CITY COMMISSION - CITY OF WILDWOOD

Mayor/Commissioner – Ed Wolf – Seat 1

Mayor Pro Tem/Commissioner – Pamala Harrison-Bivins – Seat 2

Joe Elliott – Seat 3

Marcos Flores – Seat 4

Julian Green – Seat 5

Jason McHugh – City Manager

Agenda

Regular Meeting

January 13, 2025 7:00 PM

City Hall Commission Chamber

100 N Main Street

Persons with disabilities or language barriers needing assistance to participate in any of these proceedings should contact the City Clerk's Department, ADA Coordinator, at 352-330-1330, Ext. 103, forty-eight (48) hours in advance of the meeting.

F.S.S. 286.0105 - If a person decides to appeal any decision made by the Commission with respect to any matter considered at this meeting, they will need a record of the proceedings, and that, for such purpose, they may need to ensure that a verbatim record of the proceedings is made, which record includes the testimony and evidence upon which the appeal is to be based. The City of Wildwood DOES NOT provide this verbatim record.

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1. Call to Order

2. Oath of Office to Commissioner Joe Elliott and Commissioner Julian Green

3. Consent Agenda/Informational Items

(A consent agenda may be presented by the Mayor at the beginning of a meeting. Items may be removed from the consent agenda at the request of any one Commissioner. Items not removed may be adopted by general consent without debate. Removed items may be either taken up immediately after the consent agenda or placed later on the agenda at the discretion of the Commission.)

A. *EXPENDITURE REPORT*

B. *MINUTES FOR APPROVAL: OCTOBER 21, 2024 COMMISSION WORKSHOP*

C. *MINUTES FOR APPROVAL: OCTOBER 28, 2024 REGULAR MEETING*

D. *PLAT 2401-001 COOTIE'S RANCH FINAL PLAT*

E. *PLAT 2407-005 TWISTED OAKS PHASE 2 FINAL PLAT (CONSTRUCTION PHASES III & IV)*

F. *PLAT 2407-006 TWISTED OAKS TOWNHOMES PHASE 2 FINAL PLAT*

G. *PLAT 2407-007 HIGHFIELD AT TWISTED OAKS PHASE 2 FINAL PLAT*

H. *PLAT 2411-001 VOSO UNIT 176 FINAL PLAT*

I. *PLAT 2411-002 VOSO UNIT 177 FINAL PLAT*

J. *PLAT 2411-003 VOSO UNIT 180 FINAL PLAT*

K. *PLAT 2411-004 VOSO UNIT 290 FINAL PLAT*

L. *PLAT 2411-006 VOSO UNIT 175 FINAL PLAT*

M. *PLAT 2411-007 VOSO UNIT 186 FINAL PLAT*

N. *PLAT 2411-009 VOSO UNIT 189 FINAL PLAT*

O. *BUDGETED FINANCIAL ITEMS*

1. *OXFORD WATER TREATMENT PLANT CORROSION INHIBITOR INJECTION PROJECT FOR THE AMOUNT OF $29,948.00*

2. *PURCHASE OF FIFTY (50) MANHOLE RING AND COVERS FOR THE AMOUNT OF $27,320.00*

3. *REHAB AND EPOXY COATING OF FORTY-FOUR (44) MANHOLES BY ENGINEERED SPRAY SOLUTIONS FOR THE AMOUNT OF $277,388.00*

4. *CHEMICAL STORAGE TANK REPLACEMENT FOR THE OXFORD WATER TREATMENT PLANT FOR THE AMOUNT OF $35,128.00*

5. *GENERATOR REPLACEMENT FOR THE 501 WATER TREATMENT FACILITY FOR THE AMOUNT OF $235,508.24*

4. <u>Presentations and/or Proclamations</u>

5. <u>Public Hearings - Timed - Legislative</u>

A. *SWEAR IN CITY STAFF AND PUBLIC SPEAKERS*

B. ***ORDINANCE NO. O2024-91 -*** *AN ORDINANCE OF THE CITY OF WILDWOOD, FLORIDA; AMENDING EXHIBIT "A" OF ORDINANCE NO O2023-54, AS AMENDED, RELATING TO THE WASTE MANAGEMENT CONTRACT FOR SOLID WASTE AND RECYCLING SERVICES; ESTABLISHING NEW RATES AND FEES; PROVIDING FOR SEVERABILITY; PROVIDING FOR CONFLICTS; AND PROVIDING FOR AN EFFECTIVE DATE.*

Waste Management Rate Update

Staff recommends approval.

6. **Public Hearings - Timed - Quasi-Judicial**

A. ***ORDINANCE NO. O2024-83 -*** *AN ORDINANCE OF THE CITY OF WILDWOOD, FLORIDA, PROVIDING FOR THE VOLUNTARY ANNEXATION OF CERTAIN REAL PROPERTY CONSISTING OF APPROXIMATELY 4.82 ACRES GENERALLY LOCATED APPROXIMATELY 0.38 MILES WEST OF THE CR 134 AND E C 462 INTERSECTION, SOUTH ALONG CR 134, IN SECTION 5, TOWNSHIP 19 SOUTH, RANGE 23 EAST; WHICH IS LOCATED IN THE CITY'S JOINT PLANNING AREA; PROVIDING THAT SECTION 1-14 OF THE CITY OF WILDWOOD CODE OF ORDINANCES IS AMENDED TO INCLUDE THE ANNEXED PROPERTY; PROVIDING FOR CODIFICATION; PROVIDING FOR CONFLICT; PROVIDING FOR SEVERABILITY; AND PROVIDING FOR AN EFFECTIVE DATE.*

AN 2410-004 Kylie Annexation

Parcel G05-258
The applicant/owners Shirley A. Rhoton and Debra Lee Angell Drawdy have submitted a voluntary annexation application for parcel G05-258 on 4.82 acres, MOL.
Staff recommends approval.

7. **Public Forum - 4 minute time limit**

8. **Ordinances First Reading Only (No Vote)**

A. ***ORDINANCE NO. O2024-72 -*** *AN ORDINANCE OF THE CITY OF WILDWOOD, FLORIDA GRANTING A REQUEST FOR A PLANNED DEVELOPMENT PURSUANT TO SECTION 8.6 OF THE LAND DEVELOPMENT REGULATIONS FOR CERTAIN PROPERTY WITHIN THE CITY OF WILDWOOD, FLORIDA; OWNED BY CEDAR CREEK EQUITY INVESTMENTS, LLC AND SUNSCAPE FARMS, LLC; PROVIDING FOR SEVERABILITY; AND PROVIDING FOR AN EFFECTIVE DATE.*

PD 2312-001 Wildwood III Planned Development

The applicant seeks approval from the City Commission for a Planned Development (PD) for Wildwood III on approximately 55.73 acres, MOL. The PD provides general provisions for the project development including, but not limited to, a maximum number of dwelling units at 350, limiting the maximum amenity square-footage to 20,000 SF, and modifying building separation requirements. Also included are minor exceptions to the Design District Standards (DDS) including, but not limited to, defining the amenities within the development, limiting applicable sections of the DDS, and modifying the landscape buffers due to the dedication of right-of-way for public use. All the provisions are outlined in

detail within the attached ordinance.
The Planning and Zoning Board/Special Magistrate recommends approval.

B. ***ORDINANCE NO. O2024-81 -*** *AN ORDINANCE OF THE CITY OF WILDWOOD, FLORIDA, PROPOSING A SMALL-SCALE FUTURE LAND USE MAP AMENDMENT TO THE ADOPTED COMPREHENSIVE PLAN AND FUTURE LAND USE MAP IN ACCORDANCE WITH THE COMMUNITY PLANNING ACT OF 2011, AS AMENDED; PROVIDING FOR CODIFICATION; PROVIDING FOR CONFLICT; PROVIDING FOR SEVERABILITY; AND PROVIDING FOR AN EFFECTIVE DATE.*

CP 2410-003 Floeter House

PARCEL G27B010
The applicant is seeking approval from the City Commission for a Small-Scale Comprehensive Plan Amendment to change the Future Land Use Map designation from Rural Residential (Sumter County) to Mobile Home Park (City) for the parcel listed above on 0.182 acres MOL. This request is accompanied by a rezoning request RZ 2410-003 (O2024-82).
Special Magistrate recommends approval.

C. ***ORDINANCE NO. O2024-82 -*** *AN ORDINANCE OF THE CITY OF WILDWOOD, FLORIDA; PROPOSING A ZONING MAP AMENDMENT TO THE OFFICIAL ZONING MAP IN ACCORDANCE WITH SECTIONS 3.2 AND 3.3 OF THE LAND DEVELOPMENT REGULATIONS; PROVIDING FOR CODIFICATION; PROVIDING FOR CONFLICT; PROVIDING FOR SEVERABILITY; AND PROVIDING FOR AN EFFECTIVE DATE.*

RZ 2410-003 Floeter House

Parcel G27B010
The applicant seeks approval from the City Commission for a Zoning Map amendment to change the zoning district from R6C (Sumter County) to MHP (City) for the parcel listed above on 0.182 acres MOL. This request is accompanied by a small-scale comprehensive plan amendment request CP 2410-003 (O2024-81).
Special Magistrate recommends approval.

D. ***ORDINANCE NO. O2024-94 -*** *AN ORDINANCE OF THE CITY OF WILDWOOD, FLORIDA, PROVIDING FOR THE VOLUNTARY ANNEXATION OF CERTAIN REAL PROPERTY CONSISTING OF APPROXIMATELY 2.5 ACRES LOCATED ON AT THE SOUTHEAST CORNER OF THE INTERSECTION OF CR 504 AND CR 511A, IN SECTION 20, TOWNSHIP 19 SOUTH, RANGE 23 EAST; WHICH IS LOCATED IN THE CITY'S JOINT PLANNING AREA; PROVIDING THAT SECTION 1-14 OF THE CITY OF WILDWOOD CODE OF ORDINANCES IS AMENDED TO INCLUDE THE ANNEXED PROPERTY; PROVIDING FOR CODIFICATION; PROVIDING FOR CONFLICT; PROVIDING FOR SEVERABILITY; AND PROVIDING FOR AN*

EFFECTIVE DATE.

AN 2412-001 Wieckhorst

The applicant L. Norman Adams Home Builders on behalf of the owner Barbara Wieckhorst has submitted a voluntary annexation application for parcel G29A239. The property to be annexed totals 2.5 acres MOL and is located at 4415 CR 504.
Staff recommends approval.

E. ***ORDINANCE NO. O2024-95 -*** *AN ORDINANCE OF THE CITY OF WILDWOOD, FLORIDA, PROVIDING FOR THE VOLUNTARY ANNEXATION OF CERTAIN REAL PROPERTY CONSISTING OF APPROXIMATELY 2 ACRES LOCATED ON WARM SPRINGS AVE, APPROXIMATELY 200 FEET WEST OF CR 513 AND 860 FEET EAST OF CR 515, IN SECTION 29, TOWNSHIP 19 SOUTH, RANGE 23 EAST; WHICH IS CONTIGUOUS TO THE CITY LIMITS OF THE CITY OF WILDWOOD AND LOCATED IN THE CITY'S JOINT PLANNING AREA; PROVIDING THAT SECTION 1-14 OF THE CITY OF WILDWOOD CODE OF ORDINANCES IS AMENDED TO INCLUDE THE ANNEXED PROPERTY; PROVIDING FOR CODIFICATION; PROVIDING FOR CONFLICT; PROVIDING FOR SEVERABILITY; AND PROVIDING FOR AN EFFECTIVE DATE.*

AN 2404-002 Johary Real Estate Services

Parcel G29-008
The applicant has submitted a voluntary annexation application for parcel G29-008. The property to be annexed totals 2 acres MOL and is generally located approximately 200 feet west of CR 513 and 860 feet east of CR 515.
Staff recommends approval.

9. <u>Resolutions for Approval</u>

A. ***RESOLUTION NO. R2025-1 -*** *A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF WILDWOOD, FLORIDA, ADOPTING THE CITY OF WILDWOOD 2024 UTILITY SYSTEM MASTER PLAN; COMPLETED BY KIMLEY-HORN AND ASSOCIATES; PROVIDING FOR AN EFFECTIVE DATE.*

2024 Utility System Master Plan

Staff recommends approval.

B. ***RESOLUTION NO. R2025-2 -*** *A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF WILDWOOD, FLORIDA ADDING POLICY 8.33 "EMPLOYEE NOTARY PUBLIC SERVICES" TO THE CITY OF WILDWOOD PERSONNEL RULES AND REGULATIONS; PROVIDING FOR AN EFFECTIVE DATE.*

Adding Policy 8.33 Employee Notary Public Services to the City of

Wildwood Personnel Rules and Regulations

Staff recommends approval.

C. ***RESOLUTION NO. R2025-3 -*** *A RESOLUTION OF THE CITY OF WILDWOOD, FLORIDA AUTHORIZING THE MAYOR TO EXECUTE THE INTERLOCAL AGREEMENT BETWEEN THE CITIES OF BUSHNELL, CENTER HILL, COLEMAN, WEBSTER, AND WILDWOOD TO ESTABLISH A ROTATION FOR MUNICIPAL REPRESENTATION FOR THE LAKE SUMTER METROPOLITAN PLANNING ORGANIZATION GOVERNING BOARD.*

Interlocal Agreement Establishing Municipal Rotation on the Lake Sumter MPO Governing Board

Staff recommends approval.

D. ***RESOLUTION NO. R2025-4 -*** *A RESOLUTION OF THE CITY OF WILDWOOD, FLORIDA APPOINTING COMMISSIONER JOE ELLIOTT AND COMMISSIONER MARCOS FLORES TO REPRESENT THE CITY OF WILDWOOD ON THE LAKE-SUMTER METROPOLITAN PLANNING ORGANIZATION GOVERNING BOARD; PROVIDING FOR 12-MONTH TERMS; AND PROVIDING FOR AN EFFECTIVE DATE.*

Appointment to the Lake Sumter Metropolitan Planning Organization Governing Board

Staff recommends the Commission appoint Commissioner Elliott to the Lake Sumter MPO Governing Board.

10. <u>Financial & Contracts & Agreements</u>

A. *CONTINENTAL WASTEWATER TREATMENT PLANT DECOMMISSIONING AND SR 44 FORCE MAIN PAY APP NO. 10 IN THE AMOUNT OF $84,841.80*

B. *WORK AUTHORIZATION NO. 6 FOR KIMLEY-HORN FOR THE DESIGN, PERMITTING, AND BID ADMINISTRATION OF THE CONTINENTAL WELL NO. 1 PROJECT IN THE AMOUNT OF $62,500.00*

C. *EMERGENCY BACKUP GENERATOR RENTAL FOR THE WASTEWATER TREATMENT FACILITY FOR THE AMOUNT OF $107,730.00*

D. *20HP REPLACEMENT PUMP FOR LIFT STATION NO. 27 (CR219) FOR THE AMOUNT OF $30,284.20*

E. *CLARIFIER GEAR BOX REPLACEMENT BY GARNEY CONSTRUCTION FOR THE AMOUNT OF $55,765.00*

F. *WORK AUTHORIZATION NO. 18 IN THE AMOUNT OF $25,500 FOR KIMLEY-HORN TO ASSIST THE CITY IN UPDATING CHAPTER 19 OF THE CODE OF ORDINANCES*

G. *HUEY STREET IMPROVEMENTS PROJECT PAYMENT APPLICATION #6 IN THE AMOUNT OF $175,631.33*

H. *EMPLOYMENT CONTRACT FOR POLICE OFFICER RECRUIT: ELLIOTT VANSLYKE*

11. General Items for Consideration/Discussion and Other Business

12. Appointments

13. City Manager Reports

14. Other Department Reports

15. Commission Members Reports

16. City Attorney Reports

17. Adjournment

Upcoming Events

January 18, 2025 - Dr. Martin Luther King Jr. Celebration - Community Walk at 12pm from the Dr. Martin Luther King Jr. Community Center to the Dr. Martin Luther King Jr. Park with Celebration at the Park from 1pm to 4pm

January 27, 2025 - City Commission Meeting at City Hall at 7pm

January 31, 2025 - Cookie Decorating Workshop at Warfield Auditorium at 6:30pm

February 10, 2025 - City Commission Meeting at City Hall at 9am

January 13, 2025 7:00 PM

CITY OF WILDWOOD
YEAR TO DATE REVENUE-EXPENDITURE REPORT
COMMISSION MEETING JANUARY 13 2025

Revenue Account Range: *First to zzz-zzz-zzzz* ***Include Non-Anticipated:*** *No* ***Year To Date As Of:*** *01/31/25*
Expend Account Range: *First to zzz-zzz-zz-zzzz* ***Include Non-Budget:*** *No*
Print Zero YTD Activity: *No* ***Prior Year:*** *Thru 09/30/24*

Revenue Account	Description	Prior Yr Rev	Anticipated	YTD Rev	Excess/Deficit	% Real
001-311-1000	AD VALOREM TAXES	16,352,459.18	18,515,900.00	16,182,530.14	2,333,369.86-	87
001-312-4100	LOCAL OPTION GAS TAX	1,146,258.46	1,237,500.00	234,784.44	1,002,715.56-	19
001-312-6000	DISCRETIONARY/LOCAL GOVT. INFRA	4,102,242.14	4,870,300.00	864,042.43	4,006,257.57-	18
001-313-1000	FRANCHISE TAX-/PROGRESS ENERGY SVCS	956,053.38	1,155,000.00	144,851.21	1,010,148.79-	13
001-313-1010	FRANCHISE TAX- SECO	1,387,226.65	1,760,000.00	491,330.69	1,268,669.31-	28
001-313-4080	LEESBURG ELECTRIC FRANCHISE FEE	50,727.61	99,000.00	20,493.57	78,506.43-	21
001-313-4160	FRANCHISE TAX- TECO/PEOPLES GAS	271,477.54	396,000.00	67,977.06	328,022.94-	17
001-313-4170	FENNEY WATER CONS AUTHORITY-UTILITY T	0.00	66,000.00	0.00	66,000.00-	0
001-313-4175	GIBSON PLACE WATER CONSERV AUTH FRA	29,648.88	0.00	11,565.39	11,565.39	0
001-313-4180	LEESBURG GAS FRANCHISE FEE	67,860.67	82,500.00	22,405.89	60,094.11-	27
001-313-4185	MIDDLETON WATER CONSERV AUTH FRAN F	22,909.18	15,000.00	5,296.96	9,703.04-	35
001-313-4190	SOUTH SUMTER UTILITY COMPANY FRANCH	618,297.40	965,000.00	0.00	965,000.00-	0
001-313-4195	MIDDLETON UTILITY CO FRANCHISE FEES	22,209.66	15,000.00	6,518.94	8,481.06-	43
001-313-4196	GIBSON PLACE UTILITY CO FRAN FEES	7,644.94	500.00	7,866.82	7,366.82	***
001-313-5000	FRANCHISE TAX- WASTE MGMNT-REFUSE S\	233,297.28	242,000.00	46,560.28	195,439.72-	19
001-313-5001	TRI-COUNTY SANITATION FRANCHISE FEE	211,703.30	385,000.00	69,996.02	315,003.98-	18
001-314-1000	UTILITY TAX-PROGRESS ENERGY SVCS.	803,246.52	896,500.00	135,280.97	761,219.03-	15
001-314-1010	UTILITY TAX-SUMTER ELECTRIC	1,276,472.04	1,265,000.00	458,364.85	806,635.15-	36
001-314-3000	UTILITY TAX-WATER SALES	146,548.06	126,500.00	27,019.80	99,480.20-	21
001-314-3002	THE VILLAGES-5% WATER UTILITY TAX	211,673.68	275,000.00	37,000.28	237,999.72-	13
001-314-3003	CENTRAL SUMTER UTILIITY CO. LLC	133,600.29	220,000.00	23,114.62	196,885.38-	11
001-314-4000	UTILITY TAX-SUBURBAN PROPANE	14,242.81	18,700.00	2,209.74	16,490.26-	12
001-314-4030	FERRELLGAS LP	1,625.05	1,500.00	422.79	1,077.21-	28
001-314-4040	CIRCLE K STORES	311.99	200.00	52.28	147.72-	26

CITY OF WILDWOOD
YEAR TO DATE REVENUE-EXPENDITURE REPORT
COMMISSION MEETING JANUARY 13 2025

Revenue Account	Description	Prior Yr Rev	Anticipated	YTD Rev	Excess/Deficit	% Real
001-314-4080	LEESBURG ELECTRIC UTILITY TAX	42,642.53	60,500.00	20,337.05	40,162.95-	34
001-314-4081	LEESBURG GAS UTILITY TAX	108,604.08	99,000.00	37,369.05	61,630.95-	38
001-314-4090	THERMOTANE PROPOANE UTILITY TAX	47.29	0.00	0.00	0.00	0
001-314-4100	INTERCONN RESOURCES LLC	10,969.00	15,000.00	2,010.49	12,989.51-	13
001-314-4150	CVS	398.98	300.00	52.00	248.00-	17
001-314-4151	AMERIGAS PROPANE	4,346.93	8,000.00	585.76	7,414.24-	7
001-314-4152	LOWE'S PROPANE TAX	1,682.94	2,500.00	355.65	2,144.35-	14
001-314-4153	BLOSSMAN COMPANIES PROPANE TAX	322.84	300.00	41.08	258.92-	14
001-314-4160	TECO-PEOPLES GAS	375,367.53	396,000.00	62,888.15	333,111.85-	16
001-314-4162	GAS SOUTH UTILITY TAX	741.50	440.00	120.92	319.08-	27
001-314-4190	SOUTH SUMTER UTILITY CO UTILITY TAX	180,650.74	187,000.00	0.00	187,000.00-	0
001-314-4191	PUBLIX UTILITY TAX	807.89	1,000.00	189.53	810.47-	19
001-314-4195	MIDDLETON UTILITY CO UTILITY TAX	9,051.20	5,000.00	831.43	4,168.57-	17
001-314-4196	GIBSON PLACE UTILITY CO UTIL TAX	2,471.08	200.00	2,470.61	2,270.61	***
001-314-9010	STATE COMMUNICATIONS TAX	836,621.32	908,000.00	144,582.08	763,417.92-	16
001-331-5000	FEMA GRANT	33,192.46	0.00	1,163.95	1,163.95	0
001-335-1200	STATE REVENUE SHARING	952,865.15	1,080,800.00	170,029.91	910,770.09-	16
001-335-1400	MOBILE HOME LICENSES	15,925.56	16,500.00	4,823.22	11,676.78-	29
001-335-1600	STATE BEVERAGE LICENSES	9,661.20	7,500.00	8,067.02	567.02	108
001-335-1800	1/2 CENT SALES TAX	2,013,342.74	2,255,570.00	357,063.38	1,898,506.62-	16
001-339-1010	MIDDLETON UTILITY CO PILOT FEES	3,185.04	3,000.00	900.21	2,099.79-	30
001-341-2006	COMMUNITY DEVELOPMENT SERVICES	687,911.59	759,000.00	148,044.15	610,955.85-	20
001-341-2010	TREE MITIGATION PERMITS	76,470.00	500.00	100.00	400.00-	20
001-347-4000	SPECIAL EVENT PERMIT FEE	0.00	0.00	850.00	850.00	0
001-347-5300	BUILDING RENTAL-WILDWOOD COMMUNITY	143,962.95	70,000.00	37,229.66	32,770.34-	53
001-347-5302	COMMUNITY CENTER-RESERVATION FEES	2,458.90	0.00	5,914.87	5,914.87	0
001-347-5305	BUILDING RENTAL-OXFORD COMMUNITY CEI	12,251.24	10,000.00	5,731.69	4,268.31-	57

CITY OF WILDWOOD
YEAR TO DATE REVENUE-EXPENDITURE REPORT
COMMISSION MEETING JANUARY 13 2025

Revenue Account	Description	Prior Yr Rev	Anticipated	YTD Rev	Excess/Deficit	% Real
001-347-5306	BUILDING RENTAL-MLK JR COMMUNITY CEN	2,421.43	1,500.00	351.17	1,148.83-	23
001-347-5307	OUTDOOR BUILDING RENTALS	280.31	100.00	0.00	100.00-	0
001-347-5308	OPEN SPACE RENTALS	1,005.14	800.00	73.43	726.57-	9
001-350-1000	FINES	85,329.42	30,000.00	10,438.84	19,561.16-	35
001-351-1002	CODE ENFORCEMENT	33,515.90	1,500.00	818.98	681.02-	55
001-351-3000	POLICE-2ND DOLLAR FUND	7,947.28	2,500.00	858.93	1,641.07-	34
001-361-0000	INTEREST EARNINGS	222,934.18	100,000.00	26,972.40	73,027.60-	27
001-369-0000	OTHER MISCELLANEOUS REVENUE	4,030.71	5,000.00	2,211.27	2,788.73-	44
001-369-0010	STATE HIGHWAY LIGHTING AGREEMENT	18,297.94	18,850.00	4,747.50	14,102.50-	25
001-369-0012	FDOT HIGHWAY MAINTENANCE AGREEMENT	14,284.94	18,900.00	0.00	18,900.00-	0
001-369-0050	AUCTION PROCEEDS	3,620.00	10,000.00	0.00	10,000.00-	0
001-369-0052	SPONSORSHIPS	6,000.00	0.00	0.00	0.00	0
001-369-0058	DONATIONS	11,664.25	0.00	100.00	100.00	0
001-369-0075	MULTI-PURPOSE FIELD RENTAL	0.00	0.00	930.38	930.38	0
001-369-0076	BASEBALL FIELD RENTAL	6,568.51	300.00	1,668.21	1,368.21	556
001-369-0078	FIELD PREPARATION FEES	1,620.00	500.00	0.00	500.00-	0
001-369-0792	PROGRAM REGISTRATION FEES	39,301.28	30,000.00	11,085.00	18,915.00-	37
001-369-0794	CONCESSION / VENDOR FEES	620.00	0.00	0.00	0.00	0
001-369-0796	SPECIAL EVENT REGISTRATION FEES	30,156.37	15,000.00	892.00	14,108.00-	6
001-369-2100	POLICE DEPT MISCELLANEOUS REVENUE	7,755.95	3,500.00	470.00	3,030.00-	13
001-369-3700	MISCELLANEOUS POLICE DONATIONS	5,200.00	0.00	0.00	0.00	0
001-369-3748	MISC. GRANTS/VESTS	7,600.00	2,500.00	0.00	2,500.00-	0
001-369-4000	FUEL TAX REFUND	12,909.89	10,000.00	4,610.30	5,389.70-	46
001-380-1000	OTHR FINANCING SOURCE-INSURANCE PRO	21,489.96	0.00	0.00	0.00	0
001-382-1010	TRANSFER FROM INDUSTRIAL PARK	10,000.00	10,000.00	0.00	10,000.00-	0
001-382-1013	TRANSFER FROM LAW ENFORCEMENT IMP F	412,800.00	412,800.00	0.00	412,800.00-	0
001-389-5000	NON-OPERATIONAL CASH FORWARD-GEN FU	0.00	8,200,000.00	0.00	8,200,000.00-	0

CITY OF WILDWOOD
YEAR TO DATE REVENUE-EXPENDITURE REPORT
COMMISSION MEETING JANUARY 13 2025

Revenue Account	Description	Prior Yr Rev	Anticipated	YTD Rev	Excess/Deficit	% Real
	GENERAL FUND Revenue Totals	**34,561,042.85**	**47,367,960.00**	**19,937,665.44**	**27,430,294.56-**	**42**

Expenditure Account	Description	Prior Yr Expd	Budgeted	YTD Expended	Unexpended	% Expd
001-511-00-0000	LEGISLATIVE- CITY COMMISSION:	0.00	0.00	0.00	0.00	0
001-511-10-1200	SALARIES	51,185.79	53,441.00	17,227.56	36,213.44	32
001-511-10-2100	FICA EXPENSE	3,915.87	4,148.00	1,318.00	2,830.00	32
001-511-10-2200	RETIREMENT	30,035.76	31,360.00	10,109.12	21,250.88	32
001-511-10-2300	LIFE & HEALTH INSURANCE	285.00	0.00	95.00	95.00-	0
001-511-10-2600	WORKERS COMPENSATION INSURANCE	378.13	0.00	274.19	274.19-	0
001-511-30-3100	PROFESSIONAL SERVICES	2,365.00	6,000.00	0.00	6,000.00	0
001-511-30-4000	TRAVEL & PER DIEM	6,705.45	7,000.00	303.04	6,696.96	4
001-511-30-4100	TELEPHONE EXPENSE	1,089.58	2,000.00	181.76	1,818.24	9
001-511-30-4110	IT LICENSING / EQUIPMENT	5,474.39	8,220.00	1,841.49	6,378.51	22
001-511-30-4200	POSTAGE/TRANSPORTATION FEES	95.00	0.00	103.93	103.93-	0
001-511-30-4300	UTILITIES EXPENSE	1,030.21	1,800.00	253.17	1,546.83	14
001-511-30-4600	REPAIR & MAINTENANCE	0.00	500.00	0.00	500.00	0
001-511-30-4900	MISC. EXPENSE & OTHER CURRENT	0.00	2,500.00	71.98	2,428.02	3
001-511-30-5100	OFFICE SUPPLIES	0.00	150.00	0.00	150.00	0
001-511-30-5200	OPERATING SUPPLIES	64.00	400.00	0.00	400.00	0
001-511-30-5400	SUBSCRIPTIONS/DUES	4,851.87	6,600.00	5,438.00	1,162.00	82
001-511-30-5500	TRAINING	2,050.00	2,800.00	0.00	2,800.00	0
001-511-60-6200	CAP. IMPROVEMENT-BUILDINGS	0.00	50,000.00	0.00	50,000.00	0
	511 LEGISLATIVE- CITY COMMISSION:	**109,526.05**	**176,919.00**	**37,217.24**	**139,701.76**	**21**
001-512-00-0000	EXECUTIVE- CITY MANAGER:	0.00	0.00	0.00	0.00	0
001-512-10-1200	SALARIES	419,230.97	556,477.00	128,323.63	428,153.37	23

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Expenditure Account	Description	Prior Yr Expd	Budgeted	YTD Expended	Unexpended	% Expd
001-512-10-1500	SICK LEAVE	11,907.39	0.00	3,865.76	3,865.76-	0
001-512-10-1600	VACATION PAY	28,844.41	0.00	7,949.07	7,949.07-	0
001-512-10-1800	HOLIDAY PAY	18,655.68	0.00	7,677.75	7,677.75-	0
001-512-10-2100	FICA EXPENSE	35,754.65	43,130.00	9,802.70	33,327.30	23
001-512-10-2200	RETIREMENT	131,232.07	148,341.00	39,808.18	108,532.82	27
001-512-10-2210	BENEFIT ADMIN FEES	108.00	0.00	27.00	27.00-	0
001-512-10-2300	LIFE & HEALTH INSURANCE	41,230.33	54,000.00	15,267.15	38,732.85	28
001-512-10-2600	WORKERS COMPENSATION INSURANCE	756.27	1,000.00	548.35	451.65	55
001-512-30-3100	PROFESSIONAL SERVICES	366,713.91	260,602.50	12,972.50	247,630.00	5
001-512-30-3450	CLOTHING AND UNIFORMS	303.00	750.00	49.00	701.00	7
001-512-30-4000	TRAVEL & PER DIEM	8,949.30	13,300.00	2,669.00	10,631.00	20
001-512-30-4100	TELEPHONE EXPENSE	4,074.65	5,000.00	658.03	4,341.97	13
001-512-30-4110	IT LICENSING / EQUIPMENT	22,683.57	24,140.00	15,677.33	8,462.67	65
001-512-30-4150	ADVERTISING/RECORDING EXPENSE	1,978.63	4,000.00	312.68	3,687.32	8
001-512-30-4200	POSTAGE/TRANSPORTATION FEES	659.73	1,000.00	67.02	932.98	7
001-512-30-4600	REPAIR & MAINTENANCE	2,010.48	5,800.00	1,126.65	4,673.35	19
001-512-30-4900	MISC. EXPENSE & OTHER CURRENT	411.99	2,500.00	25.00	2,475.00	1
001-512-30-5100	OFFICE SUPPLIES	836.92	2,100.00	310.81	1,789.19	15
001-512-30-5200	OPERATING SUPPLIES	2,520.18	7,250.00	446.36	6,803.64	6
001-512-30-5250	FUEL EXPENSE	160.37	500.00	0.00	500.00	0
001-512-30-5400	SUBSCRIPTIONS/DUES	2,951.88	6,300.00	974.88	5,325.12	15
001-512-30-5500	TRAINING	5,620.72	13,700.00	400.00-	14,100.00	3-
	512 EXECUTIVE- CITY MANAGER:	**1,107,595.10**	**1,149,890.50**	**248,158.85**	**901,731.65**	**22**
001-513-00-0000	CLERK/FINANCE DEPARTMENT:	0.00	0.00	0.00	0.00	0
001-513-10-1200	SALARIES	285,186.92	472,893.00	88,174.31	384,718.69	19
001-513-10-1300	OVERTIME	0.00	500.00	342.65	157.35	69

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Expenditure Account	Description	Prior Yr Expd	Budgeted	YTD Expended	Unexpended	% Expd
001-513-10-1500	SICK LEAVE	10,033.94	0.00	3,175.24	3,175.24-	0
001-513-10-1600	VACATION PAY	17,960.48	0.00	7,470.35	7,470.35-	0
001-513-10-1800	HOLIDAY PAY	11,184.17	0.00	5,247.64	5,247.64-	0
001-513-10-2100	FICA EXPENSE	24,813.95	36,654.00	7,987.40	28,666.60	22
001-513-10-2200	RETIREMENT	49,131.56	70,001.00	15,687.53	54,313.47	22
001-513-10-2210	BENEFIT ADMIN FEES	54.00	0.00	27.00	27.00-	0
001-513-10-2300	LIFE & HEALTH INSURANCE	49,981.51	75,600.00	16,116.55	59,483.45	21
001-513-10-2500	UNEMPLOYMENT COMPENSATION	377.40	0.00	0.00	0.00	0
001-513-10-2600	WORKERS COMPENSATION INSURANCE	1,512.62	2,000.00	1,096.73	903.27	55
001-513-30-3100	PROFESSIONAL SERVICES	1,955.00	13,380.00	0.00	13,380.00	0
001-513-30-3200	ACCOUNTING/AUDITING FEE	22,500.00	35,000.00	0.00	35,000.00	0
001-513-30-3400	OTHER CONTRACTUAL SERVICES	13,546.15	27,710.00	5,372.08	22,337.92	19
001-513-30-4000	TRAVEL & PER DIEM	17.00	3,880.00	0.00	3,880.00	0
001-513-30-4100	TELEPHONE EXPENSE	5,478.69	7,500.00	1,322.95	6,177.05	18
001-513-30-4110	IT LICENSING / EQUIPMENT	67,302.38	65,250.00	44,379.68	20,870.32	68
001-513-30-4150	ADVERTISING/RECORDING EXPENSE	2,610.68	1,600.00	49.28	1,550.72	3
001-513-30-4200	POSTAGE/TRANSPORTATION FEES	1,842.48	7,850.00	228.11	7,621.89	3
001-513-30-4300	UTILITIES EXPENSE	17,991.77	30,000.00	3,027.73	26,972.27	10
001-513-30-4400	RENTAL & LEASING	3,806.70	7,500.00	331.96	7,168.04	4
001-513-30-4500	GENERAL INSURANCE	319,609.90	450,000.00	363,218.00	86,782.00	81
001-513-30-4600	REPAIR & MAINTENANCE	28,341.17	30,000.00	4,518.84	25,481.16	15
001-513-30-4900	MISC. EXPENSE & OTHER CURRENT	4,719.16	6,000.00	1,808.72	4,191.28	30
001-513-30-4910	ELECTION EXPENSES	0.00	500.00	0.00	500.00	0
001-513-30-5100	OFFICE SUPPLIES	3,701.71	6,850.00	700.44	6,149.56	10
001-513-30-5200	OPERATING SUPPLIES	6,468.48	8,200.00	1,970.73	6,229.27	24
001-513-30-5400	SUBSCRIPTIONS/DUES	187.50	2,100.00	425.00	1,675.00	20
001-513-30-5500	TRAINING	2,291.00	10,050.00	0.00	10,050.00	0

Expenditure Account	Description	Prior Yr Expd	Budgeted	YTD Expended	Unexpended	% Expd
001-513-70-7100	DEBT SERVICE/CITY HALL-PRINCIPAL	115,380.09	118,240.00	0.00	118,240.00	0
001-513-70-7200	DEBT SERVICE/CITY HALL-INTEREST	19,047.44	16,200.00	0.00	16,200.00	0
001-513-70-7500	DEBT SERVICE/POLICE STATION-PRINCIPAL	235,452.36	241,640.00	0.00	241,640.00	0
001-513-70-7550	DEBT SERVICE/POLICE STATION-INTEREST	56,158.33	49,980.00	0.00	49,980.00	0
001-513-70-7600	DEBT SERV/2018 GEN FUND PROJ LOAN-PRI	339,576.44	345,960.00	172,173.19	173,786.81	50
001-513-70-7650	DEBT SERV/2018 GEN FUND PROJ LOAN-INTI	83,009.40	76,630.00	39,093.10	37,536.90	51
	513 CLERK/FINANCE DEPARTMENT:	**1,801,230.38**	**2,219,668.00**	**783,945.21**	**1,435,722.79**	**35**
001-516-00-0000	DEVELOPMENT SERVICES:	0.00	0.00	0.00	0.00	0
001-516-10-1200	SALARIES	613,358.35	962,068.00	179,808.94	782,259.06	19
001-516-10-1300	OVERTIME	0.00	1,000.00	141.35	858.65	14
001-516-10-1500	SICK LEAVE	19,673.72	0.00	3,171.49	3,171.49-	0
001-516-10-1600	VACATION PAY	32,501.62	0.00	12,544.37	12,544.37-	0
001-516-10-1800	HOLIDAY PAY	23,839.25	0.00	10,346.83	10,346.83-	0
001-516-10-2100	FICA EXPENSE	52,736.63	72,604.00	15,759.91	56,844.09	22
001-516-10-2200	RETIREMENT	109,754.60	156,201.00	32,742.76	123,458.24	21
001-516-10-2210	BENEFIT ADMIN FEES	117.00	0.00	54.00	54.00-	0
001-516-10-2300	LIFE & HEALTH INSURANCE	96,094.34	145,800.00	29,061.67	116,738.33	20
001-516-10-2600	WORKERS COMPENSATION INSURANCE	2,268.89	3,000.00	1,645.08	1,354.92	55
001-516-30-3100	PROFESSIONAL SERVICES	961,968.72	846,175.00	97,431.53	748,743.47	12
001-516-30-3450	CLOTHING AND UNIFORMS	0.00	2,500.00	0.00	2,500.00	0
001-516-30-4000	TRAVEL & PER DIEM	3,064.88	13,000.00	2,694.54	10,305.46	21
001-516-30-4100	TELEPHONE EXPENSE	8,818.12	9,000.00	1,933.58	7,066.42	21
001-516-30-4110	IT LICENSING / EQUIPMENT	81,279.35	69,020.00	49,977.91	19,042.09	72
001-516-30-4150	ADVERTISING/RECORDING EXPENSE	23,838.34	35,200.00	8,736.44	26,463.56	25
001-516-30-4200	POSTAGE/TRANSPORTATION FEES	1,242.36	2,000.00	384.36	1,615.64	19
001-516-30-4600	REPAIR & MAINTENANCE	2,274.07	5,000.00	758.95	4,241.05	15

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Expenditure Account	Description	Prior Yr Expd	Budgeted	YTD Expended	Unexpended	% Expd
001-516-30-4900	MISC. EXPENSE & OTHER CURRENT	16,494.28	5,000.00	116.86	4,883.14	2
001-516-30-4950	CODE ENFORCEMENT	18,597.72	40,000.00	1,473.99	38,526.01	4
001-516-30-5100	OFFICE SUPPLIES	1,900.02	7,000.00	560.86	6,439.14	8
001-516-30-5200	OPERATING SUPPLIES	5,367.65	7,000.00	105.42	6,894.58	2
001-516-30-5250	FUEL EXPENSE	471.62	1,800.00	90.71	1,709.29	5
001-516-30-5400	SUBSCRIPTIONS/DUES	2,936.94	4,000.00	0.00	4,000.00	0
001-516-30-5500	TRAINING	6,929.09	25,000.00	300.00	24,700.00	1
	516 DEVELOPMENT SERVICES:	**2,085,527.56**	**2,412,368.00**	**449,841.55**	**1,962,526.45**	**19**
001-518-00-0000	INFORMATION TECHNOLOGY DEPARTMENT	0.00	0.00	0.00	0.00	0
001-518-10-1200	SALARIES	206,776.02	274,463.00	59,155.57	215,307.43	22
001-518-10-1500	SICK LEAVE	6,178.18	0.00	4,958.48	4,958.48-	0
001-518-10-1600	VACATION PAY	13,343.88	0.00	3,802.63	3,802.63-	0
001-518-10-1800	HOLIDAY PAY	6,506.29	0.00	2,821.47	2,821.47-	0
001-518-10-2100	FICA EXPENSE	17,439.14	21,274.00	5,352.54	15,921.46	25
001-518-10-2200	RETIREMENT	31,632.13	37,411.00	9,641.68	27,769.32	26
001-518-10-2300	LIFE & HEALTH INSURANCE	33,567.97	43,200.00	13,294.03	29,905.97	31
001-518-10-2600	WORKERS COMPENSATION INSURANCE	302.51	500.00	301.58	198.42	60
001-518-30-3100	PROFESSIONAL SERVICES	12,452.00	45,000.00	7,690.58	37,309.42	17
001-518-30-3400	OTHER CONTRACTUAL SERVICES	4,650.67	11,000.00	0.00	11,000.00	0
001-518-30-4000	TRAVEL & PER DIEM	2,081.56	7,500.00	16.03-	7,516.03	0-
001-518-30-4100	TELEPHONE EXPENSE	7,740.25	8,500.00	1,521.09	6,978.91	18
001-518-30-4110	IT LICENSING / EQUIPMENT	13,300.85	26,310.00	7,059.07	19,250.93	27
001-518-30-4200	POSTAGE/TRANSPORTATION FEES	25.53	250.00	0.00	250.00	0
001-518-30-4300	UTILITIES EXPENSE	1,596.64	2,300.00	0.00	2,300.00	0
001-518-30-4600	REPAIR & MAINTENANCE	1,057.34	2,500.00	95.37	2,404.63	4
001-518-30-4900	MISC. EXPENSE & OTHER CURRENT	583.00	500.00	0.00	500.00	0

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Expenditure Account	Description	Prior Yr Expd	Budgeted	YTD Expended	Unexpended	% Expd
001-518-30-5100	OFFICE SUPPLIES	746.44	1,200.00	19.54	1,180.46	2
001-518-30-5200	OPERATING SUPPLIES	5,070.20	7,500.00	320.26	7,179.74	4
001-518-30-5400	SUBSCRIPTIONS/DUES	522.33	2,500.00	300.00	2,200.00	12
001-518-30-5500	TRAINING	599.00	12,000.00	883.42	11,116.58	7
001-518-30-5550	LICENSING	13,428.69	50,000.00	6,197.46	43,802.54	12
001-518-60-6400	CAP. IMPROVEMENTS-MACHINERY/EQUIP	8,505.59	0.00	0.00	0.00	0
	518 INFORMATION TECHNOLOGY DEPARTMI	**388,106.21**	**553,908.00**	**123,398.74**	**430,509.26**	**22**
001-519-00-0000	HUMAN RESOURCE DEPARTMENT:	0.00	0.00	0.00	0.00	0
001-519-10-1200	SALARIES	156,496.54	216,128.00	52,288.46	163,839.54	24
001-519-10-1500	SICK LEAVE	6,062.51	0.00	813.66	813.66-	0
001-519-10-1600	VACATION PAY	7,752.71	0.00	2,402.83	2,402.83-	0
001-519-10-1800	HOLIDAY PAY	6,595.46	0.00	3,083.68	3,083.68-	0
001-519-10-2100	FICA EXPENSE	13,533.15	16,751.00	4,482.05	12,268.95	27
001-519-10-2200	RETIREMENT	24,037.40	29,460.00	7,985.61	21,474.39	27
001-519-10-2210	BENEFIT ADMIN FEES	54.00	0.00	27.00	27.00-	0
001-519-10-2300	LIFE & HEALTH INSURANCE	20,947.66	32,400.00	8,068.60	24,331.40	25
001-519-10-2600	WORKERS COMPENSATION INSURANCE	166.34	350.00	164.54	185.46	47
001-519-30-3100	PROFESSIONAL SERVICES	13,401.25	15,000.00	0.00	15,000.00	0
001-519-30-3400	OTHER CONTRACTUAL SERVICES	5,601.33	6,650.00	1,001.57	5,648.43	15
001-519-30-4000	TRAVEL & PER DIEM	2,888.74	8,500.00	0.00	8,500.00	0
001-519-30-4100	TELEPHONE EXPENSE	5,274.01	5,000.00	881.60	4,118.40	18
001-519-30-4110	IT LICENSING / EQUIPMENT	45,221.68	60,400.00	14,031.59	46,368.41	23
001-519-30-4150	ADVERTISING/RECRUITING	8,648.88	8,500.00	943.92	7,556.08	11
001-519-30-4200	POSTAGE/TRANSPORTATION FEES	158.23	500.00	57.96	442.04	12
001-519-30-4300	UTILITIES EXPENSE	1,596.65	2,300.00	266.18	2,033.82	12
001-519-30-4600	REPAIR & MAINTENANCE	5,487.30	5,500.00	1,482.06	4,017.94	27

Expenditure Account	Description	Prior Yr Expd	Budgeted	YTD Expended	Unexpended	% Expd
001-519-30-4800	EMPLOYEE PROGRAMS	12,341.09	18,740.00	7,668.74	11,071.26	41
001-519-30-4900	MISC. EXPENSE & OTHER CURRENT	752.29	1,000.00	36.97	963.03	4
001-519-30-5100	OFFICE SUPPLIES	1,828.70	1,500.00	306.56	1,193.44	20
001-519-30-5200	OPERATING SUPPLIES	2,759.59	4,950.00	632.73	4,317.27	13
001-519-30-5250	FUEL EXPENSE	262.89	600.00	95.14	504.86	16
001-519-30-5400	SUBSCRIPTIONS/DUES	1,679.68	2,060.00	464.00	1,596.00	23
001-519-30-5500	TRAINING	3,676.73	5,330.00	99.00	5,231.00	2
001-519-30-5501	STAFF TRAINING PROGRAMS	707.63	6,650.00	526.30	6,123.70	8
	519 HUMAN RESOURCE DEPARTMENT:	**347,932.44**	**448,269.00**	**107,810.75**	**340,458.25**	**24**
001-521-00-0000	POLICE DEPARTMENT:	0.00	0.00	0.00	0.00	0
001-521-10-1200	SALARIES	2,901,717.68	4,992,735.00	922,780.86	4,069,954.14	18
001-521-10-1220	UNIFORM ALLOWANCE	16,530.00	21,565.00	4,410.00	17,155.00	20
001-521-10-1250	ON CALL	11,550.00	13,000.00	3,875.00	9,125.00	30
001-521-10-1260	SHIFT DIFFERENTIAL	14,784.74	20,100.00	4,830.54	15,269.46	24
001-521-10-1300	OVERTIME	147,305.59	160,000.00	46,765.43	113,234.57	29
001-521-10-1500	SICK LEAVE	68,753.71	0.00	19,095.47	19,095.47-	0
001-521-10-1600	VACATION PAY	134,587.42	0.00	38,114.96	38,114.96-	0
001-521-10-1700	INCENTIVE PAY	26,280.00	56,000.00	6,880.00	49,120.00	12
001-521-10-1800	HOLIDAY PAY	111,346.00	0.00	50,173.74	50,173.74-	0
001-521-10-1820	HOLIDAY PREMIUM	100,436.45	100,000.00	132,676.44	32,676.44-	133
001-521-10-2100	FICA EXPENSE	270,424.76	378,514.00	94,199.23	284,314.77	25
001-521-10-2200	RETIREMENT	1,078,487.49	1,563,616.00	373,768.88	1,189,847.12	24
001-521-10-2210	BENEFIT ADMIN FEES	531.00	0.00	175.50	175.50-	0
001-521-10-2300	LIFE & HEALTH INSURANCE	467,259.60	756,000.00	146,065.46	609,934.54	19
001-521-10-2600	WORKERS COMPENSATION INSURANCE	113,444.82	120,000.00	65,803.14	54,196.86	55
001-521-30-3100	PROFESSIONAL SERVICES	48,179.45	52,000.00	2,239.26	49,760.74	4

Expenditure Account	Description	Prior Yr Expd	Budgeted	YTD Expended	Unexpended	% Expd
001-521-30-3400	OTHER CONTRACTUAL SERVICES	39,271.02	92,000.00	8,989.60	83,010.40	10
001-521-30-3450	CLOTHING AND UNIFORMS	18,236.27	25,000.00	2,611.73	22,388.27	10
001-521-30-3500	INVESTIGATIONS	9,528.29	17,000.00	2,817.80	14,182.20	17
001-521-30-4000	TRAVEL & PER DIEM	13,591.05	15,000.00	1,017.50	13,982.50	7
001-521-30-4100	TELEPHONE EXPENSE	68,470.38	107,000.00	12,765.05	94,234.95	12
001-521-30-4110	IT LICENSING / EQUIPMENT	258,989.36	253,830.00	43,922.09	209,907.91	17
001-521-30-4200	POSTAGE/TRANSPORTATION FEES	512.68	2,000.00	78.26	1,921.74	4
001-521-30-4300	UTILITIES EXPENSE	60,415.67	65,000.00	9,718.00	55,282.00	15
001-521-30-4400	RENTAL & LEASING	1,452.57	5,000.00	540.58	4,459.42	11
001-521-30-4600	REPAIR & MAINTENANCE	70,695.80	90,000.00	12,327.42	77,672.58	14
001-521-30-4900	MISC. EXPENSE & OTHER CURRENT	0.00	4,000.00	0.00	4,000.00	0
001-521-30-4960	BOOT ALLOWANCE	2,368.21	11,000.00	272.04	10,727.96	2
001-521-30-5100	OFFICE SUPPLIES	2,172.11	5,000.00	817.55	4,182.45	16
001-521-30-5200	OPERATING SUPPLIES	49,705.67	85,000.00	14,634.06	70,365.94	17
001-521-30-5250	FUEL EXPENSE	154,018.57	200,000.00	26,996.19	173,003.81	14
001-521-30-5400	SUBSCRIPTIONS/DUES	1,438.60	4,500.00	3,094.95	1,405.05	69
001-521-30-5500	TRAINING	14,045.20	40,000.00	0.00	40,000.00	0
001-521-60-6400	CAP. IMPROVEMENT-MACHINERY	530,245.09	466,400.00	0.00	466,400.00	0
	521 POLICE DEPARTMENT:	**6,806,775.25**	**9,721,260.00**	**2,052,456.73**	**7,668,803.27**	**21**
001-541-00-0000	PUBLIC WORKS/STREET DEPT.	0.00	0.00	0.00	0.00	0
001-541-10-1200	SALARIES	1,226,087.57	1,593,584.00	349,966.76	1,243,617.24	22
001-541-10-1250	ON CALL	6,400.00	6,500.00	1,750.00	4,750.00	27
001-541-10-1300	OVERTIME	22,268.31	12,000.00	10,007.68	1,992.32	83
001-541-10-1500	SICK LEAVE	52,339.30	0.00	16,055.82	16,055.82-	0
001-541-10-1600	VACATION PAY	77,708.85	0.00	21,657.47	21,657.47-	0
001-541-10-1800	HOLIDAY PAY	48,153.59	0.00	20,209.43	20,209.43-	0

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Expenditure Account	Description	Prior Yr Expd	Budgeted	YTD Expended	Unexpended	% Expd
001-541-10-1820	HOLIDAY PREMIUM	2,243.29	0.00	48,019.88	48,019.88-	0
001-541-10-2100	FICA EXPENSE	109,732.95	123,526.00	35,664.14	87,861.86	29
001-541-10-2200	RETIREMENT	227,878.74	247,428.00	73,954.10	173,473.90	30
001-541-10-2210	BENEFIT ADMIN FEES	40.50	0.00	27.00	27.00-	0
001-541-10-2300	LIFE & HEALTH INSURANCE	218,840.33	280,800.00	70,687.28	210,112.72	25
001-541-10-2600	WORKERS COMPENSATION INSURANCE	37,814.94	40,000.00	21,934.39	18,065.61	55
001-541-30-3100	PROFESSIONAL SERVICES	201,498.54	393,321.23	62,904.84	330,416.39	16
001-541-30-3400	OTHER CONTRACTUAL SERVICES	947,306.39	368,100.00	23,229.44	344,870.56	6
001-541-30-3440	RIGHT-OF-WAY MAINTENANCE	397,332.85	450,800.00	52,817.57	397,982.43	12
001-541-30-3450	CLOTHING AND UNIFORMS	8,463.51	8,000.00	1,329.21	6,670.79	17
001-541-30-4000	TRAVEL & PER DIEM	549.26	2,500.00	0.00	2,500.00	0
001-541-30-4100	TELEPHONE EXPENSE	25,612.40	24,600.00	4,476.91	20,123.09	18
001-541-30-4110	IT LICENSING / EQUIPMENT	58,369.96	92,430.00	13,843.57	78,586.43	15
001-541-30-4200	POSTAGE/TRANSPORTATION FEES	59.09	150.00	8.00	142.00	5
001-541-30-4300	UTILITIES EXPENSE	30,672.03	26,200.00	5,322.31	20,877.69	20
001-541-30-4350	VILLAGES STREET LIGHTING	609,549.02	1,332,400.00	339,018.04	993,381.96	25
001-541-30-4400	RENTAL & LEASING	24,472.05	7,580.00	14,972.55	7,392.55-	198
001-541-30-4600	REPAIR & MAINTENANCE	54,591.59	51,500.00	15,049.59	36,450.41	29
001-541-30-4601	REPAIR & MAINTENANCE - BUILDINGS	5,656.09	20,000.00	727.38	19,272.62	4
001-541-30-4603	PAVEMENT PRESERVATION/REHABILITATION	435,942.74	1,501,709.06	256,436.73	1,245,272.33	17
001-541-30-4900	MISC. EXPENSE & OTHER CURRENT	0.00	3,000.00	0.00	3,000.00	0
001-541-30-4940	LANDFILL DISPOSAL FEES	4,791.05	6,000.00	243.60	5,756.40	4
001-541-30-4960	BOOT ALLOWANCE	3,181.87	4,030.00	1,662.91	2,367.09	41
001-541-30-5100	OFFICE SUPPLIES	2,044.76	3,000.00	413.78	2,586.22	14
001-541-30-5200	OPERATING SUPPLIES	72,274.46	70,000.00	16,914.91	53,085.09	24
001-541-30-5250	FUEL EXPENSE	29,354.78	35,000.00	6,848.81	28,151.19	20
001-541-30-5400	SUBSCRIPTIONS/DUES	6,771.51	11,350.00	1,832.28	9,517.72	16

Expenditure Account	Description	Prior Yr Expd	Budgeted	YTD Expended	Unexpended	% Expd
001-541-30-5500	TRAINING	11,801.56	31,100.00	858.17	30,241.83	3
001-541-60-6115	CITY HALL / ANNEX REHAB	19,543.08	0.00	0.00	0.00	0
001-541-60-6200	CAP. IMPROVEMENT-BUILDINGS	51,526.72	0.00	0.00	0.00	0
001-541-60-6300	CAPITAL IMPROVEMENT-OTHER	74,069.96	0.00	0.00	0.00	0
001-541-60-6400	CAP. IMPROVEMENT-MACHINERY	228,974.86	73,500.00	0.00	73,500.00	0
001-541-60-6681	PRINCIPAL-EQUIPMENT LEASE	29,231.37	0.00	0.00	0.00	0
001-541-60-6691	INTEREST-EQUIPMENT LEASE	1,100.13	0.00	0.00	0.00	0
	541 PUBLIC WORKS/STREET DEPT.	**5,364,250.00**	**6,820,108.29**	**1,488,844.55**	**5,331,263.74**	**22**
001-549-00-0000	FLEET MAINTENANCE DEPT:	0.00	0.00	0.00	0.00	0
001-549-10-1200	SALARIES	230,571.58	297,335.00	71,309.47	226,025.53	24
001-549-10-1300	OVERTIME	357.18	1,500.00	0.00	1,500.00	0
001-549-10-1500	SICK LEAVE	8,446.78	0.00	169.66	169.66-	0
001-549-10-1600	VACATION PAY	18,481.69	0.00	7,496.03	7,496.03-	0
001-549-10-1800	HOLIDAY PAY	9,390.89	0.00	3,840.08	3,840.08-	0
001-549-10-2100	FICA EXPENSE	20,444.21	23,048.00	6,335.38	16,712.62	27
001-549-10-2200	RETIREMENT	36,308.18	40,530.00	11,287.68	29,242.32	28
001-549-10-2210	BENEFIT ADMIN FEES	108.00	0.00	13.50	13.50-	0
001-549-10-2300	LIFE & HEALTH INSURANCE	45,166.45	54,000.00	14,625.87	39,374.13	27
001-549-10-2600	WORKERS COMPENSATION INSURANCE	12,403.31	15,000.00	8,225.39	6,774.61	55
001-549-30-3100	PROFESSIONAL SERVICES	0.00	500.00	0.00	500.00	0
001-549-30-3400	OTHER CONTRACTUAL SERVICES	7,426.80	10,200.00	1,088.66	9,111.34	11
001-549-30-3450	CLOTHING AND UNIFORMS	2,665.16	3,500.00	534.65	2,965.35	15
001-549-30-4000	TRAVEL & PER DIEM	0.00	100.00	0.00	100.00	0
001-549-30-4100	TELEPHONE EXPENSE	1,948.97	3,500.00	387.56	3,112.44	11
001-549-30-4110	IT LICENSING / EQUIPMENT	23,006.69	52,580.00	6,079.04	46,500.96	12
001-549-30-4200	POSTAGE/TRANSPORTATION FEES	24.20	100.00	0.00	100.00	0

Expenditure Account	Description	Prior Yr Expd	Budgeted	YTD Expended	Unexpended	% Expd
001-549-30-4300	UTILITIES EXPENSE	4,372.77	7,000.00	730.21	6,269.79	10
001-549-30-4400	RENTAL & LEASING	1,590.38	2,500.00	321.08	2,178.92	13
001-549-30-4600	REPAIR & MAINTENANCE	4,486.40	5,000.00	0.00	5,000.00	0
001-549-30-4900	MISC. EXPENSE & OTHER CURRENT	0.00	100.00	0.00	100.00	0
001-549-30-4960	BOOT ALLOWANCE	350.00	700.00	175.00	525.00	25
001-549-30-5100	OFFICE SUPPLIES	386.62	1,500.00	41.52	1,458.48	3
001-549-30-5200	OPERATING SUPPLIES	36,521.67	80,000.00	16,504.22	63,495.78	21
001-549-30-5250	FUEL EXPENSE	3,375.55	4,000.00	529.22	3,470.78	13
001-549-30-5400	SUBSCRIPTIONS/DUES	314.00	800.00	0.00	800.00	0
001-549-30-5500	TRAINING	575.00	2,500.00	0.00	2,500.00	0
001-549-60-6400	CAP. IMPROVEMENTS-MACHINERY/EQUIP	28,196.44	0.00	0.00	0.00	0
	549 FLEET MAINTENANCE DEPT:	**496,918.92**	**605,993.00**	**149,694.22**	**456,298.78**	**25**
001-572-00-0000	PARKS & RECREATION:	0.00	0.00	0.00	0.00	0
001-572-10-1200	SALARIES	645,088.42	1,056,402.00	186,449.25	869,952.75	18
001-572-10-1250	ON CALL	5,900.00	6,500.00	1,750.00	4,750.00	27
001-572-10-1300	OVERTIME	11,799.47	2,000.00	5,811.74	3,811.74-	291
001-572-10-1500	SICK LEAVE	14,672.97	0.00	2,449.68	2,449.68-	0
001-572-10-1600	VACATION PAY	33,372.18	0.00	8,356.69	8,356.69-	0
001-572-10-1800	HOLIDAY PAY	23,382.46	0.00	10,920.24	10,920.24-	0
001-572-10-1820	HOLIDAY PREMIUM	3,552.27	0.00	0.00	0.00	0
001-572-10-2100	FICA EXPENSE	56,905.79	76,642.00	16,503.94	60,138.06	22
001-572-10-2200	RETIREMENT	98,459.03	171,109.00	29,405.01	141,703.99	17
001-572-10-2210	BENEFIT ADMIN FEES	18.00	0.00	13.50	13.50-	0
001-572-10-2300	LIFE & HEALTH INSURANCE	135,894.81	216,000.00	42,132.46	173,867.54	20
001-572-10-2600	WORKERS COMPENSATION INSURANCE	9,831.92	13,000.00	7,128.66	5,871.34	55
001-572-30-3100	PROFESSIONAL SERVICES	7,059.60	14,000.00	1,102.89	12,897.11	8

Expenditure Account	Description	Prior Yr Expd	Budgeted	YTD Expended	Unexpended	% Expd
001-572-30-3400	OTHER CONTRACTUAL SERVICES	172,400.28	205,380.00	78,196.69	127,183.31	38
001-572-30-3450	CLOTHING AND UNIFORMS	7,495.37	10,150.00	842.86	9,307.14	8
001-572-30-4000	TRAVEL & PER DIEM	580.34	4,550.00	2.50	4,547.50	0
001-572-30-4100	TELEPHONE EXPENSE	30,076.33	28,500.00	6,522.70	21,977.30	23
001-572-30-4110	IT LICENSING / EQUIPMENT	43,271.29	44,000.00	14,200.20	29,799.80	32
001-572-30-4150	ADVERTISING AND PROMOTIONS	24,032.48	25,000.00	9,148.42	15,851.58	37
001-572-30-4200	POSTAGE/TRANSPORTATION FEES	3.25	150.00	9.38	140.62	6
001-572-30-4300	UTILITIES EXPENSE	39,366.62	40,000.00	6,236.57	33,763.43	16
001-572-30-4400	RENTAL & LEASING	8,242.82	6,900.00	2,327.96	4,572.04	34
001-572-30-4600	REPAIR & MAINTENANCE	68,556.08	100,750.00	12,378.08	88,371.92	12
001-572-30-4601	REPAIR & MAINTENANCE - BUILDINGS	26,032.18	38,000.00	732.00	37,268.00	2
001-572-30-4610	BAKER HOUSE MAINTENANCE	1,803.37	10,000.00	148.43	9,851.57	1
001-572-30-4620	BAKER HOUSE OPERATIONS-OTHER MISC.	2,379.63	5,300.00	938.95	4,361.05	18
001-572-30-4630	BAKER HOUSE SPECIAL EVENTS	7,740.43	12,000.00	1,189.65	10,810.35	10
001-572-30-4900	MISC. EXPENSE & OTHER CURRENT	88.26-	5,000.00	169.96	4,830.04	3
001-572-30-4910	SPECIAL EVENTS	136,370.36	170,000.00	45,121.23	124,878.77	27
001-572-30-4915	ATHLETIC LEAGUES & ACTIVITIES	102,467.15	109,400.00	27,946.53	81,453.47	26
001-572-30-4920	YOUTH CAMPS & PROGRAMS	20,292.81	52,500.00	0.00	52,500.00	0
001-572-30-4960	BOOT ALLOWANCE	1,224.04	2,450.00	350.00	2,100.00	14
001-572-30-5100	OFFICE SUPPLIES	2,732.42	4,500.00	210.95	4,289.05	5
001-572-30-5200	OPERATING SUPPLIES	74,262.12	88,500.00	20,097.55	68,402.45	23
001-572-30-5250	FUEL EXPENSE	23,953.89	25,000.00	3,200.74	21,799.26	13
001-572-30-5280	LANDSCAPING	12,730.17	62,000.00	6,077.00	55,923.00	10
001-572-30-5400	SUBSCRIPTIONS/DUES	867.83	3,210.00	638.00	2,572.00	20
001-572-30-5500	TRAINING	7,393.81	8,500.00	535.57	7,964.43	6
001-572-60-6200	CAP. IMPROVEMENT-BUILDINGS	9,772.26	0.00	0.00	0.00	0
001-572-60-6300	CAPITAL IMPROVEMENT-OTHER	8,999.92	0.00	0.00	0.00	0

Expenditure Account	Description	Prior Yr Expd	Budgeted	YTD Expended	Unexpended	% Expd
001-572-60-6400	CAP. IMPROVEMENT-MACHINERY	105,095.10	132,100.00	41,138.23	90,961.77	31
	572 PARKS & RECREATION:	**1,983,991.01**	**2,749,493.00**	**590,384.21**	**2,159,108.79**	**21**
001-575-00-0000	COMMUNITY CENTER:	0.00	0.00	0.00	0.00	0
001-575-10-1200	SALARIES	73,445.33	129,843.00	23,192.87	106,650.13	18
001-575-10-1300	OVERTIME	225.00	0.00	0.00	0.00	0
001-575-10-1800	HOLIDAY PAY	197.00	0.00	475.69	475.69-	0
001-575-10-2100	FICA EXPENSE	5,651.00	10,070.00	1,810.64	8,259.36	18
001-575-10-2200	RETIREMENT	9,023.71	17,700.00	2,756.39	14,943.61	16
001-575-10-2300	LIFE & HEALTH INSURANCE	9.50	0.00	28.50	28.50-	0
001-575-30-3100	PROFESSIONAL SERVICES	176.29	3,000.00	0.00	3,000.00	0
001-575-30-3400	OTHER CONTRACTUAL SERVICES	20,173.73	15,000.00	6,511.81	8,488.19	43
001-575-30-3450	CLOTHING AND UNIFORMS	845.36	1,200.00	0.00	1,200.00	0
001-575-30-4100	TELEPHONE EXPENSE	0.00	6,680.00	540.00	6,140.00	8
001-575-30-4200	POSTAGE/TRANSPORTATION FEES	3.30	150.00	0.00	150.00	0
001-575-30-4300	UTILITIES EXPENSE	56,441.03	45,000.00	8,588.73	36,411.27	19
001-575-30-4400	RENTAL & LEASING	2,210.33	4,500.00	492.10	4,007.90	11
001-575-30-4600	REPAIR & MAINTENANCE	47,541.00	50,000.00	7,197.76	42,802.24	14
001-575-30-5100	OFFICE SUPPLIES	504.23	1,000.00	0.00	1,000.00	0
001-575-30-5200	OPERATING SUPPLIES	18,789.56	20,000.00	5,247.01	14,752.99	26
001-575-30-5400	SUBSCRIPTIONS/DUES	100.00	100.00	0.00	100.00	0
001-575-60-6200	CAP. IMPROVEMENT-BUILDINGS	42,694.25	56,900.70	57,263.81	363.11-	101
	575 COMMUNITY CENTER:	**278,030.62**	**361,143.70**	**114,105.31**	**247,038.39**	**32**
001-580-90-9901	CONTINGENCY RESERVE-GEN FUND	0.00	6,576,248.00	0.00	6,576,248.00	0
001-581-00-1040	TRANSFER TO EXPANDED CRA	215,690.00	231,880.00	0.00	231,880.00	0

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001-581-00-4020	TRANSFER TO UTILITY CAP PROJECTS FUNI	3,000,000.00	4,000,000.00	0.00	4,000,000.00	0
001-581-90-3010	TRANSFER TO CAPITAL PROJECT FUND	15,700,000.00	10,000,000.00	0.00	10,000,000.00	0
	581 Total	**18,915,690.00**	**14,231,880.00**	**0.00**	**14,231,880.00**	**0**
	GENERAL FUND Expenditure Totals	**39,685,573.54**	**48,027,148.49**	**6,145,857.36**	**41,881,291.13**	**13**

001 GENERAL FUND	**Prior**	**YTD**
Revenues:	**34,561,042.85**	**19,937,665.44**
Expenditures:	**39,685,573.54**	**6,145,857.36**
Net Income:	**5,124,530.69**	**- 13,791,808.08**

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Revenue Account	Description	Prior Yr Rev	Anticipated	YTD Rev	Excess/Deficit	% Real
101-361-1350	INTEREST EARNED	255.76	200.00	68.64	131.36-	34
101-366-1350	CONTRIBUTIONS/DUES	1,310.00	2,000.00	0.00	2,000.00-	0
101-366-1360	GRAVE OPENING PERMITS	750.00	600.00	300.00	300.00-	50
101-389-5000	NON-OPER/ CEMETERY RESERVES FORWAR	0.00	64,000.00	0.00	64,000.00-	0
	CEMETERY FUND Revenue Totals	**2,315.76**	**66,800.00**	**368.64**	**66,431.36-**	**0**

Expenditure Account	Description	Prior Yr Expd	Budgeted	YTD Expended	Unexpended	% Expd
101-569-00-0000	GREENWOOD CEMETERY:	0.00	0.00	0.00	0.00	0
101-569-30-4600	REPAIR & MAINTENANCE	0.00	500.00	0.00	500.00	0
101-569-30-4900	MISC. EXPENSE & OTHER CURRENT	0.00	200.00	0.00	200.00	0
101-569-30-5200	OPERATING SUPPLIES	0.00	100.00	0.00	100.00	0
	569 GREENWOOD CEMETERY:	**0.00**	**800.00**	**0.00**	**800.00**	**0**
101-580-90-9999	CONTINGENCY	0.00	66,000.00	0.00	66,000.00	0
	CEMETERY FUND Expenditure Totals	**0.00**	**66,800.00**	**0.00**	**66,800.00**	**0**

101 CEMETERY FUND	**Prior**	**YTD**
Revenues:	**2,315.76**	**368.64**
Expenditures:	**0.00**	**0.00**
Net Income:	**2,315.76**	**368.64**

Revenue Account	Description	Prior Yr Rev	Anticipated	YTD Rev	Excess/Deficit	% Real
104-361-0000	INTEREST	17,309.79	5,000.00	5,483.05	483.05	110
104-369-9000	TAX INCREMENT FINANCING - SUM CTY	395,695.00	405,500.00	0.00	405,500.00-	0
104-382-0010	TRANSFER FROM GENERAL	215,690.00	231,880.00	0.00	231,880.00-	0
104-389-5006	CASH FORWARD - CRA DISTRICT	0.00	1,964,000.00	0.00	1,964,000.00-	0
	COMMUNITY REDEVELOPMENT Revenue Tot	**628,694.79**	**2,606,380.00**	**5,483.05**	**2,600,896.95-**	**0**

Expenditure Account	Description	Prior Yr Expd	Budgeted	YTD Expended	Unexpended	% Expd
104-550-00-0000	COMM REDEVELOPMENT DEPT.:	0.00	0.00	0.00	0.00	0
104-550-10-1200	SALARIES	45,480.57	73,893.00	12,218.80	61,674.20	17
104-550-10-1500	SICK LEAVE	773.95	0.00	344.64	344.64-	0
104-550-10-1600	VACATION PAY	4,837.72	0.00	1,572.11	1,572.11-	0
104-550-10-1800	HOLIDAY PAY	1,831.18	0.00	746.08	746.08-	0
104-550-10-2100	FICA EXPENSE	4,048.66	5,659.00	1,138.43	4,520.57	20
104-550-10-2200	RETIREMENT	18,269.18	25,510.00	5,137.13	20,372.87	20
104-550-10-2300	LIFE & HEALTH INSURANCE	3,784.56	3,888.00	1,175.68	2,712.32	30
104-550-30-4000	TRAVEL & PER DIEM	0.00	750.00	0.00	750.00	0
104-550-30-5400	SUBSCRIPTIONS/DUES	175.00	200.00	0.00	200.00	0
104-550-30-5500	TRAINING	0.00	1,500.00	0.00	1,500.00	0
104-550-60-6330	FACADE IMPROVEMENT GRANT	3,891.36	40,000.00	0.00	40,000.00	0
104-550-60-6390	OTHER MISC PROJECTS	0.00	500,000.00	0.00	500,000.00	0
104-550-70-7303	DEMOLITIONS	0.00	25,000.00	0.00	25,000.00	0
104-550-70-7307	MISC. OTHER PROJECTS	8,679.00	0.00	0.00	0.00	0
	550 COMM REDEVELOPMENT DEPT.:	**91,771.18**	**676,400.00**	**22,332.87**	**654,067.13**	**3**
104-580-90-9904	CONTINGENCY - CRA DISTRICT	0.00	1,929,980.00	0.00	1,929,980.00	0
	COMMUNITY REDEVELOPMENT Expenditure	**91,771.18**	**2,606,380.00**	**22,332.87**	**2,584,047.13**	**1**

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104 COMMUNITY REDEVELOPMENT	Prior	YTD
Revenues:	628,694.79	5,483.05
Expenditures:	91,771.18	22,332.87
Net Income:	536,923.61	16,849.82-

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Revenue Account	Description	Prior Yr Rev	Anticipated	YTD Rev	Excess/Deficit	% Real
105-361-0000	INTEREST	13.58	100.00	0.00	100.00-	0
105-369-0058	DONATIONS	27,072.00	15,000.00	12,320.00	2,680.00-	82
105-389-5010	CASH FORWARD - BAKER HOUSE	0.00	76,800.00	0.00	76,800.00-	0
	BAKER HOUSE Revenue Totals	**27,085.58**	**91,900.00**	**12,320.00**	**79,580.00-**	**13**

Expenditure Account	Description	Prior Yr Expd	Budgeted	YTD Expended	Unexpended	% Expd
105-576-00-0000	BAKER HOUSE DEPARTMENT:	0.00	0.00	0.00	0.00	0
105-576-30-4620	BAKER HOUSE OPERATIONS	79.09	900.00	10.30	889.70	1
105-580-90-9910	CONTINGENCY - BAKER HOUSE	0.00	91,000.00	0.00	91,000.00	0
	BAKER HOUSE Expenditure Totals	**79.09**	**91,900.00**	**10.30**	**91,889.70**	**0**

105 BAKER HOUSE	**Prior**	**YTD**
Revenues:	**27,085.58**	**12,320.00**
Expenditures:	**79.09**	**10.30**
Net Income:	**27,006.49**	**12,309.70**

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Revenue Account	Description	Prior Yr Rev	Anticipated	YTD Rev	Excess/Deficit	% Real
107-341-3004	RECREATION IMPACT FEES	301,196.34	300,000.00	120,975.94	179,024.06-	40
107-361-0000	INTEREST	10,584.59	2,000.00	2,949.68	949.68	147
107-389-5004	CASH FORWARD - P & R IMPACT FEE	0.00	972,500.00	0.00	972,500.00-	0
	RECREATION IMPACT FEES Revenue Totals	**311,780.93**	**1,274,500.00**	**123,925.62**	**1,150,574.38-**	**9**

Expenditure Account	Description	Prior Yr Expd	Budgeted	YTD Expended	Unexpended	% Expd
107-572-00-0000	RECREATION IMPACT FEES:	0.00	0.00	0.00	0.00	0
107-580-90-9903	CONTINGENCY - P&R IMPACT FEES	0.00	1,274,500.00	0.00	1,274,500.00	0
	RECREATION IMPACT FEES Expenditure Tota	**0.00**	**1,274,500.00**	**0.00**	**1,274,500.00**	**0**

107 RECREATION IMPACT FEES	**Prior**	**YTD**
Revenues:	**311,780.93**	**123,925.62**
Expenditures:	**0.00**	**0.00**
Net Income:	**311,780.93**	**123,925.62**

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Revenue Account	Description	Prior Yr Rev	Anticipated	YTD Rev	Excess/Deficit	% Real
108-341-3001	LAW ENFORCEMENT IMPACT FEES	1,064,545.58	1,240,000.00	345,256.27	894,743.73-	28
108-361-0000	INTEREST	207.47	0.00	17.03	17.03	0
108-389-5002	CASH FORWARD - POLICE IMPACT FEE	0.00	1,925,300.00	0.00	1,925,300.00-	0
	LAW ENFORCEMENT IMPACT FEES Revenue	**1,064,753.05**	**3,165,300.00**	**345,273.30**	**2,820,026.70-**	**10**

Expenditure Account	Description	Prior Yr Expd	Budgeted	YTD Expended	Unexpended	% Expd
108-521-00-0000	LAW ENFORCEMENT IMPACT FEES:	0.00	0.00	0.00	0.00	0
108-521-30-4900	MISC. EXPENSE & OTHER CURRENT	406.87	0.00	31.71	31.71-	0
108-521-60-6200	CAP.IMPROVEMENT-BUILDINGS	0.00	400,000.00	0.00	400,000.00	0
108-521-60-6400	CAP. IMPROVEMENT- MACHINERY & EQUIPM	621,471.89	0.00	0.00	0.00	0
108-521-70-9105	TRANSFER TO GENERAL FUND - LOAN PAYM	412,800.00	412,800.00	0.00	412,800.00	0
	521 LAW ENFORCEMENT IMPACT FEES:	**1,034,678.76**	**812,800.00**	**31.71**	**812,768.29**	**0**
108-580-90-9902	CONTINGENCY -LAW ENFORCEMENT IMPAC	0.00	2,352,500.00	0.00	2,352,500.00	0
	LAW ENFORCEMENT IMPACT Expenditure To	**1,034,678.76**	**3,165,300.00**	**31.71**	**3,165,268.29**	**0**

108 LAW ENFORCEMENT IMPACT FEES	**Prior**	**YTD**
Revenues:	**1,064,753.05**	**345,273.30**
Expenditures:	**1,034,678.76**	**31.71**
Net Income:	**30,074.29**	**345,241.59**

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Revenue Account	Description	Prior Yr Rev	Anticipated	YTD Rev	Excess/Deficit	% Real
301-331-9000	FEDERAL GRANT REVENUE	0.00	675,000.00	0.00	675,000.00-	0
301-334-9000	STATE GRANT REVENUE	0.00	650,000.00	0.00	650,000.00-	0
301-361-0000	INTEREST	174,366.58	10,000.00	42,917.30	32,917.30	429
301-382-0010	TRANSFER FROM GENERAL FUND	15,700,000.00	10,000,000.00	0.00	10,000,000.00-	0
301-389-5000	NON-OPERATIONAL CASH FORWARD-CAP.IM	0.00	12,240,000.00	0.00	12,240,000.00-	0
	CAPITAL IMPROVEMENT FUND Revenue Tota	**15,874,366.58**	**23,575,000.00**	**42,917.30**	**23,532,082.70-**	**0**

Expenditure Account	Description	Prior Yr Expd	Budgeted	YTD Expended	Unexpended	% Expd
301-500-00-0000	CAPITAL IMPROVEMENT FUND	0.00	0.00	0.00	0.00	0
301-511-60-6201	ANNEX NO. 2 REHAB	41.78	0.00	0.00	0.00	0
301-516-60-6301	DOWNTOWN MASTER PLAN PROJECTS	855,347.76	325,000.00	9,948.79	315,051.21	3
301-516-60-6304	TRAILWINDS FOUNTAIN	559.82	0.00	0.00	0.00	0
	516 Total	**855,907.58**	**325,000.00**	**9,948.79**	**315,051.21**	**3**
301-521-60-6301	POLICE DEPARTMENT HQ MONUMENT SIGN	21,713.00	0.00	0.00	0.00	0
301-541-60-6101	DRAINAGE PROJECT LAND ACQUISITION	229,393.67	514,420.00	0.00	514,420.00	0
301-541-60-6202	MUNICIPAL SERVICES COMPLEX PROJECT	128,115.87	0.00	0.00	0.00	0
301-541-60-6204	PW BUILDING HVAC UPGRADES	110,940.00	0.00	0.00	0.00	0
301-541-60-6206	PUBLIC WORKS DEPARTMENT ANNEX	0.00	100,000.00	0.00	100,000.00	0
301-541-60-6301	PLEASANTDALE REHAB	383,999.48	0.00	0.00	0.00	0
301-541-60-6302	BARWICK REHAB	29,468.20	0.00	0.00	0.00	0
301-541-60-6303	OAK GROVE VILLAGE DRAINAGE IMPROVEM	36,220.00	949,650.00	2,150.00	947,500.00	0
301-541-60-6305	PAVEMENT PRESERVATION PLAN	76,605.04	0.00	0.00	0.00	0
301-541-60-6306	CLAY DRAIN ROAD DESIGN	70,377.00	615,367.00	24,769.00	590,598.00	4

Expenditure Account	Description	Prior Yr Expd	Budgeted	YTD Expended	Unexpended	% Expd
301-541-60-6307	JACKSON ST IMPROVEMENTS	45,389.72	1,545,500.00	677.10	1,544,822.90	0
301-541-60-6308	HUEY ST IMPROVEMENTS	1,088,856.37	1,577,505.55	686,856.30	890,649.25	44
301-541-60-6309	ST CLAIR STREET IMPROVEMENTS	522,957.69	0.00	0.00	0.00	0
301-541-60-6310	DOWNTOWN PARKING GARAGE	6,841,596.54	333,652.59	60,939.98	272,712.61	18
301-541-60-6311	MSC ENTRANCE GATE	33,558.95	0.00	0.00	0.00	0
301-541-60-6312	BROKEN OAK DRIVE	437,327.61	0.00	0.00	0.00	0
	541 Total	**10,034,806.14**	**5,636,095.14**	**775,392.38**	**4,860,702.76**	**14**
301-572-60-6205	RECREATION CENTER AT MLK PARK	156,456.00	224,705.60	0.00	224,705.60	0
301-572-60-6302	MILLENNIUM PARK IMPROVEMENTS	227,417.90	13,444,797.00	10,812.52	13,433,984.48	0
301-572-60-6304	LAKE DEATON PIER IMPROVEMENTS	419,016.12	0.00	0.00	0.00	0
301-572-60-6305	CITY HALL COURTYARD REHAB	12,588.00	50,000.00	0.00	50,000.00	0
301-572-60-6306	OXFORD PARK IMPROVEMENTS	0.00	500,000.00	0.00	500,000.00	0
	572 Total	**815,478.02**	**14,219,502.60**	**10,812.52**	**14,208,690.08**	**0**
301-575-60-6201	COMMUNITY CENTER HVAC UPGRADES	66,745.05	804,000.00	15.14	803,984.86	0
301-575-60-6202	COMMUNITY CENTER RENOVATIONS	0.00	100,000.00	5,665.39	94,334.61	6
	575 Total	**66,745.05**	**904,000.00**	**5,680.53**	**898,319.47**	**1**
301-580-90-9901	CONTINGENCY-CAP.IMPROVEMENT FUND	0.00	400,000.00	0.00	400,000.00	0
301-581-00-4020	TRANSFER TO UTILITY CAP PROJECTS FUNI	5,000,000.00	5,000,000.00	0.00	5,000,000.00	0
	CAPITAL IMPROVEMENT FUN Expenditure To	**16,794,691.57**	**26,484,597.74**	**801,834.22**	**25,682,763.52**	**3**

301 CAPITAL IMPROVEMENT FUND	**Prior**	**YTD**
Revenues:	**15,874,366.58**	**42,917.30**

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Expenditures:	**16,794,691.57**	**801,834.22**
Net Income:	**920,324.99-**	**758,916.92-**

Revenue Account	Description	Prior Yr Rev	Anticipated	YTD Rev	Excess/Deficit	% Real
401-343-3100	WATER SALES-OPERATING INCOME	4,119,249.86	4,859,723.00	796,135.47	4,063,587.53-	16
401-343-3500	WATER- METER INSTALLATIONS	233,501.32	263,000.00	65,216.87	197,783.13-	25
401-343-3510	WATER- OTHER (ON/OFF FEES)	35,325.00	30,000.00	8,375.00	21,625.00-	28
401-343-3520	WATER INCOME-OTHER	20,439.57	10,000.00	4,540.09	5,459.91-	45
401-343-3521	RETURN CHECK BILLINGS	15.00	0.00	15.00	15.00	0
401-343-5100	SEWER OPERATING INCOME-BILLINGS	6,800,771.18	9,614,212.00	1,403,287.27	8,210,924.73-	15
401-343-5510	SEWER OTHER MISC	0.00	12,000.00	0.00	12,000.00-	0
401-343-5511	LAND LEASE-TURTLE MOUNT(TOWER)	15,870.00	15,000.00	3,967.50	11,032.50-	26
401-343-5520	TSS/COD WASTEWATER FEES	906,498.38	1,000,000.00	180,875.36	819,124.64-	18
401-343-6100	REUSE WATER OPERATIONS	125,915.18	130,295.00	204.04	130,090.96-	0
401-361-0000	INTEREST EARNINGS	93,479.16	25,000.00	17,738.44	7,261.56-	71
401-389-5000	Non-Operational-Cash Forward- W/S	0.00	10,110,000.00	0.00	10,110,000.00-	0
	UTILITY FUND Revenue Totals	**12,351,064.65**	**26,069,230.00**	**2,480,355.04**	**23,588,874.96-**	**9**

Expenditure Account	Description	Prior Yr Expd	Budgeted	YTD Expended	Unexpended	% Expd
401-530-00-0000	PHYSICAL ENVIRONMENT/ADMIN:	0.00	0.00	0.00	0.00	0
401-530-10-1200	SALARIES	148,780.39	194,926.00	44,217.72	150,708.28	23
401-530-10-1500	SICK LEAVE	9,675.56	0.00	1,650.58	1,650.58-	0
401-530-10-1600	VACATION PAY	11,520.36	0.00	2,784.45	2,784.45-	0
401-530-10-1800	HOLIDAY PAY	6,282.02	0.00	2,577.31	2,577.31-	0
401-530-10-2100	FICA EXPENSE	13,451.56	15,111.00	3,912.36	11,198.64	26
401-530-10-2200	RETIREMENT	23,947.79	26,570.00	6,982.60	19,587.40	26
401-530-10-2210	BENEFIT ADMIN FEES	27.00	0.00	13.50	13.50-	0
401-530-10-2300	LIFE & HEALTH INSURANCE	35,371.45	43,200.00	13,227.39	29,972.61	31
401-530-10-2600	WORKERS COMPENSATION INSURANCE	1,512.62	1,600.00	877.39	722.61	55
401-530-30-3100	PROFESSIONAL SERVICES	1,205.00	3,000.00	0.00	3,000.00	0

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Expenditure Account	Description	Prior Yr Expd	Budgeted	YTD Expended	Unexpended	% Expd
401-530-30-3200	ACCOUNTING & AUDITING FEES	22,500.00	35,000.00	0.00	35,000.00	0
401-530-30-3400	OTHER CONTRACTUAL SERVICES	31,354.14	35,750.00	6,949.84	28,800.16	19
401-530-30-4000	TRAVEL & PER DIEM	0.00	500.00	0.00	500.00	0
401-530-30-4100	TELEPHONE EXPENSE	5,086.35	5,400.00	1,213.25	4,186.75	22
401-530-30-4110	IT LICENSING / EQUIPMENT	39,800.74	45,520.00	24,186.40	21,333.60	53
401-530-30-4200	POSTAGE/TRANSPORTATION FEES	31,457.27	32,800.00	0.69	32,799.31	0
401-530-30-4300	UTILITIES EXPENSE	17,689.80	20,000.00	1,410.02	18,589.98	7
401-530-30-4400	RENTAL & LEASING	3,806.53	3,750.00	439.10	3,310.90	12
401-530-30-4500	GENERAL INSURANCE	316,165.89	450,000.00	363,218.00	86,782.00	81
401-530-30-4600	REPAIR & MAINTENANCE	23,424.12	31,950.00	2,521.84	29,428.16	8
401-530-30-4900	MISC. EXPENSE & OTHER CURRENT	18,373.19	16,200.00	3,177.49	13,022.51	20
401-530-30-5100	OFFICE SUPPLIES	527.17	1,000.00	61.10	938.90	6
401-530-30-5200	OPERATING SUPPLIES	5,465.63	5,500.00	1,371.55	4,128.45	25
401-530-30-5400	SUBSCRIPTIONS/DUES	409.86	500.00	0.00	500.00	0
401-530-30-5500	TRAINING	760.00	2,000.00	0.00	2,000.00	0
	530 PHYSICAL ENVIRONMENT/ADMIN:	**768,594.44**	**970,277.00**	**480,792.58**	**489,484.42**	**50**
401-533-00-0000	WATER DEPARTMENT:	0.00	0.00	0.00	0.00	0
401-533-10-1200	SALARIES	747,842.29	1,255,075.00	227,119.73	1,027,955.27	18
401-533-10-1250	ON CALL	12,800.00	14,000.00	3,000.00	11,000.00	21
401-533-10-1260	SHIFT DIFFERENTIAL	0.00	5,200.00	0.00	5,200.00	0
401-533-10-1300	OVERTIME	15,771.12	15,000.00	5,827.63	9,172.37	39
401-533-10-1500	SICK LEAVE	26,918.54	0.00	7,357.56	7,357.56-	0
401-533-10-1600	VACATION PAY	37,247.11	0.00	7,052.81	7,052.81-	0
401-533-10-1700	INCENTIVE PAY	1,250.00	0.00	700.00	700.00-	0
401-533-10-1800	HOLIDAY PAY	28,383.61	0.00	12,273.56	12,273.56-	0
401-533-10-1820	HOLIDAY PREMIUM	1,876.87	5,000.00	10,625.24	5,625.24-	212

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Expenditure Account	Description	Prior Yr Expd	Budgeted	YTD Expended	Unexpended	% Expd
401-533-10-2100	FICA EXPENSE	67,020.85	94,382.00	20,939.38	73,442.62	22
401-533-10-2200	RETIREMENT	118,359.02	186,626.00	37,338.88	149,287.12	20
401-533-10-2210	BENEFIT ADMIN FEES	94.50	0.00	13.50	13.50-	0
401-533-10-2300	LIFE & HEALTH INSURANCE	148,013.42	244,070.00	46,667.18	197,402.82	19
401-533-10-2600	WORKERS COMPENSATION INSURANCE	24,201.51	25,500.00	13,983.16	11,516.84	55
401-533-30-3100	PROFESSIONAL SERVICES	132,674.52	193,675.66	7,262.26	186,413.40	4
401-533-30-3400	OTHER CONTRACTUAL SERVICES	215,610.16	304,516.00	55,064.50	249,451.50	18
401-533-30-3450	CLOTHING AND UNIFORMS	8,125.98	11,000.00	2,649.37	8,350.63	24
401-533-30-4000	TRAVEL & PER DIEM	4,225.57	8,000.00	240.13	7,759.87	3
401-533-30-4100	TELEPHONE EXPENSE	35,834.80	30,000.00	6,887.55	23,112.45	23
401-533-30-4110	IT LICENSING / EQUIPMENT	52,206.96	57,110.00	14,524.62	42,585.38	25
401-533-30-4200	POSTAGE/TRANSPORTATION FEES	975.18	3,500.00	0.00	3,500.00	0
401-533-30-4300	UTILITIES EXPENSE	180,007.68	150,000.00	65,450.97	84,549.03	44
401-533-30-4400	RENTAL & LEASING	3,226.26	9,000.00	789.75	8,210.25	9
401-533-30-4600	REPAIR & MAINTENANCE	213,305.39	160,000.00	61,605.62	98,394.38	38
401-533-30-4900	MISC. EXPENSE & OTHER CURRENT	4,030.00	6,000.00	102.50	5,897.50	2
401-533-30-4960	BOOT ALLOWANCE	2,671.27	3,850.00	570.94	3,279.06	15
401-533-30-5100	OFFICE SUPPLIES	3,746.39	6,500.00	314.02	6,185.98	5
401-533-30-5200	OPERATING SUPPLIES	162,974.79	231,000.00	12,706.00	218,294.00	6
401-533-30-5220	WATER METERS	301,216.88	449,853.19	115,637.42	334,215.77	26
401-533-30-5250	FUEL EXPENSE	45,671.38	45,000.00	7,471.71	37,528.29	17
401-533-30-5260	CHEMICALS	398,028.60	350,000.00	145,221.00	204,779.00	41
401-533-30-5270	LABORATORY SAMPLES	47,076.00	45,000.00	4,588.00	40,412.00	10
401-533-30-5400	SUBSCRIPTIONS/DUES	7,231.64	9,000.00	322.55	8,677.45	4
401-533-30-5500	TRAINING	8,212.18	7,600.00	2,062.45	5,537.55	27
401-533-60-6300	CAPITAL IMPROVEMENT-OTHER	26,551.85	853,000.00	29,017.00	823,983.00	3
401-533-60-6301	METER CHANGE OUT PROGRAM	115,407.65	220,000.00	19,960.00	200,040.00	9

Expenditure Account	Description	Prior Yr Expd	Budgeted	YTD Expended	Unexpended	% Expd
401-533-60-6350	LOOP/UPGRADE WATER MAINS	268,622.90	1,021,554.60	17,977.00	1,003,577.60	2
401-533-60-6400	CAP. IMPROVEMENT-MACHINERY	212,245.00	342,112.00	136,728.00	205,384.00	40
401-533-60-6681	LEASE PURCHASE PRINCIPAL PMT	19,188.55	19,970.00	19,960.34	9.66	100
401-533-60-6691	LEASE PURCHASE INTEREST PMT	2,409.86	1,640.00	1,638.07	1.93	100
401-533-60-6911	RELOCATION PROJECTS	0.00	4,500,000.00	0.00	4,500,000.00	0
	533 WATER DEPARTMENT:	**3,701,256.28**	**10,883,734.45**	**1,121,650.40**	**9,762,084.05**	**10**
401-535-00-0000	WASTEWATER DEPARTMENT:	0.00	0.00	0.00	0.00	0
401-535-10-1200	SALARIES	1,079,284.54	1,784,364.00	355,630.66	1,428,733.34	20
401-535-10-1250	ON CALL	18,700.00	19,500.00	5,000.00	14,500.00	26
401-535-10-1260	SHIFT DIFFERENTIAL	0.00	5,200.00	0.00	5,200.00	0
401-535-10-1300	OVERTIME	30,321.50	19,500.00	15,483.77	4,016.23	79
401-535-10-1500	SICK LEAVE	47,850.49	0.00	13,953.03	13,953.03-	0
401-535-10-1600	VACATION PAY	60,148.99	0.00	18,045.51	18,045.51-	0
401-535-10-1700	INCENTIVE PAY	1,900.00	0.00	1,400.00	1,400.00-	0
401-535-10-1800	HOLIDAY PAY	37,977.19	0.00	19,455.20	19,455.20-	0
401-535-10-1820	HOLIDAY PREMIUM	9,174.30	12,000.00	29,601.85	17,601.85-	247
401-535-10-2100	FICA EXPENSE	99,101.45	130,601.00	35,061.10	95,539.90	27
401-535-10-2200	RETIREMENT	179,786.41	282,391.00	63,656.20	218,734.80	23
401-535-10-2210	BENEFIT ADMIN FEES	310.50	0.00	121.50	121.50-	0
401-535-10-2300	LIFE & HEALTH INSURANCE	190,157.83	320,740.00	67,062.95	253,677.05	21
401-535-10-2600	WORKERS COMPENSATION INSURANCE	48,403.12	50,800.00	27,856.65	22,943.35	55
401-535-30-3100	PROFESSIONAL SERVICES	153,779.49	210,670.22	717.98	209,952.24	0
401-535-30-3400	OTHER CONTRACTUAL SERVICES	299,117.14	992,000.00	109,160.84	882,839.16	11
401-535-30-3450	CLOTHING AND UNIFORMS	9,168.63	14,000.00	3,352.55	10,647.45	24
401-535-30-4000	TRAVEL & PER DIEM	6,494.85	8,000.00	346.52	7,653.48	4
401-535-30-4100	TELEPHONE EXPENSE	24,270.19	23,000.00	4,466.48	18,533.52	19

CITY OF WILDWOOD
YEAR TO DATE REVENUE-EXPENDITURE REPORT
COMMISSION MEETING JANUARY 13 2025

Expenditure Account	Description	Prior Yr Expd	Budgeted	YTD Expended	Unexpended	% Expd
401-535-30-4110	IT LICENSING / EQUIPMENT	63,717.57	57,240.00	13,065.78	44,174.22	23
401-535-30-4200	POSTAGE/TRANSPORTATION FEES	2,613.94	3,000.00	292.79	2,707.21	10
401-535-30-4300	UTILITIES EXPENSE	517,849.79	450,000.00	55,732.91	394,267.09	12
401-535-30-4400	RENTAL & LEASING	33,742.50	75,000.00	15,295.49	59,704.51	20
401-535-30-4600	REPAIR & MAINTENANCE	640,861.47	700,000.00	102,485.91	597,514.09	15
401-535-30-4900	MISC. EXPENSE & OTHER CURRENT	10,881.08	15,000.00	113.96	14,886.04	1
401-535-30-4940	LANDFILL DISPOSAL FEES	166,291.56	180,000.00	24,549.00	155,451.00	14
401-535-30-4960	BOOT ALLOWANCE	1,957.52	5,100.00	1,105.54	3,994.46	22
401-535-30-5100	OFFICE SUPPLIES	4,353.57	5,500.00	1,640.52	3,859.48	30
401-535-30-5200	OPERATING SUPPLIES	259,987.38	330,000.00	54,036.67	275,963.33	16
401-535-30-5250	FUEL EXPENSE	71,968.39	65,000.00	25,449.70	39,550.30	39
401-535-30-5260	CHEMICALS	257,346.12	228,000.00	86,372.80	141,627.20	38
401-535-30-5270	LABORATORY SAMPLES	160,464.00	300,000.00	54,314.00	245,686.00	18
401-535-30-5400	SUBSCRIPTIONS/DUES	2,675.94	5,000.00	322.54	4,677.46	6
401-535-30-5500	TRAINING	8,623.94	10,000.00	2,012.45	7,987.55	20
401-535-60-6200	CAP. IMPROVEMENT-BUILDINGS	0.00	100,000.00	632.13	99,367.87	1
401-535-60-6250	LIFT STATION UPGRADES	441,798.91	904,416.42	0.00	904,416.42	0
401-535-60-6300	CAPITAL IMPROVEMENT-OTHER	46,594.00	157,000.00	0.00	157,000.00	0
401-535-60-6310	MILLENNIUM PARK PROJECT	127,252.12	1,803,000.00	3,000.00	1,800,000.00	0
401-535-60-6330	CR 209 LS UPGRADES	286,900.74	100,583.88	100,583.88	0.00	100
401-535-60-6340	GRAVITY SYSTEM RENEWAL & REPLACEMEN	0.00	230,687.50	0.00	230,687.50	0
401-535-60-6400	CAP. IMPROVEMENT-MACHINERY	964,402.33	477,064.43	49,089.67	427,974.76	10
401-535-60-6610	SEWER SYSTEM RENEWAL AND REPLACEME	281,660.38	645,000.00	0.00	645,000.00	0
401-535-60-6681	LEASE PURCHASE PRINCIPAL PMT	79,982.17	122,000.00	0.00	122,000.00	0
401-535-60-6691	LEASE PURCHASE INTEREST PMT	4,616.50	0.00	0.00	0.00	0
401-535-60-6770	SR 44 FM / CCC DECOMMISSIONING	3,317,708.79	837,141.53	847.50	836,294.03	0
401-535-70-7303	WILDWOOD ESTATES LS	81,767.83	0.00	0.00	0.00	0

Expenditure Account	Description	Prior Yr Expd	Budgeted	YTD Expended	Unexpended	% Expd
	535 WASTEWATER DEPARTMENT:	**10,131,965.16**	**11,678,499.98**	**1,361,316.03**	**10,317,183.95**	**12**
401-580-90-0000	CONTINGENCY:	0.00	0.00	0.00	0.00	0
401-580-90-9912	CONTIN- WATER SEWER-REFUSE	0.00	3,304,794.00	0.00	3,304,794.00	0
401-582-00-0000	DEBT SERVICE:	0.00	0.00	0.00	0.00	0
401-582-70-7100	SUMTER SCHOOL BOARD LEASE PURCHASE	170,000.00	170,000.00	0.00	170,000.00	0
401-582-70-7103	DBT SRV.-SRF LOAN PRIN-2007	347,935.50	355,210.00	0.00	355,210.00	0
401-582-70-7106	DEBT SERV-2016 CONTINENTAL LOAN (BB&T	110,531.26	113,380.00	56,328.98	57,051.02	50
401-582-70-7204	INT EXP.-SRF LOAN-3 (2007)	31,979.38	24,710.00	0.00	24,710.00	0
401-582-70-7206	DEBT SERV-INTERST-2016 CONTINENTAL (BE	24,083.78	21,240.00	10,978.54	10,261.46	52
	582 DEBT SERVICE:	**684,529.92**	**684,540.00**	**67,307.52**	**617,232.48**	**10**
	UTILITY FUND Expenditure Totals	**15,286,345.80**	**27,521,845.43**	**3,031,066.53**	**24,490,778.90**	**11**

401 UTILITY FUND	**Prior**	**YTD**
Revenues:	**12,351,064.65**	**2,480,355.04**
Expenditures:	**15,286,345.80**	**3,031,066.53**
Net Income:	**2,935,281.15-**	**550,711.49-**

CITY OF WILDWOOD
YEAR TO DATE REVENUE-EXPENDITURE REPORT
COMMISSION MEETING JANUARY 13 2025

Revenue Account	Description	Prior Yr Rev	Anticipated	YTD Rev	Excess/Deficit	% Real
402-334-3500	STATE GRANT	0.00	9,250,000.00	0.00	9,250,000.00-	0
402-361-0000	INTEREST	38,836.54	0.00	25,733.44	25,733.44	0
402-382-0010	TRANSFER FROM GENERAL FUND	3,000,000.00	4,000,000.00	0.00	4,000,000.00-	0
402-382-3010	TRANSFER FROM CAPITAL IMPROVEMENT FI	5,000,000.00	5,000,000.00	0.00	5,000,000.00-	0
402-382-4090	TRANSFER FROM WW SDC FUND	1,000,000.00	15,000,000.00	0.00	15,000,000.00-	0
402-389-5000	CASH FORWARD	0.00	8,500,000.00	0.00	8,500,000.00-	0
402-389-9001	LOAN PROCEEDS	0.00	90,000,000.00	0.00	90,000,000.00-	0
402-389-9002	SRF LOAN PROCEEDS	0.00	12,000,000.00	0.00	12,000,000.00-	0
	CAPITAL PROJECTS (LOAN/GRANT) Revenue	**9,038,836.54**	**143,750,000.00**	**25,733.44**	**143,724,266.56-**	**0**

Expenditure Account	Description	Prior Yr Expd	Budgeted	YTD Expended	Unexpended	% Expd
402-536-00-0000	CONSTRUCTION FUND:	0.00	0.00	0.00	0.00	0
402-536-70-7353	WWTP PROJECT	854,219.51	64,441,700.00	286,542.50	64,155,157.50	0
402-580-90-9913	CONTINGENCY - CONSTRUCTION FUND	0.00	79,950,000.00	0.00	79,950,000.00	0
	CAPITAL PROJECTS (LOAN/ Expenditure Tot	**854,219.51**	**144,391,700.00**	**286,542.50**	**144,105,157.50**	**0**

402 CAPITAL PROJECTS (LOAN/GRANT)	**Prior**	**YTD**
Revenues:	**9,038,836.54**	**25,733.44**
Expenditures:	**854,219.51**	**286,542.50**
Net Income:	**8,184,617.03**	**260,809.06-**

CITY OF WILDWOOD
YEAR TO DATE REVENUE-EXPENDITURE REPORT
COMMISSION MEETING JANUARY 13 2025

Revenue Account	Description	Prior Yr Rev	Anticipated	YTD Rev	Excess/Deficit	% Real
403-361-0000	INTEREST EARNINGS	265.69	240.00	40.17	199.83-	17
403-389-5000	NON-OPERATIONAL-CASH FORWARD	0.00	53,600.00	0.00	53,600.00-	0
	INDUSTRIAL FUND Revenue Totals	**265.69**	**53,840.00**	**40.17**	**53,799.83-**	**0**

Expenditure Account	Description	Prior Yr Expd	Budgeted	YTD Expended	Unexpended	% Expd
403-552-00-0000	INDUSTRIAL PARK:	0.00	0.00	0.00	0.00	0
403-552-30-3100	PROFESSIONAL SERVICES	0.00	1,000.00	0.00	1,000.00	0
403-580-90-9999	CONTINGENCY	0.00	42,840.00	0.00	42,840.00	0
403-581-00-0000	INDUSTRIAL PARK:	0.00	0.00	0.00	0.00	0
403-581-00-0100	TRANSFER TO GENERAL FUND	10,000.00	10,000.00	0.00	10,000.00	0
	INDUSTRIAL FUND Expenditure Totals	**10,000.00**	**53,840.00**	**0.00**	**53,840.00**	**0**

403 INDUSTRIAL FUND	**Prior**	**YTD**
Revenues:	**265.69**	**40.17**
Expenditures:	**10,000.00**	**0.00**
Net Income:	**9,734.31-**	**40.17**

CITY OF WILDWOOD
YEAR TO DATE REVENUE-EXPENDITURE REPORT
COMMISSION MEETING JANUARY 13 2025

Revenue Account	Description	Prior Yr Rev	Anticipated	YTD Rev	Excess/Deficit	% Real
404-361-0000	INTEREST	18.29	0.00	0.68	0.68	0
404-389-5002	CASH FORWARD - WATER CONNECTIONS	0.00	51,100.00	0.00	51,100.00-	0
	WATER CONNECTION FEES Revenue Totals	**18.29**	**51,100.00**	**0.68**	**51,099.32-**	**0**

Expenditure Account	Description	Prior Yr Expd	Budgeted	YTD Expended	Unexpended	% Expd
404-533-00-0000	WATER CONNECTION FEES:	0.00	0.00	0.00	0.00	0
404-533-30-4900	MISC. EXPENSE & OTHER CURRENT	360.76	0.00	30.00	30.00-	0
404-533-70-7352	ASHLEY WTP PROJECT	231,325.00	0.00	0.00	0.00	0
	533 Total	**231,685.76**	**0.00**	**30.00**	**30.00-**	**0**
404-580-90-9909	CONTINGENCY - WATER CONNECTION FEES	0.00	51,100.00	0.00	51,100.00	0
	WATER CONNECTION FEES Expenditure Tota	**231,685.76**	**51,100.00**	**30.00**	**51,070.00**	**0**

404 WATER CONNECTION FEES	**Prior**	**YTD**
Revenues:	**18.29**	**0.68**
Expenditures:	**231,685.76**	**30.00**
Net Income:	**231,667.47-**	**29.32-**

CITY OF WILDWOOD
YEAR TO DATE REVENUE-EXPENDITURE REPORT
COMMISSION MEETING JANUARY 13 2025

Revenue Account	Description	Prior Yr Rev	Anticipated	YTD Rev	Excess/Deficit	% Real
406-361-0000	INTEREST	15.50	0.00	1.31	1.31	0
406-389-5006	CASH FORWARD - WASTEWATER CONNECTI	0.00	154,500.00	0.00	154,500.00-	0
	WASTEWATER CONNECTION FEES Revenue	**15.50**	**154,500.00**	**1.31**	**154,498.69-**	**0**

Expenditure Account	Description	Prior Yr Expd	Budgeted	YTD Expended	Unexpended	% Expd
406-535-00-0000	SEWER TAP CONNECTION FEES:	0.00	0.00	0.00	0.00	0
406-535-30-4900	MISC. EXPENSE & OTHER CURRENT	360.19	0.00	30.00	30.00-	0
406-580-90-5006	CONTINGENCY - WASTEWATER CONNECTIOI	0.00	154,500.00	0.00	154,500.00	0
	WASTEWATER CONNECTION F Expenditure T	**360.19**	**154,500.00**	**30.00**	**154,470.00**	**0**

406 WASTEWATER CONNECTION FEES	**Prior**	**YTD**
Revenues:	**15.50**	**1.31**
Expenditures:	**360.19**	**30.00**
Net Income:	**344.69-**	**28.69-**

Revenue Account	Description	Prior Yr Rev	Anticipated	YTD Rev	Excess/Deficit	% Real
408-343-3560	WATER SDC FEES	1,990,895.22	3,437,000.00	592,012.89	2,844,987.11-	17
408-361-0000	INTEREST EARNED	528.97	200.00	46.71	153.29-	23
408-389-5012	CASH FORWARD - WATER SDC	0.00	5,350,000.00	0.00	5,350,000.00-	0
	WATER SDC FEES Revenue Totals	**1,991,424.19**	**8,787,200.00**	**592,059.60**	**8,195,140.40-**	**6**

Expenditure Account	Description	Prior Yr Expd	Budgeted	YTD Expended	Unexpended	% Expd
408-533-30-3401	DEVELOPER REIMBURSEMENTS	0.00	0.00	28,958.40	28,958.40-	0
408-533-30-4900	MISC. EXPENSE & OTHER CURRENT	389.15	0.00	30.68	30.68-	0
408-533-70-7351	CR 501 IRON FILTRATION PLANT UPGRADES	37,152.50	5,564,547.50	7,897.50	5,556,650.00	0
408-533-70-7352	ASHLEY WTP UPGRADES	277,000.00	0.00	0.00	0.00	0
	533 Total	**314,541.65**	**5,564,547.50**	**36,886.58**	**5,527,660.92**	**1**
408-580-90-9914	CONTINGENCY - WATER SDC FUND	0.00	5,731,170.00	0.00	5,731,170.00	0
408-582-70-7107	SRF PRINCIPAL - OXFORD WTP	222,961.58	224,930.00	112,217.11	112,712.89	50
408-582-70-7207	SRF INTEREST - OXFORD WTP	33,068.02	31,100.00	15,797.69	15,302.31	51
	582 Total	**256,029.60**	**256,030.00**	**128,014.80**	**128,015.20**	**50**
	WATER SDC FEES Expenditure Totals	**570,571.25**	**11,551,747.50**	**164,901.38**	**11,386,846.12**	**1**

408 WATER SDC FEES	**Prior**	**YTD**
Revenues:	**1,991,424.19**	**592,059.60**
Expenditures:	**570,571.25**	**164,901.38**
Net Income:	**1,420,852.94**	**427,158.22**

Revenue Account	Description	Prior Yr Rev	Anticipated	YTD Rev	Excess/Deficit	% Real
409-343-5560	WASTEWATER SDC FEES	5,726,336.40	7,150,000.00	1,606,561.34	5,543,438.66-	22
409-361-0000	INTEREST EARNED	1,268.48	500.00	107.49	392.51-	22
409-389-5013	CASH FORWARD	0.00	9,950,000.00	0.00	9,950,000.00-	0
	WASTEWATER SDC FEES Revenue Totals	**5,727,604.88**	**17,100,500.00**	**1,606,668.83**	**15,493,831.17-**	**9**

Expenditure Account	Description	Prior Yr Expd	Budgeted	YTD Expended	Unexpended	% Expd
409-535-30-3401	DEVELOPER REIMBURSEMENTS	176,523.84	0.00	0.00	0.00	0
409-535-30-4900	MISC. EXPENSE & OTHER CURRENT	397.07	500.00	31.66	468.34	6
409-535-60-6310	MILLENIUM PARK REUSE LINE	0.00	2,000,000.00	0.00	2,000,000.00	0
409-535-60-6315	HUEY STREET SANITARY SEWER REROUTE	431,091.99	0.00	0.00	0.00	0
409-535-70-7346	WWTP FACILITY PLAN	1,499,054.11	1,666,490.95	368,190.82	1,298,300.13	22
409-535-70-7355	BRIDGE CROSSING PROJECT	126,477.22	0.00	0.00	0.00	0
	535 Total	**2,233,544.23**	**3,666,990.95**	**368,222.48**	**3,298,768.47**	**10**
409-580-90-9915	CONTINGENCY - WASTEWATER SDC FUND	0.00	24,370.00	0.00	24,370.00	0
409-581-00-4020	TRANSFER TO UTILITY CAP PROJECTS FUNI	1,000,000.00	15,000,000.00	0.00	15,000,000.00	0
409-582-70-7101	DBT SERV-SRF CRC09 FORCEMAIN DESIGN F	4,464.17	4,540.00	0.00	4,540.00	0
409-582-70-7102	DBT SRV-SRF CR209 FM CONSTRUCTION PR	69,809.23	69,830.00	34,912.47	34,917.53	50
409-582-70-7200	INTEREST EXPENSE-CR209 FM SRF CONSTR	309.57	290.00	146.93	143.07	51
409-582-70-7202	INT EXP.-SRF DESIGN LOAN-CR209 FORCEM/	1,002.05	970.00	0.00	970.00	0
	582 Total	**75,585.02**	**75,630.00**	**35,059.40**	**40,570.60**	**46**
	WASTEWATER SDC FEES Expenditure Totals	**3,309,129.25**	**18,766,990.95**	**403,281.88**	**18,363,709.07**	**2**

409 WASTEWATER SDC FEES	**Prior**	**YTD**

CITY OF WILDWOOD

YEAR TO DATE REVENUE-EXPENDITURE REPORT
COMMISSION MEETING JANUARY 13 2025

Revenues:	**5,727,604.88**	**1,606,668.83**
Expenditures:	**3,309,129.25**	**403,281.88**
Net Income:	**2,418,475.63**	**1,203,386.95**

CITY OF WILDWOOD
YEAR TO DATE REVENUE-EXPENDITURE REPORT
COMMISSION MEETING JANUARY 13 2025

Revenue Account	Description	Prior Yr Rev	Anticipated	YTD Rev	Excess/Deficit	% Real
601-361-0000	INTEREST	137.58	100.00	31.70	68.30-	32
601-389-5000	NON-OPERATIONAL- CASH FORWARD	0.00	51,845.00	0.00	51,845.00-	0
	LAW ENFORCEMENT FUND Revenue Totals	**137.58**	**51,945.00**	**31.70**	**51,913.30-**	**0**

Expenditure Account	Description	Prior Yr Expd	Budgeted	YTD Expended	Unexpended	% Expd
601-521-00-0000	LAW ENFORCEMENT TRUST:	0.00	0.00	0.00	0.00	0
601-580-90-9999	CONTINGENCY	0.00	51,945.00	0.00	51,945.00	0
	LAW ENFORCEMENT FUND Expenditure Tota	**0.00**	**51,945.00**	**0.00**	**51,945.00**	**0**

601 LAW ENFORCEMENT FUND	**Prior**	**YTD**
Revenues:	**137.58**	**31.70**
Expenditures:	**0.00**	**0.00**
Net Income:	**137.58**	**31.70**

Grand Totals	Prior	YTD
Revenues:	81,579,406.86	25,172,844.12
Expenditures:	77,869,105.90	10,855,918.75
Net Income:	3,710,300.96	14,316,925.37

CITY COMMISSION
CITY OF WILDWOOD, FLORIDA
WORKSHOP
October 21, 2024 9:00 AM
CITY HALL COMMISSION CHAMBER

(meeting taped)

1. **Call to Order**

Attendee Name	Title	Status
Ed Wolf	Mayor	Present
Pamala Harrison-Bivins	Mayor Pro Tem/Commissioner	Present
Joe Elliott	Commissioner	Present
Marcos Flores	Commissioner	Present
Julian Green	Commissioner	Present
Jason McHugh	City Manager	Present
Ashley Hunt	City Attorney	Absent
Joshua Bills	City Attorney	Present
Cassandra Smith	Assistant City Manager/CFO	Present
Jessica Barnes	City Clerk	Present
Randall Parmer	Police Chief	Present
Melanie Strickland	Development Services Director	Present
Jeremy Hockenbury	Public Works Director	Present
Jason Martin	Assistant Utilities Director	Present

Mayor Wolf called the workshop of the Wildwood City Commission to order at 9 a.m., dispensing with the invocation and Pledge of Allegiance to move on to the first item of business.

2. **Item(s) for Discussion**

A. 2024 Utility Master Plan

Trey Clayton of Kimley Horn approached the Commission to give a presentation on the Utility Master Plan that his firm had been working on.

Clayton stated that there were four main goals/objectives of the master plan. The first goal was to identify existing system capacity and deficiencies. The second goal was to develop system demand projections for future years. The third goal was to identify the required system improvements that would be needed to meet the future system demands. Finally, the plan would culminate in the development of a capital improvement program for the required system improvements.

Clayton stated that a review of the existing service area showed that it was greater than 50 square miles. The existing water and sewer infrastructure spanned over 15 miles. He stated that the utility system served over 21,000 people through 7,466 service connections as of June 2024.

Clayton then reviewed the demand projections for the city's utility system. The projections were developed using existing water billing data, known future developments, population projections from SWFWMD and B.E.B.R., and infill demands. Clayton then showed how the development projections would affect daily flows in the water and wastewater systems. Clayton projected flows out to the year 2050.

Clayton then reviewed future capital needs of the water and wastewater systems based on the demand projections. He broke the projects up into 10 year increments. He also provided capital projects for the reuse system. He wrapped up the presentation with the line item CIP plan that included current day cost estimates for all projects.

B. City of Wildwood Housing Needs Study - September 2024

Laura Smith of GAI Consultants approached the Commission to give a presentation on the Housing Study her firm had been working on. The housing study analyzed the population trends within the City, income data, employment trends, and how the housing market was impacted by all those statistics. The study recognized the development of The Villages since 2010 and segregated the data between all of Wildwood and the non-Villages portion to show the differing trends between the two. The study revealed that there were very few workers who both reside and work within the City of Wildwood. Housing availability and affordability played a part in that statistic. Smith stated that despite all the current development, the data showed that projected housing needs were going to exceed the future demand. Smith stated that the next phase of the study was to develop actionable strategies and tactics for bringing housing supply and demand more in alignment in future years.

C. City Charter Discussion

The Commission discussed the newly created Charter Review Committee. Commissioner Elliott provided a recap of the first meeting of the committee. He reviewed the resolution that was adopted by the Commission establishing the committee which outlined the Commission's responsibility to the process. Elliott stated that the resolution dictated that the Commission provide the committee with direction on what to review in the charter. Elliott provided a list of items he thought should be reviewed. He asked other commission members if there were any additional concerns about the content of the current charter. No other specific items were mentioned.

3. Adjournment

With no further business to attend to, the meeting was adjourned at 10:57 a.m.

RESULT:	**Adjourned**
MOVER:	Mayor Pro Tem/Commissioner Harrison-Bivins
SECONDER:	Commissioner Green
AYES:	Mayor Wolf, Mayor Pro Tem/Commissioner Harrison-Bivins, Commissioner Elliott, Commissioner Flores, Commissioner Green

CITY COMMISSION
CITY OF WILDWOOD, FLORIDA

SEAL

ATTEST: _____ BY: _____
Jessica Barnes, City Clerk Ed Wolf, Mayor

CITY COMMISSION
CITY OF WILDWOOD, FLORIDA
REGULAR MEETING
October 28, 2024 7:00 PM
CITY HALL COMMISSION CHAMBER

(meeting taped)

1. Call to Order

Attendee Name	Title	Status
Ed Wolf	Mayor	Present
Pamala Harrison-Bivins	Mayor Pro Tem/Commissioner	Present
Joe Elliott	Commissioner	Present
Marcos Flores	Commissioner	Present
Julian Green	Commissioner	Present
Jason McHugh	City Manager	Present
Ashley Hunt	City Attorney	Present
Joshua Bills	City Attorney	Present
Cassandra Smith	Assistant City Manager/CFO	Present
Jessica Barnes	City Clerk	Present
Randall Parmer	Police Chief	Present
Melanie Strickland	Development Services Director	Present
Jeremy Hockenbury	Public Works Director	Present
Jason Martin	Assistant Utilities Director	Present

Mayor Wolf called the regular meeting of the Wildwood City Commission to order at 7 p.m. followed by invocation and Pledge of Allegiance.

2. Consent Agenda/Informational Items

No items were removed from the Consent Agenda. Items A - G were voted on together. No comments were offered or received. Vote 5-0.

RESULT:	**Adopted**
MOVER:	Commissioner Green
SECONDER:	Mayor Pro Tem/Commissioner Harrison-Bivins
AYES:	Mayor Wolf, Mayor Pro Tem/Commissioner Harrison-Bivins, Commissioner Elliott, Commissioner Flores, Commissioner Green

A. Expenditure Report

B. Minutes for Approval: July 15, 2024 Commission Workshop

C. Minutes for Approval: August 2, 2024 Special Commission Meeting

D. Minutes for Approval: August 12, 2024 Regular Commission Meeting

E. SP 2312-010 The Railyard

F. PLAT 2409-004 VOSO Unit 185 Final Plat

G. Budgeted Financial Items

1. Purchase of a Spare Mixer for the Wastewater Treatment Facility for the Amount of $42,218.00

2. Purchase of a Spare Gearbox for the Kruger Ditch Rotors for the Amount of $52,231.94

3. Purchase of One John Deere Gator for the Parks and Rec Department for the Amount of $21,535.00

4. Purchase of One John Deere 5100E Tractor from Everglades Equipment for Public Works for the Amount of $67,369.44

3. Presentations and/or Proclamations

None.

4. Public Hearings - Timed - Legislative

A. Swear in City Staff and Public Speakers

Mayor Wolf swore in staff and audience members who intended to speak during the public hearings.

B. CP 2408-003 John Papagno Residential

Mayor Wolf read the title of Ordinance No. O2024-58 for CP 2408-003. The applicant sought approval from the City Commission for a Small-Scale Comprehensive Plan Amendment to change the Future Land Use Map designation from Agricultural (County) to Residential Mixed Use (City) for parcel D19-031 consisting of 2.32 acres MOL. No comments offered or received. Vote 5-0.

RESULT:	**Adopted**
MOVER:	Commissioner Green
SECONDER:	Commissioner Flores
AYES:	Mayor Wolf, Mayor Pro Tem/Commissioner Harrison-Bivins, Commissioner

Elliott, Commissioner Flores, Commissioner Green

C. CP 2408-001 Old Wire West

Mayor Wolf read the title of Ordinance No. O2024-60 for CP 2408-001. The applicant sought approval from the City Commission for a Small-Scale Comprehensive Plan Amendment to change the Future Land Use designation from Medium Density Residential (City) to Commercial (City) for parcel G05D061 consisting of 0.298 acres MOL. No comments offered or received. Vote 5-0.

RESULT:	**Adopted**
MOVER:	Mayor Pro Tem/Commissioner Harrison-Bivins
SECONDER:	Commissioner Green
AYES:	Mayor Wolf, Mayor Pro Tem/Commissioner Harrison-Bivins, Commissioner Elliott, Commissioner Flores, Commissioner Green

D. CP 2408-002 Kent's Building

Mayor Wolf read the title of Ordinance No. O2024-62 for CP 2408-002. The applicant sought approval from the City of Wildwood City Commission for a Small Scale Comprehensive Plan Amendment Request to change the Future Land Use Map designation from Medium Density Residential (City) to Commercial (City) for parcel G06L166 consisting of 0.2421 acres of land MOL. No comments offered or received. Vote 5-0.

RESULT:	**Adopted**
MOVER:	Commissioner Elliott
SECONDER:	Commissioner Flores
AYES:	Mayor Wolf, Mayor Pro Tem/Commissioner Harrison-Bivins, Commissioner Elliott, Commissioner Flores, Commissioner Green

5. Public Hearings - Timed - Quasi-Judicial

A. PD 2404-001 Convenience Store with Gas Planned Development

Mayor Wolf read the title of Ordinance No. O2024-55 for PD 2404-001. The applicant seeks approval from the City Commission for a Planned Development (PD) for SP 2305-007 Convenience Store with Gas to accommodate signage, shared utility infrastructure improvements, and shared access in order to advertise gas prices as well as accommodate future tenants on the parcels G07-076, G07-078 & G07-250. This PD allows five (5) signs to be located on the property along with requirements to the existing billboard as outlined in the ordinance. Development Services Director Melanie Strickland commented that this item is to set up an agreement to address signage issues that are regulated by State Statute; she noted that the site plan has not been submitted at this time.

Five individuals commented on the agenda item.

Greg Horzewski expressed concerns due to the development being adjacent to his property. He was concerned about tree removal, noise generated from the development, and increased traffic.

Charles "Ed" Buckner expressed support for the development, as it would provide easy access to the individuals in their neighborhood.

Louise Garrison stated that her concern is about the current state of the property as it is overgrown and is attracting unwanted wildlife. She asked that something be done to clean up the property now.

Robert Hall expressed concern about the noise and light that would be generated by the development and requested that a wall be required to block these nuisances from the nearby residential neighborhood.

Mark Solomon expressed concern about the increased traffic that would be generated. He commented that the current traffic levels were excessive and this would only add to it. He was particularly concerned about u-turn traffic that would be generated from the development and the increased risk for accidents related to u-turns.

Mayor Wolf commented that residents would be notified of future public hearings related to the development.

No other comments were offered or received. Vote 5-0.

RESULT:	**Adopted**
MOVER:	Commissioner Flores
SECONDER:	Commissioner Elliott
AYES:	Mayor Wolf, Mayor Pro Tem/Commissioner Harrison-Bivins, Commissioner Elliott, Commissioner Flores, Commissioner Green

B. RZ 2408-003 John Papagno Residential

Mayor Wolf read the title of Ordinance No. O2024-59 for RZ 2408-003. The applicant sought approval from the City Commission for a Zoning Map Amendment to change the zoning district from RR5C (County) to RMU (City) for parcel D19-031 consisting of 2.32 acres MOL. No comments were offered or received. Vote 5-0.

RESULT:	**Adopted**
MOVER:	Mayor Pro Tem/Commissioner Harrison-Bivins
SECONDER:	Commissioner Green
AYES:	Mayor Wolf, Mayor Pro Tem/Commissioner Harrison-Bivins, Commissioner Elliott, Commissioner Flores, Commissioner Green

C. RZ 2408-001 Old Wire West

Mayor Wolf read the title of Ordinance No. O2024-61 for RZ 2408-001. The applicant sought approval from the City Commission for a Zoning Map amendment to change the zoning district from R-3 (City) to C-1 (City) for parcel G05D061 consisting of 0.298 acres MOL. No comments were offered or received. Vote 5-0.

RESULT:	**Adopted**
MOVER:	Commissioner Flores
SECONDER:	Commissioner Elliott
AYES:	Mayor Wolf, Mayor Pro Tem/Commissioner Harrison-Bivins, Commissioner Elliott, Commissioner Flores, Commissioner Green

D. RZ 2408-002 Kent's Building

Mayor Wolf read the title of Ordinance No. O2024-63 for RZ 2408-002. The applicant sought approval from the City of Wildwood City Commission for a Zoning Map amendment request to change the zoning designation from R-3 (City) to C-1 (City) for parcel G06L166 consisting of 0.242 acres of land MOL. No comments were offered or received. Vote 5-0.

RESULT:	**Adopted**
MOVER:	Mayor Pro Tem/Commissioner Harrison-Bivins
SECONDER:	Commissioner Green
AYES:	Mayor Wolf, Mayor Pro Tem/Commissioner Harrison-Bivins, Commissioner Elliott, Commissioner Flores, Commissioner Green

E. AN 2408-003 Oxford Professional Plaza

Mayor Wolf read the title of Ordinance No. O2024-64 for AN 2408-003. The applicant, Lawrence Breech, on behalf of the owner, T-Lynne Properties, LLC, submitted a voluntary annexation application for parcel D20-050. The property to be annexed totaled 3.63 acres MOL and is located approximately 0.36 miles north of the C 472 and N US 301 intersection, located east along N US 301. No comments were offered or received. Vote 5-0.

RESULT:	**Adopted**
MOVER:	Commissioner Green
SECONDER:	Commissioner Flores
AYES:	Mayor Wolf, Mayor Pro Tem/Commissioner Harrison-Bivins, Commissioner Elliott, Commissioner Flores, Commissioner Green

F. CN 2408-001 Voluntary Contraction by De-annexing 230.23 Acres of Land (Villages and Buffalo Hide)

Mayor Wolf read the title of Ordinance No. O2024-65 for CN 2408-001. A voluntary contraction petition was submitted for review and consideration on behalf of the Villages Land Operating Company, LLC and Buffalo Hide and Cattle Company, LLC to de-annex approximately 230.23 acres more or less of real property generally located north of E C-470 and west of Marsh Bend Trail, and south of Sumter County Road 526 and west of SE 42nd Drive. No comments offered/received. Vote 5-0.

RESULT:	**Adopted**
MOVER:	Commissioner Elliott
SECONDER:	Mayor Pro Tem/Commissioner Harrison-Bivins
AYES:	Mayor Wolf, Mayor Pro Tem/Commissioner Harrison-Bivins, Commissioner Elliott, Commissioner Flores, Commissioner Green

6. Public Forum - 4 minute time limit

Kelly Gladson of Oak Grove Village addressed the Commission regarding the aftermath of hurricane Milton in her neighborhood. She stated that several residents were experiencing hardships and she asked if anything was being done to mitigate the flooding conditions. City manager McHugh stated that the Commission had expedited a project to install a pump system which would mitigate the flooding conditions but not eliminate them. He offered to speak to Ms. Gladson more following the meeting.

7. Ordinances First Reading Only (No Vote)

A. AN 2409-002 5127 CR 169

Mayor Wolf read the title of Ordinance No. 2024-66, an ordinance providing for the annexation of parcel G15A098. The applicant, Dorothy Joy Messenger-Young, trustee of the Young Family Revocable Trust, has submitted a voluntary annexation application for the parcel. The property to be annexed totals 0.286 acres MOL, and is located at 5127 CR 169, Wildwood, FL 34785. First reading only - no vote.

RESULT: FIRST READING	**PUBLIC HEARING: November 11, 2024**

B. AN 2410-001 Greatest American Hero

Mayor Wolf read the title of Ordinance No. 2024-66, an ordinance providing for the annexation of parcel D19-067. The applicant and property owner, Joseph Martelli (TTEE), has submitted a voluntary annexation for the parcel. First reading only - no vote.

RESULT: FIRST READING	**PUBLIC HEARING: November 11, 2024**

8. Resolutions for Approval

None.

9. Financial & Contracts & Agreements

A. ESRI SGEA Three-year Renewal for Enterprise-wide Mapping Software

It Director Paul Ketz presented a request for approval of a three-year quote from Environmental Systems Research Institute, Inc. (ESRI) for a Small Government Enterprise Agreement (SGEA) Annual Subscription for the City of Wildwood. ESRI provides the professional mapping software utilized by the City, Sumter County, and the State of Florida. Pricing falls under the Small Municipal and County Government Enterprise Agreement program. The Information Technology department has consulted third-party resellers and confirmed that they cannot offer Enterprise Agreements (as done with Microsoft) and that this program is exclusively available through ESRI, Inc. No comments received/offered. Vote 5-0.

RESULT:	**Approved**
MOVER:	Commissioner Elliott
SECONDER:	Commissioner Green
AYES:	Mayor Wolf, Mayor Pro Tem/Commissioner Harrison-Bivins, Commissioner Elliott, Commissioner Flores, Commissioner Green

B. Huey Street Improvements Project – Change Order 4 in the Amount of $21,500

Public Works Director Jeremy Hockenbury presented Change Order No. 4 for the Huey Street project for approval. The contractor, Art Walker, is requesting Change Order 4 (CO 4) in the amount of $21,500 for changes in the original scope of work associated with plan revision (No.4) by Kimley-Horn, which proposes installing a new ditch bottom inlet structure (Structure number

EX-H03), to maintain the intended flow of the storm water system. No comments offered/received. Vote 5-0.

RESULT:	**Approved**
MOVER:	Commissioner Green
SECONDER:	Commissioner Flores
AYES:	Mayor Wolf, Mayor Pro Tem/Commissioner Harrison-Bivins, Commissioner Elliott, Commissioner Flores, Commissioner Green

C. Huey Street Improvements Project - Payment Application No. 4 in the Amount of $168,605.16

Public Works Director Hockenbury presented Pay Application No. 4 for the Huey Street project for approval. Art Walker is requesting Payment Application No. 4 in the amount of $168,605.16 for site work performed from September 1 through September 30, 2024. The project is 40% completed. No comments offered/received. Vote 5-0.

RESULT:	**Approved**
MOVER:	Commissioner Elliott
SECONDER:	Commissioner Green
AYES:	Mayor Wolf, Mayor Pro Tem/Commissioner Harrison-Bivins, Commissioner Elliott, Commissioner Flores, Commissioner Green

D. Well No. 3 Repair at the 501 Water Treatment Facility for the Amount of $26,971.75

Assistant Utilities Director Jason Martin presented a request for approval of payment for a well repair at the 501 Water Treatment Plant. No comments offered/received. Vote 5-0.

RESULT:	**Approved**
MOVER:	Commissioner Green
SECONDER:	Mayor Pro Tem/Commissioner Harrison-Bivins
AYES:	Mayor Wolf, Mayor Pro Tem/Commissioner Harrison-Bivins, Commissioner Elliott, Commissioner Flores, Commissioner Green

E. Proposal from Stantec to Perform an Impact Fee Study for $48,000

Assistant City Manager/CFO Cassandra Smith presented a request to approval an agreement with Stantec to perform an Impact Fee Study. The recent utility revenue sufficiency analysis recommended that the city's impact fees be re-evaluated. Florida statute requires that a study must be done to justify any increase to impact fees. No comments offered/received. Vote 5-0.

RESULT:	**Approved**
MOVER:	Commissioner Flores
SECONDER:	Mayor Pro Tem/Commissioner Harrison-Bivins
AYES:	Mayor Wolf, Mayor Pro Tem/Commissioner Harrison-Bivins, Commissioner Elliott, Commissioner Flores, Commissioner Green

10. General Items for Consideration/Discussion and Other Business

A. Agreement for Traffic Law Enforcement in Beaumont CDD

City Manager Jason McHugh presented for approval an agreement for traffic law enforcement within the Beaumont CDD. The agreement gives the City of Wildwood traffic control jurisdiction over the roads in the Beaumont Community Development District, as provided in Section 316.006(3)(b), Florida Statutes. The Beaumont Community Development District petitioned the City to enter into the agreement. Without the agreement, the Wildwood Police Department would not have legal jurisdiction to enforce traffic laws within certain parts of the community. No comments offered/received. Vote 5-0.

RESULT:	**Approved**
MOVER:	Commissioner Elliott
SECONDER:	Commissioner Green
AYES:	Mayor Wolf, Mayor Pro Tem/Commissioner Harrison-Bivins, Commissioner Elliott, Commissioner Flores, Commissioner Green

11. Appointments

None.

12. City Manager Reports

City manager McHugh stated that the recent "Monday with the Manager" and the recent "Welcome to Wildwood" events went well. He also provided an update on the hurricane Milton response.

A. Local Construction Projects Update

McHugh stated the construction update report was included in the agenda packet for Commission review.

B. Grants Update Report

McHugh stated the grant update report was included in the agenda packet for Commission review.

13. Other Department Reports

A. Information Technology Department Update October 2024

IT Director Ketz presented his department's quarterly report and praised his staff for the great work they have been doing.

14. Commission Members Reports

Commissioner Elliott notified other commissioners that Wildwood would be granted a permanent seat on the Lake Sumter Metropolitan Commission. He also updated the Commission on his committee activities.

Commissioner Green praised staff for coordinating with neighboring communities and providing needed assistance to them for hurricane response.

15. City Attorney Reports

None.

16. Adjournment

With no further business to attend to the meeting was adjourned at 7: 56 p.m.

RESULT:	**Adjourned**
MOVER:	Mayor Pro Tem/Commissioner Harrison-Bivins
SECONDER:	Commissioner Flores
AYES:	Mayor Wolf, Mayor Pro Tem/Commissioner Harrison-Bivins, Commissioner Elliott, Commissioner Flores, Commissioner Green

Upcoming Events

CITY COMMISSION
CITY OF WILDWOOD, FLORIDA

SEAL

ATTEST: _____ BY: _____
Jessica Barnes, City Clerk Ed Wolf, Mayor

CITY COMMISSION OF THE CITY OF WILDWOOD

EXECUTIVE SUMMARY

SUBJECT: **PLAT 2401-001 Cootie's Ranch Final Plat**

REQUESTED ACTION: The Planning and Zoning Board/Special Magistrate recommends approval.

CONTRACT:

BUDGET IMPACT:

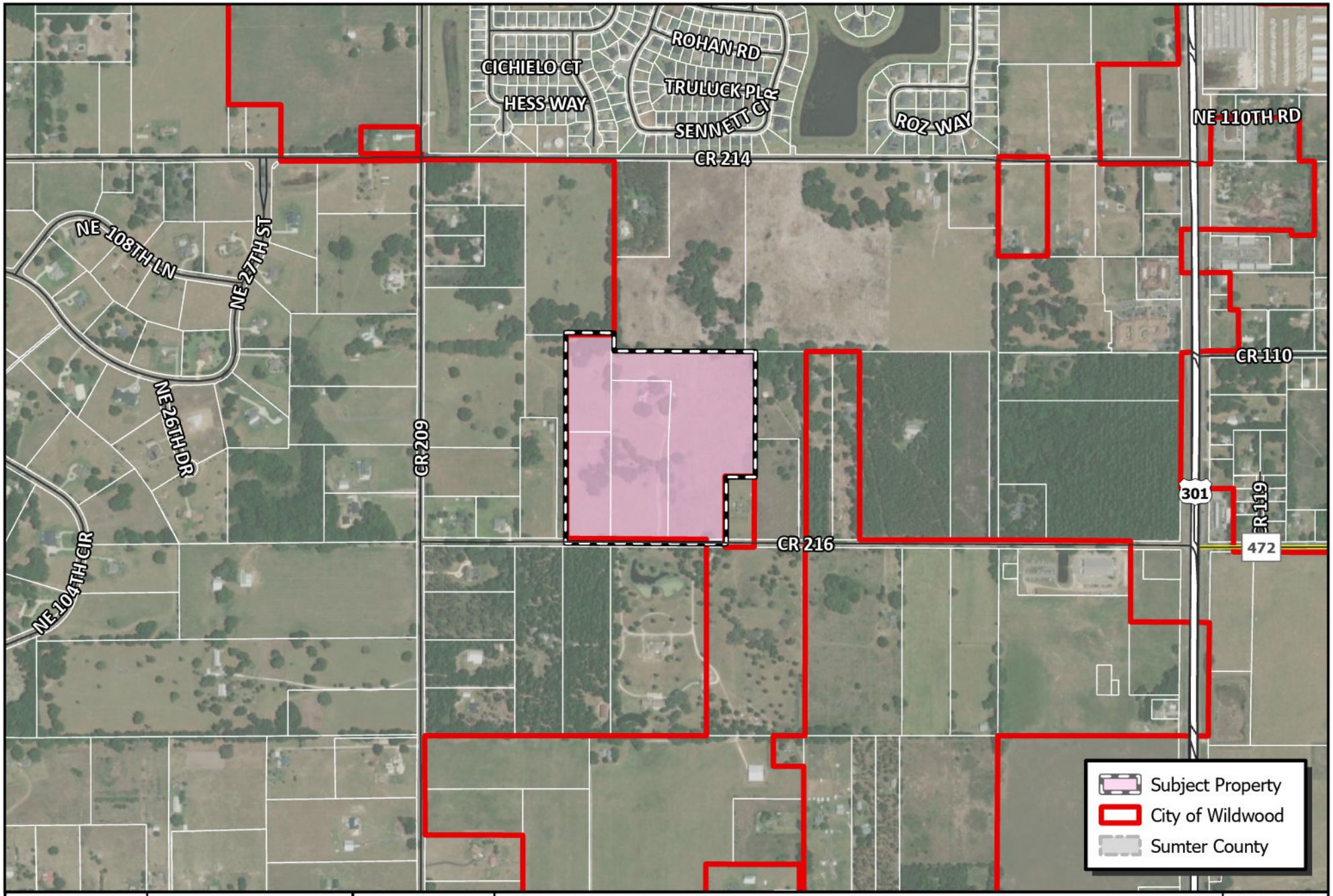
HISTORY/FACTS/ISSUES:

Case Number	PLAT 2401-001 Cootie's Ranch Final Plat
Applicant(s)	Clymer Farner Barley Surveying, LLC
Owner(s)	Sheila Bernstein Wright
Acreage	38.55 +/-
Property Location	The subject property is generally located approximately 0.19 miles east of CR 209, approximately 0.61 miles west of N US 301, north along CR 216.
Parcel(s)	D19-027, D19-110, D19-120, & D19-121
Date	December 30, 2024

The applicant is seeking approval from the City Commission for Cootie's Ranch Final Plat, a 4-parcel subdivision which includes Tract A for right-of-way dedication to the public along CR 216 and a 20-foot ingress/egress and utility easement for parcel 1 that is located along the western boundary of parcel 2, per the attached plans.

PLAT 2401-001 meets the criteria set forth in F.S. 177, Land Development Regulations, and is in line with goals, objectives, and policies within the 2050 Comprehensive Plan.

Amanda Bondi
Planner II, Development Services



WILDWOOD FLORIDA EST. 1877

CITY OF WILDWOOD
100 North Main Street
Wildwood, FL 34785
Phone: (352) 330-1330
www.wildwood-fl.gov

N

US Feet
0 200 400 800

PLAT 2401-001

COOTIE'S RANCH FINAL PLAT

PARCELS D19-027, D19-110, D19-120 & D19-121

MAP 1B

LOCATION MAP

DEC 2023

COVENANTS, CONDITIONS, RESTRICTIONS AND EASEMENTS FOR THIS SUBDIVISION ARE RECORDED IN THE PUBLIC RECORDS OF SUMTER COUNTY, FLORIDA. OR BOOK _____ PAGE _____.

COOTIE'S RANCH

SECTION 19, TOWNSHIP 18 SOUTH, RANGE 23 EAST,
CITY OF WILDWOOD, SUMTER COUNTY, FLORIDA.

PLAT BOOK _____
PAGE _____

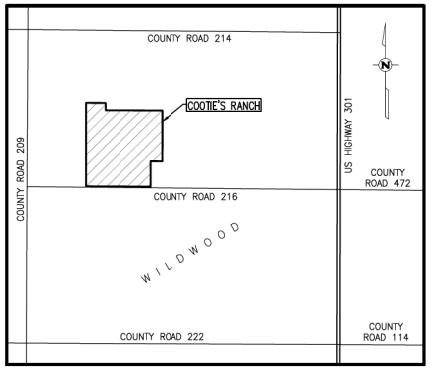
LEGAL DESCRIPTION:

A PARCEL OF LAND LYING WITHIN SECTION 19, TOWNSHIP 18 SOUTH, RANGE 23 EAST, SUMTER COUNTY, FLORIDA, DESCRIBED AS FOLLOWS:

BEGIN AT THE NORTHWEST CORNER OF THE SOUTHEAST 1/4 OF THE NORTHWEST 1/4 OF AFORESAID SECTION 19; THENCE ALONG THE NORTH LINE OF SAID SOUTHEAST 1/4 OF THE NORTHWEST 1/4 OF SECTION 19 RUN S89°44'53"E, 972.80 FEET TO THE WEST LINE OF THE EAST 350.00 FEET OF SAID SOUTHEAST 1/4 OF NORTHWEST 1/4; THENCE ALONG SAID WEST LINE RUN S00°04'34"W, 863.90 FEET TO A POINT ON THE NORTH LINE OF THE SOUTH 461.00 FEET OF SAID SOUTHEAST 1/4 OF NORTHWEST 1/4; THENCE ALONG SAID NORTH LINE RUN N89°43'09"W, 200.00 FEET TO A POINT ON THE WEST LINE OF THE EAST 553.00 FEET OF THE SOUTHEAST 1/4 OF THE NORTHWEST 1/4 OF SECTION 19; THENCE ALONG SAID WEST LINE RUN S00°04'34"W, 461.00 FEET TO THE SOUTH LINE OF THE NORTHWEST 1/4 OF SECTION 19; THENCE ALONG SAID SOUTH LINE RUN N89°43'08"W, 1,105.78 FEET TO THE EAST LINE OF PROPERTY DESCRIBED IN O.R. BOOK 3035, PAGE 713, PUBLIC RECORDS OF SUMTER COUNTY, FLORIDA; THENCE ALONG SAID EAST LINE RUN N00°02'44"E, 1,449.40 FEET TO A POINT THAT IS 125.00 FEET NORTH OF THE NORTH LINE OF THE SOUTHWEST 1/4 OF THE NORTHWEST 1/4 OF SECTION 19; THENCE PARALLEL WITH SAID NORTH LINE RUN S89°43'18"E A DISTANCE OF 332.73 FEET TO THE EAST LINE OF THE WEST 1/2 OF THE NORTHWEST 1/4 OF SECTION 19; THENCE ALONG SAID EAST LINE RUN S00°01'55"W A DISTANCE OF 125.00 FEET TO THE POINT OF BEGINNING.

CONTAINING 38.55 ACRES, MORE OR LESS.

VICINITY MAP
1" = 1000'



4 PARCELS – 1 TRACT

NOTICE: THIS PLAT, AS RECORDED IN ITS GRAPHIC FORM, IS THE OFFICIAL DEPICTION OF THE SUBDIVIDED LANDS DESCRIBED HEREIN AND WILL IN NO CIRCUMSTANCES BE SUPPLANTED IN AUTHORITY BY ANY OTHER GRAPHIC OR DIGITAL FORM OF THE PLAT. THERE MAY BE ADDITIONAL RESTRICTIONS THAT ARE NOT RECORDED ON THIS PLAT THAT MAY BE FOUND IN THE PUBLIC RECORDS OF THIS COUNTY.

NOTES:

1.) BEARINGS AND COORDINATES SHOWN HEREON ARE BASED ON THE FLORIDA STATE PLANE COORDINATE SYSTEM, WEST ZONE, NORTH AMERICAN DATUM (NAD) OF 1983 WITH 2011 ADJUSTMENT. AS A REFERENCE FOR THIS SURVEY, THE SOUTH LINE OF THE NORTHWEST 1/4 OF SECTION 19, TOWNSHIP 18 SOUTH, RANGE 23 EAST HAS A BEARING OF N89°43'09"W.

2.) ALL DISTANCES SHOWN ARE IN FEET.

3.) LOT CORNERS HAVE BEEN SET AS SHOWN HEREON.

4.) ALL PERMANENT REFERENCE MONUMENTS (P.R.M.'S) HAVE BEEN SET IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER 177, FLORIDA STATUTES.

5.) THE TITLE OPINION FOR THIS PLAT HAS BEEN SUBMITTED BY SEPARATE DOCUMENT.

6). TRACT "A" IS FOR ROAD RIGHT-OF-WAY AND IS DEDICATED TO THE PUBLIC.

7). PROPERTY IS SUBJECT TO RIGHT-OF-WAY EASEMENT RECORDED IN OFFICIAL RECORDS BOOK 75, PAGE 815, AS AFFECTED BY ASSIGNMENT OF RIGHT-OF-WAY EASEMENTS, CONVEYANCE OF FACILITIES AND ASSUMPTION AGREEMENT RECORDED IN OFFICIAL RECORDS BOOK 78, PAGE 249, PUBLIC RECORDS OF SUMTER COUNTY, FLORIDA. (BLANKET TYPE ELECTRIC EASEMENT)

8). MORTGAGEE'S JOINDER AND CONSENT TO PLATTING IS PROVIDED BY SEPARATE INSTRUMENT.

9). ALL PLATTED UTILITY EASEMENTS SHALL PROVIDE THAT SUCH EASEMENTS SHALL ALSO BE EASEMENTS FOR THE CONSTRUCTION, INSTALLATION, MAINTENANCE, AND OPERATION OF CABLE TELEVISION SERVICES; PROVIDED, HOWEVER, NO SUCH CONSTRUCTION, INSTALLATION, MAINTENANCE, AND OPERATION OF CABLE TELEVISION SERVICES SHALL INTERFERE WITH THE FACILITIES AND SERVICES OF AN ELECTRIC, TELEPHONE, GAS, OR OTHER PUBLIC UTILITY. IN THE EVENT A CABLE TELEVISION COMPANY DAMAGES THE FACILITIES OF A PUBLIC UTILITY, IT SHALL BE SOLELY RESPONSIBLE FOR THE DAMAGES. THIS SECTION SHALL NOT APPLY TO THOSE PRIVATE EASEMENTS GRANTED TO OR OBTAINED BY A PARTICULAR ELECTRIC, TELEPHONE, GAS, OR OTHER PUBLIC UTILITY. SUCH CONSTRUCTION, INSTALLATION, MAINTENANCE, AND OPERATION SHALL COMPLY WITH THE NATIONAL ELECTRICAL SAFETY CODE AS ADOPTED BY THE FLORIDA PUBLIC SERVICE COMMISSION.

DEDICATION – COOTIE'S RANCH

KNOW ALL MEN BY THESE PRESENTS, THAT THE UNDERSIGNED, SHEILA M. BERNSTEIN, AS OWNER IN FEE SIMPLE OF THE LANDS DESCRIBED HEREON, HAS CAUSED TO BE MADE THIS PLAT OF COOTIE'S RANCH, A SUBDIVISION OF LAND HEREIN DESCRIBED AND DEDICATES TRACT "A" TO THE PERPETUAL USE OF THE PUBLIC FOR ROAD RIGHT-OF-WAY.

THE 20 FOOT INGRESS/EGRESS AND UTILITY EASEMENT OVER PARCEL 2 IS FOR THE COLLECTIVE BENEFIT OF, USE OF, AND UNIMPEDED ACCESS TO AND FROM PARCEL 1.

WITNESSES: OWNER:

(1)_____
SIGNATURE
PRINT NAME
MAILING ADDRESS

BY:_____
SHEILA M. BERNSTEIN

(2)_____
SIGNATURE
PRINT NAME
MAILING ADDRESS

STATE OF FLORIDA
COUNTY OF_____

THE FOREGOING INSTRUMENT WAS ACKNOWLEDGED BEFORE ME BY MEANS OF ☐ PHYSICAL PRESENCE OR ☐ ONLINE NOTARIZATION, THIS _____ DAY OF _____, 20___ BY SHEILA M. BERNSTEIN, WHO ☐ IS PERSONALLY KNOWN TO ME OR ☐ PRODUCED _____ AS IDENTIFICATION.

NOTARY PUBLIC – STATE OF FLORIDA

SEAL

PRINT NAME:_____
COMMISSION NO.:_____
COMMISSION EXPIRES:_____

CERTIFICATE OF APPROVAL BY CITY OFFICIALS

THIS CERTIFIES THAT THIS PLAT WAS PRESENTED TO THE PROJECT REVIEW COMMITTEE OF THE CITY OF WILDWOOD, SUMTER COUNTY, FLORIDA AND WAS APPROVED BY THE BOARD FOR RECORD ON THIS ____ DAY OF _____, 20____.

ATTEST:

MELANIE D. STRICKLAND
PROJECT REVIEW COMMITTEE COORDINATOR

THIS CERTIFIES THAT THIS PLAT WAS PRESENTED TO THE COMMISSION OF THE CITY OF WILDWOOD, SUMTER COUNTY, FLORIDA, AND WAS APPROVED BY THE COMMISSION FOR RECORD ON THIS ____ DAY OF _____, 20____.

JESSICA BARNES
CITY CLERK

ED WOLF
MAYOR

THIS CERTIFIES THAT THIS PLAT WAS PRESENTED TO THE ATTORNEY FOR THE CITY OF WILDWOOD, SUMTER COUNTY, FLORIDA, AND APPROVED BY HIM OR HER AS TO FORM AND LEGALITY ON THIS ____ DAY OF _____, 20____.

PRINT NAME
CITY OF WILDWOOD, ATTORNEY

SIGNATURE
CITY OF WILDWOOD, ATTORNEY

DEVELOPMENT SERVICES DIRECTOR
MELANIE D. STRICKLAND

PUBLIC WORKS DIRECTOR
JEREMY HOCKENBURY

PRINT NAME
CITY OF WILDWOOD, ENGINEER

SIGNATURE
CITY OF WILDWOOD, ENGINEER

CERTIFICATE OF CLERK

I HEREBY CERTIFY THAT I HAVE EXAMINED THIS PLAT AND FIND THAT IT COMPLIES IN FORM WITH ALL THE REQUIREMENTS OF CHAPTER 177, PART 1, PLATTING, FLORIDA STATUTES AND WAS FILED FOR RECORD ON _____, 20____, AT _____ FILE NUMBER _____ PLAT BOOK_____PAGE _____.

CLERK OF THE COURT IN AND FOR SUMTER COUNTY, FLORIDA

SEAL

PRINT NAME
DEPUTY CLERK

SIGNATURE
DEPUTY CLERK

REVIEWING SURVEYOR'S CERTIFICATE

PURSUANT TO SECTION 177.081, FLORIDA STATUTES, I HEREBY CERTIFY THAT I HAVE PERFORMED A REVIEW OF THIS PLAT FOR CONFORMITY TO CHAPTER 177, PART 1, PLATTING, FLORIDA STATUTES AND THAT SAID PLAT COMPLIES WITH THE TECHNICAL REQUIREMENTS OF THAT CHAPTER; PROVIDED, HOWEVER, THAT MY REVIEW AND CERTIFICATION DOES NOT INCLUDE FIELD VERIFICATION OF ANY POINTS OR MEASUREMENTS SHOWN ON THIS PLAT.

SEAL

SIGNATURE

DATE

PRINT NAME

REGISTRATION NO.

CERTIFICATE OF SURVEYOR

I HEREBY CERTIFY THAT THIS PLAT OF "COOTIE'S RANCH" WAS PREPARED UNDER MY DIRECTION AND SUPERVISION; AND THAT THE PERMANENT REFERENCE MONUMENTS AS SHOWN THEREON WERE PLACED ON THE DAY OF _____, 20____. I FURTHER CERTIFY THAT THIS PLAT COMPLIES WITH THE REQUIREMENTS OF CHAPTER 177, PART 1, PLATTING, FLORIDA STATUTES.

CLYMER FARNER BARLEY SURVEYING, LLC
4450 N.E. 83rd ROAD
WILDWOOD, FLORIDA 34785
LICENSED BUSINESS NO. 8498

SEAL

KAYE M. JAMESON
REGISTRATION NO. 5912

DATE

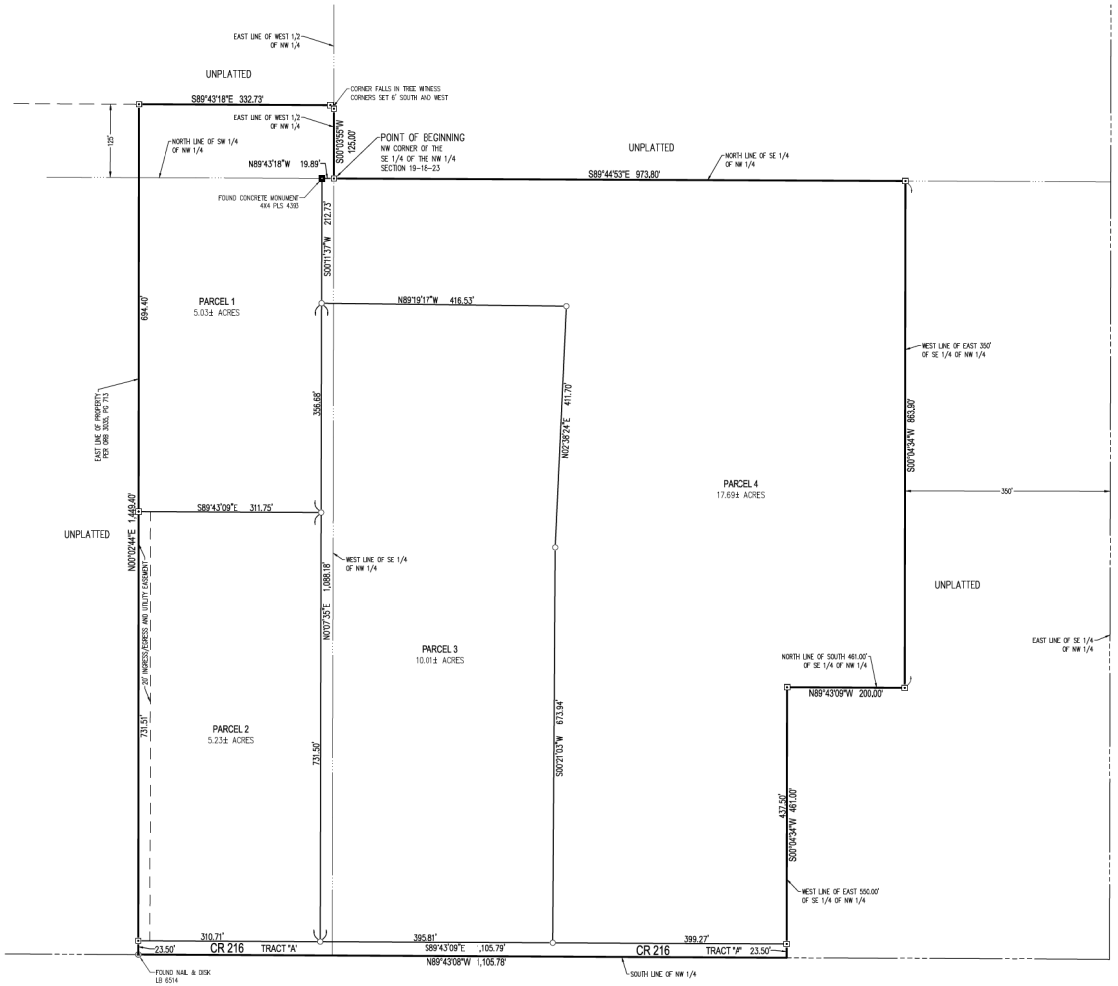
PREPARED BY:
CFB | CLYMER FARNER BARLEY SURVEYING
4450 NE BIRD ROAD - WILDWOOD, FL 34785
(352) 748-5126 LB8498

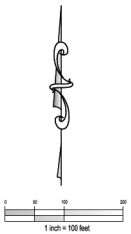
COOTIE'S RANCH

SECTION 19, TOWNSHIP 18 SOUTH, RANGE 23 EAST,
CITY OF WILDWOOD, SUMTER COUNTY, FLORIDA.

SHEET 2 OF 2

PLAT BOOK _____
PAGE _____





LEGEND

⊡	INDICATES 4" X 4" X 24" CONCRETE PERMANENT REFERENCE MONUMENT (P.R.M.) OR 5/8" IRON PIN AND CAP SET LB #6498
○	INDICATES 5/8" IRON PIN AND CAP SET LB #6498
LB	INDICATES LICENSED BUSINESS
ORB	INDICATES OFFICIAL RECORDS BOOK
PLS	INDICATES PROFESSIONAL LICENSED SURVEYOR
PG	INDICATES PAGE
R/W	INDICATES RIGHT-OF-WAY

PREPARED BY:
CFB CLYMER FARNER BARLEY SURVEYING
4450 NE 83RD ROAD • WILDWOOD, FL 34785
(352) 749-3126 LB6498

City of Wildwood, Florida

Planning & Zoning Board/Special Magistrate

The case below was heard on Tuesday, December 3, 2024, by the Special Magistrate. The applicant is seeking a favorable recommendation for a final plat from the City of Wildwood Planning and Zoning Board/Special Magistrate for Cootie's Ranch, a 4-parcel subdivision which includes Tract A for right-of-way dedication to the public along CR 216 and a 20-foot ingress/egress and utility easement for parcel 1 that is located along the western boundary of parcel 2 on 38.55 acres, MOL. The subject property is generally located approximately 0.19 miles east of CR 209, approximately 0.61 miles west of N US 301, north along CR 216.

Case Number: PLAT 2401-001 Cootie's Ranch Final Plat

Applicant(s): Clymer Farner Barley Surveying, LLC

Owner(s): Sheila Bernstein Wright

Parcel(s): D19-027, D19-110, D19-120, & D19-121

Under Land Development Regulation (LDR) § 1.7(B)(1), the Planning and Zoning Board/Special Magistrate has a duty to make a recommendation to the City Commission on all proposed final plats.

Based upon the testimony, evidence, and information presented as to the criteria set forth in LDR § 5.6, the Special Magistrate

☒ recommends approval

☐ recommends approval with the following conditions:

_____

☐ recommends denial

Dated: December 3, 2024

Lindsay C. T. Holt
Special Magistrate City of Wildwood

CITY COMMISSION OF THE CITY OF WILDWOOD

EXECUTIVE SUMMARY

SUBJECT: **PLAT 2407-005 Twisted Oaks Phase 2 Final Plat (Construction Phases III & IV)**

REQUESTED ACTION: The Planning and Zoning Board/Special Magistrate recommends approval.

CONTRACT:

BUDGET IMPACT:

HISTORY/FACTS/ISSUES:

Case Number	PLAT 2407-005
Owner(s)	KL Twisted Oaks LLC
Applicant	James P. Harvey
Acreage	35.399 +/- Acres
Property Location	Property is generally located east of CR 209, west of US 301, south of E C 462, and north of W Clarke St.
Parcel(s)	A portion of D31A218
Date	January 2, 2024

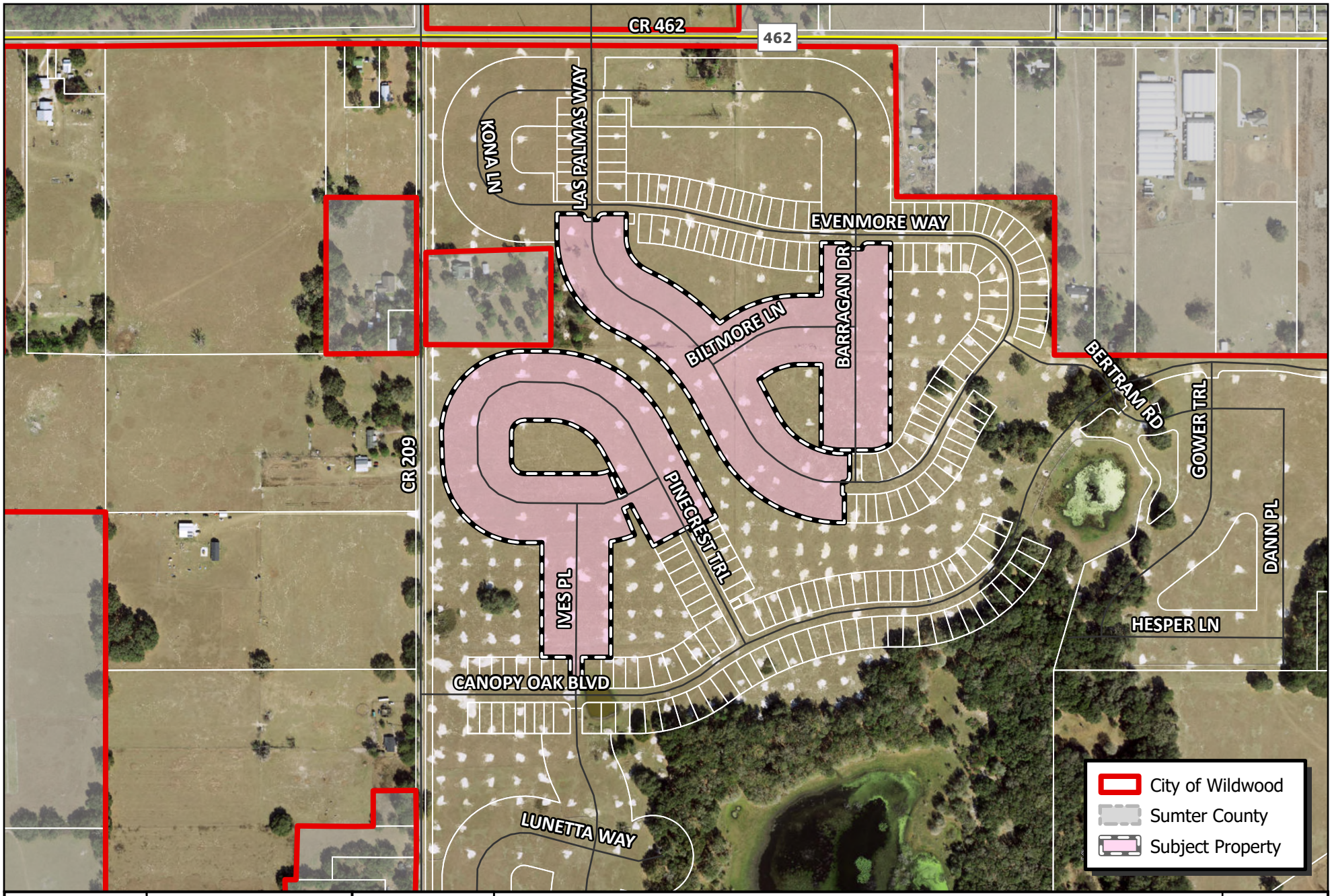
The applicant is seeking approval from the City of Wildwood City Commission for the Twisted Oaks Phase 2 Final Plat (Construction phases III and IV) consisting of 215 lots and 2 tracts, per the attached plans.

There was one outstanding comment regarding provision of the surety bond, however, it has been addressed as of January 3, 2025.

PLAT 2407-005 is expected to meet the criteria set forth in the F.S. 177, Twisted Oaks Planned Development, Land Development Regulations, and will be in line with the goals, objectives and policies of the 2050 Comprehensive Plan.



McKenna Page
Planner I, Development Services



WILDWOOD FLORIDA EST. 1877

CITY OF WILDWOOD
100 North Main Street
Wildwood, FL 34785
Phone: (352) 330-1330
www.wildwood-fl.gov

N
US Feet
0 35 70 140

PLAT 2407-005

TWISTED OAKS PHASE 2 FINAL PLAT

A PORTION OF PARCEL D31A218

MAP 1B
LOCATION MAP
JUL 2024

SUBDIVISION BOND

Bond No. 800188689

KNOW ALL MEN BY THESE PRESENTS, THAT WE KL Twisted Oaks LLC, located at 105 NE 1st Street, Delray Beach, FL 33444 561-682-9500, as Principal, and Atlantic Specialty Insurance Company, 605 Highway 169 North, Suite 800, Plymouth, MN 55441 authorized to do business in the State of Florida, as Surety, are held and firmly bound unto City of Wildwood as Obligee, in the penal sum of Two Million Four Hundred Fifty-Four Thousand Five Hundred Thirty-Five and 53/100 ($2,454,535.53) DOLLARS, lawful money of the United States of America, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, administrators, executors, successors and assigns, jointly and severally, firmly by these presents;

WHEREAS, KL Twisted Oaks LLC has agreed to construct in Twisted Oaks Phases 3 & 4 the following improvements: Infrastructure and Roadways as approved by the Obligee ("the Improvements"); and

WHEREAS, KL Twisted Oaks LLC is required to furnish a good and sufficient bond, conditioned to the proper installation of the Improvements.

NOW, THEREFORE, the condition of this obligation is such that if the Principal, its successors, legal representatives or assigns, shall construct, or have constructed, the Improvements herein described, according to the approved plans, specifications and standards or other requirements established by the City Engineer, and do all incidental work in connection therewith; and if all permits, permit fees, standards, and other regulations, currently in effect have been complied with; then this obligation shall be null and void; otherwise to remain in full force and effect.

If the Principal shall be declared in default by the City, the Surety shall have sixty (60) days from the date of said default within which to take whatever action it deems necessary in order to ensure performance. If, at the expiration of sixty (60) days from the date of said default, no arrangements have been made by the Principal or Surety satisfactory to the City for the completion of the Improvements, then the City shall have the right to complete the Improvements and the Principal and Surety, jointly and severally, shall pay all costs of completing the Improvements to the City, up to the amount of this bond, including, but not limited to, engineering, legal and other costs, together with any damages, either direct, indirect or consequential, which the City may sustain on account of the Principal's default. After the expiration of the aforesaid sixty (60) day period, the City shall have the additional right to contract for the completion of said contract upon which the Principal has defaulted and upon the City's acceptance of the lowest responsible bid for the completion of the Improvements, the Principal and Surety shall, jointly and severally, become immediately liable for the amount of said bid, up to the amount of this bond, and in the event the City is required to commence legal proceedings for the collection thereof, interest shall accrue at the rate of six percent (6%) per annum beginning with the commencement of such legal proceedings. The City, in its discretion, may permit the Surety to complete said contract, in the event of Principal's default.

In the event that the City commences suit for the collection of any sums due hereunder, the obligors and each of them agree to pay all costs incurred by the City including attorney's fees.

IN WITNESS WHEREOF, This instrument has been executed by the duly authorized representative of the Principal and the Surety.

Signed, sealed and dated this 20th day of December , 2024.

KL Twisted Oaks LLC
By: The Kolter Group LLC, a Florida limited liability company

By: _____
Richard Kattoura, Authorized Signatory

Atlantic Specialty Insurance Company

(Seal)

By: _____
Brook T. Smith, Attorney-in-Fact

intact INSURANCE

Power of Attorney

KNOW ALL MEN BY THESE PRESENTS, that ATLANTIC SPECIALTY INSURANCE COMPANY, a New York corporation with its principal office in Plymouth, Minnesota, does hereby constitute and appoint: **Audria R. Ward, Barbara J. Benton, Brett Rosenhaus, Brian S. Turner, Brook T. Smith, Charles J. Nielson, David R. Hoover, Davor Mimica, Deborah S. Neichter, Denise Donelson, Devin J. Phillips, Donald P. Bramlage, Edward T. Ward, F. Danny Gann, James H. Martin, James T. Smith, Jarrett Merlucci, Jason D. Cromwell, Jessica Pamela Reno, Joseph P. Nielson, Justin Vokus, Keith Nicholson, Kevin R. Wojtowicz, Laura D. Mosholder, Michelle D. Liwosz, Patricia Schmaltz, Raymond M. Hundley, Shawn Alan Burton, Tracey C. Brown, William O. Walker**, each individually if there be more than one named, its true and lawful Attorney-in-Fact, to make, execute, seal and deliver, for and on its behalf as surety, any and all bonds, recognizances, contracts of indemnity, and all other writings obligatory in the nature thereof; provided that no bond or undertaking executed under this authority shall exceed in amount the sum of: **unlimited** and the execution of such bonds, recognizances, contracts of indemnity, and all other writings obligatory in the nature thereof in pursuance of these presents, shall be as binding upon said Company as if they had been fully signed by an authorized officer of the Company and sealed with the Company seal. This Power of Attorney is made and executed by authority of the following resolutions adopted by the Board of Directors of ATLANTIC SPECIALTY INSURANCE COMPANY on the twenty-fifth day of September, 2012:

Resolved: That the President, any Senior Vice President or Vice-President (each an "Authorized Officer") may execute for and in behalf of the Company any and all bonds, recognizances, contracts of indemnity, and all other writings obligatory in the nature thereof, and affix the seal of the Company thereto; and that the Authorized Officer may appoint and authorize an Attorney-in-Fact to execute on behalf of the Company any and all such instruments and to affix the Company seal thereto; and that the Authorized Officer may at any time remove any such Attorney-in-Fact and revoke all power and authority given to any such Attorney-in-Fact.

Resolved: That the Attorney-in-Fact may be given full power and authority to execute for and in the name and on behalf of the Company any and all bonds, recognizances, contracts of indemnity, and all other writings obligatory in the nature thereof, and any such instrument executed by any such Attorney-in-Fact shall be as binding upon the Company as if signed and sealed by an Authorized Officer and, further, the Attorney-in-Fact is hereby authorized to verify any affidavit required to be attached to bonds, recognizances, contracts of indemnity, and all other writings obligatory in the nature thereof.

This power of attorney is signed and sealed by facsimile under the authority of the following Resolution adopted by the Board of Directors of ATLANTIC SPECIALTY INSURANCE COMPANY on the twenty-fifth day of September, 2012:

Resolved: That the signature of an Authorized Officer, the signature of the Secretary or the Assistant Secretary, and the Company seal may be affixed by facsimile to any power of attorney or to any certificate relating thereto appointing an Attorney-in-Fact for purposes only of executing and sealing any bond, undertaking, recognizance or other written obligation in the nature thereof, and any such signature and seal where so used, being hereby adopted by the Company as the original signature of such officer and the original seal of the Company, to be valid and binding upon the Company with the same force and effect as though manually affixed.

IN WITNESS WHEREOF, ATLANTIC SPECIALTY INSURANCE COMPANY has caused these presents to be signed by an Authorized Officer and the seal of the Company to be affixed this first day of January, 2023.

ATLANTIC SPECIALTY INSURANCE COMPANY CORPORATE SEAL 1986 NEW YORK

By _____
Sarah A. Kolar, Vice President and General Counsel

STATE OF MINNESOTA
HENNEPIN COUNTY

On this first day of January, 2023, before me personally came Sarah A. Kolar, Vice President and General Counsel of ATLANTIC SPECIALTY INSURANCE COMPANY, to me personally known to be the individual and officer described in and who executed the preceding instrument, and she acknowledged the execution of the same, and being by me duly sworn, that she is the said officer of the Company aforesaid, and that the seal affixed to the preceding instrument is the seal of said Company and that the said seal and the signature as such officer was duly affixed and subscribed to the said instrument by the authority and at the direction of the Company.

THE GREAT SEAL OF THE STATE OF MINNESOTA
ALISON D. NASH-TROUT
NOTARY PUBLIC - MINNESOTA
My Commission Expires
January 31, 2030

_____
Notary Public

I, the undersigned, Secretary of ATLANTIC SPECIALTY INSURANCE COMPANY, a New York Corporation, do hereby certify that the foregoing power of attorney is in full force and has not been revoked, and the resolutions set forth above are now in force.

Signed and sealed. Dated 20th day of December, 2024

ATLANTIC SPECIALTY INSURANCE COMPANY CORPORATE SEAL 1986 NEW YORK

_____
Kara L.B. Barrow, Secretary

This Power of Attorney expires
January 31, 2030

Please direct bond verifications to surety@intactinsurance.com

TWISTED OAKS - PHASE 2

A REPLAT OF TRACTS FD-1, FD-1A, FD-2 AND FD-2A, ACCORDING TO THE PLAT THEREOF AS RECORDED IN PLAT BOOK 21, PAGES 18 THROUGH 18T, OF THE PUBLIC RECORDS OF SUMTER COUNTY, FLORIDA, LYING IN SECTION 31, TOWNSHIP 18 SOUTH, RANGE 23 EAST, CITY OF WILDWOOD, SUMTER COUNTY, FLORIDA

PLAT BOOK _____ PAGE _____
SHEET 1 OF 8 SHEETS

DESCRIPTION:

TRACTS FD-1, FD-1A, FD-2 AND FD-2A, ACCORDING TO THE PLAT THEREOF AS RECORDED IN PLAT BOOK 21, PAGES 18 THROUGH 18T, OF THE PUBLIC RECORDS OF SUMTER COUNTY, FLORIDA.

ALSO DESCRIBED AS

A PARCEL OF LAND LYING IN SECTION 31, TOWNSHIP 18 SOUTH, RANGE 23 EAST, SUMTER COUNTY, FLORIDA, AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGIN AT THE SOUTHWEST CORNER OF LOT 99, TWISTED OAKS, AS RECORDED IN PLAT BOOK 21, PAGES 18 THROUGH 18T, OF THE PUBLIC RECORDS OF SUMTER COUNTY, FLORIDA; THENCE RUN ALONG THE BOUNDARY OF TRACTS P-14, OS-6 AND TRACT FD-4 OF SAID TWISTED OAKS THE FOLLOWING SEVEN (7) COURSES; 1) N.89°53'23"W., A DISTANCE OF 7.75 FEET; 2) NORTHWESTERLY, 645.84 FEET ALONG THE ARC OF A TANGENT CURVE TO THE RIGHT HAVING A RADIUS OF 600.00 FEET AND A CENTRAL ANGLE OF 61°40'24" (CHORD BEARING N.59°03'11"W., 615.11 FEET); 3) N.28°12'59"W., A DISTANCE OF 207.01 FEET; 4) NORTHWESTERLY, 440.40 FEET ALONG THE ARC OF A TANGENT CURVE TO THE LEFT HAVING A RADIUS OF 685.00 FEET AND A CENTRAL ANGLE OF 36°50'11" (CHORD BEARING N.46°38'04"W., 432.85 FEET); 5) NORTHWESTERLY, 506.05 FEET ALONG THE ARC OF A REVERSE CURVE TO THE RIGHT HAVING A RADIUS OF 445.00 FEET AND A CENTRAL ANGLE OF 65°09'21" (CHORD BEARING N.32°28'29"W., 479.22 FEET); 6) N.00°06'12"E., A DISTANCE OF 96.50 FEET; 7) S.89°53'48"E., A DISTANCE OF 95.00 FEET TO A SOUTHWESTERLY CORNER OF TRACT R-1 ALSO BEING THE SOUTHERLY RIGHT-OF-WAY OF EVENMORE WAY OF SAID TWISTED OAKS; THENCE RUN ALONG THE SOUTHERLY BOUNDARY OF SAID TRACT R-1 AND THE SOUTHERLY RIGHT-OF-WAY OF EVENMORE WAY THE FOLLOWING FOUR (4) COURSES: 1) SOUTHEASTERLY, 39.27 FEET ALONG THE ARC OF A TANGENT CURVE TO THE RIGHT HAVING A RADIUS OF 25.00 FEET AND A CENTRAL ANGLE OF 90°00'00" (CHORD BEARING S.44°53'48"E., 35.36 FEET); 2) S.89°53'48"E., A DISTANCE OF 50.00 FEET; 3) NORTHEASTERLY, 39.27 FEET ALONG THE ARC OF A NON-TANGENT CURVE TO THE RIGHT HAVING A RADIUS OF 25.00 FEET AND A CENTRAL ANGLE OF 90°00'00" (CHORD BEARING N.45°06'12"E., 35.36 FEET); 4) S.89°53'48"E., A DISTANCE OF 95.00 FEET TO THE NORTHWEST CORNER OF TRACT P-17 OF SAID TWISTED OAKS; THENCE RUN ALONG THE BOUNDARY OF SAID TRACT P-17 THE FOLLOWING SEVEN (7) COURSES: 1) S.00°06'12"W., A DISTANCE OF 96.50 FEET; 2) SOUTHEASTERLY, 176.26 FEET ALONG THE ARC OF A TANGENT CURVE TO THE LEFT HAVING A RADIUS OF 155.00 FEET AND A CENTRAL ANGLE OF 65°09'21" (CHORD BEARING S.32°28'29"E., 166.92 FEET); 3) SOUTHEASTERLY, 377.05 FEET ALONG THE ARC OF A REVERSE CURVE TO THE RIGHT HAVING A RADIUS OF 975.00 FEET AND A CENTRAL ANGLE OF 22°09'26" (CHORD BEARING S.53°58'27"E., 374.70 FEET); 4) N.55°39'26"E., A DISTANCE OF 36.66 FEET; 5) EASTERLY, 327.72 FEET ALONG THE ARC OF A TANGENT CURVE TO THE RIGHT HAVING A RADIUS OF 545.00 FEET AND A CENTRAL ANGLE OF 34°27'12" (CHORD BEARING N.72°53'01"E., 322.81 FEET); 6) S.89°53'23"E., A DISTANCE OF 87.20 FEET; 7) N.00°06'37"E., A DISTANCE OF 220.64 FEET TO A POINT ON SAID SOUTHERLY BOUNDARY OF SAID TRACT R-1 AND THE SOUTHERLY RIGHT-OF-WAY OF EVENMORE WAY; THENCE RUN ALONG SAID SOUTHERLY BOUNDARY AND RIGHT-OF-WAY LINE THE FOLLOWING FIVE (5) COURSES: 1) S.89°45'49"E., A DISTANCE OF 95.06 FEET; 2) SOUTHEASTERLY, 39.21 FEET ALONG THE ARC OF A TANGENT CURVE TO THE RIGHT HAVING A RADIUS OF 25.00 FEET AND A CENTRAL ANGLE OF 89°52'26" (CHORD BEARING S.44°49'36"E., 35.32 FEET); 3) S.89°38'15"E., A DISTANCE OF 50.00 FEET; 4) NORTHEASTERLY, 39.32 FEET ALONG THE ARC OF A NON-TANGENT CURVE TO THE RIGHT HAVING A RADIUS OF 25.00 FEET AND A CENTRAL ANGLE OF 90°07'34" (CHORD BEARING N.45°10'24"E., 35.39 FEET); 5) S.89°45'49"E., A DISTANCE OF 94.95 FEET TO THE NORTHWEST CORNER OF LOT 71 OF SAID TWISTED OAKS; THENCE RUN ALONG THE WEST BOUNDARY OF SAID LOT 71 AND THE WEST BOUNDARY OF TRACT P-15 OF SAID TWISTED OAKS THE FOLLOWING FOUR (4) COURSES: 1) S.00°06'37"W., A DISTANCE OF 839.83 FEET; 2) WESTERLY, 91.78 FEET ALONG THE ARC OF A NON-TANGENT CURVE TO THE RIGHT HAVING A RADIUS OF 140.00 FEET AND A CENTRAL ANGLE OF 37°33'46" (CHORD BEARING S.71°19'44"W., 90.15 FEET); 3) N.89°53'23"W., A DISTANCE OF 34.65 FEET; 4) S.00°06'37"W., A DISTANCE OF 15.00 FEET TO A POINT ON THE AFORESAID TRACT R-1 ALSO BEING THE NORTHERLY, WESTERLY AND SOUTHERLY RIGHT-OF-WAY LINES OF BARRAGAN DRIVE AND LAS PALMAS WAY OF SAID TWISTED OAKS; THENCE RUN THE FOLLOWING SIX (6) COURSES: 1) N.89°53'23"W., A DISTANCE OF 50.00 FEET TO POINT A; 2) S.00°06'37"W., A DISTANCE OF 95.00 FEET; 3) SOUTHWESTERLY, 39.27 FEET ALONG THE ARC OF A TANGENT CURVE TO THE RIGHT HAVING A RADIUS OF 25.00 FEET AND A CENTRAL ANGLE OF 90°00'00" (CHORD BEARING S.45°06'37"W., 35.36 FEET); 4) N.89°53'23"W., A DISTANCE OF 4.40 FEET; 5) S.00°06'37"W., A DISTANCE OF 50.00 FEET; 6) S.89°53'23"E., A DISTANCE OF 7.75 FEET TO THE NORTHWEST CORNER OF AFORESAID LOT 99 OF TWISTED OAKS; THENCE RUN ALONG THE WEST BOUNDARY OF SAID LOT 99, S.00°06'37"W., A DISTANCE OF 120.00 FEET TO THE **POINT OF BEGINNING**.

CONTAINING 19.288 ACRES, MORE OR LESS.

LESS OUT

A PARCEL OF LAND LYING IN SECTION 31, TOWNSHIP 18 SOUTH, RANGE 23 EAST, SUMTER COUNTY, FLORIDA, AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGIN AT AFORESAID POINT A; THENCE RUN ALONG THE BOUNDARY OF TRACT P-16 OF SAID TWISTED OAKS THE FOLLOWING TEN (10) COURSES: 1) N.89°53'23"W., A DISTANCE OF 29.40 FEET; 2) NORTHWESTERLY, 333.68 FEET ALONG THE ARC OF A TANGENT CURVE TO THE RIGHT HAVING A RADIUS OF 310.00 FEET AND A CENTRAL ANGLE OF 61°40'24" (CHORD BEARING N.59°03'11"W., 317.81 FEET); 3) N.28°12'59"W., A DISTANCE OF 165.83 FEET; 4) N.55°39'26"E., A DISTANCE OF 35.78 FEET; 5) EASTERLY, 153.34 FEET ALONG THE ARC OF A TANGENT CURVE TO THE RIGHT HAVING A RADIUS OF 255.00 FEET AND A CENTRAL ANGLE OF 34°27'12" (CHORD BEARING N.72°53'01"E., 151.04 FEET); 6) S.89°53'23"E., A DISTANCE OF 87.20 FEET; 7) S.00°06'37"W., A DISTANCE OF 344.50 FEET; 8) EASTERLY, 92.09 FEET ALONG THE ARC OF A NON-TANGENT CURVE TO THE LEFT HAVING A RADIUS OF 295.00 FEET AND A CENTRAL ANGLE OF 17°53'07" (CHORD BEARING S.80°56'49"E., 91.71 FEET); 9) S.89°53'23"E., A DISTANCE OF 29.40 FEET; 10) S.00°06'37"W., A DISTANCE OF 15.00 FEET TO THE **POINT OF BEGINNING**.

CONTAINING 1.486 ACRES, MORE OR LESS.

TOGETHER WITH

A PARCEL OF LAND LYING IN SECTION 31, TOWNSHIP 18 SOUTH, RANGE 23 EAST, SUMTER COUNTY, FLORIDA, AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGIN AT THE SOUTHEAST CORNER OF TRACT P-11, OF SAID TWISTED OAKS; THENCE RUN ALONG THE BOUNDARY OF TRACTS P-11, OS-6 AND P-14 THE FOLLOWING EIGHT (8) COURSES: 1) N.00°06'59"E., A DISTANCE OF 480.00 FEET; 2) N.89°57'22"W., A DISTANCE OF 72.76 FEET; 3) NORTHWESTERLY, 541.86 FEET ALONG THE ARC OF A TANGENT CURVE TO THE RIGHT HAVING A RADIUS OF 345.00 FEET AND A CENTRAL ANGLE OF 89°59'23" (CHORD BEARING N.44°57'40"W., 487.86 FEET); 4) N.00°02'01"E., A DISTANCE OF 113.96 FEET; 5) NORTHEASTERLY, 543.70 FEET ALONG THE ARC OF A TANGENT CURVE TO THE RIGHT HAVING A RADIUS OF 345.00 FEET AND A CENTRAL ANGLE OF 90°17'44" (CHORD BEARING N.45°10'53"E., 489.16 FEET); 6) S.89°40'15"E., A DISTANCE OF 105.16 FEET; 7) SOUTHEASTERLY, 584.56 FEET ALONG THE ARC OF A TANGENT CURVE TO THE RIGHT HAVING A RADIUS OF 545.00 FEET AND A CENTRAL ANGLE OF 61°27'16" (CHORD BEARING S.58°56'37"E., 556.94 FEET); 8) S.28°12'59"E., A DISTANCE OF 461.30 FEET TO THE NORTHERLY CORNER OF LOT 191 OF SAID TWISTED OAKS; THENCE RUN ALONG THE NORTHERLY BOUNDARY OF LOTS 190 AND 191 AND TRACT R-1 OF SAID TWISTED OAKS THE FOLLOWING THREE (3) COURSES: 1) S.61°47'01"W., A DISTANCE OF 120.00 FEET; 2) N.28°12'59"W., A DISTANCE OF 15.53 FEET; 3) S.61°47'01"W., A DISTANCE OF 170.00 FEET TO THE WESTERLY CORNER OF SAID LOT 190; THENCE RUN ALONG THE BOUNDARY OF SAID TWISTED OAKS THE FOLLOWING FIVE (5) COURSES: 1) N.28°12'59"W., A DISTANCE OF 195.50 FEET; 2) SOUTHWESTERLY, 35.07 FEET ALONG THE ARC OF A NON-TANGENT CURVE TO THE RIGHT HAVING A RADIUS OF 325.00 FEET AND A CENTRAL ANGLE OF 06°11'00" (CHORD BEARING S.64°52'31"W., 35.06 FEET); 3) S.22°01'59"E., A DISTANCE OF 120.00 FEET; 4) WESTERLY, 102.39 FEET ALONG THE ARC OF A NON-TANGENT CURVE TO THE RIGHT HAVING A RADIUS OF 445.00 FEET AND A CENTRAL ANGLE OF 13°11'00" (CHORD BEARING S.74°33'31"W., 102.17 FEET); 5) S.00°02'38"W., A DISTANCE OF 485.35 FEET TO THE SOUTHWEST CORNER OF SAID TRACT P-12; THENCE RUN ALONG THE NORTH BOUNDARY OF LOTS 175 AND 176 OF SAID TWISTED OAKS, N.89°57'22"W., A DISTANCE OF 120.00 FEET TO THE NORTHWEST CORNER OF SAID LOT 175; THENCE RUN ALONG THE WEST BOUNDARY OF SAID LOT 175, S.00°02'38"W., A DISTANCE OF 105.00 FEET TO THE WESTERLY CORNER OF SAID LOT 175; THENCE RUN ALONG THE NORTH BOUNDARY OF AFORESAID TRACT R-1 ALSO BEING THE NORTHERLY RIGHT-OF-WAY LINE OF CANOPY OAK BOULEVARD OF SAID TWISTED OAKS, N.89°57'22"W., A DISTANCE OF 50.00 FEET TO THE EASTERLY CORNER OF LOT 174 OF SAID TWISTED OAKS; THENCE RUN ALONG THE EAST BOUNDARY OF SAID LOT 174, N.00°02'38"E., A DISTANCE OF 105.00 FEET TO THE NORTHEAST CORNER OF SAID LOT 174; THENCE RUN ALONG THE NORTH BOUNDARY OF LOTS 173 AND 174, N.89°57'22"W., A DISTANCE OF 120.00 FEET TO THE **POINT OF BEGINNING**.

CONTAINING 19.432 ACRES, MORE OR LESS.

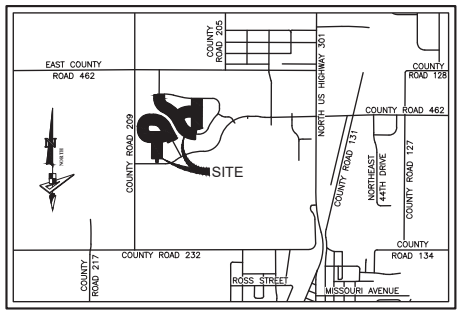
LESS OUT

A PARCEL OF LAND LYING IN SECTION 31, TOWNSHIP 18 SOUTH, RANGE 23 EAST, SUMTER COUNTY, FLORIDA, AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCE AT AFORESAID POINT B; THENCE N.18°32'21"W. A DISTANCE OF 50.11 FEET TO THE **POINT OF BEGINNING**. THENCE RUN ALONG THE BOUNDARY OF TRACT P-13 OF SAID TWISTED OAKS THE FOLLOWING TEN (10) COURSES:1) S.22°40'10"E., A DISTANCE OF 120.00 FEET; 2) NORTHEASTERLY, 26.62 FEET ALONG THE ARC OF A NON-TANGENT CURVE TO THE LEFT HAVING A RADIUS OF 275.00 FEET AND A CENTRAL ANGLE OF 05°32'49" (CHORD BEARING N.64°33'26"E., 26.61 FEET); 3) N.28°12'59"W., A DISTANCE OF 200.27 FEET; 4) NORTHWESTERLY, 273.51 FEET ALONG THE ARC OF A TANGENT CURVE TO THE LEFT HAVING A RADIUS OF 255.00 FEET AND A CENTRAL ANGLE OF 61°27'16" (CHORD BEARING N.58°56'37"W., 260.59 FEET); 5) N.89°40'15"W., A DISTANCE OF 105.16 FEET; 6) SOUTHWESTERLY, 86.68 FEET ALONG THE ARC OF A TANGENT CURVE TO THE LEFT HAVING A RADIUS OF 55.00 FEET AND A CENTRAL ANGLE OF 90°17'44" (CHORD BEARING S.45°10'53"W., 77.98 FEET); 7) S.00°02'01"W., A DISTANCE OF 113.96 FEET; 8) SOUTHEASTERLY, 86.38 FEET ALONG THE ARC OF A TANGENT CURVE TO THE LEFT HAVING A RADIUS OF 55.00 FEET AND A CENTRAL ANGLE OF 89°59'23" (CHORD BEARING S.44°57'40"E., 77.77 FEET); 9) S.89°57'22"E., A DISTANCE OF 293.36 FEET; 10) EASTERLY, 61.45 FEET ALONG THE ARC OF A NON-TANGENT CURVE TO THE LEFT HAVING A RADIUS OF 155.00 FEET AND A CENTRAL ANGLE OF 22°42'48" (CHORD BEARING N.78°41'14"E., 61.04 FEET) TO THE **POINT OF BEGINNING**.

CONTAINING 1.835 ACRES, MORE OR LESS.

NOTICE:
THIS PLAT, AS RECORDED IN ITS GRAPHIC FORM, IS THE OFFICIAL DEPICTION OF THE SUBDIVIDED LANDS DESCRIBED HEREIN AND WILL IN NO CIRCUMSTANCES BE SUPPLANTED IN AUTHORITY BY ANY OTHER GRAPHIC OR DIGITAL FORM OF THE PLAT. THERE MAY BE ADDITIONAL RESTRICTIONS THAT ARE NOT RECORDED ON THIS PLAT THAT MAY BE FOUND IN THE PUBLIC RECORDS OF THIS COUNTY.



LOCATION MAP
CITY OF WILDWOOD, SUMTER COUNTY, FLORIDA
SCALE: 1" = 2000'

NOTES:

1) ALL PLATTED UTILITY EASEMENTS SHALL PROVIDE THAT SUCH EASEMENTS SHALL ALSO BE EASEMENTS FOR THE CONSTRUCTION, INSTALLATION, MAINTENANCE, AND OPERATION OF CABLE TELEVISION SERVICES; PROVIDED, HOWEVER, NO SUCH CONSTRUCTION, INSTALLATION, MAINTENANCE, AND OPERATION OF CABLE TELEVISION SERVICES SHALL INTERFERE WITH THE FACILITIES AND SERVICES OF AN ELECTRIC, TELEPHONE, GAS OR OTHER PUBLIC UTILITY. IN THE EVENT A CABLE TELEVISION COMPANY DAMAGES THE FACILITIES OF A PUBLIC UTILITY, IT SHALL BE SOLELY RESPONSIBLE FOR THE DAMAGES. THIS SECTION SHALL NOT APPLY TO THOSE PRIVATE EASEMENTS GRANTED TO OR OBTAINED BY A PARTICULAR ELECTRIC, TELEPHONE, GAS OR OTHER PUBLIC UTILITY. SUCH CONSTRUCTION, INSTALLATION, MAINTENANCE, AND OPERATION SHALL COMPLY WITH THE NATIONAL ELECTRICAL SAFETY CODE AS ADOPTED BY THE FLORIDA PUBLIC SERVICE COMMISSION.
2) ALL DISTANCES SHOWN ARE IN FEET.
3) BEARINGS SHOWN HEREON ARE BASED ON THE NORTH BOUNDARY OF THE SOUTHWEST 1/4 OF SECTION 31, HAVING A GRID BEARING OF S.89°53'21"E. THE GRID BEARINGS AS SHOWN HEREON REFER TO THE STATE PLANE COORDINATE SYSTEM, NORTH AMERICAN DATUM OF 1983 (NAD 83-2011 ADJUSTMENT) FOR THE WEST ZONE OF FLORIDA.
4) WITH REFERENCE TO CURVILINEAR LOTS, NON-RADIAL LINES HAVE BEEN DESIGNATED BY (NR). ALL OTHER LINES ARE RADIAL.
5) LOT CORNERS WILL BE SET PRIOR TO THE TRANSFER OF ANY LOT OR PRIOR TO THE EXPIRATION OF THE BOND OR OTHER SURETY.
6) PERMANENT CONTROL POINTS (P.C.P.'S) WILL BE SET WITHIN ONE YEAR OF THE DATE THIS PLAT WAS RECORDED OR PRIOR TO THE EXPIRATION OF THE BOND OR SURETY.
7) ALL PERMANENT REFERENCE MONUMENTS (P.R.M.'S) HAVE BEEN SET IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER 177, FLORIDA STATUES.
8) THE PROPERTY INFORMATION REPORT FOR THIS PLAT HAS BEEN SUBMITTED BY SEPARATE DOCUMENT.
9) EVERY LOT HAS A 5.00 FOOT WIDE DRAINAGE AND UTILITY EASEMENT ON EACH SIDE OF THE LOT UNLESS OTHERWISE NOTED OR DEPICTED.
10) THE RADIUS ON THE EXTERIOR OF WETLANDS BUFFER IS 25.00' UNLESS NOTED OR DEPICTED.
11) LOTS 216 THROUGH 430 ARE DEPICTED ON THIS PLAT FOR A TOTAL OF 215 LOTS. TRACTS R-1 AND R-2 ARE DEPICTED ON THIS PLAT FOR A TOTAL OF 2 TRACTS.
12) MORTGAGEE'S JOINDER AND CONSENT TO DEDICATION RECORDED BY SEPARATE INSTRUMENT IN OFFICIAL RECORDS BOOK _____, PAGE _____ OF THE PUBLIC RECORDS OF SUMTER COUNTY, FLORIDA
13) MORTGAGEE'S JOINDER AND CONSENT TO DEDICATION RECORDED BY SEPARATE INSTRUMENT IN OFFICIAL RECORDS BOOK _____, PAGE _____ OF THE PUBLIC RECORDS OF SUMTER COUNTY, FLORIDA
14) AT THE TIME OF RECORDING THIS PLAT IS AFFECTED BY THE FOLLOWING RECORDED EASEMENTS FOUND IN THE PUBLIC RECORDS OF SUMTER COUNTY, FLORIDA: (WHICH THIS REFERENCE DOES NOT ACT TO REIMPOSE SAME)
a. RESTRICTIONS, COVENANTS, CONDITIONS, EASEMENTS AND OTHER MATTERS AS CONTAINED ON THE PLAT OF TWISTED OAKS, RECORDED IN PLAT BOOK 21, PAGE 18, 18A THROUGH 18T.

REVIEWING SURVEYOR'S CERTIFICATE:

PURSUANT TO SECTION 177.081, FLORIDA STATUTES, I HEREBY CERTIFY THAT I HAVE PERFORMED A REVIEW OF THIS PLAT FOR CONFORMITY TO CHAPTER 177, FLORIDA STATUTES AND THAT SAID PLAT COMPLIES WITH THE TECHNICAL REQUIREMENTS OF THAT CHAPTER; PROVIDED, HOWEVER, THAT MY REVIEW AND CERTIFICATION DOES NOT INCLUDE FIELD VERIFICATION OF ANY POINTS OR MEASUREMENTS SHOWN ON THIS PLAT.

SIGNATURE _____ DATE _____

RONALD W. HERR, P.L.S. **REGISTRATION NO.**
WADE SURVEYING, INC.

CERTIFICATE OF APPROVAL BY CITY OFFICIALS:

THIS CERTIFIES THAT THIS PLAT WAS PRESENTED TO THE PROJECT REVIEW COMMITTEE OF THE CITY OF WILDWOOD, SUMTER COUNTY, FLORIDA AND WAS APPROVED BY THE BOARD FOR RECORD ON THIS __ DAY OF _____, 2024.

ATTEST: _____
MELANIE D. STRICKLAND
PROJECT REVIEW COMMITTEE COORDINATOR

THIS CERTIFIES THAT THIS PLAT WAS PRESENTED TO THE COMMISSION OF THE CITY OF WILDWOOD, SUMTER COUNTY, FLORIDA, AND WAS APPROVED BY THE COMMISSION FOR RECORD ON THIS __ DAY OF _____, 2024.

JESSICA BARNES, CITY CLERK — ED WOLF, MAYOR

THIS CERTIFIES THAT THIS PLAT WAS PRESENTED TO THE ATTORNEY FOR THE CITY OF WILDWOOD, SUMTER COUNTY, FLORIDA, AND APPROVED BY HIM OR HER AS TO FORM AND LEGALITY ON THIS _____ DAY OF _____, 2024.

MELANIE D. STRICKLAND, DEVELOPMENT SERVICES DIRECTOR — JEREMY HOCKENBURY, PUBLIC WORKS DIRECTOR

PRINT NAME, CITY OF WILDWOOD, ENGINEER — SIGNATURE, CITY OF WILDWOOD, ENGINEER

PRINT NAME, CITY OF WILDWOOD, ATTORNEY — SIGNATURE, CITY OF WILDWOOD, ATTORNEY

DEDICATION AND GRANT OF EASEMENTS:

THIS IS TO CERTIFY THAT KL TWISTED OAKS, LLC ("OWNER"), IS THE FEE SIMPLE OWNER OF THE LANDS DESCRIBED IN THIS PLAT KNOWN AS TWISTED OAKS - PHASE 2, AND HEREBY DEDICATES THE LANDS SUBJECT TO THIS PLAT AS FOLLOWS:

1. TO THE TWISTED OAKS POINTE COMMUNITY DEVELOPMENT DISTRICT, AND ITS SUCCESSORS AND ASSIGNS (TOGETHER, "CDD":

a. TRACTS R-1 AND R-2 FOR RIGHT-OF-WAY PURPOSES. THE CDD SHALL HAVE THE RIGHT AND OBLIGATION TO MAINTAIN SUCH TRACTS, GOVERNMENTAL ENTITIES, INCLUDING EMERGENCY PERSONNEL AND VEHICLES, AS WELL AS UTILITY PROVIDERS AND UNITED STATES POSTAL SERVICE MAIL CARRIERS, SHALL HAVE A NON-EXCLUSIVE EASEMENT OVER ALL SUCH RIGHTS-OF-WAY FOR THE PURPOSES OF PERFORMING THEIR OFFICIAL DUTIES.

b. NON-EXCLUSIVE, PERPETUAL EASEMENTS OVER ALL DRAINAGE EASEMENTS ("D.E.") WITH THE RIGHTS TO ACCESS, CONSTRUCT, ACQUIRE, OWN, OPERATE, MAINTAIN, REPAIR AND REPLACE ANY STORMWATER IMPROVEMENTS WITHIN SUCH EASEMENTS. THE CDD SHALL HAVE THE RIGHT AND OBLIGATION TO MAINTAIN SUCH IMPROVEMENTS.

c. NON-EXCLUSIVE, PERPETUAL EASEMENTS OVER ALL UTILITY EASEMENTS ("U.E.") IDENTIFIED HEREON INCLUDING THE RIGHT OF ACCESS FOR CDD PURPOSES, AND THE RIGHT AND OBLIGATION TO CONSTRUCT, ACQUIRE, OWN, AND TRANSFER ANY WATER, SEWER AND RECLAIM UTILITIES WITHIN SUCH EASEMENTS.

d. THE CDD MAY INSTALL AND/OR ACQUIRE WATER, SEWER AND RECLAIM UTILITIES WITHIN TRACTS R-1 AND R-2 AND TRANSFER THEM TO THE CITY UPON COMPLETION, SUBJECT TO THE CITY'S APPROVAL PROCESS. AS A POINT OF CLARIFICATION, THE CDD SHALL NOT, AND IS NOT INTENDED TO BE, A UTILITY PROVIDER FOR WATER, SEWER AND RECLAIM UTILITIES, AND INSTEAD INTENDS ONLY TO FINANCE THE INITIAL INSTALLATION OF SUCH UTILITIES AND CONVEY THEM TO THE CITY UPON COMPLETION

2. TO THE CITY OF WILDWOOD, FLORIDA ("CITY"), AND ITS SUCCESSORS AND ASSIGNS:

a. NON-EXCLUSIVE EASEMENTS FOR GOVERNMENTAL PURPOSES OVER TRACTS R-1 AND R-2 FOR RIGHTS-OF-WAY ACCESS, UTILITY EASEMENTS AND DRAINAGE EASEMENTS. EXCEPT AS OTHERWISE STATED HEREIN, THE CITY SHALL HAVE THE RIGHT BUT NOT THE OBLIGATION TO MAINTAIN AND REPAIR ANY IMPROVEMENTS THEREON.

3. ALL UTILITY EASEMENTS SHOWN ON THIS PLAT SHALL ALSO BE EASEMENTS FOR THE CONSTRUCTION, INSTALLATION, MAINTENANCE, AND OPERATION OF CABLE TELEVISIONS SERVICES IN THE MANNER AND SUBJECT TO THE PROVISIONS OF CHAPTER 177, PART 1, SECTION 177.091(28) OF THE FLORIDA STATUTES; HOWEVER, ONLY CABLE TELEVISION SERVICE PROVIDERS SPECIFICALLY AUTHORIZED BY THE UNDERSIGNED OWNERS, THEIR SUCCESSORS AND ASSIGNS, TO SERVE THE LANDS SHOWN ON THIS PLAT, SHALL HAVE THE BENEFIT OF SAID CABLE TELEVISION SERVICE EASEMENTS.

4. ALL LANDS SUBJECT TO THIS PLAT THAT ARE NOT OTHERWISE DEDICATED ABOVE ARE HEREBY RESERVED BY THE OWNER FOR FUTURE USES.

5. TO ALL UTILITY PROVIDERS, PUBLIC OR PRIVATE:

a. NON-EXCLUSIVE EASEMENTS OVER ALL UTILITY EASEMENTS AND AS SHOWN ON THE PLAT HEREIN FOR THE RIGHTS OVER THE ROADS FOR INSTALLATION, OPERATION, MAINTENANCE, AND REPAIR OF ELECTRIC FACILITIES.

IN WITNESS WHEREOF, THE UNDERSIGNED OWNERS HAS EXECUTED THIS PLAT ON THE ___ DAY OF ____, 2024.

KL TWISTED OAKS, LLC, A FLORIDA LIMITED LIABILITY COMPANY

BY: _____ SIGNATURE — _____ SIGNATURE

_____ AUTHORIZED SIGNATORY — _____ PRINT NAME — _____ PRINT NAME

_____ ADDRESS — _____ ADDRESS

IN WITNESS WHEREOF, THE UNDERSIGNED OWNER HAS EXECUTED THIS PLAT ON THE ___ DAY OF _____, 2024. TWISTED OAKS POINTE COMMUNITY DEVELOPMENT DISTRICT ("CDD")

BY: _____ SIGNATURE — _____ SIGNATURE

_____ AUTHORIZED SIGNATORY — _____ PRINT NAME — _____ PRINT NAME

_____ ADDRESS — _____ ADDRESS

NOTARY ACKNOWLEDGEMENT:

STATE OF _____, COUNTY OF _____) SS

THE FOREGOING DEDICATION WAS ACKNOWLEDGED BEFORE ME BY MEANS OF (__) PHYSICAL PRESENCE OR (__) ONLINE NOTARIZATION, THIS ____ DAY OF _____, 2024, BY JAMES P. HARVEY, AS THE AUTHORIZED SIGNATORY, OF KL TWISTED OAKS LLC, A FLORIDA LIMITED LIABILITY COMPANY, HE/SHE IS PERSONALLY KNOWN TO ME OR PRODUCED _____ AS IDENTIFICATION.

_____ NOTARY PUBLIC, STATE OF FLORIDA — _____ MY COMMISSION EXPIRES:

_____ TYPE OF IDENTIFICATION PRODUCED — _____ PRINTED NAME OF NOTARY — _____ COMMISSION NUMBER:

NOTARY ACKNOWLEDGEMENT:

STATE OF _____, COUNTY OF _____) SS

THE FOREGOING DEDICATION WAS ACKNOWLEDGED BEFORE ME BY MEANS OF (__) PHYSICAL PRESENCE OR (__) ONLINE NOTARIZATION, THIS ____ DAY OF _____, 2024, BY _____, AS _____ OF TWISTED OAKS POINTE COMMUNITY DEVELOPMENT DISTRICT "CDD", HE/SHE IS PERSONALLY KNOWN TO ME OR PRODUCED _____ AS IDENTIFICATION.

_____ NOTARY PUBLIC, STATE OF FLORIDA — _____ MY COMMISSION EXPIRES:

_____ TYPE OF IDENTIFICATION PRODUCED — _____ PRINTED NAME OF NOTARY — _____ COMMISSION NUMBER:

CERTIFICATE OF CLERK OF COURT:

I HEREBY CERTIFY THAT I HAVE EXAMINED THIS PLAT AND FIND THAT IT COMPLIES IN FORM WITH ALL THE REQUIREMENTS OF CHAPTER 177, FLORIDA STATUTES AND WAS FILED FOR RECORD ON _____, 2024, AT _____ FILE NUMBER _____, PLAT BOOK _____ PAGE _____.
CLERK OF THE COURT IN AND FOR SUMTER COUNTY, FLORIDA

_____ PRINT NAME, DEPUTY CLERK — _____ SIGNATURE, DEPUTY CLERK

CERTIFICATE OF SURVEYOR:

I HEREBY CERTIFY THAT THIS PLAT OF TWISTED OAKS - PHASE 2 WAS PREPARED UNDER MY DIRECTION AND SUPERVISION; AND THAT THE PERMANENT REFERENCE MONUMENTS AS SHOWN HEREON WERE PLACED ON THE 8TH DAY OF APRIL, 2024; I FURTHER CERTIFY THAT THIS PLAT COMPLIES WITH THE REQUIREMENTS OF CHAPTER 177, FLORIDA STATUES.

_____ DAVID MAXWELL, PROFESSIONAL LAND SURVEYOR NO. LS7311 — _____ DATE:

GEOPOINT SURVEYING, INC. (LICENSED BUSINESS NUMBER LB7768)
528 NORTHLAKE BOULEVARD, STE. 1040, ALTAMONTE SPRINGS, FLORIDA 32701

LEGEND:

⊕ ----------	INDICATES FOUND (P.R.M.) PERMANENT REFERENCE MONUMENT 4"X4" CONCRETE MONUMENT WITH DISK STAMPED "PRM LB7768" UNLESS OTHERWISE NOTED.
■ ----------	INDICATES SET (P.R.M.) PERMANENT REFERENCE MONUMENT 4"X4" CONCRETE MONUMENT WITH DISK STAMPED "PRM LB7768" UNLESS OTHERWISE NOTED.
◉ ----------	INDICATES (P.C.P.) PERMANENT CONTROL POINT STAMPED "PCP LB7768"
● ----------	LOT CORNER OR CHANGE OF DIRECTION
C.C.R. ----------	CERTIFIED CORNER RECORDS
U.E. ----------	UTILITY EASEMENT
P.U.E. ----------	DRAINAGE EASEMENT
D.E. ----------	DRAINAGE EASEMENT
PC ----------	POINT OF CURVATURE
PT ----------	POINT OF TANGENCY
PRC ----------	POINT OF REVERSE CURVATURE
PI ----------	POINT OF INTERSECTION
LS ----------	LICENSE SURVEYOR
LB ----------	LICENSE BUSINESS
O.R. ----------	OFFICIAL RECORDS BOOK

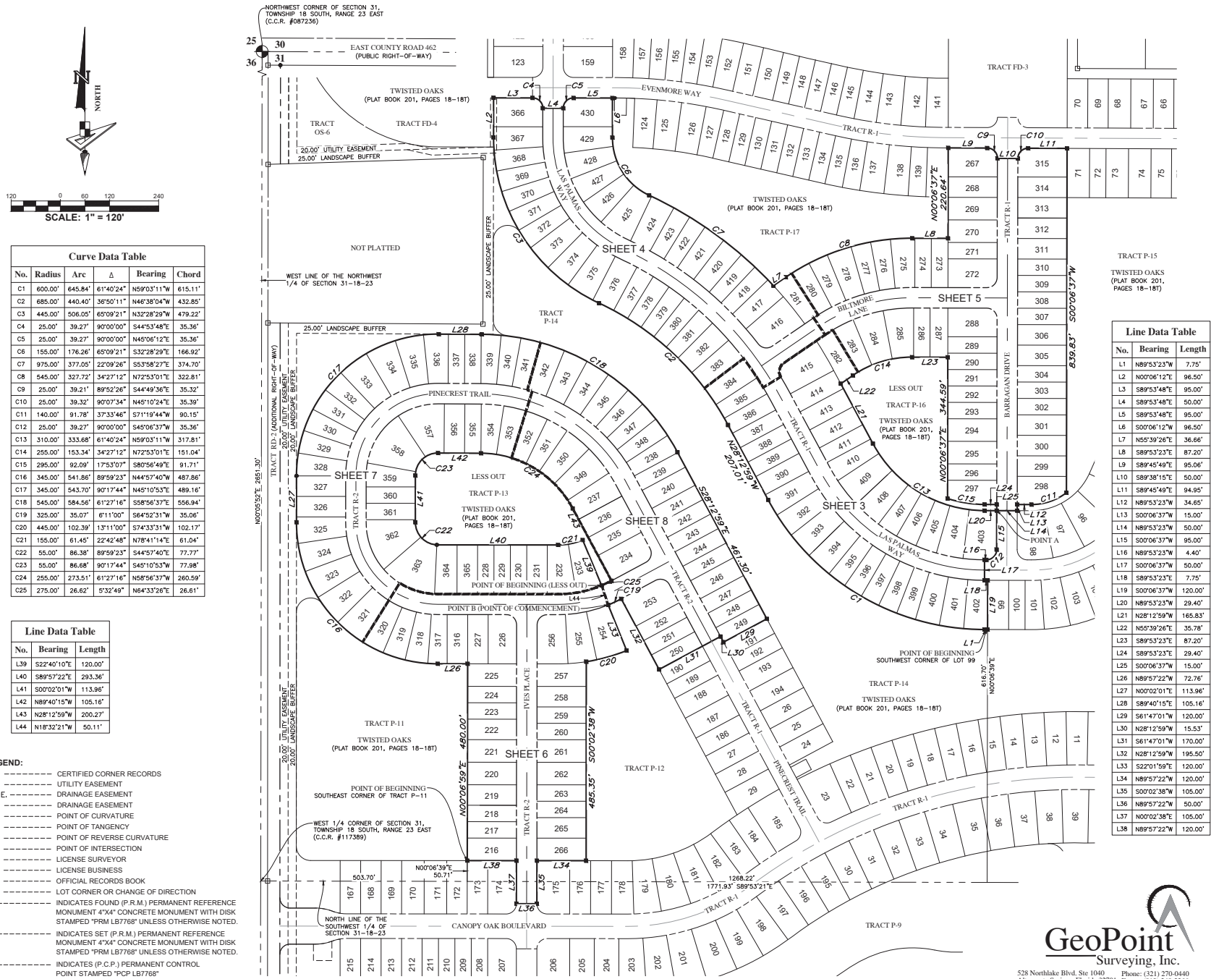
GeoPoint Surveying, Inc.
528 Northlake Blvd. Ste 1040
Altamonte Springs, Florida 32701
www.geopointsurvey.com
Phone: (321) 270-0440
Fax: (813) 248-2266
Licensed Business Number LB 7768

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TWISTED OAKS - PHASE 2

A REPLAT OF TRACTS FD-1, FD-1A, FD-2 AND FD-2A, ACCORDING TO THE PLAT THEREOF AS RECORDED IN PLAT BOOK 21, PAGES 18 THROUGH 18T, OF THE PUBLIC RECORDS OF SUMTER COUNTY, FLORIDA, LYING IN SECTION 31, TOWNSHIP 18 SOUTH, RANGE 23 EAST, CITY OF WILDWOOD, SUMTER COUNTY, FLORIDA

PLAT BOOK _____ PAGE _____
SHEET 2 OF 8 SHEETS
KEY MAP



SCALE: 1" = 120'

Curve Data Table					
No.	Radius	Arc	Δ	Bearing	Chord
C1	600.00'	645.84'	61°40'24"	N59°03'11"W	615.11'
C2	685.00'	440.40'	36°50'11"	N46°38'04"W	432.85'
C3	445.00'	506.05'	65°09'21"	N32°28'29"W	479.22'
C4	25.00'	39.27'	90°00'00"	S44°53'48"E	35.36'
C5	25.00'	39.27'	90°00'00"	N45°06'12"E	35.36'
C6	155.00'	176.26'	65°09'21"	S32°28'29"E	166.92'
C7	975.00'	377.05'	22°09'26"	S53°58'27"E	374.70'
C8	545.00'	327.72'	34°27'12"	N72°53'01"E	322.81'
C9	25.00'	39.21'	89°52'26"	S44°49'36"E	35.32'
C10	25.00'	39.32'	90°07'34"	N45°10'24"E	35.39'
C11	140.00'	91.78'	37°33'46"	S71°19'44"W	90.15'
C12	25.00'	39.27'	90°00'00"	S45°06'37"W	35.36'
C13	310.00'	333.68'	61°40'24"	N59°03'11"W	317.81'
C14	255.00'	153.34'	34°27'12"	N72°53'01"E	151.04'
C15	295.00'	92.09'	17°53'07"	S80°56'49"E	91.71'
C16	345.00'	541.86'	89°59'23"	N44°57'40"W	487.86'
C17	345.00'	543.70'	90°17'44"	N45°10'53"E	489.16'
C18	545.00'	584.56'	61°27'16"	S58°56'37"E	556.94'
C19	325.00'	35.07'	6°11'00"	S64°52'31"W	35.06'
C20	445.00'	102.39'	13°11'00"	S74°33'31"W	102.17'
C21	155.00'	61.45'	22°42'48"	N78°41'14"E	61.04'
C22	55.00'	86.38'	89°59'23"	S44°57'40"E	77.77'
C23	55.00'	86.68'	90°17'44"	S45°10'53"W	77.98'
C24	255.00'	273.51'	61°27'16"	N58°56'37"W	260.59'
C25	275.00'	26.62'	5°32'49"	N64°33'26"E	26.61'

Line Data Table		
No.	Bearing	Length
L39	S22°40'10"E	120.00'
L40	S89°57'22"E	293.36'
L41	S00°02'01"W	113.96'
L42	N89°40'15"W	105.16'
L43	N28°12'59"W	200.27'
L44	N18°32'21"W	50.11'

Line Data Table		
No.	Bearing	Length
L1	N89°53'23"W	7.75'
L2	N00°06'12"E	96.50'
L3	S89°53'48"E	95.00'
L4	S89°53'48"E	50.00'
L5	S89°53'48"E	95.00'
L6	S00°06'12"W	96.50'
L7	N55°39'26"E	36.66'
L8	S89°53'23"E	87.20'
L9	S89°45'49"E	95.06'
L10	S89°38'15"E	50.00'
L11	S89°45'49"E	94.95'
L12	N89°53'23"W	34.65'
L13	S00°06'37"W	15.00'
L14	N89°53'23"W	50.00'
L15	S00°06'37"W	95.00'
L16	N89°53'23"W	4.40'
L17	S00°06'37"W	50.00'
L18	S89°53'23"E	7.75'
L19	S00°06'37"W	120.00'
L20	N89°53'23"W	29.40'
L21	N28°12'59"W	165.83'
L22	N55°39'26"E	35.78'
L23	S89°53'23"E	87.20'
L24	S89°53'23"E	29.40'
L25	S00°06'37"W	15.00'
L26	N89°57'22"W	72.76'
L27	N00°02'01"E	113.96'
L28	S89°40'15"E	105.16'
L29	S61°47'01"W	120.00'
L30	N28°12'59"W	15.53'
L31	S61°47'01"W	170.00'
L32	N28°12'59"W	195.50'
L33	S22°01'59"E	120.00'
L34	N89°57'22"W	120.00'
L35	S00°02'38"W	105.00'
L36	N89°57'22"W	50.00'
L37	N00°02'38"E	105.00'
L38	N89°57'22"W	120.00'

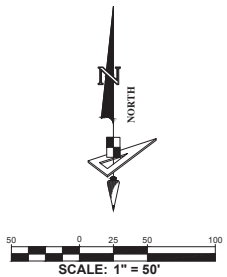
LEGEND:

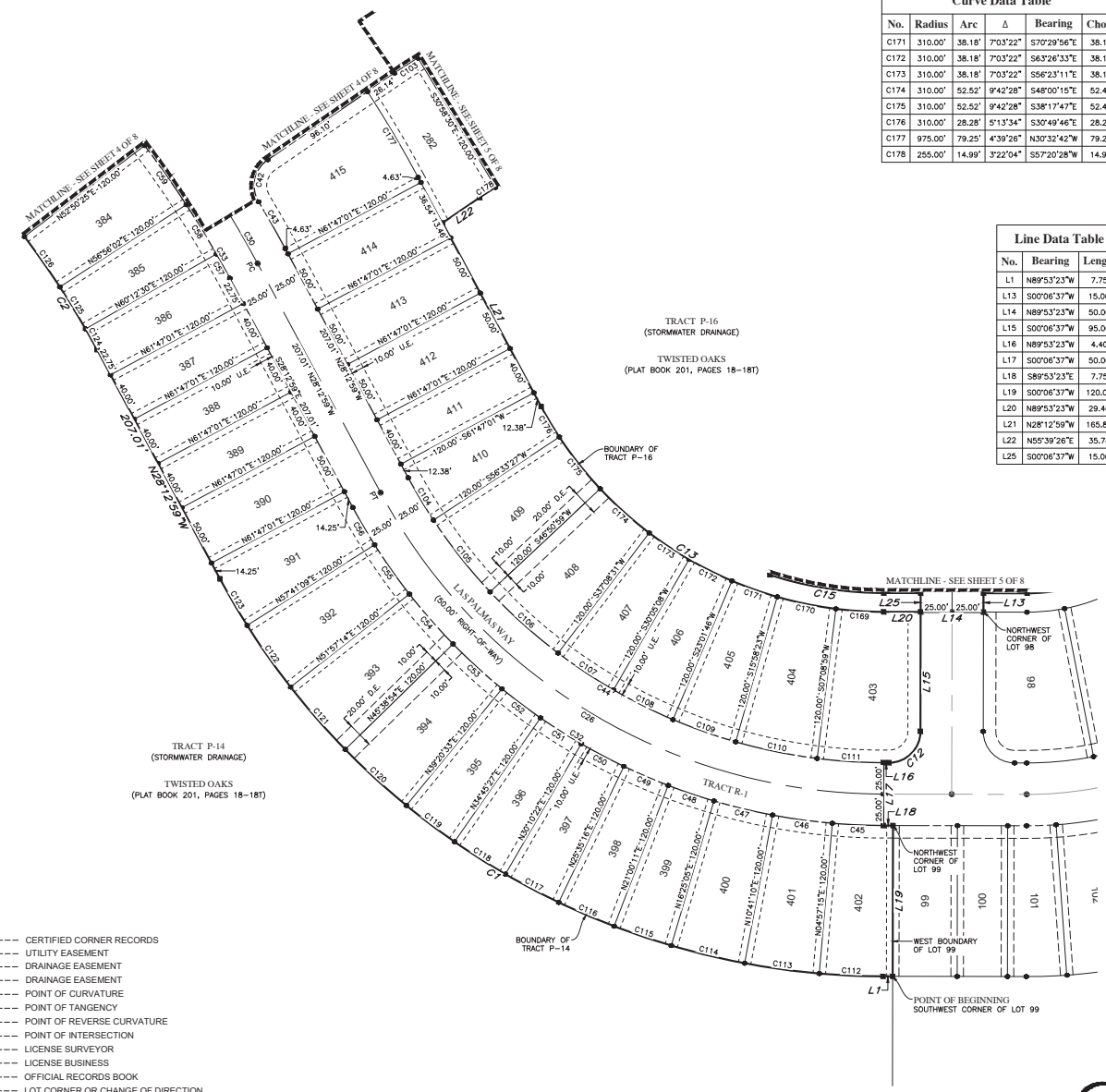
- C.C.R. ---------- CERTIFIED CORNER RECORDS
- U.E. ---------- UTILITY EASEMENT
- P.U.E. ---------- DRAINAGE EASEMENT
- D.E. ---------- DRAINAGE EASEMENT
- PC ---------- POINT OF CURVATURE
- PT ---------- POINT OF TANGENCY
- PRC ---------- POINT OF REVERSE CURVATURE
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- LS ---------- LICENSE SURVEYOR
- LB ---------- LICENSE BUSINESS
- O.R. ---------- OFFICIAL RECORDS BOOK
- ● ---------- LOT CORNER OR CHANGE OF DIRECTION
- ⊖ ---------- INDICATES FOUND (P.R.M.) PERMANENT REFERENCE MONUMENT 4"X4" CONCRETE MONUMENT WITH DISK STAMPED "PRM LB7768" UNLESS OTHERWISE NOTED.
- ■ ---------- INDICATES SET (P.R.M.) PERMANENT REFERENCE MONUMENT 4"X4" CONCRETE MONUMENT WITH DISK STAMPED "PRM LB7768" UNLESS OTHERWISE NOTED.
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TWISTED OAKS - PHASE 2

A REPLAT OF TRACTS FD-1, FD-1A, FD-2 AND FD-2A, ACCORDING TO THE PLAT THEREOF AS RECORDED IN PLAT BOOK 21, PAGES 18 THROUGH 18T, OF THE PUBLIC RECORDS OF SUMTER COUNTY, FLORIDA, LYING IN SECTION 31, TOWNSHIP 18 SOUTH, RANGE 23 EAST, CITY OF WILDWOOD, SUMTER COUNTY, FLORIDA





Curve Data Table					
No.	Radius	Arc	Δ	Bearing	Chord
C1	600.00'	645.84'	61°40'24"	N59°03'11"W	615.11'
C2	685.00'	440.40'	36°50'11"	N46°38'04"W	432.85'
C12	25.00'	39.27'	90°00'00"	S45°06'37"W	35.36'
C13	310.00'	333.68'	61°40'24"	N59°03'11"W	317.81'
C15	295.00'	92.09'	17°53'07"	S80°56'49"E	91.71'
C26	455.00'	489.76'	61°40'24"	N59°03'11"W	466.46'
C30	830.00'	88.75'	6°07'36"	N31°16'47"W	88.71'
C32	480.00'	516.67'	61°40'24"	S59°03'11"E	492.09'
C33	805.00'	517.55'	36°50'11"	S46°38'04"E	508.68'
C42	25.00'	37.85'	86°44'34"	N12°17'09"E	34.34'
C43	855.00'	42.82'	2°52'10"	N29°39'04"W	42.81'
C44	430.00'	462.85'	61°40'24"	N59°03'11"W	440.83'
C45	480.00'	40.58'	4°50'38"	S87°28'04"E	40.57'
C46	480.00'	48.02'	5°43'55"	S82°10'48"E	48.00'
C47	480.00'	48.02'	5°43'55"	S76°26'52"E	48.00'
C48	480.00'	38.41'	4°35'06"	S71°17'22"E	38.40'
C49	480.00'	38.41'	4°35'06"	S66°42'16"E	38.40'
C50	480.00'	38.41'	4°35'06"	S62°07'11"E	38.40'
C51	480.00'	38.41'	4°35'06"	S57°32'05"E	38.40'
C52	480.00'	38.41'	4°35'06"	S52°57'00"E	38.40'
C53	480.00'	52.83'	6°18'21"	S47°30'17"E	52.80'
C54	480.00'	52.83'	6°18'21"	S41°11'56"E	52.80'
C55	480.00'	48.02'	5°43'55"	S35°10'48"E	48.00'
C56	480.00'	34.33'	4°05'52"	S30°15'55"E	34.32'
C57	805.00'	22.13'	1°34'31"	N29°00'15"W	22.13'
C58	805.00'	46.01'	3°16'28"	N31°25'44"W	46.00'
C59	805.00'	57.51'	4°05'36"	N35°06'47"W	57.50'
C103	375.00'	22.04'	3°22'04"	S57°20'28"W	22.04'
C104	430.00'	39.22'	5°13'34"	S30°49'46"E	39.21'
C105	430.00'	72.86'	9°42'28"	S38°17'47"E	72.77'
C106	430.00'	72.86'	9°42'28"	S48°00'15"E	72.77'
C107	430.00'	52.96'	7°03'22"	S56°23'11"E	52.92'
C108	430.00'	52.96'	7°03'22"	S63°26'33"E	52.92'
C109	430.00'	52.96'	7°03'22"	S70°29'56"E	52.92'
C110	430.00'	66.22'	8°49'24"	S78°26'19"E	66.15'
C111	430.00'	52.83'	7°02'22"	S86°22'12"E	52.80'
C112	600.00'	50.72'	4°50'38"	S87°28'04"E	50.71'
C113	600.00'	60.03'	5°43'55"	S82°10'48"E	60.00'
C114	600.00'	60.03'	5°43'55"	S76°26'52"E	60.00'
C115	600.00'	48.01'	4°35'06"	S71°17'22"E	48.00'
C116	600.00'	48.01'	4°35'06"	S66°42'16"E	48.00'
C117	600.00'	48.01'	4°35'06"	S62°07'11"E	48.00'
C118	600.00'	48.01'	4°35'06"	S57°32'05"E	48.00'
C119	600.00'	48.01'	4°35'06"	S52°57'00"E	48.00'
C120	600.00'	66.03'	6°18'21"	S47°30'17"E	66.00'
C121	600.00'	66.03'	6°18'21"	S41°11'56"E	66.00'
C122	600.00'	60.03'	5°43'55"	S35°10'48"E	60.00'
C123	600.00'	42.91'	4°05'52"	S30°15'55"E	42.90'
C124	685.00'	18.83'	1°34'31"	N29°00'15"W	18.83'
C125	685.00'	39.15'	3°16'28"	N31°25'44"W	39.14'
C126	685.00'	48.94'	4°05'36"	N35°06'47"W	48.93'
C169	310.00'	38.09'	7°02'22"	S86°22'12"E	38.06'
C170	310.00'	47.74'	8°49'24"	S78°26'19"E	47.69'

Curve Data Table					
No.	Radius	Arc	Δ	Bearing	Chord
C171	310.00'	38.18'	7°03'22"	S70°29'56"E	38.15'
C172	310.00'	38.18'	7°03'22"	S63°26'33"E	38.15'
C173	310.00'	38.18'	7°03'22"	S56°23'11"E	38.15'
C174	310.00'	52.52'	9°42'28"	S48°00'15"E	52.46'
C175	310.00'	52.52'	9°42'28"	S38°17'47"E	52.46'
C176	310.00'	28.28'	5°13'34"	S30°49'46"E	28.27'
C177	975.00'	79.25'	4°39'26"	N30°32'42"W	79.23'
C178	255.00'	14.99'	3°22'04"	S57°20'28"W	14.99'

Line Data Table		
No.	Bearing	Length
L1	N89°53'23"W	7.75'
L13	S00°06'37"W	15.00'
L14	N89°53'23"W	50.00'
L15	S00°06'37"W	95.00'
L16	N89°53'23"W	4.40'
L17	S00°06'37"W	50.00'
L18	S89°53'23"E	7.75'
L19	S00°06'37"W	120.00'
L20	N89°53'23"W	29.40'
L21	N28°12'59"W	165.83'
L22	N55°39'26"E	35.78'
L25	S00°06'37"W	15.00'

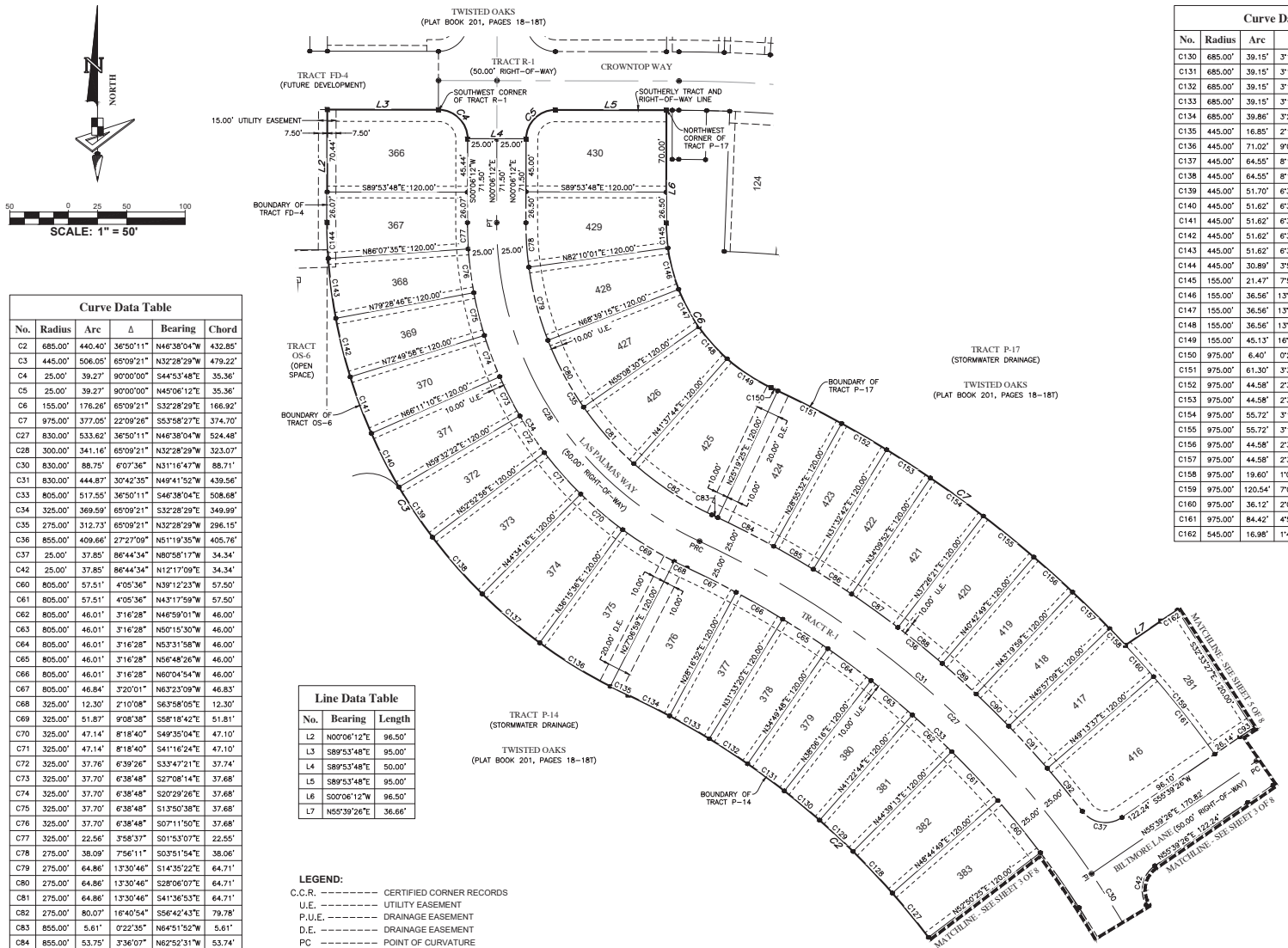
LEGEND:

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Curve Data Table					
No.	Radius	Arc	Δ	Bearing	Chord
C2	685.00'	440.40'	36°50'11"	N46°38'04"W	432.85'
C3	445.00'	506.05'	65°09'21"	N32°28'29"W	479.22'
C4	25.00'	39.27'	90°00'00"	S44°53'48"E	35.36'
C5	25.00'	39.27'	90°00'00"	N45°06'12"E	35.36'
C6	155.00'	176.26'	65°09'21"	S32°28'29"E	166.92'
C7	975.00'	377.05'	22°09'26"	S53°58'27"E	374.70'
C27	830.00'	533.62'	36°50'11"	N46°38'04"W	524.48'
C28	300.00'	341.16'	65°09'21"	N32°28'29"W	323.07'
C30	830.00'	88.75'	6°07'36"	N31°16'47"W	88.71'
C31	830.00'	444.87'	30°42'35"	N49°41'52"W	439.56'
C33	805.00'	517.55'	36°50'11"	S46°38'04"E	508.68'
C34	325.00'	369.59'	65°09'21"	S32°28'29"E	349.99'
C35	275.00'	312.73'	65°09'21"	N32°28'29"W	296.15'
C36	855.00'	409.66'	27°27'09"	N51°19'35"W	405.76'
C37	25.00'	37.85'	86°44'34"	N80°58'17"W	34.34'
C42	25.00'	37.85'	86°44'34"	N12°17'09"E	34.34'
C60	805.00'	57.51'	4°05'36"	N39°12'23"W	57.50'
C61	805.00'	57.51'	4°05'36"	N43°17'59"W	57.50'
C62	805.00'	46.01'	3°16'28"	N46°59'01"W	46.00'
C63	805.00'	46.01'	3°16'28"	N50°15'30"W	46.00'
C64	805.00'	46.01'	3°16'28"	N53°31'58"W	46.00'
C65	805.00'	46.01'	3°16'28"	N56°48'26"W	46.00'
C66	805.00'	46.01'	3°16'28"	N60°04'54"W	46.00'
C67	805.00'	46.84'	3°20'01"	N63°23'09"W	46.83'
C68	325.00'	12.30'	2°10'08"	S63°58'05"E	12.30'
C69	325.00'	51.87'	9°08'38"	S58°18'42"E	51.81'
C70	325.00'	47.14'	8°18'40"	S49°35'04"E	47.10'
C71	325.00'	47.14'	8°18'40"	S41°16'24"E	47.10'
C72	325.00'	37.76'	6°39'26"	S33°47'21"E	37.74'
C73	325.00'	37.70'	6°38'48"	S27°08'14"E	37.68'
C74	325.00'	37.70'	6°38'48"	S20°29'26"E	37.68'
C75	325.00'	37.70'	6°38'48"	S13°50'38"E	37.68'
C76	325.00'	37.70'	6°38'48"	S07°11'50"E	37.68'
C77	325.00'	22.56'	3°58'37"	S01°53'07"E	22.55'
C78	275.00'	38.09'	7°56'11"	S03°51'54"E	38.06'
C79	275.00'	64.86'	13°30'46"	S14°35'22"E	64.71'
C80	275.00'	64.86'	13°30'46"	S28°06'07"E	64.71'
C81	275.00'	64.86'	13°30'46"	S41°36'53"E	64.71'
C82	275.00'	80.07'	16°40'54"	S56°42'43"E	79.78'
C83	855.00'	5.61'	0°22'35"	N64°51'52"W	5.61'
C84	855.00'	53.75'	3°36'07"	N62°52'31"W	53.74'
C85	855.00'	39.09'	2°37'10"	N59°45'53"W	39.09'
C86	855.00'	39.09'	2°37'10"	N57°08'43"W	39.09'
C87	855.00'	48.86'	3°16'28"	N54°11'53"W	48.86'
C88	855.00'	48.86'	3°16'28"	N50°55'25"W	48.86'
C89	855.00'	39.09'	2°37'10"	N47°58'36"W	39.09'
C90	855.00'	39.09'	2°37'10"	N45°21'26"W	39.09'
C91	855.00'	48.86'	3°16'28"	N42°24'37"W	48.86'
C92	855.00'	47.35'	3°10'22"	N39°11'12"W	47.34'
C93	425.00'	13.24'	1°47'07"	S56°32'59"W	13.24'
C127	685.00'	48.94'	4°05'36"	N39°12'23"W	48.93'
C128	685.00'	48.94'	4°05'36"	N43°17'59"W	48.93'
C129	685.00'	39.15'	3°16'28"	N46°59'01"W	39.14'

Curve Data Table					
No.	Radius	Arc	Δ	Bearing	Chord
C130	685.00'	39.15'	3°16'28"	N50°15'30"W	39.14'
C131	685.00'	39.15'	3°16'28"	N53°31'58"W	39.14'
C132	685.00'	39.15'	3°16'28"	N56°48'26"W	39.14'
C133	685.00'	39.15'	3°16'28"	N60°04'54"W	39.14'
C134	685.00'	39.86'	3°20'01"	N63°23'09"W	39.85'
C135	445.00'	16.85'	2°10'08"	S63°58'05"E	16.84'
C136	445.00'	71.02'	9°08'38"	S58°18'42"E	70.94'
C137	445.00'	64.55'	8°18'40"	S49°35'04"E	64.49'
C138	445.00'	64.55'	8°18'40"	S41°16'24"E	64.49'
C139	445.00'	51.70'	6°39'26"	S33°47'21"E	51.68'
C140	445.00'	51.62'	6°38'48"	S27°08'14"E	51.59'
C141	445.00'	51.62'	6°38'48"	S20°29'26"E	51.59'
C142	445.00'	51.62'	6°38'48"	S13°50'38"E	51.59'
C143	445.00'	51.62'	6°38'48"	S07°11'50"E	51.59'
C144	445.00'	30.89'	3°58'37"	S01°53'07"E	30.88'
C145	155.00'	21.47'	7°56'11"	S03°51'54"E	21.45'
C146	155.00'	36.56'	13°30'46"	S14°35'22"E	36.47'
C147	155.00'	36.56'	13°30'46"	S28°06'07"E	36.47'
C148	155.00'	36.56'	13°30'46"	S41°36'53"E	36.47'
C149	155.00'	45.13'	16°40'54"	S56°42'43"E	44.97'
C150	975.00'	6.40'	0°22'35"	N64°51'52"W	6.40'
C151	975.00'	61.30'	3°36'07"	N62°52'31"W	61.29'
C152	975.00'	44.58'	2°37'10"	N59°45'53"W	44.57'
C153	975.00'	44.58'	2°37'10"	N57°08'43"W	44.57'
C154	975.00'	55.72'	3°16'28"	N54°11'53"W	55.71'
C155	975.00'	55.72'	3°16'28"	N50°55'25"W	55.71'
C156	975.00'	44.58'	2°37'10"	N47°58'36"W	44.57'
C157	975.00'	44.58'	2°37'10"	N45°21'26"W	44.57'
C158	975.00'	19.60'	1°09'07"	N43°28'17"W	19.60'
C159	975.00'	120.54'	7°05'00"	N39°21'14"W	120.46'
C160	975.00'	36.12'	2°07'21"	N41°50'03"W	36.12'
C161	975.00'	84.42'	4°57'39"	N38°17'33"W	84.39'
C162	545.00'	16.98'	1°47'07"	S56°32'59"W	16.98'

Line Data Table		
No.	Bearing	Length
L2	N00°06'12"E	96.50'
L3	S89°53'48"E	95.00'
L4	S89°53'48"E	50.00'
L5	S89°53'48"E	95.00'
L6	S00°06'12"W	96.50'
L7	N55°39'26"E	36.66'

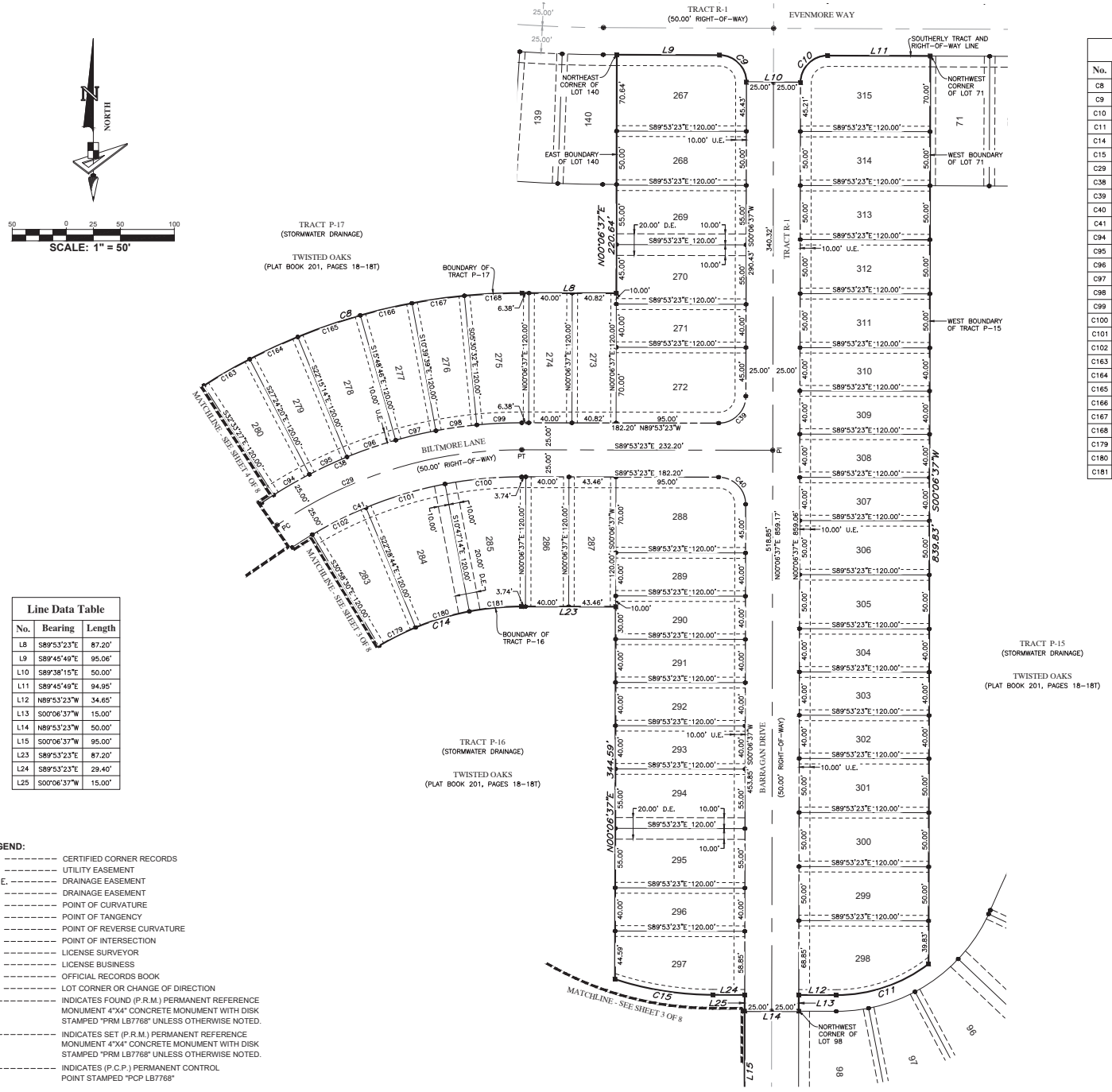
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Curve Data Table					
No.	Radius	Arc	Δ	Bearing	Chord
C8	545.00'	327.72'	34°27'12"	N72°53'01"E	322.81'
C9	25.00'	39.21'	89°52'26"	S44°49'36"E	35.32'
C10	25.00'	39.32'	90°07'34"	N45°10'24"E	35.39'
C11	140.00'	91.78'	37°33'46"	S71°19'44"W	90.15'
C14	255.00'	153.34'	34°27'12"	N72°53'01"E	151.04'
C15	295.00'	92.09'	17°53'07"	S80°56'49"E	91.71'
C29	400.00'	240.53'	34°27'12"	N72°53'01"E	236.92'
C38	425.00'	255.56'	34°27'12"	S72°53'01"W	251.73'
C39	25.00'	39.27'	90°00'00"	S45°06'37"W	35.36'
C40	25.00'	39.27'	90°00'00"	S44°53'23"E	35.36'
C41	375.00'	225.50'	34°27'12"	N72°53'01"E	222.11'
C94	425.00'	38.22'	5°09'07"	S60°01'06"W	38.20'
C95	425.00'	38.22'	5°09'07"	S65°10'13"W	38.20'
C96	425.00'	47.78'	6°26'28"	S70°58'00"W	47.75'
C97	425.00'	38.22'	5°09'07"	S76°45'48"W	38.20'
C98	425.00'	38.22'	5°09'07"	S81°54'55"W	38.20'
C99	425.00'	41.19'	5°33'10"	S87°20'02"W	41.17'
C100	375.00'	71.32'	10°53'52"	S84°39'41"W	71.22'
C101	375.00'	76.52'	11°41'30"	S73°22'01"W	76.39'
C102	375.00'	55.61'	8°29'46"	S63°16'23"W	55.56'
C163	545.00'	49.01'	5°09'07"	S60°01'06"W	48.99'
C164	545.00'	49.01'	5°09'07"	S65°10'13"W	48.99'
C165	545.00'	61.27'	6°26'28"	S70°58'00"W	61.24'
C166	545.00'	49.01'	5°09'07"	S76°45'48"W	48.99'
C167	545.00'	49.01'	5°09'07"	S81°54'55"W	48.99'
C168	545.00'	53.45'	5°37'09"	S87°18'03"W	53.43'
C179	255.00'	37.81'	8°29'46"	S63°16'23"W	37.78'
C180	255.00'	52.03'	11°41'30"	S73°22'01"W	51.94'
C181	255.00'	48.50'	10°53'52"	S84°39'41"W	48.43'

Line Data Table		
No.	Bearing	Length
L8	S89°53'23"E	87.20'
L9	S89°45'49"E	95.06'
L10	S89°38'15"E	50.00'
L11	S89°45'49"E	94.95'
L12	N89°53'23"W	34.65'
L13	S00°06'37"W	15.00'
L14	N89°53'23"W	50.00'
L15	S00°06'37"W	95.00'
L23	S89°53'23"E	87.20'
L24	S89°53'23"E	29.40'
L25	S00°06'37"W	15.00'

LEGEND:

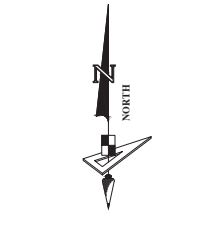
- C.C.R. ---------- CERTIFIED CORNER RECORDS
- U.E. ---------- UTILITY EASEMENT
- P.U.E. ---------- DRAINAGE EASEMENT
- D.E. ---------- DRAINAGE EASEMENT
- PC ---------- POINT OF CURVATURE
- PT ---------- POINT OF TANGENCY
- PRC ---------- POINT OF REVERSE CURVATURE
- PI ---------- POINT OF INTERSECTION
- LS ---------- LICENSE SURVEYOR
- LB ---------- LICENSE BUSINESS
- O.R. ---------- OFFICIAL RECORDS BOOK
- ● ---------- LOT CORNER OR CHANGE OF DIRECTION
- ⊖ ---------- INDICATES FOUND (P.R.M.) PERMANENT REFERENCE MONUMENT 4"X4" CONCRETE MONUMENT WITH DISK STAMPED "PRM LB7768" UNLESS OTHERWISE NOTED.
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TWISTED OAKS - PHASE 2

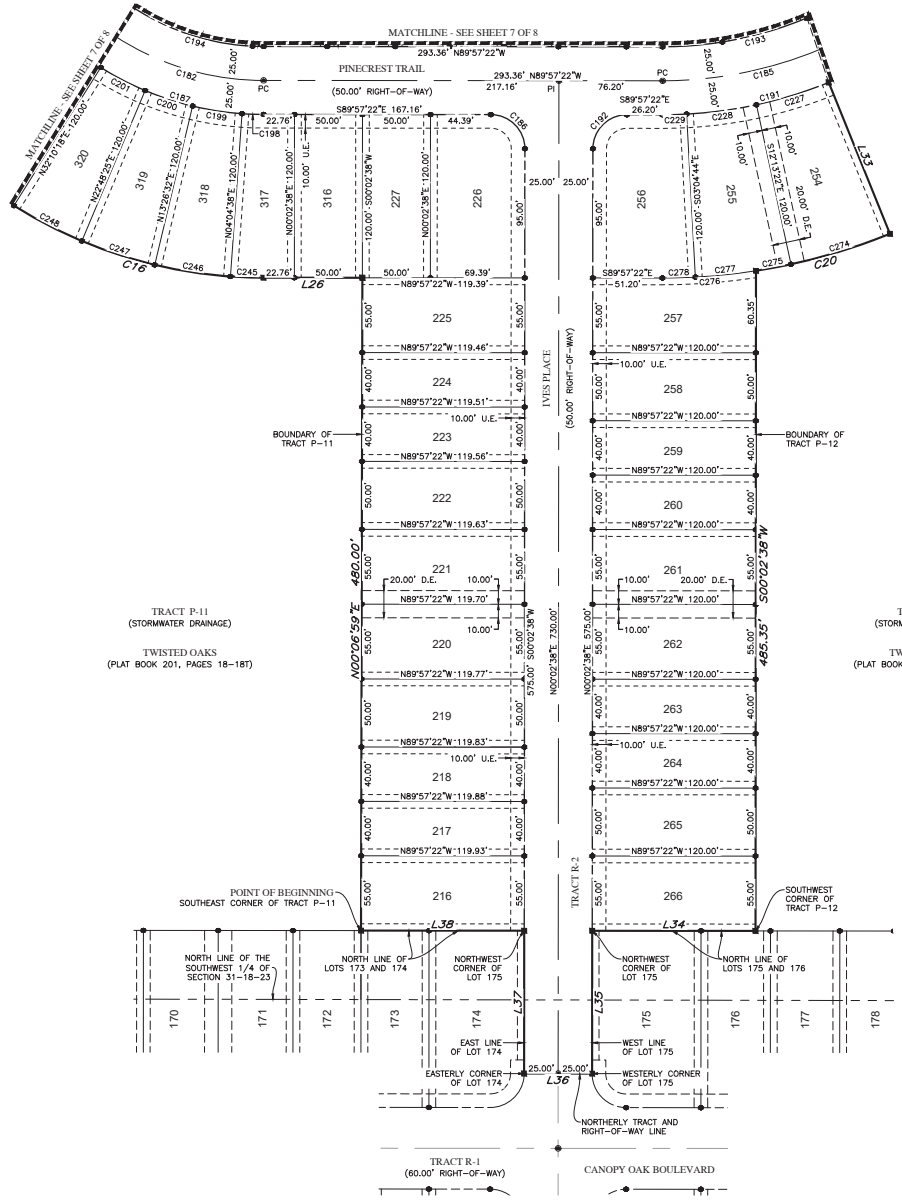
A REPLAT OF TRACTS FD-1, FD-1A, FD-2 AND FD-2A, ACCORDING TO THE PLAT THEREOF AS RECORDED IN PLAT BOOK 21, PAGES 18 THROUGH 18T, OF THE PUBLIC RECORDS OF SUMTER COUNTY, FLORIDA, LYING IN SECTION 31, TOWNSHIP 18 SOUTH, RANGE 23 EAST, CITY OF WILDWOOD, SUMTER COUNTY, FLORIDA

PLAT BOOK _____ PAGE _____
SHEET 6 OF 8 SHEETS



Line Data Table		
No.	Bearing	Length
L26	N89°57'22"W	72.76'
L33	S22°01'59"E	120.00'
L34	N89°57'22"W	120.00'
L35	S00°02'38"W	105.00'
L36	N89°57'22"W	50.00'
L37	N00°02'38"E	105.00'
L38	N89°57'22"W	120.00'

Curve Data Table					
No.	Radius	Arc	Δ	Bearing	Chord
C16	345.00'	541.86'	89°59'23"	N44°57'40"W	487.86'
C20	445.00'	102.39'	13°11'00"	S74°33'31"W	102.17'
C182	200.00'	314.12'	89°59'23"	N44°57'40"W	282.82'
C185	300.00'	147.97'	28°15'37"	S75°54'50"W	146.48'
C186	25.00'	39.27'	90°00'00"	S44°57'22"E	35.36'
C187	225.00'	353.39'	89°59'23"	S44°57'40"E	318.17'
C191	325.00'	160.30'	28°15'37"	N75°54'50"E	158.68'
C192	25.00'	39.27'	90°00'00"	N45°02'38"E	35.36'
C193	275.00'	109.02'	22°42'48"	S78°41'14"W	108.30'
C194	175.00'	274.86'	89°59'23"	N44°57'40"W	247.47'
C198	225.00'	15.84'	4°02'00"	S87°56'22"E	15.84'
C199	225.00'	36.78'	9°21'53"	S81°14'25"E	36.73'
C200	225.00'	36.78'	9°21'53"	S71°52'32"E	36.73'
C201	225.00'	36.78'	9°21'53"	S62°30'38"E	36.73'
C227	325.00'	55.65'	9°48'37"	N72°52'19"E	55.58'
C228	325.00'	51.87'	9°08'38"	N82°20'57"E	51.81'
C229	325.00'	17.71'	3°07'22"	N88°28'57"E	17.71'
C245	345.00'	24.29'	4°02'00"	S87°56'22"E	24.28'
C246	345.00'	56.39'	9°21'53"	S81°14'25"E	56.33'
C247	345.00'	56.39'	9°21'53"	S71°52'32"E	56.33'
C248	345.00'	56.39'	9°21'53"	S62°30'38"E	56.33'
C274	445.00'	76.19'	9°48'37"	N72°52'19"E	76.10'
C275	445.00'	26.20'	3°22'23"	N79°27'50"E	26.19'
C276	445.00'	69.07'	8°53'37"	N85°35'50"E	69.01'
C277	445.00'	44.82'	5°46'15"	N84°02'08"E	44.80'
C278	445.00'	24.25'	3°07'22"	N88°28'57"E	24.25'



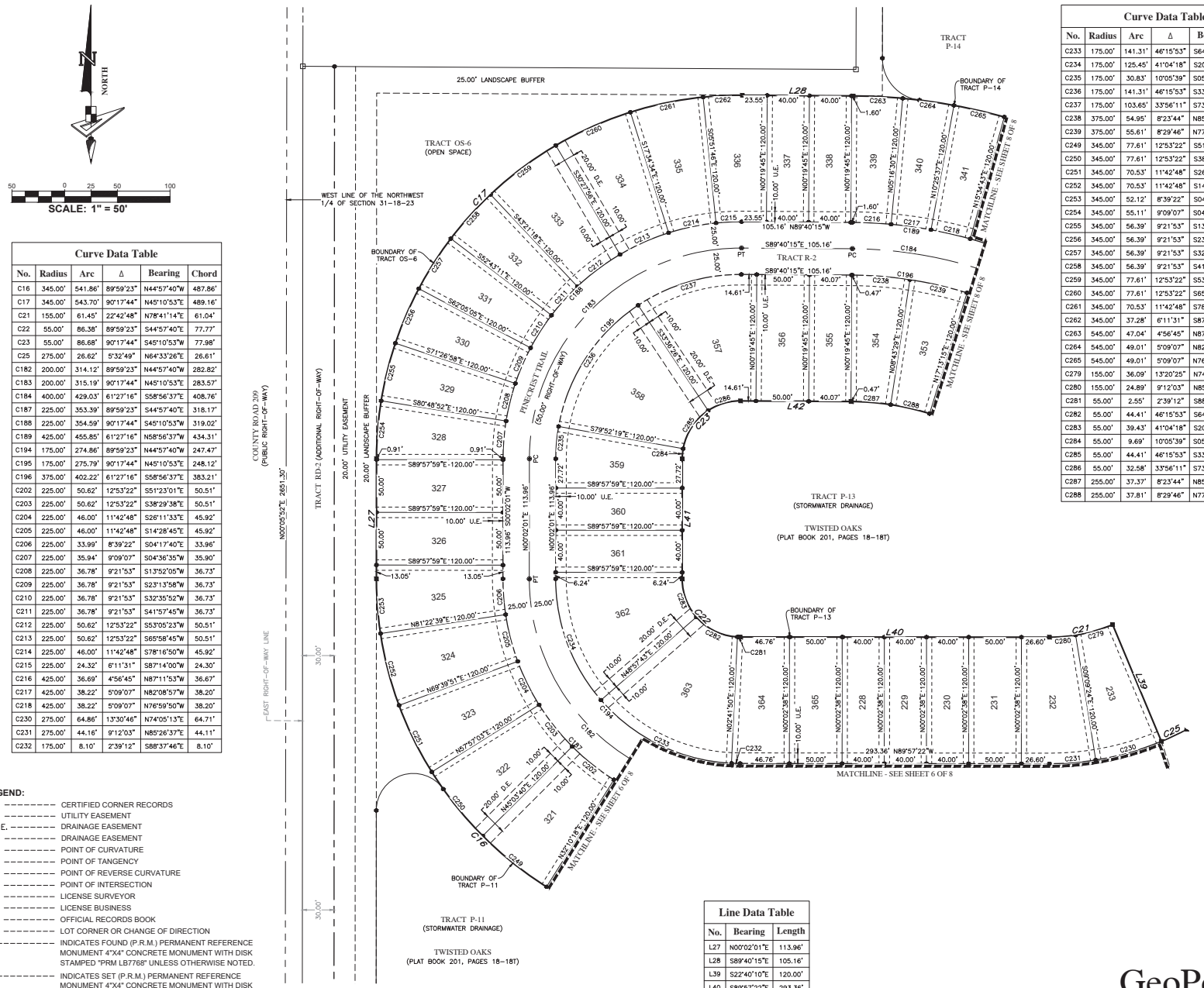
LEGEND:

- C.C.R. ---------- CERTIFIED CORNER RECORDS
- U.E. ---------- UTILITY EASEMENT
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TWISTED OAKS - PHASE 2

A REPLAT OF TRACTS FD-1, FD-1A, FD-2 AND FD-2A, ACCORDING TO THE PLAT THEREOF AS RECORDED IN PLAT BOOK 21, PAGES 18 THROUGH 18T, OF THE PUBLIC RECORDS OF SUMTER COUNTY, FLORIDA, LYING IN SECTION 31, TOWNSHIP 18 SOUTH, RANGE 23 EAST, CITY OF WILDWOOD, SUMTER COUNTY, FLORIDA



Curve Data Table

No.	Radius	Arc	Δ	Bearing	Chord
C16	345.00'	541.86'	89°59'23"	N44°57'40"W	487.86'
C17	345.00'	543.70'	90°17'44"	N45°10'53"E	489.16'
C21	155.00'	61.45'	22°42'48"	N78°41'14"E	61.04'
C22	55.00'	86.38'	89°59'23"	S44°57'40"E	77.77'
C23	55.00'	86.68'	90°17'44"	S45°10'53"W	77.98'
C25	275.00'	26.62'	5°32'49"	N64°33'26"E	26.61'
C182	200.00'	314.12'	89°59'23"	N44°57'40"W	282.82'
C183	200.00'	315.19'	90°17'44"	N45°10'53"E	283.57'
C184	400.00'	429.03'	61°27'16"	S58°56'37"E	408.76'
C187	225.00'	353.39'	89°59'23"	S44°57'40"E	318.17'
C188	225.00'	354.59'	90°17'44"	S45°10'53"W	319.02'
C189	425.00'	455.85'	61°27'16"	N58°56'37"W	434.31'
C194	175.00'	274.86'	89°59'23"	N44°57'40"W	247.47'
C195	175.00'	275.79'	90°17'44"	N45°10'53"E	248.12'
C196	375.00'	402.22'	61°27'16"	S58°56'37"E	383.21'
C202	225.00'	50.62'	12°53'22"	S51°23'01"E	50.51'
C203	225.00'	50.62'	12°53'22"	S38°29'38"E	50.51'
C204	225.00'	46.00'	11°42'48"	S26°11'33"E	45.92'
C205	225.00'	46.00'	11°42'48"	S14°28'45"E	45.92'
C206	225.00'	33.99'	8°39'22"	S04°17'40"E	33.96'
C207	225.00'	35.94'	9°09'07"	S04°36'35"W	35.90'
C208	225.00'	36.78'	9°21'53"	S13°52'05"W	36.73'
C209	225.00'	36.78'	9°21'53"	S23°13'58"W	36.73'
C210	225.00'	36.78'	9°21'53"	S32°35'52"W	36.73'
C211	225.00'	36.78'	9°21'53"	S41°57'45"W	36.73'
C212	225.00'	50.62'	12°53'22"	S53°05'23"W	50.51'
C213	225.00'	50.62'	12°53'22"	S65°58'45"W	50.51'
C214	225.00'	46.00'	11°42'48"	S78°16'50"W	45.92'
C215	225.00'	24.32'	6°11'31"	S87°14'00"W	24.30'
C216	425.00'	36.69'	4°56'45"	N87°11'53"W	36.67'
C217	425.00'	38.22'	5°09'07"	N82°08'57"W	38.20'
C218	425.00'	38.22'	5°09'07"	N76°59'50"W	38.20'
C230	275.00'	64.86'	13°30'46"	N74°05'13"E	64.71'
C231	275.00'	44.16'	9°12'03"	N85°26'37"E	44.11'
C232	175.00'	8.10'	2°39'12"	S88°37'46"E	8.10'

Curve Data Table

No.	Radius	Arc	Δ	Bearing	Chord
C233	175.00'	141.31'	46°15'53"	S64°10'13"E	137.50'
C234	175.00'	125.45'	41°04'18"	S20°30'08"E	122.78'
C235	175.00'	30.83'	10°05'39"	S05°04'51"W	30.79'
C236	175.00'	141.31'	46°15'53"	S33°15'37"W	137.50'
C237	175.00'	103.65'	33°56'11"	S73°21'39"W	102.14'
C238	375.00'	54.95'	8°23'44"	N85°28'23"W	54.90'
C239	375.00'	55.61'	8°29'46"	N77°01'38"W	55.56'
C249	345.00'	77.61'	12°53'22"	S51°23'01"E	77.45'
C250	345.00'	77.61'	12°53'22"	S38°29'38"E	77.45'
C251	345.00'	70.53'	11°42'48"	S26°11'33"E	70.41'
C252	345.00'	70.53'	11°42'48"	S14°28'45"E	70.41'
C253	345.00'	52.12'	8°39'22"	S04°17'40"E	52.07'
C254	345.00'	55.11'	9°09'07"	S04°36'35"W	55.05'
C255	345.00'	56.39'	9°21'53"	S13°52'05"W	56.33'
C256	345.00'	56.39'	9°21'53"	S23°13'58"W	56.33'
C257	345.00'	56.39'	9°21'53"	S32°35'52"W	56.33'
C258	345.00'	56.39'	9°21'53"	S41°57'45"W	56.33'
C259	345.00'	77.61'	12°53'22"	S53°05'23"W	77.45'
C260	345.00'	77.61'	12°53'22"	S65°58'45"W	77.45'
C261	345.00'	70.53'	11°42'48"	S78°16'50"W	70.41'
C262	345.00'	37.28'	6°11'31"	S87°14'00"W	37.27'
C263	545.00'	47.04'	4°56'45"	N87°11'53"W	47.03'
C264	545.00'	49.01'	5°09'07"	N82°08'57"W	48.99'
C265	545.00'	49.01'	5°09'07"	N76°59'50"W	48.99'
C279	155.00'	36.09'	13°20'25"	N74°00'03"E	36.01'
C280	155.00'	24.89'	9°12'03"	N85°26'37"E	24.86'
C281	55.00'	2.55'	2°39'12"	S88°37'46"E	2.55'
C282	55.00'	44.41'	46°15'53"	S64°10'13"E	43.21'
C283	55.00'	39.43'	41°04'18"	S20°30'08"E	38.59'
C284	55.00'	9.69'	10°05'39"	S05°04'51"W	9.68'
C285	55.00'	44.41'	46°15'53"	S33°15'37"W	43.21'
C286	55.00'	32.58'	33°56'11"	S73°21'39"W	32.10'
C287	255.00'	37.37'	8°23'44"	N85°28'23"W	37.33'
C288	255.00'	37.81'	8°29'46"	N77°01'38"W	37.78'

Line Data Table

No.	Bearing	Length
L27	N00°02'01"E	113.96'
L28	S89°40'15"E	105.16'
L39	S22°40'10"E	120.00'
L40	S89°57'22"E	293.36'
L41	S00°02'01"W	113.96'
L42	N89°40'15"W	105.16'

LEGEND:

- C.C.R. ---------- CERTIFIED CORNER RECORDS
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- P.U.E. ---------- DRAINAGE EASEMENT
- D.E. ---------- DRAINAGE EASEMENT
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- PT ---------- POINT OF TANGENCY
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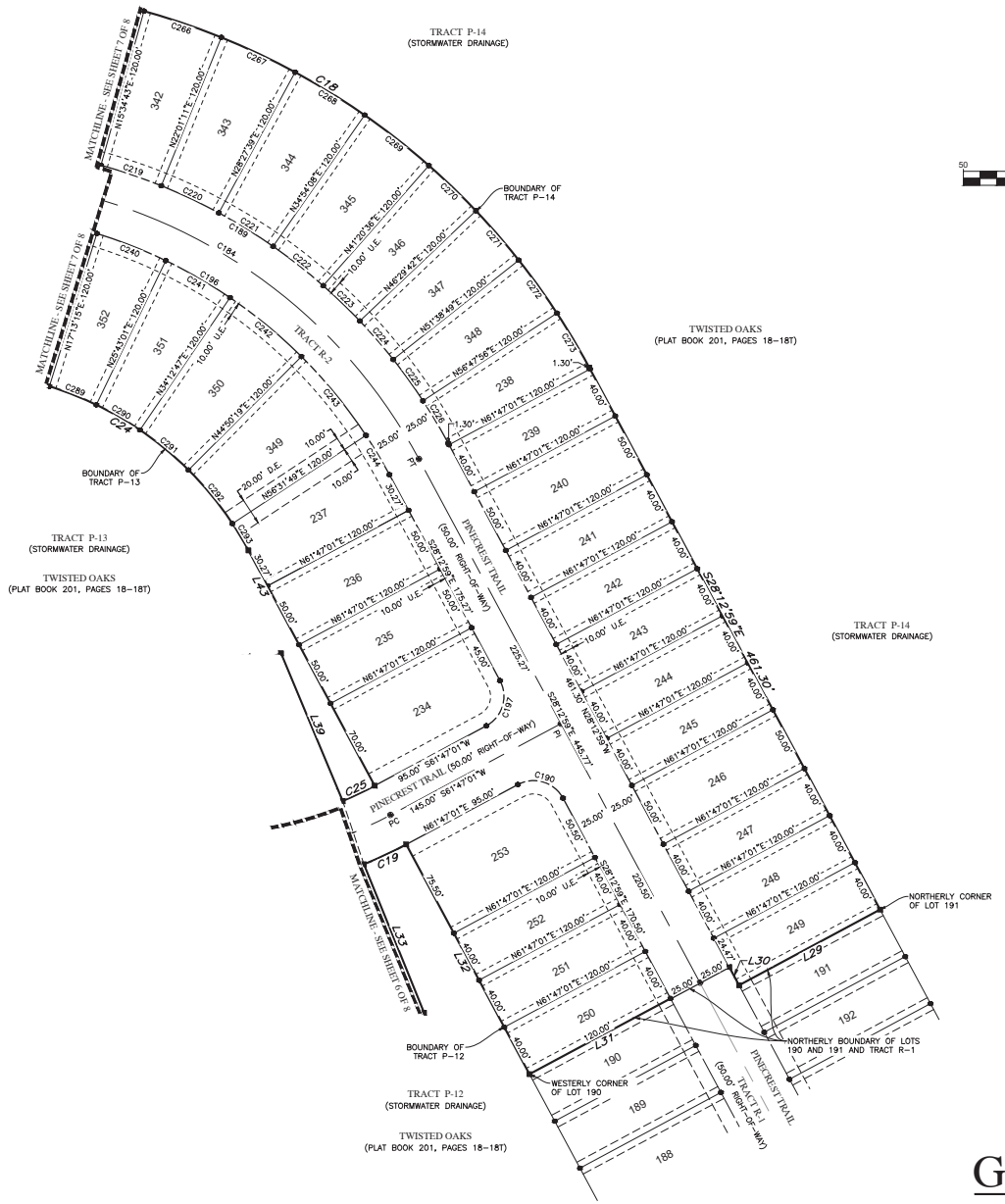
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Curve Data Table					
No.	Radius	Arc	Δ	Bearing	Chord
C18	545.00'	584.56'	61°27'16"	S58°56'37"E	556.94'
C19	325.00'	35.07'	6°11'00"	S64°52'31"W	35.06'
C24	255.00'	273.51'	61°27'16"	N58°56'37"W	260.59'
C25	275.00'	26.62'	5°32'49"	N64°33'26"E	26.61'
C184	400.00'	429.03'	61°27'16"	S58°56'37"E	408.76'
C189	425.00'	455.85'	61°27'16"	N58°56'37"W	434.31'
C190	25.00'	39.27'	90°00'00"	S73°12'59"E	35.36'
C196	375.00'	402.22'	61°27'16"	S58°56'37"E	383.21'
C197	25.00'	39.27'	90°00'00"	S16°47'01"W	35.36'
C219	425.00'	47.78'	6°26'28"	N71°12'03"W	47.75'
C220	425.00'	47.78'	6°26'28"	N64°45'35"W	47.75'
C221	425.00'	47.78'	6°26'28"	N58°19'07"W	47.75'
C222	425.00'	47.78'	6°26'28"	N51°52'38"W	47.75'
C223	425.00'	38.22'	5°09'07"	N46°04'51"W	38.20'
C224	425.00'	38.22'	5°09'07"	N40°55'44"W	38.20'
C225	425.00'	38.22'	5°09'07"	N35°46'37"W	38.20'
C226	425.00'	36.97'	4°59'05"	N30°42'31"W	36.96'
C240	375.00'	55.61'	8°29'46"	N68°31'52"W	55.56'
C241	375.00'	55.61'	8°29'46"	N60°02'06"W	55.56'
C242	375.00'	69.54'	10°37'32"	N50°28'27"W	69.44'
C243	375.00'	76.52'	11°41'30"	N39°18'56"W	76.39'
C244	375.00'	34.38'	5°15'12"	N30°50'35"W	34.37'
C266	545.00'	61.27'	6°26'28"	N71°12'03"W	61.24'
C267	545.00'	61.27'	6°26'28"	N64°45'35"W	61.24'
C268	545.00'	61.27'	6°26'28"	N58°19'07"W	61.24'
C269	545.00'	61.27'	6°26'28"	N51°52'38"W	61.24'
C270	545.00'	49.01'	5°09'07"	N46°04'51"W	48.99'
C271	545.00'	49.01'	5°09'07"	N40°55'44"W	48.99'
C272	545.00'	49.01'	5°09'07"	N35°46'37"W	48.99'
C273	545.00'	47.41'	4°59'05"	N30°42'31"W	47.40'
C289	255.00'	37.81'	8°29'46"	N68°31'52"W	37.78'
C290	255.00'	37.81'	8°29'46"	N60°02'06"W	37.78'
C291	255.00'	47.29'	10°37'32"	N50°28'27"W	47.22'
C292	255.00'	52.03'	11°41'30"	N39°18'56"W	51.94'
C293	255.00'	23.38'	5°15'12"	N30°50'35"W	23.37'

Line Data Table		
No.	Bearing	Length
L29	S61°47'01"W	120.00'
L30	N28°12'59"W	15.53'
L31	S61°47'01"W	170.00'
L32	N28°12'59"W	195.50'
L33	S22°01'59"E	120.00'
L39	S22°40'10"E	120.00'
L43	N28°12'59"W	200.27'



LEGEND:

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O.R. ——— OFFICIAL RECORDS BOOK
● ——— LOT CORNER OR CHANGE OF DIRECTION
⊖ ——— INDICATES FOUND (P.R.M.) PERMANENT REFERENCE MONUMENT 4"X4" CONCRETE MONUMENT WITH DISK STAMPED "PRM LB7768" UNLESS OTHERWISE NOTED.
■ ——— INDICATES SET (P.R.M.) PERMANENT REFERENCE MONUMENT 4"X4" CONCRETE MONUMENT WITH DISK STAMPED "PRM LB7768" UNLESS OTHERWISE NOTED.
◉ ——— INDICATES (P.C.P.) PERMANENT CONTROL POINT STAMPED "PCP LB7768"

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Licensed Business Number LB 7768

City of Wildwood, Florida

Planning & Zoning Board/Special Magistrate

The case below was heard on Tuesday, December 3, 2024, by the Special Magistrate. The applicant is seeking a favorable recommendation for a final plat from the City of Wildwood Planning and Zoning Board/Special Magistrate for Twisted Oaks Phase II (Construction Phases III & IV), on 35.399 acres, MOL. The subject property is generally located east of CR 209, west of US 301, south of E C 462, and north of W Clarke St.

Case Number: Plat 2407-005 Twisted Oaks Phase 2 Final Plat (Construction Phases III & IV)

Applicant(s): James P. Harvey

Owner(s): KL Twisted Oaks LLC

Parcel(s): A portion of D31A218

Under Land Development Regulation (LDR) § 1.7(B)(1), the Planning and Zoning Board/Special Magistrate has a duty to make a recommendation to the City Commission on all proposed final plats.

Based upon the testimony, evidence, and information presented as to the criteria set forth in LDR § 5.6, the Special Magistrate

☐ recommends approval

☒ recommends approval with the following conditions:

resolution of outstanding City Attorney comment(s)

☐ recommends denial

Dated: December 3, 2024

Lindsay C. T. Holt
Special Magistrate City of Wildwood

CITY COMMISSION OF THE CITY OF WILDWOOD

EXECUTIVE SUMMARY

SUBJECT: **PLAT 2407-006 Twisted Oaks Townhomes Phase 2 Final Plat**

REQUESTED ACTION: The Planning and Zoning Board/Special Magistrate recommends approval.

CONTRACT:

BUDGET IMPACT:

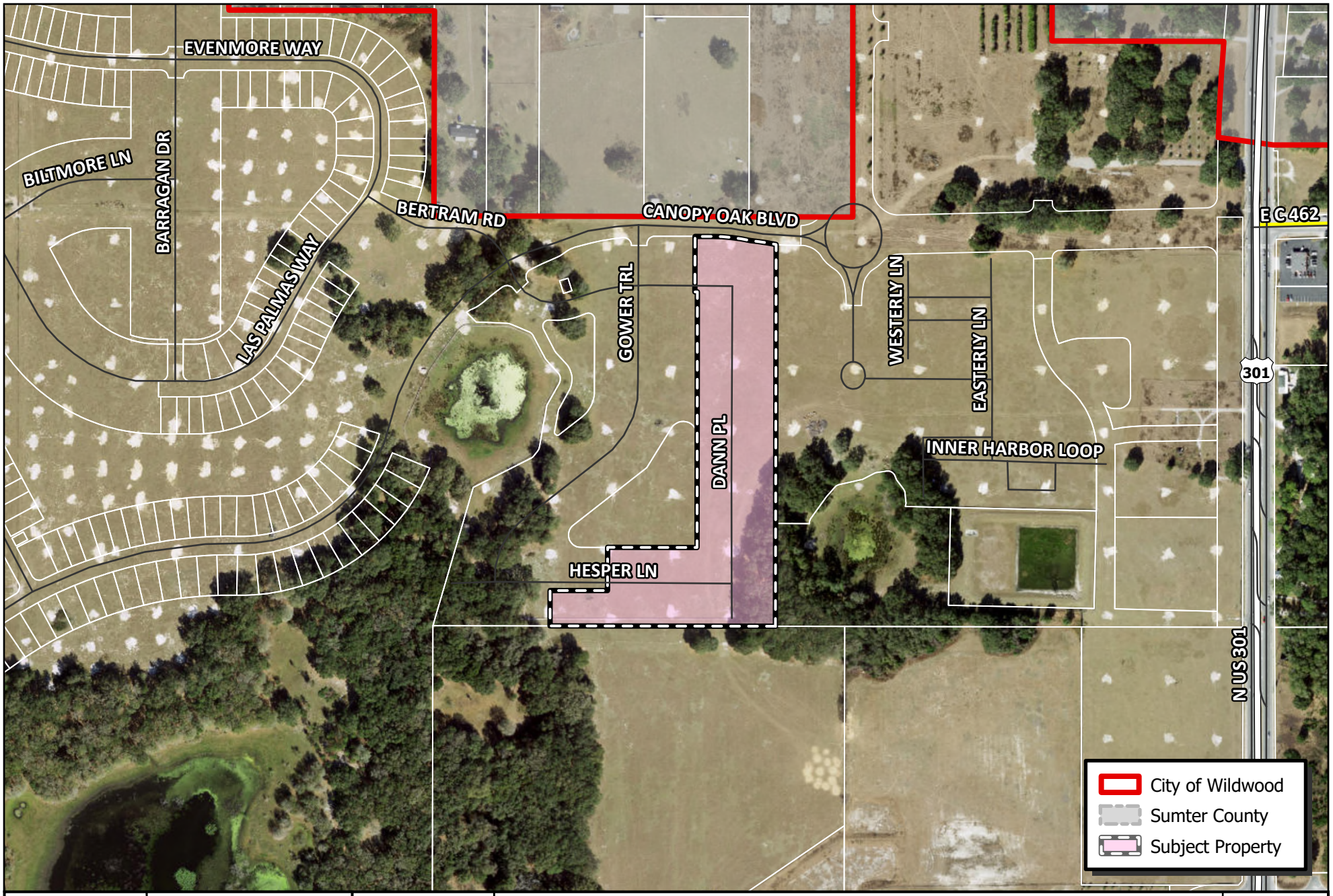
HISTORY/FACTS/ISSUES:

Case Number	PLAT 2407-006 Twisted Oaks Townhomes Phase 2 Final Plat
Applicant(s)	James P. Harvey
Owner(s)	KL Twisted Oaks, LLC
Acreage	9.467 +/-
Property Location	The subject property is generally located approximately 0.31 miles west of N US 301, approximately 0.66 miles east of CR 209, and approximately 0.28 miles south of E C 462.
Parcel(s)	Portion of D31A218
Date	December 30, 2024

The applicant is seeking approval from the City Commission for Twisted Oaks Townhomes Phase 2 Final Plat, a 128-lot subdivision with 4 tracts, per the attached plans.

PLAT 2407-006 meets the criteria set forth in the F.S. 177, Twisted Oaks Planned Development, Land Development Regulations and is in line with the goals, objectives, and policies within the 2050 Comprehensive Plan.

Amanda Bondi
Planner II, Development Services



WILDWOOD FLORIDA EST. 1877

CITY OF WILDWOOD
100 North Main Street
Wildwood, FL 34785
Phone: (352) 330-1330
www.wildwood-fl.gov

N

US Feet
0 35 70 140

PLAT 2407-006

TWISTED OAKS TOWNHOMES PHASE 2 FINAL PLAT

PORTION OF PARCEL D31A218

MAP 1B

LOCATION MAP

JUL 2024

TWISTED OAKS TOWNHOMES PHASE 2

A REPLAT OF TRACT FD-6, TWISTED OAKS, ACCORDING TO THE PLAT THEREOF
AS RECORDED IN PLAT BOOK 21, PAGES 18 THROUGH 18T, OF THE PUBLIC RECORDS OF SUMTER COUNTY, FLORIDA
LYING IN SECTION 31, TOWNSHIP 18 SOUTH, RANGE 23 EAST, CITY OF WILDWOOD, SUMTER COUNTY, FLORIDA

DESCRIPTION:

A REPLAT OF TRACT FD-6, TWISTED OAKS, ACCORDING TO THE PLAT THEREOF AS RECORDED IN PLAT BOOK 21, PAGES 18 THROUGH 18T, OF THE PUBLIC RECORDS OF SUMTER COUNTY, FLORIDA. LYING IN SECTION 31, TOWNSHIP 18 SOUTH, RANGE 23 EAST, CITY OF WILDWOOD, SUMTER COUNTY, FLORIDA.

ALSO DESCRIBED AS

A PARCEL OF LAND LYING IN SECTION 31, TOWNSHIP 18 SOUTH, RANGE 23 EAST, SUMTER COUNTY, FLORIDA, AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGIN AT THE SOUTHWEST CORNER OF TRACT OS-1, TWISTED OAKS, ACCORDING TO THE PLAT THEREOF AS RECORDED IN PLAT BOOK 21, PAGES 18 THROUGH 18T, OF THE PUBLIC RECORDS OF SUMTER COUNTY, FLORIDA; THENCE ALONG THE NORTH LINE OF THE SOUTHEAST 1/4 OF SAID SECTION 31, N.89°53'23"W., A DISTANCE OF 726.92 FEET TO THE SOUTHEAST CORNER OF TRACT OS-3, TWISTED OAKS TOWNHOMES PHASE 1, ACCORDING TO THE PLAT THEREOF AS RECORDED IN PLAT BOOK 21, PAGES 36 THROUGH 36D, OF THE PUBLIC RECORDS OF SUMTER COUNTY, FLORIDA; THENCE N.00°06'40"E., A DISTANCE OF 114.22 FEET TO THE NORTHEAST CORNER OF LOT 93, OF SAID TWISTED OAKS TOWNHOMES PHASE 1; THENCE ALONG THE SOUTH RIGHT-OF-WAY LINE OF HESPER LANE (TRACT R-1), OF SAID TWISTED OAKS TOWNHOMES PHASE 1, S.89°53'20"E., A DISTANCE OF 185.09 FEET; THENCE N.00°06'40"E., A DISTANCE OF 139.33 FEET TO THE NORTHEAST CORNER OF LOT 198, OF SAID TWISTED OAKS TOWNHOMES PHASE 1; THENCE ALONG THE BOUNDARY OF TRACT OS-5, OF SAID TWISTED OAKS TOWNHOMES PHASE 1, RUN THE FOLLOWING THREE (3) COURSES: 1) S.89°53'20"E., A DISTANCE OF 288.17 FEET; 2) N.00°06'40"E., A DISTANCE OF 824.63 FEET; 3) N.89°50'08"W., A DISTANCE OF 8.35 FEET; THENCE N.00°09'52"E., A DISTANCE OF 179.33 FEET TO THE NORTHEAST CORNER OF TRACT OS-2, OF SAID TWISTED OAKS TOWNHOMES PHASE 1; THENCE ALONG THE SOUTH RIGHT-OF-WAY LINE OF CANOPY OAK BOULEVARD (TRACT R-1), OF SAID TWISTED OAKS, THE FOLLOWING THREE (3) COURSES: 1) S.89°50'08"E., A DISTANCE OF 56.19 FEET; 2) THENCE EASTERLY, 122.94 FEET ALONG THE ARC OF A TANGENT CURVE TO THE RIGHT HAVING A RADIUS OF 568.00 FEET AND A CENTRAL ANGLE OF 12°24'05" (CHORD BEARING S.83°38'06"E., 122.70 FEET); 3) THENCE EASTERLY, 84.70 FEET ALONG THE ARC OF A REVERSE CURVE TO THE LEFT HAVING A RADIUS OF 632.00 FEET AND A CENTRAL ANGLE OF 07°40'44" (CHORD BEARING S.81°16'25"E., 84.64 FEET) TO THE NORTHWEST CORNER OF TRACT M-1, OF SAID TWISTED OAKS; THENCE ALONG THE WEST BOUNDARY OF TRACTS M-1 AND OS-1, OF SAID TWISTED OAKS, S.00°36'40"W., A DISTANCE OF 1231.41 FEET TO THE **POINT OF BEGINNING**.

CONTAINING 9.467 ACRES, MORE OR LESS.

NOTES:

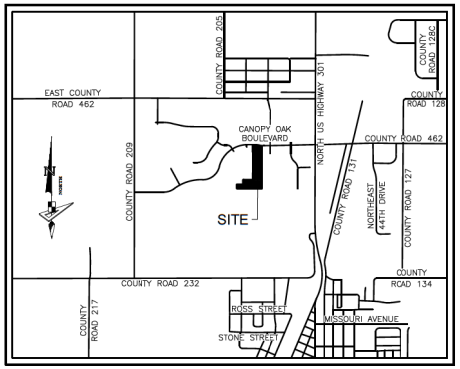
1) ALL PLATTED UTILITY EASEMENTS SHALL PROVIDE THAT SUCH EASEMENTS SHALL ALSO BE EASEMENTS FOR THE CONSTRUCTION, INSTALLATION, MAINTENANCE, AND OPERATION OF CABLE TELEVISION SERVICES; PROVIDED, HOWEVER, NO SUCH CONSTRUCTION, INSTALLATION, MAINTENANCE, AND OPERATION OF CABLE TELEVISION SERVICES SHALL INTERFERE WITH THE FACILITIES AND SERVICES OF AN ELECTRIC, TELEPHONE, GAS OR OTHER PUBLIC UTILITY. IN THE EVENT A CABLE TELEVISION COMPANY DAMAGES THE FACILITIES OF A PUBLIC UTILITY, IT SHALL BE SOLELY RESPONSIBLE FOR THE DAMAGES. THIS SECTION SHALL NOT APPLY TO THOSE PRIVATE EASEMENTS GRANTED TO OR OBTAINED BY A PARTICULAR ELECTRIC, TELEPHONE, GAS OR OTHER PUBLIC UTILITY. SUCH CONSTRUCTION, INSTALLATION, MAINTENANCE, AND OPERATION SHALL COMPLY WITH THE NATIONAL ELECTRICAL SAFETY CODE AS ADOPTED BY THE FLORIDA PUBLIC SERVICE COMMISSION.
2) BEARINGS SHOWN HEREON ARE BASED ON THE NORTH LINE OF THE SOUTHEAST 1/4 OF SECTION 31, TOWNSHIP 18 SOUTH, RANGE 23 EAST, HAVING A GRID BEARING OF N 89°53'23" W. THE GRID BEARINGS AS SHOWN HEREON REFER TO THE STATE PLANE COORDINATE SYSTEM, NORTH AMERICAN DATUM OF 1983 (NAD 83-2011 ADJUSTMENT) FOR THE WEST ZONE OF FLORIDA.
3) THE SUBJECT PLAT LIES IN FLOOD ZONES "X" AND "A", ACCORDING TO FLOOD INSURANCE RATE MAP, MAP NO. 12119C0068D FOR SUMTER COUNTY, DATED 09/27/2013, AND ISSUED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY. LINES SHOWN, IF ANY, HAVE BEEN DIGITALLY TRANSLATED FROM DFIRM DATABASE INFORMATION SUPPLIED BY THE FEMA MAP SERVICE CENTER (HTTPS://MSC.FEMA.GOV).
4) ALL DISTANCES SHOWN ARE IN FEET.
5) WITH REFERENCE TO CURVILINEAR LOTS, NON-RADIAL LINES HAVE BEEN DESIGNATED BY (NR). ALL OTHER LINES ARE RADIAL.
6) LOT CORNERS WILL BE SET PRIOR TO THE TRANSFER OF ANY LOT OR PRIOR TO THE EXPIRATION OF THE BOND OR OTHER SURETY.
7) PERMANENT CONTROL POINTS (P.C.P.'S) WILL BE SET WITHIN ONE YEAR OF THE DATE THIS PLAT WAS RECORDED OR PRIOR TO THE EXPIRATION OF THE BOND OR SURETY.
8) ALL PERMANENT REFERENCE MONUMENTS (P.R.M.'S) HAVE BEEN SET IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER 177, FLORIDA STATUES.
9) THE PROPERTY INFORMATION REPORT FOR THIS PLAT HAS BEEN SUBMITTED BY SEPARATE DOCUMENT.
10) THE RADIUS ON THE EXTERIOR OF WETLANDS BUFFER IS 25.00' UNLESS NOTED OR DEPICTED.
11) LOTS 15 THROUGH 92 AND LOTS 199 THROUGH 248 ARE DEPICTED ON THIS PLAT FOR A TOTAL OF 128 LOTS, TRACTS OS-6, OS-7, OS-8 AND R-1 FOR A TOTAL OF 4 TRACTS.
12) MORTGAGEE'S JOINDER AND CONSENT TO DEDICATION RECORDED BY SEPARATE INSTRUMENT IN OFFICIAL RECORDS BOOK _____, PAGE _____ OF THE PUBLIC RECORDS OF SUMTER COUNTY, FLORIDA
13) MORTGAGEE'S JOINDER AND CONSENT TO DEDICATION RECORDED BY SEPARATE INSTRUMENT IN OFFICIAL RECORDS BOOK _____, PAGE _____ OF THE PUBLIC RECORDS OF SUMTER COUNTY, FLORIDA
14) AT THE TIME OF RECORDING THIS PLAT IS AFFECTED BY THE FOLLOWING RECORDED EASEMENTS FOUND IN THE PUBLIC RECORDS OF SUMTER COUNTY, FLORIDA: (WHICH THIS REFERENCE DOES NOT ACT TO REIMPOSE SAME)

a. RESTRICTIONS, COVENANTS, CONDITIONS, EASEMENTS AND OTHER MATTERS AS CONTAINED ON THE PLAT OF TWISTED OAKS, RECORDED IN PLAT BOOK 21, PAGE 18 18A THROUGH 18T.
b. EASEMENT AS CONTAINED IN THAT CERTAIN AGREEMENT BETWEEN THE CITY OF WILDWOOD, FLORIDA AND MILDRED O'DELL, INDIVIDUALLY AND AS TRUSTEE OF THE ESTATE OF JAMES O'DELL, RECORDED JUNE 27, 2000 IN OFFICIAL RECORDS BOOK 812, PAGES 209 THROUGH 211 AND TOGETHER WITH AND AFFECTED BY SUBORDINATION OF CITY UTILITY INTERESTS RECORDED SEPTEMBER 10, 2008 IN OFFICIAL RECORDS BOOK 1992, PAGE 661, ALL OF THE PUBLIC RECORDS OF SUMTER COUNTY, FLORIDA.

LEGEND:

C.C.R. ---------- CERTIFIED CORNER RECORD
U.E. ---------- UTILITY EASEMENT
D.E. ---------- DRAINAGE EASEMENT
PC ---------- POINT OF CURVATURE
PT ---------- POINT OF TANGENCY
PRC ---------- POINT OF REVERSE CURVATURE
PCC ---------- POINT OF COMPOUND CURVATURE
LS ---------- LICENSE SURVEYOR
LB ---------- LICENSE BUSINESS
O.R. ---------- OFFICIAL RECORDS BOOK
(NR) ---------- NON-RADIAL

● ---------- LOT CORNER OR CHANGE OF DIRECTION
■ ---------- INDICATES (P.R.M.) SET PERMANENT REFERENCE MONUMENT 4"X4" CONCRETE MONUMENT WITH DISK STAMPED "PRM LB7768" UNLESS OTHERWISE NOTED.
⊖ ---------- INDICATES (P.R.M.) FOUND PERMANENT REFERENCE MONUMENT 4"X4" CONCRETE MONUMENT WITH DISK STAMPED "PRM LB7768" UNLESS OTHERWISE NOTED.
◉ ---------- INDICATES (P.C.P.) PERMANENT CONTROL POINT STAMPED "PCP LB7768"



LOCATION MAP
CITY OF WILDWOOD, SUMTER COUNTY, FLORIDA
SCALE: 1" = 2000'

CERTIFICATE OF CLERK OF COURT:

I HEREBY CERTIFY THAT I HAVE EXAMINED THIS PLAT AND FIND THAT IT COMPLIES IN FORM WITH ALL THE REQUIREMENTS OF CHAPTER 177, FLORIDA STATUTES AND WAS FILED FOR RECORD ON _____, 2024, AT _____ FILE NUMBER _____, PLAT BOOK _____ PAGE _____.

CLERK OF THE COURT IN AND FOR SUMTER COUNTY, FLORIDA

PRINT NAME
DEPUTY CLERK

SIGNATURE
DEPUTY CLERK

REVIEWING SURVEYOR'S CERTIFICATE:

PURSUANT TO SECTION 177.081, FLORIDA STATUTES, I HEREBY CERTIFY THAT I HAVE PERFORMED A REVIEW OF THIS PLAT FOR CONFORMITY TO CHAPTER 177, FLORIDA STATUTES AND THAT SAID PLAT COMPLIES WITH THE TECHNICAL REQUIREMENTS OF THAT CHAPTER; PROVIDED, HOWEVER, THAT MY REVIEW AND CERTIFICATION DOES NOT INCLUDE FIELD VERIFICATION OF ANY POINTS OR MEASUREMENTS SHOWN ON THIS PLAT.

SIGNATURE

DATE

RONALD W. HERR, P.L.S.
WADE SURVEYING, INC.

REGISTRATION NO.

CERTIFICATE OF APPROVAL BY CITY OFFICIALS:

THIS CERTIFIES THAT THIS PLAT WAS PRESENTED TO THE PROJECT REVIEW COMMITTEE OF THE CITY OF WILDWOOD, SUMTER COUNTY, FLORIDA AND WAS APPROVED BY THE BOARD FOR RECORD ON THIS __ DAY OF _____, 2024.

ATTEST:

MELANIE D. STRICKLAND
PROJECT REVIEW COMMITTEE COORDINATOR

THIS CERTIFIES THAT THIS PLAT WAS PRESENTED TO THE COMMISSION OF THE CITY OF WILDWOOD, SUMTER COUNTY, FLORIDA, AND WAS APPROVED BY THE COMMISSION FOR RECORD ON THIS __ DAY OF _____, 2024.

JESSICA BARNES
CITY CLERK

ED WOLF
MAYOR

THIS CERTIFIES THAT THIS PLAT WAS PRESENTED TO THE ATTORNEY FOR THE CITY OF WILDWOOD, SUMTER COUNTY, FLORIDA, AND APPROVED BY HIM OR HER AS TO FORM AND LEGALITY ON THIS _____ DAY OF _____, 2024.

MELANIE D. STRICKLAND
DEVELOPMENT SERVICES DIRECTOR

JEREMY HOCKENBURY
PUBLIC WORKS DIRECTOR

PRINT NAME
CITY OF WILDWOOD, ENGINEER

SIGNATURE
CITY OF WILDWOOD, ENGINEER

PRINT NAME
CITY OF WILDWOOD, ATTORNEY

SIGNATURE
CITY OF WILDWOOD, ATTORNEY

NOTICE:
THIS PLAT, AS RECORDED IN ITS GRAPHIC FORM, IS THE OFFICIAL DEPICTION OF THE SUBDIVIDED LANDS DESCRIBED HEREIN AND WILL IN NO CIRCUMSTANCES BE SUPPLANTED IN AUTHORITY BY ANY OTHER GRAPHIC OR DIGITAL FORM OF THE PLAT. THERE MAY BE ADDITIONAL RESTRICTIONS THAT ARE NOT RECORDED ON THIS PLAT THAT MAY BE FOUND IN THE PUBLIC RECORDS OF THIS COUNTY.

DEDICATION AND GRANT OF EASEMENTS:

THIS IS TO CERTIFY THAT KL TWISTED OAKS, LLC ("OWNER"), IS THE FEE SIMPLE OWNER OF THE LANDS DESCRIBED IN THIS PLAT KNOWN AS TWISTED OAKS TOWNHOMES PHASE 2, AND HEREBY DEDICATES THE LANDS SUBJECT TO THIS PLAT AS FOLLOWS:

1. TO THE TWISTED OAKS POINTE COMMUNITY DEVELOPMENT DISTRICT, AND ITS SUCCESSORS AND ASSIGNS (TOGETHER, "CDD"):

a. TRACT R-1 FOR RIGHT-OF-WAY PURPOSES. THE CDD SHALL HAVE THE RIGHT AND OBLIGATION TO MAINTAIN SUCH TRACTS. GOVERNMENTAL ENTITIES, INCLUDING EMERGENCY PERSONNEL AND VEHICLES, AS WELL AS UTILITY PROVIDERS AND UNITED STATES POSTAL SERVICE MAIL CARRIERS, SHALL HAVE A NON-EXCLUSIVE EASEMENT OVER ALL SUCH RIGHTS-OF-WAY FOR THE PURPOSES OF PERFORMING THEIR OFFICIAL DUTIES.

b. TRACTS OS-6 THROUGH OS-8 FOR OPEN SPACE PURPOSES. THE CDD SHALL HAVE THE RIGHT AND OBLIGATION TO MAINTAIN SUCH TRACTS.

c. NON-EXCLUSIVE, PERPETUAL EASEMENTS OVER ALL DRAINAGE EASEMENTS ("D.E.") WITH THE RIGHTS TO ACCESS, CONSTRUCT, ACQUIRE, OWN, OPERATE, MAINTAIN, REPAIR AND REPLACE ANY STORMWATER IMPROVEMENTS WITHIN SUCH EASEMENTS. THE CDD SHALL HAVE THE RIGHT AND OBLIGATION TO MAINTAIN SUCH IMPROVEMENTS.

d. THE CDD MAY INSTALL AND/OR ACQUIRE WATER, SEWER AND RECLAIM UTILITIES WITHIN TRACT R-1 AND TRANSFER THEM TO THE CITY UPON COMPLETION, SUBJECT TO THE CITY'S APPROVAL PROCESS. AS A POINT OF CLARIFICATION, THE CDD SHALL NOT, AND IS NOT INTENDED TO BE, A UTILITY PROVIDER FOR WATER, SEWER AND RECLAIM UTILITIES, AND INSTEAD INTENDS ONLY TO FINANCE THE INITIAL INSTALLATION OF SUCH UTILITIES AND CONVEY THEM TO THE CITY UPON COMPLETION.

2. TO THE CITY OF WILDWOOD, FLORIDA ("CITY"), AND ITS SUCCESSORS AND ASSIGNS:

e. NON-EXCLUSIVE EASEMENTS FOR GOVERNMENTAL PURPOSES OVER TRACT R-1 FOR RIGHTS-OF-WAY ACCESS, UTILITY EASEMENTS AND DRAINAGE EASEMENTS, EXCEPT AS OTHERWISE STATED HEREIN, THE CITY SHALL HAVE THE RIGHT BUT NOT THE OBLIGATION TO MAINTAIN AND REPAIR ANY IMPROVEMENTS THEREON.

3. ALL UTILITY EASEMENTS SHOWN ON THIS PLAT SHALL ALSO BE EASEMENTS FOR THE CONSTRUCTION, INSTALLATION, MAINTENANCE, AND OPERATION OF CABLE TELEVISIONS SERVICES IN THE MANNER AND SUBJECT TO THE PROVISIONS OF CHAPTER 177, PART 1, SECTION 177.091(28) OF THE FLORIDA STATUTES; HOWEVER, ONLY CABLE TELEVISION SERVICE PROVIDERS SPECIFICALLY AUTHORIZED BY THE UNDERSIGNED OWNERS, THEIR SUCCESSORS AND ASSIGNS, TO SERVE THE LANDS SHOWN ON THIS PLAT, SHALL HAVE THE BENEFIT OF SAID CABLE TELEVISION SERVICE EASEMENTS.

4. ALL LANDS SUBJECT TO THIS PLAT THAT ARE NOT OTHERWISE DEDICATED ABOVE ARE HEREBY RESERVED BY THE OWNER FOR FUTURE USES.

5. TO ALL UTILITY PROVIDERS, PUBLIC OR PRIVATE:

a. NON-EXCLUSIVE EASEMENTS OVER ALL UTILITY EASEMENTS AND AS SHOWN ON THE PLAT HEREIN FOR THE RIGHTS OVER THE ROADS FOR INSTALLATION, OPERATION, MAINTENANCE, AND REPAIR OF ELECTRIC FACILITIES, STREET LIGHTS, AND OTHER SIMILAR FACILITIES.

IN WITNESS WHEREOF, THE UNDERSIGNED OWNERS HAS EXECUTED THIS PLAT ON THE ___ DAY OF ____, 2024.

KL TWISTED OAKS, LLC, A FLORIDA LIMITED LIABILITY COMPANY

SIGNATURE

SIGNATURE

PRINT NAME

PRINT NAME

BY:_____
AUTHORIZED SIGNATORY

ADDRESS

ADDRESS

IN WITNESS WHEREOF, THE UNDERSIGNED OWNER HAS EXECUTED THIS PLAT ON THE ___ DAY OF _____, 2024.
TWISTED OAKS POINTE COMMUNITY DEVELOPMENT DISTRICT ("CDD")

SIGNATURE

SIGNATURE

PRINT NAME

PRINT NAME

BY:_____
AUTHORIZED SIGNATORY

ADDRESS

ADDRESS

NOTARY ACKNOWLEDGEMENT:

STATE OF FLORIDA }
COUNTY OF SUMTER } SS

THE FOREGOING CERTIFICATE OF OWNERSHIP WAS ACKNOWLEDGE BEFORE ME BY MEANS OF ☐ PHYSICAL PRESENCE OR ☐ ONLINE NOTARIZATION, THIS _____ DAY OF _____, 2024, _____, AS THE _____ OF KL TWISTED OAKS; WHO IS PERSONALLY KNOWN TO ME OR PRODUCED _____ AS IDENTIFICATION.

NOTARY PUBLIC SIGNATURE

COMMISSION EXPIRES:

PRINT NAME
COMMISSION NO:

NOTARY ACKNOWLEDGEMENT:

STATE OF FLORIDA }
COUNTY OF SUMTER } SS

THE FOREGOING CERTIFICATE OF OWNERSHIP WAS ACKNOWLEDGE BEFORE ME BY MEANS OF ☐ PHYSICAL PRESENCE OR ☐ ONLINE NOTARIZATION, THIS _____ DAY OF _____, 2024. BY _____, AS THE AUTHORIZED SIGNATORY, OF COMMUNITY DEVELOPMENT DISTRICT; WHO IS PERSONALLY KNOWN TO ME OR PRODUCED _____ AS IDENTIFICATION.

NOTARY PUBLIC SIGNATURE

COMMISSION EXPIRES:

PRINT NAME
COMMISSION NO:

CERTIFICATE OF SURVEYOR:

I HEREBY CERTIFY THAT THIS PLAT OF TWISTED OAKS TOWNHOMES PHASE 2 WAS PREPARED UNDER MY DIRECTION AND SUPERVISION; AND THAT THE PERMANENT REFERENCE MONUMENTS AS SHOWN HEREON WERE PLACED ON THE 29TH DAY OF FEBRUARY, 2024; I FURTHER CERTIFY THAT THIS PLAT COMPLIES WITH THE REQUIREMENTS OF CHAPTER 177, FLORIDA STATUTES

DATE

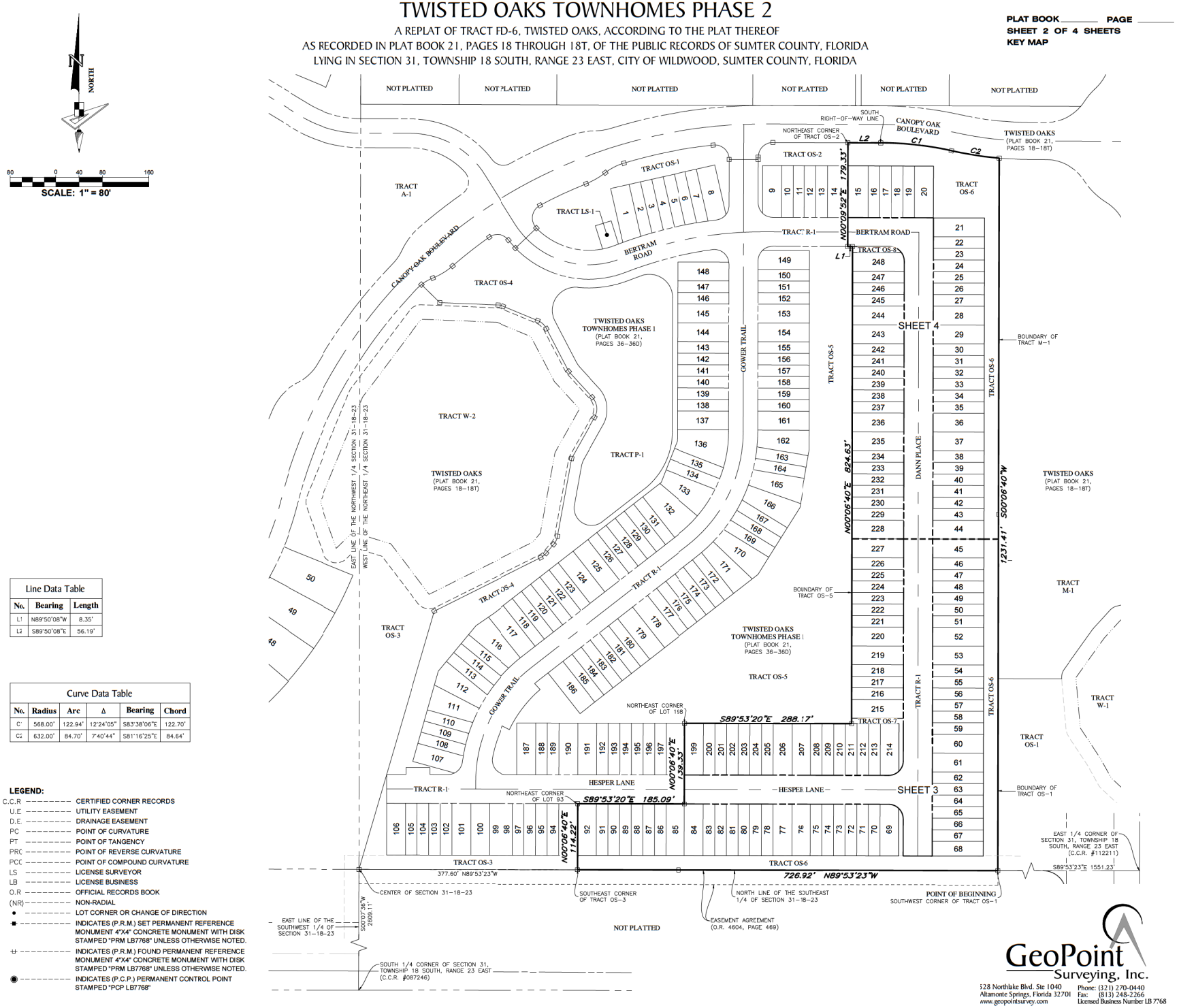
DAVID W. MAXWELL
PROFESSIONAL LAND SURVEYOR NO. LS7311
GEOPOINT SURVEYING, INC. (LICENSED BUSINESS NUMBER LB7768)
528 NORTHLAKE BOULEVARD, STE. 1040, ALTAMONTE SPRINGS, FLORIDA 32701

GeoPoint Surveying, Inc.
528 Northlake Blvd. Ste 1040
Altamonte Springs, Florida 32701
www.geopointsurvey.com
Phone: (321) 270-0440
Fax: (813) 248-2266
Licensed Business Number LB 7768

TWISTED OAKS TOWNHOMES PHASE 2

A REPLAT OF TRACT FD-6, TWISTED OAKS, ACCORDING TO THE PLAT THEREOF
AS RECORDED IN PLAT BOOK 21, PAGES 18 THROUGH 18T, OF THE PUBLIC RECORDS OF SUMTER COUNTY, FLORIDA
LYING IN SECTION 31, TOWNSHIP 18 SOUTH, RANGE 23 EAST, CITY OF WILDWOOD, SUMTER COUNTY, FLORIDA

PLAT BOOK _____ PAGE _____
SHEET 2 OF 4 SHEETS
KEY MAP



Line Data Table		
No.	Bearing	Length
L1	N89°50'08"W	8.35'
L2	S89°50'08"E	56.19'

Curve Data Table					
No.	Radius	Arc	Δ	Bearing	Chord
C1	568.00'	122.94'	12°24'05"	S83°38'06"E	122.70'
C2	632.00'	84.70'	7°40'44"	S81°16'25"E	84.64'

LEGEND:

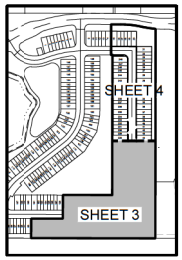
C.C.R	CERTIFIED CORNER RECORDS
U.E	UTILITY EASEMENT
D.E.	DRAINAGE EASEMENT
PC	POINT OF CURVATURE
PT	POINT OF TANGENCY
PRC	POINT OF REVERSE CURVATURE
PCC	POINT OF COMPOUND CURVATURE
LS	LICENSE SURVEYOR
LB	LICENSE BUSINESS
O.R	OFFICIAL RECORDS BOOK
(NR)	NON-RADIAL
•	LOT CORNER OR CHANGE OF DIRECTION
■	INDICATES (P.R.M.) SET PERMANENT REFERENCE MONUMENT 4"X4" CONCRETE MONUMENT WITH DISK STAMPED "PRM LB7768" UNLESS OTHERWISE NOTED.
⊎	INDICATES (P.R.M.) FOUND PERMANENT REFERENCE MONUMENT 4"X4" CONCRETE MONUMENT WITH DISK STAMPED "PRM LB7768" UNLESS OTHERWISE NOTED.
◉	INDICATES (P.C.P.) PERMANENT CONTROL POINT STAMPED "PCP LB7768"

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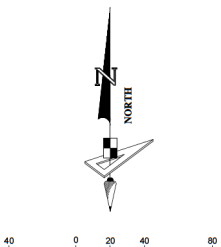
TWISTED OAKS TOWNHOMES PHASE 2

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PLAT BOOK _____ PAGE _____
SHEET 3 OF 4 SHEETS



SHEET LAYOUT
SCALE: 1" = 400'



MATCHLINE - SEE SHEET 4 OF 4

TWISTED OAKS TOWNHOMES PHASE 1 (PLAT BOOK 21, PAGES 36–36D)

TRACT OS-4 (OPEN SPACE)

DRAINAGE EASEMENT

BOUNDARY OF TRACT OS–5

DANN PLACE (50.00' RIGHT–OF–WAY)

TRACT OS-7 (OPEN SPACE)

BOUNDARY OF TRACT M–1

TRACT M-1 (MULTIFAMILY)

TWISTED OAKS (PLAT BOOK 21, PAGES 18–18T)

TRACT OS-1 (OPEN SPACE)

BOUNDARY OF TRACT OS–1

TRACT OS-6 (OPEN SPACE)

TRACT R-1

HESPER LANE (50.00' RIGHT–OF–WAY)

NORTHEAST CORNER OF LOT 198

NORTHEAST CORNER OF LOT 93

SOUTHEAST CORNER OF TRACT OS–3

TRACT OS-3 (OPEN SPACE)

EASEMENT AGREEMENT (O.R. 4604, PG. 469)

NORTH LINE OF THE SOUTHEAST 1/4 OF SECTION 31–18–23

NOT PLATTED

POINT OF BEGINNING
SOUTHWEST CORNER OF TRACT OS–1

LEGEND:

C.C.R	CERTIFIED CORNER RECORDS
U.E	UTILITY EASEMENT
D.E.	DRAINAGE EASEMENT
PC	POINT OF CURVATURE
PT	POINT OF TANGENCY
PRC	POINT OF REVERSE CURVATURE
PCC	POINT OF COMPOUND CURVATURE
LS	LICENSE SURVEYOR
LB	LICENSE BUSINESS
O.R	OFFICIAL RECORDS BOOK
(NR)	NON-RADIAL
•	LOT CORNER OR CHANGE OF DIRECTION
■	INDICATES (P.R.M.) SET PERMANENT REFERENCE MONUMENT 4"X4" CONCRETE MONUMENT WITH DISK STAMPED "PRM LB7768" UNLESS OTHERWISE NOTED.
⊎	INDICATES (P.R.M.) FOUND PERMANENT REFERENCE MONUMENT 4"X4" CONCRETE MONUMENT WITH DISK STAMPED "PRM LB7768" UNLESS OTHERWISE NOTED.
◉	INDICATES (P.C.P.) PERMANENT CONTROL POINT STAMPED "PCP LB7768"

Curve Data Table

No.	Radius	Arc	Δ	Bearing	Chord
C6	25.00'	39.27'	90°00'00"	N44°53'20"W	35.36'
C7	25.00'	39.27'	90°00'00"	N45°06'40"E	35.36'
C9	25.00'	19.88'	45°34'23"	N22°40'32"W	19.36'
C10	25.00'	19.38'	44°25'37"	N67°40'32"W	18.90'
C11	25.00'	19.38'	44°25'37"	N67°53'51"E	18.90'
C12	25.00'	19.88'	45°34'23"	N22°53'51"E	19.36'

Line Data Table

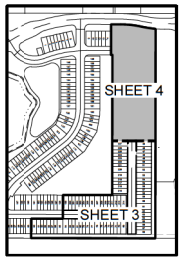
No.	Bearing	Length
L6	N48°21'51"W	13.36'
L7	S89°53'20"E	20.00'

GeoPoint Surveying, Inc.
528 Northlake Blvd. Ste 1040
Altamonte Springs, Florida 32701
www.geopointsurvey.com
Phone: (321) 270-0440
Fax: (813) 248-2266
Licensed Business Number LB 7768

TWISTED OAKS TOWNHOMES PHASE 2

A REPLAT OF TRACT FD-6, TWISTED OAKS, ACCORDING TO THE PLAT THEREOF
AS RECORDED IN PLAT BOOK 21, PAGES 18 THROUGH 18T, OF THE PUBLIC RECORDS OF SUMTER COUNTY, FLORIDA
LYING IN SECTION 31, TOWNSHIP 18 SOUTH, RANGE 23 EAST, CITY OF WILDWOOD, SUMTER COUNTY, FLORIDA

PLAT BOOK_____ PAGE _____
SHEET 4 OF 4 SHEETS



SHEET LAYOUT
SCALE: 1" = 400'



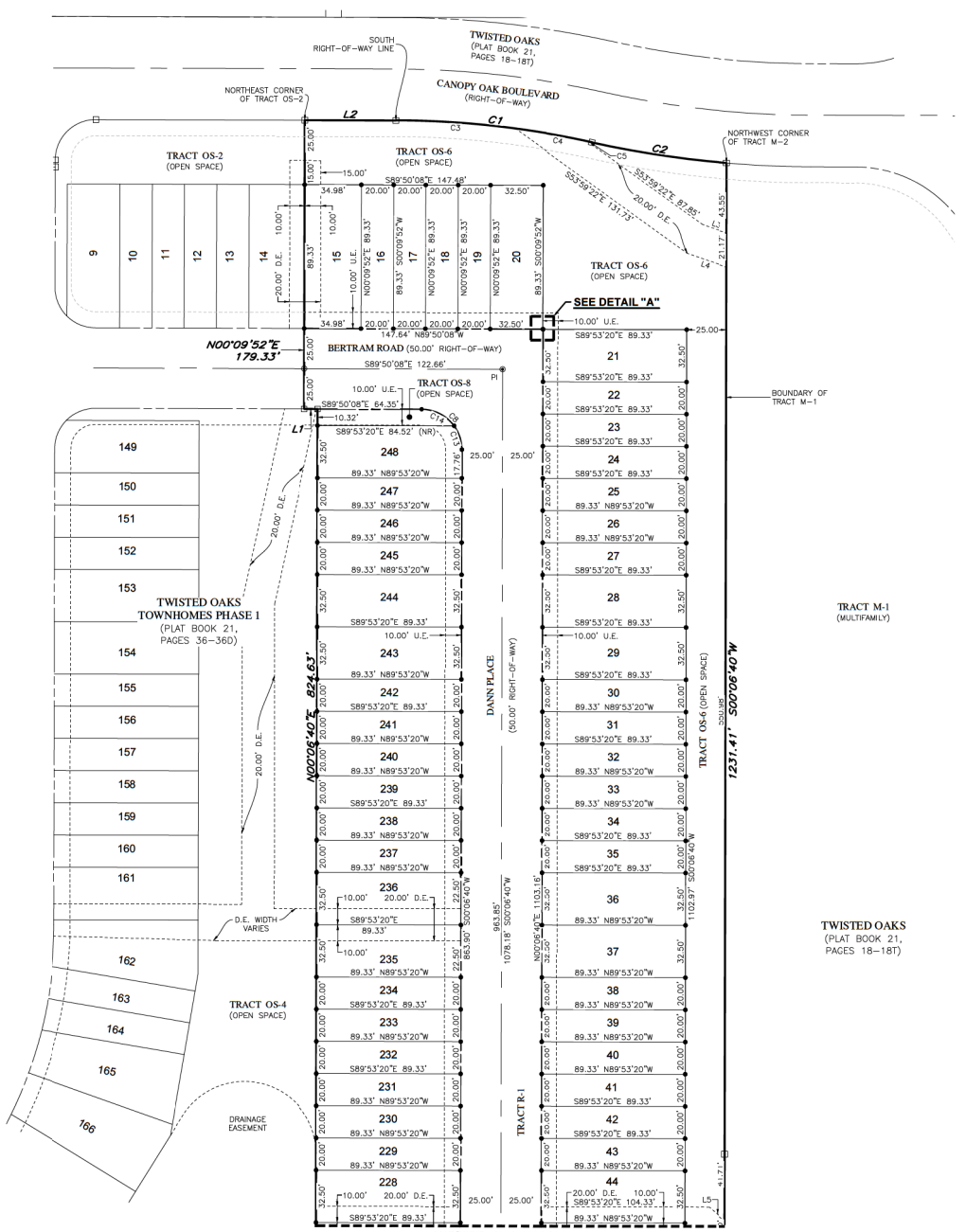
40 0 20 40 80
SCALE: 1" = 40'

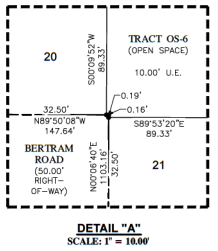
Line Data Table		
No.	**Bearing**	**Length**
L1	N89°50'08"W	8.35'
L2	S89°50'08"E	56.19'
L3	S70°42'58"E	16.23'
L4	S70°42'58"E	26.12'
L5	S48°21'51"E	13.36'

Curve Data Table					
No.	**Radius**	**Arc**	**Δ**	**Bearing**	**Chord**
C1	568.00'	122.94'	12°24'05"	S83°38'06"E	122.70'
C2	632.00'	84.70'	7°40'44"	S81°16'25"E	84.64'
C3	568.00'	74.49'	7°30'51"	N86°04'43"W	74.44'
C4	568.00'	45.58'	4°35'53"	N80°01'21"W	45.57'
C5	568.00'	2.87'	0°17'22"	N77°34'44"W	2.87'
C8	25.00'	39.25'	89°56'48"	N44°51'44"W	35.34'
C13	25.00'	15.77'	36°08'00"	N17°57'20"W	15.51'
C14	25.00'	23.48'	53°48'48"	N62°55'44"W	22.63'

LEGEND:

C.C.R	CERTIFIED CORNER RECORDS
U.E.	UTILITY EASEMENT
D.E.	DRAINAGE EASEMENT
PC	POINT OF CURVATURE
PT	POINT OF TANGENCY
PRC	POINT OF REVERSE CURVATURE
PCC	POINT OF COMPOUND CURVATURE
LS	LICENSE SURVEYOR
LB	LICENSE BUSINESS
O.R.	OFFICIAL RECORDS BOOK
(NR)	NON-RADIAL
•	LOT CORNER OR CHANGE OF DIRECTION
■	INDICATES (P.R.M.) SET PERMANENT REFERENCE MONUMENT 4"X4" CONCRETE MONUMENT WITH DISK STAMPED "PRM LB7768" UNLESS OTHERWISE NOTED.
⊎	INDICATES (P.R.M.) FOUND PERMANENT REFERENCE MONUMENT 4"X4" CONCRETE MONUMENT WITH DISK STAMPED "PRM LB7768" UNLESS OTHERWISE NOTED.
◉	INDICATES (P.C.P.) PERMANENT CONTROL POINT STAMPED "PCP LB7768"





DETAIL "A"
SCALE: 1" = 10.00'

GeoPoint Surveying, Inc.
528 Northlake Blvd. Ste 1040
Altamonte Springs, Florida 32701
www.geopointsurvey.com
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Licensed Business Number LB 7768

City of Wildwood, Florida

Planning & Zoning Board/Special Magistrate

The case below was heard on Tuesday, December 3, 2024, by the Special Magistrate. The applicant is seeking a favorable recommendation for a final plat from the City of Wildwood Planning and Zoning Board/Special Magistrate for Twisted Oaks Townhomes Phase 2 Final Plat, on 9.467 acres, MOL. The subject property is generally located approximately 0.31 miles west of N US 301, approximately 0.66 miles east of CR 209, and approximately 0.28 miles south of E C 462.

Case Number: PLAT 2407-006 Twisted Oaks Townhomes Phase 2 Final Plat

Applicant(s): James P. Harvey

Owner(s): KL Twisted Oaks, LLC

Parcel(s): Portion of D31A218

Under Land Development Regulation (LDR) § 1.7(B)(1), the Planning and Zoning Board/Special Magistrate has a duty to make a recommendation to the City Commission on all proposed final plats.

Based upon the testimony, evidence, and information presented as to the criteria set forth in LDR § 5.6, the Special Magistrate

☒ recommends approval

☐ recommends approval with the following conditions:

_____

☐ recommends denial

Dated: December 3, 2024

Lindsay C. T. Holt
Special Magistrate City of Wildwood

CITY COMMISSION OF THE CITY OF WILDWOOD

EXECUTIVE SUMMARY

SUBJECT: **PLAT 2407-007 Highfield at Twisted Oaks Phase 2 Final Plat**

REQUESTED ACTION: The Planning and Zoning Board/Special Magistrate recommends approval.

CONTRACT:

BUDGET IMPACT:

HISTORY/FACTS/ISSUES:

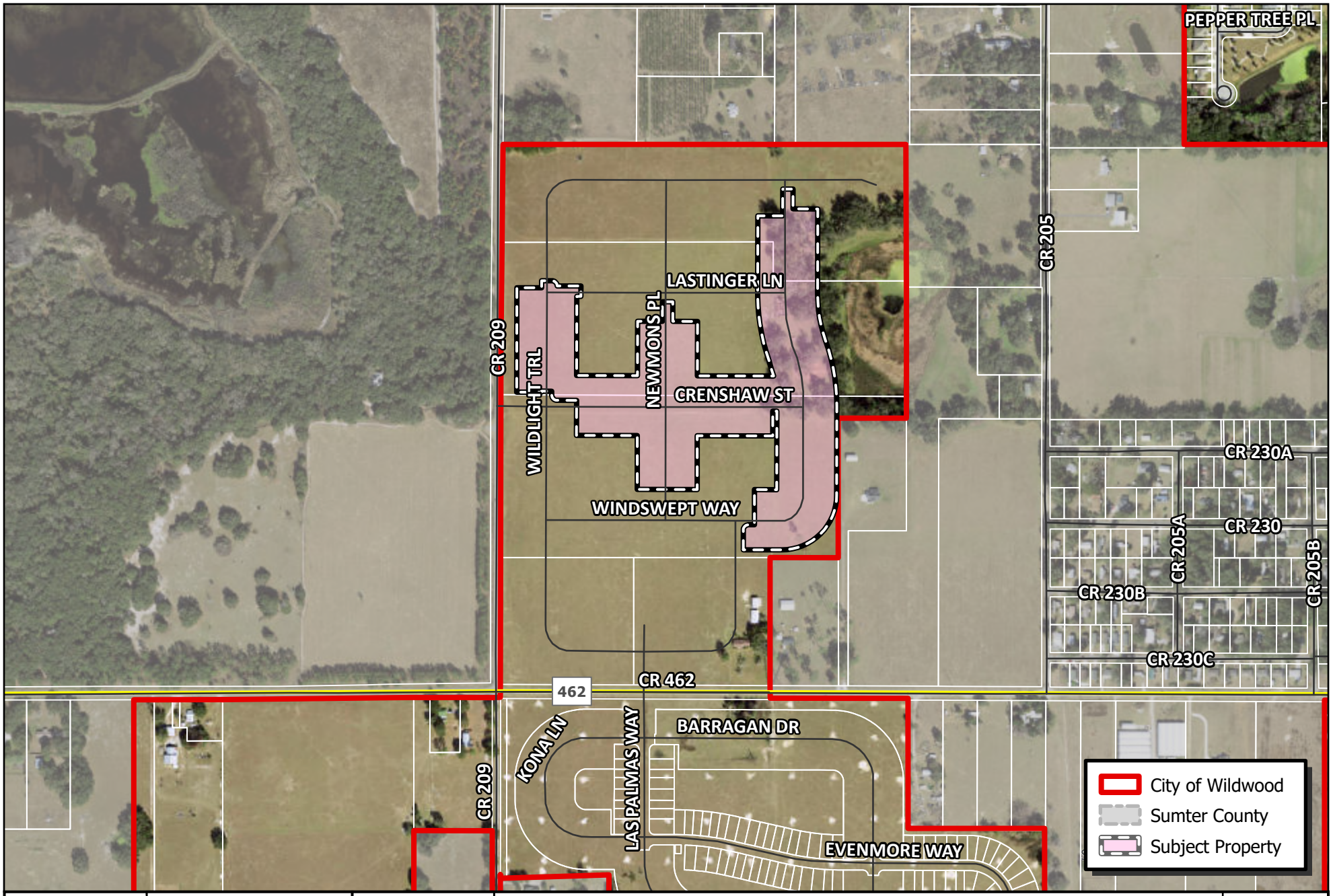
Case Number	PLAT 2407-007 Highfield at Twisted Oaks Phase 2 Final Plat
Applicant(s)	KL Highfield, LLC - James P. Harvey
Owner(s)	KL Highfield, LLC
Acreage	25.110 +/-
Property Location	The subject property is generally located approximately 0.14 miles north of E C 462 and east along CR 209.
Parcel(s)	Portion of D30-030
Date	January 3, 2025

The applicant is seeking approval from the City Commission for Highfield at Twisted Oaks Phase 2 Final Plat, a 140-lot subdivision with 3 tracts, per the attached plans.

There were two outstanding comments by the City Attorney, a SECO Utility Easement to be provided and a performance surety which have both been addressed as of January 3, 2025.

PLAT 2407-007 meets the criteria set forth in F.S. 177, Land Development Regulations, and is in line with the goals, objectives, and policies within the 2050 Comprehensive Plan.

Amanda Bondi
Planner II, Development Services



WILDWOOD FLORIDA EST. 1877

CITY OF WILDWOOD
100 North Main Street
Wildwood, FL 34785
Phone: (352) 330-1330
www.wildwood-fl.gov

N

US Feet
0 35 70 140

PLAT 2407-007

HIGHFIELD AT TWISTED OAKS PHASE 2 FINAL PLAT

PORTION OF PARCEL D30-030

MAP 1B
LOCATION MAP
JUL 2024

SUBDIVISION BOND

Bond No. 800188690

KNOW ALL MEN BY THESE PRESENTS, THAT WE KL Highfield LLC, located at 105 NE 1st Street, Delray Beach, FL 33444 561-682-9500, as Principal, and Atlantic Specialty Insurance Company, 605 Highway 169 North, Suite 800, Plymouth, MN 55441 , authorized to do business in the State of Florida, as Surety, are held and firmly bound unto City of Wildwood as Obligee, in the penal sum of Two Million Two Hundred Fifty Thousand Sixteen and 60/100 ($2,250,016.60) DOLLARS, lawful money of the United States of America, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, administrators, executors, successors and assigns, jointly and severally, firmly by these presents;

WHEREAS, KL Highfield LLC has agreed to construct in Highfield Phase 2 the following improvements: Infrastructure and Roadways as approved by the Obligee ("the Improvements"); and

WHEREAS, KL Highfield LLC is required to furnish a good and sufficient bond, conditioned to the proper installation of the Improvements.

NOW, THEREFORE, the condition of this obligation is such that if the Principal, its successors, legal representatives or assigns, shall construct, or have constructed, the Improvements herein described, according to the approved plans, specifications and standards or other requirements established by the City Engineer, and do all incidental work in connection therewith; and if all permits, permit fees, standards, and other regulations, currently in effect have been complied with; then this obligation shall be null and void; otherwise to remain in full force and effect.

If the Principal shall be declared in default by the City, the Surety shall have sixty (60) days from the date of said default within which to take whatever action it deems necessary in order to ensure performance. If, at the expiration of sixty (60) days from the date of said default, no arrangements have been made by the Principal or Surety satisfactory to the City for the completion of the Improvements, then the City shall have the right to complete the Improvements and the Principal and Surety, jointly and severally, shall pay all costs of completing the Improvements to the City, up to the amount of this bond, including, but not limited to, engineering, legal and other costs, together with any damages, either direct, indirect or consequential, which the City may sustain on account of the Principal's default. After the expiration of the aforesaid sixty (60) day period, the City shall have the additional right to contract for the completion of said contract upon which the Principal has defaulted and upon the City's acceptance of the lowest responsible bid for the completion of the Improvements, the Principal and Surety shall, jointly and severally, become immediately liable for the amount of said bid, up to the amount of this bond, and in the event the City is required to commence legal proceedings for the collection thereof, interest shall accrue at the rate of six percent (6%) per annum beginning with the commencement of such legal proceedings. The City, in its discretion, may permit the Surety to complete said contract, in the event of Principal's default.

In the event that the City commences suit for the collection of any sums due hereunder, the obligors and each of them agree to pay all costs incurred by the City including attorney's fees.

IN WITNESS WHEREOF, This instrument has been executed by the duly authorized representative of the Principal and the Surety.

Signed, sealed and dated this 20th day of December, 2024.

KL Highfield LLC
By: The Kolter Group LLC, a Florida limited liability company

By: _____
Richard Kattoura, Authorized Signatory

Atlantic Specialty Insurance Company

(Seal)

By: _____
Brook T. Smith, Attorney-in-Fact

intact INSURANCE

Power of Attorney

KNOW ALL MEN BY THESE PRESENTS, that ATLANTIC SPECIALTY INSURANCE COMPANY, a New York corporation with its principal office in Plymouth, Minnesota, does hereby constitute and appoint: **Audria R. Ward, Barbara J. Benton, Brett Rosenhaus, Brian S. Turner, Brook T. Smith, Charles J. Nielson, David R. Hoover, Davor Mimica, Deborah S. Neichter, Denise Donelson, Devin J. Phillips, Donald P. Bramlage, Edward T. Ward, F. Danny Gann, James H. Martin, James T. Smith, Jarrett Merlucci, Jason D. Cromwell, Jessica Pamela Reno, Joseph P. Nielson, Justin Vokus, Keith Nicholson, Kevin R. Wojtowicz, Laura D. Mosholder, Michelle D. Liwosz, Patricia Schmaltz, Raymond M. Hundley, Shawn Alan Burton, Tracey C. Brown, William O. Walker**, each individually if there be more than one named, its true and lawful Attorney-in-Fact, to make, execute, seal and deliver, for and on its behalf as surety, any and all bonds, recognizances, contracts of indemnity, and all other writings obligatory in the nature thereof; provided that no bond or undertaking executed under this authority shall exceed in amount the sum of: **unlimited** and the execution of such bonds, recognizances, contracts of indemnity, and all other writings obligatory in the nature thereof in pursuance of these presents, shall be as binding upon said Company as if they had been fully signed by an authorized officer of the Company and sealed with the Company seal. This Power of Attorney is made and executed by authority of the following resolutions adopted by the Board of Directors of ATLANTIC SPECIALTY INSURANCE COMPANY on the twenty-fifth day of September, 2012:

Resolved: That the President, any Senior Vice President or Vice-President (each an "Authorized Officer") may execute for and in behalf of the Company any and all bonds, recognizances, contracts of indemnity, and all other writings obligatory in the nature thereof, and affix the seal of the Company thereto; and that the Authorized Officer may appoint and authorize an Attorney-in-Fact to execute on behalf of the Company any and all such instruments and to affix the Company seal thereto; and that the Authorized Officer may at any time remove any such Attorney-in-Fact and revoke all power and authority given to any such Attorney-in-Fact.

Resolved: That the Attorney-in-Fact may be given full power and authority to execute for and in the name and on behalf of the Company any and all bonds, recognizances, contracts of indemnity, and all other writings obligatory in the nature thereof, and any such instrument executed by any such Attorney-in-Fact shall be as binding upon the Company as if signed and sealed by an Authorized Officer and, further, the Attorney-in-Fact is hereby authorized to verify any affidavit required to be attached to bonds, recognizances, contracts of indemnity, and all other writings obligatory in the nature thereof.

This power of attorney is signed and sealed by facsimile under the authority of the following Resolution adopted by the Board of Directors of ATLANTIC SPECIALTY INSURANCE COMPANY on the twenty-fifth day of September, 2012:

Resolved: That the signature of an Authorized Officer, the signature of the Secretary or the Assistant Secretary, and the Company seal may be affixed by facsimile to any power of attorney or to any certificate relating thereto appointing an Attorney-in-Fact for purposes only of executing and sealing any bond, undertaking, recognizance or other written obligation in the nature thereof, and any such signature and seal where so used, being hereby adopted by the Company as the original signature of such officer and the original seal of the Company, to be valid and binding upon the Company with the same force and effect as though manually affixed.

IN WITNESS WHEREOF, ATLANTIC SPECIALTY INSURANCE COMPANY has caused these presents to be signed by an Authorized Officer and the seal of the Company to be affixed this first day of January, 2023.

ATLANTIC SPECIALTY INSURANCE COMPANY CORPORATE SEAL 1986 NEW YORK

By _____
Sarah A. Kolar, Vice President and General Counsel

STATE OF MINNESOTA
HENNEPIN COUNTY

On this first day of January, 2023, before me personally came Sarah A. Kolar, Vice President and General Counsel of ATLANTIC SPECIALTY INSURANCE COMPANY, to me personally known to be the individual and officer described in and who executed the preceding instrument, and she acknowledged the execution of the same, and being by me duly sworn, that she is the said officer of the Company aforesaid, and that the seal affixed to the preceding instrument is the seal of said Company and that the said seal and the signature as such officer was duly affixed and subscribed to the said instrument by the authority and at the direction of the Company.

ALISON D. NASH-TROUT
NOTARY PUBLIC - MINNESOTA
My Commission Expires
January 31, 2030

_____
Notary Public

I, the undersigned, Secretary of ATLANTIC SPECIALTY INSURANCE COMPANY, a New York Corporation, do hereby certify that the foregoing power of attorney is in full force and has not been revoked, and the resolutions set forth above are now in force.

Signed and sealed. Dated 20th day of December, 2024

ATLANTIC SPECIALTY INSURANCE COMPANY CORPORATE SEAL 1986 NEW YORK

_____
Kara L.B. Barrow, Secretary

This Power of Attorney expires
January 31, 2030

Please direct bond verifications to surety@intactinsurance.com

HIGHFIELD AT TWISTED OAKS - PHASE 2

A REPLAT OF TRACT FD-1, HIGHFIELD AT TWISTED OAKS - PHASE 1, ACCORDING TO THE PLAT THEREOF AS RECORDED IN PLAT BOOK 21, PAGES 35 THROUGH 35G, OF THE PUBLIC RECORDS OF SUMTER COUNTY, FLORIDA, LYING IN SECTION 30, TOWNSHIP 18 SOUTH, RANGE 23 EAST, CITY OF WILDWOOD, SUMTER COUNTY, FLORIDA

PLAT BOOK_____ PAGE _____
SHEET 1 OF 5

DESCRIPTION:

A REPLAT OF TRACT FD-1, HIGHFIELD AT TWISTED OAKS, ACCORDING TO THE PLAT THEREOF AS RECORDED IN PLAT BOOK 21, PAGES 35 THROUGH 35G, OF THE PUBLIC RECORDS OF SUMTER COUNTY, FLORIDA, LYING IN SECTION 30, TOWNSHIP 18 SOUTH, RANGE 23 EAST, CITY OF WILDWOOD, SUMTER COUNTY, FLORIDA.

BEING MORE PARTICULARLY DESCRIBED AS:

A PARCEL OF LAND LYING IN SECTION 30, TOWNSHIP 18 SOUTH, RANGE 23 EAST, SUMTER COUNTY, FLORIDA, AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGIN AT THE NORTHWEST CORNER OF LOT 17, HIGHFIELD AT TWISTED OAKS, AS RECORDED IN PLAT BOOK 21, PAGES 35 THROUGH 35G, OF THE PUBLIC RECORDS OF SUMTER COUNTY, FLORIDA; THENCE RUN ALONG THE EAST BOUNDARY OF TRACT R-1 ALSO BEING WILDLIGHT TRAIL AND WINDSWEPT WAY THE AND THE EAST BOUNDARY OF LOT 64 OF SAID HIGHFIELD AT TWISTED OAKS, THE FOLLOWING FOUR (4) COURSES: 1) N.00°08'03"E., A DISTANCE OF 95.00 FEET; 2) THENCE NORTHEASTERLY, 39.27 FEET ALONG THE ARC OF A TANGENT CURVE TO THE RIGHT HAVING A RADIUS OF 25.00 FEET AND A CENTRAL ANGLE OF 90°00'35" (CHORD BEARING N.45°08'21"E., 35.36 FEET); 3) S.89°51'22"E., A DISTANCE OF 28.59 FEET; 4) N.00°08'38"E., A DISTANCE OF 170.00 FEET TO THE NORTHEAST CORNER OF SAID LOT 64, THENCE RUN ALONG THE BOUNDARY OF TRACT D-6 OF SAID HIGHFIELD AT TWISTED OAKS, THE FOLLOWING SIX (6) COURSES: 1) S.89°51'22"E., A DISTANCE OF 107.62 FEET; 2) N.00°06'54"E., A DISTANCE OF 380.00 FEET; 3) N.89°51'22"W., A DISTANCE OF 20.00 FEET; 4) S.00°08'38"W., A DISTANCE OF 120.00 FEET; 5) N.89°51'22"W., A DISTANCE OF 364.92 FEET; 6) S.00°08'38"W., A DISTANCE OF 260.00 FEET TO THE SOUTHWEST CORNER OF SAID TRACT D-6; THENCE RUN ALONG THE NORTH BOUNDARY OF LOTS 69, 70, 71 AND 72 AND TRACT R-1 ALSO KNOW AS NEWMONS PLACE OF SAID HIGHFIELD AT TWISTED OAKS, N.89°51'22"W., A DISTANCE OF 290.00 FEET TO THE SOUTHEAST CORNER OF TRACT D-5 OF SAID HIGHFIELD AT TWISTED OAKS; THENCE RUN ALONG THE BOUNDARY OF SAID TRACT D-5, THE FOLLOWING TWO (2) COURSES: 1) N.00°08'38"E., A DISTANCE OF 260.00 FEE"; 2) N.89°51'22"W., A DISTANCE OF 294.56 FEET TO THE NORTHWEST CORNER OF SAID TRACT D-5; THENCE RUN ALONG THE BOUNDARY OF LOTS 87, 88 AND 89 AND TRACT R-1 ALSO BEING WILDLIGHT TRAIL AND CRENSHAW STREET OF SAID HIGHFIELD AT TWISTED OAKS, THE FOLLOWING SIX (6) COURSES: 1) N.00°08'38"E., A DISTANCE OF 170.00 FEET; 2) N.89°51'22"W., A DISTANCE OF 95.00 FEET; 3) THENCE NORTHWESTERLY, 39.27 FEET ALONG THE ARC OF A TANGENT CURVE TO THE RIGHT HAVING A RADIUS OF 25.00 FEET AND A CENTRAL ANGLE OF 90°00'00" (CHORD BEARING N.44°51'22"W., 35.36 FEET); 4) N.00°08'38"E., A DISTANCE OF 19.00 FEET; 5) N.89°51'22"W., A DISTANCE OF 50.00 FEET; 6) THENCE SOUTHERLY, 5.03 FEET ALONG THE ARC OF A NON-TANGENT CURVE TO THE RIGHT HAVING A FADIUS OF 25.00 FEET AND A CENTRAL ANGLE OF 11°32'13" (CHORD BEARING S.05°54'45"W., 5.03 FEET) TO THE SOUTHEAST CORNER OF LOT 126 OF SAID HIGHFIELD AT TWISTED OAKS; THENCE RUN ALONG THE BOUNDARY OF TRACT OS-1 OF SAID HIGHFIELD AT TWISTED OAKS, THE FOLLOWING TWO (2) COURSES: 1) N.89°51'22"W., A DISTANCE OF 119.49 FEET; 2) N.00°08'38"E., A DISTANCE OF 505.00 FEET TO THE SOUTHWEST CORNER OF TRACT FD-2 OF SAID HIGHFIELD AT TWISTED OAKS; THENCE RUN ALONG THE BOUNDARY OF SAID TRACT FD-2 AND TRACT D-3 OF SAID HIGHFIELD AT TWISTED OAKS, THE FOLLOWING SIX (6) COURSES: 1) S.89°51'22"E., A DISTANCE OF 120.00 FEET; 2) N.00°08'38"E., A DISTANCE OF 34.21 FEET; 3) S.89°51'22"E., A CENTRAL ANGLE OF 50.00 FEET; 4) THENCE SOUTHEASTERLY, 39.27 FEET ALONG THE ARC OF A NON-TANGENT CURVE TO THE LEFT HAVING A RADIUS OF 25.00 FEET AND A CENTRAL ANGLE OF 90°00'00" (CHORD BEARING S.44°51'22"E., 35.36 FEET); 5) S.89°51'22"E., A DISTANCE OF 115.10 FEET; 6) S.00°08'38"W., A DISTANCE OF 50.00 FEET; THENCE RUN ALONG THE BOUNDARY OF TRACT D-2 OF SAID HIGHFIELD AT TWISTED OAKS, THE FOLLOWING FOUR (4) COURSES: 1) N.89°51'22"W., A DISTANCE OF 20.10 FEET; 2) S.00°08'38"W., A DISTANCE OF 383.21 FEET; 3) S.89°51'22"E., A DISTANCE OF 294.50 FEET; 4) N.00°08'38"E., A DISTANCE OF 263.21 FEET TO THE NORTHEAST CORNER OF SAID TRACT D-2; THENCE RUN ALONG THE AFORESAID TRACT FD-2, THE FOLLOWING FIVE (5) COURSES: 1) S.89°51'22"E., A DISTANCE OF 120.00 FEET; 2) N.00°08'38"E., A DISTANCE OF 95.00 FEET; 3) S.89°51'22"E., A DISTANCE OF 50.00 FEET; 4) S.00°08'38"W., A DISTANCE OF 95.00 FEET; 5) S.89°51'22"E., A DISTANCE OF 120.00 FEET TO THE NORTHWEST CORNER OF TRACT D-1 OF SAID HIGHFIELD AT TWISTED OAKS, THE FOLLOWING FOUR (4) COURSES: 1) S.00°08'38"W., A DISTANCE OF 263.21 FEET; 2) S.89°51'22"E., A DISTANCE OF 368.57 FEET; 3) THENCE NORTHERLY, 79.15 FEET ALONG THE ARC O^ A NON-TANGENT CURVE TO THE LEFT HAVING A RADIUS OF 655.00 FEET AND A CENTRAL ANGLE OF 06°55'26" (CHORD BEARING N.18°38'39"W., 79.10 FEET); 4) THENCE NORTHERLY, 313.69 FEET ALONG THE ARC OF A REVERSE CURVE TO THE RIGHT HAVING A RADIUS OF 945.00 FEET AND A CENTRAL ANGLE OF 19°01'09" (CHORD BEARING N.10°05'47"W., 312.25 FEET) TO THE NORTHEAST CORNER OF SAID TRACT D-1; THENCE RUN ALONG THE BOUNDARY OF AFORESAID TRACT FD-2 AND TRACT D-4 OF SAID HIGHFIELD AT TWISTED OAKS, THE FOLLOWING SEVEN (7) COURSES: 1) N.00°02'01"E., A DISTANCE OF 50.00 FEET; 2) N.00°06'54"E., A DISTANCE OF 342.00 FEET; 3) S.89°53'06"E., A DISTANCE OF 120.00 FEET; 4) N.00°06'54"E., A DISTANCE OF 129.61 FEET; 5) S.89°55'47"E., A DISTANCE OF 50.00 FEET; 6) S.00°05'33"W., A DISTANCE OF 95.01 FEET; 7) S.89°54'27"E., A DISTANCE OF 119.96 FEET; THENCE RUN ALONG THE BOUNDARY OF TRACT OS-1 OF SAID HIGHFIELD AT TWISTED OAKS AND AFORESAID LOT 17, THE FOLLOWING SIX (6) COURSES: 1) S.00°06'54"W., A DISTANCE OF 415.12 FEET; 2) SOUTHERLY, 225.45 FEET ALONG THE ARC OF A TANGENT CURVE TO THE LEFT HAVING A RADIUS OF 655.00 FEET AND A CENTRAL ANGLE OF 19°43'15" (CHORD BEARING S.09°44'44"E., 224.34 FEET); 3) THENCE SOUTHERLY, 325.26 FEET ALONG THE ARC OF A REVERSE CURVE TO THE RIGHT HAVING A RADIUS OF 945.00 FEET AND A CENTRAL ANGLE OF 19°43'15" (CHORD BEARING S.09°44'44"E., 323.66 FEET); 4) S.00°06'54"W., A DISTANCE OF 429.94 FEET; 5) THENCE SOUTHWESTERLY, 416.40 FEET ALONG THE ARC OF A TANGENT CURVE TO THE RIGHT HAVING A RADIUS OF 265.00 FEET AND A CENTRAL ANGLE OF 90°01'45" (CHORD BEARING S.45°07'46"W., 374.86 FEET); 6) N.89°51'22"W., A DISTANCE OF 186.21 FEET TO THE **POINT OF BEGINNING**.

CONTAINING 25.110 ACRES, MORE OR LESS.

NOTES:

1) ALL PLATTED UTILITY EASEMENTS SHALL PROVIDE THAT SUCH EASEMENTS SHALL ALSO BE EASEMENTS FOR THE CONSTRUCTION, INSTALLATION, MAINTENANCE, AND OPERATION OF CABLE TELEVISION SERVICES; PROVIDED, HOWEVER, NO SUCH CONSTRUCTION. INSTALLATION, MAINTENANCE, AND OPERATION OF CABLE TELEVISION SERVICES SHALL INTERFERE WITH THE FACILITIES AND SERVICES OF AN ELECTRIC, TELEPHONE, GAS OR OTHER PUBLIC UTILITY. IN THE EVENT A CABLE TELEVISION COMPANY DAMAGES THE FACILITIES OF A PUBLIC UTILITY, IT SHALL BE SOLELY RESPONSIBLE FOR THE DAMAGES. THIS SECTION SHALL NOT APPLY TO THOSE PRIVATE EASEMENTS GRANTED TO OR OBTAINED BY A PARTICULAR ELECTRIC, TELEPHONE, GAS OR OTHER PUBLIC UTILITY. SUCH CONSTRUCTION, INSTALLATION, MAINTENANCE, AND OPERATION SHALL COMPLY WITH THE NATIONAL ELECTRICAL SAFETY CODE AS ADOP"ED BY THE FLORIDA PUBLIC SERVICE COMMISSION.
2) BEARINGS SHOWN HEREON ARE BASED ON THE SOUTH LINE OF SECTION 30, TOWNSHIP 18 SOUTH, RANGE 23 EAST, HAVING A GRID BEARING OF S 89°45'54" E. THE GRID BEARINGS AS SHOWN HEREON REFER TO THE STATE PLANE COORDINATE SYSTEM, NORTH AMERICAN DATUM OF 1983 (NAD 83-2011 ADJUSTMENT) FOR THE WEST ZONE OF FLORIDA.
3) ALL DISTANCES SHOWN ARE IN FEET.
4) WITH REFERENCE TO CURVILINEAR LOTS, NON-RADIAL LINES HAVE BEEN DESIGNATED BY (NR). ALL OTHER LINES ARE RADIAL.
5) LOT CORNERS WILL BE SET PRIOR TO THE TRANSFER OF ANY LOT OR PRIOR TO THE EXPIRATION OF THE BOND OR OTHER SURETY.
6) PERMANENT CONTROL POINTS (P.C.P.'S) WILL BE SET WITHIN ONE YEAR OF THE DATE THIS PLAT WAS RECORDED OR PRIOR TO THE EXPIRATION OF THE BOND OR SURETY.
7) ALL PERMANENT REFERENCE MONUMENTS (P.R.M'S) HAVE BEEN SET IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER 177, FLORIDA STATUES.
8) THE PROPERTY INFORMATION REPORT FOR THIS PLAT HAS BEEN SUBMITTED BY SEPARATE DCCUMENT.
9) EVERY LOT HAS A 5.00 FOOT WIDE DRAINAGE AND UTILITY EASEMENT ON EACH SIDE OF THE LOT UNLESS OTHERWISE NOTED OR DEPICTED.
10) EVERY LOT HAS 10.00 FEET FRONT LOT UTILITY EASEMENTS, AND EVERY CORNER LOT HAS 10.00 FEET UTILITY EASEMENTS UNLESS OTHERWISE NOTED OR DEPICTED.
11) MORTGAGEE'S JOINDER AND CONSENT TO DEDICATION RECORDED BY SEPARATE INSTRUMEN" IN OFFICIAL RECORDS BOOK ____, PAGE _____ OF THE PUBLIC RECORDS OF SUMTER COUNTY, FLORIDA.
12) MORTGAGEE'S JOINDER AND CONSENT TO DEDICATION RECORDED BY SEPARATE INSTRUMEN" IN OFFICIAL RECORDS BOOK ____, PAGE _____ OF THE PUBLIC RECORDS OF SUMTER COUNTY, FLORIDA.
13) LOTS 126 THROUGH 265 ARE DEPICTED ON THIS PLAT FOR A TOTAL OF 140 LOTS. TRACTS R-1 AND R-2 ARE DEPICTED ON THIS PLAT FOR A TOTAL OF 2 TRACTS.
14) AT THE TIME OF RECORDING THIS PLAT IS AFFECTED BY THE FOLLOWING RECORDED EASEMENTS FOUND IN THE PUBLIC RECORDS OF SUMTER COUNTY, FLORIDA: (WHICH THIS REFERENCE DOES NOT ACT TO REIMPOSE SAME)

a. TEMPORARY EASEMENT AGREEMENT MADE ON AUGUST 31, 2023 BY KL HIGHFIELD LLC, A FLORIDA LIMITED LIABILITY COMPANY TO AND IN FAVOR OF PULTE HOME COMPANY, LLC, RECORDED SEPTEMBER 7, 2023 IN OFFICIAL RECORDS BOOK 4524, PAGE 236.
b. TEMPORARY EASEMENT AGREEMENT MADE ON AUGUST 31, 2023 IN FAVOR OF PARK SQUARE ENTERPRISES, LLC, A DELAWARE LIMITED LIABILITY COMPANY, RECORDED SEPTEMBER 7, 2023 IN OFFICIAL RECORDS BOOK 4524, PAGE 266.

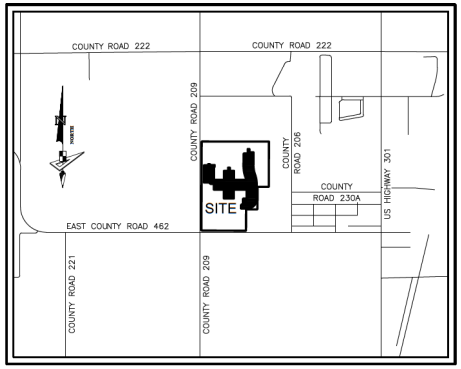
CERTIFICATE OF CLERK OF COURT:

I HEREBY CERTIFY THAT I HAVE EXAMINED THIS PLAT AND FIND THAT IT COMPLIES IN FORM WITH ALL THE REQUIREMENTS OF CHAPTER 177, FLORIDA STATUTES AND WAS FILED FOR RECORD ON _____, 2024, AT _____ FILE NUMBER _____, PLAT BOOK _____ PAGE _____.

CLERK OF THE COURT IN AND FOR SUMTER COUNTY, FLORIDA

PRINT NAME
DEPUTY CLERK

SIGNATURE
DEPUTY CLERK



LOCATION MAP
CITY OF WILDWOOD, SUMTER COUNTY, FLORIDA
SCALE: 1" = 2000'

CERTIFICATE OF APPROVAL BY CITY OFFICIALS:

THIS CERTIFIES THAT THIS PLAT WAS PRESENTED TO THE PROJECT REVIEW COMMITTEE OF THE CITY OF WILDWCOD, SUMTER COUNTY, FLORIDA AND WAS APPROVED BY THE BOARD FOR RECORD ON THIS __ DAY OF _____, 2024.

ATTEST:

MELANIE D. STRICKLAND
PROJECT REVIEW COMMITTEE COORDINATOR

THIS CERTIFIES THAT THIS PLAT WAS PRESENTED TO THE COMMISSION OF THE CITY OF WILDWOOD, SUMTER COUNTY, FLORIDA, AND WAS APPROVED BY THE COMMISSION FOR RECORD ON THIS __ DAY OF _____, 2024.

JESSICA BARNES
CITY CLERK

ED WOLF
MAYOR

THIS CERTIFIES THAT THIS PLAT WAS PRESENTED TO THE ATTORNEY FOR THE CITY OF WILDWOOD, SUMTER COUNTY, FLORIDA, AND APPROVED BY HIM OR HER AS TO FORM AND LEGALITY ON THIS ____ DAY OF _____, 2024.

MELANIE D. STRICKLAND
DEVELOPMENT SERVICES DIRECTOR

JEREMY HOCKENBURY
PUBLIC WORKS DIRECTOR

PRINT NAME
CITY OF WILDWOOD, ENGINEER

SIGNATURE
CITY OF WILDWOOD, ENGINEER

PRINT NAME
CITY OF WILDWOOD, ATTORNEY

SIGNATURE
CITY OF WILDWOOD, ATTORNEY

LEGEND:

U.E.	UTILITY EASEMENT
P.U.E.	PUBLIC UTILITY EASEMENT
D.E.	DRAINAGE EASEMENT
PC	POINT OF CURVATURE
PT	POINT OF TANGENCY
PI	POINT OF INTERSECTION
(NR)	NON-RADIAL
PCC	POINT OF COMPOUND CURVATURE
LS	LICENSE SURVEYOR
LB	LICENSE BUSINESS
O.R.	OFFICIAL RECORDS BOOK
■	INDICATES SET (P.R.M.) PERMANENT REFERENCE MONUMENT 4"X4" CONCRETE MONUMENT WITH DISK STAMPED "PRM LB7768" UNLESS OTHERWISE NOTED.
⊕	INDICATES FOUND (P.R.M.) PERMANENT REFERENCE MONUMENT 4"X4" CONCRETE MONUMENT WITH DISK STAMPED "PRM LB1723" UNLESS OTHERWISE NOTED.
●	LOT CORNER OR CHANGE OF DIRECTION
C.C.R.	CERTIFIED CORNER RECORD
◉	INDICATES (P.C.P.) PERMANENT CONTROL POINT STAMPED "PCP LB7768"

NOTICE:
THIS PLAT, AS RECORDED IN ITS GRAPHIC FORM, IS THE OFFICIAL DEPICTION OF THE SUBDIVIDED LANDS DESCRIBED HEREIN AND WILL IN NO CIRCUMSTANCES BE SUPPLANTED IN AUTHORITY BY ANY OTHER GRAPHIC OR DIGITAL FORM OF THE PLAT. THERE MAY BE ADDITIONAL RESTRICTIONS THAT ARE NOT RECORDED ON THIS PLAT THAT MAY BE FOUND IN THE PUBLIC RECORDS OF THIS COUNTY.

DEDICATION AND GRANT OF EASEMENTS:

THIS IS TO CERTIFY THAT KL HIGHFIELD LLC, A FLORIDA LIMITED LIABILITY COMPANY ("OWNER"), IS THE FEE SIMPLE OWNER OF THE LANDS DESCRIBED IN THIS PLAT KNOWN AS HIGHFIELD AT TWISTED OAKS - PHASE 2, AND HEREBY DEDICATES THE LANDS SUBJECT TO THIS PLAT AS FOLLOWS:

1. TO THE TWISTED OAKS POINTE COMMUNITY DEVELOPMENT DISTRICT, AND ITS SUCCESSORS AND ASSIGNS (TOGETHER, "CDD"):
   a. TRACTS R-1 AND R-2 FOR RIGHT-OF-WAY PURPOSES. THE CDD SHALL HAVE THE RIGHT AND OBLIGATION TO MAINTAIN SUCH TRACTS. GOVERNMENTAL ENTITIES, INCLUDING EMERGENCY PERSONNEL AND VEHICLES, AS WELL AS UTILITY PROVIDERS, AND UNITED STATES POSTAL SERVICE MAIL CARRIERS, SHALL HAVE A NON-EXCLUSIVE EASEMENT OVER ALL SUCH RIGHTS-OF-WAY FOR THE PURPOSES OF PERFORMING THEIR OFFICIAL DUTIES.
   b. NON-EXCLUSIVE, PERPETUAL EASEMENTS OVER ALL "DRAINAGE EASEMENTS" WITH THE RIGHTS TO ACCESS, CONSTRUC", ACQUIRE, OWN, OPERATE, MAINTAIN, REPAIR AND REPLACE ANY STORMWATER IMPROVEMENTS WITHIN SUCH EASEMENTS. THE CDD SHALL HAVE THE RIGHT AND OBLIGATION TO MAINTAIN SUCH IMPROVEMENTS.
   c. NON-EXCLUSIVE, PERPETUAL EASEMENTS OVER ALL "LANDSCAPE BUFFERS" WITH THE RIGHTS TO ACCESS, CONSTRUC", ACQUIRE, OWN, OPERATE, MAINTAIN, REPAIR AND REPLACE ANY LANDSCAPE, HARDSCAPE, LIGHTING, AND IRRIGATION IMPROVEMENTS WITHIN SUCH EASEMENTS. THE CDD SHALL HAVE THE RIGHT AND OBLIGATION TO MAINTAIN SUCH IMPRCVEMENTS.
   d. THE CDD MAY INSTALL AND/OR ACQUIRE WATER, SEWER AND RECLAIM UTILITIES WITHIN TRACTS R-1 AND R-2 AND TRANSFER THEM TO THE CITY UPON COMPLETION, SUBJECT TO THE CITY'S APPROVAL PROCESS. AS A POINT OF CLARIFICATION, THE CDD SHALL NOT, AND IS NOT INTENDED TO BE, A UTILITY PROVIDER FOR WATER, SEWER AND RECLAIM UTILITIES, AND INSTEAD INTENDS ONLY TO FINANCE THE INITIAL INSTALLATION OF SUCH UTILITIES AND CONVEY THEM TO THE CITY UPON COMP.,ETION.
2. TO THE CITY OF WILDWOOD, FLORIDA ("CITY"), AND ITS SUCCESSORS AND ASSIGNS:
   a. NON-EXCLUSIVE EASEMENTS FOR GOVERNMENTAL PURPOSES OVER ALL RIGHTS-OF-WAY, UTILITY EASEMENTS AND DRAINAGE EASEMENTS. EXCEPT AS OTHERWISE STATED HEREIN, THE CITY SHALL HAVE THE RIGHT BUT NOT THE OBLIGATION TO MAINTAIN AND REPAIR ANY IMPROVEMENTS THEREON.
3. ALL UTILITY EASEMENTS SHOWN ON THIS PLAT SHALL ALSO BE EASEMENTS FOR THE CONSTRUCTION, INSTALLATION, MAINTENANCE, AND OPERATION OF CABLE TELEVISIONS SERVICES IN THE MANNER AND SUBJECT TO THE PROVISIONS OF CHAPTER 177, PART 1, SECTION 177.091(28) OF THE FLORIDA STATUTES; HOWEVER, ONLY CABLE TELEVISION SERVICE PROVIDERS SPECIFICALLY AUTHORIZED BY THE UNDERSIGNED OWNERS, THEIR SUCCESSORS AND ASSIGNS, TO SERVE THE LANDS SHOWN ON THIS PLAT, SHALL HAVE THE BENEFIT OF SAID CABLE TELVISION SERVICE EASEMENTS.
4. TO ALL UTILITY PROVIDERS, PUBLIC OR PRIVATE:
   a. NON-EXCLUSIVE EASEMENTS OVER ALL UTILITY EASEMENTS AND AS SHOWN ON THE PLAT HEREIN FOR THE RIGHTS OVER THE LANDS FOR INSTALLATION, OPERATION, MAINTENANCE, AND REPAIR OF ELECTRIC FACILITIES, ELECTRIC FACILITIES, STREET LIGHTS, AND OTHER SIMILAR FACILITIES.
5. ALL LANDS SUBJECT TO THIS PLAT THAT ARE NOT OTHERWISE DEDICATED ABOVE ARE HEREBY RESERVED BY THE OWNER FOR FUTURE USES.

IN WITNESS WHEREOF, THE UNDERSIGNED OWNER HAS EXECUTED THIS PLAT ON THE ___ DAY OF _____, 2024.
KL HIGHFIELD,LLC, A FLORIDA LIMITED LIABLITY COMPANY

SIGNATURE
PRINT NAME
ADDRESS

SIGNATURE
PRINT NAME
ADDRESS

BY:
AUTHORIZED SIGNATORY

IN WITNESS WHEREOF, THE UNDERSIGNED OWNER HAS EXECUTED THIS PLAT ON THE ___ DAY OF _____, 2024.
TWISTED OAKS POINTE COMMUNITY DEVELOPMENT DISTRICT ("CDD")

SIGNATURE
PRINT NAME
ADDRESS

SIGNATURE
PRINT NAME
ADDRESS

BY:
AUTHORIZED SIGNATORY

NOTARY ACKNOWLEDGEMENT:

STATE OF FLORIDA }
COUNTY OF SUMTER } SS

THE FOREGCING CERTIFICATE OF OWNERSHIP WAS ACKNOWLEDGE BEFORE ME BY MEANS OF ☐ PHYSICAL PRESENCE OR ☐ ONLINE NOTARIZATION, THIS ____ DAY OF _____, 2024, BY _____, AS THE _____, OF KL HIGHFIELD LLC; WHO IS PERSONALLY KNOWN TO ME OR PRODUCED _____ AS IDENTIFICATION.

NOTARY PUBLIC SIGNATURE
PRINT NAME
COMMISSION NO:
COMMISSION EXPIRES:

NOTARY ACKNOWLEDGEMENT:

STATE OF FLORIDA }
COUNTY OF SUMTER } SS

THE FOREGCING CERTIFICATE OF OWNERSHIP WAS ACKNOWLEDGE BEFORE ME BY MEANS OF ☐ PHYSICAL PRESENCE OR ☐ ONLINE NOTARIZATION, THIS _____ DAY OF _____, 2024, BY _____, AS THE AUTHORIZED SIGNATORY, OF COMMUNITY DEVELOPMENT DISTRICT; WHO IS PERSONALLY KNOWN TO ME OR PRODUCED _____ AS IDENTIFICATION.

NOTARY PUBLIC SIGNATURE
PRINT NAME
COMMISSION NO:
COMMISSION EXPIRES:

REVIEWING SURVEYOR'S CERTIFICATE:

PURSUANT TO SECTION 177.081, FLORIDA STATUTES, I HEREBY CERTIFY THAT I HAVE PERFORMED A REVIEW OF THIS PLAT FOR CONFORMITY TO CHAPTER 177, FLORIDA STATUTES AND THAT SAID PLAT COMPLIES WITH THE TECHNICAL REQUIREMENTS OF THAT CHAPTER; PROVIDED, HOWEVER, THAT MY REVIEW AND CERTIFICATION DOES NOT INCLUDE FIELD VERIFICATION OF ANY POINTS OR MEASUREMENTS SHOWN ON THIS PLAT.

SIGNATURE
DATE

RONALD W. HERR, P.L.S.
WADE SURVEYING, INC.
REGISTRATION NO.

CERTIFICATE OF SURVEYOR:

I HEREBY CERTIFY THAT THIS PLAT OF HIGHFIELD AT TWISTED OAKS - PHASE 2 WAS PREPARED UNDER MY DIRECTION AND SUPERVISION; AND THAT THE PERMANENT REFERENCE MONUMENTS AS SHOWN HEREON WERE PLACED ON THE 1ST DAY OF MARCH, 2024; I FURTHER CERTIFY THAT THIS PLAT COMPLIES WITH THE REQUIREMENTS OF CHAPTER 177, FLORIDA STATUES.

DAVID MAXWELL
PROFESSIONAL LAND SURVEYOR NO. LS7311
GEOPOINT SURVEYING, INC.
(LICENSED BUSINESS NUMBER LB7768)
528 NORTHLAKE BOULEVARD, STE. 1040,
ALTAMONTE SPRINGS, FLORIDA 32701
DATE:

GeoPoint Surveying, Inc.
528 Northlake Blvd. Ste 1040
Altamonte Springs, Florida 32701
www.geopointsurvey.com
Phone: (321) 270-0440
Fax: (813) 248-2266
Licensed Business Number LB 7768

HIGHFIELD AT TWISTED OAKS - PHASE 2

A REPLAT OF TRACT FD-1, HIGHFIELD AT TWISTED OAKS - PHASE 1, ACCORDING TO THE PLAT THEREOF AS RECORDED IN PLAT BOOK 21, PAGES 35 THROUGH 35G, OF THE PUBLIC RECORDS OF SUMTER COUNTY, FLORIDA, LYING IN SECTION 30, TOWNSHIP 18 SOUTH, RANGE 23 EAST, CITY OF WILDWOOD, SUMTER COUNTY, FLORIDA

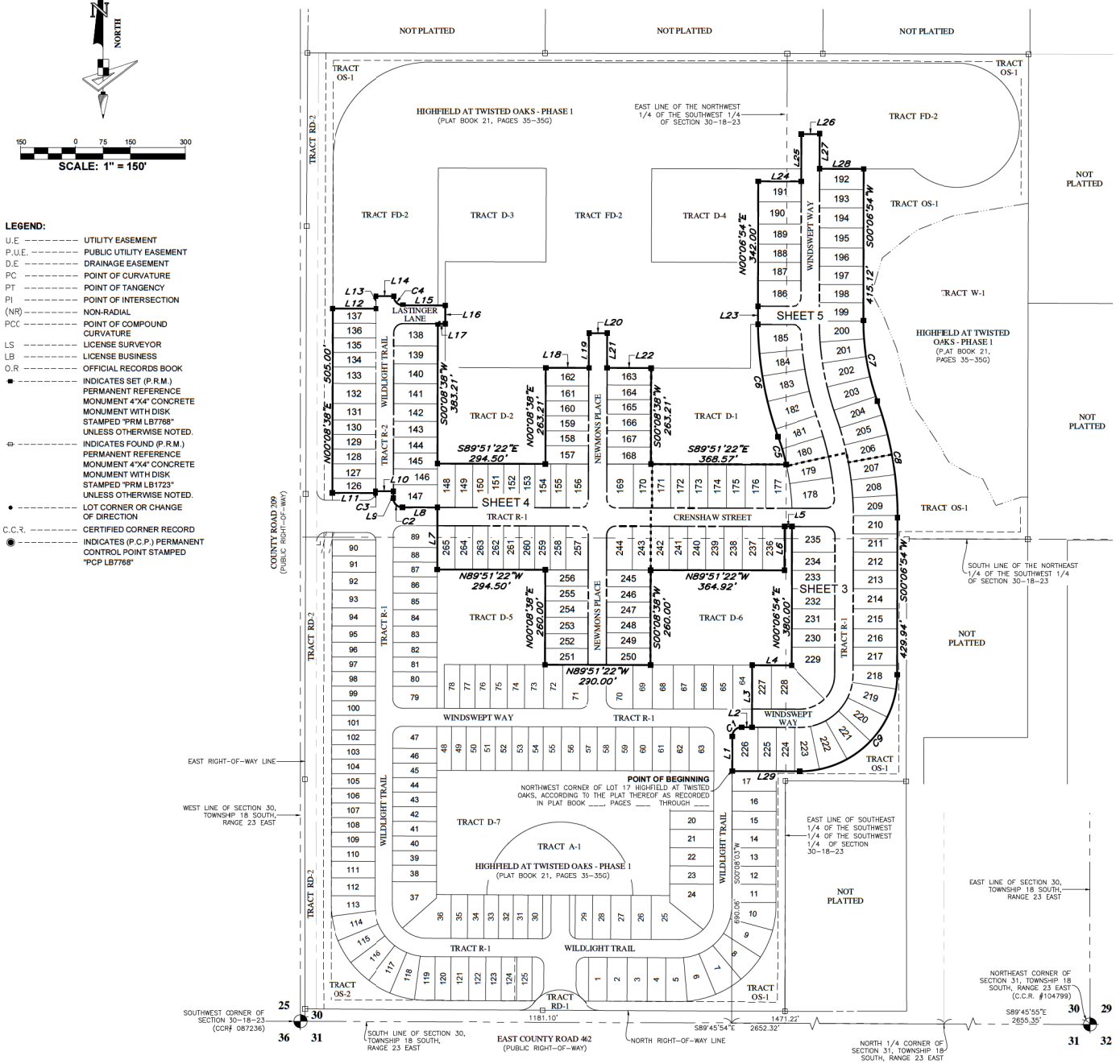
PLAT BOOK_____ PAGE _____
SHEET 2 OF 5
KEY MAP

NORTH

150 0 75 150 300
SCALE: 1" = 150'

LEGEND:

- U.E. ---------- UTILITY EASEMENT
- P.U.E. ---------- PUBLIC UTILITY EASEMENT
- D.E ---------- DRAINAGE EASEMENT
- PC ---------- POINT OF CURVATURE
- PT ---------- POINT OF TANGENCY
- PI ---------- POINT OF INTERSECTION
- (NR) ---------- NON-RADIAL
- PCC ---------- POINT OF COMPOUND CURVATURE
- LS ---------- LICENSE SURVEYOR
- LB ---------- LICENSE BUSINESS
- O.R ---------- OFFICIAL RECORDS BOOK
- ■ ---------- INDICATES SET (P.R.M.) PERMANENT REFERENCE MONUMENT 4"X4" CONCRETE MONUMENT WITH DISK STAMPED "PRM LB7768" UNLESS OTHERWISE NOTED.
- ⊖ ---------- INDICATES FOUND (P.R.M.) PERMANENT REFERENCE MONUMENT 4"X4" CONCRETE MONUMENT WITH DISK STAMPED "PRM LB1723" UNLESS OTHERWISE NOTED.
- • ---------- LOT CORNER OR CHANGE OF DIRECTION
- C.C.R. ---------- CERTIFIED CORNER RECORD
- ◉ ---------- INDICATES (P.C.P.) PERMANENT CONTROL POINT STAMPED "PCP LB7768"



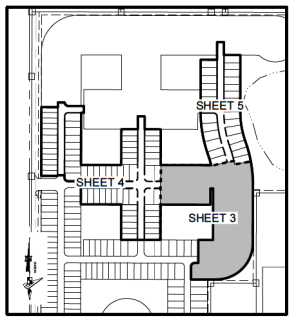
Curve Data Table					
No.	Radius	Arc	Δ	Bearing	Chord
C1	25.00'	39.27'	90°00'35"	N45°08'21"E	35.36'
C2	25.00'	39.27'	90°00'00"	S44°51'22"E	35.36'
C3	25.00'	5.03'	11°32'13"	N05°54'45"E	5.03'
C4	25.00'	39.27'	90°00'00"	S44°51'22"E	35.36'
C5	655.00'	79.15'	6°55'26"	N16°08'39"W	79.10'
C6	945.00'	313.69'	19°01'09"	N10°05'47"W	312.25'
C7	655.00'	225.45'	19°43'15"	S09°44'44"E	224.34'
C8	945.00'	325.26'	19°43'15"	S09°44'44"E	323.66'
C9	265.00'	416.40'	90°01'45"	S45°07'46"W	374.86'

Line Data Table		
No.	Bearing	Length
L1	N00°08'03"E	95.00'
L2	S89°51'22"E	28.59'
L3	N00°08'38"E	170.00'
L4	S89°51'22"E	107.62'
L5	N89°51'22"W	20.00'
L6	S00°08'38"W	120.00'
L7	N00°08'38"E	170.00'
L8	N89°51'22"W	95.00'
L9	N00°08'38"E	19.00'
L10	N89°51'22"W	50.00'
L11	N89°51'22"W	119.49'
L12	S89°51'22"E	120.00'
L13	N00°08'38"E	34.21'
L14	S89°51'22"E	50.00'
L15	S89°51'22"E	115.10'
L16	S00°08'38"W	50.00'
L17	N89°51'22"W	20.10'
L18	S89°51'22"E	120.00'
L19	N00°08'38"E	95.00'
L20	S89°51'22"E	50.00'
L21	S00°08'38"W	95.00'
L22	S89°51'22"E	120.00'
L23	N00°02'01"E	50.00'
L24	S89°53'06"E	120.00'
L25	N00°06'54"E	129.61'
L26	S89°55'47"E	50.00'
L27	S00°05'33"W	95.01'
L28	S89°54'27"E	119.96'
L29	N89°51'22"W	186.21'

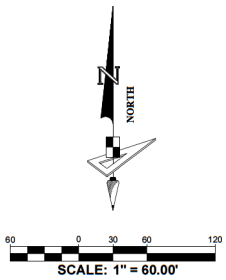
GeoPoint Surveying, Inc.
528 Northlake Blvd. Ste 1040
Altamonte Springs, Florida 32701
www.geopointsurvey.com
Phone: (321) 270-0440
Fax: (813) 248-2266
Licensed Business Number LB 7768

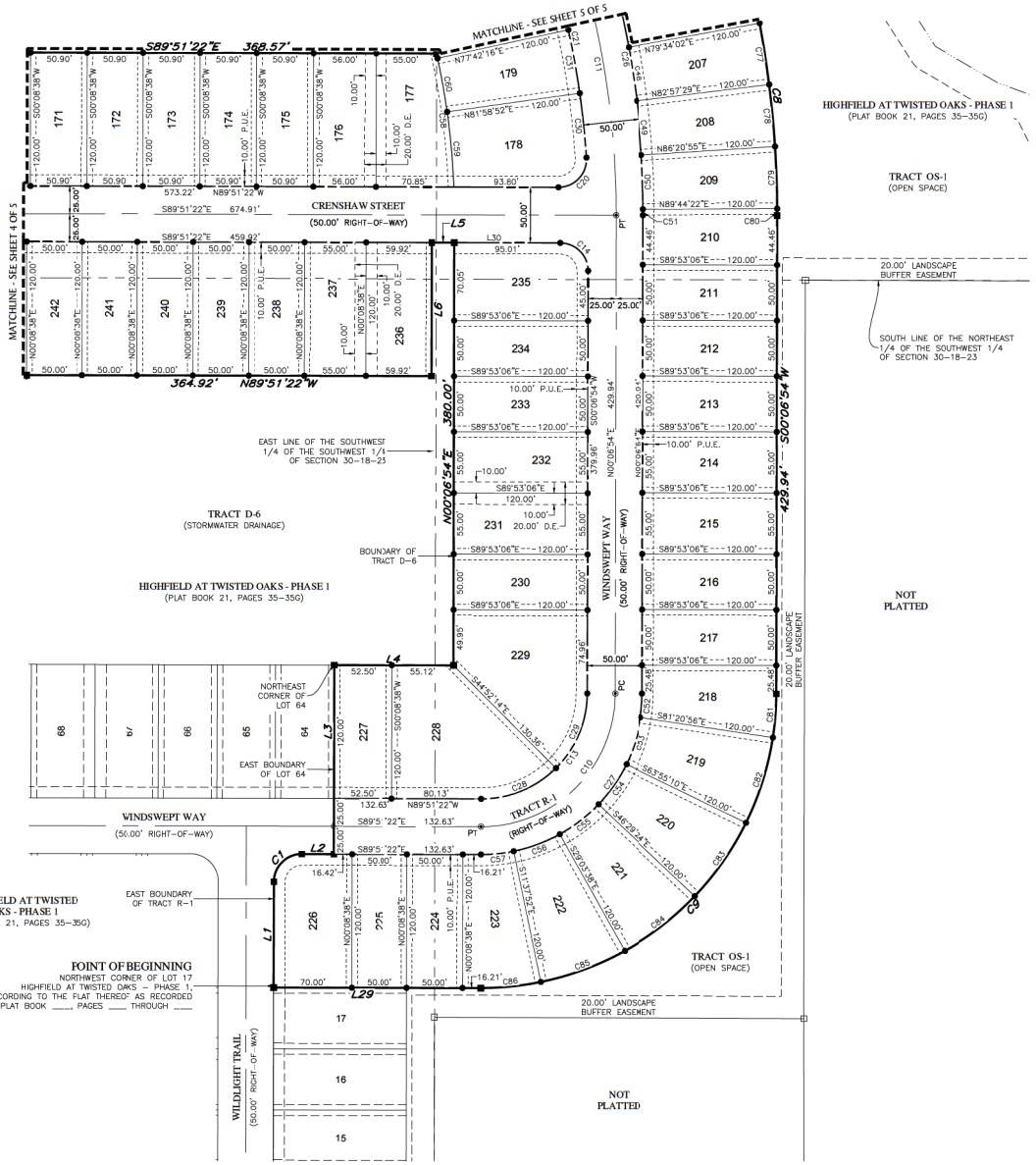
HIGHFIELD AT TWISTED OAKS - PHASE 2

A REPLAT OF TRACT FD-1, HIGHFIELD AT TWISTED OAKS - PHASE 1, ACCORDING TO THE PLAT THEREOF AS RECORDED IN PLAT BOOK 21, PAGES 35 THROUGH 35G, OF THE PUBLIC RECORDS OF SUMTER COUNTY, FLORIDA, LYING IN SECTION 30, TOWNSHIP 18 SOUTH, RANGE 23 EAST, CITY OF WILDWOOD, SUMTER COUNTY, FLORIDA



SHEET LAYOUT:
SCALE 1" = 500.00'





LEGEND:

- U.E. ---------- UTILITY EASEMENT
- P.U.E. ---------- PUBLIC UTILITY EASEMENT
- D.E. ---------- DRAINAGE EASEMENT
- PC ---------- POINT OF CURVATURE
- PT ---------- POINT OF TANGENCY
- PI ---------- POINT OF INTERSECTION
- (NR) ---------- NON-RADIAL
- PCC ---------- POINT OF COMPOUND CURVATURE
- LS ---------- LICENSE SURVEYOR
- LB ---------- LICENSE BUSINESS
- O.R. ---------- OFFICIAL RECORDS BOOK
- ■ ---------- INDICATES SET (P.R.M.) PERMANENT REFERENCE MONUMENT 4"X4" CONCRETE MONUMENT WITH DISK STAMPED "PRM LB7768" UNLESS OTHERWISE NOTED.
- ⊟ ---------- INDICATES FOUND (P.R.M.) PERMANENT REFERENCE MONUMENT 4"X4" CONCRETE MONUMENT WITH DISK STAMPED "PRM LB1723" UNLESS OTHERWISE NOTED.
- • ---------- LOT CORNER OR CHANGE OF DIRECTION
- C.C.R. ---------- CERTIFIED CORNER RECORD
- ◉ ---------- INDICATES (P.C.P.) PERMANENT CONTROL POINT STAMPED "PCP LB7768"

Curve Data Table

No.	Radius	Arc	Δ	Bearing	Chord
C1	25.00'	39.27'	90°00'35"	N45°08'21"E	35.36'
C8	945.00'	325.26'	19°43'15"	S09°44'44"E	323.66'
C9	265.00'	416.40'	90°01'45"	S45°07'46"W	374.86'
C10	120.00'	188.56'	90°01'45"	N45°07'46"E	169.75'
C11	800.00'	275.36'	19°43'15"	N09°44'44"W	274.00'
C13	95.00'	149.27'	90°01'45"	N45°07'46"E	134.38'
C14	25.00'	39.26'	89°58'15"	N44°52'14"W	35.35'
C20	25.00'	40.95'	93°51'13"	N43°13'02"E	36.52'
C21	775.00'	215.02'	15°53'47"	N11°39'28"W	214.33'
C26	825.00'	283.96'	19°43'15"	N09°44'44"W	282.56'
C27	145.00'	227.84'	90°01'45"	N45°07'46"E	205.11'
C28	95.00'	74.63'	45°00'52"	N67°38'12"E	72.73'
C29	95.00'	74.64'	45°00'52"	N22°37'20"E	72.73'
C30	775.00'	58.29'	4°18'33"	N05°51'51"W	58.27'
C31	775.00'	57.85'	4°16'36"	N10°09'26"W	57.84'
C48	825.00'	48.82'	3°23'27"	N08°44'15"W	48.82'
C49	825.00'	48.82'	3°23'27"	N05°20'48"W	48.82'
C50	825.00'	48.83'	3°23'27"	N01°57'21"W	48.82'
C51	825.00'	5.41'	0°22'31"	N00°04'22"W	5.40'
C52	145.00'	21.60'	8°32'10"	N04°22'59"E	21.58'
C53	145.00'	44.11'	17°25'46"	N17°21'57"E	43.94'
C54	145.00'	44.11'	17°25'46"	N34°47'43"E	43.94'
C55	145.00'	44.11'	17°25'46"	N52°13'29"E	43.94'
C56	145.00'	44.11'	17°25'46"	N69°39'15"E	43.94'
C57	145.00'	29.80'	11°46'30"	N84°15'23"E	29.75'
C58	655.00'	121.22'	10°36'12"	N07°22'50"W	121.04'
C59	655.00'	67.90'	5°56'23"	N05°02'56"W	67.87'
C60	655.00'	48.89'	4°16'36"	N10°09'26"W	48.88'
C77	945.00'	55.93'	3°23'27"	N08°44'15"W	55.92'
C78	945.00'	55.93'	3°23'27"	N05°20'48"W	55.92'
C79	945.00'	55.93'	3°23'27"	N01°57'21"W	55.92'
C80	945.00'	6.19'	0°22'31"	N00°04'22"W	6.19'
C81	265.00'	39.48'	8°32'10"	N04°22'59"E	39.44'
C82	265.00'	80.62'	17°25'46"	N17°21'57"E	80.30'
C83	265.00'	80.61'	17°25'46"	N34°47'43"E	80.30'
C84	265.00'	80.61'	17°25'46"	N52°13'29"E	80.30'
C85	265.00'	80.62'	17°25'46"	N69°39'15"E	80.30'
C86	265.00'	54.46'	11°46'30"	N84°15'23"E	54.36'

Line Data Table

No.	Bearing	Length
L1	N00°08'03"E	95.00'
L2	S89°51'22"E	28.59'
L3	N00°08'38"E	170.00'
L4	S89°51'22"E	107.62'
L5	N89°51'22"W	20.00'
L6	S00°08'38"W	120.00'
L29	N89°51'22"W	186.21'
L30	N89°51'22"W	95.01'

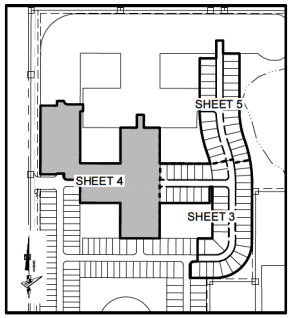
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Licensed Business Number LB 7768

HIGHFIELD AT TWISTED OAKS - PHASE 2

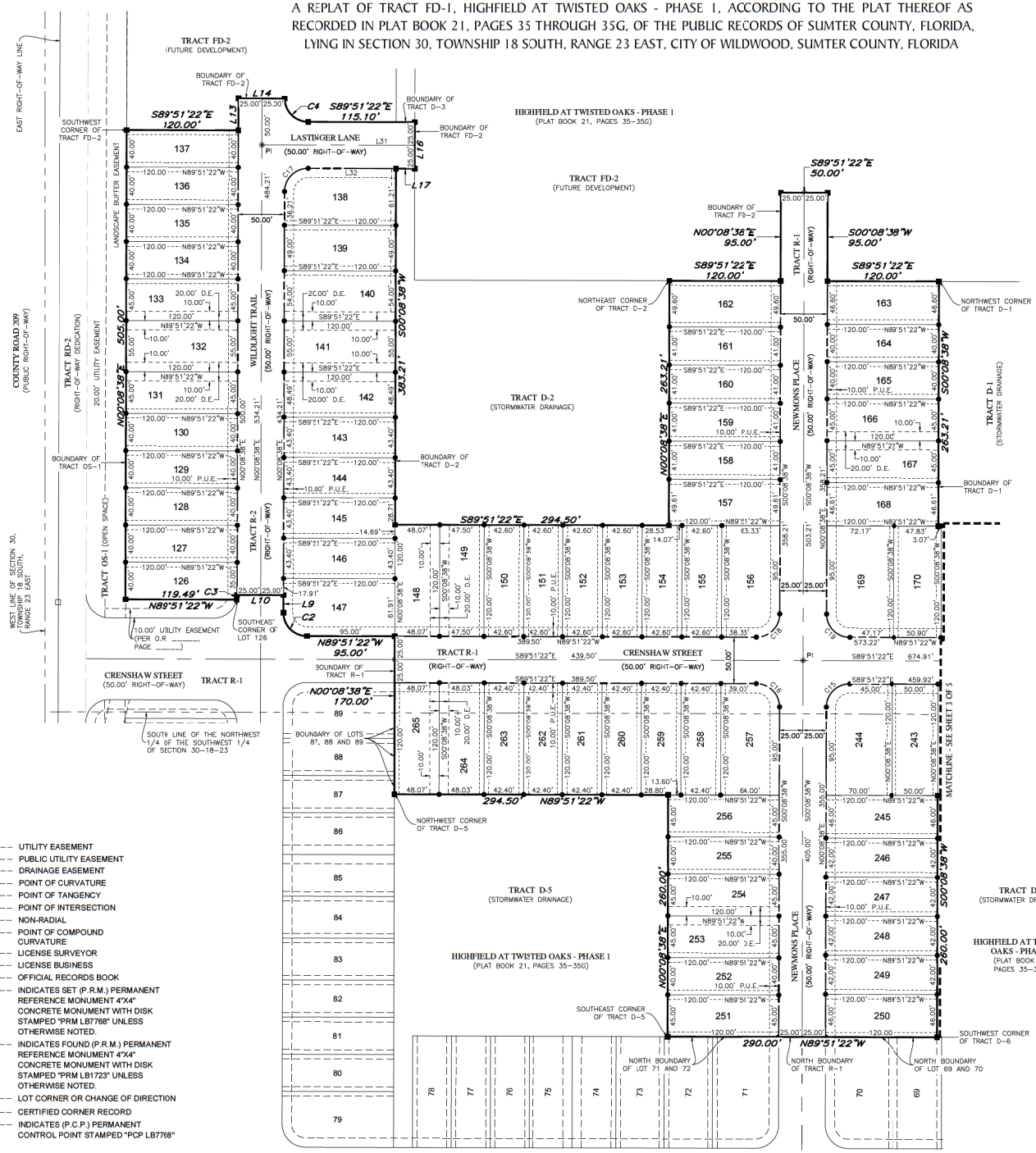
A REPLAT OF TRACT FD-1, HIGHFIELD AT TWISTED OAKS - PHASE 1, ACCORDING TO THE PLAT THEREOF AS RECORDED IN PLAT BOOK 21, PAGES 35 THROUGH 35G, OF THE PUBLIC RECORDS OF SUMTER COUNTY, FLORIDA, LYING IN SECTION 30, TOWNSHIP 18 SOUTH, RANGE 23 EAST, CITY OF WILDWOOD, SUMTER COUNTY, FLORIDA

PLAT BOOK_____ PAGE _____

SHEET 4 OF 5



SHEET LAYOUT:
SCALE 1" = 500.00'

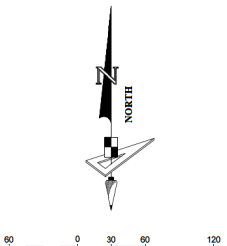


Curve Data Table					
No.	**Radius**	**Arc**	**Δ**	**Bearing**	**Chord**
C2	25.00'	39.27'	90°00'00"	N44°51'22"W	35.36'
C3	25.00'	5.03'	11°32'13"	S05°54'45"W	5.03'
C4	25.00'	39.27'	90°00'00"	S44°51'22"E	35.36'
C15	25.00'	39.27'	90°00'00"	S45°08'38"W	35.36'
C16	25.00'	39.27'	90°00'00"	N44°51'22"W	35.36'
C17	25.00'	39.27'	90°00'00"	S45°08'38"W	35.36'
C18	25.00'	39.27'	90°00'00"	N45°08'38"E	35.36'
C19	25.00'	39.27'	90°00'00"	S44°51'22"E	35.36'

Line Data Table		
No.	**Bearing**	**Length**
L9	N00°08'38"E	19.00'
L10	N89°51'22"W	50.00'
L13	N00°08'38"E	34.21'
L14	S89°51'22"E	50.00'
L16	S00°08'38"W	50.00'
L17	N89°51'22"W	20.10'
L31	S89°51'22"E	165.10'
L32	N89°51'22"W	95.00'

LEGEND:

- U.E. ---------- UTILITY EASEMENT
- P.U.E. ---------- PUBLIC UTILITY EASEMENT
- D.E. ---------- DRAINAGE EASEMENT
- PC ---------- POINT OF CURVATURE
- PT ---------- POINT OF TANGENCY
- PI ---------- POINT OF INTERSECTION
- (NR) ---------- NON-RADIAL
- PCC ---------- POINT OF COMPOUND CURVATURE
- LS ---------- LICENSE SURVEYOR
- LB ---------- LICENSE BUSINESS
- O.R. ---------- OFFICIAL RECORDS BOOK
- ■ ---------- INDICATES SET (P.R.M.) PERMANENT REFERENCE MONUMENT 4"X4" CONCRETE MONUMENT WITH DISK STAMPED "PRM LB7768" UNLESS OTHERWISE NOTED.
- ⊟ ---------- INDICATES FOUND (P.R.M.) PERMANENT REFERENCE MONUMENT 4"X4" CONCRETE MONUMENT WITH DISK STAMPED "PRM LB1723" UNLESS OTHERWISE NOTED.
- • ---------- LOT CORNER OR CHANGE OF DIRECTION
- C.C.R. ---------- CERTIFIED CORNER RECORD
- ◉ ---------- INDICATES (P.C.P.) PERMANENT CONTROL POINT STAMPED "PCP LB7768"

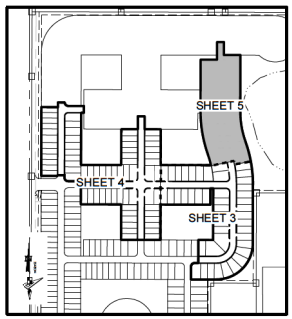


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HIGHFIELD AT TWISTED OAKS - PHASE 2

A REPLAT OF TRACT FD-1, HIGHFIELD AT TWISTED OAKS - PHASE 1, ACCORDING TO THE PLAT THEREOF AS RECORDED IN PLAT BOOK 21, PAGES 35 THROUGH 35G, OF THE PUBLIC RECORDS OF SUMTER COUNTY, FLORIDA, LYING IN SECTION 30, TOWNSHIP 18 SOUTH, RANGE 23 EAST, CITY OF WILDWOOD, SUMTER COUNTY, FLORIDA

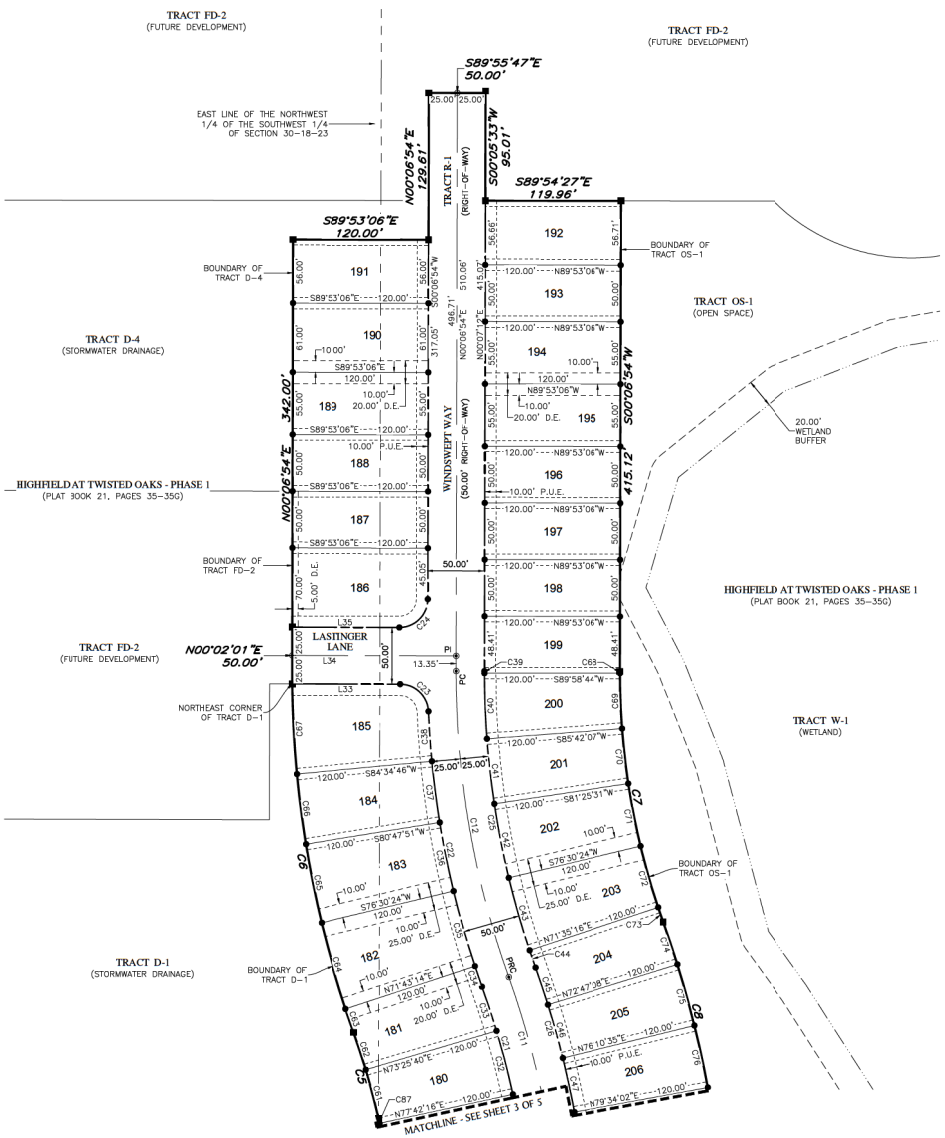
PLAT BOOK_____ PAGE _____
SHEET 5 OF 5



SHEET LAYOUT:
SCALE 1" = 500.00'

NORTH

60 0 30 60 120
SCALE: 1" = 60.00'



LEGEND:

U.E.	UTILITY EASEMENT
P.U.E.	PUBLIC UTILITY EASEMENT
D.E.	DRAINAGE EASEMENT
PC	POINT OF CURVATURE
PT	POINT OF TANGENCY
PI	POINT OF INTERSECTION
(NR)	NON-RADIAL
PCC	POINT OF COMPOUND CURVATURE
LS	LICENSE SURVEYOR
LB	LICENSE BUSINESS
O.R.	OFFICIAL RECORDS BOOK
■	INDICATES SET (P.R.M.) PERMANENT REFERENCE MONUMENT 4"X4" CONCRETE MONUMENT WITH DISK STAMPED "PRM LB7768" UNLESS OTHERWISE NOTED.
⊖	INDICATES FOUND (P.R.M.) PERMANENT REFERENCE MONUMENT 4"X4" CONCRETE MONUMENT WITH DISK STAMPED "PRM LB1723" UNLESS OTHERWISE NOTED.
•	LOT CORNER OR CHANGE OF DIRECTION
C.C.R.	CERTIFIED CORNER RECORD
◉	INDICATES (P.C.P.) PERMANENT CONTROL POINT STAMPED "PCP LB7768"

Curve Data Table

No.	Radius	Arc	Δ	Bearing	Chord
C5	655.00'	79.15'	6°55'26"	N16°08'39"W	79.10'
C6	945.00'	313.69'	19°01'09"	N10°05'47"W	312.25'
C7	655.00'	225.45'	19°43'15"	S09°44'44"E	224.34'
C8	945.00'	325.26'	19°43'15"	N09°44'44"W	323.66'
C11	800.00'	275.36'	19°43'15"	N09°44'44"W	274.00'
C12	800.00'	275.36'	19°43'15"	S09°44'44"E	274.00'
C21	775.00'	215.02'	15°53'47"	N11°39'28"W	214.33'
C22	825.00'	248.41'	17°15'06"	S10°58'49"E	247.47'
C23	25.00'	38.18'	87°30'06"	N46°06'19"W	34.58'
C24	25.00'	39.28'	90°01'45"	N45°07'46"E	35.36'
C25	775.00'	266.75'	19°43'15"	S09°44'44"E	265.44'
C26	825.00'	283.96'	19°43'15"	N09°44'44"W	282.56'
C32	775.00'	57.85'	4°16'36"	N14°26'02"W	57.84'
C33	775.00'	41.03'	3°02'01"	N18°05'21"W	41.03'
C34	825.00'	19.10'	1°19'35"	S18°56'34"E	19.10'
C35	825.00'	68.91'	4°47'10"	S15°53'11"E	68.89'
C36	825.00'	61.78'	4°17'27"	S11°20'53"E	61.77'
C37	825.00'	54.45'	3°46'55"	S07°18'42"E	54.45'
C38	825.00'	44.15'	3°03'59"	S03°53'15"E	44.15'
C39	775.00'	1.84'	0°08'10"	S00°02'49"W	1.84'
C40	775.00'	57.85'	4°16'36"	S02°09'35"E	57.84'
C41	775.00'	57.85'	4°16'36"	S06°26'11"E	57.84'
C42	775.00'	66.53'	4°55'07"	S11°02'03"E	66.51'
C43	775.00'	66.53'	4°55'07"	S15°57'10"E	66.51'
C44	775.00'	16.15'	1°11'38"	S19°00'33"E	16.15'
C45	825.00'	34.44'	2°23'30"	N18°24'37"W	34.43'
C46	825.00'	48.82'	3°23'27"	N15°31'08"W	48.82'
C47	825.00'	48.82'	3°23'27"	N12°07'42"W	48.82'
C61	655.00'	44.47'	3°53'25"	N14°37'38"W	44.46'
C62	655.00'	34.68'	3°02'01"	N18°05'21"W	34.68'
C63	945.00'	21.88'	1°19'35"	S18°56'34"E	21.88'
C64	945.00'	78.94'	4°47'10"	S15°53'11"E	78.91'
C65	945.00'	70.77'	4°17'27"	S11°20'53"E	70.75'
C66	945.00'	62.38'	3°46'55"	S07°18'42"E	62.37'
C67	945.00'	79.72'	4°50'02"	S03°00'13"E	79.70'
C68	655.00'	1.56'	0°08'10"	S00°02'49"W	1.56'
C69	655.00'	48.89'	4°16'36"	S02°09'35"E	48.88'
C70	655.00'	48.89'	4°16'36"	S06°26'11"E	48.88'
C71	655.00'	56.23'	4°55'07"	S11°02'03"E	56.21'
C72	655.00'	56.23'	4°55'07"	S15°57'10"E	56.21'
C73	655.00'	13.65'	1°11'38"	S19°00'33"E	13.65'
C74	945.00'	39.45'	2°23'30"	N18°24'37"W	39.44'
C75	945.00'	55.93'	3°23'27"	N15°31'08"W	55.92'
C76	945.00'	55.93'	3°23'27"	N12°07'42"W	55.92'
C87	655.00'	4.42'	0°23'12"	N12°29'20"W	4.42'

Line Data Table

No.	Bearing	Length
L33	N89°51'22"W	95.73'
L34	N89°51'22"W	144.96'
L35	N89°51'22"W	94.99'

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City of Wildwood, Florida

Planning & Zoning Board/Special Magistrate

The case below was heard on Tuesday, December 3, 2024, by the Special Magistrate. The applicant is seeking a favorable recommendation for a final plat from the City of Wildwood Planning and Zoning Board/Special Magistrate for Highfield at Twisted Oaks Phase 2 Final Plat, on 25.110 acres, MOL. The subject property is generally located approximately 0.14 miles north of E C 462 and east along CR 209.

Case Number: PLAT 2407-007 Highfield at Twisted Oaks Phase 2 Final Plat

Applicant(s): KL Highfield, LLC – James P. Harvey

Owner(s): KL Highfield, LLC

Parcel(s): Portion of D30-030

Under Land Development Regulation (LDR) § 1.7(B)(1), the Planning and Zoning Board/Special Magistrate has a duty to make a recommendation to the City Commission on all proposed final plats.

Based upon the testimony, evidence, and information presented as to the criteria set forth in LDR § 5.6, the Special Magistrate

☐ recommends approval

☒ recommends approval with the following conditions:

resolution of outstanding City Attorney comment(s)

☐ recommends denial

Dated: December 3, 2024

Lindsay C. T. Holt
Special Magistrate City of Wildwood

CITY COMMISSION OF THE CITY OF WILDWOOD

EXECUTIVE SUMMARY

SUBJECT: **PLAT 2411-001 VOSO Unit 176 Final Plat**

REQUESTED ACTION: Staff recommends approval.

CONTRACT: Vendor/Entity:

Effective Date: Termination Date:

Managing Division/Department:

BUDGET IMPACT:

HISTORY/FACTS/ISSUES:

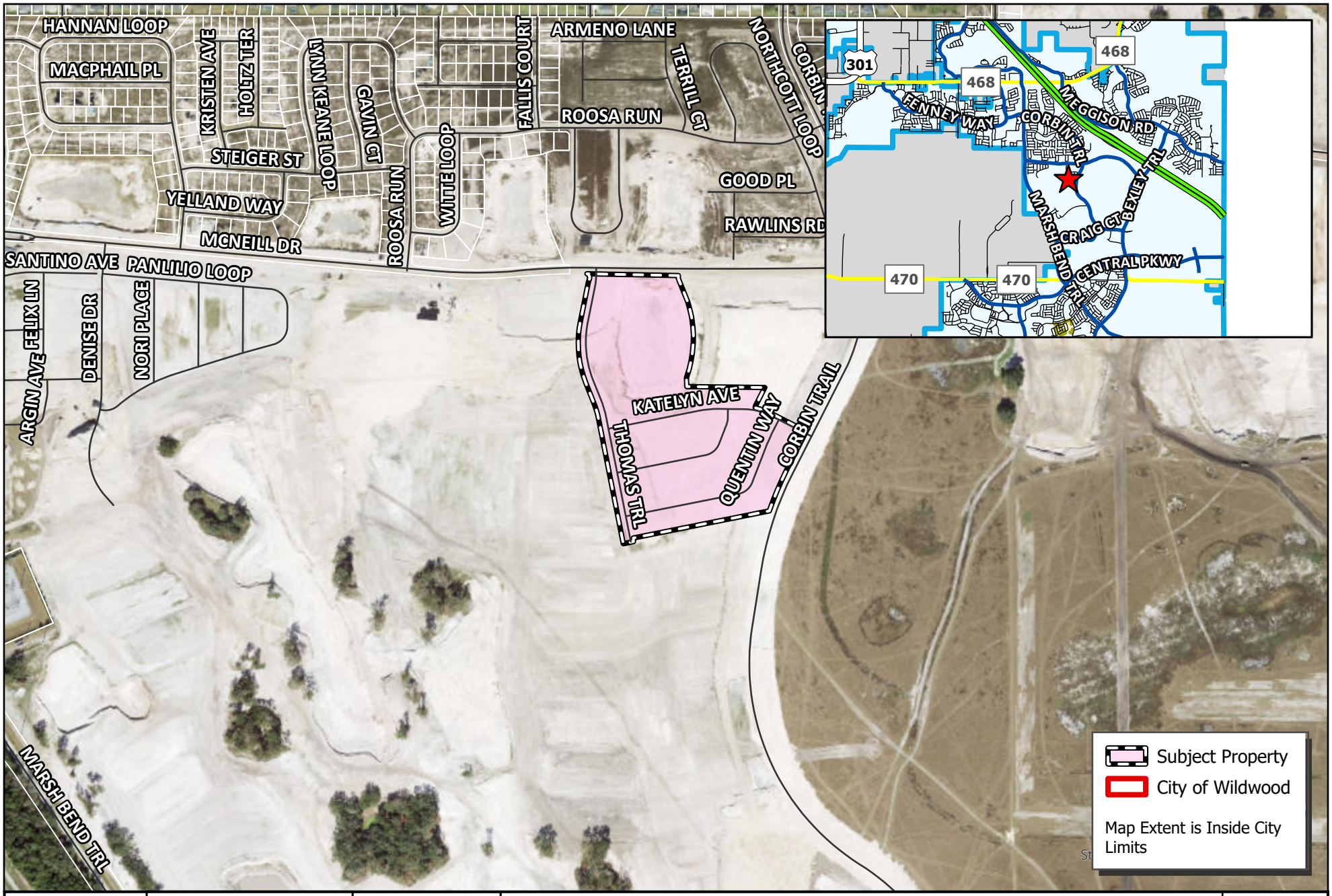
Case Number	PLAT 2411-001 VOSO Unit 176 Final Plat
Owner/Applicant(s)	The Villages Development Company, LLC
Acreage	19.35 +/-
Property Location	The subject property is generally located at the south west intersection of Corbin Trail and McNeill Drive, approximately 0.6 miles East of Marsh Bend Trail.
Parcel	K03-005

The applicant is seeking approval from the City Commission for the VOSO Unit 176 Final Plat, a subdivision consisting of 73 single-family dwelling units and 3 tracts, as per the attached plans.

Plat 2411-001 meets the criteria set forth in the F.S. 177, the Villages of Southern Oaks 163 Agreement, the Land Development Regulations, and is consistent with the goals, objectives, and policies of the 2050 Comprehensive Plan.



Date: 12/17/2024
McKenna Page
Planner I, Development Services



WILDWOOD FLORIDA EST. 1877

CITY OF WILDWOOD
100 North Main Street
Wildwood, FL 34785
Phone: (352) 330-1330
www.wildwood-fl.gov

N

0 0.01 0.02 0.04 0.06 0.08 Miles

PLAT 2411-001

VOSO - UNIT 176 FINAL PLAT

PARCEL K03-005

MAP 1B

LOCATION MAP

NOV 2024

COVENANTS, CONDITIONS, RESTRICTIONS AND EASEMENTS FOR THIS SUBDIVISION ARE RECORDED IN THE PUBLIC RECORDS OF SUMTER COUNTY, FLORIDA. OR BOOK _____, PAGE _____.

VILLAGES OF SOUTHERN OAKS UNIT NO. 176

SHEET 1 OF 4

SECTION 3, TOWNSHIP 20 SOUTH, RANGE 23 EAST,
CITY OF WILDWOOD, SUMTER COUNTY, FLORIDA.

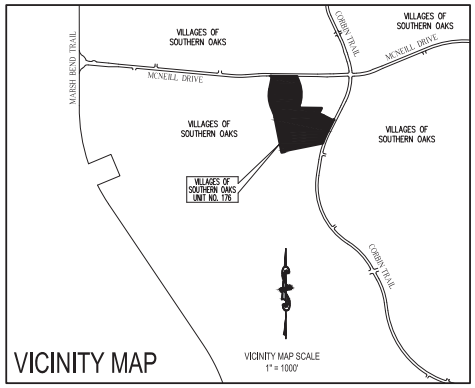
PLAT BOOK _____
PAGE _____

LEGAL DESCRIPTION

A PARCEL OF LAND LYING WITHIN THE NORTHEAST 1/4 OF SECTION 3, TOWNSHIP 20 SOUTH, RANGE 23 EAST, SUMTER COUNTY, FLORIDA, DESCRIBED AS FOLLOWS:

COMMENCE AT THE SOUTHWEST CORNER OF LOT 17, VILLAGES OF SOUTHERN OAKS UNIT NO. 150, ACCORDING TO THE PLAT THEREOF AS RECORDED IN PLAT BOOK 21, PAGES 33 AND 33A, PUBLIC RECORDS OF SUMTER COUNTY, FLORIDA; THENCE ALONG THE WEST BOUNDARY LINE OF SAID PLAT RUN S00°39'41"W, 88.00 FEET TO THE SOUTH RIGHT OF WAY LINE OF MCNEILL DRIVE OF SAID PLAT; SAID SOUTH RIGHT OF WAY LINE OF MCNEILL DRIVE ALSO BEING OF VILLAGES OF SOUTHERN OAKS UNIT NO. 149, ACCORDING TO THE PLAT THEREOF AS RECORDED IN PLAT BOOK 21, PAGES 32, 32A THROUGH 32C, PUBLIC RECORDS OF SUMTER COUNTY, FLORIDA; THENCE ALONG SAID SOUTH RIGHT OF WAY LINE OF MCNEILL DRIVE PER PLAT OF VILLAGES OF SOUTHERN OAKS UNIT NO. 149 RUN N89°20'19"W, 127.42 FEET TO THE POINT OF BEGINNING; THENCE DEPARTING SAID SOUTH RIGHT OF WAY LINE RUN S00°39'41"W, 15.00 FEET; THENCE S21°47'11"E, 120.52 FEET; THENCE S16°23'26"E, 38.38 FEET; THENCE S12°24'31"E, 38.68 FEET; THENCE S07°54'03"E, 48.55 FEET; THENCE S03°24'29"E, 38.38 FEET; THENCE S00°34'21"W, 38.65 FEET; THENCE S05°04'48"W, 48.57 FEET; THENCE S09°34'25"W, 38.38 FEET; THENCE S13°33'19"W, 38.67 FEET; THENCE S17°10'02"W, 46.82 FEET; THENCE S02°43'09"E, 42.44 FEET; THENCE S89°20'19"E, 377.18 FEET; THENCE S26°54'13"W, 98.78 FEET; THENCE S12°10'46"W, 10.00 FEET TO A POINT ON THE ARC OF A NON-TANGENT CURVE CONCAVE SOUTHERLY, HAVING A RADIUS OF 317.50 FEET AND A CHORD BEARING AND DISTANCE OF S70°27'30"E, 81.37 FEET TO WHICH A RADIAL LINE BEARS N12°10'46"E; THENCE EASTERLY ALONG THE ARC OF SAID CURVE, THROUGH A CENTRAL ANGLE OF 14°43'28", AN ARC DISTANCE OF 81.59 FEET TO THE POINT OF TANGENCY; THENCE S63°05'47"E, 171.76 FEET TO THE POINT OF CURVATURE OF A CURVE CONCAVE NORTHERLY AND HAVING A RADIUS OF 20.00 FEET; THENCE EASTERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 90°00'00", AN ARC DISTANCE OF 31.42 FEET TO A POINT OF CUSP; THENCE S26°54'13"W, 224.42 FEET TO THE POINT OF CURVATURE OF A CURVE CONCAVE SOUTHEASTERLY AND HAVING A RADIUS OF 1,621.50 FEET; THENCE SOUTHWESTERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 07°47'54", AN ARC DISTANCE OF 220.70 FEET; THENCE ALONG A NON-TANGENT LINE RUN S76°42'56"W, 670.98 FEET; THENCE S11°12'10"E, 17.38 FEET; THENCE S78°47'50"W, 50.00 FEET; THENCE N11°12'10"W, 611.27 FEET TO THE POINT OF CURVATURE OF A CURVE CONCAVE WESTERLY AND HAVING A RADIUS OF 475.00 FEET; THENCE NORTHERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 10°41'10", AN ARC DISTANCE OF 88.59 FEET TO THE POINT OF TANGENCY; THENCE N21°53'20"W, 98.21 FEET TO THE POINT OF CURVATURE OF A CURVE CONCAVE EASTERLY AND HAVING A RADIUS OF 525.00 FEET; THENCE NORTHERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 33°19'41", AN ARC DISTANCE OF 305.38 FEET TO THE POINT OF TANGENCY; THENCE N11°26'21"E, 175.98 FEET TO THE POINT OF CURVATURE OF A CURVE CONCAVE WESTERLY AND HAVING A RADIUS OF 225.00 FEET; THENCE NORTHERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 08°34'29", AN ARC DISTANCE OF 33.67 FEET TO A POINT OF COMPOUND CURVATURE OF A CURVE CONCAVE SOUTHWESTERLY AND HAVING A RADIUS OF 20.00 FEET; THENCE NORTHWESTERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 92°12'11", AN ARC DISTANCE OF 32.18 FEET TO A POINT OF CUSP; SAID POINT ALSO BEING ON AFORESAID SOUTH RIGHT OF WAY LINE OF MCNEILL DRIVE PER PLAT OF VILLAGES OF SOUTHERN OAKS UNIT NO. 149; THENCE ALONG SAID SOUTH RIGHT OF WAY LINE RUN S89°20'19"E, 452.28 FEET TO THE POINT OF BEGINNING.

CONTAINING 19.35 ACRES, MORE OR LESS.



73 LOTS – 3 TRACTS

NOTICE: THIS PLAT, AS RECORDED IN ITS GRAPHIC FORM, IS THE OFFICIAL DEPICTION OF THE SUBDIVIDED LANDS DESCRIBED HEREIN AND WILL IN NO CIRCUMSTANCES BE SUPPLANTED IN AUTHORITY BY ANY OTHER GRAPHIC OR DIGITAL FORM OF THE PLAT. THERE MAY BE ADDITIONAL RESTRICTIONS THAT ARE NOT RECORDED ON THIS PLAT THAT MAY BE FOUND IN THE PUBLIC RECORDS OF THIS COUNTY.

NOTES:

1.) BEARINGS ARE BASED ON THE WEST BOUNDARY LINE OF VILLAGES OF SUMTER UNIT NO. 150, AS RECORDED IN PLAT BOOK 21, PAGES 33 AND 33A, PUBLIC RECORDS OF SUMTER COUNTY, FLORIDA AS BEING S00°39'41"W.

2.) ALL PLATTED UTILITY EASEMENTS SHALL PROVIDE THAT SUCH EASEMENTS SHALL ALSO BE EASEMENTS FOR THE CONSTRUCTION, INSTALLATION, MAINTENANCE, AND OPERATION OF CABLE TELEVISION SERVICES; PROVIDED, HOWEVER, NO SUCH CONSTRUCTION, INSTALLATION, MAINTENANCE, AND OPERATION OF CABLE TELEVISION SERVICES SHALL INTERFERE WITH THE FACILITIES AND SERVICES OF AN ELECTRIC, TELEPHONE, GAS, OR OTHER PUBLIC UTILITY. IN THE EVENT A CABLE TELEVISION COMPANY DAMAGES THE FACILITIES OF A PUBLIC UTILITY, IT SHALL BE SOLELY RESPONSIBLE FOR THE DAMAGES. THIS SECTION SHALL NOT APPLY TO THOSE PRIVATE EASEMENTS GRANTED TO OR OBTAINED BY A PARTICULAR ELECTRIC, TELEPHONE, GAS, OR OTHER PUBLIC UTILITY. SUCH CONSTRUCTION, INSTALLATION, MAINTENANCE, AND OPERATION SHALL COMPLY WITH THE NATIONAL ELECTRICAL SAFETY CODE AS ADOPTED BY THE FLORIDA PUBLIC SERVICE COMMISSION.

3.) ALL DISTANCES SHOWN ARE IN FEET.

4.) WITH REFERENCE TO CURVILINEAR LOTS, RADIAL LINES HAVE BEEN DESIGNATED BY (R). ALL OTHER LINES ARE NON-RADIAL.

5.) LOT CORNERS WILL BE SET PRIOR TO THE TRANSFER OF ANY LOT OR PRIOR TO THE EXPIRATION OF THE BOND OR OTHER SURETY.

6.) PERMANENT CONTROL POINTS (P.C.P.'S) WILL BE SET WITHIN ONE YEAR OF THE DATE THIS PLAT WAS RECORDED OR PRIOR TO THE EXPIRATION OF THE BOND OR SURETY.

7.) ALL PERMANENT REFERENCE MONUMENTS (P.R.M.'S) HAVE BEEN SET IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER 177, FLORIDA STATUTES.

8.) TRACTS "A" AND "B" ARE FOR ANY PURPOSE PERMITTED BY APPLICABLE LAW AND APPROVED IN WRITING BY DEVELOPER.

9.) TRACT "C" IS FOR ANY PURPOSE PERMITTED BY APPLICABLE LAW AND APPROVED IN WRITING BY DEVELOPER. NO INGRESS OR EGRESS IS PERMITTED WITHOUT THE DEVELOPER'S CONSENT.

10.) THE DISTRICT FINDS IT IN THE PUBLIC INTEREST, AND HEREBY AGREES TO PROVIDE THE THE FOLLOWING SERVICES: (A) MAINTENANCE AND REPAIR OF AREAS OWNED BY THE DISTRICT OR DEDICATED TO THE USE AND ENJOYMENT OF THE RESIDENTS OF THE DISTRICT, THE SUBDIVISION, OR THE PUBLIC; (B) PAY FOR THE COST OF WATER AND SEWER PROVIDED BY GIBSON PLACE UTILITY COMPANY, LLC, OR ITS ASSIGNS, TOGETHER WITH THE COST OF GARBAGE, ELECTRICAL, LIGHTING, TELEPHONE, GAS AND OTHER NECESSARY UTILITY SERVICE FOR AREAS OWNED BY THE DISTRICT OR DEDICATED TO THE USE AND ENJOYMENT OF THE RESIDENTS OF THE DISTRICT, SUBDIVISION, OR THE PUBLIC; (C) MAINTENANCE AND REPAIR OF THE STORM WATER RUNOFF DRAINAGE SYSTEM INCLUDING DRAINAGE EASEMENTS AND DRAIN PIPES NOT MAINTAINED BY GIBSON PLACE WATER CONSERVATION AUTHORITY, LLC, OR ITS ASSIGNS, OR THE CITY OF WILDWOOD; AND (D) MAINTENANCE AND REPAIR OF THE LANDSCAPING AND IRRIGATION ON ISLANDS AND CUL-DE-SACS LOCATED WITHIN THE ROADWAYS, IF ANY.

11.) THE TITLE OPINION FOR THIS PLAT HAS BEEN SUBMITTED BY SEPARATE DOCUMENT.

VILLAGES OF SOUTHERN OAKS UNIT NO. 176
CONVEYANCE AND GRANT OF EASEMENTS TO
VILLAGE COMMUNITY DEVELOPMENT DISTRICT NO. 15

ALL RIGHT, TITLE AND INTEREST OF THE VILLAGES DEVELOPMENT COMPANY, LLC, (THE DEVELOPER) IN TRACTS "A", "B" AND "C" AND THE ROADWAYS SHOWN ON THIS PLAT OF VILLAGES OF SOUTHERN OAKS UNIT NO. 176, IS HEREBY SOLD, CONVEYED AND SET OVER TO VILLAGE COMMUNITY DEVELOPMENT DISTRICT NO. 15 (THE DISTRICT): (1) RESERVING UNTO THE DEVELOPER AND ITS ASSIGNS, AND EACH OF THEIR SUCCESSORS, TENANTS, INVITEES, AND GUESTS PERPETUAL EASEMENTS FOR INGRESS AND EGRESS AND THE CONSTRUCTION, INSTALLATION, MAINTENANCE AND OPERATION OF UNDERGROUND ELECTRIC, TELEPHONE, CABLE, GAS AND OTHER UTILITIES, IRRIGATION FACILITIES, POTABLE WATER, SANITARY SEWER AND STORM WATER FACILITIES, LANDSCAPED AREAS, FENCES, WALLS, ENTRY FACILITIES, INCLUDING ELECTRONIC CARD READING EQUIPMENT, GOLF CART AND PEDESTRIAN PATHS, SIGNAGE, ENJOYMENT IMPROVEMENTS AND GOLF CART AND PEDESTRIAN BRIDGES; AND (2) SUBJECT TO THE RESTRICTION THAT ALL ADDITIONS OF, REMOVAL OF, AND CHANGES TO IMPROVEMENTS LOCATED ON SUCH TRACTS AND ROADWAYS (INCLUDING, WITHOUT LIMITATION, ALL THOSE IMPROVEMENTS DESCRIBED ABOVE), MUST FIRST BE APPROVED IN ADVANCE BY THE DEVELOPER.

THE DEVELOPER ALSO GRANTS TO THE DISTRICT NON-EXCLUSIVE, PERPETUAL EASEMENTS OVER, ACROSS AND UPON ANY SPECIAL EASEMENTS SHOWN HEREON FOR THE PURPOSE OF MAINTAINING DRAINAGE FACILITIES LOCATED THEREON.

THE DISTRICT, BY EXECUTING THE DEDICATION CONTAINED ON THIS PLAT, ACCEPTS THIS CONVEYANCE AND AGREES TO MAINTAIN THE TRACTS LISTED ABOVE, INCLUDING ALL IMPROVEMENTS CONSTRUCTED THEREON AND DRAINAGE FACILITIES LOCATED WITHIN ANY SPECIAL EASEMENTS PERPETUALLY, AND MAINTAIN THE ROADWAYS AND DRAINAGE FEATURES LYING WITHIN SUCH ROADWAYS FOR TWO YEARS AFTER THE CITY ENGINEER HAS CERTIFIED THE CONSTRUCTION HAS BEEN COMPLETED.

WITNESSES:

SIGNATURE

PRINT NAME

7580 MIDDLETON DRIVE
MIDDLETON, FLORIDA 34762
MAILING ADDRESS

SIGNATURE

PRINT NAME

4450 NE 83RD ROAD
WILDWOOD, FLORIDA 34785
MAILING ADDRESS

THE VILLAGES DEVELOPMENT COMPANY, LLC,
A FLORIDA LIMITED LIABILITY COMPANY
BY: VDC MANAGER, LLC,
A FLORIDA LIMITED LIABILITY COMPANY,
ITS MANAGER

BY: _____
MARTIN L. DZURO, MANAGER

STATE OF FLORIDA
COUNTY OF SUMTER

THE FOREGOING INSTRUMENT WAS ACKNOWLEDGED BEFORE ME, BY MEANS OF ☐ PHYSICAL PRESENCE OR ☐ ONLINE NOTARIZATION, THIS ____ DAY OF _____, 20____, BY MARTIN L. DZURO, AS MANAGER OF AND ON BEHALF OF VDC MANAGER, LLC, A FLORIDA LIMITED LIABILITY COMPANY, THE MANAGER OF THE VILLAGES DEVELOPMENT COMPANY, LLC, A FLORIDA LIMITED LIABILITY COMPANY, FOR THE PURPOSES EXPRESSED HEREIN, WHO IS PERSONALLY KNOWN TO ME AND WHO DID NOT TAKE AN OATH.

NOTARY PUBLIC – STATE OF FLORIDA
PRINT NAME: _____
COMMISSION NO.: _____
COMMISSION EXPIRES: _____

SEAL

CERTIFICATE OF APPROVAL BY CITY OFFICIALS

THIS CERTIFIES THAT THIS PLAT HAS BEEN REVIEWED FOR CONFORMITY TO F.S. CHAPTER 177, AS CERTIFIED BY THE REVIEWING SURVEYOR SHOWN BELOW.

MELANIE D. STRICKLAND
DEVELOPMENT SERVICES DIRECTOR

THIS CERTIFIES THAT THIS PLAT WAS PRESENTED TO THE COMMISSION OF THE CITY OF WILDWOOD, SUMTER COUNTY, FLORIDA, AND WAS APPROVED BY THE COMMISSION FOR RECORD ON THIS ____ DAY OF _____, 20____.

JESSICA BARNES
CITY CLERK

ED WOLF
MAYOR

THIS CERTIFIES THAT THIS PLAT WAS PRESENTED TO THE ATTORNEY FOR THE CITY OF WILDWOOD, SUMTER COUNTY, FLORIDA, AND APPROVED BY HIM OR HER AS TO FORM AND LEGALITY ON THIS ____ DAY OF _____, 20____.

PRINT NAME
CITY OF WILDWOOD, ATTORNEY

SIGNATURE
CITY OF WILDWOOD, ATTORNEY

DEVELOPMENT SERVICES DIRECTOR
MELANIE D. STRICKLAND

PUBLIC WORKS DIRECTOR
JEREMY HOCKENBURY

PRINT NAME
CITY OF WILDWOOD, ENGINEER

SIGNATURE
CITY OF WILDWOOD, ENGINEER

REVIEWING SURVEYOR'S CERTIFICATE

PURSUANT TO SECTION 177.081, FLORIDA STATUTES, I HEREBY CERTIFY THAT I HAVE PERFORMED A REVIEW OF THIS PLAT FOR CONFORMITY TO CHAPTER 177, FLORIDA STATUTES AND THAT SAID PLAT COMPLIES WITH THE TECHNICAL REQUIREMENTS OF THAT CHAPTER; PROVIDED, HOWEVER, THAT MY REVIEW AND CERTIFICATION DOES NOT INCLUDE FIELD VERIFICATION OF ANY POINTS OR MEASUREMENTS SHOWN ON THIS PLAT.

SIGNATURE

DATE

RONALD W. HERR, P.L.S.
WADE SURVEYING, INC.

4907
REGISTRATION NO.

SEAL

DEDICATION

KNOW ALL MEN BY THESE PRESENTS, THAT THE UNDERSIGNED, THE VILLAGES DEVELOPMENT COMPANY, LLC (THE DEVELOPER) HAS CAUSED TO BE MADE THIS PLAT, VILLAGES OF SOUTHERN OAKS UNIT NO. 176, A SUBDIVISION OF LAND HEREIN DESCRIBED AND JOINS WITH VILLAGE COMMUNITY DEVELOPMENT DISTRICT NO. 15 (THE DISTRICT) TO HEREBY DEDICATE THE ROADWAYS SHOWN HEREON TO THE CITY OF WILDWOOD AND THE PERPETUAL USE OF THE PUBLIC; AND DEDICATES TRACTS "A", "B" AND "C" TO VILLAGE COMMUNITY DEVELOPMENT DISTRICT NO. 15.

WITNESSES:

(1) _____
SIGNATURE

PRINT NAME

7580 MIDDLETON DRIVE
MIDDLETON, FLORIDA 34762
MAILING ADDRESS

(2) _____
SIGNATURE

PRINT NAME

4450 NE 83RD ROAD
WILDWOOD, FLORIDA 34785
MAILING ADDRESS

THE VILLAGES DEVELOPMENT COMPANY, LLC,
A FLORIDA LIMITED LIABILITY COMPANY

BY: VDC MANAGER, LLC,
A FLORIDA LIMITED LIABILITY COMPANY,
ITS MANAGER

BY: _____
MARTIN L. DZURO, MANAGER

WITNESSES:

(1) _____
SIGNATURE

PRINT NAME

3601 KIESSEL ROAD
THE VILLAGES, FLORIDA 32163
MAILING ADDRESS

(2) _____
SIGNATURE

PRINT NAME

4450 NE 83RD ROAD
WILDWOOD, FLORIDA 34785
MAILING ADDRESS

VILLAGE COMMUNITY DEVELOPMENT
DISTRICT NO. 15

BY: _____
SPENCER R. NOVAK, CHAIR

STATE OF FLORIDA
COUNTY OF SUMTER

THE FOREGOING INSTRUMENT WAS ACKNOWLEDGED BEFORE ME, BY MEANS OF ☐ PHYSICAL PRESENCE OR ☐ ONLINE NOTARIZATION, THIS ____ DAY OF _____, 20____, BY SPENCER R. NOVAK, THE CHAIR OF VILLAGE COMMUNITY DEVELOPMENT DISTRICT NO. 15, ON BEHALF OF THE DISTRICT, WHO IS PERSONALLY KNOWN TO ME AND WHO DID NOT TAKE AN OATH.

NOTARY PUBLIC – STATE OF FLORIDA
PRINT NAME: _____
COMMISSION NO.: _____
COMMISSION EXPIRES: _____

SEAL

CERTIFICATE OF SURVEYOR

I HEREBY CERTIFY THAT THIS PLAT OF VILLAGES OF SOUTHERN OAKS UNIT NO. 176, WAS PREPARED UNDER MY DIRECTION AND SUPERVISION; AND THAT THE PERMANENT REFERENCE MONUMENTS AS SHOWN THEREON WERE PLACED ON THE ____ DAY OF _____, 20____; I FURTHER CERTIFY THAT THIS PLAT COMPLIES WITH THE REQUIREMENTS OF CHAPTER 177, FLORIDA STATUTES.

CLYMER FARNER BARLEY SURVEYING, LLC
4450 N.E. 83RD ROAD
WILDWOOD, FLORIDA 34785
LICENSED BUSINESS NO. 8498

SEAL

KAYE M. JAMESON
REGISTRATION NO. 5912

DATE

CERTIFICATE OF CLERK

I HEREBY CERTIFY THAT I HAVE EXAMINED THIS PLAT AND FIND THAT IT COMPLIES IN FORM WITH ALL THE REQUIREMENTS OF CHAPTER 177, FLORIDA STATUTES AND WAS FILED FOR RECORD ON _____, 20____, AT _____ AND FILE NUMBER _____.

PLAT BOOK _____ PAGE _____.

CLERK OF THE COURT IN AND
FOR SUMTER COUNTY, FLORIDA

SEAL

PRINT NAME
DEPUTY CLERK

SIGNATURE
DEPUTY CLERK

PREPARED BY: CFB SURVEYING — CLYMER FARNER BARLEY
4450 NE 83RD ROAD - WILDWOOD, FL 34785
(352) 748-3120 LB#498

VILLAGES OF SOUTHERN OAKS
UNIT NO. 176

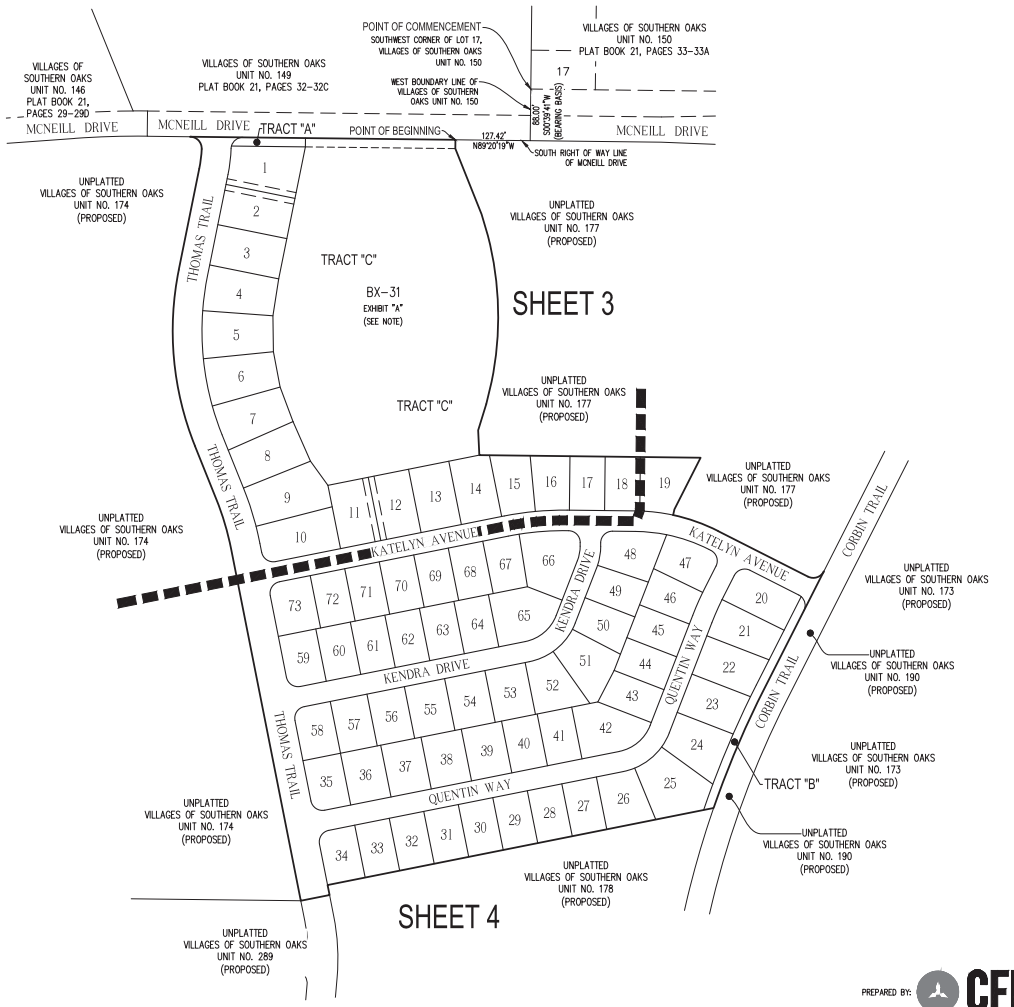
SECTION 3, TOWNSHIP 20 SOUTH, RANGE 23 EAST,
CITY OF WILDWOOD, SUMTER COUNTY, FLORIDA.

SHEET 2 OF 4

PLAT BOOK _____
PAGE _____

1 inch = 100 feet

KEY MAP



LEGEND

▣	INDICATES 4" X 4" X 24" CONCRETE PERMANENT REFERENCE MONUMENT (P.R.M.) FOUND AS NOTED.
⊡	INDICATES 4" X 4" X 24" CONCRETE PERMANENT REFERENCE MONUMENT (P.R.M.) OR 5/8" IRON PIN AND CAP SET LB #8498
●	INDICATES P.K. NAIL AND DISK PERMANENT CONTROL POINT (P.C.P.) LB #8498 TO BE SET WITHIN ONE YEAR OF THE DATE THIS PLAT IS RECORDED.
○	INDICATES 5/8" IRON PIN AND CAP TO BE SET IN ACCORDANCE WITH SECTION 177.091(9) FLORIDA STATUTES. (SEE NOTE #5.)
C9	INDICATES CURVE NUMBER IN CURVE TABLE
L9	INDICATES LINE NUMBER IN LINE TABLE
℄	INDICATES CENTERLINE
Δ	INDICATES DELTA (CENTRAL ANGLE OF CURVE)
CB	INDICATES CHORD BEARING
CH	INDICATES CHORD DISTANCE
L	INDICATES ARC LENGTH
ORB	INDICATES OFFICIAL RECORDS BOOK
PC	INDICATES POINT OF CURVATURE
POC	INDICATES POINT ON CURVE
R	INDICATES RADIUS LENGTH
(R)	INDICATES RADIAL LINE
PCC	INDICATES POINT OF COMPOUND CURVATURE
PRC	INDICATES POINT OF REVERSE CURVATURE
PT	INDICATES POINT OF TANGENCY
DRA	INDICATES DRAINAGE RETENTION AREA FOR STORMWATER MANAGEMENT INCLUDING CONVEYANCING PIPES
GFE	INDICATES GATE FACILITIES EASEMENT (RESERVED BY THE DEVELOPER AND ITS ASSIGNS)
SE	INDICATES SPECIAL EASEMENT RESERVED BY DEVELOPER AND ITS ASSIGNS, FOR LANDSCAPING AND/OR THE CONSTRUCTION, INSTALLATION, MAINTENANCE AND OPERATION OF WATER, SANITARY SEWER, ELECTRIC, TELEPHONE, GAS OR OTHER UTILITIES AND/OR DRAINAGE FACILITIES AND/OR WALL FENCING AND/OR GOLF CART PATHS. DEVELOPER CONTEMPLATES PUTTING H.V.A.C. AND SIMILAR EQUIPMENT WITHIN THE EASEMENT AREA. UTILITY PROVIDERS UTILIZING SUCH EASEMENT AREA COVENANT, AS A CONDITION OF THE RIGHT TO USE SUCH EASEMENT, NOT TO INTERFERE OR DISTURB SUCH EQUIPMENT INSTALLED WITHIN THE EASEMENT AREA.
SME	INDICATES SIGN MAINTENANCE EASEMENT RESERVED BY DEVELOPER AND ITS ASSIGNS FOR INSTALLATION AND MAINTENANCE OF SIGNAGE.

LB	INDICATES LICENSED BUSINESS
NO.	INDICATES NUMBER
PB	INDICATES PLAT BOOK
PG	INDICATES PAGE
PGS	INDICATES PAGES
SQ FT	INDICATES SQUARE FEET
R/W	INDICATES RIGHT-OF-WAY

PREPARED BY: CFB | CLYMER FARMER BARLEY SURVEYING
4450 NE 83RD ROAD - WILDWOOD, FL 34785
(352) 748-3126 LB8498

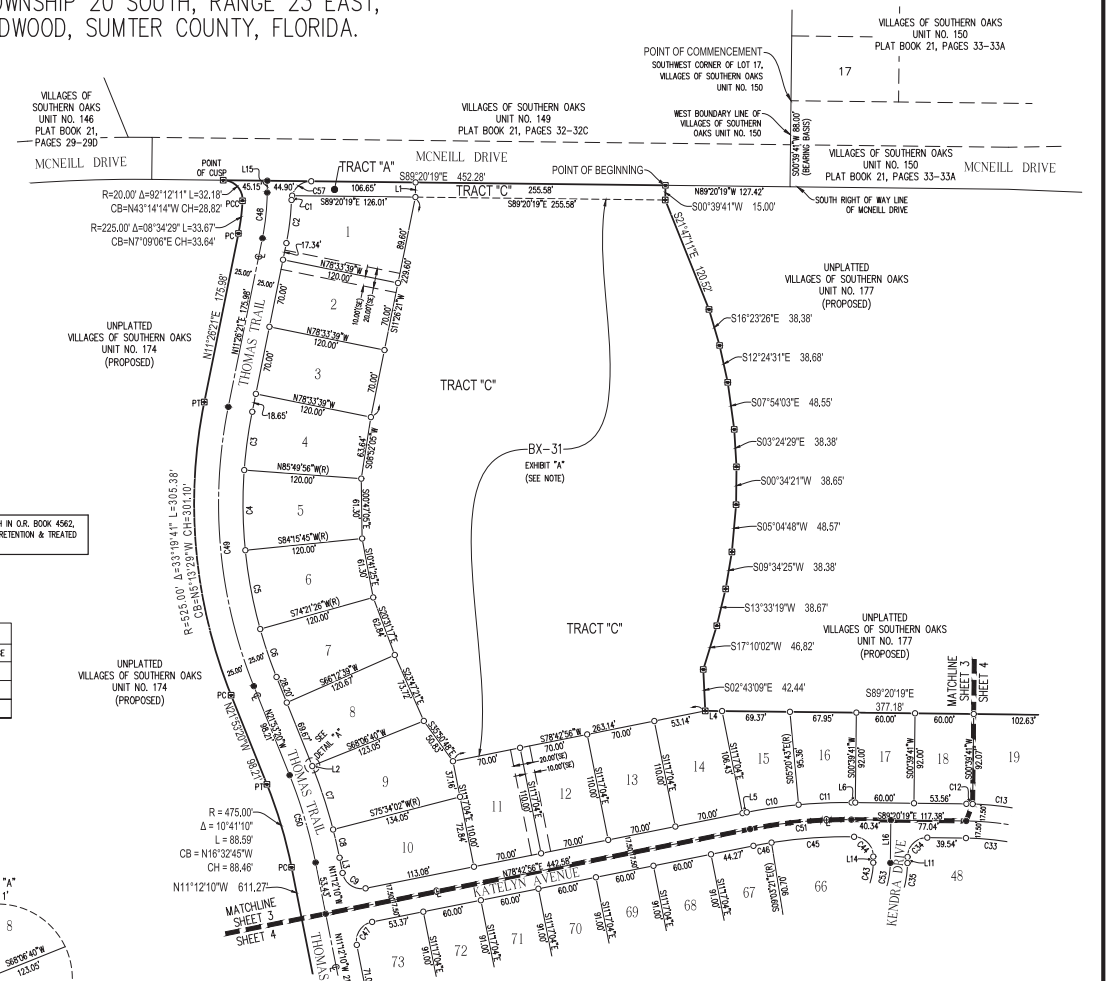
VILLAGES OF SOUTHERN OAKS UNIT NO. 176

SECTION 3, TOWNSHIP 20 SOUTH, RANGE 23 EAST,
CITY OF WILDWOOD, SUMTER COUNTY, FLORIDA.

SHEET 3 OF 4

PLAT BOOK _____
PAGE _____





CURVE TABLE					
CURVE TAG	RADIUS	CENTRAL ANGLE	ARC LENGTH	CHORD BEARING	CHORD LENGTH
C1	20.00'	12°56'49"	4.52'	S08°39'56"W	4.51'
C2	275.00'	9°14'50"	44.38'	N06°48'56"E	44.33'
C3	475.00'	7°16'17"	60.28'	S07°48'13"W	60.24'
C4	475.00'	9°54'19"	82.12'	S00°47'05"E	82.02'
C5	475.00'	9°54'19"	82.12'	S10°41'25"E	82.02'
C6	475.00'	6°14'46"	51.78'	S18°45'57"E	51.76'
C7	525.00'	7°27'22"	68.32'	N18°09'39"W	68.27'
C8	525.00'	3°13'48"	29.60'	N12°49'04"W	29.59'
C9	20.00'	90°04'54"	31.44'	S56°14'37"E	28.30'
C10	517.50'	5°56'21"	53.64'	S81°41'06"W	53.62'
C11	517.50'	6°00'24"	54.25'	S87°39'29"W	54.23'
C12	317.50'	1°09'44"	6.44'	N88°45'27"W	6.44'
C13	317.50'	10°21'21"	57.39'	N82°59'55"W	57.31'
C33	282.50'	10°45'25"	53.04'	N83°57'36"W	52.96'
C34	20.00'	90°00'00"	31.42'	S45°39'41"W	28.28'
C35	106.50'	17°38'56"	32.81'	N09°29'09"E	32.68'
C43	71.50'	20°28'58"	25.56'	N10°54'10"E	25.42'
C44	20.00'	89°38'53"	31.29'	N44°09'46"W	28.20'
C45	482.50'	10°04'09"	84.79'	S85°58'44"W	84.68'
C46	482.50'	2°13'43"	18.77'	S79°49'48"W	18.77'
C47	20.00'	89°55'06"	31.39'	S33°45'23"W	28.26'
C48	250.00'	10°46'40"	47.03'	N06°03'01"E	46.96'
C49	500.00'	33°19'41"	290.84'	S05°13'29"E	286.76'
C50	500.00'	10°41'10"	93.25'	N16°32'45"W	93.12'
C51	500.00'	11°56'45"	104.25'	S84°41'18"W	104.06'
C53	89.00'	20°28'58"	31.82'	N10°54'10"E	31.65'
C57	20.00'	75°31'21"	26.36'	S52°54'01"W	24.49'

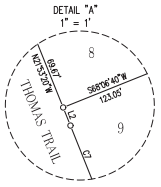
LINE TABLE		
LINE TAG	BEARING	DISTANCE
L1	N00°39'41"E	15.00'
L2	S21°53'20"E	0.33'
L3	N11°12'10"W	15.87'
L4	S89°20'19"E	17.23'
L5	S78°42'56"W	4.45'
L6	N89°20'19"W	3.82'
L11	N00°39'41"E	6.21'
L14	N00°39'41"E	6.20'
L15	N00°39'41"E	12.12'
L16	N00°39'41"E	43.71'

NOTE

EXHIBIT A = EASEMENTS SET FORTH IN O.R. BOOK 4562, PAGE 323. (STORMWATER RUNOFF, RETENTION & TREATED EFFLUENT)

TRACT TABLE		
TRACT	SQ FT	ACREAGE
A	1,815	0.04
B	5,848	0.13
C	189,449	4.35

DETAIL "A"
1" = 1'



LEGEND

- ▣ INDICATES 4" X 4" X 24" CONCRETE PERMANENT REFERENCE MONUMENT (P.R.M.) FOUND AS NOTED.
- ▣ INDICATES 4" X 4" X 24" CONCRETE PERMANENT REFERENCE MONUMENT (P.R.M.) OR 5/8" IRON PIN AND CAP SET LB #8498
- ● INDICATES P.K. NAIL AND DISK PERMANENT CONTROL POINT (P.C.P.) LB #8498 TO BE SET WITHIN ONE YEAR OF THE DATE THIS PLAT IS RECORDED.
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- POC INDICATES POINT ON CURVE
- R INDICATES RADIUS LENGTH
- (R) INDICATES RADIAL LINE
- PCC INDICATES POINT OF COMPOUND CURVATURE
- PRC INDICATES POINT OF REVERSE CURVATURE
- PT INDICATES POINT OF TANGENCY
- DRA INDICATES DRAINAGE RETENTION AREA FOR STORMWATER MANAGEMENT INCLUDING CONVEYANCING PIPES
- GFE INDICATES GATE FACILITIES EASEMENT (RESERVED BY THE DEVELOPER AND ITS ASSIGNS)
- SE INDICATES SPECIAL EASEMENT RESERVED BY DEVELOPER AND ITS ASSIGNS, FOR LANDSCAPING AND/OR THE CONSTRUCTION, INSTALLATION, MAINTENANCE AND OPERATION OF WATER, SANITARY SEWER, ELECTRIC, TELEPHONE, GAS OR OTHER UTILITIES AND/OR DRAINAGE FACILITIES AND/OR WALL FENCING AND/OR GOLF CART PATHS. DEVELOPER CONTEMPLATES PUTTING H.V.A.C. AND SIMILAR EQUIPMENT WITHIN THE EASEMENT AREA. UTILITY PROVIDERS UTILIZING SUCH EASEMENT AREA COVENANT, AS A CONDITION OF THE RIGHT TO USE SUCH EASEMENT, NOT TO INTERFERE OR DISTURB SUCH EQUIPMENT INSTALLED WITHIN THE EASEMENT AREA.
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- LB INDICATES LICENSED BUSINESS
- NO. INDICATES NUMBER
- PB INDICATES PLAT BOOK
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- PGS INDICATES PAGES
- SQ FT INDICATES SQUARE FEET
- R/W INDICATES RIGHT-OF-WAY

PREPARED BY:

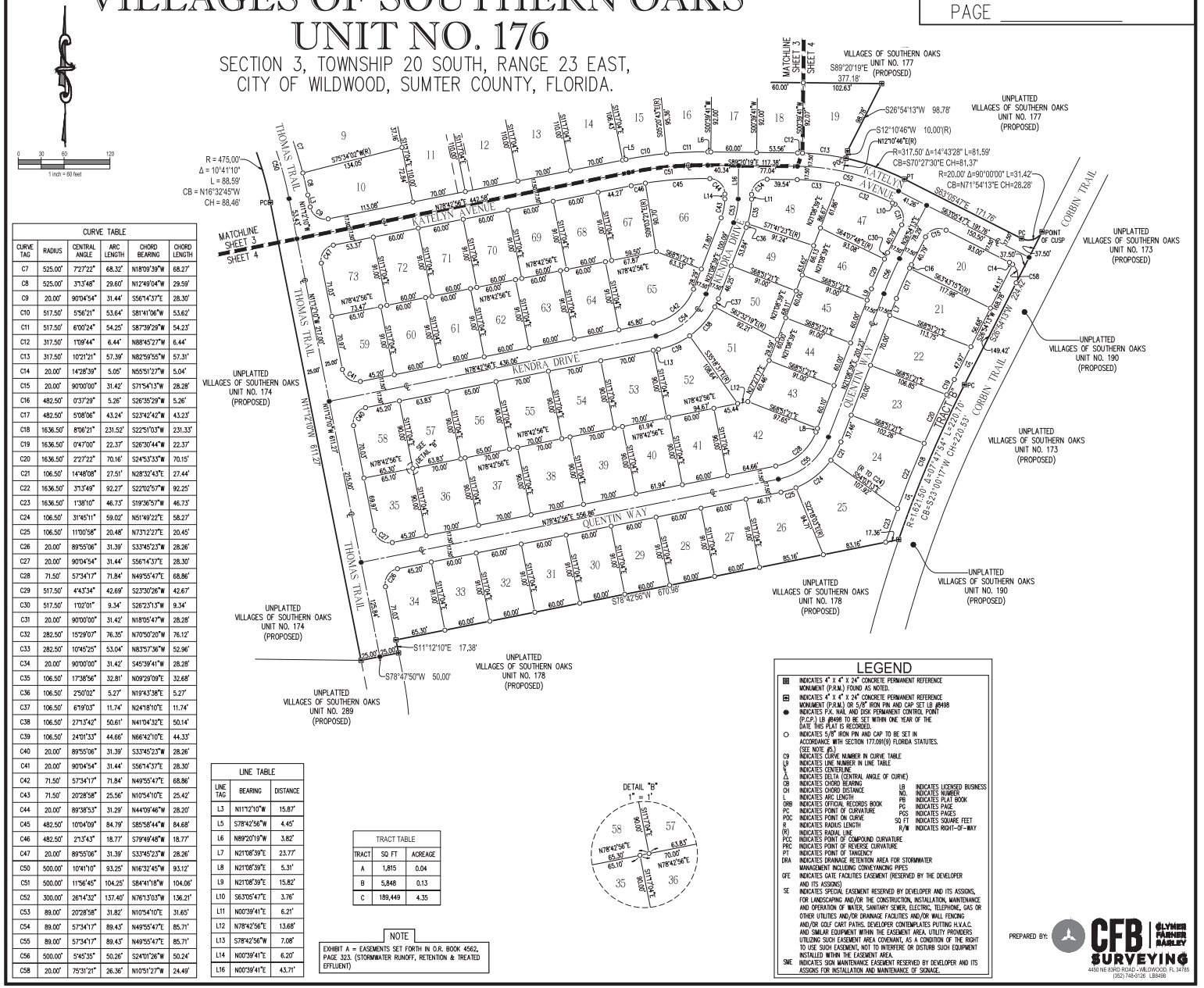
CFB | CLYMER FARMER BARLEY
SURVEYING
4450 NE 83RD ROAD - WILDWOOD, FL 34785
(352) 748-0126 LB8498

VILLAGES OF SOUTHERN OAKS UNIT NO. 176

SECTION 3, TOWNSHIP 20 SOUTH, RANGE 23 EAST,
CITY OF WILDWOOD, SUMTER COUNTY, FLORIDA.

SHEET 4 OF 4

PLAT BOOK _____
PAGE _____



CURVE TABLE					
CURVE TAG	RADIUS	CENTRAL ANGLE	ARC LENGTH	CHORD BEARING	CHORD LENGTH
C7	525.00'	7°27'22"	68.32'	N18°09'39"W	68.27'
C8	525.00'	3°13'48"	29.60'	N12°49'04"W	29.59'
C9	20.00'	90°04'54"	31.44'	S56°14'37"E	28.30'
C10	517.50'	5°56'21"	53.64'	S81°41'06"W	53.62'
C11	517.50'	6°00'24"	54.25'	S87°39'29"W	54.23'
C12	317.50'	1°09'44"	6.44'	N88°45'27"W	6.44'
C13	317.50'	10°21'21"	57.39'	N82°59'55"W	57.31'
C14	20.00'	14°28'39"	5.05'	N55°51'27"W	5.04'
C15	20.00'	90°00'00"	31.42'	S71°54'13"W	28.28'
C16	482.50'	0°37'29"	5.26'	S26°35'29"W	5.26'
C17	482.50'	5°08'06"	43.24'	S23°42'42"W	43.23'
C18	1636.50'	8°06'21"	231.52'	S22°51'03"W	231.33'
C19	1636.50'	0°47'00"	22.37'	S26°30'44"W	22.37'
C20	1636.50'	2°27'22"	70.16'	S24°53'33"W	70.15'
C21	106.50'	14°48'08"	27.51'	N28°32'43"E	27.44'
C22	1636.50'	3°13'49"	92.27'	S22°02'57"W	92.25'
C23	1636.50'	1°38'10"	46.73'	S19°36'57"W	46.73'
C24	106.50'	31°45'11"	59.02'	N51°49'22"E	58.27'
C25	106.50'	11°00'58"	20.48'	N73°12'27"E	20.45'
C26	20.00'	89°55'06"	31.39'	S33°45'23"W	28.26'
C27	20.00'	90°04'54"	31.44'	S56°14'37"E	28.30'
C28	71.50'	57°34'17"	71.84'	N49°55'47"E	68.86'
C29	517.50'	4°43'34"	42.69'	S23°30'26"W	42.67'
C30	517.50'	1°02'01"	9.34'	S26°23'13"W	9.34'
C31	20.00'	90°00'00"	31.42'	N18°05'47"W	28.28'
C32	282.50'	15°29'07"	76.35'	N70°50'20"W	76.12'
C33	282.50'	10°45'25"	53.04'	N83°57'36"W	52.96'
C34	20.00'	90°00'00"	31.42'	S45°39'41"W	28.28'
C35	106.50'	17°38'56"	32.81'	N09°29'09"E	32.68'
C36	106.50'	2°50'02"	5.27'	N19°43'38"E	5.27'
C37	106.50'	6°19'03"	11.74'	N24°18'10"E	11.74'
C38	106.50'	27°13'42"	50.61'	N41°04'32"E	50.14'
C39	106.50'	24°01'33"	44.66'	N66°42'10"E	44.33'
C40	20.00'	89°55'06"	31.39'	S33°45'23"W	28.26'
C41	20.00'	90°04'54"	31.44'	S56°14'37"E	28.30'
C42	71.50'	57°34'17"	71.84'	N49°55'47"E	68.86'
C43	71.50'	20°28'58"	25.56'	N10°54'10"E	25.42'
C44	20.00'	89°38'53"	31.29'	N44°09'46"W	28.20'
C45	482.50'	10°04'09"	84.79'	S85°56'44"W	84.68'
C46	482.50'	2°13'43"	18.77'	S79°49'48"W	18.77'
C47	20.00'	89°55'06"	31.39'	S33°45'23"W	28.26'
C50	500.00'	10°41'10"	93.25'	N16°32'45"W	93.12'
C51	500.00'	11°56'45"	104.25'	S84°41'18"W	104.06'
C52	300.00'	26°14'32"	137.40'	N76°13'03"W	136.21'
C53	89.00'	20°28'58"	31.82'	N10°54'10"E	31.65'
C54	89.00'	57°34'17"	89.43'	N49°55'47"E	85.71'
C55	89.00'	57°34'17"	89.43'	N49°55'47"E	85.71'
C56	500.00'	5°45'35"	50.26'	S24°01'26"W	50.24'
C58	20.00'	75°31'21"	26.36'	N10°51'27"W	24.49'

LINE TABLE		
LINE TAG	BEARING	DISTANCE
L3	N11°12'10"W	15.87'
L5	S78°42'56"W	4.45'
L6	N89°20'19"W	3.82'
L7	N21°08'39"E	23.77'
L8	N21°08'39"E	5.31'
L9	N21°08'39"E	15.82'
L10	S63°05'47"E	3.76'
L11	N00°39'41"E	6.21'
L12	N78°42'56"E	13.68'
L13	S78°42'56"W	7.08'
L14	N00°39'41"E	6.20'
L16	N00°39'41"E	43.71'

TRACT TABLE		
TRACT	SQ FT	ACREAGE
A	1,815	0.04
B	5,848	0.13
C	189,449	4.35

NOTE

EXHIBIT A = EASEMENTS SET FORTH IN O.R. BOOK 4562, PAGE 323. (STORMWATER RUNOFF, RETENTION & TREATED EFFLUENT)

LEGEND

- ▣ INDICATES 4" X 4" X 24" CONCRETE PERMANENT REFERENCE MONUMENT (P.R.M.) FOUND AS NOTED.
- ▣ INDICATES 4" X 4" X 24" CONCRETE PERMANENT REFERENCE MONUMENT (P.R.M.) OR 5/8" IRON PIN AND CAP SET LB #6498
- ● INDICATES P.K. NAIL AND DISK PERMANENT CONTROL POINT (P.C.P.) LB #6498 TO BE SET WITHIN ONE YEAR OF THE DATE THIS PLAT IS RECORDED.
- ○ INDICATES 5/8" IRON PIN AND CAP TO BE SET IN ACCORDANCE WITH SECTION 177.091(9) FLORIDA STATUTES. (SEE NOTE #5.)
- C9 INDICATES CURVE NUMBER IN CURVE TABLE
- L9 INDICATES LINE NUMBER IN LINE TABLE
- ℄ INDICATES CENTERLINE
- Δ INDICATES DELTA (CENTRAL ANGLE OF CURVE)
- CB INDICATES CHORD BEARING
- CH INDICATES CHORD DISTANCE
- L INDICATES ARC LENGTH
- ORB INDICATES OFFICIAL RECORDS BOOK
- PC INDICATES POINT OF CURVATURE
- POC INDICATES POINT ON CURVE
- R INDICATES RADIUS LENGTH
- (R) INDICATES RADIAL LINE
- PCC INDICATES POINT OF COMPOUND CURVATURE
- PRC INDICATES POINT OF REVERSE CURVATURE
- PT INDICATES POINT OF TANGENCY
- DRA INDICATES DRAINAGE RETENTION AREA FOR STORMWATER MANAGEMENT INCLUDING CONVEYANCING PIPES
- GFE INDICATES GATE FACILITIES EASEMENT (RESERVED BY THE DEVELOPER AND ITS ASSIGNS)
- SE INDICATES SPECIAL EASEMENT RESERVED BY DEVELOPER AND ITS ASSIGNS, FOR LANDSCAPING AND/OR THE CONSTRUCTION, INSTALLATION, MAINTENANCE AND OPERATION OF WATER, SANITARY SEWER, ELECTRIC, TELEPHONE, GAS OR OTHER UTILITIES AND/OR DRAINAGE FACILITIES AND/OR WALL FENCING AND/OR GOLF CART PATHS. DEVELOPER CONTEMPLATES PUTTING H.V.A.C. AND SIMILAR EQUIPMENT WITHIN THE EASEMENT AREA. UTILITY PROVIDERS UTILIZING SUCH EASEMENT AREA COVENANT, AS A CONDITION OF THE RIGHT TO USE SUCH EASEMENT, NOT TO INTERFERE OR DISTURB SUCH EQUIPMENT INSTALLED WITHIN THE EASEMENT AREA.
- SME INDICATES SIGN MAINTENANCE EASEMENT RESERVED BY DEVELOPER AND ITS ASSIGNS FOR INSTALLATION AND MAINTENANCE OF SIGNAGE.

- LB INDICATES LICENSED BUSINESS
- NO. INDICATES NUMBER
- PB INDICATES PLAT BOOK
- PG INDICATES PAGE
- PGS INDICATES PAGES
- SQ FT INDICATES SQUARE FEET
- R/W INDICATES RIGHT-OF-WAY

PREPARED BY:

CFB SURVEYING
CLYMER FARMER BARLEY
4450 NE 83RD ROAD - WILDWOOD, FL 34785
(352) 748-0126 LB6498

CITY COMMISSION OF THE CITY OF WILDWOOD

EXECUTIVE SUMMARY

SUBJECT: **PLAT 2411-002 VOSO Unit 177 Final Plat**

REQUESTED ACTION: Staff recommends approval.

CONTRACT:

BUDGET IMPACT:

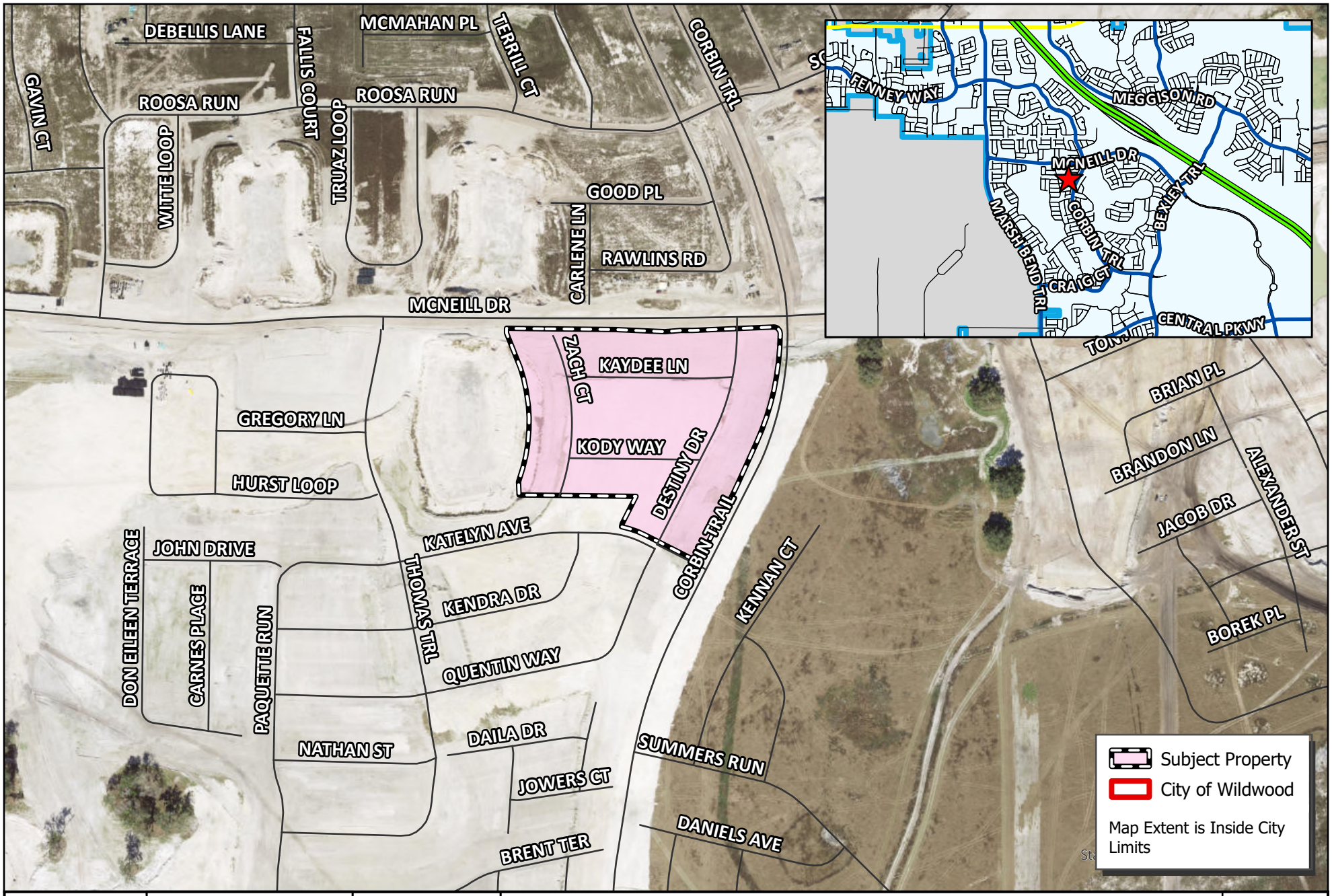
HISTORY/FACTS/ISSUES:

Case Number	PLAT 2411-002 VOSO Unit 177 Final Plat
Owner/Applicant(s)	The Villages Development Company, LLC
Acreage	10.67 +/-
Property Location	The property is generally located at the southwest corner of the intersection of McNeill Dr. and Corbin Trail.
Parcel(s)	K03-005
Date	January 2, 2025

The applicant is seeking approval from the City Commission for the VOSO Unit 177 Final Plat, a subdivision consisting of 63 lots and five tracts, per the attached plans.

Plat 2411-002 meets the criteria set forth in F.S. 177, the Villages of Southern Oaks 163 Agreement, the Land Development Regulations, and is consistent with the goals, objectives, and policies of the 2050 Comprehensive Plan.

Alex Lammers
Planner I, Development Services



WILDWOOD FLORIDA EST. 1877

CITY OF WILDWOOD
100 North Main Street
Wildwood, FL 34785
Phone: (352) 330-1330
www.wildwood-fl.gov

N

0 0.01 0.02 0.03 0.04 0.06
Miles

PLAT 2411-002

VOSO - UNIT 177 FINAL PLAT

PARCEL K03-005

MAP 1B

LOCATION MAP

JAN 2025

COVENANTS, CONDITIONS, RESTRICTIONS AND EASEMENTS FOR THIS SUBDIVISION ARE RECORDED IN THE PUBLIC RECORDS OF SUMTER COUNTY, FLORIDA. OR BOOK _____, PAGE _____.

VILLAGES OF SOUTHERN OAKS UNIT NO. 177

SHEET 1 OF 4

SECTION 3, TOWNSHIP 20 SOUTH, RANGE 23 EAST,
CITY OF WILDWOOD, SUMTER COUNTY, FLORIDA.

PLAT BOOK _____
PAGE _____

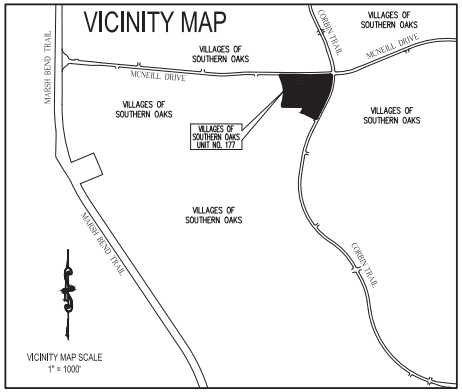
LEGAL DESCRIPTION

A PARCEL OF LAND LYING WITHIN THE NORTHEAST 1/4 OF SECTION 3, TOWNSHIP 20 SOUTH, RANGE 23 EAST, SUMTER COUNTY, FLORIDA, DESCRIBED AS FOLLOWS:

COMMENCE AT THE SOUTHWEST CORNER OF LOT 17, VILLAGES OF SOUTHERN OAKS UNIT NO. 150, ACCORDING TO THE PLAT THEREOF AS RECORDED IN PLAT BOOK 21, PAGES 33 AND 33A, PUBLIC RECORDS OF SUMTER COUNTY, FLORIDA; THENCE ALONG THE WEST BOUNDARY LINE OF SAID PLAT RUN S00°39'41"W, 88.00 FEET TO THE SOUTH RIGHT OF WAY LINE OF MCNEILL DRIVE PER SAID PLAT FOR THE POINT OF BEGINNING; THE FOLLOWING SIX (6) COURSES BEING ALONG SAID SOUTH RIGHT OF WAY LINE: RUN S89°20'19"E, 223.15 FEET; THENCE S87°42'07"E, 160.50 FEET; THENCE N85°25'35"E, 50.24 FEET; THENCE S89°20'19"E, 14.37 FEET TO THE POINT OF CURVATURE OF A CURVE CONCAVE NORTHERLY AND HAVING A RADIUS OF 921.50 FEET; THENCE EASTERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 03°09'37", AN ARC DISTANCE OF 50.83 FEET TO THE POINT OF TANGENCY; THENCE N87°30'04"E, 234.48 FEET TO THE POINT OF CURVATURE OF A CURVE CONCAVE SOUTHWESTERLY AND HAVING A RADIUS OF 21.50 FEET; SAID POINT BEING ON THE SOUTHERLY RIGHT OF WAY LINE OF MCNEILL DRIVE, VILLAGES OF SOUTHERN OAKS UNIT NO. 151, ACCORDING TO THE PLAT THEREOF AS RECORDED IN PLAT BOOK 21, PAGES 25, 25A THROUGH 25H, PUBLIC RECORDS OF SUMTER COUNTY, FLORIDA; THENCE ALONG SAID SOUTHERLY RIGHT OF WAY LINE: RUN SOUTHEASTERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 92°53'47", AN ARC DISTANCE OF 34.86 FEET TO A POINT OF COMPOUND CURVATURE OF A CURVE CONCAVE WESTERLY AND HAVING A RADIUS OF 872.50 FEET; THENCE DEPARTING SAID SOUTHERLY RIGHT OF WAY LINE RUN SOUTHERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 24°00'56", AN ARC DISTANCE OF 365.71 FEET TO THE POINT OF TANGENCY; THENCE S24°24'47"W, 138.96 FEET TO THE POINT OF CURVATURE OF A CURVE CONCAVE NORTHWESTERLY AND HAVING A RADIUS OF 831.50 FEET; THENCE SOUTHWESTERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 02°29'26", AN ARC DISTANCE OF 36.15 FEET TO THE POINT OF TANGENCY; THENCE S26°54'13"W, 229.84 FEET TO THE POINT OF CURVATURE OF A CURVE CONCAVE NORTHERLY AND HAVING A RADIUS OF 20.00 FEET; THENCE WESTERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 90°00'00", AN ARC DISTANCE OF 31.42 FEET TO THE POINT OF TANGENCY; THENCE N63°05'47"W, 171.76 FEET TO THE POINT OF CURVATURE OF A CURVE CONCAVE SOUTHERLY AND HAVING A RADIUS OF 317.50 FEET; THENCE WESTERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 14°43'28", AN ARC DISTANCE OF 81.59 FEET; THENCE ALONG A RADIAL LINE RUN N12°10'46"E, 10.00 FEET; THENCE N26°54'13"E, 98.78 FEET; THENCE N89°20'19"W, 377.18 FEET; THENCE N02°43'09"W, 42.44 FEET; THENCE N17°10'02"E, 46.82 FEET; THENCE N13°33'19"E, 38.67 FEET; THENCE N09°34'25"E, 38.38 FEET; THENCE N05°04'48"E, 48.57 FEET; THENCE N00°34'21"E, 38.65 FEET; THENCE N03°24'29"W, 38.38 FEET; THENCE N07°54'03"W, 48.55 FEET; THENCE N12°24'31"W, 38.69 FEET; THENCE N16°23'26"W, 38.38 FEET; THENCE N21°47'11"W, 120.52 FEET; THENCE N00°39'41"E, 15.00 FEET TO THE SOUTH RIGHT OF WAY LINE OF MCNEILL DRIVE, VILLAGES OF SOUTHERN OAKS UNIT NO. 149, ACCORDING TO THE PLAT THEREOF AS RECORDED IN PLAT BOOK 21, PAGES 32, 32A THROUGH 32C, PUBLIC RECORDS OF SUMTER COUNTY, FLORIDA; THENCE ALONG SAID SOUTH RIGHT OF WAY LINE RUN S89°20'19"E, 127.42 FEET TO THE POINT OF BEGINNING.

CONTAINING 10.67 ACRES, MORE OR LESS.

VICINITY MAP



VICINITY MAP SCALE
1" = 1000'

63 LOTS – 5 TRACTS

NOTICE: THIS PLAT, AS RECORDED IN ITS GRAPHIC FORM, IS THE OFFICIAL DEPICTION OF THE SUBDIVIDED LANDS DESCRIBED HEREIN AND WILL IN NO CIRCUMSTANCES BE SUPPLANTED IN AUTHORITY BY ANY OTHER GRAPHIC OR DIGITAL FORM OF THE PLAT. THERE MAY BE ADDITIONAL RESTRICTIONS THAT ARE NOT RECORDED ON THIS PLAT THAT MAY BE FOUND IN THE PUBLIC RECORDS OF THIS COUNTY.

NOTES:

1.) BEARINGS ARE BASED ON THE WEST BOUNDARY OF VILLAGES OF SOUTHERN OAKS UNIT 150 AS RECORDED IN PLAT BOOK 21, PAGES 33 AND 33A, PUBLIC RECORDS OF SUMTER COUNTY, FLORIDA AS BEING S00°39'41"W.

2.) ALL PLATTED UTILITY EASEMENTS SHALL PROVIDE THAT SUCH EASEMENTS SHALL ALSO BE EASEMENTS FOR THE CONSTRUCTION, INSTALLATION, MAINTENANCE, AND OPERATION OF CABLE TELEVISION SERVICES; PROVIDED, HOWEVER, NO SUCH CONSTRUCTION, INSTALLATION, MAINTENANCE, AND OPERATION OF CABLE TELEVISION SERVICES SHALL INTERFERE WITH THE FACILITIES AND SERVICES OF AN ELECTRIC, TELEPHONE, GAS, OR OTHER PUBLIC UTILITY. IN THE EVENT A CABLE TELEVISION COMPANY DAMAGES THE FACILITIES OF A PUBLIC UTILITY, IT SHALL BE SOLELY RESPONSIBLE FOR THE DAMAGES. THIS SECTION SHALL NOT APPLY TO THOSE PRIVATE EASEMENTS GRANTED TO OR OBTAINED BY A PARTICULAR ELECTRIC, TELEPHONE, GAS, OR OTHER PUBLIC UTILITY. SUCH CONSTRUCTION, INSTALLATION, MAINTENANCE, AND OPERATION SHALL COMPLY WITH THE NATIONAL ELECTRICAL SAFETY CODE AS ADOPTED BY THE FLORIDA PUBLIC SERVICE COMMISSION.

3.) ALL DISTANCES SHOWN ARE IN FEET.

4.) WITH REFERENCE TO CURVILINEAR LOTS, RADIAL LINES HAVE BEEN DESIGNATED BY (R). ALL OTHER LINES ARE NON-RADIAL.

5.) LOT CORNERS WILL BE SET PRIOR TO THE TRANSFER OF ANY LOT OR PRIOR TO THE EXPIRATION OF THE BOND OR OTHER SURETY.

6.) PERMANENT CONTROL POINTS (P.C.P.'S) WILL BE SET WITHIN ONE YEAR OF THE DATE THIS PLAT WAS RECORDED OR PRIOR TO THE EXPIRATION OF THE BOND OR SURETY.

7.) ALL PERMANENT REFERENCE MONUMENTS (P.R.M.'S) HAVE BEEN SET IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER 177, FLORIDA STATUTES.

8.) TRACTS "A", "B", "C", "D" AND "E" ARE FOR ANY PURPOSE PERMITTED BY APPLICABLE LAW AND APPROVED IN WRITING BY DEVELOPER. NO INGRESS OR EGRESS IS PERMITTED WITHOUT THE DEVELOPER'S CONSENT.

9.) THE DISTRICT FINDS IT IN THE PUBLIC INTEREST, AND HEREBY AGREES TO PROVIDE THE FOLLOWING SERVICES: (A) MAINTENANCE AND REPAIR OF AREAS OWNED BY THE DISTRICT OR DEDICATED TO THE USE AND ENJOYMENT OF THE RESIDENTS OF THE DISTRICT, THE SUBDIVISION, OR THE PUBLIC; (B) PAY FOR THE COST OF WATER AND SEWER PROVIDED BY GIBSON PLACE UTILITY COMPANY, LLC, OR ITS ASSIGNS, TOGETHER WITH THE COST OF GARBAGE, ELECTRICAL, LIGHTING, TELEPHONE, GAS AND OTHER NECESSARY UTILITY SERVICE FOR AREAS OWNED BY THE DISTRICT OR DEDICATED TO THE USE AND ENJOYMENT OF THE RESIDENTS OF THE DISTRICT, SUBDIVISION, OR THE PUBLIC; (C) MAINTENANCE AND REPAIR OF THE STORM WATER RUNOFF DRAINAGE SYSTEM INCLUDING DRAINAGE EASEMENTS AND DRAIN PIPES NOT MAINTAINED BY GIBSON PLACE WATER CONSERVATION AUTHORITY, LLC, OR ITS ASSIGNS, OR THE CITY OF WILDWOOD; AND (D) MAINTENANCE AND REPAIR OF THE LANDSCAPING AND IRRIGATION ON ISLANDS AND CUL-DE-SACS LOCATED WITHIN THE ROADWAYS, IF ANY; (E) MAINTENANCE AND REPAIR TO THE TOP AND EXTERIOR OF THE WALLS AND/OR FENCES LOCATED ON OR ADJACENT TO TRACTS A AND B OF THE SUBDIVISION; AND (F) MAINTENANCE AND REPAIR, INCLUDING STRUCTURAL REPAIR, TO THE WALLS AND/OR FENCES LOCATED ON OR ADJACENT TO TRACTS C, D, AND E OF THE SUBDIVISION.

10.) THE TITLE OPINION FOR THIS PLAT HAS BEEN SUBMITTED BY SEPARATE DOCUMENT.

VILLAGES OF SOUTHERN OAKS UNIT NO. 177
CONVEYANCE AND GRANT OF EASEMENTS TO
VILLAGE COMMUNITY DEVELOPMENT DISTRICT NO. 15

ALL RIGHT, TITLE AND INTEREST OF THE VILLAGES DEVELOPMENT COMPANY, LLC, (THE DEVELOPER) IN TRACTS "A", "B", "C", "D" AND "E" AND THE ROADWAYS SHOWN ON THIS PLAT OF VILLAGES OF SOUTHERN OAKS UNIT NO. 177, IS HEREBY SOLD, CONVEYED AND SET OVER TO VILLAGE COMMUNITY DEVELOPMENT DISTRICT NO. 15 (THE DISTRICT): (1) RESERVING UNTO THE DEVELOPER AND ITS ASSIGNS, AND EACH OF THEIR SUCCESSORS, TENANTS, INVITEES, AND GUESTS PERPETUAL EASEMENTS FOR INGRESS AND EGRESS AND THE CONSTRUCTION, INSTALLATION, MAINTENANCE AND OPERATION OF UNDERGROUND ELECTRIC, TELEPHONE, CABLE, GAS AND OTHER UTILITIES, IRRIGATION FACILITIES, POTABLE WATER, SANITARY SEWER AND STORM WATER FACILITIES, LANDSCAPED AREAS, FENCES, WALLS, ENTRY FACILITIES, INCLUDING ELECTRONIC CARD READING EQUIPMENT, GOLF CART AND PEDESTRIAN PATHS, SIGNAGE, ENJOYMENT IMPROVEMENTS AND GOLF CART AND PEDESTRIAN BRIDGES; AND (2) SUBJECT TO THE RESTRICTION THAT ALL ADDITIONS OF, REMOVAL OF, AND CHANGES TO IMPROVEMENTS LOCATED ON SUCH TRACTS AND ROADWAYS (INCLUDING, WITHOUT LIMITATION, ALL THOSE IMPROVEMENTS DESCRIBED ABOVE), MUST FIRST BE APPROVED IN ADVANCE BY THE DEVELOPER.

THE DEVELOPER ALSO GRANTS TO THE DISTRICT NON-EXCLUSIVE, PERPETUAL EASEMENTS OVER, ACROSS AND UPON ANY SPECIAL EASEMENTS SHOWN HEREON FOR THE PURPOSE OF MAINTAINING DRAINAGE FACILITIES LOCATED THEREON.

THE DISTRICT, BY EXECUTING THE DEDICATION CONTAINED ON THIS PLAT, ACCEPTS THIS CONVEYANCE AND AGREES TO MAINTAIN THE TRACTS LISTED ABOVE, INCLUDING ALL IMPROVEMENTS CONSTRUCTED THEREON AND DRAINAGE FACILITIES LOCATED WITHIN ANY SPECIAL EASEMENTS PERPETUALLY, AND MAINTAIN THE ROADWAYS AND DRAINAGE FEATURES LYING WITHIN SUCH ROADWAYS FOR TWO YEARS AFTER THE CITY ENGINEER HAS CERTIFIED THE CONSTRUCTION HAS BEEN COMPLETED.

WITNESSES:

_____
SIGNATURE
_____
PRINT NAME

7580 MIDDLETON DRIVE
MIDDLETON, FLORIDA 34762
MAILING ADDRESS

_____
SIGNATURE
_____
PRINT NAME

4450 NE 83RD ROAD
WILDWOOD, FLORIDA 34785
MAILING ADDRESS

THE VILLAGES DEVELOPMENT COMPANY, LLC,
A FLORIDA LIMITED LIABILITY COMPANY
BY: VDC MANAGER, LLC,
A FLORIDA LIMITED LIABILITY COMPANY,
ITS MANAGER

BY: _____
MARTIN L. DZURO, MANAGER

STATE OF FLORIDA
COUNTY OF SUMTER

THE FOREGOING INSTRUMENT WAS ACKNOWLEDGED BEFORE ME, BY MEANS OF ☐ PHYSICAL PRESENCE OR ☐ ONLINE NOTARIZATION, THIS _____ DAY OF _____, 20_____, BY MARTIN L. DZURO, AS MANAGER OF AND ON BEHALF OF VDC MANAGER, LLC, A FLORIDA LIMITED LIABILITY COMPANY, THE MANAGER OF THE VILLAGES DEVELOPMENT COMPANY, LLC, A FLORIDA LIMITED LIABILITY COMPANY, FOR THE PURPOSES EXPRESSED HEREIN, WHO IS PERSONALLY KNOWN TO ME AND WHO DID NOT TAKE AN OATH.

_____
NOTARY PUBLIC – STATE OF FLORIDA
PRINT NAME: _____
COMMISSION NO.: _____
COMMISSION EXPIRES: _____

SEAL

CERTIFICATE OF APPROVAL BY CITY OFFICIALS

THIS CERTIFIES THAT THIS PLAT HAS BEEN REVIEWED FOR CONFORMITY TO F.S. CHAPTER 177, AS CERTIFIED BY THE REVIEWING SURVEYOR SHOWN BELOW.

_____
MELANIE D. STRICKLAND
DEVELOPMENT SERVICES DIRECTOR

THIS CERTIFIES THAT THIS PLAT WAS PRESENTED TO THE COMMISSION OF THE CITY OF WILDWOOD, SUMTER COUNTY, FLORIDA, AND WAS APPROVED BY THE COMMISSION FOR RECORD ON THIS _____ DAY OF _____, 20____.

_____
JESSICA BARNES
CITY CLERK

_____
ED WOLF
MAYOR

THIS CERTIFIES THAT THIS PLAT WAS PRESENTED TO THE ATTORNEY FOR THE CITY OF WILDWOOD, SUMTER COUNTY, FLORIDA, AND APPROVED BY HIM OR HER AS TO FORM AND LEGALITY ON THIS _____ DAY OF _____, 20____.

_____
PRINT NAME
CITY OF WILDWOOD, ATTORNEY

_____
SIGNATURE
CITY OF WILDWOOD, ATTORNEY

_____
DEVELOPMENT SERVICES DIRECTOR
MELANIE D. STRICKLAND

_____
PUBLIC WORKS DIRECTOR
JEREMY HOCKENBURY

_____
PRINT NAME
CITY OF WILDWOOD, ENGINEER

_____
SIGNATURE
CITY OF WILDWOOD, ENGINEER

REVIEWING SURVEYOR'S CERTIFICATE

PURSUANT TO SECTION 177.081, FLORIDA STATUTES, I HEREBY CERTIFY THAT I HAVE PERFORMED A REVIEW OF THIS PLAT FOR CONFORMITY TO CHAPTER 177, FLORIDA STATUTES AND THAT SAID PLAT COMPLIES WITH THE TECHNICAL REQUIREMENTS OF THAT CHAPTER; PROVIDED, HOWEVER, THAT MY REVIEW AND CERTIFICATION DOES NOT INCLUDE FIELD VERIFICATION OF ANY POINTS OR MEASUREMENTS SHOWN ON THIS PLAT.

_____ _____
SIGNATURE DATE

_____ 4907
RONALD W. HERR, P.L.S. REGISTRATION NO.
WADE SURVEYING, INC.

SEAL

PREPARED BY: CFB SURVEYING — CLYMER FARMER BARLEY
4450 NE 83RD ROAD - WILDWOOD, FL 34785
(352) 748-3120 LB#498

DEDICATION

KNOW ALL MEN BY THESE PRESENTS, THAT THE UNDERSIGNED, THE VILLAGES DEVELOPMENT COMPANY, LLC (THE DEVELOPER) HAS CAUSED TO BE MADE THIS PLAT, VILLAGES OF SOUTHERN OAKS UNIT NO. 177, A SUBDIVISION OF LAND HEREIN DESCRIBED AND JOINS WITH VILLAGE COMMUNITY DEVELOPMENT DISTRICT NO. 15 (THE DISTRICT) TO HEREBY DEDICATE THE ROADWAYS SHOWN HEREON TO THE CITY OF WILDWOOD AND THE PERPETUAL USE OF THE PUBLIC; AND DEDICATES TRACTS "A", "B", "C", "D" AND "E" TO VILLAGE COMMUNITY DEVELOPMENT DISTRICT NO. 15.

WITNESSES:

(1) _____
SIGNATURE
_____
PRINT NAME

7580 MIDDLETON DRIVE
MIDDLETON, FLORIDA 34762
MAILING ADDRESS

(2) _____
SIGNATURE
_____
PRINT NAME

4450 NE 83RD ROAD
WILDWOOD, FLORIDA 34785
MAILING ADDRESS

THE VILLAGES DEVELOPMENT COMPANY, LLC,
A FLORIDA LIMITED LIABILITY COMPANY

BY: VDC MANAGER, LLC,
A FLORIDA LIMITED LIABILITY COMPANY,
ITS MANAGER

BY: _____
MARTIN L. DZURO, MANAGER

WITNESSES:

(1) _____
SIGNATURE
_____
PRINT NAME

3601 KIESSEL ROAD
THE VILLAGES, FLORIDA 32163
MAILING ADDRESS

(2) _____
SIGNATURE
_____
PRINT NAME

4450 NE 83RD ROAD
WILDWOOD, FLORIDA 34785
MAILING ADDRESS

VILLAGE COMMUNITY DEVELOPMENT
DISTRICT NO. 15

BY: _____
SPENCER R. NOVAK, CHAIR

STATE OF FLORIDA
COUNTY OF SUMTER

THE FOREGOING INSTRUMENT WAS ACKNOWLEDGED BEFORE ME, BY MEANS OF ☐ PHYSICAL PRESENCE OR ☐ ONLINE NOTARIZATION, THIS _____ DAY OF _____, 20_____, BY MARTIN L. DZURO, AS MANAGER OF AND ON BEHALF OF VDC MANAGER, LLC, A FLORIDA LIMITED LIABILITY COMPANY, THE MANAGER OF THE VILLAGES DEVELOPMENT COMPANY, LLC, A FLORIDA LIMITED LIABILITY COMPANY, FOR THE PURPOSES EXPRESSED HEREIN, WHO IS PERSONALLY KNOWN TO ME AND WHO DID NOT TAKE AN OATH.

_____
NOTARY PUBLIC – STATE OF FLORIDA
PRINT NAME: _____
COMMISSION NO.: _____
COMMISSION EXPIRES: _____

SEAL

STATE OF FLORIDA
COUNTY OF SUMTER

THE FOREGOING INSTRUMENT WAS ACKNOWLEDGED BEFORE ME, BY MEANS OF ☐ PHYSICAL PRESENCE OR ☐ ONLINE NOTARIZATION, THIS _____ DAY OF _____, 20_____, BY SPENCER R. NOVAK, THE CHAIR OF VILLAGE COMMUNITY DEVELOPMENT DISTRICT NO. 15, ON BEHALF OF THE DISTRICT, WHO IS PERSONALLY KNOWN TO ME AND WHO DID NOT TAKE AN OATH.

_____
NOTARY PUBLIC – STATE OF FLORIDA
PRINT NAME: _____
COMMISSION NO.: _____
COMMISSION EXPIRES: _____

SEAL

CERTIFICATE OF SURVEYOR

I HEREBY CERTIFY THAT THIS PLAT OF VILLAGES OF SOUTHERN OAKS UNIT NO. 177, WAS PREPARED UNDER MY DIRECTION AND SUPERVISION; AND THAT THE PERMANENT REFERENCE MONUMENTS AS SHOWN THEREON WERE PLACED ON THE _____ DAY OF _____, 20_____; I FURTHER CERTIFY THAT THIS PLAT COMPLIES WITH THE REQUIREMENTS OF CHAPTER 177, FLORIDA STATUTES.

CLYMER FARNER BARLEY SURVEYING, LLC
4450 N.E. 83RD ROAD
WILDWOOD, FLORIDA 34785
LICENSED BUSINESS NO. 8498

SEAL

_____ _____
KAYE M. JAMESON DATE
REGISTRATION NO. 5912

CERTIFICATE OF CLERK

I HEREBY CERTIFY THAT I HAVE EXAMINED THIS PLAT AND FIND THAT IT COMPLIES IN FORM WITH ALL THE REQUIREMENTS OF CHAPTER 177, FLORIDA STATUTES AND WAS FILED FOR RECORD ON _____, 20_____, AT _____ FILE NUMBER _____.

PLAT BOOK _____ PAGE _____.

CLERK OF THE COURT IN AND
FOR SUMTER COUNTY, FLORIDA

SEAL

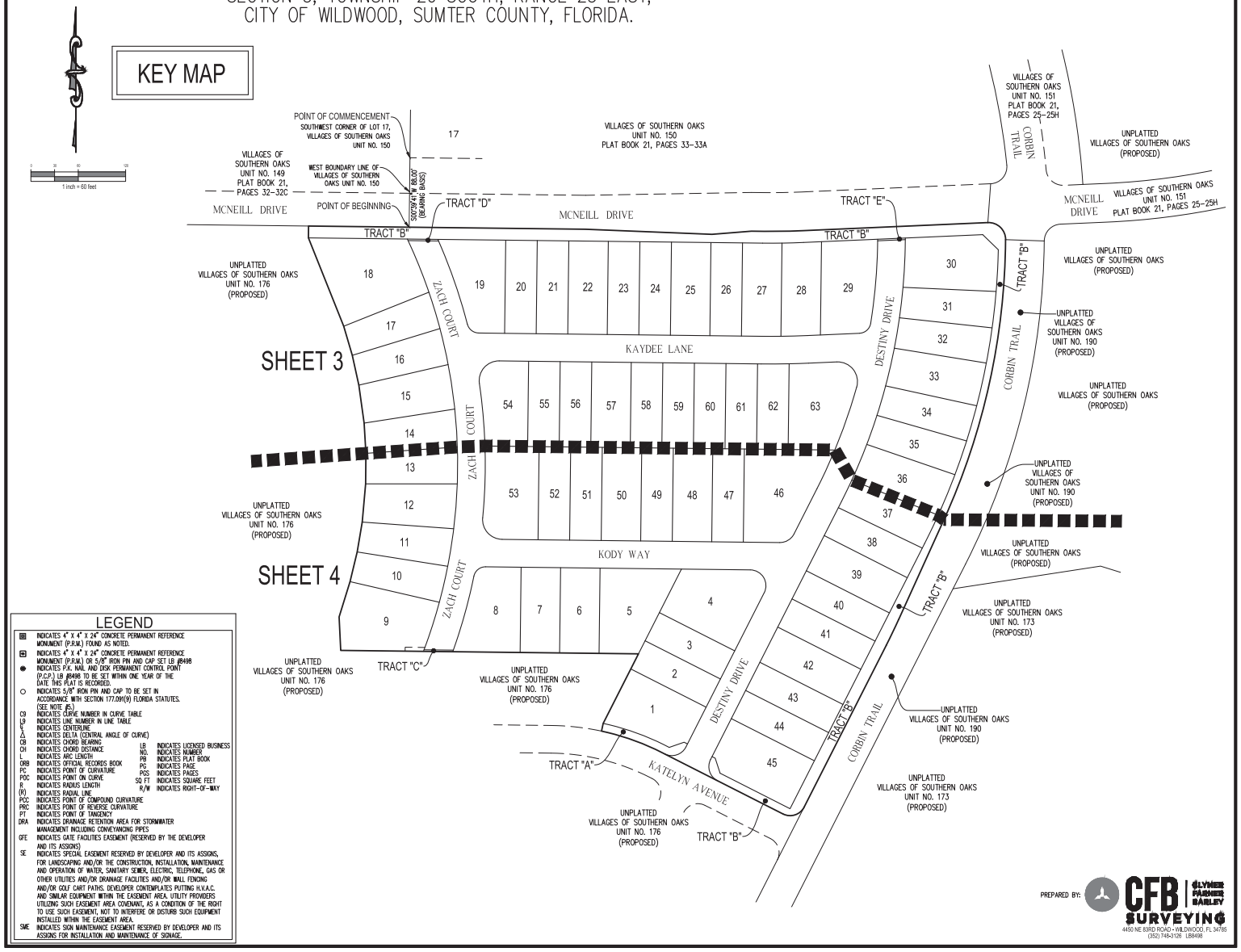
_____ _____
PRINT NAME SIGNATURE
DEPUTY CLERK DEPUTY CLERK

VILLAGES OF SOUTHERN OAKS UNIT NO. 177

SHEET 2 OF 4

PLAT BOOK _____
PAGE _____

SECTION 3, TOWNSHIP 20 SOUTH, RANGE 23 EAST,
CITY OF WILDWOOD, SUMTER COUNTY, FLORIDA.



LEGEND

- ▣ INDICATES 4" X 4" X 24" CONCRETE PERMANENT REFERENCE MONUMENT (P.R.M.) FOUND AS NOTED.
- ⊡ INDICATES 4" X 4" X 24" CONCRETE PERMANENT REFERENCE MONUMENT (P.R.M.) OR 5/8" IRON PIN AND CAP SET LB #8498
- ● INDICATES P.K. NAIL AND DISK PERMANENT CONTROL POINT (P.C.P.) LB #8498 TO BE SET WITHIN ONE YEAR OF THE DATE THIS PLAT IS RECORDED.
- ○ INDICATES 5/8" IRON PIN AND CAP TO BE SET IN ACCORDANCE WITH SECTION 177.091(9) FLORIDA STATUTES. (SEE NOTE #5.)
- C9 INDICATES CURVE NUMBER IN CURVE TABLE
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- PRC INDICATES POINT OF REVERSE CURVATURE
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- DRA INDICATES DRAINAGE RETENTION AREA FOR STORMWATER MANAGEMENT INCLUDING CONVEYANCING PIPES
- GFE INDICATES GATE FACILITIES EASEMENT (RESERVED BY THE DEVELOPER AND ITS ASSIGNS)
- SE INDICATES SPECIAL EASEMENT RESERVED BY DEVELOPER AND ITS ASSIGNS, FOR LANDSCAPING AND/OR THE CONSTRUCTION, INSTALLATION, MAINTENANCE AND OPERATION OF WATER, SANITARY SEWER, ELECTRIC, TELEPHONE, GAS OR OTHER UTILITIES AND/OR DRAINAGE FACILITIES AND/OR WALL FENCING AND/OR GOLF CART PATHS. DEVELOPER CONTEMPLATES PUTTING H.V.A.C. AND SIMILAR EQUIPMENT WITHIN THE EASEMENT AREA. UTILITY PROVIDERS UTILIZING SUCH EASEMENT AREA COVENANT, AS A CONDITION OF THE RIGHT TO USE SUCH EASEMENT, NOT TO INTERFERE OR DISTURB SUCH EQUIPMENT INSTALLED WITHIN THE EASEMENT AREA.
- SME INDICATES SIGN MAINTENANCE EASEMENT RESERVED BY DEVELOPER AND ITS ASSIGNS FOR INSTALLATION AND MAINTENANCE OF SIGNAGE.

LB	INDICATES LICENSED BUSINESS
NO.	INDICATES NUMBER
PB	INDICATES PLAT BOOK
PG	INDICATES PAGE
PGS	INDICATES PAGES
SQ FT	INDICATES SQUARE FEET
R/W	INDICATES RIGHT-OF-WAY

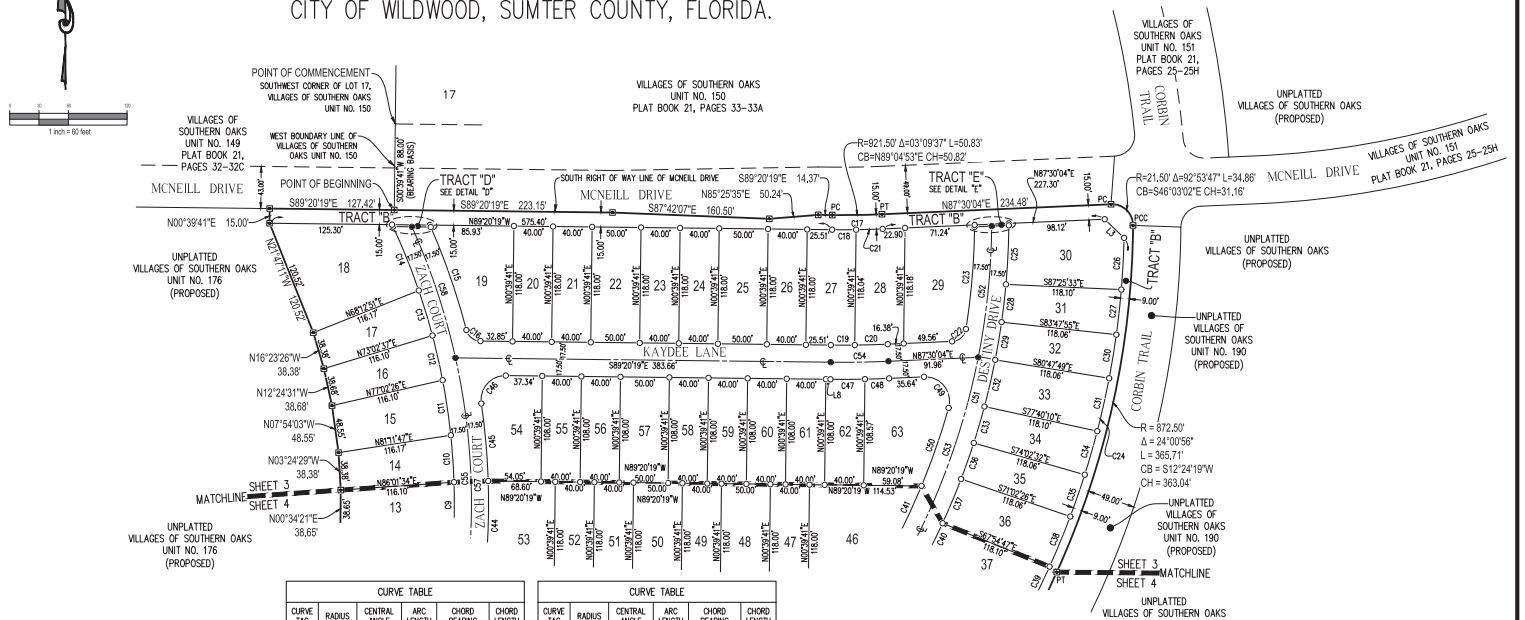
PREPARED BY: CFB | CLYMER FARMER BARLEY SURVEYING
4450 NE 83RD ROAD - WILDWOOD, FL 34785
(352) 748-3126 LB8498

VILLAGES OF SOUTHERN OAKS UNIT NO. 177

SHEET 3 OF 4

PLAT BOOK _____
PAGE _____

SECTION 3, TOWNSHIP 20 SOUTH, RANGE 23 EAST,
CITY OF WILDWOOD, SUMTER COUNTY, FLORIDA.



CURVE TABLE					
CURVE TAG	RADIUS	CENTRAL ANGLE	ARC LENGTH	CHORD BEARING	CHORD LENGTH
C9	670.50'	3°59'40"	46.75'	N00°07'53"E	46.74'
C10	670.50'	4°06'59"	48.17'	N03°55'27"W	48.16'
C11	670.50'	4°52'08"	56.98'	N08°25'01"W	56.96'
C12	670.50'	3°59'50"	46.78'	N12°51'00"W	46.77'
C13	670.50'	4°06'58"	48.17'	N16°54'24"W	48.16'
C14	670.50'	6°12'48"	72.71'	N22°04'17"W	72.67'
C15	705.50'	9°14'36"	113.82'	N19°11'15"W	113.69'
C16	15.00'	74°46'22"	19.58'	S51°57'08"E	18.22'
C17	936.50'	3°09'37"	51.65'	N89°04'53"E	51.65'
C18	936.50'	1°29'54"	24.49'	N89°54'44"E	24.49'
C19	1054.50'	1°19'50"	24.49'	N89°59'46"E	24.49'
C20	1054.50'	1°49'47"	33.67'	N88°24'58"E	33.67'
C21	936.50'	1°39'43"	27.16'	N88°19'56"E	27.16'
C22	15.00'	78°25'46"	20.53'	N48°17'11"E	18.97'
C23	710.50'	8°37'33"	106.97'	N04°45'32"E	106.86'
C24	863.50'	25°39'10"	386.61'	N14°04'38"E	383.39'
C25	745.50'	4°48'10"	62.49'	N02°42'32"E	62.47'
C26	863.50'	3°30'46"	52.94'	N03°00'26"E	52.93'
C27	863.50'	3°04'28"	46.34'	N06°18'03"E	46.33'
C28	745.50'	2°59'13"	38.86'	N06°36'14"E	38.86'
C29	745.50'	3°00'06"	39.06'	N09°35'53"E	39.05'
C30	863.50'	3°00'06"	45.24'	N09°20'20"E	45.23'
C31	863.50'	3°40'48"	55.46'	N12°40'48"E	55.45'
C32	745.50'	3°46'04"	49.02'	N12°58'58"E	49.02'
C33	745.50'	2°59'13"	38.86'	N16°21'37"E	38.86'
C34	863.50'	3°04'28"	46.34'	N16°03'26"E	46.33'
C35	863.50'	3°00'06"	45.24'	N19°05'43"E	45.23'
C36	745.50'	3°00'06"	39.06'	N19°21'16"E	39.05'

CURVE TABLE					
CURVE TAG	RADIUS	CENTRAL ANGLE	ARC LENGTH	CHORD BEARING	CHORD LENGTH
C37	745.50'	3°46'04"	49.02'	N22°44'21"E	49.02'
C38	863.50'	3°40'48"	55.46'	N22°26'11"E	55.45'
C39	863.50'	2°37'39"	39.60'	N25°35'24"E	39.59'
C40	745.50'	2°16'50"	29.67'	N25°45'48"E	29.67'
C41	710.50'	4°20'53"	53.92'	N24°43'47"E	53.91'
C44	705.50'	7°23'16"	90.97'	N01°49'04"E	90.90'
C45	705.50'	6°27'33"	79.53'	N05°06'21"W	79.49'
C46	25.00'	98°59'49"	43.20'	S41°09'47"W	38.02'
C47	1089.50'	1°51'22"	35.30'	N89°44'00"E	35.29'
C48	1089.50'	1°18'15"	24.80'	N88°09'12"E	24.80'
C49	25.00'	108°14'05"	47.23'	N38°22'53"W	40.51'
C50	710.50'	6°49'11"	84.57'	N19°08'45"E	84.52'
C51	728.00'	26°22'16"	335.07'	N13°43'06"E	332.12'
C52	728.00'	10°38'05"	135.12'	N05°51'00"E	134.93'
C53	728.00'	15°44'11"	199.95'	N19°02'08"E	199.32'
C54	1072.00'	3°09'37"	59.13'	N89°04'53"E	59.12'
C55	688.00'	44°17'04"	531.76'	N02°08'53"W	518.62'
C57	688.00'	21°53'06"	262.79'	N01°33'52"W	261.20'
C58	688.00'	11°47'00"	141.49'	N18°23'55"W	141.24'
C63	670.50'	0°11'23"	2.22'	N25°04'59"W	2.22'
C64	705.50'	0°10'42"	2.20'	N23°43'12"W	2.20'
C65	710.50'	0°09'41"	2.00'	N00°31'36"E	2.00'
C66	745.50'	0°09'14"	2.00'	N00°23'04"E	2.00'

LINE TABLE		
LINE TAG	BEARING	DISTANCE
L3	S45°57'21"E	27.51'
L8	N89°20'19"W	4.71'

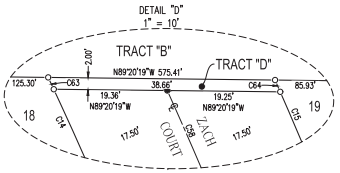
TRACT TABLE		
TRACT	SQ FT	ACREAGE
A	1,149	0.026
B	23,213	0.533
C	74	0.002
D	77	0.002
E	70	0.002

LEGEND

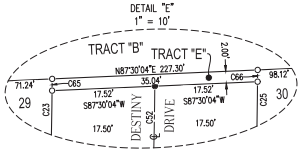
- ■ INDICATES 4" X 4" X 24" CONCRETE PERMANENT REFERENCE MONUMENT (P.R.M.) FOUND AS NOTED.
- ⊡ INDICATES 4" X 4" X 24" CONCRETE PERMANENT REFERENCE MONUMENT (P.R.M.) OR 5/8" IRON PIN AND CAP SET LB #6498
- ● INDICATES P.K. NAIL AND DISK PERMANENT CONTROL POINT (P.C.P.) LB #6498 TO BE SET WITHIN ONE YEAR OF THE DATE THIS PLAT IS RECORDED.
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- L INDICATES ARC LENGTH
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- SQ FT INDICATES SQUARE FEET
- R/W INDICATES RIGHT-OF-WAY

DETAIL "D"
1" = 10'



DETAIL "E"
1" = 10'



PREPARED BY: CFB SURVEYING — OLYMER PARMER BARLEY
4450 NE 83RD ROAD - WILDWOOD, FL 34785
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VILLAGES OF SOUTHERN OAKS UNIT NO. 177

SHEET 4 OF 4

PLAT BOOK _____
PAGE _____

SECTION 3, TOWNSHIP 20 SOUTH, RANGE 23 EAST,
CITY OF WILDWOOD, SUMTER COUNTY, FLORIDA.

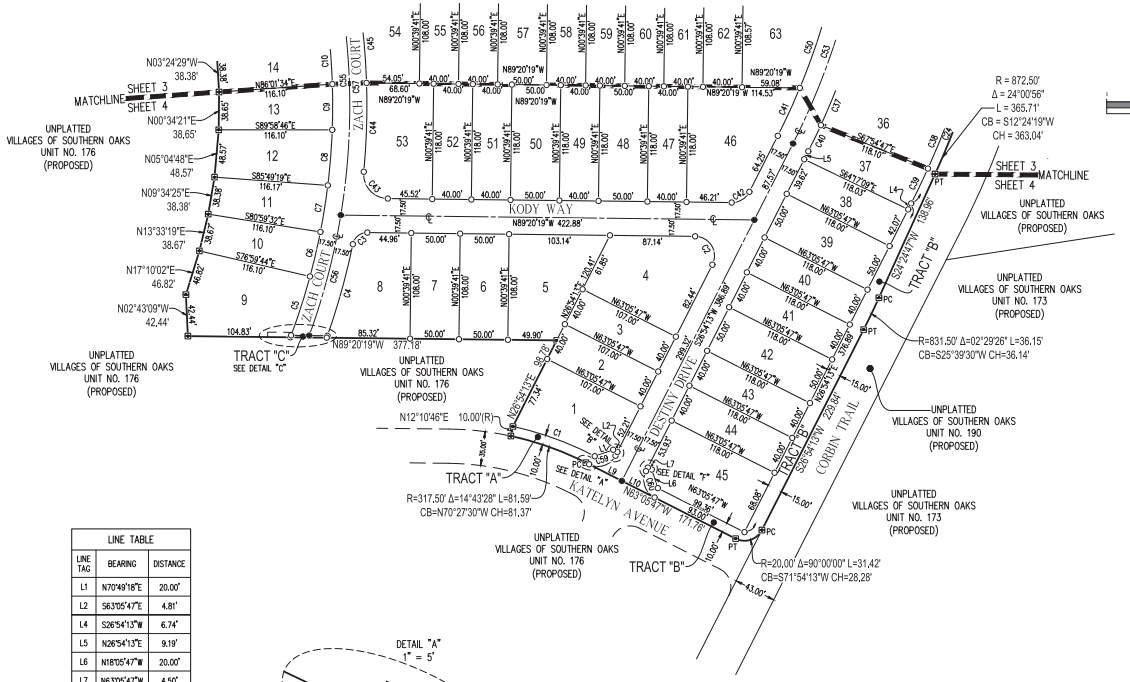
CURVE TABLE					
CURVE TAG	RADIUS	CENTRAL ANGLE	ARC LENGTH	CHORD BEARING	CHORD LENGTH
C1	327.50'	15°36'46"	89.24'	N70°00'51"W	88.97'
C2	20.00'	116°14'32"	40.58'	N31°13'03"W	33.97'
C3	15.00'	79°03'28"	20.70'	S51°07'57"W	19.09'
C4	705.50'	8°03'52"	99.30'	N15°38'09"E	99.22'
C5	670.50'	5°35'20"	65.40'	N17°54'25"E	65.38'
C6	670.50'	3°59'48"	46.77'	N13°06'51"E	46.76'
C7	670.50'	4°06'59"	48.17'	N09°03'27"E	48.16'
C8	670.50'	4°52'14"	57.00'	N04°33'50"E	56.98'
C9	670.50'	3°59'40"	46.75'	N00°07'53"E	46.74'
C10	670.50'	4°06'59"	48.17'	N03°55'27"W	48.16'
C24	863.50'	25°39'10"	386.61'	N14°04'38"E	383.39'
C37	745.50'	3°46'04"	49.02'	N22°44'21"E	49.02'
C38	863.50'	3°40'48"	55.46'	N22°26'11"E	55.45'
C39	863.50'	2°37'39"	39.60'	N25°35'24"E	39.59'
C40	745.50'	2°16'50"	29.67'	N25°45'48"E	29.67'
C41	710.50'	4°20'53"	53.92'	N24°43'47"E	53.91'
C42	20.00'	63°45'28"	22.26'	N58°46'57"E	21.12'
C43	25.00'	94°51'01"	41.39'	S41°54'49"E	36.82'
C44	705.50'	7°23'16"	90.97'	N01°49'04"E	90.90'
C45	705.50'	6°27'33"	79.53'	N05°06'21"W	79.49'
C50	710.50'	6°49'11"	84.57'	N19°08'45"E	84.52'
C53	728.00'	15°44'11"	199.95'	N19°02'08"E	199.32'
C55	688.00'	44°17'04"	531.76'	N02°08'53"W	518.62'
C56	688.00'	10°36'58"	127.48'	N14°41'10"E	127.29'
C57	688.00'	21°53'06"	262.79'	N01°33'52"W	261.20'
C59	20.00'	90°00'00"	31.42'	N71°54'13"E	28.28'
C60	20.00'	90°00'00"	31.42'	S18°05'47"E	28.28'
C61	670.50'	0°10'55"	2.13'	N20°36'38"E	2.13'
C62	705.50'	0°10'18"	2.11'	N19°34'55"E	2.11'
C67	670.50'	0°27'15"	5.31'	N20°28'27"E	5.31'

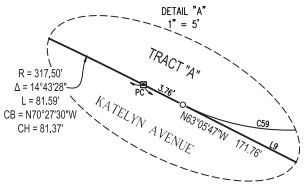
LINE TABLE		
LINE TAG	BEARING	DISTANCE
L1	N70°49'18"E	20.00'
L2	S63°05'47"E	4.81'
L4	S26°54'13"W	6.74'
L5	N26°54'13"E	9.19'
L6	N18°05'47"W	20.00'
L7	N63°05'47"W	4.50'
L9	N63°05'47"W	37.50'
L10	N63°05'47"W	37.50'

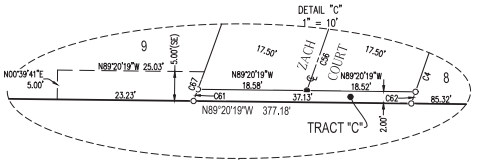
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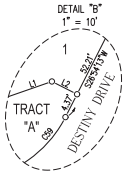
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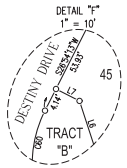
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PREPARED BY: CFB | GLYMPH FARMER BARLEY SURVEYING
4450 NE 83RD ROAD - WILDWOOD, FL 34785
(352) 748-0126 LB6498

CITY COMMISSION OF THE CITY OF WILDWOOD

EXECUTIVE SUMMARY

SUBJECT: **PLAT 2411-003 VOSO Unit 180 Final Plat**

REQUESTED ACTION: Staff recommends approval.

CONTRACT: Vendor/Entity:

Effective Date: Termination Date:

Managing Division/Department:

BUDGET IMPACT:

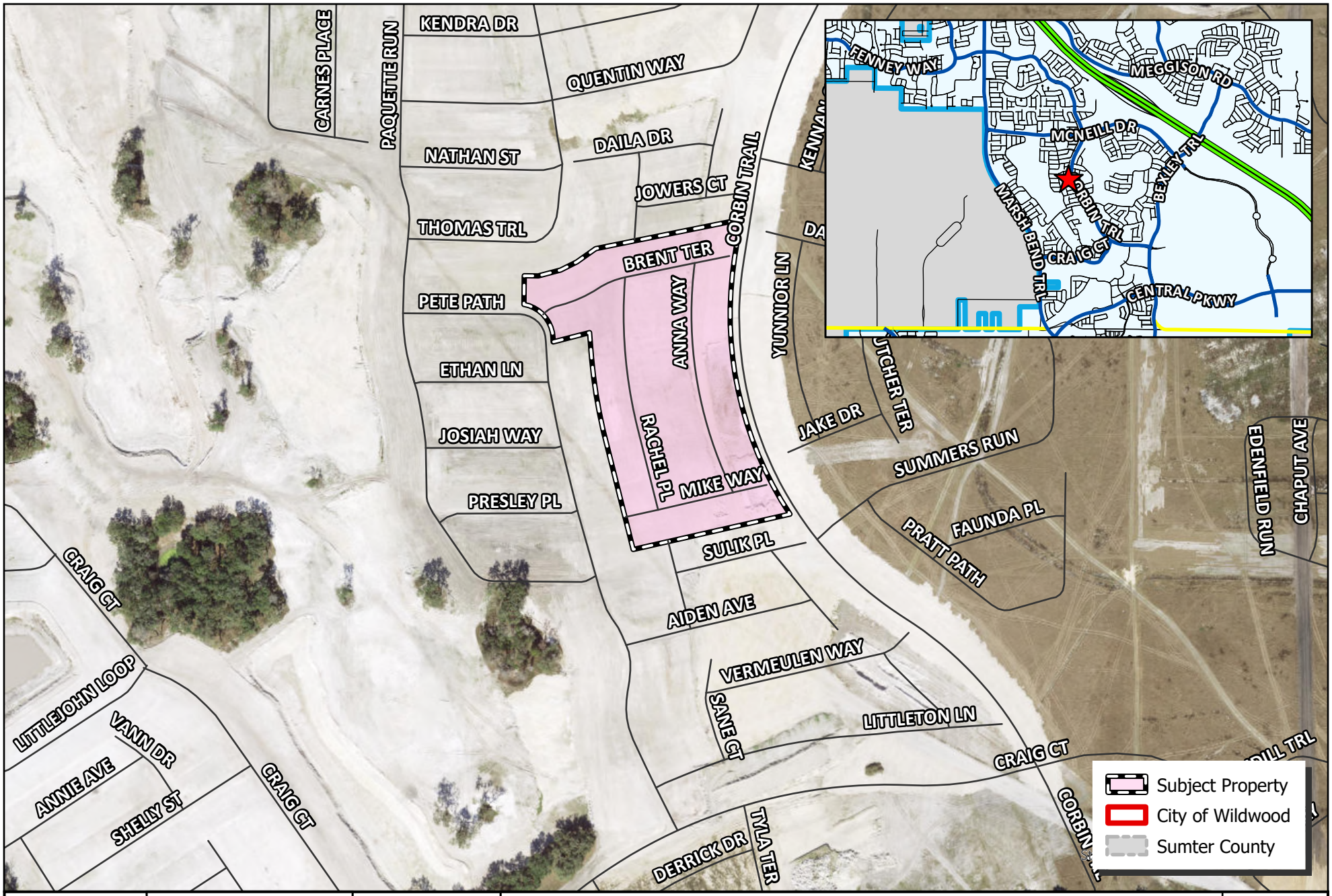
HISTORY/FACTS/ISSUES:

Case Number	PLAT 2411-003 VOSO Unit 180 Final Plat
Owner/Applicant(s)	The Villages Development Company, LLC
Acreage	11.35 +/-
Property Location	The subject property is generally located approximately 0.5 miles east of Marsh Bend Trail, west of Corbin Trail, and 0.2 miles north of Craig Court.
Parcel	K03-005

The applicant is seeking approval from the City Commission for the VOSO Unit 180 Final Plat, a subdivision consisting of 63 single-family dwelling units and 4 tracts, as per the attached plans.

Plat 2411-003 meets the criteria set forth in the F.S. 177, The Villages of Southern Oaks 163 Agreement, the Land Development Regulations, and is consistent with the goals, objectives, and policies of the 2050 Comprehensive Plan.

Date: 12/13/2024
McKenna Page
Planner I, Development Services



WILDWOOD FLORIDA EST. 1877

CITY OF WILDWOOD
100 North Main Street
Wildwood, FL 34785
Phone: (352) 330-1330
www.wildwood-fl.gov

N

0 0.01 0.02 0.03 0.04 0.06
Miles

PLAT 2411-003

VOSO - UNIT 180 FINAL PLAT

PARCEL K03-005

MAP 1B

LOCATION MAP

JAN 2025

COVENANTS, CONDITIONS, RESTRICTIONS AND EASEMENTS FOR THIS SUBDIVISION ARE RECORDED IN THE PUBLIC RECORDS OF SUMTER COUNTY, FLORIDA. OR BOOK _____, PAGE _____.

VILLAGES OF SOUTHERN OAKS UNIT NO. 180

SHEET 1 OF 4

SECTION 3, TOWNSHIP 20 SOUTH, RANGE 23 EAST,
CITY OF WILDWOOD, SUMTER COUNTY, FLORIDA.

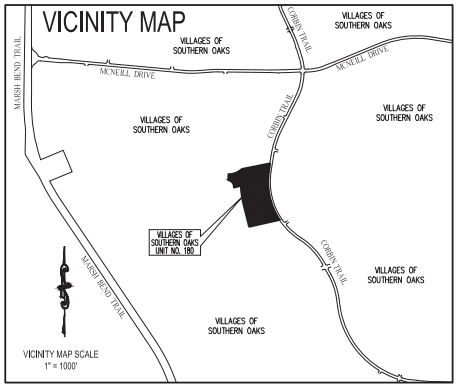
PLAT BOOK _____
PAGE _____

LEGAL DESCRIPTION

A PARCEL OF LAND LYING WITHIN THE SOUTHEAST 1/4 OF SECTION 3, TOWNSHIP 20 SOUTH, RANGE 23 EAST, SUMTER COUNTY, FLORIDA, DESCRIBED AS FOLLOWS:

COMMENCE AT THE SOUTHWEST CORNER OF LOT 17, VILLAGES OF SOUTHERN OAKS UNIT NO. 150, ACCORDING TO THE PLAT THEREOF AS RECORDED IN PLAT BOOK 21, PAGES 33 AND 33A, PUBLIC RECORDS OF SUMTER COUNTY, FLORIDA; SAID POINT ALSO BEING ON THE WEST BOUNDARY LINE OF SAID PLAT; THENCE ALONG SAID WEST BOUNDARY LINE OF PLAT RUN S00°39'41"W, 88.00 FEET TO THE SOUTH RIGHT OF WAY LINE OF MCNEILL DRIVE OF SAID PLAT; THE FOLLOWING SIX (6) COURSES BEING ALONG SAID SOUTH RIGHT OF WAY LINE: RUN S89°20'19"E, 223.15 FEET; THENCE S87°42'07"E, 160.50 FEET; THENCE N85°25'35"E, 50.24 FEET; THENCE S89°20'19"E, 14.37 FEET TO THE POINT OF CURVATURE OF A CURVE CONCAVE NORTHERLY AND HAVING A RADIUS OF 921.50 FEET; THENCE EASTERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 03°09'37", AN ARC DISTANCE OF 50.83 FEET TO THE POINT OF TANGENCY; THENCE N87°30'04"E, 234.48 FEET TO THE POINT OF CURVATURE OF A CURVE CONCAVE SOUTHWESTERLY AND HAVING A RADIUS OF 21.50 FEET; SAID POINT BEING ON THE SOUTHERLY RIGHT OF WAY LINE OF MCNELL DRIVE, VILLAGES OF SOUTHERN OAKS UNIT NO. 151, ACCORDING TO THE PLAT THEREOF AS RECORDED IN PLAT BOOK 21, PAGES 25, 25A THROUGH 25H, PUBLIC RECORDS OF SUMTER COUNTY, FLORIDA; THENCE ALONG SAID PLAT OF VILLAGES OF SOUTHERN OAKS UNIT NO. 151; RUN SOUTHEASTERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 92°53'47", AN ARC DISTANCE OF 34.86 FEET TO THE POINT OF COMPOUND CURVATURE OF A CURVE CONCAVE WESTERLY AND HAVING A RADIUS OF 872.50 FEET; THENCE DEPARTING SAID PLATTED BOUNDARY RUN SOUTHERLY ALONG THE ARC OF SAID CURVE, THROUGH A CENTRAL ANGLE OF 24°00'56", AN ARC DISTANCE OF 365.71 FEET TO THE POINT OF TANGENCY; THENCE S24°24'47"W, 138.96 FEET TO THE POINT OF CURVATURE OF A CURVE CONCAVE SOUTHEASTERLY AND HAVING A RADIUS OF 831.50 FEET; THENCE SOUTHWESTERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 02°29'26", AN ARC DISTANCE OF 36.15 FEET TO THE POINT OF TANGENCY; THENCE S26°54'13"W, 454.26 FEET TO THE POINT OF CURVATURE OF A CURVE CONCAVE SOUTHEASTERLY AND HAVING A RADIUS OF 1,621.50 FEET; THENCE SOUTHWESTERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 17°54'17", AN ARC DISTANCE OF 506.71 FEET TO THE POINT OF TANGENCY; THENCE S08°59'57"W, 146.94 FEET TO THE POINT OF BEGINNING; THENCE CONTINUE S08°59'57"W, 124.53 FEET TO THE POINT OF CURVATURE OF A CURVE CONCAVE EASTERLY AND HAVING A RADIUS OF 1,171.50 FEET; THENCE SOUTHERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 42°21'11", AN ARC DISTANCE OF 865.97 FEET; THENCE DEPARTING SAID CURVE ALONG A NON-TANGENT LINE RUN S77°16'31"W, 518.52 FEET; THENCE N14°07'28"W, 397.87 FEET; THENCE N12°01'11"W, 58.70 FEET; THENCE N10°08'14"W, 58.70 FEET; THENCE N08°04'00"W, 58.70 FEET; THENCE N05°59'47"W, 58.70 FEET; THENCE N04°33'45"W, 82.56 FEET; THENCE S75°20'59"W, 121.20 FEET TO A POINT ON THE ARC OF A NON-TANGENT CURVE CONCAVE EASTERLY, HAVING A RADIUS OF 1,744.50 FEET AND A CHORD BEARING AND DISTANCE OF N02°41'01"W, 14.35 FEET TO WHICH A RADIAL LINE BEARS S87°04'50"W; THENCE NORTHERLY ALONG THE ARC OF SAID CURVE, THROUGH A CENTRAL ANGLE OF 00°28'17", AN ARC DISTANCE OF 14.35 FEET TO THE POINT OF REVERSE CURVATURE OF A CURVE CONCAVE SOUTHWESTERLY AND HAVING A RADIUS OF 114.00 FEET; THENCE NORTHWESTERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 77°20'38", AN ARC DISTANCE OF 153.89 FEET; THENCE ALONG A NON-TANGENT LINE RUN N00°39'41"E, 92.58 FEET; THENCE S89°20'19"E, 44.94 FEET; THENCE N75°20'59"E, 74.72 FEET; THENCE N63°23'05"E, 58.39 FEET; THENCE N54°41'44"E, 74.35 FEET; THENCE N78°42'56"E, 477.04 FEET TO THE POINT OF BEGINNING.

CONTAINING 11.35 ACRES, MORE OR LESS.



63 LOTS – 4 TRACTS

NOTICE: THIS PLAT, AS RECORDED IN ITS GRAPHIC FORM, IS THE OFFICIAL DEPICTION OF THE SUBDIVIDED LANDS DESCRIBED HEREIN AND WILL IN NO CIRCUMSTANCES BE SUPPLANTED IN AUTHORITY BY ANY OTHER GRAPHIC OR DIGITAL FORM OF THE PLAT. THERE MAY BE ADDITIONAL RESTRICTIONS THAT ARE NOT RECORDED ON THIS PLAT THAT MAY BE FOUND IN THE PUBLIC RECORDS OF THIS COUNTY.

NOTES:

1.) BEARINGS ARE BASED ON THE WEST BOUNDARY LINE OF VILLAGES OF SOUTHERN OAKS UNIT NO. 150 AS RECORDED IN PLAT BOOK 21, PAGES 33 AND 33A, PUBLIC RECORDS OF SUMTER COUNTY, FLORIDA, AS BEING S00°39'41"W.

2.) ALL PLATTED UTILITY EASEMENTS SHALL PROVIDE THAT SUCH EASEMENTS SHALL ALSO BE EASEMENTS FOR THE CONSTRUCTION, INSTALLATION, MAINTENANCE, AND OPERATION OF CABLE TELEVISION SERVICES; PROVIDED, HOWEVER, NO SUCH CONSTRUCTION, INSTALLATION, MAINTENANCE, AND OPERATION OF CABLE TELEVISION SERVICES SHALL INTERFERE WITH THE FACILITIES AND SERVICES OF AN ELECTRIC, TELEPHONE, GAS, OR OTHER PUBLIC UTILITY. IN THE EVENT A CABLE TELEVISION COMPANY DAMAGES THE FACILITIES OF A PUBLIC UTILITY, IT SHALL BE SOLELY RESPONSIBLE FOR THE DAMAGES. THIS SECTION SHALL NOT APPLY TO THOSE PRIVATE EASEMENTS GRANTED TO OR OBTAINED BY A PARTICULAR ELECTRIC, TELEPHONE, GAS, OR OTHER PUBLIC UTILITY. SUCH CONSTRUCTION, INSTALLATION, MAINTENANCE, AND OPERATION SHALL COMPLY WITH THE NATIONAL ELECTRICAL SAFETY CODE AS ADOPTED BY THE FLORIDA PUBLIC SERVICE COMMISSION.

3.) ALL DISTANCES SHOWN ARE IN FEET.

4.) WITH REFERENCE TO CURVILINEAR LOTS, RADIAL LINES HAVE BEEN DESIGNATED BY (R). ALL OTHER LINES ARE NON-RADIAL.

5.) LOT CORNERS WILL BE SET PRIOR TO THE TRANSFER OF ANY LOT OR PRIOR TO THE EXPIRATION OF THE BOND OR OTHER SURETY.

6.) PERMANENT CONTROL POINTS (P.C.P.'S) WILL BE SET WITHIN ONE YEAR OF THE DATE THIS PLAT WAS RECORDED OR PRIOR TO THE EXPIRATION OF THE BOND OR SURETY.

7.) ALL PERMANENT REFERENCE MONUMENTS (P.R.M.'S) HAVE BEEN SET IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER 177, FLORIDA STATUTES.

8.) TRACTS "A", "B", "C" AND "D" ARE FOR ANY PURPOSE PERMITTED BY APPLICABLE LAW AND APPROVED IN WRITING BY DEVELOPER. NO INGRESS OR EGRESS IS PERMITTED WITHOUT THE DEVELOPER'S CONSENT.

9.) THE DISTRICT FINDS IT IN THE PUBLIC INTEREST, AND HEREBY AGREES TO PROVIDE THE FOLLOWING SERVICES: (A) MAINTENANCE AND REPAIR OF AREAS OWNED BY THE DISTRICT OR DEDICATED TO THE USE AND ENJOYMENT OF THE RESIDENTS OF THE DISTRICT, THE SUBDIVISION, OR THE PUBLIC; (B) PAY FOR THE COST OF WATER AND SEWER PROVIDED BY GIBSON PLACE UTILITY COMPANY, LLC, OR ITS ASSIGNS, TOGETHER WITH THE COST OF GARBAGE, ELECTRICAL, LIGHTING, TELEPHONE, GAS AND OTHER NECESSARY UTILITY SERVICE FOR AREAS OWNED BY THE DISTRICT OR DEDICATED TO THE USE AND ENJOYMENT OF THE RESIDENTS OF THE DISTRICT, SUBDIVISION, OR THE PUBLIC; (C) MAINTENANCE AND REPAIR OF THE STORM WATER RUNOFF DRAINAGE SYSTEM INCLUDING DRAINAGE EASEMENTS AND DRAIN PIPES NOT MAINTAINED BY GIBSON PLACE WATER CONSERVATION AUTHORITY, LLC, OR ITS ASSIGNS, OR THE CITY OF WILDWOOD; AND (D) MAINTENANCE AND REPAIR OF THE LANDSCAPING AND IRRIGATION ON ISLANDS AND CUL-DE-SACS LOCATED WITHIN THE ROADWAYS, IF ANY.

10.) THE TITLE OPINION FOR THIS PLAT HAS BEEN SUBMITTED BY SEPARATE DOCUMENT.

VILLAGES OF SOUTHERN OAKS UNIT NO. 180
CONVEYANCE AND GRANT OF EASEMENTS TO
VILLAGE COMMUNITY DEVELOPMENT DISTRICT NO. 15

ALL RIGHT, TITLE AND INTEREST OF THE VILLAGES DEVELOPMENT COMPANY, LLC, (THE DEVELOPER) IN TRACTS "A", "B", "C" AND "D" AND THE ROADWAYS SHOWN ON THIS PLAT OF VILLAGES OF SOUTHERN OAKS UNIT NO. 180, IS HEREBY SOLD, CONVEYED AND SET OVER TO VILLAGE COMMUNITY DEVELOPMENT DISTRICT NO. 15 (THE DISTRICT); (1) RESERVING UNTO THE DEVELOPER AND ITS ASSIGNS, AND EACH OF THEIR SUCCESSORS, TENANTS, INVITEES, AND GUESTS PERPETUAL EASEMENTS FOR INGRESS AND EGRESS AND THE CONSTRUCTION, INSTALLATION, MAINTENANCE AND OPERATION OF UNDERGROUND ELECTRIC, TELEPHONE, CABLE, GAS AND OTHER UTILITIES, IRRIGATION FACILITIES, POTABLE WATER, SANITARY SEWER AND STORM WATER FACILITIES, LANDSCAPED AREAS, FENCES, WALLS, ENTRY FACILITIES, INCLUDING ELECTRONIC CARD READING EQUIPMENT, GOLF CART AND PEDESTRIAN PATHS, SIGNAGE, ENJOYMENT IMPROVEMENTS AND GOLF CART AND PEDESTRIAN BRIDGES; AND (2) SUBJECT TO THE RESTRICTION THAT ALL ADDITIONS OF, REMOVAL OF, AND CHANGES TO IMPROVEMENTS LOCATED ON SUCH TRACTS AND ROADWAYS (INCLUDING, WITHOUT LIMITATION, ALL THOSE IMPROVEMENTS DESCRIBED ABOVE), MUST FIRST BE APPROVED IN ADVANCE BY THE DEVELOPER.

THE DEVELOPER ALSO GRANTS TO THE DISTRICT NON-EXCLUSIVE, PERPETUAL EASEMENTS OVER, ACROSS AND UPON ANY SPECIAL EASEMENTS SHOWN HEREON FOR THE PURPOSE OF MAINTAINING DRAINAGE FACILITIES LOCATED THEREON.

THE DISTRICT, BY EXECUTING THE DEDICATION CONTAINED ON THIS PLAT, ACCEPTS THIS CONVEYANCE AND AGREES TO MAINTAIN THE TRACTS LISTED ABOVE, INCLUDING ALL IMPROVEMENTS CONSTRUCTED THEREON AND DRAINAGE FACILITIES LOCATED WITHIN ANY SPECIAL EASEMENTS PERPETUALLY, AND MAINTAIN THE ROADWAYS AND DRAINAGE FEATURES LYING WITHIN SUCH ROADWAYS FOR TWO YEARS AFTER THE CITY ENGINEER HAS CERTIFIED THE CONSTRUCTION HAS BEEN COMPLETED.

WITNESSES:

_____
SIGNATURE

_____
PRINT NAME

7580 MIDDLETON DRIVE
MIDDLETON, FLORIDA 34762
MAILING ADDRESS

_____
SIGNATURE

_____
PRINT NAME

4450 NE 83RD ROAD
WILDWOOD, FLORIDA 34785
MAILING ADDRESS

THE VILLAGES DEVELOPMENT COMPANY, LLC,
A FLORIDA LIMITED LIABILITY COMPANY
BY: VDC MANAGER, LLC,
A FLORIDA LIMITED LIABILITY COMPANY,
ITS MANAGER

BY: _____
MARTIN L. DZURO, MANAGER

STATE OF FLORIDA
COUNTY OF SUMTER

THE FOREGOING INSTRUMENT WAS ACKNOWLEDGED BEFORE ME, BY MEANS OF ☐ PHYSICAL PRESENCE OR ☐ ONLINE NOTARIZATION, THIS ___ DAY OF _____, 20____, BY MARTIN L. DZURO, AS MANAGER OF AND ON BEHALF OF VDC MANAGER, LLC, A FLORIDA LIMITED LIABILITY COMPANY, THE MANAGER OF THE VILLAGES DEVELOPMENT COMPANY, LLC, A FLORIDA LIMITED LIABILITY COMPANY, FOR THE PURPOSES EXPRESSED HEREIN, WHO IS PERSONALLY KNOWN TO ME AND WHO DID NOT TAKE AN OATH.

_____
NOTARY PUBLIC – STATE OF FLORIDA
PRINT NAME: _____
COMMISSION NO.: _____
COMMISSION EXPIRES: _____

SEAL

CERTIFICATE OF APPROVAL BY CITY OFFICIALS

THIS CERTIFIES THAT THIS PLAT HAS BEEN REVIEWED FOR CONFORMITY TO F.S. CHAPTER 177, AS CERTIFIED BY THE REVIEWING SURVEYOR SHOWN BELOW.

_____
MELANIE D. STRICKLAND
DEVELOPMENT SERVICES DIRECTOR

THIS CERTIFIES THAT THIS PLAT WAS PRESENTED TO THE COMMISSION OF THE CITY OF WILDWOOD, SUMTER COUNTY, FLORIDA, AND WAS APPROVED BY THE COMMISSION FOR RECORD ON THIS ____ DAY OF_____, 20____.

_____ _____
JESSICA BARNES, CITY CLERK — ED WOLF, MAYOR

THIS CERTIFIES THAT THIS PLAT WAS PRESENTED TO THE ATTORNEY FOR THE CITY OF WILDWOOD, SUMTER COUNTY, FLORIDA, AND APPROVED BY HIM OR HER AS TO FORM AND LEGALITY ON THIS ____ DAY OF _____, 20____.

_____ _____
PRINT NAME, CITY OF WILDWOOD, ATTORNEY — SIGNATURE, CITY OF WILDWOOD, ATTORNEY

_____ _____
DEVELOPMENT SERVICES DIRECTOR, MELANIE D. STRICKLAND — PUBLIC WORKS DIRECTOR, JEREMY HOCKENBURY

_____ _____
PRINT NAME, CITY OF WILDWOOD, ENGINEER — SIGNATURE, CITY OF WILDWOOD, ENGINEER

REVIEWING SURVEYOR'S CERTIFICATE

PURSUANT TO SECTION 177.081, FLORIDA STATUTES, I HEREBY CERTIFY THAT I HAVE PERFORMED A REVIEW OF THIS PLAT FOR CONFORMITY TO CHAPTER 177, FLORIDA STATUTES AND THAT SAID PLAT COMPLIES WITH THE TECHNICAL REQUIREMENTS OF THAT CHAPTER; PROVIDED, HOWEVER, THAT MY REVIEW AND CERTIFICATION DOES NOT INCLUDE FIELD VERIFICATION OF ANY POINTS OR MEASUREMENTS SHOWN ON THIS PLAT.

_____ _____
SIGNATURE — DATE

_____ _____
RONALD W. HERR, P.L.S., WADE SURVEYING, INC. — 4907, REGISTRATION NO.

SEAL

DEDICATION

KNOW ALL MEN BY THESE PRESENTS, THAT THE UNDERSIGNED, THE VILLAGES DEVELOPMENT COMPANY, LLC (THE DEVELOPER) HAS CAUSED TO BE MADE THIS PLAT, VILLAGES OF SOUTHERN OAKS UNIT NO. 180, A SUBDIVISION OF LAND HEREIN DESCRIBED AND JOINS WITH VILLAGE COMMUNITY DEVELOPMENT DISTRICT NO. 15 (THE DISTRICT) TO HEREBY DEDICATE THE ROADWAYS SHOWN HEREON TO THE CITY OF WILDWOOD AND THE PERPETUAL USE OF THE PUBLIC; AND DEDICATES TRACTS "A", "B", "C" AND "D" TO VILLAGE COMMUNITY DEVELOPMENT DISTRICT NO. 15.

WITNESSES:
(1) _____
SIGNATURE

_____
PRINT NAME

7580 MIDDLETON DRIVE
MIDDLETON, FLORIDA 34762
MAILING ADDRESS

(2) _____
SIGNATURE

_____
PRINT NAME

4450 NE 83RD ROAD
WILDWOOD, FLORIDA 34785
MAILING ADDRESS

THE VILLAGES DEVELOPMENT COMPANY, LLC,
A FLORIDA LIMITED LIABILITY COMPANY

BY: VDC MANAGER, LLC,
A FLORIDA LIMITED LIABILITY COMPANY,
ITS MANAGER

BY: _____
MARTIN L. DZURO, MANAGER

WITNESSES:
(1) _____
SIGNATURE

_____
PRINT NAME

3601 KIESSEL ROAD
THE VILLAGES, FLORIDA 32163
MAILING ADDRESS

(2) _____
SIGNATURE

_____
PRINT NAME

4450 NE 83RD ROAD
WILDWOOD, FLORIDA 34785
MAILING ADDRESS

VILLAGE COMMUNITY DEVELOPMENT DISTRICT NO. 15

BY: _____
SPENCER R. NOVAK, CHAIR

STATE OF FLORIDA
COUNTY OF SUMTER

THE FOREGOING INSTRUMENT WAS ACKNOWLEDGED BEFORE ME, BY MEANS OF ☐ PHYSICAL PRESENCE OR ☐ ONLINE NOTARIZATION, THIS ___ DAY OF _____, 20____, BY MARTIN L. DZURO, AS MANAGER OF AND ON BEHALF OF VDC MANAGER, LLC, A FLORIDA LIMITED LIABILITY COMPANY, THE MANAGER OF THE VILLAGES DEVELOPMENT COMPANY, LLC, A FLORIDA LIMITED LIABILITY COMPANY, FOR THE PURPOSES EXPRESSED HEREIN, WHO IS PERSONALLY KNOWN TO ME AND WHO DID NOT TAKE AN OATH.

_____
NOTARY PUBLIC – STATE OF FLORIDA
PRINT NAME: _____
COMMISSION NO.: _____
COMMISSION EXPIRES: _____

SEAL

STATE OF FLORIDA
COUNTY OF SUMTER

THE FOREGOING INSTRUMENT WAS ACKNOWLEDGED BEFORE ME, BY MEANS OF ☐ PHYSICAL PRESENCE OR ☐ ONLINE NOTARIZATION, THIS ___ DAY OF _____, 20____, BY SPENCER R. NOVAK, THE CHAIR OF VILLAGE COMMUNITY DEVELOPMENT DISTRICT NO. 15, ON BEHALF OF THE DISTRICT, WHO IS PERSONALLY KNOWN TO ME AND WHO DID NOT TAKE AN OATH.

_____
NOTARY PUBLIC – STATE OF FLORIDA
PRINT NAME: _____
COMMISSION NO.: _____
COMMISSION EXPIRES: _____

SEAL

CERTIFICATE OF SURVEYOR

I HEREBY CERTIFY THAT THIS PLAT OF VILLAGES OF SOUTHERN OAKS UNIT NO. 180, WAS PREPARED UNDER MY DIRECTION AND SUPERVISION; AND THAT THE PERMANENT REFERENCE MONUMENTS AS SHOWN THEREON WERE PLACED ON THE ___ DAY OF _____, 20____; I FURTHER CERTIFY THAT THIS PLAT COMPLIES WITH THE REQUIREMENTS OF CHAPTER 177, FLORIDA STATUTES.

CLYMER FARNER BARLEY SURVEYING, LLC
4450 N.E. 83RD ROAD
WILDWOOD, FLORIDA 34785
LICENSED BUSINESS NO. 8498

SEAL

_____ _____
KAYE M. JAMESON, REGISTRATION NO. 5912 — DATE

CERTIFICATE OF CLERK

I HEREBY CERTIFY THAT I HAVE EXAMINED THIS PLAT AND FIND THAT IT COMPLIES IN FORM WITH ALL THE REQUIREMENTS OF CHAPTER 177, FLORIDA STATUTES AND WAS FILED FOR RECORD ON _____, 20____, AT_____, FILE NUMBER _____

PLAT BOOK _____ PAGE _____.

CLERK OF THE COURT IN AND
FOR SUMTER COUNTY, FLORIDA

SEAL

_____ _____
PRINT NAME, DEPUTY CLERK — SIGNATURE, DEPUTY CLERK

PREPARED BY: CFB SURVEYING — CLYMER FARNER BARLEY
4450 NE 83RD ROAD - WILDWOOD, FL 34785
(352) 748-3120 LB#498

VILLAGES OF SOUTHERN OAKS UNIT NO. 180

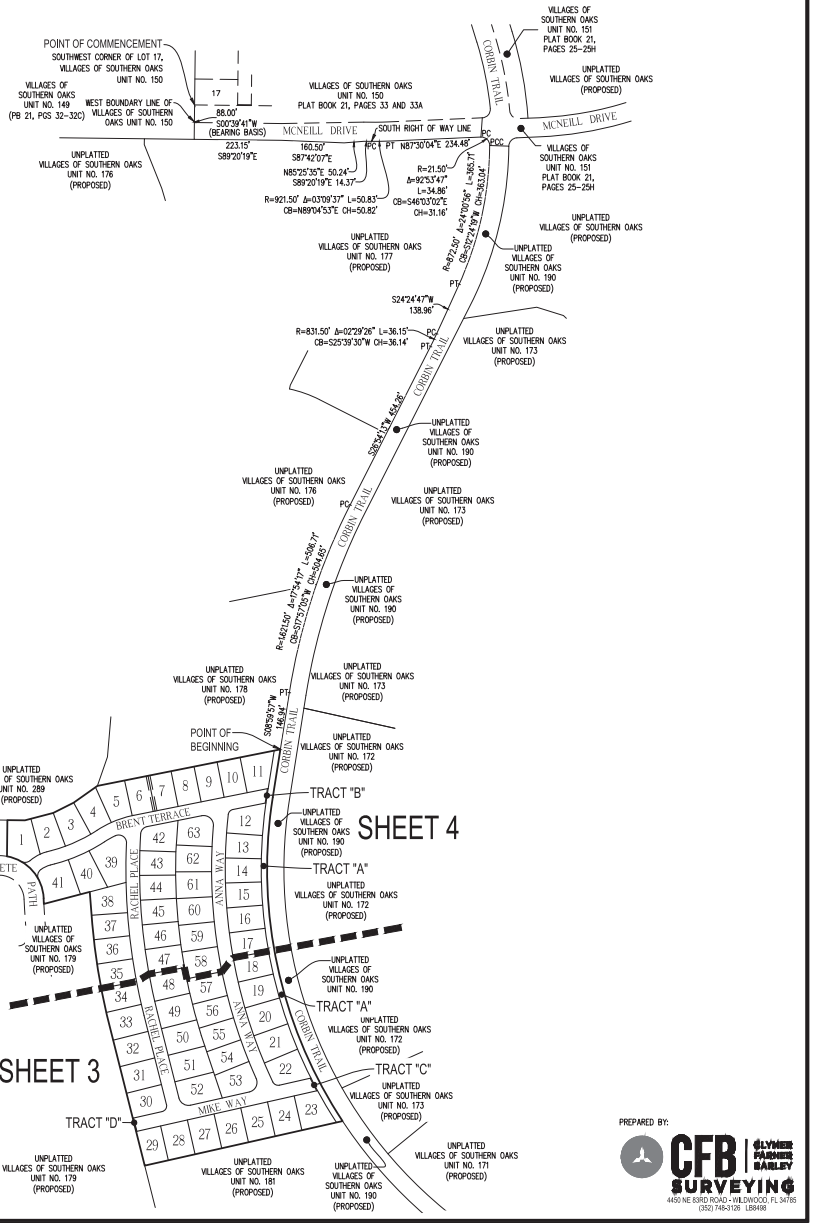
SECTION 3, TOWNSHIP 20 SOUTH, RANGE 23 EAST,
CITY OF WILDWOOD, SUMTER COUNTY, FLORIDA.

SHEET 2 OF 4

PLAT BOOK _____
PAGE _____



KEY MAP



TRACT TABLE		
TRACT	SQ FT	ACREAGE
A	14,857	0.341
B	75	0.002
C	72	0.002
D	70	0.002

LEGEND

- ■ INDICATES 4" X 4" X 24" CONCRETE PERMANENT REFERENCE MONUMENT (P.R.M.) FOUND AS NOTED.
- ▣ INDICATES 4" X 4" X 24" CONCRETE PERMANENT REFERENCE MONUMENT (P.R.M.) OR 5/8" IRON PIN AND CAP SET LB #8498
- ● INDICATES P.K. NAIL AND DISK PERMANENT CONTROL POINT (P.C.P.) LB #8498 TO BE SET WITHIN ONE YEAR OF THE DATE THIS PLAT IS RECORDED.
- ○ INDICATES 5/8" IRON PIN AND CAP TO BE SET IN ACCORDANCE WITH SECTION 177.091(9) FLORIDA STATUTES. (SEE NOTE #5.)
- C9 INDICATES CURVE NUMBER IN CURVE TABLE
- L9 INDICATES LINE NUMBER IN LINE TABLE
- ℄ INDICATES CENTERLINE
- Δ INDICATES DELTA (CENTRAL ANGLE OF CURVE)
- CB INDICATES CHORD BEARING
- CH INDICATES CHORD DISTANCE
- L INDICATES ARC LENGTH
- ORB INDICATES OFFICIAL RECORDS BOOK
- PC INDICATES POINT OF CURVATURE
- POC INDICATES POINT ON CURVE
- R INDICATES RADIUS LENGTH
- (R) INDICATES RADIAL LINE
- PCC INDICATES POINT OF COMPOUND CURVATURE
- PRC INDICATES POINT OF REVERSE CURVATURE
- PT INDICATES POINT OF TANGENCY
- DRA INDICATES DRAINAGE RETENTION AREA FOR STORMWATER MANAGEMENT INCLUDING CONVEYANCING PIPES
- GFE INDICATES GATE FACILITIES EASEMENT (RESERVED BY THE DEVELOPER AND ITS ASSIGNS)
- SE INDICATES SPECIAL EASEMENT RESERVED BY DEVELOPER AND ITS ASSIGNS, FOR LANDSCAPING AND/OR THE CONSTRUCTION, INSTALLATION, MAINTENANCE AND OPERATION OF WATER, SANITARY SEWER, ELECTRIC, TELEPHONE, GAS OR OTHER UTILITIES AND/OR DRAINAGE FACILITIES AND/OR WALL FENCING AND/OR GOLF CART PATHS. DEVELOPER CONTEMPLATES PUTTING H.V.A.C. AND SIMILAR EQUIPMENT WITHIN THE EASEMENT AREA. UTILITY PROVIDERS UTILIZING SUCH EASEMENT AREA COVENANT, AS A CONDITION OF THE RIGHT TO USE SUCH EASEMENT, NOT TO INTERFERE OR DISTURB SUCH EQUIPMENT INSTALLED WITHIN THE EASEMENT AREA.
- SME INDICATES SIGN MAINTENANCE EASEMENT RESERVED BY DEVELOPER AND ITS ASSIGNS FOR INSTALLATION AND MAINTENANCE OF SIGNAGE.

- LB INDICATES LICENSED BUSINESS
- NO. INDICATES NUMBER
- PB INDICATES PLAT BOOK
- PG INDICATES PAGE
- PGS INDICATES PAGES
- SQ FT INDICATES SQUARE FEET
- R/W INDICATES RIGHT-OF-WAY

PREPARED BY:
CFB SURVEYING
CLYMER FARMER BARLEY
4450 NE 83RD ROAD - WILDWOOD, FL 34785
(352) 748-3126 LB8498

VILLAGES OF SOUTHERN OAKS
UNIT NO. 180

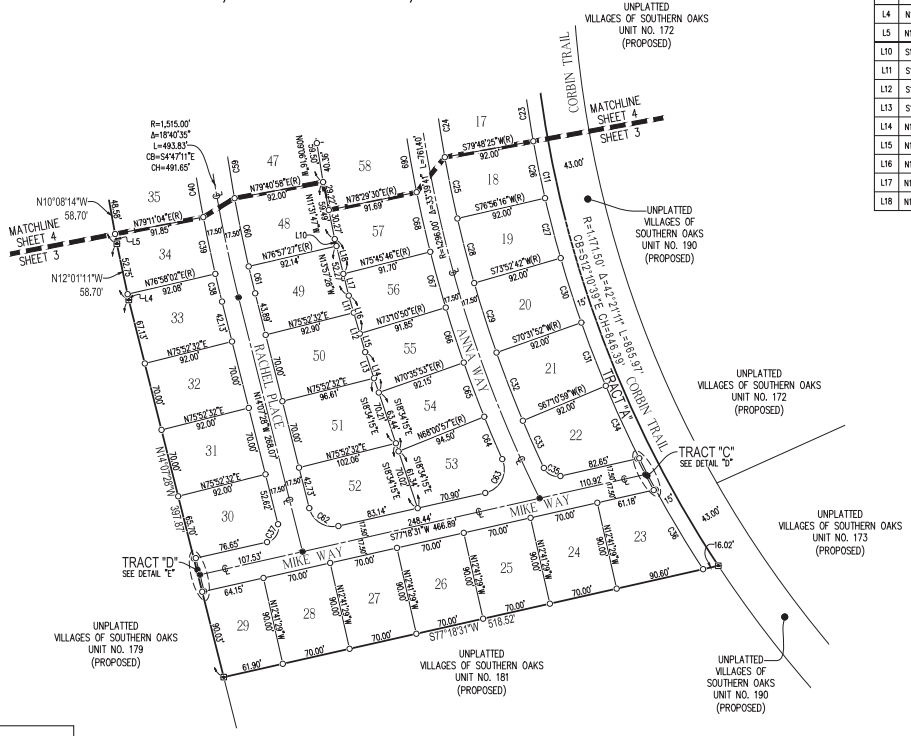
SECTION 3, TOWNSHIP 20 SOUTH, RANGE 23 EAST,
CITY OF WILDWOOD, SUMTER COUNTY, FLORIDA.

SHEET 3 OF 4

PLAT BOOK _____
PAGE _____



TRACT TABLE		
TRACT	SQ FT	ACREAGE
A	14,857	0.341
B	75	0.002
C	72	0.002
D	70	0.002



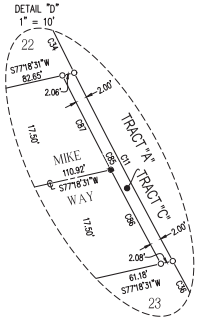
LINE TABLE		
LINE TAG	BEARING	DISTANCE
L4	N12°01'11"W	5.95'
L5	N10°08'14"W	10.12'
L10	S13°57'28"E	7.36'
L11	S16°12'58"E	18.18'
L12	S16°12'58"E	41.95'
L13	S18°34'15"E	28.16'
L14	N18°34'15"W	43.61'
L15	N16°12'58"W	19.75'
L16	N16°12'58"W	40.38'
L17	N13°57'28"W	22.96'
L18	N13°57'28"W	36.67'

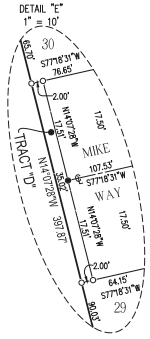
CURVE TABLE					
CURVE TAG	RADIUS	CENTRAL ANGLE	ARC LENGTH	CHORD BEARING	CHORD LENGTH
C11	1186.50'	42°04'49"	871.41'	S12°02'28"E	851.96'
C23	1186.50'	2°52'08"	59.41'	S08°45'31"E	59.40'
C24	1278.50'	2°52'08"	64.02'	S08°45'31"E	64.01'
C25	1278.50'	2°52'09"	64.02'	S11°37'39"E	64.02'
C26	1186.50'	2°52'09"	59.42'	S11°37'39"E	59.41'
C27	1186.50'	3°03'34"	63.36'	S14°35'31"E	63.35'
C28	1278.50'	3°03'34"	68.27'	S14°35'31"E	68.26'
C29	1278.50'	3°20'50"	74.69'	S17°47'43"E	74.68'
C30	1186.50'	3°20'50"	69.32'	S17°47'43"E	69.31'
C31	1186.50'	3°20'53"	69.33'	S21°08'34"E	69.32'
C32	1278.50'	3°20'53"	74.71'	S21°08'34"E	74.70'
C33	1278.50'	2°22'13"	52.89'	S24°00'07"E	52.89'
C34	1186.50'	3°56'29"	81.62'	S24°47'15"E	81.60'
C35	15.00'	77°30'15"	20.29'	S63°56'21"E	18.78'
C36	1186.50'	4°34'25"	94.71'	S30°47'39"E	94.69'
C37	15.00'	91°26'00"	23.94'	N31°35'32"E	21.48'
C38	1532.50'	1°05'30"	29.20'	S13°34'43"E	29.20'
C39	1532.50'	2°13'02"	59.30'	S11°55'27"E	59.30'
C40	1532.50'	2°13'02"	59.31'	S09°42'25"E	59.30'
C59	1497.50'	2°25'32"	63.39'	S09°06'16"E	63.39'
C60	1497.50'	2°43'32"	71.23'	S11°40'47"E	71.23'
C61	1497.50'	1°04'55"	28.28'	S13°35'01"E	28.28'
C62	25.00'	88°34'00"	38.64'	S58°24'28"E	34.91'
C63	25.00'	101°20'56"	44.22'	N26°36'05"E	38.68'
C64	1313.50'	2°03'20"	47.12'	S23°00'43"E	47.12'
C65	1313.50'	2°34'56"	59.20'	S20°41'35"E	59.19'
C66	1313.50'	2°34'57"	59.20'	S18°06'38"E	59.20'
C67	1313.50'	2°34'56"	59.20'	S15°31'42"E	59.19'
C68	1313.50'	2°43'44"	62.56'	S12°52'22"E	62.55'
C69	1313.50'	2°50'12"	65.03'	S10°05'24"E	65.02'
C85	1186.50'	1°44'58"	36.23'	S27°37'58"E	36.22'
C86	1188.50'	0°52'30"	18.15'	S28°02'34"E	18.15'
C87	1188.50'	0°52'17"	18.07'	S27°10'11"E	18.07'

LEGEND

- ▣ INDICATES 4" X 4" X 24" CONCRETE PERMANENT REFERENCE MONUMENT (P.R.M.) FOUND AS NOTED.
- ▣ INDICATES 4" X 4" X 24" CONCRETE PERMANENT REFERENCE MONUMENT (P.R.M.) OR 5/8" IRON PIN AND CAP SET LB #8498
- ● INDICATES P.K. NAIL AND DISK PERMANENT CONTROL POINT (P.C.P.) LB #8498 TO BE SET WITHIN ONE YEAR OF THE DATE THIS PLAT IS RECORDED.
- ○ INDICATES 5/8" IRON PIN AND CAP TO BE SET IN ACCORDANCE WITH SECTION 177.091(9) FLORIDA STATUTES. (SEE NOTE #5.)
- C9 INDICATES CURVE NUMBER IN CURVE TABLE
- L9 INDICATES LINE NUMBER IN LINE TABLE
- ℄ INDICATES CENTERLINE
- Δ INDICATES DELTA (CENTRAL ANGLE OF CURVE)
- CB INDICATES CHORD BEARING
- CH INDICATES CHORD DISTANCE
- L INDICATES ARC LENGTH
- ORB INDICATES OFFICIAL RECORDS BOOK
- PC INDICATES POINT OF CURVATURE
- POC INDICATES POINT ON CURVE
- R INDICATES RADIUS LENGTH
- (R) INDICATES RADIAL LINE
- PCC INDICATES POINT OF COMPOUND CURVATURE
- PRC INDICATES POINT OF REVERSE CURVATURE
- PT INDICATES POINT OF TANGENCY
- DRA INDICATES DRAINAGE RETENTION AREA FOR STORMWATER MANAGEMENT INCLUDING CONVEYANCING PIPES
- GFE INDICATES GATE FACILITIES EASEMENT (RESERVED BY THE DEVELOPER AND ITS ASSIGNS)
- SE INDICATES SPECIAL EASEMENT RESERVED BY DEVELOPER AND ITS ASSIGNS, FOR LANDSCAPING AND/OR THE CONSTRUCTION, INSTALLATION, MAINTENANCE AND OPERATION OF WATER, SANITARY SEWER, ELECTRIC, TELEPHONE, GAS OR OTHER UTILITIES AND/OR DRAINAGE FACILITIES AND/OR WALL FENCING AND/OR GOLF CART PATHS. DEVELOPER CONTEMPLATES PUTTING H.V.A.C. AND SIMILAR EQUIPMENT WITHIN THE EASEMENT AREA. UTILITY PROVIDERS UTILIZING SUCH EASEMENT AREA COVENANT, AS A CONDITION OF THE RIGHT TO USE SUCH EASEMENT, NOT TO INTERFERE OR DISTURB SUCH EQUIPMENT INSTALLED WITHIN THE EASEMENT AREA.
- SME INDICATES SIGN MAINTENANCE EASEMENT RESERVED BY DEVELOPER AND ITS ASSIGNS FOR INSTALLATION AND MAINTENANCE OF SIGNAGE.

- LB INDICATES LICENSED BUSINESS
- NO. INDICATES NUMBER
- PB INDICATES PLAT BOOK
- PG INDICATES PAGE
- PGS INDICATES PAGES
- SQ FT INDICATES SQUARE FEET
- R/W INDICATES RIGHT-OF-WAY





PREPARED BY:

CFB SURVEYING | GLYMER PARSHER BARLEY

4450 NE 83RD ROAD - WILDWOOD, FL 34785
(352) 748-3126 LB8498

VILLAGES OF SOUTHERN OAKS UNIT NO. 180

SECTION 3, TOWNSHIP 20 SOUTH, RANGE 23 EAST,
CITY OF WILDWOOD, SUMTER COUNTY, FLORIDA.

SHEET 4 OF 4

PLAT BOOK _____
PAGE _____



CURVE TABLE					
CURVE TAG	RADIUS	CENTRAL ANGLE	ARC LENGTH	CHORD BEARING	CHORD LENGTH
C1	114.00'	19°28'08"	38.74'	N70°03'27"W	38.55'
C2	20.00'	70°32'06"	24.62'	N84°24'34"E	23.10'
C3	106.50'	16°28'41"	30.63'	S57°22'51"W	30.52'
C4	106.50'	9°43'47"	18.09'	S70°29'05"W	18.06'
C5	397.50'	5°29'20"	38.08'	N72°36'19"E	38.07'
C6	397.50'	10°20'59"	71.80'	N64°41'09"E	71.70'
C7	397.50'	2°41'14"	18.64'	N58°10'03"E	18.64'
C8	267.50'	8°58'22"	41.89'	S61°18'37"W	41.85'

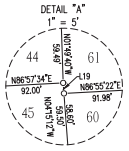
LINE TABLE		
LINE TAG	BEARING	DISTANCE
L1	N75°20'59"E	15.69'
L2	N75°20'59"E	11.58'
L3	N54°41'44"E	5.94'
L5	N10°08'14"W	10.12'
L6	N08°04'00"W	14.28'
L7	N05°59'47"W	18.45'
L8	N04°33'45"W	22.61'
L9	N75°20'59"E	11.58'
L19	N04°15'12"W	0.90'
L20	N45°50'04"E	7.41'
L21	N75°20'59"E	11.58'

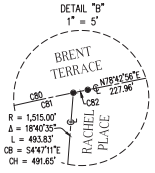
TRACT TABLE		
TRACT	SQ FT	ACREAGE
A	14,857	0.341
B	75	0.002
C	72	0.002
D	70	0.002

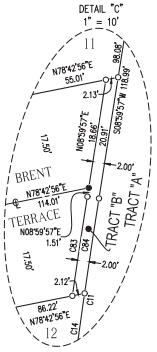
CURVE TABLE					
CURVE TAG	RADIUS	CENTRAL ANGLE	ARC LENGTH	CHORD BEARING	CHORD LENGTH
C9	267.50'	12°01'41"	56.16'	S71°48'39"W	56.05'
C10	267.50'	0°53'27"	4.16'	S78°16'13"W	4.16'
C11	1186.50'	42°04'49"	871.41'	S12°02'28"E	851.96'
C12	15.00'	72°27'11"	18.97'	S42°29'20"W	17.73'
C13	1278.50'	2°06'29"	47.04'	S05°12'30"W	47.04'
C14	1186.50'	4°03'15"	83.96'	S06°10'54"W	83.94'
C15	1186.50'	2°52'13"	59.44'	S02°43'10"W	59.43'
C16	1278.50'	2°52'13"	64.04'	S02°43'10"W	64.04'
C17	1278.50'	2°52'12"	64.04'	S00°09'02"E	64.03'
C18	1186.50'	2°52'12"	59.43'	S00°09'02"E	59.43'
C19	1186.50'	2°52'10"	59.42'	S03°01'13"E	59.42'
C20	1278.50'	2°52'10"	64.03'	S03°01'13"E	64.02'
C21	1278.50'	2°52'09"	64.02'	S05°53'23"E	64.01'
C22	1186.50'	2°52'09"	59.41'	S05°53'23"E	59.41'
C23	1186.50'	2°52'08"	59.41'	S08°45'31"E	59.40'
C24	1278.50'	2°52'08"	64.02'	S08°45'31"E	64.01'
C25	1278.50'	2°52'09"	64.02'	S11°37'39"E	64.02'
C26	1186.50'	2°52'09"	59.42'	S11°37'39"E	59.41'
C39	1532.50'	2°13'02"	59.30'	S11°55'27"E	59.30'
C40	1532.50'	2°13'02"	59.31'	S09°42'25"E	59.30'
C41	1532.50'	2°13'02"	59.31'	S07°29'23"E	59.30'
C42	1532.50'	2°13'02"	59.31'	S05°16'20"E	59.30'
C43	1532.50'	2°53'43"	77.44'	S02°42'58"E	77.43'
C44	1532.50'	3°45'18"	100.43'	S00°36'33"W	100.42'
C45	20.00'	117°49'55"	41.13'	N56°25'46"W	34.26'
C46	232.50'	7°49'51"	31.78'	S60°44'22"W	31.75'
C47	432.50'	6°04'08"	45.81'	N59°51'30"E	45.79'
C48	432.50'	7°38'07"	57.64'	N66°42'38"E	57.59'
C49	432.50'	4°49'18"	36.40'	N72°56'20"E	36.39'
C50	71.50'	21°35'56"	26.95'	S64°33'01"W	26.79'
C51	20.00'	81°26'47"	28.43'	S13°01'40"W	26.10'
C52	114.00'	25°14'51"	50.23'	N15°04'18"W	49.83'
C53	20.00'	75°15'35"	26.27'	S41°05'08"W	24.42'
C54	1497.50'	1°38'44"	43.01'	S02°37'59"W	43.00'
C55	1497.50'	2°25'32"	63.39'	S00°35'51"W	63.39'
C56	1497.50'	2°25'32"	63.39'	S01°49'40"E	63.39'
C57	1497.50'	2°25'32"	63.39'	S04°15'12"E	63.39'
C58	1497.50'	2°25'32"	63.40'	S06°40'44"E	63.39'
C59	1497.50'	2°25'32"	63.39'	S09°06'16"E	63.39'
C60	1497.50'	2°43'32"	71.23'	S11°40'47"E	71.23'
C68	1313.50'	2°43'44"	62.56'	S12°52'22"E	62.55'
C69	1313.50'	2°50'12"	65.03'	S10°05'24"E	65.02'
C70	1313.50'	2°47'50"	64.13'	S07°16'23"E	64.12'
C71	1313.50'	2°47'50"	64.13'	S04°28'33"E	64.12'
C72	1313.50'	2°47'50"	64.13'	S01°40'43"E	64.12'
C73	1313.50'	2°47'50"	64.13'	S01°07'07"W	64.12'
C74	1313.50'	2°17'12"	52.42'	S03°39'39"W	52.42'
C75	25.00'	106°05'19"	46.29'	N48°14'25"W	39.96'
C76	114.00'	16°28'12"	32.77'	N35°56'50"W	32.66'
C77	114.00'	16°09'27"	32.15'	N52°14'39"W	32.04'
C78	89.00'	29°30'55"	45.85'	S60°35'32"W	45.34'
C79	415.00'	18°31'33"	134.18'	N66°05'13"E	133.60'
C80	250.00'	21°53'30"	95.52'	S67°46'11"W	94.94'
C81	250.00'	21°36'15"	94.27'	S67°37'34"W	93.71'
C82	250.00'	0°17'15"	1.25'	S78°34'19"W	1.25'
C83	1188.50'	0°49'28"	17.10'	S08°35'13"W	17.10'
C84	1186.50'	0°47'25"	16.37'	S08°36'14"W	16.37'

LEGEND

- ▣ INDICATES 4" X 4" X 24" CONCRETE PERMANENT REFERENCE MONUMENT (P.R.M.) FOUND AS NOTED.
- ▣ INDICATES 4" X 4" X 24" CONCRETE PERMANENT REFERENCE MONUMENT (P.R.M.) OR 5/8" IRON PIN AND CAP SET LB #5498
- ● INDICATES P.K. NAIL AND DISK PERMANENT CONTROL POINT (P.C.P.) LB #6498 TO BE SET WITHIN ONE YEAR OF THE DATE THIS PLAT IS RECORDED.
- ○ INDICATES 5/8" IRON PIN AND CAP TO BE SET IN ACCORDANCE WITH SECTION 177.091(9) FLORIDA STATUTES. (SEE NOTE #5.)
- C9 INDICATES CURVE NUMBER IN CURVE TABLE
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- SE INDICATES SPECIAL EASEMENT RESERVED BY DEVELOPER AND ITS ASSIGNS, FOR LANDSCAPING AND/OR THE CONSTRUCTION, INSTALLATION, MAINTENANCE AND OPERATION OF WATER, SANITARY SEWER, ELECTRIC, TELEPHONE, GAS OR OTHER UTILITIES AND/OR DRAINAGE FACILITIES AND/OR WALL FENCING AND/OR GOLF CART PATHS. DEVELOPER CONTEMPLATES PUTTING H.V.A.C. AND SIMILAR EQUIPMENT WITHIN THE EASEMENT AREA. UTILITY PROVIDERS UTILIZING SUCH EASEMENT AREA COVENANT, AS A CONDITION OF THE RIGHT TO USE SUCH EASEMENT, NOT TO INTERFERE OR DISTURB SUCH EQUIPMENT INSTALLED WITHIN THE EASEMENT AREA.
- SME INDICATES SIGN MAINTENANCE EASEMENT RESERVED BY DEVELOPER AND ITS ASSIGNS FOR INSTALLATION AND MAINTENANCE OF SIGNAGE.







PREPARED BY:

CFB SURVEYING
CLYMER FARMER BARLEY
4450 NE 83RD ROAD - WILDWOOD, FL 34785
(352) 748-3126 LB6498

CITY COMMISSION OF THE CITY OF WILDWOOD

EXECUTIVE SUMMARY

SUBJECT: **PLAT 2411-004 VOSO Unit 290 Final Plat**

REQUESTED ACTION: Staff recommends approval.

CONTRACT:

BUDGET IMPACT:

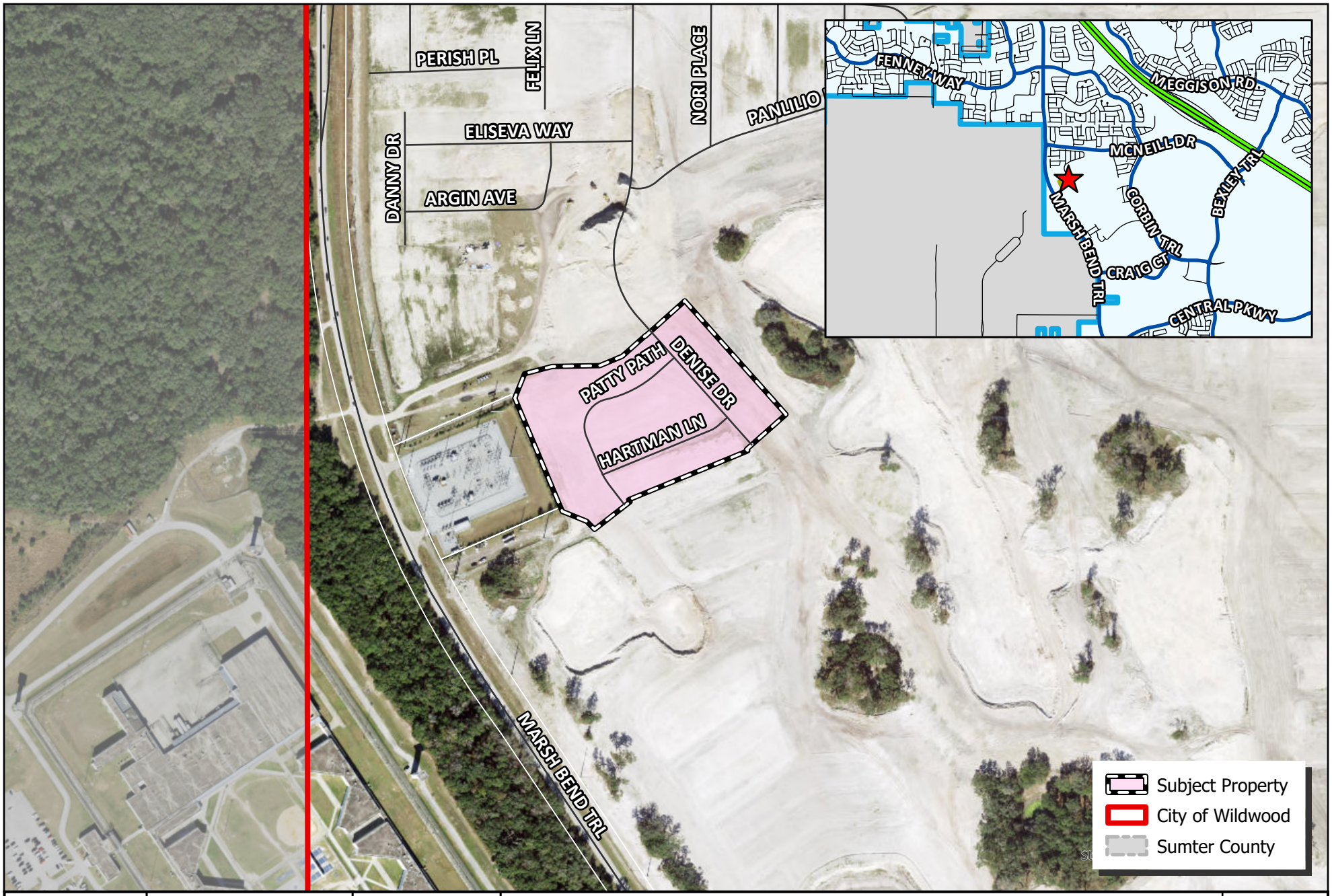
HISTORY/FACTS/ISSUES:

Case Number	PLAT 2411-004 VOSO Unit 290 Final Plat
Owner/Applicant(s)	The Villages Development Company, LLC
Acreage	7.82 +/-
Property Location	The property is generally located at 0.09 miles east of Marsh Bend Trail and 0.27 miles south of McNeill Dr.
Parcel(s)	K03-005
Date	January 2, 2025

The applicant is seeking approval from the City Commission for the VOSO Unit 290 Final Plat, a subdivision consisting of 34 lots and one tract, per the attached plans.

Plat 2411-004 meets the criteria set forth in F.S. 177, The Villages of Southern Oaks 163 Agreement, the Land Development Regulations, and is consistent with the goals, objectives, and policies of the 2050 Comprehensive Plan.

Alex Lammers
Planner I, Development Services



WILDWOOD FLORIDA EST. 1877

CITY OF WILDWOOD
100 North Main Street
Wildwood, FL 34785
Phone: (352) 330-1330
www.wildwood-fl.gov

PLAT 2411-004

VOSO - UNIT 290 FINAL PLAT

PARCEL K03-005

MAP 1B

LOCATION MAP

NOV 2024

COVENANTS, CONDITIONS, RESTRICTIONS AND EASEMENTS FOR THIS SUBDIVISION ARE RECORDED IN THE PUBLIC RECORDS OF SUMTER COUNTY, FLORIDA.
OR BOOK _____, PAGE _____.

VILLAGES OF SOUTHERN OAKS UNIT NO. 290

SHEET 1 OF 2

SECTION 3, TOWNSHIP 20 SOUTH, RANGE 23 EAST,
CITY OF WILDWOOD, SUMTER COUNTY, FLORIDA.

PLAT BOOK _____
PAGE _____

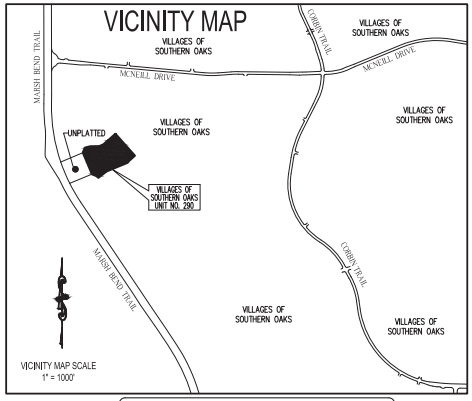
LEGAL DESCRIPTION

A PARCEL OF LAND LYING WITHIN THE WEST 1/2 OF SECTION 3, TOWNSHIP 20 SOUTH, RANGE 23 EAST, SUMTER COUNTY, FLORIDA, DESCRIBED AS FOLLOWS:

BEGIN AT THE MOST EASTERLY CORNER OF LOT 1, VILLAGES OF SOUTHERN OAKS UNIT NO. 184 AS RECORDED IN PLAT BOOK 22, PAGES 13, 13A THROUGH 13C, INCLUSIVE, PUBLIC RECORDS OF SUMTER COUNTY, FLORIDA; THENCE DEPARTING SAID PLATTED BOUNDARY RUN S41°41'38"E, 490.00 FEET; THENCE S48°18'22"W, 170.00 FEET; THENCE S41°41'38"E, 5.82 FEET; THENCE S67°37'52"W, 415.58 FEET; THENCE S37°45'47"E, 8.20 FEET; THENCE S52°14'13"W, 145.00 FEET; THENCE N44°45'17"W, 36.34 FEET; THENCE N67°46'56"W, 84.85 FEET TO THE BOUNDARY OF LANDS DESCRIBED IN OFFICIAL RECORDS BOOK 2150, PAGE 462, PUBLIC RECORDS OF SUMTER COUNTY, FLORIDA; THENCE ALONG SAID BOUNDARY LINE RUN N22°46'56"W, 396.69 FEET; THENCE DEPARTING SAID BOUNDARY RUN N22°13'04"E, 84.85 FEET; THENCE N75°26'22"E, 91.34 FEET; THENCE N89°00'00"E, 154.70 FEET; THENCE N67°04'43"E, 77.40 FEET; THENCE N48°18'22"E, 100.00 FEET TO A POINT ON THE AFORESAID BOUNDARY OF VILLAGES OF SOUTHERN OAKS UNIT NO. 184; THENCE ALONG SAID BOUNDARY THE FOLLOWING TWO (2) COURSES: RUN S41°41'38"E, 1.12 FEET; THENCE N48°18'22"E, 170.00 FEET TO THE POINT OF BEGINNING.

CONTAINING 7.82 ACRES, MORE OR LESS.

VICINITY MAP



VICINITY MAP SCALE
1" = 1000'

34 LOTS – 1 TRACT

NOTICE: THIS PLAT, AS RECORDED IN ITS GRAPHIC FORM, IS THE OFFICIAL DEPICTION OF THE SUBDIVIDED LANDS DESCRIBED HEREIN AND WILL IN NO CIRCUMSTANCES BE SUPPLANTED IN AUTHORITY BY ANY OTHER GRAPHIC OR DIGITAL FORM OF THE PLAT. THERE MAY BE ADDITIONAL RESTRICTIONS THAT ARE NOT RECORDED ON THIS PLAT THAT MAY BE FOUND IN THE PUBLIC RECORDS OF THIS COUNTY.

NOTES:

1.) BEARINGS ARE BASED ON THE SOUTHERLY LINE OF LOT 1, VILLAGES OF SOUTHERN OAKS UNIT NO. 184 AS BEING N48°18'22"E.

2.) ALL PLATTED UTILITY EASEMENTS SHALL PROVIDE THAT SUCH EASEMENTS SHALL ALSO BE EASEMENTS FOR THE CONSTRUCTION, INSTALLATION, MAINTENANCE, AND OPERATION OF CABLE TELEVISION SERVICES; PROVIDED, HOWEVER, NO SUCH CONSTRUCTION, INSTALLATION, MAINTENANCE, AND OPERATION OF CABLE TELEVISION SERVICES SHALL INTERFERE WITH THE FACILITIES AND SERVICES OF AN ELECTRIC, TELEPHONE, GAS, OR OTHER PUBLIC UTILITY. IN THE EVENT A CABLE TELEVISION COMPANY DAMAGES THE FACILITIES OF A PUBLIC UTILITY, IT SHALL BE SOLELY RESPONSIBLE FOR THE DAMAGES. THIS SECTION SHALL NOT APPLY TO THOSE PRIVATE EASEMENTS GRANTED TO OR OBTAINED BY A PARTICULAR ELECTRIC, TELEPHONE, GAS, OR OTHER PUBLIC UTILITY. SUCH CONSTRUCTION, INSTALLATION, MAINTENANCE, AND OPERATION SHALL COMPLY WITH THE NATIONAL ELECTRICAL SAFETY CODE AS ADOPTED BY THE FLORIDA PUBLIC SERVICE COMMISSION.

3.) ALL DISTANCES SHOWN ARE IN FEET.

4.) WITH REFERENCE TO CURVILINEAR LOTS, RADIAL LINES HAVE BEEN DESIGNATED BY (R). ALL OTHER LINES ARE NON–RADIAL.

5.) LOT CORNERS WILL BE SET PRIOR TO THE TRANSFER OF ANY LOT OR PRIOR TO THE EXPIRATION OF THE BOND OR OTHER SURETY.

6.) PERMANENT CONTROL POINTS (P.C.P.'S) WILL BE SET WITHIN ONE YEAR OF THE DATE THIS PLAT WAS RECORDED OR PRIOR TO THE EXPIRATION OF THE BOND OR SURETY.

7.) ALL PERMANENT REFERENCE MONUMENTS (P.R.M.'S) HAVE BEEN SET IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER 177, FLORIDA STATUTES.

8.) TRACT "A" IS FOR ANY PURPOSE PERMITTED BY APPLICABLE LAW AND APPROVED IN WRITING BY DEVELOPER.

9.) THE DISTRICT FINDS IT IN THE PUBLIC INTEREST, AND HEREBY AGREES TO PROVIDE THE FOLLOWING SERVICES: (A) MAINTENANCE AND REPAIR OF AREAS OWNED BY THE DISTRICT OR DEDICATED TO THE USE AND ENJOYMENT OF THE RESIDENTS OF THE DISTRICT, THE SUBDIVISION, OR THE PUBLIC; (B) PAY FOR THE COST OF WATER AND SEWER PROVIDED BY GIBSON PLACE UTILITY COMPANY, LLC, OR ITS ASSIGNS, TOGETHER WITH THE COST OF GARBAGE, ELECTRICAL, LIGHTING, TELEPHONE, GAS AND OTHER NECESSARY UTILITY SERVICE FOR AREAS OWNED BY THE DISTRICT OR DEDICATED TO THE USE AND ENJOYMENT OF THE RESIDENTS OF THE DISTRICT, SUBDIVISION, OR THE PUBLIC; (C) MAINTENANCE AND REPAIR OF THE STORM WATER RUNOFF DRAINAGE SYSTEM INCLUDING DRAINAGE EASEMENTS AND DRAIN PIPES NOT MAINTAINED BY GIBSON PLACE WATER CONSERVATION AUTHORITY, LLC, OR ITS ASSIGNS, OR THE CITY OF WILDWOOD; AND (D) MAINTENANCE AND REPAIR OF THE LANDSCAPING AND IRRIGATION ON ISLANDS AND CUL-DE-SACS LOCATED WITHIN THE ROADWAYS, IF ANY; AND (E) MAINTENANCE AND REPAIR TO THE TOP AND EXTERIOR OF THE WALLS AND/OR FENCES LOCATED ON OR ADJACENT TO TRACT A OF THE SUBDIVISION.

10.) THE TITLE OPINION FOR THIS PLAT HAS BEEN SUBMITTED BY SEPARATE DOCUMENT.

VILLAGES OF SOUTHERN OAKS UNIT NO. 290 CONVEYANCE AND GRANT OF EASEMENTS TO VILLAGE COMMUNITY DEVELOPMENT DISTRICT NO. 15

ALL RIGHT, TITLE AND INTEREST OF THE VILLAGES DEVELOPMENT COMPANY, LLC, (THE DEVELOPER) IN TRACT "A" AND THE ROADWAYS SHOWN ON THIS PLAT OF VILLAGES OF SOUTHERN OAKS UNIT NO. 290, IS HEREBY SOLD, CONVEYED AND SET OVER TO VILLAGE COMMUNITY DEVELOPMENT DISTRICT NO. 15 (THE DISTRICT): (1) RESERVING UNTO THE DEVELOPER AND ITS ASSIGNS, AND EACH OF THEIR SUCCESSORS, TENANTS, INVITEES, AND GUESTS PERPETUAL EASEMENTS FOR INGRESS AND EGRESS AND THE CONSTRUCTION, INSTALLATION, MAINTENANCE AND OPERATION OF UNDERGROUND ELECTRIC, TELEPHONE, CABLE, GAS AND OTHER UTILITIES, IRRIGATION FACILITIES, POTABLE WATER, SANITARY SEWER AND STORM WATER FACILITIES, LANDSCAPED AREAS, FENCES, WALLS, ENTRY FACILITIES, INCLUDING ELECTRONIC CARD READING EQUIPMENT, GOLF CART AND PEDESTRIAN PATHS, SIGNAGE, ENJOYMENT IMPROVEMENTS AND GOLF CART AND PEDESTRIAN BRIDGES; AND (2) SUBJECT TO THE RESTRICTION THAT ALL ADDITIONS OF, REMOVAL OF, AND CHANGES TO IMPROVEMENTS LOCATED ON SUCH TRACTS AND ROADWAYS (INCLUDING, WITHOUT LIMITATION, ALL THOSE IMPROVEMENTS DESCRIBED ABOVE), MUST FIRST BE APPROVED IN ADVANCE BY THE DEVELOPER.

THE DEVELOPER ALSO GRANTS TO THE DISTRICT NON–EXCLUSIVE, PERPETUAL EASEMENTS OVER, ACROSS AND UPON ANY SPECIAL EASEMENTS SHOWN HEREON FOR THE PURPOSE OF MAINTAINING DRAINAGE FACILITIES LOCATED THEREON.

THE DISTRICT, BY EXECUTING THE DEDICATION CONTAINED ON THIS PLAT, ACCEPTS THIS CONVEYANCE AND AGREES TO MAINTAIN THE TRACTS LISTED ABOVE, INCLUDING ALL IMPROVEMENTS CONSTRUCTED THEREON AND DRAINAGE FACILITIES LOCATED WITHIN ANY SPECIAL EASEMENTS PERPETUALLY, AND MAINTAIN THE ROADWAYS AND DRAINAGE FEATURES LYING WITHIN SUCH ROADWAYS FOR TWO YEARS AFTER THE CITY ENGINEER HAS CERTIFIED THE CONSTRUCTION HAS BEEN COMPLETED.

WITNESSES:

SIGNATURE

PRINT NAME

7580 MIDDLETON DRIVE
MIDDLETON, FLORIDA 34762
MAILING ADDRESS

SIGNATURE

PRINT NAME

4450 NE 83RD ROAD
WILDWOOD, FLORIDA 34785
MAILING ADDRESS

THE VILLAGES DEVELOPMENT COMPANY, LLC,
A FLORIDA LIMITED LIABILITY COMPANY
BY: VDC MANAGER, LLC,
A FLORIDA LIMITED LIABILITY COMPANY,
ITS MANAGER

BY: _____
MARTIN L. DZURO, MANAGER

STATE OF FLORIDA
COUNTY OF SUMTER

THE FOREGOING INSTRUMENT WAS ACKNOWLEDGED BEFORE ME, BY MEANS OF ☐ PHYSICAL PRESENCE OR ☐ ONLINE NOTARIZATION, THIS ____ DAY OF _____, 20____, BY MARTIN L. DZURO, AS MANAGER OF AND ON BEHALF OF VDC MANAGER, LLC, A FLORIDA LIMITED LIABILITY COMPANY, THE MANAGER OF THE VILLAGES DEVELOPMENT COMPANY, LLC, A FLORIDA LIMITED LIABILITY COMPANY, FOR THE PURPOSES EXPRESSED HEREIN, WHO IS PERSONALLY KNOWN TO ME AND WHO DID NOT TAKE AN OATH.

NOTARY PUBLIC – STATE OF FLORIDA
PRINT NAME: _____
COMMISSION NO.: _____
COMMISSION EXPIRES: _____

SEAL

CERTIFICATE OF APPROVAL BY CITY OFFICIALS

THIS CERTIFIES THAT THIS PLAT HAS BEEN REVIEWED FOR CONFORMITY TO F.S. CHAPTER 177, AS CERTIFIED BY THE REVIEWING SURVEYOR SHOWN BELOW.

MELANIE D. STRICKLAND
DEVELOPMENT SERVICES DIRECTOR

THIS CERTIFIES THAT THIS PLAT WAS PRESENTED TO THE COMMISSION OF THE CITY OF WILDWOOD, SUMTER COUNTY, FLORIDA, AND WAS APPROVED BY THE COMMISSION FOR RECORD ON THIS ____ DAY OF _____, 20____.

JESSICA BARNES
CITY CLERK

ED WOLF
MAYOR

THIS CERTIFIES THAT THIS PLAT WAS PRESENTED TO THE ATTORNEY FOR THE CITY OF WILDWOOD, SUMTER COUNTY, FLORIDA, AND APPROVED BY HIM OR HER AS TO FORM AND LEGALITY ON THIS ____ DAY OF _____, 20____.

PRINT NAME
CITY OF WILDWOOD, ATTORNEY

SIGNATURE
CITY OF WILDWOOD, ATTORNEY

DEVELOPMENT SERVICES DIRECTOR
MELANIE D. STRICKLAND

PUBLIC WORKS DIRECTOR
JEREMY HOCKENBURY

PRINT NAME
CITY OF WILDWOOD, ENGINEER

SIGNATURE
CITY OF WILDWOOD, ENGINEER

REVIEWING SURVEYOR'S CERTIFICATE

PURSUANT TO SECTION 177.081, FLORIDA STATUTES, I HEREBY CERTIFY THAT I HAVE PERFORMED A REVIEW OF THIS PLAT FOR CONFORMITY TO CHAPTER 177, FLORIDA STATUTES AND THAT SAID PLAT COMPLIES WITH THE TECHNICAL REQUIREMENTS OF THAT CHAPTER; PROVIDED, HOWEVER, THAT MY REVIEW AND CERTIFICATION DOES NOT INCLUDE FIELD VERIFICATION OF ANY POINTS OR MEASUREMENTS SHOWN ON THIS PLAT.

SIGNATURE

DATE

RONALD W. HERR, P.L.S.
WADE SURVEYING, INC.

4907
REGISTRATION NO.

SEAL

DEDICATION

KNOW ALL MEN BY THESE PRESENTS, THAT THE UNDERSIGNED, THE VILLAGES DEVELOPMENT COMPANY, LLC (THE DEVELOPER) HAS CAUSED TO BE MADE THIS PLAT, VILLAGES OF SOUTHERN OAKS UNIT NO. 290, A SUBDIVISION OF LAND HEREIN DESCRIBED AND JOINS WITH VILLAGE COMMUNITY DEVELOPMENT DISTRICT NO. 15 (THE DISTRICT) TO HEREBY DEDICATE THE ROADWAYS SHOWN HEREON TO THE CITY OF WILDWOOD AND THE PERPETUAL USE OF THE PUBLIC; AND DEDICATES TRACT "A" TO VILLAGE COMMUNITY DEVELOPMENT DISTRICT NO. 15.

WITNESSES:

(1) _____
SIGNATURE

PRINT NAME

7580 MIDDLETON DRIVE
MIDDLETON, FLORIDA 34762
MAILING ADDRESS

(2) _____
SIGNATURE

PRINT NAME

4450 NE 83RD ROAD
WILDWOOD, FLORIDA 34785
MAILING ADDRESS

THE VILLAGES DEVELOPMENT COMPANY, LLC,
A FLORIDA LIMITED LIABILITY COMPANY

BY: VDC MANAGER, LLC,
A FLORIDA LIMITED LIABILITY COMPANY,
ITS MANAGER

BY: _____
MARTIN L. DZURO, MANAGER

WITNESSES:

(1) _____
SIGNATURE

PRINT NAME

3601 KIESSEL ROAD
THE VILLAGES, FLORIDA 32163
MAILING ADDRESS

(2) _____
SIGNATURE

PRINT NAME

4450 NE 83RD ROAD
WILDWOOD, FLORIDA 34785
MAILING ADDRESS

VILLAGE COMMUNITY DEVELOPMENT DISTRICT NO. 15

BY: _____
SPENCER R. NOVAK, CHAIR

STATE OF FLORIDA
COUNTY OF SUMTER

THE FOREGOING INSTRUMENT WAS ACKNOWLEDGED BEFORE ME, BY MEANS OF ☐ PHYSICAL PRESENCE OR ☐ ONLINE NOTARIZATION, THIS ____ DAY OF _____, 20____, BY MARTIN L. DZURO, AS MANAGER OF AND ON BEHALF OF VDC MANAGER, LLC, A FLORIDA LIMITED LIABILITY COMPANY, THE MANAGER OF THE VILLAGES DEVELOPMENT COMPANY, LLC, A FLORIDA LIMITED LIABILITY COMPANY, FOR THE PURPOSES EXPRESSED HEREIN, WHO IS PERSONALLY KNOWN TO ME AND WHO DID NOT TAKE AN OATH.

NOTARY PUBLIC – STATE OF FLORIDA
PRINT NAME: _____
COMMISSION NO.: _____
COMMISSION EXPIRES: _____

SEAL

STATE OF FLORIDA
COUNTY OF SUMTER

THE FOREGOING INSTRUMENT WAS ACKNOWLEDGED BEFORE ME, BY MEANS OF ☐ PHYSICAL PRESENCE OR ☐ ONLINE NOTARIZATION, THIS ____ DAY OF _____, 20____, BY SPENCER R. NOVAK, THE CHAIR OF VILLAGE COMMUNITY DEVELOPMENT DISTRICT NO. 15, ON BEHALF OF THE DISTRICT, WHO IS PERSONALLY KNOWN TO ME AND WHO DID NOT TAKE AN OATH.

NOTARY PUBLIC – STATE OF FLORIDA
PRINT NAME: _____
COMMISSION NO.: _____
COMMISSION EXPIRES: _____

SEAL

CERTIFICATE OF SURVEYOR

I HEREBY CERTIFY THAT THIS PLAT OF VILLAGES OF SOUTHERN OAKS UNIT NO. 290, WAS PREPARED UNDER MY DIRECTION AND SUPERVISION; AND THAT THE PERMANENT REFERENCE MONUMENTS AS SHOWN THEREON WERE PLACED ON THE ____ DAY OF _____, 20____; I FURTHER CERTIFY THAT THIS PLAT COMPLIES WITH THE REQUIREMENTS OF CHAPTER 177, FLORIDA STATUTES.

CLYMER FARNER BARLEY SURVEYING, LLC
4450 N.E. 83RD ROAD
WILDWOOD, FLORIDA 34785
LICENSED BUSINESS NO. 8498

SEAL

KAYE M. JAMESON
REGISTRATION NO. 5912

DATE

CERTIFICATE OF CLERK

I HEREBY CERTIFY THAT I HAVE EXAMINED THIS PLAT AND FIND THAT IT COMPLIES IN FORM WITH ALL THE REQUIREMENTS OF CHAPTER 177, FLORIDA STATUTES AND WAS FILED FOR RECORD ON _____, 20____, AT _____ FILE NUMBER _____.

PLAT BOOK _____ PAGE _____.

CLERK OF THE COURT IN AND
FOR SUMTER COUNTY, FLORIDA

SEAL

PRINT NAME
DEPUTY CLERK

SIGNATURE
DEPUTY CLERK

PREPARED BY:
CFB SURVEYING
CLYMER FARNER BARLEY
4450 NE 83RD ROAD - WILDWOOD, FL 34785
(352) 748-3126 LB#498

VILLAGES OF SOUTHERN OAKS UNIT NO. 290

SECTION 3, TOWNSHIP 20 SOUTH, RANGE 23 EAST,
CITY OF WILDWOOD, SUMTER COUNTY, FLORIDA.

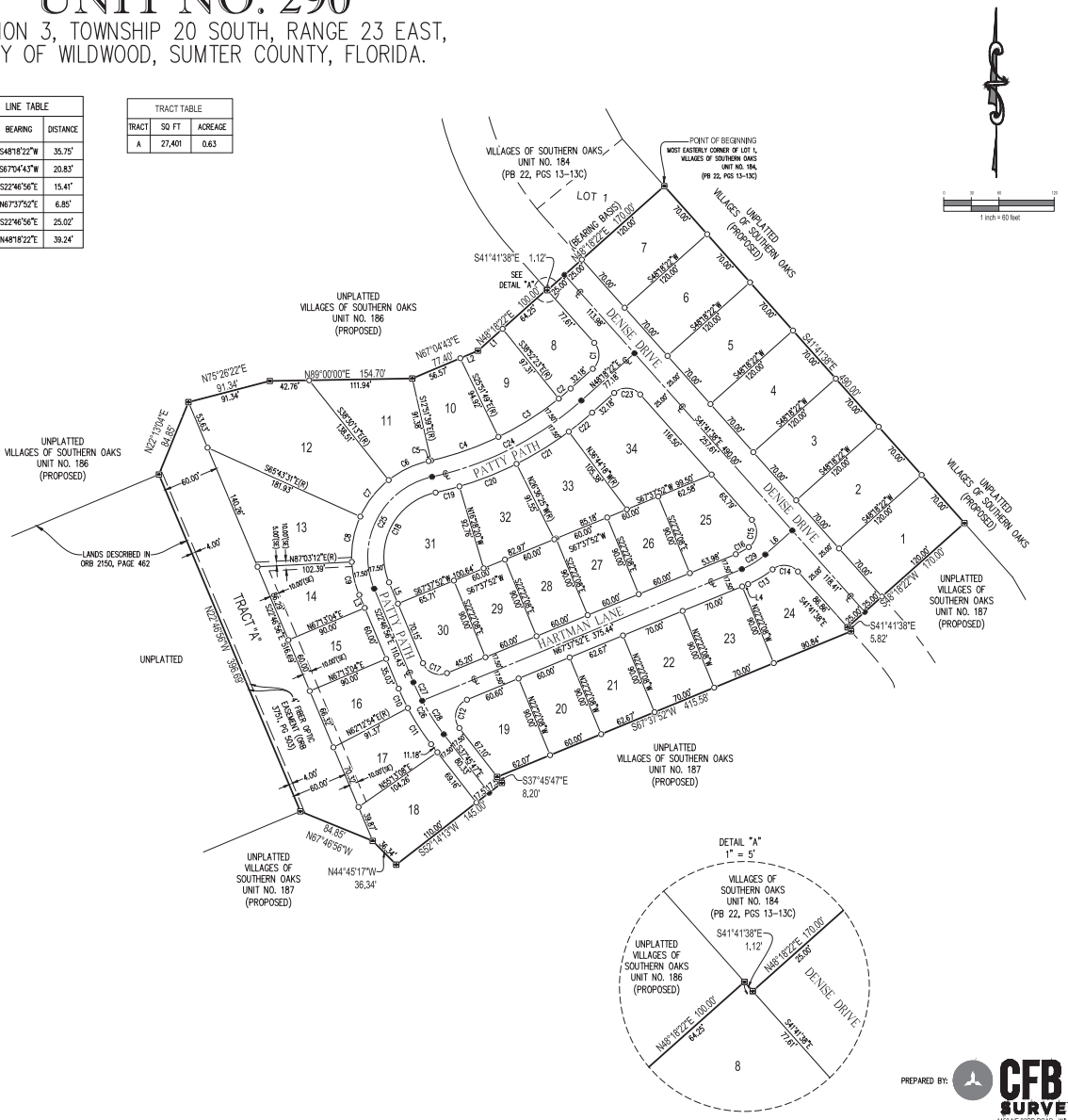
SHEET 2 OF 2

PLAT BOOK _____
PAGE _____

CURVE TABLE					
CURVE TAG	RADIUS	CENTRAL ANGLE	ARC LENGTH	CHORD BEARING	CHORD LENGTH
C1	20.00'	90°00'00"	31.42'	N03°18'22"E	28.28'
C2	342.50'	2°49'16"	16.86'	N49°42'59"E	16.86'
C3	342.50'	13°00'34"	77.77'	N57°37'54"E	77.60'
C4	342.50'	13°00'10"	77.73'	N70°38'16"E	77.56'
C5	342.50'	0°26'54"	2.68'	N77°21'48"E	2.68'
C6	106.50'	26°05'29"	48.50'	S64°32'31"W	48.08'
C7	106.50'	27°13'17"	50.60'	S37°53'08"W	50.12'
C8	106.50'	27°13'17"	50.60'	S10°39'50"W	50.12'
C9	106.50'	19°50'08"	36.87'	S12°51'52"E	36.69'
C10	267.50'	5°00'10"	23.36'	S25°17'01"E	23.35'
C11	267.50'	9°58'41"	46.58'	S32°46'27"E	46.53'
C12	20.00'	105°23'39"	36.79'	S14°56'03"W	31.82'
C13	106.50'	16°42'51"	31.07'	N59°16'27"E	30.96'
C14	20.00'	87°23'21"	30.50'	N85°23'19"W	27.63'
C15	20.00'	96°25'28"	33.66'	N06°31'06"E	29.82'
C16	71.50'	12°54'03"	16.10'	N61°10'51"E	16.06'
C17	20.00'	89°35'11"	31.27'	S67°34'32"E	28.18'
C18	71.50'	100°22'12"	125.25'	S27°24'09"W	109.84'
C19	377.50'	4°03'35"	26.75'	N75°33'28"E	26.74'
C20	377.50'	10°08'05"	66.77'	N68°27'38"E	66.69'
C21	377.50'	10°07'54"	66.75'	N58°19'39"E	66.67'
C22	377.50'	4°57'20"	32.65'	N50°47'02"E	32.64'
C23	20.00'	90°00'00"	31.42'	N86°41'38"W	28.28'
C24	360.00'	29°16'54"	183.98'	N62°56'48"E	181.99'
C25	89.00'	100°22'12"	155.91'	S27°24'09"W	136.72'
C26	250.00'	14°58'51"	65.37'	S30°16'22"E	65.18'
C27	250.00'	5°02'28"	22.00'	S25°18'11"E	21.99'
C28	250.00'	9°56'22"	43.37'	S32°47'36"E	43.31'
C29	89.00'	19°19'31"	30.02'	N57°58'07"E	29.88'

LINE TABLE		
LINE TAG	BEARING	DISTANCE
L1	S48°18'22"W	35.75'
L2	S67°04'43"W	20.83'
L3	S22°46'56"E	15.41'
L4	N67°37'52"E	6.85'
L5	S22°46'56"E	25.02'
L6	N48°18'22"E	39.24'

TRACT TABLE		
TRACT	SQ FT	ACREAGE
A	27,401	0.63



LEGEND

- ■ INDICATES 4" X 4" X 24" CONCRETE PERMANENT REFERENCE MONUMENT (P.R.M.) FOUND AS NOTED.
- ⊡ INDICATES 4" X 4" X 24" CONCRETE PERMANENT REFERENCE MONUMENT (P.R.M.) OR 5/8" IRON PIN AND CAP SET LB #8498
- ● INDICATES P.K. NAIL AND DISK PERMANENT CONTROL POINT (P.C.P.) LB #8498 TO BE SET WITHIN ONE YEAR OF THE DATE THIS PLAT IS RECORDED.
- ○ INDICATES 5/8" IRON PIN AND CAP TO BE SET IN ACCORDANCE WITH SECTION 177.091(9) FLORIDA STATUTES. (SEE NOTE #5.)
- C9 INDICATES CURVE NUMBER IN CURVE TABLE
- L9 INDICATES LINE NUMBER IN LINE TABLE
- ℄ INDICATES CENTERLINE
- Δ INDICATES DELTA (CENTRAL ANGLE OF CURVE)
- CB INDICATES CHORD BEARING
- CH INDICATES CHORD DISTANCE
- L INDICATES ARC LENGTH
- ORB INDICATES OFFICIAL RECORDS BOOK
- PC INDICATES POINT OF CURVATURE
- POC INDICATES POINT ON CURVE
- R INDICATES RADIUS LENGTH
- (R) INDICATES RADIAL LINE
- PCC INDICATES POINT OF COMPOUND CURVATURE
- PRC INDICATES POINT OF REVERSE CURVATURE
- PT INDICATES POINT OF TANGENCY
- DRA INDICATES DRAINAGE RETENTION AREA FOR STORMWATER MANAGEMENT INCLUDING CONVEYANCING PIPES
- GFE INDICATES GATE FACILITIES EASEMENT (RESERVED BY THE DEVELOPER AND ITS ASSIGNS)
- SE INDICATES SPECIAL EASEMENT RESERVED BY DEVELOPER AND ITS ASSIGNS, FOR LANDSCAPING AND/OR THE CONSTRUCTION, INSTALLATION, MAINTENANCE AND OPERATION OF WATER, SANITARY SEWER, ELECTRIC, TELEPHONE, GAS OR OTHER UTILITIES AND/OR DRAINAGE FACILITIES AND/OR WALL FENCING AND/OR GOLF CART PATHS. DEVELOPER CONTEMPLATES PUTTING H.V.A.C. AND SIMILAR EQUIPMENT WITHIN THE EASEMENT AREA. UTILITY PROVIDERS UTILIZING SUCH EASEMENT AREA COVENANT, AS A CONDITION OF THE RIGHT TO USE SUCH EASEMENT, NOT TO INTERFERE OR DISTURB SUCH EQUIPMENT INSTALLED WITHIN THE EASEMENT AREA.
- SME INDICATES SIGN MAINTENANCE EASEMENT RESERVED BY DEVELOPER AND ITS ASSIGNS FOR INSTALLATION AND MAINTENANCE OF SIGNAGE.

- LB INDICATES LICENSED BUSINESS
- NO. INDICATES NUMBER
- PB INDICATES PLAT BOOK
- PG INDICATES PAGE
- PGS INDICATES PAGES
- SQ FT INDICATES SQUARE FEET
- R/W INDICATES RIGHT-OF-WAY

PREPARED BY: CFB | CLYMER FARMER BARLEY SURVEYING
4450 NE 83RD ROAD - WILDWOOD, FL 34785
(352) 748-3126 LB8498

CITY COMMISSION OF THE CITY OF WILDWOOD

EXECUTIVE SUMMARY

SUBJECT: **PLAT 2411-006 VOSO Unit 175 Final Plat**

REQUESTED ACTION: Staff recommends approval.

CONTRACT: Vendor/Entity:

Effective Date: Termination Date:

Managing Division/Department:

BUDGET IMPACT:

HISTORY/FACTS/ISSUES:

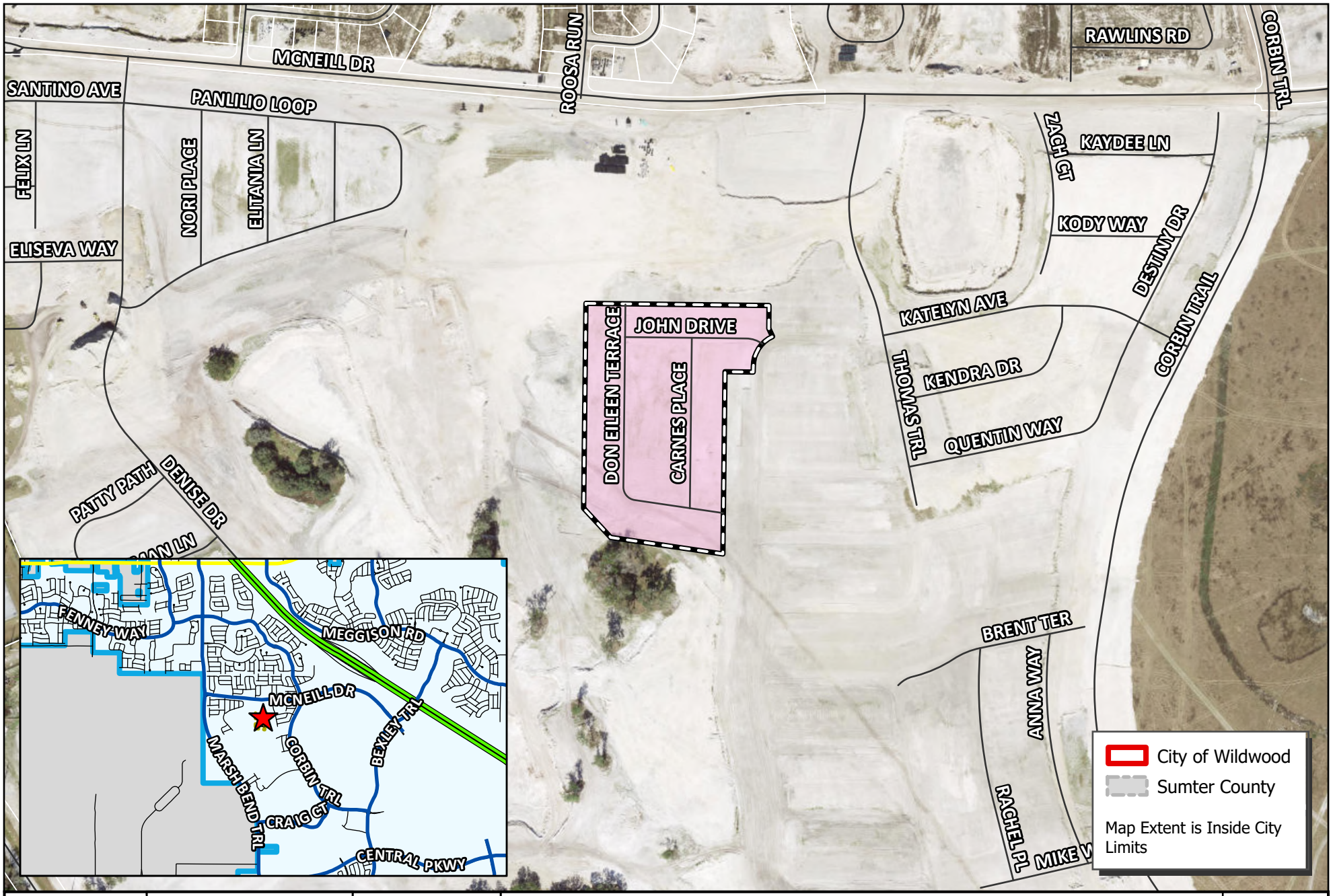
Case Number	PLAT 2411-006 VOSO Unit 175 Final Plat
Owner/Applicant(s)	The Villages Development Company, LLC
Acreage	8.52 +/-
Property Location	The subject property is generally located approximately 0.5 miles west of Marsh Bend Trail, 0.15 miles south of McNeill Drive, and 0.3 miles west of Corbin Trail.
Parcel	K03-005

The applicant is seeking approval from the City Commission for the VOSO Unit 175 Final Plat, a subdivision consisting of 46 single-family dwelling units and 4 tracts, as per the attached plans.

Plat 2411-006 meets the criteria set forth in the F.S. 177, the Villages of Southern Oaks 163 Agreement, the Land Development Regulations, and is consistent with the goals, objectives, and policies of the 2050 Comprehensive Plan.



Date: 12/13/2024
McKenna Page
Planner I, Development Services



WILDWOOD FLORIDA EST. 1877

CITY OF WILDWOOD
100 North Main Street
Wildwood, FL 34785
Phone: (352) 330-1330
www.wildwood-fl.gov

N

0 0.01 0.02 0.03 0.04 0.06
Miles

PLAT 2411-006

VOSO - UNIT 175 FINAL PLAT

PARCEL K03-005

MAP 1B

LOCATION MAP

NOV 2024

COVENANTS, CONDITIONS, RESTRICTIONS AND EASEMENTS FOR THIS SUBDIVISION ARE RECORDED IN THE PUBLIC RECORDS OF SUMTER COUNTY, FLORIDA. OR BOOK _____, PAGE _____.

VILLAGES OF SOUTHERN OAKS UNIT NO. 175

SECTION 3, TOWNSHIP 20 SOUTH, RANGE 23 EAST,
CITY OF WILDWOOD, SUMTER COUNTY, FLORIDA.

PLAT BOOK _____
PAGE _____

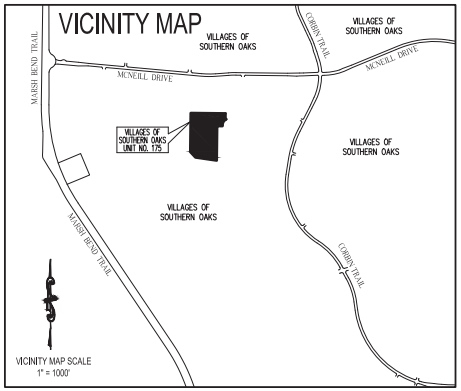
LEGAL DESCRIPTION

A PARCEL OF LAND LYING WITHIN SECTION 3, TOWNSHIP 20 SOUTH, RANGE 23 EAST, SUMTER COUNTY, FLORIDA, DESCRIBED AS FOLLOWS:

COMMENCE AT THE MOST SOUTHERLY CORNER OF LOT 7, VILLAGES OF SOUTHERN OAKS UNIT NO. 144, ACCORDING TO THE PLAT THEREOF AS RECORDED IN PLAT BOOK 21, PAGES 22, 22A THROUGH 22D, PUBLIC RECORDS OF SUMTER COUNTY, FLORIDA; THENCE ALONG THE EAST LINE OF TRACT "F" OF SAID PLAT AND THE SOUTHERLY EXTENSION THEREOF RUN S28°44'02"W, 95.99 FEET TO THE SOUTHERLY RIGHT OF WAY LINE OF MCNEILL DRIVE PER THE PLAT OF VILLAGES OF SOUTHERN OAKS UNIT NO. 146, AS RECORDED IN PLAT BOOK 21, PAGES 29, 29A THROUGH 29D, PUBLIC RECORDS OF SUMTER COUNTY, FLORIDA; THENCE ALONG SAID SOUTHERLY RIGHT OF WAY LINE OF VILLAGES OF SOUTHERN OAKS UNIT NO. 146 RUN S84°48'37"E, 638.05 FEET; THENCE DEPARTING SAID SOUTHERLY RIGHT OF WAY LINE RUN S00°39'41"W, 644.38 FEET TO THE POINT OF BEGINNING; THENCE S89°20'19"E, 590.54 FEET; THENCE S00°39'41"W, 74.25 FEET; THENCE S24°42'24"E, 28.80 FEET TO A POINT ON THE ARC OF A NON-TANGENT CURVE CONCAVE SOUTHEASTERLY, HAVING A RADIUS OF 106.50 FEET AND A CHORD BEARING AND DISTANCE OF S32°58'39"W, 113.87 FEET TO WHICH A RADIAL LINE BEARS N24°42'24"W; THENCE SOUTHWESTERLY ALONG THE ARC OF SAID CURVE, THROUGH A CENTRAL ANGLE OF 64°37'55", AN ARC DISTANCE OF 120.14 FEET TO THE POINT OF TANGENCY; THENCE S00°39'41"W, 19.00 FEET; THENCE N89°20'19"W, 91.00 FEET; THENCE S00°39'41"W, 587.90 FEET; THENCE N81°37'49"W, 365.55 FEET; THENCE N42°56'26"W, 128.69 FEET; THENCE N00°39'41"E, 661.17 FEET TO THE POINT OF BEGINNING.

CONTAINING 8.52 ACRES, MORE OR LESS.

VICINITY MAP



46 LOTS – 4 TRACTS

NOTICE: THIS PLAT, AS RECORDED IN ITS GRAPHIC FORM, IS THE OFFICIAL DEPICTION OF THE SUBDIVIDED LANDS DESCRIBED HEREIN AND WILL IN NO CIRCUMSTANCES BE SUPPLANTED IN AUTHORITY BY ANY OTHER GRAPHIC OR DIGITAL FORM OF THE PLAT. THERE MAY BE ADDITIONAL RESTRICTIONS THAT ARE NOT RECORDED ON THIS PLAT THAT MAY BE FOUND IN THE PUBLIC RECORDS OF THIS COUNTY.

NOTES:

1.) BEARINGS ARE BASED ON THE SOUTH RIGHT OF WAY LINE OF MCNEILL DRIVE, VILLAGES OF SOUTHERN OAKS UNIT NO. 146 AS BEING S84°48'37"E.

2.) ALL PLATTED UTILITY EASEMENTS SHALL PROVIDE THAT SUCH EASEMENTS SHALL ALSO BE EASEMENTS FOR THE CONSTRUCTION, INSTALLATION, MAINTENANCE, AND OPERATION OF CABLE TELEVISION SERVICES. PROVIDED, HOWEVER, NO SUCH CONSTRUCTION, INSTALLATION, MAINTENANCE, AND OPERATION OF CABLE TELEVISION SERVICES SHALL INTERFERE WITH THE FACILITIES AND SERVICES OF AN ELECTRIC, TELEPHONE, GAS, OR OTHER PUBLIC UTILITY. IN THE EVENT A CABLE TELEVISION COMPANY DAMAGES THE FACILITIES OF A PUBLIC UTILITY, IT SHALL BE SOLELY RESPONSIBLE FOR THE DAMAGES. THIS SECTION SHALL NOT APPLY TO THOSE PRIVATE EASEMENTS GRANTED TO OR OBTAINED BY A PARTICULAR ELECTRIC, TELEPHONE, GAS, OR OTHER PUBLIC UTILITY. SUCH CONSTRUCTION, INSTALLATION, MAINTENANCE, AND OPERATION SHALL COMPLY WITH THE NATIONAL ELECTRICAL SAFETY CODE AS ADOPTED BY THE FLORIDA PUBLIC SERVICE COMMISSION.

3.) ALL DISTANCES SHOWN ARE IN FEET.

4.) WITH REFERENCE TO CURVILINEAR LOTS, RADIAL LINES HAVE BEEN DESIGNATED BY (R). ALL OTHER LINES ARE NON-RADIAL.

5.) LOT CORNERS WILL BE SET PRIOR TO THE TRANSFER OF ANY LOT OR PRIOR TO THE EXPIRATION OF THE BOND OR OTHER SURETY.

6.) PERMANENT CONTROL POINTS (P.C.P.'S) WILL BE SET WITHIN ONE YEAR OF THE DATE THIS PLAT WAS RECORDED OR PRIOR TO THE EXPIRATION OF THE BOND OR SURETY.

7.) ALL PERMANENT REFERENCE MONUMENTS (P.R.M.'S) HAVE BEEN SET IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER 177, FLORIDA STATUTES.

8.) TRACTS "A" AND "B" ARE FOR ANY PURPOSE PERMITTED BY APPLICABLE LAW AND APPROVED IN WRITING BY DEVELOPER.

9.) TRACTS "C" AND "D" ARE FOR ANY PURPOSE PERMITTED BY APPLICABLE LAW AND APPROVED IN WRITING BY DEVELOPER. NO INGRESS OR EGRESS IS PERMITTED WITHOUT THE DEVELOPER'S CONSENT.

10.) THE DISTRICT FINDS IT IN THE PUBLIC INTEREST, AND HEREBY AGREES TO PROVIDE THE FOLLOWING SERVICES: (A) MAINTENANCE AND REPAIR OF AREAS OWNED BY THE DISTRICT OR DEDICATED TO THE USE AND ENJOYMENT OF THE RESIDENTS OF THE DISTRICT, THE SUBDIVISION, OR THE PUBLIC; (B) PAY FOR THE COST OF WATER AND SEWER PROVIDED BY GIBSON PLACE UTILITY COMPANY, LLC, OR ITS ASSIGNS, TOGETHER WITH THE COST OF GARBAGE, ELECTRICAL, LIGHTING, TELEPHONE, GAS AND OTHER NECESSARY UTILITY SERVICE FOR AREAS OWNED BY THE DISTRICT OR DEDICATED TO THE USE AND ENJOYMENT OF THE RESIDENTS OF THE DISTRICT, SUBDIVISION, OR THE PUBLIC; (C) MAINTENANCE AND REPAIR OF THE STORM WATER RUNOFF DRAINAGE SYSTEM INCLUDING DRAINAGE EASEMENTS AND DRAIN PIPES NOT MAINTAINED BY GIBSON PLACE WATER CONSERVATION AUTHORITY, LLC, OR ITS ASSIGNS, OR THE CITY OF WILDWOOD; AND (D) MAINTENANCE AND REPAIR OF THE LANDSCAPING AND IRRIGATION ON ISLANDS AND CUL-DE-SACS LOCATED WITHIN THE ROADWAYS, IF ANY; (E) MAINTENANCE AND REPAIR TO THE TOP AND EXTERIOR OF THE WALLS AND/OR FENCES LOCATED ON OR ADJACENT TO TRACTS A AND B OF THE SUBDIVISION; AND (F) MAINTENANCE AND REPAIR, INCLUDING STRUCTURAL REPAIR, TO THE WALLS AND/OR FENCES LOCATED ON OR ADJACENT TO TRACTS C AND D OF THE SUBDIVISION.

11.) THE TITLE OPINION FOR THIS PLAT HAS BEEN SUBMITTED BY SEPARATE DOCUMENT.

VILLAGES OF SOUTHERN OAKS UNIT NO. 175 CONVEYANCE AND GRANT OF EASEMENTS TO VILLAGE COMMUNITY DEVELOPMENT DISTRICT NO. 15

ALL RIGHT, TITLE AND INTEREST OF THE VILLAGES DEVELOPMENT COMPANY, LLC, (THE DEVELOPER) IN TRACTS "A", "B", "C" AND "D" AND THE ROADWAYS SHOWN ON THIS PLAT OF VILLAGES OF SOUTHERN OAKS UNIT NO. 175, IS HEREBY SOLD, CONVEYED AND SET OVER TO VILLAGE COMMUNITY DEVELOPMENT DISTRICT NO. 15 (THE DISTRICT): (1) RESERVING UNTO THE DEVELOPER AND ITS ASSIGNS, AND EACH OF THEIR SUCCESSORS, TENANTS, INVITEES, AND GUESTS PERPETUAL EASEMENTS FOR INGRESS AND EGRESS AND THE CONSTRUCTION, INSTALLATION, MAINTENANCE AND OPERATION OF UNDERGROUND ELECTRIC, TELEPHONE, CABLE, GAS AND OTHER UTILITIES, IRRIGATION FACILITIES, POTABLE WATER, SANITARY SEWER AND STORM WATER FACILITIES, LANDSCAPED AREAS, FENCES, WALLS, ENTRY FACILITIES, INCLUDING ELECTRONIC CARD READING EQUIPMENT, GOLF CART AND PEDESTRIAN PATHS, SIGNAGE, ENJOYMENT IMPROVEMENTS AND GOLF CART AND PEDESTRIAN BRIDGES; AND (2) SUBJECT TO THE RESTRICTION THAT ALL ADDITIONS OF, REMOVAL OF, AND CHANGES TO IMPROVEMENTS LOCATED ON SUCH TRACTS AND ROADWAYS (INCLUDING, WITHOUT LIMITATION, ALL THOSE IMPROVEMENTS DESCRIBED ABOVE), MUST FIRST BE APPROVED IN ADVANCE BY THE DEVELOPER.

THE DEVELOPER ALSO GRANTS TO THE DISTRICT NON-EXCLUSIVE, PERPETUAL EASEMENTS OVER, ACROSS AND UPON ANY SPECIAL EASEMENTS SHOWN HEREON FOR THE PURPOSE OF MAINTAINING DRAINAGE FACILITIES LOCATED THEREON.

THE DISTRICT, BY EXECUTING THE DEDICATION CONTAINED ON THIS PLAT, ACCEPTS THIS CONVEYANCE AND AGREES TO MAINTAIN THE TRACTS LISTED ABOVE, INCLUDING ALL IMPROVEMENTS CONSTRUCTED THEREON AND DRAINAGE FACILITIES LOCATED WITHIN ANY SPECIAL EASEMENTS PERPETUALLY, AND MAINTAIN THE ROADWAYS AND DRAINAGE FEATURES LYING WITHIN SUCH ROADWAYS FOR TWO YEARS AFTER THE CITY ENGINEER HAS CERTIFIED THE CONSTRUCTION HAS BEEN COMPLETED.

WITNESSES:

SIGNATURE

PRINT NAME

7580 MIDDLETON DRIVE
MIDDLETON, FLORIDA 34762
MAILING ADDRESS

SIGNATURE

PRINT NAME

4450 NE 83RD ROAD
WILDWOOD, FLORIDA 34785
MAILING ADDRESS

THE VILLAGES DEVELOPMENT COMPANY, LLC,
A FLORIDA LIMITED LIABILITY COMPANY
BY: VDC MANAGER, LLC,
A FLORIDA LIMITED LIABILITY COMPANY,
ITS MANAGER

BY: _____
MARTIN L. DZURO, MANAGER

STATE OF FLORIDA
COUNTY OF SUMTER

THE FOREGOING INSTRUMENT WAS ACKNOWLEDGED BEFORE ME, BY MEANS OF ☐ PHYSICAL PRESENCE OR ☐ ONLINE NOTARIZATION, THIS ____ DAY OF _____, 20____, BY MARTIN L. DZURO, AS MANAGER OF AND ON BEHALF OF VDC MANAGER, LLC, A FLORIDA LIMITED LIABILITY COMPANY, THE MANAGER OF THE VILLAGES DEVELOPMENT COMPANY, LLC, A FLORIDA LIMITED LIABILITY COMPANY, FOR THE PURPOSES EXPRESSED HEREIN, WHO IS PERSONALLY KNOWN TO ME AND WHO DID NOT TAKE AN OATH.

NOTARY PUBLIC – STATE OF FLORIDA
PRINT NAME: _____
COMMISSION NO.: _____
COMMISSION EXPIRES: _____

SEAL

CERTIFICATE OF APPROVAL BY CITY OFFICIALS

THIS CERTIFIES THAT THIS PLAT HAS BEEN REVIEWED FOR CONFORMITY TO F.S. CHAPTER 177, AS CERTIFIED BY THE REVIEWING SURVEYOR SHOWN BELOW.

MELANIE D. STRICKLAND
DEVELOPMENT SERVICES DIRECTOR

THIS CERTIFIES THAT THIS PLAT WAS PRESENTED TO THE COMMISSION OF THE CITY OF WILDWOOD, SUMTER COUNTY, FLORIDA, AND WAS APPROVED BY THE COMMISSION FOR RECORD ON THIS ____ DAY OF _____, 20____.

JESSICA BARNES
CITY CLERK

ED WOLF
MAYOR

THIS CERTIFIES THAT THIS PLAT WAS PRESENTED TO THE ATTORNEY FOR THE CITY OF WILDWOOD, SUMTER COUNTY, FLORIDA, AND APPROVED BY HIM OR HER AS TO FORM AND LEGALITY ON THIS ____ DAY OF _____, 20____.

PRINT NAME
CITY OF WILDWOOD, ATTORNEY

SIGNATURE
CITY OF WILDWOOD, ATTORNEY

DEVELOPMENT SERVICES DIRECTOR
MELANIE D. STRICKLAND

PUBLIC WORKS DIRECTOR
JEREMY HOCKENBURY

PRINT NAME
CITY OF WILDWOOD, ENGINEER

SIGNATURE
CITY OF WILDWOOD, ENGINEER

REVIEWING SURVEYOR'S CERTIFICATE

PURSUANT TO SECTION 177.081, FLORIDA STATUTES, I HEREBY CERTIFY THAT I HAVE PERFORMED A REVIEW OF THIS PLAT FOR CONFORMITY TO CHAPTER 177, FLORIDA STATUTES AND THAT SAID PLAT COMPLIES WITH THE TECHNICAL REQUIREMENTS OF THAT CHAPTER; PROVIDED, HOWEVER, THAT MY REVIEW AND CERTIFICATION DOES NOT INCLUDE FIELD VERIFICATION OF ANY POINTS OR MEASUREMENTS SHOWN ON THIS PLAT.

SIGNATURE

DATE

RONALD W. HERR, P.L.S.
WADE SURVEYING, INC.

4907
REGISTRATION NO.

SEAL

DEDICATION

KNOW ALL MEN BY THESE PRESENTS, THAT THE UNDERSIGNED, THE VILLAGES DEVELOPMENT COMPANY, LLC (THE DEVELOPER) HAS CAUSED TO BE MADE THIS PLAT, VILLAGES OF SOUTHERN OAKS UNIT NO. 175, A SUBDIVISION OF LAND HEREIN DESCRIBED AND JOINS WITH VILLAGE COMMUNITY DEVELOPMENT DISTRICT NO. 15 (THE DISTRICT) TO HEREBY DEDICATE THE ROADWAYS SHOWN HEREON TO THE CITY OF WILDWOOD AND THE PERPETUAL USE OF THE PUBLIC; AND DEDICATES TRACTS "A", "B", "C" AND "D" TO VILLAGE COMMUNITY DEVELOPMENT DISTRICT NO. 15.

WITNESSES:

(1) _____
SIGNATURE

PRINT NAME

7580 MIDDLETON DRIVE
MIDDLETON, FLORIDA 34762
MAILING ADDRESS

(2) _____
SIGNATURE

PRINT NAME

4450 NE 83RD ROAD
WILDWOOD, FLORIDA 34785
MAILING ADDRESS

THE VILLAGES DEVELOPMENT COMPANY, LLC,
A FLORIDA LIMITED LIABILITY COMPANY

BY: VDC MANAGER, LLC,
A FLORIDA LIMITED LIABILITY COMPANY,
ITS MANAGER

BY: _____
MARTIN L. DZURO, MANAGER

WITNESSES:

(1) _____
SIGNATURE

PRINT NAME

3601 KIESSEL ROAD
THE VILLAGES, FLORIDA 32163
MAILING ADDRESS

(2) _____
SIGNATURE

PRINT NAME

4450 NE 83RD ROAD
WILDWOOD, FLORIDA 34785
MAILING ADDRESS

VILLAGE COMMUNITY DEVELOPMENT DISTRICT NO. 15

BY: _____
SPENCER R. NOVAK, CHAIR

STATE OF FLORIDA
COUNTY OF SUMTER

THE FOREGOING INSTRUMENT WAS ACKNOWLEDGED BEFORE ME, BY MEANS OF ☐ PHYSICAL PRESENCE OR ☐ ONLINE NOTARIZATION, THIS ____ DAY OF _____, 20____, BY MARTIN L. DZURO, AS MANAGER OF AND ON BEHALF OF VDC MANAGER, LLC, A FLORIDA LIMITED LIABILITY COMPANY, THE MANAGER OF THE VILLAGES DEVELOPMENT COMPANY, LLC, A FLORIDA LIMITED LIABILITY COMPANY, FOR THE PURPOSES EXPRESSED HEREIN, WHO IS PERSONALLY KNOWN TO ME AND WHO DID NOT TAKE AN OATH.

NOTARY PUBLIC – STATE OF FLORIDA
PRINT NAME: _____
COMMISSION NO.: _____
COMMISSION EXPIRES: _____

SEAL

STATE OF FLORIDA
COUNTY OF SUMTER

THE FOREGOING INSTRUMENT WAS ACKNOWLEDGED BEFORE ME, BY MEANS OF ☐ PHYSICAL PRESENCE OR ☐ ONLINE NOTARIZATION, THIS ____ DAY OF _____, 20____, BY SPENCER R. NOVAK, THE CHAIR OF VILLAGE COMMUNITY DEVELOPMENT DISTRICT NO. 15, ON BEHALF OF THE DISTRICT, WHO IS PERSONALLY KNOWN TO ME AND WHO DID NOT TAKE AN OATH.

NOTARY PUBLIC – STATE OF FLORIDA
PRINT NAME: _____
COMMISSION NO.: _____
COMMISSION EXPIRES: _____

SEAL

CERTIFICATE OF SURVEYOR

I HEREBY CERTIFY THAT THIS PLAT OF VILLAGES OF SOUTHERN OAKS UNIT NO. 175, WAS PREPARED UNDER MY DIRECTION AND SUPERVISION; AND THAT THE PERMANENT REFERENCE MONUMENTS AS SHOWN THEREON WERE PLACED ON THE ____ DAY OF _____, 20____; I FURTHER CERTIFY THAT THIS PLAT COMPLIES WITH THE REQUIREMENTS OF CHAPTER 177, FLORIDA STATUTES.

CLYMER FARNER BARLEY SURVEYING, LLC
4450 N.E. 83RD ROAD
WILDWOOD, FLORIDA 34785
LICENSED BUSINESS NO. 8498

SEAL

KAYE M. JAMESON
REGISTRATION NO. 5912

DATE

CERTIFICATE OF CLERK

I HEREBY CERTIFY THAT I HAVE EXAMINED THIS PLAT AND FIND THAT IT COMPLIES IN FORM WITH ALL THE REQUIREMENTS OF CHAPTER 177, FLORIDA STATUTES AND WAS FILED FOR RECORD ON _____, 20____, AT _____ FILE NUMBER _____.

PLAT BOOK _____ PAGE _____.

CLERK OF THE COURT IN AND
FOR SUMTER COUNTY, FLORIDA

SEAL

PRINT NAME
DEPUTY CLERK

SIGNATURE
DEPUTY CLERK

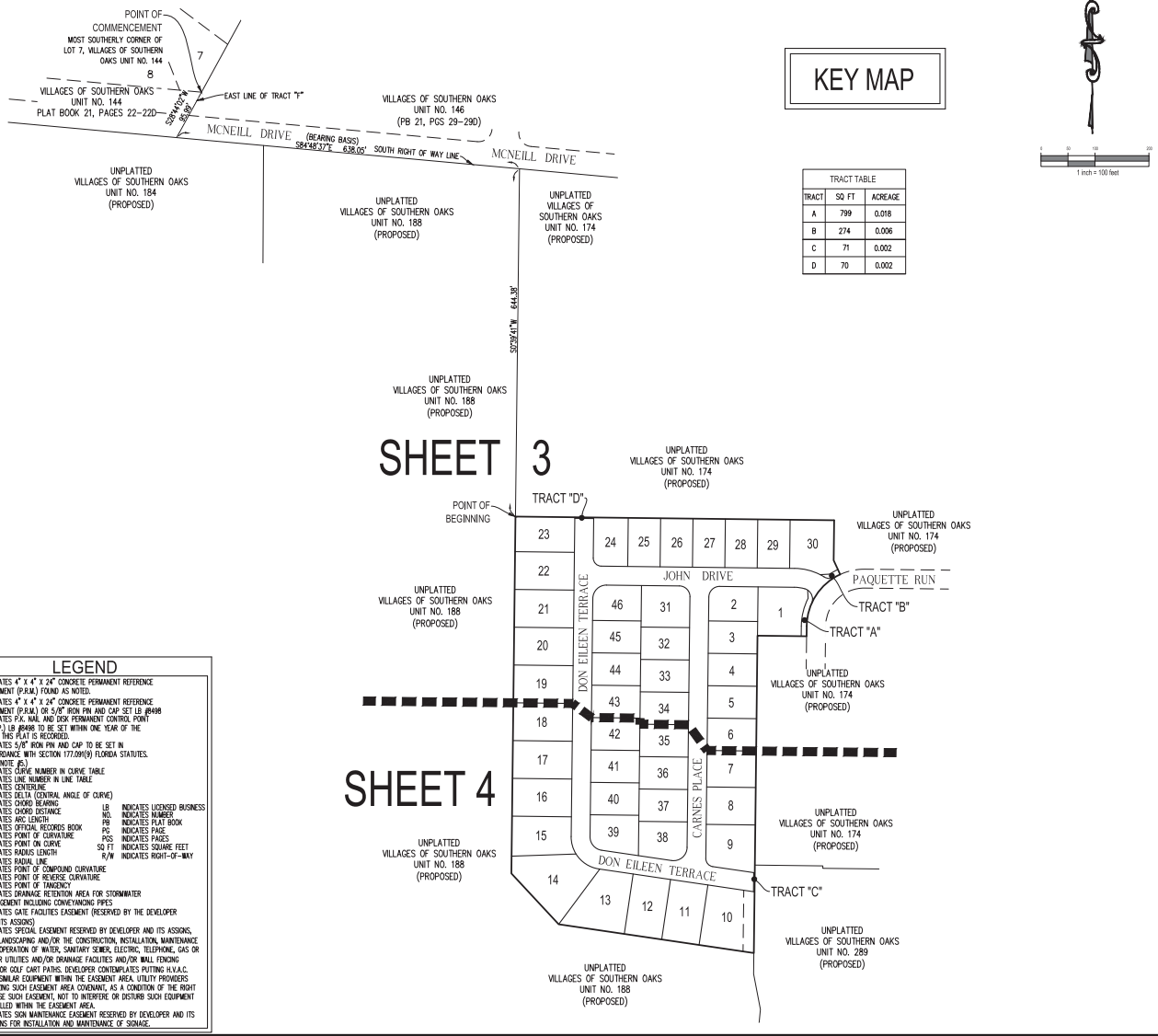
PREPARED BY: CFB CLYMER FARNER BARLEY SURVEYING
4450 NE 83RD ROAD - WILDWOOD, FL 34785
(352) 748-3126 LB#498

VILLAGES OF SOUTHERN OAKS UNIT NO. 175

SHEET 2 OF 4

PLAT BOOK _____
PAGE _____

SECTION 3, TOWNSHIP 20 SOUTH, RANGE 23 EAST,
CITY OF WILDWOOD, SUMTER COUNTY, FLORIDA.



KEY MAP

TRACT TABLE		
TRACT	SQ FT	ACREAGE
A	799	0.018
B	274	0.006
C	71	0.002
D	70	0.002

LEGEND

- ▣ INDICATES 4" X 4" X 24" CONCRETE PERMANENT REFERENCE MONUMENT (P.R.M.) FOUND AS NOTED.
- ⊡ INDICATES 4" X 4" X 24" CONCRETE PERMANENT REFERENCE MONUMENT (P.R.M.) OR 5/8" IRON PIN AND CAP SET LB #8498
- ● INDICATES P.K. NAIL AND DISK PERMANENT CONTROL POINT (P.C.P.) LB #8498 TO BE SET WITHIN ONE YEAR OF THE DATE THIS PLAT IS RECORDED.
- ○ INDICATES 5/8" IRON PIN AND CAP TO BE SET IN ACCORDANCE WITH SECTION 177.091(9) FLORIDA STATUTES. (SEE NOTE #5.)
- C9 INDICATES CURVE NUMBER IN CURVE TABLE
- L9 INDICATES LINE NUMBER IN LINE TABLE
- ℄ INDICATES CENTERLINE
- Δ INDICATES DELTA (CENTRAL ANGLE OF CURVE)
- CB INDICATES CHORD BEARING
- CH INDICATES CHORD DISTANCE
- L INDICATES ARC LENGTH
- ORB INDICATES OFFICIAL RECORDS BOOK
- PC INDICATES POINT OF CURVATURE
- POC INDICATES POINT ON CURVE
- R INDICATES RADIUS LENGTH
- (R) INDICATES RADIAL LINE
- PCC INDICATES POINT OF COMPOUND CURVATURE
- PRC INDICATES POINT OF REVERSE CURVATURE
- PT INDICATES POINT OF TANGENCY
- DRA INDICATES DRAINAGE RETENTION AREA FOR STORMWATER MANAGEMENT INCLUDING CONVEYANCING PIPES
- GFE INDICATES GATE FACILITIES EASEMENT (RESERVED BY THE DEVELOPER AND ITS ASSIGNS)
- SE INDICATES SPECIAL EASEMENT RESERVED BY DEVELOPER AND ITS ASSIGNS, FOR LANDSCAPING AND/OR THE CONSTRUCTION, INSTALLATION, MAINTENANCE AND OPERATION OF WATER, SANITARY SEWER, ELECTRIC, TELEPHONE, GAS OR OTHER UTILITIES AND/OR DRAINAGE FACILITIES AND/OR WALL FENCING AND/OR GOLF CART PATHS. DEVELOPER CONTEMPLATES PUTTING H.V.A.C. AND SIMILAR EQUIPMENT WITHIN THE EASEMENT AREA. UTILITY PROVIDERS UTILIZING SUCH EASEMENT AREA COVENANT, AS A CONDITION OF THE RIGHT TO USE SUCH EASEMENT, NOT TO INTERFERE OR DISTURB SUCH EQUIPMENT INSTALLED WITHIN THE EASEMENT AREA.
- SME INDICATES SIGN MAINTENANCE EASEMENT RESERVED BY DEVELOPER AND ITS ASSIGNS FOR INSTALLATION AND MAINTENANCE OF SIGNAGE.

- LB INDICATES LICENSED BUSINESS
- NO. INDICATES NUMBER
- PB INDICATES PLAT BOOK
- PG INDICATES PAGE
- PGS INDICATES PAGES
- SQ FT INDICATES SQUARE FEET
- R/W INDICATES RIGHT-OF-WAY

PREPARED BY:
CFB SURVEYING
GLYMER PARSNER BARLEY
4450 NE 83RD ROAD - WILDWOOD, FL 34785
(352) 748-3126 LB8498

VILLAGES OF SOUTHERN OAKS UNIT NO. 175

SECTION 3, TOWNSHIP 20 SOUTH, RANGE 23 EAST,
CITY OF WILDWOOD, SUMTER COUNTY, FLORIDA.

SHEET 3 OF 4

PLAT BOOK _____
PAGE _____

CURVE TABLE					
CURVE TAG	RADIUS	CENTRAL ANGLE	ARC LENGTH	CHORD BEARING	CHORD LENGTH
C1	116.50'	26°08'55"	53.17'	S13°44'08"W	52.71'
C2	20.00'	17°08'06"	5.98'	N65°11'37"W	5.96'
C3	71.50'	15°34'40"	19.44'	N81°32'59"W	19.38'
C4	20.00'	90°00'00"	31.42'	S45°39'41"W	28.28'
C8	15.00'	90°00'00"	23.56'	S44°20'19"E	21.21'
C9	106.50'	26°20'18"	48.96'	N76°10'10"W	48.53'
C10	116.50'	8°38'09"	17.56'	S60°58'32"W	17.54'
C11	20.00'	90°00'00"	31.42'	N44°20'19"W	28.28'
C14	25.00'	90°00'00"	39.27'	S45°39'41"W	35.36'
C15	106.50'	16°18'13"	30.30'	S51°32'17"W	30.20'
C16	106.50'	19°38'09"	36.50'	S33°34'06"W	36.32'
C17	89.00'	35°43'10"	55.48'	N71°28'44"W	54.59'
C19	106.50'	23°05'20"	42.92'	S12°12'21"W	42.63'
C20	20.00'	80°22'35"	28.06'	N16°26'16"W	25.81'
C21	106.50'	4°38'00"	8.61'	N60°41'01"W	8.61'
C22	20.00'	61°56'35"	21.62'	S89°20'19"E	20.58'
C23	106.50'	5°36'13"	10.42'	S62°29'30"W	10.41'

LINE TABLE		
LINE TAG	BEARING	DISTANCE
L1	N00°39'41"E	19.00'
L2	S03°03'36"E	15.13'
L4	N89°20'19"W	9.30'
L5	N87°00'51"E	17.83'
L6	S24°42'24"E	18.80'

TRACT TABLE		
TRACT	SQ FT	ACREAGE
A	799	0.018
B	274	0.006
C	71	0.002
D	70	0.002

1 inch = 100 feet

POINT OF COMMENCEMENT
MOST SOUTHERLY CORNER OF LOT 7, VILLAGES OF SOUTHERN OAKS UNIT NO. 144

VILLAGES OF SOUTHERN OAKS UNIT NO. 144
PLAT BOOK 21, PAGES 22-22D

EAST LINE OF TRACT "F"

S89°40'07"W 89.95'

VILLAGES OF SOUTHERN OAKS UNIT NO. 146
(PB 21, PGS 29-29D)

MCNEILL DRIVE

(BEARING BASIS)
S84°48'37"E 638.05'

SOUTH RIGHT OF WAY LINE OF MCNEILL DRIVE

UNPLATTED
VILLAGES OF SOUTHERN OAKS UNIT NO. 184
(PROPOSED)

UNPLATTED
VILLAGES OF SOUTHERN OAKS UNIT NO. 188
(PROPOSED)

UNPLATTED
VILLAGES OF SOUTHERN OAKS UNIT NO. 174
(PROPOSED)

S01°39'41"W 644.38'

DETAIL "A"
1" = 10'

JOHN DRIVE

TRACT "A"

R = 106.50'
Δ = 64°37'55"
L = 120.14'
CB = S32°58'39"W
CH = 113.87'

DETAIL "D"
1" = 10'

TRACT "D"

S89°20'19"E 590.54'

DON EILEEN TERRACE

DETAIL "E"
1" = 10'

TRACT "B"

JOHN DRIVE

R = 106.50'
Δ = 64°37'55"
L = 120.14'
CB = S32°58'39"W
CH = 113.87'

POINT OF BEGINNING

TRACT "D"
SEE DETAIL "D"

UNPLATTED
VILLAGES OF SOUTHERN OAKS UNIT NO. 188
(PROPOSED)

UNPLATTED
VILLAGES OF SOUTHERN OAKS UNIT NO. 174
(PROPOSED)

S89°20'19"E 590.54'

N00°39'41"E 661.17'

DON EILEEN TERRACE

JOHN DRIVE

N89°20'19"W 590.80'

CARNES PLACE

S00°39'41"W 587.30'

MATCHLINE SHEET 3
SHEET 4

UNPLATTED
VILLAGES OF SOUTHERN OAKS UNIT NO. 174
(PROPOSED)

S00°39'41"W 74.25'

S24°42'24"E 28.80'(R)

N24°42'24"W(R)

POC

PAQUETTE RUN

TRACT "B"
R=106.50' Δ=64°37'55" L=120.14'
CB=S32°58'39"W CH=113.87'

TRACT "A"

PT

S00°39'41"W 19.00'

N89°20'19"W 91.00'

PAQUETTE RUN

UNPLATTED
VILLAGES OF SOUTHERN OAKS UNIT NO. 174
(PROPOSED)

MATCHLINE SHEET 3
SHEET 4

LEGEND

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PREPARED BY:
CFB | CLYMER FARNER BARLEY
SURVEYING
4450 NE 83RD ROAD - WILDWOOD, FL 34785
(352) 748-0126 LB8498

VILLAGES OF SOUTHERN OAKS UNIT NO. 175

SECTION 3, TOWNSHIP 20 SOUTH, RANGE 23 EAST,
CITY OF WILDWOOD, SUMTER COUNTY, FLORIDA.

SHEET 4 OF 4

PLAT BOOK _____
PAGE _____

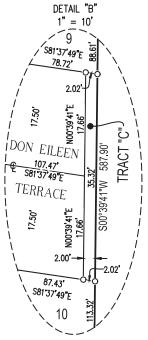
CURVE TABLE					
CURVE TAG	RADIUS	CENTRAL ANGLE	ARC LENGTH	CHORD BEARING	CHORD LENGTH
C5	15.00'	82°17'30"	21.54'	S40°29'04"E	19.74'
C6	60.00'	49°43'08"	52.07'	S56°46'15"E	50.45'
C7	60.00'	32°34'22"	34.11'	S15°37'30"E	33.65'
C12	25.00'	97°42'30"	42.63'	N49°30'56"E	37.65'
C13	25.00'	82°17'30"	35.91'	S40°29'04"E	32.90'
C18	42.50'	82°17'30"	61.04'	S40°29'04"E	55.93'

LINE TABLE		
LINE TAG	BEARING	DISTANCE
L3	S81°37'49"E	1.78'

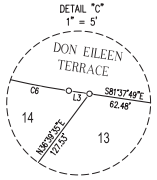
TRACT TABLE		
TRACT	SQ FT	ACREAGE
A	799	0.018
B	274	0.006
C	71	0.002
D	70	0.002

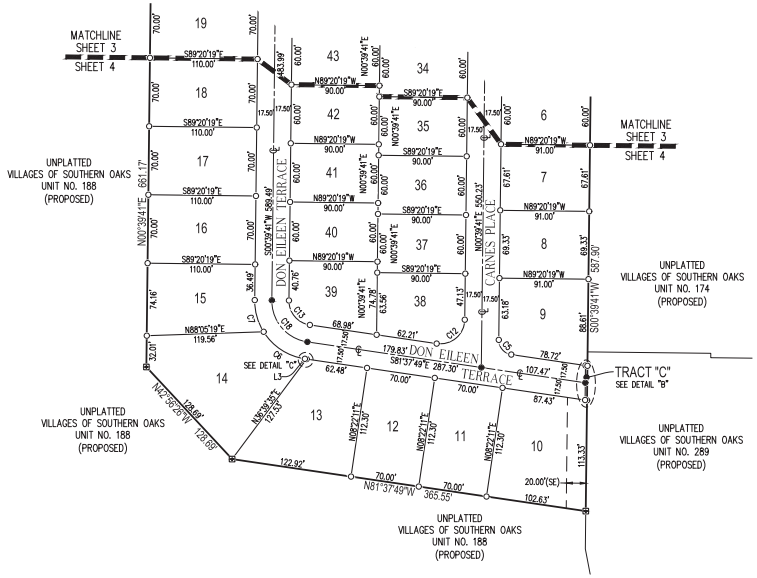
1 inch = 100 feet

DETAIL "B"
1" = 10'



DETAIL "C"
1" = 5'





LEGEND

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- PB INDICATES PLAT BOOK
- PG INDICATES PAGE
- PGS INDICATES PAGES
- SQ FT INDICATES SQUARE FEET
- R/W INDICATES RIGHT-OF-WAY

PREPARED BY:

CFB SURVEYING
GLYMPH PARKER BARLEY
4450 NE 83RD ROAD - WILDWOOD, FL 34785
(352) 748-0126 LB8498

CITY COMMISSION OF THE CITY OF WILDWOOD

EXECUTIVE SUMMARY

SUBJECT: **PLAT 2411-007 VOSO Unit 186 Final Plat**

REQUESTED ACTION: Staff recommends approval.

CONTRACT:

BUDGET IMPACT:

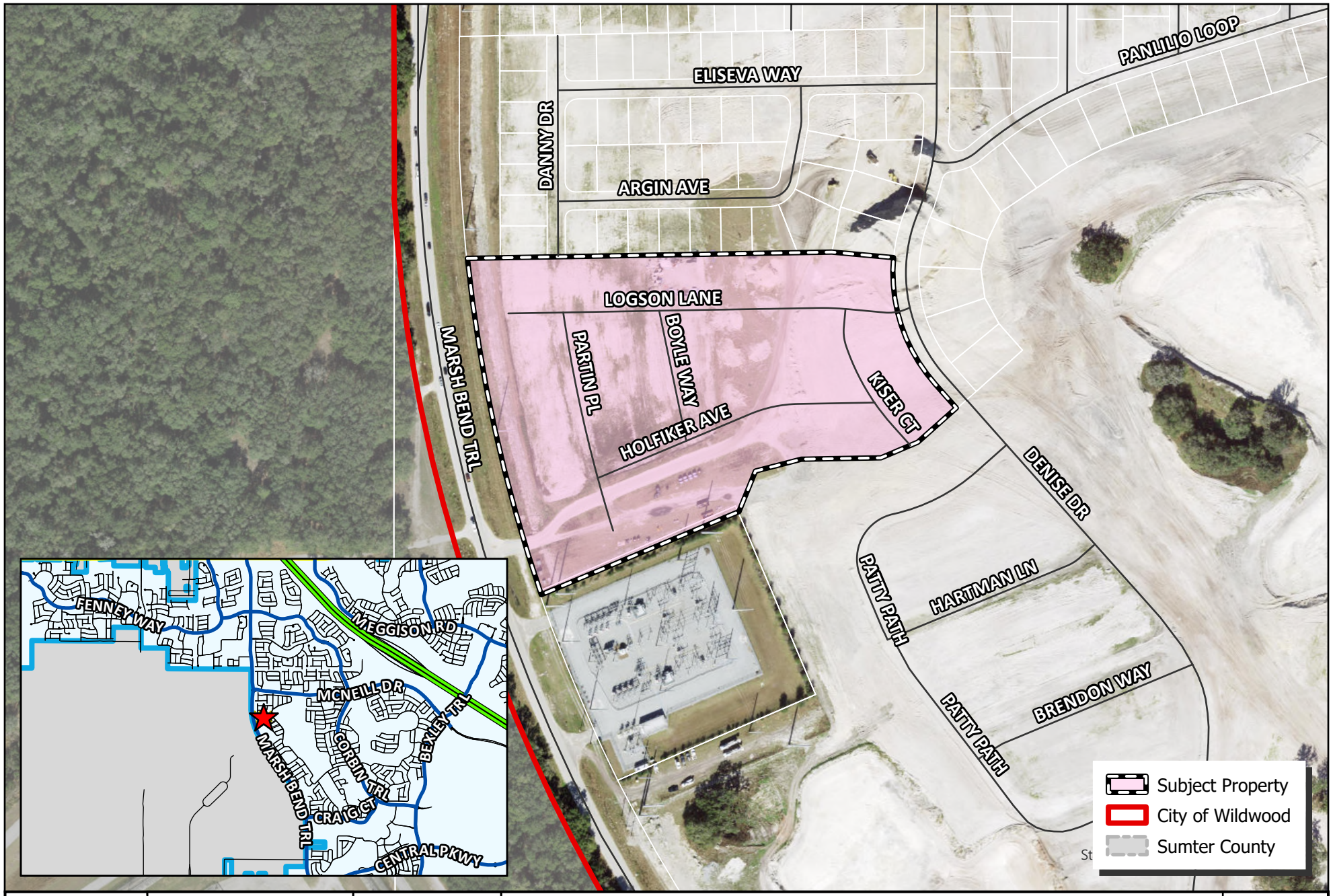
HISTORY/FACTS/ISSUES:

Case Number	PLAT 2411-007 VOSO Unit 186 Final Plat
Owner/Applicant(s)	The Villages Development Company, LLC
Acreage	9.49 +/-
Property Location	The property is generally located on Marsh Bend Trail, 0.2 miles south of McNeill Dr.
Parcel(s)	K03-005
Date	January 2, 2025

The applicant is seeking approval from the City Commission for the VOSO Unit 186 Final Plat, a subdivision consisting of 70 lots and six tracts, per the attached plans.

Plat 2411-007 meets the criteria set forth in F.S. 177, The Villages of Southern Oaks 163 Agreement, the Land Development Regulations, and is consistent with the goals, objectives, and policies of the 2050 Comprehensive Plan.

Alex Lammers
Planner I, Development Services



WILDWOOD FLORIDA EST. 1877

CITY OF WILDWOOD
100 North Main Street
Wildwood, FL 34785
Phone: (352) 330-1330
www.wildwood-fl.gov

N

0 00.01 0.02 0.03 0.04 Miles

PLAT 2411-007

VOSO - UNIT 186 FINAL PLAT

PARCEL K03-005

MAP 1B

LOCATION MAP

JAN 2025

COVENANTS, CONDITIONS, RESTRICTIONS AND EASEMENTS FOR THIS SUBDIVISION ARE RECORDED IN THE PUBLIC RECORDS OF SUMTER COUNTY, FLORIDA. OR BOOK _____, PAGE _____.

VILLAGES OF SOUTHERN OAKS UNIT NO. 186

SECTION 3, TOWNSHIP 20 SOUTH, RANGE 23 EAST,
CITY OF WILDWOOD, SUMTER COUNTY, FLORIDA.

SHEET 1 OF 4

PLAT BOOK _____
PAGE _____

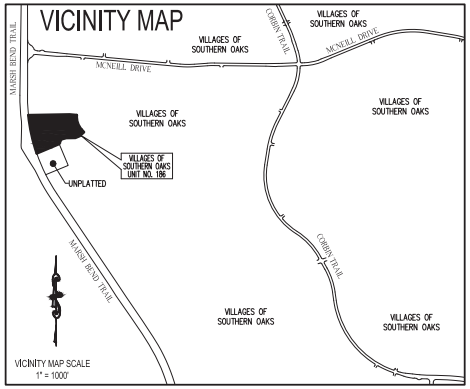
LEGAL DESCRIPTION

A PARCEL OF LAND LYING WITHIN THE WEST 1/2 OF SECTION 3, TOWNSHIP 20 SOUTH, RANGE 23 EAST, SUMTER COUNTY, FLORIDA, DESCRIBED AS FOLLOWS:

BEGIN AT THE SOUTHWEST CORNER OF VILLAGES OF SOUTHERN OAKS UNIT NO. 185 AS RECORDED IN PLAT BOOK 22, PAGES 18 AND 18A, PUBLIC RECORDS OF SUMTER COUNTY, FLORIDA; SAID POINT ALSO BEING ON THE EASTERLY RIGHT OF WAY LINE OF MARSH BEND TRAIL (FORMERLY COUNTY ROAD NO. 501 PER SUMTER COUNTY RIGHT OF WAY MAP); THENCE DEPARTING SAID EASTERLY RIGHT OF WAY LINE AND ALONG THE SOUTH LINE OF SAID PLATTED BOUNDARY RUN N89°00'00"E, 705.50 FEET TO A POINT ON THE WESTERLY BOUNDARY OF VILLAGES OF SOUTHERN OAKS UNIT NO. 184 AS RECORDED IN PLAT BOOK 22, PAGES 13, 13A THROUGH 13 C, INCLUSIVE, PUBLIC RECORDS OF SUMTER COUNTY, FLORIDA; THENCE ALONG SAID PLATTED BOUNDARY THE FOLLOWING THREE (3) COURSES: S84°51'40"E, 120.00 FEET TO A POINT ON THE ARC OF A NON-TANGENT CURVE CONCAVE EASTERLY, HAVING A RADIUS OF 325.00 FEET AND A CHORD BEARING AND DISTANCE OF S18°16'39"E, 258.32 FEET TO WHICH A RADIAL LINE BEARS N84°51'40"W; THENCE SOUTHERLY ALONG THE ARC OF SAID CURVE, THROUGH A CENTRAL ANGLE OF 46°49'58", AN ARC DISTANCE OF 265.65 FEET TO THE POINT OF TANGENCY; THENCE S41°41'38"E, 61.21 FEET; THENCE DEPARTING SAID PLATTED BOUNDARY RUN S48°18'22"W, 100.00 FEET; THENCE S67°04'43"W, 77.40 FEET; THENCE S89°00'00"W, 154.70 FEET; THENCE S75°26'22"W, 91.34 FEET; THENCE S22°13'04"W, 84.85 FEET TO THE BOUNDARY OF THOSE LANDS DESCRIBED IN OFFICIAL RECORDS BOOK 2150, PAGE 462, PUBLIC RECORDS OF SUMTER COUNTY, FLORIDA; THENCE ALONG SAID BOUNDARY LINE RUN S67°13'04"W, 415.02 FEET TO A POINT ON THE ARC OF A NON-TANGENT CURVE CONCAVE EASTERLY, HAVING A RADIUS OF 2,920.00 FEET AND A CHORD BEARING AND DISTANCE OF N12°22'42"W, 666.50 FEET TO WHICH A RADIAL LINE BEARS S71°04'07"W; SAID POINT ALSO BEING ON AFORESAID EASTERLY RIGHT OF WAY LINE OF MARSH BEND TRAIL; THENCE ALONG SAID EASTERLY RIGHT OF WAY LINE RUN NORTHERLY ALONG THE ARC OF SAID CURVE, THROUGH A CENTRAL ANGLE OF 13°06'24", AN ARC DISTANCE OF 667.96 FEET TO THE POINT OF BEGINNING.

CONTAINING 9.49 ACRES, MORE OR LESS.

VICINITY MAP



70 LOTS – 6 TRACTS

NOTICE: THIS PLAT, AS RECORDED IN ITS GRAPHIC FORM, IS THE OFFICIAL DEPICTION OF THE SUBDIVIDED LANDS DESCRIBED HEREIN AND WILL IN NO CIRCUMSTANCES BE SUPPLANTED IN AUTHORITY BY ANY OTHER GRAPHIC OR DIGITAL FORM OF THE PLAT. THERE MAY BE ADDITIONAL RESTRICTIONS THAT ARE NOT RECORDED ON THIS PLAT THAT MAY BE FOUND IN THE PUBLIC RECORDS OF THIS COUNTY.

NOTES:

1.) BEARINGS ARE BASED ON THE SOUTH LINE OF VILLAGES OF SOUTHERN OAKS UNIT NO. 185, AS RECORDED IN PLAT BOOK 22, PAGES 18 AND 18A, PUBLIC RECORDS OF SUMTER COUNTY, FLORIDA AS BEING N89°00'00"E.

2.) ALL PLATTED UTILITY EASEMENTS SHALL PROVIDE THAT SUCH EASEMENTS SHALL ALSO BE EASEMENTS FOR THE CONSTRUCTION, INSTALLATION, MAINTENANCE, AND OPERATION OF CABLE TELEVISION SERVICES; PROVIDED, HOWEVER, NO SUCH CONSTRUCTION, INSTALLATION, MAINTENANCE, AND OPERATION OF CABLE TELEVISION SERVICES SHALL INTERFERE WITH THE FACILITIES AND SERVICES OF AN ELECTRIC, TELEPHONE, GAS, OR OTHER PUBLIC UTILITY. IN THE EVENT A CABLE TELEVISION COMPANY DAMAGES THE FACILITIES OF A PUBLIC UTILITY, IT SHALL BE SOLELY RESPONSIBLE FOR THE DAMAGES. THIS SECTION SHALL NOT APPLY TO THOSE PRIVATE EASEMENTS GRANTED TO OR OBTAINED BY A PARTICULAR ELECTRIC, TELEPHONE, GAS, OR OTHER PUBLIC UTILITY. SUCH CONSTRUCTION, INSTALLATION, MAINTENANCE, AND OPERATION SHALL COMPLY WITH THE NATIONAL ELECTRICAL SAFETY CODE AS ADOPTED BY THE FLORIDA PUBLIC SERVICE COMMISSION.

3.) ALL DISTANCES SHOWN ARE IN FEET.

4.) WITH REFERENCE TO CURVILINEAR LOTS, RADIAL LINES HAVE BEEN DESIGNATED BY (R). ALL OTHER LINES ARE NON-RADIAL.

5.) LOT CORNERS WILL BE SET PRIOR TO THE TRANSFER OF ANY LOT OR PRIOR TO THE EXPIRATION OF THE BOND OR OTHER SURETY.

6.) PERMANENT CONTROL POINTS (P.C.P.'S) WILL BE SET WITHIN ONE YEAR OF THE DATE THIS PLAT WAS RECORDED OR PRIOR TO THE EXPIRATION OF THE BOND OR SURETY.

7.) ALL PERMANENT REFERENCE MONUMENTS (P.R.M.'S) HAVE BEEN SET IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER 177, FLORIDA STATUTES.

8.) TRACTS "A", "B" AND "F" ARE FOR ANY PURPOSE PERMITTED BY APPLICABLE LAW AND APPROVED IN WRITING BY DEVELOPER.

9.) TRACTS "C", "D" AND "E" ARE FOR ANY PURPOSE PERMITTED BY APPLICABLE LAW AND APPROVED IN WRITING BY DEVELOPER. NO INGRESS OR EGRESS IS PERMITTED WITHOUT THE DEVELOPER'S CONSENT.

10.) THE DISTRICT FINDS IT IN THE PUBLIC INTEREST, AND HEREBY AGREES TO PROVIDE THE FOLLOWING SERVICES: (A) MAINTENANCE AND REPAIR OF AREAS OWNED BY THE DISTRICT OR DEDICATED TO THE USE AND ENJOYMENT OF THE RESIDENTS OF THE DISTRICT, THE SUBDIVISION, OR THE PUBLIC; (B) PAY FOR THE COST OF WATER AND SEWER PROVIDED BY GIBSON PLACE UTILITY COMPANY, LLC, OR ITS ASSIGNS, TOGETHER WITH THE COST OF GARBAGE, ELECTRICAL, LIGHTING, TELEPHONE, GAS AND OTHER NECESSARY UTILITY SERVICE FOR AREAS OWNED BY THE DISTRICT OR DEDICATED TO THE USE AND ENJOYMENT OF THE RESIDENTS OF THE DISTRICT, SUBDIVISION, OR THE PUBLIC; (C) MAINTENANCE AND REPAIR OF THE STORM WATER RUNOFF DRAINAGE SYSTEM INCLUDING DRAINAGE EASEMENTS AND DRAIN PIPES NOT MAINTAINED BY GIBSON PLACE WATER CONSERVATION AUTHORITY, LLC, OR ITS ASSIGNS, OR THE CITY OF WILDWOOD; (D) MAINTENANCE AND REPAIR OF THE LANDSCAPING AND IRRIGATION ON ISLANDS AND CUL-DE-SACS LOCATED WITHIN THE ROADWAYS, IF ANY; (E) MAINTENANCE AND REPAIR TO THE TOP AND EXTERIOR OF THE WALLS AND/OR FENCES LOCATED ON OR ADJACENT TO TRACT F OF THE SUBDIVISION; AND (F) MAINTENANCE AND REPAIR, INCLUDING STRUCTURAL REPAIR, TO THE WALLS AND/OR FENCES LOCATED ON OR ADJACENT TO TRACTS C AND D OF THE SUBDIVISION.

11.) THE TITLE OPINION FOR THIS PLAT HAS BEEN SUBMITTED BY SEPARATE DOCUMENT.

VILLAGES OF SOUTHERN OAKS UNIT NO. 186 CONVEYANCE AND GRANT OF EASEMENTS TO VILLAGE COMMUNITY DEVELOPMENT DISTRICT NO. 15

ALL RIGHT, TITLE AND INTEREST OF THE VILLAGES DEVELOPMENT COMPANY, LLC, (THE DEVELOPER) IN TRACTS "A", "B", "C", "D", "E" AND "F" AND THE ROADWAYS SHOWN ON THIS PLAT OF VILLAGES OF SOUTHERN OAKS UNIT NO. 186, IS HEREBY SOLD, CONVEYED AND SET OVER TO VILLAGE COMMUNITY DEVELOPMENT DISTRICT NO. 15 (THE DISTRICT): (1) RESERVING UNTO THE DEVELOPER AND ITS ASSIGNS, AND EACH OF THEIR SUCCESSORS, TENANTS, INVITEES, AND GUESTS PERPETUAL EASEMENTS FOR INGRESS AND EGRESS AND THE CONSTRUCTION, INSTALLATION, MAINTENANCE AND OPERATION OF UNDERGROUND ELECTRIC, TELEPHONE, CABLE, GAS AND OTHER UTILITIES, IRRIGATION FACILITIES, POTABLE WATER, SANITARY SEWER AND STORM WATER FACILITIES, LANDSCAPED AREAS, FENCES, WALLS, ENTRY FACILITIES, INCLUDING ELECTRONIC CARD READING EQUIPMENT, GOLF CART AND PEDESTRIAN PATHS, SIGNAGE, ENJOYMENT IMPROVEMENTS AND GOLF CART AND PEDESTRIAN BRIDGES; AND (2) SUBJECT TO THE RESTRICTION THAT ALL ADDITIONS OF, REMOVAL OF, AND CHANGES TO IMPROVEMENTS LOCATED ON SUCH TRACTS AND ROADWAYS (INCLUDING, WITHOUT LIMITATION, ALL THOSE IMPROVEMENTS DESCRIBED ABOVE), MUST FIRST BE APPROVED IN ADVANCE BY THE DEVELOPER.

THE DEVELOPER ALSO GRANTS TO THE DISTRICT NON-EXCLUSIVE, PERPETUAL EASEMENTS OVER, ACROSS AND UPON ANY SPECIAL EASEMENTS SHOWN HEREON FOR THE PURPOSE OF MAINTAINING DRAINAGE FACILITIES LOCATED THEREON.

THE DISTRICT, BY EXECUTING THE DEDICATION CONTAINED ON THIS PLAT, ACCEPTS THIS CONVEYANCE AND AGREES TO MAINTAIN THE TRACTS LISTED ABOVE, INCLUDING ALL IMPROVEMENTS CONSTRUCTED THEREON AND DRAINAGE FACILITIES LOCATED WITHIN ANY SPECIAL EASEMENTS PERPETUALLY, AND MAINTAIN THE ROADWAYS AND DRAINAGE FEATURES LYING WITHIN SUCH ROADWAYS FOR TWO YEARS AFTER THE CITY ENGINEER HAS CERTIFIED THE CONSTRUCTION HAS BEEN COMPLETED.

WITNESSES:

SIGNATURE

PRINT NAME

7580 MIDDLETON DRIVE
MIDDLETON, FLORIDA 34762
MAILING ADDRESS

SIGNATURE

PRINT NAME

4450 NE 83RD ROAD
WILDWOOD, FLORIDA 34785
MAILING ADDRESS

THE VILLAGES DEVELOPMENT COMPANY, LLC,
A FLORIDA LIMITED LIABILITY COMPANY
BY: VDC MANAGER, LLC,
A FLORIDA LIMITED LIABILITY COMPANY,
ITS MANAGER

BY: _____
MARTIN L. DZURO, MANAGER

STATE OF FLORIDA
COUNTY OF SUMTER

THE FOREGOING INSTRUMENT WAS ACKNOWLEDGED BEFORE ME, BY MEANS OF ☐ PHYSICAL PRESENCE OR ☐ ONLINE NOTARIZATION, THIS _____ DAY OF _____, 20____, BY MARTIN L. DZURO, AS MANAGER OF AND ON BEHALF OF VDC MANAGER, LLC, A FLORIDA LIMITED LIABILITY COMPANY, THE MANAGER OF THE VILLAGES DEVELOPMENT COMPANY, LLC, A FLORIDA LIMITED LIABILITY COMPANY, FOR THE PURPOSES EXPRESSED HEREIN, WHO IS PERSONALLY KNOWN TO ME AND WHO DID NOT TAKE AN OATH.

NOTARY PUBLIC – STATE OF FLORIDA
PRINT NAME: _____
COMMISSION NO.: _____
COMMISSION EXPIRES: _____

SEAL

CERTIFICATE OF APPROVAL BY CITY OFFICIALS

THIS CERTIFIES THAT THIS PLAT HAS BEEN REVIEWED FOR CONFORMITY TO F.S. CHAPTER 177, AS CERTIFIED BY THE REVIEWING SURVEYOR SHOWN BELOW.

MELANIE D. STRICKLAND
DEVELOPMENT SERVICES DIRECTOR

THIS CERTIFIES THAT THIS PLAT WAS PRESENTED TO THE COMMISSION OF THE CITY OF WILDWOOD, SUMTER COUNTY, FLORIDA, AND WAS APPROVED BY THE COMMISSION FOR RECORD ON THIS ____ DAY OF _____, 20____.

JESSICA BARNES
CITY CLERK

ED WOLF
MAYOR

THIS CERTIFIES THAT THIS PLAT WAS PRESENTED TO THE ATTORNEY FOR THE CITY OF WILDWOOD, SUMTER COUNTY, FLORIDA, AND APPROVED BY HIM OR HER AS TO FORM AND LEGALITY ON THIS ____ DAY OF _____, 20____.

PRINT NAME
CITY OF WILDWOOD, ATTORNEY

SIGNATURE
CITY OF WILDWOOD, ATTORNEY

DEVELOPMENT SERVICES DIRECTOR
MELANIE D. STRICKLAND

PUBLIC WORKS DIRECTOR
JEREMY HOCKENBURY

PRINT NAME
CITY OF WILDWOOD, ENGINEER

SIGNATURE
CITY OF WILDWOOD, ENGINEER

REVIEWING SURVEYOR'S CERTIFICATE

PURSUANT TO SECTION 177.081, FLORIDA STATUTES, I HEREBY CERTIFY THAT I HAVE PERFORMED A REVIEW OF THIS PLAT FOR CONFORMITY TO CHAPTER 177, FLORIDA STATUTES AND THAT SAID PLAT COMPLIES WITH THE TECHNICAL REQUIREMENTS OF THAT CHAPTER; PROVIDED, HOWEVER, THAT MY REVIEW AND CERTIFICATION DOES NOT INCLUDE FIELD VERIFICATION OF ANY POINTS OR MEASUREMENTS SHOWN ON THIS PLAT.

SIGNATURE

DATE

RONALD W. HERR, P.L.S.
WADE SURVEYING, INC.

4907
REGISTRATION NO.

SEAL

DEDICATION

KNOW ALL MEN BY THESE PRESENTS, THAT THE UNDERSIGNED, THE VILLAGES DEVELOPMENT COMPANY, LLC (THE DEVELOPER) HAS CAUSED TO BE MADE THIS PLAT, VILLAGES OF SOUTHERN OAKS UNIT NO. 186, A SUBDIVISION OF LAND HEREIN DESCRIBED AND JOINS WITH VILLAGE COMMUNITY DEVELOPMENT DISTRICT NO. 15 (THE DISTRICT) TO HEREBY DEDICATE THE ROADWAYS SHOWN HEREON TO THE CITY OF WILDWOOD AND THE PERPETUAL USE OF THE PUBLIC; AND DEDICATES TRACTS "A", "B", "C", "D", "E" AND "F" TO VILLAGE COMMUNITY DEVELOPMENT DISTRICT NO. 15.

WITNESSES:

(1) _____
SIGNATURE

PRINT NAME

7580 MIDDLETON DRIVE
MIDDLETON, FLORIDA 34762
MAILING ADDRESS

(2) _____
SIGNATURE

PRINT NAME

4450 NE 83RD ROAD
WILDWOOD, FLORIDA 34785
MAILING ADDRESS

THE VILLAGES DEVELOPMENT COMPANY, LLC,
A FLORIDA LIMITED LIABILITY COMPANY

BY: VDC MANAGER, LLC,
A FLORIDA LIMITED LIABILITY COMPANY,
ITS MANAGER

BY: _____
MARTIN L. DZURO, MANAGER

WITNESSES:

(1) _____
SIGNATURE

PRINT NAME

3601 KIESSEL ROAD
THE VILLAGES, FLORIDA 32163
MAILING ADDRESS

(2) _____
SIGNATURE

PRINT NAME

4450 NE 83RD ROAD
WILDWOOD, FLORIDA 34785
MAILING ADDRESS

VILLAGE COMMUNITY DEVELOPMENT
DISTRICT NO. 15

BY: _____
SPENCER R. NOVAK, CHAIR

STATE OF FLORIDA
COUNTY OF SUMTER

THE FOREGOING INSTRUMENT WAS ACKNOWLEDGED BEFORE ME, BY MEANS OF ☐ PHYSICAL PRESENCE OR ☐ ONLINE NOTARIZATION, THIS _____ DAY OF _____, 20____, BY MARTIN L. DZURO, AS MANAGER OF AND ON BEHALF OF VDC MANAGER, LLC, A FLORIDA LIMITED LIABILITY COMPANY, FOR THE PURPOSES EXPRESSED HEREIN, WHO IS PERSONALLY KNOWN TO ME AND WHO DID NOT TAKE AN OATH.

NOTARY PUBLIC – STATE OF FLORIDA
PRINT NAME: _____
COMMISSION NO.: _____
COMMISSION EXPIRES: _____

SEAL

STATE OF FLORIDA
COUNTY OF SUMTER

THE FOREGOING INSTRUMENT WAS ACKNOWLEDGED BEFORE ME, BY MEANS OF ☐ PHYSICAL PRESENCE OR ☐ ONLINE NOTARIZATION, THIS _____ DAY OF _____, 20____, BY SPENCER R. NOVAK, THE CHAIR OF VILLAGE COMMUNITY DEVELOPMENT DISTRICT NO. 15, ON BEHALF OF THE DISTRICT, WHO IS PERSONALLY KNOWN TO ME AND WHO DID NOT TAKE AN OATH.

NOTARY PUBLIC – STATE OF FLORIDA
PRINT NAME: _____
COMMISSION NO.: _____
COMMISSION EXPIRES: _____

SEAL

CERTIFICATE OF SURVEYOR

I HEREBY CERTIFY THAT THIS PLAT OF VILLAGES OF SOUTHERN OAKS UNIT NO. 186, WAS PREPARED UNDER MY DIRECTION AND SUPERVISION; AND THAT THE PERMANENT REFERENCE MONUMENTS AS SHOWN THEREON WERE PLACED ON THE _____ DAY OF _____, 20____; I FURTHER CERTIFY THAT THIS PLAT COMPLIES WITH THE REQUIREMENTS OF CHAPTER 177, FLORIDA STATUTES.

CLYMER FARNER BARLEY SURVEYING, LLC
4450 N.E. 83RD ROAD
WILDWOOD, FLORIDA 34785
LICENSED BUSINESS NO. 8498

SEAL

KAYE M. JAMESON
REGISTRATION NO. 5912

DATE

CERTIFICATE OF CLERK

I HEREBY CERTIFY THAT I HAVE EXAMINED THIS PLAT AND FIND THAT IT COMPLIES IN FORM WITH ALL THE REQUIREMENTS OF CHAPTER 177, FLORIDA STATUTES AND WAS FILED FOR RECORD ON _____, 20____, AT _____ FILE NUMBER _____.

PLAT BOOK _____ PAGE _____.

CLERK OF THE COURT IN AND
FOR SUMTER COUNTY, FLORIDA

SEAL

PRINT NAME
DEPUTY CLERK

SIGNATURE
DEPUTY CLERK

PREPARED BY:
CFB SURVEYING
CLYMER FARNER BARLEY
4450 NE 83RD ROAD - WILDWOOD, FL 34785
(352) 748-3126 LB#498

VILLAGES OF SOUTHERN OAKS UNIT NO. 186

SECTION 3, TOWNSHIP 20 SOUTH, RANGE 23 EAST,
CITY OF WILDWOOD, SUMTER COUNTY, FLORIDA.

SHEET 2 OF 4

PLAT BOOK _____
PAGE _____

KEY MAP



TRACT TABLE		
TRACT	SQ FT	ACREAGE
A	1,679	0.038
B	2,020	0.046
C	71	0.002
D	70	0.002
E	74	0.002
F	62,390	1.432

LEGEND

- ▣ INDICATES 4" X 4" X 24" CONCRETE PERMANENT REFERENCE MONUMENT (P.R.M.) FOUND AS NOTED.
- ▣ INDICATES 4" X 4" X 24" CONCRETE PERMANENT REFERENCE MONUMENT (P.R.M.) OR 5/8" IRON PIN AND CAP SET LB #8498
- ● INDICATES P.K. NAIL AND DISK PERMANENT CONTROL POINT (P.C.P.) LB #8498 TO BE SET WITHIN ONE YEAR OF THE DATE THIS PLAT IS RECORDED.
- ○ INDICATES 5/8" IRON PIN AND CAP TO BE SET IN ACCORDANCE WITH SECTION 177.091(9) FLORIDA STATUTES. (SEE NOTE #5.)
- C9 INDICATES CURVE NUMBER IN CURVE TABLE
- L9 INDICATES LINE NUMBER IN LINE TABLE
- ℄ INDICATES CENTERLINE
- Δ INDICATES DELTA (CENTRAL ANGLE OF CURVE)
- CB INDICATES CHORD BEARING
- CH INDICATES CHORD DISTANCE
- L INDICATES ARC LENGTH
- ORB INDICATES OFFICIAL RECORDS BOOK
- PC INDICATES POINT OF CURVATURE
- POC INDICATES POINT ON CURVE
- R INDICATES RADIUS LENGTH
- (R) INDICATES RADIAL LINE
- PCC INDICATES POINT OF COMPOUND CURVATURE
- PRC INDICATES POINT OF REVERSE CURVATURE
- PT INDICATES POINT OF TANGENCY
- DRA INDICATES DRAINAGE RETENTION AREA FOR STORMWATER MANAGEMENT INCLUDING CONVEYANCING PIPES
- GFE INDICATES GATE FACILITIES EASEMENT (RESERVED BY THE DEVELOPER AND ITS ASSIGNS)
- SE INDICATES SPECIAL EASEMENT RESERVED BY DEVELOPER AND ITS ASSIGNS, FOR LANDSCAPING AND/OR THE CONSTRUCTION, INSTALLATION, MAINTENANCE AND OPERATION OF WATER, SANITARY SEWER, ELECTRIC, TELEPHONE, GAS OR OTHER UTILITIES AND/OR DRAINAGE FACILITIES AND/OR WALL FENCING AND/OR GOLF CART PATHS. DEVELOPER CONTEMPLATES PUTTING H.V.A.C. AND SIMILAR EQUIPMENT WITHIN THE EASEMENT AREA. UTILITY PROVIDERS UTILIZING SUCH EASEMENT AREA COVENANT, AS A CONDITION OF THE RIGHT TO USE SUCH EASEMENT, NOT TO INTERFERE OR DISTURB SUCH EQUIPMENT INSTALLED WITHIN THE EASEMENT AREA.
- SME INDICATES SIGN MAINTENANCE EASEMENT RESERVED BY DEVELOPER AND ITS ASSIGNS FOR INSTALLATION AND MAINTENANCE OF SIGNAGE.

LB INDICATES LICENSED BUSINESS
NO. INDICATES NUMBER
PB INDICATES PLAT BOOK
PG INDICATES PAGE
PGS INDICATES PAGES
SQ FT INDICATES SQUARE FEET
R/W INDICATES RIGHT-OF-WAY

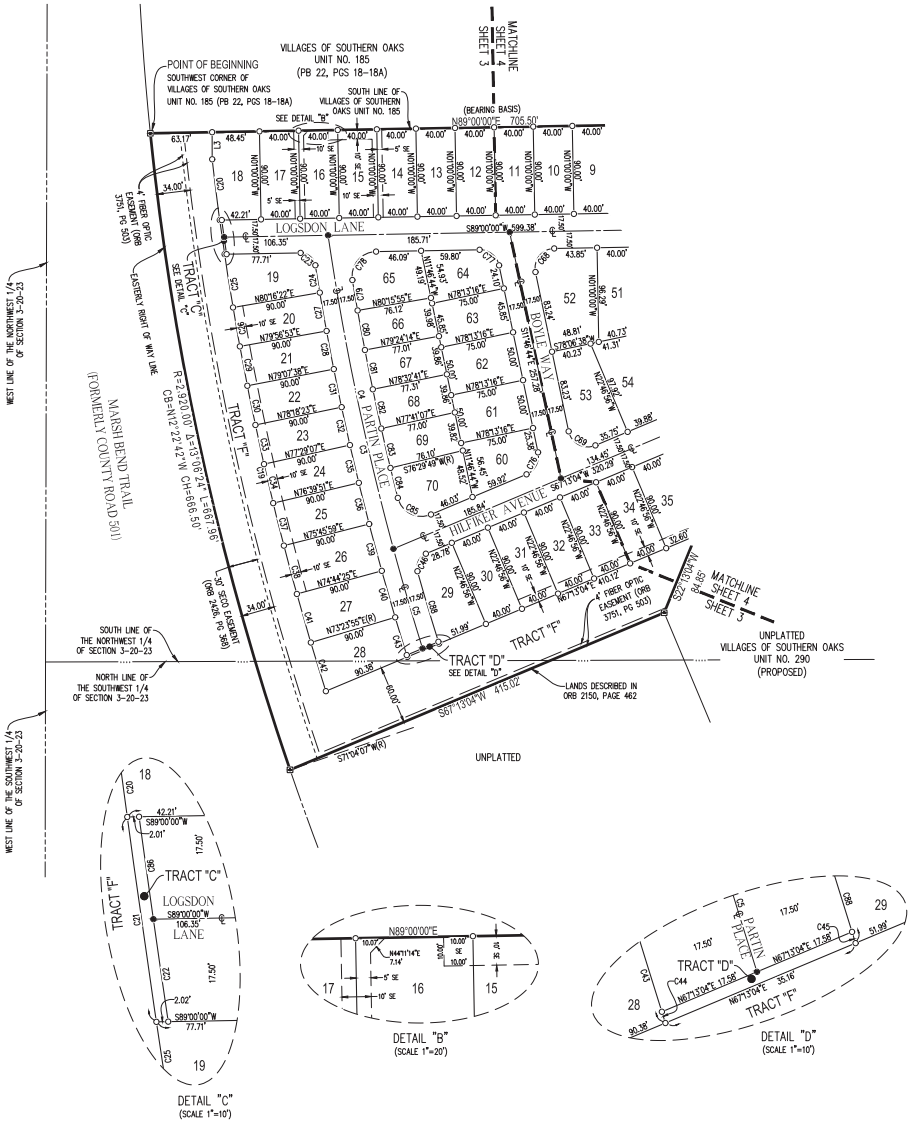
PREPARED BY:
CFB SURVEYING
OLYMER PARSNER BARLEY
4450 NE 83RD ROAD - WILDWOOD, FL 34785
(352) 748-3126 LB8498

VILLAGES OF SOUTHERN OAKS UNIT NO. 186

SECTION 3, TOWNSHIP 20 SOUTH, RANGE 23 EAST,
CITY OF WILDWOOD, SUMTER COUNTY, FLORIDA.

SHEET 3 OF 4

PLAT BOOK _____
PAGE _____



CURVE TABLE					
CURVE TAG	RADIUS	CENTRAL ANGLE	ARC LENGTH	CHORD BEARING	CHORD LENGTH
C3	2752.50'	9°01'52"	433.86'	S12°53'10"E	433.41'
C4	2752.50'	6°49'15"	327.67'	S11°46'51"E	327.48'
C5	2752.50'	2°12'37"	106.19'	S16°17'46"E	106.18'
C19	2860.00'	11°09'40"	557.12'	S12°03'51"E	556.24'
C20	2860.00'	1°15'19"	62.65'	S07°06'41"E	62.65'
C21	2860.00'	0°42'24"	35.27'	S08°05'32"E	35.27'
C22	2858.00'	0°21'13"	17.64'	S08°16'26"E	17.64'
C23	15.00'	82°02'29"	21.48'	N49°58'46"W	19.69'
C24	2770.00'	0°35'07"	28.29'	S09°15'04"E	28.29'
C25	2860.00'	1°06'15"	55.11'	S08°59'51"E	55.11'
C26	2860.00'	0°48'34"	40.41'	S09°57'16"E	40.41'
C27	2770.00'	0°49'31"	39.90'	S09°57'23"E	39.90'
C28	2770.00'	0°49'15"	39.68'	S10°46'46"E	39.68'
C29	2860.00'	0°49'15"	40.97'	S10°46'10"E	40.97'
C30	2860.00'	0°49'15"	40.98'	S11°35'25"E	40.98'
C31	2770.00'	0°49'15"	39.69'	S11°36'01"E	39.69'
C32	2770.00'	0°49'15"	39.69'	S12°25'17"E	39.69'
C33	2860.00'	0°49'15"	40.98'	S12°24'41"E	40.98'
C34	2860.00'	0°49'16"	40.99'	S13°13'56"E	40.99'
C35	2770.00'	0°49'16"	39.70'	S13°14'32"E	39.70'
C36	2770.00'	0°53'53"	43.41'	S14°06'07"E	43.41'
C37	2860.00'	0°53'53"	44.82'	S14°05'31"E	44.82'
C38	2860.00'	1°01'34"	51.22'	S15°03'14"E	51.21'
C39	2770.00'	1°01'34"	49.60'	S15°03'50"E	49.60'
C40	2770.00'	1°01'28"	49.53'	S16°05'21"E	49.53'
C41	2860.00'	1°02'04"	51.64'	S16°05'03"E	51.64'
C42	2860.00'	1°02'36"	52.08'	S17°07'23"E	52.08'
C43	2770.00'	0°52'34"	42.35'	S17°02'22"E	42.35'
C44	2770.00'	0°02'30"	2.01'	S17°27'24"E	2.01'
C45	2735.00'	0°02'32"	2.01'	S17°23'18"E	2.01'
C46	15.00'	83°00'29"	21.73'	S25°42'49"W	19.88'
C68	20.00'	100°46'44"	35.18'	S38°36'38"W	30.82'
C69	20.00'	101°00'12"	35.26'	S62°16'50"E	30.87'
C76	20.00'	78°59'48"	27.58'	N27°43'10"E	25.44'
C77	20.00'	79°13'16"	27.65'	N51°23'22"W	25.50'
C78	25.00'	98°23'38"	42.93'	S39°48'11"W	37.85'
C79	2735.00'	0°39'43"	31.59'	S09°43'30"E	31.59'
C80	2735.00'	0°51'41"	41.12'	S10°29'12"E	41.12'
C81	2735.00'	0°51'33"	41.02'	S11°20'49"E	41.02'
C82	2735.00'	0°51'34"	41.02'	S12°12'22"E	41.02'
C83	2735.00'	0°52'02"	41.40'	S13°04'10"E	41.40'
C84	2735.00'	0°39'39"	31.54'	S13°50'00"E	31.54'
C85	25.00'	98°37'07"	43.03'	S63°28'23"E	37.91'
C86	2858.00'	0°21'12"	17.63'	S07°55'13"E	17.63'
C88	2735.00'	1°37'08"	77.28'	S16°35'59"E	77.28'

LINE TABLE		
LINE TAG	BEARING	DISTANCE
L3	S00°06'06"E	27.71'

TRACT TABLE		
TRACT	SQ FT	ACREAGE
A	1,679	0.038
B	2,020	0.046
C	71	0.002
D	70	0.002
E	74	0.002
F	62,390	1.432

0 30 60 120
1 inch = 60 feet

LEGEND

- ▣ INDICATES 4" X 4" X 24" CONCRETE PERMANENT REFERENCE MONUMENT (P.R.M.) FOUND AS NOTED.
- ⊡ INDICATES 4" X 4" X 24" CONCRETE PERMANENT REFERENCE MONUMENT (P.R.M.) OR 5/8" IRON PIN AND CAP SET LB #8498
- ● INDICATES P.K. NAIL AND DISK PERMANENT CONTROL POINT (P.C.P.) LB #8498 TO BE SET WITHIN ONE YEAR OF THE DATE THIS PLAT IS RECORDED.
- ○ INDICATES 5/8" IRON PIN AND CAP TO BE SET IN ACCORDANCE WITH SECTION 177.091(9) FLORIDA STATUTES. (SEE NOTE #5.)
- C9 INDICATES CURVE NUMBER IN CURVE TABLE
- L9 INDICATES LINE NUMBER IN LINE TABLE
- ℄ INDICATES CENTERLINE
- Δ INDICATES DELTA (CENTRAL ANGLE OF CURVE)
- CB INDICATES CHORD BEARING
- CH INDICATES CHORD DISTANCE
- L INDICATES ARC LENGTH
- ORB INDICATES OFFICIAL RECORDS BOOK
- PC INDICATES POINT OF CURVATURE
- POC INDICATES POINT ON CURVE
- R INDICATES RADIUS LENGTH
- (R) INDICATES RADIAL LINE
- PCC INDICATES POINT OF COMPOUND CURVATURE
- PRC INDICATES POINT OF REVERSE CURVATURE
- PT INDICATES POINT OF TANGENCY
- DRA INDICATES DRAINAGE RETENTION AREA FOR STORMWATER MANAGEMENT INCLUDING CONVEYANCING PIPES
- GFE INDICATES GATE FACILITIES EASEMENT (RESERVED BY THE DEVELOPER AND ITS ASSIGNS)
- SE INDICATES SPECIAL EASEMENT RESERVED BY DEVELOPER AND ITS ASSIGNS, FOR LANDSCAPING AND/OR THE CONSTRUCTION, INSTALLATION, MAINTENANCE AND OPERATION OF WATER, SANITARY SEWER, ELECTRIC, TELEPHONE, GAS OR OTHER UTILITIES AND/OR DRAINAGE FACILITIES AND/OR WALL FENCING AND/OR GOLF CART PATHS. DEVELOPER CONTEMPLATES PUTTING H.V.A.C. AND SIMILAR EQUIPMENT WITHIN THE EASEMENT AREA. UTILITY PROVIDERS UTILIZING SUCH EASEMENT AREA COVENANT, AS A CONDITION OF THE RIGHT TO USE SUCH EASEMENT, NOT TO INTERFERE OR DISTURB SUCH EQUIPMENT INSTALLED WITHIN THE EASEMENT AREA.
- SME INDICATES SIGN MAINTENANCE EASEMENT RESERVED BY DEVELOPER AND ITS ASSIGNS FOR INSTALLATION AND MAINTENANCE OF SIGNAGE.

LB INDICATES LICENSED BUSINESS
NO. INDICATES NUMBER
PB INDICATES PLAT BOOK
PG INDICATES PAGE
POS INDICATES PAGES
SQ FT INDICATES SQUARE FEET
R/W INDICATES RIGHT-OF-WAY

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VILLAGES OF SOUTHERN OAKS UNIT NO. 186

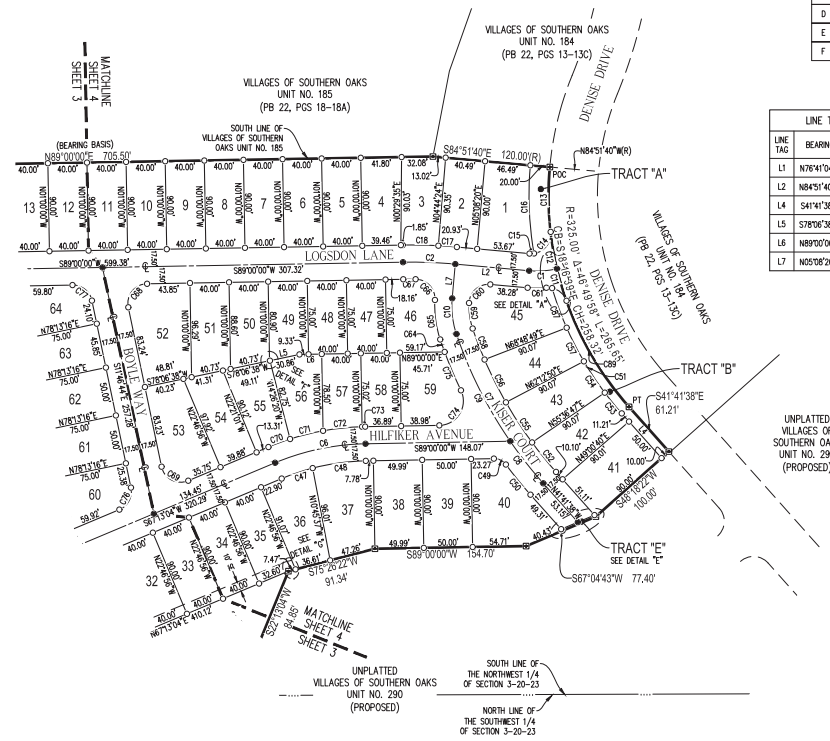
SECTION 3, TOWNSHIP 20 SOUTH, RANGE 23 EAST,
CITY OF WILDWOOD, SUMTER COUNTY, FLORIDA.

SHEET 4 OF 4

PLAT BOOK _____
PAGE _____

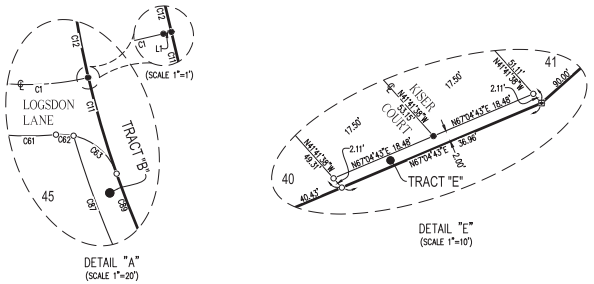
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F	62,390	1.432

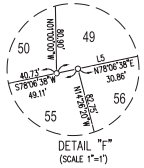


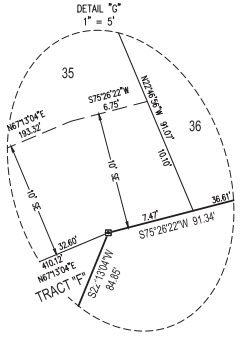


LINE TABLE		
LINE TAG	BEARING	DISTANCE
L1	N76°41'04"E	0.14'
L2	N84°51'40"W	75.83'
L4	S41°41'38"E	61.21'
L5	S78°06'38"W	31.24'
L6	N89°00'00"E	22.79'
L7	N05°08'20"E	35.19'

CURVE TABLE					
CURVE TAG	RADIUS	CENTRAL ANGLE	ARC LENGTH	CHORD BEARING	CHORD LENGTH
C1	89.00'	18°27'16"	28.67'	N85°54'42"E	28.54'
C2	500.00'	6°08'20"	53.57'	N87°55'50"W	53.55'
C6	250.00'	21°46'56"	95.04'	S78°06'32"W	94.47'
C7	442.50'	23°01'37"	177.84'	S30°10'50"E	176.64'
C8	442.50'	7°05'18"	54.74'	S38°08'59"E	54.71'
C9	442.50'	15°56'19"	123.10'	S26°38'11"E	122.70'
C10	89.00'	23°48'21"	36.98'	S06°45'51"E	36.71'
C11	325.00'	6°01'34"	34.18'	S16°19'44"E	34.17'
C12	325.00'	6°44'53"	38.28'	S09°56'30"E	38.25'
C13	325.00'	11°42'23"	66.40'	S00°42'52"E	66.29'
C14	20.00'	88°20'20"	30.84'	N37°36'07"E	27.87'
C15	20.00'	13°22'03"	4.67'	N88°27'18"E	4.66'
C16	345.00'	15°01'42"	90.49'	S02°22'31"E	90.23'
C17	517.50'	2°05'47"	18.93'	N85°54'33"W	18.93'
C18	517.50'	4°02'34"	36.51'	N88°58'44"W	36.51'
C47	232.50'	8°14'29"	33.44'	S71°20'18"W	33.41'
C48	232.50'	13°32'27"	54.95'	S82°13'46"W	54.82'
C49	15.00'	54°15'57"	14.21'	N63°52'02"W	13.68'
C50	460.00'	4°57'35"	39.82'	S39°12'51"E	39.81'
C51	335.00'	25°16'18"	147.76'	S29°03'30"E	146.56'
C52	425.00'	5°14'24"	38.87'	S39°04'27"E	38.85'
C53	335.00'	4°41'03"	27.39'	S39°21'07"E	27.38'
C54	335.00'	6°36'03"	38.59'	S33°42'34"E	38.57'
C55	425.00'	6°36'03"	48.96'	S33°09'13"E	48.94'
C56	425.00'	6°35'59"	48.95'	S26°33'12"E	48.93'
C57	335.00'	6°35'59"	38.59'	S27°06'33"E	38.57'
C58	425.00'	4°35'11"	34.02'	S20°57'37"E	34.01'
C59	71.50'	21°13'54"	26.50'	S08°03'05"E	26.34'
C60	20.00'	92°34'28"	32.31'	S48°51'06"W	28.91'
C61	106.50'	10°17'41"	19.14'	N89°59'29"E	19.11'
C62	20.00'	17°15'47"	6.03'	N86°31'28"W	6.00'
C63	20.00'	58°33'04"	20.44'	N48°37'03"W	19.56'
C64	460.00'	1°40'57"	13.51'	S19°30'30"E	13.51'
C65	106.50'	22°04'13"	41.02'	S07°37'55"E	40.77'
C66	20.00'	92°54'29"	32.43'	N43°03'02"W	28.99'
C67	482.50'	1°29'44"	12.59'	S89°44'51"W	12.59'
C68	20.00'	100°46'44"	35.18'	S38°36'38"W	30.82'
C69	20.00'	101°00'12"	35.26'	S62°16'50"E	30.87'
C70	267.50'	5°03'29"	23.62'	S69°44'48"W	23.61'
C71	267.50'	7°26'59"	34.78'	S76°00'02"W	34.76'
C72	267.50'	8°36'29"	40.19'	S84°01'46"W	40.15'
C73	267.50'	0°39'59"	3.11'	S88°40'00"W	3.11'
C74	25.00'	114°40'01"	50.03'	N31°39'59"E	42.09'
C75	460.00'	5°19'03"	42.69'	S23°00'30"E	42.68'
C76	20.00'	78°59'48"	27.58'	N27°43'10"E	25.44'
C77	20.00'	79°13'16"	27.65'	N51°23'22"W	25.50'
C87	335.00'	7°23'12"	43.19'	S20°06'57"E	43.16'
C89	325.00'	22°21'08"	126.79'	S30°31'05"E	125.99'







LEGEND

- ▣ INDICATES 4" X 4" X 24" CONCRETE PERMANENT REFERENCE MONUMENT (P.R.M.) FOUND AS NOTED.
- ▣ INDICATES 4" X 4" X 24" CONCRETE PERMANENT REFERENCE MONUMENT (P.R.M.) OR 5/8" IRON PIN AND CAP SET LB #8498
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- SME INDICATES SIGN MAINTENANCE EASEMENT RESERVED BY DEVELOPER AND ITS ASSIGNS FOR INSTALLATION AND MAINTENANCE OF SIGNAGE.

LB INDICATES LICENSED BUSINESS
NO. INDICATES NUMBER
PB INDICATES PLAT BOOK
PG INDICATES PAGE
PGS INDICATES PAGES
SQ FT INDICATES SQUARE FEET
R/W INDICATES RIGHT-OF-WAY

PREPARED BY:
CFB SURVEYING | OLYMER PARMER BARLEY
4450 NE 83RD ROAD - WILDWOOD, FL 34785
(352) 748-0128 LB8498

CITY COMMISSION OF THE CITY OF WILDWOOD

EXECUTIVE SUMMARY

SUBJECT: **PLAT 2411-009 VOSO Unit 189 Final Plat**

REQUESTED ACTION: Staff recommends approval.

CONTRACT:

BUDGET IMPACT:

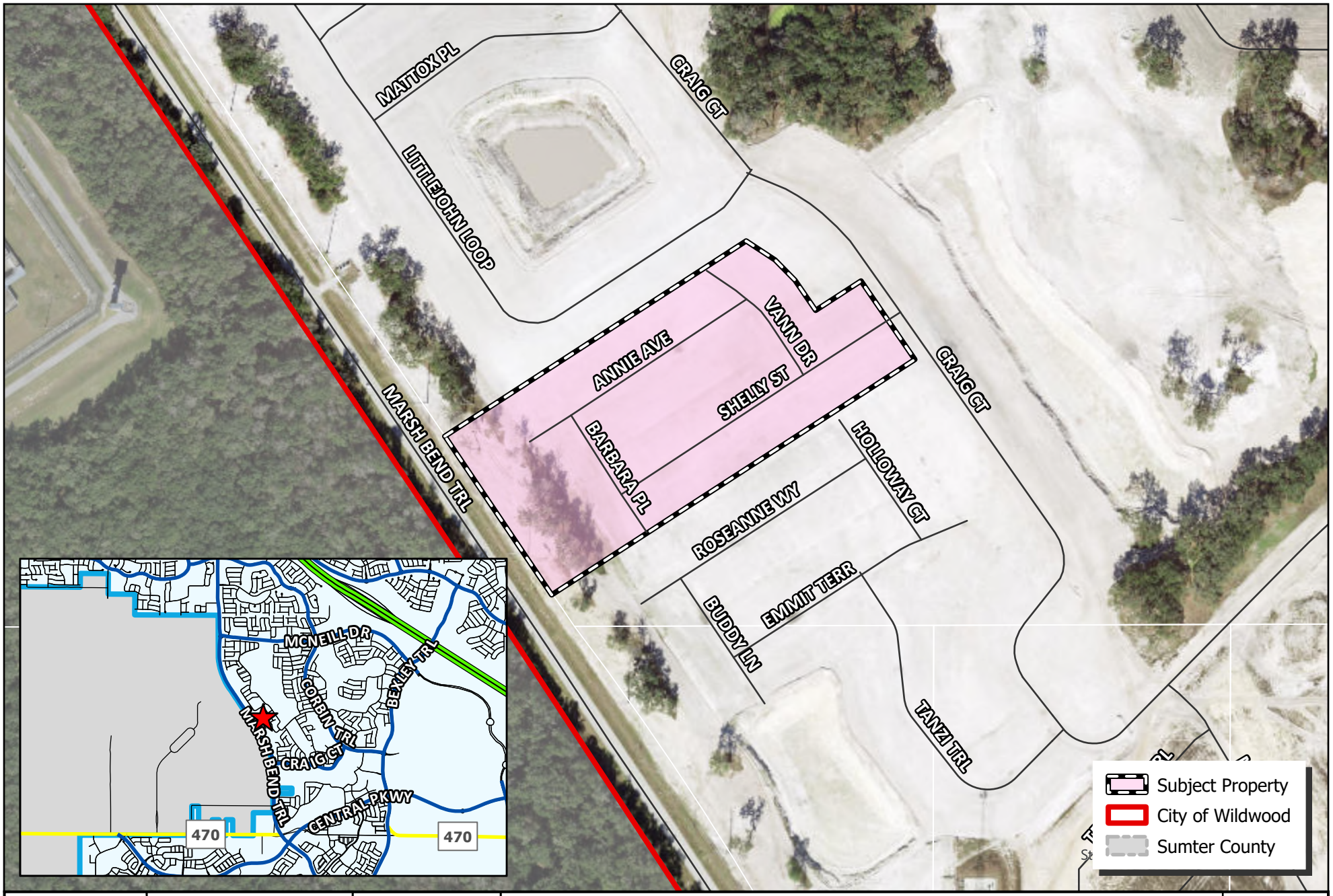
HISTORY/FACTS/ISSUES:

Case Number	PLAT 2411-009
Owner/Applicant(s)	The Villages Development Company, LLC
Acreage	8.89 +/-
Property Location	The property is generally located on Marsh Bend Trail, 1.09 miles north of Central Parkway
Parcel(s)	K03-005
Date	January 2, 2024

The applicant is seeking approval from the City Commission for the VOSO Unit 189 Final Plat, a subdivision consisting of 44 lots and six tracts, per the attached plans.

Plat 2411-009 meets the criteria set forth in F.S. 177, The Villages of Southern Oaks 163 Agreement, the Land Development Regulations, and is consistent with the goals, objectives, and policies of the 2050 Comprehensive Plan.

Alex Lammers
Planner I, Development Services



WILDWOOD FLORIDA EST. 1877

CITY OF WILDWOOD
100 North Main Street
Wildwood, FL 34785
Phone: (352) 330-1330
www.wildwood-fl.gov

N

0 0.01 0.01 0.02 0.03 0.04
Miles

PLAT 2411-009

VOSO - UNIT 189 FINAL PLAT

PARCEL K03-005

MAP 1B

LOCATION MAP

JAN 2025

COVENANTS, CONDITIONS, RESTRICTIONS AND EASEMENTS FOR THIS SUBDIVISION ARE RECORDED IN THE PUBLIC RECORDS OF SUMTER COUNTY, FLORIDA. OR BOOK _____, PAGE _____.

VILLAGES OF SOUTHERN OAKS UNIT NO. 189

SHEET 1 OF 2

SECTION 3, TOWNSHIP 20 SOUTH, RANGE 23 EAST,
CITY OF WILDWOOD, SUMTER COUNTY, FLORIDA.

PLAT BOOK _____
PAGE _____

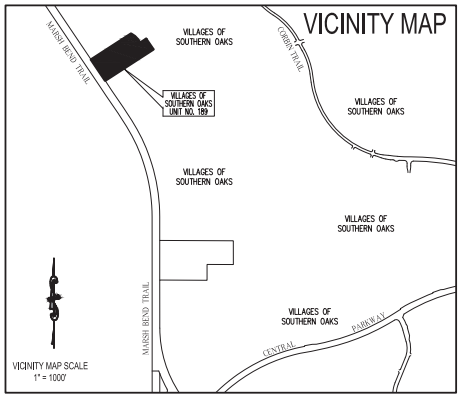
LEGAL DESCRIPTION

A PARCEL OF LAND LYING WITHIN THE SOUTH 1/2 OF SECTION 3, TOWNSHIP 20 SOUTH, RANGE 23 EAST, SUMTER COUNTY, FLORIDA, DESCRIBED AS FOLLOWS:

COMMENCE AT THE NORTHWEST CORNER OF THE SOUTHWEST 1/4 OF AFORESAID SECTION 3; THENCE ALONG THE WEST LINE THEREOF RUN S00°05'29"W, 2232.05 FEET; THENCE DEPARTING SAID WEST LINE RUN S89°54'31"E, 1563.91 FEET TO THE NORTHEASTERLY RIGHT OF WAY LINE OF MARSH BEND TRAIL (FORMERLY COUNTY ROAD NO. 501 PER SUMTER COUNTY RIGHT OF WAY MAP) FOR THE POINT OF BEGINNING; THENCE DEPARTING SAID RIGHT OF WAY LINE RUN N57°03'09"E, 811.06 FEET; THENCE S56°44'03"E, 78.23 FEET; THENCE S44°25'43"E, 62.17 FEET; THENCE S34°23'32"E, 82.51 FEET; THENCE N57°03'09"E, 122.04 FEET; THENCE S34°23'32"E, 215.07 FEET; THENCE S57°03'09"W, 977.25 FEET TO AFORESAID NORTHEASTERLY RIGHT OF WAY LINE; THE FOLLOWING TWO (2) COURSES BEING ALONG SAID RIGHT OF WAY LINE: RUN N33°54'37"W, 373.30 FEET; THENCE N33°58'04"W, 56.76 FEET TO THE POINT OF BEGINNING.

CONTAINING 8.98 ACRES, MORE OR LESS.

VICINITY MAP



VICINITY MAP SCALE
1" = 1000'

44 LOTS – 6 TRACTS

NOTICE: THIS PLAT, AS RECORDED IN ITS GRAPHIC FORM, IS THE OFFICIAL DEPICTION OF THE SUBDIVIDED LANDS DESCRIBED HEREIN AND WILL IN NO CIRCUMSTANCES BE SUPPLANTED IN AUTHORITY BY ANY OTHER GRAPHIC OR DIGITAL FORM OF THE PLAT. THERE MAY BE ADDITIONAL RESTRICTIONS THAT ARE NOT RECORDED ON THIS PLAT THAT MAY BE FOUND IN THE PUBLIC RECORDS OF THIS COUNTY.

NOTES:

1.) BEARINGS ARE BASED ON THE WEST LINE OF THE SOUTHWEST 1/4 OF SECTION 3, TOWNSHIP 20 SOUTH, RANGE 23 EAST AS BEING S00°05'29"W.

2.) ALL PLATTED UTILITY EASEMENTS SHALL PROVIDE THAT SUCH EASEMENTS SHALL ALSO BE EASEMENTS FOR THE CONSTRUCTION, INSTALLATION, MAINTENANCE, AND OPERATION OF CABLE TELEVISION SERVICES; PROVIDED, HOWEVER, NO SUCH CONSTRUCTION, INSTALLATION, MAINTENANCE, AND OPERATION OF CABLE TELEVISION SERVICES SHALL INTERFERE WITH THE FACILITIES AND SERVICES OF AN ELECTRIC, TELEPHONE, GAS, OR OTHER PUBLIC UTILITY. IN THE EVENT A CABLE TELEVISION COMPANY DAMAGES THE FACILITIES OF A PUBLIC UTILITY, IT SHALL BE SOLELY RESPONSIBLE FOR THE DAMAGES. THIS SECTION SHALL NOT APPLY TO THOSE PRIVATE EASEMENTS GRANTED TO OR OBTAINED BY A PARTICULAR ELECTRIC, TELEPHONE, GAS, OR OTHER PUBLIC UTILITY. SUCH CONSTRUCTION, INSTALLATION, MAINTENANCE, AND OPERATION SHALL COMPLY WITH THE NATIONAL ELECTRICAL SAFETY CODE AS ADOPTED BY THE FLORIDA PUBLIC SERVICE COMMISSION.

3.) ALL DISTANCES SHOWN ARE IN FEET.

4.) WITH REFERENCE TO CURVILINEAR LOTS, RADIAL LINES HAVE BEEN DESIGNATED BY (R). ALL OTHER LINES ARE NON-RADIAL.

5.) LOT CORNERS WILL BE SET PRIOR TO THE TRANSFER OF ANY LOT OR PRIOR TO THE EXPIRATION OF THE BOND OR OTHER SURETY.

6.) PERMANENT CONTROL POINTS (P.C.P.'S) WILL BE SET WITHIN ONE YEAR OF THE DATE THIS PLAT WAS RECORDED OR PRIOR TO THE EXPIRATION OF THE BOND OR SURETY.

7.) ALL PERMANENT REFERENCE MONUMENTS (P.R.M.'S) HAVE BEEN SET IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER 177, FLORIDA STATUTES.

8.) TRACTS "A", "B" AND "F" ARE FOR ANY PURPOSE PERMITTED BY APPLICABLE LAW AND APPROVED IN WRITING BY DEVELOPER.

9.) TRACTS "C", "D" AND "E" ARE FOR ANY PURPOSE PERMITTED BY APPLICABLE LAW AND APPROVED IN WRITING BY DEVELOPER. NO INGRESS OR EGRESS IS PERMITTED WITHOUT THE DEVELOPER'S CONSENT.

10.) THE DISTRICT FINDS IT IN THE PUBLIC INTEREST, AND HEREBY AGREES TO PROVIDE THE FOLLOWING SERVICES: (A) MAINTENANCE AND REPAIR OF AREAS OWNED BY THE DISTRICT OR DEDICATED TO THE USE AND ENJOYMENT OF THE RESIDENTS OF THE DISTRICT, THE SUBDIVISION, OR THE PUBLIC; (B) PAY FOR THE COST OF WATER AND SEWER PROVIDED BY GIBSON PLACE UTILITY COMPANY, LLC, OR ITS ASSIGNS, TOGETHER WITH THE COST OF GARBAGE, ELECTRICAL, LIGHTING, TELEPHONE, GAS AND OTHER NECESSARY UTILITY SERVICE FOR AREAS OWNED BY THE DISTRICT OR DEDICATED TO THE USE AND ENJOYMENT OF THE RESIDENTS OF THE DISTRICT, SUBDIVISION, OR THE PUBLIC; (C) MAINTENANCE AND REPAIR OF THE STORM WATER RUNOFF DRAINAGE SYSTEM INCLUDING DRAINAGE EASEMENTS AND DRAIN PIPES NOT MAINTAINED BY GIBSON PLACE WATER CONSERVATION AUTHORITY, LLC, OR ITS ASSIGNS, OR THE CITY OF WILDWOOD; (D) MAINTENANCE AND REPAIR OF THE LANDSCAPING AND IRRIGATION ON ISLANDS AND CUL-DE-SACS LOCATED WITHIN THE ROADWAYS, IF ANY; (E) MAINTENANCE AND REPAIR TO THE TOP AND EXTERIOR OF THE WALLS AND/OR FENCES LOCATED ON OR ADJACENT TO TRACTS A, B, AND F OF THE SUBDIVISION; AND (F) MAINTENANCE AND REPAIR, INCLUDING STRUCTURAL REPAIR, TO THE WALLS AND/OR FENCES LOCATED ON OR ADJACENT TO TRACTS C, D, AND E OF THE SUBDIVISION.

11.) THE TITLE OPINION FOR THIS PLAT HAS BEEN SUBMITTED BY SEPARATE DOCUMENT.

VILLAGES OF SOUTHERN OAKS UNIT NO. 189 CONVEYANCE AND GRANT OF EASEMENTS TO VILLAGE COMMUNITY DEVELOPMENT DISTRICT NO. 15

ALL RIGHT, TITLE AND INTEREST OF THE VILLAGES DEVELOPMENT COMPANY, LLC, (THE DEVELOPER) IN TRACTS "A", "B", "C", "D", "E" AND "F" AND THE ROADWAYS SHOWN ON THIS PLAT OF VILLAGES OF SOUTHERN OAKS UNIT NO. 189, IS HEREBY SOLD, CONVEYED AND SET OVER TO VILLAGE COMMUNITY DEVELOPMENT DISTRICT NO. 15 (THE DISTRICT); (1) RESERVING UNTO THE DEVELOPER AND ITS ASSIGNS, AND EACH OF THEIR SUCCESSORS, TENANTS, INVITEES, AND GUESTS PERPETUAL EASEMENTS FOR INGRESS AND EGRESS AND THE CONSTRUCTION, INSTALLATION, MAINTENANCE AND OPERATION OF UNDERGROUND ELECTRIC, TELEPHONE, CABLE, GAS AND OTHER UTILITIES, IRRIGATION FACILITIES, POTABLE WATER, SANITARY SEWER AND STORM WATER FACILITIES, LANDSCAPED AREAS, FENCES, WALLS, ENTRY FACILITIES, INCLUDING ELECTRONIC CARD READING EQUIPMENT, GOLF CART AND PEDESTRIAN PATHS, SIGNAGE, ENJOYMENT IMPROVEMENTS AND GOLF CART AND PEDESTRIAN BRIDGES; AND (2) SUBJECT TO THE RESTRICTION THAT ALL ADDITIONS OF, REMOVAL OF, AND CHANGES TO IMPROVEMENTS LOCATED ON SUCH TRACTS AND ROADWAYS (INCLUDING, WITHOUT LIMITATION, ALL THOSE IMPROVEMENTS DESCRIBED ABOVE), MUST FIRST BE APPROVED IN ADVANCE BY THE DEVELOPER.

THE DEVELOPER ALSO GRANTS TO THE DISTRICT NON-EXCLUSIVE, PERPETUAL EASEMENTS OVER, ACROSS AND UPON ANY SPECIAL EASEMENTS SHOWN HEREON FOR THE PURPOSE OF MAINTAINING DRAINAGE FACILITIES LOCATED THEREON.

THE DISTRICT, BY EXECUTING THE DEDICATION CONTAINED ON THIS PLAT, ACCEPTS THIS CONVEYANCE AND AGREES TO MAINTAIN THE TRACTS LISTED ABOVE, INCLUDING ALL IMPROVEMENTS CONSTRUCTED THEREON AND DRAINAGE FACILITIES LOCATED WITHIN ANY SPECIAL EASEMENTS PERPETUALLY, AND MAINTAIN THE ROADWAYS AND DRAINAGE FEATURES LYING WITHIN SUCH ROADWAYS FOR TWO YEARS AFTER THE CITY ENGINEER HAS CERTIFIED THE CONSTRUCTION HAS BEEN COMPLETED.

WITNESSES:

_____
SIGNATURE

_____
PRINT NAME

7580 MIDDLETON DRIVE
MIDDLETON, FLORIDA 34762
MAILING ADDRESS

_____
SIGNATURE

_____
PRINT NAME

4450 NE 83RD ROAD
WILDWOOD, FLORIDA 34785
MAILING ADDRESS

THE VILLAGES DEVELOPMENT COMPANY, LLC,
A FLORIDA LIMITED LIABILITY COMPANY
BY: VDC MANAGER, LLC,
A FLORIDA LIMITED LIABILITY COMPANY,
ITS MANAGER

BY: _____
MARTIN L. DZURO, MANAGER

STATE OF FLORIDA
COUNTY OF SUMTER

THE FOREGOING INSTRUMENT WAS ACKNOWLEDGED BEFORE ME, BY MEANS OF ☐ PHYSICAL PRESENCE OR ☐ ONLINE NOTARIZATION, THIS ____ DAY OF _____, 20____, BY MARTIN L. DZURO, AS MANAGER OF AND ON BEHALF OF VDC MANAGER, LLC, A FLORIDA LIMITED LIABILITY COMPANY, THE MANAGER OF THE VILLAGES DEVELOPMENT COMPANY, LLC, A FLORIDA LIMITED LIABILITY COMPANY, FOR THE PURPOSES EXPRESSED HEREIN, WHO IS PERSONALLY KNOWN TO ME AND WHO DID NOT TAKE AN OATH.

_____
NOTARY PUBLIC – STATE OF FLORIDA
PRINT NAME: _____
COMMISSION NO.: _____
COMMISSION EXPIRES: _____

SEAL

CERTIFICATE OF APPROVAL BY CITY OFFICIALS

THIS CERTIFIES THAT THIS PLAT HAS BEEN REVIEWED FOR CONFORMITY TO F.S. CHAPTER 177, AS CERTIFIED BY THE REVIEWING SURVEYOR SHOWN BELOW.

_____
MELANIE D. STRICKLAND
DEVELOPMENT SERVICES DIRECTOR

THIS CERTIFIES THAT THIS PLAT WAS PRESENTED TO THE COMMISSION OF THE CITY OF WILDWOOD, SUMTER COUNTY, FLORIDA, AND WAS APPROVED BY THE COMMISSION FOR RECORD ON THIS ____ DAY OF _____, 20____.

_____
JESSICA BARNES
CITY CLERK

_____
ED WOLF
MAYOR

THIS CERTIFIES THAT THIS PLAT WAS PRESENTED TO THE ATTORNEY FOR THE CITY OF WILDWOOD, SUMTER COUNTY, FLORIDA, AND APPROVED BY HIM OR HER AS TO FORM AND LEGALITY ON THIS ____ DAY OF _____, 20____.

_____
PRINT NAME
CITY OF WILDWOOD, ATTORNEY

_____
SIGNATURE
CITY OF WILDWOOD, ATTORNEY

_____
DEVELOPMENT SERVICES DIRECTOR
MELANIE D. STRICKLAND

_____
PUBLIC WORKS DIRECTOR
JEREMY HOCKENBURY

_____
PRINT NAME
CITY OF WILDWOOD, ENGINEER

_____
SIGNATURE
CITY OF WILDWOOD, ENGINEER

REVIEWING SURVEYOR'S CERTIFICATE

PURSUANT TO SECTION 177.081, FLORIDA STATUTES, I HEREBY CERTIFY THAT I HAVE PERFORMED A REVIEW OF THIS PLAT FOR CONFORMITY TO CHAPTER 177, FLORIDA STATUTES AND THAT SAID PLAT COMPLIES WITH THE TECHNICAL REQUIREMENTS OF THAT CHAPTER; PROVIDED, HOWEVER, THAT MY REVIEW AND CERTIFICATION DOES NOT INCLUDE FIELD VERIFICATION OF ANY POINTS OR MEASUREMENTS SHOWN ON THIS PLAT.

_____ _____
SIGNATURE DATE

_____ 4907
RONALD W. HERR, P.L.S. REGISTRATION NO.
WADE SURVEYING, INC.

SEAL

PREPARED BY: CFB SURVEYING | CLYMER FARMER BARLEY
4450 NE 83RD ROAD - WILDWOOD, FL 34785
(352) 748-3126 LB#498

DEDICATION

KNOW ALL MEN BY THESE PRESENTS, THAT THE UNDERSIGNED, THE VILLAGES DEVELOPMENT COMPANY, LLC (THE DEVELOPER) HAS CAUSED TO BE MADE THIS PLAT, VILLAGES OF SOUTHERN OAKS UNIT NO. 189, A SUBDIVISION OF LAND HEREIN DESCRIBED AND JOINS WITH VILLAGE COMMUNITY DEVELOPMENT DISTRICT NO. 15 (THE DISTRICT) TO HEREBY DEDICATE THE ROADWAYS SHOWN HEREON TO THE CITY OF WILDWOOD AND THE PERPETUAL USE OF THE PUBLIC; AND DEDICATES TRACTS "A", "B", "C", "D", "E" AND "F" TO VILLAGE COMMUNITY DEVELOPMENT DISTRICT NO. 15.

WITNESSES:

(1) _____
SIGNATURE

_____
PRINT NAME

7580 MIDDLETON DRIVE
MIDDLETON, FLORIDA 34762
MAILING ADDRESS

(2) _____
SIGNATURE

_____
PRINT NAME

4450 NE 83RD ROAD
WILDWOOD, FLORIDA 34785
MAILING ADDRESS

THE VILLAGES DEVELOPMENT COMPANY, LLC,
A FLORIDA LIMITED LIABILITY COMPANY

BY: VDC MANAGER, LLC,
A FLORIDA LIMITED LIABILITY COMPANY,
ITS MANAGER

BY: _____
MARTIN L. DZURO, MANAGER

WITNESSES:

(1) _____
SIGNATURE

_____
PRINT NAME

3601 KIESSEL ROAD
THE VILLAGES, FLORIDA 32163
MAILING ADDRESS

(2) _____
SIGNATURE

_____
PRINT NAME

4450 NE 83RD ROAD
WILDWOOD, FLORIDA 34785
MAILING ADDRESS

VILLAGE COMMUNITY DEVELOPMENT DISTRICT NO. 15

BY: _____
SPENCER R. NOVAK, CHAIR

STATE OF FLORIDA
COUNTY OF SUMTER

THE FOREGOING INSTRUMENT WAS ACKNOWLEDGED BEFORE ME, BY MEANS OF ☐ PHYSICAL PRESENCE OR ☐ ONLINE NOTARIZATION, THIS ____ DAY OF _____, 20____, BY MARTIN L. DZURO, AS MANAGER OF AND ON BEHALF OF VDC MANAGER, LLC, A FLORIDA LIMITED LIABILITY COMPANY, THE MANAGER OF THE VILLAGES DEVELOPMENT COMPANY, LLC, A FLORIDA LIMITED LIABILITY COMPANY, FOR THE PURPOSES EXPRESSED HEREIN, WHO IS PERSONALLY KNOWN TO ME AND WHO DID NOT TAKE AN OATH.

_____
NOTARY PUBLIC – STATE OF FLORIDA
PRINT NAME: _____
COMMISSION NO.: _____
COMMISSION EXPIRES: _____

SEAL

STATE OF FLORIDA
COUNTY OF SUMTER

THE FOREGOING INSTRUMENT WAS ACKNOWLEDGED BEFORE ME, BY MEANS OF ☐ PHYSICAL PRESENCE OR ☐ ONLINE NOTARIZATION, THIS ____ DAY OF _____, 20____, BY SPENCER R. NOVAK, THE CHAIR OF VILLAGE COMMUNITY DEVELOPMENT DISTRICT NO. 15, ON BEHALF OF THE DISTRICT, WHO IS PERSONALLY KNOWN TO ME AND WHO DID NOT TAKE AN OATH.

_____
NOTARY PUBLIC – STATE OF FLORIDA
PRINT NAME: _____
COMMISSION NO.: _____
COMMISSION EXPIRES: _____

SEAL

CERTIFICATE OF SURVEYOR

I HEREBY CERTIFY THAT THIS PLAT OF VILLAGES OF SOUTHERN OAKS UNIT NO. 189, WAS PREPARED UNDER MY DIRECTION AND SUPERVISION; AND THAT THE PERMANENT REFERENCE MONUMENTS AS SHOWN THEREON WERE PLACED ON THE ____ DAY OF _____, 20____; I FURTHER CERTIFY THAT THIS PLAT COMPLIES WITH THE REQUIREMENTS OF CHAPTER 177, FLORIDA STATUTES.

CLYMER FARNER BARLEY SURVEYING, LLC
4450 N.E. 83RD ROAD
WILDWOOD, FLORIDA 34785
LICENSED BUSINESS NO. 8498

SEAL

_____ _____
KAYE M. JAMESON DATE
REGISTRATION NO. 5912

CERTIFICATE OF CLERK

I HEREBY CERTIFY THAT I HAVE EXAMINED THIS PLAT AND FIND THAT IT COMPLIES IN FORM WITH ALL THE REQUIREMENTS OF CHAPTER 177, FLORIDA STATUTES AND WAS FILED FOR RECORD ON _____, 20____, AT _____ FILE NUMBER _____.

PLAT BOOK _____ PAGE _____.

CLERK OF THE COURT IN AND
FOR SUMTER COUNTY, FLORIDA

SEAL

_____ _____
PRINT NAME SIGNATURE
DEPUTY CLERK DEPUTY CLERK

VILLAGES OF SOUTHERN OAKS UNIT NO. 189

SHEET 2 OF 2

PLAT BOOK _____
PAGE _____

SECTION 3, TOWNSHIP 20 SOUTH, RANGE 23 EAST,
CITY OF WILDWOOD, SUMTER COUNTY, FLORIDA.

1 inch = 60 feet

TRACT TABLE		
TRACT	SQ FT	ACREAGE
A	873	0.020
B	865	0.020
C	70	0.002
D	70	0.002
E	76	0.002
F	62,349	1.431

LINE TABLE		
LINE TAG	BEARING	DISTANCE
L1	S34°23'32"E	70.53'
L2	S34°23'32"E	77.66'
L3	S57°03'09"W	10.00'
L4	S56°44'03"E	1.82'
L5	S34°23'32"E	77.59'
L6	N57°03'09"E	10.00'
L7	S34°23'32"E	69.52'
L8	S34°23'32"E	38.01'
L9	S34°23'32"E	37.01'
L10	S34°23'32"E	18.42'

CURVE TABLE					
CURVE TAG	RADIUS	CENTRAL ANGLE	ARC LENGTH	CHORD BEARING	CHORD LENGTH
C1	20.00'	11°42'36"	4.09'	S62°54'27"W	4.08'
C2	15.00'	90°57'46"	23.81'	S11°34'16"W	21.39'
C3	15.00'	89°02'14"	23.31'	N78°25'44"W	21.03'
C4	15.00'	113°47'12"	29.79'	N00°09'33"E	25.13'
C5	267.50'	4°12'53"	19.68'	N54°37'36"W	19.67'
C6	267.50'	13°07'26"	61.27'	N45°57'27"W	61.14'
C7	267.50'	6°26'53"	30.10'	N36°10'18"W	30.09'
C8	15.00'	90°00'00"	23.56'	S77°56'51"E	21.21'
C9	20.00'	76°50'43"	26.82'	N72°46'54"W	24.86'
C10	15.00'	90°00'00"	23.56'	N12°03'09"E	21.21'
C11	25.00'	89°02'14"	38.85'	S78°25'44"E	35.06'
C12	25.00'	90°57'46"	39.69'	S11°34'16"W	35.65'
C13	25.00'	81°25'01"	35.52'	N82°14'20"W	32.61'
C14	232.50'	8°34'59"	34.83'	N37°14'20"W	34.80'
C15	250.00'	23°47'12"	103.79'	N44°50'27"W	103.04'
C16	250.00'	6°41'48"	29.22'	N53°23'09"W	29.20'
C17	250.00'	17°05'23"	74.57'	N41°29'33"W	74.29'
C18	20.00'	13°28'29"	4.70'	N50°18'55"E	4.69'
C19	20.00'	77°58'13"	27.22'	N04°35'34"E	25.16'

LEGEND

- ▣ INDICATES 4" X 4" X 24" CONCRETE PERMANENT REFERENCE MONUMENT (P.R.M.) FOUND AS NOTED.
- ▣ INDICATES 4" X 4" X 24" CONCRETE PERMANENT REFERENCE MONUMENT (P.R.M.) OR 5/8" IRON PIN AND CAP SET LB #8498
- ● INDICATES P.K. NAIL AND DISK PERMANENT CONTROL POINT (P.C.P.) LB #8498 TO BE SET WITHIN ONE YEAR OF THE DATE THIS PLAT IS RECORDED.
- ○ INDICATES 5/8" IRON PIN AND CAP TO BE SET IN ACCORDANCE WITH SECTION 177.091(9) FLORIDA STATUTES. (SEE NOTE #5.)
- C9 INDICATES CURVE NUMBER IN CURVE TABLE
- L9 INDICATES LINE NUMBER IN LINE TABLE
- ℄ INDICATES CENTERLINE
- Δ INDICATES DELTA (CENTRAL ANGLE OF CURVE)
- CB INDICATES CHORD BEARING
- CH INDICATES CHORD DISTANCE
- L INDICATES ARC LENGTH
- ORB INDICATES OFFICIAL RECORDS BOOK
- PC INDICATES POINT OF CURVATURE
- POC INDICATES POINT ON CURVE
- R INDICATES RADIUS LENGTH
- (R) INDICATES RADIAL LINE
- PCC INDICATES POINT OF COMPOUND CURVATURE
- PRC INDICATES POINT OF REVERSE CURVATURE
- PT INDICATES POINT OF TANGENCY
- DRA INDICATES DRAINAGE RETENTION AREA FOR STORMWATER MANAGEMENT INCLUDING CONVEYANCING PIPES
- GFE INDICATES GATE FACILITIES EASEMENT (RESERVED BY THE DEVELOPER AND ITS ASSIGNS)
- SE INDICATES SPECIAL EASEMENT RESERVED BY DEVELOPER AND ITS ASSIGNS, FOR LANDSCAPING AND/OR THE CONSTRUCTION, INSTALLATION, MAINTENANCE AND OPERATION OF WATER, SANITARY SEWER, ELECTRIC, TELEPHONE, GAS OR OTHER UTILITIES AND/OR DRAINAGE FACILITIES AND/OR WALL FENCING AND/OR GOLF CART PATHS. DEVELOPER CONTEMPLATES PUTTING H.V.A.C. AND SIMILAR EQUIPMENT WITHIN THE EASEMENT AREA. UTILITY PROVIDERS UTILIZING SUCH EASEMENT AREA COVENANT, AS A CONDITION OF THE RIGHT TO USE SUCH EASEMENT, NOT TO INTERFERE OR DISTURB SUCH EQUIPMENT INSTALLED WITHIN THE EASEMENT AREA.
- SME INDICATES SIGN MAINTENANCE EASEMENT RESERVED BY DEVELOPER AND ITS ASSIGNS FOR INSTALLATION AND MAINTENANCE OF SIGNAGE.

- LB INDICATES LICENSED BUSINESS
- NO. INDICATES NUMBER
- PB INDICATES PLAT BOOK
- PG INDICATES PAGE
- PGS INDICATES PAGES
- SQ FT INDICATES SQUARE FEET
- R/W INDICATES RIGHT-OF-WAY

POINT OF COMMENCEMENT
NORTHWEST CORNER OF THE SOUTHWEST 1/4 OF SECTION 3-20-23

WEST LINE OF THE SOUTHWEST 1/4 OF SECTION 3-20-23
S00°05'29"W 2,632.05' (BEARING BASIS)

POINT OF BEGINNING

S89°54'31"E 1,563.91'

N33°58'04"W 56.76'

NORTHEASTERLY RIGHT-OF-WAY LINE

50' SCCO EASEMENT (ORB 1426, PG 368)

N33°58'04"W 373.50'

MARSH BEND TRAIL
(FORMERLY COUNTY ROAD 301)

SOUTH LINE OF THE SOUTHWEST 1/4 OF SECTION 3-20-23

SECTION 3-20-23
SECTION 10-20-23

UNPLATTED VILLAGES OF SOUTHERN OAKS UNIT NO. 188 (PROPOSED)

UNPLATTED VILLAGES OF SOUTHERN OAKS UNIT NO. 189 (PROPOSED)

UNPLATTED VILLAGES OF SOUTHERN OAKS UNIT NO. 190 (PROPOSED)

TRACT "A"
TRACT "B"
TRACT "C" SEE DETAIL "B"
TRACT "D" SEE DETAIL "C"
TRACT "E" SEE DETAIL "D"
TRACT "F"

ANNIE AVENUE
BARBARA PLACE
CRAIG COURT
GIVANN DRIVE
SHELLY STREET
VANN DRIVE

DETAIL "A" 1" = 10'
DETAIL "B" 1" = 10'
DETAIL "C" 1" = 10'
DETAIL "D" 1" = 10'
DETAIL "E" 1" = 10'
DETAIL "F" 1" = 10'

PREPARED BY: CFB SURVEYING | ELYMER FARMER BARLEY
4450 NE 83RD ROAD - WILDWOOD, FL 34785
(352) 748-3126 LB8498

CITY COMMISSION OF THE CITY OF WILDWOOD

EXECUTIVE SUMMARY

SUBJECT: **Oxford Water Treatment Plant Corrosion Inhibitor Injection Project for the Amount of $29,948.00**

REQUESTED ACTION: Staff Recommends Approval

CONTRACT: Vendor/Entity: Guardian Equipment Inc

Effective Date: 12/16/2024 Termination Date:

Managing Division/Department: Utility Department / Water Division

BUDGET IMPACT: This is a budgeted project in the 24/25 fiscal year budget. Funds are available in account 408-533-60-6310.

HISTORY/FACTS/ISSUES:

In our ongoing commitment to improving water quality for the city's ratepayers, the department recommends the installation of a corrosion inhibitor at the Oxford Water Treatment Plant. This treatment is consistent with the approach currently utilized at the 501 and Huey Street water plants and was listed as a recommended project by the City's consulting Engineer, Kimley-Horn and Associates. Kimley-Horn assisted staff with permitting this project through FDEP.

The corrosion inhibitor will serve two key purposes: it will help sequester iron and manganese in the water, preventing undesirable staining and taste issues, and it will help safeguard the integrity of the system's older infrastructure by reducing corrosion. Staff recommends approval for Guardian Equipment to install the corrosion inhibitor for the amount of $29,948.00. Guardian Equipment is the City's Chemical Maintenance Contractor, see attached contract.

GUARDIAN EQUIPMENT, INC.

330 Hickman Drive, Sanford, FL 32771 PH:888-928-3700 / 407-936-2216 FX:407-936-2217

November 22, 2024

Mr. Wayne Bouchard
Wildwood, City of
Wastewater Treatment Plant
1290 Industrial Drive
Wildwood, City of

RE: OXFORD WATER TREATMENT PLANT
CORROSION INHIBITOR PROJECT

Hi Wayne,

As per our conversation, we are pleased to offer the following information for your review and consideration.

ONE (1) Stenner Pump Model S407X w/ Polypropylene Encloser W/ Pressure Gauge

ONE (1) LOT ORTHOPHOSPHATE CHASE PIPES & FEED LINES

ONE (1) Ultra-Twin IBC Hard Top, With Drain

ONE (1) LOT OF INSTALLATION TO INCLUDE INJECTION POINT W/ QUILL, CORPORATION STOP AND 24" SADDLE

ONE (1) Lot of Programming services to add one new chemical feed pump speed command to the Oxford water treatment plant PLC routine. This quote includes programming of the PLC, the HMI and VT SCADA systems. This quote includes furnishing updated engineered schematics for the PLC panel.

ONE (1) Lot of conduit & wiring to the new feed pump.

Price: $ 29,948.00
Please Note the following:

- Freight has been included.
- We have not included any totes or the wet tap.

Should you have any questions or need additional information, please feel free to contact me at 407.902.8870.

Sincerely,

Kim Newman
Guardian Equipment, Inc.

PROFESSIONAL SERVICES AGREEMENT
Chemical Feed Systems Maintenance and Repair Services

THIS AGREEMENT is made this 11th day of March, 2024, by and between City of Wildwood (hereafter referred to as "City"), whose address is 100 N Main Street, Wildwood, Florida 34785, and Guardian Equipment, Inc. (hereafter referred to as "Contractor"), whose address is 330 Hickman Dr., Sanford, FL 32771.

WHEREAS, the City has need of professional services for Chemical Feed Systems Maintenance and Repair Services; and,

WHEREAS, the parties desire to enter into a written agreement outlining the duties, responsibilities and compensation of Contractor, based on the Contractor's response to RFP #2024-18 – Request for Proposals for Chemical Feed Systems Maintenance and Repair Services.

NOW, THEREFORE, in consideration of the mutual covenants and agreements contained herein, it is hereby agreed as follows:

1. The relationship of the Contractor to the City will be that of a professional contractor to provide the professional and technical services required under this agreement in accordance with acceptable professional practices and ethical standards applicable to the Contractor's profession, and Contractor will endeavor to provide to the City prompt and efficient services to the best of its ability.

2. Contractor is hereby retained and employed as the Chemical Feed Systems Maintenance and Repairs Services Contractor and will work with the City to provide said services in accordance with the scope of services outlined in RFP #2024-18.

3. Contractor agrees to prepare and complete a report to the City, detailing the status of services provided pursuant to this Agreement at least ninety (90) days prior to the expiration of the term of this Agreement, or at least ninety (90) days prior to the expiration of any renewal term of this Agreement. Contractors may be asked to present the deliverables in person for review by staff or for discussion at a scheduled City Commission meeting.

4. The term of this Agreement shall commence on 3/11/2024 and continue in full force through 3/11/2027, unless otherwise terminated as provided in paragraph five (5) of this Agreement. This Agreement may be renewed on an annual basis for additional consecutive one-year periods, if agreed to in writing by both parties, at least sixty (60) days prior to the expiration of this Agreement, including any periods of renewal. The term of this Agreement does not relieve the Contractor of any future responsibility as described in paragraph eight (8) of this Agreement.

5. This Agreement may be terminated by either party upon thirty (30) days prior written notice to the other party at the address designated in this Agreement for receiving such notice. If this agreement is terminated, Contractor shall be authorized to receive payment for all work performed up to the date of termination.

6. With regard to compensation paid to Contractor, Contractor shall furnish to the City on a monthly basis an itemized invoice detailing all of Contractor's hours, services, expenses and any other services utilized by the City during the preceding month. Invoice shall be itemized pursuant to and in accordance with the attached Fee Schedule. The contractor shall compute the total amount due for the preceding month and all amounts due. Contractor shall be paid on a monthly basis pursuant to the provisions of the Local Government Prompt Payment Act, F.S. 218. The contractor acknowledges and agrees that the rates set forth in the Fee Schedule shall remain fixed throughout the duration of the Agreement and thereafter shall only be adjusted by mutual written agreement of both parties.

7. General Considerations.
   a. All reports, drawings, designs, specifications, notebooks, computations, details, and calculation documents prepared by the Contractor and presented to the City pursuant to this Agreement are and remain the property of the City as instruments of service.

b. All analyses, data, documents, models, modeling, reports, and tests performed or utilized by Contractor shall be made available to the City upon request and shall be considered public records, pursuant to F.S. 119.0701.

c. Contractor shall keep all books, records, files, drawings, plans and other documentation, including all electronically stored items, which concern or relate to the services required hereunder, for a minimum of three (3) years from the date of expiration or termination of this Agreement, or as otherwise required by any applicable law, whichever date is later. The City shall have the right to order, inspect and copy all such Records as often as it deems necessary during any such period of time. The right to audit, inspect, and copy records shall include all of the records of sub-Contractors (if any).

d. Contractor shall, at all times, comply with the Florida Public Records Law, the Florida Open Meeting Law and all other applicable laws, rules and regulations of the State of Florida.

e. Contractor shall, at all times, carry Professional Liability, General Liability, Automobile and Worker's Compensation Insurance pursuant to the insurance requirements in RFP #2024-18, naming City as an additional insured in each such policy.

f. Upon Contractor's written request, the City will furnish, or cause to be furnished, such reports, studies, instruments, documents, and other information as Contractor and City mutually deem necessary, and Contractor may rely upon same in performing the services required under this agreement.

g. The City and Contractor each bind itself and its successors, legal representatives and assigns to the other party to this agreement and to the partners, successors, legal representatives and assigns of such other party to this agreement, in respect to all covenants of this agreement; and neither the City nor Contractor shall assign or transfer their interest in this agreement without the prior written consent of the other party.

8. Should any other professional services be called for by the City which are not otherwise set forth in this Agreement or any of its attachments or exhibits, said charges shall be agreed upon in advance by the parties hereto. The Contractor may be required to provide additional services to the City on challenges, public protests, administrative hearings or similar matters. The Contractor shall be available to represent the City, serve as an expert witness and provide supporting documentation as necessary.

9. The Contract Documents, which comprise the entire Contract between City and Contractor and which are further incorporated herein by reference, consist of the following:

a. Request for Proposals (RFP)
b. Vendor's RFP Documents, including submitted exceptions
c. Permits / Licenses
d. All RFP Addenda Issued Prior to RFP Opening Date
e. All Modifications and Change Orders Issued
f. Services hourly rates, as attached to this contract.

10. The Contractor agrees to indemnify and hold harmless the City of Wildwood, and their elected officials, employees and volunteers from and against all claims, losses and expenses, including legal costs, arising out of or resulting from, the performance of this contract, provided that any such claims, damage, loss of expenses is attributed to bodily injury, sickness, disease, personal injury or death, or to injury to or destruction of tangible property including the loss or loss of use resulting there from and is caused in whole or in part by any negligent act or omission of the Contractor.

11. Contractor, its agents, servants, or employees shall, in no manner, whatsoever be construed as the employees, agents, servants or representatives of the City and shall have not expressed or implied power or authority to act in any manner whatsoever for or on behalf of the City, except as provided in the scope of services called for herein. Contractor is hereby designated as an independent contractor to the City and none of the employees, agents or servants of the Contractor shall have, or be entitled to, any of the fringe benefits applicable to employees of the City.

12. In the event of default by either party hereto, the defaulting party shall be liable for all costs and expenses, including reasonable attorney's fees and costs incurred by the other party in enforcing its rights hereunder, whether litigation be instituted or not, at the trial court and appellate court level.

13. Contractor does hereby waive any and all "venue privilege" and or "diversity of citizenship privileges" and specifically agrees that any action brought for the enforcement, construction or interpretation of this agreement shall be maintained in the County or Circuit Court in and for Sumter County, Florida, and Contractor hereby specifically waives its right or privilege to institute any action of any kind or nature whatsoever, against the City in any other State Court, Federal Court or administrative tribunal.

14. This Agreement represents the entire and integrated agreement between the parties and supersedes all prior negotiations, representations, or agreements, either written or verbal. If any provision of this Agreement is declared to be invalid or unenforceable, the remainder shall continue to operate in full force and effect.

15. This Agreement cannot be changed or modified, unless by written agreement signed by all parties hereto.

16. In performing services hereunder, Contractor shall comply with all federal, state and local laws and regulations. Contractor shall be responsible for identifying and obtaining all permits necessary to complete the scope of services. Contractor shall be responsible for obtaining, at its sole cost and expense, all necessary licenses and other governmental approvals required in order for Contractor to provide the type of services required hereunder.

17. Contractor shall immediately notify City in writing of any commitments during the term of this Agreement which may constitute a potential or actual conflict of interest with respect to the scope of services to be performed for the City.

18. Each of the WHEREAS clauses listed above is hereby re-alleged and incorporated into this Agreement as if otherwise fully stated herein.

19. Any notices required by this Agreement shall be mailed to the following individual(s), by Certified Mail, Return Receipt requested:

FOR THE CITY

Name: Jason McHugh

Address: 100 N Main Street, Wildwood, FL 34785

Title: City Manager

Date: 3/11/2024

FOR THE CONTRACTOR

Name: Mark A Cliburn Jr. / Mark A Cliburn Jr.

Address: 330 Hickman Drive Sanford FL 32771

Title: President

Date: 5/2/24

IN WITNESS WHEREOF, the parties have signed this agreement the day and year first above written.

ATTEST:

By: Jessica Barnes

CITY OF WILDWOOD

Ed Wolf

By: Ed Wolf, Mayor

Date Signed: 5/9/24

ATTEST:

By: J Taymon

Contractor

Mark A Cliburn Jr.

By: Mark A Cliburn Jr.

Date Signed: 5/2/24

CITY COMMISSION OF THE CITY OF WILDWOOD

EXECUTIVE SUMMARY

SUBJECT: **Purchase of Fifty (50) Manhole Ring and Covers for the Amount of $27,320.00**

REQUESTED ACTION: Staff Recommends Approval

CONTRACT: Vendor/Entity: Fortiline Waterworks

Effective Date: 12/16/2024 Termination Date:

Managing Division/Department: Utility Department / Wastewater Division

BUDGET IMPACT: This is a budgeted item in the 24/25 fiscal year budget. Funds are available in account 401-535-60-6610 (Sewer System Renewal and Replace).

HISTORY/FACTS/ISSUES:

The City's central sewer system needs preventative and periodic maintenance on a yearly basis. Due to certain waste and gases, the brick and concrete structure inside the manholes deteriorate over time. To keep the system's integrity sound and functional without interruption in service, the wastewater division is requesting to purchase fifty (50) hinged manhole rings and covers. Attached are three quotes received by staff, with Fortiline Waterworks being the lowest bid. This is an approved project in the 24/25 budget.

QUOTE

FORTILINE WATERWORKS

CUSTOMER NO	QUOTING BRANCH	QUOTE NO	QUOTE DATE	PAGE
212848	FORTILINE OCALA	6578137	12/02/24	1

CUSTOMER

WILDWOOD CITY OF
100 N. MAIN STREET
WILDWOOD, FL 34785

PROJECT INFORMATION

PAMREX

LINE	QTY	UOM	DESCRIPTION	UNIT PRICE	TOTAL PRICE
10	50	EA	24" PAMREX RING & COVER	530.0000	26,500.00
20	20	EA	2" MH ADJ RING LADTECH 24"	41.0000	820.00
			3 WEEK LEAD TIME		
				Subtotal:	27,320.00
				Tax:	.00
				Bid Total:	27,320.00

John Cornell
401-535-60-6610
12-2-24

ALL STOCK DELIVERIES ARE SUBJECT TO SHIPPING CHARGES

All PVC and HDPE material is quoted for shipment within 7 days of quote/bid date. All other material is quoted for shipment within 30 days of quote/bid date.
After 7 days for PVC and HDPE or 30 days for all other material, ALL quoted prices are subject to review based on current market conditions.

Ent By JKS 12/02/24 8:08:45

BIDCNEW

HAYES PIPE SUPPLY, INC.

9416 E. Dr. MLK, Jr. Boulevard • Tampa, FL 33610
(813) 241-4040 • Fax (813) 241-4041
www.hayespipe.com

QUO # - AA918

TO: CITY OF WILDWOOD

100 N MAIN ST

WILDWOOD FL 34785

PAMREX / LADTECH MATERIAL

CITY OF WILDWOOD

Plan Date	Last Revision	BID DATE	BID TIME
11/13/2024	.	11/13/2024	:00

QUANTITY	D E S C R I P T I O N	UNIT	PRICE	EXTENSION

****

Due to continued supply chain issues and changes within the manufacturer's price protection policies, effective today, March 23,2022, **all materials are subject to pricing at time of shipment.** Material availability and timeliness of shipments cannot be guaranteed.
These terms supersede all other contractual provisions including buyer's purchase orders.

****

50	PAMREX 24" HINGED MANHOLE RING & COVER w/GASKET & ATTACHED	EA	538.00	26,900.00
	"WILDWOOD" NAME BADGE. **LEAD TIME IS 3 WEEKS FROM DATE OF PO.**			
20	LADTECH 24" x 2" RISER RINGS PART #24R200	EA	38.50	770.00
	IN STOCK IN ORLANDO.			
			Total For Quoted Items	27,670.00

HAYES PIPE SUPPLY, INC.

BY._____

STAline Waterworks Inc.
P.O. Box 242016
Charlotte NC 28224

Bid

Bid Due Date	Bid ID	Job Name
11/15/2024	BID14254	Wildwood Manhole Materials

Quoting Branch	Customer	Job Information
STAline Waterworks - ORL-FL 505 Johns Road Apopka FL 32703	CASH-ORL-FL 505 Johns Road Apopka FL 32703	Wildwood Manhole Materials 34785

Line	Quantity	UOM	Item	Unit Price	Total Price
1	50	EA	St. Gobin Pamrex 24" hinged manhole ring and cover with gasket and attached "Wildwood" name badge	575.75	28,787.50
2	20	EA	24"X2" HDPE MANHOLE RISER RING	40.75	815.00

Subtotal	$29,602.50
Tax	$2,072.18
Total	$31,674.68

CSR: Carter Butlin **Bid Printed: 2024-11-15T13:33:14-05:00** **SLS: Ben Scott**

ALL quoted prices are subject to review based on current market conditions after 30 days.

CITY COMMISSION OF THE CITY OF WILDWOOD

EXECUTIVE SUMMARY

SUBJECT: **Rehab and Epoxy Coating of Forty-Four (44) Manholes by Engineered Spray Solutions for the Amount of $277,388.00**

REQUESTED ACTION: Staff Recommends Approval

CONTRACT: Vendor/Entity: Engineered Spray Solutions

Effective Date: 12/17/2024 Termination Date:

Managing Division/Department: Utility Department / Wastewater Division

BUDGET IMPACT: This is a budgeted item in the 24/25 fiscal year budget. Funds for this project can be found in account 401-535-60-6610 (Sewer System Renewal and Replace)

HISTORY/FACTS/ISSUES:

The city's central sewer system needs preventative and periodic maintenance on a yearly basis. Due to certain waste and gases, the brick and concrete structure inside manholes deteriorates over time. To keep the system's integrity sound and functional without interruption in service, the Wastewater Division is requesting to rehab/epoxy coat the interior of 44 manholes within the collection system, utilizing an existing "piggyback" contract. This is part of an ongoing maintenance program that is budgeted each year. The total cost for the project will be $277,388.00. Attached are both the piggyback contract #PW2020-05 with the City of St. Augustine and a quote from Engineered Spray Solutions. Staff recommend approval to have Engineered Spray Solutions conduct the annual maintenance of 44 manholes for the amount of $277,388.00.

ENGINEERED SPRAY SOLUTIONS
Applying the Gold Standard.

1306 Banana Road, Lakeland, Florida 33810
Office • 863-577-4821

December 16, 2024

To: John Cornell
City of Wildwood Utilities
711 Huey St,
City of Wildwood, FL32785

Project: City of Wildwood- Forty-four (44) Manhole to be rehabilitated with SprayWall Polyurethane Lining System.

Pricing for this proposal and scope of work is based upon the St. Augustine unit price schedule for sanitary and storm manhole & structures rehabilitation bid RFP#PW2020-05. The contract was approved and ratified by the St. Augustine Board of Commissioners on October 18th, 2020.

- Mobilization of competent crew of four (4) and capable equipment to the City of Wildwood, FL project sites.
- 4' diameter manholes measured a total of 227 vertical feet to be lined.
- 5,000 psi high pressure water cleaning of the surface within host structure.
- Make suitable preparation to surface areas to prepare surface for the Euclid v100 has been estimated for proper surface preparation.
- Stop leaks with MasterRoq 355-1K chemical grout.
- Rebuild bench areas as needed.
- Replace frame and covers for all manholes with frame and covers supplied by the city. All frame and cover replacements in the pavement will utilize a 4'x'4 cold asphalt patch to repair pavement areas.
- Spray-apply up to 250 mils of SprayWall Polyurethane Protective Lining system to chimney, walls, and bench area of manholes. A termination groove will be cut at the flow line to ensure proper adhesion. The flow channel is not to be lined.
- Visually inspect and electronic holiday inspection on SprayWall Polyurethane Protective Lining to ensure a 100% pinhole free monolith coating.
- Provide Maintenance of Traffic as needed.
- Bypassing has not been accounted for in this proposal.
- Twenty-five to thirty (25-30) days of work estimated to complete this project.

Included: ESS professional crew and equipment, MOT

Exclusions: Dewatering, bonding, Bypassing of any Wastewater

Notes: two hundred seventy (270) gallons of 355 1k chemical grout for water stop is accounted for in this proposal. However, chemical grout for water stop if required beyond two hundred seventy gallons, will be invoiced at $125.00/gallon, at a minimum of 6 gallons, with approved change order. Standby of crew for situations beyond our control could result in additional charges. Any items not included in the above Scope of Work are considered excluded and would be completed only by approved change order. Project is bid based on standard daylight work hours. Balance is due upon completion. Proposal price is valid for 30 days.

City of Wildwood- Forty-four (44) Manhole Rehabilitation Project

Please see attached summary sheet

Total - $277,388.00

Respectfully Submitted,

Christian Hubbard

Christian Hubbard
Business Development
(863) 999-2790
chubbard@ess-1.net

It is mutually understood that in undertaking to correct/repair conditions present, other conditions that were hidden may become known. Such consequences will be beyond ESS's control, and ESS assumes no responsibility for such consequences. ESS will however, use its best skills and experience to avoid or minimize them. The owner assumes responsibility for any hazardous waste uncovered at this site.

1. The *buyer* has furnished pre-bid information used in planning the work covered in this proposal to ESS, and ESS assumes no responsibility for its accuracy. If the conditions are not in accordance with the information furnished to ESS by the *buyer* or others, the recommended procedures and scope of work in this proposal may not apply. The *buyer* will reimburse any additional expenses incurred by ESS as a result of this difference to ESS.

2. Any items of work not specifically included in this proposal shall not be the responsibility of ESS. Any alteration or deviation from the attached or referenced specifications, involving extra costs will be executed only upon written orders, and will become an extra charge over and above this proposal. All agreements are contingent upon strikes, accidents, or delays beyond our control.

3. It is mutually agreed that ESS shall retain all rights conferred upon it by the lien statutes of any State, Federal, or Territorial Government and will exercise lien rights if necessary. If ESS is not paid when required by this contract, interest of 1.5% will be charged per month. If the delinquent amount is referred to an attorney for collection, the buyer will pay all costs of collection including reasonable attorney fees and court costs. Should any legal action be required as a result of this contract, venue for such action shall be Polk County, Florida.

4. Our proposal is based on carrying out the work in a continuous manner during regular working hours. Should our work be delayed or interrupted for any reason beyond our control we will be compensated for standby of the crew and equipment.

5. If conditions beyond ESS's control make it impossible for us to render performance as specified, and buyer elects to terminate the contract, ESS will be entitled to a cancellation charge for any job set-up, in addition to reimbursement in full for all of ESS's costs (including labor, materials, and overhead), plus reasonable profit for all work performed to date of written notification by the buyer.

By executing this contract, owner agrees that all vendor requirements, including but not limited to pre-qualification, insurance, W-9, etc., have been adequately met.

FINAL BID FORM 1 - COATING METHOD - POLYURETHANE

UNIT PRICE SCHEDULE FOR SANITARY AND STORM MANHOLE & STRUCTURES REHABILITATION BID RFP#PW2020-05

Bidders must provide prices for each line item for their bid to be considered responsive. City of Wildwood 44 Manholes

Item No.	Description	Unit	Qty	Unit Price($)	Amount ($)
A - MANHOLE & STRUCTURES COATING - POLYURETHANE					
1	Manhole Protective Resin Based Lining 48" Diameter 1/8" Minimum Thickness	VF	0	$ 328.00	$ -
2	Manhole Structural Resin Based Lining 48" Diameter 1/4" Minimum Thickness	VF	227	$ 376.00	$ 85,164.00
3	Manhole Structural Resin Based Lining 48" Diameter 1/2" Minimum Thickness	VF	0	$ 521.00	$ -
4	Manhole Structural Resin Based Lining 48" Diameter 1" Minimum Thickness	VF	0	$ 811.00	$ -
5	Manhole Proctective Resin Based Lining 60" Diameter 1/8" Minimum Thickness	VF	0	$ 410.00	$ -
6	Manhole Structural Resin Based Lining 60" Diameter 1/4" Minimum Thickness	VF	0	$ 470.00	$ -
7	Manhole Structural Resin Based Lining 60" Diameter 1/2" Minimum Thickness	VF	0	$ 651.25	$ -
8	Manhole Structural Resin Based Lining 60" Diameter 1" Minimum Thickness	VF	0	$ 1,013.75	$ -
9	Structure / Manhole Protective Resin Based Lining 1/8" Minimum Thickness	SF	0	$ 26.50	$ -
10	Structure / Manhole Structural Resin Based Lining 1/4" Minimum Thickness	SF	572	$ 31.00	$ 17,732.00
11	Structure / Manhole Structural Resin Based Lining 1/2" Minimum Thickness	SF	0	$ 42.00	$ -
12	Structure / Manhole Structural Resin Based Lining 1" Minimum Thickness	SF	0	$ 65.00	$ -
SUBTOTAL A - MANHOLE & STRUCTURES LINING - POLYURETHANE					**$ 102,896.00**
B - MANHOLE & STRUCTURES REPAIR					
13	Removal of Existing Manhole or Wetwell Lining System (Excluding T-Lock Epoxy or Polyurea Liners)	SF	0	$ 9.00	$ -
14	Removal of Existing Manhole or Wetwell T-Lock, Epoxy or Polyurea Liners	SF	0	$ 22.00	$ -
15	Patching & Profiling - Cementitious Grout Only	SF	3,351	$ 12.00	$ 40,212.00
16	Infiltration Control - Chemical Grout	GAL	264	$ 125.00	$ 33,000.00
17	Surface Preparation - Sand Blasting	SF	0	$ 10.00	$ -
18	Bench and Invert Channel Repair	LF	176	$ 225.00	$ 39,600.00
19	Chimney Repairs	VF	0	$ 225.00	$ -
20	Chimney Replacement	VF	0	$ 675.00	$ -
21	Chimney sealing (Construction Joint at Ring and Cover)	EA	0	$ 285.00	$ -
22	Manhole Rim & Cover Replacement (STD 24" Diameter) - Paved Areas	EA	27	$ 1,150.00	$ 31,050.00
23	Manhole Rim & Cover Replacement (STD 24" Diameter) - Grassed Areas	EA	7	$ 950.00	$ 6,650.00
24	Manhole Rim & Cover Replacement (3PC COSA DETAIL SS1)- Paved Areas	EA	0	$ 1,550.00	$ -
25	Manhole Rim & Cover Replacement (3PC COSA DETAIL SS1)- Grassed Areas	EA	0	$ 1,250.00	$ -
26	Raise / Re-Level Existing Frame and Cover for Street Adjustment (up to 4")	EA	0	$ 600.00	$ -
27	Provide and Install Manhole Cover lid & Pick Hole seals	EA	0	$ 275.00	$ -
28	Install Rain Water Protector STD 24" Stainless	EA	0	$ 365.00	$ -
29	Install Rain Water Protector Large 31.5" Stainless	EA	0	$ 485.00	$ -
30	Install Rain Water Protector STD 24" HDPE	EA	0	$ 135.00	$ -
31	Install Rain Water Protector Large 31.5" HDPE	EA	0	$ 190.00	$ -
SUBTOTAL B - MANHOLE & STRUCTURES REPAIR					**$ 150,512.00**

C - CLEANING, TELEVISING AND ASSESSMENT					
32	Cleaning Manholes for Rehabilitation	EA	44	$ 150.00	$ 6,600.00
33	Cleaning Structures for Rehabilitatioin	EA	0	$ 1,000.00	$ -
34	Pre and Post Photographs(USB) Manholes for Rehabilitation	EA	44	$ 150.00	$ 6,600.00
35	Pre and Post Photographs(USB) Structures for Rehabilitation	EA	0	$ 300.00	$ -
36	Mobilization (Inspection only)	WK	0	$ 1,500.00	$ -
37	Manhole Inspection Level 1	EA	0	$ 125.00	$ -
38	Manhole Inspection Level 2	EA	0	$ 185.00	$ -
39	Structure (Wet Well) Inspection Level 1	EA	0	$ 1,300.00	$ -
40	Structure (Wet Well) Inspection Level 2 (Includes scan)	EA	0	$ 1,750.00	$ -
41	Cleaning Sewer Manholes (CCTV purposes only)	EA	0	$ 45.00	$ -
42	Cleaning Stormwater Structures (CCTV purposes only)	EA	0	$ 65.00	$ -
43	Cleaning Wetwells (CCTV / Inspection purposes only)	EA	0	$ 600.00	$ -
44	Light Storm Drain Cleaning From ROW (Right of way) 8"-10"	LF	0	$ 4.75	$ -
45	Light Storm Drain Cleaning From ROW (Right of way) 12"-15"	LF	0	$ 8.25	$ -
46	Light Storm Drain Cleaning From ROW (Right of way) 16"-24"	LF	0	$ 12.25	$ -
47	Light Storm Drain Cleaning From ROW (Right of way) 30"-36"	LF	0	$ 29.00	$ -
48	Light Storm Drain Cleaning From Side and Rear Easements 8"-10"	LF	0	$ 9.40	$ -
49	Light Storm Drain Cleaning From Side and Rear Easements 12"-15"	LF	0	$ 16.40	$ -
50	Light Storm Drain Cleaning From Side and Rear Easements 16"-24"	LF	0	$ 24.75	$ -
51	Light Storm Drain Cleaning From Side and Rear Easements 30"-36"	LF	0	$ 58.50	$ -
52	Increase for "Medium" cleaning of storm drain to above line items 44-51	LF	0	$ 1.75	$ -
53	Increase for "Heavy" cleaning of storm drain to above line items 44-51	LF	0	$ 3.50	$ -
54	Storm Drain CCTV 8" - 10"	LF	0	$ 3.75	$ -
55	Storm Drain CCTV 12" - 18"	LF	0	$ 3.75	$ -
56	Storm Drain CCTV 18 - 24"	LF	0	$ 3.75	$ -
57	Storm Drain CCTV 24" - 30""	LF	0	$ 3.75	$ -
58	Storm Drain CCTV 30" - 42"	LF	0	$ 3.75	$ -
59	Storm Drain CCTV 42" - 54"	LF	0	$ 3.75	$ -
60	Storm Drain CCTV 54" - 66"	LF	0	$ 3.75	$ -
61	Box Culvert Top Scan	LF	0	$ 10.50	$ -
62	Box Culvert Bottom Debris Mapping scan	LF	0	$ 5.50	$ -
63	CCTV Sanitary pipe inspection - includes light cleaning 8”-10” Diameter	LF	0	$ 3.00	$ -
64	CCTV Sanitary pipe inspection - includes light cleaning 12”-15” Diameter	LF	0	$ 3.25	$ -
65	CCTV Sanitary pipe inspection - includes light cleaning 16”-24” Diameter	LF	0	$ 6.50	$ -
66	Dye Testing of Sewer	EA	0.00	$ 850.00	$ -
67	Dye Flooding of Sewer	EA	0.00	$ 1,250.00	$ -
68	Wastewater Flow Monitoring Equipment Rental and Installation in existing Structures	EA	0.00	$ 2,750.00	$ -
69	Wastewater Flow Monitoring Monitoring and Maintenance	EA / Month	0.00	$ 650.00	$ -
70	Rainfall Monitoring Equipment Rental and Installation in existing Structures	EA	0.00	$ 850.00	$ -
71	Rainfall Monitoring Monitoring and Maintenance	EA / Month	0.00	$ 300.00	$ -
72	Line cleaning / Jetting for Sanitary	LF	0	$ 3.25	$ -
73	Increase for "Medium" cleaning of sanitary sewer line, ADD to above line item 72	LF	0	$ 1.25	$ -
74	Increase for "Heavy" cleaning of sanitary sewer line, ADD to above line item 72	LF	0	$ 2.50	$ -
75	GPS Mapping of Requested Manholes	EA	0	$ 150.00	$ -
SUBTOTAL C - CLEANING, TELEVISING AND ASSESSMENT					**$ 13,200.00**

D - ANCILLARY SERVICES					
76	Plug Rental 6" - 10"	DAY	0	$ 125.00	$ -
77	Plug Rental 10" - 16"	DAY	0	$ 150.00	$ -
78	Plug Rental 16" - 24"	DAY	0	$ 200.00	$ -
79	Plug Rental 24" - 36"	DAY	0	$ 250.00	$ -
80	Bypass Pumper Truck	HOUR	0	$ 325.00	$ -
81	Bypass Vac-Truck	HOUR	0	$ 325.00	$ -
82	Maintenance of Traffic (MOT) -Arterial (single lane closure)	EA	0	$ 1,250.00	$ -
83	Maintenance of Traffic (MOT) - FDOT (single lane closure)	EA	0	$ 1,500.00	$ -
84	Maintenance of Traffic (MOT) - Neighborhood (Simple MOT including Flagmen)	EA	0	$ 600.00	$ -
85	Mobilization Standard (per Crew)	WK	4	$ 2,450.00	$ 10,780.00
86	Mobilization Emergency (per crew)	EA	0	$ 3,750.00	$ -
87	Meals/Hotel/Lodging (per crew)	DAY	0	$ 600.00	$ -
SUBTOTAL D - ANCILLARY SERVICES					**$ 10,780.00**
E - COST of INVOICE PLUS OH/P ON MISCELLANEOUS SERVICES			**BUDGET**		
88	Bypass Pumping Services		**$ -**	**15% OH/P**	**$ -**
89	Maintenance of Traffic CUSTOM INDEX		**$ -**	**15% OH/P**	**$ -**
90	Bypassing Plug (HAVE TO ORDER)		**$ -**	**15% OH/P**	**$ -**
91	Miscellaneous / Unexpected Materials or Services		**$ -**	**15% OH/P**	**$ -**
92	Extra / Miscellaneous		**$ -**	**15% OH/P**	**$ -**
93	Extra / Miscellaneous		**$ -**	**15% OH/P**	**$ -**
SUBTOTAL E - COST PLUS ON MISCELLANEOUS SERVICES					**$ -**
SUMMARY OF BID FORM 1 - LINING METHOD - POLYURETHANE					
SUBTOTAL BID PRICE (A) MANHOLE AND STRUCTURES COATING - POLYURETHANE (SUM ITEMS 1 -12)					**$ 102,896.00**
SUBTOTAL BID PRICE (B) MANHOLE AND STRUCTURES REPAIR (SUM ITEMS 13 - 31)					**$ 150,512.00**
SUBTOTAL BID PRICE (C) CLEANING, TELEVISING AND ASSESSMENT (SUM ITEMS 32-75)					**$ 13,200.00**
SUBTOTAL BID PRICE (D) ANCILLARY SERVICES (SUM ITEMS 76-87)					**$ 10,780.00**
SUBTOTAL BID PRICE (E) COST PLUS ON MISCELLANEOUS SERVICES (SUM ITEMS 88-93)					**$ -**
TOTAL BID PRICE 1-LINING METHOD - POLYURETHANE					**$277,388.00**
Bond amount calculated at 3% of total bid Price 1		**3%**			**$ -**
Bond Amount	**Multiplier 3% (for use on projects over $100,000.00**			**Total project**	**$ 277,388.00**

CITY OF
ST AUGUSTINE
EST. 1565
NATION'S OLDEST CITY

RECEIVED
OCT 18 2020
BY:

October 15, 2020

Engineered Spray Solutions, LLC
Attn: Mr. James Collier
1306 Banana Road
Lakeland, FL 33810

RE: Agreement for RFP #PW2020-05 for Sanitary Sewer Manhole Inspections and Rehabilitation

Dear Mr. Collier:

Accompanying this cover letter for your firm's records is the completely executed Agreement between the City of St. Augustine and Engineered Spray Solutions, LLC for Sanitary Sewer Manhole Inspections and Rehabilitation. We look forward to an excellent working relationship.

Please feel free to contact me at my office (904) 209-4305 or, via email, at swhitener@citystaug.com if you have any questions.

Sincerely,

SWhitener

Sharon F. Whitener, CPPO
Procurement Manager

SFW

Enclosure

xc: John P. Regan, City Manager
Meredith L. Breidenstein, Assistant City Manager
Reuben C. Franklin, Jr., Public Works Director
Todd J. Grant, Utilities Director
James C. Piggott, General Services Director
File

CONSTRUCTION SERVICES AGREEMENT BETWEEN THE CITY OF ST. AUGUSTINE AND ENGINEERED SPRAY SOLUTIONS LLC FOR THE SANITARY SEWER MANHOLE INSPECTIONS AND REHABILITATION PROJECT

THIS AGREEMENT is entered into by and between the CITY OF ST. AUGUSTINE ("the City"), whose address is P. O. Box 210, St. Augustine, Florida 32085-0210, and ENGINEERED SPRAY SOLUTIONS LLC ("Contractor"), whose address is 1306 Banana Road, Lakeland, Florida 33810. All references to the parties hereto include the parties, their officers, employees, agents, successors, and assigns.

In consideration of the payments hereinafter specified, the covenants and conditions of this Agreement, and other good and valuable consideration, the adequacy of which is hereby acknowledged, Contractor agrees to furnish and deliver all materials and perform all services and labor required for ("the Work"). In accordance with RFP Number PW2020-05, Contractor shall complete the Work in conformity with this Agreement, which consists of and incorporates all of the following documents: (1) advertisement for proposals; (2) Instructions to Respondents; (3) addenda; certifications, and affidavits; (4) proposal submittals; and (5) this Agreement, including the Scope of Work, Specifications, General Conditions and any Special Conditions or other attachments. If any provision in the body of this Agreement conflicts with any attachment hereto, the terms of this Agreement shall prevail unless the referenced attachment is a requirement pursuant to grant funding. This Agreement, including attachments, shall take precedence over all solicitation documents (items 1 - 4). The parties hereby agree to the following terms and conditions.

1. TERM OF AGREEMENT

(a) The term of this Agreement shall run from the Effective Date to the Final Completion Date. Time is of the essence for each and every aspect of this Agreement. Where additional time is allowed to complete the Work, the new time limit shall also be of the essence. All provisions of this Agreement that by their nature extend beyond the Completion Date shall survive termination or expiration of this Agreement.

(b) **Effective Date.** The Effective Date is the date upon which the last party to this Agreement has dated and executed the same.

(c) **Completion Date**. The Completion Date of this Agreement is September 30, 2021, unless extended by mutual written agreement of the parties. The Completion Date for specific work orders shall be the time for completion stated in the work order; which shall be agreed upon by both parties.

(d) This Agreement may be renewed by mutual and written consent of each party for no more than a total of four (4) consecutive years.

2. COMMENCEMENT OF WORK

(a) Contractor shall commence the Work within fourteen (14) days of issuance of a Work Order by the City, this date shall be known as the "Commencement Date." Contractor shall prosecute the Work regularly, diligently, and uninterruptedly so as to complete the Work ready for use in accordance with the Scope of Work and the time for completion stated therein. Contractor shall not commence the Work until any required submittals are received and approved.

3. **LIQUIDATED DAMAGES**

(a) If Contractor neglects, fails, or refuses to satisfactorily complete the Work by the Completion Date, Contractor shall, as a part of the consideration for this Agreement, pay the City the amount stipulated herein, not as a penalty, but as liquidated damages for such breach, for each calendar day Contractor is in default thereafter. This amount is fixed and agreed upon between the parties due to the impracticability and extreme difficulty of ascertaining the actual damages the City would sustain in such event. The amount of liquidated damages shall be $500.00 per day. Liquidated damages shall be deducted from payments as they become due and may be deducted from the retainage due upon completion. They constitute an agreed-upon liquidated sum solely for consequential damages attributable to delay and are not a substitute for any other consequential damages incurred by the City, such as the cost of finding a replacement Contractor for completion of the Work if this Agreement is terminated by the City for non-performance.

(b) Contractor shall not be charged with liquidated damages or any excess cost when the City determines that Contractor's reasons for the time extension are acceptable in accordance with **FORCE MAJEURE; DELAYS; EXTENSION OF COMPLETION DATE, as described below**. A written extension of the Completion Date constitutes a waiver of liquidated damages to the new Completion Date unless expressly provided therein to the contrary.

4. **DELIVERABLES**

(a) The Work is specified in the Scope of Work, Exhibit A. Contractor shall deliver all products and deliverables as stated therein. Contractor is responsible for the professional quality, technical accuracy, and timely completion of the Work. Both workmanship and materials shall be of good quality. Contractor shall, if required, furnish satisfactory evidence as to the kind and quality of materials provided. Unless otherwise specifically provided for herein, Contractor shall provide and pay for all materials, labor, and other facilities and equipment necessary for performance of the Work. The City's Project Manager shall make a final acceptance inspection of the deliverables when completed and finished in all respects.

(b) If not otherwise addressed in the Scope of Work and/or Specifications, upon written request, Contractor shall submit written progress reports to the City's Project Manager at the frequency requested in the form approved by the Project Manager at no additional cost to the City. The progress report shall provide an updated progress schedule, taking into account all delays and approved changes in the Work. Failure to provide a progress report will be cause to withhold payment.

5. **OWNERSHIP OF DELIVERABLES**

All deliverables, including Work not accepted by the City, are City property when Contractor has received compensation therefor, in whole or in part. Any City source documents or other City or non-City documents, specifications, materials, reports, or accompanying data developed, secured, or used in the performance of the Work, excluding proprietary materials, as outlined in the Statement of Work, are City property and shall be safeguarded and provided to the City upon request. City plans and specifications shall not be used on other work and, with the exception of the original plans and specifications, shall be returned to the City upon request. This obligation shall survive termination or expiration of this Agreement.

6. **FUNDING OF AGREEMENT**

(a) For satisfactory performance of the Work, the City agrees to pay Contractor in accordance with the Unit Price Schedule, Exhibit D and as set forth in each Work Order and billed in accordance with the terms of the Work Order.

7. **PAYMENT OF INVOICES**

(a) Contractor shall submit monthly itemized invoices by one of the following two methods: (1) by mail to the City of St. Augustine, Financial Management, P. O. Box 210, St. Augustine, FL 32085-0210, or (2) by e-mail to purchasing@citystaug.com. Each invoice shall be submitted in detail sufficient for proper pre-audit and post-audit review. If necessary, for audit purposes, Contractor shall provide additional supporting information as required to document invoices.

8. **CONTRACT PAYMENT AND COMPLIANCE WITH THE LOCAL GOVERNMENT PROMPT PAYMENT ACT**

(a) Each month, the Contractor shall submit an application for payment for work performed to that point. The Owner will process and issue payment in compliance with the requirements of the Florida Local Government Prompt Payment Act as described below. Final payment in the amount of ten percent (10%) of the total project amount will be retained pending final inspection and acceptance of the project by the Owner and proof of complete payment to all subcontractors and suppliers.

(b) All invoices shall include the following information: (1) City contract number; (2) City encumbrance number; (3) City work-order number, if applicable; (4) Contractor's name and address (include remit address, if necessary); (5) Contractor's invoice number and date of invoice; (6) City Project Manager or Work Order Manager, if applicable; (7) Contractor's Project Manager; (8) supporting documentation as to cost and/or project completion (as per the cost schedule and other requirements of the Statement of Work; for work-orders, see special requirements under **WORK ORDERS**); (9) Progress Report (if required); (10) Diversity Report (if otherwise required herein). Invoices that do not correspond with this paragraph shall be returned without action, stating the basis for rejection. Payments shall be made within twenty (20) business days of receipt of an approved invoice. Disputes regarding invoice sufficiency are resolved pursuant to the dispute resolution procedure of this Agreement.

(c) As conditions precedent to final payment under this Contract, the Contractor shall furnish any manufacturers' guarantees or warranties for materials provided or equipment installed in the Work; shall have performed all other requirements pursuant to the Contract Documents; shall warrant all workmanship for a period of one (1) year after the date of final acceptance of the Work by the Owner and shall furnish signed copies of the Contractor's Warranty Guarantees signed by Contractor, subcontractors, materialsmen, suppliers, laborers or others furnishing work, labor, materials, machinery or fixtures in the performance of the Work. The City shall be the expressly designated beneficiary of any and all Warranty Guarantees. Acceptance of any Work or any possession taken by Owner shall not operate as a waiver of any provision of the Contract Documents or any right or power reserved to Owner, including any right to damages provided in the Contract Documents.

(d) In order to comply with the provisions of the Florida Local Government Prompt Payment Act, the City designates the following as its Agent:

1. James Wheeler, P.E.
   Public Works Department
   City of St. Augustine
   P.O. Box 210
   St. Augustine, FL 32085-0210
   904-209-4276 (Office)
   904-209-4286 (Fax)
   Email: jwheeler@citystaug.com

2. The City's Agent is required to review invoices or payment requests prior to processing for payment.

3. The due date for payment of construction services by the City shall be determined as follows:

   a) If the City's agent must approve the payment request or invoice submitted by the Contractor before the payment request or invoice is submitted to the City, payment shall be due twenty-five (25) business days after the date on which the payment request or invoice is stamped as received as provided in Section 218.74(1), F.S. The Contractor may send the City an overdue notice. If the payment request or invoice is not rejected within four (4) business days after delivery of the overdue notice, the payment request or invoice shall be deemed accepted, except for any portion of the payment request or invoice that is fraudulent or misleading.

   b) If the City's agent need not approve the payment request or invoice submitted by the Contractor, payment is due twenty (20) business days after the date on which the payment request or invoice is stamped as received as provided in Section 218.74(1), F.S.

   c) If a payment request or invoice submitted by the Contractor does not meet the contract requirements, the City must reject the payment request or invoice within twenty (20) business days after the date on which the payment request or invoice is stamped as received as provided in Section 218.74(1), F.S. The rejection must be written and must specify the deficiency and the action necessary to make the payment request or invoice proper.

   d) If a payment request or invoice is rejected and the Contractor submits a payment request or invoice which corrects the deficiency, the corrected payment request or invoice must be paid or rejected ten (10) business days after the date the corrected payment request or invoice is stamped as received as provided in Section 218.74(1), F.S.

   e) If a dispute between the City and the Contractor cannot be resolved by the procedure described above, the dispute shall be resolved in accordance with the dispute resolution procedure described in Section 217.76(2), F.S.

f) If the City disputes only a portion of a payment request or invoice submitted by the Contractor, the City shall pay the undisputed portion in a timely manner in accordance with subsections (a) and (b) above.

4. Punch List

a) For projects less than $10,000,000.00.
Within thirty (30) calendar days of reaching Substantial Completion of the Work as defined in the Contract or, if not defined in the Contract, upon reaching beneficial occupancy or use, the City's Project Manager, the Project Engineer and the Contractor shall review the work, note any deficiencies and develop a single list of items required to render the construction services purchased by the City complete, satisfactory and acceptable. The list shall be delivered to the

Contractor no later than five (5) calendar days after it has been developed and reviewed.

b) For projects more than $10,000,000.00.
Within thirty (30) calendar days or, if extended by Contract, up to sixty (60) calendar days, of reaching Substantial Completion of the Work or, if not defined in the contract, upon reaching beneficial occupancy or use, the City's Project Manager, the Project Engineer and the Contractor shall review the Work, note any deficiencies and generate a list of items required to render the construction services purchased by the City complete, satisfactory and acceptable. The list shall be delivered to the Contractor no later than five (5) days after it has been developed and reviewed.

c) The Final Contract Completion Date shall be no fewer than thirty (30) days after delivery of the list of items. If the list is not provided to the Contractor by the agreed upon date for delivery of the list, the Contract Term for completion shall be extended by the number of days the City exceeded the delivery date.

(e) **Payments withheld.** The City may withhold or, on account of subsequently discovered evidence, nullify, in whole or in part, any payment to such an extent as may be necessary to protect the City from loss as a result of: (1) defective Work not remedied; (2) failure of Contractor to make payments when due to subcontractors or suppliers for materials or labor; (3) failure to maintain adequate progress in the Work; (4) damage to another contractor; or (5) any other material breach of this Agreement. Amounts withheld shall not be considered due and shall not be paid until the ground(s) for withholding payment have been remedied.

(f) **Payments.** The City shall pay Contractor one hundred percent (100%) of each approved invoice.

9. **COST OF LIVING INCREASES.** A Consumer Price Index ("CPI") – based Cost Schedule increase may be requested in writing no later than three months before the contract renewal date. The increase will be limited to the lesser of five percent or the result of the CPI percentage increase calculation expressed below. The CPI percentage increase shall be calculated by using the Consumer Price Index for All Urban Consumers ("CPI-U") numbers provided by the Bureau of Labor Statistics. The CPI percentage increase shall be calculated by subtracting from the most recent May CPI-U number the CPI-U number for the previous May, then dividing the remainder

by the previous May's number, and finally, multiplying the quotient by 100. Cost Schedule increases shall be prorated based upon the number of calendar months in the City's fiscal year that the contract has been in effect. (For example, a cost schedule increase for renewal of a contract initiated in March (six months into the City's fiscal year), would be limited to the lesser of either one-half of the CPI percentage increase or 2.5 percent upon renewal in October.) In the event this contract includes a provision for fuel adjustment, and an upward fuel adjustment is made during the contract year, the CPI percentage increase shall be multiplied by the percentage of the Total Compensation allocated to non-fuel costs. For example, if it is determined that the cost of fuel is 20 percent of the Total Compensation, the CPI percentage increase shall be multiplied by 0.8.

10. **PAYMENT AND RELEASE** Contractor's acceptance of final payment shall constitute a release in full of all Contractor claims against the City arising from the performance of this Agreement, with the exception of any pending claims for additional compensation that have been documented and filed as required by this Agreement.

11. **INDEMNIFICATION** Contractor shall indemnify and hold harmless, release, and forever discharge the City, its public officers, employees, agents, representatives, successors, and assigns, from any and all liabilities, damages, losses, and costs, including, but not limited to, reasonable attorney's fees, to the extent caused by the negligence, recklessness, or intentional wrongful misconduct of the Contractor, its employees or sub-contractors, in the performance of the Work and resulting from damages to property, personal injury, or loss of life.

12. **INSURANCE AND PERMITS.** Contractor shall acquire and maintain, at its own expense, all permits, and licenses required by law and shall maintain the same in full force and effect. Contractor is responsible for conformance with all State and Federal regulations and requirements. City of St. Augustine permit fees shall be waived.

    Contractor shall provide all insurance required by Exhibit B, Insurance Requirements, and shall not commence Work until it has provided Certificates of Insurance to the City as per Exhibit B. Receipt of Certificates of Insurance indicating less coverage than required does not constitute a waiver of the Insurance Requirements. Contractor waives its right of recovery against the City to the extent permitted by its insurance policies. Contractor's insurance shall be considered primary, and City insurance shall be considered excess, as may be applicable to Contractor's obligation to provide insurance.

13. **FUNDING CONTINGENCY.** This Agreement is at all times contingent upon funding availability, which may include a single source or multiple sources, including, but not limited to: (1) ad valorem tax revenues appropriated by the City's Commission; (2) annual appropriations by the Florida Legislature, or (3) appropriations from other agencies or funding sources. Agreements that extend for a period of more than one Fiscal Year are subject to annual appropriation of funds in the sole discretion and judgment of the City's Commission for each succeeding Fiscal Year. Should the Work not be funded, in whole or in part, in the current Fiscal Year or succeeding Fiscal Years, the City shall so notify Contractor and this Agreement shall be deemed terminated for convenience five (5) days after receipt of such notice, or within such additional time as the City may allow. For the purpose of this Agreement, "Fiscal Year" is defined as the period beginning on October 1 and ending on September 30.

14. **PROJECT MANAGEMENT AND PERSONNEL**

    (a) The Project Managers listed below shall be responsible for overall coordination and management of the Work. Either party may change its Project Manager upon three (3) business

days prior written notice to the other party. Written notice of change of address shall be provided within five (5) business days. All notices shall be in writing to the Project Managers at the addresses below and shall be sent by one of the following methods: (1) hand delivery; (2) U.S. certified mail; (3) national overnight courier; (4) e-mail or, (5) fax. Notices via certified mail are deemed delivered upon receipt. Notices via overnight courier are deemed delivered one (1) business day after having been deposited with the courier. Notices via e-mail or fax are deemed delivered on the date transmitted and received.

CITY	CONTRACTOR
James Wheeler, P.E., Project Manager	James J. Collier, Project Manager
City of St. Augustine	Engineered Spray Solutions LLC
P.O. Box 210	1306 Banana Road
St. Augustine, Florida 32085-0210	Lakeland, Florida 33810
904-209-4276 (office)	863-577-4821 (office)
904-209-4286 (fax)	863-853-8593 (fax)
E-mail: jwheeler@citystaug.com	E-mail: jcollier@ess-1.net

(b) The City's Project Manager shall have sole and complete responsibility for transmitting instructions, receiving information, and communicating City policies and decisions regarding all matters pertinent to performance of the Work, and may approve minor deviations in the Work that do not affect the Total Compensation or Completion Date or otherwise significantly modify the terms of the Agreement. For Work Order-based contracts, the City may designate a "Work Order Manager" on the Work Order, who will serve as the Project Manager for that Work Order and shall have the same responsibilities as the City's Project Manager. The City's Project Manager may approve minor deviations in the Work that do not affect the Total Compensation or Completion Date or otherwise significantly modify the terms of the Agreement. The City's Project Manager and, as appropriate, other City employees, shall meet with Contractor when necessary in the City's judgment to provide decisions regarding performance of the Work, as well as to review and comment on reports.

(c) Contractor shall provide efficient supervision of the Work, using its best skill and attention. Contractor shall keep on the worksite during its progress a competent superintendent, satisfactory to the City. The superintendent shall not be changed except with the City's consent, unless the superintendent proves to be unsatisfactory to Contractor and/or ceases to be in its employ. The superintendent shall represent Contractor in the absence of Contractor's Project Manager. All directions given to him shall be as binding as if given to Contractor. If the City produces documented evidence and informs the Contractor that any person on the job is incompetent, disorderly, or is working contrary to the Agreement or the City's instructions, that person shall thereupon be immediately dismissed from the project and shall not be given employment on any work connected with this Agreement. The City may request Contractor replace its Project Manager if said manager fails to carry the Work forward in a competent manner, follow instructions or specifications, or for other reasonable cause.

(d) Contractor shall maintain an adequate and competent professional staff. Contractor's employees, subcontractors, or agents shall be properly trained to meet or exceed any specified licensing, training and/or certification applicable to their profession. Upon request, Contractor shall furnish proof thereof.

15. **SCHEDULING AND WORK PLANNING; PROGRESS REPORTING**

(a) **Pre-work Conference.** Within ten (10) days after execution of this Agreement, Contractor shall schedule a pre-work conference with the City's Project Manager to discuss scheduling and other matters. Contractor shall provide a work plan for the City's approval not fewer than five (5) days prior to the pre-work conference. The City shall have ten (10) days to review the work plan. Not less than five (5) days prior to the pre-work conference, Contractor shall provide the City a list of each subcontract exceeding ten percent (10%) of the Total Compensation. The list shall include: (1) name, address, contract, phone number and email address of subcontractor, (2) description of subcontract work, and (3) estimated value of work.

(b) **Progress Reports**. Contractor shall provide to the City the project schedule and update/status reports as provided in the Scope of Work. Reports will provide detail on progress of the Work and outline any potential issues affecting completion or the overall schedule. Reports may be submitted in any form agreed to by City's Project Manager and Contractor, and may include emails, memos, and letters.

(c) **Daily Reporting.** The City may require Contractor to provide a daily report regarding the progress of the Work. The need for a daily report shall be determined at the pre-work conference. If required, a form shall be completed for each day any Work is performed until the project is accepted by the City. Completed forms shall be submitted to the City's Project Manager or other authorized representative by 9:00 a.m. of the following day.

(d) **Progress Meetings.** The City may elect to conduct on-site progress meetings with Contractor on a frequency to be determined by the City. In such event, Contractor shall make available its Project Manager and/or superintendent and other appropriate personnel to discuss matters pertinent to the Work.

(e) **Failure to Meet Schedule.** If progress of the Work falls five percent (5%) or more behind schedule, except as a result of City-approved delays, Contractor shall take all necessary steps to augment the work effort to get the project back on schedule. Should the progress of the Work fall ten percent (10%) or more behind schedule, the City may advise Contractor through a "cure" notice that this Agreement is subject to termination for cause if the failure is not cured within the time frame specified in said notice.

16. **FORCE MAJEURE; DELAYS**

(a) **Force Majeure.** Contractor shall not be liable for failure to carry out the terms of this Agreement to the extent such failure is due to a Force Majeure event, except for failures that could have been reasonably foreseen and guarded against so as to avoid or reduce the adverse impact thereof. A Force Majeure event is hereby defined as the failure to carry out any of the terms of this Agreement due to any one of the following circumstances beyond the control of Contractor: (a) the operation and effect of rules, regulations, or orders promulgated by any commission, county, municipality, or governmental agency of the State of Florida or the United States, (b) a restraining order, injunction, or similar decree of any court of competent jurisdiction, (c) war, (d) flood, (e) earthquake, (f) fire, (g) severe wind storm, (h) acts of public disturbance, (i) quarantine restrictions, (j) epidemics, (k) strikes, (l) freight embargoes, or (m) sabotage. The times specified herein for performances include delays that can ordinarily be anticipated due to adverse weather conditions. The

City is not obligated to grant an extension of time due to adverse weather conditions unless such conditions rise to the level of Force Majeure.

(b) **Delay.** Contractor shall not be compensated for delays caused by Contractor's inefficiency, rework made necessary by Contractor's error, failure to perform the Work as scheduled, or any other corrective or productivity measures made necessary by errors, omissions, or failures to properly perform the Work. Neither shall the Contractor be compensated for delays caused by events by force majeure as described in sub-para (a) above. Within ten (10) days after the onset of a delay, Contractor shall notify the City in writing of the delay, which shall provide: (1) a detailed description the delay and its probable duration, (2) the specified portion of the Work affected, and (3) an opinion as to the cause of the delay and liability (if any) for the delay. Notices provided more than ten (10) days after the inception of the delay shall only be effective as to additional time incurred during the ten (10) day period preceding receipt of such notice. In the case of continuing cause delay for the same cause, only one notice of delay is necessary. **Failure to provide this notice waives any claim for extension of time resulting from such delay**. If the delay is due to the failure of another City contractor to complete its work in a timely manner, changes ordered in the Work, a Force Majeure event, or any other cause which the City, in its sole judgment and discretion, determines to justify the delay, then the Completion Date may be extended as necessary to compensate for the delay. All time extensions shall be in the form of a written amendment signed by both parties.

17. **MODIFICATION OF SPECIFICATIONS; CHANGE ORDERS; EMERGENCY CHANGES IN WORK**

(a) **Modification of Specifications.** No oral agreement or conversation with any officer, agent, or employee of the City after execution of this Agreement shall affect or modify any of its terms. No one is authorized to change any provision of the specifications without written authorization of the City. The presence or absence of a City inspector shall not relieve Contractor from any requirements of this Agreement.

(b) **Change Orders**

(i) The City may alter, add to, or deduct from the Work by executing a Change Order without liability to Contractor, except for the reasonable cost of any additional Work. All such Work within Contractor's capacity to perform shall be performed pursuant to the Change Order. Any associated claim for extension of time will be adjusted when the Change Order is issued. The parties shall negotiate the cost of the Change Order on an equitable basis, which may be determined in one or more of the following ways: (1) estimate and acceptance of a lump sum, (2) unit prices named in the contract or subsequently agreed upon, (3) costs and percentage or by (4) cost and a fixed fee. If the parties cannot agree upon cost, Contractor shall implement the Change Order and shall maintain and present in such form as the City Project Manager may direct the correct amount of the net cost of labor and materials, together with vouchers. The Project Manager will certify the amount due Contractor, including reasonable allowances for overhead and profit. Pending a final determination of value, payments will be based upon the City Project Manager's certification. Final resolution of the amount due to Contractor shall be pursuant to the dispute resolution procedure.

(ii) For any Change Order requests submitted by Contractor, the City may determine that City instructions to correct deficient Work, to stop the Work due to deficiencies in the Work, or any other matters that impose additional costs upon Contractor, do not warrant an increase in the Total Compensation or extension of the Completion Date. If Contractor disputes this determination, final resolution shall be pursuant to the dispute resolution procedure.

(c) **Emergency Changes in Work.** In the event an emergency endangering life or property requires immediate action, the City may give Contractor an oral instruction to proceed with an emergency change in the Work, which will be confirmed in writing within five (5) days. Within fifteen (15) days after commencement of the emergency change in the Work, Contractor shall provide the City with a written estimate of any increased costs or delays as a result thereof. **Failure to so notify the City constitutes a waiver of any right to an extension of time or increase in compensation**. Within fifteen (15) days after receipt of Contractor's estimate, the parties shall negotiate a Change Order. If unable to reach agreement, disputed issues shall be resolved pursuant to the dispute resolution procedure. In no event shall Contractor decline to perform the emergency change in the Work.

18. **TERMINATION AND SUSPENSION**

(a) **City Termination for Cause.** The Agreement may be terminated by the City for cause in the event of any breach hereof, including, but not limited to, Contractor's: (1) failing to carry forward and complete the Work as provided herein; (2) failing to comply with applicable laws, regulations, permits, or ordinances; (3) failing to timely correct defective Work; (4) making a general assignment for the benefit of its creditors; (5) having a receiver appointed because of insolvency; (6) filing bankruptcy or having a petition for involuntary bankruptcy filed against it; (7) failing to make payments when due to subcontractors, vendors, or others for materials or labor used in the Work; (8) making a material misrepresentation to the City regarding the Work, or (9) any other material breach of this Agreement. In such event, the City shall provide Contractor with written notice of its intention to terminate this Agreement, stating the nature of the deficiency and the effective date of termination. At the City's sole judgment and discretion, the City may afford Contractor an opportunity to cure said deficiency, in which event the notice shall specify the time allowed. Upon termination, the City may take possession of the premises and of all materials thereon and finish the Work by whatever means it deems expedient. In such event, Contractor shall not receive any further payment until the Work is completed by the City. Contractor shall be liable for all costs involved in completing the Work, including additional managerial and administrative services, which shall be offset against any amount due to Contractor.

(b) **City Termination for Convenience.** Notwithstanding any other provision hereof, the City may at any time terminate this Agreement or any Work issued under it, in whole or in part, without cause, upon thirty (30) days written notice to Contractor. In such event, Contractor shall be compensated for any Work performed prior to the date of termination and for materials that were ordered prior to receipt of notice of termination that cannot be returned to the vendor, which shall become City property. Upon receipt of notice, Contractor shall discontinue the Work on the date and to the extent specified therein and shall place no further orders for materials, equipment, services, or facilities, except as needed to continue any portion of the Work not terminated. Contractor shall also make every reasonable effort to cancel, upon terms satisfactory to the City, all orders or subcontracts related to the terminated Work. Contractor may not claim any compensation not specifically provided

for herein, including, but not limited to: loss of anticipated profits; idle equipment, labor, and facilities; any additional claims of subcontractors and vendors.

(c) **City Suspension for Cause.** The City may issue a written partial or full Stop Work Notice in the event Contractor fails to comply with or is negligent in performing any provision hereof. All performance shall immediately cease as per such notice and no further billable costs shall be incurred. The City may terminate this Agreement if Contractor fails or refuses to comply with a Stop Work Notice.

(d) **City Suspension for Convenience.** The City may direct Contractor to stop Work, in whole or in part, whenever, in the City's sole judgment and discretion, such stoppage is necessary to ensure proper completion of the Work, avoid injury to third persons, or otherwise meet the City's objectives. The City shall provide Contractor not fewer than five (5) days written notice, except in emergency circumstances. Contractor shall immediately comply with such notice. Should such stoppage increase Contractor's cost, an equitable adjustment will be made by Change Order. The notice shall be effective until rescinded in writing, unless the period of suspension is stated in the notice.

(e) **Contractor's Right to Stop Work or Terminate Agreement**

(i) **Stop Work.** Contractor may stop work only under the following circumstances: (1) the Work is ordered temporarily discontinued by a court or other public authority; (2) it is necessary to stop work in order to protect the safety of Contractor or third persons; or (3) the City fails to pay Contractor when due any undisputed and adequately documented sum certified for payment by the City Project Manager. In such event, Contractor shall provide the City not fewer than seven (7) days prior written notice of its intention to stop work, except in emergency circumstances or when necessary to prevent injury to persons or property.

(ii) **Termination.** Contractor may terminate this Agreement under only the following circumstances: (1) the Work is ordered discontinued by a court or other public authority, through no act or fault of Contractor, for a period of not fewer than three months; (2) the City fails to pay Contractor when due any undisputed and adequately documented sum certified for payment by the City Project Manager. In such event, Contractor shall provide not fewer than twenty (20) days written notice of its intention to terminate and afford the City the opportunity to cure said deficiency within said time period.

(iii) **Duty to Perform.** Except as expressly provided above, in the event of any event, dispute, or other matter arising under this Agreement, Contractor shall fully perform the Work in accordance with the City's written instructions and may claim additional compensation as a Change Order, subject to the dispute resolution procedure.

19. **PROTECTION OF WORK.** Contractor shall protect and prevent damage to all finished and unfinished portions of the Work including, but not limited to, the protection of the same from damage by the elements, theft or vandalism. Restoration of such damage shall be the sole responsibility

of Contractor and shall not be cause for an increase in the Contract Consideration nor any extension of the Term.

20. **TRENCH SAFETY.** In the performance of this contract, Contractor may be requested to supply cost estimates for trench excavation to a depth exceeding five feet. Section 553.62, F.S., incorporates the Occupational Safety and Health Administration's excavation safety standards, 29 CFR s. 1926.650 Subpart P, as the standard. Contractor shall separately estimate the cost of compliance with those standards as required by Section 553.63, F.S. Such estimate shall be based on the linear feet of trench to be excavated and shall include written assurance of compliance with those standards and any applicable special shoring requirements.

21. **NO ASSIGNMENT.** The Contractor may not assign this Contract without the advance written approval of the City. For the purposes of this paragraph, assignment shall be interpreted to include any transfer of more than fifty (50%) percent of the ownership interests of the Contractor whether or not the Contractor is a sole proprietorship, partnership, corporation, limited liability company, limited partnership or any other business, organization or entity.

22. **COMPLIANCE WITH PUBLIC RECORDS ACT**

IF THE CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT:

Telephone:	(904) 825-1007
Email:	recordsrequest@citystaug.com
Mailing Address:	City of St. Augustine Darlene Galambos, City Clerk Public Records Custodian P.O. Box 210 St. Augustine, Florida 32085-0210

Pursuant to Chapter 119, Florida Statutes, the Contractor shall comply with the provisions of the Florida Public Records Act, specifically to:

1. Keep and maintain public records required by the City to perform the Work.
2. Upon request from the City's custodian of public records, provide the City with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in Chapter 119, Florida Statutes, or as otherwise provided by law.
3. Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the contract term and following completion of the contract if the contractor does not transfer the records to the City.
4. Upon completion of the contract, transfer, at no cost, to the City all public records in possession of the Contractor or keep and maintain public records required by the City to perform the service. If the Contractor transfers all public records to the City upon completion of the contract, the Contractor shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If the Contractor keeps and maintains public records upon completion of the contract, the Contractor shall

meet all applicable requirements for retaining public records. All records stored electronically must be provided to the City, upon request from the City's custodian of public records, in a format that is compatible with the information technology systems of the City.

5. A request to inspect or copy public records relating to the City's contract for services must be made directly to the City. If the City does not possess the requested records, the City shall immediately notify the Contractor of the request, and the Contractor must provide the records to the City or allow the records to be inspected or copied within a reasonable time.
6. If the Contractor does not comply with the City's public records request for records, the City shall consider such noncompliance a material default of the terms of the contract and shall seek such remedies for such default as provided in the contract or at law.
7. A contractor who fails to provide the public records to the City within a reasonable time may be subject to penalties under F.S. 119.10.

23. **NO WAIVER OF SOVEREIGN IMMUNITY.** Nothing in this agreement shall be construed as a waiver of sovereign immunity beyond that provided in Section 768.28, F.S., nor shall anything in this Agreement be construed as increasing the limits of the sovereign immunity of the City as provided in Section 768.28, F.S.

24. **ACCESS; WORK AREA; GATES**

(a) **Access.** The City will provide sufficient access to accomplish Work performed on City property. Contractor shall maintain all on-site roadways and paved and unpaved access roadways to and from the worksite in an acceptable and passable condition at no additional cost to the City, and shall, upon conclusion of the Work, return said roadways to City in their original condition. Land access to construction sites is restricted to the route designated by the City. Contractor is responsible for improvements and repairs to access routes required during construction. All access routes shall be used for the purpose of construction only. Contractor shall not disturb lands or waters outside the area of construction, except as may be found necessary and authorized by the City.

(b) **Work Area.** All Work shall be confined to the designated work area(s). Contractor shall obtain written approval from the City before making any adjustments.

25. **ASSIGNMENT AND SUBCONTRACTS**

(a) Contractor shall not sublet, assign, or transfer any Work involving more than fifteen percent (15%) of the total cost of the Work, or assign any monies due hereunder, without the City's prior written consent. As soon as practicable after signing this Agreement, but not fewer than seven (7) business days prior to the effective date of any subcontracts, Contractor shall notify the City's Project Manager in writing of the name of any subcontractor that has not been previously disclosed in the procurement process. Within five (5) business days, after the City receipt of said notification, the City shall indicate its approval or disapproval, which shall not be unreasonably withheld. Failure to timely provide such approval or disapproval shall constitute approval. Neither City approval of a subcontractor nor any other provision of this Agreement creates a contractual relationship between any subcontractor and the City. Contractor shall be allowed a maximum 10% markup of their subcontractor's work for oversight and management.

(b) Contractor is responsible for fulfilling all work elements in any subcontracts and payment of all monies due. Contractor is fully responsible to the City for the acts and omissions of

its subcontractors and persons directly or indirectly employed by them and shall hold the City harmless from any liability or damages resulting from any subcontract to the extent allowed by law.

26. **AUDIT; ACCESS TO RECORDS.** Until the expiration of three (3) years after expenditure of funds hereunder, the City or its duly authorized representatives shall have access to examine any of Contractor's books and other records involving transactions related to this Agreement. Contractor shall preserve all such records for a period of not fewer than three (3) years. Contractor shall refund any payment(s) that are found to not constitute allowable costs based upon audit examination. All required records shall be maintained until an audit has been completed and all questions arising from it are resolved. Contractor will provide proper facilities for access to and inspection of all required records.

27. **BONDS**

Pursuant to Chapter 255.05 F.S., prior to commencing the work, the Selected Contractor shall execute and record in the public records of St. Johns County a payment and performance bond with a surety insurer authorized to do business in the State of Florida. A certified copy of the recorded bond shall be provided to the City prior to commencement of the work.

(a) Payment Bond. A payment bond equal to the Total Compensation is required for fixed price contracts and fixed price Work Orders greater than $100,000; provided, however, that the bond may be reduced by the City, in its sole judgment and discretion, to that amount necessary to ensure payment of all subcontractors and materialmen. The City may require, in its sole judgment and discretion, a payment bond for fixed price contracts and Work Orders of $100,000 or less in which event the bonding requirement shall be disclosed in the Invitation for Bids or Work Order specifications.

(b) Performance Bond. A performance bond equal to one hundred twenty-five percent (125%) of the Total Compensation is required for fixed price contracts and Work Orders greater than $200,000. The City may require, in its sole judgment and discretion, a performance bond for fixed price contracts and Work Orders of $200,000 or less in which event the bonding requirement shall be disclosed in the Invitation for Bids or Work Order specifications.

(c) Completed bonds shall be delivered to and accepted by the City prior to commencement of the Work. Bond premiums shall be paid by Contractor. Bonds shall be (1) either in the reproduced form provided in the Bid Documents or in a form approved by the City, and (2) written through a licensed agency that fulfills the requirements of Section 287.0935, F.S.

(d) **Qualification-Management and Strength**. The Surety executing a bond must be rated no less than "Excellent" for both financial strength and issuer credit, with a rating outlook of stable or positive for both, and must have a financial size rating of VII or better according to the latest information available from A.M. Best Company, Inc.'s rating and analysis web site.

(e) In lieu of the bond, a Contractor may submit an alternative form of security in the form of cash, money order, certified check, cashier's check, irrevocable letter of credit, or other security acceptable to the City.

28. **CIVIL RIGHTS.** Pursuant to Chapter 760, F.S., Contractor shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin, age, handicap, or marital status.

29. **CLEANUP; EQUIPMENT REMOVAL.** Upon expiration or termination of this Agreement, Contractor shall restore the worksite to its original condition, except for replacement of vegetation, unless otherwise required by this Agreement. Contractor shall remove from City property and all public and private property all machinery, equipment, supplies, surplus materials, temporary structures, rubbish, and waste materials resulting from its activities. After twenty (20) days, the City may sell or dispose of any materials left at the worksite as it sees fit and deduct the cost of sale or disposal from any amounts due to Contractor. Any revenues obtained shall be applied toward costs incurred by the City, with excess revenues paid to Contractor.

30. **COORDINATION WITH THE CITY AND OTHER CITY CONTRACTORS**

(a) The City may let other contracts in connection with the Work. Wherever work done by the City or another City contractor is contiguous to Contractor's Work, the respective rights of the various interests shall be established by the City so as to secure completion of the Work. Contractor shall arrange its Work so as not to interfere with the City or other City contractors and join its Work to that of others in a proper manner, and in accordance with the intent of the Scope of Work. Contractor shall perform its Work in the proper sequence in relation to that of other City contractors, as may be directed by the City. Contractor shall afford other City contractors' reasonable opportunity for introduction and storage of their materials and execution of their work and shall properly conduct and coordinate its Work with theirs. Contractor shall take into account all contingent work to be done by others and shall not plead its want of knowledge of such contingent work as a basis for delay or non-performance. Contractor shall be liable for any damage it causes to the work performed by other City contractors.

(b) If any part of the Work depends for proper execution or results upon the work of other City contractors, Contractor shall inspect and promptly report any defects in the other contractor's work that render it unsuitable for Contractor's Work. **Failure to so inspect and report shall constitute an acceptance of the other contractor's work as fit and proper for the reception of its Work, except as to defects which may develop in the other contractor's work after execution of the Work.**

31. **CORRELATION AND INTENT OF DOCUMENTS; QUESTIONS OR ISSUES REGARDING PERFORMANCE OF THE WORK**

(a) This Agreement and all attachments are complementary. What is called for by one is as binding as if called for by all. The intent is to include all labor and materials, equipment, transportation, and incidentals necessary for the proper and complete execution of the Work. Materials or work described in words, which so applied have a well-known technical or trade meaning, shall be held to refer to such recognized standards.

(b) It is the City's intention to fully assist Contractor in the successful performance of the Work and to respond in a timely manner to questions or issues that arise. Contractor should discuss any questions or issues with the City's Project Manager and communicate such questions or issues in writing when required by this Agreement. The City shall respond through its Project Manager.

32. **DAVIS BACON ACT.** This contract is federally funded and is subject to the provisions of the Davis-Bacon Act (40 U.S.C. 276a to a-7), as supplemented by the Department of Labor Regulations (29 CFR part 5, "Labor Standards Provisions Applicable to Contracts Governing Federally Financed and Assisted Construction"). Under this Act, contractors are required to pay wages to laborers and mechanics at a rate not less than the prevailing minimum wage rates and fringe benefits for corresponding classes of laborers and mechanics employed on similar projects in the area. In addition, construction-related subcontracts of more than $2,000 must include a provision for compliance with the Davis-Bacon Act.

33. **DISPUTE RESOLUTION.**

(a) **During the course of work.** In the event any dispute arises during the course of the Work, Contractor shall fully perform the Work in accordance with the City's written instructions and may claim additional compensation. Contractor is under a duty to seek clarification and resolution of any issue, discrepancy, or dispute by submitting a formal request for additional compensation, schedule adjustment, or other dispute resolution to the City's Project Manager no later than fifteen (15) calendar days after the precipitating event. If not resolved by the Project Manager within five (5) business days, the Project Manager shall forward the request to the Office of the City Manager, which shall issue a written decision within fifteen (15) calendar days of receipt. This determination shall constitute final action of the City and shall then be subject to judicial review upon completion of the Work. **Contractor shall proceed with the Work in accordance with said determination. This shall not waive Contractor's position regarding the matter in dispute.**

(b) **Invoices.** In the event the City rejects an invoice as improper, and the Contractor declines to modify the invoice, the Contractor must notify the City in writing within ten (10) calendar days of receipt of notice of rejection that the Contractor will not modify the invoice and state the reason(s) therefor. Within five (5) business days of receipt of such notice, if not informally resolved through discussion with the City Project Manager, the Project Manager shall forward the disputed invoice and the Contractor's written response to the Office of the City Manager. The matter shall then proceed as described in subsection (a), above.

34. **DIVERSITY REPORTING.** The City is committed to the opportunity for diversity in its procurement activities and encourages its prime vendors (contractors and suppliers) to make a good faith effort to ensure that women and minority-owned business enterprises (W/MBE) are given the opportunity for maximum participation as sub-contractors. The City will assist Contractor by sharing information on W/MBEs. Contractor shall provide with each invoice a report describing the company names for all W/MBEs, the type of minority, and the amount spent with each at all levels. The report will also denote if there were no W/MBE expenditures.

35. **DUTY TO INSPECT AND REPORT DEFICIENCIES IN PLANS AND SPECIFICATIONS**

(a) For any Work that is dependent upon conditions at the worksite, Contractor's acceptance of contract award represents and warrants that Contractor has inspected and satisfied itself concerning the nature and location of the Work and general and local conditions, including, without limitation: (1) conditions affecting transportation, disposal, handling, and storage of materials; (2) availability and quality of labor; (3) availability and condition of roads; (4) climatic conditions and seasons; (5) hydrology of the terrain; (6) topography and ground surface conditions; (7) nature and quantity of surface materials to be encountered; (8) equipment and facilities needed preliminary to and during the Work; and (9) all other

matters that can affect the Work and the cost thereof. Contractor's failure to acquaint itself with such conditions will not relieve it from its responsibility for properly estimating the time required or cost of performing the Work. Where the City has investigated subsurface conditions, this data may be provided to Contractor or is available upon request. Contractor must either seek clarification concerning the data or assume the responsibility for its interpretation.

(b) If Contractor discovers hidden or subsurface conditions that differ materially from those normally expected or indicated in the technical specifications, Contractor shall immediately, and before such conditions are disturbed, notify the City in writing of: (1) subsurface or latent physical conditions differing materially from those indicated in the technical specifications, or (2) unknown physical conditions of an unusual nature differing materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for herein. The City shall promptly investigate the conditions and determine whether they materially differ so as to cause an increase or decrease in Contractor's cost. Where the differing site conditions materially impact Contractor's cost, an equitable adjustment shall be made and the Agreement modified accordingly. No claim will be allowed if Contractor fails to provide the required notice.

(c) If Contractor in the course of the Work finds any defect in the plans and specifications, including, but not limited to, any discrepancy between the drawings and the physical conditions at the worksite, or any errors or omissions in the drawings or in the layout, as given by points and instructions, it shall immediately inform the City in writing, which shall be promptly verified by the City. Any Work done after such discovery, until authorized, will be done at Contractor's risk as to cost overruns and modifications necessary to correct deficiencies in the Work. To ensure the proper execution of its subsequent Work, Contractor shall measure Work already in place or completed and shall immediately report any discrepancy between the executed Work and the drawings or other specifications.

36. **EMPLOYMENT ELIGIBILITY.** Contractor must use the United States Department of Homeland Security's E-Verify system ("E-Verify") to verify the employment eligibility of all persons hired by Contractor during the term of this Agreement to work in Florida. Additionally, if Contractor uses subcontractors to perform any portion of the Work (under this Agreement) valued in excess of $3,000, Contractor must include a requirement in the subcontractor's contract that the subcontractor use E-Verify to verify the employment eligibility of all persons hired by subcontractor to perform any such portion of the Work. Within 30 days of this Agreement's Effective Date, Contractor must provide the City with evidence that Contractor is enrolled in the E-Verify system. Answers to questions regarding E-Verify as well as instructions on enrollment may be found at the E-Verify website: www.uscis.gov/e-verify.

37. **GOVERNING LAW, VENUE, ATTORNEY'S FEES, WAIVER OF RIGHT TO JURY TRIAL.** This Agreement shall be construed according to the laws of Florida and shall not be construed more strictly against one party than against the other because it may have been drafted by one of the parties. As used herein, "shall" is always mandatory. In the event of any legal proceedings arising from or related to this Agreement: (1) venue for any state legal proceedings shall be in a court of competent jurisdiction located in St. Johns County; (2) venue for any federal legal proceeding shall be in the federal court for the Middle District of Florida, Jacksonville Division; (3) each party shall bear its own attorney's fees, including appeals; (4) for civil proceedings, the parties hereby consent to trial by the court and waive the right to jury trial.

38. **INTEREST IN THE BUSINESS OF CONTRACTOR; NON-LOBBYING.** Contractor certifies that no officer, agent, or employee of the City has any material interest, as defined in Chapter 112, F.S., either directly or indirectly, in the business of Contractor to be conducted under this Agreement, and that no such person shall have any such interest at any time during the term of this Agreement. Pursuant to Section 216.347, F.S., monies received from the City pursuant to this Agreement shall not be used to lobby the Florida Legislature or any other state agency.

39. **INDEPENDENT CONTRACTOR.** Contractor is an independent contractor. Neither Contractor nor Contractor's employees are employees or agents of the City. Contractor controls and directs the means and methods by which the Work is accomplished. Contractor is solely responsible for compliance with all labor, wage and hour and tax laws pertaining to it, its officers, agents, and employees, and shall indemnify and hold the City harmless from any failure to comply with such laws. Contractor's duties include, but not be limited to: (1) providing Workers' Compensation coverage for employees as required by law; (2) hiring employees or subcontractors necessary to perform the Work; (3) providing any and all employment benefits, including, but not limited to, annual leave, sick leave, paid holidays, health insurance, retirement benefits, and disability insurance; (4) payment of all federal, state and local taxes, income or employment taxes, and, if Contractor is not a corporation, self-employment (Social Security) taxes; (5) compliance with the Fair Labor Standards Act, 29 U.S.C. §§ 201, et seq., including payment of overtime as required by said Act; and (6) providing employee training, office or other facilities, equipment and materials for all functions necessary to perform the Work. In the event the City provides training, equipment, materials, or facilities to meet specific City needs or otherwise facilitate performance of the Work, this shall not affect Contractor's duties hereunder or alter Contractor's status as an independent contractor. This paragraph does not create an affirmative obligation to provide any employee benefits not required by law.

40. **INSPECTION AND TESTING OF WORK; REJECTION OF WORK AND MATERIALS; TOOLS, PLANT, AND EQUIPMENT; MATERIAL SUBSTITUTION**

(a) **Standards for Quality and Workmanship.** All materials, equipment, and supplies furnished by Contractor for permanent incorporation into the Work shall be new and of the quality standards specified. Unless otherwise specified, all material and workmanship shall meet the requirements in the applicable standards specifications of the American Society for Testing and Materials. If two or more brands, makes of material, devices, or equipment are shown or specified, each should be regarded as the equal of the other. First-calls and the finished product shall be equal to the best-accepted standards of the trade class. The finished product shall be equal to the best-accepted standards of the trade for the category of Work performed. The City's intent is to obtain a high-quality job that will operate and function with the lowest possible maintenance costs. Inspection standards will be established to ensure that this objective is achieved.

(b) **Materials and Equipment Schedules.** The City shall have the right of prior approval for all materials or equipment incorporated into the Work. Within ten (10) days after the date of contract award and before any material or equipment is purchased, Contractor shall submit to the City's Project Manager a complete list of materials or equipment to be incorporated into the Work. The list shall include catalog cuts, diagrams, drawings, and such other descriptive data as may be required. The use of materials or equipment not in accordance with this Agreement may be rejected.

(c) **Inspection.** The Work and all materials or equipment used therefor are subject to inspection by the City at all times in order to ensure compliance herewith. Upon request,

Contractor shall provide samples of the type and quantity of the various materials used in the Work, as determined and directed by the City. The City's Project Manager and inspector(s) shall be provided access to the Work wherever it is in preparation or progress. Contractor shall provide proper facilities for such access and inspection. Construction contractors shall maintain one complete copy of the drawings and specifications for the Work at the worksite, which shall be made available to the City upon request.

(d) **Re-examination of Work.** The City may order re-examination of questioned Work and, if so ordered, the Work shall be uncovered by Contractor. If such Work is found to be in accordance with specifications, the City will pay the cost of re-examination and replacement. If such Work is found to be not in accordance with specifications, Contractor will pay such cost.

(e) **Testing.**

(i) The City may require that materials be tested prior to incorporation in the Work. In some instances, it may be expedient to make these tests at the source of supply. Therefore, upon request, Contractor shall furnish the City with information identifying the source of supply before incorporating material into the Work. Upon request, Contractor shall furnish two (2) copies of the manufacturer's certificate of compliance with these specifications covering manufactured items. All tests performed by a laboratory to ascertain whether the material, as placed, meets the required specification will be paid for by Contractor. This paragraph does not obligate the City to perform tests for acceptance of material or relieve Contractor of its responsibility to furnish satisfactory material.

(ii) If the specifications, the City's instructions, laws, ordinances, or any public authority require any Work to be specifically tested or approved, Contractor shall give the City's Project Manager timely notice of its readiness for inspection. If inspection is by an authority other than the City's Project Manager, Contractor's Project Manager shall supply the City's Project Manager with 72 hours prior notice of such inspection. Inspections by the City's Project Manager will be made promptly and, where practicable, at the source of supply. If any Work should be covered up without the prior approval of the City's Project Manager, it shall, if required by the City, be uncovered for examination at Contractor's expense.

(f) **Rejection of Work and Materials.** Contractor shall promptly notify the City of any defective material and shall not incorporate such material into the Work. The City may reject all Work and material that does not conform to this Agreement, which shall be removed and replaced with approved quality material at no additional cost to the City. If the City deems any portion of the Work unsatisfactory, Contractor shall rework those areas so that the total Work is completed in a manner satisfactory to the City. If disputed, Contract may submit a Change Order, subject to the dispute resolution procedure.

(g) **Tools, Plant, and Equipment.** If at any time before commencement of or during progress of the Work, tools, plant, or equipment appear to the City to be insufficient, inefficient, or inappropriate to secure the quality of Work or the proper rate of progress, the City may order Contractor to increase its efficiency, to improve its character, or to augment the number of or substitute new tools, plant, or equipment, as the case may be. Contractor shall conform to such order. If Contractor maintains that any such order is not in conformance with this Agreement, is unnecessary, or requires Contractor to incur excessive costs or

delays, Contractor may submit a Change Order, subject to the dispute resolution procedure. Failure of the City to make such demand shall not relieve Contractor of its obligation to secure the quality of the Work and the rate of progress necessary to timely complete the Work.

(h) **Material substitution.** Except where otherwise indicated, whenever a material or a piece of equipment required in the Work is shown in the specifications by using the name of the proprietary product or that of a particular manufacturer or vendor, any material, equipment, device, or article that will in the City's opinion at least equally perform the same duties imposed by the general design, considering quality, workmanship, economy of operation, and suitability for the purpose intended, may be considered "equal" and substituted for the material or piece of equipment originally specified. In the event Contractor desires the City to consider an item for substitution, Contractor shall submit a written request, which shall give all pertinent details and comparisons of the substitute with the item specified. The City will notify Contractor in writing of its acceptance or rejection. In all cases, new material shall be used. Contractor shall pay all costs resulting from inspection or testing of materials or equipment proposed for substitution.

41. **LAND AND WATER RESOURCES.** Contractor shall not discharge or permit the discharge, directly or indirectly, of any fuels, oils, calcium chloride, acids, insecticides, herbicides, wastes, toxic or hazardous substances, or other pollutants or harmful materials, onto any lands or into any surface or ground waters, including, but not limited to, streams, lakes, rivers, canals, ditches, or reservoirs. Contractor shall investigate and comply with all applicable federal, state, county, and municipal laws concerning toxic wastes, hazardous substances, and pollution of surface and ground waters. If any waste, toxic or hazardous substance, or other material that can cause pollution, as defined in Section 403.031, F.S., is dumped or spilled in unauthorized areas, Contractor shall notify the City thereof within one (1) workday and thereafter shall remove the material and restore the area to its original condition. If necessary, contaminated ground shall be excavated and disposed of as directed by the City and replaced with suitable fill material, compacted and finished with topsoil, and planted as required to re-establish vegetation. All cleanup and disposal costs shall be borne by Contractor.

42. **LIENS.** Acknowledging that the City's property is not subject to liens, neither final payment nor payment of any part of the retainage shall become due until Contractor delivers to the City releases of all labor and material cost liens arising from Contractor's performance of the Work, including Contractor and any subcontractor(s), and an affidavit by Contractor stating that the releases and receipts include all labor and material costs for which a lien could be filed. If any subcontractor refuses to furnish Contractor a release or a receipt in full, Contractor may furnish to the City a bond satisfactory to the City, indemnifying the City against any such potential lien. If any lien or potential lien remains unsatisfied, the City may discharge the same forthwith and deduct the cost thereof from any amounts due to Contractor. In the event Contractor has been fully paid or the amount of such lien exceeds the amount due to Contractor, Contractor shall refund to the City all monies that the City paid in discharging such lien, including all costs and a reasonable attorney's fee. The discharging of such a lien by the City shall not constitute a waiver of any claims of defenses that Contractor may have against the lienor.

43. **NUISANCE.** Contractor shall exercise every reasonable means to avoid creating or continuing a public or private nuisance resulting from the Work, including, but not limited to: (1) excessive noise associated with radio or other forms of electronic entertainment for persons at the worksite; (2) dust from construction operations, and (3) the uncontrolled flow of surface waters.

44. **PERMITS AND LICENSES; COMPLIANCE WITH LAW.** Contractor shall comply with all applicable federal, state and local laws and regulations, including those pertaining to wages, health and safety. Contractor shall include this requirement in all subcontracts. All materials used and work performed must conform to the laws of the United States, the State of Florida and county and municipal ordinances. Contractor represents and warrants that it is duly licensed to perform the Work in accordance with the laws of the State of Florida and the county or municipality in which the Work is to be performed. For out-of-state contractors, Contractor warrants that it is authorized to do business within the state of Florida and registered with the Secretary of State. Unless otherwise provided in the Statement of Work, the responsibility of the parties for obtaining permits is apportioned as follows:

    (a) The City shall procure all permits required from the Florida Department of Environmental Protection, the U.S. Environmental Protection Agency, and the U.S. Army Corps of Engineers.
    (b) Contractor shall procure any permits required by the county or municipality wherein the Work is located.
    (c) Contractor shall: (i) give to the proper authorities all required notices relative to the Work; (ii) obtain and pay for all official permits and any professional or other licenses, code stamps, and inspections that are Contractor's responsibility; and (iii) furnish any bonds, security, or deposits required to permit performance of the Work; (iv) until the Work is accepted as substantially complete, comply with all conditions of governmental permits; and (v) resolve any issues resulting from a finding of noncompliance by any governmental agencies, including all costs for delays, litigation, fines, or other costs.

45. **PETROLEUM STORAGE TANKS.** Any petroleum storage tanks with a capacity of 55 gallons or greater that Contractor brings onto City property must be either double-walled or kept within secondary containment that will contain 110% of the tank volume.

46. **PROTECTION OF THE WORK, CITY EQUIPMENT, AND PROPERTY.** Contractor is responsible for the proper care of the Work and protecting the Work from damage until final acceptance by the City, whether or not the same has been covered by partial payments. Contractor is solely responsible for all City-owned equipment in its possession, if any. Contractor shall adequately protect and maintain all passageways, guard fences, lights, and other facilities as required by public authority or local conditions. Contractor shall conduct the Work so as to minimize damage to existing improvements, and shall restore, as nearly as practical, to its original condition, any such improvements damaged by its operations. In the event of temporary suspension of the Work, or during inclement weather, or whenever the City shall direct, Contractor shall carefully protect the Work from damage. If any Work is damaged due to Contractor's failure to so protect the Work, the loss shall be remedied at Contractor's expense. Contractor shall protect public and privately-owned property, structures, utilities, and work of any kind against damage or interruptions of service resulting from its activities. Contractor shall repair, replace, or restore any damage or loss to any public or private property to the City's satisfaction. Should Contractor fail to perform these obligations, the City may make good any such damage and deduct the cost thereof from Contractor's final payment.

47. **PUBLIC ENTITY CRIME.** A person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a bid, proposal, or reply on a contract to provide any goods or services to a public entity; may not submit a bid, proposal, or reply on a contract with a public entity for the construction or repair of a public building or public work; may not submit bids, proposals, or replies on leases of real property to a public entity; may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a

contract with any public entity; and may not transact business with any public entity in excess of the threshold amount provided in s. 287.017 F.S., for CATEGORY TWO ($35,000) for a period of 36 months following the date of being placed on the convicted vendor list.

48. **RELEASE OF INFORMATION**. Contractor shall not publish or release any information related to performance of this Agreement, or prepare, publish, or release any news or press release in any way related to this Agreement, without prior City review and written consent.

49. **REMEDIES FOR NON-PERFORMANCE**

(a) **City Remedies.** The remedies enumerated herein are non-exclusive. In addition to the remedies set forth below, the City may avail itself of any statutory and/or common law remedies not set forth herein. In the event of a breach, the City may terminate this Agreement for cause. Alternatively, the City may allow Contractor to correct the deficiency, or may take such action as is necessary to correct such deficiency through City action or that of a third party. Delay or failure by the City to enforce any right or remedy hereunder shall not impair, or be deemed a waiver of, any such right or remedy, or impair the City's rights or remedies for any subsequent breach of this Agreement.

(b) **Contractor Correction of Deficiencies.** The City shall provide Contractor with written notice of deficiency. At the City's sole judgment and discretion, the City may afford an opportunity to correct said deficiency, in which event the notice shall specify the time allowed to cure. If Contractor disputes that a failure of performance has occurred, Contractor shall, nevertheless, perform the corrective action and may submit a request for a Change Order subject to the dispute resolution procedure. Unless authorized through a Change Order, the Completion Date shall not be extended in order to correct deficiencies. Contractor shall bear the cost of correcting all work of other contractors that is destroyed, damaged, or otherwise negatively impacted by its corrective action. Failure to take timely corrective action may result in termination for cause or the City pursuing alternative remedies, as provided herein.

(c) **Alternative Remedies to Correct Deficiency.** If the City determines that it is not in its best interest for Contractor to correct incomplete or damaged Work caused by Contractor's failure of performance, the City may pursue any or all of the following remedies, in whole or in part: (1) accept the Work as is and deduct the reasonable value of the deficient Work from the Total Compensation; (2) complete the Work through the utilization of City employees and deduct the cost thereof from the Total Compensation; (3) contract with a third party to complete the deficient Work and deduct the cost thereof from the Total Compensation.

(d) **City Technical Assistance.** The City may elect to provide technical assistance to Contractor in order to complete satisfactory performance of the Work. If the City is performing a function that Contractor is required to perform, the City may deduct the cost of providing such technical assistance from the Total Compensation. Prior to providing any such technical assistance, the City shall notify Contractor that it considers such assistance to be above and beyond its duties under this Agreement and that it intends to deduct the cost of providing such assistance from the Total Compensation. Contractor shall not be entitled to reject technical assistance when the City determines that such assistance is necessary to complete the Work.

50. **ROYALTIES AND PATENTS.** Contractor certifies that, to the best of its information and belief, the Work does not infringe on any patent rights. Unless provided otherwise herein, Contractor shall: (1) pay all royalties, patent, and license fees necessary for the Work; (2) defend all suits or claims for infringement of any patent rights, and (3) save and hold the City harmless from loss on account thereof; provided, however, that the City shall be responsible for any such losses when the utilization of a particular process or product of a particular manufacturer is specified by the City. If Contractor obtains information that the process or article so specified is a patent infringement, it shall be responsible for such loss unless it promptly so notifies the City.

51. **SAFETY.** For any Work that is to be performed on premises that are owned or controlled by the City (the Premises), Contractor has the sole and exclusive duty for the safety of the premises. Contractor shall provide and maintain sufficient protection for the safety of its employees and other persons who may utilize the Premises, and prevent damage to City property, materials, and equipment. Contractor shall at all times enforce strict discipline and good order among its employees and shall not employ any unfit person or anyone not skilled in the work assigned. Neither Contractor nor its subcontractors shall allow or cause to be allowed any hunting or any weapons, animals, alcohol, or drugs, on or from the Premises or adjacent property. Contractor employees shall not park their vehicles or store equipment or materials adjacent to roads where it may be a hazard to traffic. A clear distance of at least 30 feet from the edge of the pavement or right-of-way shall be kept free of any obstacles unless otherwise authorized by the City. Contractor shall ensure that only authorized personnel are allowed on the worksite and shall post notices warning both employees and the public of all safety hazards created by Contractor.

52. **SUBSTANTIAL COMPLETION; PUNCH LIST.** Contractor shall notify the City in writing when it considers the Work to be substantially complete. "Substantially complete" is the point when the City can beneficially occupy its property and use the Work for its intended purpose, with only minor items remaining in order for the Work to be fully complete. Within thirty (30) days of receipt of such notice, the City shall review the Work and determine whether the Work is substantially complete. If the City agrees that the Work is substantially complete, the City shall, within said 30-day period, develop a list of items ("Punch List") required to render the Work complete, satisfactory, and acceptable in all respects. The Punch List shall be delivered to Contractor not later than five (5) days after it is developed. Contractor shall complete the Punch List items by the Completion Date; provided, however, that if the Completion Date is less than thirty (30) days after the date of delivery of the Punch List, the Completion Date shall be extended to thirty (30) days after delivery of the Punch List. Failure to include any corrective work or pending items not yet completed on the Punch List does not alter Contractor's responsibility to complete all construction services required by the Agreement. Upon completion of all Punch List items, Contractor may request payment of any remaining retainage. If the City disputes the completion of any items on the Punch List, it may withhold 150 percent of the estimated cost of completing any such items and shall return the remainder of the retainage to Contractor. Any disputed matters shall be resolved pursuant to the dispute resolution procedure of this Agreement.

53. **SURVEYS; PRESERVATION OF MONUMENTS; POINTS AND INSTRUCTIONS**

(a) **Surveys.** When necessary to performance of the Work, unless otherwise provided in the Statement of Work, the City will furnish horizontal and vertical control necessary to lay out the Work, including horizontal reference point(s) and a vertical control benchmark within 200 feet of the site. The City will set the horizontal reference point(s) and vertical control only at the beginning of the job. Contractor is responsible for interim staking during the job and all staking and layout work not otherwise furnished by the City. Contractor

shall furnish all construction layout of the Work, including layout, centerline, and grade stakes for access roadways. Contractor shall furnish all personnel, equipment, and materials to make such surveys as are necessary to determine the quantity of Work performed. Field notes and computations for estimates shall be verified by the City's Project Manager as to the quantities estimated.

(b) **Preservation of Monuments.** Contractor shall maintain and preserve all new and existing benchmarks, monuments, markers, reference points, and stakes established by others and/or the City. Should any of the aforesaid be destroyed or damaged by Contractor, the same shall be replaced by Contractor's licensed land surveyor at no cost to the City. Contractor shall be responsible for the cost of any deficiencies in the Work caused by such loss or disturbance.

(c) **Points and Instructions.** Contractor shall provide reasonable and necessary opportunities and facilities for setting points and making measurements. Contractor shall not proceed until it has made a timely request to the City for, and has received, such points and instructions as may be necessary as the Work progresses. The Work shall be done in strict conformity with such points and instructions.

54. **USE OF COMPLETED PORTIONS OF THE WORK.** The City shall have the right to take possession of and use any completed or partially completed portions of the Work, notwithstanding the fact that the time for completing the entire Work or such portions may not have expired. Such taking of possession and use will not be deemed an acceptance of any Work not completed. If such possession and use increases the cost of or delays the Work, Contractor shall be entitled to a Change Order for extra compensation, or extension of time, as necessary, to offset the effect of such prior possession and use.

55. **WARRANTY**

(a) Contractor warrants that the Work, workmanship and material furnished by Contractor shall be new and of specified quality, shall conform to the requirements of this Agreement, shall be free from defects, and shall be free from any security interest, lien, or other encumbrances. This warranty shall remain in effect for a period of twelve (12) months after completion of the Work, unless otherwise specified herein. Any defective Work, workmanship, or material corrected during the warranty period shall be similarly warranted for twelve (12) months following its correction or for such other period as specified herein. The express warranty set forth herein shall not be exclusive and shall not act as a limitation upon any statutory or other warranty of any kind, express or implied, including any implied warranty of merchantability or fitness for a particular purpose.

(b) In the event of breach of this warranty, Contractor shall take the necessary actions to correct the breach in the most expedient manner as dictated by then-existing circumstances. All costs incidental to the repair, replacement, redesign, and testing incurred as a result thereof, including the removal, replacement, and reinstallation of equipment in place when the Work was started, shall be Contractor's responsibility. Upon written notification of a breach, Contractor shall promptly send the necessary personnel to the project site to assume responsibility for corrective action. Time is of the essence. Contractor shall be afforded necessary and reasonable access to perform warranty work. If Contractor fails to promptly correct the breach, the City may take corrective action without waiving any other rights or remedies it may have, and Contractor shall reimburse the City for all expenses reasonably incurred in performing such corrective action.

56. **WORK ORDERS**

(a) The City reserves the right to award Work Orders based on the ability to perform in a timely manner, availability of required equipment, cost of required equipment, past performance on similar work, availability of qualified staff, and other factors deemed critical to the performance of each Work Order. The City may, at its sole discretion, request a "not to exceed" cost for any Work Order as a method of determining award. The City makes no guarantees of any amount of work to be awarded under the Agreement. The City reserves the right to directly purchase and provide to Contractor all or part of the equipment or materials to be incorporated in the Work.

(b) Contractor shall not proceed with any Work prior to the receipt of a written Work Order and shall commence the Work under each Work Order within fourteen (14) days of receipt, unless an alternate date is stated in the Work Order. All Work shall be done to the satisfaction of the City's Project Manager or Work Order Manager and subject to the other terms of this Agreement. The Contractor must agree to the terms of the Work Order. Commencement of Work pursuant to a Work Order constitutes acceptance of all of the terms and conditions of the Work Order. A representative Work Order is attached as **Exhibit C**.

(c) **Type of Work Order**. When services are needed, the City and Contractor shall agree upon the type of Work Order and the specifics of the Work Order.

(i) Generally, a time and materials Work Order involves projects where field conditions, environmental or cultural resource preservation issues, subsurface and other physical conditions, or other aspects of the Work cannot be accurately defined. This often results in work being modified in the field by the City. Identification of the Work involved is typically concept level drawings with minimal details. The Work Order will describe the general nature of the Work, including specific deliverables, if applicable, along with the total number of hours, days, or weeks estimated for each task; the materials to be incorporated into the work, and the total authorized expenditure amount. If deliverables are specified and materials, equipment, or sub-contractors are necessary to complete the Work, the Work Order shall specify the estimated costs thereof. The City must approve the hiring of sub-contractors in order to ensure they are qualified to perform the Work and have been competitively procured. The Contractor is compensated for equipment and labor based upon the unit costs of this Agreement, and "Other Direct Costs" as defined in sub-paragraph (d)(iv), below. Invoices must be documented as to the number of hours worked and equipment and materials used sufficient for City audit in accordance with the unit costs of this Agreement and the Work Order. The City reserves the right to determine the means and methods of performing the Work and supplying materials.

(ii) A fixed-price Work Order is issued when the extent and cost of the Work is agreed upon. It will describe with specificity the location, quantity, work limits, timeframes, deliverables, progress payments (if any), total cost, and any other matters pertaining to the Work. The fixed price includes all applicable permits, bonds, labor, equipment, supplies, project support, overhead and materials necessary to complete the Work. It is used when the scope of work can be clearly determined, such as when detailed design drawings and/or specifications and supporting documents are available and site conditions are known. It may include a detailed schedule of values, construction schedule, and any other necessary documents.

(iii) A time and materials with not-to-exceed amount Work Order is utilized when a not-to-exceed cost is agreed upon for a time and materials Work Order. All of the terms of a time and materials Work Order apply, subject to the not-to-exceed amount. In addition, the deliverables must be described with the specificity of a fixed price Work Order.

(d) **Additional Provisions Applicable to Time and Materials and Time and Materials with Not-to-Exceed Work Orders.**

(i) **Additional equipment and services**.

a. The City may issue a Work Order requiring the use of additional or specialized equipment not identified in the unit costs of the Agreement. The cost of such equipment may be identified separately and included in the specific Work Order to which it applies, or the Agreement may be amended through a Change Order with an amended cost schedule that includes such equipment. If deliverables are specified and sub-contractors are necessary to complete the Work, the Work Order shall specify the costs of the materials, equipment, and sub-contractors.

b. After a Work Order is issued, the City may require the use of material, equipment and/or subcontracted services not included in the original Work Order. A Change Order will be issued if the cost exceeds the "not to exceed" amount of the Work Order, or if the additional cost exceeds $100,000.

c. If due to an emergency, the City determines that material, equipment and/or subcontracted services that were not included in the original Work Order are required, the City may authorize procurement thereof in a manner that most efficiently and effectively minimizes public risk and economic loss.

(ii) **Equipment substitution**. No provision hereof prohibits substitution of rented or leased equipment for unit cost equipment under the Agreement, or addition of rented or leased equipment not included in the Work Order or cost estimates, provided any such substitution or addition complies with the competitive procurement provisions of this paragraph and has been approved in advance in writing by the City. Should the Work require the use of individual equipment for longer than 30 days or 30 hours per week, the City may compare equipment weekly or monthly rental rates on the open market with the rates in the Cost Schedule and require Contractor to rent the equipment on the open market if the cost is lower than the Cost Schedule. The City will reimburse Contractor this rental cost (with allowable percentage markup in the Cost Schedule) plus the hourly rate for operator with fuel and operation and maintenance.

(iii) **Other Direct Costs.**

a. Subject to prior written City approval, the City will reimburse Contractor for materials purchased by Contractor and incorporated into the Work,

non-contract equipment, leases/rentals, subcontract work, bonds, and permits obtained by Contractor, including applicable sales tax ("Other Direct Costs"), plus the allowable percentage markup in the Cost Schedule, provided Contractor adheres to the following the competitive procedures:

- Cost is $2,500.01 - $15,000 – three documented quotes – oral, written, or on line; or a written explanation to City Purchasing Manager and approval from the City's Purchasing Manager for not receiving three quotes.
- Cost is greater than $15,000 – at least three written quotes, reviewed and approved by City procurement staff, or a written explanation to and approval from the City's Purchasing Manager for not receiving three quotes.
- Documentation of solicitations where cost exceeds $2,500 shall be submitted with the Contractor's cost estimate. If a cost exceeds $15,000, documentation shall include a complete bidders list and the request for quotes that was sent to each prospective bidder.

b. Temporary facilities and temporary use materials required for erosion control and dewatering operations may be considered as Other Direct Costs upon approval by the City.

c. Only equipment or materials that are incorporated into the Work and contracted services directly related to the Work qualify for compensation as Other Direct Costs. Compensation shall not be provided for any other costs associated with the Work not identified on the Cost Schedule or Work Order.

(iv) The City reserves the right to reject any proposed subcontractors.

(e) **Invoicing.** In addition to the general provisions in **PAYMENT OF INVOICES**, supporting documentation shall include:

(i) **Time and Material Work Orders:** (hourly billing for labor and/or equipment and materials):

a. Name of employee and/or type of equipment
b. Employee position title/job classification (if applicable)
c. Hours worked and/or equipment utilized on a daily basis, as documented by Contractor's Daily Record of Hours, signed by Contractor and City staff (attached hereto as revised by the City from time to time).
d. The approved charge rate for each classification of Contractor employee and/or equipment included in Cost Schedule, Attachment ____, and/or the Work Order authorizing the Work. In the absence of an individual rate in the Cost Schedule, the Contractor employee's general classification rate may be utilized.
e. If billed for use of equipment not in the Cost Schedule, documentation of prior authorization for equipment used, including cost and estimated quantities.
f. Documentation of any required competitive procurement for equipment, subcontractors, or materials.

g. Contractor's notarized affidavit shall be provided with the first invoice for those Work Orders not requiring a Payment Bond, stating that payment of subcontractors and materialmen shall be made pursuant to Section 218.735, F.S.

h. Proof of payment of subcontractors and materialmen for which Contractor has already received payment from the City. Proof may be in the form of (1) a cancelled check; (2) a receipt marked paid by subcontractor or materialman; (3) a waiver of claim executed by the subcontractor or materialman; (4) Contractor's sworn affidavit that all subcontractors and materialmen for which payment has been received from the City have been paid by the Contractor; or (5) any other form that has been pre-approved in writing by the City. For the final invoice purposes, proof of payment must be submitted not only as to amounts previously paid by the City, but also as to amounts included in the final invoice.

i. A copy of the original vendor invoice(s) for Other Direct Costs. Altered or amended vendor invoices shall be rejected. If a vendor's invoice is from a supplier other than the one providing the lowest quote, Contractor shall explain the reason for not using the lowest cost supplier. The City reserves the right to reduce the amount reimbursed if a competitive market analysis clearly demonstrates that the invoice exceeds market value. In no event shall Contractor charge the City for any subcontractor's work that exceeds the approved Cost Schedule.

j. Diversity Statement. If W/MBE subcontractors or suppliers are used, provide company names and amount spent with each. If no W/MBE sub-contractors or suppliers are used, so indicate.

k. Contractor may provide a detailed invoice with supporting information, or alternatively, may provide a summary invoice with the information provided from Contractor's payroll or other records as supporting backup material.

ii. **Fixed Price Work Orders**:

a. Description of the Work that has been completed in accordance with the progress/payment schedule of the Statement of Work for the Work Order.

b. Certification that the Work for which payment is requested has been completed in accordance with the Statement of Work for the Work Order, in a format approved by the City Project Manager.

c. Proof of payment of subcontractors and materialmen as described above for Type 1 Work Orders.

d. Diversity Statement. If W/MBE subcontractors or suppliers are used, provide company names and amount spent with each. If no W/MBE sub-contractors or suppliers are used, so indicate.

iii. **Time and Materials with Not-to-Exceed Work Orders**:

a. Description and certification of completion of the work as described above for Fixed Price Work Orders.

b. Hourly billing information for Time and Materials Work Orders, as described above.

c. Proof of payment of subcontractors and materialmen as described above for Time and Materials Work Orders.

57. **WORK SCHEDULE.** As per General Conditions.

58. **CONTRACT INTERPRETATION.** In the event of a conflict between the terms of this Agreement and the General Conditions, the term of the General Conditions shall prevail.

59. **ENTIRE AGREEMENT.** The terms of this Agreement supersede any and all prior or contemporaneous understandings, agreements and representations and constitute the final and complete understandings of the parties.

ADDITIONAL PROVISIONS
(In Alphabetical Order)

DEFINITIONS

ADDENDA: Written or graphic instruments issued prior to the opening of Bids which make additions, deletions, or revisions to the solicitation or contract documents.

AGREEMENT: The written contract between the City and Contractor covering the Work, which includes all documents attached to this Agreement or incorporated herein by reference. The words "contract" and "Agreement" are synonymous in these documents.

AMENDMENT: Any written change made to the terms and conditions of the Agreement.

BID: The written offer of Respondent (when submitted on the reproduced approved forms) to perform the Work and furnish the necessary materials in accordance with the provisions of this Agreement.

BID BOND: The security furnished with a Bid to guarantee that Respondent will enter into a contract and execute, deliver, and perform all other obligations described in the Invitation for Bids if Contractor receives a Notice of Intent to Award the contract from the City.

CHANGE ORDER: A written agreement of the parties after the Commencement Date to amend this Agreement so as to modify the Scope of Work or the Total Compensation or provide for an extension of time.

COMMENCEMENT DATE: The date upon which the Work is authorized to proceed.

COMPLETION DATE: The date by which the Work is required to be completed.

CONTRACTOR: Contractor, its officers, employees, agents, successors, and assigns.

CONTRACTOR's PROJECT MANAGER: The individual designated by the Contractor to be responsible for overall coordination, oversight, and management of the Work for Contractor.

CONTRACTOR's SUPERINTENDENT: Contractor's representative who is present during the progress of the Work and authorized to receive and fulfill instructions from the Contractor's Project Manager or the City.

CPM or CRITICAL PATH METHOD: The use of calculated task duration with no regard for probabilities. A path has no float and is the longest path through the project. A critical path encompasses those project activities that are crucial and cannot be shifted, having calculated task duration. They are the important activities driving the project. Float belongs to the City.

DAY: Each day shown on the calendar.

DELIVERABLES: All Work that is to be performed pursuant to the Scope of Work, in whole or in part, including, but not limited to, all equipment or materials that are incorporated within the Work.

CITY: The City of St. Augustine, its Commission, officers, agents, and employees.

CITY'S PROJECT MANAGER: The City employee designated by the City to be responsible for overall coordination, oversight, and management of the Work for the City.

CITY'S SUPPLEMENTAL INSTRUCTION: Instructions issued by the City's Project Manager to make minor changes in the Work not affecting the Total Compensation or the Completion Date, and consistent with the purpose of the Work.

FINAL RELEASE OF LIENS: The instrument that is to be signed by Contractor and submitted to the City upon completion of the Work showing that all bills from subcontractors have been paid.

INSPECTOR: The City's Project Manager or an authorized representative of the City who is assigned to inspect the Work.

PERFORMANCE AND PAYMENT BOND: The security furnished by Contractor and surety in either the form provided or in a form approved by the City as a guarantee that Contractor will perform all of its contractual obligations in accordance with the terms of the Agreement and pay in full all bills and accounts for material, labor, services, and supplies used directly or indirectly in the performing the Work.

PERSON: Any individual, partnership, society, association, joint stock company, corporation, estate, receiver, trustee, assignee, referee, or capacity, whether appointed by a court or others, and any combination of individuals.

PRINCIPAL: When used in a Bid, Performance and Payment Bond, the word "principal" means the same as the word "Contractor."

REQUEST FOR BIDS: An advertised solicitation for sealed competitive Bids, with the title, date, and hour of the public opening designated. It includes a detailed description of the goods and/or services sought, the date for submittal of Bids, and all contractual terms and conditions.

RESPONDENT: Any person who submits a Bid in response to a Request for Bids or a proposal in response to a Request for Proposals.

SCOPE OF WORK: The City's written directions, requirements and technical specifications for completing the Work. Standards for specifying materials or testing that are incorporated therein by reference shall have the same force and effect as if fully set forth therein.

SUBCONTRACTORS: Those persons having a direct contract with Contractor relating to performance of the Work, including one who furnishes material worked into a special design in accordance with the plans or specifications of the Work, but not including one who merely furnishes material.

SURETY: The entity bound by a bond to be liable for Contractor's satisfactory performance of the Work and payment of all debts pertaining thereto.

TOTAL BID: The total cost to be paid to Contractor for completion of the Work.

TOTAL COMPENSATION: The total funds to be expended pursuant to this Agreement upon satisfactory completion of the Work.

WORK: All labor, materials, equipment, transportation, supporting documentation, and other products, services, or facilities necessary for complete performance of the Agreement.

IN WITNESS WHEREOF, the parties hereto have executed, or caused to be executed by their duly authorized officials, this Agreement in duplicate, each of which shall be deemed an original on the day and year first above written.

CITY OF ST. AUGUSTINE,
FLORIDA a municipal corporation

ATTEST:

Name: Darlene Galambos
Darlene Galambos, City Clerk

By: Meredith Breidenstein

Printed Name: ~~Meredith Breidenstein~~

Title: Assistant City Manager

(SEAL)

Date: 10/9/2020

ENGINEERED SPRAY SOLUTIONS LLC

Signed, sealed and delivered
in the presence of:

Melissa Kimball
Witness

By:

Printed Name: Melissa Kimball

Printed Name: James J. Collier

Title: Authorized Representative

Date: 10/5/2020

Jessica Morales
Witness

Printed Name: Jessica Morales

APPROVED AS TO FORM AND
LEGAL SUFFICIENCY:

Isabelle C. Lopez, City Attorney

Exhibit A: Scope of Work/Technical Specifications
Exhibit B: Insurance Requirements
Exhibit C: Work Order Authorization (sample)
Exhibit D: Unit Price Schedule
Attachment #1 – Requirements for: 2 CFR Part 200 Appendix II
Attachment #2 – Requirement for HUD 24 CFR 85.36
Attachment #3 – Additional Requirements
Attachment #4 – David-Bacon Wage Decisions
Attachment #5 - COSA As-Built Requirements
Attachment #6 - Electronic Drawing File Standards

SECTION 01001
GENERAL WORK REQUIREMENTS

PART 1 - **GENERAL**

1.01 NOTICES

A. All notices or other papers required to be delivered by the Contractor to the City shall be delivered to the City of St. Augustine, Public Works Department, 75 King Street, St. Augustine, FL 32084.

1.02 WORK TO BE DONE

A. The Contractor shall furnish all labor, materials, equipment, tools, services, and incidentals to complete all work required by these specifications and as shown on the RFP documents, at a rate of progress which will ensure completion of the Work within the Work Order Time contracted.

B. The Contractor shall perform the Work complete, in place, and ready for continuous service, and shall include repairs, testing, permits, clean up, replacements, and restoration required as a result of damages caused during this construction.

C. The Contractor shall comply with all City, County, State, Federal, and other codes, which are applicable to the proposed Work.

D. All newly constructed Work shall be carefully protected from injury in any way. No wheeling, walking, or placing of heavy loads on it shall be allowed and all portions damaged shall be reconstructed by the Contractor at his own expense.

E. Scope of Work: See Section 01010 "Summary of Work" and the Unit Price Schedule for details.

1.03 DRAWINGS AND PROJECT MANUAL

A. The Work shall be performed in accordance with the Specifications prepared by the City. All work and materials shall conform to the City Public Works Standards and Specifications Design Manual and Details, latest edition or as indicated in the Work Order.

B. The Contractor shall verify all field dimensions, quantities and details included in each Work Order or other data received from the City, and shall notify same, in writing, of all errors, omissions, conflicts and discrepancies found therein. Failure to discover or correct errors, conflicts or discrepancies shall not relieve the Contractor of full responsibility for unsatisfactory Work, faulty construction or improper operation resulting there from, nor from rectifying such conditions.

C. All schedules are given for the convenience of the City and the Contractor and are not guaranteed to be complete. The Contractor shall assume all responsibility for the making of estimates of the size, kind, and quantity of materials and equipment included in the Work to be done under this Contract.

D. Intent:

A. All Work called for in each Work Order applicable to this Contract, but not shown or referenced in the respective Work Order or contract shall be of like effect as if shown or mentioned in both. Work not specified either in the Work Order or in the Contract but involved in carrying out their intent or in the complete and proper execution of the Work, is required and shall be performed by the Contractor as though it were specifically delineated or described.

B. Items of material, equipment, machinery, and the like may be specified in the Work Order and not in the Contract Specifications. Such items shall be provided by the Contractor in accordance standards referenced in the Contract.

C. The apparent silence of the Specifications as to any detail, or the apparent omission from them of a detailed description concerning any Work to be done and materials to be furnished, shall be regarded as meaning that only the best general practice is to prevail and that only material and workmanship of the best quality is to be used, and interpretation of these Specifications shall be made upon that basis.

E. The more detailed work requirement will take precedence of the Contract and Work Order documents.

1.04 PROTECTION AND RESTORATION

A. The Contractor shall be responsible for the preservation of all public and private property and shall use every means of protection necessary to prevent damage thereto. If any direct or indirect damage is done to public or private property by or on account of any act, omission, neglect, or misconduct in the execution of the Work on the part of the Contractor, such property shall be restored by the Contractor, at his expense, to a condition similar or equal to that existing before the damage was done, or the Contractor shall make good the damage in other manner acceptable to the City.

B. Protection of Trees and Shrubs

A. Protect with boxes or other barricades.
B. Do not place excavated material so as to injure trees or shrubs.
C. Install pipelines in short tunnels between and under root systems.
D. Support trees to prevent root disturbance during nearby excavation.

C. Tree and Limb Removal

A. Tree limbs, which interfere with equipment operation and are approved for pruning, shall be neatly trimmed and the tree cut coated with tree paint.

B. The City may order the Contractor, for the convenience of the City, to remove trees along the line or trench excavation. The Contractor shall obtain any permits required for removal of trees. Ordered tree removal shall be paid for under the appropriate Contract

Items.

D. Trees or shrubs destroyed by negligence of the Contractor or his employees shall be replaced by the Contractor with new stock of similar size and age, at the proper season and at the sole expense of the Contractor.

E. Lawn Areas: All lawn areas disturbed by construction shall be replaced with like kind to a condition similar or equal to that existing before construction. Where sod is to be removed, it shall be carefully removed, and the same re-sodded, or the area where sod has been removed shall be restored with new sod in the manner described in the applicable section.

F. Where fencing, walls, shrubbery, grass strips or area must be removed or damaged incident to the construction operation, the Contractor shall, after completion of the work, replace or restore to the original condition.

G. The cost of all labor, materials, equipment, and work for restoration shall be deemed included in the appropriate Contract Item or items, or if no specific item is provided therefore, as part of the overhead cost of the Work, and no additional payment will be made, therefore.

1.05 PUBLIC NUISANCE

A. The Contractor shall not create a public nuisance including, but not limited to, encroachment on adjacent lands, flooding of adjacent lands, or excessive noise.

B. Noise control shall be in accordance with the City of St. Augustine Code of Ordnances Chapter 11 article IV.

C. No extra charge may be made for time lost due to work stoppage resulting from the creation of a public nuisance.

1.06 WORK HOURS

A. Weekday work hours will be from 7 AM to 7 PM and 10 AM and 6 PM on weekends. Unless specifically authorized in writing from the City.

1.07 MAINTENANCE OF SERVICE

A. The Contractor shall, prior to interrupting any utility service (water, sewer, etc.) for the purpose of performing work, contact the City and make arrangements for the interruption which will be satisfactory to the City.

B. Utilities that are damaged during construction shall be repaired by the Contractor and service restored within 4-hours of the damage. The City retains the option of repairing any damage to storm or Sanitary utility pipes in order to expedite service to the customers. The Contractor will remain responsible for all costs associated with the

repair.

1.08 TRANSFER OF SERVICE

A. When the City has accepted the rehabilitation of a manhole and placed it into operation, the transfer of service is complete. The Contractor may begin the work of removing the existing or temporary facilities.

1.09 LABOR

A. Supervision: The Contractor shall supervise and direct the Work efficiently and with his best skills and attention. The Contractor shall have a competent, English speaking superintendent or representative, who shall be on the site of the Project at all working hours, and who shall have full authority by the Contractor to direct the performance of the Work and make arrangements for all necessary materials, equipment, and labor without delay.

1.10 QUALIFICATION

A. Company:
   1. Documented company QA/QC plan and procedures for all work included in contract PW2020-05.
   2. Storm Sewer Cleaning.
      a. A minimum total of 3 years cleaning and CCTV experience on municipal storm drains.
      b. A total of five (5) projects cleaning municipal storm drains.
      c. Experience with cleaning and CCTV of municipal storm drains 24 to 60" diameter.
      d. Provide name, title, phone number, address of a minimum of 2 references documenting experience with cleaning and CCTV of storm drains 24 to 60" diameter.

B. CCTV inspection shall require a minimum of 1 certified personnel with PACP certifications.
   1. One (1) person shall have PACP certification that will lead or supervise each field CCTV crew for inspection and a minimum of 2-years in the role of a lead person.
   2. This person shall also have experience in the role as a QA/QC management supervisor

C. Each inspection supervisor shall be NASSCO PACP/MACP certified. Use of PACP/MACP certified technicians to review/document defects in the office (post process) is not acceptable.
   1. The CCTV Contractor must have an internal quality assurance/quality control (QA/QC) program in place and all inspection data shall be subjected to the procedures prior to submittal to the City. The City will perform QA/QC audits on submitted data.
   2. A QA/QC shall be performed by NASSCO MACP and PACP certified personnel.

D. Lining or Coating Applicators
   1. Ten (10) recent references of Applicator applying approved coating/lining on a minimum of 12 vertical feet and applied a minimum of 5000 vertical feet with in the last 5 years.

E. Certifications and License.
   1. NASSCO Pipeline Assessment and Certification Program (PACP), Manhole Assessment and Certification Program (MACP) certifications.
   2. OSHA 30-hour training certificate for Site Superintendent.
   3. OSHA 10-hour training certificate for all other personnel.
   4. All personnel involved with site work to have separate Fall Protection and Confined Space Training.
   5. State of Florida Certified Underground Utility and Excavation Contractors License or current Florida State General Contractor License.
   6. Manufacturer's applicator certificate.

1.11 MATERIALS AND EQUIPMENT

A. MANUFACTURER

A. All transactions with the manufacturers or Subcontractors shall be through the Contractor, unless the Contractor and the City request that the manufacturer or Subcontractor communicate directly with the City. Any such transactions shall not in any way release the Contractor from his full responsibility under this Contract.

B. All workmanship and materials shall be of the highest quality. The equipment shall be the product of manufacturers who are experienced and skilled in the field with an established record of research and development. No equipment will be considered unless the manufacturer has designed and manufactured equipment of comparable type and size and have demonstrated sufficient experience in such design and manufacture.

C. No material shall be delivered to the Site without prior submittal approval from the City.

D. All apparatus, mechanisms, equipment, machinery, and manufactured articles for incorporation into the Project shall be the new (most current production at time of bid) and unused standard products of recognized reputable manufacturers.

E. Manufactured and fabricated products:
   1. Design, fabricate and assemble in accord with the best engineering and shop practices.
   2. Manufacture like parts of duplicate units to standard sizes and gauges, to be interchangeable.
   3. Any two or more pieces of material or equipment of the same kind, type or classification, and being used for identical types of service, shall be made by the same manufacturer.
   4. Products shall be suitable for service conditions as specified and as stated by manufacturer.
   5. Equipment capacities, sizes and dimensions shown or specified shall be adhered to unless variations are specifically approved in writing.

6. Do not use material or equipment for any purpose other than that for which it is designed or is specified.

1.12 MANUFACTURER'S SERVICE

A. Where service by the manufacturer is specified to be furnished as part of the cost of the manhole rehabilitation products, the expense of the Work shall be at incorporated into the respective unit price.

B. The services provided shall be by a qualified manufacturer's service representative to demonstrate the product to City personnel, check and verify the completed installation and approve the installed products. Such services cover the period of time and for the number of trips required to meet the technical specification requirements

C. The services shall further demonstrate to the City complete satisfaction that the equipment will satisfactorily perform the functions for which it has been installed.

1.13 INSPECTION AND TESTING

A. General

A. All materials and equipment furnished by the Contractor shall be subject to the inspection, review and acceptance of the City and meet the requirements of the technical specifications, codes and standards. If in the testing of any material or equipment it is ascertained by the City that the material or equipment does not comply with the Contract, the Contractor shall be notified thereof, and the Contractor will be directed to refrain from delivering said material or products, or to remove it promptly from the Site or from the Work and not accepted by the City shall be replaced with acceptable material or products, without cost to the City.

B. The Contractor shall give notice in writing to the City sufficiently in advance of his intention to commence the preparation of materials or products for use in or as part of the permanent construction. Such notice shall contain a request for inspection, the date of commencement and the expected date of completion of the preparation or application of materials. Upon receipt of such notice, the City may arrange to have a representative present at such times during the preparation, application, or testing of the materials or products; or the City will notify the Contractor that the inspection will be waived.

C. When inspection is waived or when the City so requires, the Contractor shall furnish to the City authoritative evidence in the form of Certificates of Proper use, surface preparation and installation from the Manufacturer. This certificate will state that materials used in the Work have been manufactured, installed and tested in conformity with their instructions, applicable standards and in accordance with the Contract Specifications. These certificates shall be notarized and accompany results of physical tests and chemical analysis, where necessary, that have been made directly on the product or on similar products of the manufacturer.

D. The Contractor must comply with these provisions before acceptance of the applied material or products by the City. Such inspections or acceptance by the City shall not release the Contractor from the responsibility for furnishing materials meeting the

requirements of the Contract Specifications.

B. Cost

A. Contractor shall employ and pay for the services of an independent testing laboratory to perform testing indicated in the Contract Specifications, or at the City's discretion to ensure conformity with the Contract Specifications.

B. The cost of field leakage and pressure tests and shop tests of materials and equipment specifically called for in the Contract Specifications shall be borne by the Contractor. Such costs shall be deemed to be included in the Contract unit price.

C. The Contractor shall notify the City a minimum of 48-hours in advance of scheduled field tests.

D. The Contractor shall pay for all work required to uncover, remove, replace, retest, etc., any work not tested due to the Contractor's failure to provide the 48-hours advance notice or due to failed tests.

C. Shop Testing

A. Each material or system for which pressure, duty, capacity, rating, performance, and function or special requirements are specified shall be tested in the shop of the manufacturer in a manner which shall conclusively prove that its characteristics comply fully with the requirements of the Contract Specifications. No such material or products shall be shipped to the worksite until the City notifies the Contractor, in writing, that the results of such tests are acceptable.

B. The manufacturing company shall provide five (2) copies of the manufacturer's actual shop test data and interpreted results signed by a responsible official of the manufacturing company and notarized, showing conformity with the Contract Specifications as a prerequisite for the acceptance of any materials or products used in manhole rehabilitations. The cost of shop tests and of furnishing manufacturer's preliminary and shop test data shall be in the Contract unit price.

D. Field Testing:

A. The City may at any time during the progress of the Work, request additional testing beyond that which is specified in the Contract Specifications. This testing will be at the City's expense. Contractor shall:

1. Arrange and have requested testing performed.
2. Secure and deliver to the laboratory adequate quantities of representative samples of materials proposed to be used and which require testing.
3. Provide to the laboratory the preliminary design mix proposed to be used for concrete, and other material mixes, which require control by the testing laboratory.

E. Demonstration Tests: Upon completion of the Work and prior to final payment, all products installed under this Contract shall be subjected to acceptance or demonstration tests as specified or required to provide compliance with the Contract Specifications. The Contractor shall furnish all labor, fuel, energy, water and all other equipment necessary for the demonstration tests at no additional cost to the City.

F. Final Inspection: Prior to preparation of the final payment application, a final inspection will be performed by the City to determine if the Work is properly and satisfactorily constructed in accordance with the requirements of the Contract Specifications.

G. Inspection by Other Agencies: The Florida Department of Transportation, the Florida Department of Environmental Protection, and other authorized governmental agencies shall have free access to the site for inspecting materials and work, and the Contractor shall afford them all necessary facilities and assistance for doing so. Any instructions to the Contractor resulting from these inspections shall be given through the City. These rights of inspections shall not be construed to create any contractual relationship between the Contractor and these agencies.

1.14 PROJECT SITE AND ACCESS

A. RIGHT-OF-WAY AND EASEMENTS

A. The use of public streets and alleys shall be such as to provide a minimum of inconvenience to the public and to other traffic. Any earth or other excavated material shall be removed by the Contractor and the streets cleaned to the satisfaction of the City.

B. The Contractor shall not enter or occupy private land outside of easements, except by written permission of the property owner.

C. At the time of the Pre-Construction meetings, the Contractor shall become fully acquainted with the status of all easements.

B. ACCESS

A. Neither the material removed, nor the materials or equipment used in the construction of the Work shall be so placed as to prevent free access to all fire hydrants, valves, pumping stations or private utility facilities.

B. Access to businesses located adjacent to the project site must always be maintained. Contractor may prearrange the closing of business access with the business Owner. Such prearranged access closing shall not exceed two (2) hours. Property shall be restored, and all construction debris removed within 48-hours of acceptance of each manhole rehabilitation.

C. Contractor agrees that representatives of the City and any governmental agents will have access to the Work wherever it is in preparation or progress and that the Contractor shall provide facilities for such access and inspection.

1.15 UTILITIES

A. UTILITY CONSTRUCTION

A. Public utility installations and structures shall be understood to include all poles, tracks, pipes, wires, conduits, house service connections, vaults, manholes and all other appurtenances and facilities pertaining thereto, whether owned or controlled by governmental bodies or privately owned by individuals, firms or corporations, used to serve the public with transportation, traffic control, gas, electricity, telephone, sewerage, drainage or water. Other public or private property, which may be affected by the Work, shall be deemed included hereunder.

B. All open excavations associated with manhole rehabilitations shall be adequately safeguarded by providing temporary barricades, caution signs, lights and other means. The Contractor shall, at his own expense, provide suitable and safe bridges and other crossings for accommodating travel by pedestrians and workmen. Bridges provided for access to private property during rehabilitations shall be removed when no longer required.

C. If any excavation becomes a hazard, or if it excessively restricts traffic at any point, the City may require special construction procedures. As a minimum, the Contractor shall conform to the following restoration procedures:

1. Interim Restoration: All excavations shall be backfilled and compacted as specified by the end of each working day or proper barricades shall be in place before the end of the workday. For excavations within existing paved areas; lime rock base or soil cement base (match existing) shall be spread and compacted to provide a relatively smooth surface free of loose aggregate material. At the end of each workweek, the asphaltic surface course shall be completed and opened to traffic. Contractor shall coordinate his construction activity including density tests and inspections to allow enough time to achieve this requirement. All driveway cuts shall be backfilled, compacted, and lime rock base spread and compacted immediately after installation. Contractor shall coordinate with the individual property owners prior to removing the driveway section.
2. All materials and products shall be neatly stored in a location, which will cause the least disturbance to the public. All debris shall be removed and properly disposed of by the end of each working day.
3. Final Restoration Overlay: After completing all installations, testing, and acceptance of the rehabilitation work by the City, final restoration shall be performed. Any additional restoration required after testing shall be repaired in a timely manner at no additional cost to the City.
4. Maintenance of all restored facilities shall be the Contractor's responsibility. This maintenance shall be performed on an on-going basis during construction. The Contractor's Progress Schedule shall reflect the above restoration requirements.
5. Additional Restoration for Work in Business, Commercial or Historic Districts: The Contractor shall restore all private property, damaged by construction, to its original condition. Access to businesses located adjacent to the project site must always be maintained. Contractor may prearrange the closing of business accesses with the business owner. Such prearranged access closing shall not exceed two (2) hours. Property drainage and grading shall be restored within 24-hours of backfilling trench.

B. EXISTING UTILITIES

A. The locations of all existing underground piping, structures and other facilities are not provided in Work Orders. The Contractor will need to be requested "one call" for locates.as needed for rehabilitation work. It is the Contractor's responsibility to verify all existing underground piping, structures and other facilities.

B. The Contractor shall, at all times, employ acceptable methods and exercise reasonable care and skill so as to avoid unnecessary delay, injury, damage or destruction of existing utility installations and structures; and shall, at all times in the performance of the Work,

avoid unnecessary interference with, or interruption of, utility services; and shall cooperate fully with the owners thereof to that end.

C. When existing facilities are found to conflict with the Work, the City reserves the right to modify the scope of work in the respective Work Order to avoid interference with existing facilities and associated delays.

D. All utilities, which do not interfere with the work, shall be carefully protected against damage. Any existing utilities damaged in any way by the Contractor shall be restored or replaced by the Contractor at his expense as directed by the City. Any existing facilities, which require operation to facilitate repairs, shall be operated only by the owner of the respective utility.

E. It is the responsibility of the Contractor to ensure that all utility and/or poles, the stability of which may be endangered by the proximity to rehabilitation work, be temporarily stayed and/or shored in position while work proceeds in the vicinity of the pole and that the utility or other companies concerned be given reasonable advance notice of any such excavation.

C. NOTICES

A. All governmental utility departments and other owners of public utilities, which may be affected by the Work, will be informed in writing by the Contractor one (1) week after the execution of the Work Order covering the Work. Such notice will be sent out in general and directed to the attention of the governmental utility departments and other owners of public utilities for such installations and structures as may be affected by the Work.

B. The Contractor shall comply with Florida Statute 553.851 regarding protection of underground gas pipelines. Evidence of notification to the gas pipeline owner shall be furnished to the City within one (1) week after the execution of the Work Order.

C. It shall be the Contractor's responsibility to contact utility companies at least 72-hours in advance of any excavations required to perform manhole rehabilitations in any area so maintenance personnel can locate and protect facilities, if required by the utility company.

D. The Contractor shall give a minimum five (5) working day notice to utility personnel prior to interrupting a utility service (water, sewer, etc.).

E. Note that notification requirements associated with manhole rehabilitations are included in other Sections that are part of this contract.

1.16 RELATED CONSTRUCTION REQUIREMENTS

A. PUBLIC INFORMATION OFFICER

1. The Contractor shall provide community interaction and coordination through Work Order Manager (WOM). The WOM will provide resolution to complaints and problems from community members affected by the construction for the entire project duration. The City maintains a 24-hour phone number for citizens to call in cases of emergency. The City will field these calls, provide answers to questions, research issues with the project team or appropriate agencies and follow up each complaint in a timely manner. The WOM will maintain a daily diary of call and/or interactions with the community, as well as a complaint log chronicling all issues and proposed resolutions.

2. The WOM shall attend the project progress meetings and provide the project team with a report of public issues since the last progress meeting. The WOM will also disseminate roadway closures, temporary and permanent restoration and other relevant construction information to the community, as well as, when appropriate, to the media, emergency services personnel and other interested agencies.
3. The designated WOM shall have previous experience in providing similar services.

B. TRAFFIC MAINTENANCE

A. Refer to Section 01570 – Maintenance of Traffic

C. BARRIER AND LIGHTS

A. The Contractor shall exercise extreme care in the conduct of the Work to protect health and safety of the workmen and the public. The Contractor shall provide all protective measures and devices necessary, in conformance with applicable local, state and federal regulations. Protective measures shall include but are not limited to barricades, warning lights/flashers and safety ropes.

B. All equipment and vehicles operating within 10-feet of the roadway shall have flashing strobe lights attached.

D. DUST AND EROSION CONTROL

A. The Contractor shall prevent dust nuisance from his operations or from traffic.

B. Contractor is responsible for providing effective temporary erosion and sediment control measures during construction or until final controls become effective.

C. Refer to the City of St. Augustine Standards and Specifications Design Manual and Standards Storm Water Pollution Prevention Plan Sheet N-1 for erosion control requirements associated with manhole rehabilitation work.

E. LINES AND GRADES

A. Maintain existing lines and grades of the rehabilitated manholes. Where frames and covers are replaced refer to grade requirements in Section 02775, Wastewater Manhole Rehabilitation paragraph 3.19.

F. TEMPORARY CONSTRUCTION

A. Temporary fences: If, during the course of the Work, it is necessary to remove or disturb any fencing, the Contractor shall at his own expense, provide a suitable temporary fence which shall be maintained until the permanent fence is replaced.

B. Responsibility for Temporary Structures: In accepting the Contract, the Contractor assumes full responsibility for the sufficiency and safety of all temporary structures or work and for any damage which may result from their failure or their improper construction, maintenance or operation.

G. DAILY REPORTS

A. The Contractor shall submit to the City's Representative daily reports of construction activities excluding non-workdays. The reports shall be complete in detail and shall include the following information:

1. Days from Work Order commencement date.
2. Weather information

3. Work activities, including manpower, equipment and daily production quantities.
4. Major deliveries
5. Visitors to site
6. Test records
7. New problems, and
8. Other pertinent information

B. A similar report shall be submitted for/by each Subcontractor.

C. The report(s) shall be submitted to the City Representative within 2 days of the respective report date. Each report shall be signed by the Contractor's Superintendent or Project Manager.

D. If a report is incomplete, in error, or contains misinformation, a copy of the report shall be returned by the City Representative to the Contractor's Superintendent or Project Manager with corrections noted. When chronic errors or omissions occur, the Contractor shall correct the procedures by which the reports are produced.

H. CLEANING

A. During Construction

1. During construction of the Work, the Contractor shall, at all times, keep the Site free from material, debris and rubbish as practicable and shall remove the same from any portion of the Site if, in the opinion of the City, such material, debris, or rubbish constitutes a nuisance or is objectionable.
2. Provide on-site containers for the collection of waste materials, debris and rubbish and remove such from the Site periodically by disposal at a legal disposal area away from the Site.
3. The Contractor shall remove from the site all surplus materials and temporary structures when no longer necessary to the Work at the direction of the County.

B. Final Cleaning

1. At the conclusion of the Work, all equipment, tools, temporary structures and materials belonging to the Contractor shall be promptly taken away, and the Contractor shall remove and promptly dispose of all water, dirt, rubbish or any other foreign substances. Employ skilled workmen for final cleaning. Thoroughly clean all installed equipment and materials to a bright, clean, polished and new appearing condition. Remove grease, mastic, adhesives, dust, dirt, stains, fingerprints, labels, and other foreign materials from sight-exposed interior and exterior surfaces. Broom clean exterior paved surfaces; rake clean other surfaces of the grounds.
2. The Work site surrounding the rehabilitated manhole shall be returned to the pre-construction condition documented by video and photographs. The condition is to be equal or better than what existed before the Work.
3. Prior to final completion, or City beneficial occupancy, Contractor shall conduct an inspection of interior and exterior surfaces, and all work areas to verify that the entire Work is clean. The City will determine if the final cleaning is acceptable. or political subdivision having jurisdiction.

PART 2 - **PRODUCTS (NOT USED)**

PART 3 - **EXECUTION (NOT USED)**

END OF SECTION

SECTION 01010
SUMMARY OF WORK

PART 1 - WORK COVERED BY CONTRACT DOCUMENTS

1.01 General

A. This Contract includes the inspection and rehabilitation of Sanitary Sewer manholes, Lift Station Wet Wells, Stormwater Structures, and cleaning and inspection of Stormwater culverts and drains and Sanitary sewer mains as described in Sections of the Annual Contract PW2020-05.

B. Upon the City's acceptance of proposed inspections and/or rehabilitations work a purchase order requisition will be made followed by issuance of a Work Order.

C. The scope of each work order will vary. Initially inspections will be made on individual collection basins.

D. Contract Documents
   1) Section 01001 General Work Requirements
   2) Section 01010 Summary of Work
   3) Section 01200 Project Meetings
   4) Section 01300 Submittals
   5) Section 01516 Collection System Bypass
   6) Section 01570 Maintenance of Traffic
   7) Section 02761 Cleaning Storm and Sanitary Sewer Systems
   8) Section 02762 Televising Storm and Sanitary Sewer Systems
   9) Section 02764 Televising Existing Manholes, Wet Wells, and Stormwater Structures
   10) Section 02775 Wastewater Manhole, Lift Station Wet Well and Storm Water Structure Rehabilitation
   11) City of St. Augustine (COSA) Standards and Specifications Design Manual and Details.
   12) Unit Price Schedule.

E. Refer to section 02775 for qualifications for both manhole inspections and rehabilitations.

F. Work that is covered with cleaning, inspections and rehabilitations in contract PW2020-05:
   1) All submittals in accordance with section 01300.
   2) Attending and participating in work order pre-work meetings in accordance with section 01200.
   3) Submitting and periodically updating work schedules.
   4) Visual documentation of manholes both pre and post rehabilitation.
   5) Maintenance of Traffic in accordance with section 01570.
   6) Collection system bypassing in accordance with section 01516.
   7) Distribute notices, door hangers, to all residents and businesses in the location of work.
   8) Site security and safety.

9) System type product application demonstrations for City personnel prior to application.
10) Externally eliminating infiltration.
11) Interior surface preparation.
12) Cleaning & Inspection of Sanitary Mains, Stormwater Culverts and Drains
13) Inspection and Rehabilitation of Sanitary Lift Station Wet Wells and Stormwater Structures.
14) Inspection of the Interior of Box Culverts
15) Repair or replacement of the manhole invert and bench including sealing of pipe penetrations.
16) Patching/lining/coating of manhole bench/invert, barrel, corbel/cone and chimney.
17) Sealing manhole frame/chimney.
18) Replace manhole frame and cover.
19) Adjusting frame/cover finished grading including roadway or sod repairs.
20) Providing and installing inflow dishes.
21) Providing and installing cover seals.
22) All restorations and cleanup.
23) Testing and documentation of each manhole rehabilitation.
24) Work will not include total reconstruction of the manhole or replacement.

1.02 SEQUENCE OF WORK

A. The Contractor shall establish his work sequence based on the use of crews to facilitate completion of construction and testing within the specified Contract Time.

B. The Contractor shall submit a schedule and work sequence to the Owner at least five (5) days prior to the Notice to Proceed. Work on all utility lines shall be accomplished so that all facilities will stay in operation.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTIONNALLY

SECTION 01200
PROJECT MEETINGS

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

A. Contractor participation in pre-work conferences, and by exception progress meetings and specially called meetings.

B. Progress meeting exception. Progress meetings will be held on a by-weekly frequency for work orders extending 4 calendar weeks or more. Specialty meetings will be held when work issues arise that are solved in the field or product demonstrations are provided.

1.02 MEETINGS CALLED BY THE CITY

A. The City will schedule and administer a pre-work conference, and by exception progress meetings and specific topic meetings throughout the progress of the Work. The City will:
   1. Prepare and distribute a notification of the meeting to required attendees.
   2. Establish, prepare and distribute an agenda with the notification.
   3. Make physical arrangements for the meetings.
   4. Preside at meetings.
   5. Prepare and distribute minutes of meetings including significant proceedings and decisions, within 15 working days after each meeting. Minutes will be forwarded to all participants and to parties affected by decisions made at the meeting.

B. Representatives of the Contractor, Subcontractors and suppliers attending meetings shall be qualified and authorized to act on behalf of the entity each represents.

C. The pre-work meeting location will be held at the 4th floor of City Hall in the Public Works Conference Room and any progress or specialty meetings will be held at the City Field Operations Facilities. All contractor employees may obtain parking passes for the meeting at City Hall. The parking at the operations facilities is informal.

1.03 PRE-CONSTRUCTION CONFERENCE

A. Attendance:
   1. City
   2. Contractor and superintendent
   3. Subcontractors as appropriate to the agenda
   4. Representatives of suppliers and manufacturers as appropriate to the agenda
   5. Other agency representatives (FDOT, SJC, etc.)
   6. Others as requested by the City or Contractor

B. Draft Agenda:
   1. Will be distributed for review and input prior to the meeting.

1.04 PROGRESS MEETINGS

A. See pre-work meeting paragraph 1.03. The Contractor's representative is to attend meetings and have the authority to act on behalf of the entity represented on field related matters. Contractor's representative is to study previous meeting minutes and current agenda items, in order to be prepared to discuss pertinent topics and provide specific information on the agenda.

B. Revision to Minutes:
   1. A draft of the meeting notes will be distributed to the attendees. A time frame will be provided for any suggested changes. Meeting notes will be issued at the end of this time period or when all changes or content is finalized.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01300
SUBMITTALS

PART 1 - GENERAL

Work completed without approved Shop Drawings and/or samples shall be considered installed at the Contractor's risk.

1.01 SHOP DRAWINGS AND DATA

A. Contractor's drawings, certifications, samples, proposed equipment, plans, data sheets and forms shall be clearly marked with specification title and numbers to identify pertinent materials. Delete information which is not applicable to the Work by striking or cross-hatching.

B. If Shop Drawings show variations from Contract requirements because of standard shop practice or for other reasons, the Contractor shall describe such variations in the letter of transmittal. If acceptable, proper adjustment in the Contract shall be implemented where appropriate. If the Contractor fails to describe such variations, the Contractor shall not be relieved of the responsibility for executing the Work in accordance with the Contract, even though such Drawings have been reviewed.

C. All submittals are to be in conformance with applicable standards or codes.

D. Submittals may be provided electronically via portable hard drives, ftp web sites or similar.

1.02 REVIEW OF SHOP DRAWINGS AND SAMPLES

A. The City /Professional's review of submittals and samples as submitted by the Contractor will be to determine if the items(s) generally conform(s) to the information in the Contract Documents.

B. The review of submittals will be general, and shall not be construed:
   1. As permitting any departure from the Contract Documents
   2. As relieving the Contractor of responsibility for any errors, including details, dimensions, and materials
   3. As approving departures from details furnished by the City/Professional, except as otherwise provided herein

C. If the drawings or schedules as submitted describe variations and show a departure from the Contract Documents which the City/Professional finds to be in the interest of the City and to be so minor as not to involve a change in Contract Price or Contract Time, the City/Professional may return the reviewed drawings without noting an exception.

D. "Approved As Noted": Contractor shall incorporate City/Professional's comments into the submittal before release to manufacturer. The Contractor shall send a letter to the City/Professional acknowledging the comments and their incorporation into the Shop Drawing.

E. "Amend and Resubmit": Contractor shall resubmit the Shop Drawing to the City/Professional. The resubmittal shall incorporate the City/Professional's comments highlighted on the Shop Drawing.

F. "Rejected": Contractor shall correct, revise and resubmit Shop Drawing for review by City/Professional.

G. "Record Copy" will be accepted for record purposes only.

H. Resubmittals will be handled in the same manner as first submittals. For resubmittals the Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, to revisions other than the corrections requested by City/Professional on previous submissions. The Contractor shall make any corrections required by the City/Professional.

I. When the Shop Drawings have been completed to the satisfaction of the City/Professional, the Contractor shall carry out the Construction in accordance therewith and shall make no further changes therein except upon written instructions from the City/Professional.

1.03 PRODUCT DATA

A. Submit not less than 1 electronic or 2 -copies, unless approved by the City/Professional. Mark each copy to identify applicable products, models, options and other data. Supplement manufacturers' standard data to provide information unique to the Work.

1.04 SAMPLES

A. Submit the number of samples specified in the respective Specification section, but no less than two (2). After review one (1) will be retained by the City. Reviewed samples that may be used in the Work are indicated in the Specification Section.

B. Samples shall be of sufficient size to clearly illustrate:
   1. Each sample shall have a label indicating:
      a. Name of Project
      b. Name of Contractor and Subcontractor
      c. Material or equipment represented
      d. Place of origin
      e. Location in Project
      f. Specification title and number
      g. Submittal number

1.05 DRAWINGS, PRODUCT DATA AND CERTIFICATES

A. Each letter of transmittal shall identify each and every item transmitted by title, drawing number, revision number and date.

B. The following is applicable to submitted videos, plans, drawings, and certificates:
   1. Each submittal shall identify applicable Standards.

C. When resubmission is required, the City/Professional will return only one (1) marked up copies. A third submission from the same manufacturer will not be accepted.

1.06 SUBSTITUTIONS

A. The substitution requirements of this Section are in addition to the requirements of the General Conditions.

B. When a particular product is specified or called for, it is intended and shall be understood that the proposal tendered by the Bidder includes those products in his Bid. Substitutions will only be considered in cases where original materials are unavailable or in an instance where substitute can be proven superior in its planned application

C. The intent of these specifications is to provide the City with a quality facility without discouraging competitive bidding. For products specified only by reference standards, performance and descriptive methods, without naming manufacturer's products, the Contractor may provide the products of any manufacturer complying with the Contract Documents, subject to the review of product data by the City/Professional as specified herein.
   1. Substitutions will be required to be suitable for the application and provide performance equal to or better than the listed or approved product.
   2. Substituted products will also be required to come with an equivalent or better warranty than the listed or approved.

D. The City/Professional's approval is required for substitutions.

E. The Contract is based on the materials, equipment and methods described in the Contract Documents.

F. Do not substitute materials, equipment or methods unless such substitution has been specifically approved for this Work by the City/Professional in writing. The Contractor must provide a submittal per this Section specifically requesting approval of the substitution. Failure to specifically identify the requested substitution may invalidate approval of a submittal.

1.07 AVAILABILITY OF SPECIFIED ITEMS

A. Verify prior to bidding that all specified items will be available in time for installation during Construction for orderly and timely progress of the Work.

B. In the event that specified items will not be available, notify the City/Professional prior to receipt of proposals.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 SUBMITTAL PROCEDURES

A. On resubmittals, direct specific attention in writing or on the revised Drawings or sample to revisions other than the corrections required by City on previous submissions.

B. In the event that a resubmittal becomes necessary if it is time critical a tabletop review will be arranged to expedite the review.

C. All drawings, schematics, manufacturer's product data, certifications and other drawing submittals required for a system specification shall be submitted at one time as a package to facilitate interface checking.

D. All Shop Drawings shall be accompanied with a transmittal letter providing the following information:
   1. Project Title and Contract Number
   2. Date
   3. Contractor's name and address
   4. The number of each Shop Drawing, project data, and sample required
   5. Notification of Deviations from Contract Documents
   6. Submittal Log Number conforming to specification section numbers
      a. Submit each specification section separately.
      b. Identify each Shop Drawing item required under respective specification section.
      c. Identify resubmittal using specification section followed by A (first resubmittal), B (second resubmittal) …etc.

3.02 CITY'S / PROFESSIONAL'S REVIEW

A. Corrections or comments made on Submittals during review do not relieve the Contractor from compliance with the requirements of the Specifications and standards. This check is only for review of general conformance. Any substitutions or changes shall be properly noted.

B. Review Time:
   1. On a normal basis, each submittal will be returned to the Contractor within 2 working days of the date it is received. CCTV videos will be an exception.
   2. If, for any reason, the above schedule cannot be met, the Contractor will be so informed within a reasonable period.

END OF SECTION

SECTION 01516
COLLECTION SYSTEM BYPASS

PART 1 - GENERAL

1.01 SCOPE OF WORK

A. SEWER BYPASSING AND DEWATERING

1. Contractor shall provide all isolation and bypass operations: The Contractor's objective of flow bypass and/or diversion pumping is to maintain an efficient and uninterrupted level of service to wastewater collection system for users while inspections or rehabilitation operations are being performed on the manhole. The main segment(s) being bypassed and/or from which flow is being diverted by:

    a. Ensuring that bypass and diversion pumps are adequately fueled, lubricated and maintained.

    b. Ensuring backup spare parts are expeditiously applied to the flow bypass and/or diversion pumping system in the event of component breakdown.

    c. Ensure an emergency backup plan is smoothly implemented in the event of system failure.

    d. Preventing backup, spillage, flooding or overflow onto streets, yards and unpaved areas or into building, adjacent ditches, storm water mains and waterways while flow bypass or diversion pumping takes place.

    e. Ensuring that installation, startup and subsequent disassembly of the flow bypass and diversion pumping system is smoothly transitioned.

2. Flow bypass and diversion pumping shall be done in such a manner so as not to damage private or public property or create a nuisance or public menace. The pumped sewage shall be in an enclosed hose or pipe that is adequately protected from traffic and shall be redirected into the wastewater collection system. After the work is completed, flow shall be returned to the sewer and all temporary equipment removed.

3. When pumps are operating, an experienced bypass/diversion pump maintenance operator/mechanic and/or deputy shall continuously be on site to monitor the operation of the entire bypass/diversion system. The operator/mechanic shall comprehensively, methodically and continuously:

    a. Adjust pump speed as appropriate so as not to adversely impact upstream or downstream flow condition levels.

b. Check that the effectiveness and security of bulkheads, dams, diaphragms, plugs, valves, weirs and all other flow control devices are working effectively and according to plan.

c. Check the integrity of hoses and couplings along the entire bypass/diversion system.

d. Monitor lubrication levels and top off as necessary.

e. Facilitate minor repairs as required.

f. Report to City on problems arising.

4. The Contractor shall be solely responsible for planning and executing sewer flow control, bypass and diversion pumping operations. The Contractor shall be entirely liable for damages to private or public property that may result from his/her operations and for all cleanup, disinfection, damages, and resultant fines in the event of spillage, flooding or overflow.

5. In the event of accidental overflow or spillage, refer to section 02775 for information regarding an event.

6. Once by-pass pumping is underway at any given site, work shall be completed as efficiently as possible without interruption.

7. The level of noise emitted from pumps must be within regulations/ordinance parameters.

1.02 SUBMITTALS

A. Prior to implementation of any bypass, the Contractor will submit and receive City acceptance of a bypass plan. The Contractor will submit to the County a comprehensive written plan for approval and acceptance that describes the intended bypass for the maintenance of flows during construction. The Contractor will also provide a sketch showing the location of bypass pumping equipment for each pump station or line segment(s) around which flows are being bypassed. The plan will include proposed tanker(s), pump(s), bypass piping, backup plan and equipment, work schedule, monitoring log for bypass pumping, monitoring plan of the bypass pumping operation, and maintenance of traffic plan.

PART 2 - PRODUCTS

2.01 GENERAL

A. The Contractor will provide and maintain adequate equipment, piping, tankers, and other necessary appurtenances in order to maintain continuous and reliable wastewater service in all wastewater lines as required for construction. The Contractor will have tankers,

backup pump(s), piping, and appurtenances ready to deploy immediately.

B. All piping will be designed to withstand at least twice the maximum system pressure or a minimum of 50-psi, whichever is greater.

C. When bypassing a pump station, one (1) back-up pump equal to the primary unit will be provided by the Contractor. Bypass pumps shall have a maximum rating of 55 decibels for sound attenuation.

PART 3 - EXECUTION

3.01 GENERAL

A. The Contractor shall have all materials, equipment and labor necessary to complete the repair, replacement, or rehabilitation on the job site prior to isolating the gravity main segment, manhole, or pump station. The Contractor will demonstrate that the temporary bypass pumping system is in good working order and is sufficiently sized to successfully handle flows by performing a test run for a period of 24-hours prior to beginning the Work.

3.02 TRAFFIC CONSIDERATIONS

A. The Contractor shall locate bypass pumping suction and discharge lines so as to not cause undue interference with the use of streets, private driveways, and alleys, to include the possible temporary trenching of piping at critical intersections. Additional traffic maintenance requirements are found in Section 01570 "Maintenance of Traffic".

3.03 BYPASS OPERATION

A. The Contractor shall submit a bypass plan to the City and the bypass plan must be approved before the bypass is operational to perform the Work. Contractor shall maintain the wastewater system flow and no surcharging will be allowed to occur out of the system.

B. Where Work requires the main or pump station to be taken out service after normal working hours and bypass pumping is being used; the Contractor shall be responsible for monitoring the bypass operation 24-hours per day, 7-days per week. Any electronic monitoring in lieu of on-site monitoring must be detailed in the comprehensive written bypass plan.

C. The Contractor shall ensure that no damage will be caused to private property as a result of bypass pumping operations. The Contractor will complete the Work as quickly as possible and pass all tests and inspections before discontinuing bypassing operations and returning flow to the wastewater manhole, main, or pump station.

D. During bypassing, no wastewater will be leaked, dumped, or spilled in or onto, any area outside of the existing wastewater system.

E. The Contractor shall immediately notify the City should a sanitary sewer overflow (SSO) occur. The Contractor shall take the necessary action to wash down, clean up and disinfect the spillage area to the satisfaction of the City or other governmental agency.

F. The Contractor shall cease bypass operations and return flows to the existing sewer when directed by the City. When bypass operations are complete, all bypass piping shall be drained into the wastewater system prior to disassembly.

3.04 CONTRACTOR LIABILITY

A. The Contractor shall be responsible for all required pumping, equipment, piping, and appurtenances to accomplish the bypass and for any and all damage that results directly or indirectly from the bypass pumping equipment, piping and/or appurtenances. The Contractor shall also be liable for all City personnel labor and equipment costs, penalties and fines resulting from sanitary sewer overflows. It is the intent of these specifications to require the Contractor to establish adequate bypass pumping as required regardless of the flow condition.

B. Refer to Section 02775, Wastewater Manhole Rehabilitation paragraph 1.12 for responsibility for Overflows and Spills.

END OF SECTION

SECTION 01570
MAINTENANCE OF TRAFFIC

PART 1 - GENERAL

1.01 DESCRIPTION

This section includes identifying safety hazards and then furnishing all necessary labor, materials, tools, and equipment including, but not limited, to signs, barricades, traffic drums, cones, flashers, construction fencing, flag persons, variable message boards, uniformed police officers, warning devices, temporary pavement markings, temporary sidewalk, delineators, etc., to maintain vehicular and pedestrian traffic through and adjacent to the project area. These measures and actions shall be taken to safely maintain the accessibility of public and construction traffic by preventing potential construction hazards. All materials, work and incidental costs related to Maintenance of Traffic will be paid for at the contract lump sum price.

1.02 REQUIREMENTS

A. The Traffic Control Plan shall conform to the following standards:
   1. Standard Specifications for Road and Bridge Construction, latest edition including all subsequent supplements issued by the Florida Department of Transportation, (FDOT).
   2. Manual on Uniform Traffic Control Devices for Streets and Highways by U.S. Department of Transportation, Federal Highway Administration.
   3. All references to the respective agencies in the above referenced standards shall be construed to also include the municipality as applicable for this Work.

B. Sequence the Work in a manner that will minimize disruption of vehicular and pedestrian access through and around the construction area.

C. Traffic planning and control for the maintenance and protection of pedestrian and vehicular traffic affected by the Contractor's Work includes, but is not limited to:
   1. Construction and maintenance of any necessary detour equipment and facilities.
   2. Providing necessary facilities for access to residences and businesses.
   3. Furnishing, installing, and maintenance of traffic control and safety devices (e.g. signage, barricades, barriers, message boards, etc.), and flag persons as appropriate during Construction.
   4. Control of water runoff, dust and any other special requirements for safe and expeditious movement of traffic.

D. Planning, maintenance and control of traffic shall be provided at the Contractor's expense. The Contractor will bear all expense of maintaining the vehicle and pedestrian traffic throughout the work area.

E. The Contractor will ensure all personnel involved in traffic control are and capable of communicating with the public. The Contractor may be required to hire off-duty uniformed police officers, in addition to flag persons, to direct and maintain traffic. Locations and conditions requiring such uniformed police officers shall be as directed by the City. The Contractor shall be required to utilize uniformed police officers for work within St. Johns County and FDOT maintained ROW, road closures affecting school traffic and during all night work involving a road closure or crossing on nonresidential roads. The City will arrange for police assistance on City Streets when needed.

F. The Contractor will remove temporary equipment and facilities when no longer required, restore grounds to original, or to specified conditions.

1.03 SUBMITTALS

A. Submit at Contractor's own expense a Traffic Control Plan for approval by the controlling roadway agency (FDOT, St. John's County Public Works or other local government) having jurisdiction over the road for approval.
   1. The Traffic Control Plan will detail procedures and protective measures proposed by the Contractor to provide for protection and control of traffic affected by the Work consistent with the following applicable standards:
      a. Standard Specifications for Road and Bridge Construction, latest edition including all subsequent supplements issued by the Florida Department of Transportation, (FDOT Spec.).
      b. Manual of Traffic Control and Safe Practices for Street and Highway Construction, Maintenance and Utility Operations, FDOT.
      c. Right-of-Way Utilization Regulations, St. John's County, Florida, latest edition.

B. All references to the respective agencies in the above referenced standards shall be construed to also include the municipality as applicable for this Work.

C. The Traffic Control Plan will be developed by a person that is qualified, has experience with and has a current advanced MOT certification in accordance with Florida Statutes and Federal Regulations. The plan shall include proposed locations and time durations of the following, as applicable:
   1. Pedestrian and public vehicular traffic routing.
   2. Lane and sidewalk closures, other traffic blockage and lane restrictions and reductions anticipated to be caused by construction operations. Show and describe the proposed location, dates, hours and duration of closure, vehicular and pedestrian traffic routing and management, traffic control devices for implementing pedestrian and vehicular movement around the closures, and details of barricades.
   3. Location, type and method of shoring to provide lateral support to the side of an excavation or embankment parallel to an open travel-way.

4. Allowable on-street parking within the immediate vicinity of worksite.
5. Access to buildings immediately adjacent to worksite.
6. Driveways blocked by construction operations.
7. Temporary traffic control devices, temporary pavement striping and marking of streets and sidewalks affected by construction
8. Temporary commercial and industrial loading and unloading zones.
9. Construction vehicle reroutes, travel times, staging locations, and number and size of vehicles involved.

D. Obtain and submit prior to erection, or otherwise impacting traffic, all required permits from all authorities having jurisdiction, excluding City of St. Augustine Public Works, if applicable.

E. A right-of-way use permit will be required for work on City Streets. The City will assist with the application of and will issue this permit at no cost to the Contractor.

PART 2 - PRODUCTS

2.01 MATERIALS AND EQUIPMENT

A. The Contractor shall furnish, erect, and maintain all necessary traffic control devices, including flag person, in accordance with the Manual of Uniform Traffic Control Devices for Streets and Highways published by the U.S. Department of Transportation, Federal Highway Administration.
   1. FLAG PERSONS
      a. All flag persons used on this Project will adhere to the following requirements:
      b. Any person acting as a flag person on this Project will have attended a training session taught by a Contractor's or subcontractors qualified trainer before the start date of this Contract.
      c. The Contractor's qualified trainer will have completed a "Flag person Train the Trainer Session" in the 5-years previous or before the start date of this Contract and will be on file as a qualified flag person trainer.
      d. The flag person trainer's name and Qualification Number will be furnished by the Contractor at the Pre-Construction meeting. The Contractor will provide all flag persons with the Flag Person Handbook and will observe the rules and regulations contained therein. This handbook will be in the possession of all flag person while flagging on the Project.
      e. Flag persons will not be assigned other duties while working as authorized flag persons.
      f. Any person replacing flag person for break shall have the same training.

PART 3 - EXECUTION

3.01 NOTIFICATIONS

A. The Contractor will notify individual owners, owner's agents, and tenants of buildings affected by the construction, with copies to the city, 72-hours in advance of any construction activities.

B. The Contractor shall notify residents and pedestrians via variable message boards no later than 10 days prior to the closure of any road, lane or pedestrian thoroughfare.

C. The Contractor shall notify Emergency Management Services agencies, St. Johns County EOC no less than 7 days prior to such closures or whenever roads are impassable.

D. Implement closing of vehicle or pedestrian thoroughfare in accordance with the construction drawings and the approved Traffic Control Plan.

E. The Contractor will immediately notify the City of any vehicular or pedestrian safety or efficiency problems incurred as a result of the construction of the Project.

3.02 GENERAL TRAFFIC CONTROL

A. The Contractor will sequence and plan construction operations and will generally conduct Work in such a manner as not to unduly or unnecessarily restrict or impede normal traffic.

B. Unless otherwise provided, all roads within the limits of the Work will be kept open to all traffic by the Contractor. The Contractor will keep the portion of the project being used by public traffic, whether it is through or local traffic, in such condition that traffic will be adequately accommodated.

C. The Contractor will be responsible for installation and maintenance of all traffic control devices and requirements for the duration of the construction period. Necessary precautions for traffic control will include, but not be limited to, warning signs, signals, lighting devices, markings, barricades, canalizations, and hand signaling devices.

D. The Contractor will provide and maintain in a safe condition temporary approaches or crossings and intersections with trails, roads, streets, businesses, parking lots, residences, garages and farms.

E. The Contractor will always provide emergency access to all residences and businesses. Residential and business access will always be restored and maintained outside of the Contractor's normal working hours.

F. Traffic is to be maintained on one section of existing pavement, proposed pavement, or a combination thereof. Alternating one-way traffic may be utilized and limited to a maximum length of 500-feet during construction hours. Lane width for alternating one-way traffic will be kept to a minimum width of 10-feet, or as directed by the City.

G. Travel lanes and pedestrian access will be kept reasonably smooth, dry, and in a suitable condition at all times.

H. The Contractor will make provisions at all "open cut" street crossings to allow for free passage of vehicles and pedestrians, either by bridging or other temporary crossing structures. Such structures will be of adequate strength and proper construction and will be maintained by the Contractor in such a manner as not to constitute an undue traffic hazard.

I. The Contractor will keep all signs in proper position, clean, and legible at all times. Care will be taken so that weeds, shrubbery, construction materials, equipment, and soil are not allowed to obscure any sign, light, or barricade. Signs that do not apply to construction conditions should be removed or adjusted so that the legend is not visible to approaching traffic.

J. The City may determine the need for, and extent of, additional striping removal and restriping.

K. Excavated material, spoil banks, construction materials, equipment and supplies will not be in such a manner as to obstruct traffic, as practicable. The Contractor will immediately remove from the site all demolition material, exercising such precaution as may be directed by the City. All material excavated shall be disposed of so as to minimize traffic and pedestrian inconvenience and to prevent damage to adjacent property.

L. During any suspension, the Contractor will make passable and open to traffic such portions of the Project and/or temporally roadways as directed by the City for accommodation of traffic during the anticipated period of suspension. Passable conditions will be maintained until issuance of an order for the resumption of construction operations. When Work is resumed, the Contractor will replace or renew any Work or materials lost or damaged because of such temporary use in every respect as though its prosecution had been continuous and without interferences.

END OF SECTION

SECTION 02761

CLEANING STORM AND SANITARY SEWER SYSTEMS

PART 1 - GENERAL

1.01 SCOPE OF WORK

A. The Work covered in this section consists of cleaning stormwater culverts, drains, and sanitary sewer mains prior to the internal television inspection(s) for new or existing storm and wastewater systems.

B. Cleaning: The intent of cleaning is to remove debris that may be causing a reduction in flow capacity, potential culvert or drain backups, or that limits the ability to evaluate the structural condition of the pipe segment. On all cleaning the Contractor shall perform work to an acceptable level as necessary to perform a thorough television inspection of the culvert or drain. An acceptable level is defined as the removal of all debris throughout the pipe segment cleaned. If the pipe condition is such that cleaning may cause a potential collapse, then the pipe shall be televised without attempting to clean it pending approval by the City.

C. Water for Cleaning: The City shall provide access to water via fire hydrants for cleaning and other work items requiring water. The Contractor will be responsible for obtaining a transient water meter and paying for water used during course of cleaning. Additional compensation will be scheduled for extending water for cleaning greater than 500 feet from the main section to be cleaned.

D. Recovering of Equipment: The Contractor will be responsible for recovering any equipment that becomes lodged or lost in the pipeline. The Contractor will be responsible for all costs associated with required evacuation, restoration of roads and easements, and repairs to pipes and manholes as needed to restore the pipeline and appurtenances back to their original conditions.

E. Maintenance of Traffic (MOT)
Refer to General Requirements Section 01570, Maintenance of Traffic requirements.

F. Existing Utilities: The Contractor must take the necessary precautions for the protection of any utility encountered on the project or the restoration of any utility damaged during the work.
   1. If an excavation is required, the Contractor shall notify, at least 48 hours before breaking ground, all public or private service corporations having wire, poles, pipes, conduit, manholes, or other structures that may be affected by this operation, including all structures which are affected and not shown on these plans. Owners of underground utilities, which are members of the state's one call service, can be notified by calling. Non-member underground utility Owners must be called directly.

2. All maintenance, repair, and replacement of existing utilities shall be in accordance with the rules and regulations of the various utility companies having jurisdiction.
3. All existing storm sewers, driveway drains, surface drainpipes and other property, removed or damaged during work to clean and inspect the sewers shall be repaired and reconnected by the Contractor as directed by the City at no additional cost to the City.

G. Request for Supplementary Information

1. It shall be the responsibility of the Contractor to make timely requests of the City for supplemental information, which should be furnished by the City under the terms of this contract, and as required in the planning and execution of the work. Such requests may be submitted from time to time as the need approaches, but each shall be filed in ample time to permit appropriate action to be taken by all parties involved to avoid delay.
2. B. Each request shall be in writing and list the various items and the latest day by which each will be required by the Contractor. The first list shall be submitted within two (2) weeks after contract award and shall be as complete as possible at that time. The Contractor shall, if required, furnish promptly any assistance and information the City may require in responding to these requests of the Contractor. The Contractor shall be fully responsible for all delays arising from failure to comply with this section.

H. Use of Premises

1. The Contractor shall not trespass upon or in any way disturb private property without first obtaining written permission from the property Owner and/or Owner or Prime Contractor as appropriate to do so. A copy of such written permission shall be furnished to the City prior to accessing the site.
2. It shall be the Contractor's responsibility to work equipment around poles, trees, or other obstructions and to do so at his own expense.
3. If the Contractor finds it necessary to obtain additional working area, it shall be the Contractor's responsibility for its acquisition.
4. The Contractor shall, at no additional expense, restore such property to the original condition in the sole and unfettered opinion of the property Owner. The Contractor must take photographs and/or videos of existing properties prior to disturbance of each property and make a copy available to the City.
5. All items within the street right-of-way or sewer easement shall be removed, or removed and replaced, or restored as directed by the City.
6. The Contractor shall ensure all employees have a badge or visible identification during any time that they on the project site or within private property. This identification must be worn so that it is readily recognized and readable to the public.

I. Protection of Trees

1. The Contractor shall avoid any unnecessary damage to trees. Branches which overhang the project limits, and which interfere with the operation of equipment shall be tied back to avoid damage, if possible. Where injury to branches is unavoidable, the branches shall be sawed off neatly at the trunk or main branch, and the cut area shall be protected with approved pruning spray immediately. The Contractor at no additional expense shall remove any trees damaged beyond saving and make restitution to the Owner (public or private).

J. Fencing

1. Any fences, including hedge and shrubs, that need to be removed to facilitate the work shall be replaced, in kind or with repairs satisfactory to the Owner, at the Contractor's expense. Replacement of fences, hedges, and shrubs shall be considered incidental to the contract and not measured for payment.

K. Restoration

1. All roadway berms and drainage ditches disturbed by the work shall be restored, reshaped, and graded to drain.
2. Pavement restoration, if necessary, shall conform to the City, County, or State standards and specifications depending upon who has jurisdiction for the street. Trench backfill and compaction shall be in conformance with the local street restoration jurisdiction.
3. The remediation of sunken trenches caused by activities conducted in this contract shall be the Contractor's responsibility. Sunken areas shall be backfilled and compacted to meet adjoining grades; the surface shall be re-seeded or resurfaced with asphalt or concrete matching the existing surfacing.
4. The Contractor shall restore unpaved areas by seeding and mulching. No direct payment will be made for seeding and mulching.
5. Driveways shall be restored in accordance with Owner's regulations, or the Owner's Specifications depending upon who has jurisdiction for the driveway.
6. All disturbed areas shall be restored as nearly as possible to their original condition.
7. All restoration shall be completed in strict accordance with the appropriate items of the standards, specifications or matching the pre-work conditions as directed by the Owner.
8. The cost of all restoration of streets, drives, walks; sod, etc. shall be incidental to the contract and not measured for payment.
9. Restoration shall be kept current with the project work. Failure to keep restoration of these items completed reasonably close shall result in a stop work notice and delay of payment until such restoration is completed to the satisfaction of the Owner.

L. Cleanup

1. The Contractor shall keep the work area in an uncluttered condition by the frequent removal of debris. The Contractor shall remove all debris and unused material and leave the area in a condition similar to the condition of the area before any work was performed.

M. Property Damage

1. The Contractor shall immediately investigate any and all reports of sewage backing up into fixtures served by the sewer section that is being cleaned or televised.
2. The Contractor will be required to notify the City immediately if he causes any damage to private or public property caused by activities related to this contract. The Contractor shall make repairs and/or clean the property immediately in a timeframe that is acceptable to the Owner.

N. Access to Municipal Water Supplies
   1. Will be defined by the City with each work order proposal request.

1.02 CLEANING EQUIPMENT

A. Hydraulically Propelled Equipment:

1. The equipment used shall be of a movable dam type and be constructed in such a way that a portion of the dam may be collapsed at any time during the cleaning operation to protect against flooding of the sewer. The movable dam shall be equal in diameter to the pipe being cleaned and shall provide a flexible scraper around the outer periphery for grease removal. Special precautions to prevent flooding of the sewers and public or private property shall always be taken. Storm/Sewer cleaning balls or other such equipment which cannot be collapsed instantly to provide an immediate unobstructed flow-way during emergency conditions will not be considered as acceptable cleaning equipment. The movable dam shall be of equal diameter as the pipe being cleaned and shall provide a flexible scraper around the outer periphery to ensure total removal of the grease of obstruction.

B. High-Velocity Jet (Hydro-Cleaning) Equipment:

1. All height velocity hydraulic sewer cleaning equipment shall be truck mounted. The equipment shall have a minimum of 500 feet of ¾ inch I.D. high pressure hose with a selection of two or more high velocity nozzles. The nozzles shall have a capacity of 30 GPM at a minimum working pressure of 1000 psi. The nozzles shall be capable of producing a scouring action of 15 to 45 degree in the direction of cleaning and perpendicular to the sewer axis in all size lines designated to be cleaned. Equipment shall also include a high velocity gun for washing and scouring manhole walls and floor. The gun capacity shall equal 3.5 to 27 GPM at between 200 and 800 psi. The gun shall be capable of producing flows from a fine spray to a long-distance solid stream. The equipment shall carry its own 1200-gallon (minimum) water tank capable of holding corrosive or caustic cleaning, sanitizing or degreasing chemicals if required by the City, auxiliary engines and pumps, and hydraulically driving hose reel. All controls shall be located so that the equipment can be operated underground.

C. Mechanically Powered Equipment:

1. Bucket machines shall be in pairs with each machine powered by a minimum of a 16-horsepower engine to ensure sufficient pulling power. Machines shall have an overload device. Machines with direct drive that could cause damage to the pipe will not be used. The belt clutch gear reduction shall be a combination of approximately 83 to 1 reduction in low speed and 55 to 1 in high speed. The power rodding machine shall be either a sectional or continuous rod type capable of holding a minimum of 750-feet of rod. The rod shall be specially heat-treated steel, designed for the purpose intended. The machine shall have a positive rod drive and product a 2,000-pound rod pull. To ensure safe operation, the machine shall be fully enclosed body and an automatic safety throw-out clutch or relief valve. The final pass shall be with a brush large enough to assure that the line has been cleaned sufficiently. This brush shall be mechanically driven, with the power mechanism properly sized. All electrical drops required by the Contractor shall be arranged by the Contractor.

D. Vacuum machines:

1. May be used for removal of materials from manholes when other cleaning equipment is used to dislodge and transport material to the access point.

E. Combination Cleaner:

1. For cleaning small and large diameter sewer, the Contractor may use a combination hydraulic high-volume water and solids separation system. Water volume of up to 250-gpm at or above 2,000-psi will move solids to the downstream manhole in high flow conditions. The separation system will dewater solids to 95 % (passing a paint filter test) and transfer them to a dump truck, if needed, for transport to a water reclamation facility, approved landfill, or other location specified by the County or designee. Wash water will be filtered to a point where it can be used in the pump for continuous cleaning. No bypassing of sewer flows will be necessary. The unit shall be capable of 24-hour operation and the unit shall not leave the manhole until a section is fully cleaned.

1.03 CAPTURE AND REMOVAL OF DEBRIS:

A. The Contractor shall furnish equipment, either specialized or stand in the industry, for the purpose of preventing debris from being washed past the manhole, inlet, or outfall downstream of the line segment being cleaned, and for removing the debris from the structure before any damage is caused to the system performance and or system equipment such as pump/lift stations, check valves, flow-ways, etc. The cost of all system downtime and repairs to restore operational status resulting from construction debris damage that in the City's opinion was reasonably preventable will be borne by the Contractor.

1.04 QUALIFICATIONS

A. Refer to General Requirements Section 01001 article 1.10.A.2 for minimum qualifications.

1.05 SHOP DRAWINGS AND SUBMITTALS

A. Submittals shall be submitted to the City for review and acceptance prior to cleaning.
   1. Schedule of work:
      a. Work Schedule. This schedule shall outline the sequence in which the Contractor proposes to conduct his operations and shall be submitted to the City two weeks in advance of performing work and provide the City a reasonable opportunity to observed and inspect work. The Contractor shall use a time-scaled format listing each segment of sewer to be cleaned. The level of detail of activities shall provide clear, concise communication of the plan of work. At a minimum, activities showing initial mobilization, start-up, and cleaning.
      b. Original and updated schedules must be provided to the City in writing. The software used for producing the schedules must have the capability to tailor the form and format of schedules, and accompanying reports, may be use of Microsoft excel, project with similar formats.
      c. The City may require additional updates to the schedule as changes occur. These additional updates will be submitted to the City within 24 hours of the request. Changes to the schedule are subject to approval of the City.
      d. Schedule is to be updated weekly
   2. Proposed cleaning equipment.
   3. SDS for chemical cleaning products to be used.
   4. Cleaning log in a format acceptable to the City for purposes of recording pertinent information relative to the storm water main and sanitary sewer main and structures being cleaned.

B. Post Cleaning submittal.
   1. Cleaning log including any pertinent information observed during cleaning.
      A daily log shall be maintained to record the location of the manholes and sewer lines, lengths of the lines cleaned, method of cleaning, line sizes, identify type of cleaning (light, medium, or heavy), and type of debris moved. Observations are to be recorded on a cleaning report form.

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION

3.01 GENERAL

A. The Contractor shall furnish and maintain, in good condition, all cleaning and equipment necessary for proper execution of the work.

B. Maintaining Flow: It will be the responsibility of the Contractor, throughout the tenure of this contract, to provide and maintain sufficient flow at all times to pass any flash of storm flow of drainage ditches and prevent any backwater flooding due to obstruction caused by cleaning equipment.

C. Work notices are to be provided to property owners 48 hours prior to beginning work. A copy of the notices will also be provided to the City at the time they are provided to property owners.

3.02 SITE VISIT:

B. The Contractor shall be responsible for conducting a physical reconnaissance of the area to be cleaned in order to verify the location of known and/or accepted manholes or inlets.

B. The Contractor shall utilize a magnetic locator to attempt to identify the location of buried manhole covers and notify the City representative so that City personnel can excavate and bring the manhole up to grade prior to cleaning. Under no circumstances shall the Contractor excavate buried manholes without prior authorization from the City.

3.03 QUALITY ASSURANCE:

A. Refer to Section 01001 article 1.10.A for Company quality assurance documentation requirement.

3.04 ISOLATION AND BYPASS OPERATIONS

A. Refer to Section 02762 article 3.04 for provisions regarding isolation and bypass.

3.05 CLEANING PRECAUTIONS

A. All necessary precautions shall be taken to protect the culvert or drain from damage during all cleaning and preparation operations. Precautions shall also be taken to ensure that no damage is caused to public or private property adjacent to or served by the drain or its branches. The Contractor shall pay for and restore, at no additional costs to the City, any damage caused to public or private property because of such cleaning and preparation operations.

B. Satisfactory precautions shall be taken in the use of cleaning equipment. When hydraulically propelled cleaning tools (which depend upon water pressure to provide their cleaning force) or tools which retard the flow in the sewer line are used, precautions shall be taken to ensure that the water pressure created does not damage or cause flooding of public or private property being served by the sewer. No fire hydrant shall be obstructed in case of a fire in the area served by the hydrant. All requirements shall be met when accessing a fire hydrant including but not limited to meters, backflow preventers, and properly trained personnel. It shall be the Contractor's responsibility to meet all state and local requirements.

3.06 HYDRAULIC CLEANING METHODOLOGY:

A. High Velocity Cleaning Methodology: High velocity hydro-cleaning shall consist of cleaning and flushing of the storm water main or sewer line by means of water pumped into the line at a high velocity. This shall be accomplished using approved equipment to deliver water to a self-propelled nozzle to do the necessary cleaning and flushing. As many passes as necessary shall be made to sufficiently clean the storm water main or sewer line.

3.07 MECHANICAL CLEANING METHODOLOGY:

A. Rodding: Cleaning shall be with a power-driven continuous steel rod of sufficient length and gauge with the proper cleaning heads or augers, so as to loosen all solids or other materials. It shall also provide a means to thread a cable for the power winch.

B. Bucket Machine: Removal of all solids, materials and other debris shall be by means of a clam-shell type bucket and/or other appliance dragged through storm water main or sewer line with power winches of suitable size and horsepower.

C. Supplemental Cleaning: After all material has been removed by mechanical cleaning, a minimum of one pass using hydraulic cleaning methods shall be performed to ensure complete removal of material form the walls of the pipe. Any damage to pipes will be repaired.

3.08 SPECIAL CLEANING REQUIREMENTS FOR CAST IRON PIPE:

A. After cleaning pipe of normal deposits such as sand and grease by methods above, the pipe shall be cleaned of tuberculation, including rust build-up and mineral deposits. For pipe diameters greater than 24-inch, the Contractor may choose any equipment necessary to remove the tuberculation, such as a "pig "or rodder; For pipe diameters less than or equal to 24-inch, all tuberculations shall be removed using either a high pressure water blaster capable of delivering a minimum 40 gallons per minute at a pressure of 10,000 psi, mechanically or hydraulically driven chain flail, grinding chain cutters or other suitable means of removal of tuberculation. However, no equipment shall be used which may damage the pipe, manholes, street, or downstream pump stations without arranging emergency provisions to repair or replace the main being cleaned.

3.09 CLEANING

A. If cleaning of an entire culvert, drain or main section cannot be successfully performed from one access point, the equipment shall be set up on the other a connecting access point and cleaning attempted again. If results of the cleaning are favorable, the Contractor will proceed with the TV inspection. All sludge, dirt, sand, rocks, and other solid or semisolid materials resulting from the cleaning operation shall be removed from the downstream manhole of the section being cleaned. The Contractor shall not be responsible for removing mortar or other material that is securely attached to the pipe walls or joints.

B. Materials shall be disposed of from the site at least once at the end of each workday. The Contractor will be responsible for the disposal of materials removed from the culvert or drain system. Refer to paragraph 3.05.D.5.1 of Section 02775 for disposal of debris removed from stormwater culverts and drains.

C. The designated inlet or manhole structure sections shall be cleaned using hydraulically propelled, high-velocity jet, or mechanically powered equipment approved by the City. Cleaning shall consist of normal hydraulic jet cleaning to facilitate the internal CCTV inspection.

D. Types of cleaning of sanitary and storm sewers:

1. Light cleaning of sewers consists of a maximum of 1 pass of the jet nozzle. Light cleaning of laterals will consist of flushing water into a cleanout. Resulting in removal of ¼ pipe diameter depth or less of sand and/or debris from a section of pipe. The removal of roots, barnacles/oysters and/or tuberculation would be considered a separate item.
2. Medium cleaning of sewers consists of 2 to 4 passes of the jet nozzle. Medium cleaning of laterals will consist of 1 to 4 passes with a jet nozzle. Resulting in removal of greater than ¼ and up to and including ½ pipe diameter depth of sand and/or debris from a section of pipe. The removal or roots and/or tuberculation would be considered a separate item.
3. Heavy cleaning consists of 5 or more passes of the jet nozzle such as removing heavy grease, debris, and roots. Resulting in the removal of greater than ½ pipe diameter depth of sand and/or debris from a section of pipe. The removal of roots and/or tuberculation would be considered a separate item.

E. Selection of the equipment used shall be based on the conditions of lines at the time the Work commences. The equipment and methods selected shall be satisfactory to the City. The equipment shall be capable of removing dirt, grease, rocks, sand, debris, other materials, and obstructions from the sewer lines, laterals, and manholes.

F. If cleaning of an entire section cannot be successfully performed from one manhole, the equipment shall be set up on the other manhole and cleaning again attempted. The intent of preparatory cleaning is to provide sufficient cleaning to ensure camera passage and the internal conditions of the pipeline can be fully assessed.

G. If the City establishes that a section of the pipeline cannot be adequately cleaned due to broken, collapsed, or void areas, then the inspection will be attempted up to the obstruction.

3.10 ROOT REMOVAL

A. Roots shall be removed in the designated sections and manholes where root intrusion is a problem and where authorized by the City. Special attention should be used during the cleaning operation to remove roots from the joints. Any roots that could prevent the proper application of chemical sealants or could prevent the proper seating and application of cured-in-place liners shall be removed. Procedures may include the use of

mechanical equipment such as, rodding machines, bucket machines, winches using root cutters, porcupines, and equipment such as high-velocity jet cleaners. Chemical root treatment shall be used before or following the root removal operation, depending on the manufacturer's recommendation. The Contractor shall capture and remove all roots from the line.

3.11 MATERIAL REMOVAL AND DISPOSAL

A. All sludge, dirt, sand, rocks, grease, roots, and other solid or semisolid material resulting from the cleaning operation shall be removed at the downstream structure of the section being cleaned. Contractor shall provide appropriate screening to stop passing of materials into downstream culverts, drains and structures. All solid or semisolid materials dislodged during cleaning operations shall be removed from the culvert or drain by Contractor at the downstream access point of the culvert or drain section being cleaned. The passing of dislodged materials downstream of the segment being cleaned shall not be permitted. In such an event, as observed or detected by the City or any third party, Contractor shall be responsible for cleaning the affected downstream access points in their entirety, at no additional cost to the City.

B. The Contractor shall be responsible for the disposal of all waste materials and shall transport waste materials to the City's Wastewater Treatment Plant for processing. City shall approve all waste material disposal schedules. The selected Contractor(s) shall be responsible for all waste material spills and clean-up in the loading, hauling and unloading of the Contractors equipment.

C. The contractor shall be responsible for conforming to any and all requirements regarding hauling and disposal of waste form each work site in accordance with OSHA regulations and those that may be mandated by federal, state, or local governments. The contractor shall ensure that all waste material transporters possess all required federal, state and local regulations, including but without limitation, 40 CFR Part 263, "Standards Applicable to Transporters of Hazardous Waste" and Chapter 17-730, Part 3 Florida Administration Code, as may be amended from time to time.

D. The Contractor shall keep his haul route and work area(s) neat, clean, and reasonably free of odor, and shall bear all responsibility for the cleanup of any spill.

3.12 ACCEPTANCE OF CLEANING OPERATION

A. Acceptance of sanitary sewer and storm water pipe and structure cleaning shall be made upon the successful completion of the television inspection and shall be to the satisfaction of the City. If television inspection shows the cleaning to be unsatisfactory, the Contractor shall be required to re-clean and re-inspect the sewer line at no additional cost until the cleaning is shown to be satisfactory.

B. In addition, on all sanitary sewers which have sags or dips, to an extent that the television camera lens becomes submerged during the television inspection, the Contractor shall use a high pressure cleaner to draw the water out of the pipe, or other means, to allow the full

circumferential view of the pipe and identification of pipe defects, cracks, holes, and location of service connections.

PART 4 - METHOD OF MEASUREMENT AND PAYMENT CLARIFICATIONS:

4.01 Unit Pricing:

A. Unit price line items C.44-51 cover the cost for light level of cleaning of storm drains. Line items C.52 and 53 unit costs will be added to these unit costs when medium or heavy levels of cleaning are required to the respective light cleaning item.

B. Unit price line items C.63 – C.65 cover the cost of both light level of cleaning and CCTV of sanitary sewer gravity mains. Reference Section 02762, Televising Storm and Sanitary Sewer Systems for CCTV inspections.

C. Unit price line item C.72 covers the cost for light level of cleaning of sanitary sewer gravity mains including proper water disposal. Line items C.73 and .74 unit costs will be added to the unit price of line item C.72 when medium or heavy levels of cleaning are required in a main segment

D. Unit price line items C.85 and .87 costs for mobilization and per diem costs will be associated with work performed on line items C.44 – .51, C.52 – .60, C.63 - .65 and C.72.

E. Unit price line item E.91 will be applied when root removal is required.

END OF SECTION

SECTION 02762

TELEVISING STORM AND SANITARY SEWER SYSTEMS

PART 1 - GENERAL

1.01 SCOPE OF WORK

The Work covered within this Section is for the internal closed-circuit television (CCTV) inspection of stormwater culverts, drains and sanitary mains. The Contractor shall perform televising work as necessary to thoroughly document the condition of all the culverts and drains the study area. The stormwater culverts and drains shall be carefully inspected to determine alignment, grade variations, separated joints, location and extent of any deterioration, breaks, obstacles, obstructions, and debris.

The quality of all Work specified in this Section shall meet or exceed the requirements of the National Association of Sewer Service Companies (NASSCO) Recommended Specifications for Sewer Collection System Rehabilitation (latest edition), except as described in this Section. Applicable portions of this Section that inadvertently fall below those standards shall be corrected and maintained at the NASSCO standards as a minimum requirement, at no additional cost to the City.

Refer to General Work Requirements Sections 01001, Summary of Work 01010, Section 01516 Collection System Bypassing, and Section 01570, Maintenance of Traffic, and Section 02761, Cleaning Storm and Sanitary Sewer Systems for requirements related to CCTV inspections.

1.02 REQUIREMENTS

A. The Contractor shall inspect the sewer interior using a color closed circuit television camera (CCTV) and document the inspection on a digital recorder. All inspection video shall be captured in either MPEG or Windows Media Video (.WMV) file format and saved portable hard drives for submittal. Each inspected culvert or drain, referenced structure to structure, inlet to inlet, and inlet or manhole to outfall shall be referenced to the property address and corresponding culvert or drain should have an associated MPEG or WMV file. Digital photographs (.JPG files), inspection reports (.PDF files) and any handwritten inspection logs or field maps shall accompany the video inspections for each sewer reach (manhole-to-manhole) or lateral inspected.

B. Contractor shall provide inspection video, data and reports in accordance with the requirements specified herein. Contractor shall provide all video on portable hard drive as specified. All Work will conform to current NASSCO Pipeline Assessment Certification Program (PACP) coding conventions and all software used by the Contractor will be PACP compliant. An electronic database will be provided by the Contractor in a PACP exported format approved by the City.

C. The Contractor shall provide comments as necessary to fully describe the existing condition of the sewer on the inspection forms.

D. Contractor shall be responsible for modifications to equipment and/or inspection procedures to achieve report material of acceptable quality.

E. No Work shall commence prior to approval of the submitted material by the City. Once accepted, the report material shall serve as a standard for the remaining Work.

F. Site to be restored to pre-inspection conditions.

G. Contractor shall ensure that employee's vehicles display company logo on side doors and company phone numbers. No personal vehicles are to park at the job site.

1.03 QUALIFICATIONS AND QUALITY

A. Refer to Section 01001 paragraph 1.10.B for required certifications and licenses.

1.04 SUBMITTALS

Submittals shall be provided to the City for review and acceptance prior to construction as listed and described in the individual General Requirements and Technical Specification sections. Work performed for which a submittal or shop drawing is required that has not been reviewed by the City or responsible agencies shall be considered installed at the Contractor's risk.

A. Submittals associated with this section submitted under another Section.
   1. Refer to Section 01516 for Generic by-pass pumping plan submittal.
   2. Refer to Section 02761 for SDS submittal.
   3. Work schedule refer to Section 02761, Cleaning Storm Sewer Systems, and article 1.05.A & B for requirements.
   4. Maintenance of Traffic is covered in General Requirements Section 01570.
   5. Previous Work Products: The Contractor shall submit one (1) example of previous closed-circuit televising (CCTV) inspections stormwater culverts and drains work for approval. The approved sample will establish the quality of deliverable to be expected on the project. The submitted example shall be the work of the field supervisor or foreman to be used on this Project.
   6. CCTV video sample, Section 01101.

B. Submittals under this section.
   1. PACP certificate copies of all operators.
   2. Footage calibration report for each camera used.
   3. Work schedule refer to Section 02761, Cleaning Storm Sewer Systems, and article 1.05.A & B for requirements.
   4. Maintenance of Traffic is covered in General Requirements Section 01570.

C. The following deliverables shall be submitted on a portable hard drive at the completion of

inspection:

1. Storm water main work inspection videos saved in MPEG format or Windows Media video format
2. Electronic version (.pdf) of the pipe inspection reports
3. PACP export pipe inspection database (.mdb)
4. Inspection digital photographs in JPEG format
5. Map of sub area depicting area inspected, inspection status, asset identification numbers and mark ups
6. QA/QC report.

D. The above deliverables shall be submitted monthly, or shorter frequency depending on the duration of the work order, to the City for approval. Application for payment shall be made after review and approval by the City.

E. The sewer inspection video, report documents, and sewer inspection database shall be in accordance with NASSCO PACP and ITCP.

1.05 NOTIFICATION

A. Contractor shall notify the City a minimum of 4-work days prior to performing any inspection work. No payment will be made for inspections performed without proper notification.

PART 2 - PRODUCTS

2.01 EQUIPMENT

A. Closed Circuit Television Camera: The television camera used for the inspection shall be one specifically designed and constructed for storm sewer inspection. Lighting for the camera shall be suitable to allow a clear picture of the entire periphery of the pipe. The camera shall be operative in 100 % humidity/submerged conditions. The CCTV camera equipment will provide a view of the pipe ahead of the equipment and of features to the side of the equipment through turning and rotation of the lens. The camera shall be capable of tilting at right angles along the axis of the pipe while panning the camera lens through a full circle about the circumference of the pipe. The lights on the camera shall also be capable of panning 90° (degrees) to the axis of the pipe.

The radial view camera must be solid-state color and have remote control of the rotational lens. The camera shall be capable of viewing the complete circumference of the pipe or culvert. Cameras incorporating mirrors for viewing sides or using exposed rotating heads are not acceptable. The camera lens shall be an auto-iris type with remote controlled manual override.

If the equipment proves to be unsatisfactory, it shall be replaced with adequate equipment. The camera unit shall have sufficient quantities of line and video cable to inspect 2 complete, consecutive sewer reaches with access approximately 750-feet apart.

The camera, television monitor, and other components of the video system shall be capable of producing picture quality to the satisfaction of the City. The television camera, electronic systems and monitor shall provide an image that meets the following specifications, or approved equal:

1. The gray scale shall show equal changes in brightness ranging from black to white with a minimum of five stages.
2. With the monitor control correctly adjusted, the 6-colors; Yellow, Cyan, Green, Magenta, Red, and Blue, plus black and white shall be clearly resolved with the primary colors in order of decreasing luminance. The gray scale shall appear in contrasting shades of gray with no color tint.
3. The picture shall show no convergence or divergence over the whole of the picture. The monitor shall be at least 13-inches diagonally across the picture tube.
4. The live picture on the CCTV monitor shall be capable of registering a minimum of 470 lines horizontal resolution and be a clear, stable image with no interference.
5. Lighting intensity shall be remote controlled and shall be adjusted to minimize reflective glare. Lighting and camera quality shall provide a clear in-focus picture of the entire inside periphery of the sewers and laterals for all conditions except submergence. Under ideal conditions (no fog in the sewer) the camera lighting shall allow a clear picture up to 5 pipe diameter lengths away for the entire periphery of the sewer. The lighting shall provide uniform light free from shadows or hot spots.
6. The camera light head shall include a high-intensity side viewing lighting system to allow illumination of internal sections of lateral sewer connections.
7. Camera focal distance shall be remotely adjustable through a range of 6-inches to infinity.
8. Picture quality and definition shall be to the satisfaction of the City.
9. The monitor and software shall also be able to capture and save screen images of typical sewer details and all defects. Screen images shall be embedded into the pipe inspection report document submitted with the inspection video.
10. The video camera shall be capable of displaying on screen data as specified in paragraph 3.08 herein.
11. Depth gage: The camera shall have a depth gage or approved method to measure deflection in the pipe and joint separation approved by the City. The camera shall have zoom capabilities to be able to view the entire depth of a 20-foot deep manhole from the bottom during inspection.
12. The camera lens shall be kept clear of condensation and debris during the CCTV inspection.
13. Camera equipment must have independent lab approval for use in Class 1, Group 0 Hazardous locations per NFPA.

B. Video Capture System

The video and audio recordings of the sewer inspections shall be made using digital video equipment. A video enhancer may be used in conjunction with, but not in lieu of, the required equipment. The digital recording equipment shall capture sewer inspection on hard drive, with each sewer reach inspection recorded as an individual movie file (.MPEG,

.MPG, or .WMV) or approved equal. The video files will be named in accordance with the City file naming convention contained in paragraph 3.11 herein.

1. The video file names will be referenced in the inspection database and in an inspection, report generated in PDF format. The pipeline collection and real time video capture and data acquisition systems shall be provided.
2. The system shall use the most current PACP compliant application software and shall be fully object oriented or approved equal. It shall be capable of printing pipeline inspection reports with captured images of defects or other related significant visual information on a standard color printer.
3. The imaging capture system shall store digitized color picture images and be saved in digital format on a hard drive or approved equal. Also, this system shall have the capability to supply the City with inspection data reports for each line segment.
4. The Contractor shall have the ability to store the compressed video files in industry standard and approved City format and be transferable with the PACP compliant inspection database.
5. The Contractor's equipment shall have the ability to "Link". "Linking" is defined as storing the video time frame code with each observation or defect with the ability to navigate from/to any previously recorded observation or defect instantaneously.
6. The system shall be able to produce data reports to include, at a minimum, all observation points and pertinent data. All data reports shall match the defect severity codes in accordance with PACP naming conventions
7. The data-sorting program shall be capable of sorting all data stored using generic sort key and user defined sort fields.
8. Camera footage, date & manhole numbers shall be maintained in real time and shall be displayed on the video monitor as well as the video character generators illuminated footage display at the control console. All manhole references will be based on the Cities Facility ID number.
9. Digital video shall be defined as ISO-MPEG Level 1 (MPEG-1) coding having a resolution of 352 pixels (x) by 240 pixels (y) (minimum) and an encoded frame rate of 29.97 frames per second. The digital recording shall include both audio and video information that accurately reproduces the original picture and sound of the video inspection. The video portion of the digital recording shall be free of electrical interference and shall produce a clear and stable image. The audio portion shall be sufficiently free of background and electrical noise so as to produce an oral report that is clear and discernible.
10. Inspection software shall be PACP compliant versions of CUES Granite XP, WinCan, Flexidata, or approved equal.
11. The CCTV equipment/software shall be capable of producing digitized images of all sewer line defects, manhole defects, and sewer line service connections in .jpeg format. Contractor shall plan to take digital still images of each defect, construction features and service connection to clearly depict it. More images may be necessary depending upon the condition of the pipe.

2.02 REPORTING CAPABILITIES

A. The CCTV system shall be capable of printing pipeline inspection reports with pipeline

schematics and captured images of defects and other related significant visual information. The system shall have the ability to display any combination of the following formats and features simultaneously.

The following information is mandatory for all inspections:

1. Inspection Information: Refers to the area of pipe to be inspected between 2 manholes or the address of the lateral to be inspected.
   a. Project Name
   b. Surveyed by (Operator/Surveyor's name)
   c. Operator/Surveyor Certificate number
   d. System Owner
   e. Date
   f. Drainage Area (tributary pump station number)
   g. Time
   h. Sheet number (report sheet number
   i. Street Name and Number
   j. Locality (City of St. Augustine (COSA))
   k. Additional Location Information (e.g. backyard, parking lot, etc)
   l. Upstream Manhole or Structure Number (City standard Facility ID Number)
   m. Upstream manhole or structure rim/grate to invert (depth)
   n. Downstream Manhole or Structure Number (City standard Facility ID Number)
   o. Downstream manhole or structure rim/grate to invert (depth)
   p. Direction of inspection (Upstream or Downstream)
   q. Type of Pipe
   r. Pipe Height
   s. Pipe Width
   t. Pipe Shape
   u. Pipe Material
   v. Lining Material (for lined sewers)
   w. Pipe Joint Length
   x. Purpose of Inspection (Condition evaluation, new line, CIP R/R project, etc.)
   y. Pre-Cleaning (jetter, heavy cleaning, no pre-cleaning)
   z. Media Number (Video file name)
   aa. Weather
   bb. Additional information/Comments
2. Observation Data: Refers to the portion of pipe where an observation is discovered. Observations shall be noted by text descriptions and defect code number using PACP defects codes, still frame pictures and video clips captured and recorded. Each observation shall include the following:
   a. Actual observation footage
   b. Video reference
   c. Location of defect; clock position
   d. Code (Group/Descriptor/Modifier/Severity)
   e. Whether it is a continuous defect
   f. Whether the defect occurs at a joint
   g. Severity level

h. video counter location
i. Final footage
j. Video clip ID for each observation
k. Image reference (file name of photos)
l. Remarks (as appropriate or needed)

3. Formats: Standard and/or custom designed reports shall have the following formats available and shall be able to be produced in hard copy or viewed on the monitor.
   a. Site Observation: Displays detailed site observation reports in landscape or portrait views.
   b. Directory Report: Displays a list of all the projects sorted by pump station number and manhole number.
   c. Picture Reports: Displays site data and include full size single photos or half size double photos of discrepancies.
   d. Pipe Run: Displays a graphical display of the site indicating footage, observations, and comments.
   e. Project Data: Displays the project, client, and Contractor information.
   f. Custom Sort: Creates user-defined reports of selected site, project, and observation data.

PART 3 - EXECUTION

3.01 GENERAL

A. Work notices are to be provided to property owners 48 hours prior to beginning work. A copy of the notices will also be provided to the City at the time they are provided to property owners.

B. Prior to inspection the Contractor shall obtain pipe and manhole or structure asset identification numbers from the City to be used during inspections. Inspections performed using identification numbers other than the City assigned numbers will be rejected.

C. Inspection shall not commence until the sewer section to be televised has been completely cleaned in conformance with Specification Section 02761 "Cleaning Storm and Sanitary Sewer Systems."

D. Inspection of newly installed sewers (not yet in service) shall not begin prior to completion of the following:
   1. Pipe air testing
   2. All manhole or structure work, including installation of inverts

E. After the sewer cleaning operation is completed, the line sections shall be visually inspected internally by means of color closed-circuit television. The television inspection shall be performed one-line section at time.

F. Refer to Section 01001 paragraph 1.10.B for qualifications.

G. Contractor shall perform sewer-televising work within 24-hours of said sewer being cleaned. If said sewer is not televised within the required 24-hour time limit, the sewer shall be re-cleaned prior to televising at no additional expense to the City.

H. The Contractor shall lower the camera into the start manhole and record the camera entry into the sewer, observing the manhole as the camera enters.

I. Pipe or culvert dimension is to be physically measured at the beginning and end of inspections and documented in the CCTV video record.

J. The depth of each manhole or structure shall be measured to the nearest 1/10th of a foot and documented on the inspection forms. Estimates of manhole depths will not be accepted.

K. The CCTV camera shall be positioned as close to the spring line as possible while maintaining the required equipment stability.

L. Wherever possible the inspections shall be performed in the upstream to downstream direction. All sewer segments shall be recorded in a logical order in the same direction they are cleaned and televised.

M. In the event that access to some manholes is restricted, permission may be granted by the City to direct the camera through the sewer in an upstream direction, against the flow.

N. When sewer conditions prevent forward movement of the camera, the camera shall be withdrawn, and Contractor shall televise the line from the opposite direction.

O. The camera shall be directed through the sewer in a downstream direction, with the flow, at a uniform, slow rate. In no case will the video camera record while moving at a speed greater than 30-feet per minute. If, during the course of the Project, the inspection is rejected due to camera speeds exceeding 30-feet per minute, the inspection recordings shall be redone, at no additional cost to the City.

P. If a new manhole or structure is discovered in the field that was not on current maps, a new manhole identification number will be assigned by City. The City shall assign the manhole the next number above the highest manhole number within the sub area. The data / video files shall then be re-named to include the new ID, and a new CCTV inspection shall be started from the new ID. Contractor shall consult with the City for assignment of new manhole or structure identification numbers. Contractor shall note in the inspection form comments that a new ID has been assigned as well as provide a marked-up map indicating the newly found manhole and assigned manhole ID.

Q. Flow levels within existing sewers to be inspected shall not exceed 5% of the pipe diameter. If water levels prevent adequate televising of the sewer, then conducting the Work during low flow periods or other methods like plugging and bypass pumping shall be implemented.

R. For inspection of new sewers (not yet in service), the Contractor shall introduce clean water into the upstream manhole and keep water flowing until flow is observed at the downstream manhole location.

S. The survey unit shall be slowed, stopped, or backed up to perform detailed inspections of significant features. The camera shall be stopped at all defects, changes in material, water level, size, side connections, manholes, structures, junctions, or other unusual areas. When stopped at the defect or feature, the operator shall pan the camera to the area and along the circumference of the pipe. Recording shall document broken sections, root intrusion, miss-aligned joints and other defects for a minimum of 5 seconds.

T. The camera unit shall be paused long enough at areas suspected of leaking to determine if a leak exists currently or if deposits have occurred.

U. At the Contractor's discretion or direction of the City, the camera shall be stopped or backed up (when conditions allow) to view and analyze conditions that appear to be unusual or uncommon for a sound sewer. The lens and lighting shall be readjusted, if need be, in order to ensure a clear, distinct, and properly lighted feature.

V. Video recordings shall include a continuous video display/readout of similar information, as described in paragraph 3.08 herein. A separate digital video file shall be made for each pipe reach inspected.

W. Contractor shall coordinate with the City prior to commencement of Work to ensure inspection is accomplished in a manner acceptable to the City.

X. If the video and/or audio recording is of poor quality, the City has the right to require a re-submittal of the affected sewer sections and no payment will be made until an acceptable video and audio recording is made, submitted to, and accepted by the County.

Y. Measurement for location of defects and actual length of pipe shall be by means of a calibrated meter on the camera with a digital readout on the video monitor. This readout shall be included in the video recording. Marking on cable, or the like, which would require interpolation for depth of manhole, will not be allowed. Measurement will be accurate to 1-foot per 100-feet of inspected pipe.

Z. The distance shall be measured between the exit of the start manhole and the entrance of the finish manhole for a true measurement of the length of the pipe segment, as required by PACP. It shall be recorded in standard units and the video display readout shall display units to one-tenth of a foot.

AA. The Contractor inspection units shall be equipped with adequate back up equipment and spare parts so field repairs to equipment can be made and down time is minimized.

BB. The Contractor shall be responsible for all traffic control measures required to perform the Work.

3.02 QUALITY ASSURANCE

A. Refer to Section 01001 paragraph 1.10 for requirements to have documented QA/QC procedures.

3.03 PRE-CONSTRUCTION INSPECTION

A. Procedure
   1. The pre-construction inspection shall be used to determine whether the line has been cleaned sufficiently; to confirm the location and nature of defects.
   2. The camera shall be moved through the line in either direction at a moderate rate, stopping when necessary to permit documentation of the sewer's condition. In no case will the television camera be pulled at a speed greater than 30-feet per minute. Manual winches, power winches, TV cable, and power rewinds or other devices that do not obstruct the camera view or interfere with proper documentation of the sewer conditions shall be used to move the camera through the sewer line. If, during the inspection operation, the television camera will not pass through the entire culvert or drain section, the Contractor shall set up his equipment so that the inspection can be performed from the opposite access point (reverse set-up).
   3. When manually operated winches are used to pull the television camera through the line, telephones, radios or other suitable means of communication shall be set up between the entry and exit points of the section being inspected to insure good communication between members of the crew.
   4. The importance of accurate distance measurements is emphasized. The location of defects shall be within ± 1 feet.
   5. During the internal inspection the television camera shall be temporarily stopped at each defect along the line. The Contractor shall record the nature and location of the defect. Where defects are also active infiltration sources, the rate of infiltration in gallons per minute shall be estimated by the Contractor and recorded. The camera shall also be stopped at active service connections where flow is discharging. Flows from service connections that are determined to be infiltration/inflow shall also be recorded.

B. Documentation of Television Inspection
   1. Television Inspection Logs: Printed location records shall be kept by the Contractor and will clearly show the location in relation to an adjacent manhole of each infiltration point observed during inspection. In addition, other points of significance such as locations of unusual conditions, roots, connecting sewers, broken pipe, presence of scale and corrosion, and other discernible features will be recorded, and a copy of such records will be supplied to the City. The Contractor shall record all visuals observations on a "Television Inspection Report" form.
   2. Once recorded, the digital data shall be labeled and become the property of the City. The Contractor shall have all readings and necessary playback equipment readily accessible for review by the City during the Project.

3.04 SEWER BYPASSING AND DEWATERING

A. Refer to General Requirement Section 01516, Collection System Bypass, article 1.01 Scope of Work for sewer bypass requirements.

3.05 LINEAR MEASUREMENT

The CCTV camera location footage counter shall be zeroed at the beginning of each inspection. The survey unit location entered on the footage counter at the start of the inspection shall allow for the distance from the accepted start of the length of the sewer to the initial point of observation of the camera (pre-set footage). In the case of resuming an inspection at an intermediate point within a sewer reach, the footage counter shall be set to start at the distance from the upstream manhole or structure to that point, as previously recorded by the counter. The Contractor shall ensure that the footage counter starts to register immediately when the survey unit starts to move.

Prior to commencing inspections, the Contractor shall demonstrate compliance with the linear measurement tolerance specified below:

A. The equipment shall measure the location of the camera unit in 1-foot increments from the beginning (upstream end) of each continuous section. This footage location must be displayed on the CCTV monitor and recorded on the videotapes.

B. The accuracy of the measured location shall be within + 0.5% of the actual length of the sewer-reach being surveyed, or 1-foot, whichever is greater.

3.06 MEASUREMENT OF SAGS

The CCTV camera shall be equipped with a measuring device capable of accurately measuring the depth of standing water up to 3-inches. The measuring device shall be mounted to the front of the unit and be capable of being read as the unit advances through the pipe.

3.07 CCTV MONITOR DISPLAY

The images displayed on the CCTV monitors will be a view of the pipe above the water surface as seen by the CCTV camera as the unit is conveyed through the sewer.

The camera lighting shall be fixed in intensity prior to commencing the survey and the white balance set to the color temperature emitted. In order to ensure color constancy, no variation in illumination shall take place during the survey.

The video equipment shall be checked using an approved test card with a color bar prior to commencing each day's survey. The camera shall be positioned centrally and parallel to the test card at a distance where the full test card just fills the monitor screen. The card shall be illuminated evenly and uniformly without any reflection.

3.08 DATA DISPLAYS

A. The CCTV images shall include an initial data display that identifies the sewer reach being surveyed and a survey status display that provides continuously updated information on the location of the survey unit as the survey is being performed. These data displays shall be in alphanumeric form. The size and position of the data shall not interfere with the main subject of the monitor picture.

B. The on-screen display should be white during inspections where the background behind the display is dark and, conversely, black where the background is light.

C. At the beginning of each reach of sewer being inspected, the following information shall be electronically generated and displayed on the CCTV monitors as well as included in the audio track:
   1. Date of survey
   2. Inspection company name and inspector
   3. Street name or location
   4. Manhole/structure number to manhole/structure number (in order of inspection)
   5. Direction of survey (upstream or downstream)
   6. Time of start of survey

D. During inspections, the following information shall be electronically generated, automatically updated, and displayed on the CCTV monitors:
   1. Survey unit location in the sewer line in feet and tenths of feet from adjusted zero
   2. Sewer diameter
   3. Upstream and downstream manholes reference numbers as per approved Drawings or City GIS.
   4. During Lateral inspections the video display shall contain the lateral location and the footage of the camera within the lateral.

3.09 MANHOLE OR STRUCTURE NUMBERING, INSPECTION FORMS AND DEFECT CODES

A. The Contractor will be required to use the manhole or structure numbering as shown on sewer maps provided by the City when performing the inspections for this project. These numbers are based on the Facility ID the City maintains in their graphics database.

B. Inspection forms, defect codes, inspection database and inspection protocols used for documentation of CCTV work shall be in accordance with the National Association of Sewer Service Companies (NASSCO) Pipeline Assessment and Certification Program (PACP).

3.10 BOX CULVERT INSPECTIONS △

A. CCTV Camera will be employed to scan the inside top of the culvert. The camera will be on a propelled skid at a uniform rate. Video images of defects will be captured and referenced in an electronic log so that the defects location is known. These images will be used to evaluate the condition of the inside top of the structure.

B. A CCTV Camera mounted to a motorized skid and deployed inside of the culvert to document debris in the structure. Video images of debris will be recorded documenting flow restrictions that existing in the culvert.

3.11 SANITARY AND STORM SEWER DYE TESTING △

A. Dye test tracing of sewers involves introducing a small quantity of liquid dye concentrate into suspect inflow sources followed with sufficient volume of water clean water to locate the source's discharge point. During each tracing, sanitary and storm sewers and curb inlets will be monitored the discharge of dyed test water.

B. Each dye water flood report will identify the section of sanitary sewers piping tested, the location(s) where the storm water system piping was isolated and flooded, photographs of each setup and CCTV inspection results identifying the locations were dye water entered the sanitary sewer collection system.

3.12 WASTEWATER FLOW MONITORING △

A. Wastewater flow monitoring equipment rental and installation of a Trimble Company Telog Ru-35 wireless multi-channel recording telemetry unit equipped with a FloWav model PSA-35-AV A/V pressure level sensor and doppler level sensor. With a redundant Flow Wave "StingRay" RS-232 or RS-485 ultrasonic level sensor.

B. Wastewater flow monitoring and maintenance.
   1. The telemetry equipment data tracking will be stored on an 'Enterprise' server on a daily basis so that the recorded flow monitoring data (level velocity & discharge volumes) stored on the server is easily accessible. This data will be evaluated to predict the associated groundwater infiltration and storm water inflow levels will also be provided.

3.13 RAINFALL MONITORING △

A. Installation and rental of a Texas Electronics Tipping Bucket Rain Gauge and a Trimble Company Telog RG-32A Remote Telemetry Unit (RTU).

B. Rainfall Monitoring and Maintenance
   1. Digital rainfall data will be recorded as 15-minute intervals over a 24-hour period from each installation locations. Collected data will be used to establish rainfall magnitudes and durations.

3.14 DELIVERABLES

The Contractor will be required to submit the following deliverables at the completion of the post construction video inspection. The pre-construction video inspection deliverables shall be as defined in 3.02 of this specification.

A. Inspection Reports to include:
   1. Inspection session header information (see required fields above)
   2. Defect log report including photo captures from CCTV video
   3. Schematic drawing of pipe showing defects
   4. Format:
      a. Adobe Acrobat PDF files: 1 report PDF per pipe
      b. Sewer inspection report file name:

<From MH/Structure ID>_<To MH/Structure ID>_<Date (year_mo_day format)>.PDF

Example: 30060002_30060001_2018_01_16.pdf

B. Inspection video files on portable hard drive, typed labels shall be attached to the face of each hard drive. The typed index labels shall include the following information:
   1. Content (CCTV)
   2. Contractor name
   3. Purpose of Survey
   4. Reaches included (from Manhole/Structure Number ## to Manhole/Structure Number ##)
   5. Date of survey
   6. Contract Number / Delivery Order Number (if applicable)

C. Sewer video files shall be MPEG or Windows Media File named according to the following standard:

<Upstream MH/Structure ID>_<Downstream MH/Structure ID>-<Inspection>_<Date (year month day)>.wmv

Example: 39540008-39540007_20090805.wmv

In instances where a reverse set up is necessary to perform or complete the inspection the file name shall incorporate a "R" at the end of the file name to indicate "reverse" direction. Using the file example above, if the inspection from the upstream end was halted due to an obstruction and the pipe was televised from the opposite end, the video file from the downstream to upstream direction would be assigned the following file name:

Example:39540008-39540007_20090805_R.wmv

D. Electronic Inspection Data stored and exported in a NASSCO Pipeline Assessment and Certification Program (PACP) compliant Microsoft Access database (.MDB) version 4.4 or newer delivered on portable hard drive.

E. Inspection photograph digital files (jpeg) indexed to NASSCO PACP compliant database.

F. Map of sub area depicting area inspected, inspection status, asset identification numbers and mark ups,

G. Acceptable media for the video recordings portable hard drive.

H. Inspection data noted above shall be provided to the City weekly throughout the inspection work.

I. Contractor Quality Control report detailing data validation performed, pipe inspection records reviewed and results.

J. All inspection data shall be submitted on a portable hard drive. Each hard drive shall be filled with as much data as practical to minimize the number of hard drives submitted. Sections of a single segment of sewer shall not be recorded to more than 1 hard drive. Video footage of recorded segments shall be grouped by area and shall be submitted in sequential order relating to the area mapping designation.

K. Upon approval by the City of all, or portions of, the data delivered via the portable hard drives, the approved CCTV data shall be delivered to the City on a portable hard drive labeled with project information. The hard drive shall clearly indicate the date of the inspection, the designated segment(s) of sewer mains(s) contained on the disk, the name of the project, the project Contract and Work Order number, and Contractor name. The hard drive shall contain separate digital files for each manhole-to-manhole section.

L. The database shall be comprehensive for the entire project, and additional data shall be added to the database each week.

3.15 ACCEPTANCE

A. Inspection deliverables will be validated to check conformance with the specified requirements for file names, formats, quantity, and resolution, data table references, in addition to checks for null fields, asset numbers, duplicate records, connectivity, material, size, and depth. Any data not passing the data validation checks will be returned to the Contractor for resubmittal.

B. Inspection submittals will be reviewed for quality control. A minimum of 5% of the submitted inspections will be randomly reviewed. A quality control check will be performed for each CCTV operator and each operator must exceed 90% accuracy.

C. Throughout the duration of the project, should the City discover inaccuracies in data or quality issues with any of the videos, Contractor shall re-inspect those segments at no additional cost to the City. The City will provide comments regarding acceptance of the data within 21-days of receiving the data from the Contractor. Neither the CCTV inspections nor the WORK inspected is accepted by the City until such time that an acceptance letter is issued by the City.

PART 4 - METHOD OF MEASUREMENT AND PAYMENT CLARIFICATIONS:

4.01 Unit Pricing:

A. Unit price line items C54 – C60 includes all work required for close circuit televising and documentation requirements of storm drains/culverts described in this Section.

B. Unit price line items C63 - C65 includes all work required for light cleaning and close circuit televising and documentation requirements of sanitary sewers. Refer to Section 02761 for requirements on light cleaning.

C. Unit price line item C61 and 62 includes all work to inspect and document existing conditions for Box Culverts.

D. Unit price line item C66 includes all work to trace suspected inflow sources. Each will be per defect location on private property to verify inflow source on the property owner's side of the service. Each test is intended to verify if a cross connection is present.

E. Unit price line item C67 includes all work involved with flooding stormwater system piping, CCTV inspection of sanitary gravity sewers dye water infiltration with photographic records of each test setup. Each suspected cross connection that is identified during smoke testing by others will define the location where flooding will be performed.

F. Unit price line item C68 includes all work associated with procurement and installation of wastewater flow monitoring and telemetry equipment.

G. Unit price line item C69 includes maintaining of the equipment installed under line item C68 and documenting results with evaluations of recorded flow conditions and predicting stormwater inflow and infiltrations.

H. Unit Price line items C70 includes all work associated with procurement and installation of rainfall monitoring and telemetry equipment for each installation location.

I. Unit Price line item C71 includes maintaining equipment installed under line item C70 and documenting and analyzing recorded data.

END OF SECTION

SECTION 02764

TELEVISING EXISTING MANHOLES, WET WELLS, AND STORMWATER STRUCTURES

PART 1 - GENERAL

1.01 SCOPE OF WORK

A. The Contractor shall perform visual inspections of the existing manholes and structures and record any defect discovered. The visual inspection shall include surface photo, manhole cover and frame, chimney, walls, invert, and all appurtenances

B. The nature of the inspections shall be to verify the physical condition of the manhole and to provide a permanent record of the existing condition as it relates to dimensions, materials, obstructions, breakage, connections, and deterioration. Inspections may be performed by personnel entry or from the surface utilizing pole mounted camera equipment to visually inspect the chimney, cone, wall, bench, pipe seals and invert conditions, and conditions of connecting pipes.

C. Upon completion of inspections a recommendation shall be submitted listing any rehabilitations, if any, for the respective manhole.

1.02 REQUIREMENTS

A. The Contractor shall inspect the manhole surroundings and the manhole interior using visual means and a digital camera for documentation.

B. All inspections shall be recorded on standard manhole forms acceptable to the City.

C. All inspection forms shall be scanned and submitted as .PDF files.

D. All inspection data shall be entered into a NASSCO Manhole Assessment Certification Program (MACP) compliant database. The database shall be submitted along with the scanned .PDF files and all digital photographs in .JPG format.

E. The inspection photographs, report documents, and inspection database shall be in accordance with NASSCO MACP.

F. Contractor shall maintain a copy of all report materials. The Contractor shall provide comments as necessary to fully describe the existing condition of the manhole on the inspection forms.

G. Contractor shall be responsible for modifications to equipment and/or inspection procedures to achieve report requirements.

1.03 QUALITY ASSURANCE

A. Refer to Section 01001 paragraph 1.10.C for certifications and qualifications required for work performed under this Section.

1.04 SHOP DRAWINGS AND SUBMITTALS

A. Submittals shall be provided to the City for review and acceptance. Prior to rehabilitation in accordance with the submittals shall be in accordance with specifications Section 01300.

B. The following deliverables shall be submitted at the completion of inspection:
   1. Electronic version (.pdf) of the manhole inspection reports
   2. Populated NASSCO MACP Standard manhole inspection database (.mdb or Excel) saved on portable hard drives.
   3. Inspection digital photographs in JPEG format saved on portable hard drives.
   4. Recommended rehabilitations for each manhole inspected.
   5. QA/QC report

C. The above deliverables shall be submitted to the City for approval.

D. The manhole inspection reports, and database shall be in accordance with NASSCO MACP standards.

1.05 NOTIFICATION

A. The Contractor shall notify the City a minimum of 48-hours prior to performing any inspection work. The City may be present during part or all of the inspections. No payment will be made for inspections performed without proper schedule notification.

B. The Contractor shall distribute notices, door hangers, 72-hours in advance, to all residents and businesses in the area where inspections are schedule. The areas need to encompass at a minimum a two-block radius of the inspection location. If the location has restricted access, one road in and out all property owners along the access are to receive notices. The Contractor is to notify the City if they are not able, due to a lack of access, to the front door of the house or building in the area where notices are to be distributed. Such notices will not be required during the inspection phase of manhole rehabilitations unless there is restricted access to residences or businesses.

PART 2 - PRODUCTS

2.01 DIGITAL CAMERA FOR REMOTE INSPECTIONS

A. All manhole photographs required as part of this specification shall be obtained using a minimum 4-megapixel digital camera with strobe flash capable of producing digital images with minimum resolution of 2240 x 1680.

PART 3 - EXECUTION

3.01 GENERAL

A. The inspection crew shall mobilize to the site of the manhole inspection and immediately establish traffic control measures per Florida Department of Transportation (FDOT) requirements as well as any measures required to protect pedestrians. The crew shall inspect each manhole and record required information.

B. All manhole and structures shall be located. Metal detectors shall be used to locate buried manholes. Once a buried manhole has been located, it shall be marked with paint and/or flagging, if necessary. All pertinent information available shall be recorded including area photo, address, etc. Contractor shall notify the City weekly with a list of those manholes that could not be fully inspected due to access issues. The City may arrange to have some, or all these manholes exposed, or otherwise made accessible for full inspection. The City will notify Contractor of the status and may authorize re-inspection.

3.02 MANDATORY INSPECTION HEADER INFORMATION ▲

A. The following mandatory information shall be recorded on the inspection form (template is located in the forms section). Note that the mandatory fields noted below are more inclusive than the MACP requirements. All available information shall be collected and recorded for those manholes and structures that are buried, could not open, surcharged, etc.

1. Manhole or Structure Number (City standard Asset Number)
2. Sheet number
3. Work Order No.
4. Date
5. Time
6. Surveyor's Name
7. Certification Number
8. System owner
9. Locality (St. Augustine, Fl.)
10. Drainage area (tributary Pump Station Number)
11. Location (street number and name)
12. Rim or grate to invert (nearest 0.1 foot)
13. Pre-cleaning method (using approved MACP codes)
14. Location code (using approved MACP codes)
15. Manhole or structure surface type (using approved MACP codes)
16. Potential for runoff (using approved MACP codes)

17. Access point type (using approved MACP codes)
18. Inspection status (using approved MACP codes)
19. using street name an address reference)
20. Internal photo image reference (using standard manhole component descriptions)

3.03 MANHOLE OR STRUCTURE COMPONENT OBSERVATIONS

A. The inspection crew shall complete all fields within the manhole component/observation section of the inspection form. The following information shall be collected:
   1. Cover type (solid, vented, bolted)
   2. Cover size (top surface diameter in inches)
   3. Cover material
   4. Number of vent holes
   5. Cover/Frame fit (cover to frame fit, MACP codes)
   6. Cover condition (MACP codes)
   7. Cover insert type
   8. Cover insert condition
   9. Frame condition
   10. Frame seal condition
   11. Frame offset distance
   12. Frame seal inflow
   13. Wall material
   14. Interior wall coating
   15. Wall diameter
   16. Pipe diameters
   17. Pipe materials type
   18. Bench present
   19. Channel installed
   20. Additional remarks relevant to the manhole or structure

3.04 MANHOLE OR STRUCTURE INTERIOR INSPECTION

A. The inspection crew shall determine the types of defects within the manhole, document each defect on the manhole form and take a photograph of each defect. The manhole chimney, cone, wall, bench, and channel shall be inspected for structural integrity, signs of I/I and the presence of roots. All documentation shall follow NASSCO MACP standards. Each defect will be documented on the inspection form with the following information:
   1. Defect number
   2. Component of manhole containing defect
   3. Defect code (using approved MACP codes)
   4. Image Reference (using City approved file naming structure)

3.05 CONNECTING PIPE DETAILS

A. Each pipe entering and exiting the manhole shall be photographed where possible and inspected to determine diameter, pipe material, debris levels, and rim to invert distance (to 0.1-feet). The pipe inspection will include the following information:
   1. Pipe photo (using City main segment numbering)
   2. Pipe direction (incoming or outgoing)
   3. Pipe clock positions (6:00 position = outgoing)
   4. Pipe diameter
   5. Pipe material (using PACP codes)
   6. Rim to invert distance (measured to nearest 1/10th of a foot)
   7. Pipe special condition (drops, force mains, etc. using approved MACP codes)
   8. Debris depth
   9. Connecting structure number; if manhole or cleanout, service line clock position, stubout clock position, etc.
   10. Pipe seal condition (using approved MACP codes)
   11. Pipe seal roots (using approved MACP codes)
   12. Observed pipe defects, obstructions, roots, etc. (using PACP codes)

3.06 MANHOLE OR STRUCTURE SKETCH, MAP UPDATE, AND NOTES

A. The inspection crew shall complete the manhole plan view sketch noting all connecting pipes. Any special observations or notes may be added to the profile sketch on the field form.

B. Influent and effluent lines in each manhole shall be compared to the existing map and corrections noted in the sketch section of the field form.

3.07 NOTIFICATION OF EMERGENCY CONDITIONS

A. Inspection crews shall immediately notify the City and/or on-site inspector of any defects posing imminent danger to the public (missing lids, covers broken during inspection, sink holes, etc.) and any observed pipe blockages or potential overflow conditions.

3.08 COMPLETION

A. Once the inspection is complete the field crew shall make certain the ring is clean and does not have any debris preventing a proper cover fit. The manhole lid shall be replaced, and any displaced items moved back into place.

B. A list of manholes and/or structures that could not be fully inspected, along with the problem explanation, shall be forwarded to the City weekly throughout the inspection work.

C. If the Contractor has completed accessible inspections, and the City authorizes, then Contractor may be required to re-mobilize at the same unit price and complete the

requested inspections. All re-inspections will be at the same contracted unit price.

D. Any map updates shall be consolidated and forwarded to the City with the submitted inspections.

3.09 PHOTOGRAPH REQUIREMENTS

A. During each inspection the following series of photographs shall be taken:
   1. Area Photograph: During the inspection, a photograph shall be taken of the manhole cover showing location within the roadway, shoulder, or easement as appropriate. Photographs shall be taken of any indications of previous overflows such as watermarks and paper or other debris typical of sewer overflows. Surface photographs shall be oriented in the direction of the outgoing pipe to show the pipeline cover and easement condition. The area photographs should show the manhole visible in the foreground where possible. A minimum of 1 area photo is required.
   2. Internal Photograph: Take a photograph of the manhole or structure interior in plan view showing the general arrangement of the incoming and outgoing sewers, manhole walls, and other appurtenances. The internal condition photograph shall be oriented with the direction of the outgoing main line flow at the bottom of the photograph (6:00 position). A minimum of 1 internal photograph is required.
   3. Manhole or Structure Defect Photographs: During manhole inspections digital photographs shall be taken of all defects. Photographs must clearly and accurately show each defect and correspond to defects and photo numbers logged on the manhole inspection form. A minimum of 1 photo for each observed defect is required.
   4. Connecting Pipe Photographs: The camera should then be pointed into all incoming and outgoing pipes where possible to capture general conditions within the pipes. Any obvious blockages or defects should be noted using PACP defect codes. A minimum of 1 photo of each incoming or outgoing pipe is required.

B. During inspections manholes or structures shall be free of steam, fog, water vapor, or other conditions that will impact the quality of photographs.

C. All photographs shall adequately capture the manhole conditions and details of defects. Lighting and camera quality shall provide a clear, in-focus picture of the manhole/structure interior, manhole/structure defects, and manhole/structure. The lighting shall provide uniform light free from shadows or hot spots.

D. If larger than 2240 x 1680 resolution, then photo will be converted to 2240 x 1680. Photos less than 2240 x 1680 are not acceptable and converting upward to 2240 x 1680 is not acceptable. All photographs shall be resized to 2240 x 1680 resolution to minimize file size.

E. The images shall be kept electronically, copied to an external hard drive, and submitted with the inspection forms per paragraph 3.12. Photographs shall be named according to

the photograph naming conventions included herein.

F. All digital photographs shall be referenced on the manhole inspection form and electronic spreadsheet/database.

G. All digital photographs shall be renamed in accordance with the following photo file naming convention:

1. Area Photo = Manhole/Structure ID, A, Photo Number, jpg
   Example: 3965002A0001.jpg
   Manhole/Structure: 39650002
   A=Area Photo
   Photo No.0001
2. Internal Photo = Manhole/Structure ID, I, Photo Number, jpg
   Example: 3965002I0001.jpg
   Manhole/Structure: 3965002
   I=Internal Photo
   Photo No.0001
   (Note: Photo oriented with the outgoing pipe on the bottom)
3. Manhole Defect Photo = Manhole/Structure ID, M, Photo Number, jpg
   Example: 3965002M0015
   Manhole/Structure: 3965002
   M=Manhole Defect Photo
   S=Structure Defect Photo
   Photo No. 0015
4. Pipe Photo = Manhole/Structure ID, P, Photo Number, jpg
   Example: 3965002P0002.jpg
   Manhole/Structure: 3965002
   P=Pipe Photo
   Photo No. 0002

3.10 MANHOLE/STRUCTURE NUMBERING, INSPECTION FORMS AND DEFECT CODES

A. The Contractor shall use the City manhole/structure numbering system when performing the inspections for this Project. Manhole/structure numbers will be provided by the City.

B. Defect codes shall conform to those specified in the NASSCO MACP specification.

3.11 SITE RESTORATION

After inspecting manholes in an area, the work site shall be cleaned and restored to pre-Work conditions. If manhole is buried and exposed, then restore site by placing material back over exposed manhole. No re-sodding is anticipated or included in the pricing.

3.12 DELIVERABLES

The Contractor will be required to submit the following deliverables at the completion of inspection.

A. Scanned Field Inspection Reports to include:
   1. Inspection session header information (see required fields above)
   2. Component observations
   3. Manhole/Structure inspection details including defects observed and photo image references
   4. Connecting pipe details
   5. Manhole/Structure plan view sketch
   6. Manhole/Structure rehabilitation recommendation for each manhole.
   7. Format:
      a. Adobe Acrobat PDF files: 1 report PDF per manhole or Structure
      b. File name: <MH ID> <Date (year_mo_day format)>.PDF

         Example: 30060002_2010_02_16.pdf

B. Inspection digital photographs file name, format, and resolution shall meet requirements of paragraph 3.08 and stored and submitted on a portable hard drive.

C. Electronic Inspection Data stored and exported in City approved NASSCO Manhole Assessment and Certification Program (MACP) compliant Microsoft Access database (.MDB) version 4.4, or Excel file delivered on portable hard drive.

D. Marked up field maps detailing map corrections and/or discrepancies noted during inspection.

All digital files shall be submitted on portable hard drive.

END OF SECTION

SECTION 02775

WASTEWATER MANHOLE, LIFT STATION WET WELL AND STORMWATER STRUCTURES REHABILITATION

PART 1 - GENERAL

1.01 Manholes, Lift Stations Wet Wells and Stormwater Structures in the City of St. Augustine are in varying conditions of deterioration. Therefore, procedures for rehabilitation demand selection of best industry practices to restore these assets and avoid unnecessary replacements. Therefore, selection of rehabilitation requirements needs to be based on each structures condition.

1.02 QUALIFICATIONS

A. Refer to Section 01001 paragraph 1.10.D for applicator qualifications.

1.03 SCOPE OF WORK

A. Manhole inspections shall be in accordance with NASSCO Manhole Assessment Certification Program (MACP), both level 1 and 2.
   1. Detailed inspections will include digital photographs of the interior. These photographs will be made documenting the entire perimeter of each manhole, wet well or stormwater structure. Digital photos are taken of each defect found inside of the manhole or structure during the inspection.

B. Manhole and Structures inspections is a condition precedent to establishing required rehabilitations.

C. The City will review rehabilitation recommendations that are included in the submitted inspection reports.

D. The City will define approved rehabilitations in each proposal request.

E. All rehabilitation proposals shall include a schedule, statement of compliance with this specification, a work plan with proposed product and system submittals.

F. Submittals shall be made in accordance with Section 01300

G. This specification covers all work necessary for sanitary manhole, lift station wet well and stormwater structure rehabilitations. The Contractor shall provide all labor, materials and equipment necessary for rehabilitation of these structures.

H. After rehabilitation manholes and wet wells shall sealed from inflow and infiltration, be corrosion resistant, and structurally sound.

I. The repair and sealing of the manhole base, bench, invert, walls, corbel/cone, and chimney of brick, block, or precast manholes, includes the removal and proper disposal of any unsound material.

J. After rehabilitation Stormwater structures shall be structurally sound and be protected from corrosion.

K. Installation of manhole external and internal infiltration barriers.

L. Removal and replacement of manhole frames and covers.

M. Horizontal and/or vertical adjustment of and securing misaligned manhole frames and covers to grade.
N. Installation of manhole cover seals and inflow dishes at City designated locations.
O. The inspection and testing of the various types of work to ensure compliance.
P. Related work specified in other Sections.
   1. Section 01001 "General Work Requirements"
   2. Section 01010 "Summary of Work"
   3. Section 01200 "Project Meetings"
   4. Section 01300 "Submittals"
   5. Section 01516 "Collection System Bypass"
   6. Section 01570 "Maintenance of Traffic"
   7. Section 02764 "Televising Existing Manholes"

Q. All work shall adhere to Occupational Health and Safety Administration (OSHA) standards, current edition. All entries into or work within confined spaces shall be performed in accordance with OSHA Standard Title 29 Code of Federal Regulations (CFR) 1910.146 permit required confined spaces. Referencing the Guidance to safety in confined spaces, U.S. Department of Health and Human Services/National Institute for Occupational Safety Health Publication No. 87-113.

1.04 USE OF PREMISES

A. The Contractor shall not trespass upon or in any way disturb private property without first obtaining written permission from the property Owner and/or Owner or Prime Contractor as appropriate to do so. A copy of such written permission shall be furnished to the City prior to accessing the site.
B. It shall be the Contractor's responsibility to work equipment around poles, trees, or other obstructions and to do so at his own expense.
C. If the Contractor finds it necessary to obtain additional working area, it shall be the Contractor's responsibility for its acquisition.
D. The Contractor shall, at no additional expense, restore such property to the original condition in the sole and unfettered opinion of the property Owner. The Contractor must take photographs and/or videos of existing properties prior to disturbance of each property and make a copy available to the City.
E. All items within the street right-of-way or sewer easement shall be removed, or removed and replaced, or restored as directed by the City.
F. The Contractor shall ensure all employees have a badge or visible identification during any time that they on the project site or within private property. This identification must be worn so that it is readily recognized and readable to the public.

1.05 WATER FOR CLEANING

A. The City shall provide access to water via fire hydrants for cleaning and other work items requiring water. The Contractor will be responsible for obtaining a transient water meter for water used in performance of work. There will be no cost to the contractor for use of water required for rehabilitation work.

1.06 PROTECTION OF TREES

A. The Contractor shall avoid any unnecessary damage to trees. Branches which overhang the project limits, and which interfere with the operation of equipment shall be tied back to avoid damage, if possible. Where injury to branches is unavoidable, the branches shall be sawed off neatly at the trunk or main branch, and the cut area shall be protected with approved pruning spray immediately. The Contractor at no additional expense shall remove any trees damaged beyond saving and make restitution to the Owner (public or private).

1.07 FENCING

A. Any fences, including hedge and shrubs, that need to be removed to facilitate the work shall be replaced, in kind or with repairs satisfactory to the Owner, at the Contractor's expense. Payment for replacement of fences, hedges, and shrubs is covered in Part 4 paragraph 4.01.FF.

1.08 RESTORATION

A. All roadway berms and drainage ditches disturbed by the work shall be restored, reshaped, and graded to drain.
B. Pavement restoration, if necessary, shall conform to the City, County, or State standards and specifications depending upon who has jurisdiction for the street. Trench backfill and compaction shall be in conformance with the local street restoration jurisdiction.
C. The remediation of sunken trenches caused by activities conducted in this contract shall be the Contractor's responsibility. Sunken areas shall be backfilled and compacted to meet adjoining grades; the surface shall be re-seeded or resurfaced with asphalt or concrete matching the existing surfacing.
D. The Contractor shall restore unpaved areas by seeding and mulching. No direct payment will be made for seeding and mulching.
E. Driveways shall be restored in accordance with Owner's regulations, or the Owner's Specifications depending upon who has jurisdiction for the driveway.
F. All disturbed areas shall be restored as nearly as possible to their original condition.
G. All restoration shall be completed in strict accordance with the appropriate items of the standards, specifications or matching the pre-work conditions as directed by the Owner.
H. The cost of all restoration of streets, drives, walks; sod, etc. shall be incidental to the contract and not measured for payment.
I. Restoration shall be kept current with the project work. Failure to keep restoration of these items completed reasonably close shall result in a stop work notice and delay of payment until such restoration is completed to the satisfaction of the Owner.

1.09 CLEANUP

A. The Contractor shall keep the work area in an uncluttered condition by the frequent removal of debris. The Contractor shall remove all debris and unused material and leave the area in a condition similar to the condition of the area before any work was performed.

1.10 PROPERTY DAMAGE

A. The Contractor shall immediately investigate any and all reports of sewage backing up into fixtures served by the sewer section upstream of the manhole that is being rehabilitated.

B. The Contractor will be required to notify the City immediately if he causes any damage to private or public property caused by activities related to this contract. The Contractor shall make repairs and/or clean the property immediately in a timeframe that is acceptable to the Owner.

C. The Contractor shall furnish equipment, either specialized or standard in the industry, for the purpose of preventing debris from being washed past the manhole, inlet, or outfall downstream of the line segment being cleaned, and for removing the debris from the structure before any damage is caused to the system performance and or system equipment such as pump/lift stations, check valves, flow-ways, etc. The cost of all system downtime and repairs to restore operational status resulting from construction debris damage that in the City's opinion was reasonably preventable will be borne by the Contractor.

1.11 REFERENCES

A. Applicable Codes, Specifications, and Standards

1. American Society for Testing and Materials (ASTM), Latest Editions
   a. A48, Standard Specification for Gray Iron Castings
   b. A240, Standard Specification for Chromium and Chromium Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications
   c. A479, Standard Specification for Stainless Steel Bars and Shapes for Use in Boilers and Other Pressure Vessels
   d. C109, Standard Test Method for Compressive Strength of Hydraulic-Cement Mortars
   e. C150, Standard Specification for Portland Cement
   f. C157 Standard Test Method for Length Change of Hardened Hydraulic Cement and Polymer Concretes
   g. C216, Standard Specification for Facing Brick (Solid Masonry Units Made from Clay or Shale
   h. C267, Standard Test Method for Chemical Resistance of mortars, grouts and Monolithic Surfacing and Polymer Concrete
   i. C270, Standard Specification for Mortar for Unit Masonry
   j. C293, Standard Test Method for Flexural Strength of Concrete
   k. C308, Standard Test Method for Tensile Strength of Chemical-Resistant Mortar, Grouts, and Monolithic Surfacing.
   l. C321, Standard Test Method for Bond Strength of Chemical Resistant Mortars
   m. C348, Standard Test Method for Flexural Strength of Hydraulic Cement Mortars
   n. C478, Standard Specification for Circular Precast Reinforced Concrete Manhole Sections
   o. C496, Tensile Strength of Chemically Setting Silicate and Silica Chemical Resistant Mortars
   p. C580, Standard Test Method for Flexural Strength and Modulus of Elasticity of

Chemical-Resistant Mortars, Grouts, Monolithic Surfacing, and Polymer Concretes

q. C596, Standard Test Method for Drying Shrinkage of Mortar Containing Hydraulic Cement
r. C882, Standard Test Method for Bond Strength of Epoxy-Resin Systems Used with Concrete by Slant Shear
s. C923, Standard Specification for Resilient Connectors Between Reinforced Concrete Manhole Structures, Pipes, and Laterals
t. Standard Test Method for Bond Strength of Mortar to Masonry Units
u. D412, Standard Test Method for Vulcanized Rubber and Thermoplastic Elastomers – Tension, Tensile Strength and Elongation %
v. D4787, Standard Practice of Continuity Verification of Liquid or Sheet Linings Applied to Concrete Substrates
w. D543, Resistance of Plastics to Chemical Reagents
x. D638, Standard Test Method for Tensile Properties of Plastics.
y. D695, Standard Test Method for Compressive Properties of Rigid Plastics.
z. D790, Standard Test Methods for Flexural Properties of Plastics
aa. D792, Standard Test Methods for Density ad Specific Gravity (Relative Density) of Plastics by Displacement.
bb. D2240, Standard Test Method for Rubber Property – Durometer Hardness
u) D2344/D2344M, Standard Test Method for Short-Beam Strength of Polymer Matrix Composite Materials and Their Laminates
v) D2039, Standard Test Method for Tensile Properties of Polymer Matrix Composite Materials
w) D3039, Standard Test Method for Tensile Properties of Polymer Matrix Composite Materials
x) D4060, Standard Test Method for Abrasion Resistance of Organic Coatings by The Taber Abrader
y) D4414, Standard Practice for Measurement of Wet Film Thickness of Organic Coatings by Notched Gage
z) D4541 Standard Test Method for Pull Off Strength of Coatings Using Portable Adhesion Testers
aa) D4787 Continuity Verification of Liquid or Sheet Linings Applied to Concrete Substrates
bb) D6132 Standard Test Method for Nondestructive Measurement of Dry Film Thickness or Applied Organic Coatings Using an Ultrasonic Coating Thickness Gage.
cc) D7234, Pull-off Strength of Coatings Using a Portable Adhesion Tester
dd) F593, Standard Specification for Stainless Steel Bolts, Hex Cap Screws, and Studs
ee) F2414, Standard Practice for Sealing Sewer Manholes using Chemical Grouting.
ff) F2551, Standard Practice for Installing a Protective Cementitious Liner System in Sanitary Sewer Manholes
gg) G210, Severe Wastewater Analysis Test

2. Federal Specifications
   a. HH-P-117, Jute Packing
3. Steel Structures Painting Council – Surface preparation standards, Society of

Protective Coatings published standards.
   a. SSPC SP-13 Surface Preparation of Concrete
4. NACE International (Formerly the National Association of Corrosion Engineers)
   a. NACE No. 6 Surface Preparation of Concrete
   b. NACE SP0188 – For performing holiday detection

5. City of St. Augustine (COSA) Standards and Specifications Design Manual and Details

1.12 RESPONSIBILITY FOR OVERFLOW AND SPILLS

A. It shall be the responsibility of the Contractor to schedule and perform his work to result in no overflows or spills of sewage from the system. If sewage flows are such that they interfere with the Contractor's ability to perform work, the Contractor shall be responsible for scheduling his work during low flow periods or provide bypass pumping. Bypass pumping shall be provided only with the specific written approval of the City.

B. In the event of overflows caused by the Contractor's work activities, the Contractor shall immediately take appropriate action to contain and stop the overflow, clean up the spillage, and disinfect the area affected by the spill. The Contractor shall also notify the City Utility Manager immediately upon becoming aware of the discharge. They will provide instructions on this notification during and after normal business hours, nights, weekends and holidays.

C. The Contractor will reimburse the City for all sampling, testing and analysis necessary to document that the contamination caused by overflows or spills associated with their work has been eliminated.

D. In the City's opinion, if the Contractor has not taken immediate actions necessary when a spill or overflow occurs the City will provide the labor, equipment, materials and related costs to stop the overflow, clean up the spillage and disinfect the area. The Contractor will be responsible to reimburse the City for all documented costs incurred as a result of spills and overflows related to the Contractor's work.

E. Immediate actions are to be taken to stop the overflow and eliminate the potential public health hazard. Actions to address overflows is a condition precedent to all work.

F. All overflows, regardless of quantity will needed to be documented on a Sanitary Sewer Overflow (SSO) Report and submitted to the Florida Department of Environmental Protection Northeast District Office.

G. Contractor will indemnify and hold harmless the City for any fines or third-party claims for personal or property damage arising out of a spill or overflow that is fully or partially the responsibility of the Contractor. Should fines subsequently be imposed as a result of any overflow for which the Contractor is fully or partially responsible, the Contractor shall pay all such fines and all of the City's legal, engineering, and administrative costs in defending such fines and claims associated with the overflow or spill.

1.13 SHOP DRAWINGS, SUBMITTALS, AND DEMONSTRATIONS

A. Manhole and Structures Condition Assessment Inspection Reports
   1. Manhole and Structures inspection work plan that includes a detailed schedule of activities and working hours. Resubmittal will be required if the sequence, duration,

or dates of inspections change from the initial work plan.

2. Reference Section 02764 Televising Existing Manholes, Wet Wells, and Stormwater Structures for submittal documentation.
3. Reports shall be formatted and coded to be in compliance with NASSCO MACP standards and include text reports with digital photographs of the noted defects.
4. Reports will include rehabilitation recommendations.

B. Manholes wet well and Stormwater Structures assessment submittal approvals will establish the rehabilitation procedures that will be performed on each manhole. All other product and rehabilitation submittals will be based on these procedures.

C. Product data and/or shop drawings for rehabilitations are to be submitted with each work order proposal submittal. In the case where exact products and/or fabrications have been previously approved under a separate work order then these items only require a reference to the work order under which the item was approved.

D. A pre-video of the manhole area and internal conditions is to be submitted prior to rehabilitation work.

E. Plans and procedures are to be submitted prior to starting preparation for manhole rehabilitation in accordance with the General Conditions and 01300 "Submittals."

F. Structural design for manhole and stormwater structure rehabilitation is to be performed by a State of Florida licensed Professional Engineer, if applicable.

G. Work Plan Submittals.
   1. Site Safety Plan
   2. Quality control plan.
   3. Collection System Bypass Plan.
   4. Emergency Plans.
      a. Procedure for health or safety emergency
      b. Overflows, spills, service backups
      c. Hazardous chemical spills

H. Certifications and License.
   1. Refer to Section 01001 paragraph 1.10.E for requirements.

I. Contact list with primary and secondary contacts.

J. Sample public work notifications, door hangers.

K. Warranty certificate form

L. Grout.
   1. Catalog data showing manufacturer's clarifications and updates, ASTM references, material composition, specifications, and physical and chemical properties of grout.
      a. Chemical Grout Information:
         1) Description of chemical grout materials.
         2) Description of proposed additives to be used.
         3) Manufacturers recommended procedures for storing, mixing, testing, and handling of chemical grouts.
         4) SDS sheets for all materials to be used.
   2. Calculations of expected volumes of annular space between packer and pipe wall, to be used in calculating required gel times.

3. Manufacturer's recommended procedures for handling, storing, mixing and injecting grout.
4. Method of Construction.
   a. Access manholes and site locations.
   b. Work dimensions.
   c. Size of working area.
   d. Site access points.
   e. Grout manufacturer's certification that Contractor is approved installer of their system. Certificates of training in handling, mixing, and application of grout for sanitary sewer line and joint and lateral connection sealing for grout truck operator and at least one crewmember involved in sealing process.
   f. Third party lab test results for field installations in United States of same grout system as proposed for actual installation.
   g. a. Test results must verify grout physical and chemical properties specified herein have been achieved in previous field applications.
   h. Documentation for Products and Installers: Engineer's approval required before acceptance or injection of grout.
   i. Proof of grout manufacturer's product liability insurance, if requested by Engineer.
   j. Pump calibration information.
   k. Field sealing records.
   l. Certification of accuracy and calibration of pressure sensing/monitoring equipment by independent testing firm within one month before use of equipment.

6) Upon completion of grouting, submit a report showing the following data for each manhole grouted or attempted to be grouted.
   a. Identification of the Manhole or structure ID number.
   b. Type of manhole, brick or concrete with depth to invert from top of frame rim.
   c. Pass/fail results.
   d. Volume of grout material used.
   e. Gel set time used (cup test results from tanks)
   f. Grout mix record of the batches mixed including amount of grout and catalyst, additives, temperature of the grout solution in tanks.
   g. Operator conducting testing and sealing shall be noted on the reports.

M. Coatings/Linings Applicator Qualifications.
   1. Manufacturer's applicator certificate.
   2. Application equipment meets Manufactures requirements.
   3. Manufacturers' Certificate of Compliance certifying compliance with the applicable Specifications and Standards. The certifications shall list all materials furnished under this Section.

N. Submittals shall include manufacturer's product descriptions and use, Specifications, independent testing reports, handling, storage, mixing, application, curing, and cleanup requirements. If a Safety Data Sheet (SDS) has been developed for the product it shall also be provided.

O. Manhole, Wet Well and Stormwater Structure Liner/Coating Systems/Chemical

Grouts/Chimney Seals: ▲

1. Certified copies of factory tests required by the applicable Standards, the Manufacturer, and this Section.
2. Manufacturer's handling, storage, and installation instructions and procedures.
3. Surface Preparation requirements
4. Pre/Post adherence testing
5. pH test after prep
6. Product data including
   a. Sample of coating products
   b. Surface preparation requirements
   c. Product data

P. Lids and Frames, Inflow Dishes, Lid Seals, Casting Seals, and Adjustment Rings
   1. Product data
   2. Shop Drawings
   3. Installation instructions, if applicable.

Q. Manhole and Stormwater Structure adjustment, Patching and Repair materials. ▲

R. Post rehabilitation report that provides a complete and accurate record of all rehabilitations performed and list of products used. This report shall include a video record of the completed interior and area work.

1.14 PRODUCT MANUFACTURERS DEMONSTRATIONS

A. Use of all materials that require surface preparations, handling, mixing, and curing will require demonstration and explanation of these aspects to City personnel if approved for use on City facilities. This demonstration will be provided at a designated existing manhole, wet well, or stormwater structure at a time approved by the City. This demonstration will need to be provided to the Cities satisfaction prior to further use on City facilities. ▲

B. Demonstrations are to be provided prior to delivery and installation of grout or coating/lining systems approved for use in manhole rehabilitation.

PART 2 - PRODUCTS

2.01 - GENERAL

A. Materials
   1. The materials used shall be designed and manufactured for the rehabilitation of Sanitary Sewer Manholes, Wet Wells and Stormwater Structures. The materials shall have a proven history of extended service performance in this application and be compatible with all existing and new materials used in the manhole rehabilitation.
   2. All materials shall be delivered to the job site in original unopened packages clearly labeled with the manufacturer's identification and printed instructions. ▲

3. All materials shall be stored and handled in accordance with recommendations of the manufacturer.
4. All materials shall be mixed and applied in accordance with the manufacturer's written instructions.
5. The Contractor shall warrant and hold harmless the City against all claims for patent infringement and any loss thereof.
6. Handle and store all materials and dispose of all wastes in accordance with applicable regulations.
7. Each lining system shall be designed for application over wet surfaces (but not active running water) without degradation of the final product and/or the bond between the product and the manhole surfaces.
8. All finished products used in the rehabilitation of manholes shall be suited for its intended purpose, seal and protect the internal surfaces from deterioration due to corrosive conditions and perform and provide extended service life to the extent represented by the product manufacturers.

2.02 INSPECTION SOFTWARE

A. Inspections shall use software that can provide complete survey reports in compliance with current version of NASSCO MACP/PACP software. No payment will be rendered for improperly formatted data.
B. NASSCO MACP and PACP fields, as well as any additional available fields requested by the City or his representative shall be populated during the inspections with valid NASSCO values. All reports and/or submittals shall use NASSCO MACP/PACP Standards as a basis.

2.03 DIGITAL CAMERA FOR REMOTE INSPECTIONS

A. All manhole photographs required as part of this specification shall be obtained using a minimum 4-megapixel digital camera with strobe flash capable of producing digital images with minimum resolution of 2240 x 1680.
B. The camera shall be capable of zoom focus to provide clear photographs of the entire vertical depth of the manhole.
C. The camera equipment/software shall be capable of producing digital images of all manhole, wet well and storm structure defects. The digital photographs shall become the property of the City.

D. Each portable hard drive shall contain the following information and arrangement at the beginning as a title screen:

St. Augustine, Florida
Collection Basin Number
Contract Number
Work Order Number
CONTRACTOR: (Name of Contractor)
DATE: (When photo was taken)
LOCATION: (Description of Location(s) and View(s))

E. Written documentation must coincide with the information on the photograph to make

easy retrieval of locations at a later date.

2.04 GROUT – GENERAL

A. Grout manufacturer will select the type of grout to be used for sealing the manhole based on the manhole installed conditions.
B. While being injected, the grout must be able to react /perform in the presence of water (groundwater).
C. The ability to increase grout mix viscosity, density and gel strength by increased concentration of constituents or the use of approved additives.
D. The cured grout must withstand submergence in water without degradation.
E. The resultant grout formation must be homogeneous and prevent the passage of water (infiltration) through the manhole base, barrel, cone, and chimney.
F. The grout must not be biodegradable.
G. The cured grout should be chemically stable and resistant to organics found in costal ground water and sewage.
H. Residual grout shall be easily removable from the interior surfaces of the manhole to prevent performance of other manhole rehabilitation products.
1. Handle, mix, and store grout in accordance with the manufacturer's recommendations. The materials shall be delivered to the site in unopened original manufacturer's containers.
2. Chemical grout sealing shall be in accordance with ASTM F2414 latest edition Standard Practice for Sealing Sewer Manholes Using Chemical Grout.

2.05 GROUT PRODUCTS

A. Properties and Characteristics.
1. Will perform in presence of infiltrating water (groundwater), during injection.
2. Packaged for field storage, handling requirements with minimum spillage and worker safety.
B. Cured grout:
1. Submergible in water without degrading.
2. Not biodegradable.
a. Additives may be used to meet this requirement, without effecting long-term strength.
3. Chemically stable and resistant to concentrations of acids, alkalis, and organic materials found in normal sewage.
C. Composition.
1. Acrylamide gel:
a. Minimum of 10 percent acrylamide base material by weight in total grout mix.
b. Higher concentration percent of acrylamide base material (maximum 20%) may be used to increase strength or offset dilution during injection.
c. Able to tolerate some dilution and react in moving water during injection.
d. Approximately 2 centipoise viscosity. Can be increased with additives.
e. Constant viscosity during reaction period.
f. Controlled reaction time from 10 seconds to 1 hour.

g. Curing reaction producing a homogenous, chemically stable, non-biodegradable, firm, flexible gel.
h. Able to prevent dehydration and increase-mix viscosity, density and gel strength by use of additives.
i. Diatomaceous earth (Celite 209 or equal) can be added to concentration of five percent.
j. Use of other additives following manufacturer's recommendation and Engineer's approval.
k. Root control additive 2, 6-Dichlorobenzonitrile, may be added following manufacturer's recommendation and Engineer's direction.

2. Urethane gel:
   a. Ratio: One-part urethane prepolymer mixed with 5 to 10 parts water by volume.
   b. Recommended mix ratio: 1-part urethane prepolymer to 8 parts of water (11 percent prepolymer).
   c. Liquid prepolymer:
   d. Solids content: 77 to 83 percent.
   e. Specific Gravity: 1.04 (8.65 pounds per gallon)
   f. Flash Point: 20 degrees F.
   g. Viscosity: 600 to 1,200 centipoises water at 70 degrees F.
   h. Water for reacting prepolymer: pH of 6.5 to 8.
   i. Curing reaction:
      1) Produces chemically stable, non-biodegradable, tough, flexible gel.
      2) Able to increase mix viscosity, density, gel strength and resistance to shrinkage by using additives in water component of grout.
      3) Minimum 15 percent shrink control agent supplied by the same manufacturer.
3. Acrylate gel:
   a. Minimum 10 percent acrylate base material by weight or as specified by the manufacturer.
   b. In total grout mix, a higher concentration (percent) of acrylate base material may be used to increase strength or offset dilution during injection.
   c. If acrylate base material is in 40 percent solution 27.5 percent by weight of total grout mix: 11 percent base material.
   d. Able to tolerate some dilution and react in moving water during injection.
   e. Viscosity: Approximately 2 centipoises.
   f. Can be increased with additives.
   g. Constant viscosity during reaction period.
      Controlled reaction time: 10 seconds to 1 hour.
   h. Curing reaction producing homogeneous, chemically stable, non-biodegradable, flexible gel.
   i. Able to prevent dehydration and to increase-mix viscosity, density and gel strength by use of additives.
      1) Diatomaceous earth (Celite 209 or equal) can be added to concentration of five percent, by volume.
      2) Use of other additives following manufacturer's recommendations and Engineer's approval.
   j. Root control additive 2, 6-Dichlorobenzonitrile, may be added following manufacturer's recommendation and Engineer's direction.

D. Additives
   1. At the CONTRACTOR'S discretion and according to field conditions, additives may be selected and used within the manufacturers recommended quantities.
   2. Strengthening Agents
      a. For joint grouting, a latex or "diatomaceous earth" additive may be added to increase compressive and tensile strength. The quantity of strengthening agent additive shall be as recommended by the manufacturer and approved by ENGINEER. Product Manufacturer:
   3. Root Inhibitor
      a. When roots are present, for joint and lateral connection joint grouting, a root deterrent chemical shall be added to control root re-growth. The quantity of inhibitor shall be as recommended by the manufacturer and approved by ENGINEER.
   4. Dye
      a. A manufacturer approved water soluble dye without trace metals may be added to the grout tank(s) for visual confirmation.
   5. Gel Time Modifier
      a. A gel time extending agent may be used in accordance with the manufacturer's recommendations to extend gel time as necessary.
   6. Freeze/Thaw
      a. In those lines where the grouting material may be exposed to a freeze-thaw cycle, ethylene glycol or other ENGINEER approved additive shall be used to prevent chemical grout cracking once set.
   7. Gel shrink control, and accelerators.
   8. When using non soluble additives the grout tanks must have mechanical mixing devices to keep the additives in suspension and maintain a uniform solution of grout and additive.

2.06 PATCHING OR REPLACEMENT OF INVERT AND BENCH

A. Materials used for bench and trough repairs shall be a rapid setting, high early strength, non-shrink material.
B. Products shall not contain chlorides or metallic particles and shall be mixed and applied in accordance with the manufacturer's recommendations.
C. Repair and patching material shall be compatible with all material components and lining system applied to the manhole.
D. Patching material shall be rapid setting, fiber reinforced, calcium aluminate, corrosion resistant, cementitious material, that meets the following minimum requirements:

Compressive Strength ASTM C109	2400 psi, 24 hours
Bond ASTM C321	2000 psi, 28 days
Cement	Calcium Aluminate, Sulfate resistant
Sulfate Resistance ASTM C267	Inert
Shrinkage ASTM C596	0 percent at 90 percent relative humidity

E. Products shall be Strong-Seal QSR Plus and High-Performance Mix as manufactured by the Strong Company, Pine Bluff, AR; Quadex AluminaLiner as manufactured by Quadex Inc., North Little Rock, AR; EucoRepair V100, Euclid Chemical, Cleveland, OH; or approved equal. ▲

F. Repair shall be top coated to provide protection against chemical and biological corrosion, if this protection is not integral to the product.

2.07 SEALING ACTIVE LEAKS

A. Infiltration control material shall be rapid setting epoxy or cementitious product that is corrosion resistant and specifically formulated for leak control to stop minor infiltration and to make repairs in sanitary sewer concrete and brick structures. Minor infiltration is defined by dripping or seepage where visual water may be on the surface but not projecting beyond the surface of the wall of the structure.

B. Use of Grout materials shall meet the requirements of paragraph 2.05 for severe infiltration control.

2.08 CEMENTITIOUS LINING SYSTEMS GENERAL

A. Cementitious manhole lining materials shall exhibit the following properties:
   1. Cementitious restoration products shall be specifically designed for the rehabilitation of manholes and other related wastewater structures.
   2. Liner products shall be cement based, fiber reinforced, shrinkage compensated and enhanced with chemical admixtures and siliceous aggregates.
   3. Liner products shall be mixed with water per manufacturer's written specifications and applied using equipment specifically designed for troweling, low-pressure spray or centrifugal spin casting application.
   4. All cementitious liners shall be troweled to densify and smooth out the surfaces.
   5. Materials shall be specifically formulated to withstand H2S (hydrogen sulfide) bacterial corrosion and abrasion in sanitary sewer systems.

B. Spray applied or centrifugally cast structural reinforced cement manhole lining
   1. The material applied to the surface of the manhole shall be a cementitious blend of calcium aluminate cement and manufactured calcium aluminate aggregates for constructing a liner that is impervious to the flow of water, is resistant to sulfide attack, and restores structural integrity to existing manhole walls.
   2. A monolithic liner shall be formed which covers all interior manhole surfaces and shall have the following minimum requirements at 28-days:

Compressive Strength (ASTM C579)	9,000-psi
Tensile Strength (ASTM C496)	800-psi
Flexural Strength (ASTM C293) (Modified)	1200-psi
Shrinkage (ASTM C596)	0% at 95% R.H.
Bond (ASTM C882)	2000 psi
Density, when applied	130 pcf
pH >1	No deterioration

Sulfide Resistance (ASTM C267)	Inert

2.09 MULTI-COMPONENT STRESS SKIN PANEL LINER SYSTEM

A. The material applied onto the surface of the manhole shall be a multi-component stress skin panel liner system designed to withstand the effects of hydrogen sulfide without any deterioration to the liner. The liner shall be a solvent free, two-component polymeric, moisture/chemical barrier specifically developed for the wastewater environment. The cured epoxy resin system shall conform to the following minimum Structural Standards:

Minimum Structural Standards

Cured Product	Test Method	Results
Tensile Strength	ASTM C496/D638	2000-psi
Flexural Strength	ASTM C293/D790	2500-psi
Bond Strength	ASTM C882/D4541	2000-psi
Shrinkage @ 95% R.H.	ASTM C596	0%
Compressive Strength	ASTM C579	8,000-psi
Compressive Strength	ASTM D695	8,000-psi
Chemical & Biological Corrosion		None @ pH 2.0

1. Manholes in which the pH may be less than 2.0 or less, an additional liner/coating may be required to provide complete corrosion protection.
2. Product to accompany a certified letter from the manufacturer for a 10-year performance warranty.
3. Linings shall be 1/2" minimum thickness and finished surfaces shall conform to the original configuration of the manhole.

2.10 COATING PRODUCTS

A. General
1. Coating products shall be applied to manholes specified to receive a corrosion protective coating sufficiently thick to totally protect the existing host structure from further corrosion, deterioration and water vapor transmission. Coating materials must be compatible with the manhole rehabilitation SYSTEM. Substrate and surface preparation, application conditions, application equipment, material preparation, and curing shall be in strict accordance with the manufacturer's written recommendations.
2. Apply Organic Linings to manhole interior walls and benches.

2.11 EPOXY RESIN AND POLYURETHANE SYSTEM MANHOLE AND STORMWATER STRUCTURE COATINGS ▲

A. The material sprayed onto the surface of the manhole and stormwater structures shall be an epoxy resin or polyurethane system formulated for application within a sanitary sewer

environment. The resin will exhibit suitable corrosion resistance and enhance the structural integrity of the existing manhole or structure. ▲

B. Epoxy shall be microbe resistant.
C. Suitable for all interior surfaces of manhole less frame and cover.
D. Application shall be a monolithic lining.
E. System to be from one manufacturer.
F. Compatible with either Portland cement, concrete block or clay brick surfaces.
G. System to provide abrasion, impact, and chemical resistance to wastewater environment with long detention times and elevated temperatures.
H. The epoxy or polyurethane manhole or stormwater structure liner shall be a chemical resistant (below a pH of 2.0), VOC compliant, moisture tolerant, 100% solids, two (2) component epoxy system with the following properties: ▲

Flexural Strength (ASTM D790)	10,000 psi
Compressive Strength (ASTM D695)	10,000 psi
Tensile Strength (ASTM D638)	6,300 psi
Adhesion (ASTM D4541/7234)	Substrate Failure
Taber Abrasion, CS17 wheel (ASTM D4060)	< 112 mg loss, 1 Kg/1000 cycles
Elongation (ASTM D638)	1.5 %
Shore D Hardness (ASTM D2240)	85

I. Coating Products shall be an Organic Coating for use in Wastewater Manholes:
1. Raven 405 High Build Epoxy Liner, .3 inches minimum thickness, as manufactured by Raven Lining SYSTEMs Inc., Tulsa, OK.
2. Structure Guard by Quadex, .3 inches, minimum thickness, manufactured by Vortex Infrastructure, Houston, TX.
3. Spraywall by SprayRoq, Irondale, Al. ▲
4. Or Approved Equal systems.

2.12 MANHOLE SEALS

A. Chimney Coating Seals
1. Chimney seals shall be used for the purpose of preventing leakage of water into the manhole through the frame joint area and the area above the manhole cone including all extensions to the chimney area. Extensions shall include adjustment rings and/or material used to achieve grade.
2. Coatings shall be 100% solids epoxy, moisture tolerant, high tensile strength, chemically resistant to sulfuric acid and inert to hydrogen sulfide sewer gas.
3. Chimney Seals shall be:
   a. Flex-Seal as manufactured by Sealing SYSTEMs Inc., Loretto MN, listed on SPL WW-511 Organic Lining for Wastewater Manholes.
   b. NPR-3501 as manufactured by Neopoxy International, Hayward, CA.
   c. Parsonpoxy FP as manufactured by Parson Environmental Products, Inc., Wernersville, PA.
   d. Reactamine 760 as manufactured by Carboline, St. Louis, MO. ▲
   e. Or Approved Equal.

B. Chimney Mechanical Seals
   1. Seals shall be designed to provide an interior flexible watertight seal between the manhole cover frame and cone section. The seal shall be rubber with stainless steel expansion bands. Seal shall be capable of repeated vertical and horizontal movements of not less than 2-inch installation with a minimum 25-year design lift.
   2. Rubber sleeves shall be extruded from a high-grade rubber compound meeting the applicable requirements of ASTM C923. Sleeves shall be double, or triple pleated with a minimum unexpanded vertical height of 8-inches, a minimum thickness of 3/16-inch, and have integrally formed top and bottom expansion band recesses and multiple sealing fins. Any splices shall be factory vulcanized and shall be able to withstand a 180-degree bend with no visible separation at splices.
   3. Expansion Bands shall be 16-gauge thickness, 1-3/4-inches wide and made of stainless-steel meeting ASTM A240, Type 316. Bands shall have an expansion mechanism capable of developing the pressure necessary to provide a watertight seal, a minimum adjustment range of not less than 2-inches and a positive locking mechanism. Bands shall be removable with minimum effort and reusable.

C. Ring Casting Seals
   1. Ring casting seals shall be used for the purpose of eliminating infiltration and forming a bond between the ring casting and grade adjustment ring or cone.
   2. Refer to mechanical seals listed under Chimney Mechanical Seals.

D. Precast Manhole Joint sealing.
   1. Joint seals may be accomplished with use of chemical grout or mechanical type inserts.
   2. Installation or application of the seal needs to be in accordance with the manufacturer's instructions in relation to preparation, mixing, and insertion or installation.
   3. Expanded Gasket, use of an elastomeric polyurethane resin-soaked oakum method, using dry twisted jute oakum meeting Federal Specification HH-P-117 or resin rod with polyurethane resin (water activated).
   4. Manufactured Seal, flexible seal portion of the seal is made of a rubber type product, it shall have a minimum thickness of 3/16", a minimum unexpanded width of 8 inches, and be fabricated from a high-grade rubber compound conforming to the applicable requirements of ASTM C923. The internal seal shall have a double pleated and the external seal a corrugated, coverage shall be made of the same material and have the same minimum thickness as the compressing the sleeve and extension against the manhole shall be fabricated from minimum 16-240, Type 304, for sheet and ASTM A479, Type 304, for rods.. Any screws, bolts or nuts used on these bands shall be stainless steel conforming to ASTM F593, Type 304.

2.13 MANHOLE FRAME AND COVER

A. Manhole frame and cover to meet requirements of City of St. Augustine Storm/Sewer Manhole Cover and Frame shown of Standard Construction Detail SS-1.
   1. Gray iron castings for manhole frames, covers, adjustment rings, and other items shall conform to the ASTM Designation A48, Class 30. Castings shall be true to pattern in form and dimensions and free of pouring faults and other defects which would impair their strength or otherwise make them unfit for the service intended. The seating surfaces between frames and covers shall be machined to fit true. No plugging or

filling will be allowed. Lifting or "pick" holes shall be provided but shall not penetrate the cover. Casting patterns shall conform to those shown or indicated on the STANDARD DETAILS. All manhole frames and covers shall be traffic bearing to meet AASHTO H-20 loadings. Frames shall be suitable for the future addition of a cast iron ring for upward adjustment of top elevation. In certain locations, such as in flood prone areas, install inflow dishes and/or gasketed covers. Locations where dishes and gaskets are to be installed will designated by the CITY.

2.14 MANHOLE ADJUSTMENT RINGS

A. Brick courses shall be a minimum of two (2) and a maximum of four (4). Mortar shall conform to ASTM C270, type M. Bricks shall be made of clay and conform to ASTM C216, grade SW, and sized 3 1/2 inches (w) x 8 inches (l) x 2 ¼ inches (h).

B. Precast concrete grade rings shall be reinforced in accordance with ASTM C478 latest edition. The inside dimension shall match the existing interior surface of the manhole. The exterior dimension shall not be less than the exterior dimension of the manhole at the top of the cone section. The grade ring shall be Type V, 4000 psi at 28 days.

2.15 INFLOW DISH

A. General
   1. An inflow dish shall be installed at manholes designated by the City.
   2. Inflow dishes and components shall be manufactured of material resistant to corrosion from atmospheres containing hydrogen sulfide and dilute sulfuric acid.
   3. The inflow dish material of construction depends on the location of the manhole.
   4. Inflow dishes shall include tethers.
   5. Inflow dishes shall allow venting of sewer gasses.

B. Dish Material
   1. Manholes located in undeveloped areas, gravel surface roads, residential asphalt surfaced roads may be manufacturered from high molecular weight polyethylene (HMWPE), high density polyethylene material, comply with UL Standard, 94-HB and meet all associated ASTM specifications related to Prime HDPE 250. Gaskets shall be closed cell neoprene material, .5" wide, and .125" minimum thickness, with pressure sensitive adhesive on one side. Straps to be woven nylon fastened to the dish body with stainless steel fasteners and washers.
   2. Manholes located on paved high traffic areas are to be manufactured from stainless steel.
      a. Fabricated from 304 or 316 stainless steel with a minimum thickness of 16 gauge.
      b. Gasket, matching HMWPE dishes.
      c. Tether manufactured from 3/16" braided stainless steel attached with a stainless-steel rivet and washers to prevent tether failure. Cable terminal end and eye manufactured from stainless steel.
      d. Relief valve, gas relief valve designed to release at a pressure of .5 to 1.5 psi and release less than 5 gallons of water in 24 hours. Valve is threaded and screwed into a hole drilled in the bottom of the insert. The valve is to be made from

material that is inert from Sulfuric Acid, Hydrogen Sulfide and other substances found in Sanitary Sewer Systems.

e. The City will designate manholes to receive stainless steel dishes.

2.16 MANHOLE LID SEALS

A. Cover seals shall be horizontal style.
B. Gaskets shall be minimum of .6" wide, and .15" thick.
C. Circumference of gaskets shall be capable of sealing with an outside diameter of 36 inches.
D. Cover lid, U-shaped pick hole plugs sized to fit and shall be supplied by Cretex Specialty Products or approved equal.

PART 3 - EXECUTION

3.01 GENERAL

A. Safety:
   1. The Contractor shall perform all work in strict accordance with all applicable OSHA, TOSHA, and manufacturer's safety standards. Each method of manhole rehabilitation is this Section requires some degree of manhole entry by workers. Particular attention is drawn to those safety requirements regarding confined space entry and respiratory protection from airborne particulate materials during cleaning and product mixing and application.
B. Work Notices
   1. Rehabilitation work notifications, door hangers, are to be distributed a minimum of 72 hours prior to commencement of any activities. Notices will not be required during Manhole, Wet Well and Stormwater Structure inspections provided driveways or streets access to and from residences or businesses is not restricted.
C. Maintenance of Traffic
   1. The Contractor must setup and maintain any necessary or required traffic control devices prior to commencing work and continue until work is complete and site restored.
D. Bypassing
   1. All plugging and bypassing must be in place and maintained prior to and until the manhole rehabilitation and testing allows for flow to be restored.
F. Contractor to submit an updated schedule of inspection or rehabilitation activities on a bi-weekly basis.

3.02 INSPECTION PREPARATION

A. Level 1 and 2 inspections shall be made by Confined Space Entry or Camera.
B. Contractor shall insert a measuring rod into the interior of the manhole to verify rim to invert distance measurements of the manhole, as well as the invert of each adjoining pipe.
C. City is responsible for location of buried and/or manhole discovered in field.
D. Contractor is solely responsible for all damages resulting from operations.

E. Upon completing inspections manhole cover and any displaced items moved back into place.
F. Inspection photos, reports and databases shall be delivered on an external hard drive. The external hard drive will become the property of the City.
G. Each inspection report shall be provided in PDF format to the City.
H. All data submittals shall include a data transmittal form indicating the manhole ID, street location, and date of the inspection.

3.03 DIGITAL PHOTOGRAPH VIEWS REQUIRED

A. Complete coverage shall include all surface features within 20-feet of the Work area to be used by the Contractor. Such coverage shall include, but not be limited to, all existing driveways, sidewalks, curbs, ditches, roadways, landscaping, trees, culverts, headwalls, and retaining walls, equipment, structures, pavements, manholes, vaults, handrails, etc. located within the work zone. Photographic coverage shall extend to the maximum height of all structures within this zone.

B. The photographer shall take special efforts to point out defects in the area and internal to the manhole.

C. All photographs shall be done during times of good visibility. No photograph shall be done during periods of visible precipitation, or when more than 10% of the ground area is covered with standing water, unless otherwise authorized by City.

D. The Contractor shall notify the City in writing 48-hours prior to commencement of photograph documentation. The City may provide a designated representative to accompany and observe all photography. Photographs completed without a City Representative present will be unacceptable unless specifically authorized by the City.

3.04 DIGITAL PHOTOGRAPH REQUIREMENTS

A. Major Locations:
   1. The Contractor shall provide color digital photograph of each manhole, wet well, stormwater structure and facilities adjacent to the work before construction starts.
   2. All photographs shall be taken with character generator operating with date, time, and location on photo. All photographs shall be delivered to the City.
   2. All photographs shall maintain viewer orientation. To this end, overall establishing views of all visible house and business addresses shall be used for the area view.
   3. All photographs shall be done during time of good visibility. No photographs shall be done during precipitation, mist or fog. Photographs shall be taken when sufficient sunlight is present to properly illuminate the subjects of photos and to produce bright, sharp images of those subjects.

3.05 GENERAL REHABILITATION PROCEDURES

A. All preparation, application, and finish work shall be in strict compliance with the product or system manufacturer's instructions.

B. Manufacturer's instructions will take precedence over the requirements in this specification.
C. Product or system applicator is required to be an approved applicator/installer from the manufacturer. Certification documentation is part of the required submittals under this section.
D. Cleaning:
    1. All concrete and masonry surfaces to be rehabilitated shall be clean. All grease, oil, laitance, coatings, loose bricks, mortar, unsound brick or concrete, and other foreign materials shall be completely removed.
    2. Water blasting utilizing a 210°F steam unit and proper nozzles shall be the primary method of cleaning; however, other methods such as wet or dry sandblasting, acid wash, concrete cleaners, degreasers, or mechanical means may be required to properly clean the surface.
        a. All surfaces on which these methods are used shall be thoroughly rinsed, scrubbed, and neutralized to remove cleaning agents and their reactant products. Debris resulting from cleaning shall be removed from the manhole and not discharged downstream.
    3. Cleaning and surface preparation will meet the above requirements unless otherwise dictated by the product or system manufacturer.
    4. Manufacturers cleaning and surface preparation requirements will take precedence.
    5. Remove and properly dispose of all debris from cleaning and surface preparations.
        1. All sanitary waste may be disposed of at the City Wastewater Treatment Plant at 501 Riberia Street. There is a designated discharge point at the City's plant for such waste. All other demolition materials will become the Contactor's property and are to be legally disposed. The City will not charge for sanitary waste disposal at the designated point at the plant. ▲
E. Stop Infiltration:
    1. Stop Active Leaks with patching material or infiltration control materials requirements described under paragraph 2.07.A applied according to manufacturer's instructions. Install deep weep holes as required to localize infiltration during application of patching materials. Plug weep holes after application with infiltration control material before applying liner materials.
    2. Severe Infiltration Control:
        a. Severe infiltrations conditions shall be established in the approved assessment report submittal referenced in paragraph 1.13.A/B.
        b. Exterior chemical curtain grouting shall be used to stop severe infiltrations.
        c. Only use manufacturer recommended and approved grouting materials that meet the requirements of paragraphs 2.04 and 2.05.
        d. Grouting shall be performed by manufacturer certified applicators and in strict accordance to their installation instructions. Refer to paragraph 3.04 for further grouting requirements.
F. Patching:
    1. All large holes or voids around joints, or pipes and all spalled areas and all holes caused by missing or cracked brick shall be patched.
    2. All missing mortar shall be repointed using a non-shrink patching mortar.
    3. All cracked or disintegrated material shall be removed from the area to be patched or repointed, exposing a sound subbase.

4. All cracks not subject to movement and greater than 1/16-inch in width shall be routed out to a minimum width and depth of 1/2-inch and patched with non-shrink rapid setting mortar suitable for exposures in Sanitary wastewater manholes meeting product requirements of article 2.06.

G. Flow Control:
   1. The Contractor shall be responsible for plugging or diverting the flow of sewage as needed for approved manhole rehabilitations.

H. Inverts and benches.
   1. Remove all loose grout and rubble from existing channel.
   2. Rebuild channel if required by reshaping and repairing slope of shelves or benches.
   3. Work shall include aligning inflow and outflow ports in such a manner as to prevent the deposition of solids at the transition point.
   4. All inverts shall follow the grades of the pipe entering the manhole.
   5. Changes in direction of the sewer and entering branch or branches shall have a true curve with the largest possible radius and shall be shaped to allow easy entrance of maintenance equipment including buckets or T.V. camera.

I. Lining System.
   1. Each lining system shall be installed in accordance with the manufacturer's recommendation to withstand groundwater pressures.
   2. For manholes greater than 12-feet in depth, the lining shall withstand the pressures associated with a groundwater depth equal to the manhole depth.
   3. Linings for all other manholes shall withstand the pressures associated with groundwater depth of 12-feet.
   4. Measure groundwater depth from manhole bench to top of ground surface.
   5. Application of products shall be by factory/manufacturer certified applicators.
   6. Spray equipment shall be specifically designed to accurately ratio and apply the lining/coating product.
   7. Equipment shall be in proper working order and shall be as recommended by the product manufacturer.
   8. Subsequent top coating or additional coats shall occur within the product's recoat time. Additional surface preparation procedures will be required if this recoat time is exceeded. The product manufacturer's re-coat time for the specific application, based on temperature and project conditions, and shall be strictly followed by the CONTRACTOR.
   9. Edges, corners, crevices, welds, and bolts shall be given a brush coat (stripe coat) for each coating. The stripe coat shall be applied by a brush and worked in both directions. Special attention shall be given to filling all crevices with coating.

3.05 CHEMICAL GROUT

A. Grouting shall be applied to a manhole for the purpose of eliminating infiltration prior to application of a lining, coating or other structural rehabilitation component.
B. Grout types and longevity in different soil conditions must be verified through the grout manufacture.
C. Provide 48-hour notice to the City prior to start of work for equipment testing.
D. Prevent material from entering gravity sewer collection system.
E. Demonstrate acceptable grout volumetric measuring technique.

F. Adjust chemical mixing ratios required for the specific application.
G. Do not block pipes entering/exiting manhole with grout. Use a camera or mirror to confirm pipes are not blocked.
H. Do not damage manhole structure during operations. Repair damage as directed by the City.
I. Manhole Sealing: Follow ASTM F2414 and as specified herein.

J. Brick Manholes.
   1. Drill grout injection holes in the manhole in strategic locations to re-direct flow coming through cracks and other defects in the wall, or to seal the entire exterior surface of the manhole, shall be in accordance with the recommendations of the grout manufacturer.
   2. Grout shall be injected through the drilled holes using the recommended probe and applying pressures that will effectively inject the grout but, not cause damage to the manhole structure or surrounding area.
   3. Injection holes shall be cleaned and patched as recommended by the manufacturer.

K. Precast Manholes
   1. Seal pipe connections as specified by drilling between the pipe and manhole opening and injecting grout.

   2. At precast joints inject grout through holes drilled at leaking joint.

L. Acceptance will be by visual inspection. Drips or running water will not be accepted. Damp spots will be accepted provided that if a cloth towel is rubbed on the surface there will be no transfer of water to the towel and the towel will not be damp/wet.

3.07 REPAIRING/REPLACING INVERT, BENCH

A. Construct invert channels to provide a smooth flow transition waterway with no disruption of flow at pipe-manhole connections.
B. Invert and bench to meet layout in City of St. Augustine Public Works Department applicable sanitary sewer manhole details. In form the City if existing manhole and pipe penetrations will not allow for the invert and/or bench to be replaced according to these details. The City will provide direction on how to proceed with the replacement.
C. Materials used for repair or replacement shall be as approved in the product submittals and include the manufacturers written instructions.
D. Preparation of the surface on which the repair or replacement is to be made is to be in accordance with the submitted and approved written instructions from the product manufacturer.

3.08 SPRAY APPLICATION OF THE CEMENTITIOUS MATERIAL

A. Material hose shall be coupled to an low-velocity spray application nozzle. Pumping of the material shall commence, and the mortar shall be atomized by the introduction of air at the nozzle, creating a low-velocity spray pattern for material application.

B. Spraying shall be performed by starting at the manhole invert and progressing up the wall to the corbel and chimney areas.
C. Material shall be applied to a specified uniform minimum thickness no less than 2-inches. Material shall be applied to the bench area in such a manner as to provide for proper drainage without ponding.

3.09 SPRAY APPLIED LIGHT-WEIGHT STRUCTURAL REINFORCED CEMENT

A. The surface prior to spraying shall be damp without noticeable free water droplets or running water.
B. Materials shall be spray-applied to a minimum uniform thickness to ensure that all cracks, crevices, and voids are filled, and a somewhat smooth surface remains after light troweling. The light troweling is performed to compact the material into voids and to set the bond.
C. The first application shall have begun to take an initial set (disappearance of surface sheen, which could be 15-minutes to 1-hour depending upon ambient conditions) before the second application to assure a minimum total finished thickness of 1/2-inch. The final finished thickness may need to be greater than 1/2-inch as recommended by the manufacturer to withstand groundwater pressures. A depth gauge shall be used during application, at various locations, to verify the required thickness. The surface then shall be troweled to smooth finish with care taken not to over trowel to bring additional water to the surface and weaken it. Manufacturer's recommendations shall be followed whenever more than 24-hours have elapsed between applications.
D. The bench covers used to catch debris shall be removed and the bench and invert sprayed such that a gradual slope is produced from the walls to the invert with the thickness at the edge of the invert being no less than 1/2-inch. The wall-bench intersection shall be rounded to a uniform radius the full circumference of the intersection.
E. No application shall be made to frozen surfaces or if freezing is expected to occur within the manhole for 24-hours after application. If ambient temperatures are in excess of 95°F, precautions shall be taken to keep the mix temperature at time of application below 90°F, using ice if necessary.
F. The final application shall have a minimum of 4-hours cure time before being subjected to active flow.

3.10 CENTRIFUGAL SPIN CASTING APPLICATION OF THE CEMENTITIOUS MATERIAL:

A. Material hose shall be coupled to a high-speed rotating applicator device. The rotating casting applicator shall then be positioned within the center of the manhole at either the top of the manhole chimney or the lowest point elevation corresponding to the junction of the manhole bench and walls.
B. The high-speed rotating applicator shall then be initialized, and pumping of the material shall commence. As the mortar begins to be centrifugally cast evenly around the interior of the manhole, the rotating applicator head shall be raised and/or lowered at a controlled retrieval speed conducive to providing a uniform material thickness on the manhole walls.
C. Controlled multiple passes are then made until the specified minimum finished thickness is attained. If the procedure is interrupted for any reason, simply arrest the retrieval of the applicator head until flows are recommenced.

D. Material thickness may be verified at any point with a depth gauge and shall be no less than a uniform 2-inches. If additional material is required at any level, the rotating applicator head shall be placed at that level and application shall recommence until that area is thickened.

3.11 CENTRIFUGALLY CAST STRUCTURAL REINFORCED CEMENT

A. Application procedures shall conform to the recommendations of the manufacturer.
B. The rotating casting applicator shall be positioned to evenly apply the material and be withdrawn at a rate to assure a final minimum thickness of 1-inch. The final finished thickness may need to be greater than 1-inch as recommended by the manufacturer to withstand groundwater pressures. A depth gauge shall be used during application, at various locations to verify the required thickness.
C. The bench covers used to catch debris shall be removed and the bench and invert sprayed, or hand applied so that a gradual slope is produced from the walls to the invert with the thickness at the edge of the invert being no less than 1/2-inch. The wall-bench intersection shall be rounded to a uniform radius the full circumference of the intersection.
D. No application shall be made to frozen surfaces or if freezing is expected to occur within the manhole for 24-hours after application. If ambient temperatures are in excess of 95°F, precautions shall be taken to keep the mix temperature at time of application below 90°F.
E. The final application shall have a minimum of 1-hour cure time as recommended by the manufacturer before being subjected to active flow.

3.12 SPRAYED APPLIED EPOXY RESIN SYSTEM

A. Application procedures shall conform to the recommendations of the manufacturer.

B. The epoxy resin shall be sprayed onto the surfaces of the manhole walls, benches, and inverts to produce a smooth coating and yield the required structural integrity and corrosion resistance. A depth gauge shall be used during application at various locations to verify the required thickness.

C. The epoxy resin shall be applied to a minimum thickness of 0.125-inches (125-mils) at the top of the manhole and gradually thickened in accordance with manufacturer's recommendations to withstand groundwater pressures. The application shall have a minimum cure time as recommended by the manufacturer before being subjected to active flow.

D. The sloped surface of the manhole bench shall be made non-skid by broadcasting aluminum oxide or sand into the surface prior to gelatin/set.

3.13 MULTI-COMPONENT LINER SYSTEM

A. Application procedures shall conform to the recommendations of the manufacturer.

B. The liner system shall be sprayed onto the surfaces of the manhole walls, benches, and inverts to produce a smooth surface. The spray equipment shall be specifically designed to accurately ratio and apply the liner system.

C. Final installation shall be a minimum of 500-mils.

D. The application shall have a minimum cure time as recommended by the manufacturer before being subjected to active flow.

3.14 MANHOLE LINER AND COATING REPAIR/REPLACEMENT

A. Occasionally installation of will result in the need to repair or replace a defective Manhole Liner. The Contractor shall outline specific repair or replacement procedures for potential defects that may occur in the Manhole Liner. Repair/replacement procedures shall be accordance with the Manhole Liner manufacturer's recommendations and shall be submitted as part of the PWS.
B. Defects in the installed Manhole Liner that will not affect the operation and long-term life of the product shall be identified and defined.
C. Repairable defects that may occur in the installed Manhole Liner shall be specifically defined by the Contractor based on manufacturer's recommendations, including a detailed step-by-step repair procedure, resulting in a finished product meeting the requirements of these contract specifications.
D. Un-repairable defects that may occur to the Manhole Liner shall be clearly defined by the Contractor based on the manufacturer's recommendations, including a recommended procedure for the removal and replacement of the Manhole Liner.

3.15 SANITARY SEWER MAIN AND LATERAL CONNECTIONS TO MANHOLES

A. Sanitary sewer lateral connections to rehabilitated manholes shall be reinstated to provide a seamless, leak free, and unobstructed flow connection between the new manhole lining or coating system and the lateral connections.
B. Connections are to be sealed during repairs or reconstruction of manhole base and invert.
C. Infiltration between connecting mains, laterals and manhole invert/base/walls shall follow the requirements of paragraph 3.05.E.

3.16 CHIMNEY SEALS

A. The Contractor is responsible for contacting the manufacturer for specific cure times of substrate materials prior to applying the chimney seal product.
B. Prior to surface preparation, infiltration shall be stopped by using a material which is compatible with the repair products and is suitable for top coating with the recommended coating product. The manufacturer shall verity the product compatibility, in writing, to the City.
C. Surface preparation by manufacturers approved method shall remove oils, grease, existing coatings, wax, loose debris, curing compounds, rust, efflorescence, sealers, salt, or other contaminants which may affect the performance and adhesion to the chimney seal to the substrate.

D. Application procedures shall conform to the recommendations of the product manufacturer, including environmental conditions, surface preparation, product mixing, handling, application and cure time.
E. Chimney seals, paragraph 2.12, shall include sealing the manhole cover frame.

3.17 RING CASTING SEALS

A. The Contractor shall furnish all material, equipment, tools and labor for the application of a ring casting seal to form a bond between the ring casting and grade adjustment ring or cone.
B. Preparation and installation shall be in accordance with the manufacturer's recommendations.

3.18 PRECAST CONCRETE JOINT SEALS

A. See section 2.12 for preparation, mixing, insertion and cleanout if grout is selected and approved for use.
B. Follow the instructions of the product manufacturer for surface preparation and installation of a mechanical surface seal if selected and approved for use.

3.19 MANHOLE RING AND COVER

A. Replacing manhole ring and cover.
   1. The manhole ring and cover shall be manufacturered and installed to match the existing chimney or cone.
   2. The manhole casting shall be smooth, true to pattern and free from projections, sand holes or defects. The machine bearing surfaces of the frame and cover shall have even bearing.
   3. Mounting surfaces shall be prepared in accordance with the bedding materials manufacturer's instructions.
   4. The casting shall be fully bedded in mortar with adjustment brick courses placed between the frame and manhole.
   5. The bedding mortar shall be non-shrink and inert to corrosion deterioration.
   6. Top of the manhole castings located in pavement, shouldered areas and sidewalks shall be set flush with grade and in the plane of the paved surface. Top of manhole castings located outside of these areas shall be placed 2" above grade prior to sodding.

3.20 RAISING OF EXISTING MANHOLE FRAME AND COVER.

A. Existing manholes that are below the grade described in article 3.19.A.6 shall be raised to meet this requirement.
B. The exterior of the adjustment rings shall be given two coats of waterproofing material, CS-55 by Concrete Sealants, Inc. or approved equal. Do not coat the mating surfaces of the rings.
C. Grade ring height may be a nominal 12" vertical adjustment with a maximum of 18".

D. Bedding mortar to be in accordance with article 2.14.A.

3.21 INFLOW DISHES

A. The manhole frame shall be cleaned of all dirt and debris before placing the manhole insert on the rim.
B. The insert shall be installed in compliance with the submitted and accepted manufacturer's recommendations. The insert shall be fully seated around the manhole frame rim to prevent water from infiltrating between the cover and manhole frame rim and shall not impede the proper seating of the manhole cover.
C. Locations where these no metallic inflow dishes are to be installed will be designated by the City.

3.22 MANHOLE LID SEALS

A. Seals to be installed in accordance with the manufacturer's instructions.
B. As a minimum the frame surfaces where the seal is to be installed are to be wire brushed in preparation to install seal.
C. Verify lid/frame surfaces true and allow proper compression of the lid seal.

3.23 MANHOLE REHABILITATION ACCEPTANCE

A. After all rehabilitation work has been completed, the manholes shall be visually inspected for leakage and tested by the Contractor as applicable to the rehabilitation's procedures applied to the respective manhole in the presence of the City and found to be acceptable.
B. Coatings shall be free of pinholes and hollow spots/voids and other defects that will reduce the service life of the applied system. Definition of defects will be as defined by the coating manufacturer.
C. Film thickness measurements will be based on the surface area covered and volume of coating applied. This thickness will then be verified via spark testing with the voltage setting adjusted to indicate thickness deficiencies.
D. Holiday Detection Test (Spark Testing) to identify pinholes, thin material and any defects that will affect the life and performance of the install coating/lining if applicable.
E. Adhesion Testing:
    1. A minimum of 10% of the manholes coated shall be tested for adhesion/bond of the coating to the substrate. Testing shall be conducted in accordance with ASTM D4541, ASTM D7234, or NACE SPO18. The City shall select the manholes to be tested.
    2. Adhesion testing does not apply to Sprayroq Spraywall lining.
F. If properties tested do not meet minimum requirements, the system or product shall be repaired or replaced by the contractor, at no cost to the City.
G. Photographic Inspections of post-rehabilitation condition of manhole.
    1. Refer to section 02764 for photographic inspection requirements.
    2. Submit post photographic inspections to the City within 10 calendar days.

H. Cementitious Material Property Testing
    1. Applies to cementitious repairs only. The purpose of this testing is used to confirm compliance with property requirements described in the under Part 2, Products.

2. One 2 x 2-inch sample cube shall be taken for each manhole where this material was applied. Samples shall be formed using the application method used for the rehabilitation. The sample cube will be sent to an independent testing lab approved by the City and tested for compression strength as described in ASTM C-109.

I. Frame Sealing Test

1. Leakage test – Following the expansion of the lower band a quality assurance test shall be performed to ensure effective sealing by pulling the upper section of the seal or extension inward to create a recess behind the seal where water can be poured. Pour the water behind the seal and observe the lower sealing area for any visible leaks. The sealing shall be considered effective if no water leaks from behind the seal at the lower sealing area.

J. Visual inspection.

K. Cover Sealing Test

1. The sealed manhole covers shall be visually inspected to ensure that the bearing surface was properly cleaned and that products were properly sized and installed according to the manufacturer's instructions.
2. Water shall be poured filling the opening between the frame and cover. If the water level in the gap remains constant the seal is acceptable. If the water leaks into the manhole the seal needs to be cleaned, adjusted, or replaced.

L. After the manhole rehabilitation work has been completed, the manhole shall be inspected by the Contractor in the presence of the City and the work shall be accepted if found satisfactory to the City. No evidence of visible leaks shall be allowed. Non-uniformity, sagging, lamination, holidays or other defects will be cause for rejection of the coating. All surfaces shall be tested for the presence of holidays and pinholes via spark testing at 100-volts per millimeter. The Contractor shall provide the testing equipment and perform the testing in the presence of the City. Any holidays or pinholes found during the testing shall be repaired and the surface re-tested until the surfaces are completely free of holidays and pinholes.

3.24 CLEANUP

A. After the installation work has been completed and the testing is acceptable, the Contractor shall clean up the entire project area. The Contractor shall dispose of all excess material and debris. The work area shall be left in a condition equal to or better than the prior condition.

3.25 WARRANTY

A. The Contractor shall guarantee materials and workmanship to be free from defects for a warranty period of 5-years from the date of final payment is approved by the City.

B. If at any time during the warranty period any leakage, cracking, or other discontinuity is identified and is attributable to this guarantee, the Contractor shall remove and replace or repair the failed item with new material at no cost to the City. No field repair shall be approved. This defect shall be repaired or replaced within (4) weeks from the date of defect notification to the contractor at no additional cost to the City.

C. The Contractor shall be responsible for all required replacement or repair costs associated with a rehabilitated item during the warranty period including all cost associated with backups, maintenance of traffic, and all other property damage.

D. Furnish an extended warranty for manhole rehabilitation materials from the Contractor and liner manufacturer for a total of 5-years from date of final completion.

E. Warranty Inspections
   1. Conduct visual inspection prior to the expiration of warranty to determine integrity of rehabilitation materials and water-tightness.
      a. Contractor to accompany City on these inspections.
      b. Inspect a minimum of 25% of manholes rehabilitated at locations selected by the City. If more than one manhole fails warranty inspection, inspect all manholes that had the same rehabilitation performed on the work order.

F. All subsequent maintenance and inspections on the manholes that were rehabilitated under a respective work order shall photographically document the manhole condition before and after such work. Maintenance may include CIPP lining, cleaning, or CCTV inspections of connected mains. CIPP lining may be full segment liners or sectional main or lateral liners. The record photos will include the date and time of the work. The photo records will be made available to the Contractor upon request.

PART 4 - METHOD OF MEASUREMENT AND PAYMENT CLARIFICATIONS:

4.01 Unit Pricing:

A. Manhole & Structure Resin Based Lining unit price line items A.1 through A.8 includes light surface preparation (filling barrel joints patching a couple of bug holes and similar), and resources for application and finishing.

   i. If the structure needs further surface preparation due to exposed wire, brick manholes, covering of an existing liner or rebuilding walls then unit price line item B.15 will apply for surface preparation.

   ii. Unit price line item B.15 will also apply for brick manholes and rehabilitation from high H2S gas for patching and profile. Cleaning, unit price line item C.32 is not included in line items A.1 through A.12.

   iii. These line items also include lining of the cone/corbels of manholes.

   iv. Selection of the thickness of lining will apply where there are structural deficiencies and where there is a highwater table. The increased thickness is applied to restore the load capacity of the structure.

B. Manhole & Structure Resin Based Lining unit price line items A.9 through A.12 apply for lining of square sanitary and stormwater structures and lining of manhole benches.

C. Unit price line item 13 include all work required to remove lining systems in existing manholes or lift station wet wells with exception to lining covered in line item 14.

D. Unit price line item 14 include all work required to remove T-lock, Epoxy or Polyurea type liners from existing manholes or wet wells.

E. Unit price line item B.16 covers chemical grout use for infiltration control. This line includes use of BASF MasterRoc polyurethane grouts.

F. Unit price line item B.17, Sand Blasting will apply for road oil removal in stormwater structures and grease traps as well and manhole ring and cover castings.

G. Unit price line item B.18, Bench and Invert Channel Repair. Units apply to the linear feet of the manhole diameter.

H. Unit price line items B.18 and B.19 cover manhole chimney repairs and replacement.

I. Unit price line item B.21 applies to manhole chimney and ring casting coating seals.

J. Unit price line item B.22 – 25 cover replacement of manhole ring and covers.

K. Unit price line item C.26 covers raising and leveling manhole frame and cover up to 4" in paved areas.

L. Unit price line item C.27 covers installation of manhole cover lid and pick hole seals.

M. Unit price line item C.28 – 31 covers providing and installing rainwater manhole cover protectors.

N. Unit Price line items under section E will apply when there is a need to raise manhole ring and covers greater than 4" (inches).

O. Unit price line item C.32 applies to Sanitary Manholes.

P. Unit price line item C.33 applies to lift stations and junction boxes. The unit price

Q. Unit price line items C.34 and 35 document the pre-work and post work conditions.

R. Unit price line item C.36 covers mobilization costs for manhole, lift station and storm water structures inspections.

S. Unit price line items C.37 includes level 1 general condition assessment of a manhole.

T. Unit price line item C.38 includes level 2 detailed assessment of a manholes condition for defining recommended rehabilitations and includes 360-degree flat paper of the video.

U. Unit price line item C.39 and 40 include all work and documentation for NASSCO level 1 and level 2 Inspections of sanitary lift station wet wells and similarly sized structures.

V. Unit price line items C.41 – 43 cover costs for cleaning sanitary manholes, stormwater structures and lift station wet wells for inspections.

W. Unit price line item C.61 and 62 requires a floating scanner for determining surface damage inside of a Box Culvert.

X. Unit price line item C.75 GPS mapping of manholes

Y. Unit price line item C.76 – C.79 includes the cost for renting pipe plugs.

Z. Unit price line items D.82 and 83 includes necessary MOT index for a typical single lane closure, signage, flagmen and accessories for each proposed structure.

AA. Unit price line item D.84 covers residential MOT which covers typical road work ahead signage and flagmen for needed areas. This line item may cover MOT that covers multiple structures.

BB. Unit price line item C.85 and 86 cover regular or emergency mobilization costs for a 4-man crew for rehabilitation work.

CC. Unit price line item C.87 covers the per diem cost for a 4-man crew to perform rehabilitations.

DD. Unit price line items E.88 and 89 will include invoiced services to perform bypassing functions. The services required will be covered in each proposal. Reference Section 01516 for Scope of Work.

EE. Unit price line item E89 will include costs for provide off-duty uniformed police officers to direct and maintain traffic on FDOT and St. Johns County roads. This item is in reference to Section 01570.1.02.E. ▲

FF. Unit price line item E93 will include costs for replacement of fencing, hedges and shrubs that were removed to facilitate the work.

GG. Unit price line item E91 bypass plug.

HH. Unit price line items E.91 through 93 cost items will be pre-approved by the Work Order Manager.

END OF SECTION

EXHIBIT B - INSURANCE REQUIREMENTS

At a minimum, Contractor shall acquire and maintain until completion of the Work the insurance coverage listed below, which constitutes primary coverage. Contractor shall not commence the Work until the City receives and approves Certificates of Insurance documenting required coverage. Contractor's General Liability policy shall include Endorsement CG 20101185, or equivalent, naming the City of St. Augustine ("City") as Additional Insured. All required policies shall include: (1) endorsement that waives any right of subrogation against the City for any policy of insurance provided under this requirement or under any state or federal worker's compensation or employer's liability act; (2) endorsement to give the City no less than thirty (30) days notice in the event of cancellation or material change. Certificates of Insurance must be accompanied by copies of the requested endorsements.

Any deductibles or self-insured retentions above $100,000 must be declared to and approved by the City. Approval will not be unreasonably withheld. Contractor is responsible for any deductible or self-insured retention. Insurance must be placed with insurers having an A.M. Best rating of A-V or greater. City receipt of insurance certificates providing less than the required coverage does not waive these insurance requirements.

(a) **Workers' Compensation Insurance.** Workers' compensation and employer's liability coverage, including maritime workers compensation, if applicable, in not less than the minimum limits required by Florida law. If Contractor claims an exemption from workers' compensation coverage, Contractor must provide a copy of the Certificate of Exemption from the Florida Division of Workers' Compensation for all officers or members of an LLC claiming exemption who will be participating in the Work. In addition, Contractor must provide a completed City "Affidavit (Non-Construction)" for non-construction contracts. Contractor is solely responsible for compliance with any Federal workers' compensation laws such as, but not limited to, Jones Act and USL&H Act, including any benefits available to any workers performing work on this project.

(b) **General Liability.** Commercial General Liability Insurance on an "Occurrence Basis," with limits of liability not less than $1,000,000/$2,000,000, for personal injury, bodily injury, and property damage. Coverage shall include: (1) contractual liability, (2) products and completed operations, (3) independent contractors, and (4) property in the care, control, or custody of the Contractor. Extensions shall be added or exclusions deleted to provide the necessary coverage.

(c) **Automobile Liability.** Minimum limits of $100,000/$300,000/$50,000

**If applicable, the following additional coverage may be required, depending upon the nature of the Work.

(**) **"Builder's Risk" Property Insurance.** Coverage amount shall be sufficient to insure the completed value of new project construction.

(**) **Maritime Workers' Compensation** insurance may be required if the work involves maritime activities, such as underwater diving, or work adjacent to navigable waters.

(**) **Watercraft Liability**. $300,000 for bodily injury and property damage.

(**) **Pollution/Environmental Impairment Liability Coverage**. Not less than $500,000 per occurrence and/or aggregate combined single limit, personal injury, bodily injury, and property damage.

(**) **Professional Liability**. (Per claim) $500,000 single limits..

EXHIBIT C – SAMPLE WORK ORDER
WORK ORDER AUTHORIZATION

Contract Number:_____ **Contract Name:** _____

Work Order Number: _____ **Project Name:**_____

Encumbrance Number: _____

Work Order Amount: _____

To: _____
_____
_____
_____

From: _____, Project Manager

Work Order Manager:
Name: _____
Phone: _____
Email: _____

Description of Work: All work shall be accomplished in accordance with the attached Scope of Work, Exhibit "A" – Scope of Work. Invoices shall reference the Contract Number, Work Order Number and Encumbrance number; include the information required; and be submitted to the Project Manager.

Special note:_____

Commencement Date: Work is authorized to proceed on the date this Work Order is executed by the City. **Commencement of the work authorized herein prior to execution of this Work Order by Contractor constitutes acceptance of all terms and conditions of this Work Order.** Payment will not be made until this Work Order has been signed by Contractor and received by the City.

Completion Date: All work pursuant to this Work Order shall be completed by (Completion Date). The Completion Date, if extended pursuant to the above-referenced contract governing this Work Order, shall not be extended beyond the current City fiscal year, ending on September 30, 20 .

_____ _____
Department Director: Date

_____ _____
Contractor Date

ATTACHMENT #1 - REQUIREMENTS FOR: 2 CFR PART 200 APPENDIX II

1. Equal Employment Opportunity.

"During the performance of this contract, the contractor agrees as follows:

(1) The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to the following: Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.

(2) The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive considerations for employment without regard to race, color, religion, sex, or national origin.

(3) The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(4) The contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.

(5) The contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(6) In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions as may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

(7) The contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (7) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the administering agency

may direct as a means of enforcing such provisions, including sanctions for noncompliance: Provided, however, That in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency the contractor may request the United States to enter into such litigation to protect the interests of the United States."

2. Davis Bacon Act and Copeland Anti-Kickback Act.

a. Applicability of Davis-Bacon Act. The Davis-Bacon Act only applies to the emergency Management Preparedness Grant Program, Homeland Security Grant Program, Nonprofit Security Grant Program, Tribal Homeland Security Grant Program, Port Security Grant Program, and Transit Security Grant Program. **It does not apply to other FEMA grant and cooperative agreement programs, including the Public Assistance Program.**

b. All prime construction contracts in excess of $2,000 awarded by non-Federal entities must include a provision for compliance with the Davis-Bacon Act (40 U.S.C. §§ 3141-3144 and 3146-3148) as supplemented by Department of Labor regulations at 29 C.F.R. Part 5 (Labor Standards Provisions Applicable to Contracts Covering Federally Financed and Assisted Construction)). See 2 C.F.R. Part 200, Appendix II, ¶ D.

c. In accordance with the statute, contractors must be required to pay wages to laborers and mechanics at a rate not less than the prevailing wages specified in a wage determination made by the Secretary of Labor. In addition, contractors must be required to pay wages not less than once a week.

d. The non-Federal entity must place a copy of the current prevailing wage determination issued by the Department of Labor in each solicitation. The decision to award a contract or subcontract must be conditioned upon the acceptance of the wage determination. The non-Federal entity must report all suspected or reported violations to the Federal awarding agency.

e. In contracts subject to the Davis-Bacon Act, the contracts must also include a provision for compliance with the Copeland "Anti-Kickback" Act (40 U.S.C. §3145), as supplemented by Department of Labor regulations at 29 C.F.R. Part 3 (Contractors and Subcontractors on Public Building or Public Work Financed in Whole or in Part by Loans or Grants from the United States). The Copeland Anti- Kickback Act provides that each contractor or subrecipient must be prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public work, to give up any part of the compensation to which he or she is otherwise entitled. The non-Federal entity must report all suspected or reported violations to FEMA.

f. The regulation at 29 C.F.R. § 5.5(a) does provide the required contract clause that applies to compliance with both the Davis-Bacon and Copeland Acts. However, as discussed in the previous subsection, the Davis-Bacon Act does not apply to Public Assistance recipients and subrecipients. **In situations where the Davis-Bacon Act does not apply, neither does the Copeland "Anti-Kickback Act."** However, for purposes of grant programs where both clauses do apply, FEMA requires the following contract clause:

"Compliance with the Copeland "Anti-Kickback" Act

(1) Contractor. The contractor shall comply with 18 U.S.C. § 874, 40U.S.C. § 3145, and the

requirements of 29 C.F.R. pt. 3 as may be applicable, which are incorporated by reference into this contract.

(2) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clause above and such other clauses as the FEMA may by appropriate instructions require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all of these contract clauses.

(2) Breach. A breach of the contract clauses above may be grounds for termination of the contract, and for debarment as a contractor and subcontractor as provided in 29 C.F.R. § 5.12."

3. Contract Work Hours and Safety Standards Act

"Compliance with the Contract Work Hours and Safety Standards Act.

(1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

(2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (1) of this section the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1) of this section, in the sum of $10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1) of this section.

(3) Withholding for unpaid wages and liquidated damages. The (write in the name of the Federal agency or the loan or grant recipient) shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2) of this section.

(4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with

the clauses set forth in paragraphs (1) through (4) of this section."

4. Rights to Inventions Made Under a Contract or Agreement.

a. Stafford Act Disaster Grants. This requirement **does not apply to the Public Assistance**, Hazard Mitigation Grant Program, Fire Management Assistance Grant Program, Crisis Counseling Assistance and Training Grant Program, Disaster Case Management Grant Program, and Federal Assistance to Individuals and Households – Other Needs Assistance Grant Program, as FEMA awards under these programs do not meet the definition of "funding agreement."

b. If the FEMA award meets the definition of "funding agreement" under 37 C.F.R. § 401.2(a) and the non-Federal entity wishes to enter into a contract with a small business firm or nonprofit organization regarding the substitution of parties, assignment or performance of experimental, developmental, or research work under that "funding agreement," the non-Federal entity must comply with the requirements of 37 C.F.R. Part 401 (Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements), and any implementing regulations issued by FEMA. See 2 C.F.R. Part 200, Appendix II, ¶ F.

c. The regulation at 37 C.F.R. § 401.2(a) currently defines "funding agreement" as any contract, grant, or cooperative agreement entered into between any Federal agency, other than the Tennessee Valley Authority, and any contractor for the performance of experimental, developmental, or research work funded in whole or in part by the Federal government. This term also includes any assignment, substitution of parties, or subcontract of any type entered into for the performance of experimental, developmental, or research work under a funding agreement as defined in the first sentence of this paragraph.

5. Clean Air Act & Federal Water Pollution Control Act

The following provides a sample contract clause concerning compliance for contracts of amounts in excess of $150,000:

Clean Air Act

(1) The contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. § 7401 et seq.

(2) The contractor agrees to report each violation to the (name of the state agency or local or Indian tribal government) and understands and agrees that the (name of the state agency or local or Indian tribal government) will, in turn, report each violation as required to assure notification to the (name of recipient), Federal Emergency Management Agency, and the appropriate Environmental Protection Agency Regional Office.

(3) The contractor agrees to include these requirements in each subcontract exceeding $100,000 financed in whole or in part with Federal assistance provided by FEMA.

Federal Water Pollution Control Act

(1) The contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq.

(2) The contractor agrees to report each violation to the (name of the state agency or local or Indian tribal government) and understands and agrees that the (name of the state agency or local or Indian tribal government) will, in turn, report each violation as required to assure notification to the (name of recipient), Federal Emergency Management Agency, and the appropriate Environmental Protection Agency Regional Office.

(3) The contractor agrees to include these requirements in each subcontract exceeding $100,000 financed in whole or in part with Federal assistance provided by FEMA.

6. Debarment and Suspension

"Suspension and Debarment

(1) This contract is a covered transaction for purposes of 2 C.F.R. pt. 180 and 2 C.F.R. pt. 3000. As such the contractor is required to verify that none of the contractor, its principals (defined at 2 C.F.R. § 180.995), or its affiliates (defined at 2 C.F.R. § 180.905) are excluded (defined at 2 C.F.R.§ 180.940) or disqualified (defined at 2 C.F.R. § 180.935).

(2) The contractor must comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C and must include a requirement to comply with these regulations in any lower tier covered transaction it enters into.

(3) This certification is a material representation of fact relied upon by (insert name of subrecipient). If it is later determined that the contractor did not comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C, in addition to remedies available to (name of state agency serving as recipient and name of subrecipient), the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment.

(4) The bidder or proposer agrees to comply with the requirements of 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C while this offer is valid and throughout the period of any contract that may arise from this offer. The bidder or proposer further agrees to include a provision requiring such compliance in its lower tier covered transactions."

7. Byrd Anti-Lobbying Amendment

Byrd Anti-Lobbying Amendment, 31 U.S.C. § 1352 (as amended)

Contractors who apply or bid for an award of $100,000 or more shall file the required certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an

employee of a member of Congress in connection with obtaining any Federal contract, grant, or any other award covered by
31 U.S.C. § 1352. Each tier shall also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are
forwarded from tier to tier up to the recipient.

APPENDIX A, 44 C.F.R. PART 18 – CERTIFICATION REGARDING LOBBYING

Certification for Contracts, Grants, Loans, and Cooperative Agreements

(To be submitted with each bid or offer exceeding $100,000)

The undersigned [Contractor] certifies, to the best of his or her knowledge, that:

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of
the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any
Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

2. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee
of a Member of Congress in connection with this Federal contract, grant, loan, or
cooperative agreement, the undersigned shall complete and submit Standard Form- LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

3. The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31, U.S.C. § 1352 (as amended by the Lobbying Disclosure Act of 1995). Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000
and not more than $100,000 for each such failure.

The Contractor, _____, certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Contractor understands and agrees that the provisions of 31 U.S.C. § 3801 *et seq.*,
apply to this certification and disclosure, if any.

_____

Signature of Contractor's Authorized Official

_____

Name and Title of Contractor's Authorized Official

_____

Date

8. Procurement of Recovered Materials

a. In the performance of this contract, the Contractor shall make maximum use of products containing recovered materials that are EPA- designated items unless the product cannot be acquired—

(1) Competitively within a timeframe providing for compliance with the contract performance schedule;

(2) Meeting contract performance requirements; or

(3) At a reasonable price.

b. Information about this requirement is available at EPA's Comprehensive Procurement Guidelines web site, http://www.epa.gov/cpg/. The list of EPA-designate items is available at http://www.epa.gov/cpg/products.htm.".

9. Additional FEMA Requirements

a. The Uniform Rules authorize FEMA to require additional provisions for non- Federal entity contracts. FEMA, pursuant to this authority, requires or recommends the following:

b. Changes.

To be eligible for FEMA assistance under the non-Federal entity's FEMA grant or cooperative agreement, the cost of the change, modification, change order, or constructive change must be allowable, allocable, within the scope of its grant or cooperative agreement, and reasonable for the completion of project scope. FEMA recommends, therefore, that a non-Federal entity include a changes clause in its contract that describes how, if at all, changes can be made by either party to alter the method, price, or schedule of the work without breaching the contract. The language of the clause may differ depending on the nature of the contract and the end-item procured.

c. Access to Records.

"Access to Records. The following access to records requirements apply to this contract:

(1) The contractor agrees to provide (insert name of state agency or local or Indian tribal government), (insert name of recipient), the FEMA Administrator, the Comptroller General of the United States, or any of their authorized representatives access to any books, documents, papers, and records of the Contractor which

are directly pertinent to this contract for the purposes of making audits, examinations, excerpts, and transcriptions.

(2) The Contractor agrees to permit any of the foregoing parties to reproduce by any means whatsoever or to copy excerpts and transcriptions as reasonably needed.

(3) The contractor agrees to provide the FEMA Administrator or his authorized representatives access to construction or other work sites pertaining to the work being completed under the contract."

10. DHS Seal, Logo, and Flags

a. The contractor shall not use the DHS seal(s), logos, crests, or reproductions of flags or likenesses of DHS agency officials without specific FEMA pre- approval.

11. Compliance with Federal Law, Regulations, and Executive Orders

a. This is an acknowledgement that FEMA financial assistance will be used to fund the contract only. The contractor will comply will all applicable federal law, regulations, executive orders, FEMA policies, procedures, and directives.

12. No Obligation by Federal Government

a. The Federal Government is not a party to this contract and is not subject to any obligations or liabilities to the non-Federal entity, contractor, or any other party pertaining to any matter resulting from the contract.

13. Program Fraud and False or Fraudulent Statements or Related Acts

a. The contractor acknowledges that 31 U.S.C. Chap. 38 (Administrative Remedies for False Claims and Statements) applies to the contractor's actions pertaining to this contract.

ATTACHMENT #2 - REQUIREMENTS FOR HUD 24 CFR 85.36

1. Compliance with Clean Air Act, Clean Water Act and Environmental Protection Agency regulations

Clean Air and Water. (Applicable to contracts in excess of $100,000). Because of 24 CFR 85.36(i)(12) and federal law, the Design Professional shall comply with applicable standards, orders, or requirements issued under section 306 of the Clean Air Act (42 U.S.C. § 1857h-4 transferred to 42 USC § 7607, section 508 of the Clean Water Act (33 U.S.C. § 1368), Executive Order 11738, and Environmental Protection Agency regulations (40 CFR part 15), on all contracts, subcontracts, and subgrants of amounts in excess of $100,000.

2. Mandatory standards and policies with Energy Policy and Conservation Act

Energy Efficiency. Pursuant to Federal regulations (24 C.F.R 85.36(i)(13)) and Federal law, except when working on an Indian housing authority Project on an Indian reservation, the Design Professional shall comply with the mandatory standards and policies relating to energy efficiency which are contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act (Pub. L. 94-163 codified at 42 U.S.C.A. § 6321 et. seq.).

ATTACHMENT #3 - ADDITIONAL REQUIREMENTS

1. Minority Business Enterprises (MBE) and Women Business Enterprises (WBE)

I. The Sub-Recipient agrees to include in the subcontract that (i) the subcontractor is bound by the terms of this Agreement, (ii) the subcontractor is bound by all applicable state and federal laws and regulations, and (iii) the subcontractor shall hold the Division and Sub-Recipient harmless against all claims of whatever nature arising out of the subcontractor's performance of work under this Agreement, to the extent allowed and required by law.

II. CONTRACTING WITH SMALL AND MINORITY BUSINESSES, WOMEN'S BUSINESS ENTERPRISES, AND LABOR SURPLUS AREA FIRMS

(a) If the Sub-Recipient, with the funds authorized by this Agreement, seeks to procure goods or services, then, in accordance with 2 C.F.R. §200.321, the Sub-Recipient shall take the following affirmative steps to assure that minority businesses, women's business enterprises, and labor surplus area firms are used whenever possible:

i. Placing qualified small and minority businesses and women's business enterprises on solicitation lists;
ii. Assuring that small and minority businesses, and women's business enterprises are solicited whenever they are potential sources;
iii. Dividing total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by small and minority businesses, and women's business enterprises;
iv. Establishing delivery schedules, where the requirement permits, which encourage participation by small and minority businesses, and women's business enterprises;
v. Using the services and assistance, as appropriate, of such organizations as the Small Business Administration and the Minority Business Development Agency of the Department of Commerce; and
vi. Requiring the prime contractor, if subcontracts are to be let, to take the affirmative steps listed in paragraphs (i) through (v) of this section.

(b) The requirement outlined in subparagraph a. above, sometimes referred to as "socioeconomic contracting," does not impose an obligation to set aside either the solicitation or award of a contract to these types of firms. Rather, the requirement only imposes an obligation to carry out and document the six affirmative steps identified above.

(c) The "socioeconomic contracting" requirement outlines the affirmative steps that the Sub-Recipient must take; the requirements do not preclude the Sub-Recipient from undertaking additional steps to involve small and minority businesses and women's business enterprises.

(d) The requirement to divide total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by small and minority businesses, and women's business enterprises, does not authorize the Sub-Recipient to break a single project down into smaller components in order to circumvent the micro-purchase or small purchase thresholds so as to utilize streamlined acquisition procedures (e.g. "project splitting").

ATTACHMENT #4 – DAVID-BACON WAGE DECISIONS

EXHIBIT D – UNIT PRICE SCHEDULE

Item No.	Description	Unit	Unit Price
A – MANHOLE & STRUCTURES COATING - POLYURETHANE			
1	Manhole Protective Resin Based Lining 48" Diameter 1/8" Minimum Thickness	VF	$328.00
2	Manhole Structural Resin Based Lining 48" Diameter 1/4" Minimum Thickness	VF	$376.00
3	Manhole Structural Resin Based Lining 48" Diameter 1/2" Minimum Thickness	VF	$521.00
4	Manhole Structural Resin Based Lining 48" Diameter 1" Minimum Thickness	VF	$811.00
5	Manhole Protective Resin Based Lining 60" Diameter 1/8" Minimum Thickness	VF	$410.00
6	Manhole Structural Resin Based Lining 60" Diameter 1/4" Minimum Thickness	VF	$470.00
7	Manhole Structural Resin Based Lining 60" Diameter 1/2" Minimum Thickness	VF	$651.25
8	Manhole Structural Resin Based Lining 60" Diameter 1" Minimum Thickness	VF	$1,013.75
9	Structure / Manhole Protective Resin Based Lining 1/8" Minimum Thickness	SF	$26.50
10	Structure / Manhole Structural Resin Based Lining 1/4" Minimum Thickness	SF	$31.00
11	Structure / Manhole Structural Resin Based Lining 1/2" Minimum Thickness	SF	$42.00
12	Structure / Manhole Structural Resin Based Lining 1" Minimum Thickness	SF	$65.00
B – MANHOLE & STRUCTURES REPAIR			
13	Removal of Existing Manhole or Wetwell Lining System (Excluding T-Lock Epoxy or Polyurea Liners)	SF	$9.00
14	Removal of Existing Manhole or Wetwell T-Lock, Epoxy or Polyurea Liners	SF	$22.00
15	Patching & Profiling - Cementitious Grout Only	SF	$12.00
16	Infiltration Control - Chemical Grout	GAL	$125.00
17	Surface Preparation - Sand Blasting	SF	$10.00
18	Bench and Invert Channel Repair	LF	$225.00
19	Chimney Repairs	VF	$225.00
20	Chimney Replacement	VF	$675.00
21	Chimney sealing (Construction Joint at Ring and Cover)	EA	$285.00
22	Manhole Rim & Cover Replacement (STD 24" Diameter) - Paved Areas	EA	$1,150.00
23	Manhole Rim & Cover Replacement (STD 24" Diameter) - Grassed Areas	EA	$950.00
24	Manhole Rim & Cover Replacement (3PC COSA DETAIL SS1)- Paved Areas	EA	$1,550.00
25	Manhole Rim & Cover Replacement (3PC COSA DETAIL SS1)- Grassed Areas	EA	$1,250.00
26	Raise / Re-Level Existing Frame and Cover for Street Adjustment (up to 4")	EA	$600.00
27	Provide and Install Manhole Cover lid & Pick Hole seals	EA	$275.00
28	Install Rain Water Protector STD 24" Stainless	EA	$365.00
29	Install Rain Water Protector Large 31.5" Stainless	EA	$485.00
30	Install Rain Water Protector STD 24" HDPE	EA	$135.00

31	Install Rain Water Protector Large 31.5" HDPE	EA	$190.00
C. CLEANING, TELEVISING AND ASSISSMENT			
32	Cleaning Manholes for Rehabilitation	EA	$150.00
33	Cleaning Structures for Rehabilitation	EA	$1,000.00
34	Pre and Post Photographs(USB) Manholes for Rehabilitation	EA	$150.00
35	Pre and Post Photographs(USB) Structures for Rehabilitation	EA	$300.00
36	Mobilization (Inspection only)	WK	$1,500.00
37	Manhole Inspection Level 1	EA	$125.00
38	Manhole Inspection Level 2	EA	$185.00
39	Structure (Wet Well) Inspection Level 1	EA	$1,300.00
40	Structure (Wet Well) Inspection Level 2 (Includes scan)	EA	$1,750.00
41	Cleaning Sewer Manholes (CCTV purposes only)	EA	$45.00
42	Cleaning Stormwater Structures (CCTV purposes only)	EA	$65.00
43	Cleaning Wetwells (CCTV / Inspection purposes only)	EA	$600.00
44	Light Storm Drain Cleaning From ROW (Right of way) 8"-10"	LF	$4.75
45	Light Storm Drain Cleaning From ROW (Right of way) 12"-15"	LF	$8.25
46	Light Storm Drain Cleaning From ROW (Right of way) 16"-24"	LF	$12.25
47	Light Storm Drain Cleaning From ROW (Right of way) 30"-36"	LF	$29.00
48	Light Storm Drain Cleaning From Side and Rear Easements 8"-10"	LF	$9.40
49	Light Storm Drain Cleaning From Side and Rear Easements 12"-15"	LF	$16.40
50	Light Storm Drain Cleaning From Side and Rear Easements 16"-24"	LF	$24.75
51	Light Storm Drain Cleaning From Side and Rear Easements 30"-36"	LF	$58.50
52	Increase for "Medium" cleaning of storm drain to above line items 44-51	LF	$1.75
53	Increase for "Heavy" cleaning of storm drain to above line items 44-51	LF	$3.50
54	Storm Drain CCTV 8" - 10"	LF	$3.75
55	Storm Drain CCTV 12" - 18"	LF	$3.75
56	Storm Drain CCTV 18 - 24"	LF	$3.75
57	Storm Drain CCTV 24" - 30""	LF	$3.75
58	Storm Drain CCTV 30" - 42"	LF	$3.75
59	Storm Drain CCTV 42" - 54"	LF	$3.75
60	Storm Drain CCTV 54" - 66"	LF	$3.75
61	Box Culvert Top Scan	LF	$10.50
62	Box Culvert Bottom Debris Mapping scan	LF	$5.50
63	CCTV Sanitary pipe inspection - includes light cleaning 8"-10" Diameter	LF	$3.00
64	CCTV Sanitary pipe inspection - includes light cleaning 12"-15" Diameter	LF	$3.25
65	CCTV Sanitary pipe inspection - includes light cleaning 16"-24" Diameter	LF	$6.50
66	Dye Testing of Sewer	EA	$850.00
67	Dye Flooding of Sewer	EA	$1,250.00
68	Wastewater Flow Monitoring Equipment Rental and Installation in existing Structures	EA	$2,750.00
69	Wastewater Flow Monitoring Monitoring and Maintenance	EA / Month	$650.00

70	Rainfall Monitoring Equipment Rental and Installation in existing Structures	EA	$850.00
71	Rainfall Monitoring Monitoring and Maintenance	EA / Month	$300.00
72	Line cleaning / Jetting for Sanitary	LF	$3.25
73	Increase for "Medium" cleaning of sanitary sewer line, ADD to above line item 72	LF	$1.25
74	Increase for "Heavy" cleaning of sanitary sewer line, ADD to above line item 72	LF	$2.50
75	GPS Mapping of Requested Manholes	EA	$150.00
D – ANCILLARY SERVICES			
76	Plug Rental 6" - 10"	DAY	$125.00
77	Plug Rental 10" - 16"	DAY	$150.00
78	Plug Rental 16" - 24"	DAY	$200.00
79	Plug Rental 24" - 36"	DAY	$250.00
80	Bypass Pumper Truck	HOUR	$325.00
81	Bypass Vac-Truck	HOUR	$325.00
82	Maintenance of Traffic (MOT) -Arterial (single lane closure)	EA	$1,250.00
83	Maintenance of Traffic (MOT) - FDOT (single lane closure)	EA	$1,500.00
84	Maintenance of Traffic (MOT) - Neighborhood (Simple MOT including Flagmen)	EA	$600.00
85	Mobilization Standard (per Crew)	WK	$2,450.00
86	Mobilization Emergency (per crew)	EA	$3,750.00
87	Meals/Hotel/Lodging (per crew)	DAY	$600.00
E – COST OF INVOICE PLUS OH/P ON MISCELLANEOUS SERVICES. City to authorize use of these items			
88	Bypass Pumping Services		**15% OH/P**
89	Maintenance of Traffic CUSTOM INDEX		**15% OH/P**
90	Bypassing Plug (HAVE TO ORDER)		**15% OH/P**
91	Miscellaneous / Unexpected Materials or Services		**15% OH/P**
92	Extra / Miscellaneous		**15% OH/P**
93	Extra / Miscellaneous		**15% OH/P**
BOND AMOUNT			
94	Bond amount calculated at 3% of total bid Price 1	**3%**	

CONFORMED 09-16-2020

CITY OF
ST AUGUSTINE
EST. 1565
NATION'S OLDEST CITY

August 13, 2021

Engineered Spray Solutions, LLC
Attn: Mr. James Collier
1306 Banana Road
Lakeland, FL 33810

RE: Renewal #1 to Contract #PW2020-05 for Sanitary Sewer Manhole Inspections and Rehabilitation

Dear Mr. Collier:

Accompanying this cover letter for your firm's records is the completely executed Renewal #1 between the City of St. Augustine and Engineered Spray Solutions, LLC for Sanitary Sewer Manhole Inspections and Rehabilitation. We look forward to continuing an excellent working relationship.

Please feel free to contact me at my office (904) 209-4305 or, via email, at swhitener@citystaug.com if you have any questions.

Sincerely,

Sharon F. Whitener, CPPO
Procurement Manager

SFW

Enclosure

xc: John P. Regan, City Manager
Meredith L. Breidenstein, Assistant City Manager
Reuben C. Franklin, Jr., Public Works Director
Todd J. Grant, Utilities Director
James C. Piggott, General Services Director
File

FIRST RENEWAL OF THE AGREEMENT BETWEEN THE CITY OF ST. AUGUSTINE AND ENGINEERED SPRAY SOLUTIONS LLC FOR SANITARY SEWER MANHOLE INSPECTIONS AND REHABILITATION PROJECT

THIS RENEWAL AGREEMENT is entered into by and between the CITY OF ST. AUGUSTINE (the "City"), whose mailing address is P. O. Box 210, St. Augustine, Florida 32085, and ENGINEERED SPRAY SOLUTIONS LLC, ("Contractor"), whose address is 1306 Banana Road, Lakeland, Florida 33810.

The City entered into an Agreement with Contractor on October 9, 2020 for Sanitary Sewer Manhole Inspections and Rehabilitation Project for a term ending on September 30, 2021. The Agreement included the option to renew up to four (4) consecutive years. The City and Contractor now desire to renew the Agreement for an additional two (2) year term, October 1, 2021 through September 30, 2023 (Renewal #1).

In consideration of the mutual covenants contained herein and for other good and valuable consideration, the parties agree to the following:

1. The Agreement, Contract No. PW2020-05, is renewed for an additional two (2) year term beginning October 1, 2021 and ending September 30, 2023. For satisfactory performance of the Work outlined in the Contract during this additional term period, the City agrees to pay Contractor in accordance with the Agreement's Cost Schedule.

2. **EMPLOYMENT ELIGIBILITY.** Contractor must comply with F.S. 448.095 and use the United States Department of Homeland Security's E-Verify system ("E-Verify") to verify the employment eligibility of all persons hired by Contractor during the term of this Agreement to work in Florida. Additionally, if Contractor uses subcontractors to perform any portion of the Work (under this Agreement), Contractor must include a requirement in the subcontractor's contract that the subcontractor use E-Verify to verify the employment eligibility of all persons hired by subcontractor to perform any such portion of the Work. Contractor must include a requirement in the subcontractor's contract that the subcontractor use E-Verify to verify the employment eligibility of all persons hired by subcontractor to perform any such portion of the work. Answers to questions regarding E-Verify as well as instructions on enrollment may be found at the E-Verify website: www.uscis.gov/e-verify.

All other terms and conditions of the Agreement are hereby ratified and continue in full force and effect.

SIGNATURES APPEAR ON THE FOLLOWING PAGE

IN WITNESS WHEREOF, the parties hereto have executed, or caused to be executed by their duly authorized officials, this Agreement in duplicate, each of which shall be deemed an original on the day and year first above written.

CITY OF ST. AUGUSTINE,
FLORIDA a municipal corporation

ATTEST:

Name: Darlene Galanko
City Clerk

By: _____

Printed Name: John P. Regan

(SEAL)

Title: City Manager

Date: 8/11/21

ENGINEERED SPRAY SOLUTIONS LLC

Signed, sealed and delivered
in the presence of:

_____
Witness

By: _____

Printed Name: Adam Webb

Printed Name: Lewis G. Collier

Title: CEO & Owner

_____
Witness

Date: 8-3-2021

Printed Name: Jessica Morales

APPROVED AS TO FORM AND
LEGAL SUFFICIENCY:

_____
Isabelle C. Lopez, City Attorney

SECOND RENEWAL OF THE AGREEMENT BETWEEN THE CITY OF ST. AUGUSTINE AND ENGINEERED SPRAY SOLUTIONS LLC FOR SANITARY SEWER MANHOLE INSPECTIONS AND REHABILITATION PROJECT

THIS RENEWAL AGREEMENT is entered into by and between the CITY OF ST. AUGUSTINE (the "City"), whose mailing address is P. O. Box 210, St. Augustine, Florida 32085, and ENGINEERED SPRAY SOLUTIONS LLC, ("Contractor"), whose address is 1306 Banana Road, Lakeland, Florida 33810.

The City entered into an Agreement with Contractor on October 9, 2020 for Sanitary Sewer Manhole Inspections and Rehabilitation Project for a term ending on September 30, 2021. The Agreement included the option to renew up to four (4) consecutive years. On August 11, 2021, the Agreement was renewed for an additional two (2) year term, October 01, 2021 through September 30, 2023. The City and Contractor now desire to renew the Agreement for an additional two (2) year term, October 1, 2023 through September 30, 2025 (Renewal #2).

In consideration of the mutual covenants contained herein and for other good and valuable consideration, the parties agree to the following:

1. The Agreement, Contract No. PW2020-05, is renewed for an additional two (2) year term beginning October 1, 2023 and ending September 30, 2025. For satisfactory performance of the Work outlined in the Contract during this additional term period, the City agrees to pay Contractor in accordance with the Agreement's Cost Schedule.

All other terms and conditions of the Agreement are hereby ratified and continue in full force and effect.

SIGNATURES APPEAR ON THE FOLLOWING PAGE

IN WITNESS WHEREOF, the parties hereto have executed, or caused to be executed by their duly authorized officials, this Agreement in duplicate, each of which shall be deemed an original on the day and year first above written.

CITY OF ST. AUGUSTINE,
FLORIDA a municipal corporation

ATTEST:

Name: Darlene Galambos
City Clerk

By: _____

Printed Name: John P. Regan

(SEAL)

Title: City Manager

Date: 5/26/23

ENGINEERED SPRAY SOLUTIONS LLC

Signed, sealed and delivered
in the presence of:

Jim Collier
Witness

By: Jim Collier (May 25, 2023 09:32 EDT)

Printed Name: Jim Collier

Title: Authorized rep/project manager

Adam Webb
Adam Webb (May 25, 2023 09:37 EDT)
Witness

Date: May 25, 2023

Printed Name: Adam Webb

APPROVED AS TO FORM AND
LEGAL SUFFICIENCY:

Isabelle C. Lopez, City Attorney

Contract PW2020-06 Renewal #2 PAT for Sanitary Sewer Cleaning, Inspection, and Renewal.

Final Audit Report 2023-05-25

Created:	2023-05-18
By:	Joshua Pfieffer (jPfieffer@citystaug.com)
Status:	Signed
Transaction ID:	CBJCHBCAABAAoNb0-hgT55dkgtp9swh1sCtUdD6gXm9h

"Contract PW2020-06 Renewal #2 PAT for Sanitary Sewer Clea ning, Inspection, and Renewal." History

Document created by Joshua Pfieffer (jPfieffer@citystaug.com)
2023-05-18 - 8:54:06 PM GMT

Document e-signed by Joshua Pfieffer (jPfieffer@citystaug.com)
Signature Date: 2023-05-18 - 8:56:40 PM GMT - Time Source: server

Document emailed to Sharon Whitener (swhitener@citystaug.com) for signature
2023-05-18 - 8:56:42 PM GMT

Email viewed by Sharon Whitener (swhitener@citystaug.com)
2023-05-19 - 12:34:56 PM GMT

Document e-signed by Sharon Whitener (swhitener@citystaug.com)
Signature Date: 2023-05-19 - 12:36:03 PM GMT - Time Source: server

Document emailed to sslaughter@citystaug.com for signature
2023-05-19 - 12:36:07 PM GMT

Email viewed by sslaughter@citystaug.com
2023-05-19 - 12:40:59 PM GMT

Signer sslaughter@citystaug.com entered name at signing as Stephen Slaughter
2023-05-19 - 12:42:03 PM GMT

Document e-signed by Stephen Slaughter (sslaughter@citystaug.com)
Signature Date: 2023-05-19 - 12:42:05 PM GMT - Time Source: server

Adobe Acrobat Sign

Document emailed to rfranklin@citystaug.com for signature
2023-05-19 - 12:42:07 PM GMT

Email viewed by rfranklin@citystaug.com
2023-05-19 - 12:46:01 PM GMT

Signer rfranklin@citystaug.com entered name at signing as Reuben Franklin
2023-05-19 - 12:46:35 PM GMT

Document e-signed by Reuben Franklin (rfranklin@citystaug.com)
Signature Date: 2023-05-19 - 12:46:37 PM GMT - Time Source: server

Document emailed to Diane Partridge (dpartridge@aegion.com) for signature
2023-05-19 - 12:46:38 PM GMT

Email viewed by Diane Partridge (dpartridge@aegion.com)
2023-05-19 - 3:44:10 PM GMT

Email viewed by Diane Partridge (dpartridge@aegion.com)
2023-05-24 - 2:31:34 PM GMT

Email viewed by Diane Partridge (dpartridge@aegion.com)
2023-05-25 - 7:27:15 PM GMT

Document e-signed by Diane Partridge (dpartridge@aegion.com)
Signature Date: 2023-05-25 - 7:28:00 PM GMT - Time Source: server

Document emailed to Janet Hass (jhass@aegion.com) for signature
2023-05-25 - 7:28:04 PM GMT

Email viewed by Janet Hass (jhass@aegion.com)
2023-05-25 - 8:17:31 PM GMT

Document e-signed by Janet Hass (jhass@aegion.com)
Signature Date: 2023-05-25 - 8:17:55 PM GMT - Time Source: server

Document emailed to Ursula Youngblood (uyoungblood@aegion.com) for signature
2023-05-25 - 8:17:57 PM GMT

Email viewed by Ursula Youngblood (uyoungblood@aegion.com)
2023-05-25 - 10:12:06 PM GMT

Document e-signed by Ursula Youngblood (uyoungblood@aegion.com)
Signature Date: 2023-05-25 - 10:12:56 PM GMT - Time Source: server

Agreement completed.
2023-05-25 - 10:12:56 PM GMT

Adobe Acrobat Sign

CITY COMMISSION OF THE CITY OF WILDWOOD

EXECUTIVE SUMMARY

SUBJECT: **Chemical Storage Tank Replacement for the Oxford Water Treatment Plant for the Amount of $35,128.00**

REQUESTED ACTION: Staff Recommends Approval

CONTRACT: Vendor/Entity: Guardian Equipment Inc

Effective Date: 12/17/2024 Termination Date:

Managing Division/Department: Utility Department / Water Division

BUDGET IMPACT: This is a budgeted item in the 24/25 fiscal year budget. Funds for this purchase can be found in account 401-533-60-6300 (Capital Improvement Other)

HISTORY/FACTS/ISSUES:

One of the two sulfuric acid storage tanks at the Oxford Water Treatment plant needs to be replaced. Staff budgeted to replace and upgrade to a larger tank size (2,000 gallons) to accommodate the future expansion of the water treatment plant so that the tanks should need to be replaced when the expansion occurs. Staff recommends approval to purchase the replacement tank from the City's chemical maintenance contractor, Guardian Equipment, for the amount of $35,128.00. See attached quote and contract.

GUARDIAN EQUIPMENT, INC.

330 Hickman Drive, Sanford, FL 32771 PH:888-928-3700 / 407-936-2216 FX:407-936-2217

December 17, 2024

Mr. Wayne Bouchard
Wildwood, City of
Wastewater Treatment Plant
1290 Industrial Drive
Wildwood, City of

RE: OXFORD WATER TREATMENT PLANT
HOUSTON STORAGE TANK - SULFURIC ACID STORAGE

Hi Wayne,

As per our conversation, we are pleased to offer the following information for your review and consideration.

ONE (1) Houston 1990 Gallon Polyethylene Double Wall Sulfuric Acid Storage Tank
Primary Tank: 7’ I.D. X 6’ 11” tall, 8” Freeboard
1.7 specific gravity; 1.2 safety factor
Polyethylene tank construction, black in color
Polyethylene fittings are 150# rated with polypropylene encapsulated steel backing rings
Tank will share a common flat top Tank will share a common flat bottom Secondary
Secondary Tank: ~7’ 8” I.D. X 7’ 7’-8” tall (including fittings)
1.5 specific gravity; 1.2 safety factor
Polyethylene tank construction Tank will be black in color
Polyethylene fittings are 150# rated with polypropylene encapsulated steel backing rings
Tank designed for ambient temperature; maximum 100°F Tank designed for atmospheric pressure.
Fill: 2” welded ANSI flange
Drain: 3” welded ANSI flange (outlet)
Vent: 4” welded ANSI flange (vent-primary tank)
Return: 2” welded ANSI flange
Emergency Vent: 6” emergency vent
Manway: 22” threaded
Drain (secondary tank): 3” welded ANSI flange
Vent: 3” welded ANSI flange

Set of non-seismic rated polypropylene tie downs
PE Nameplate Tank will be hydro tested for 24 hours
Five Year Warranty
Delivery
Installation
Removal of existing tank

Price: $ 35,128.00

- Freight has been included.
- **The customer is responsible for evacuating the existing tank of chemicals before the installation starts.**

Should you have any questions or need additional information, please feel free to contact me at 407.902.8870.

Sincerely,

Kim Newman
Guardian Equipment, Inc.

PROFESSIONAL SERVICES AGREEMENT
Chemical Feed Systems Maintenance and Repair Services

THIS AGREEMENT is made this 11th day of March, 2024, by and between City of Wildwood (hereafter referred to as "City"), whose address is 100 N Main Street, Wildwood, Florida 34785, and Guardian Equipment, Inc. (hereafter referred to as "Contractor"), whose address is 330 Hickman Dr., Sanford, FL 32771.

WHEREAS, the City has need of professional services for Chemical Feed Systems Maintenance and Repair Services; and,

WHEREAS, the parties desire to enter into a written agreement outlining the duties, responsibilities and compensation of Contractor, based on the Contractor's response to RFP #2024-18 – Request for Proposals for Chemical Feed Systems Maintenance and Repair Services.

NOW, THEREFORE, in consideration of the mutual covenants and agreements contained herein, it is hereby agreed as follows:

1. The relationship of the Contractor to the City will be that of a professional contractor to provide the professional and technical services required under this agreement in accordance with acceptable professional practices and ethical standards applicable to the Contractor's profession, and Contractor will endeavor to provide to the City prompt and efficient services to the best of its ability.

2. Contractor is hereby retained and employed as the Chemical Feed Systems Maintenance and Repairs Services Contractor and will work with the City to provide said services in accordance with the scope of services outlined in RFP #2024-18.

3. Contractor agrees to prepare and complete a report to the City, detailing the status of services provided pursuant to this Agreement at least ninety (90) days prior to the expiration of the term of this Agreement, or at least ninety (90) days prior to the expiration of any renewal term of this Agreement. Contractors may be asked to present the deliverables in person for review by staff or for discussion at a scheduled City Commission meeting.

4. The term of this Agreement shall commence on 3/11/2024 and continue in full force through 3/11/2027, unless otherwise terminated as provided in paragraph five (5) of this Agreement. This Agreement may be renewed on an annual basis for additional consecutive one-year periods, if agreed to in writing by both parties, at least sixty (60) days prior to the expiration of this Agreement, including any periods of renewal. The term of this Agreement does not relieve the Contractor of any future responsibility as described in paragraph eight (8) of this Agreement.

5. This Agreement may be terminated by either party upon thirty (30) days prior written notice to the other party at the address designated in this Agreement for receiving such notice. If this agreement is terminated, Contractor shall be authorized to receive payment for all work performed up to the date of termination.

6. With regard to compensation paid to Contractor, Contractor shall furnish to the City on a monthly basis an itemized invoice detailing all of Contractor's hours, services, expenses and any other services utilized by the City during the preceding month. Invoice shall be itemized pursuant to and in accordance with the attached Fee Schedule. The contractor shall compute the total amount due for the preceding month and all amounts due. Contractor shall be paid on a monthly basis pursuant to the provisions of the Local Government Prompt Payment Act, F.S. 218. The contractor acknowledges and agrees that the rates set forth in the Fee Schedule shall remain fixed throughout the duration of the Agreement and thereafter shall only be adjusted by mutual written agreement of both parties.

7. General Considerations.
   a. All reports, drawings, designs, specifications, notebooks, computations, details, and calculation documents prepared by the Contractor and presented to the City pursuant to this Agreement are and remain the property of the City as instruments of service.

b. All analyses, data, documents, models, modeling, reports, and tests performed or utilized by Contractor shall be made available to the City upon request and shall be considered public records, pursuant to F.S. 119.0701.

c. Contractor shall keep all books, records, files, drawings, plans and other documentation, including all electronically stored items, which concern or relate to the services required hereunder, for a minimum of three (3) years from the date of expiration or termination of this Agreement, or as otherwise required by any applicable law, whichever date is later. The City shall have the right to order, inspect and copy all such Records as often as it deems necessary during any such period of time. The right to audit, inspect, and copy records shall include all of the records of sub-Contractors (if any).

d. Contractor shall, at all times, comply with the Florida Public Records Law, the Florida Open Meeting Law and all other applicable laws, rules and regulations of the State of Florida.

e. Contractor shall, at all times, carry Professional Liability, General Liability, Automobile and Worker's Compensation Insurance pursuant to the insurance requirements in RFP #2024-18, naming City as an additional insured in each such policy.

f. Upon Contractor's written request, the City will furnish, or cause to be furnished, such reports, studies, instruments, documents, and other information as Contractor and City mutually deem necessary, and Contractor may rely upon same in performing the services required under this agreement.

g. The City and Contractor each bind itself and its successors, legal representatives and assigns to the other party to this agreement and to the partners, successors, legal representatives and assigns of such other party to this agreement, in respect to all covenants of this agreement; and neither the City nor Contractor shall assign or transfer their interest in this agreement without the prior written consent of the other party.

8. Should any other professional services be called for by the City which are not otherwise set forth in this Agreement or any of its attachments or exhibits, said charges shall be agreed upon in advance by the parties hereto. The Contractor may be required to provide additional services to the City on challenges, public protests, administrative hearings or similar matters. The Contractor shall be available to represent the City, serve as an expert witness and provide supporting documentation as necessary.

9. The Contract Documents, which comprise the entire Contract between City and Contractor and which are further incorporated herein by reference, consist of the following:

a. Request for Proposals (RFP)
b. Vendor's RFP Documents, including submitted exceptions
c. Permits / Licenses
d. All RFP Addenda Issued Prior to RFP Opening Date
e. All Modifications and Change Orders Issued
f. Services hourly rates, as attached to this contract.

10. The Contractor agrees to indemnify and hold harmless the City of Wildwood, and their elected officials, employees and volunteers from and against all claims, losses and expenses, including legal costs, arising out of or resulting from, the performance of this contract, provided that any such claims, damage, loss of expenses is attributed to bodily injury, sickness, disease, personal injury or death, or to injury to or destruction of tangible property including the loss or loss of use resulting there from and is caused in whole or in part by any negligent act or omission of the Contractor.

11. Contractor, its agents, servants, or employees shall, in no manner, whatsoever be construed as the employees, agents, servants or representatives of the City and shall have not expressed or implied power or authority to act in any manner whatsoever for or on behalf of the City, except as provided in the scope of services called for herein. Contractor is hereby designated as an independent contractor to the City and none of the employees, agents or servants of the Contractor shall have, or be entitled to, any of the fringe benefits applicable to employees of the City.

12. In the event of default by either party hereto, the defaulting party shall be liable for all costs and expenses, including reasonable attorney's fees and costs incurred by the other party in enforcing its rights hereunder, whether litigation be instituted or not, at the trial court and appellate court level.

13. Contractor does hereby waive any and all "venue privilege" and or "diversity of citizenship privileges" and specifically agrees that any action brought for the enforcement, construction or interpretation of this agreement shall be maintained in the County or Circuit Court in and for Sumter County, Florida, and Contractor hereby specifically waives its right or privilege to institute any action of any kind or nature whatsoever, against the City in any other State Court, Federal Court or administrative tribunal.

14. This Agreement represents the entire and integrated agreement between the parties and supersedes all prior negotiations, representations, or agreements, either written or verbal. If any provision of this Agreement is declared to be invalid or unenforceable, the remainder shall continue to operate in full force and effect.

15. This Agreement cannot be changed or modified, unless by written agreement signed by all parties hereto.

16. In performing services hereunder, Contractor shall comply with all federal, state and local laws and regulations. Contractor shall be responsible for identifying and obtaining all permits necessary to complete the scope of services. Contractor shall be responsible for obtaining, at its sole cost and expense, all necessary licenses and other governmental approvals required in order for Contractor to provide the type of services required hereunder.

17. Contractor shall immediately notify City in writing of any commitments during the term of this Agreement which may constitute a potential or actual conflict of interest with respect to the scope of services to be performed for the City.

18. Each of the WHEREAS clauses listed above is hereby re-alleged and incorporated into this Agreement as if otherwise fully stated herein.

19. Any notices required by this Agreement shall be mailed to the following individual(s), by Certified Mail, Return Receipt requested:

FOR THE CITY

Name: Jason McHugh

Address: 100 N Main Street, Wildwood, FL 34785

Title: City Manager

Date: 3/11/2024

FOR THE CONTRACTOR

Name: Mark A Cliburn Jr. / Mark A Cliburn Jr.

Address: 330 Hickman Drive Sanford FL 32771

Title: President

Date: 5/2/24

IN WITNESS WHEREOF, the parties have signed this agreement the day and year first above written.

ATTEST:

By: Jessica Barnes

CITY OF WILDWOOD

Ed Wolf

By: Ed Wolf, Mayor

Date Signed: 5/9/24

ATTEST:

By: J Taymen

Contractor

Mark A Cliburn Jr.

By: Mark A Cliburn Jr.

Date Signed: 5/2/24

CITY COMMISSION OF THE CITY OF WILDWOOD

EXECUTIVE SUMMARY

SUBJECT: **Generator Replacement for the 501 Water Treatment Facility for the Amount of $235,508.24**

REQUESTED ACTION: Staff Recommends Approval

CONTRACT: Vendor/Entity: Ring Power

Effective Date: 1/03/2025 Termination Date:

Managing Division/Department: Utility Department / Water Division

BUDGET IMPACT: This is an approved budgeted project in the 24/25 fiscal year budget. Funds are available in account 401-533-60-6300 (Capital Improvement - Other).

HISTORY/FACTS/ISSUES:

Staff is requesting to replace the existing outdated generator at the 501 Water Treatment Facility. The generator has reached the end of its life cycle due to age and the addition of new equipment (Well #3 / Iron Filter System), which added power demand to the generator. The new generator will provide continuous, uninterrupted service and increase reliability during storm and emergency events. The new generator is sized for build out of the facility and will be procured from Sourcewell Cooperative Pricing Agreement through Ring Power Caterpillar. Attached is a quote from Ring Power Ocala for the amount of $235,508.24.

Your North and Central Florida Caterpillar Dealer

ST. AUGUSTINE	TALLAHASSEE	OCALA	ORLANDO	TAMPA
500 World Commerce Prkwy	32000 Blue Star Hwy	6202 N US 301/441	9901 Ringhaver Dr.	9797 Gibsonton Dr
St. Augustine, FL 32092	Midway, FL 32343	Ocala, FL 34475	Orlando, FL 32824	Riverview, FL 33569
904-737-7730	**850-562-1622**	**352-732-4600**	**407-855-6195**	**813-671-3700**

SALES ***SERVICE*** ***PARTS*** ***LEASING*** ***RENTALS***

QUOTATION / SALES AGREEMENT / SECURITY AGREEMENT

DATE: **1.3.24**

QUOTATION NO: **RB25-31436228.Sourcewell**

CUSTOMER NAME: **City of Wildwood Sourcewell ID 18981**
ADDRESS:
CITY/STATE/ZIP: **Wildwood, FL 34785**
PHONE:

ESTIMATED SHIPPING LEAD TIME: **Generator Estimated 12-14 Weeks.**
SHIPPING VIA/FOB: Jobsite
ESTIMATED SUBMITTAL LEAD TIME: 2 WEEKS
JOBSITE ADDRESS: TBD
CITY/STATE/ZIP: Wildwood FL 34785
PROJECT NAME: **WW 501 WTP Upgrades**

TERMS: *Full payment is due from buyer within 10 days of delivery or pickup of the equipment.*

DESCRIPTION OF MATERIAL	UNIT PRICE	EXTENSION
One (1) New Caterpillar C13 Diesel Engine Generator Set, 350kW, Rated Standby, 480V, Three Phase, UL2200 Equipped as Follows: • GCCP1.2 Generator Controller • Block Heater • Electronic Governor • Alarms and Shutdowns • Generator Run Relay • Permanent Magnet-Excited • Battery: Wet with Cables, Battery Charger 10 A • Generator Circuit Breaker 600 Amp, Adjustable Trip • Secondary Breaker For Load Banking, 600 Amp, Adjustable Trip • **Enclosure** Aluminum Sound Attenuated. 150 MPH Wind Load Certification • Internal Exhaust Silencer • **Fuel Tank** UL142- 25 Hour Sub-Base 660 Gallon With Rupture Basin • Color: Cat White Enclosure Black Base Tank.		

Quotation Accepted By: _____Date: _____Tax No.: _____

Customer: _____Salesman's Signature: Rainer Berry

Rainer Berry. EPG Sales Central FL

TERMS

- This offer to sell is made subject to buyer's acceptance within ten (10) days from this date (noted above).
- All quoted prices are subject to change without notice. Those in effect on the date of shipment shall prevail.
- Subject to credit approval.
- Used equipment is subject to prior sale.
- A 25% restocking fee will be assessed for all canceled orders or returned materials.
- No retainage to be withheld. Ring Power Systems is an equipment supplier and is not a sub-contractor. Our terms are Net 10 days.
- **No sales tax is included.**
- Buyer grants to seller a security interest in all equipment as described in this agreement until such time as payment is made in full in accordance with the terms and conditions of this agreement and in accord with the seller's credit application.
- **Ring Power requires a purchase order to secure this sales agreement.**

Quote No. **RB25-31436228.Sourcewell**

DESCRIPTION OF MATERIAL	UNIT PRICE	EXTENSION
SCOPE OF INSTALLATION • All Material, & Labor For A Complete Installation. • Prior to removal of existing generator, a temporary back up generator will be provided and connected to customer connection cabinet. Pricing is included for up to two weeks. • Remove Existing Generator – Relocate to Customer Destination • Modify Existing Pad & Relocate Stub Up Area • Relocate Conduit for New Stub Up Area • Upsize / Replace all Power & Control Wiring From Transfer Switch to New Generator. Control Wiring In Dedicated Conduit • Excavation For Wiring Replacement Included • Deliver, Offload, Set, Connect, & Anchor New Generator. Connecting to Existing Transfer Switch. • Pull Vacuum on Fuel Tank **Start-up**: Perform FDEP Testing & Documentation Required for Customer Fuel Tank Registration & Insurance. FUEL BY OTHERS. Perform Required Caterpillar Commissioning. Perform a 2 Hour Generator Full Load Test. Perform a System Building Customer Witness Transfer Test. Basic Customer Instruction is Included. **O&M's** One (1) Set of Operation and Maintenance Manuals **Warranty**: *5 Year Platinum Plus Caterpillar ECS*		
Total Net Per Sourcewell Contract # 092222-CAT	**$235,508.24**	**$235,508.24**

NOTE:

- **Purchase orders must include the current Sourcewell Contract Number 092222-CAT and the Customer Sourcewell Member Number - 18981**

Notice to Buyer:

This quotation is valid for 30 days. Due to the fluctuating costs associated with key materials such as steel, aluminum, and copper, and other manufacturer delays beyond Ring Power's control, we reserve the right to review quotation pricing at the time of order and again at time of equipment release. If material costs increase by greater than 2%, Ring Power will update our quotation accordingly. We appreciate your understanding during this volatile time and look forward to partnering with you as we work through it together.

See Page 3 For Additional Notes

DESCRIPTION OF MATERIAL	UNIT PRICE	EXTENSION

NOTE

1. **The above price includes start-up, testing, and customer training (during normal business hours, Monday-Friday, 8 AM - 4PM). Equipment installation must complete and equipment ready to start-up. This includes all auxiliary power for generator/enclosure accessories, interconnect wiring, Remote Annunciators, etc. If there are questions regarding the locations for termination, our Project Manager will assist you. Return service calls due to incomplete installation (outside of Ring Power's control) may result in additional charges.**
2. **Training that is to be videotaped, requires Ring Power approval in advance. RPC "Video Recording Agreement" / waiver signed by the customer / end-user in advance. Videographer / Recording Equipment to be provided by others.**
3. **Third Party Testing provided by others (i.e. NETA, Infrared Scanning, etc…)In some cases, based on the generator set package weights and dimensions, items may ship loose and must be re-assembled by the contractor on site. Those items might include the fuel tank, load frame & generator, generator enclosures, mufflers, etc…**
4. **For fuel tanks over 550 Gallons, it is the Contractor or Owners responsibility to notify the appropriate State, and/or local regulatory agencies prior to delivery of the fuel storage tank so that it can be inspected prior to fueling. The FDEP Registration form will be provided in the Ring Power Submittal. Per FDEP Breach of Integrity Testing Guidance, tanks will ship from the factory with a vacuum/gauge installed. On-site testing is not included.**
5. **No sales tax included**
6. **Proposal is based on information supplied by the Customer, & Review of Previous Submittal.**
7. **No specifications, drawings, or diagrams were received or reviewed. General exception is taken to any other specifications and drawings not available at time of quotation. Equipment supplied will be limited to that described in this proposal.**
8. **Equipment shipped will be invoiced for at the time of delivery.**
9. **Ring Power will not release equipment for production until we have received the signed sales agreement or PO and signed and approved submittal from our customer. This is done to insure that we are providing quality equipment that fits our customer's needs. If you need any assistance, please contact your sales representative.**

Thank you for considering Ring Power Systems for your generator needs

Rainer Berry

Rainer Berry

Ring Power Systems, Retail Generator Sales NE Florida, Central Fl
904-494-7561 Office 904-679-9706 Cell
Rainer.Berry@Ringpower.com

Caterpillar, Inc.

Electrical Energy Power Generation Equipment

#092222-CAT

THIS DOCUMENT IS FOR INFORMATIONAL PURPOSES ONLY AND IS NOT A PART OF THE CONTRACT BETWEEN SOURCEWELL AND SUPPLIER.

If you would like to purchase off this contract or for questions regarding products and pricing, the Supplier Contact Information can be found at:

Caterpillar Inc.: Contract 092222-CAT | Sourcewell (sourcewell-mn.gov)

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Sourcewell

Solicitation Number: RFP #092222

CONTRACT

This Contract is between Sourcewell, 202 12th Street Northeast, P.O. Box 219, Staples, MN 56479 (Sourcewell) and Caterpillar Inc., 5212 N. O'Connor Blvd., Suite 1100, Irving, TX 75039 (Supplier).

Sourcewell is a State of Minnesota local government unit and service cooperative created under the laws of the State of Minnesota (Minnesota Statutes Section 123A.21) that offers cooperative procurement solutions to government entities. Participation is open to eligible federal, state/province, and municipal governmental entities, higher education, K-12 education, nonprofit, tribal government, and other public entities located in the United States and Canada. Sourcewell issued a public solicitation for Electrical Energy Power Generation Equipment with Related Parts, Supplies, and Services from which Supplier was awarded a contract.

Supplier desires to contract with Sourcewell to provide equipment, products, or services to Sourcewell and the entities that access Sourcewell's cooperative purchasing contracts (Participating Entities).

1. TERM OF CONTRACT

A. EFFECTIVE DATE. This Contract is effective upon the date of the final signature below.

B. EXPIRATION DATE AND EXTENSION. This Contract expires November 22, 2026, unless it is cancelled sooner pursuant to Article 22. This Contract may be extended one additional year upon the request of Sourcewell and written agreement by Supplier.

C. SURVIVAL OF TERMS. Notwithstanding any expiration or termination of this Contract, all payment obligations incurred prior to expiration or termination will survive, as will the following: Articles 11 through 14 survive the expiration or cancellation of this Contract. All other rights will cease upon expiration or termination of this Contract.

2. EQUIPMENT, PRODUCTS, OR SERVICES

A. EQUIPMENT, PRODUCTS, OR SERVICES. Supplier will provide the Equipment, Products, or Services as stated in its Proposal submitted under the Solicitation Number listed above.

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Supplier's Equipment, Products, or Services Proposal (Proposal) is attached and incorporated into this Contract.

All Equipment and Products provided under this Contract must be new and the current model. Supplier may offer used, close-out or refurbished Equipment or Products if they are clearly indicated in Supplier's product and pricing list. Unless agreed to by the Participating Entities in advance, Equipment or Products must be delivered as operational to the Participating Entity's site.

This Contract offers an indefinite quantity of sales, and while substantial volume is anticipated, sales and sales volume are not guaranteed.

B. WARRANTY. Supplier warrants that all Equipment, Products, and Services furnished are free from liens and encumbrances, and are free from defects in design, materials, and workmanship. In addition, Supplier warrants the Equipment, Products, and Services are suitable for and will perform in accordance with the ordinary use for which they are intended. Supplier's dealers and distributors must agree to assist the Participating Entity in reaching a resolution in any dispute over warranty terms with the manufacturer. Any manufacturer's warranty that extends beyond the expiration of the Supplier's warranty will be passed on to the Participating Entity.

C. DEALERS, DISTRIBUTORS, AND/OR RESELLERS. Upon Contract execution and throughout the Contract term, Supplier must provide to Sourcewell a current means to validate or authenticate Supplier's authorized dealers, distributors, or resellers relative to the Equipment, Products, and Services offered under this Contract, which will be incorporated into this Contract by reference. It is the Supplier's responsibility to ensure Sourcewell receives the most current information.

3. PRICING

All Equipment, Products, or Services under this Contract will be priced at or below the price stated in Supplier's Proposal.

When providing pricing quotes to Participating Entities, all pricing quoted must reflect a Participating Entity's total cost of acquisition. This means that the quoted cost is for delivered Equipment, Products, and Services that are operational for their intended purpose, and includes all costs to the Participating Entity's requested delivery location.

Regardless of the payment method chosen by the Participating Entity, the total cost associated with any purchase option of the Equipment, Products, or Services must always be disclosed in the pricing quote to the applicable Participating Entity at the time of purchase.

A. SHIPPING AND SHIPPING COSTS. All delivered Equipment and Products must be properly packaged. Damaged Equipment and Products may be rejected. If the damage is not readily

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apparent at the time of delivery, Supplier must permit the Equipment and Products to be returned within a reasonable time at no cost to Sourcewell or its Participating Entities. Participating Entities reserve the right to inspect the Equipment and Products at a reasonable time after delivery where circumstances or conditions prevent effective inspection of the Equipment and Products at the time of delivery. In the event of the delivery of nonconforming Equipment and Products, the Participating Entity will notify the Supplier as soon as possible and the Supplier will replace nonconforming Equipment and Products with conforming Equipment and Products that are acceptable to the Participating Entity.

Supplier must arrange for and pay for the return shipment on Equipment and Products that arrive in a defective or inoperable condition.

Sourcewell may declare the Supplier in breach of this Contract if the Supplier intentionally delivers substandard or inferior Equipment or Products.

B. SALES TAX. Each Participating Entity is responsible for supplying the Supplier with valid tax-exemption certification(s). When ordering, a Participating Entity must indicate if it is a tax-exempt entity.

C. HOT LIST PRICING. At any time during this Contract, Supplier may offer a specific selection of Equipment, Products, or Services at discounts greater than those listed in the Contract. When Supplier determines it will offer Hot List Pricing, it must be submitted electronically to Sourcewell in a line-item format. Equipment, Products, or Services may be added or removed from the Hot List at any time through a Sourcewell Price and Product Change Form as defined in Article 4 below.

Hot List program and pricing may also be used to discount and liquidate close-out and discontinued Equipment and Products as long as those close-out and discontinued items are clearly identified as such. Current ordering process and administrative fees apply. Hot List Pricing must be published and made available to all Participating Entities.

4. PRODUCT AND PRICING CHANGE REQUESTS

Supplier may request Equipment, Product, or Service changes, additions, or deletions at any time. All requests must be made in writing by submitting a signed Sourcewell Price and Product Change Request Form to the assigned Sourcewell Supplier Development Administrator. This approved form is available from the assigned Sourcewell Supplier Development Administrator. At a minimum, the request must:

- Identify the applicable Sourcewell contract number;
- Clearly specify the requested change;
- Provide sufficient detail to justify the requested change;

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- Individually list all Equipment, Products, or Services affected by the requested change, along with the requested change (e.g., addition, deletion, price change); and
- Include a complete restatement of pricing documentation in Microsoft Excel with the effective date of the modified pricing, or product addition or deletion. The new pricing restatement must include all Equipment, Products, and Services offered, even for those items where pricing remains unchanged.

A fully executed Sourcewell Price and Product Request Form will become an amendment to this Contract and will be incorporated by reference.

5. PARTICIPATION, CONTRACT ACCESS, AND PARTICIPATING ENTITY REQUIREMENTS

A. PARTICIPATION. Sourcewell's cooperative contracts are available and open to public and nonprofit entities across the United States and Canada; such as federal, state/province, municipal, K-12 and higher education, tribal government, and other public entities. Supplier may not enter into a contract with a U.S. Federal Government entity prior to obtaining necessary internal approvals and will not be obligated to provide Equipment, Products, or Services to any U.S. Federal Government entity under this Contract unless separately agreed in writing. Supplier may work with such parties and may agree to provide equipment or services under the Contract on a case-by-case basis.

The benefits of this Contract should be available to all Participating Entities that can legally access the Equipment, Products, or Services under this Contract. A Participating Entity's authority to access this Contract is determined through its cooperative purchasing, interlocal, or joint powers laws. Any entity accessing benefits of this Contract will be considered a Service Member of Sourcewell during such time of access. Supplier understands that a Participating Entity's use of this Contract is at the Participating Entity's sole convenience and Participating Entities reserve the right to obtain like Equipment, Products, or Services from any other source.

Supplier is responsible for familiarizing its sales and service forces with Sourcewell contract use eligibility requirements and documentation and will encourage potential participating entities to join Sourcewell. Sourcewell reserves the right to add and remove Participating Entities to its roster during the term of this Contract.

B. PUBLIC FACILITIES. Supplier's employees may be required to perform work at government-owned facilities, including schools. Supplier's employees and agents must conduct themselves in a professional manner while on the premises, and in accordance with Participating Entity policies and procedures, and all applicable laws.

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6. PARTICIPATING ENTITY USE AND PURCHASING

A. ORDERS AND PAYMENT. To access the contracted Equipment, Products, or Services under this Contract, a Participating Entity must clearly indicate to Supplier that it intends to access this Contract; however, order flow and procedure will be developed jointly between Sourcewell and Supplier. Typically, a Participating Entity will issue an order directly to Supplier or its authorized subsidiary, distributor, dealer, or reseller. If a Participating Entity issues a purchase order, it may use its own forms, but the purchase order should clearly note the applicable Sourcewell contract number. All Participating Entity orders under this Contract must be issued prior to expiration or cancellation of this Contract; however, Supplier performance, Participating Entity payment obligations, and any applicable warranty periods or other Supplier or Participating Entity obligations may extend beyond the term of this Contract.

Supplier's acceptable forms of payment are included in its attached Proposal. Participating Entities will be solely responsible for payment and Sourcewell will have no liability for any unpaid invoice of any Participating Entity.

B. ADDITIONAL TERMS AND CONDITIONS/PARTICIPATING ADDENDUM. Additional terms and conditions to a purchase order, or other required transaction documentation, may be negotiated between a Participating Entity and Supplier, such as job or industry-specific requirements, legal requirements (e.g., affirmative action or immigration status requirements), or specific local policy requirements. Some Participating Entities may require the use of a Participating Addendum, the terms of which will be negotiated directly between the Participating Entity and the Supplier or its authorized dealers, distributors, or resellers, as applicable. Any negotiated additional terms and conditions must never be less favorable to the Participating Entity than what is contained in this Contract.

C. SPECIALIZED SERVICE REQUIREMENTS. In the event that the Participating Entity requires service or specialized performance requirements not addressed in this Contract (such as e-commerce specifications, specialized delivery requirements, or other specifications and requirements), the Participating Entity and the Supplier may enter into a separate, standalone agreement, apart from this Contract. Sourcewell, including its agents and employees, will not be made a party to a claim for breach of such agreement.

D. TERMINATION OF ORDERS. Participating Entities may terminate an order, in whole or in part, immediately upon notice to Supplier in the event of any of the following events:

1. The Participating Entity fails to receive funding or appropriation from its governing body at levels sufficient to pay for the equipment, products, or services to be purchased; or
2. Federal, state, or provincial laws or regulations prohibit the purchase or change the Participating Entity's requirements.

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E. GOVERNING LAW AND VENUE. The governing law and venue for any action related to a Participating Entity's order will be determined by the Participating Entity making the purchase.

7. CUSTOMER SERVICE

A. PRIMARY ACCOUNT REPRESENTATIVE. Supplier will assign an Account Representative to Sourcewell for this Contract and must provide prompt notice to Sourcewell if that person is changed. The Account Representative will be responsible for:

- Maintenance and management of this Contract;
- Timely response to all Sourcewell and Participating Entity inquiries; and
- Business reviews to Sourcewell and Participating Entities, if applicable.

B. BUSINESS REVIEWS. Supplier must perform a minimum of one business review with Sourcewell per contract year. The business review will cover sales to Participating Entities, pricing and contract terms, administrative fees, sales data reports, performance issues, supply issues, customer issues, and any other necessary information.

8. REPORT ON CONTRACT SALES ACTIVITY AND ADMINISTRATIVE FEE PAYMENT

A. CONTRACT SALES ACTIVITY REPORT. Each calendar quarter, Supplier must provide a contract sales activity report (Report) to the Sourcewell Supplier Development Administrator assigned to this Contract. Reports are due no later than 45 days after the end of each calendar quarter. A Report must be provided regardless of the number or amount of sales during that quarter (i.e., if there are no sales, Supplier must submit a report indicating no sales were made).

The Report must contain the following fields:

- Participating Entity Name (e.g., City of Staples Highway Department);
- Participating Entity Physical Street Address;
- Participating Entity City;
- Participating Entity State/Province;
- Participating Entity Zip/Postal Code;
- Participating Entity Contact Name;
- Participating Entity Contact Email Address;
- Participating Entity Contact Telephone Number;
- Sourcewell Assigned Entity/Participating Entity Number;
- Item Purchased Description;
- Item Purchased Price;
- Sourcewell Administrative Fee Applied; and
- Date Purchase was invoiced/sale was recognized as revenue by Supplier.

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B. ADMINISTRATIVE FEE. In consideration for the support and services provided by Sourcewell, the Supplier will pay an administrative fee to Sourcewell on all Equipment, Products, and Services provided to Participating Entities. The Administrative Fee must be included in, and not added to, the pricing. Supplier may not charge Participating Entities more than the contracted price to offset the Administrative Fee.

The Supplier will submit payment to Sourcewell for the percentage of administrative fee stated in the Proposal multiplied by the total sales of all Equipment, Products, and Services purchased by Participating Entities under this Contract during each calendar quarter. Payments should note the Supplier's name and Sourcewell-assigned contract number in the memo; and must be mailed to the address above "Attn: Accounts Receivable" or remitted electronically to Sourcewell's banking institution per Sourcewell's Finance department instructions. Payments must be received no later than 45 calendar days after the end of each calendar quarter.

Supplier agrees to cooperate with Sourcewell in auditing transactions under this Contract to ensure that the administrative fee is paid on all items purchased under this Contract.

In the event the Supplier is delinquent in any undisputed administrative fees, Sourcewell reserves the right to cancel this Contract and reject any proposal submitted by the Supplier in any subsequent solicitation. In the event this Contract is cancelled by either party prior to the Contract's expiration date, the administrative fee payment will be due no more than 30 days from the cancellation date.

9. AUTHORIZED REPRESENTATIVE

Sourcewell's Authorized Representative is its Chief Procurement Officer.

Supplier's Authorized Representative is the person named in the Supplier's Proposal. If Supplier's Authorized Representative changes at any time during this Contract, Supplier must promptly notify Sourcewell in writing.

10. AUDIT, ASSIGNMENT, AMENDMENTS, WAIVER, AND CONTRACT COMPLETE

A. AUDIT. Pursuant to Minnesota Statutes Section 16C.05, subdivision 5, the books, records, documents, and accounting procedures and practices relevant to this Contract are subject to examination by Sourcewell or the Minnesota State Auditor for a minimum of six years from the end of this Contract. This clause extends to Participating Entities as it relates to business conducted by that Participating Entity under this Contract.

B. ASSIGNMENT. Neither party may assign or otherwise transfer its rights or obligations under this Contract without the prior written consent of the other party and a fully executed assignment agreement. Such consent will not be unreasonably withheld. Any prohibited

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assignment will be invalid. Provided, however, that Caterpillar is permitted to subcontract certain of its rights and obligations to Caterpillar dealers for performance without Sourcewell's prior written consent.

C. AMENDMENTS. Any amendment to this Contract must be in writing and will not be effective until it has been duly executed by the parties.

D. WAIVER. Failure by either party to take action or assert any right under this Contract will not be deemed a waiver of such right in the event of the continuation or repetition of the circumstances giving rise to such right. Any such waiver must be in writing and signed by the parties.

E. CONTRACT COMPLETE. This Contract represents the complete agreement between the parties. No other understanding regarding this Contract, whether written or oral, may be used to bind either party. For any conflict between the attached Proposal and the terms set out in Articles 1-22 of this Contract, the terms of Articles 1-22 will govern.

F. RELATIONSHIP OF THE PARTIES. The relationship of the parties is one of independent contractors, each free to exercise judgment and discretion with regard to the conduct of their respective businesses. This Contract does not create a partnership, joint venture, or any other relationship such as master-servant, or principal-agent.

11. INDEMNITY AND HOLD HARMLESS

Intentionally omitted.

12. GOVERNMENT DATA PRACTICES

Supplier and Sourcewell must comply with the Minnesota Government Data Practices Act, Minnesota Statutes Chapter 13, as it applies to all data provided by or provided to Sourcewell under this Contract and as it applies to all data created, collected, received, maintained, or disseminated by the Supplier under this Contract.

13. INTELLECTUAL PROPERTY, PUBLICITY, MARKETING, AND ENDORSEMENT

A. INTELLECTUAL PROPERTY

1. *Grant of License.* During the term of this Contract:

    a. Sourcewell grants to Supplier a royalty-free, worldwide, non-exclusive right and license to use the trademark(s) provided to Supplier by Sourcewell in advertising and promotional materials for the purpose of marketing Sourcewell's relationship with Supplier.

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b. Supplier grants to Sourcewell a royalty-free, worldwide, non-exclusive right and license to use Supplier's trademarks in advertising and promotional materials for the purpose of marketing Supplier's relationship with Sourcewell.

2. *Limited Right of Sublicense*. The right and license granted herein includes a limited right of each party to grant sublicenses to their respective subsidiaries, distributors, dealers, resellers, marketing representatives, and agents (collectively "Permitted Sublicensees") in advertising and promotional materials for the purpose of marketing the Parties' relationship to Participating Entities. Any sublicense granted will be subject to the terms and conditions of this Article. Each party will be responsible for any breach of this Article by any of their respective sublicensees.

3. *Use; Quality Control.*

a. Neither party may alter the other party's trademarks from the form provided and must comply with removal requests as to specific uses of its trademarks or logos.

b. Each party agrees to use, and to cause its Permitted Sublicensees to use, the other party's trademarks only in good faith and in a dignified manner consistent with such party's use of the trademarks. Upon written notice to the breaching party, the breaching party has 30 days of the date of the written notice to cure the breach or the license will be terminated.

4. *Termination*. Upon the termination of this Contract for any reason, each party, including Permitted Sublicensees, will have 30 days to remove all Trademarks from signage, websites, and the like bearing the other party's name or logo (excepting Sourcewell's pre-printed catalog of suppliers which may be used until the next printing). Supplier must return all marketing and promotional materials, including signage, provided by Sourcewell, or dispose of it according to Sourcewell's written directions.

B. PUBLICITY. Any publicity regarding the subject matter of this Contract must not be released without prior written approval from the Authorized Representatives. Publicity includes notices, informational pamphlets, press releases, research, reports, signs, and similar public notices prepared by or for the Supplier individually or jointly with others, or any subcontractors, with respect to the program, publications, or services provided resulting from this Contract.

C. MARKETING. Any direct advertising, marketing, or offers with Participating Entities must be approved by Sourcewell. Send all approval requests to the Sourcewell Supplier Development Administrator assigned to this Contract.

D. ENDORSEMENT. The Supplier must not claim that Sourcewell endorses its Equipment, Products, or Services.

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14. GOVERNING LAW, JURISDICTION, AND VENUE

The substantive and procedural laws of the State of Minnesota will govern this Contract. Venue for all legal proceedings arising out of this Contract, or its breach, must be in the appropriate state court in Todd County, Minnesota or federal court in Fergus Falls, Minnesota.

15. FORCE MAJEURE

Neither party to this Contract will be held responsible for delay or default caused by acts of God or other conditions that are beyond that party's reasonable control. A party defaulting under this provision must provide the other party prompt written notice of the default.

16. SEVERABILITY

If any provision of this Contract is found by a court of competent jurisdiction to be illegal, unenforceable, or void then both parties will be relieved from all obligations arising from that provision. If the remainder of this Contract is capable of being performed, it will not be affected by such determination or finding and must be fully performed.

17. PERFORMANCE, DEFAULT, AND REMEDIES

A. PERFORMANCE. During the term of this Contract, the parties will monitor performance and address unresolved contract issues as follows:

1. *Notification.* The parties must promptly notify each other of any known dispute and work in good faith to resolve such dispute within a reasonable period of time. If necessary, Sourcewell and the Supplier will jointly develop a short briefing document that describes the issue(s), relevant impact, and positions of both parties.
2. *Escalation.* If parties are unable to resolve the issue in a timely manner, as specified above, either Sourcewell or Supplier may escalate the resolution of the issue to a higher level of management. The Supplier will have 30 calendar days to cure an outstanding issue.
3. *Performance while Dispute is Pending*. Notwithstanding the existence of a dispute, the Supplier must continue without delay to carry out all of its responsibilities under the Contract that are not affected by the dispute. If the Supplier fails to continue without delay to perform its responsibilities under the Contract, in the accomplishment of all undisputed work, the Supplier will bear any additional costs incurred by Sourcewell and/or its Participating Entities as a result of such failure to proceed.

B. DEFAULT AND REMEDIES. Either of the following constitutes cause to declare this Contract, or any Participating Entity order under this Contract, in default:

1. Nonperformance of contractual requirements, or
2. A material breach of any term or condition of this Contract.

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The party claiming default must provide written notice of the default, with 30 calendar days to cure the default. Time allowed for cure will not diminish or eliminate any liability for liquidated or other damages. If the default remains after the opportunity for cure, the non-defaulting party may:

- Exercise any remedy provided by law or equity, or
- Terminate the Contract or any portion thereof, including any orders issued against the Contract.

18. INSURANCE

A. REQUIREMENTS. At its own expense, Supplier must maintain insurance policy(ies) in effect at all times during the performance of this Contract with insurance company(ies) licensed or authorized to do business in the State of Minnesota having an "AM BEST" rating of A- or better, with coverage and limits of insurance not less than the following:

1. *Workers' Compensation and Employer's Liability.*
Workers' Compensation: As required by any applicable law or regulation.
Employer's Liability Insurance: must be provided in amounts not less than listed below:
Minimum limits:
$500,000 each accident for bodily injury by accident
$500,000 policy limit for bodily injury by disease
$500,000 each employee for bodily injury by disease

2. *Commercial General Liability Insurance.* Supplier will maintain insurance covering its operations, with coverage on an occurrence basis, and must be subject to terms no less broad than the Insurance Services Office ("ISO") Commercial General Liability Form CG0001 (2001 or newer edition), or equivalent. At a minimum, coverage must include liability arising from premises, operations, bodily injury and property damage, independent contractors, products-completed operations including construction defect, contractual liability, blanket contractual liability, and personal injury and advertising injury. All required limits, terms and conditions of coverage must be maintained during the term of this Contract.
Minimum Limits:
$1,000,000 each occurrence Bodily Injury and Property Damage
$1,000,000 Personal and Advertising Injury
$2,000,000 aggregate for products liability-completed operations
$2,000,000 general aggregate

3. *Commercial Automobile Liability Insurance.* During the term of this Contract, Supplier will maintain insurance covering all owned, hired, and non-owned automobiles in limits of liability not less than indicated below. The coverage must be subject to terms

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no less broad than ISO Business Auto Coverage Form CA 0001 (2010 edition or newer), or equivalent.

Minimum Limits:
$1,000,000 each accident, combined single limit

4. *Umbrella Insurance*. During the term of this Contract, Supplier will maintain umbrella coverage over Employer's Liability, Commercial General Liability, and Commercial Automobile.

Minimum Limits:
$2,000,000

5. *Professional/Technical, Errors and Omissions, and/or Miscellaneous Professional Liability*. During the term of this Contract, Supplier will maintain coverage for all claims the Supplier may become legally obligated to pay resulting from any actual or alleged negligent act, error, or omission related to Supplier's professional services required under this Contract.

Minimum Limits:
$2,000,000 per claim or event
$2,000,000 – annual aggregate

Failure of Supplier to maintain the required insurance will constitute a material breach entitling Sourcewell to immediately terminate this Contract for default.

B. CERTIFICATES OF INSURANCE. Prior to commencing under this Contract, Supplier must furnish to Sourcewell a certificate of insurance, as evidence of the insurance required under this Contract. Prior to expiration of the policy(ies), renewal certificates must be mailed to Sourcewell, 202 12th Street Northeast, P.O. Box 219, Staples, MN 56479 or sent to the Sourcewell Supplier Development Administrator assigned to this Contract. The certificates must be signed by a person authorized by the insurer(s) to bind coverage on their behalf.

Failure to request certificates of insurance by Sourcewell, or failure of Supplier to provide certificates of insurance, in no way limits or relieves Supplier of its duties and responsibilities in this Contract.

C. ADDITIONAL INSURED ENDORSEMENT AND PRIMARY AND NON-CONTRIBUTORY INSURANCE CLAUSE. Supplier agrees to list Sourcewell and its Participating Entities, including their officers, agents, and employees, as an additional insured under the Supplier's commercial general liability insurance policy with respect to liability arising out of activities, "operations," or "work" performed by or on behalf of Supplier, and products and completed operations of Supplier. The policy provision(s) or endorsement(s) must further provide that coverage is primary and not excess over or contributory with any other valid, applicable, and collectible insurance or self-insurance in force for the additional insureds. A Participating Dealer may name a Participating Entity as an additional insured on a case-by-case basis.

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D. WAIVER OF SUBROGATION. Supplier waives and must require (by endorsement or otherwise) all its insurers to waive subrogation rights against Sourcewell and other additional insureds for losses paid under the insurance policies required by this Contract or other insurance applicable to the Supplier or its subcontractors. The waiver must apply to all deductibles and/or self-insured retentions applicable to the required or any other insurance maintained by the Supplier or its subcontractors.

E. UMBRELLA/EXCESS LIABILITY/SELF-INSURED RETENTION. The limits required by this Contract can be met by either providing a primary policy or in combination with umbrella/excess liability policy(ies), or self-insured retention.

19. COMPLIANCE

A. LAWS AND REGULATIONS. All Equipment, Products, or Services provided under this Contract must comply fully with applicable federal laws and regulations, and with the laws in the states and provinces in which the Equipment, Products, or Services are sold.

B. LICENSES. Supplier's Participating Dealers must maintain a valid and current status on all required federal, state/provincial, and local licenses, bonds, and permits required for the operation of the business that the Supplier's Participating Dealer conducts with Sourcewell and Participating Entities.

20. BANKRUPTCY, DEBARMENT, OR SUSPENSION CERTIFICATION

Supplier certifies and warrants that it is not in bankruptcy or that it has previously disclosed in writing certain information to Sourcewell related to bankruptcy actions. If at any time during this Contract Supplier declares bankruptcy, Supplier must immediately notify Sourcewell in writing.

Supplier certifies and warrants that neither it nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from programs operated by the State of Minnesota; the United States federal government or the Canadian government, as applicable; or any Participating Entity. Supplier certifies and warrants that neither it nor its principals have been convicted of a criminal offense related to the subject matter of this Contract. Supplier further warrants that it will provide immediate written notice to Sourcewell if this certification changes at any time.

21. PROVISIONS FOR NON-UNITED STATES FEDERAL ENTITY PROCUREMENTS UNDER UNITED STATES FEDERAL AWARDS OR OTHER AWARDS

Intentionally omitted.

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22. CANCELLATION

Sourcewell or Supplier may cancel this Contract at any time, with or without cause, upon 60 days' written notice to the other party. However, Sourcewell may cancel this Contract immediately upon discovery of a material defect in any certification made in Supplier's Proposal. Cancellation of this Contract does not relieve either party of financial, product, or service obligations incurred or accrued prior to cancellation.

Sourcewell

DocuSigned by:
Jeremy Schwartz
C0FD2A139D06489...

By: _____
Jeremy Schwartz
Title: Chief Procurement Officer

12/6/2022 | 4:51 PM CST
Date: _____

Caterpillar Inc.

DocuSigned by:
Jaime Mineart
8ED6778AD1EB44E...

By: _____
Jaime Mineart
Title: Vice President & General Manager
Retail Electric Power Solutions

12/6/2022 | 6:57 PM PST
Date: _____

Approved:

DocuSigned by:
Chad Coauette
7E42B8F817A64CC...

By: _____
Chad Coauette
Title: Executive Director/CEO

12/6/2022 | 8:58 PM CST
Date: _____

RFP 092222 - Electrical Energy Power Generation Equipment with Related Parts, Supplies, and Services

Vendor Details

Company Name:	Caterpillar
Address:	5205 N O'Connor Blvd Irving, TX 75039
Contact:	Jaime Mineart
Email:	Mineart_Jaime_M@cat.com
Phone:	309-208-8238
Fax:	847-212-8020
HST#:	

Submission Details

Created On:	Thursday August 04, 2022 09:20:25
Submitted On:	Thursday September 22, 2022 11:48:50
Submitted By:	Jaime Mineart
Email:	Mineart_Jaime_M@cat.com
Transaction #:	7d158290-a935-4ffc-acc0-efaa11d1bfb4
Submitter's IP Address:	198.180.154.20

Specifications

Table 1: Proposer Identity & Authorized Representatives

General Instructions (applies to all Tables) Sourcewell prefers a brief but thorough response to each question. Do not merely attach additional documents to your response without also providing a substantive response. Do not leave answers blank; respond “N/A” if the question does not apply to you (preferably with an explanation).

Line Item	Question	Response *	
1	Proposer Legal Name (one legal entity only): (In the event of award, will execute the resulting contract as "Supplier")	Caterpillar Inc.	*
2	Identify all subsidiary entities of the Proposer whose equipment, products, or services are included in the Proposal.	N/A	*
3	Identify all applicable assumed names or DBA names of the Proposer or Proposer's subsidiaries in Line 1 or Line 2 above.	N/A	*
4	Provide your CAGE code or Unique Entity Identifier (SAM):	11083	*
5	Proposer Physical Address:	5212 N O'Connor Blvd Ste. 1100, Irving, TX 75039	*
6	Proposer website address (or addresses):	https://www.caterpillar.com/, https://www.cat.com/en_US.html	*
7	Proposer's Authorized Representative (name, title, address, email address & phone) (The representative must have authority to sign the “Proposer’s Assurance of Compliance” on behalf of the Proposer and, in the event of award, will be expected to execute the resulting contract):	Authorized Rep: Jaime Mineart Title: Vice President & General Manager, Retail Electric Power Solutions Address: 5212 N O'Connor Blvd Ste. 1100, Irving, TX 75039 Email: Mineart_Jaime_M@cat.com Phone: (309) 208-8238	*
8	Proposer's primary contact for this proposal (name, title, address, email address & phone):	Primary Contact: Nicole Warnstedt Title: Territory Sales Manager Address: 5212 N O'Connor Blvd Ste. 1100, Irving, TX 75039 Email: Warnstedt_nicole_a@cat.com Phone: (847) 212-8020	*
9	Proposer's other contacts for this proposal, if any (name, title, address, email address & phone):	Other Contact: Steve Turner Title: Americas Sales Manager, Retail Electric Power Solutions Address: 5212 N O'Connor Blvd Ste. 1100, Irving, TX 75039 Email: Turner_Stephen_M@cat.com Phone: (309) 208-8238	

Table 2: Company Information and Financial Strength

Line Item	Question	Response *	

10	Provide a brief history of your company, including your company's core values, business philosophy, and industry longevity related to the requested equipment, products or services.	Caterpillar was founded in 1925 when two entrepreneurs merged their companies: Holt Manufacturing Company and C.L Best Tractor Company. The merger was a great success because the ethics of both men were focused on high quality products and the best customer support. The key to this satisfaction is two-fold: build the best products and empower our dealers to offer the best support. Through this combination, we are proud to prove that our products offer the best value to our customers regardless of where they are located. Caterpillar produced its first diesel engine in 1939. In 1953, Caterpillar created a division dedicated to the specific needs of a broad range of diesel engine customers, including power generation. In 2021, the Energy & Transportation segment including all Power Generation divisions contributed more than $20.2 Billion of revenue globally for Caterpillar Inc. with more than $7.6 Billion in North America alone. Since the founding, Caterpillar Inc. has retained the culture of focusing on customer needs and supporting products after the sale. Our company culture is keenly focused on customer satisfaction and every employee realizes that a customer's experience using the product will determine whether he or she will purchase another one. Caterpillar has a robust Code of Conduct that can be found at Caterpillar | Code of Conduct | Caterpillar Values in Action. Here is a quote from Jim Umpleby, Caterpillar Chief Executive Officer, summarizing this code and its significance in Caterpillar culture. "We are proud that the people on our team come from across the globe, with diverse backgrounds, experiences, and perspectives. This diverse culture and character make us stronger. What unites us within this diversity is a common set of Values; that we are not just accountable for the work we do; we also care deeply about how we do it. Our Code of Conduct defines those Values in action –what we stand for and how we conduct ourselves with our customers, suppliers and one another. Its purpose is not to provide a set of rules that covers every situation or challenge we may face, but to guide us in living those values every day. The Code of Conduct explains what Integrity, Excellence, Teamwork, Commitment and Sustainability mean to us and how we use these Values to make sound, ethical decisions. Our Code of Conduct is one of the most important documents we produce at Caterpillar. We can prove measurable advantages in total owning and operating costs as well as tangible benefits in terms of standard safety features, telematic information sharing, and many training, and application support services offered by our dealers.	*
11	What are your company's expectations in the event of an award?	Caterpillar is honored to have served Sourcewell and its members who have purchased Cat construction equipment, work-tools, and electrical power generation products through Sourcewell since 2008. Furthermore, we are proud to have earned the Sourcewell Legacy Award in 2019. Caterpillar is the top contributor to generator sales in our current Power Generation and Services contract 120617-CAT. Together with the Machine contract, we look forward to the opportunity to further grow business and serve member needs together in this new Power Generation contract. With average 20-30% growth over the past 5 years, we will be dedicated to continuing with this annual growth.	*

12	Demonstrate your financial strength and stability with meaningful data. This could include such items as financial statements, SEC filings, credit and bond ratings, letters of credit, and detailed reference letters. Upload supporting documents (as applicable) in the document upload section of your response.	Maintaining financial strength is a critical priority for Caterpillar. We receive debt ratings from the major credit rating agencies. Caterpillar is "mid-A" rated by S&P and Fitch and has a "low-A" rating with a positive outlook from Moody's. Maintaining our "mid-A" credit rating is critical to our cash deployment priorities. Due to our prudent focus on financial strength, on a comparative basis Caterpillar has generally demonstrated higher profitability, lower leverage, and better liquidity than our competitor peer group. Our liquidity position is extremely strong with typically the highest percentage of cash as a percent of total assets on the balance sheet vs our competitors. Please see 2021 Investor Presentation which provides additional details about our financial position. The full text of the SEC filing documents can be found on our public website: https://investors.caterpillar.com/financials/sec-filings/default.aspx. In 2021 full year sales and revenues were $50.971B. Enterprise operating cash Flow was $7.2B. During the year, the company paid dividends of $2.33B and repurchased $2.67B of Caterpillar common stock. Liquidity remained strong with an enterprise cash balance of $9.25B at the end of 2021. After paying uninterrupted rising annual dividends for more than two decades, Caterpillar, Inc. (NYSE:CAT) reached the 27th consecutive year mark for inclusion in the elite group of companies designated as Dividend Aristocrats. In addition to a minimum of 25 consecutive years of dividend hikes, a company must be a component of the S&P 500 index and and must have a market capitalization of at least $3B to qualify as a Dividend Aristocrat.	*
13	What is your US market share for the solutions that you are proposing?	Market share information beyond what is made publicly available through our annual reports is considered confidential. Market share data is not readily available within the industry. There are not many manufacturers offering products for the US and Canada that meet the required regulations. Caterpillar is a significant contributor to the overall Power Generation sector within the US and Canada.	*
14	What is your Canadian market share for the solutions that you are proposing?	Market share information beyond what is made publicly available through our annual reports is considered confidential. Market share data is not readily available within the industry. There are not many manufacturers offering products for the US and Canada that meet the required regulations. Caterpillar is a significant contributor to the overall Power Generation sector within the US and Canada.	*
15	Has your business ever petitioned for bankruptcy protection? If so, explain in detail.	No, Caterpillar has never filed for bankruptcy.	*
16	How is your organization best described: is it a manufacturer, a distributor/dealer/reseller, or a service provider? Answer whichever question (either a) or b) just below) best applies to your organization. a) If your company is best described as a distributor/dealer/reseller (or similar entity), provide your written authorization to act as a distributor/dealer/reseller for the manufacturer of the products proposed in this RFP. If applicable, is your dealer network independent or company owned? b) If your company is best described as a manufacturer or service provider, describe your relationship with your sales and service force and with your dealer network in delivering the products and services proposed in this RFP. Are these individuals your employees, or the employees of a third party?	Caterpillar is a world class manufacturer which distributes products through a vast and capable dealer network. Our dealers are strong independent companies and in North America alone they have a combined net worth of billions of dollars. Their large valuation is a competitive advantage because it allows them to have the infrastructure to support customers regardless of location, industry, fleet size, or application. We believe our dealers have the largest amount of service parts available in their inventory. Another advantage of independently owned dealers is that they know their customers and market well. They tailor their services specifically to their customers' needs. Caterpillar and each dealer have signed a sales and service agreement that outlines the specific expectations from both parties. In a broad overview, Caterpillar manufactures products and sells them to our dealers. The dealers then sell those products to customers. Caterpillar does not sell directly to state and local governments. Though we will sign this contract as a manufacturer, our dealers will be given the opportunity to avail themselves of the opportunity presented by the contract and will execute all the transactions with governmental customers as they do today. This includes but is not limited to consultation, quoting, accepting payment, delivery, warranty support, parts sales, and service. This is no different than sales occurring out the terms of this agreement. Caterpillar dealers heartily embrace the other Sourcewell contracts currently available to them (032119-CAT, 120617-CAT and 062320-CAT). They have all been trained on contract usage. In fact, the current Electric Power contract is leveraged by at least 75% of our dealers in North America. Caterpillar offers specific discounts to Sourcewell members. By using any Sourcewell Contract, our dealers agree to honor those discounts.	*
17	If applicable, provide a detailed explanation outlining the licenses and certifications that are both required to be held, and actually held, by your organization (including third parties and subcontractors that you use) in pursuit of the business contemplated by this RFP.	Caterpillar and its subsidiaries operate across the globe in a variety of markets that require Caterpillar to adhere to all locally mandated laws and regulations in order to do business. With regards to the territories covered by this RFP, Caterpillar will comply with applicable laws in order to do business in the territories described herein.	*

18	Provide all “Suspension or Debarment” information that has applied to your organization during the past ten years.	Caterpillar has not been suspended or disbarred in trading history.	*

Table 3: Industry Recognition & Marketplace Success

Line Item	Question	Response *	
19	Describe any relevant industry awards or recognition that your company has received in the past five years	Please note: To list all the awards received in the past 5 years would unnecessarily lengthen our response. For brevity, we are highlighting some recognition received in 2020, 2021 and 2022. Also note there are many global awards. Fortune Magazine #78 on the Fortune 500 2021 Fortune Magazine World's Most Admired Companies World & North America Dow Jones Sustainability Index Forbes Best Employers for diversity 2020 and 2021 #82 Best Global Brands- Interbrand 2021 The Wall Street Journal Best Managed Companies in 2020 and 2021 The Wall Street Journal World's Most Sustainably Managed Companies Human Rights Campaign Foundation Corporate Equality Index Dow Jones Sustainability Index (World and North America) 21 years World’s Most Sustainably Managed Companies – The Wall Street Journal United Way World Wide’s Global Corporate Leadership Program U.S. President’s Volunteer Service Award from Junior Achievement Corporate Equality Index – Human Rights Campaign Foundation CSR China Top 100 – the 4th CSR China Education Award (China) China CSR Excellence Award – China Philanthropy Times (China) Corporate Social Responsibility Research Center of Southern Weekly (China) Outstanding Contribution to Poverty Alleviation – China Foundation for Poverty Alleviation (China) 2020 Global 500 – Fortune Magazine America’s Most Responsible Companies 2020, 2021 & 2022 – Newsweek Best-Managed Companies of 2020 & 2021 – The Wall Street Journal Top Companies for Customer Satisfaction – The Wall Street Journal The CEO Leaderboard: COVID-19 Reputation Rankings – SJR All-America Executive Team – Institutional Investor Top 150 Global Licensors – Global License Best Global Brands Top 100 – Interbrand World’s Most Valuable Brands 2020 – Forbes 2020 Best Places to Work for Disability Inclusion – Disability Equality Index World’s Best Employers 2020 – Forbes Best Employers for Women 2020 – Forbes America’s Best Employers by State 2020 – Forbes America's Best Employers for Diversity 2020 – Forbes Best Employers for New Grads 2020 – Forbes Global 2000 – Forbes 2020, 2021 & 2022 Best Employers for Veterans 2020 and 2021– Forbes Top Veteran-Friendly Company – U.S. Veterans Magazine #1 Great Place to Work – Great Place to Work Institute (Brazil) #1 Great Place to Work in the Ag Business - Great Place to Work Institute (Brazil) Chile’s 20 Best Places in 2020 to Work for LGBTQ Equality, pwc Human Rights Campaign Top of Mind Company “Industry category” (Piracicaba, Brazil) Certification on Promoting Work-Life Balance in Hyogo Prefecture – Hyogo Work and Life Center (Japan) Hyogo’s Women’s Success in Business Promotion Company – Hyogo Women Empowerment & Promotion Center (Japan) Hanada Award for WIN Akashi – Hyogo Women and Future Association (Japan) Hyogo Childcare Supporting Company Award (Japan) Science & Technology Industry Summit: Outstanding Contribution – The Economic Observer (China) 2020 China Good Companies: Industry Leadership – Jiemian.com (China) Cat® G3520 Fast-Response, Natural Gas Generator Set Earns Gold Award in Consulting-Specifying Engineer’s 2021 Product of the Year Competition	*
20	What percentage of your sales are to the governmental sector in the past three years	The governmental and educational sector is extremely important to Caterpillar. We do not track government and education separately. However, it is safe to assume that the bulk of these sales is to state, county, municipal and special districts. We have a dedicated team to ensure success in this market. Overall, the percentage of our sales to non-federal government agencies varies between 7% and 15%.	*

21	What percentage of your sales are to the education sector in the past three years	The governmental and educational sector is extremely important to Caterpillar. We do not track government and education separately. However, it is safe to assume that the bulk of these sales is to state, county, municipal and special districts. We have a dedicated team to ensure success in this market. Overall, the percentage of our sales to non-federal government agencies varies between 7% and 15%.	*
22	List any state, provincial, or cooperative purchasing contracts that you hold. What is the annual sales volume for each of these contracts over the past three years?	Cat dealers typically hold contracts with states and provinces. Additionally, we are contract holders with OMNIA. Just as we would never share Sourcewell transaction information with other cooperatives, we feel it is inappropriate to share volumes with those contracts.	*
23	List any GSA contracts or Standing Offers and Supply Arrangements (SOSA) that you hold. What is the annual sales volume for each of these contracts over the past three years?	Listed below are the current Power Generation GSA contracts that Caterpillar holds: SIN 335999 Power Distribution Equipment: 2020=$736,134 2021=$1,353,905 2022 = as of today $285,951 Contract Number: GS07F5666R (Future sales will be under new contract: GS30F0018U)	*

Table 4: References/Testimonials

Line Item 24. Supply reference information from three customers who are eligible to be Sourcewell participating entities.

Entity Name *	Contact Name *	Phone Number *	
City of Ogden	Monica Kapp	801-430-2308	*
United Water Conservation District	Chris Hendricks	805-415-1554	*
Renewable Water Resources	Brent Rhymer	864-299-4000	*

Table 5: Top Five Government or Education Customers

Line Item 25. Provide a list of your top five government, education, or non-profit customers (entity name is optional), including entity type, the state or province the entity is located in, scope of the project(s), size of transaction(s), and dollar volumes from the past three years.

Entity Name	Entity Type *	State / Province *	Scope of Work *	Size of Transactions *	Dollar Volume Past Three Years *	
City of Charlotte	Government	North Carolina - NC	A city local to North Carolina	Purchased 16 units (specific to EP products)	$2,545,112	*
Manatee County	Government	Florida - FL	A county local to Florida	Purchased 9 units (specific to EP products)	$1,463,479	*
Bonita Springs Utilities	Government	Florida - FL	A city local to Florida	Purchased 2 units (specific to EP products)	$1,388,444	*
University of Florida	Government	Florida - FL	College in Gainesville, Florida	Purchased 3 units (specific to EP products)	$1,199,583	*
City of Raleigh Public Utilities	Government	North Carolina - NC	Water and sanitary sewer services	Purchased one unit (specific to EP products)	$1,034,177	*

Table 6: Ability to Sell and Deliver Service

Describe your company's capability to meet the needs of Sourcewell participating entities across the US and Canada, as applicable. Your response should address in detail at least the following areas: locations of your network of sales and service providers, the number of workers (full-time equivalents) involved in each sector, whether these workers are your direct employees (or employees of a third party), and any overlap between the sales and service functions.

Line Item	Question	Response *	

26	Sales force.	The Cat dealer salesforce is the most capable and highly trained in the industry. The Cat dealer salespeople are consultants to their customers and advise their customers on the best solutions for their application and job. As a manufacturer we request our dealers to follow strict training protocols to ensure our sales force remains current on all product updates. Specifically, as it relates to governmental sales, each dealer has one or more people named to be a key liaison between us as manufacturer and their dealer sales team. This person is offered additional in-depth training on Sourcewell and ensures that all contract terms are followed. In addition, dealers also have electric power specialists located in house to work with customers on all aspects of their power generation business. In North America, our dealers employ more than 53,000 people across the machine, energy, parts and service divisions. The dealer sales teams are supported by a network of Caterpillar professionals. Each dealer has in territory support of 5-8 Caterpillar sales/marketing employees. It is the responsibility of these people to ensure that the dealer and Caterpillar are working well together to constantly improve and to adapt to marketplace changes. Beyond the territory experts, the sales and marketing department at Caterpillar is staffed by more than 600 people whose mission is to focus on customer satisfaction. Even more are employed "behind-the-scenes" to ensure industry leading product design, up to date product information, and maintaining the ease of doing business in an increasingly connected marketplace.	*
27	Dealer network or other distribution methods.	The Cat dealer network is key to the success of our company. Within Canada and the United States, we have more than 800 dealer owned locations that sell and rent equipment. Please refer to our directory listing of Cat dealer locations and locations map in the attached “Cat Dealer Directory”. Cat dealers are independently owned and many cover an entire state or province. In some cases, dealers cross state/provincial boundaries, and in other cases, more than one dealer will be located in a state). Each dealer has multiple branches and a mobile service fleet that can serve customers regardless of location. These are full physical locations our governmental customers can use. Because of the size of Cat dealers, they are exceptionally capable to serve governmental customers and customers in the governmental industry. Dealers have trained specialists that cover many industries. Many of our dealer sales reps sell more than 50% of their sales through Sourcewell. To support these dealers and specialists in the field, Caterpillar has an electric power division with 30+ dedicated electric power territory managers dedicated to training and focused on the electric power industry. To help with Sourcewell sales, we have a dedicated sales rep, Nicole Warnstedt, who is expert on co-operative purchasing for the power generation group as well as an intern to assist with day to day tasks. Caterpillar also pulls together the electric power specialists into a Dealer Advisory group to have a continuous feedback loop on industry trends and to collaborate on future new product introductions. Collectively, Cat dealers' large net worth permits them to stock a high volume of replacement parts - allowing governmental customers the fastest turnaround on parts availability and repair time. Cat dealers recognize the importance of governmental business to their overall success and their product support sales reps are well versed in working with government entities. Please refer to the Cat dealer locations list and map included in "Additional Documents".	*

28	Service force.	At Caterpillar we are very proud of the saying "The sales department sells the first machine; the service department sells every one after that." The Cat dealer network in North America collectively employs more than 20,000 factory trained technicians, parts experts, product support managers and other service-oriented staff. These people are supported by the best repair shop equipment and materials. As machines and engines are constantly updated, so too are our service experts. We conduct product-specific training every week of the year. Technician shortage is an industry-wide concern, but because Cat dealers are large, long established companies, they can offer strong compensation and benefit packages that encourage the best people to seek employment and to retain them once hired. Caterpillar works very closely with dealers and through a program called "Think Big", we are able to keep the pipeline of high quality employees full. In addition to the technicians and mechanics that work on the generators directly, each dealer has a service support staff that includes customer-facing consultants who are responsible for working with customers to set up maintenance and repair schedules to ensure the best possible up-time. Collectively, service support staff makes up the bulk of each dealers' staff. Roughly half of their personnel investment goes to ensuring customer success via product support. The dealer service teams are supported by a network of Caterpillar professionals. Each dealer has in territory support of 5-8 Caterpillar parts/service employees. It is the responsibility of these people to ensure that the dealer and Caterpillar are working well together to constantly improve and to adapt to marketplace changes. Beyond the territory experts, the service and support groups at Caterpillar are staffed by thousands of people whose mission is to focus on post-sale customer satisfaction. Even more are employed "behind-the-scenes" to ensure technical literature is up to date, service standards are adhere to and repair questions are answered quickly. Historically, we have exceeded our 95% 2-hour response rate target in responding to dealer service inquiries.	*
29	Describe the ordering process. If orders will be handled by distributors, dealers or others, explain the respective roles of the Proposer and others.	Our simple order process has been and will continue to be well appreciated by Sourcewell and Sourcewell members: 1) When a member decides to purchase a new Cat Generator, they include the contract number and their Sourcewell member number on the Purchase Order they issue to the Cat dealer. 2) The Cat dealer then accepts the PO, issues the invoice, accepts payment and delivers the generator. 3) After the generator has been delivered, the dealer, as part of their normal process, includes the member number when filing their sales claims with Caterpillar. 4) At month end, Caterpillar aggregates these reports and sends the sales information quarterly to Sourcewell along with the administrative fee. IMPORTANT NOTE: Should a member wish to include additional terms and conditions to this contract, or to otherwise request a Participating Addendum, that agreement / PA should be executed between the member and Cat dealer directly.	*

30	Describe in detail the process and procedure of your customer service program, if applicable. Include your response-time capabilities and commitments, as well as any incentives that help your providers meet your stated service goals or promises.	We are proud that our reputation stands on having the best customer support in the industry. In fact, our capabilities are industry leading. Should a customer ever have a problem or issue with a generator, their Cat dealer is empowered to resolve that issue locally. If the problem is a result of a defect in material or workmanship, Caterpillar has a standard warranty to address. Every Cat dealer has a common detailed service process in place. Caterpillar supports and verifies that all the dealer service technicians are supplied with the tools and equipment needed to repair all Cat products. With an abundance of Caterpillar Network service locations (over 468 locations) including an estimated sales and service team of 53,000, 8,000 service bays, and 8,500 field service trucks, our highly skilled/trained Caterpillar dealer technicians are in close proximity to Sourcewell customers within the US and Canada. The Caterpillar network provides unmatched service capabilities to meet customer servicing requirements. Technicians have access to an electronic library of technical information including Service Letters, Technical Information Bulletins, System Operations, Troubleshooting and Disassembly and Assembly manuals. These manuals are provided for every Cat product. Each dealer also has one or more "Technical Communicators" who are dedicated to supporting the service technicians by acting as a liaison between the shop personnel and Caterpillar. The service technicians also have a dealer support network (DSN) system with direct access to Caterpillar's Service Engineers. Caterpillar responds to more than 95% of all high priority tickets within one hour. Depending on a customer's needs, they may choose to handle service issues themselves, in conjunction with their dealer, or they may ask their dealer to handle them entirely. To meet the varying desires of each customer, Caterpillar offers a wide range of service programs: -Cat Inspect -Condition Monitoring -Customer Support Agreements -S-O-S Services (fluid analysis)	*
31	Describe your ability and willingness to provide your products and services to Sourcewell participating entities in the United States.	We are happy to serve all geographic areas and all Sourcewell member sectors with in the United States with our complete product and service offerings. Caterpillar has successfully utilized Sourcewell to sell generators in all states.	*
32	Describe your ability and willingness to provide your products and services to Sourcewell participating entities in Canada.	We are happy to serve all geographic areas and all Sourcewell member sectors within Canada with our complete product and service offerings. In fact, we see the Canadian market as a significant growth opportunity for Sourcewell use and are actively encouraging its use. Caterpillar currently has Canada Sourcewell growth in our Canada Dealer's 2023 Growth Plans. We have gained momentum with our current contract 120617-CAT in Canada.	*
33	Identify any geographic areas of the United States or Canada that you will NOT be fully serving through the proposed contract.	We are happy to serve all geographic areas of the United States and Canada.	*
34	Identify any Sourcewell participating entity sectors (i.e., government, education, not-for-profit) that you will NOT be fully serving through the proposed contract. Explain in detail. For example, does your company have only a regional presence, or do other cooperative purchasing contracts limit your ability to promote another contract?	We are happy to serve all Sourcewell Member sectors within the United States and Canada with our complete product and service offering through Sourcewell. Caterpillar's cooperative purchasing contracts are non-exclusive; i.e. none of them restrict Caterpillar from promoting any other cooperative purchasing contracts.	*
35	Define any specific contract requirements or restrictions that would apply to our participating entities in Hawaii and Alaska and in US Territories.	There are no restrictions or limitations for sales to members in Hawaii, Alaska or U.S. Territories.	*

Table 7: Marketing Plan

Line Item	Question	Response *	

36	Describe your marketing strategy for promoting this contract opportunity. Upload representative samples of your marketing materials (if applicable) in the document upload section of your response.	Caterpillar is committed to cooperating with Sourcewell to fully and continually train our 53,000+ management and sales staff within the dealer network to ensure maximum awareness and embracement of our Sourcewell contract. To show our commitment, we have engaged to deploy the proven ability of the Government Solutions Team, LLC (GST) of Lebanon, Tennessee to train and further support our sales management and dealer network in the event of a contract award in this RFP process. GST's extensive knowledge and understanding of the Sourcewell statues, history and processes will be our continual priority in the support and education of our distribution channel. GST builds Sourcewell awareness and enthusiasm within our dealer network. Consistent remote and on-site dealer training at regional and national dealer meetings will continue to lead to exemplary sales growth of our proposed Sourcewell contract. GST also staffs a Dealer Support Specialist who is dedicated to assisting sales reps with their questions and needs. Caterpillar is also listed as a strategic supplier partner for National Cooperative Purchasing Partners (NCPP), the professional association for cooperative procurement. Documentation and training regarding Sourcewell projects are available on our internal dealer website. Caterpillar also does onsite and virtual training for dealers to educate and drive Sourcewell growth. Our current marketing strategy with Sourcewell contract 120617-CAT proves to be effective with year-over-year sales growth. Since inception of Caterpillar's Sourcewell contracts, 3,015 Caterpillar generators have been sold leveraging the Sourcewell contract. Should we be fortunate enough to be awarded a contract for Energy Generation in response to RFP #092222, we will proudly announce the award publicly through our multiple customer-facing touchpoints to include but not limited to: 1) Press Release 2) Announcement in monthly Electric Power customer e-newsletter: 3) Feature on cat.com cooperative purchasing focused webpage: https://www.cat.com/en_US/articles/electric-power/sourcewell-cooperative-purchasing.html 4) Announcement on Cat Electric Power social media channels (FB, LinkedIn, Twitter) 5) Sourcewell promotion at industry events we attend where the audience includes non-profits and government within the SLED market including schools, landfill, and water/sewer treatment applications. Examples of 2022 events where GST representatives attended in support of Caterpillar and Sourcewell included American Public Works Association (PWX), Wastecon, WasteExpo, Water Environment Federation's Technical Exhibition and Conference (WEFTEC), Government Fleet Expo (GFX), National Institute of Government Procurement (NIGP), California Association of Public Procurement Officials (CAPPO), National Association of County Engineers (NACE) and American Public Works Association (APWA) Snow Conference. 6) Update promotional literature 7) Dealer awareness promotional events	*
37	Describe your use of technology and digital data (e.g., social media, metadata usage) to enhance marketing effectiveness.	Caterpillar and the Cat dealer network are leaders in using emerging technologies to reach our customers. We manage several social media platforms and can target governmental segments. We also look at past purchase history and financing information to recognize in advance when customers may be considering replacing machines they own. Caterpillar has teams of people who handle leads from Cat.com to grow and enhance online presence. Cat Electric Power has an online portal that has ability for customers to size a unit and view inventory. Our dealers have resources for lead generation from third party databases to understand which opportunities are coming in the governmental and non-profit section. Our dealers utilize these resources plus Caterpillar Inc. resources to focus and drive and understand pipeline of opportunity that we can promote the Sourcewell solution through.	*
38	In your view, what is Sourcewell's role in promoting contracts arising out of this RFP? How will you integrate a Sourcewell-awarded contract into your sales process?	Sourcewell is a well-respected contracting agency within the public procurement industry. It is important, in the event of an award, that our products and logos be included in Sourcewell marketing and website. We believe that the most important role that Soucewell can play in marketing our contract and products, is to market themselves and promote contract purchasing across the industry. In the event of an award, Caterpillar will put high priority in building awareness and enthusiasm within our dealer network and customer base to leverage the Sourcewell contract as our go to market strategy.	*

39	Are your products or services available through an e-procurement ordering process? If so, describe your e-procurement system and how governmental and educational customers have used it.	We do offer a e-procurement ordering process for parts via parts.cat.com. We can also integrate into a variety of procurement systems for high volume customers. We enable customers to size and configure our less complex products, view available inventory, and engage dealers online at power.cat.com. Our larger products are complex and often custom-configured. A consultative salesperson is integral to ensuring that generator sets are configured and built to perform well in their expected duties. For this reason, we only include our less complex products online. We encourage our independent dealers to offer options beyond those from Caterpillar. Sourcewell members are free to use those options.	*

Table 8: Value-Added Attributes

Line Item	Question	Response *	
40	Describe any product, equipment, maintenance, or operator training programs that you offer to Sourcewell participating entities. Include details, such as whether training is standard or optional, who provides training, and any costs that apply.	All dealers offer basic operation, safety, and maintenance training with every sale. All Caterpillar operation and maintenance manuals provided with our equipment have instructions for safe operation of our equipment. Should a customer desire more advanced training, such as productivity improvement or advanced repairs, each of our dealers can supply that training. Often there is a cost associated with that specific training and if would be negotiated between the dealer and the customer. Caterpillar also offers training programs directly to customers in three areas - operation, safety, and service. Members may access courses online, via CD's, or through instructor-led classes leading to operator certifications. The fees for these services vary depending on the depth of training desired. These high-level instruct-led courses can be conducted at one of our dedicated training facilities in the US or on a customer's local site using their own equipment.	*

41	Describe any technological advances that your proposed products or services offer.	Technology is a key product differentiator for Caterpillar. To describe each of them in detail would expand the length of this response beyond a reasonable level. For brevity, key technologies specific to products in this RFP are listed below. More details are available on our product pages on www.cat.com. 1. Cat Remote Asset Monitoring and telematics are available on every generator. Generators smaller than C32 come equipped with Product Link devices which allow ease of setup for monitoring. This allows customers and dealers to monitor generator health and operation with the intent of early issue detection. Through our proprietary fleet monitoring software, we are leaders in using technology to prevent unexpected downtime. 2. Caterpillar has invested in controller technology for generators, offering our EMCP 4.4 control panel for most generator offerings. This controller has an easy-to-use interface and allows for paralleling of multiple units, creating redundancies and allowing customers even more protection against outages. 3. Caterpillar equips every Tier 4 Interim/Stage IIIB engine with ACERT™ technology with an ideal combination of electronic, fuel, air and aftertreatment components, based on engine size, the type of application and the geographic location in which it will work. Applying technologies systematically and strategically optimizes them to meet our customers' high expectations for productivity, fuel efficiency, reliability, and service life. The right technology fine-tuned for the right application results in improved fuel efficiency, boosted power and performance across applications, no additional space requirements, and reduced emissions with up to 90 percent reduction in particulate matter (pm) and 50 percent reduction in oxides of nitrogen (NOx). 4. As the global climate changes, more companies are turning to sustainable solutions to help lower their carbon footprint. Renewable hydrogen and hydrogen blends are among several alternative fuels customers are considering achieving their sustainability goals. Leveraging 35 years of expertise in hydrogen technologies across multiple end markets, Caterpillar continues to improve the performance of hydrogen-fueled power technologies with minimal impacts on maintenance costs and schedules, availability, and operations. 5. Caterpillar offers a full range of Cat® Microgrid projects from 10kW to 100MW through our global dealer network. The projects would include an integrated or standalone solution using solar, energy storage and/or diesel/gas generator sets. We can also offer monitoring services for our projects. The solutions are all module and scalable. Our CAT dealers can offer product upgrades, financing services, warranties, service agreements, and parts availability. We will customize our microgrid technologies to meet your business and industry needs. 6. In 2022, Caterpillar acquired Tangent Energy Solutions, an Energy-as-a-service company. Tangent provides customers with turnkey solutions for reducing energy costs, increasing energy efficiency, reducing emissions, monetizing electric grid support and providing resiliency for customer operations. Tangent Energy's proprietary software solutions monitor patterns from grid and client facilities, analyze opportunities in energy markets, and then dispatch resources to maximize return without disrupting normal business operations.	*
42	Describe any "green" initiatives that relate to your company or to your products or services, and include a list of the certifying agency for each.	At Caterpillar, sustainability is an important commitment to building a better world. Sustainability is part of who we are and what we do every day - it is one of Caterpillar's core values. We recognize progress involves a balance of environmental stewardship, social responsibility, and economic growth. We consider this as we work toward a vision of a world in which people's basic needs - such as shelter, clean water, education, and reliable energy - are fulfilled. We provide work environments, products, services, and solutions that make productive and efficient use of resources as we strive to achieve our vision. We believe this commitment supports the enduring the success of our customers, stockholders, dealers, and our people. Caterpillar is a proud 20-year member of the Dow Jones Sustainability Indices, including both the World and North America Indices. The annuals DJSI process follows a best-in-class approach, evaluating numerous corporate economic, environmental, and social performance factors. For more on sustainability at Caterpillar, please visit our 2021 Sustainability Report found at Caterpillar | 2021 Sustainability Report. Caterpillar has recently acquired Tangent Energy Solutions. Tangent is an energy-as-a-service company that provides expertise to customers in structuring and developing projects that monetize their power generation assets. This capability increases a customer's financial rationale for new installations and, at the same time, increases power reliability and supports their ESG (Environmental, Social and Governance) initiatives. This investment increases our ability to participate in the growing utility sector and sell more electric power products. Electrification and Decarbonization are major growing trends in our energy space. Tangent can help with the reliability of power that customers are looking for while simplifying the power systems as we move forward through this Energy Transition	*

43	Identify any third-party issued eco-labels, ratings or certifications that your company has received for the equipment or products included in your Proposal related to energy efficiency or conservation, life-cycle design (cradle-to-cradle), or other green/sustainability factors.	Plants certified with IDO 14001:2004 Environmental Management System include: 1) Anchor Coupling - Goldsboro NC, ISO 14001:2004- Sept 2018 2) Anchor Coupling - Menominee - ISO 14001: 2015 - Jan. 2021 3) Mapleton - 14001:2004 self-certification issued Jan 2013 4) Reman Services - Corinth MS - ISO 14001-2015- Sept. 2021 5) Reman Services - Franklin - ISO 14001:2004-May 2017 Certifications specific to EP product manufacturing: 1) Lafayette, IN – ISO 9001: 2015- Nov 2020 2) Griffin, GA – ISO 9001:2015 – Feb 2021 3) Seguin, TX- ISO 9001:2015	*
44	Describe any Women or Minority Business Entity (WMBE), Small Business Entity (SBE), or veteran owned business certifications that your company or hub partners have obtained. Upload documentation of certification (as applicable) in the document upload section of your response.	Two CAT dealers in NA are owned by women: Foley Equipment, with territory primarily in Kansas and Missouri; and Cashman Equipment based in Nevada. In addition to these two owners, there are 31 other women in our NA dealer network who hold the titles of President, Vice President or Director. One of the more recognized initiatives within Caterpillar's Global Supply Network Division is the Caterpillar Inc. Proprietary Information Supplier Diversity Program which spurs economic growth by increasing business opportunities to minority-owned, women-owned, veteran and service disabled veteran-owned, small disadvantaged businesses and those certified in HUBZones, all while ensuring expectations are met with regards to quality, velocity, capacity, and cost. Currently more than 37% of our direct and indirect purchasing is conducted with suppliers in these categories. Caterpillar is a proud member of the National Minority Supplier Development Council (NMSDC). We also use the System for Aware Management (SAM), SBA, and NMSDC databases to locate SDB, VOSB, SDVOSB and HUBZone suppliers. Supplier Diversity is discussed with Global Supply Network Division leadership during the Monthly Operating Results Review meetings. This in turn forces accountability for divers supplier inclusion by measuring drivers, such as the number of sourcing projects, which include Divers Suppliers and the values of the projects in which they participate. The goal is to create greater transparency to determine which teams are creating inclusive environments and which are not. A full report on Caterpillar Diversity and Inclusion can be found at Caterpillar | Caterpillar 2021 Diversity & Inclusion Report Highlights Progress with Growth in Diverse Populations.	*

45	What unique attributes does your company, your products, or your services offer to Sourcewell participating entities? What makes your proposed solutions unique in your industry as it applies to Sourcewell participating entities?	BEST OVERALL VALUE / LOWEST LIFE CYCLE COST: CAT products deliver the best value for the money. We are happy to demonstrate to customers that our generators offer the lowest overall owning and operating costs when factors such as fuel efficiency, repair frequency, productivity, and resale value are factored in. We believe that government agencies are tasked to be the best stewards of taxpayer funds and our products can prove that they are the best solution. Sourcewell members are in the best position to allow these discussions to take place in contrast to a local bid situation where the focus is often only on initial price. EXTENDED SERVICE COVERAGE To show the value that we place on this proposed contract, we will continue to offer a complimentary Gold and Platinum Extended Service Coverage on most models when purchased through the Sourcewell contract. Details on these offerings can be found in flyers included in Attachments. CAT SAFETY SERVICES / SAFETY FEATURES: In addition to the tangible, measurable aspects of the life cycle cost equation, we also bring our focus on safety to every product that we manufacture. Quantifying a human life or debilitating injury is impossible, but each generator has industry-leading features that strive to minimize the possibility for accidents. Some examples include: - UL2200 Certified – all units include guards over rotating compartments, safety shutdowns and alarms, and grounded wiring installations among many other safety features - Emergency Stop Button - Enclosures are lockable to allow human contact to be avoided - XQ Product has separated control panel to allow a member to not have to go in enclosure to make generator adjustments - XQ also has cover over customer connections and circuit breaker trips when opened. - NFPA 110 – Level 1 Life Safety saves lives of people who are in hospitals, nursing homes, etc. by requiring startup in X seconds. - IBC – certified against earthquakes All certifications on our products are listed here: AS1359, CSA C22.2 No100-04, UL142, UL489, UL869, UL2200, NFPA37, NFPA70, NFPA99, NFPA110, IBC, IEC60034-1, ISO3046, ISO8528, NEMA MG1-22, NEMA MG1-33, 2006/95/EC, 2006/42/EC, 2004/108/EC. Caterpillar Safety Services offers culture, jobsite and leadership assessments; safety and leadership training workshops; and a comprehensive continuous improvement process through consultative services. Services are facilitated by Safety Services consultants and training products can be purchased for self-implementation. Details on products and services are available at www.cat.com/safety. DEALERSHIP ATTRIBUTES: Back up power is a critical asset of many Sourcewell members. Caterpillar dealers bring a unique solution to provide second to none service to our customers. Unlike competitors, our dealers own their own rental fleet and make available as needed. Even with stationary products, we have options to provide back up rentals to best serve Sourcewell's members when emergencies occur. Our vast dealer network with 800 locations is positioned to service both urban and rural areas throughout the US and Canada. PRODUCT ATTRIBUTES: Over the last five years, Caterpillar has invested in a product that is lower capex cost for the public and non-profit industry sector. This new line of generators, our GC models, involved a redesign of 15 of our current generator offerings, which created an average cost reduction of 10-15%. The cost savings is driven by offering fewer options on these models without sacrificing Caterpillar quality.	*

Table 9: Warranty

Describe in detail your manufacturer warranty program, including conditions and requirements to qualify, claims procedure, and overall structure. You may upload representative samples of your warranty materials (if applicable) in the document upload section of your response in addition to responding to the questions below.

Line Item	Question	Response *	
46	Do your warranties cover all products, parts, and labor?	Yes. Caterpillar has the most extensive warranty coverage in the industry. We cover all products, parts and labor with fewer exclusions than our competitors. Please see our "EP Warranty Statement SELF5731-01."	*
47	Do your warranties impose usage restrictions or other limitations that adversely affect coverage?	We are pleased to say that our warranties cover defects in material and workmanship for the time specified in the policy when the equipment is used as per design intent.	*
48	Do your warranties cover the expense of technicians' travel time and mileage to perform warranty repairs?	Caterpillar warranties cover the cost of replacement parts and the labor to install them. They sometimes cover travel time and mileage. Dealer territories vary considerably from state to state as do their policies about travel time and mileage during the warranty period.	*
49	Are there any geographic regions of the United States or Canada (as applicable) for which you cannot provide a certified technician to perform warranty repairs? How will Sourcewell participating entities in these regions be provided service for warranty repair?	We have no geography restrictions on warranty repairs. One of our key differentiating strengths is our ability to service equipment regardless of where it is located.	*
50	Will you cover warranty service for items made by other manufacturers that are part of your proposal, or are these warranties issues typically passed on to the original equipment manufacturer?	Warranty service for generator ordered from a Caterpillar facility are generally provided by Caterpillar and performed by Cat dealers. Some items, such as battery chargers, are covered under their manufacturers' warranties	*
51	What are your proposed exchange and return programs and policies?	We warrant that upon delivery our products will be free from defects in material and workmanship and will operate as intended. If they are not, we will make any necessary corrections.	*
52	Describe any service contract options for the items included in your proposal.	We have a large variety of service contract options which can all be customized according to customer needs and at least equal to local competition. More solutions are available and we encourage members and dealers to explore all options. Customer Value Agreements (CVA's): A member may choose to enter an agreement with their Cat dealer to perform routine maintenance and/or repairs. These contracts are customizable based on member's situational and local needs, including some standard options as well. For instance, all units under 1250kW have standard parts kits available. Examples of options that can be included in a CVA are: 1. Condition Monitoring 2. Load Bank Testing 3. Extended Service Coverages CVA's are a useful tool for members to better manage their budget. Most CVA's are bundled at the time of purchase; however, they may be added at any time.	*

Table 10: Payment Terms and Financing Options

Line Item	Question	Response *	
53	Describe your payment terms and accepted payment methods.	Cat dealers are independently owned businesses. As such their payment terms vary, but all will be agreed upon at the PO level.	*
54	Describe any leasing or financing options available for use by educational or governmental entities.	Caterpillar's wholly owned subsidiary, Caterpillar Financial offers Sourcewell members leasing and finance products at below market interest rates. The total interest charged is normally less than the total cost of issuing a bond. Often these leasing/financing options may not require voter approval as with bond issuance. These products also let Sourcewell members cancel their contracts without penalty (on the last day of the appropriations period) if funding is not approved for the following year. Lending terms and conditions are transparent to all Sourcewell members upon quotation.	*
55	Describe any standard transaction documents that you propose to use in connection with an awarded contract (order forms, terms and conditions, service level agreements, etc.). Upload a sample of each (as applicable) in the document upload section of your response.	Cat dealers are independently owned businesses. As such their standard transaction documents will vary.	*
56	Do you accept the P-card procurement and payment process? If so, is there any additional cost to Sourcewell participating entities for using this process?	Because Cat dealers will be receiving payments directly from members, accepting P-card procurement will be at their discretion. Many dealers do accept this method without additional fees. Some have limitations on the amount that can be processed.	*

Table 11: Pricing and Delivery

Provide detailed pricing information in the questions that follow below. Keep in mind that reasonable price and product adjustments can be made during the term of an awarded Contract as described in the RFP, the template Contract, and the Sourcewell Price and Product Change Request Form.

Line Item	Question	Response *	
57	Describe your pricing model (e.g., line-item discounts or product-category discounts). Provide detailed pricing data (including standard or list pricing and the Sourcewell discounted price) on all of the items that you want Sourcewell to consider as part of your RFP response. If applicable, provide a SKU for each item in your proposal. Upload your pricing materials (if applicable) in the document upload section of your response.	Our pricing model is simple. We offer a deep discount off the current generator list prices to all Sourcwell members. Overall pricing from published list price is discounted up to 40% with an average of 27% overall. Specific discounts apply to each diesel or natural gas platform product line. Services, used products, rental agreements, and microgrid solutions are also included at different discounting levels. We have provided reference pricing in the document entitled "Caterpillar Gen Disc List RFP August 2022."	*
58	Quantify the pricing discount represented by the pricing proposal in this response. For example, if the pricing in your response represents a percentage discount from MSRP or list, state the percentage or percentage range.	The discounts are off of the current generator list prices. Our discount ranges varies between 10 - 40% off of the list price depending on the product family.	*
59	Describe any quantity or volume discounts or rebate programs that you offer.	Our dealers are empowered to consider purchase order volume, repeat purchases, member responsiveness, etc. They may offer members additional discounts and /or services at their discretion.	*
60	Propose a method of facilitating “sourced” products or related services, which may be referred to as “open market” items or “nonstandard options”. For example, you may supply such items “at cost” or “at cost plus a percentage,” or you may supply a quote for each such request.	Sourced goods / Open Market Items are available to members from our Cat dealers. The prices for these good or services will represent fair marketing value and will be determined between the member and the selling dealer. We encourage our dealers and members to use this option as it facilitates complimentary products and streamlines the procurement process. Customers and dealers are responsible for including their Sourcewell contract number and member numbers on all documentation related to these purchases. Caterpillar Inc. is not a party to these sales and is exempted from including them in quarterly reports. For audits, inclusion of a customer's Sourcewell member number on the PO and/or invoice shall be deemed sufficient.	*
61	Identify any element of the total cost of acquisition that is NOT included in the pricing submitted with your response. This includes all additional charges associated with a purchase that are not directly identified as freight or shipping charges. For example, list costs for items like pre-delivery inspection, installation, set up, mandatory training, or initial inspection. Identify any parties that impose such costs and their relationship to the Proposer.	Generators are unique in their requirements, and often require specialized startup/installation which can be determined with the dealer at the PO level. When a dealer issues a quote for a generator, any additional costs will be itemized separately and are not subject to the Sourcewell discount.	*
62	If freight, delivery, or shipping is an additional cost to the Sourcewell participating entity, describe in detail the complete freight, shipping, and delivery program.	There is no additional cost to members who choose to pick up their generator from the Cat dealer. Freight and delivery charges will be determined and assessed at each project.	*
63	Specifically describe freight, shipping, and delivery terms or programs available for Alaska, Hawaii, Canada, or any offshore delivery.	Just as for members in the 48 contiguous states, there is no additional cost to members who choose to pick up their generator from their Cat dealer. Freight and delivery charges will be determined and assessed at each project.	*
64	Describe any unique distribution and/or delivery methods or options offered in your proposal.	Generators are large purchases and if there are unique member requirements our dealers will be happy to discuss on a case by case basis.	*

Table 12: Pricing Offered

Line Item	The Pricing Offered in this Proposal is: *	Comments
65	c. better than the Proposer typically offers to GPOs, cooperative procurement organizations, or state purchasing departments.	This proposed contract is priced to be our go-to-market strategy across the US and Canada. We have included a complimentary extended warranty for most models when purchased through our proposed Sourcewell contract.

Table 13: Audit and Administrative Fee

Line Item	Question	Response *	
66	Specifically describe any self-audit process or program that you plan to employ to verify compliance with your proposed Contract with Sourcewell. This process includes ensuring that Sourcewell participating entities obtain the proper pricing, that the Vendor reports all sales under the Contract each quarter, and that the Vendor remits the proper administrative fee to Sourcewell. Provide sufficient detail to support your ability to report quarterly sales to Sourcewell as described in the Contract template.	We plan to continue our very robust process to ensure reporting speed, accuracy, and contract compliance. Caterpillar and our Cat dealers have very close and trusting relationships. Our dealers are long-established, and the current process (under contract #120617-CAT) is working well. The Caterpillar Dealer Network will receive additional discounts from Caterpillar to help reach Sourcewell members purchasing prices per the Sourcewell contract. To qualify for the discounts, the selling Caterpillar Dealer must identify each applicable sale as a Sourcewell sale on their order and they must also fill out a report to the Caterpillar designated Sourcewell custodian, Nicole Warnstedt, including the product order number and Sourcewell member number. Reports are updated and reviewed on a quarterly basis to assist in providing payment to Sourcewell. To ensure correct pricing and auditing, Caterpillar has created a focus program that dealers can use on their quotes. This focus program automatically populates associated discount levels. The Caterpillar designated Sourcewell custodian, Nicole Warnstedt, has and will remain actively involved in the auditing process both with auditing Caterpillar Dealer pricing to Sourcewell members as well as the quarterly administration fee process.	*
67	If you are awarded a contract, provide a few examples of internal metrics that will be tracked to measure whether you are having success with the contract.	In the event of an award, we will continue to measure the percentage of sales that are sold through the Sourcewell contract, dealer participation with the contract, total number of gensets sold and program growth year over year.	*
68	Identify a proposed administrative fee that you will pay to Sourcewell for facilitating, managing, and promoting the Sourcewell Contract in the event that you are awarded a Contract. This fee is typically calculated as a percentage of Vendor's sales under the Contract or as a per-unit fee; it is not a line-item addition to the Member's cost of goods. (See the RFP and template Contract for additional details.)	We propose an administrative fee to Sourcewell of 1% of transaction price of any new Caterpillar generators sold through this contract. Caterpillar will pay this fee to Sourcewell and not impose related charges to our dealers or members.	*

Table 14A: Depth and Breadth of Offered Equipment Products and Services

Line Item	Question	Response *	
69	Provide a detailed description of the equipment, products, and services that you are offering in your proposal.	Caterpillar is proposing an extensive alternative energy solutions offering including: 1) a full line of diesel and natural gas packaged generator sets from 20 to 4000 kW 2) a line of price point configured diesel generator sets up to 1250 kW and 3) Microgrid solar and battery energy solutions. The following key Caterpillar product categories are included in this response: Stationary Diesel Packaged Generator Sets Stationary Natural Gas Packaged Generator Sets Mobile Diesel Packaged Generator Sets (XQ Products with Trailers) Control Panels Switchgear Automatic Transfer Switches Microgrid Components Leasing and Financing The Caterpillar Dealer Network can also offer custom shop work, installation, “turn-key” solutions, delivery/freight, training, custom enclosures, custom fuel tanks, custom automatic transfer switches, dealer labor, additional/custom parts, engineering, leasing, financing and general contracting labor. To further enhance the Sourcewell members’ product offering, the Caterpillar Dealer Network can also offer an expansive network of used equipment along with rental agreements and maintenance agreements.	*
70	Within this RFP category there may be subcategories of solutions. List subcategory titles that best describe your products and services.	N/A	*

Table 14B: Depth and Breadth of Offered Equipment Products and Services

Indicate below if the listed types or classes of equipment, products, and services are offered within your proposal. Provide additional comments in the text box provided, as necessary.

Line Item	Category or Type	Offered *	Comments	
71	Stationary electrical generation systems, backup or standby generator sets, mobile and ground power units, and trailer mounted generators	(•) Yes ( ) No	N/A	*
72	Parts and accessories, including enclosures, fuel tanks, automatic transfer switches, paralleling equipment, switch gears, connection boxes, controls, alarm modules, batteries, block heaters, and networking tools	(•) Yes ( ) No	N/A	*
73	Related services, including design, customization, engineering, commissioning, installation, delivery, maintenance, repair, training and operation, service and maintenance agreements, decommissioning and repurposing, custom shop work, and rental services	(•) Yes ( ) No	N/A	*

Exceptions to Terms, Conditions, or Specifications Form

Only those Proposer Exceptions to Terms, Conditions, or Specifications that have been accepted by Sourcewell have been incorporated into the contract text.

Documents

Ensure your submission document(s) conforms to the following:

1. Documents in PDF format are preferred. Documents in Word, Excel, or compatible formats may also be provided.

2. Documents should NOT have a security password, as Sourcewell may not be able to open the file. It is your sole responsibility to ensure that the uploaded document(s) are not either defective, corrupted or blank and that the documents can be opened and viewed by Sourcewell.

3. Sourcewell may reject any response where any document(s) cannot be opened and viewed by Sourcewell.

4. If you need to upload more than one (1) document for a single item, you should combine the documents into one zipped file. If the zipped file contains more than one (1) document, ensure each document is named, in relation to the submission format item responding to. For example, if responding to the Marketing Plan category save the document as "Marketing Plan."

- Pricing - Caterpillar Gen Disc List RFP August 2022.xlsx - Tuesday September 20, 2022 15:56:47
- Financial Strength and Stability - Financial Strength and Stability.zip - Tuesday September 20, 2022 15:58:41
- Marketing Plan/Samples - Marketing Plan.zip - Tuesday September 20, 2022 15:59:03
- WM8E/M8E/S8E or Related Certificates (optional)
- Warranty Information - SELF5743-01_.pdf - Tuesday September 20, 2022 15:57:54
- Standard Transaction Document Samples - Standard Transaction Document Samples.zip - Tuesday September 20, 2022 15:59:30
- Upload Additional Document - Additionals.zip - Tuesday September 20, 2022 15:59:44

Addenda, Terms and Conditions

PROPOSER AFFIDAVIT AND ASSURANCE OF COMPLIANCE

I certify that I am the authorized representative of the Proposer submitting the foregoing Proposal with the legal authority to bind the Proposer to this Affidavit and Assurance of Compliance:

1. The Proposer is submitting this Proposal under its full and complete legal name, and the Proposer legally exists in good standing in the jurisdiction of its residence.

2. The Proposer warrants that the information provided in this Proposal is true, correct, and reliable for purposes of evaluation for contract award.

3. The Proposer, including any person assisting with the creation of this Proposal, has arrived at this Proposal independently and the Proposal has been created without colluding with any other person, company, or parties that have or will submit a proposal under this solicitation; and the Proposal has in all respects been created fairly without any fraud or dishonesty. The Proposer has not directly or indirectly entered into any agreement or arrangement with any person or business in an effort to influence any part of this solicitation or operations of a resulting contract; and the Proposer has not taken any action in restraint of free trade or competitiveness in connection with this solicitation. Additionally, if Proposer has worked with a consultant on the Proposal, the consultant (an individual or a company) has not assisted any other entity that has submitted or will submit a proposal for this solicitation.

4. To the best of its knowledge and belief, and except as otherwise disclosed in the Proposal, there are no relevant facts or circumstances which could give rise to an organizational conflict of interest. An organizational conflict of interest exists when a vendor has an unfair competitive advantage or the vendor's objectivity in performing the contract is, or might be, impaired.

5. The contents of the Proposal have not been communicated by the Proposer or its employees or agents to any person not an employee or legally authorized agent of the Proposer and will not be communicated to any such persons prior to Due Date of this solicitation.

6. If awarded a contract, the Proposer will provide to Sourcewell Participating Entities the equipment, products, and services in accordance with the terms, conditions, and scope of a resulting contract.

7. The Proposer possesses, or will possess before delivering any equipment, products, or services, all applicable licenses or certifications necessary to deliver such equipment, products, or services under any resulting contract.

8. The Proposer agrees to deliver equipment, products, and services through valid contracts, purchase orders, or means that are acceptable to Sourcewell Members. Unless otherwise agreed to, the Proposer must provide only new and first-quality products and related services to Sourcewell Members under an awarded Contract.

9. The Proposer will comply with all applicable provisions of federal, state, and local laws, regulations, rules, and orders.

10. The Proposer understands that Sourcewell will reject RFP proposals that are marked "confidential" (or "nonpublic," etc.), either substantially or in their entirety. Under Minnesota Statutes Section 13.591, subdivision 4, all proposals are considered nonpublic data until the evaluation is complete and a Contract is awarded. At that point, proposals become public data. Minnesota Statutes Section 13.37 permits only certain narrowly defined data to be considered a "trade secret," and thus nonpublic data under Minnesota's Data Practices Act.

11. Proposer its employees, agents, and subcontractors are not:
    1. Included on the "Specially Designated Nationals and Blocked Persons" list maintained by the Office of Foreign Assets Control of the United States Department of the Treasury found at: https://www.treasury.gov/ofac/downloads/sdnlist.pdf;

    2. Included on the government-wide exclusions lists in the United States System for Award Management found at: https://sam.gov/SAM/; or

    3. Presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from programs operated

by the State of Minnesota; the United States federal government or the Canadian government, as applicable; or any Participating Entity. Vendor certifies and warrants that neither it nor its principals have been convicted of a criminal offense related to the subject matter of this solicitation.

☑ By checking this box I acknowledge that I am bound by the terms of the Proposer's Affidavit, have the legal authority to submit this Proposal on behalf of the Proposer, and that this electronic acknowledgment has the same legal effect, validity, and enforceability as if I had hand signed the Proposal. This signature will not be denied such legal effect, validity, or enforceability solely because an electronic signature or electronic record was used in its formation. - Jaime Mineart, Vice President & General Manager, Caterpillar Inc.

The Proposer declares that there is an actual or potential Conflict of Interest relating to the preparation of its submission, and/or the Proposer foresees an actual or potential Conflict of Interest in performing the contractual obligations contemplated in the bid.

○ **Yes** ◉ **No**

The Bidder acknowledges and agrees that the addendum/addenda below form part of the Bid Document.

Check the box in the column "**I have reviewed this addendum"** below to acknowledge each of the addenda.

File Name	I have reviewed the below addendum and attachments (if applicable)	Pages
Addendum_4 _Electrical_Energy_Power_Generation_Equipment_RFP_092222 Fri September 9 2022 09:10 AM	☑	1
Addendum_3 _Electrical_Energy_Power_Generation_Equipment_RFP_092222 Tue September 6 2022 02:37 PM	☑	1
Addendum_2 _Electrical_Energy_Power_Generation_Equipment_RFP_092222 Wed August 31 2022 07:52 AM	☑	1
Addendum 1 _Electrical_Energy_Power_Generation_Equipment_RFP_092222 Wed August 10 2022 11:35 AM	☑	1

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Caterpillar Sourcewell Member Discounts

All Discounts listed are for "Standby Ratings only unless otherwise stated".

	List Price Disc
Stationary Diesel	
C2.2, 60 HZ, 40 - 60 kW Diesel (Reference the "PSNA-EPG-F_C2.2PGABR" Caterpillar Price List)	
D20 - 20 kW	19%
D25 - 25 kW	19%
D30 - 30 kW	19%
C4.4, 60 HZ, 40 - 60 kW Diesel (Reference the "PSNA-EPG-F_C4.4LCABR" Caterpillar Price List)	
D40 - 40 kW	31%
D50 - 50 kW	31%
D60 - 60 kW	31%
C4.4, 60 HZ, 80 - 100 kW Diesel (Reference the "PSNA-EPG-F_C4.4PGABR" Caterpillar Price List)	
D80 - 80 kW	31%
D100 - 100 kW	31%
C4.4 GC, 60 HZ, 200 - 300 kW Diesel (Reference the "C4.4 GCABR" Caterpillar Price List)	
D40 - 40 kW	31%
D50 - 50 kW	31%
D60 - 60 kW	31%
D80 - 80 kW	31%
D100 - 100 kW	31%
C7.1, 60 HZ, 125 - 200 kW Diesel (Reference the "PSNA-EPG-F_C7.1PGABR" Caterpillar Price List)	
D125 - 125 kW	35%
D150 - 150 kW	35%
D175 - 175 kW	35%
D200 - 200 kW	35%
C7.1 GC, 60 HZ, 200 - 300 kW Diesel (Reference the "C9 GCABR" Caterpillar Price List)	
D125 - 125 kW	31%
D150 - 150 kW	31%
D175 - 175 kW	31%
D200 - 200 kW	31%
C9, 60 HZ, 200 - 300 kW Diesel (Reference the "PSNA-EPG-F_C9PGAM" Caterpillar Price List)	
200 kW	33%
250 kW	37%
300 kW	37%
C9 GC, 60 HZ, 200 - 300 kW Diesel (Reference the "C9 GCABR" Caterpillar Price List)	
250 kW	31%
300 kW	31%
C13, 60 HZ, 350 - 400 kW Diesel (Reference the "PSNA-EPG-F_C13PGAM" Caterpillar Price List)	
350 kW	37%
400 kW	37%
C13 GC, 60 HZ, 350 - 400 kW Diesel (Reference the "C13 GCABR" & "C13 GCAM" Caterpillar Price List)	
350 kW	31%
400 kW	31%
C15, 60 HZ, 350 - 500 kW Diesel (Reference the "PSNA-EPG-F_C15PGAM" Caterpillar Price List)	
350 kW	37%
400 kW	37%
450 kW	37%
500 kW	37%
C15 GC, 60 HZ, 350 - 500 kW Diesel (Reference the "C15 GCABR" & "C15 GCAM" Caterpillar Price List)	
350 kW	31%

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400 kW	31%
450 kW	31%
500 kW	31%
C18, 60 HZ, 550 - 750 kW Diesel (Reference the "PSNA-EPG-F_C18PGAM" Caterpillar Price List)	
550 kW	37%
600 kW	37%
650 kW	33%
700 kW	33%
750 kW	33%
C18 GC, 60 HZ, 550 - 600 kW Diesel (Reference the "C18 GCAM" Caterpillar Price List)	
550 kW	31%
600 kW	31%
C18, 60 HZ, EPA Tier 4f, - 455 KW Diesel (Reference the "PSNA-EPG-F_C18PKAM" Caterpillar Price List)	
455 kW Prime Power	20%
500 kW	20%
C27, 60 HZ, 750 - 800 kW Diesel (Reference the "PSNA-EPG-F_C27PGBG" Caterpillar Price List)	
750 kW	32%
800 kW	32%
C32, 60 HZ, 1000 - 1250 kW Diesel (Reference the "PSNA-EPG-F_C32PGDG" Caterpillar Price List)	
1000 kW	33%
1250 kW	34%
C27 GC, 60 HZ, 800 kW Diesel (Reference the "V12 GCAG" Caterpillar Price List)	
D800 - 800 kW	31%
C32 GC, 60 HZ, 1000-1250 kW Diesel (Reference the "V12 GCAG" Caterpillar Price List)	
D1000 - 1000 kW	31%
D1250 - 1250 kW	31%
3512C, 60 HZ, 1500 - 1750 kW Diesel **(EPA Tier 2 & CARB Emissions Certified (Nonroad); EPA Tier 2 Emissions Certified for Stationary Use)** **(Reference the "PSNA-EPG-F_3512PGFL" Caterpillar Price List)**	
1500 kW	36%
1750 kW	34%
3516C/3516E, 60 HZ, 2000 - 3000 kW Diesel **(EPA Tier 2 & CARB Emissions Certified (Nonroad); EPA Tier 2 Emissions Certified for Stationary Use)** **(Reference the "PSNA-EPG-F_3516PGFL" Caterpillar Price List)**	
2000 kW	40%
2500 kW	36%
2750 kW	33%
3000 kW	33%
3516C-HD, 60 HZ, 2000 - 2500 kW Diesel (EPA Tier 4) **(Reference the "PSNA-EPG-F_3516PGFL" Caterpillar Price List)**	
2000 kW	19%
2500 kW	19%
C175-16, 60 HZ, 3000 kW Diesel (EPA Tier 2 for Mobile and Stationary Use) **(Reference the "C175-PGAL" Caterpillar Price List)**	
3000 kW	29%
C175-16 T4F, 60 HZ, 3000 kW Diesel (EPA Tier 4) **(Reference the "C175-PGAL" Caterpillar Price List)**	
3000 kW	19%
C175-20, 60 HZ, 4000 kW Diesel (EPA Tier 2 for Mobile and Stationary Use) **(Reference the "C175-PGAL" Caterpillar Price List)**	
4000 kW	24%

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50 - 60 kW Caterpillar Natural Gas (Reference the "PSNA-EPG-F_G80PGAM" Caterpillar Price List)	
DG50-60 kw	18%
100 - 200 kW Caterpillar Natural Gas (Reference the "PSNA-EPG-F_G200PGABR" Caterpillar Price List)	
DG100 - 200 kW	18%
100 - 150 kW Caterpillar Natural Gas (Reference the "PSNA-EPG-F_G150PGAM" Caterpillar Price List)	
DG100 - 150 kW	18%
175 - 300 kW Olympian Natural Gas (Reference the "PSNA-EPG-F_GASOLYGN" Caterpillar Price List)	
175 - 300 kW Caterpillar Natural Gas (Reference the "PSNA-EPG-F-G14.2 PGAN" Caterpillar Price List)	
DG175 - 175 kW	26%
350 - 450 kW Caterpillar Natural Gas (Reference the "PSNA-EPG-F-G21.9 PGAM" Caterpillar Price List)	
DG350 - 350 kW	26%
DG400 - 400 kW	26%
DG450 - 450 kW	26%
CG18, 60 Hz, 350 - 500 kW Caterpillar Natural Gas (Reference the "PSNA-EPG-F-CG18 PGAM" Caterpillar Price List)	
DG350 - 350 kW	23%
DG400 - 400 kW	23%
DG450 - 450 kW	23%
DG500 - 500 kW	23%
G3412, 60 HZ, 375 - 500 kW Natural Gas (Reference the "PSNA-EPG-F_G3412NPG/NGG" Caterpillar Price List)	
375 kW	20%
450 kW	20%
500 kW	20%
G3512 60 HZ, 750 - 1000 kW Natural Gas (Reference the "PSNA-EPG-F_G3512NPL" Caterpillar Price List)	
750 kW	18%
1000 kW	18%
G3512 60 HZ, 1500kW Natural Gas G3512 HNL	
1500kw	18%
G3516 NQL 1500kw	18%
G3516 60 HZ, 750 - 1000 kW Natural Gas, Landfill Gas, & Biogas (Ratings Depend on Selection) (Reference the "PSNA-EPG-F_G3516BNPL" Caterpillar Price List)	
Removed	18%
G3516C 60 HZ, 1500 kW Natural Gas (Reference the "PSNA-EPG-F_G3516CNPL" Caterpillar Price List)	
1500 kW	18%
G3516A 60HZ (Reference the "PSNA-EPG-F_G3516ANQL" Caterpillar Price List) All	18%
G3516H 60 HZ, 1966 kW Natural Gas (Reference the "PSNA-EPG-F_G3516HNPL" Caterpillar Price List)	
1966 kW	18%
G3520H 60 HZ, 2469 kW Natural Gas (Reference the "PSNA-EPG-F_G3520HNPL" Caterpillar Price List)	
2469 kW	17%

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G3520 Fast Start 60 HZ, 2.0 - 2.6 MW Natural Gas

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(Reference the "PSNA-EPG-F_G3520NPL" Caterpillar Price List)	22%
2.0 - 2.6 MW	
G3520C 60 HZ, Natural Gas G3520CLGL and G3520CLPL	20%
ALL	
G3520H 60 HZ, Natural Gas G3520HNPL	20%
ALL	
CHP Solutions Packages HPS1500N, HPS2000N, HPS2500N	
1.4 - 2.5 MW	20%
G3520C 60 HZ, 1600 - 2055 kW Natural Gas	
(Reference the "PSNA-EPG-F_G3520CNPL" Caterpillar Price List)	
Removed	20%
	20%

CG132, CG170, CG260 (custom)

Due to the customization and plethora of options, it is not feasible to provide a paper price list for these specific generator sets. Each quote is custom for the specific application. However, members will receive a 15% discount off of the configured list price from each member's local dealer.	15%

XQ35, 60 HZ, 35 kVA Prime Diesel (EPA Tier 4 Final & CARB Emissions Certified (Non-road))	
(Reference the "PSNA-EPG-F_XQ35BM" Caterpillar Price List)	
27 kW Prime Power	21%
30 kW	21%
XQ60, 60 HZ, 59 kVA Prime Diesel (EPA Tier 4 Final & CARB Emissions Certified (Non-road))	
(Reference the "PSNA-EPG-F_XQ60BM" Caterpillar Price List)	
48 kW Prime Power *Temporarily Discontinued	21%
XQ125, 60 HZ, 125 kVA Prime Diesel (EPA Tier 4 Final & CARB Emissions Certified (Non-road))	
(Reference the "PSNA-EPG-F_XQ125BM" Caterpillar Price List)	
100 kW Prime Power *Temporarily Discontinued	21%
110 kW *Temporarily Discontinued	21%
XQ230, 60 HZ, 230 kVA Prime Diesel (EPA Tier 4 Final & CARB Emissions Certified (Non-road))	
(Reference the "PSNA-EPG-F_XQ230BM" Caterpillar Price List)	
182 kW Prime Power	21%
200 kW Prime Power	21%
XQ330, 60 HZ, 330 kVA Prime Diesel (EPA Tier 4 Final & CARB Emissions Certified (Non-road))	
(Reference the "PSNA-EPG-F_XQ425BM" Caterpillar Price List)	
264 kW Prime Power	21%
288 kW Prime Power	21%
XQ425, 60 HZ, 425 kVA Prime Diesel (EPA Tier 4 Final & CARB Emissions Certified (Non-road))	
(Reference the "PSNA-EPG-F_XQ425BM" Caterpillar Price List)	
340 kW Prime Power	21%
XQ570, 60 HZ, 570 kVA Prime Diesel (EPA Tier 4 Final & CARB Emissions Certified (Non-road))	
(Reference the "PSNA-EPG-F_XQ570BG" Caterpillar Price List)	
455 kW Prime Power	21%
XQ1140, 60 HZ, 1140 kVA Prime Diesel (EPA Tier 4 Final & CARB Emissions Certified (Non-road))	
(Reference the "PSNA-EPG-F_XQ1140BG" Caterpillar Price List)	
910 kW Prime Power	21%
XQ2280, 60 HZ, 2280 kVA Prime Diesel (EPA Tier 4 Final & CARB Emissions Certified (Non-road))	
(Reference the "PSNA-EPG-F_XQ1140BG" Caterpillar Price List)	
1825 kW Prime Power	21%

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Switchgear (customizable)	12%
*Due to the customization and plethora of options, it is not feasible to provide a paper price list for Cat switchgear. However, members will receive a **12% discount** off of the configured list price from each member's local dealer.*	
Epic (Reference the "PSNA-EPG-F_CATEPICG" Price List)	
Epic - Master Control Panel	10%
Epic - Generator Control Panel	10%
Epic - Utility Control Panel	10%
Supervisory Contol Panel (Reference the "PSNA-EPG-F_CATSCPN" Price List)	
EMCP 4.4 SCP	10%
Hybrid Products (Reference the "PSNA-EPG-F_CATSCPN" Price List)	
All Hybrid Products	22%
Energy Stoarge System	
XES01AN	21%
ATS (AUTOMATIC TRANSFER SWITCHES) (Reference the "ATS 2022" Price List)	
235 ATS's Available	20%

Caterpillar: Confidential Green

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Caterpillar Sourced Goods & Support Services Multiplier

Sourced Goods & Support Service Provided	Sourcewell Member Pricing
Custom Shop Work	5% off list price / typical sale price if no list price is available
Installation	5% off list price / typical sale price if no list price is available
Engineering Services	5% off list price / typical sale price if no list price is available
Delivery/Freight	5% off list price / typical sale price if no list price is available
Training	5% off list price / typical sale price if no list price is available
Custom Enclosure	5% off list price / typical sale price if no list price is available
Custom Fuel Tank	5% off list price / typical sale price if no list price is available
Custom ATS	5% off list price / typical sale price if no list price is available
Dealer Labor	5% off list price / typical sale price if no list price is available
Additional/Custom Parts	5% off list price / typical sale price if no list price is available
General Contracting Labor	5% off list price / typical sale price if no list price is available
Extended Service Contracts	5% off list price / typical sale price if no list price is available
Maintenance Agreements	5% off list price / typical sale price if no list price is available

Electrical Energy Power Generation with Related Parts, Supplies, and Services.

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Caterpillar Used Equipment Multiplier

Rental Agreements Please reference the Cat Rental National Accounts contract #062320-CAT for all your rer

.Caterpillar: Confidential Green

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Caterpillar Rental Agreements Product & Services Multiplier

Rental Agreements Please reference the Cat Rental National Accounts contract #062320-CAT for all your rental needs.

Electrical Energy Power Generation with Related Parts, Supplies, and Services.

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Product Name and Product Description
PV Panel (Solar Panels)
Time Shift - 60 Hz ES 1.5 MW-hr, 1x 20', Energy, 570 kVA, 1518 kWh, ~127 min
Time Shift - 60 Hz ES 3.0 MW-hr, 2x 20', Energy, 1000 kVA, 3036 kWh, ~145 min
Time Shift - 60 Hz ES 3.5 MW-hr, 2x 20', Energy, 1000 kVA, 3542 kWh, ~170 min
Time Shift - 60 Hz ES 4.0 MW-hr, 2x 20', Energy, 1000 kVA, 4048 kWh, ~194 min
Time Shift - 60 Hz ES 4.6 MW-hr, 3x 20', Energy, 1000 kVA, 4554 kWh, ~218 min
Time Shift - 60 Hz ES 5.1 MW-hr, 3x 20', Energy, 1000 kVA, 5060 kWh, ~242 min
Time Shift - 60 Hz ES 5.6 MW-hr, 3x 20', Energy, 1000 kVA, 5566 kWh, ~267 min
Time Shift - 60 Hz ES 6.1 MW-hr, 3x 20', Energy, 1000 kVA, 6072 kWh, ~291 min
Time Shift - 60 Hz ES 6.6 MW-hr, 3x 20', Energy, 1000 kVA, 6578 kWh, ~315 min
Time Shift - 60 Hz ES 7.1 MW-hr, 4x 20', Energy, 1000 kVA, 7084 kWh, ~340 min
Time Shift - 60 Hz ES 7.6 MW-hr, 4x 20', Energy, 1000 kVA, 7590 kWh, ~364 min
Time Shift - 60 Hz ES 8.1 MW-hr, 4x 20', Energy, 1000 kVA, 8096 kWh, ~388 min
Time Shift - 60 Hz ES 8.6 MW-hr, 4x 20', Energy, 1000 kVA, 8602 kWh, ~412 min
Time Shift - 60 Hz ES 9.1 MW-hr, 4x 20', Energy, 1000 kVA, 9108 kWh, ~437 min
Grid Stabilizer - 60 Hz PGS1260, 1x 20', Power, 1000 kVA, 672 kWh, ~32 min
Grid Stabilizer - 60 Hz PGS840, 1x 20', Power, 840 kVA, 448 kWh, ~25 min

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Unit of Issue	Ancilliary Items (Sold Separately)	Microgrid Solution Commercial List Price	Power Analytics Cyber-Secure Network List Price Add (Optional)	40 FT ISO Container List Price Add (Optional)
Due to the customization and plethora of options, it is not fea components at th **For pricing and availability, Sourcewell members**				
Each	N/A	$ 1,309,989		N/A
Each	N/A	$ 2,263,804		N/A
Each	N/A	$ 2,507,909		N/A
Each	N/A	$ 2,750,774		N/A
Each	N/A	$ 3,257,104		N/A
Each	N/A	$ 3,461,724		N/A
Each	N/A	$ 3,705,829		N/A
Each	N/A	$ 3,948,694		N/A
Each	N/A	$ 4,191,559		N/A
Each	N/A	$ 4,708,735		N/A
Each	N/A	$ 4,903,749		N/A
Each	N/A	$ 5,145,374		N/A
Each	N/A	$ 5,389,479		N/A
Each	N/A	$ 5,632,344		N/A
Each	N/A	$ 990,332		N/A
Each	N/A	$ 853,487		N/A

Quantity of BDPs	Quantity of 20 Foot Containers	Grand Total Commercial List Price **with Sourcewell Discount Applied** (Incl Optional Items)	Sourcewell Member List Price Discount
asible to provide a paper price list for these specific his time. can contact their local Caterpillar Dealer.			
1	1	$ 1,021,791	22.00%
1	2	$ 1,765,767	22.00%
1	2	$ 1,956,169	22.00%
1	2	$ 2,145,604	22.00%
1	3	$ 2,540,541	22.00%
1	3	$ 2,700,145	22.00%
1	3	$ 2,890,547	22.00%
1	3	$ 3,079,981	22.00%
1	3	$ 3,269,416	22.00%
1	4	$ 3,672,813	22.00%
1	4	$ 3,824,924	22.00%
1	4	$ 4,013,392	22.00%
1	4	$ 4,203,793	22.00%
1	4	$ 4,393,228	22.00%
1	1	$ 772,459	22.00%
1	1	$ 665,720	22.00%

Caterpillar: Confidential Green

CITY COMMISSION OF THE CITY OF WILDWOOD

EXECUTIVE SUMMARY

SUBJECT: **Waste Management Rate Update**

REQUESTED ACTION: Staff recommends approval.

CONTRACT: Vendor/Entity: Waste Management

Effective Date: February 1, 2025 Termination Date:

Managing Division/Department: Waste Management

BUDGET IMPACT: None.

HISTORY/FACTS/ISSUES:

In September 2023 the City Commission approved the Fourth Amendment to Waste Management's Refuse and Recycling contract. The Fourth Amendment had Exhibit A which outlined commercial rates through 2025. However, the agreement allows for changes to rates if based upon a change in cost of disposal. Waste Management has experienced a significant increase in the cost of disposal and is requesting that the City approve an increase in rates. Documents showing the increase in disposal costs are attached for reference.

ORDINANCE NO. O2024-91

AN ORDINANCE OF THE CITY OF WILDWOOD, FLORIDA; AMENDING EXHIBIT "A" OF ORDINANCE NO O2023-54, AS AMENDED, RELATING TO THE WASTE MANAGEMENT CONTRACT FOR SOLID WASTE AND RECYCLING SERVICES; ESTABLISHING NEW RATES AND FEES; PROVIDING FOR SEVERABILITY; PROVIDING FOR CONFLICTS; AND PROVIDING FOR AN EFFECTIVE DATE.

NOW, THEREFORE, BE IT ENACTED AND ORDAINED by the City Commission of the City of Wildwood, Florida, as follows:

SECTION 1. FINDINGS AND INTENT. The City Commission makes the following findings and intent:

(1) The City of Wildwood, Florida (hereafter "City") exercises control over all publicly dedicated rights-of-way, streets, alleys, bridges, easements and other public places located within the limits of the City.

(2) The City entered into the Contract for Solid Waste and Recycling Services on October 10, 2010 ("Waste Management Contract") with Waste Management Inc. of Florida.

(3) The City and Waste Management have previously entered into a First, Second, Third, and Fourth Amendment to the Waste Management Contract.

(4) The City and Waste Management have agreed to changes to Exhibit "A" of the Fourth Amendment.

(5) The changes and modifications to the Waste Management Contract are in the best interest of the City and its residents.

SECTION 2. AMENDMENT. The Waste Management Contract is amended as set forth in the attached Exhibit "A" – Fourth Amendment to Contract for Solid Waste and Recycling Services.

SECTION 3. Except as amended on the attached Exhibit "A", the Contract for Solid Waste and Recycling Services shall remain unchanged and in full force and effect. The City Commission hereby reaffirms and readopts the Waste Management Contract, and all amendments thereto.

SECTION 4. SEVERABILITY. Should any section or provision of the Fourth Amendment to Contract for Solid Waste and Recycling Services or any portion thereof, the deletion of which would not adversely affect (in the general sense) the receipt of any material benefits or, substantially increase the burden of any party hereunder, be declared by a judicial or administrative tribunal of competent jurisdiction to be invalid, such decision shall not affect the validity of the remainder of said Amendment, as a whole or any part thereof, other than the part declared to be invalid. In the event of any such partial invalidity, the City and Franchisee shall meet and negotiate in good faith to obtain a replacement provision that is in compliance with the judicial or administrative authority's decisions and consistent with the original intent of the parties

as contained herein.

SECTION 5. EFFECTIVE DATE. This Ordinance shall take effect immediately upon adoption and execution of the attached Exhibit "A" by the parties.

DONE AND ORDAINED this _____ day of January 2025, by the City Commission of the City of Wildwood, Florida.

CITY COMMISSION
CITY OF WILDWOOD, FLORIDA

_____
Ed Wolf, Mayor

ATTEST:_____
Jessica Barnes, City Clerk

First Reading: _____

Second Reading: _____

Approved as to form:

_____
City Attorney

EXHIBIT “A”

Exhibit "A"

City of Wildwood Rates Effective 1/01/25 through 09/30/25

Container Size (Dumpster)	Extra Dump	1 Dumps Per week	2 Dumps Per week	3 Dumps Per week	4 Dumps Per week	5 Dumps Per week	6 Dumps Per week
2 cubic yds	$35.98	$53.90	$107.81	$161.71	$215.61	$269.51	$323.42
Total Rate	$35.98	$53.90	$107.81	$161.71	$215.61	$269.51	$323.42
3 cubic yds	$53.97	$80.85	$161.71	$242.56	$323.42	$404.27	$485.12
Total Rate	$53.97	$80.85	$161.71	$242.56	$323.42	$404.27	$485.12
4 cubic yds	$71.96	$107.81	$215.61	$323.42	$431.22	$539.03	$646.83
Total Rate	$71.96	$107.81	$215.61	$323.42	$431.22	$539.03	$646.83
6 cubic yds	$107.94	$161.71	$323.42	$485.12	$646.83	$808.54	$970.24
Total Rate	$107.94	$161.71	$323.42	$485.12	$646.83	$808.54	$970.24
8 cubic yds	$143.92	$215.61	$431.22	$646.83	$862.44	$1,078.05	$1,293.66
Total Rate	$143.92	$215.61	$431.22	$646.83	$862.44	$1,078.05	$1,293.66

Container Size Roll-Offs	Per Pull Charges on Open Top Containers Total Rate		
20 yd	$ 242.20	$ 242.20	plus tipping fees
30 yd	$ 263.64	$ 263.64	plus tipping fees
40 yd	$ 285.08	$ 285.08	plus tipping fees

Compactor Size Rolloff	Per Pull Charges Total Rate		
20 yd	$ 349.38	$ 349.38	plus tipping fees
30 yd	$ 420.79	$ 420.79	plus tipping fees
34 yd	$ 457.34	$ 457.34	plus tipping fees
35 yd	$ 470.79	$ 470.79	plus tipping fees
40 yd	$ 527.94	$ 527.94	plus tipping fees

Service Type	1st Cart Monthly	Limb Debris Pickup/Disposal	Monthly Fee	2nd Cart Monthly	3rd Cart Monthly	
Residential/ Inside City	$18.30	$3.53	$21.83	$13.17	$13.17	
Fuel Surcharge	$0.00		$0.00	$0.00	$0.00	+6%
Total Rate	$18.30	$3.53	**$21.83**	**$13.17**	**$13.17**	
Residential/ Outside City	$27.47	NA	$27.47	$16.77	$16.77	
Fuel Surcharge	$0.00		$0.00	$0.00	$0.00	
Total Rate	$27.47	$0.00	$27.47	$16.77	$16.77	
Commercial/ Inside City	$27.73	$9.03 per CY	$27.73 +$9.03 per CY	$13.17	$13.17	
Fuel Surcharge	$0.00		$0.00	$0.00	$0.00	
Total Rate	$27.73	$9.03	$27.73	$13.17	$13.17	
Commercial/ Outside City	$34.49	$11.34 per CY	$34.49 +$11.34 per CY	$16.77	$16.77	
Fuel Surcharge	$0.00		$0.00	$0.00	$0.00	
Total Rate	$34.49	$11.34	$34.49	$16.77	$16.77	

Business Impact Estimate

This form should be included in the agenda packet for the item under which the proposed ordinance is to be considered and must be posted on the City of Wildwood website by the time notice of the proposed ordinance is published.

Proposed ordinance's title/reference: O2024-91 Waste Management Rate Update

This Business Impact Estimate is provided in accordance with section 166.041(4), Florida Statutes. If one or more boxes are checked below, a business impact estimate is not required by state law[1] for the proposed ordinance. This Business Impact Estimate may be revised following its initial posting.

- ☐ The proposed ordinance is required for compliance with Federal or State law or regulation;
- ☐ The proposed ordinance relates to the issuance or refinancing of debt;
- ☐ The proposed ordinance relates to the adoption of budgets or budget amendments, including revenue sources necessary to fund the budget;
- ☒ The proposed ordinance is required to implement a contract or an agreement, including, but not limited to, any Federal, State, local, or private grant or other financial assistance accepted by the municipal government;
- ☐ The proposed ordinance is an emergency ordinance;
- ☐ The ordinance relates to procurement; or
- ☐ The proposed ordinance is enacted to implement the following:
  a. Part II of Chapter 163, Florida Statutes, relating to growth policy, county and municipal planning, and land development regulation, including zoning, development orders, development agreements and development permits;
  b. Sections 190.005 and 190.046, Florida Statutes, regarding community development districts;
  c. Section 553.73, Florida Statutes, relating to the Florida Building Code; or
  d. Section 633.202, Florida Statutes, relating to the Florida Fire Prevention Code.

[1] See Section 166.041(4)(c), Florida Statutes.

Waste Management of Florida
Technical Service Center
3694 Alabama Highway 17
Emelle, AL 35459

November 15, 2024

Douglas McCoy
Senior District Manager
FL0061 - Wildwood Hauling
8708 NE 44th DR
WILDWOOD, FL 34785

RE: FL0071 Wildwood Transfer Station - 1000T MSW TON rate increase

Dear Mr. McCoy:

Waste Management is proud to be your environmental services partner. As you know, we take our work very seriously and are committed to providing you safe, reliable, and environmentally sound waste solutions that meet your highest expectations.

In our continuing effort to provide you with the best possible service and to ensure we handle the transportation and disposal of your waste safely and in accordance with federal, state and local regulations, your disposal rate will be increased effective **1/1/2025.**This increase may be based on any number of factors, including adjustments to cover increases in the Consumer Price Index, increased costs of servicing your account or other costs specific to the waste industry, and/or for us to achieve an acceptable operating margin. To the extent required by your service terms, your consent to your new disposal rate will be effective upon your invoice payment.

New IC Rates:

1000T MSW TON $59.80/ton

Please contact our Technical Service Center at (800) 963-4776 for further details regarding this increase. As always, we thank you for your business, and we appreciate your continued support of our efforts to remain the leader in environmental service, protection, and compliance.

Respectfully yours,

Waste Management

Reworld Lake II, Inc.
3830 Rogers Industrial Park Rd
Okahumpka, FL 34762
352.365.1611

October 31, 2024

Mr. Doug McCoy
WM Inc. of Florida
8708 N.E. 44th Drive
Wildwood, FL 24785

RE: Disposal Rates for Lake - WM Disposal Services Agreement effective December 1, 2024

Dear Mr. McCoy:

This letter serves to inform you that per the terms of the above referenced Disposal Services Agreement between WM Inc, of Florida and Reworld Lake II, Inc. effective December 1, 2024 the disposal prices at the Reworld Lake facility will be the following:

	New Rate effective 12/1/24
Commercial FEL, REL and Rolloff loads – MSW Only Total Disposal Capacity of 20,000 tons per year	$45.81 per ton

All charges are subject to the fuel & environmental surcharge (currently 5.5%) and will be assessed on all tons delivered to the facility. Above pricing will hold for one year and then will be adjusted per the terms of the Agreement on Dec 1, 2025 using the change in Bureau of Labor Statistics Index CUSR0000SEHG All Urban Consumers, Water and Sewer and Trash collection services in U.S. city average, from the preceding year.

Thank you for your continued partnership – we truly appreciate it. If you need any additional information regarding this matter, please do not hesitate to contact me at any time via email at pwalsh2@reworldwaste.com or cellphone at (813) 399-1773.

Best regards,

Patrick R. Walsh
Area Asset Manager
Reworld Lake II, Inc.
(813) 399-1773
pwalsh2@reworldwaste.com

CITY COMMISSION OF THE CITY OF WILDWOOD

EXECUTIVE SUMMARY

SUBJECT: **AN 2410-004 Kylie Annexation**

REQUESTED ACTION: Staff recommends approval.

CONTRACT: Vendor/Entity:

Effective Date: Termination Date:

Managing Division/Department:

BUDGET IMPACT:

HISTORY/FACTS/ISSUES:

The applicant/owners Shirley A. Rhoton and Debra Lee Angell Drawdy have submitted a voluntary annexation application for parcel G05-258. The property to be annexed totals 4.82 acres MOL and is generally located approximately 0.38 miles west of the CR 134 and E C 462 intersection, south along CR134.

Annexation into the City is appropriate because the property is within the City's Joint Planning Area with Sumter County, which allows for voluntary annexations within the planning area that would otherwise not be permissible under statute due to the creation of a "pocket" or "enclave."

There is currently a mobile home on the property with plans for an additional mobile home for family care. Utilities are not located within 1,000 feet of the property and, based on the Code of Ordinances Chapter 19, connection will not be required at this time. Should either the well or septic system fail in the future and utilities are available, connection will be required.

Amanda Bondi
Planner II, Development Services
Date: December 30, 2024

ORDINANCE NO. O2024-83

AN ORDINANCE OF THE CITY OF WILDWOOD, FLORIDA, PROVIDING FOR THE VOLUNTARY ANNEXATION OF CERTAIN REAL PROPERTY CONSISTING OF APPROXIMATELY 4.82 ACRES GENERALLY LOCATED APPROXIMATELY 0.38 MILES WEST OF THE CR 134 AND E C 462 INTERSECTION, SOUTH ALONG CR 134, IN SECTION 5, TOWNSHIP 19 SOUTH, RANGE 23 EAST; WHICH IS LOCATED IN THE CITY'S JOINT PLANNING AREA; PROVIDING THAT SECTION 1-14 OF THE CITY OF WILDWOOD CODE OF ORDINANCES IS AMENDED TO INCLUDE THE ANNEXED PROPERTY; PROVIDING FOR CODIFICATION; PROVIDING FOR CONFLICT; PROVIDING FOR SEVERABILITY; AND PROVIDING FOR AN EFFECTIVE DATE.

NOW, THEREFORE, BE IT ENACTED AND ORDAINED by the City Commission of the City of Wildwood, Florida, as follows:

SECTION 1. Based upon the petition of the owner of the following described real property, which is generally located approximately 0.38 miles west of the CR 134 and E C 462 intersection, south along CR 134, to be annexed into the City, the property is hereby annexed into the City of Wildwood pursuant to Sections 171.044 and 171.204, Florida Statutes. The City Commission finds that the property is located within the City's Joint Planning Area with Sumter County; and meets all legal requirements for annexation. The annexed property lying in Sumter County, Florida, owned by Shirley Rhoton and Debra Lee Angell-Drawdy, is more particularly described as follows:

G05-258
Shirley Rhoton & Debra Lee Angell-Drawdy
4.82 +/-

LEGAL DESCRIPTION

THE NW ¼ OF THE NW ¼ OF THE NE ¼, SECTION 5, TOWNSHIP 19 SOUTH, RANGE 23 EAST, SUMTER COUNTY, FLORIDA

NW ¼ OF NW ¼ OF NE1/4, LESS COMMENCE AT NW CORNER OF NW ¼ OF NW ¼ OF NE ¼ FOR POINT OF BEGINNING; RUN S 89 DEG 59' 25" E 270.0 FEET; S 00 DEG 05'51"E 331.77 FEET; S 89 DEG 59'09" E 117.37 FEET; S 00 DEG 00'51" W 331.77 FEET N 89 DEG 59'09" W 386.72 FEET; N 00 DEG 05'51" W 663.52 FEET TO THE POINT OF BEGINNING.

SECTION 2. All of the above described annexed property shall be liable for its proportionate share of the future and existing indebtedness of the City of Wildwood.

SECTION 3. All of the above described annexed property shall be subject to the laws and ordinance of the City of Wildwood as if this territory had been a part of the City of Wildwood at the time of passage and approval of said laws and ordinances.

SECTION 4. Until such time as the City amends its comprehensive plan, the current Sumter County zoning classification and future land use regulations will remain in full force and effect.

SECTION 5. Section 1-14 of the City of Wildwood Code of Ordinances is hereby amended to include the legal description of the annexed parcel pursuant to this Ordinance. The location map identifying the property to be annexed are attached hereto as “Exhibit A” and incorporated herein by reference.

SECTION 6. If any portion of this Ordinance is declared invalid for any purpose, the remaining portion shall remain valid and in full force and effect

SECTION 7. This Ordinance shall take effect upon final approval by the City Commission.

SECTION 8. SCRIVENER’S ERROR. The city attorney may correct scrivener’s errors found in this ordinance by filing a corrected copy of this ordinance with the city clerk.

DONE AND ORDAINED this _____ day of _____, 2025, by the City Commission of the City of Wildwood, Florida.

CITY COMMISSION

CITY OF WILDWOOD, FLORIDA

_____
Ed Wolf, Mayor

ATTEST: _____
Jessica Barnes, City Clerk

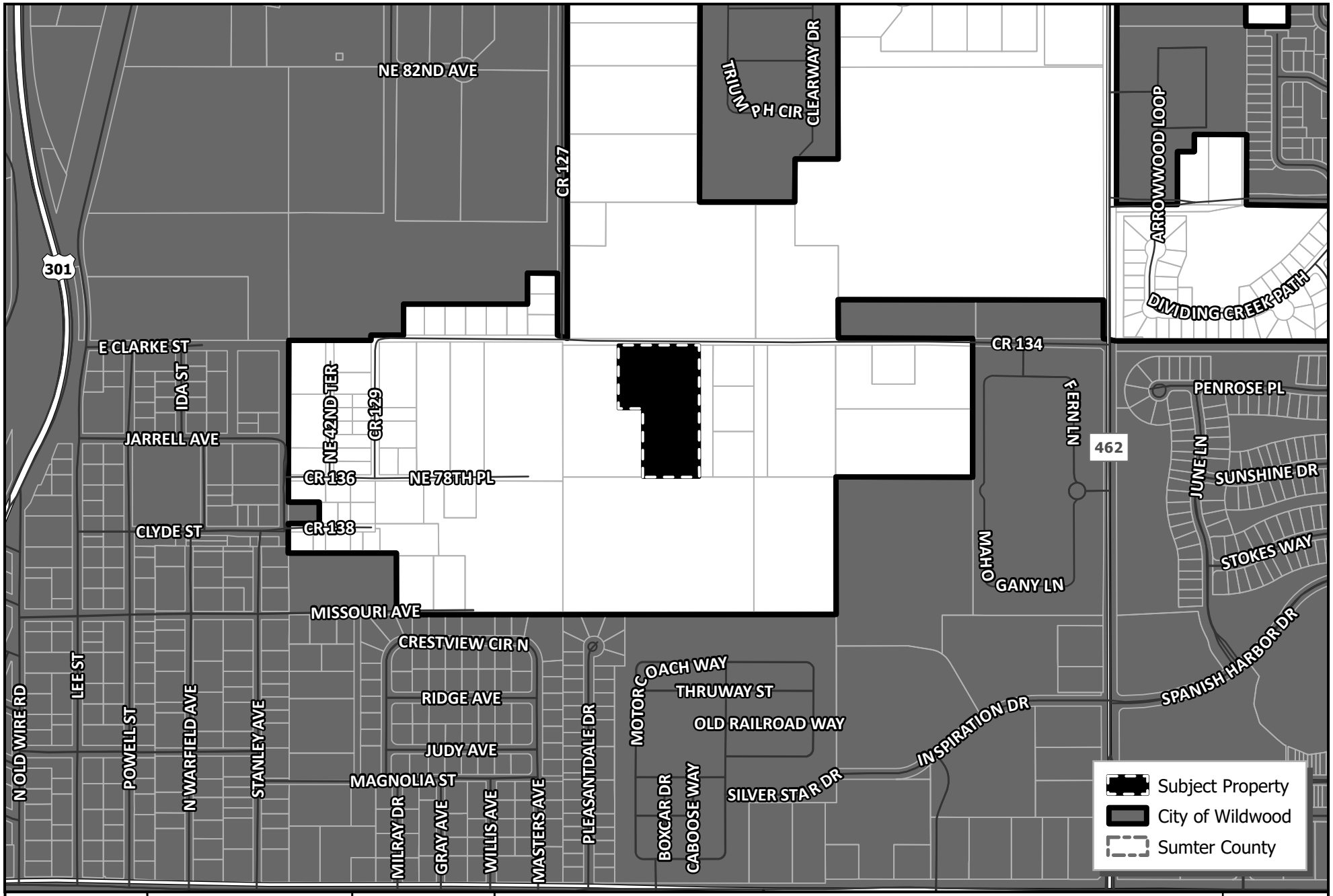
First Reading: _____

Second Reading: _____

Approved as to form:

_____
City Attorney

Exhibit A



WILDWOOD FLORIDA EST. 1877

CITY OF WILDWOOD
100 North Main Street
Wildwood, FL 34785
Phone: (352) 330-1330
www.wildwood-fl.gov

N

US Feet
0 140 280 560

AN 2410-004

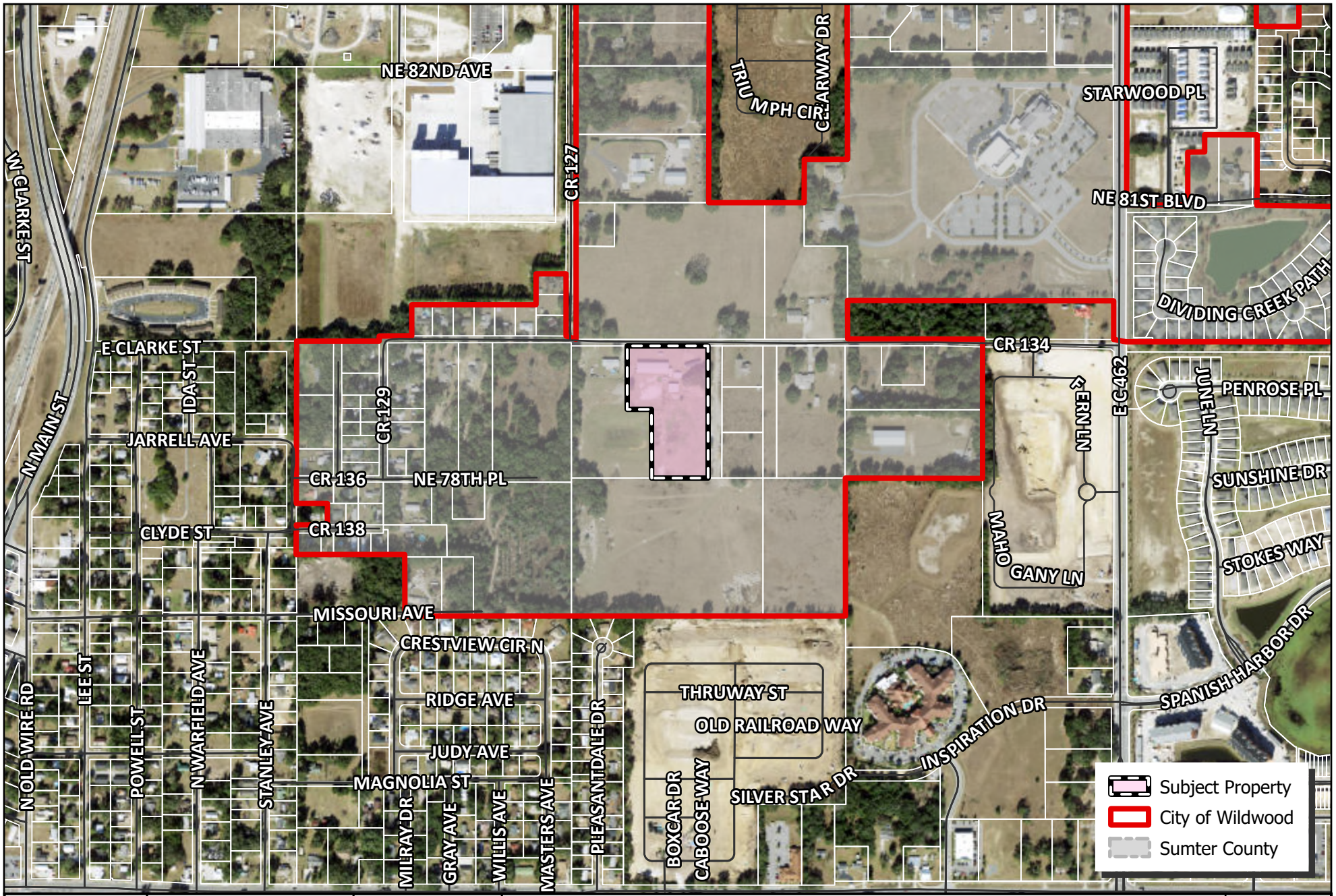
KYLIE ANNEXATION

PARCEL G05-258

MAP 1A

LOCATION MAP

NOV 2024



WILDWOOD FLORIDA EST. 1877

CITY OF WILDWOOD
100 North Main Street
Wildwood, FL 34785
Phone: (352) 330-1330
www.wildwood-fl.gov

N

0 0.01 0.02 0.04 0.06 0.08 Miles

AN 2410-004

KYLIE ANNEXATION

PARCEL G05-258

MAP 1B

LOCATION MAP

NOV 2024

Business Impact Estimate

This form should be included in the agenda packet for the item under which the proposed ordinance is to be considered and must be posted on the City of Wildwood website by the time notice of the proposed ordinance is published.

Proposed ordinance's title/reference: O2024-83

This Business Impact Estimate is provided in accordance with section 166.041(4), Florida Statutes. If one or more boxes are checked below, a business impact estimate is not required by state law[1] for the proposed ordinance. This Business Impact Estimate may be revised following its initial posting.

- ☐ The proposed ordinance is required for compliance with Federal or State law or regulation;
- ☐ The proposed ordinance relates to the issuance or refinancing of debt;
- ☐ The proposed ordinance relates to the adoption of budgets or budget amendments, including revenue sources necessary to fund the budget;
- ☐ The proposed ordinance is required to implement a contract or an agreement, including, but not limited to, any Federal, State, local, or private grant or other financial assistance accepted by the municipal government;
- ☐ The proposed ordinance is an emergency ordinance;
- ☐ The ordinance relates to procurement; or
- ☒ The proposed ordinance is enacted to implement the following:
  a. Part II of Chapter 163, Florida Statutes, relating to growth policy, county and municipal planning, and land development regulation, including zoning, development orders, development agreements and development permits;
  b. Sections 190.005 and 190.046, Florida Statutes, regarding community development districts;
  c. Section 553.73, Florida Statutes, relating to the Florida Building Code; or
  d. Section 633.202, Florida Statutes, relating to the Florida Fire Prevention Code.

[1] See Section 166.041(4)(c), Florida Statutes.

CITY COMMISSION OF THE CITY OF WILDWOOD

EXECUTIVE SUMMARY

SUBJECT: **PD 2312-001 Wildwood III Planned Development**

REQUESTED ACTION: The Planning and Zoning Board/Special Magistrate recommends approval.

CONTRACT: Vendor/Entity:

Effective Date: Termination Date:

Managing Division/Department:

BUDGET IMPACT:

HISTORY/FACTS/ISSUES:

Case Number	PD 2312-001 Wildwood III Planned Development
Ordinance Number	O2024-72
Applicant(s)	M&S Dev, LLC
Owner(s)	Cedar Creek Equity Investments, LLC & Sunscape Farms, LLC
Property Location	The subject property is generally located at the southeast corner of C 44A and CR 213 intersection.
Parcel(s)	G06-007, G06-012, G06-012A, & G06-204
Date	January 7, 2025

The applicant seeks approval from the City Commission for a Planned Development (PD) for Wildwood III on approximately 55.73 acres, MOL. The PD provides general provisions for the project development including, but not limited to, a maximum number of dwelling units at 350, limiting the maximum amenity square-footage to 20,000 SF, and modifying building separation requirements. Also included are minor exceptions to the Design District Standards (DDS) including, but not limited to, defining the amenities within the development, limiting applicable sections of the DDS, and modifying the landscape buffers due to the dedication of right-of-way for public use. All the provisions are outlined in detail within the attached ordinance.

Per City of Wildwood Land Development Regulations Sec. 8.6.(E) the City Commission may approve a PD amendment only after substantial, competent evidence has been presented that allows the Commission to make the following findings:

(1) That the proposed change is consistent with the comprehensive plan;

The proposed amendment is consistent with the comprehensive plan as the current future land use designation is Medium Density Residential (MDR) which is intended to accommodate residential use at 9 units per acre. This development had the maximum potential of 501 dwelling units, but the PD limits the dwelling units to a maximum of 350 multifamily units.

(2) That the proposed change will not adversely affect public facilities such as schools, utilities, streets, etc;
The proposed change will not adversely affect public facilities. City water and sewer are available to the development from C 44A and CR 213 with an 8” water line and from CR 213 with a 16” force main. The Transportation Impact Analysis (TIA) outlines that all roadway segments and intersections currently operate at an acceptable level of service (LOS) and will maintain to operate at an acceptable LOS at the buildout of the development in 2026. The development will be donating right-of-way for public use along CR 213 based on the City’s CR 209 corridor analysis. Wildwood school officials have determined that capacity is available to handle additional students.

(3) That changed or changing conditions makes the passage of the proposed amendment necessary;
Changing conditions make the proposed amendment necessary. The developer will be preserving most of wetlands/flood zone areas to have a minimal impact on the current environment. Because the wetlands are being preserved, the applicant’s buildable area is reduced. Along with the reduced buildable area, the applicant is providing right-of-way dedication for public use and variations to the City's codes were needed to accommodate the dedication and reduced building area.

(4) That the proposed change will not create or excessively increase traffic congestion or otherwise be a detriment to public safety; and
The proposed change will not create or excessively increase traffic congestion. The developer will be donating right-of-way for public use along CR 213 for future road expansion based on the City’s CR 209 corridor analysis.

(5) That the proposed change will not be a deterrent to the improvement or development of adjacent property.
The proposed change will not be a deterrent to the improvement or development of adjacent properties. Adjacent properties will be allowed to develop according to their future land use and zoning designations assigned by their jurisdictions.



Amanda Bondi
Planner II, Development Services

ORDINANCE NO. O2024-72

AN ORDINANCE OF THE CITY OF WILDWOOD, FLORIDA GRANTING A REQUEST FOR A PLANNED DEVELOPMENT AMENDMENT PURSUANT TO SECTION 8.6 OF THE LAND DEVELOPMENT REGULATIONS FOR CERTAIN PROPERTY WITHIN THE CITY OF WILDWOOD, FLORIDA; OWNED BY CEDAR CREEK EQUITY INVESTMENTS, LLC AND SUNSCAPE FARMS, LLC; PROVIDING FOR SEVERABILITY; AND PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, the first Wildwood III Planned Development Agreement ("Agreement") was filed with the City of Wildwood ("City") on or about December 22, 2023;

WHEREAS, it is the intent of the City Commission to promote more efficient uses of land, encourage compatible and harmonious development of contiguous lands, provide flexibility and variety to meet changing needs, and administer mixed use developments in conformance with the goals, objectives and policies of the City's Comprehensive Plan;

WHEREAS, the City recognizes the Planned Development process as a suitable avenue for planning unique developments which may not meet the specific requirements set forth in the Land Development Regulations and Design District Standards, but still facilitate the objectives stated above.

NOW, THEREFORE, BE IT ORDAINED by the City Commission of the City of Wildwood, Florida, as follows:

The application filed by Cedar Creek Equity Investments, LLC, a Florida limited liability company and Sunscape Farms, LLC, a Utah limited liability company and their successors (hereinafter referred to as the, "Developer") for a Residential Planned Development was heard by and before the City Commission, Wildwood, Florida on this _____ day of _____, 2025. Based upon the verified application and supporting documents, analyses, maps, charts, other evidence and instruments, the advice, report and recommendations of the Project Review Committee and the testimony adduced and evidence received at the Public Hearing by the Planning and Zoning Board on December 3, 2024, and otherwise being fully advised, the City Commission does hereby find and determine as follows:

SECTION 1: GENERAL FINDINGS

A. That the Wildwood III Planned Development Application (hereinafter referred to as the "Project") was duly and properly filed herein on December 22, 2023 by the Developer.

B. That all fees required to be borne and paid by the Developer have been paid in accordance with the City of Wildwood Fee Schedule.

C. That the Project was reviewed by the Project Review Committee and found to meet or exceed the minimum standards of the City's Comprehensive Plan, Land Development Regulations, Code of Ordinances, and all other applicable ordinances and regulations.

D. That the Developer intends to develop a Project consisting of 55.8 acres, more or less, which is situated in Wildwood, Florida. This land is legally described in "Exhibit A" attached hereto.

E. That the Developer has complied with the conceptual development plan provision as required by Section 8.4 of the Land Development Regulations.

F. That the City has complied with the due notice requirements of subsection 3.3(B)(3) of the Land Development Regulations.

SECTION 2: FINDINGS REGARDING PLANNED DEVELOPMENT OVERLAY

A. That the Developer has applied for a Residential Planned Development of the lands described in "Exhibit A".

B. That the zoning district of the subject land described in "Exhibit A" is classified as Medium Density Residential ("R-3") on the City of Wildwood Zoning Map.

C. That the Project is consistent with both the City of Wildwood Comprehensive Plan, the intent and purpose of the City of Wildwood Land Development Regulations, and does promote the public health, safety, morals, welfare, and orderly growth of the City of Wildwood.

D. That the City of Wildwood Land Development Regulations are consistent with the provisions of the "Planned Development Agreement" as hereinafter set forth in Section 3 of this Ordinance. With respect to any conflict between the Land Development Regulations and the "Planned Development Agreement", the provisions of the "Planned Development Agreement" shall govern. Unless specific conditions are included in the "Planned Development Agreement" waiving or replacing the terms and conditions of the Land Development Regulations, the terms and conditions of the most current Land Development Regulations shall prevail.

E. This Ordinance shall become effective immediately upon its approval and adoption by the City Commission.

SECTION 3: PLANNED DEVELOPMENT AGREEMENT: GENERAL PROVISIONS

A. Development Concept. The Project shall be developed as a Planned Development substantially in accordance with this Ordinance. This Planned Development Agreement shall govern the development of the Project.

B. Conceptual Development Plan. The Project includes a conceptual development plan pursuant to Section 8.4 of the Land Development Regulations. The conceptual development plan prepared by LevelUp Consulting dated December 15, 2023 is incorporated into this Ordinance as “Exhibit B” attached hereto. The conceptual development plan is substantially consistent with City of Wildwood Comprehensive Plan.

1. The conceptual development plan illustrates general location of the following land uses:
    a. Residential Multi-Family Uses (Villa Attached Leased Units)
    b. Residential Support Uses/Amenities (including, but limited to):
        i. Pool
        ii. Clubhouse
        iii. Nature Trail
        iv. Park

2. The Conceptual Development Plan is conceptual in nature and may be affected or modified by final zoning approval and conditions, by floodplain management regulations, final wetland or protected species locations and jurisdictional boundaries, final engineering, permitting, surveys, or conservation easements. If there are any inconsistencies between the written ordinance and the conceptual development plan, the written ordinance will supersede.

C. Development Program. The Project shall be developed in one (1) phase in accordance with the conceptual development plan and this Section. Therefore, the following shall apply:

1. Land Use Breakdown. Acreages devoted to each land use within the Project shall be in accordance with the following table:

Land Use	Total (Acres)
Residential Multi-Family (Villa Attached Leased Units) and Residential Support Uses/Amenities	+/- 35.21
Open Space	+/- 20.59
Total	+/- 55.80

2. Maximum Development Potential. Residential and non-residential development shall not exceed the following:

Land Use	Square Feet	Units
Residential Multi-Family (Villa Attached Leased Units)	N/A	350 (max)
Residential Support Uses/Amenities	20,000	N/A

D. Amendments. All modifications requiring an amendment to the Planned Development Agreement shall require review by the Project Review Committee, review and recommendation of the Planning and Zoning Board and action by the City Commission in the same manner as an Application for Planned Development.

E. Future Approvals. After this Ordinance is recorded, and prior to any construction occurring, a site plan or subdivision preliminary plan shall be submitted for review and approval in the manner required by Chapter 4 or Chapter 5 of the Land Development Regulations, whichever Chapter is applicable:

1) Developer's Agreement. Prior to approval of a site plan or a subdivision preliminary plan, the City and the Developer agree to enter into Utility or Developer's Agreements to address the provision of water, wastewater and reuse water to the Project. The agreement shall also specify, among other items, the ownership and maintenance of infrastructure associated with the Project.

F. Principal Uses. Principal uses listed in Chapter 3, Table 3-6 of the Land Development Regulations shall be permitted within the project.

G. Development Standards. Unless otherwise noted, the Project shall adhere to the zoning district standard prescribed in Chapter 3 of the Land Development Regulations for the Medium Density Residential ("R-3") zoning district.

1. Residential Development Standards.

Building separation shall be as follows:

Residential Building Separation (Feet)		
	Principal	**Accessory**
Front, min.	20'	N/A
Rear, min.	20'	5'

Side, min.	10’	5’
Corner, min.	15’	N/A

H. Design District Standards. The Project shall adhere to the Design District Standards pursuant to Section 6.12 of the Land Development Regulations, other than:

1) Chapter 2(D)(1)
2) Chapter 2(D)(2)
3) Chapter 2(D)(5)
4) Chapter 2(H)(5) such that a 10’ buffer is required adjacent to County Road 213 in lieu of a 25’ buffer.

I. Recreation and Open Space. The Project shall maintain a minimum of 25% open space.

1. Open Space. Open space shall include wetlands, preservation areas, greenspace, and landscape buffers. Open space may also include trails, plazas, courtyards, and other public similar public areas. Open space may also include recreation areas and amenities provided said amenities or area is not enclosed within conditioned space. For purposes of meeting open space requirements, up to 50% of the drainage retention areas (stormwater management areas) may be included in the open space calculation; however, the amount of open space credit from the drainage retention areas shall not exceed 50% of the open space requirement. A homeowner’s association, adjoining property owners or other private entity must maintain all such elements. Open space shall not include open bodies of water, right-of-ways, yards or lots of record per plat, driveways, off street parking areas or other impervious surface areas that do not meet the criteria.

2. Buffers. Except where wetland preservation abuts the property boundary, the Project shall maintain a 25’ buffer along the Project’s northern and western boundaries. No buffer shall be required where wetlands abut the right of way or Project Boundary to avoid additional wetland impacts. No buffer shall be required on the eastern or southern Project boundaries because the adjacent uses are compatible with the Project. Buffers shall contain canopy and understory trees as well as a 3’ tall hedge in accordance with the Design District Standards. A 5’ sidewalk shall also be incorporated into the buffer areas adjacent to the right of way.

3. Parks and Recreation.

Residential Support Uses/Amenities (including, but limited to):

a. Pool

b. Clubhouse
c. Nature Trail
d. Park

J. Environmental Considerations.

The approximate locations of wetland impacts and corresponding wetland mitigation is shown on the conceptual site plan.

K. Public Facilities.

1. Potable Water, Wastewater, and Reuse Water. The Project will connect to City Water and Wastewater systems prior to issuance of any Certificate of Occupancy. Reuse water is not currently available to the Project and shall not be required. Expansion of the City's Potable Water and Sanitary Sewer systems, including necessary utility easements, shall be negotiated by a separate Developer's Agreement between the City and the Developer. Said agreement shall specify cost, ownership and maintenance, and timetables for delivery of services.

2. Easement. Developer agrees to provide utility easements to the City as will be negotiated through the Developer's Agreement set forth in Paragraph K.1, above.

3. Solid Waste. Solid waste services shall be provided by the City or the City's contracted refuse service provider.

4. Stormwater. The Project shall contain a stormwater management system which meets the requirements of the Southwest Florida Water Management District and Chapter 6, Section 6.4 of the City's Land Development Regulations.

    a. City's Stormwater Retention Area. The Developer acknowledges that the City has existing stormwater infrastructure located adjacent to the property. The Developer will work with the City to ensure that any potential issues negatively affecting or impacting the City's Stormwater Retention Area at the corner of Peters Street and Lemon Street are mitigated. The Developer will provide the City with the ability to investigate the area of impacts and determine if any measures are necessary to prevent negative impacts. The Developer agrees to work with the City to more specifically address any potential issues during negotiation of the Developer's Agreement referenced above.

5. Underground Utilities. All utilities on site shall be located underground. Developer is responsible for running utilities underground for the Project. The City shall insure that any utilities within any public utility easement, serving lands other than the Project, shall be underground.

6. Lighting. Exterior lighting of all building and parking lots shall be designed so that light is not directed off of the Project. Exterior light fixtures should be fully shielded or designed with light-angle cut-offs so as to eliminate spill light, trespass light and glare. Lighting throughout the Project will comply with the requirements set forth in the City Land Development Code and Design District Standards.

L. Access, Parking, and Transportation.

1. Access.

The Project's main access point is located on CR 44A, as generally depicted on the conceptual site plan. A secondary access is located along CR 213, as generally depicted on the conceptual site plan.

2. Internal Roadways.

a. The Project shall provide an internal roadway connection and shall be constructed as shown on the conceptual plan.
b. The Project shall provide a sidewalk network within the residential area to encourage walking and bicycling within the development. A 5' sidewalk shall be required along both sides of the access road and connect to the required sidewalk within the buffer area.

3. Transportation System Improvements.

a. Transportation Impact Fees. Developer acknowledges that the Project is subject to Sumter County's impact fees ordinances.

b. CR 213. The Developer shall dedicate right of way to the City along County Road 213 so that there is fifty feet (50 ft.) of right of way from the centerline of County Road 213 to the property. Said dedication shall be made by a Right of Way Warranty Deed along with a valid title opinion from a Florida licensed attorney.

c. Emergency Access to Peters Street. The Developer will work with the City to provide for emergency access to the Project. Said emergency access shall allow emergency vehicles to serve the property during times of emergency. The access shall be 12 feet, which will provide for single vehicle access travelling one way at any

given time. The Developer will work with the City to ensure that any conflicts with the existing Stormwater Retention Area are avoided, which may result in no emergency access being provided. Additionally, any existing driveways along Peters Street shall not be negatively affected. The emergency access may be gated to limit unauthorized traffic into the Project.

M. Energy and Water Conservation. The Project shall promote energy efficient initiatives and shall encourage US Green Building Council standards for Energy and Environmental Design. Equipment and appliances shall meet or exceed Energy Star standards. New buildings shall, at a minimum, be designed to meet the water conservation measures stated in City of Wildwood Ordinance No. 612 and shall also provide water efficient options which meet Water Star certification standards.

N. Maintenance of Common Areas. Maintenance and repair of structures, lawn mowing, and landscaping maintenance of all common areas within the Project shall be the responsibility of the property owner or its designee, at no cost or obligation to the City. The City will be granted the right to enforce the common areas maintenance against the property owner and to be reimbursed for the reasonable attorney's fees, costs and expenses, as may be reasonably incurred by the City. In the event of noncompliance with the City Land Development Regulations, the City maintains the right to enforce same against the property owner by and through its code enforcement procedure and special magistrate.

O. Enforcement of Rules and Regulations. For the maintenance of the common areas referenced in Section 3(N), above the City of Wildwood shall have the right, but not the obligation, to enforce maintenance against the property owner and the City should be entitled to reasonable attorney's fees and costs for enforcement regardless of whether or not a suit has been filed.

P. Impact Fees. The Planned Development shall be subject to all impact fees applicable at the time of permitting. All impact fees are to be paid before issuance of any building permit. Proof of Sumter County impact fees paid shall be provided to the City of Wildwood. Any applicable impact fees adopted by the City of Wildwood, Sumter County or the Sumter County School Board prior to issuance of building permits shall also be applicable to the Planned Development.

Q. Expiration of Planned Development Agreement. Significant construction must begin within the Project boundary (as legally described in Exhibit A) within 24 months of the final adoption of the Planned Development Agreement. If no significant construction has started on the approved Project within 24 months, the Planned Development shall lapse and be of no further effect. The City Commission may extend the Planned Development for periods of up to six (6) months provided

the applicant can show good cause why said the Project was delayed under the originally approved Planned Development Agreement. However, the City Commission shall not allow extensions beyond 48 months after the effective date of this Ordinance.

SECTION 4. SEVERABILITY

If any section, sentence, clause or phrase of this Ordinance is held to be invalid or unconstitutional by a Court or competent jurisdiction, then said holding shall in no way effect the validity of the remaining portions of said Ordinance.

SECTION 5. EFFECTIVE DATE

This Ordinance shall be effective upon adoption during the second and final reading by the City of Wildwood City Commission.

SECTION 6. SCRIVENER'S ERROR.

The city attorney may correct scrivener's errors found in this ordinance by filing a corrected copy of this ordinance with the city clerk.

PASSED AND ORDAINED in regular session of the City Commission of the City of Wildwood, Sumter County, Florida, this _____ day of _____, 2025.

CITY COMMISSION
CITY OF WILDWOOD, FLORIDA

_____
ED WOLF, MAYOR

ATTEST:_____
JESSICA BARNES, City Clerk

First Reading: _____

Second Reading: _____

Approved as to Form:

_____
City Attorney

Exhibit “A”

LEGAL DESCRIPTION: (OR 4267, PG 215)

PARCEL A

THE NORTHWEST 1/4 OF THE SOUTHWEST 1/4 OF SECTION 6, TOWNSHIP 19 SOUTH, RANGE 23 EAST, SUMTER COUNTY, FLORIDA, LYING SOUTH OF OLD STATE ROAD NO. 44, LESS COUNTY ROAD RIGHT OF WAY.

PARCEL B

THE WEST 1/2 OF THE NORTHEAST 1/4 OF THE SOUTHWEST 1/4 OF SECTION 6, TOWNSHIP 19 SOUTH, RANGE 23 EAST, SUMTER COUNTY, FLORIDA, LYING SOUTH OF OLD STATE ROAD NO. 44, LESS: FROM THE NORTHEAST CORNER OF THE SOUTHWEST 1/4 OF SECTION 6, TOWNSHIP 19 SOUTH, RANGE 23 EAST, SUMTER COUNTY, FLORIDA, RUN N 89°59'55" W ALONG THE NORTH LINE OF SAID SOUTHWEST 1/4 A DISTANCE OF 661.38 FEET TO THE POINT OF BEGINNING OF THIS DESCRIPTION. FROM SAID POINT OF BEGINNING CONTINUE N 89°59'55" W FOR 210 FEET, THENCE RUN S 00°07'07" W FOR 512.03 FEET, THENCE RUN S 89°59'55" E FOR 210 FEET, THENCE RUN N 00°07'07" E FOR 512.03 FEET TO THE POINT OF BEGINNING, LESS ROAD RIGHT OF WAY FOR OLD STATE ROAD NO. 44.

PARCEL A AND PARCEL B NOW DESCRIBED AS FOLLOWS:

PARCEL 1:

THE NORTH 420 FEET OF THE NORTHWEST 1/4 OF THE SOUTHWEST 1/4 OF SECTION 6, TOWNSHIP 19 SOUTH, RANGE 23 EAST, SUMTER COUNTY, FLORIDA, LYING SOUTH OF OLD STATE ROAD NO. 44. LESS COUNTY ROAD RIGHT OF WAY.

PARCEL 2:

A PORTION OF THE NORTHWEST 1/4 OF THE SOUTHWEST 1/4 OF SECTION 6, TOWNSHIP 19 SOUTH, RANGE 23 EAST, SUMTER COUNTY, FLORIDA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCE AT THE NORTHWEST CORNER OF SAID NORTHWEST 1/4 OF THE SOUTHWEST 1/4 OF SECTION 6; THENCE S 00°28'53" E ALONG THE WEST LINE OF SAID NORTHWEST 1/4 A DISTANCE OF420.00 FEET; THENCE N 89°25'19" E A DISTANCE OF 25.00 FEET TO THE EAST RIGHT OF WAY LINE OF COUNTY ROAD NO. 213 AND THE POINT OF BEGINNING; THENCE CONTINUE

N 89°25'19" E A DISTANCE OF 465.00 FEET; THENCE S 00°28'53" E A DISTANCE OF 300.00 FEET; THENCE N 89°25'19" E A DISTANCE OF 100.00 FEET; THENCE S 00°28'53" E A DISTANCE OF 206.49 FEET; THENCE S 89°27'01" W A DISTANCE OF 565.00 FEET TO THE SAID EAST RIGHT OF WAY LINE; THENCE N 00°28'53" W ALONG SAID EAST RIGHT OF WAY LINE A DISTANCE OF 506.21 FEET TO THE POINT OF BEGINNING.

PARCEL 3:

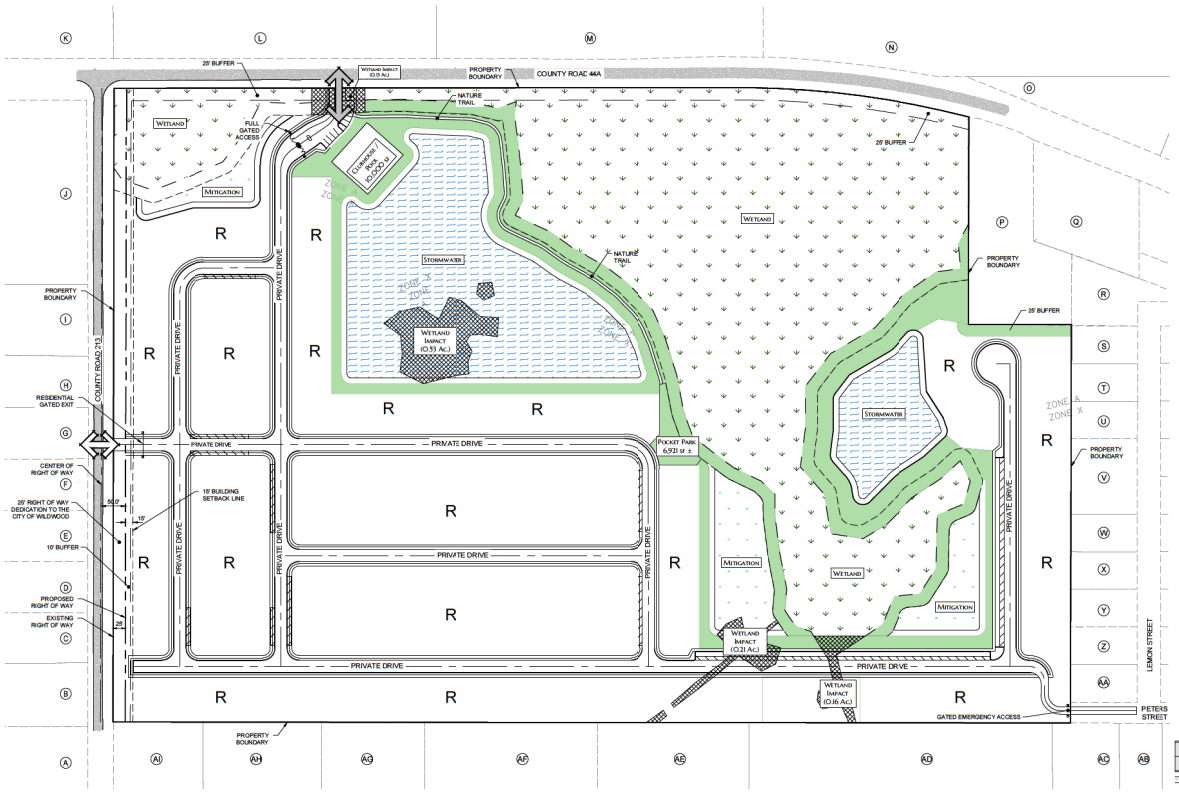
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PARCEL 4:

A PORTION OF THE NORTHWEST 1/4 OF THE SOUTHWEST 1/4 OF SECTION 6, TOWNSHIP 29 SOUTH RANGE 23 EAST, SUMTER COUNTY, FLORIDA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS: COMMENCE AT THE NORTHWEST CORNER OF SAID NORTHWEST 1/4 OF THE SOUTHWEST 1/4 OF SECTION 6; THENCE S 00°28'53" E ALONG THE WEST

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LEGEND

- BOUNDARY/PROPERTY LINE
- RIGHT OF WAY LINE
- WETLAND LINE
- WETLAND SETBACK LINE
- FEMA LINE
- ROW BUFFER
- ACCESS POINTS (PEDESTRIAN & VEHICULAR)
- SECONDARY ACCESS
- STORMWATER POND
- WETLAND
- MITIGATION
- OTHER OPEN SPACE
- PRIMARY AMENITY (PARK SPACE/POOL /CLUBHOUSE/LEASING OFFICE)
- WETLAND IMPACT
- OPTIONAL ON STREET PARKING
- 2 BR VILLA
- 3 BR VILLA
- R — RESIDENTIAL



VICINITY MAP

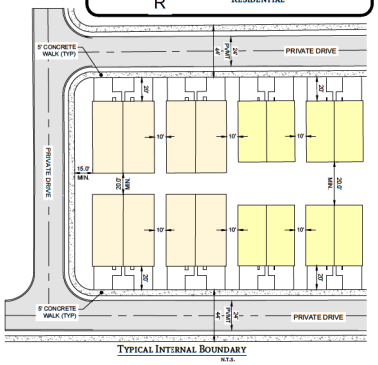
N.T.S.

SCALE IN FEET

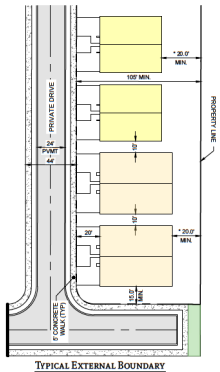
SITE DATA TABLE

PROJECT LOCATION	CITY OF WILDWOOD, FLORIDA
FUTURE LAND USE	MDR
PROPOSED ZONING	R-3
OVERLAY	PD
PID #	G06-007, G06-012A, G06-012, G06-204
FLOOD ZONES:	"X" AND "A" FIRM PANEL NO. 12119C013:D DATED: AUGUST 27, 2013
CURRENT PROPERTY USE:	VACANT
PROPOSED PROPERTY USE:	RESIDENTIAL - MULTI-FAMILY
PROJECT AREA:	55.8± ACRES
WETLAND AREA:	15.84± ACRES
WETLAND IMPACT AREA:	1.0± ACRES*
TOTAL DEVELOPABLE AREA:	40± ACRES*
MAX PROPOSED UNITS:	350
PROPOSED GROSS DENSITY:	6.3± DU/ACRE
PROPOSED NET DENSITY:	8.76± DU/ACRE
MINIMUM BUILDING SEPERATION:	10' SIDE/ 20' REAR
PERIMETER BUILDING SETBACK:	15'
CR 44A ROW BUFFER:	25'
CR213 ROW BUFFER:	10'
REQUIRED OPEN SPACE:	13.95± ACRES (25%)
PROVIDED OPEN SPACE:	20.59± ACRES

*SUBJECT TO CHANGE DURING PERMITTING



TYPICAL INTERNAL BOUNDARY N.T.S.



TYPICAL EXTERNAL BOUNDARY N.T.S.

* CR 213 15' MIN REAR SETBACK

PROPERTY DESCRIPTION

LEGAL DESCRIPTION PROVIDED BY: TRANSYSTEMS

DESCRIPTION: (OR 4267, PG 215)

PARCEL A
THE NORTHWEST 1/4 OF THE SOUTHWEST 1/4 OF SECTION 6, TOWNSHIP 19 SOUTH, RANGE 23 EAST, SUMTER COUNTY, FLORIDA, LYING SOUTH OF OLD STATE ROAD NO. 44 LESS COUNTY ROAD RIGHT OF WAY.
PARCEL B
THE WEST 1/2 OF THE NORTHEAST 1/4 OF THE SOUTHWEST 1/4 OF SECTION 6, TOWNSHIP 19 SOUTH, RANGE 23 EAST, SUMTER COUNTY, FLORIDA, LYING SOUTH OF OLD STATE ROAD NO. 44, LESS: FROM THE NORTHEAST CORNER OF THE SOUTHWEST 1/4 OF SECTION 6, TOWNSHIP 19 SUTH, RANGE 23 EAST, SUMTER COUNTY, FLORIDA, RUN N 89°59'55" W ALONG THE NORTH LINE OF SAID SOUTHWEST 1/4 A DISTANCE OF 661.38 FEET TO THE POINT OF BEGINNING OF THIS DESCRIPTION.
FROM SAID POINT OF BEGINNING CONTINUE N 89°59'55" W FOR 210 FEET, THENCE RUN S 00°07'07" W FOR 512.03 FEET, THENCE RUN S 89°59'55" E FOR 210 FEET, THENCE RUNN 00°07'07" E FOR 512.03 FEET TO THE POINT OF BEGINNING, LESS ROAD RIGHT OF WAY FOR OLD STATE ROAD NO. 44.

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SURROUNDING PROPERTY INFORMATION:

A ZONING: R2M PARCEL ID: F01-045	J ZONING: RR1 PARCEL ID: F01-018	S ZONING: RMU PARCEL ID: G06-132	AE ZONING: RR1 PARCEL ID: G06-141
B ZONING: RR5C PARCEL ID: F01-069	K ZONING: CL/RR5C PARCEL ID: F01-016	T ZONING: RMU PARCEL ID: G06-133	AF ZONING: RR1 PARCEL ID: G06-043
C ZONING: R6C PARCEL ID: F01-026	L ZONING: C-2 PARCEL ID: G06-187	U ZONING RMU PARCEL ID: G06-135	AG ZONING: R2M PARCEL ID: G06-106
D ZONING: R6C PARCEL ID: F01-025	M ZONING: A10C PARCEL ID: G06-004	V ZONING RMU PARCEL ID: G06-128	AH ZONING: RR1 PARCEL ID: G06-015
E ZONING: R6C PARCEL ID: F01-024	N ZONING: A10C PARCEL ID: G06-188	W ZONING RMU PARCEL ID: G06-119	AI ZONING: R2M PARCEL ID: G06-016
F ZONING: R6C PARCEL ID: F01-023	O ZONING: RMU PARCEL ID: G06-100	X ZONING RMU PARCEL ID: G06-123	AB ZONING: RMU PARCEL ID: G06-093
G ZONING: R6C PARCEL ID: F01-022	P ZONING: C-1 PARCEL ID: G06-099	Y ZONING RMU PARCEL ID: G06-122	AC ZONING: RMU PARCEL ID: G06-094
H ZONING: R6C PARCEL ID: F01-021	Q ZONING: RMU PARCEL ID: G06-006	Z ZONING RMU PARCEL ID: G06-121	AD ZONING: RMU PARCEL ID: G06-023
I ZONING: RR5C PARCEL ID: F01-069	R ZONING: C-1 PARCEL ID: G06-111	AA ZONING RMU PARCEL ID: G06-127	

NOTES:

1. RESIDENTIAL PODS AND DRIVE LOCATIONS ARE CONCEPTUAL AND TO BE FINALIZED WITH FINAL ENGINEERING.
2. NO BUFFER IS REQUIRED WHERE WETLAND PRESERVATION ABUTS ROW OR PROPERTY BOUNDARY.
3. PROJECT WILL CONNECT TO CITY OF WILDWOOD UTILITIES LOCATED ROW OFSR 44A.
4. AMENITIES INCLUDE 1) CLUBHOUSE, 2) POOL, 3) NATURE TRAIL, AND 4) POCKET PARK.
5. PARKING SHALL COMPLY WITH STANDARDS AS SET FORTH IN LDC SECTION 6.4

DEVELOPER:
WILDWOOD III, LLC
2910 EURT STREET
EUSTIS, FLORIDA 33762
PHONE: (727) 364-1970

ENGINEER & PLANNING:
LEVELUP CONSULTING, LLC
505 E. JACKSON STREET SUITE 200
TAMPA, FLORIDA 33602
PHONE: (813) 375-0616
EMAIL:
ERIC@LEVELUPFLORIDA.COM

SURVEY:
TRANSYSTEMS
565 SOUTH HERCULES AVENUE
CLEARWATER, FLORIDA 33764
PHONE: (727) 822-4151

ENVIRONMENTAL:
MERYMAN ENVIROMENTAL INC.
10408 BLOOMINGDALE AVENUE
RIVERVIEW, FLORIDA 33578
PHONE: (813) 626-9551

PROJECT NAME:
WILDWOOD III

DRAWING TITLE:
PD CONCEPTUAL PLAN

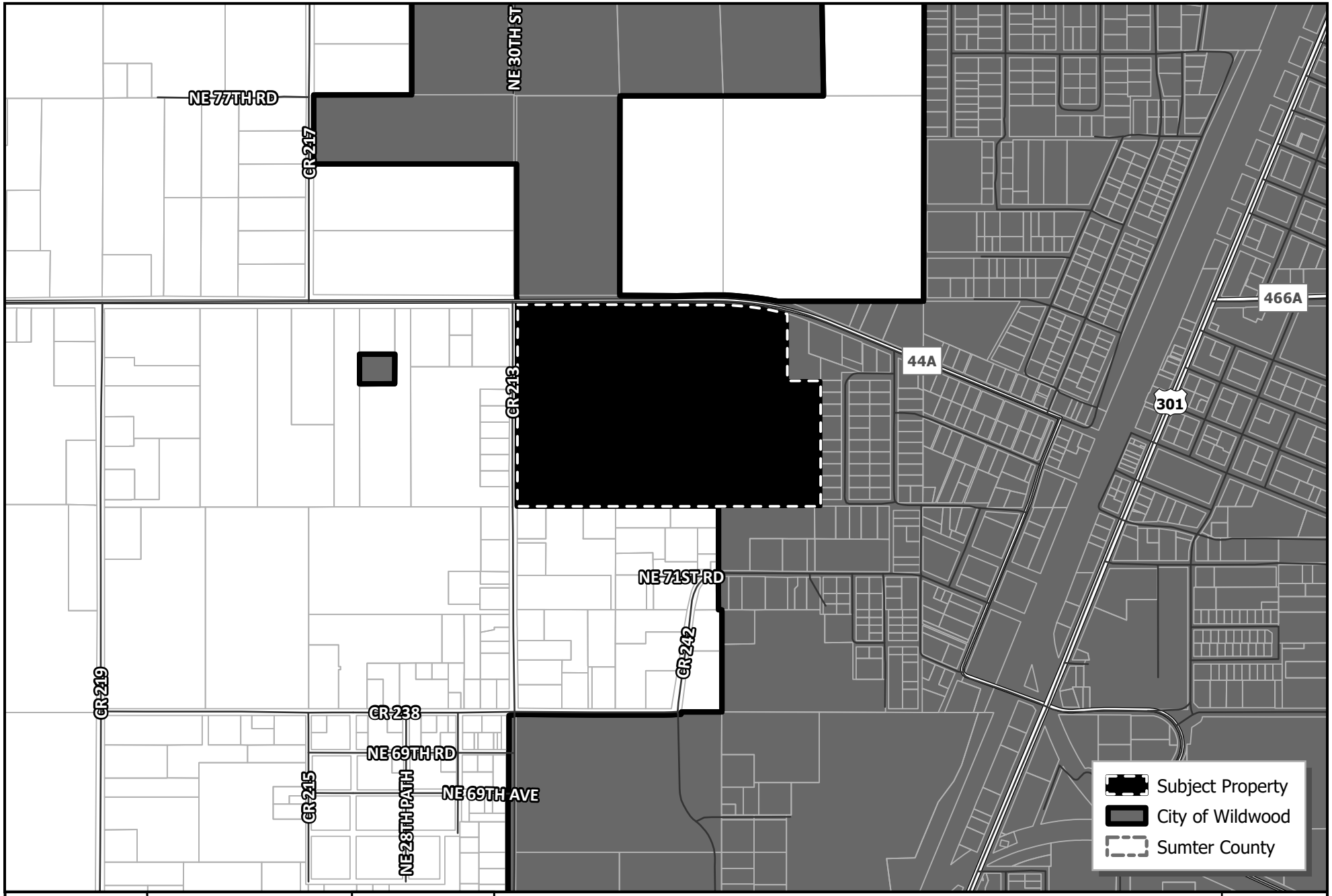
PREPARED FOR:
WILDWOOD III, LLC

PROJECT No. 268-01-01

SHEET 1 of 1

LEVELUP CONSULTING, LLC
505 E. JACKSON STREET
SUITE 200
TAMPA, FLORIDA 33602
OFFICE: 813-375-0616
WWW.LEVELUPFLORIDA.COM

T:\Projects\268-01 Wildwood III\Drawings\268-01-01 PD Plan\Current Plans\20240131.0.dwg
02/13/2024 1:07:24 PM PLOTTED BY: eric.dunning



WILDWOOD FLORIDA EST. 1877

CITY OF WILDWOOD
100 North Main Street
Wildwood, FL 34785
Phone: (352) 330-1330
www.wildwood-fl.gov

N

US Feet
0 187.5 375 750

PD 2312-001

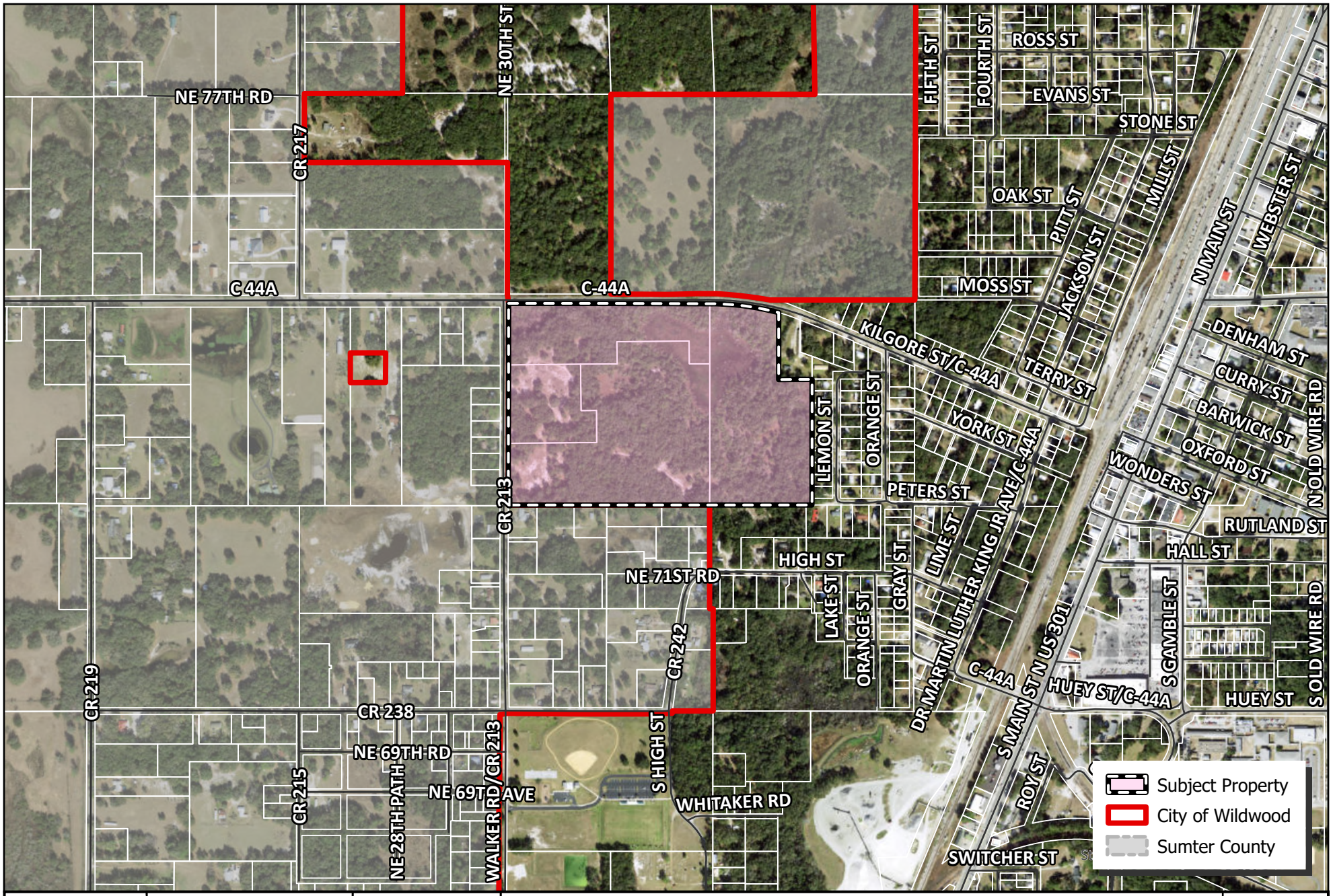
WILDWOOD III

PARCELS G06-007, G06-012, G06-012A & G06-204

MAP 1A

LOCATION MAP

NOV 2024



WILDWOOD FLORIDA EST. 1877

CITY OF WILDWOOD
100 North Main Street
Wildwood, FL 34785
Phone: (352) 330-1330
www.wildwood-fl.gov

N

0 0.01 0.03 0.06 0.09 0.12
Miles

PD 2312-001

WILDWOOD III

PARCELS G06-007, G06-012, G06-012A & G06-204

MAP 1B

LOCATION MAP

NOV 2024

Business Impact Estimate

This form should be included in the agenda packet for the item under which the proposed ordinance is to be considered and must be posted on the City of Wildwood website by the time notice of the proposed ordinance is published.

Proposed ordinance's title/reference: O2024-72

This Business Impact Estimate is provided in accordance with section 166.041(4), Florida Statutes. If one or more boxes are checked below, a business impact estimate is not required by state law[1] for the proposed ordinance. This Business Impact Estimate may be revised following its initial posting.

- ☐ The proposed ordinance is required for compliance with Federal or State law or regulation;
- ☐ The proposed ordinance relates to the issuance or refinancing of debt;
- ☐ The proposed ordinance relates to the adoption of budgets or budget amendments, including revenue sources necessary to fund the budget;
- ☐ The proposed ordinance is required to implement a contract or an agreement, including, but not limited to, any Federal, State, local, or private grant or other financial assistance accepted by the municipal government;
- ☐ The proposed ordinance is an emergency ordinance;
- ☐ The ordinance relates to procurement; or
- ☒ The proposed ordinance is enacted to implement the following:
  a. Part II of Chapter 163, Florida Statutes, relating to growth policy, county and municipal planning, and land development regulation, including zoning, development orders, development agreements and development permits;
  b. Sections 190.005 and 190.046, Florida Statutes, regarding community development districts;
  c. Section 553.73, Florida Statutes, relating to the Florida Building Code; or
  d. Section 633.202, Florida Statutes, relating to the Florida Fire Prevention Code.

[1] See Section 166.041(4)(c), Florida Statutes.

City of Wildwood, Florida
Planning & Zoning Board/Special Magistrate

The case below was heard on Tuesday, December 3, 2024, by the Special Magistrate. The applicant seeks a favorable recommendation from the City of Wildwood Planning and Zoning Board/Special Magistrate for O2024-72 to be forwarded to the City Commission for final approval. The subject property is generally located at the southeast corner of C 44A and CR 213 intersection.

Case #	PD 2312-001 Wildwood III Planned Development
Applicant(s)	M&S Dev, LLC
Owner(s)	Cedar Creek Equity Investments, LLC & Sunscape Farms, LLC
Parcel Number(s)	G06-007, G06-012, G06-012A, & G06-204

Under Land Development Regulation (LDR) § 8.2(E), the Planning and Zoning Board/Special Magistrate has a duty to make a recommendation to the City Commission on all proposed planned developments.

Based upon the testimony, evidence and information presented as to the criteria set forth in LDR § 8.2(G), the Special Magistrate

☐ recommends approval.

☒ recommends approval with the following conditions:

approval is without prejudice re: revision(s) to language of Sect. L.3.c.

☐ recommends denial.

Dated: December 3, 2024

Lindsay C.T. Holt
Special Magistrate City of Wildwood

WILDWOOD III
PLANNED DEVELOPMENT OVERLAY NARRATIVE

*****

KILGORE STREET (C-44A) AND CR 213

WILDWOOD, FL

Submitted by:

Kevin Reali, Esquire
Annie Barnes, Associate Planner
Stearns Weaver Miller
401 East Jackson Street, Suite 2100
Tampa, Florida 33602
(813) 223-4800

As of December 20, 2023

Project Narrative

This application requests a Planned Development ("**PD**") Overlay for approximately +/- 55.73 acres of land in the City of Wildwood (the "**City**"). The subject property includes four contiguous parcels identifiable as Sumter County Property Appraiser parcel identification numbers: G06-007, G06-12, G06-12A, and G06-204 (the "**Property**"). The Property is generally located on the south side of Kilgore Street (Sumter County Road 44A), southwest of the intersection between C-44A and CR 213 as depicted below. The Property accesses C-44A just east of the intersection with CR 213. C-44A is approximately 1.2 miles north of State Road 44 along CR 213, and approximately 1.5 miles east of the intersection of State Road 44 and C-44A. State Road 44 is a principal arterial roadway and C-44A is a major collector roadway, as shown on the adopted *Florida Department of Transportation Functional Roadway Classification Map,* included as **Attachment 1.**



Figure 1. Subject Property – General Location

This application supports two parallel applications; (1) a large-scale comprehensive plan amendment to amend the Future Land Use ("**FLU**") designation from Residential Mixed Use ("**RMU**") to Medium Density Residential ("**MDR**"), and (2) a request to rezone the Property Neighborhood Mixed Use – 7 ("**NMU-7**") to Medium Density Residential ("**R-3**"). The table below summarizes current Property attributes:

Parcel ID	Acreage*
G06-007	± 17 AC
G06-12	± 22.74 AC
G06-12A	± 10.11 AC
G06-204	± 5.88 AC

**Acreage is based on Sumter County Property Appraiser Records and not reflective of surveyed acreage.*

Table 1. Property Attributes

I. Request:

This request seeks approval of a Residential Planned Development ("**RPD**") in accordance with Section 8.7(A) of the Land Use Regulations ("**LDRs**"). The RPD is compatible with the proposed underlying R-3 zoning district, which permits a wide range of residential uses such as apartments and condominiums at a maximum density of 9 dwelling units per acre. A maximum of 501 dwelling units (net density) within the R-3 zoning district is permissible on the Property. This RPD Overlay requests 350 multi-family dwelling units at a maximum gross density of 6.3 dwelling units an acre (8.76 net density). The proposed density within the RPD is less than what is currently permissible in the current and proposed zoning district.

The RPD Overlay is necessary to provide flexibility in site design layout due to the extensive wetlands within the Property along C-44A, which generally occupy the balance of the northeast portion of the Property. As such, a reduction to the building separation from twenty-five feet to ten feet is necessary to preserve as much wetland area as possible.

II. Character of the Surrounding Area:

The Property is situated along the western City boundary, adjacent to property within unincorporated Sumter County. There are a mixture of commercial and residential developments in the immediate surrounding area. North of the Property across C-44A is vacant property zoned General Commercial – Neighborhood ("**C-2**") with a Commercial FLU. Property north of the Property and immediately east of the C-2 zoned property is undeveloped land zoned General Agricultural with Conventional Housing ("**AI0C**") with a Rural Residential ("**RR**") FLU (Sumter County). Approximately 2,900-feet north of the Property is a 339-acre new development known as *Twisted Oaks Pointe Community Development.* This development will include 735 residential single-family detached dwellings, 248 residential single-family semi-attached dwellings, and 300 residential multi-family units.

The Property to the east is zoned General Commercial – Downtown ("**C-1**") with the RMU FLU and developed with a self-storage facility. Further south of the self-storage facility, but immediately east of the Project, is predominantly residential single-family dwellings, zoned RMU, and within the RMU FLU. South and West of the Property is land residential in character, developed primarily with residential single-family detached dwellings. The proposed RPD provides a transition between commercial and residential parcels to the east and residential uses with less density to the west within the County.

A summary of the surrounding property attributes for property directly adjacent to the Project:

	Zoning	**Future Land Use**	**Existing Use**
North*	C-2/AIC	COM/RR	Vacant Land and Pastureland
South*	RMU/RR1/R2M	RMU/RR	Residential Single-Family Detached Dwellings
East	RMU/C-1	RMU	*Kingdom* Self Storage and Residential Single-Family Detached Dwellings
West*	RR5C/R6C/RR1	AG	Residential Single-Family Detached Dwellings

**A portion or all of the surrounding properties are located within Sumter County's jurisdiction.*

Table 2. Surrounding Property Attributes

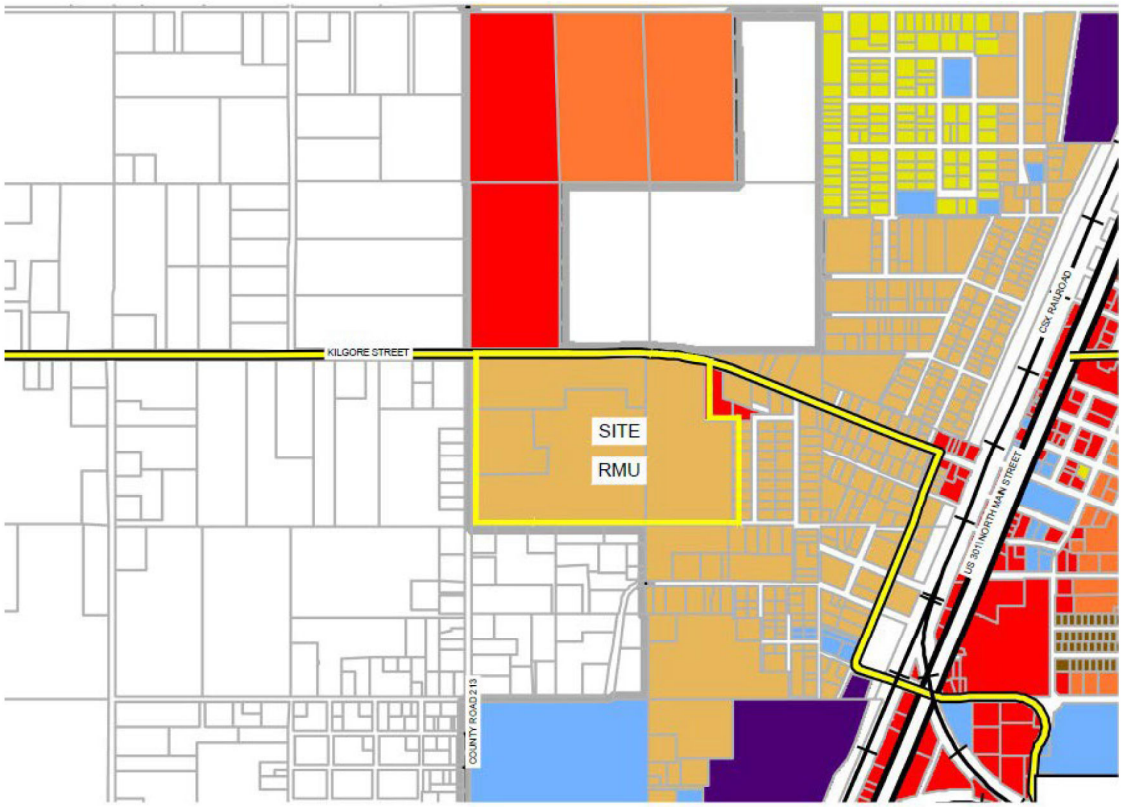


Figure 2. Subject Property Proposed Future Land Use ("FLU") Map (Attachment 2)

III. Consistency with the Comprehensive Plan:

The following objectives and policies are supportive of the Project:

Goal 1. *The City implement land use planning through comprehensive policies, regulations, capital projects and incentives to enhance the quality of life for its citizens, promote economic vitality, and accommodate future population in a sustainable and equitable manner.*

Objective 1.2.1. *The City shall strive to create a sustainable community by discouraging the proliferation of urban sprawl, promoting the efficient utilization of public infrastructure, services, and utilities, and implementing a compact land use pattern.*

Policy 1.2.1. *The City shall encourage growth and development in areas where public infrastructure, services, and utilities are already present or planned to be within 3 to 5 years.*

Discussion: This Policy encourages growth and development in areas with existing public infrastructure. There are existing utility connections (e.g. water and wastewater lines) near the Property. The Property fronts C-44A, a major collector roadway, and is within 1.5 miles of the intersection of C-44A and with State Road 44, a principal arterial roadway. The Property is approximately 2,000 feet from Downtown Main Street. Residential communities will support commercial and economic growth in the City's downtown without contributing to urban sprawl, at a density high enough to efficiently use the Property in a way that doesn't proliferate sprawl.

The Project meets Objective 1.2.1 by creating a sustainable development that steers improvements away from wetland areas as much as possible and providing development close to the downtown. This Objective implements Goal 1 by accommodating future populations in a sustainable and equitable manner.

Goal 3. *To promote the provision of a diverse, affordable and high-quality housing stock to accommodate the needs of current and future residents while preserving and enhancing established neighborhoods.*

Objective 3.1. *The City shall ensure there is adequate land for the provision of high-quality housing of different types to serve the current and future-residents while promoting the development of a sustainable community.*

Policy 3.1.5. *The City shall allow a wide range of housing types to accommodate a diversity of housing needs and preferences. These may include attached and detached single-family homes, cluster development, multi-family homes, and innovative housing types.*

Discussion: This Policy promotes wide range of housing types to accommodate a diversity of housing needs. This FLU change implements this policy by permitting residential multi-family housing. This Project meets Objective 3.1 by building high-quality housing. Further, this development meets Goal 3 by providing additional housing for current and future residents. The development will be within walking distance of a variety of downtown commercial uses.

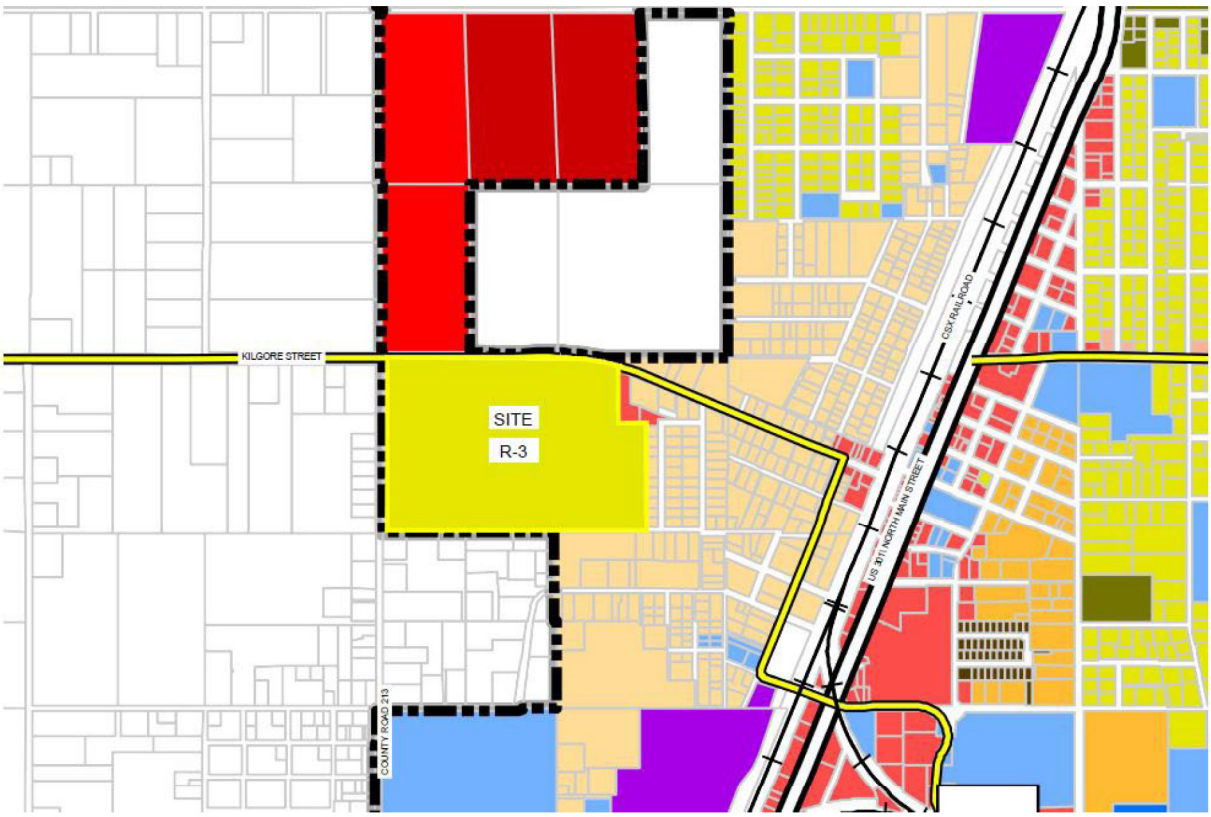


Figure 3. Subject Property Proposed Zoning Map (Attachment 3)

IV. LDR Section 8.1

Intent. The standards and procedures of this Chapter are not intended as an avenue for relaxing requirements set forth in the Land Development Regulations; the intent of this Chapter is to promote design flexibility and to permit planned diversification and integration of uses and structures. The City Commission shall have authority to establish limitations and regulations for the project to protect the public's health, safety and welfare. In doing so, planned developers are intended to:

(1) Promote more efficient and economic uses of land;

Discussion: The Property is approximately 2,000 feet from Downtown Main Street and currently vacant. A multi-family development will support commercial and economic growth in the City's downtown without contributing to urban sprawl.

(2) Encourage compatible and harmonious development of contiguous lands;

Discussion: There is a mixture of commercial and residential development in the immediate surrounding area around the Property, as described in Section II of the narrative. (*Table 2* identifies specific surrounding property attributes including zoning, FLU, and existing uses.) The proposed RPD Overlay is compatible with the proposed R-3 zoning district. The proposed RPD and R-3 zoning district provide a transition between commercial and residential parcels to the east and residential uses with less density to the West within the County.

(3) Promote home ownership opportunities for all residents of the community;

Discussion: This RPD will enable families to live in a new community with amenities without the substantial cost burden or purchasing a home.

(4) Provide flexibility and variety to meet changing needs, technologies, economics, and consumer preferences;

Discussion: The primary purpose of this RPD is to provide the design flexibility necessary to development around the wetlands on the Property as much as feasibly possible, while still efficiently using the land area close to downtown. The proposal is for a rental community, which is in high demand. The developer has several rental communities throughout the State and continues to see a demand in consumer preference to rent.

(5) Be totally controllable based on the needs of the City, in terms of the impact on the proposed site and surrounding neighborhoods;

Discussion: The proposed RPD Overlay will provide housing in a unique community that is harmonious with the environmental landscape. The RPD will provide a transition between commercial and residential parcels to the east and residential uses with less density to the West within the County. Additionally, the TIS demonstrates that all roadways segments currently operate at an acceptable LOS and will continue to operate at an acceptable LOS.

(6) Require uses of land which reduce transportation needs as well as conserve energy and natural resources;

Discussion: The RPD is a walkable community which incorporates sidewalks, a nature trail, and a park approximately 2,000 feet from Downtown Main Street. These design amenities incorporate and conserve the existing wetlands on the Property.

(7) Preserve to the greatest extent possible, and utilize in a harmonious fashion, existing landscaping features and amenities;

Discussion: The current site is vacant. A RPD is necessary to design a development around the significant amount of wetlands on the Property. In accordance with the City's Design District Standards ("**DDS**"), the RPD will provide amenities including a community clubhouse, pool, park, and nature trail.

(8) Provide for more usable and suitably located recreational facilities, open spaces and scenic areas, either commonly owned or publicly owned;

Discussion: This RPD is necessary to design a development around the wetlands as much as feasibly possible. The RPD design incorporates amenities such as a park and nature trail that is incorporates the existing vegetation.

(9) Lower development and building costs by permitting smaller networks of infrastructure and the use of more economical building types and shared facilities;

Discussion: This RPD development includes residential multi-family uses that will share all infrastructure and amenities.

(10) Permit the combining and coordinating of architectural styles, building forms, and building relationships within a development; and

Discussion: The RPD will adhere to the City's DDS regulations for multifamily architectural styles. The RPD will provide amenities including a community clubhouse, pool, park, and nature trail.

(11) Demonstration of internal and external interconnectivity for infrastructure, open space and environmental systems; and

Discussion: The Property is ideally suited along a major collector roadway, Kilgore Street (Sumter County Road 44A), which provides for sufficient transportation infrastructure, therefore, no issues with internal and external interconnectivity for infrastructure are anticipated. As previously stated, this RPD is necessary to design a development around the wetlands as much as feasibly possible. The design of the RPD is to preserve as much wetland area as possible and allow residents to enjoy the natural vegetation through specific amenities.

The TIS demonstrates that all roadways segments currently operate at an acceptable level of service LOS. The TIS also projects study roadway segments to continue to operate at an acceptable LOS. Access points are proposed along CR 213 and CR44A/Kilgore Street (a major collector roadway). There are also several stub-outs on the Property for future cross-access points in anticipation of future redevelopment in the area.

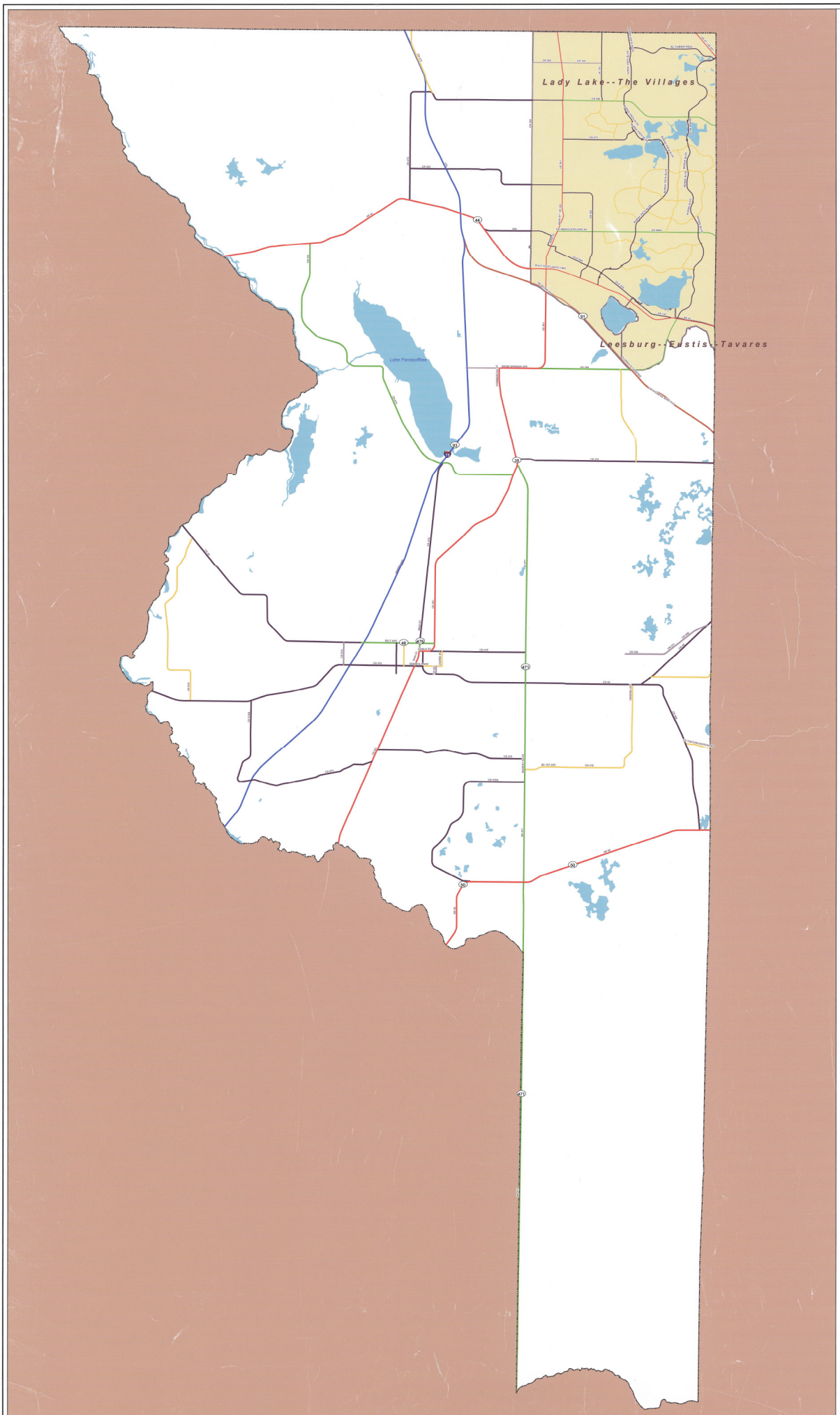
(12) Administer mixed use developments in conformance with the goals and objectives of the comprehensive pan.

Discussion: This not applicable to the Project. This RPD is providing residential multi-family development, a single use.

V. Conclusion.

A RPD Overlay is necessary to development the unique property into a community that incorporates the existing wetlands on the Property. The Project is consistent with the intent of the goals, objectives, and policies of the City of Wildwood Plan. The Project is compatible with the underlying R-3 zoning district and surrounding land uses. The Project is also consistent with the analysis of LDR Section 8.1.

ATTACHMENT 1



DISTRICT 5
2010 Urban Area Boundary & Federal Functional Classification
Sumter County, Florida

Legend

- 01 - Principal Arterial-Interstate RURAL
- 02 - Principal Arterial-Expressway RURAL
- 04 - Principal Arterial-Other RURAL
- 06 - Minor Arterial RURAL
- 07 - Major Collector RURAL
- 08 - Minor Collector RURAL
- 09 - Local RURAL
- 11 - Principal Arterial-Interstate URBAN
- 12 - Principal Arterial-Freeway and Expressway URBAN
- 14 - Principal Arterial-Other URBAN
- 16 - Minor Arterial URBAN
- 17 - Major Collector URBAN
- 18 - Minor Collector (Fed Aid) URBAN
- 19 - Local URBAN
- 2010 Adjusted Urban Area
- Water

Recommended By:

Lake-Sumter MPO Chairman — Date: 8/19/14

Florida Dept. of Transportation — Date: 8.28.14

Approved By:

Federal Highway Administration — Date: 09/02/2014

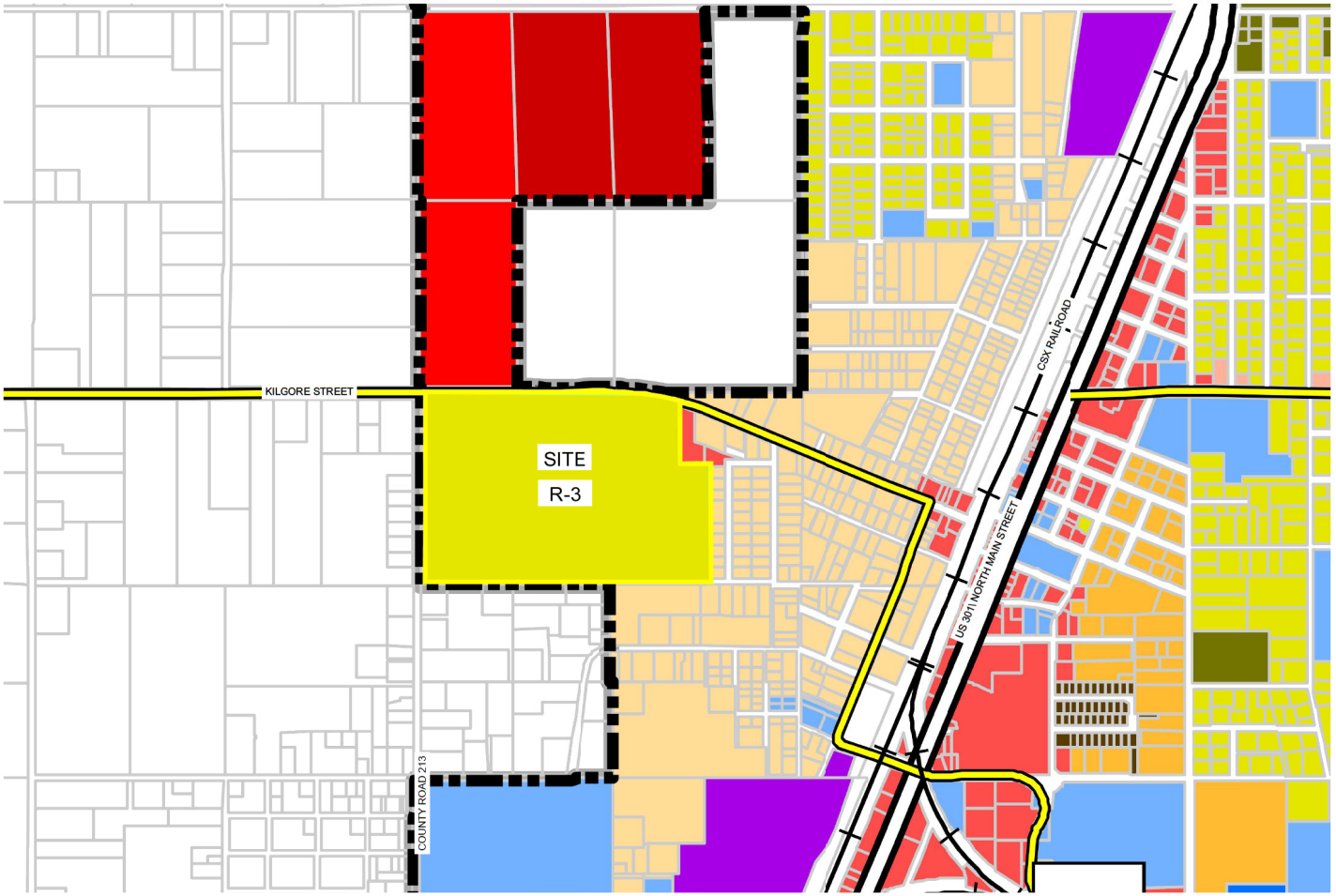
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0 2 4 8 Miles

FDOT

6/25/14

ATTACHMENT 2



Legend

Zoning Classification

- AG-10
- AG-5
- ER
- R-1
- R-2
- R-3
- R-4
- R-5
- RMU
- RMU-10
- RIO
- MHP
- C-1
- C-2
- C-2A
- C-3
- CMU
- NMU-4
- NMU-7
- ECNMU-7
- SWCMU
- CC
- 466/301 MU
- M-1
- M-2
- PEU
- INS
- PUD
- V-WW
- ARD
- CITY OF WILDWOOD
- SUMTER COUNTY

N

NOT TO SCALE

LEVELUP CONSULTING, LLC

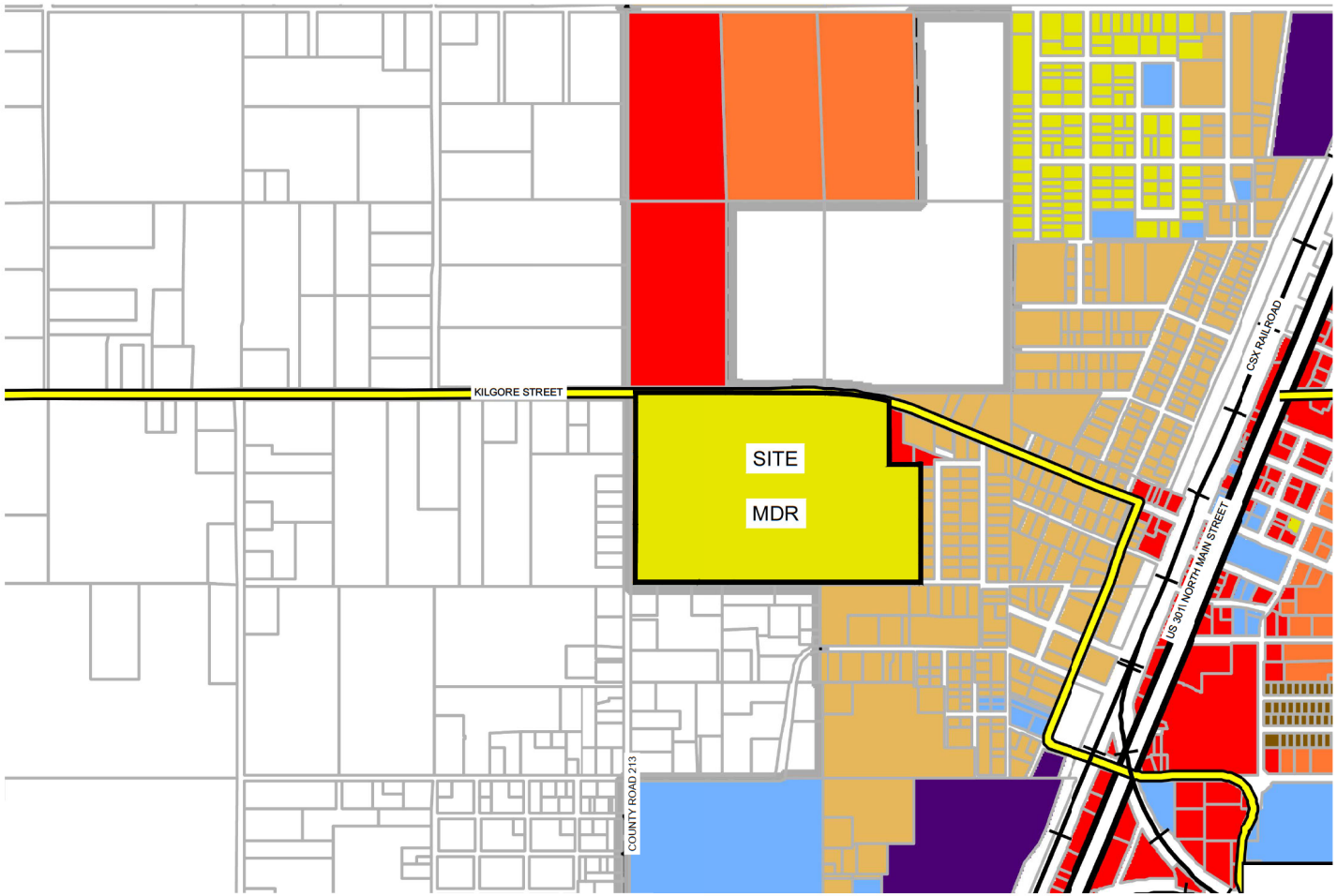
LVLUP

505 E. JACKSON STREET
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TAMPA, FLORIDA 33602
OFFICE: 813-375-0616
WWW.LEVELUPFLORIDA.COM

PREPARED FOR:	PROJECT NAME:	DRAWING TITLE:	PROJECT No. 268-01-E03
WILDWOOD III, LLC	WILDWOOD III	PROPOSED ZONING MAP	SHEET 2 of 2

G:\Projects\268-01 Wildwood III\Drawings\268-01-E03 - Proposed Zoning Map\Current Plans\268-01-E03 - Proposed Zoning Map.dwg
6/19/2023 11:11:67 AM PLOTTED BY: cd lombard

ATTACHMENT 3



CONS
AG
REC
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LDR
MDR
HDR
RMU
HDMU
MHP
COM
CMU
NC
IND
PF
V-WW DRI
WWS DRI
ARD
SUMTER COUNTY

NOT TO SCALE

LEVELUP CONSULTING, LLC
LVLUP
505 E. JACKSON STREET
SUITE 200
TAMPA, FLORIDA 33602
OFFICE: 813-375-0616
WWW.LEVELUPFLORIDA.COM

PREPARED FOR:	PROJECT NAME:	DRAWING TITLE:	PROJECT No. 268-01-E05
WILDWOOD III, LLC	WILDWOOD III	PROPOSED FLU MAP	SHEET 1 of 2

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7/10/2023 11:03:28 AM PLOTTED BY: ed lombard

Kimley»Horn

May 29, 2024

Ms. Wendy Then, AICP CFM
Assistant Director, Development Services Department
City of Wildwood
100 N. Main Street
Wildwood, FL 34785

RE: ***Future Traffic Projections CR 209 from SR 44 to CR 466***
Kimley-Horn Job Number 142173000

Dear Ms. Then:

At the request of the City of Wildwood (the City), Kimley-Horn reviewed future traffic projections on CR 209, from SR 44 to CR 466. The purpose of the review was to provide input on the needed right of way width to complete the missing section of roadway from CR 44A to CR 232.

Existing traffic data published by the Florida Department of Transportation (FDOT) was obtained for CR 209. Transportation modeling software was used to estimate the growth in traffic along CR 209 from background traffic, planned developments along CR 209 that were provided by the City, and completing the missing connection of the roadway. Our analysis found that the projected daily traffic volume on CR 209 within the planning horizon and considering the developments under review or approved by the City of Wildwood, is less than the service volume of a two-lane roadway (14,000 vehicles per day).

A more detailed traffic analysis will be performed during the Preliminary Engineering Report to identify turn lane needs and traffic control at the intersections along the corridor. It is recommended that the City plan for 100 feet of right-of-way on CR 209. This will allow for a 2-lane roadway with sidewalks to be constructed initially but will also provide flexibility for a 4-lane roadway if needed in the future due to continued development on and around the CR 209 corridor.

An exhibit showing the study area, future developments, and a two-lane and four-lane typical section within the proposed 100-foot right-of-way is provided as an attachment.

Please contact me if you have any questions.

Sincerely,
KIMLEY-HORN

Amber L. Gartner, P.E.
ALG/sab

Attachments – Aerial Exhibit

K:\OCA_Civil\1421\73000 - City Engineering Support\Additional Tasks\0290 - CR 209\doc\Lwt240529alg - CR 209.docx

AERIAL EXHIBIT
SUMTER COUNTY
FLORIDA
CR 209
PRELIMINARY ENGINEERING
STUDY SCOPE LIMITS
CITY OF WILDWOOD
SHEET NUMBER
EX-01
KHA PROJECT
DATE
MAY 2024
SCALE AS SHOWN
DESIGNED BY KHA
DRAWN BY
CHECKED BY
Kimley»Horn
©2024 KIMLEY-HORN AND ASSOCIATES, INC.
1700 SE 17TH STREET, SUITE 200, OCALA, FL 34471
PHONE: 352-438-3000
WWW.KIMLEY-HORN.COM, REGISTRY 35106
No.
REVISIONS
DATE
BY
PROPOSED 4 - LANE
TYPICAL SECTION
PROPOSED 2 - LANE
TYPICAL SECTION
1 ASPHALT SURFACE COURSE
2 BASE COURSE
3 STABILIZATION
4 5' CONCRETE SIDEWALK
VOTES:
TOTAL LENGTH: 29,124 FT
TOTAL LENGTH: 5.516 MILES
LEGEND
CITY LIMITS
NORTH
GRAPHIC SCALE IN FEET
0
500
1000
2000
BEGIN PROJECT
END PROJECT
US 301
SR 44
CR 209
CR 444
CR 242
CR 238
CR 219
CR 227
CR 232
CR 221
CR 462
CR 223
CR 1244
CR 114
CR 222
CR 472
CR 216
CR 216A
CR 110
CR 214
CR 466
NE 42 BLVD
BOULDER SQUARE
TWISTED OAKS
MATTED OAKS
TILLMAN OAKS
HIGHFIELD AT TWISTED OAKS
PEREZ HOME SITE
INQUIRY

Print

Sumter County Traffic Impact Analysis (TIA) - Submission #47774

Date Submitted: 10/13/2023

First Name*	Last Name*	Email Address*
Chris	Walsh	chris.walsh@walshtraffic.com

Address

285 Palmetto Springs Street

City	State	Zip Code
DeBary	FL	32713

Phone	Alt Phone	Parcel Number
3868015682		G06-012A, G06-204, G06-012, G06-007

Sumter County Traffic Impact Analysis (TIA)

In accordance with the Interlocal Service Boundary and Joint Planning Agreement between the City of Bushnell, City of Center Hill, City of Coleman, City of Webster, and the City of Wildwood, within the municipal service area, the Cities and County agree that County will review all traffic impact studies for development accessing the City or County road networks.

Purpose and Applicability

The purpose of the TIA is to identify the potential traffic impacts of new development on the transportation system and to develop mitigation strategies to offset those impacts according to the methodologies and provisions as described herein. These guidelines apply to all new development within Sumter County, including its municipalities, submitting building and site plans for review. The TIA requirement applies to previously approved developments that are over five years old, changing land uses within the site plan, or extending the build-out date from a previously approved TIA. Unless otherwise required by the County Administrator or designee, a TIA, as it relates to a substandard roadway section, shall not be required for any single development generating less than 50 average daily trips, as per the Trip Generation Manual, latest edition, as published by the Institute of Transportation Engineers (ITE). The following thresholds will determine the level of study that will need to be performed depending on the number of trips a development produces:

1. Applicants proposing developments that generate 50 but less than or equal to 1,000 average daily trips (ADT), according to the ITE Trip Generation Manual, current edition, must perform a Minor TIA.
2. A Major TIA shall be required for all proposed developments generating more than 1,000 ADT, as per the ITE Trip Generation Manual, current edition..

For purposes of this section, a "single development" shall include any development, parcel of land, lot, and tract, and contiguous or nearby developments, parcels, lots, or tracts that are:

1. Developed by the same or a related development or landowner;
2. Developed as part of the same zoning plan, preliminary plan, preliminary site plan, plat, or other unified or common plan of development.

These guidelines are in addition to the requirements of the access management regulations. In the event of any conflict between these guidelines and such regulations, the more stringent requirements shall apply.

Methodology Statement

Before conducting a Major TIA, a methodology statement shall be prepared by the applicant, the applicant's representative, or the applicant's engineer/consultant and submitted for review and approval by the County. Before conducting a Minor TIA, the applicant, the applicant's representative, or the applicant's engineer/consultant shall seek confirmation from County staff on the need for a methodology statement. The purpose of the methodology statement is to establish agreed-upon methodologies and assumptions before the start of the TIA. A methodology statement shall be prepared using the guidelines provided in the following paragraphs. The methodology statement will be first reviewed by County staff, if necessary, through a methodology meeting with the applicant and or the applicant's consultant. The applicant's consultant will then revise the statement based upon agreed-upon methodologies. The applicant shall ensure the consultant does not prepare a TIA without a methodology statement approved by the appropriate County representative.

Sumter County 2022 County Annual Traffic Reports
Summary Table

Click here to view the table.

Exemption

Choose File No file chosen

Applicants can submit an exemption due to a development generating less than 50 average daily trips, as per the Trip Generation Manual, latest edition, as published by the Institute of Transportation Engineers (ITE).

Please submit your Methodology Statement

Choose File No file chosen

Please submit your TIA

Wildwood III Traffic Impact Study-October 2023-SS.pdf

Date of Methodology Acceptance by County

9/28/23

Sumter County Traffic Impact Analysis (TIA) acceptance:

Matthew Tadlock

Digitally signed by Matthew Tadlock
DN: cn=Matthew Tadlock, o=Sumter County Public Works, ou=Planning and Design, email=matthew.tadlock@sumtercountyfl.gov, c=US
Date: 2024.02.16 13:03:01 -05'00'

Applicable Jurisdiction

Please check the applicable Jurisdiction:

- [ ] City of Bushnell
- [ ] City of Center Hill
- [ ] City of Coleman
- [x] City of Wildwood
- [ ] Unincorporated Sumter County

Link

FDOT Systems Implementation Office

Link

FDOT Roadway Design - Florida Greenbook

Link

Lake-Sumter MPO

Link

FDOT Traffic Information

■ **TRAFFIC IMPACT ANALYSIS**

WILDWOOD III RESIDENTIAL DEVELOPMENT

WILDWOOD, FLORIDA

OCTOBER 2023

PREPARED BY:

WALSH TRAFFIC ENGINEERING, LLC

285 PALMETTO SPRINGS STREET

DEBARY, FLORIDA 32713

PHONE – 386.668.0062

TRAFFIC IMPACT ANALYSIS

WILDWOOD III RESIDENTIAL DEVELOPMENT

WILDWOOD, FLORIDA

OCTOBER 2023

PREPARED BY:

CHRIS J. WALSH, P.E.

WALSH TRAFFIC ENGINEERING, LLC

285 PALMETTO SPRINGS STREET

DEBARY, FLORIDA 32713

PHONE – 386.668.0062

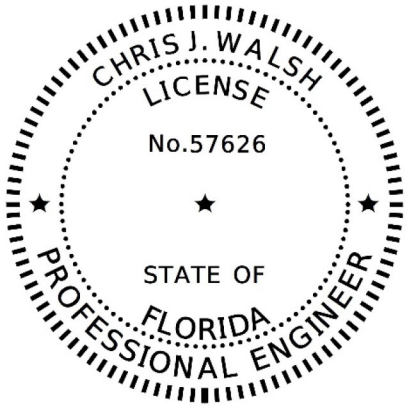
PROJECT #: 10030

PREPARED FOR:

MIZE & SEFAIR DEVELOPMENT

4039 S. DALE MABRY HIGHWAY

TAMPA, FLORIDA 33611



THIS DOCUMENT HAS BEEN DIGITALLY SIGNED AND SEALED BY:

ON THE DATE ADJACENT TO THE SEAL

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNE AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES

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Appendix B	Traffic Impact Analysis Methodology
Appendix C	Traffic Counts
Appendix D	Existing Conditions Synchro Printouts
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Appendix I	Turn-Lane Analysis Worksheets

INTRODUCTION

Walsh Traffic Engineering, LLC (Walsh Traffic) has been retained to conduct a traffic impact analysis for Wildwood III, a multi-family (duplex) development proposed for 55.8 acres located in the southeast quadrant of the intersection of CR 44A/Kilgore Street and CR 213 in Wildwood, Florida (see ***Figure 1***). The parcel ID #'s for the associated property are summarized below:

- G06-007
- G06-012
- G06-012A
- G06-204

The development is proposed to include 350 residential dwelling units. As a companion to the rezoning and PD overlay the applicant is also proposing a change in the FLU category from Residential Mixed Use to Medium Density Residential. A separate trip generation analysis was prepared in support of the FLU change. This TIA, which is separate from the FLU change trip generation analysis, was prepared in support of the proposed rezoning and PD overlay. A copy of the preliminary development plan is provided in ***Appendix A***. The development is proposed to have a buildout date of 2026.

Figure 1 - Site Location Map



Project Access

Full access to the proposed development is proposed on CR 44A, approximately 450 feet east of CR 213. A second full access driveway is also proposed on CR 213 approximately 700 feet south of CR 44A. Both intersections are anticipated to be one-way STOP controlled.

Study Area

Per the Sumter County TIA Guidelines (June 2022) and as included in the approved methodology (see ***Appendix B***), the study area for a Major TIA is to include all roadways located adjacent to the development plus all roadways where the project's peak-hour trips consume three percent (3%) or more of a roadway's two-way peak-hour generalized service volume based on the adopted LOS and committed number of lanes. Additionally, the study area is to include any roadway where the project's trips are projected to exceed 70 peak-hour two-way trips. The study intersections are to include major intersections that are part of the impact roadways, major intersections within 1,320 feet of the site access, and all site access intersections. The study roadway segments and intersections as included in the approved methodology are summarized below:

Study Roadway Segments

- CR 44A – from CR 221 to CR 213
- CR 44A – from CR 213 to US 301
- CR 213 – from SR 44 to CR 44A

Study Intersections

- CR 213 at CR 44A (1-way STOP)
- CR 213 at Project Driveway (1-way STOP)
- CR 213 at SR 44 (2-way STOP)
- CR 44A at Project Driveway (1-way STOP)
- CR 44A at Dr. MLK Jr. Avenue (1-way STOP)
- Dr. MLK Jr. at US 301 (signalized)

EXISTING CONDITIONS

Existing Volumes

For purposes of this study, AM and PM peak-period turning movement counts, from 7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM, were conducted at the study intersections. ***Figure 2*** and ***Figure 3*** summarize the existing AM and PM peak-hour turning movement volumes at the study intersections. The seasonal factor from FDOT's Peak Season Factor Category Report for Sumter County (2022) was then applied to the existing turning movement volumes. Printouts of the traffic counts are provided in ***Appendix C***.

Existing Roadway Segment Conditions

The existing AM and PM peak-hour two-way volumes on the roadway segments were obtained from the turning movement counts. The resulting volumes were then compared against the generalized service volume for each study roadway segment. ***Table 1*** and ***2*** below shows the adopted level of service and generalized service volume under the adopted level of service for each study roadway segment. As shown, the existing AM and PM peak-hour volumes for all the study roadway segments are below the generalized service volume.

Table 1 - Existing Roadway Segment Operating Conditions (AM Peak Hour)

Roadway Segment	Segment ID	# of Lanes	Speed Limit	Adopted LOS	Service Volume	Source	Existing Volume				Volume Exceeds Svc Vol?	
							NB/EB	SB/WB	Year	Source	NB/EB	SB/WB
CR 44A												
CR 221 to CR 213	35281102	2	35	D	1,200	MPO	93	40	2023	TMC	no	no
CR 213 to US 301	35281103	2	35	D	1,200	MPO	92	53	2023	TMC	no	no
CR 213												
SR 44 to CR 44A	6000	2	30	D	675	MPO	56	40	2023	TMC	no	no

Source: MPO - Lake Sumter MPO, TMC - Turning Movement Count

Table 2 - Existing Roadway Segment Operating Conditions (PM Peak Hour)

Roadway Segment	Segment ID	# of Lanes	Speed Limit	Adopted LOS	Service Volume	Source	Existing Volume				Volume Exceeds Svc Vol?	
							NB/EB	SB/WB	Year	Source	NB/EB	SB/WB
CR 44A												
CR 221 to CR 213	35281102	2	35	D	1,200	MPO	59	88	2023	TMC	no	no
CR 213 to US 301	35281103	2	35	D	1,200	MPO	93	172	2023	TMC	no	no
CR 213												
SR 44 to CR 44A	6000	2	30	D	675	MPO	52	46	2023	TMC	no	no

Source: MPO - Lake Sumter MPO, TMC - Turning Movement Count

Figure 2 - Existing AM Peak-Hour Traffic Volumes

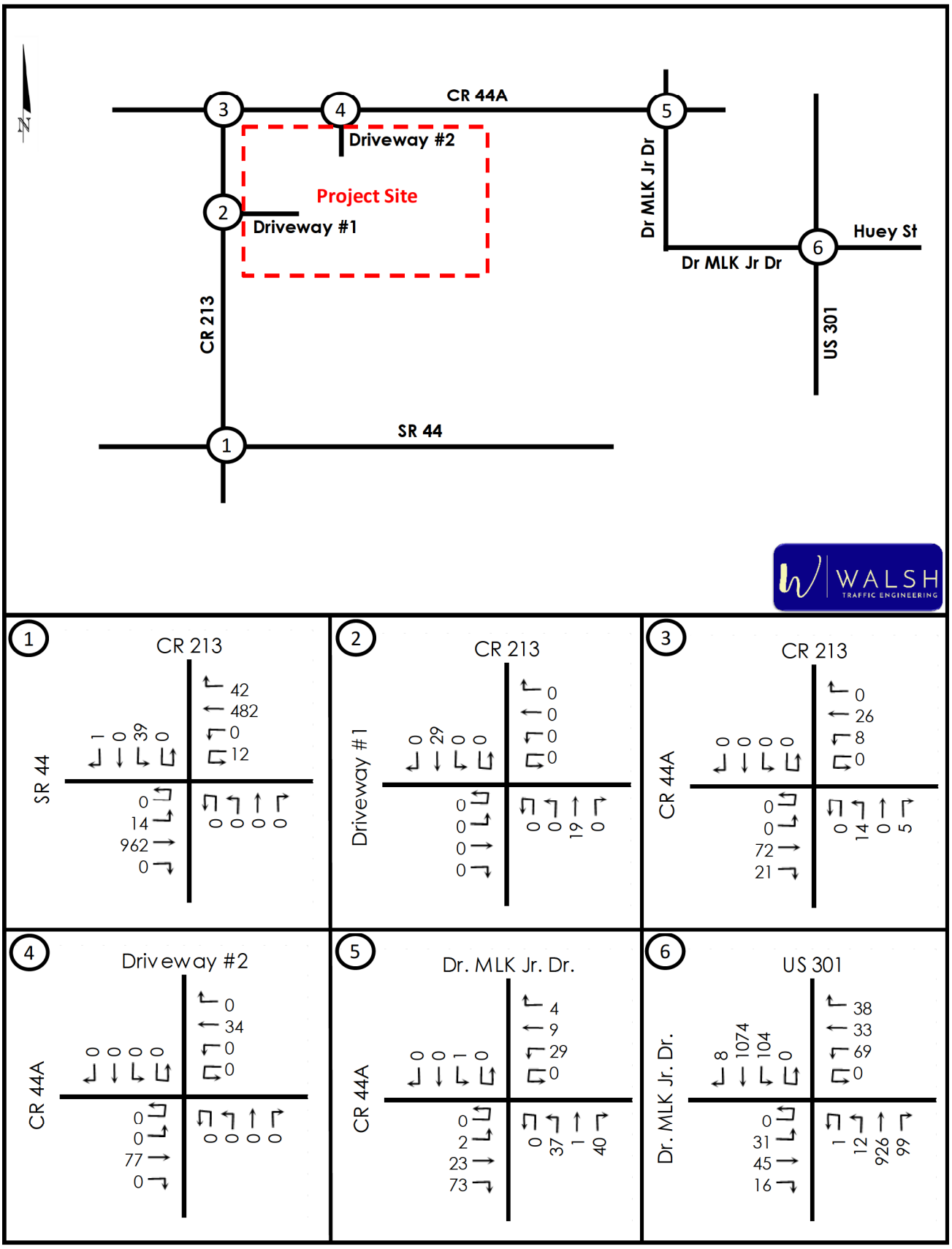
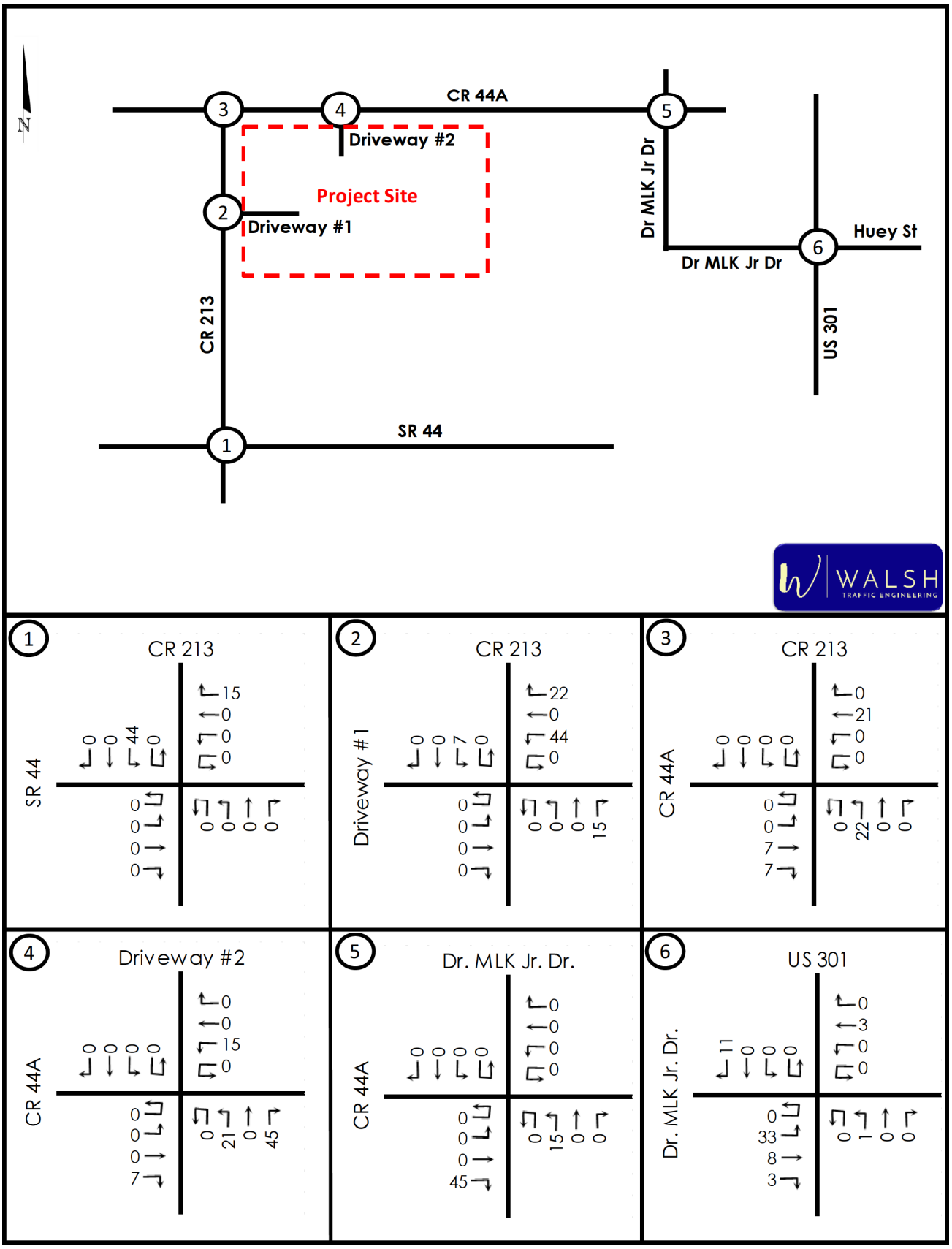


Figure 3 - Existing PM Peak-Hour Traffic Volumes



Existing Intersection Conditions

The AM and PM peak-hour existing operating conditions of the study intersections were evaluated using Highway Capacity Manual (HCM), 6th Edition methodologies within the Synchro 11 software. The existing AM and PM peak-hour turning movement volumes, existing roadway geometry, and existing signal timings (where applicable) were utilized in the analyses. ***Table 3*** summarizes the results of the intersection operational analyses. All movements at the STOP-controlled intersections currently operate acceptably. Additionally, the US 301/Dr. MLK Jr. Drive signalized intersection currently operates acceptably. Printouts of the operational analyses are provided in ***Appendix D***.

Table 3 - Existing Intersection Operating Conditions

		Eastbound				Westbound				Northbound				Southbound				Overall
		L	T	R	App	L	T	R	App	L/U	T	R	App	L	T	R	App	Intxn
SR 44 at CR 213 - 2-Way STOP																		
AM Peak	**Delay (sec/veh)**	9.3	-	-	0.1	10.4	-	-	0.2	-	0.0	-	0.0	19.8	9.9	-	19.6	-
	LOS	A	-	-	-	B	-	-	-	-	A	-	A	C	A	-	C	-
	V/C	0.018	-	-	-	0.019	-	-	-	-	0	-	-	0.146	0.001	-	-	-
	Queue (ft)	3	-	-	-	3	-	-	-	-	0	-	-	13	0	-	-	-
	Storage (ft)	375	-	-	-	225	-	-	-	-	-	-	-	250	-	-	-	-
PM Peak	**Delay (sec/veh)**	10.8	-	-	0.1	9.0	-	-	0.2	-	14.9	-	14.9	30.2	12.4	-	26.3	-
	LOS	B	-	-	-	A	-	-	-	-	B	-	B	D	B	-	D	-
	V/C	0.011	-	-	-	0.022	-	-	-	-	0.006	-	-	0.221	0.023	-	-	-
	Queue (ft)	0	-	-	-	3	-	-	-	-	0	-	-	20	-	-	-	-
	Storage (ft)	375	-	-	-	225	-	-	-	-	-	-	-	250	-	-	-	-
CR 213 at CR 44A - 1-Way STOP																		
AM Peak	**Delay (sec/veh)**	-	-	-	-	7.4	-	-	1.8	-	9.5	-	9.5	-	-	-	-	-
	LOS	-	-	-	-	A	-	-	-	-	A	-	A	-	-	-	-	-
	V/C	-	-	-	-	0.006	-	-	-	-	0.026	-	-	-	-	-	-	-
	Queue (ft)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Storage (ft)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PM Peak	**Delay (sec/veh)**	-	-	-	-	7.4	-	-	1.2	-	9.5	-	9.5	-	-	-	-	-
	LOS	-	-	-	-	A	-	-	-	-	A	-	A	-	-	-	-	-
	V/C	-	-	-	-	0.009	-	-	-	-	0.057	-	-	-	-	-	-	-
	Queue (ft)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Storage (ft)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		Eastbound				**Westbound**				**Northbound**				**Southbound**				**Overall**
		L	**T**	**R**	**App**	**L**	**T**	**R**	**App**	**L/U**	**T**	**R**	**App**	**L**	**T**	**R**	**App**	**Intxn**
CR 213 (Kilgore St.) at Dr. MLK Jr. Drive - 2-Way STOP																		
AM Peak	**Delay (sec/veh)**	7.2	-	-	0.1	7.5	-	-	5.2	-	9.4	-	9.4	-	9.8	-	9.8	-
	LOS	A	-	-	-	A	-	-	-	-	A	-	A	-	A	-	A	-
	V/C	0.001	-	-	-	0.02	-	-	-	-	0.092	-	-	-	0.001	-	-	-
	Queue (ft)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Storage (ft)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PM Peak	**Delay (sec/veh)**	7.3	-	-	0.3	7.5	-	-	4.5	-	10.9	-	10.9	-	10.2	-	10.2	-
	LOS	A	-	-	-	A	-	-	-	-	B	-	B	-	B	-	B	-
	V/C	0.003	-	-	-	0.028	-	-	-	-	0.23	-	-	-	0.026	-	-	-
	Queue (ft)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Storage (ft)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
US 301 at Dr. MLK Jr. Drive/Huey Street - Signalized																		
AM Peak	**Delay (sec/veh)**	33.0	36.7	-	35.4	32.5	35.2	-	33.9	10.5	17.3	-	17.2	11.6	15.0	-	14.7	17.6
	LOS	C	D	-	D	C	D	-	C	B	B	-	B	B	B	-	B	B
	V/C	0.12	0.3	-	-	0.26	0.3	-	-	0.05	0.62	-	-	0.35	0.6	-	-	-
	Queue (ft)	30	-	-	-	65	-	-	-	5	-	-	-	40	-	-	-	-
	Storage (ft)	75	-	-	-	100	-	-	-	150	-	-	-	150	-	-	-	-
PM Peak	**Delay (sec/veh)**	33.9	37.6	-	36.4	30.7	36.8	-	34.1	11.6	19.1	-	18.7	12.4	18.0	-	17.8	20.6
	LOS	C	D	-	D	C	D	-	C	B	B	-	B	B	B	-	B	C
	V/C	0.14	0.3			0.38	0.58			0.17	0.67			0.13	0.61			
	Queue (ft)	30	-	-	-	113	-	-	-	18	-	-	-	13	-	-	-	-
	Storage (ft)	75	-	-	-	100	-	-	-	150	-	-	-	150	-	-	-	-

FUTURE CONDITIONS

As previously conveyed, the proposed development will have a buildout date of 2026.

Committed Roadway Improvements

Improvements programmed for construction within the study area within the next three years within FDOT's Work Program, Sumter County's and Wildwood's Capital Improvements Programs, and the Lake Sumter MPO's Transportation Improvement Program are considered committed for this study. However, no specific improvements were identified/included within the study area.

Future Background Conditions

ROADWAY SEGMENTS

Future background traffic is the non-project-related traffic projected to utilize the study roadways and intersections. For the purposes of this analysis, the future background traffic was estimated by applying to the existing volumes the higher of the historical annual growth rate for each roadway as obtained from the 2022 Sumter County CMP Database, a 2% annual growth rate, or vested trips from the following developments:

- Parkview at Brownwood
- Twisted Oaks Pointe
- New Horizon Plaza
- Tillman Oaks Subdivision

Table 3 and *Table 4* show the resulting future background AM and PM peak-hour directional volumes on the study roadway segments. The 2022 Sumter County CMP Database and excerpts from the TIA's pertaining to each of the above-mentioned vested developments are provided in ***Appendix E***.

INTERSECTIONS

With regards to the future background turning movements, annual growth rates were applied to existing turning movement volumes. The resulting growth was then compared against vested trips from the four previously-mentioned vested developments. The higher of the two growth calculations were used for each specific movement to calculate future background turning movements. The resulting future background AM and PM peak-hour turning movement volumes are provided in ***Figure 4*** and ***Figure 5.*** Turning movement worksheets are provided in ***Appendix F***.

Table 4 - Future Background Volumes for Roadway Segments (AM Peak Hour)

Roadway Segment	Existing Volumes			Buildout Year	Historical Annual Growth Rate	Volume Growth						Total Background Volume	
						Based on Growth Rate		Vested Trips		Applied Growth			
	NB/EB	SB/WB	Year			NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB
CR 44A													
CR 221 to CR 213	93	40	2023	2026	7.5%	21	9	26	17	26	17	119	57
CR 213 to US 301	92	53	2023	2026	8.0%	22	13	26	17	26	17	118	70
CR 213													
SR 44 to CR 44A	56	40	2023	2026	2.75%	5	3	0	0	5	3	61	43

Note - Historical Annual Growth Rates from 2022 Sumter County CMP Database

Table 5 - Future Background Volumes for Roadway Segments (PM Peak Hour)

Roadway Segment	Existing Volumes			Buildout Year	Historical Annual Growth Rate	Volume Growth						Total Background Volume	
						Based on Growth Rate		Vested Trips		Applied Growth			
	NB/EB	SB/WB	Year			NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB
CR 44A													
CR 221 to CR 213	59	88	2023	2026	7.5%	13	20	38	22	38	22	97	110
CR 213 to US 301	93	172	2023	2026	8.0%	22	41	38	22	38	41	131	213
CR 213													
SR 44 to CR 44A	52	46	2023	2026	2.75%	4	4	0	0	4	4	56	50

Note - Historical Annual Growth Rates from 2022 Sumter County CMP Database

Figure 4 - Future Background (2026) AM Peak-Hour Traffic Volumes

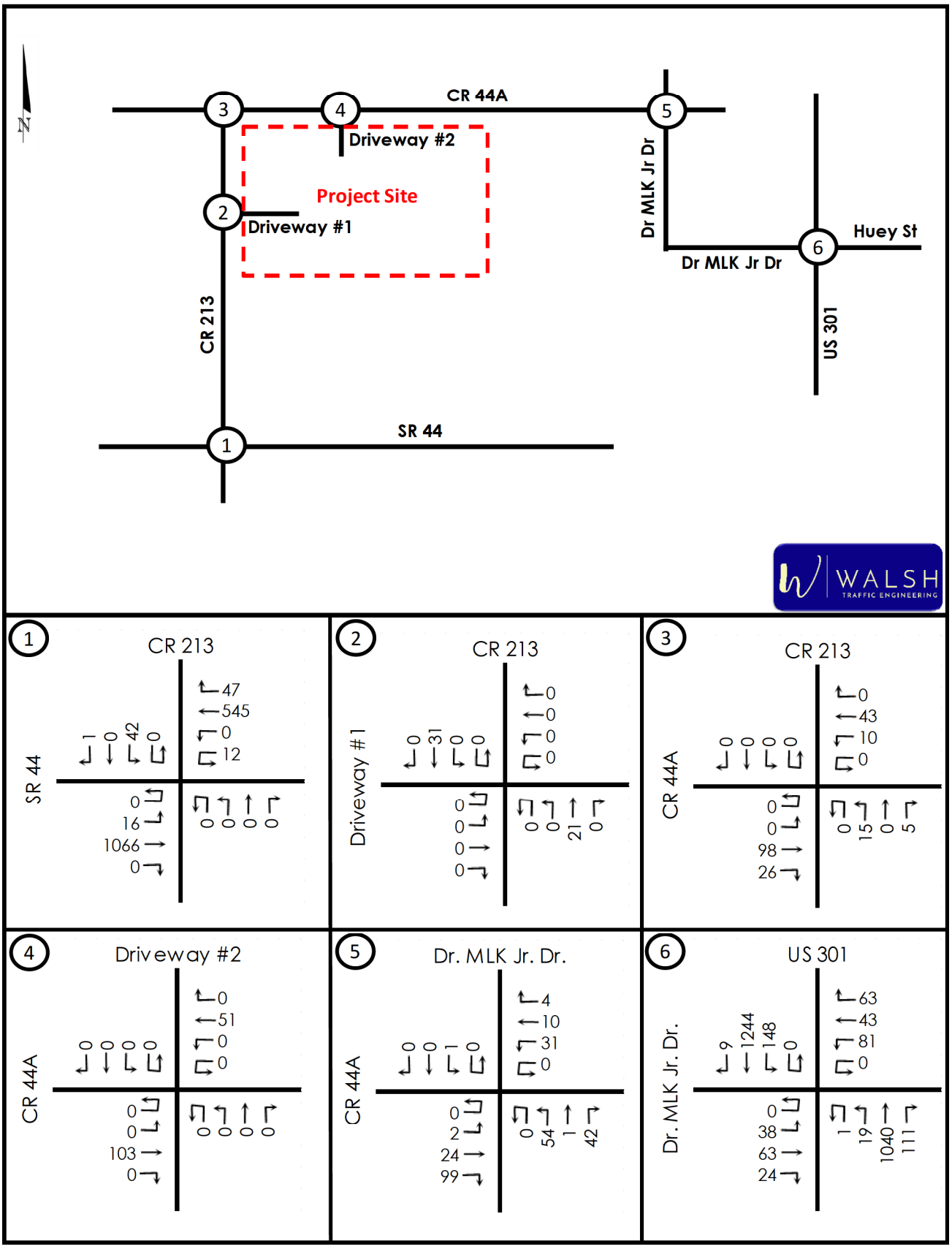
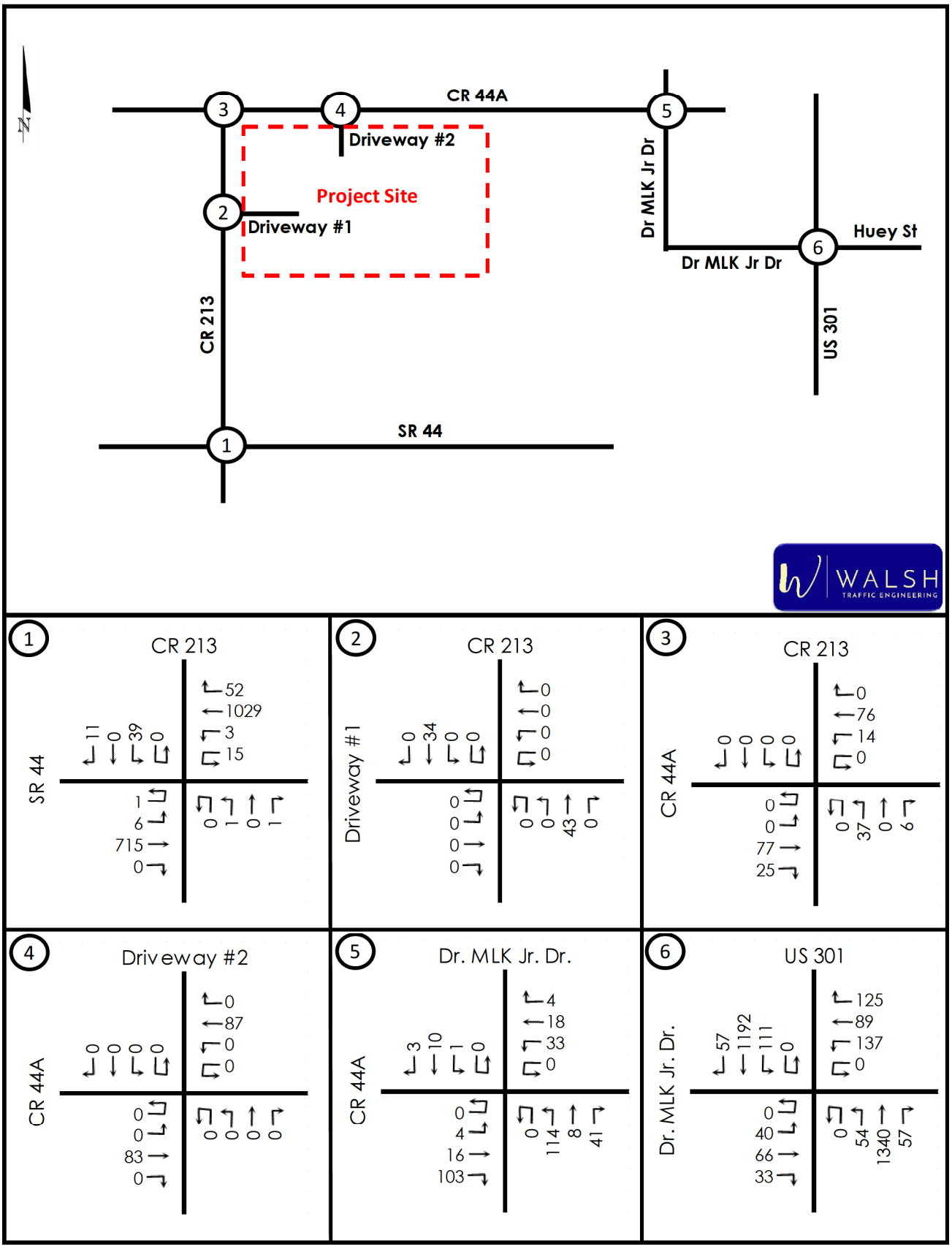


Figure 5 - Future Background (2026) PM Peak-Hour Traffic Volumes



Project Trips

TRIP GENERATION

The total daily, AM peak-hour, and PM peak-hour trip generation potential for the proposed development is provided below based on trip generation equations/rates provided in the Institute of Transportation Engineer's (ITE) Trip Generation Manual, 11th Edition for Land Use Code (LUC) 215 (Single Family Attached Housing). As summarized in ***Table 6*** and as provided in the approved methodology, the proposed development is projected to generate 2,617 total daily trips, 168 total AM peak-hour trips (44 in, 132 out), and 206 total PM peak-hour trips (122 in, 84 out).

Table 6 - Trip Generation Projection for Proposed Development

Land Use	ITE Land Use Code	Intensity	Daly Total Trips		
			In	Out	Total
Single Family Attached Housing	215	350 DU	1,308	1,309	2,617

Land Use	ITE Land Use Code	Intensity	AM Peak Hour Total Trips		
			In	Out	Total
Single Family Attached Housing	215	350 DU	44	132	176

Land Use	ITE Land Use Code	Intensity	PM Peak Hour Total Trips		
			In	Out	Total
Single Family Attached Housing	215	350 DU	122	84	206

TRIP DISTRIBUTION

The trip distribution pattern defines the primary corridors that will be traveled by the traffic generated by the project. The approved trip distribution for the new external trips, as included in the approved methodology, was estimated based on a select-zone model run using the CFRPM 7.0. As conveyed in the approved methodology, the model distribution assigned all 16% of the project trips to/from US 301, north of CR 462, via CR 221. While many of these trips are expected to travel via CR 221, it is expected that a smaller portion of these trips would likely use CR 44A to US 301. Therefore, 5% of these trips were reassigned accordingly with the remaining 11% maintaining the assignment via CR 221. The approved trip distribution is shown below in ***Figure 6***. The model plot is provided in ***Appendix G***.

The new external AM and PM peak-hour project trips were then assigned to the study roadways and intersections based on the trip distribution. ***Figure 7*** and ***Figure 8*** show the AM and PM peak-hour new external trips, assigned to the study intersections.

Figure 6 - Trip Distribution

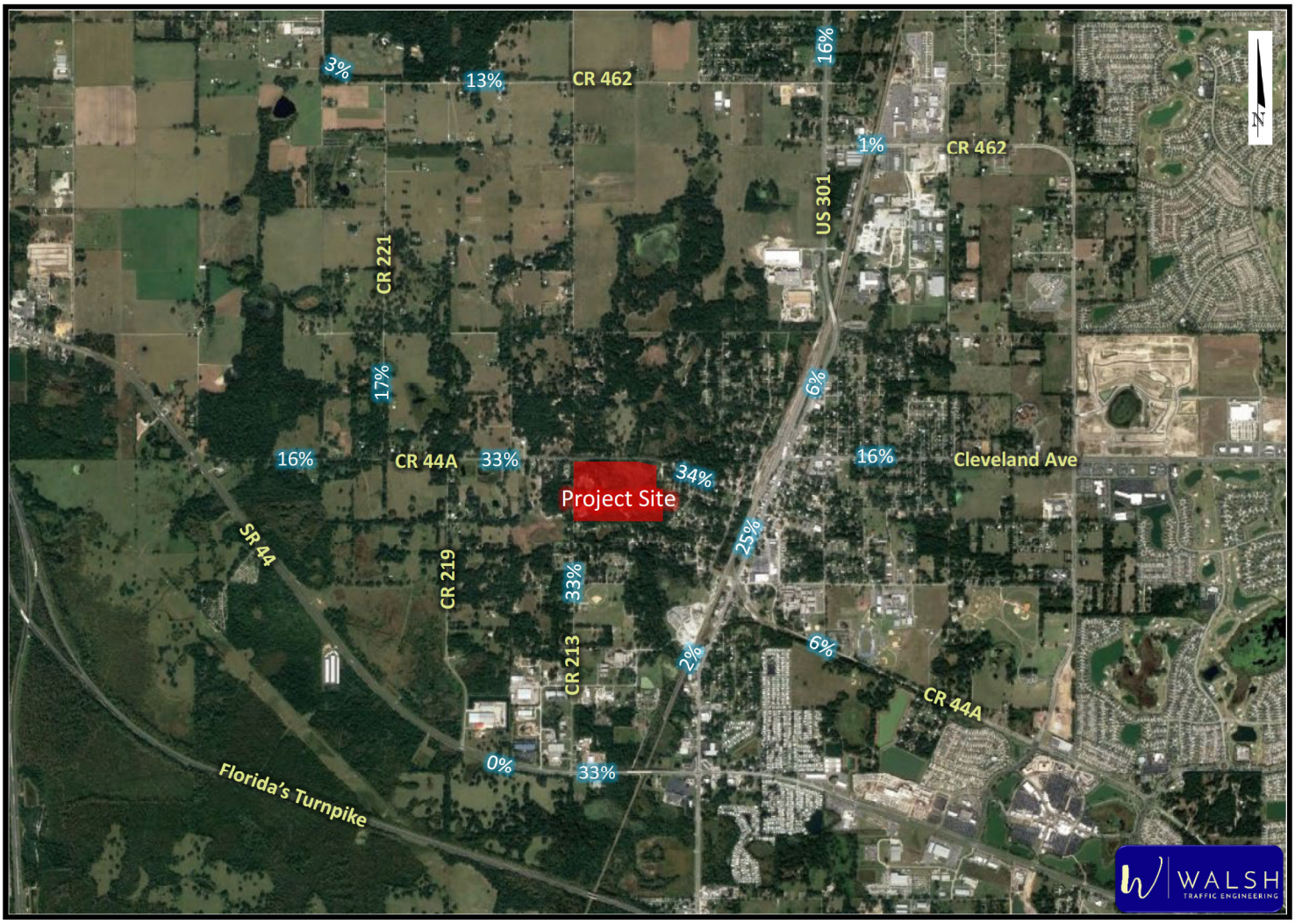


Figure 7 – Project Trips (AM Peak Hour)

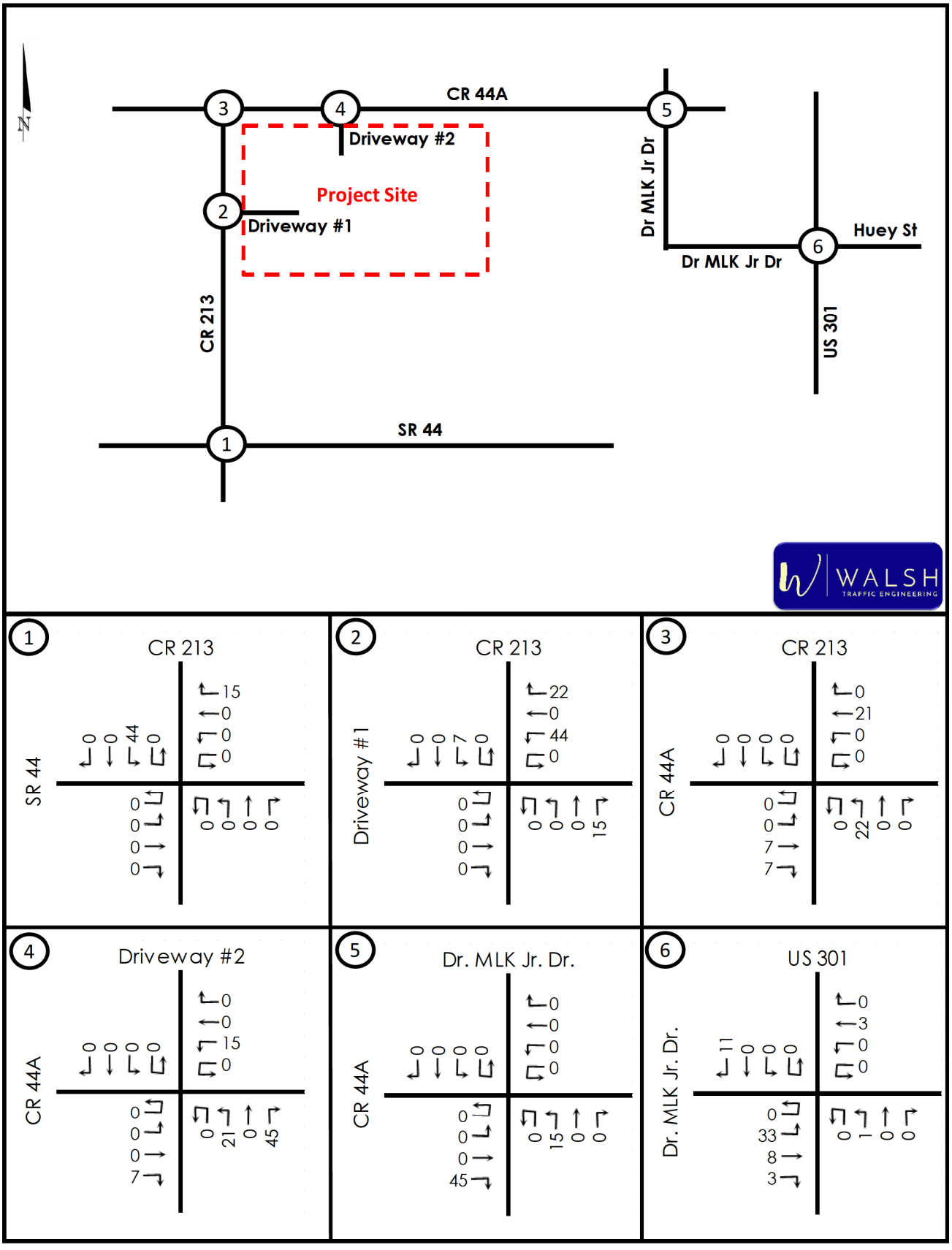
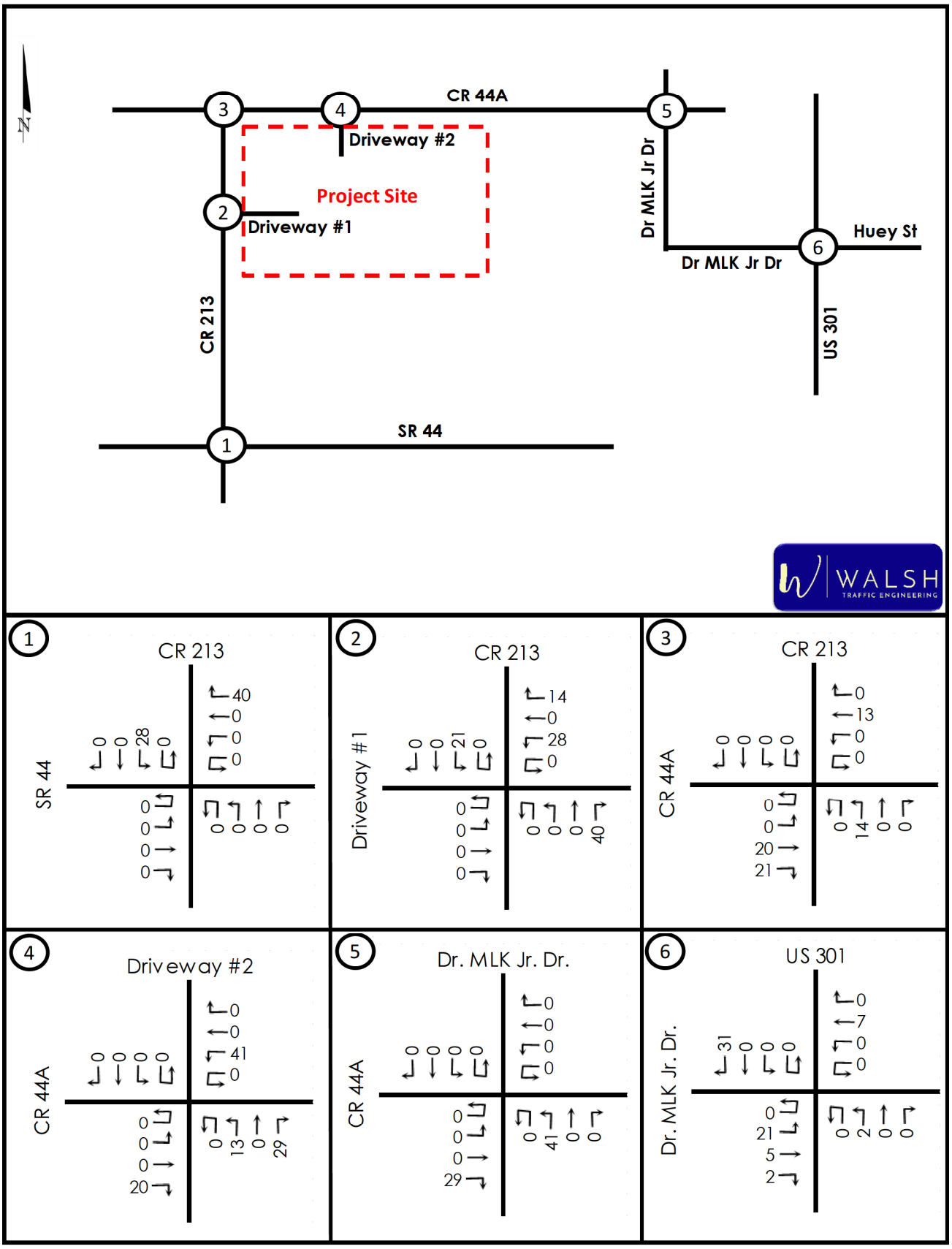


Figure 8 – Project Trips (PM Peak Hour)



Future Buildout Conditions

ROADWAY SEGMENTS

The total projected AM and PM peak-hour directional volumes for the study roadway segments were calculated by adding the project trips to the future background volume projections. The AM and PM peak-hour operating conditions of the study roadway segments were then analyzed by comparing total projected AM and PM peak-hour directional segment volumes to each roadway segment's generalized service volume. *Table 7* and *Table 8* on the following page summarize the total PM peak-hour directional volumes in year 2026 on the roadway segments at build out of the development. As summarized below, the projected volumes on all study roadway segments are below the generalized service volumes indicating all study roadways are projected to operate acceptably at buildout of the development.

Table 7 - Year 2026 Roadway Segment Volumes and Operating Conditions (AM Peak Hour)

Roadway Segment	Segment ID	# of Lanes	Speed Limit	Adopted LOS	Service Volume	Total Background		Project Trips			Total Buildout Volume		Volume Exceeds Svc Vol?	
						NB/EB	SB/WB	% Assign	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB
CR 44A														
CR 221 to CR 213	35281102	2	35	D	1,200	119	57	33.0%	15	43	134	100	no	no
CR 213 to US 301	35281103	2	35	D	1,200	118	70	34.0%	45	15	163	85	no	no
CR 213														
SR 44 to CR 44A	6000	2	30	D	675	61	43	33.0%	15	43	76	86	no	no

Table 8 – Year 2026 Roadway Segment Volumes and Operating Conditions (PM Peak Hour)

Roadway Segment	Segment ID	# of Lanes	Speed Limit	Adopted LOS	Service Volume	Total Background		Project Trips			Total Buildout Volume		Volume Exceeds Svc Vol?	
						NB/EB	SB/WB	% Assign	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB
CR 44A														
CR 221 to CR 213	35281102	2	35	D	1,200	97	110	33.0%	40	28	137	138	no	no
CR 213 to US 301	35281103	2	35	D	1,200	131	213	34.0%	29	41	160	254	no	no
CR 213														
SR 44 to CR 44A	6000	2	30	D	675	56	50	33.0%	40	28	96	78	no	no

INTERSECTIONS

For purposes of analyzing the study intersections at buildout of the development, AM and PM peak-hour turning movement projections were calculated by adding the adding the future background volume projections from ***Figures 4*** and ***5*** and the project trips from ***Figures 7*** and ***8***. The resulting total AM and PM peak-hour turning movement projections at buildout of the development are summarized in ***Figures 9*** and ***10*** on the following pages.

The AM and PM peak-hour operating conditions for the study intersections were analyzed at build out of the proposed development in year 2026 using the projected turning movements, committed roadway geometry, and existing signal timings (where applicable). ***Table 9*** summarizes the results of the future buildout intersection operational analyses in 2026. All movements at the STOP-controlled intersections, including at the two project driveways, are projected to operate acceptably at buildout of the development. Additionally, the US 301/Dr. MLK Jr. Drive signalized intersection is projected to continue to have acceptable operations at buildout of the development. Printouts of the operational analyses are provided in ***Appendix H***.

Figure 9 - Future Total (2026) AM Peak-Hour Traffic Volumes

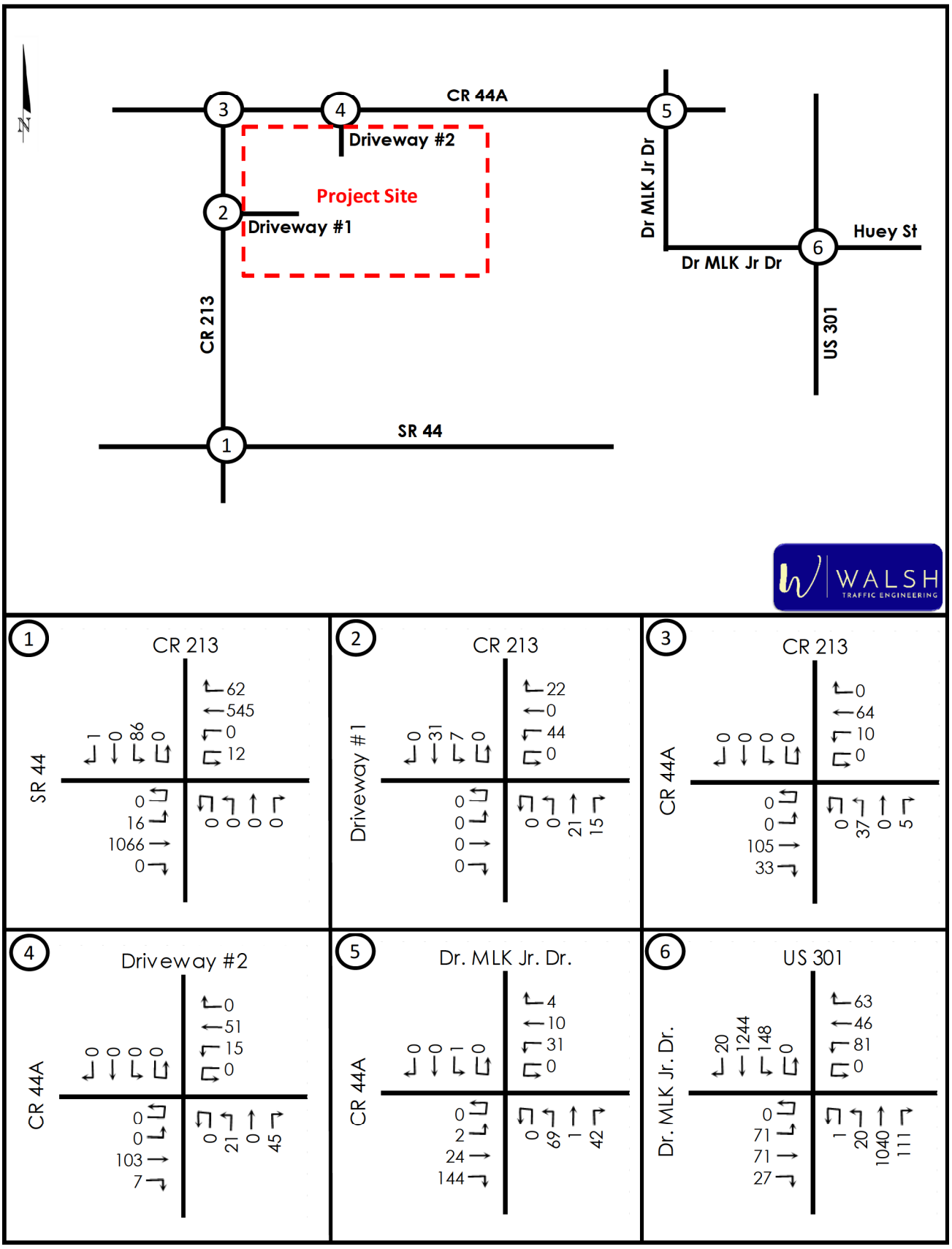
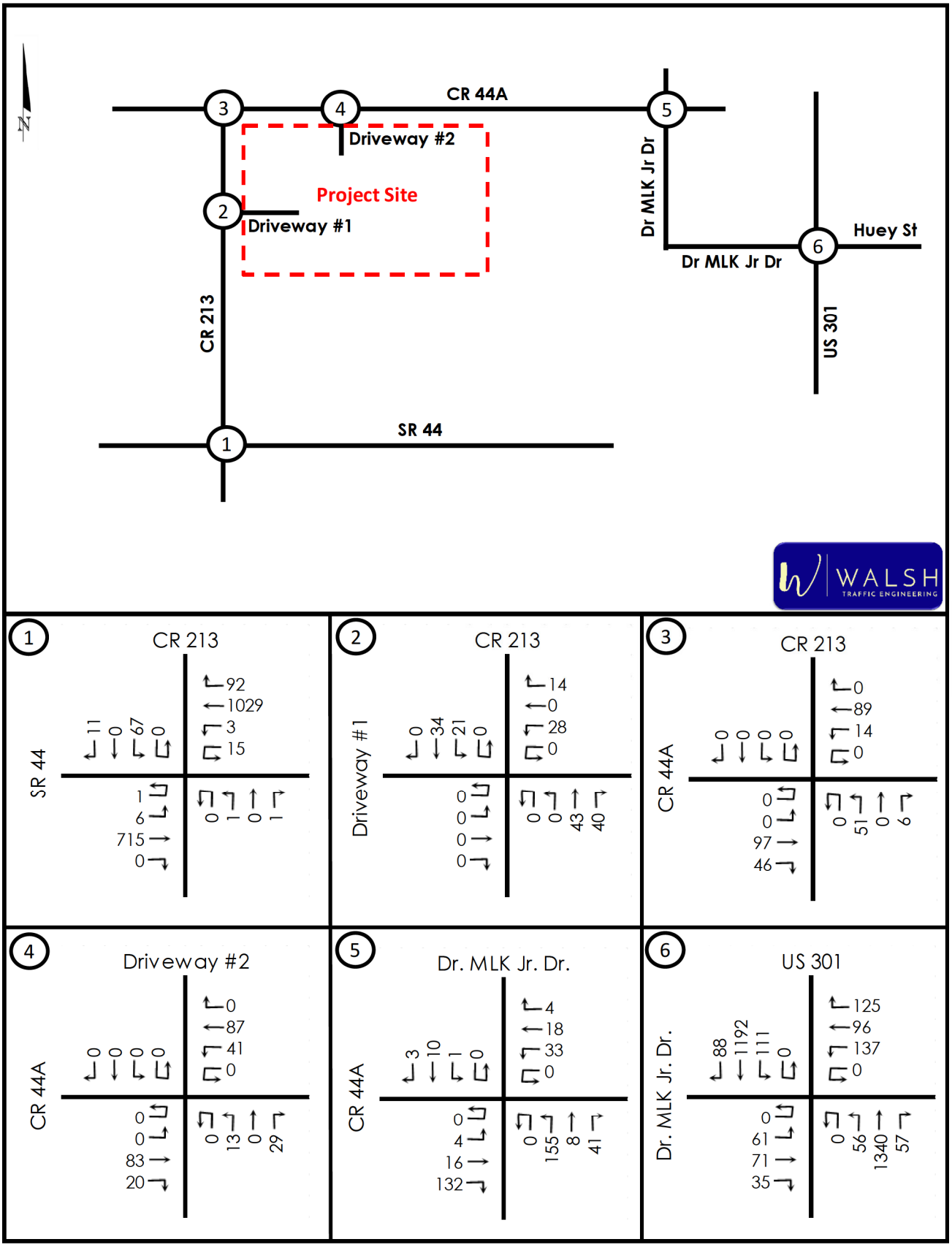


Figure 10 - Future Total (2026) PM Peak-Hour Traffic Volumes



35-50 second delay is LOS E

Table 9 - Future Buildout Intersection Operating Conditions (Year 2026)

		Eastbound				Westbound				Northbound				Southbound				Overall
		L	T	R	App	L	T	R	App	L/U	T	R	App	L	T	R	App	Intxn
SR 44 at CR 213 - 2-Way STOP																		
AM Peak	Delay (sec/veh)	9.8	-	-	0.1	11.0	-	-	0.2	-	0.0	-	0.0	27.3	10.1	-	27.1	-
	LOS	A	-	-	-	B	-	-	-	-	A	-	A	D	B	-	D	-
	V/C	0.022	-	-	-	0.021	-	-	-	-	0	-	-	0.364	0.002	-	-	-
	Queue (ft)	3	-	-	-	3	-	-	-	-	0	-	-	40	0	-	-	-
	Storage (ft)	375	-	-	-	225	-	-	-	-	-	-	-	250	-	-	-	-
PM Peak	Delay (sec/veh)	11.7	-	-	0.1	9.5	-	-	0.2	-	16.7	-	16.7	48.9	13.1	-	43.9	-
	LOS	B	-	-	-	A	-	-	-	-	C	-	C	E	B	-	D	-
	V/C	0.014	-	-	-	0.025	-	-	-	-	0.007	-	-	0.489	0.027	-	-	-
	Queue (ft)	0	-	-	-	3	-	-	-	-	0	-	-	58	-	-	-	-
	Storage (ft)	375	-	-	-	225	-	-	-	-	-	-	-	250	-	-	-	-
CR 213 at Project Driveway #1 - 1-Way STOP																		
AM Peak	Delay (sec/veh)	-	-	-	-	-	9.1	-	9.1	-	-	-	-	7.3	-	-	1.3	-
	LOS	-	-	-	-	-	A	-	A	-	-	-	-	A	-	-	-	-
	V/C	-	-	-	-	-	0.079	-	-	-	-	-	-	0.05	-	-	-	-
	Queue (ft)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Storage (ft)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PM Peak	Delay (sec/veh)	-	-	-	-	-	9.5	-	9.5	-	-	-	-	7.5	-	-	2.8	-
	LOS	-	-	-	-	-	A	-	A	-	-	-	-	A	-	-	-	-
	V/C	-	-	-	-	-	0.06	-	-	-	-	-	-	0.017	-	-	-	-
	Queue (ft)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Storage (ft)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		Eastbound				Westbound				Northbound				Southbound				Overall
		L	T	R	App	L	T	R	App	L/U	T	R	App	L	T	R	App	Intxn
CR 213 at CR 44A - 1-Way STOP																		
AM Peak	Delay (sec/veh)	-	-	-	-	7.5	-	-	1.0	-	10.4	-	10.4	-	-	-	-	-
	LOS	-	-	-	-	A	-	-	-	-	B	-	B	-	-	-	-	-
	V/C	-	-	-	-	0.008	-	-	-	-	0.067	-	-	-	-	-	-	-
	Queue (ft)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Storage (ft)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PM Peak	Delay (sec/veh)	-	-	-	-	7.6	-	-	1.0	-	10.6	-	10.6	-	-	-	-	-
	LOS	-	-	-	-	A	-	-	-	-	B	-	B	-	-	-	-	-
	V/C	-	-	-	-	0.012	-	-	-	-	0.098	-	-	-	-	-	-	-
	Queue (ft)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Storage (ft)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CR 44A at Project Driveway #2 - 1-Way STOP																		
AM Peak	Delay (sec/veh)	-	-	-	-	7.5	-	-	1.7	-	9.5	-	9.5	-	-	-	-	-
	LOS	-	-	-	-	A	-	-	-	-	A	-	A	-	-	-	-	-
	V/C	-	-	-	-	0.012	-	-	-	-	0.086	-	-	-	-	-	-	-
	Queue (ft)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Storage (ft)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PM Peak	Delay (sec/veh)	-	-	-	-	7.5	-	-	2.4	-	9.6	-	9.6	-	-	-	-	-
	LOS	-	-	-	-	A	-	-	-	-	A	-	A	-	-	-	-	-
	V/C	-	-	-	-	0.034	-	-	-	-	0.062	-	-	-	-	-	-	-
	Queue (ft)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Storage (ft)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 9 – Future Buildout Intersection Operating Conditions (Year 2026) – Cont.

		Eastbound				Westbound				Northbound				Southbound				Overall
		L	T	R	App	L	T	R	App	L/U	T	R	App	L	T	R	App	Intxn
CR 213 (Kilgore St.) at Dr. MLK Jr. Drive - 2-Way STOP																		
AM Peak	**Delay (sec/veh)**	7.2	-	-	0.1	7.6	-	-	5.3	-	10.1	-	10.1	-	10.1	-	10.1	-
	LOS	A	-	-	-	A	-	-	-	-	B	-	B	-	B	-	B	-
	V/C	0.001	-	-	-	0.023	-	-	-	-	0.144	-	-	-	0.002	-	-	-
	Queue (ft)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Storage (ft)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PM Peak	**Delay (sec/veh)**	7.3	-	-	0.2	7.7	-	-	4.6	-	12.9	-	12.9	-	10.8	-	10.8	-
	LOS	A	-	-	-	A	-	-	-	-	B	-	B	-	B	-	B	-
	V/C	0.003	-	-	-	0.032	-	-	-	-	0.373	-	-	-	0.029	-	-	-
	Queue (ft)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Storage (ft)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
US 301 at Dr. MLK Jr. Drive/Huey Street - Signalized																		
AM Peak	**Delay (sec/veh)**	33.7	39.7	-	37.2	33.4	39.6	-	37.0	12.7	21.2	-	21.1	16.1	19.0	-	18.6	21.8
	LOS	C	D	-	D	C	D	-	C	B	C	-	C	B	B	-	B	C
	V/C	0.31	0.49	-	-	0.33	0.53	-	-	0.1	0.71	-	-	0.55	0.72	-	-	-
	Queue (ft)	70	-	-	-	80	-	-	-	10	-	-	-	63	-	-	-	-
	Storage (ft)	75	-	-	-	100	-	-	-	150	-	-	-	150	-	-	-	-
PM Peak	**Delay (sec/veh)**	35.5	41.1	-	39.1	32.1	44.6	-	39.8	14.4	26.6	-	26.1	20.0	21.7	-	21.5	26.3
	LOS	D	D	-	D	C	D	-	D	B	C	-	C	B	C	-	C	C
	V/C	0.33	0.53	-	-	0.46	0.81	-	-	0.24	0.81	-	-	0.52	0.72	-	-	-
	Queue (ft)	60	-	-	-	130	-	-	-	25	-	-	-	53	-	-	-	-
	Storage (ft)	75	-	-	-	100	-	-	-	150	-	-	-	150	-	-	-	-

Project Driveway Turn-Lane Analysis

An evaluation was conducted using procedures documented in the *NCHRP Report 457: Evaluating Intersection Improvements* to determine if projected traffic volumes at either of the proposed driveways on CR 213 and CR 44A meet the minimum requirements for auxiliary left-turn lanes on the major street. Based on the results of the analysis, an auxiliary southbound left-turn lane is not warranted at the CR 213 project driveway. Similarly, based on the results of the analysis, an auxiliary westbound left-turn lane is not warranted at the CR 44A project driveway. See ***Appendix I*** for the auxiliary turn-lane analysis worksheets.

Relative to the need for right-turn lanes at the CR 213 and CR 44A driveways, the projected volumes are so far below the warranting volume thresholds that they do not even register points on *Figure 2-6* of *NCHRP Report 457*. Thus, right-turn lanes are not warranted at either project driveway.

Pedestrian, Bicycle, and Transit Considerations

Below is a discussion of multi-modal considerations for the project:

Pedestrian/Bicycle Facilities – The proposed development plan includes sidewalks extending along both sides of all development roadways. These sidewalks will also extend to the CR 213 and CR 44A right-of-way at the project driveways. However, sidewalks, shared-use paths, nor shoulders are provided along either CR 213 or CR 44A.

Transit - There is no fixed-route transit service provided in close proximity to the proposed development.

CONCLUSIONS

Walsh Traffic was retained to analyze the projected traffic impact for Wildwood III, a multi-family (duplex) development proposed for 55.8 acres located in the southeast quadrant of the intersection of CR 44A/Kilgore Street and CR 213 in Wildwood, Florida. Based on the analyses, all study roadway segments currently operate at an acceptable level of service (LOS). The study roadway segments are also projected to operate acceptably at buildout of the development in 2026. Similarly, all study intersections currently operate acceptably and are projected to continue to operate acceptably at buildout of the development.

Both project driveways are projected to operate acceptably under one-way STOP control and with a single exiting lane (one shared left-turn/right-turn lane). Additionally, left-turn and right-turn lanes are not warranted on CR 213 nor CR 44A at either project driveway location.

MEMORANDUM

To: Mr. Matthew Tadlock, P.E. – Engineer

From: Mr. Chris J. Walsh, P.E.

Date: November 27, 2023

Subject: Wildwood III Residential Development Traffic Impact Analysis Response to Comments
Wildwood, Florida

Walsh Traffic Engineering, LLC received comments on the Traffic Impact Analysis (October 2023) for the above-referenced project and we offer the following responses:

Comment 1. NE 25th St/CR 213 (Walker Rd) at SR 44 (southbound approach) is showing to operate at an inadequate Level of Service (LOS) in the PM peak hour buildout scenario. This deficiency needs to be addressed for the TIA to be accepted.

- **Ensure that the correct storage length is being used for this approach.**

Response:

Length of Southbound Left-Turn Lane - First, the southbound left-turn lane length at this intersection was again reviewed and determined to have 250' of full width turn lane. At buildout, the southbound left-turn queue is projected to be 40' in the AM peak hour and 58' in the PM peak hour. Therefore, the existing southbound left-turn lane length is more than adequate to accommodate projected queues at buildout.

Future Background Operations of Southbound Left-Turn Movement - Relative to the operation of the southbound left-turn movement, the intersection analyses within the TIA show that at buildout of the development the southbound left-turn movement is projected to operate at LOS D in the AM peak hour with a v/c ratio of 0.364. During the PM peak hour, the LOS and v/c ratio for the southbound left-turn movement is projected to be E and 0.489, respectively, at project buildout. An additional analysis as attached was conducted for the future background PM peak-hour conditions (without project traffic). Based on the analysis printout as attached, the southbound left-turn movement is projected to operate at LOS E (delay of 37.4 seconds per vehicle) without any project traffic. Thus, the deficiency is projected to occur without the proposed development.

Per Florida Statutes 163.3180(5)(h)4:

> *A "transportation deficiency" means a facility or facilities on which the adopted level of service standard is exceeded by the existing, committed, and vested trips, plus additional projected background trips from any source other than the development project under review…*

Further, it conveys under F.S. 163.3180(5)(h)2b:

> *If any road is determined to be transportation deficient without the project traffic under review, the costs of correcting that deficiency shall be removed from the project's proportionate-share calculation and the necessary transportation improvements to correct that deficiency shall be considered to be in place for purposes of the proportionate-share calculation. The improvement necessary to correct the transportation deficiency is the funding responsibility of the entity that has maintenance responsibility for the facility. The development's proportionate share shall be calculated only for the needed transportation improvements that are greater than the identified deficiency.*

Therefore, because the needed improvements for buildout are the same as those needed to mitigate the deficiency that is projected without the project, the development is not responsible to mitigate impact to this movement.

Median Storage Considerations - The intersection analysis within the TIA assumes a vehicular storage of one vehicle within the median. However, with a median width of approximately 35' through the opening, the median opening can readily accommodate more than one vehicle for two-stage movements. Thus, the operation/capacity of the southbound left-turn movement in the analysis is likely understated. It is also important to reiterate that even under these worst-case conditions, a 95th percentile queue of 58' (less than three vehicles) is projected at buildout.

Rerouting Considerations - It is also important to note that southbound left-turn motorists also have the option to reroute to Industrial Drive to use the signal to make a left turn onto SR 44. Additionally, all trips that originate from the proposed Wildwood III development projected to make a southbound left-turn at the CR 213/SR 44 intersection are projected to travel through the US 301/SR 44 intersection. Therefore, these motorists also have the option to instead travel to the US 301/SR 44 intersection via CR 44A to US 301.

Improvement Considerations - If considering improvements at the intersection to address both the future background and future buildout deficiency, the two primary improvement considerations are signalization and conversion of the median opening to a directional median opening (prohibiting left turns from the side street).

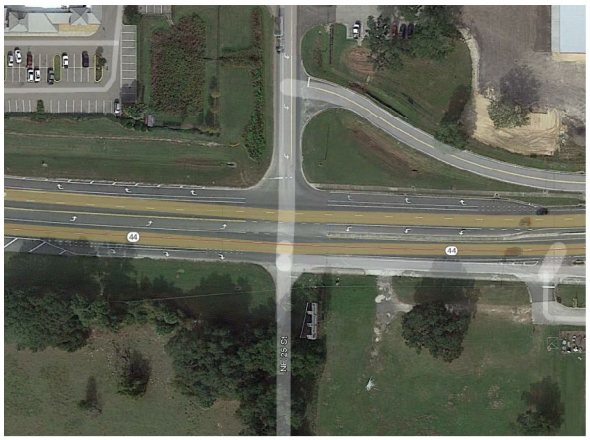
***Signalization**:* When considering signalization, it is important to note that this section of SR 44 has an access management classification of class 3. Based on a posted speed limit of 45 mph, the minimum spacing between signals per FAC 14-97 is 1,320 feet. CR 213 (Walker Road) is located approximately 660' from the existing signal located at the Industrial Drive intersection. Thus, it is highly unlikely that FDOT would allow signalization at this location due to its close proximity to Industrial Drive. Additionally, when warranting a signal based on traffic volumes, Warrants 1A and 1B are the primary warrants considered by FDOT.

In order to meet Warrant 1A, the southbound left-turn volume would need to meet/exceed 105 vehicles per hour for a minimum of eight hours of a typical day. The peak-hour (highest) southbound left-turn volume is projected to be 86 vph from Figure 10 of the TIA. Therefore, Warrant 1A is not even satisfied for the peak hour and thus would certainly not be satisfied for 8 hours of a day.

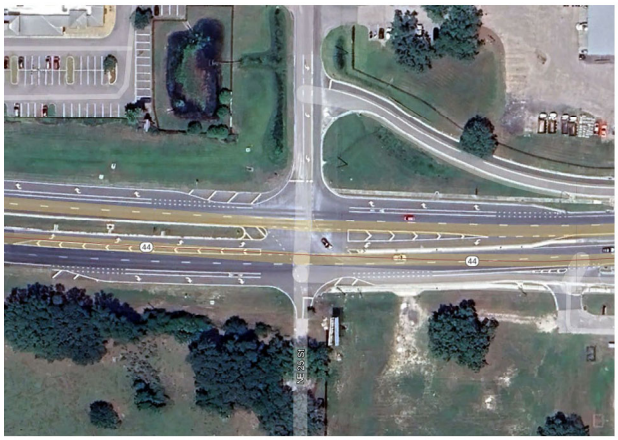
Warrant 1B is only considered where the minor street experiences excessive delay or conflict entering/crossing the major street. FDOT typically uses 60 seconds of delay per vehicle as rule of thumb for when excessive delay is experienced. However, per the analysis results, during the PM peak hour the projected delay for the southbound left-turn movement at project buildout is less than 50 seconds per vehicle. Thus, Warrant 1B would not be applicable. In the end, signalization is not an appropriate improvement consideration given the proximity of the intersection to the signalized intersection at Industrial Drive and that the projected volumes are highly unlikely to even meet MUTCD signal warrants.

Median Opening Modification: When considering the conversion of the median opening to a directional median opening, it should be noted that this section of SR 44 was recently improved/resurfaced by FDOT. Despite this full median opening not meeting FDOT's 1,320' spacing minimum, FDOT maintained and even improved the full median opening at CR 213 by providing a wider opening that can more readily accommodate two-staged vehicles. On the following pages are images showing the full median opening before and after the FDOT improvements.

Before Improvements:



After Improvements:

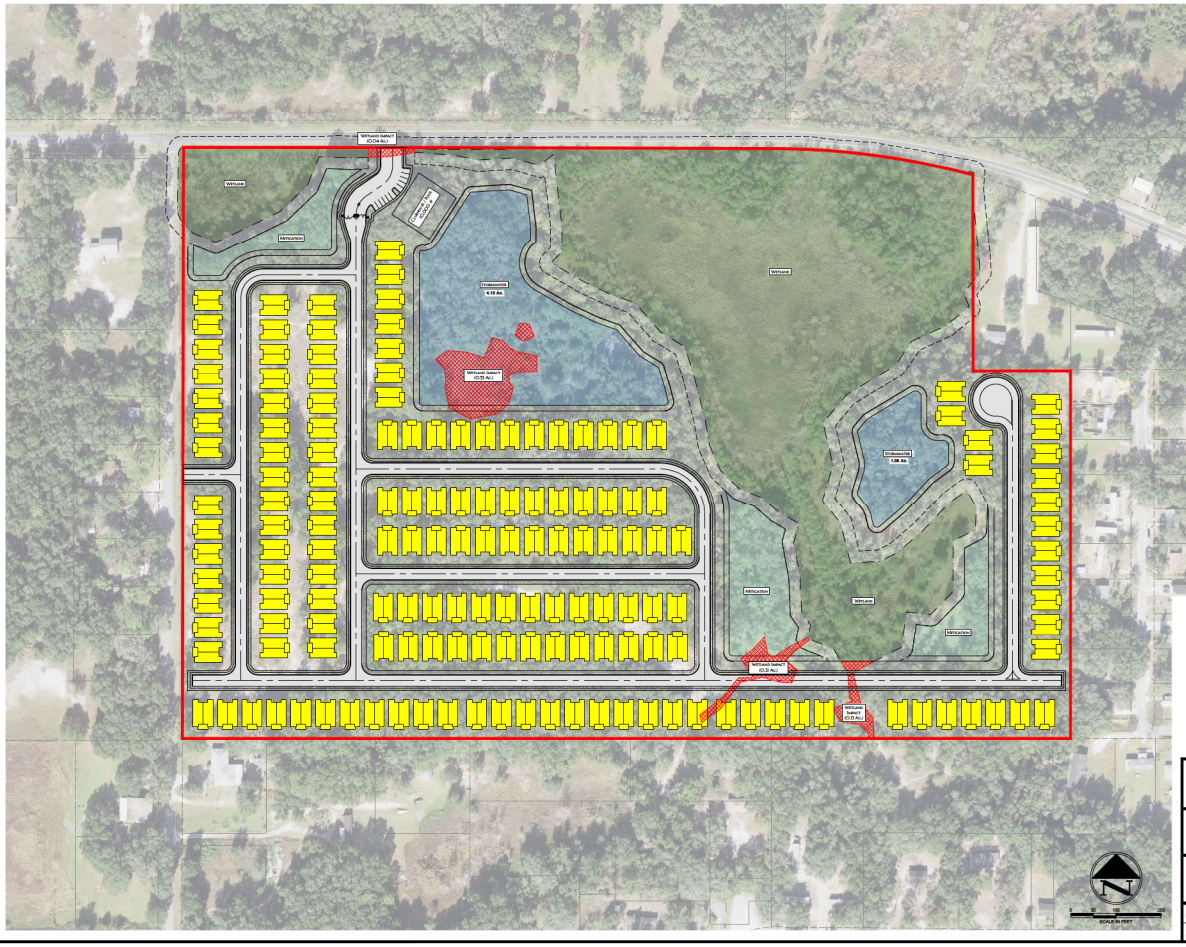


Summary - To summarize this assessment, no improvements are proposed for the southbound left-turn movement at the NE 25th St/CR 213 (Walker Rd) at SR 44 for the following reasons:

1. The deficiency identified in the TIA is projected to occur under future background conditions. Thus, per Florida Statutes, because the needed improvements for buildout are the same as those needed to mitigate deficiency that is projected without the project, the development is not responsible to mitigate impact to this movement.
2. The operational analyses as provided present a worst-case scenario with regards to median storage, thus the operation of the intersection will likely be better than those forecasted in the TIA.
3. Rather than performing a southbound left turn at the CR 213/SR 44 intersection, motorists originating from the Wildwood III development have the option to instead travel to the US 301/SR 44 intersection via CR 44A to US 301.
4. Signalization is highly unlikely to be warranted and/or approved by FDOT.
5. Despite this full median opening not meeting FDOT's 1,320' spacing minimum, FDOT maintained and even recently improved the full median opening at CR 213 by providing a wider opening that can more readily accommodate two-staged vehicles. Thus, modification of the median opening is not recommended.

Appendix A

Preliminary Development Plan



Site Data Table	
Project Location	Sumter County, Florida
Total Project Area	55.8-acres
Total Upland Area	37.7-acres
Current Zoning	NMU-7
FLU	XX
Villa Product Units	324
Gross Density	5.81 DU/Ac.
Total Pond Area	5.15 Ac. (13.7 % of Uplands)
Total Wetland/Wetland Buffer	14.2 Ac.
FEMA Flood Zone	A & X

PROJECT NAME:
WILDWOOD III

DRAWING TITLE:
CONCEPT SITE PLAN

PREPARED FOR:
MIZE AND SEFAIR

PROJECT No. PRELIMINARY

SHEET 1 of 1

LevelUp Consulting, LLC
505 E. Jackson Street
Suite 200
Tampa, Florida 33602
Office: 813-375-0616
www.levelupflorida.com

Appendix B

Traffic Impact Analysis Methodology

Print

Sumter County Traffic Impact Analysis (TIA) - Submission #47175

Date Submitted: 9/21/2023

First Name*	Last Name*	Email Address*
Chris	Walsh	chris.walsh@walshtraffic.com

Address

285 Palmetto Springs Street

City	State	Zip Code
DeBary	FL	32713

Phone	Alt Phone	Parcel Number
3868015682		G06-012A, G06-204, G06-012, G06-007

Sumter County Traffic Impact Analysis (TIA)

In accordance with the Interlocal Service Boundary and Joint Planning Agreement between the City of Bushnell, City of Center Hill, City of Coleman, City of Webster, and the City of Wildwood, within the municipal service area, the Cities and County agree that County will review all traffic impact studies for development accessing the City or County road networks.

Purpose and Applicability

The purpose of the TIA is to identify the potential traffic impacts of new development on the transportation system and to develop mitigation strategies to offset those impacts according to the methodologies and provisions as described herein. These guidelines apply to all new development within Sumter County, including its municipalities, submitting building and site plans for review. The TIA requirement applies to previously approved developments that are over five years old, changing land uses within the site plan, or extending the build-out date from a previously approved TIA. Unless otherwise required by the County Administrator or designee, a TIA, as it relates to a substandard roadway section, shall not be required for any single development generating less than 50 average daily trips, as per the Trip Generation Manual, latest edition, as published by the Institute of Transportation Engineers (ITE). The following thresholds will determine the level of study that will need to be performed depending on the number of trips a development produces:

1. Applicants proposing developments that generate 50 but less than or equal to 1,000 average daily trips (ADT), according to the ITE Trip Generation Manual, current edition, must perform a Minor TIA.
2. A Major TIA shall be required for all proposed developments generating more than 1,000 ADT, as per the ITE Trip Generation Manual, current edition..

For purposes of this section, a "single development" shall include any development, parcel of land, lot, and tract, and contiguous or nearby developments, parcels, lots, or tracts that are:

1. Developed by the same or a related development or landowner;
2. Developed as part of the same zoning plan, preliminary plan, preliminary site plan, plat, or other unified or common plan of development.

These guidelines are in addition to the requirements of the access management regulations. In the event of any conflict between these guidelines and such regulations, the more stringent requirements shall apply.

Methodology Statement

Before conducting a Major TIA, a methodology statement shall be prepared by the applicant, the applicant's representative, or the applicant's engineer/consultant and submitted for review and approval by the County. Before conducting a Minor TIA, the applicant, the applicant's representative, or the applicant's engineer/consultant shall seek confirmation from County staff on the need for a methodology statement. The purpose of the methodology statement is to establish agreed-upon methodologies and assumptions before the start of the TIA. A methodology statement shall be prepared using the guidelines provided in the following paragraphs. The methodology statement will be first reviewed by County staff, if necessary, through a methodology meeting with the applicant and or the applicant's consultant. The applicant's consultant will then revise the statement based upon agreed-upon methodologies. The applicant shall ensure the consultant does not prepare a TIA without a methodology statement approved by the appropriate County representative.

Sumter County 2022 County Annual Traffic Reports
Summary Table

Click here to view the table.

Exemption

Choose File No file chosen

Applicants can submit an exemption due to a development generating less than 50 average daily trips, as per the Trip Generation Manual, latest edition, as published by the Institute of Transportation Engineers (ITE).

Please submit your Methodology Statement

10030-Wildwood III - Rezoning TIA Methodology (revised)-9-21-23.pdf

Please submit your TIA

Choose File No file chosen

Date of Methodology Acceptance by County

Applicable Jurisdiction

Please check the applicable Jurisdiction:

- [ ] City of Bushnell
- [ ] City of Center Hill
- [ ] City of Coleman
- [x] City of Wildwood
- [ ] Unincorporated Sumter County

Sumter County Traffic Impact Analysis (TIA) Methodology acceptance, as noted:

Link

FDOT Systems Implementation Office

Link

FDOT Roadway Design - Florida Greenbook

Link

Lake-Sumter MPO

Link

FDOT Traffic Information

MEMORANDUM

Include vested trips from the following projects: Parkview, New Horizon, Twisted Oaks, Tillman Oaks

To: Mr. Matthew Tadlock

From: Mr. Chris J. Walsh, P.E.

Date: September 21, 2023

Subject: Wildwood III Residential Development Traffic Impact Analysis Methodology (revised)
Wildwood, Florida

Walsh Traffic Engineering, LLC (Walsh Traffic) has been retained to conduct a traffic impact analysis (TIA) for Wildwood III, a multi-family (duplex) development proposed for 55.8 acres located in the southeast quadrant of the intersection of CR 44A/Kilgore Street and CR 213 in Wildwood, Florida (see ***Site Location Map*** below). For the purposes of this analysis, the development is proposed to include 350 residential dwelling units. As a companion to the rezoning and PD overlay the applicant also proposes a change in the FLU category from Residential Mixed Use to Medium Density Residential. A separate trip generation analysis was prepared in support of the FLU change. This TIA, which is separate from the FLU change trip generation analysis, is being prepared in support of the proposed rezoning and PD overlay. Full access is proposed on CR 44A, approximately 450 feet east of CR 213. Full access is also proposed on CR 213 approximately 700 feet south of CR 44A. A copy of the preliminary development plan is attached. The development is proposed to be constructed by year 2026. Given that the development is projected to generate more than 100 peak-hour trips, as demonstrated later within this memorandum, this memorandum is intended to serve as a methodology for a Major Traffic Impact Analysis in accordance with the Sumter County TIA Guidelines (June 2022).



Walsh Traffic Engineering
285 Palmetto Springs Street, DeBary, Florida 32713
www.walshtraffic.com
Phone: 386.668.0062

Trip Generation

The total daily, AM peak-hour, and PM peak-hour trip generation potential for the proposed development is provided below based on trip generation equations/rates provided in the Institute of Transportation Engineer's (ITE) *Trip Generation Manual, 11th Edition* for Land Use Code (LUC) 215 (Single Family Attached Housing) As summarized below in ***Table 1***, the proposed development is projected to generate 2,617 total daily trips, 168 total AM peak-hour trips (44 in, 132 out), and 206 total PM peak-hour trips (122 in, 84 out).

Table 1 – Trip Generation Summary (Proposed Development)

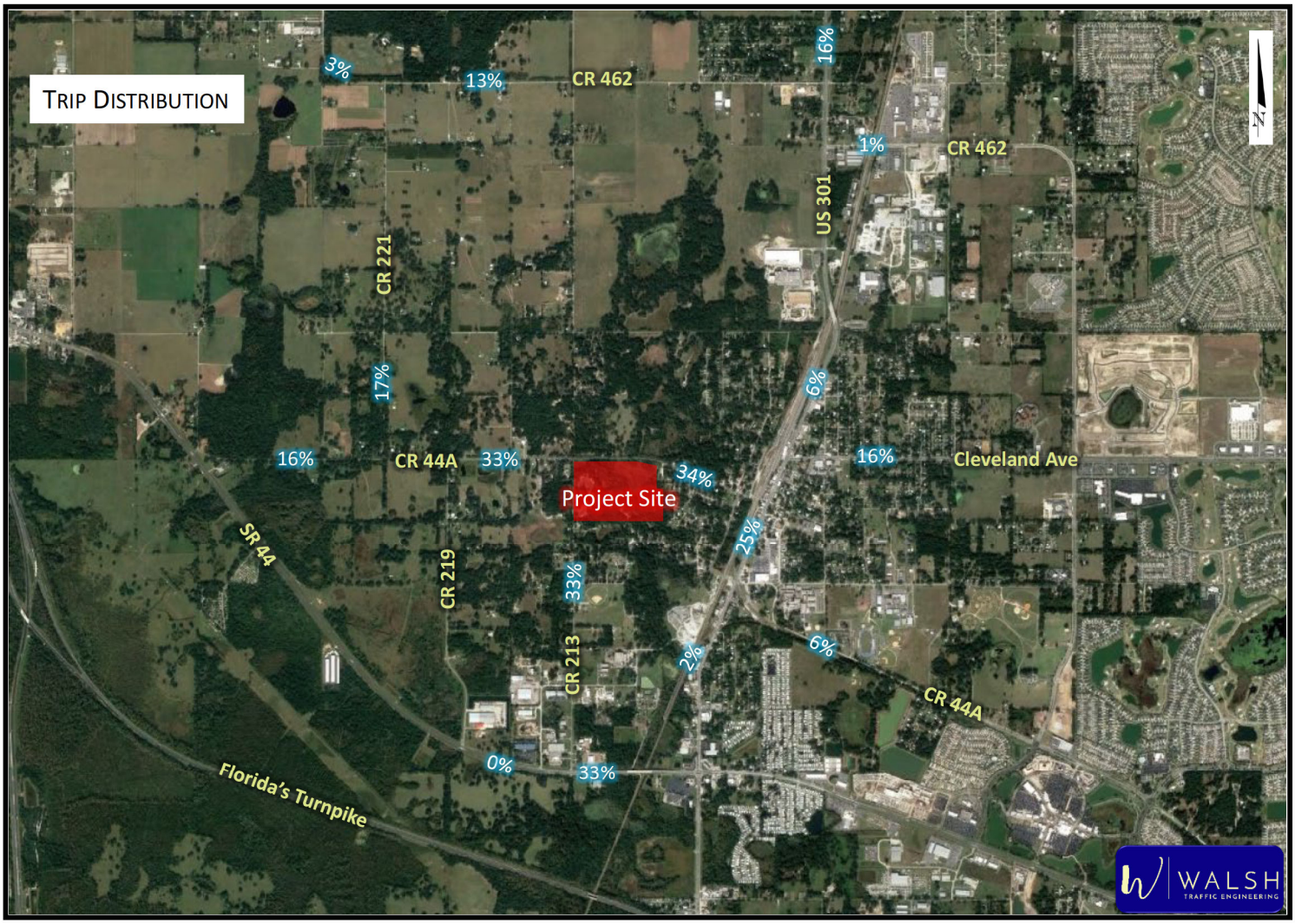
Land Use	ITE Land Use Code	Intensity	Daly		
			Total Trips		
			In	Out	Total
Single Family Attached Housing	215	350 DU	1,308	1,309	2,617

Land Use	ITE Land Use Code	Intensity	AM Peak Hour		
			Total Trips		
			In	Out	Total
Single Family Attached Housing	215	350 DU	44	132	176

Land Use	ITE Land Use Code	Intensity	PM Peak Hour		
			Total Trips		
			In	Out	Total
Single Family Attached Housing	215	350 DU	122	84	206

Trip Distribution

The trip distribution for the new external trips was estimated based on a selecton-zone model plot prepared using the CFRPM version 7. It should be noted that the model distribution assigned all 16% of the project trips to/from US 301, north of CR 462, via CR 221. While the majority of these trips are expected to travel via CR 221, it is expected that a smaller portion of these trips would likely use CR 44A to US 301. Therefore, 5% of these trips were reassigned accordingly with the remaining 11% maintaining the assignment via CR 221. The proposed trip distribution is summarized below and the model plots attached:



Walsh Traffic Engineering
285 Palmetto Springs Street, DeBary, Florida 32713
www.walshtraffic.com
Phone: 386.668.0062

Study Area

Per the Sumter County TIA Guidelines (June 2022), the study area for a Major TIA is to include all roadways located adjacent to the development plus all roadways where the project's peak-hour trips consume three percent (3%) or more of a roadway's two-way peak-hour generalized service volume based on the adopted LOS and committed number of lanes. Additionally, the study area is to include any roadway where the project's trips are projected to exceed 70 peak-hour two-way trips. ***Table 2*** below summarizes the study area determination (based on PM peak hour since trip generation is higher versus the AM peak hour):

Table 2 – Study Area Determination

Roadway Segment	# of Lanes	Adopted LOS	Directional Pk-Hr Service Volume	2-Way Pk-Hr Service Volume*	Source	Project Trips (2-Way)						
						% Assign	Project Trips	% Significant	Exceeds 3% Signif?	Abuts Project?	Volume Exceeds 70 two-way trips?	Study Roadway Segment?
CR 44A												
SR 44(w) to CR 221	2	D	1,200	2,182	MPO	16.0%	33	1.51%	no	no	no	no
CR 221 to CR 213	2	D	1,200	2,182	MPO	33.0%	68	3.12%	YES	no	no	YES
CR 213 to US 301	2	D	1,200	2,182	MPO	34.0%	70	3.21%	YES	YES	no	YES
US 301 to CR 139	2	D	1,200	2,182	Adj	6.0%	12	0.55%	no	no	no	no
CR 221												
CR 44A to CR 462	2	D	675	1,227	Adj	17.0%	35	2.85%	no	no	no	no
CR 213												
SR 44 to CR 44A	2	D	675	1,227	MPO	33.0%	68	5.54%	YES	YES	no	YES
US 301/SR 35 (Main St)												
SR 44 to CR 44A	4	D	2,000	3,636	MPO	2.0%	4	0.11%	no	no	no	no
CR 44A to CR 466A (Cleveland Ave)	4	D	1,630	2,964	MPO	25.0%	52	1.75%	no	no	no	no
CR 466A to CR 462 (s)	4	D	2,000	3,636	MPO	6.0%	12	0.33%	no	no	no	no
CR 466A (Cleveland Ave)												
US 301 to CR 139	2	D	1,200	2,182	Adj	16.0%	33	1.51%	no	no	no	no
SR 44												
CR 44A to CR 213	4	D	2,100	3,818	MPO	0.0%	0	0.00%	no	no	no	no
CR 213 to US 301	4	D	2,100	3,818	MPO	33.0%	68	1.78%	no	no	no	no

* Directional service volumes obtained from Sumter County CMP Database. These service volumes were converted to two-way through application of a standard D-factor of 0.55.

The study roadways will include the following:

- CR 44A – from CR 221 to CR 213
- CR 44A – from CR 213 to US 301
- CR 213 – from SR 44 to CR 44A

The study intersections are to include major intersections that are part of the impact roadways, major intersections within 1,320 feet of the site access, and all site access intersections. Thus, the study intersections will include the following:

- CR 213 at CR 44A (1-way STOP)
- CR 213 at Project Driveway (1-way STOP)
- CR 213 at SR 44 (2-way STOP)
- CR 44A at Project Driveway (1-way STOP)
- CR 44A at Dr. MLK Jr. Avenue (1-way STOP)
- Dr. MLK Jr. at US 301 (signalized)

Future Volume Traffic Projections

Future background traffic volumes will be estimated based on historical growth trends where available or an annual growth rate of 2%, whichever is greater. Where growth rates are not readily available, a minimum annual growth rate of 2% will be applied to factor existing volumes to the buildout year. New external project trips will then be added to the future background peak-hour volumes to develop the future total volume projections.

Analysis Periods

The study roadway segments and intersections will be analyzed under existing conditions and future build-out conditions (future background plus project trips). Roadway segments will be analyzed by comparing the AM and PM peak-hour directional volumes against each roadway's generalized service volume. In the event that the AM and/or PM volumes exceed the generalized service volume, then a more detailed arterial/highway analysis may be conducted using HCM methodologies in accordance with the *FDOT Quality/Level of Service Handbook*.

The operating conditions of the study intersections will be analyzed for both AM and PM peak-hour conditons using *Synchro 11*, employing HCM methodologies.

Planned Roadway Improvements

The Lake Sumter MPO Transportation Improvement Program (Fiscal Years 2023-2027) was reviewed for improvements within the study area. However, no capacity-related improvements are programmed for construction.

Project Driveway Evaluation

The project driveway intersections on CR 44A and CR 213 will be evaluated with regards to the need for right-turn and left-turn lanes. This analysis will be conducted in accordance with the NCHRP 457 while also providing qualitative considerations (prevailing speeds, driveway throat depth, etc.) based on engineering judgment. Where turn lanes are warranted, the study will identify the required turn-lane lengths based on queueing estimates (95th percentile queues) and deceleration distance considerations per Exhibit 212-1 of the Florida Department of Transportation FDM.

Alternative Mode Analysis

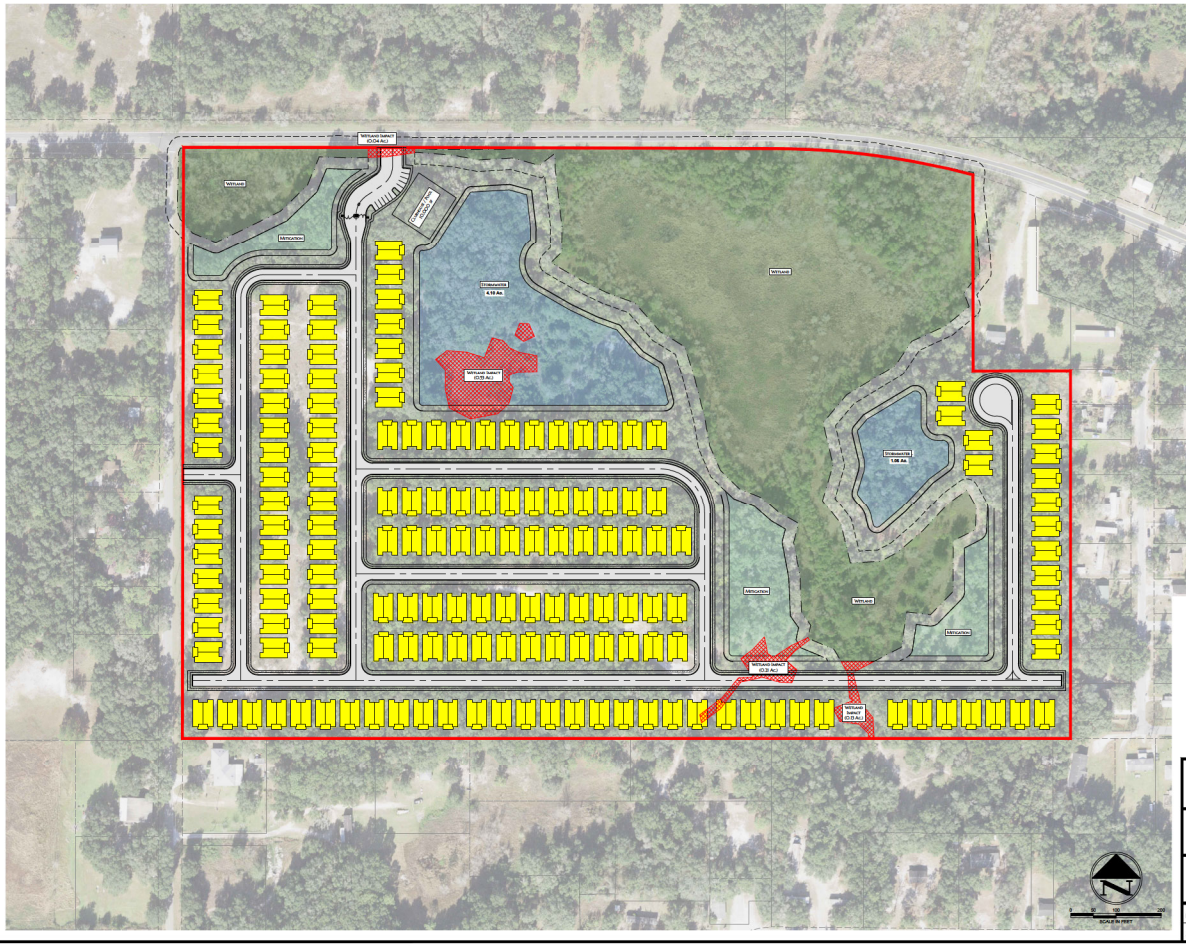
An alternative mode analysis will be conducted to evaluate present and programmed bike, pedestrian, and transit mobility options. Planned bicycle and pedestrian connections within the development will be documented.

Mitigation

Where roadway segment or intersection deficiencies are identified, appropriate improvements will be identified for existing, future background, and future total build-out conditions. Following, the applicant and the development team will coordinate with the City, and other agencies where applicable, to determine the development's mitigation responsibility. It should be noted that mitigation and associated credits towards impact fees will be addressed in accordance with Florida Statutes 163.3180.

You may contact us at (386) 801-5682 should you have any questions.

Attachments



Site Data Table

Project Location	Sumter County, Florida
Total Project Area	55.8-acres
Total Upland Area	37.7-acres
Current Zoning	NMU-7
FLU	XX
Villa Product Units	324
Gross Density	5.81 DU/Ac.
Total Pond Area	5.15 Ac. (13.7 % of Uplands)
Total Wetland/Wetland Buffer	14.2 Ac.
FEMA Flood Zone	A & X

PROJECT NAME:
WILDWOOD III

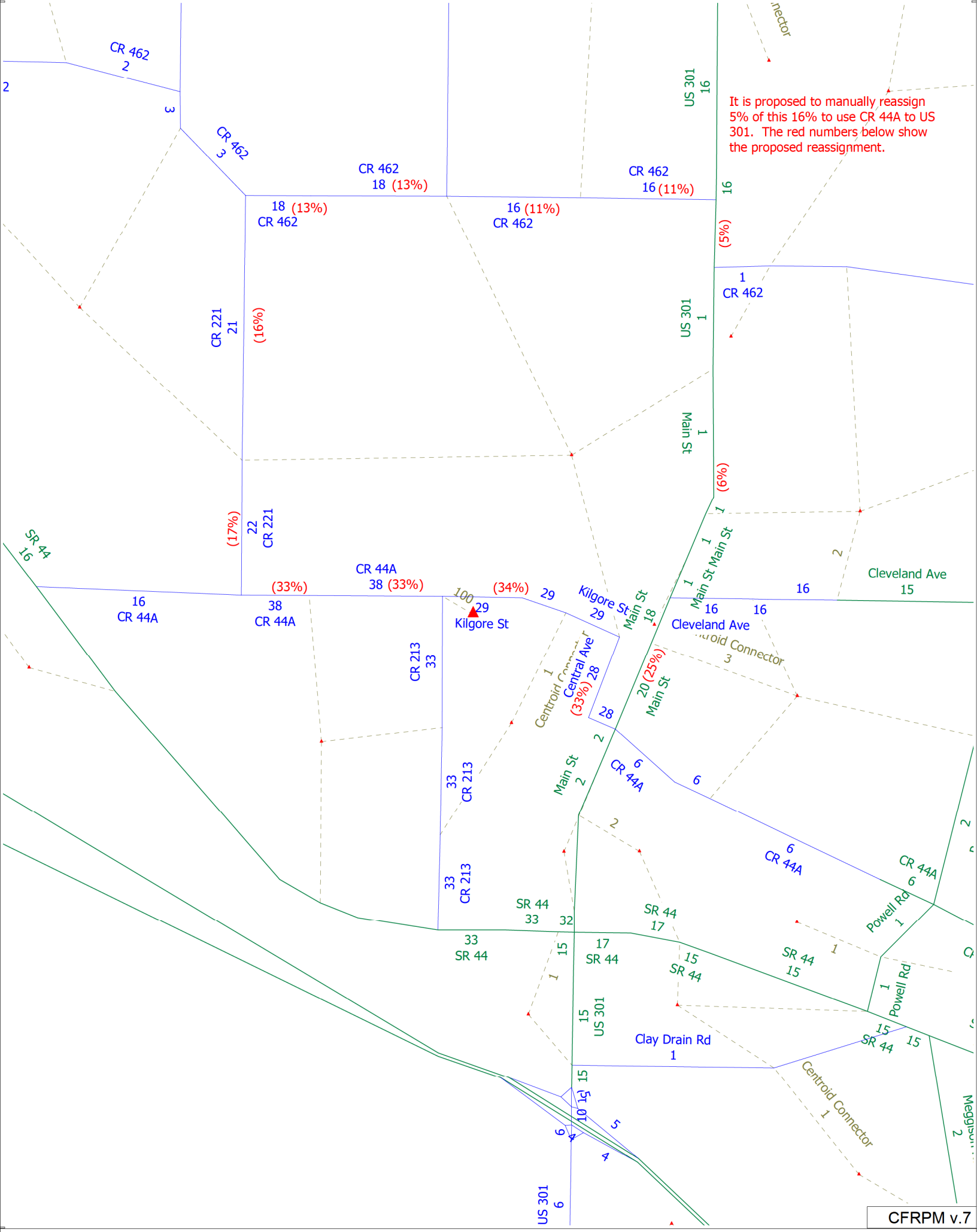
DRAWING TITLE:
CONCEPT SITE PLAN

PREPARED FOR:
MIZE AND SEFAIR

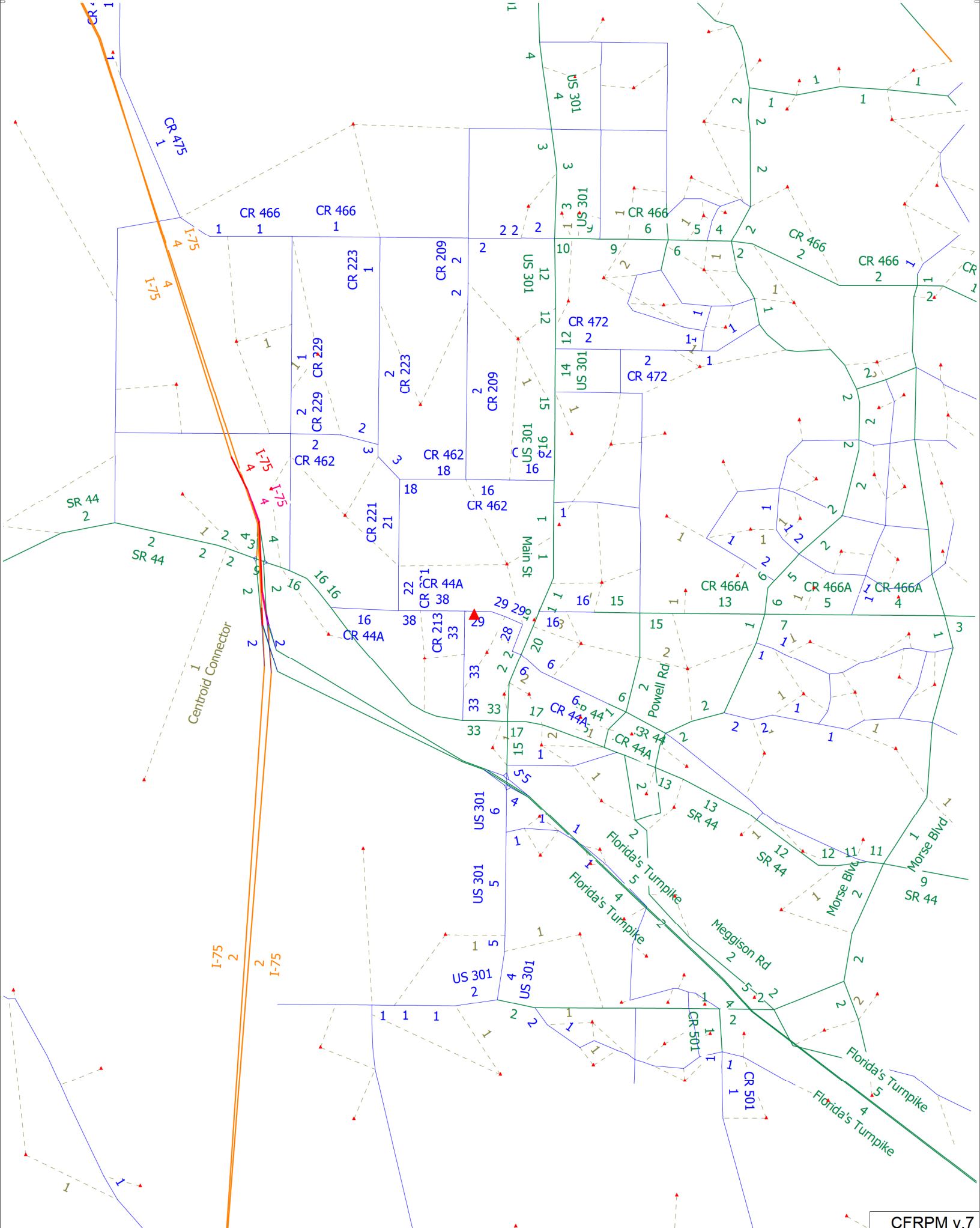
PROJECT No. PRELIMINARY

SHEET 1 of 1

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Tampa, Florida 33602
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Appendix C

Traffic Counts

National Data & Surveying Services

Intersection Turning Movement Count

Location: NE 25th St/Walker Rd & SR 44
City: Wildwood
Control: 2-Way Stop(NB/SB)

Project ID: 23-130274-002
Date: 10/3/2023

Data - Total

NS/EW Streets:	NE 25th St/Walker Rd				NE 25th St/Walker Rd				SR 44				SR 44				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	TOTAL
7:00 AM	0	0	0	0	8	0	0	0	2	236	0	0	0	110	6	2	364
7:15 AM	0	0	0	0	5	0	0	0	7	259	0	0	0	113	10	3	397
7:30 AM	0	0	0	0	15	0	1	0	0	248	0	0	0	132	10	3	409
7:45 AM	0	0	0	0	11	0	0	0	5	209	0	0	0	122	16	4	367
8:00 AM	0	0	0	0	10	0	3	0	5	196	0	0	0	93	9	1	317
8:15 AM	0	0	0	0	9	0	2	0	2	161	0	0	0	147	17	2	340
8:30 AM	0	0	0	0	6	0	0	0	4	182	0	0	0	152	6	0	350
8:45 AM	0	0	0	0	4	0	2	0	1	184	0	0	0	127	9	3	330
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	68	0	8	0	26	1675	0	0	0	996	83	18	2874
APPROACH %'s :					89.47%	0.00%	10.53%	0.00%	1.53%	98.47%	0.00%	0.00%	0.00%	90.79%	7.57%	1.64%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	0	0	0	0	39	0	1	0	14	952	0	0	0	477	42	12	1537
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.650	0.000	0.250	0.000	0.500	0.919	0.000	0.000	0.000	0.903	0.656	0.750	0.939
			0.000			0.625				0.908				0.916			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	TOTAL
4:00 PM	0	0	0	0	9	0	6	0	3	157	0	0	0	206	11	4	396
4:15 PM	0	0	0	0	13	0	4	0	2	135	0	0	0	208	12	4	378
4:30 PM	0	0	0	0	4	0	1	0	0	167	0	1	0	215	15	3	406
4:45 PM	0	0	1	0	9	0	3	0	2	137	0	0	1	185	8	2	348
5:00 PM	0	0	0	0	14	0	3	0	3	149	0	0	0	264	14	6	453
5:15 PM	1	0	0	0	9	0	3	0	0	128	0	0	2	256	10	4	413
5:30 PM	0	0	0	0	15	0	4	0	4	129	0	0	0	176	18	2	348
5:45 PM	0	0	0	0	10	0	6	0	4	96	0	0	0	182	24	0	322
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	1	0	1	0	83	0	30	0	18	1098	0	1	3	1692	112	25	3064
APPROACH %'s :	50.00%	0.00%	50.00%	0.00%	73.45%	0.00%	26.55%	0.00%	1.61%	98.30%	0.00%	0.09%	0.16%	92.36%	6.11%	1.36%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	1	0	1	0	36	0	10	0	5	581	0	1	3	920	47	15	1620
PEAK HR FACTOR :	0.250	0.000	0.250	0.000	0.643	0.000	0.833	0.000	0.417	0.870	0.000	0.250	0.375	0.871	0.783	0.625	0.894
			0.500			0.676				0.874				0.867			

	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	8%	#DIV/0!	100%	#DIV/0!	29%	9%	#DIV/0!	#DIV/0!	#DIV/0!	12%	19%	0%	
	0%	#DIV/0!	0%	#DIV/0!	0%	#DIV/0!	0%	#DIV/0!	0%	7%	#DIV/0!	0%	0%	5%	17%	0%	

National Data & Surveying Services

Intersection Turning Movement Count

Location: NE 25th St/Walker Rd & SR 44
City: Wildwood
Control: 2-Way Stop(NB/SB)

Project ID: 23-130274-002
Date: 10/3/2023

Data - Cars

NS/EW Streets:	NE 25th St/Walker Rd				NE 25th St/Walker Rd				SR 44				SR 44				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	8	0	0	0	2	216	0	0	0	99	4	2	331
7:15 AM	0	0	0	0	5	0	0	0	5	239	0	0	0	101	10	3	363
7:30 AM	0	0	0	0	12	0	0	0	0	226	0	0	0	113	7	3	361
7:45 AM	0	0	0	0	11	0	0	0	3	181	0	0	0	106	13	4	318
8:00 AM	0	0	0	0	9	0	3	0	3	168	0	0	0	82	7	1	273
8:15 AM	0	0	0	0	7	0	1	0	2	139	0	0	0	125	12	2	288
8:30 AM	0	0	0	0	5	0	0	0	3	157	0	0	0	119	3	0	287
8:45 AM	0	0	0	0	1	0	1	0	0	153	0	0	0	109	7	3	274
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	58	0	5	0	18	1479	0	0	0	854	63	18	2495
APPROACH %'s :					92.06%	0.00%	7.94%	0.00%	1.20%	98.80%	0.00%	0.00%	0.00%	91.34%	6.74%	1.93%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	0	0	0	0	36	0	0	0	10	862	0	0	0	419	34	12	1373
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.750	0.000	0.000	0.000	0.500	0.902	0.000	0.000	0.000	0.927	0.654	0.750	0.946
			0.000		0.750				0.893				0.945				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	9	0	6	0	3	142	0	0	0	178	8	4	350
4:15 PM	0	0	0	0	11	0	4	0	2	124	0	0	0	188	10	4	343
4:30 PM	0	0	0	0	4	0	1	0	0	159	0	1	0	205	12	3	385
4:45 PM	0	0	1	0	9	0	3	0	2	125	0	0	1	171	6	2	320
5:00 PM	0	0	0	0	14	0	3	0	3	135	0	0	0	251	11	6	423
5:15 PM	1	0	0	0	9	0	3	0	0	121	0	0	2	244	10	4	394
5:30 PM	0	0	0	0	15	0	3	0	4	122	0	0	0	164	17	2	327
5:45 PM	0	0	0	0	10	0	5	0	4	91	0	0	0	160	22	0	292
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	1	0	1	0	81	0	28	0	18	1019	0	1	3	1561	96	25	2834
APPROACH %'s :	50.00%	0.00%	50.00%	0.00%	74.31%	0.00%	25.69%	0.00%	1.73%	98.17%	0.00%	0.10%	0.18%	92.64%	5.70%	1.48%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	1	0	1	0	36	0	10	0	5	540	0	1	3	871	39	15	1522
PEAK HR FACTOR :	0.250	0.000	0.250	0.000	0.643	0.000	0.833	0.000	0.417	0.849	0.000	0.250	0.375	0.868	0.813	0.625	0.900
			0.500				0.676				0.853				0.866		

National Data & Surveying Services

Intersection Turning Movement Count

Location: NE 25th St/Walker Rd & SR 44
City: Wildwood
Control: 2-Way Stop(NB/SB)

Project ID: 23-130274-002
Date: 10/3/2023

Data - HT

NS/EW Streets:	NE 25th St/Walker Rd				NE 25th St/Walker Rd				SR 44				SR 44				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	20	0	0	0	11	2	0	33
7:15 AM	0	0	0	0	0	0	0	0	2	20	0	0	0	12	0	0	34
7:30 AM	0	0	0	0	3	0	1	0	0	22	0	0	0	19	3	0	48
7:45 AM	0	0	0	0	0	0	0	0	2	28	0	0	0	16	3	0	49
8:00 AM	0	0	0	0	1	0	0	0	2	28	0	0	0	11	2	0	44
8:15 AM	0	0	0	0	2	0	1	0	0	22	0	0	0	22	5	0	52
8:30 AM	0	0	0	0	1	0	0	0	1	25	0	0	0	33	3	0	63
8:45 AM	0	0	0	0	3	0	1	0	1	31	0	0	0	18	2	0	56
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	10	0	3	0	8	196	0	0	0	142	20	0	379
APPROACH %'s :					76.92%	0.00%	23.08%	0.00%	3.92%	96.08%	0.00%	0.00%	0.00%	87.65%	12.35%	0.00%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	0	0	0	0	3	0	1	0	4	90	0	0	0	58	8	0	164
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.250	0.000	0.250	0.000	0.500	0.804	0.000	0.000	0.000	0.763	0.667	0.000	0.837
					0.250				0.783				0.750				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	15	0	0	0	28	3	0	46
4:15 PM	0	0	0	0	2	0	0	0	0	11	0	0	0	20	2	0	35
4:30 PM	0	0	0	0	0	0	0	0	0	8	0	0	0	10	3	0	21
4:45 PM	0	0	0	0	0	0	0	0	0	12	0	0	0	14	2	0	28
5:00 PM	0	0	0	0	0	0	0	0	0	14	0	0	0	13	3	0	30
5:15 PM	0	0	0	0	0	0	0	0	0	7	0	0	0	12	0	0	19
5:30 PM	0	0	0	0	0	0	1	0	0	7	0	0	0	12	1	0	21
5:45 PM	0	0	0	0	0	0	1	0	0	5	0	0	0	22	2	0	30
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	2	0	2	0	0	79	0	0	0	131	16	0	230
APPROACH %'s :					50.00%	0.00%	50.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	89.12%	10.88%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	41	0	0	0	49	8	0	98
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.732	0.000	0.000	0.000	0.875	0.667	0.000	0.817
									0.732				0.891				

National Data & Surveying Services

Intersection Turning Movement Count

Location: NE 25th St/Walker Rd & SR 44
City: Wildwood
Control: 2-Way Stop(NB/SB)

Project ID: 23-130274-002
Date: 10/3/2023

Data - Bikes

NS/EW Streets:	NE 25th St/Walker Rd				NE 25th St/Walker Rd				SR 44				SR 44				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	3
APPROACH %'s :													0.00%	66.67%	33.33%	0.00%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	3
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.250	0.000	0.375
														0.375			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2
APPROACH %'s :									0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

National Data & Surveying Services

Intersection Turning Movement Count

Location: NE 25th St/Walker Rd & SR 44
City: Wildwood

Project ID: 23-130274-002
Date: 10/3/2023

Data - Pedestrians (Crosswalks)

NS/EW Streets:	NE 25th St/Walker Rd		NE 25th St/Walker Rd		SR 44		SR 44		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	1	0	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	1	0	0	0	0	0	1
APPROACH %'s :			100.00%	0.00%					
PEAK HR :	07:00 AM - 08:00 AM								TOTAL
PEAK HR VOL :	0	0	1	0	0	0	0	0	1
PEAK HR FACTOR :			0.250						0.250
			0.250						

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0
APPROACH %'s :									
PEAK HR :	04:30 PM - 05:30 PM								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :									

Prepared by National Data & Surveying Services

NE 25th St/Walker Rd & SR 44

Peak Hour Turning Movement Count

ID: 23-130274-002
City: Wildwood

Day: Tuesday
Date: 10/3/2023

PEAK HOURS

AM	07:00 AM - 08:00 AM
NOON	NONE
PM	04:30 PM - 05:30 PM

COUNT PERIODS

AM	7:00 AM - 09:00 AM
NOON	NONE
PM	4:00 PM - 06:00 PM

SOUTHBOUND (NE 25th St/Walker Rd)

AM	1	0	39	0	56	AM
NOON	0	0	0	0	0	NOON
PM	10	0	36	0	52	PM

EASTBOUND (SR 44)

AM	NOON	PM	
478	0	932	⇦
0	0	1	↶ 0
14	0	5	↱ 0
952	0	581	→ 0
0	0	0	↴ 0
AM	NOON	PM	

WESTBOUND (SR 44)

PM	NOON	AM	
47	0	42	↰ 0
920	0	477	← 0
3	0	0	↰ 0
15	0	12	↶ 0
633	0	1003	⇨
PM	NOON	AM	

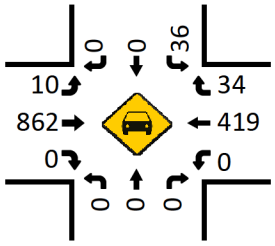
NORTHBOUND (NE 25th St/Walker Rd)

PM	3	0	1	0	1	PM
NOON	0	0	0	0	0	NOON
AM	0	0	0	0	0	AM

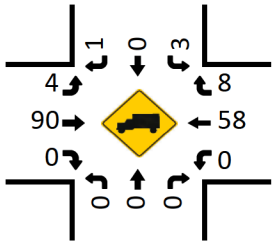
CONTROL: 2-Way Stop(NB/SB)

TEV	1537 AM	0 NOON	1620 PM
PHF	0.94		0.89

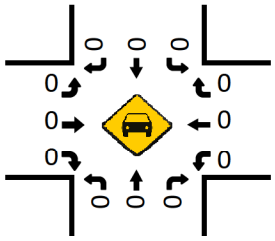
Cars (AM)



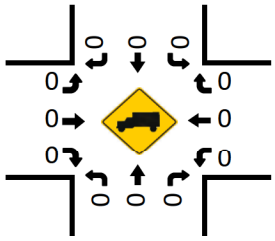
HT (AM)



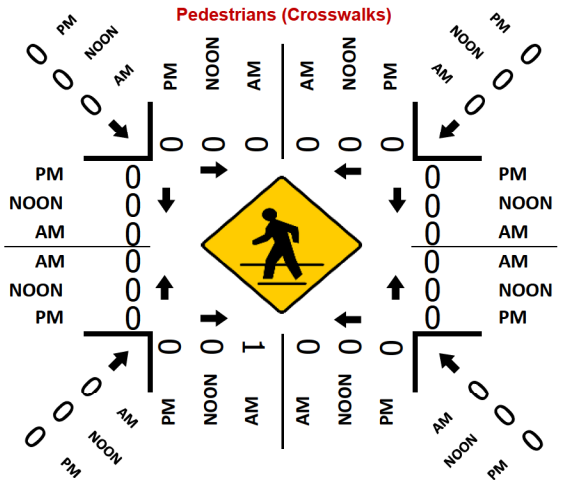
Cars (NOON)



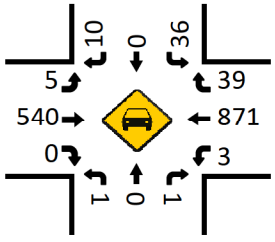
HT (NOON)



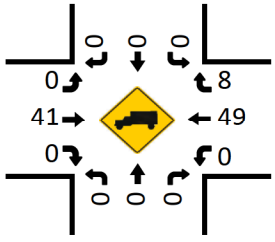
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)

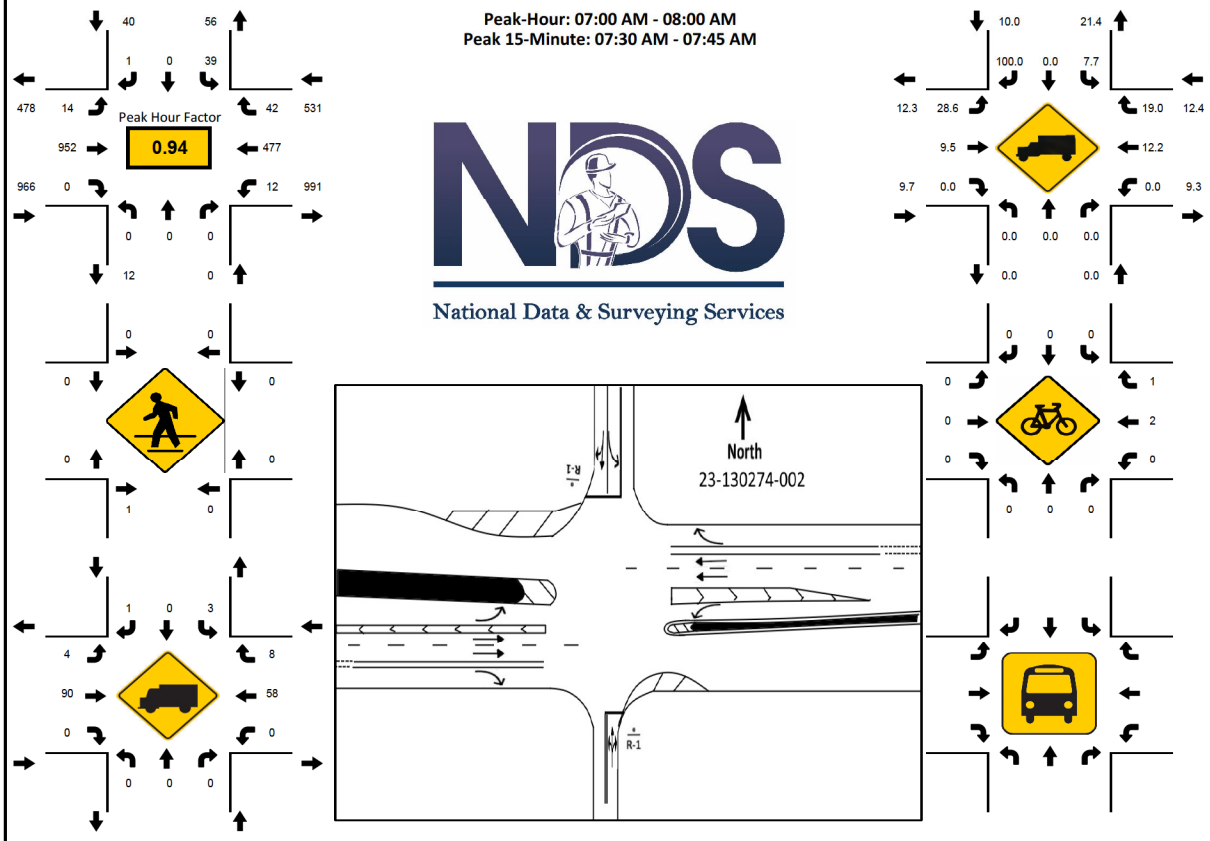


LOCATION: NE 25th St/Walker Rd & SR 44
CITY/STATE: Wildwood, FL

PROJECT ID: 23-130274-002
DATE: Tue, Oct 03, 2023

Peak-Hour: 07:00 AM - 08:00 AM
Peak 15-Minute: 07:30 AM - 07:45 AM

National Data & Surveying Services

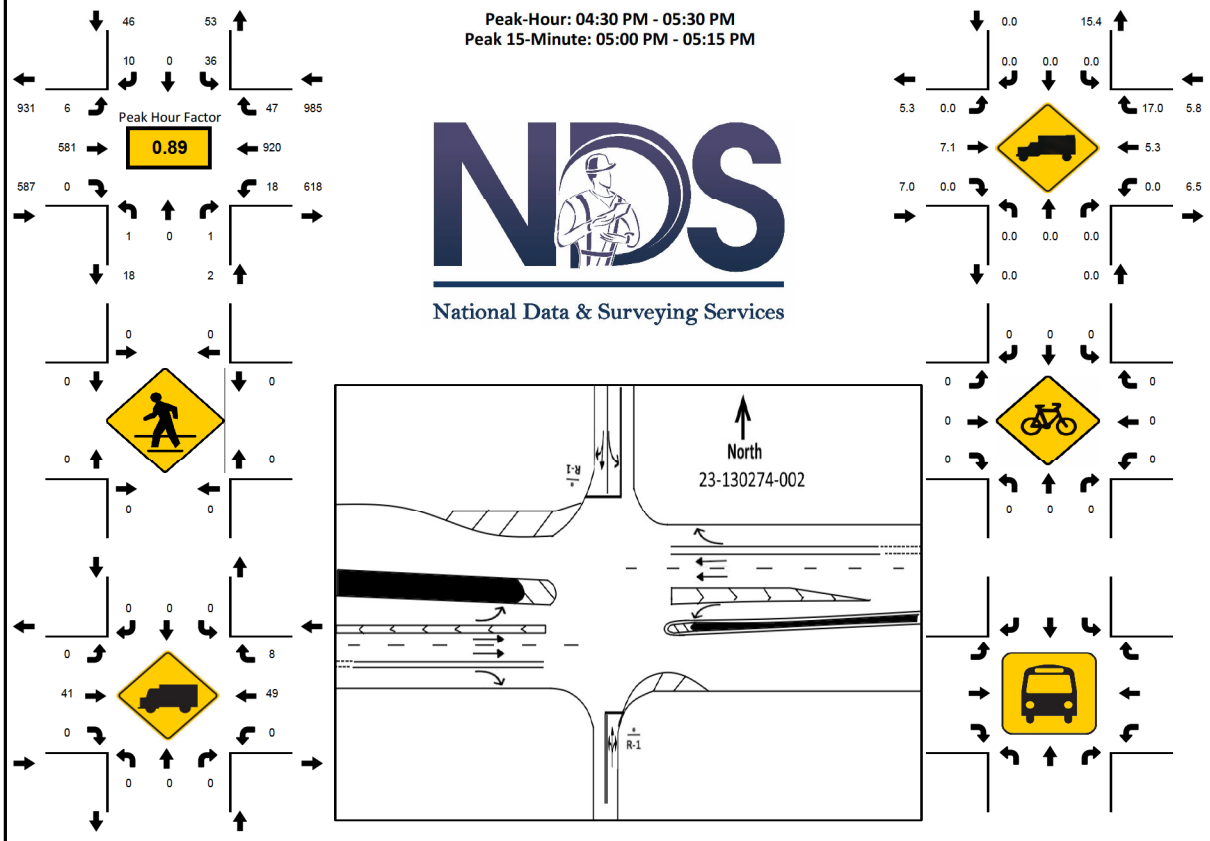


15-Min Count Period Beginning At	NE 25th St/Walker Rd Northbound					NE 25th St/Walker Rd Southbound					SR 44 Eastbound					SR 44 Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
7:00 AM	0	0	0	0		8	0	0	0		2	236	0	0		0	110	6	2		364	1537
7:15 AM	0	0	0	0		5	0	0	0		7	259	0	0		0	113	10	3		397	1490
7:30 AM	0	0	0	0		15	0	1	0		0	248	0	0		0	132	10	3		409	1433
7:45 AM	0	0	0	0		11	0	0	0		5	209	0	0		0	122	16	4		367	1374
8:00 AM	0	0	0	0		10	0	3	0		5	196	0	0		0	93	9	1		317	1337
8:15 AM	0	0	0	0		9	0	2	0		2	161	0	0		0	147	17	2		340	1020
8:30 AM	0	0	0	0		6	0	0	0		4	182	0	0		0	152	6	0		350	680
8:45 AM	0	0	0	0		4	0	2	0		1	184	0	0		0	127	9	3		330	330
Peak 15-Min Flowrates	**Northbound**					**Southbound**					**Eastbound**					**Westbound**					**Total**	
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
All Vehicles	0	0	0	0		60	0	4	0		28	1036	0	0		0	528	64	16		**1736**	
Heavy Trucks	0	0	0	0		12	0	4	0		8	112	0	0		0	76	12	0		**224**	
Pedestrians		4					0					0					0				**4**	
Bicycles	0	0	0	0		0	0	0	0		0	0	0	0		0	8	4	0		**12**	
Buses																						
Stopped Buses																						

LOCATION: NE 25th St/Walker Rd & SR 44
CITY/STATE: Wildwood, FL

PROJECT ID: 23-130274-002
DATE: Tue, Oct 03, 2023

Peak-Hour: 04:30 PM - 05:30 PM
Peak 15-Minute: 05:00 PM - 05:15 PM



15-Min Count Period Beginning At	NE 25th St/Walker Rd Northbound					NE 25th St/Walker Rd Southbound					SR 44 Eastbound					SR 44 Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
4:00 PM	0	0	0	0		9	0	6	0		3	157	0	0		0	206	11	4		396	1528
4:15 PM	0	0	0	0		13	0	4	0		2	135	0	0		0	208	12	4		378	1585
4:30 PM	0	0	0	0		4	0	1	0		0	167	0	1		0	215	15	3		406	1620
4:45 PM	0	0	1	0		9	0	3	0		2	137	0	0		1	185	8	2		348	1562
5:00 PM	0	0	0	0		14	0	3	0		3	149	0	0		0	264	14	6		453	1536
5:15 PM	1	0	0	0		9	0	3	0		0	128	0	0		2	256	10	4		413	1083
5:30 PM	0	0	0	0		15	0	4	0		4	129	0	0		0	176	18	2		348	670
5:45 PM	0	0	0	0		10	0	6	0		4	96	0	0		0	182	24	0		322	322
Peak 15-Min Flowrates	**Northbound**					**Southbound**					**Eastbound**					**Westbound**					**Total**	
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
All Vehicles	4	0	4	0		56	0	12	0		12	668	0	4		8	1056	60	24		**1908**	
Heavy Trucks	0	0	0	0		0	0	0	0		0	56	0	0		0	56	12	0		**124**	
Pedestrians		0					0					0					0				**0**	
Bicycles	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		**0**	
Buses																						
Stopped Buses																						

National Data & Surveying Services

Intersection Turning Movement Count

Location: CR 213 & CR 44A
City: Wildwood
Control: 1-Way Stop(NB)

Project ID: 23-130274-001
Date: 10/3/2023

Data - Total

NS/EW Streets:	CR 213				CR 213				CR 44A				CR 44A				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	2	0	0	0	0	0	0	0	0	9	8	0	0	2	0	0	21
7:15 AM	4	0	3	0	0	0	0	0	0	17	7	0	0	7	0	0	38
7:30 AM	5	0	0	0	0	0	0	0	0	21	3	0	0	12	0	0	41
7:45 AM	3	0	1	0	0	0	0	0	0	13	5	0	3	4	0	0	29
8:00 AM	2	0	1	0	0	0	0	0	0	20	6	0	5	3	0	0	37
8:15 AM	2	0	1	0	0	0	0	0	0	15	2	0	0	7	0	0	27
8:30 AM	4	0	1	0	0	0	0	0	0	8	5	0	1	8	0	0	27
8:45 AM	2	0	2	0	0	0	0	0	0	7	5	0	0	9	0	0	25
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	24	0	9	0	0	0	0	0	0	110	41	0	9	52	0	0	245
APPROACH %'s :	72.73%	0.00%	27.27%	0.00%					0.00%	72.85%	27.15%	0.00%	14.75%	85.25%	0.00%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	14	0	5	0	0	0	0	0	0	71	21	0	8	26	0	0	145
PEAK HR FACTOR :	0.700	0.000	0.417	0.000	0.000	0.000	0.000	0.000	0.000	0.845	0.750	0.000	0.400	0.542	0.000	0.000	0.884
	0.679								0.885				0.708				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	9	0	1	0	0	0	0	0	0	15	1	0	1	14	0	0	41
4:15 PM	3	0	1	0	0	0	0	0	0	9	2	0	2	23	0	0	40
4:30 PM	6	0	0	0	0	0	0	0	0	12	1	0	4	18	0	0	41
4:45 PM	5	0	2	0	0	0	0	0	0	5	2	0	1	7	0	0	22
5:00 PM	10	0	3	0	0	0	0	0	0	12	6	0	2	17	0	0	50
5:15 PM	9	0	0	0	0	0	0	0	0	8	5	0	1	21	0	0	44
5:30 PM	12	0	0	0	0	0	0	0	0	9	2	0	2	10	0	0	35
5:45 PM	3	0	3	0	0	0	0	0	0	10	7	0	6	5	0	0	34
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	57	0	10	0	0	0	0	0	0	80	26	0	19	115	0	0	307
APPROACH %'s :	85.07%	0.00%	14.93%	0.00%					0.00%	75.47%	24.53%	0.00%	14.18%	85.82%	0.00%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	34	0	6	0	0	0	0	0	0	39	20	0	11	53	0	0	163
PEAK HR FACTOR :	0.708	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.813	0.714	0.000	0.458	0.631	0.000	0.000	0.815
	0.769								0.819				0.727				

29%	#DIV/0!	20%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	6%	10%	#DIV/0!	0%	0%	#DIV/0!	#DIV/0!	
0%	#DIV/0!	0%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	3%	5%	#DIV/0!	0%	2%	#DIV/0!	#DIV/0!	

National Data & Surveying Services

Intersection Turning Movement Count

Location: CR 213 & CR 44A
City: Wildwood
Control: 1-Way Stop(NB)

Project ID: 23-130274-001
Date: 10/3/2023

Data - Cars

NS/EW Streets:	CR 213				CR 213				CR 44A				CR 44A				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	1	0	0	0	0	0	0	0	0	8	8	0	0	2	0	0	19
7:15 AM	2	0	2	0	0	0	0	0	0	16	7	0	0	7	0	0	34
7:30 AM	5	0	0	0	0	0	0	0	0	20	2	0	0	12	0	0	39
7:45 AM	2	0	1	0	0	0	0	0	0	12	5	0	3	4	0	0	27
8:00 AM	1	0	1	0	0	0	0	0	0	19	5	0	5	3	0	0	34
8:15 AM	2	0	1	0	0	0	0	0	0	12	2	0	0	6	0	0	23
8:30 AM	4	0	1	0	0	0	0	0	0	8	5	0	1	8	0	0	27
8:45 AM	2	0	2	0	0	0	0	0	0	7	5	0	0	8	0	0	24
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	19	0	8	0	0	0	0	0	0	102	39	0	9	50	0	0	227
APPROACH %'s :	70.37%	0.00%	29.63%	0.00%					0.00%	72.34%	27.66%	0.00%	15.25%	84.75%	0.00%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	10	0	4	0	0	0	0	0	0	67	19	0	8	26	0	0	134
PEAK HR FACTOR :	0.500	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.838	0.679	0.000	0.400	0.542	0.000	0.000	0.859
	0.700								0.896				0.708				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	9	0	1	0	0	0	0	0	0	15	0	0	1	14	0	0	40
4:15 PM	3	0	1	0	0	0	0	0	0	8	2	0	2	23	0	0	39
4:30 PM	6	0	0	0	0	0	0	0	0	12	1	0	4	18	0	0	41
4:45 PM	5	0	2	0	0	0	0	0	0	5	2	0	1	7	0	0	22
5:00 PM	10	0	3	0	0	0	0	0	0	12	5	0	2	16	0	0	48
5:15 PM	9	0	0	0	0	0	0	0	0	7	5	0	1	21	0	0	43
5:30 PM	12	0	0	0	0	0	0	0	0	9	2	0	2	10	0	0	35
5:45 PM	3	0	3	0	0	0	0	0	0	10	7	0	6	5	0	0	34
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	57	0	10	0	0	0	0	0	0	78	24	0	19	114	0	0	302
APPROACH %'s :	85.07%	0.00%	14.93%	0.00%					0.00%	76.47%	23.53%	0.00%	14.29%	85.71%	0.00%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	34	0	6	0	0	0	0	0	0	38	19	0	11	52	0	0	160
PEAK HR FACTOR :	0.708	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.792	0.679	0.000	0.458	0.619	0.000	0.000	0.833
	0.769								0.838				0.716				

National Data & Surveying Services

Intersection Turning Movement Count

Location: CR 213 & CR 44A
City: Wildwood
Control: 1-Way Stop(NB)

Project ID: 23-130274-001
Date: 10/3/2023

Data - HT

NS/EW Streets:	CR 213				CR 213				CR 44A				CR 44A				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2
7:15 AM	2	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	4
7:30 AM	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2
7:45 AM	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2
8:00 AM	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	3
8:15 AM	0	0	0	0	0	0	0	0	0	3	0	0	0	1	0	0	4
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	5	0	1	0	0	0	0	0	0	8	2	0	0	2	0	0	18
APPROACH %'s :	83.33%	0.00%	16.67%	0.00%					0.00%	80.00%	20.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	4	0	1	0	0	0	0	0	0	4	2	0	0	0	0	0	11
PEAK HR FACTOR :	0.500	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.500	0.000	0.000	0.000	0.000	0.000	0.688
	0.417								0.750								

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	2
5:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	2	2	0	0	1	0	0	5
APPROACH %'s :									0.00%	50.00%	50.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0	3
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.250	0.000	0.000	0.250	0.000	0.000	0.375
									0.500				0.250				

National Data & Surveying Services

Intersection Turning Movement Count

Location: CR 213 & CR 44A
City: Wildwood
Control: 1-Way Stop(NB)

Project ID: 23-130274-001
Date: 10/3/2023

Data - Bikes

NS/EW Streets:	CR 213				CR 213				CR 44A				CR 44A				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	2	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3
APPROACH %'s :	100.00%	0.00%	0.00%	0.00%					0.00%	100.00%	0.00%	0.00%					
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
PEAK HR FACTOR :	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500
	0.500																

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
APPROACH %'s :									0.00%	0.00%	100.00%	0.00%					
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

National Data & Surveying Services

Intersection Turning Movement Count

Location: CR 213 & CR 44A
City: Wildwood

Project ID: 23-130274-001
Date: 10/3/2023

Data - Pedestrians (Crosswalks)

NS/EW Streets:	CR 213		CR 213		CR 44A		CR 44A		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0
APPROACH %'s :									
PEAK HR :	07:15 AM - 08:15 AM								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :									

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0
APPROACH %'s :									
PEAK HR :	05:00 PM - 06:00 PM								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :									

Prepared by National Data & Surveying Services

CR 213 & CR 44A

Peak Hour Turning Movement Count

ID: 23-130274-001
City: Wildwood

Day: Tuesday
Date: 10/3/2023

PEAK HOURS	COUNT PERIODS
07:15 AM - 08:15 AM	7:00 AM - 09:00 AM
NONE	NONE
05:00 PM - 06:00 PM	4:00 PM - 06:00 PM

CONTROL: 1-Way Stop(NB)

	AM	NOON	PM
TEV	145	0	163
PHF	0.88		0.82

SOUTHBOUND (CR 213)

AM	0	0	0	0	0	AM
NOON	0	0	0	0	0	NOON
PM	0	0	0	0	0	PM

EASTBOUND (CR 44A)

AM	NOON	PM	
40	0	87	⇦
0	0	0	↶ 0
0	0	0	↱ 0
71	0	39	→ 0
21	0	20	↴ 0
AM	NOON	PM	

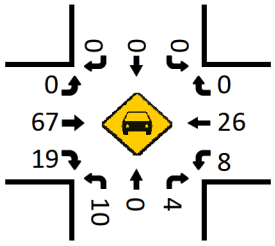
WESTBOUND (CR 44A)

PM	NOON	AM	
0	0	0	↰ 0
53	0	26	← 0
11	0	8	↰ 0
0	0	0	↶ 0
45	0	76	⇨
PM	NOON	AM	

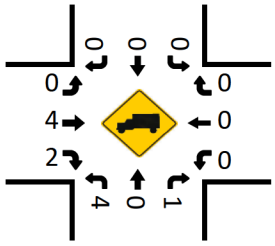
NORTHBOUND (CR 213)

PM	31	0	34	0	6	PM
NOON	0	0	0	0	0	NOON
AM	29	0	14	0	5	AM

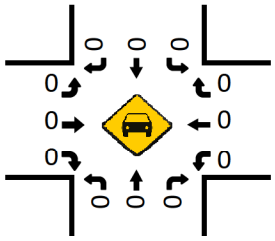
Cars (AM)



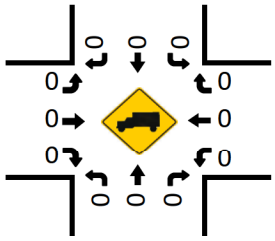
HT (AM)



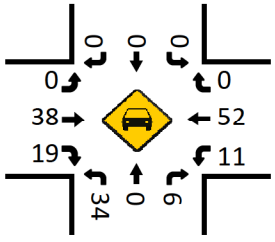
Cars (NOON)



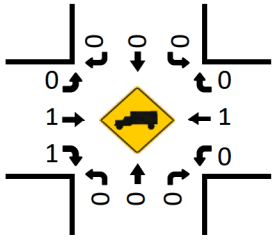
HT (NOON)



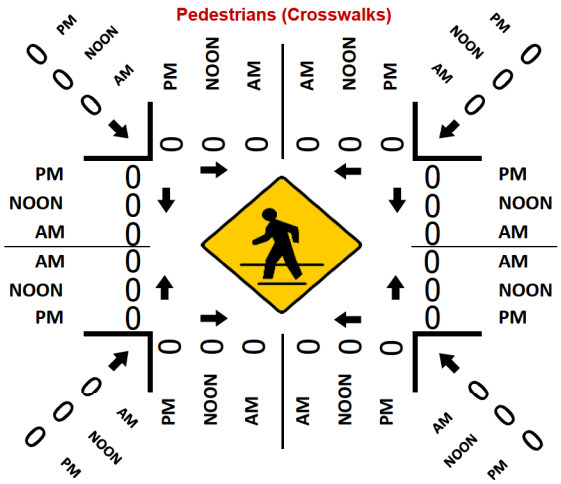
Cars (PM)



HT (PM)



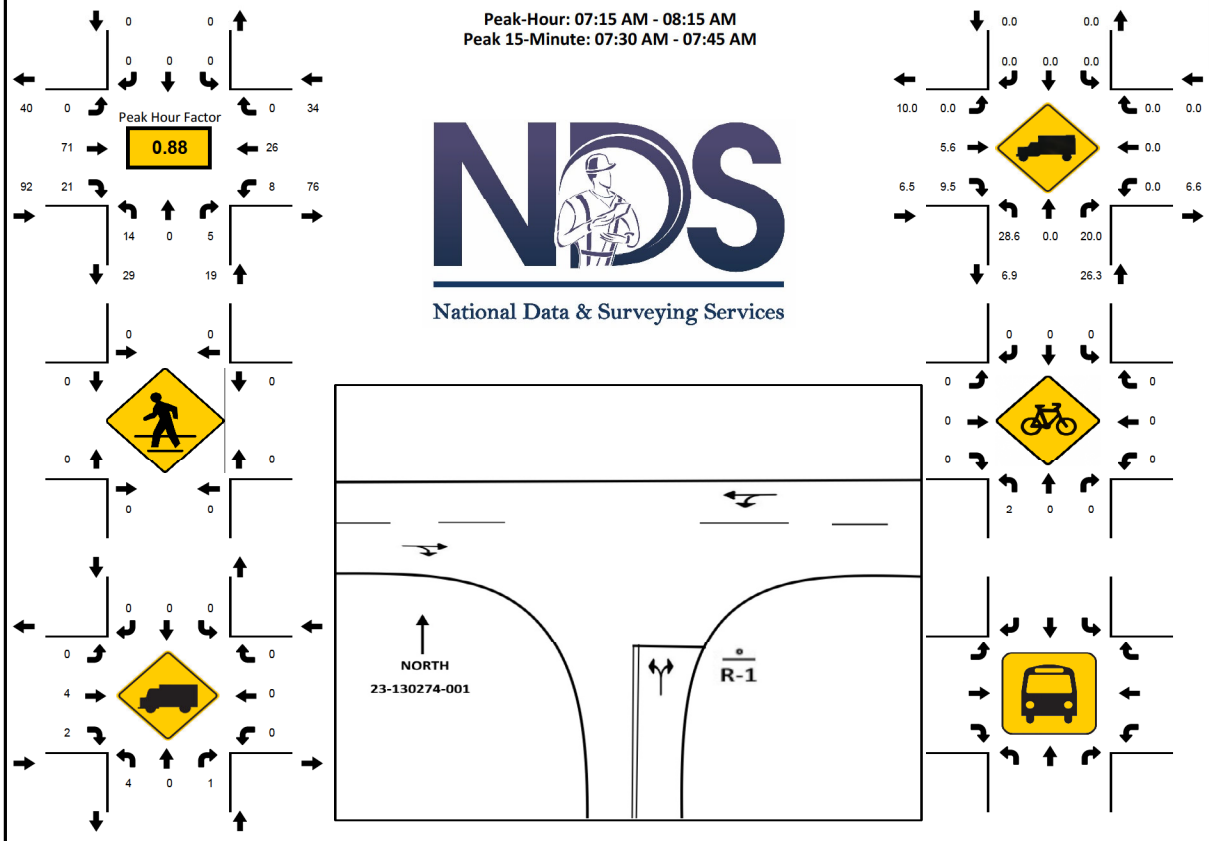
Pedestrians (Crosswalks)



LOCATION: CR 213 & CR 44A
CITY/STATE: Wildwood, FL

PROJECT ID: 23-130274-001
DATE: Tue, Oct 03, 2023

Peak-Hour: 07:15 AM - 08:15 AM
Peak 15-Minute: 07:30 AM - 07:45 AM



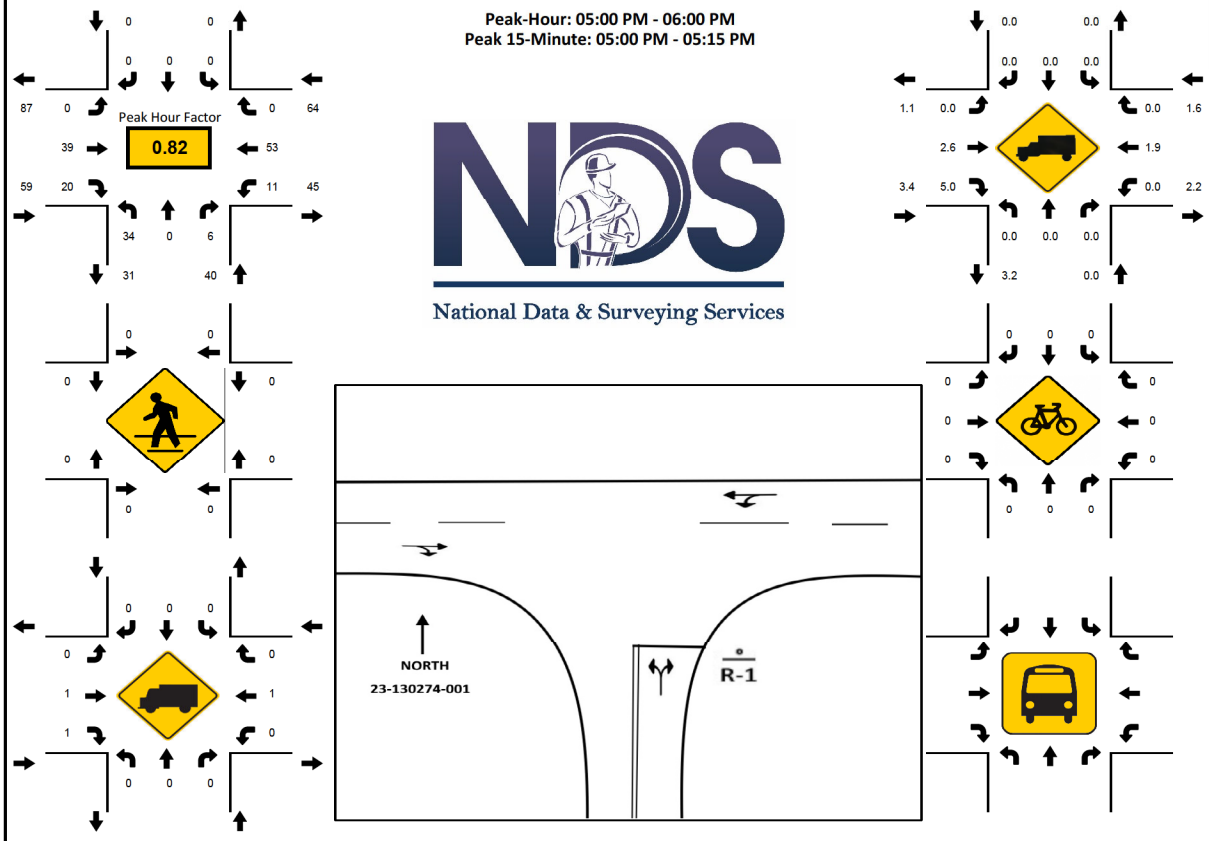
National Data & Surveying Services

15-Min Count Period Beginning At	CR 213 Northbound					CR 213 Southbound					CR 44A Eastbound					CR 44A Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
7:00 AM	2	0	0	0		0	0	0	0		0	9	8	0		0	2	0	0		21	129
7:15 AM	4	0	3	0		0	0	0	0		0	17	7	0		0	7	0	0		38	145
7:30 AM	5	0	0	0		0	0	0	0		0	21	3	0		0	12	0	0		41	134
7:45 AM	3	0	1	0		0	0	0	0		0	13	5	0		3	4	0	0		29	120
8:00 AM	2	0	1	0		0	0	0	0		0	20	6	0		5	3	0	0		37	116
8:15 AM	2	0	1	0		0	0	0	0		0	15	2	0		0	7	0	0		27	79
8:30 AM	4	0	1	0		0	0	0	0		0	8	5	0		1	8	0	0		27	52
8:45 AM	2	0	2	0		0	0	0	0		0	7	5	0		0	9	0	0		25	25
Peak 15-Min Flowrates	**Northbound**					**Southbound**					**Eastbound**					**Westbound**					**Total**	
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
All Vehicles	20	0	12	0		0	0	0	0		0	84	28	0		20	48	0	0		**212**	
Heavy Trucks	8	0	4	0		0	0	0	0		0	4	4	0		0	0	0	0		**20**	
Pedestrians		0					0					0					0				**0**	
Bicycles	4	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		**4**	
Buses																						
Stopped Buses																						

LOCATION: CR 213 & CR 44A
CITY/STATE: Wildwood, FL

PROJECT ID: 23-130274-001
DATE: Tue, Oct 03, 2023

Peak-Hour: 05:00 PM - 06:00 PM
Peak 15-Minute: 05:00 PM - 05:15 PM



15-Min Count Period Beginning At	CR 213 Northbound					CR 213 Southbound					CR 44A Eastbound					CR 44A Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
4:00 PM	9	0	1	0		0	0	0	0		0	15	1	0		1	14	0	0		41	144
4:15 PM	3	0	1	0		0	0	0	0		0	9	2	0		2	23	0	0		40	153
4:30 PM	6	0	0	0		0	0	0	0		0	12	1	0		4	18	0	0		41	157
4:45 PM	5	0	2	0		0	0	0	0		0	5	2	0		1	7	0	0		22	151
5:00 PM	10	0	3	0		0	0	0	0		0	12	6	0		2	17	0	0		50	163
5:15 PM	9	0	0	0		0	0	0	0		0	8	5	0		1	21	0	0		44	113
5:30 PM	12	0	0	0		0	0	0	0		0	9	2	0		2	10	0	0		35	69
5:45 PM	3	0	3	0		0	0	0	0		0	10	7	0		6	5	0	0		34	34
Peak 15-Min Flowrates	**Northbound**					**Southbound**					**Eastbound**					**Westbound**					**Total**	
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
All Vehicles	48	0	12	0		0	0	0	0		0	48	28	0		24	84	0	0		**244**	
Heavy Trucks	0	0	0	0		0	0	0	0		0	4	4	0		0	4	0	0		**12**	
Pedestrians		0					0					0					0				**0**	
Bicycles	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		**0**	
Buses																						
Stopped Buses																						

National Data & Surveying Services

Intersection Turning Movement Count

Location: Doctor M.L.K Jr Ave & CR 44A/Kilgore St
City: Wildwood
Control: 2-Way Stop(NB/WB)

Project ID: 23-130274-003
Date: 10/3/2023

Data - Total

NS/EW Streets:	Doctor M.L.K Jr Ave				Doctor M.L.K Jr Ave				CR 44A/Kilgore St				CR 44A/Kilgore St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	3	0	0	0	0	0	0	0	0	2	9	0	3	0	0	0	17
7:15 AM	12	0	4	0	0	0	0	0	0	8	20	0	8	2	0	0	54
7:30 AM	12	0	5	0	0	0	0	0	0	9	20	0	8	1	0	0	55
7:45 AM	5	0	18	0	0	0	0	0	1	3	14	0	6	3	2	0	52
8:00 AM	8	1	13	0	1	0	0	0	1	3	18	0	7	3	2	0	57
8:15 AM	8	3	3	0	0	1	0	0	0	3	21	0	8	2	1	0	50
8:30 AM	8	1	2	0	0	1	0	0	0	2	13	0	8	3	0	0	38
8:45 AM	15	1	5	0	0	1	0	0	2	6	8	0	3	1	0	0	42
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	71	6	50	0	1	3	0	0	4	36	123	0	51	15	5	0	365
APPROACH %'s :	55.91%	4.72%	39.37%	0.00%	25.00%	75.00%	0.00%	0.00%	2.45%	22.09%	75.46%	0.00%	71.83%	21.13%	7.04%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	37	1	40	0	1	0	0	0	2	23	72	0	29	9	4	0	218
PEAK HR FACTOR :	0.771	0.250	0.556	0.000	0.250	0.000	0.000	0.000	0.500	0.639	0.900	0.000	0.906	0.750	0.500	0.000	0.956
	0.848				0.250				0.836				0.875				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	19	6	7	0	0	3	2	0	2	4	19	0	8	2	2	0	74
4:15 PM	28	1	13	0	0	5	0	0	0	4	24	0	12	7	1	0	95
4:30 PM	20	4	10	0	0	1	1	0	0	3	13	0	10	5	1	0	68
4:45 PM	15	0	6	0	1	0	1	0	2	4	12	0	3	2	1	0	47
5:00 PM	28	3	10	0	0	4	1	0	2	4	15	0	6	3	1	0	77
5:15 PM	24	4	5	0	2	1	1	0	1	4	12	0	4	3	2	0	63
5:30 PM	15	2	6	0	0	2	3	0	2	4	13	0	4	2	1	0	54
5:45 PM	16	3	13	0	0	3	1	0	5	2	16	0	13	1	0	0	73
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	165	23	70	0	3	19	10	0	14	29	124	0	60	25	9	0	551
APPROACH %'s :	63.95%	8.91%	27.13%	0.00%	9.38%	59.38%	31.25%	0.00%	8.38%	17.37%	74.25%	0.00%	63.83%	26.60%	9.57%	0.00%	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	91	8	39	0	1	10	3	0	4	15	64	0	31	17	4	0	287
PEAK HR FACTOR :	0.813	0.500	0.750	0.000	0.250	0.500	0.750	0.000	0.500	0.938	0.667	0.000	0.646	0.607	1.000	0.000	0.755
	0.821				0.700				0.741				0.650				

	0%	0%	8%	#DIV/0!	0%	#DIV/0!	#DIV/0!	#DIV/0!	0%	0%	8%	#DIV/0!	0%	11%	0%	#DIV/0!
	2%	0%	0%	#DIV/0!	0%	0%	0%	#DIV/0!	0%	7%	2%	#DIV/0!	3%	0%	0%	#DIV/0!

National Data & Surveying Services

Intersection Turning Movement Count

Location: Doctor M.L.K Jr Ave & CR 44A/Kilgore St
City: Wildwood
Control: 2-Way Stop(NB/WB)

Project ID: 23-130274-003
Date: 10/3/2023

Data - Cars

NS/EW Streets:	Doctor M.L.K Jr Ave				Doctor M.L.K Jr Ave				CR 44A/Kilgore St				CR 44A/Kilgore St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	3	0	0	0	0	0	0	0	0	2	8	0	3	0	0	0	16
7:15 AM	12	0	4	0	0	0	0	0	0	8	18	0	8	1	0	0	51
7:30 AM	12	0	5	0	0	0	0	0	0	9	19	0	8	1	0	0	54
7:45 AM	5	0	16	0	0	0	0	0	1	3	13	0	6	3	2	0	49
8:00 AM	8	1	12	0	1	0	0	0	1	3	16	0	7	3	2	0	54
8:15 AM	8	3	3	0	0	1	0	0	0	3	21	0	8	1	1	0	49
8:30 AM	8	1	2	0	0	1	0	0	0	2	13	0	8	3	0	0	38
8:45 AM	14	1	5	0	0	1	0	0	2	6	8	0	3	1	0	0	41
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	70	6	47	0	1	3	0	0	4	36	116	0	51	13	5	0	352
APPROACH %'s :	56.91%	4.88%	38.21%	0.00%	25.00%	75.00%	0.00%	0.00%	2.56%	23.08%	74.36%	0.00%	73.91%	18.84%	7.25%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	37	1	37	0	1	0	0	0	2	23	66	0	29	8	4	0	208
PEAK HR FACTOR :	0.771	0.250	0.578	0.000	0.250	0.000	0.000	0.000	0.500	0.639	0.868	0.000	0.906	0.667	0.500	0.000	0.963
	0.893				0.250				0.813				0.854				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	19	6	7	0	0	3	2	0	2	4	19	0	8	2	2	0	74
4:15 PM	28	1	13	0	0	5	0	0	0	3	23	0	12	7	1	0	93
4:30 PM	20	4	10	0	0	1	1	0	0	3	13	0	10	5	1	0	68
4:45 PM	14	0	6	0	1	0	1	0	2	4	12	0	2	2	1	0	45
5:00 PM	27	3	10	0	0	4	1	0	2	4	15	0	6	3	1	0	76
5:15 PM	24	4	5	0	2	1	1	0	1	3	12	0	4	3	2	0	62
5:30 PM	15	2	6	0	0	2	3	0	2	4	13	0	4	2	1	0	54
5:45 PM	16	3	13	0	0	3	1	0	5	2	16	0	13	1	0	0	73
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	163	23	70	0	3	19	10	0	14	27	123	0	59	25	9	0	545
APPROACH %'s :	63.67%	8.98%	27.34%	0.00%	9.38%	59.38%	31.25%	0.00%	8.54%	16.46%	75.00%	0.00%	63.44%	26.88%	9.68%	0.00%	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	89	8	39	0	1	10	3	0	4	14	63	0	30	17	4	0	282
PEAK HR FACTOR :	0.795	0.500	0.750	0.000	0.250	0.500	0.750	0.000	0.500	0.875	0.685	0.000	0.625	0.607	1.000	0.000	0.758
	0.810				0.700				0.779				0.638				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Doctor M.L.K Jr Ave & CR 44A/Kilgore St
City: Wildwood
Control: 2-Way Stop(NB/WB)

Project ID: 23-130274-003
Date: 10/3/2023

Data - HT

NS/EW Streets:	Doctor M.L.K Jr Ave				Doctor M.L.K Jr Ave				CR 44A/Kilgore St				CR 44A/Kilgore St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
7:15 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	1	0	0	3
7:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
7:45 AM	0	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	3
8:00 AM	0	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0	3
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	1	0	3	0	0	0	0	0	0	0	7	0	0	2	0	0	13
APPROACH %'s :	25.00%	0.00%	75.00%	0.00%					0.00%	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	0	0	3	0	0	0	0	0	0	0	6	0	0	1	0	0	10
PEAK HR FACTOR :	0.000	0.000	0.375	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.750	0.000	0.000	0.250	0.000	0.000	0.833
	0.375								0.750				0.250				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2
5:00 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	2	0	0	0	0	0	0	0	0	2	1	0	1	0	0	0	6
APPROACH %'s :	100.00%	0.00%	0.00%	0.00%					0.00%	66.67%	33.33%	0.00%	100.00%	0.00%	0.00%	0.00%	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	2	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	5
PEAK HR FACTOR :	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.250	0.000	0.250	0.000	0.000	0.000	0.625
	0.500								0.250				0.250				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Doctor M.L.K Jr Ave & CR 44A/Kilgore St
City: Wildwood
Control: 2-Way Stop(NB/WB)

Project ID: 23-130274-003
Date: 10/3/2023

Data - Bikes

NS/EW Streets:	Doctor M.L.K Jr Ave				Doctor M.L.K Jr Ave				CR 44A/Kilgore St				CR 44A/Kilgore St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
8:00 AM	0	2	0	0	1	1	0	0	0	0	0	0	0	0	0	0	4
8:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	3
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	1	3	0	0	1	2	0	0	0	0	4	0	0	0	0	0	11
APPROACH %'s :	25.00%	75.00%	0.00%	0.00%	33.33%	66.67%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%					
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	0	2	0	0	1	1	0	0	0	0	1	0	0	0	0	0	5
PEAK HR FACTOR :	0.000	0.250	0.000	0.000	0.250	0.250	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.313
	0.250				0.250				0.250								

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	2
4:15 PM	1	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	3
4:30 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:15 PM	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	3
5:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	2	3	1	0	0	3	0	0	1	1	1	0	0	1	0	0	13
APPROACH %'s :	33.33%	50.00%	16.67%	0.00%	0.00%	100.00%	0.00%	0.00%	33.33%	33.33%	33.33%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	2	1	0	0	0	2	0	0	1	0	0	0	0	0	0	0	6
PEAK HR FACTOR :	0.500	0.250	0.000	0.000	0.000	0.500	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500
	0.750				0.500				0.250								

National Data & Surveying Services

Intersection Turning Movement Count

Location: Doctor M.L.K Jr Ave & CR 44A/Kilgore St
City: Wildwood
Project ID: 23-130274-003
Date: 10/3/2023

Data - Pedestrians (Crosswalks)

NS/EW Streets:	Doctor M.L.K Jr Ave		Doctor M.L.K Jr Ave		CR 44A/Kilgore St		CR 44A/Kilgore St		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	2	0	0	2	0	0	4
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	1	0	1
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	1	0	0	1
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	2	0	0	3	1	0	6
APPROACH %'s :			100.00%	0.00%	0.00%	100.00%	100.00%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM								TOTAL
PEAK HR VOL :	0	0	2	0	0	2	0	0	4
PEAK HR FACTOR :			0.250			0.250			0.250
			0.250		0.250				

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
4:00 PM	0	0	0	0	2	2	0	1	5
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	1	1	2
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	2	1	3
5:30 PM	0	0	0	0	0	0	0	1	1
5:45 PM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	0	0	2	2	3	4	11
APPROACH %'s :					50.00%	50.00%	42.86%	57.14%	
PEAK HR :	04:15 PM - 05:15 PM								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	1	1	2
PEAK HR FACTOR :							0.250	0.250	0.250
							0.250		

Prepared by National Data & Surveying Services

Doctor M.L.K Jr Ave & CR 44A/Kilgore St

Peak Hour Turning Movement Count

ID: 23-130274-003
City: Wildwood

Day: Tuesday
Date: 10/3/2023

PEAK HOURS	COUNT PERIODS
07:15 AM - 08:15 AM	7:00 AM - 09:00 AM
NONE	NONE
04:15 PM - 05:15 PM	4:00 PM - 06:00 PM

SOUTHBOUND (Doctor M.L.K Jr Ave)

AM	0	0	1	0	7	AM
NOON	0	0	0	0	0	NOON
PM	3	10	1	0	16	PM

EASTBOUND (CR 44A/Kilgore St)

AM	NOON	PM	
46	0	111	⇦
0	0	0	↶ 0
2	0	4	↱ 0
23	0	15	→ 0
72	0	64	↴ 0
AM	NOON	PM	

WESTBOUND (CR 44A/Kilgore St)

PM	NOON	AM	
4	0	4	0 ↰
17	0	9	0 ←
31	0	29	0 ↙
0	0	0	0 ↲
55	0	64	⇨
PM	NOON	AM	

CONTROL

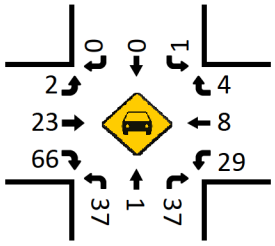
2-Way Stop(NB/WB)

TEV	218 AM	0 NOON	287 PM
PHF	0.96		0.76

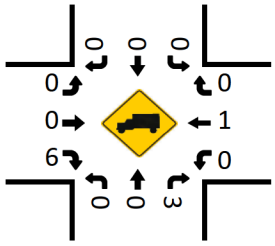
NORTHBOUND (Doctor M.L.K Jr Ave)

PM	105	0	91	8	39	PM
NOON	0	0	0	0	0	NOON
AM	101	0	37	1	40	AM

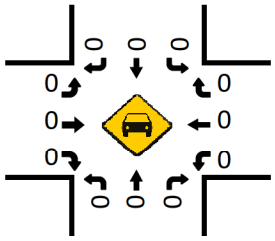
Cars (AM)



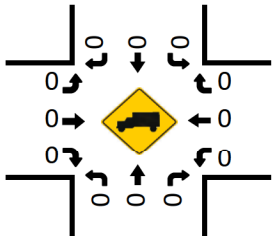
HT (AM)



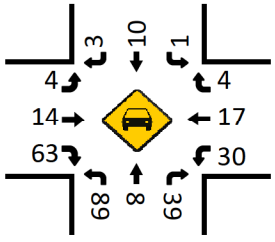
Cars (NOON)



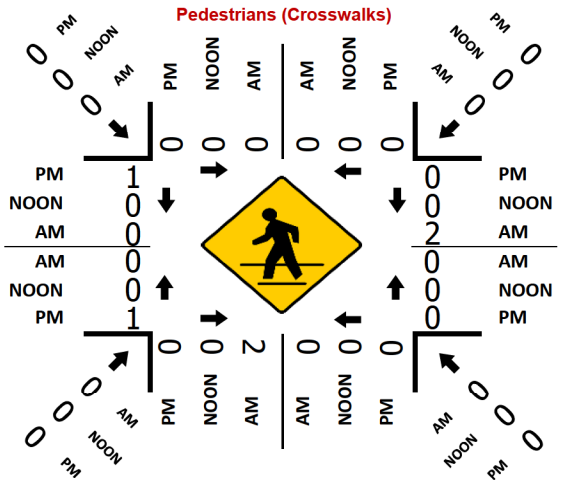
HT (NOON)



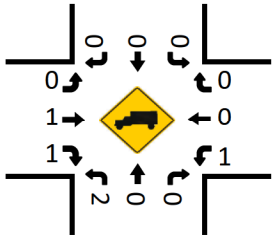
Cars (PM)



Pedestrians (Crosswalks)



HT (PM)



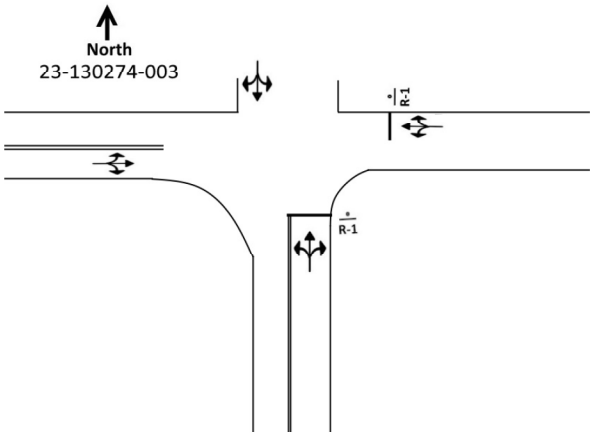
LOCATION: Doctor M.L.K Jr Ave & CR 44A/Kilgore St
CITY/STATE: Wildwood, FL

PROJECT ID: 23-130274-003
DATE: Tue, Oct 03, 2023

Peak-Hour: 07:15 AM - 08:15 AM
Peak 15-Minute: 08:00 AM - 08:15 AM

Peak Hour Factor
0.96

National Data & Surveying Services



15-Min Count Period Beginning At	Doctor M.L.K Jr Ave Northbound					Doctor M.L.K Jr Ave Southbound					CR 44A/Kilgore St Eastbound					CR 44A/Kilgore St Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
7:00 AM	3	0	0	0		0	0	0	0		0	2	9	0		3	0	0	0		17	178
7:15 AM	12	0	4	0		0	0	0	0		0	8	20	0		8	2	0	0		54	218
7:30 AM	12	0	5	0		0	0	0	0		0	9	20	0		8	1	0	0		55	214
7:45 AM	5	0	18	0		0	0	0	0		1	3	14	0		6	3	2	0		52	197
8:00 AM	8	1	13	0		1	0	0	0		1	3	18	0		7	3	2	0		57	187
8:15 AM	8	3	3	0		0	1	0	0		0	3	21	0		8	2	1	0		50	130
8:30 AM	8	1	2	0		0	1	0	0		0	2	13	0		8	3	0	0		38	80
8:45 AM	15	1	5	0		0	1	0	0		2	6	8	0		3	1	0	0		42	42
Peak 15-Min Flowrates	**Northbound**					**Southbound**					**Eastbound**					**Westbound**					**Total**	
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
All Vehicles	48	4	72	0		4	0	0	0		4	36	80	0		32	12	8	0		**300**	
Heavy Trucks	0	0	8	0		0	0	0	0		0	0	8	0		0	4	0	0		**20**	
Pedestrians		8					0					0					8				**16**	
Bicycles	0	8	0	0		4	4	0	0		0	0	4	0		0	0	0	0		**20**	
Buses																						
Stopped Buses																						

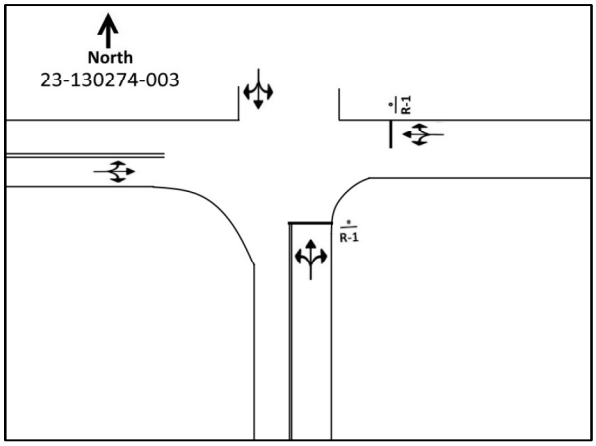
LOCATION: Doctor M.L.K Jr Ave & CR 44A/Kilgore St
CITY/STATE: Wildwood, FL

PROJECT ID: 23-130274-003
DATE: Tue, Oct 03, 2023

Peak-Hour: 04:15 PM - 05:15 PM
Peak 15-Minute: 04:15 PM - 04:30 PM

Peak Hour Factor
0.76

National Data & Surveying Services



15-Min Count Period Beginning At	Doctor M.L.K Jr Ave Northbound					Doctor M.L.K Jr Ave Southbound					CR 44A/Kilgore St Eastbound					CR 44A/Kilgore St Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
4:00 PM	19	6	7	0		0	3	2	0		2	4	19	0		8	2	2	0		74	284
4:15 PM	28	1	13	0		0	5	0	0		0	4	24	0		12	7	1	0		95	287
4:30 PM	20	4	10	0		0	1	1	0		0	3	13	0		10	5	1	0		68	255
4:45 PM	15	0	6	0		1	0	1	0		2	4	12	0		3	2	1	0		47	241
5:00 PM	28	3	10	0		0	4	1	0		2	4	15	0		6	3	1	0		77	267
5:15 PM	24	4	5	0		2	1	1	0		1	4	12	0		4	3	2	0		63	190
5:30 PM	15	2	6	0		0	2	3	0		2	4	13	0		4	2	1	0		54	127
5:45 PM	16	3	13	0		0	3	1	0		5	2	16	0		13	1	0	0		73	73
Peak 15-Min Flowrates	**Northbound**					**Southbound**					**Eastbound**					**Westbound**					**Total**	
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
All Vehicles	112	16	52	0		4	20	4	0		8	16	96	0		48	28	4	0		**408**	
Heavy Trucks	4	0	0	0		0	0	0	0		0	4	4	0		4	0	0	0		**16**	
Pedestrians		0						0				8					0				**8**	
Bicycles	4	4	0	0		0	4	0	0		4	0	0	0		0	0	0	0		**16**	
Buses																						
Stopped Buses																						

National Data & Surveying Services

Intersection Turning Movement Count

Location: US 301/S Main St/SR 35 & Dr. M.L.K Jr Ave/Huey St
City: Wildwood
Control: Signalized

Project ID: 23-130274-004
Date: 10/3/2023

Data - Total

NS/EW Streets:	US 301/S Main St/SR 35				US 301/S Main St/SR 35				Dr. M.L.K Jr Ave/Huey St				Dr. M.L.K Jr Ave/Huey St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	2	208	31	1	26	338	0	0	5	9	3	0	10	2	5	0	640
7:15 AM	7	205	21	0	29	223	3	0	9	23	5	0	14	10	7	0	556
7:30 AM	2	258	26	0	21	269	5	0	13	12	7	0	21	19	17	0	670
7:45 AM	1	246	20	0	27	233	0	0	4	1	1	0	23	2	9	0	567
8:00 AM	5	208	16	0	27	214	0	0	7	3	3	0	7	2	12	0	504
8:15 AM	5	225	17	0	14	243	8	0	14	22	9	0	16	13	12	0	598
8:30 AM	3	228	17	0	11	200	8	0	12	17	6	0	20	16	9	0	547
8:45 AM	4	237	10	0	23	240	7	0	4	5	5	0	10	6	9	0	560
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	29	1815	158	1	178	1960	31	0	68	92	39	0	121	70	80	0	4642
APPROACH %'s :	1.45%	90.61%	7.89%	0.05%	8.21%	90.36%	1.43%	0.00%	34.17%	46.23%	19.60%	0.00%	44.65%	25.83%	29.52%	0.00%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	12	917	98	1	103	1063	8	0	31	45	16	0	68	33	38	0	2433
PEAK HR FACTOR :	0.429	0.889	0.790	0.250	0.888	0.786	0.400	0.000	0.596	0.489	0.571	0.000	0.739	0.434	0.559	0.000	0.908
		0.899				0.806				0.622				0.610			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	4	296	20	0	12	213	11	0	19	14	11	0	29	13	15	0	657
4:15 PM	10	282	8	0	10	258	16	0	8	11	9	0	38	26	18	0	694
4:30 PM	13	304	11	0	10	272	15	0	10	15	8	0	34	10	21	0	723
4:45 PM	13	261	13	0	7	262	8	0	6	3	5	0	26	19	18	0	641
5:00 PM	10	293	14	0	5	246	11	0	8	5	5	0	25	19	32	0	673
5:15 PM	12	314	13	0	1	263	8	0	11	5	7	0	18	9	12	0	673
5:30 PM	10	303	7	0	5	226	16	0	8	3	12	0	24	8	8	0	630
5:45 PM	9	217	15	0	5	193	21	0	13	12	5	0	11	16	7	0	524
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	81	2270	101	0	55	1933	106	0	83	68	62	0	205	120	131	0	5215
APPROACH %'s :	3.30%	92.58%	4.12%	0.00%	2.63%	92.31%	5.06%	0.00%	38.97%	31.92%	29.11%	0.00%	44.96%	26.32%	28.73%	0.00%	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	46	1140	46	0	32	1038	50	0	32	34	27	0	123	74	89	0	2731
PEAK HR FACTOR :	0.885	0.938	0.821	0.000	0.800	0.954	0.781	0.000	0.800	0.567	0.750	0.000	0.809	0.712	0.695	0.000	0.944
		0.939				0.943				0.705				0.872			

	0%	11%	2%	0%	4%	11%	0%	#DIV/0!	6%	7%	0%	#DIV/0!	4%	0%	0%	#DIV/0!	
	0%	6%	4%	#DIV/0!	0%	4%	2%	#DIV/0!	0%	6%	0%	#DIV/0!	2%	3%	1%	#DIV/0!	

National Data & Surveying Services

Intersection Turning Movement Count

Location: US 301/S Main St/SR 35 & Dr. M.L.K Jr Ave/Huey St
City: Wildwood
Control: Signalized

Project ID: 23-130274-004
Date: 10/3/2023

Data - Cars

NS/EW Streets:	US 301/S Main St/SR 35				US 301/S Main St/SR 35				Dr. M.L.K Jr Ave/Huey St				Dr. M.L.K Jr Ave/Huey St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	2	187	30	1	25	310	0	0	5	8	3	0	10	2	5	0	588
7:15 AM	7	181	21	0	27	198	3	0	8	21	5	0	13	10	7	0	501
7:30 AM	2	234	26	0	20	235	5	0	13	12	7	0	21	19	17	0	611
7:45 AM	1	215	19	0	27	201	0	0	3	1	1	0	21	2	9	0	500
8:00 AM	4	180	16	0	27	193	0	0	5	2	3	0	6	2	12	0	450
8:15 AM	5	196	13	0	13	212	6	0	14	21	8	0	15	12	12	0	527
8:30 AM	3	203	16	0	11	173	8	0	12	17	6	0	19	16	9	0	493
8:45 AM	4	208	9	0	21	213	6	0	4	5	5	0	9	5	9	0	498
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	28	1604	150	1	171	1735	28	0	64	87	38	0	114	68	80	0	4168
APPROACH %'s :	1.57%	89.96%	8.41%	0.06%	8.84%	89.71%	1.45%	0.00%	33.86%	46.03%	20.11%	0.00%	43.51%	25.95%	30.53%	0.00%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	12	817	96	1	99	944	8	0	29	42	16	0	65	33	38	0	2200
PEAK HR FACTOR :	0.429	0.873	0.800	0.250	0.917	0.761	0.400	0.000	0.558	0.500	0.571	0.000	0.774	0.434	0.559	0.000	0.900
		0.884				0.784				0.640				0.596			

	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	4	275	20	0	12	196	11	0	19	14	11	0	28	13	13	0	616
4:15 PM	10	267	7	0	10	242	16	0	8	10	9	0	37	25	18	0	659
4:30 PM	13	289	11	0	10	259	15	0	10	15	8	0	33	10	21	0	694
4:45 PM	13	245	13	0	7	255	7	0	6	2	5	0	26	18	18	0	615
5:00 PM	10	269	13	0	5	239	11	0	8	5	5	0	25	19	31	0	640
5:15 PM	12	301	12	0	1	254	8	0	11	5	7	0	18	9	12	0	650
5:30 PM	10	283	6	0	5	219	16	0	8	3	12	0	23	8	8	0	601
5:45 PM	9	212	14	0	5	181	21	0	13	12	5	0	10	16	7	0	505
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	81	2141	96	0	55	1845	105	0	83	66	62	0	200	118	128	0	4980
APPROACH %'s :	3.49%	92.36%	4.14%	0.00%	2.74%	92.02%	5.24%	0.00%	39.34%	31.28%	29.38%	0.00%	44.84%	26.46%	28.70%	0.00%	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	46	1070	44	0	32	995	49	0	32	32	27	0	121	72	88	0	2608
PEAK HR FACTOR :	0.885	0.926	0.846	0.000	0.800	0.960	0.766	0.000	0.800	0.533	0.750	0.000	0.818	0.720	0.710	0.000	0.939
		0.927				0.947				0.689				0.878			

National Data & Surveying Services

Intersection Turning Movement Count

Location: US 301/S Main St/SR 35 & Dr. M.L.K Jr Ave/Huey St
City: Wildwood
Control: Signalized

Project ID: 23-130274-004
Date: 10/3/2023

Data - HT

NS/EW Streets:	US 301/S Main St/SR 35				US 301/S Main St/SR 35				Dr. M.L.K Jr Ave/Huey St				Dr. M.L.K Jr Ave/Huey St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	21	1	0	1	28	0	0	0	1	0	0	0	0	0	0	52
7:15 AM	0	24	0	0	2	25	0	0	1	2	0	0	1	0	0	0	55
7:30 AM	0	24	0	0	1	34	0	0	0	0	0	0	0	0	0	0	59
7:45 AM	0	31	1	0	0	32	0	0	1	0	0	0	2	0	0	0	67
8:00 AM	1	28	0	0	0	21	0	0	2	1	0	0	1	0	0	0	54
8:15 AM	0	29	4	0	1	31	2	0	0	1	1	0	1	1	0	0	71
8:30 AM	0	25	1	0	0	27	0	0	0	0	0	0	1	0	0	0	54
8:45 AM	0	29	1	0	2	27	1	0	0	0	0	0	1	1	0	0	62
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	1	211	8	0	7	225	3	0	4	5	1	0	7	2	0	0	474
APPROACH %'s :	0.45%	95.91%	3.64%	0.00%	2.98%	95.74%	1.28%	0.00%	40.00%	50.00%	10.00%	0.00%	77.78%	22.22%	0.00%	0.00%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	0	100	2	0	4	119	0	0	2	3	0	0	3	0	0	0	233
PEAK HR FACTOR :	0.000	0.806	0.500	0.000	0.500	0.875	0.000	0.000	0.500	0.375	0.000	0.000	0.375	0.000	0.000	0.000	0.869
		0.797				0.879				0.417				0.375			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	21	0	0	0	17	0	0	0	0	0	0	1	0	2	0	41
4:15 PM	0	15	1	0	0	16	0	0	0	1	0	0	1	1	0	0	35
4:30 PM	0	15	0	0	0	13	0	0	0	0	0	0	1	0	0	0	29
4:45 PM	0	16	0	0	0	7	1	0	0	1	0	0	0	1	0	0	26
5:00 PM	0	24	1	0	0	7	0	0	0	0	0	0	0	0	1	0	33
5:15 PM	0	13	1	0	0	9	0	0	0	0	0	0	0	0	0	0	23
5:30 PM	0	20	1	0	0	7	0	0	0	0	0	0	1	0	0	0	29
5:45 PM	0	5	1	0	0	12	0	0	0	0	0	0	1	0	0	0	19
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	129	5	0	0	88	1	0	0	2	0	0	5	2	3	0	235
APPROACH %'s :	0.00%	96.27%	3.73%	0.00%	0.00%	98.88%	1.12%	0.00%	0.00%	100.00%	0.00%	0.00%	50.00%	20.00%	30.00%	0.00%	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	0	70	2	0	0	43	1	0	0	2	0	0	2	2	1	0	123
PEAK HR FACTOR :	0.000	0.729	0.500	0.000	0.000	0.672	0.250	0.000	0.000	0.500	0.000	0.000	0.500	0.500	0.250	0.000	0.879
		0.720				0.688				0.500				0.625			

National Data & Surveying Services

Intersection Turning Movement Count

Location: US 301/S Main St/SR 35 & Dr. M.L.K Jr Ave/Huey St
City: Wildwood
Control: Signalized

Project ID: 23-130274-004
Date: 10/3/2023

Data - Bikes

NS/EW Streets:	US 301/S Main St/SR 35				US 301/S Main St/SR 35				Dr. M.L.K Jr Ave/Huey St				Dr. M.L.K Jr Ave/Huey St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
8:00 AM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	1	0	0	0	1	0	0	0	1	0	0	2	1	0	0	6
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	66.67%	33.33%	0.00%	0.00%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	3
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.250	0.000	0.000	0.375
														0.375			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%													
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
PEAK HR FACTOR :	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250
		0.250															

National Data & Surveying Services

Intersection Turning Movement Count

Location: US 301/S Main St/SR 35 & Dr. M.L.K Jr Ave/Huey St
City: Wildwood
Project ID: 23-130274-004
Date: 10/3/2023

Data - Pedestrians (Crosswalks)

NS/EW Streets:	US 301/S Main St/SR 35		US 301/S Main St/SR 35		Dr. M.L.K Jr Ave/Huey St		Dr. M.L.K Jr Ave/Huey St		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	1	0	1
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	1	0	1
APPROACH %'s :							100.00%	0.00%	
PEAK HR :	07:00 AM - 08:00 AM								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :									

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
4:00 PM	0	0	1	0	0	0	0	0	1
4:15 PM	0	0	0	1	0	0	0	0	1
4:30 PM	0	0	0	1	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	1	0	0	1	0	2
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	1	3	0	0	1	0	5
APPROACH %'s :			25.00%	75.00%			100.00%	0.00%	
PEAK HR :	04:15 PM - 05:15 PM								TOTAL
PEAK HR VOL :	0	0	0	2	0	0	0	0	2
PEAK HR FACTOR :				0.500					0.500
			0.500						

Prepared by National Data & Surveying Services

US 301/S Main St/SR 35 & Dr. M.L.K Jr Ave/Huey St

Peak Hour Turning Movement Count

ID: 23-130274-004
City: Wildwood

Day: Tuesday
Date: 10/3/2023

PEAK HOURS	COUNT PERIODS
07:00 AM - 08:00 AM	7:00 AM - 09:00 AM
NONE	NONE
04:15 PM - 05:15 PM	4:00 PM - 06:00 PM

SOUTHBOUND (US 301/S Main St/SR 35)

	L	T	R	U	Total	
AM	8	1063	103	0	986	AM
NOON	0	0	0	0	0	NOON
PM	50	1038	32	0	1261	PM

EASTBOUND (Dr. M.L.K Jr Ave/Huey St)

	L	T	R	U	
AM	53	0	170	0	
NOON	0	0	0	0	
PM	0	0	0	0	

	L	T	R	U	
AM	31	0	32	0	
NOON	45	0	34	0	
PM	16	0	27	0	

WESTBOUND (Dr. M.L.K Jr Ave/Huey St)

	L	T	R	U	
PM	89	0	38	0	
NOON	74	0	33	0	
AM	123	0	68	0	
	0	0	0	0	

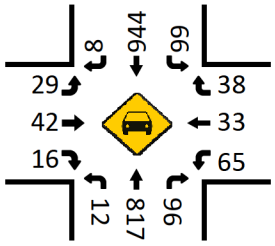
	L	T	R	U	
PM	112	0	246	0	
NOON	0	0	0	0	
AM	1188	0	46	1140	46
	0	0	0	0	0
	1148	1	12	917	98

NORTHBOUND (US 301/S Main St/SR 35)

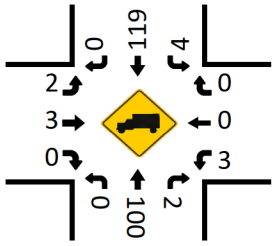
	L	T	R	U	Total	
PM	1188	0	46	1140	46	PM
NOON	0	0	0	0	0	NOON
AM	1148	1	12	917	98	AM

CONTROL			
Signalized			
TEV	2433	0	2731
	AM	NOON	PM
PHF	0.91		0.94

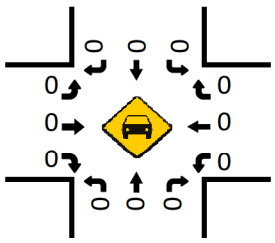
Cars (AM)



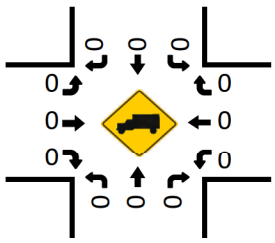
HT (AM)



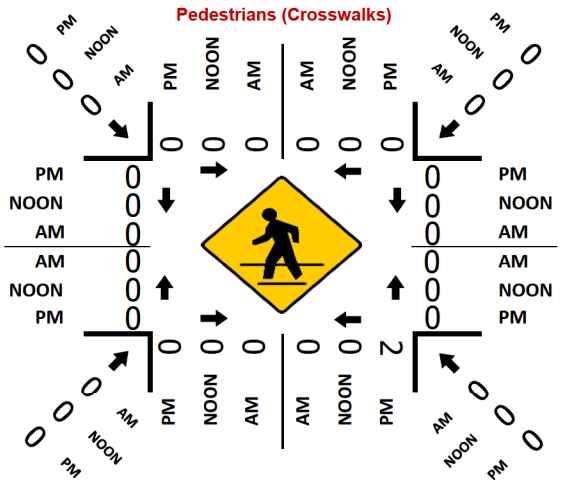
Cars (NOON)



HT (NOON)



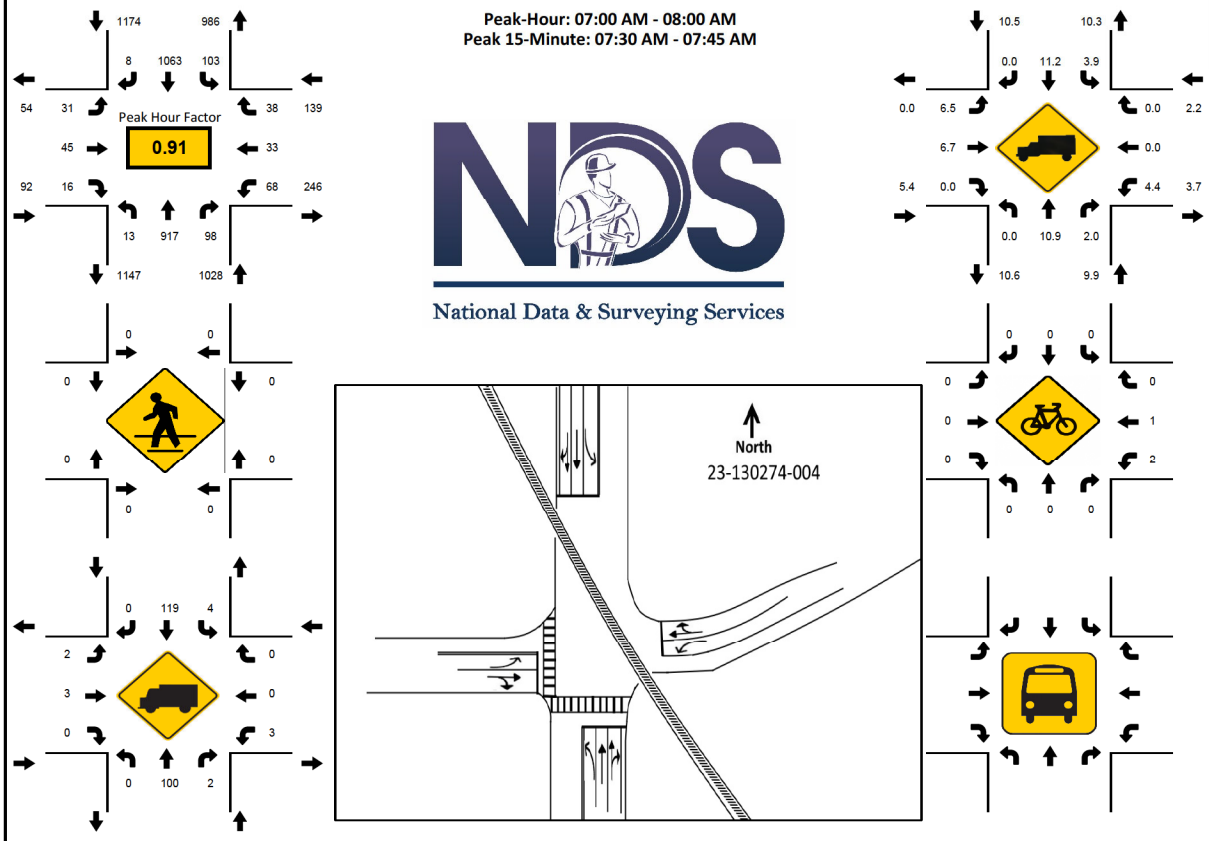
Pedestrians (Crosswalks)


PM
NOON
AM
0
0
0
0
0
0
0
0
0
0
0

LOCATION: US 301/S Main St/SR 35 & Dr. M.L.K Jr Ave/Huey St
CITY/STATE: Wildwood, FL

PROJECT ID: 23-130274-004
DATE: Tue, Oct 03, 2023

Peak-Hour: 07:00 AM - 08:00 AM
Peak 15-Minute: 07:30 AM - 07:45 AM



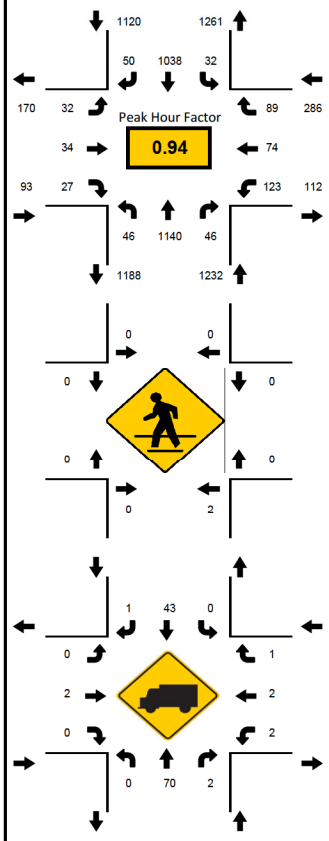
National Data & Surveying Services

15-Min Count Period Beginning At	US 301/S Main St/SR 35 Northbound					US 301/S Main St/SR 35 Southbound					Dr. M.L.K Jr Ave/Huey St Eastbound					Dr. M.L.K Jr Ave/Huey St Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
7:00 AM	2	208	31	1		26	338	0	0		5	9	3	0		10	2	5	0		640	2433
7:15 AM	7	205	21	0		29	223	3	0		9	23	5	0		14	10	7	0		556	2297
7:30 AM	2	258	26	0		21	269	5	0		13	12	7	0		21	19	17	0		670	2339
7:45 AM	1	246	20	0		27	233	0	0		4	1	1	0		23	2	9	0		567	2216
8:00 AM	5	208	16	0		27	214	0	0		7	3	3	0		7	2	12	0		504	2209
8:15 AM	5	225	17	0		14	243	8	0		14	22	9	0		16	13	12	0		598	1705
8:30 AM	3	228	17	0		11	200	8	0		12	17	6	0		20	16	9	0		547	1107
8:45 AM	4	237	10	0		23	240	7	0		4	5	5	0		10	6	9	0		560	560
Peak 15-Min Flowrates	**Northbound**					**Southbound**					**Eastbound**					**Westbound**					**Total**	
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
All Vehicles	28	1032	124	4		116	1352	20	0		52	92	28	0		92	76	68	0		**3084**	
Heavy Trucks	0	124	4	0		8	136	0	0		4	8	0	0		8	0	0	0		**292**	
Pedestrians		0					0					0					0				**0**	
Bicycles	0	0	0	0		0	0	0	0		0	0	0	0		4	4	0	0		**8**	
Buses																						
Stopped Buses																						

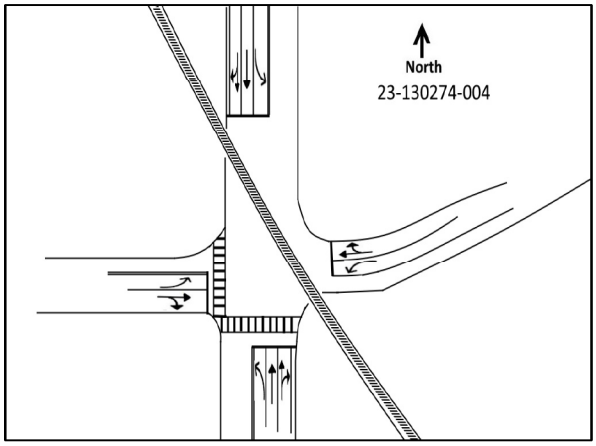
LOCATION: US 301/S Main St/SR 35 & Dr. M.L.K Jr Ave/Huey St
CITY/STATE: Wildwood, FL

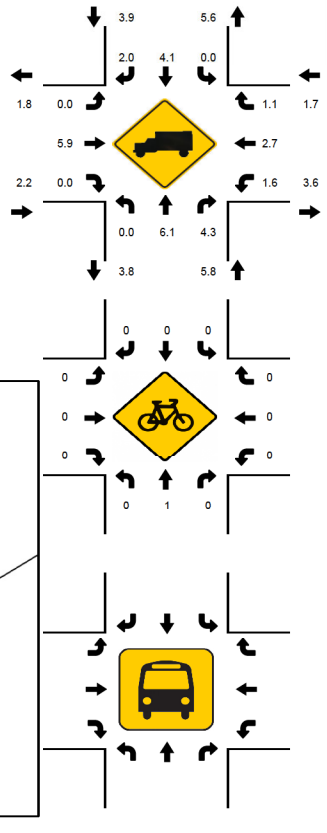
PROJECT ID: 23-130274-004
DATE: Tue, Oct 03, 2023

Peak-Hour: 04:15 PM - 05:15 PM
Peak 15-Minute: 04:30 PM - 04:45 PM



National Data & Surveying Services





15-Min Count Period Beginning At	US 301/S Main St/SR 35 Northbound					US 301/S Main St/SR 35 Southbound					Dr. M.L.K Jr Ave/Huey St Eastbound					Dr. M.L.K Jr Ave/Huey St Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
4:00 PM	4	296	20	0		12	213	11	0		19	14	11	0		29	13	15	0		657	2715
4:15 PM	10	282	8	0		10	258	16	0		8	11	9	0		38	26	18	0		694	2731
4:30 PM	13	304	11	0		10	272	15	0		10	15	8	0		34	10	21	0		723	2710
4:45 PM	13	261	13	0		7	262	8	0		6	3	5	0		26	19	18	0		641	2617
5:00 PM	10	293	14	0		5	246	11	0		8	5	5	0		25	19	32	0		673	2500
5:15 PM	12	314	13	0		1	263	8	0		11	5	7	0		18	9	12	0		673	1827
5:30 PM	10	303	7	0		5	226	16	0		8	3	12	0		24	8	8	0		630	1154
5:45 PM	9	217	15	0		5	193	21	0		13	12	5	0		11	16	7	0		524	524
Peak 15-Min Flowrates	**Northbound**					**Southbound**					**Eastbound**					**Westbound**					**Total**	
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
All Vehicles	52	1216	56	0		40	1088	64	0		40	60	36	0		152	104	128	0		**3036**	
Heavy Trucks	0	96	4	0		0	64	4	0		0	4	0	0		4	4	4	0		**184**	
Pedestrians		4					0					0					0				**4**	
Bicycles	0	4	0	0		0	0	0	0		0	0	0	0		0	0	0	0		**4**	
Buses																						
Stopped Buses																						

2022 PEAK SEASON FACTOR CATEGORY REPORT - REPORT TYPE: ALL

CATEGORY: 1800 SUMTER COUNTYWIDE

MOCF: 0.94

WEEK	DATES	SF	PSCF
1	01/01/2022 - 01/01/2022	1.03	1.10
2	01/02/2022 - 01/08/2022	1.06	1.13
3	01/09/2022 - 01/15/2022	1.09	1.16
4	01/16/2022 - 01/22/2022	1.07	1.14
5	01/23/2022 - 01/29/2022	1.06	1.13
6	01/30/2022 - 02/05/2022	1.04	1.11
7	02/06/2022 - 02/12/2022	1.03	1.10
8	02/13/2022 - 02/19/2022	1.01	1.07
* 9	02/20/2022 - 02/26/2022	0.99	1.05
*10	02/27/2022 - 03/05/2022	0.97	1.03
*11	03/06/2022 - 03/12/2022	0.94	1.00
*12	03/13/2022 - 03/19/2022	0.92	0.98
*13	03/20/2022 - 03/26/2022	0.91	0.97
*14	03/27/2022 - 04/02/2022	0.91	0.97
*15	04/03/2022 - 04/09/2022	0.90	0.96
*16	04/10/2022 - 04/16/2022	0.90	0.96
*17	04/17/2022 - 04/23/2022	0.92	0.98
*18	04/24/2022 - 04/30/2022	0.94	1.00
*19	05/01/2022 - 05/07/2022	0.96	1.02
*20	05/08/2022 - 05/14/2022	0.98	1.04
*21	05/15/2022 - 05/21/2022	1.01	1.07
22	05/22/2022 - 05/28/2022	1.01	1.07
23	05/29/2022 - 06/04/2022	1.01	1.07
24	06/05/2022 - 06/11/2022	1.00	1.06
25	06/12/2022 - 06/18/2022	1.00	1.06
26	06/19/2022 - 06/25/2022	1.00	1.06
27	06/26/2022 - 07/02/2022	0.99	1.05
28	07/03/2022 - 07/09/2022	0.99	1.05
29	07/10/2022 - 07/16/2022	0.99	1.05
30	07/17/2022 - 07/23/2022	1.01	1.07
31	07/24/2022 - 07/30/2022	1.03	1.10
32	07/31/2022 - 08/06/2022	1.05	1.12
33	08/07/2022 - 08/13/2022	1.07	1.14
34	08/14/2022 - 08/20/2022	1.09	1.16
35	08/21/2022 - 08/27/2022	1.10	1.17
36	08/28/2022 - 09/03/2022	1.10	1.17
37	09/04/2022 - 09/10/2022	1.11	1.18
38	09/11/2022 - 09/17/2022	1.11	1.18
39	09/18/2022 - 09/24/2022	1.08	1.15
40	09/25/2022 - 10/01/2022	1.04	1.11
41	10/02/2022 - 10/08/2022	1.01	1.07
42	10/09/2022 - 10/15/2022	0.97	1.03
43	10/16/2022 - 10/22/2022	0.97	1.03
44	10/23/2022 - 10/29/2022	0.97	1.03
45	10/30/2022 - 11/05/2022	0.97	1.03
46	11/06/2022 - 11/12/2022	0.96	1.02
47	11/13/2022 - 11/19/2022	0.96	1.02
48	11/20/2022 - 11/26/2022	0.98	1.04
49	11/27/2022 - 12/03/2022	1.00	1.06
50	12/04/2022 - 12/10/2022	1.02	1.09
51	12/11/2022 - 12/17/2022	1.03	1.10
52	12/18/2022 - 12/24/2022	1.06	1.13
53	12/25/2022 - 12/31/2022	1.09	1.16

* PEAK SEASON

23-FEB-2023 09:11:22 830UPD 5_1800_PKSEASON.TXT

Appendix D

Existing Conditions Synchro Printouts

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	14	962	0	12	482	42	0	0	0	39	0	1
Future Vol, veh/h	14	962	0	12	482	42	0	0	0	39	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	375	-	225	225	-	225	-	-	-	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	25	94
Heavy Vehicles, %	29	9	2	2	12	19	2	2	2	8	2	2
Mvmt Flow	15	1023	0	13	513	45	0	0	0	41	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	558	0	0	1023	0	0	1336	1637	512	1081	1592	257
Stage 1	-	-	-	-	-	-	1053	1053	-	539	539	-
Stage 2	-	-	-	-	-	-	283	584	-	542	1053	-
Critical Hdwy	4.68	-	-	4.14	-	-	7.54	6.54	6.94	7.66	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.66	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.66	5.54	-
Follow-up Hdwy	2.49	-	-	2.22	-	-	3.52	4.02	3.32	3.58	4.02	3.32
Pot Cap-1 Maneuver	844	-	-	674	-	-	112	100	507	165	106	742
Stage 1	-	-	-	-	-	-	242	301	-	479	520	-
Stage 2	-	-	-	-	-	-	700	496	-	477	301	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	844	-	-	674	-	-	109	96	507	160	102	742
Mov Cap-2 Maneuver	-	-	-	-	-	-	195	207	-	284	208	-
Stage 1	-	-	-	-	-	-	238	296	-	470	510	-
Stage 2	-	-	-	-	-	-	686	487	-	469	296	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.2	0	19.6
HCM LOS			A	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	-	844	-	-	674	-	-	284	742
HCM Lane V/C Ratio	-	0.018	-	-	0.019	-	-	0.146	0.001
HCM Control Delay (s)	0	9.3	-	-	10.4	-	-	19.8	9.9
HCM Lane LOS	A	A	-	-	B	-	-	C	A
HCM 95th %tile Q(veh)	-	0.1	-	-	0.1	-	-	0.5	0

Intersection	
Int Delay, s/veh	1.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	72	21	8	26	14	5
Future Vol, veh/h	72	21	8	26	14	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	6	10	2	2	29	20
Mvmt Flow	82	24	9	30	16	6

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	106	0	142	94
Stage 1	-	-	-	-	94	-
Stage 2	-	-	-	-	48	-
Critical Hdwy	-	-	4.12	-	6.69	6.4
Critical Hdwy Stg 1	-	-	-	-	5.69	-
Critical Hdwy Stg 2	-	-	-	-	5.69	-
Follow-up Hdwy	-	-	2.218	-	3.761	3.48
Pot Cap-1 Maneuver	-	-	1485	-	791	916
Stage 1	-	-	-	-	866	-
Stage 2	-	-	-	-	910	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1485	-	786	916
Mov Cap-2 Maneuver	-	-	-	-	786	-
Stage 1	-	-	-	-	866	-
Stage 2	-	-	-	-	905	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.8	9.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	816	-	-	1485	-
HCM Lane V/C Ratio	0.026	-	-	0.006	-
HCM Control Delay (s)	9.5	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	4.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	23	73	29	9	4	37	1	40	1	0	0
Future Vol, veh/h	2	23	73	29	9	4	37	1	40	1	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	8	2	11	2	2	2	8	2	2	2
Mvmt Flow	2	24	77	31	9	4	39	1	42	1	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	13	0	0	101	0	0	140	142	63	161	178	11
Stage 1	-	-	-	-	-	-	67	67	-	73	73	-
Stage 2	-	-	-	-	-	-	73	75	-	88	105	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.28	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.372	3.518	4.018	3.318
Pot Cap-1 Maneuver	1606	-	-	1491	-	-	830	749	985	804	716	1070
Stage 1	-	-	-	-	-	-	943	839	-	937	834	-
Stage 2	-	-	-	-	-	-	937	833	-	920	808	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1606	-	-	1491	-	-	816	733	985	756	700	1070
Mov Cap-2 Maneuver	-	-	-	-	-	-	816	733	-	756	700	-
Stage 1	-	-	-	-	-	-	942	838	-	936	816	-
Stage 2	-	-	-	-	-	-	917	816	-	879	807	-

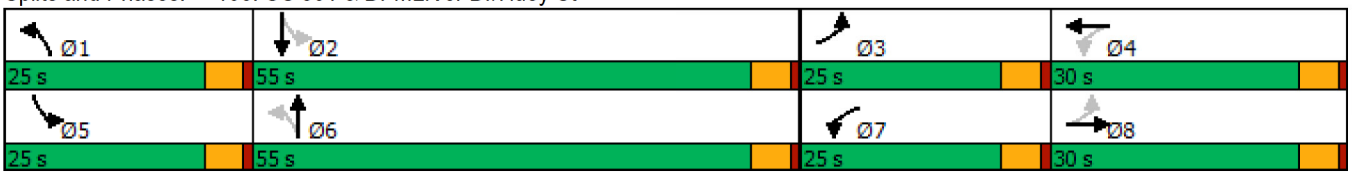
Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	5.2	9.4	9.8
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	893	1606	-	-	1491	-	-	756
HCM Lane V/C Ratio	0.092	0.001	-	-	0.02	-	-	0.001
HCM Control Delay (s)	9.4	7.2	0	-	7.5	0	-	9.8
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.3	0	-	-	0.1	-	-	0

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	31	45	69	33	13	926	104	1074
Future Volume (vph)	31	45	69	33	13	926	104	1074
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	3	8	7	4	1	6	5	2
Permitted Phases	8		4		6		2	
Detector Phase	3	8	7	4	1	6	5	2
Switch Phase								
Minimum Initial (s)	5.0	12.0	5.0	5.0	5.0	35.0	5.0	35.0
Minimum Split (s)	10.0	23.0	10.0	23.0	10.0	40.0	10.0	40.0
Total Split (s)	25.0	30.0	25.0	30.0	25.0	55.0	25.0	55.0
Total Split (%)	18.5%	22.2%	18.5%	22.2%	18.5%	40.7%	18.5%	40.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max
Act Effct Green (s)	16.2	12.2	21.0	14.8	59.2	53.3	67.4	66.6
Actuated g/C Ratio	0.17	0.13	0.22	0.15	0.61	0.55	0.70	0.69
v/c Ratio	0.14	0.29	0.27	0.27	0.04	0.63	0.34	0.53
Control Delay	30.1	39.6	31.7	25.8	7.9	20.3	10.0	12.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.1	39.6	31.7	25.8	7.9	20.3	10.0	12.6
LOS	C	D	C	C	A	C	A	B
Approach Delay		36.4		28.7		20.1		12.3
Approach LOS		D		C		C		B

Intersection Summary	
Cycle Length: 135	
Actuated Cycle Length: 96.9	
Natural Cycle: 85	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.63	
Intersection Signal Delay: 17.5	Intersection LOS: B
Intersection Capacity Utilization 57.9%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 106: US 301 & Dr MLK Jr Dr/Huey St





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	45	16	69	33	38	13	926	99	104	1074	8
Future Volume (veh/h)	31	45	16	69	33	38	13	926	99	104	1074	8
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1811	1796	1870	1841	1870	1870	1870	1737	1870	1841	1737	1870
Adj Flow Rate, veh/h	34	49	18	76	36	42	14	1018	109	114	1180	9
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	6	7	2	4	2	2	2	11	2	4	11	2
Cap, veh/h	273	163	60	294	118	138	276	1647	176	325	1957	15
Arrive On Green	0.03	0.13	0.13	0.05	0.15	0.15	0.02	0.55	0.55	0.05	0.58	0.58
Sat Flow, veh/h	1725	1253	460	1753	787	918	1781	3007	322	1753	3357	26
Grp Volume(v), veh/h	34	0	67	76	0	78	14	558	569	114	580	609
Grp Sat Flow(s),veh/h/ln	1725	0	1713	1753	0	1705	1781	1650	1679	1753	1650	1732
Q Serve(g_s), s	1.5	0.0	3.2	3.4	0.0	3.7	0.3	21.1	21.2	2.5	20.6	20.6
Cycle Q Clear(g_c), s	1.5	0.0	3.2	3.4	0.0	3.7	0.3	21.1	21.2	2.5	20.6	20.6
Prop In Lane	1.00		0.27	1.00		0.54	1.00		0.19	1.00		0.01
Lane Grp Cap(c), veh/h	273	0	223	294	0	256	276	904	919	325	962	1010
V/C Ratio(X)	0.12	0.00	0.30	0.26	0.00	0.30	0.05	0.62	0.62	0.35	0.60	0.60
Avail Cap(c_a), veh/h	596	0	469	587	0	467	637	904	919	618	962	1010
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.8	0.0	36.0	32.0	0.0	34.6	10.5	14.1	14.1	11.0	12.2	12.2
Incr Delay (d2), s/veh	0.2	0.0	0.7	0.5	0.0	0.7	0.1	3.2	3.1	0.6	2.8	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.2	0.0	2.5	2.6	0.0	2.9	0.2	12.2	12.4	1.6	11.6	12.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.0	0.0	36.7	32.5	0.0	35.2	10.5	17.3	17.2	11.6	15.0	14.9
LnGrp LOS	C	A	D	C	A	D	B	B	B	B	B	B
Approach Vol, veh/h		101			154			1141			1303	
Approach Delay, s/veh		35.4			33.9			17.2			14.7	
Approach LOS		D			C			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.5	58.2	7.9	18.7	9.7	55.0	9.7	16.9
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	20.0	50.0	20.0	25.0	20.0	50.0	20.0	25.0
Max Q Clear Time (g_c+I1), s	2.3	22.6	3.5	5.7	4.5	23.2	5.4	5.2
Green Ext Time (p_c), s	0.0	8.7	0.0	0.3	0.2	8.1	0.1	0.3

Intersection Summary	
HCM 6th Ctrl Delay	17.6
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	587	0	18	929	47	1	0	1	36	0	10
Future Vol, veh/h	6	587	0	18	929	47	1	0	1	36	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	375	-	225	225	-	225	-	-	-	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	7	2	2	5	17	2	2	2	2	2	2
Mvmt Flow	7	660	0	20	1044	53	1	0	1	40	0	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1097	0	0	660	0	0	1236	1811	330	1428	1758	522
Stage 1	-	-	-	-	-	-	674	674	-	1084	1084	-
Stage 2	-	-	-	-	-	-	562	1137	-	344	674	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	632	-	-	924	-	-	132	78	666	95	84	499
Stage 1	-	-	-	-	-	-	410	452	-	231	291	-
Stage 2	-	-	-	-	-	-	479	275	-	645	452	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	632	-	-	924	-	-	126	75	666	93	81	499
Mov Cap-2 Maneuver	-	-	-	-	-	-	252	182	-	183	191	-
Stage 1	-	-	-	-	-	-	405	447	-	228	285	-
Stage 2	-	-	-	-	-	-	458	269	-	637	447	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.2	14.9	26.3
HCM LOS			B	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	366	632	-	-	924	-	-	183	499
HCM Lane V/C Ratio	0.006	0.011	-	-	0.022	-	-	0.221	0.023
HCM Control Delay (s)	14.9	10.8	-	-	9	-	-	30.2	12.4
HCM Lane LOS	B	B	-	-	A	-	-	D	B
HCM 95th %tile Q(veh)	0	0	-	-	0.1	-	-	0.8	0.1

Intersection	
Int Delay, s/veh	2.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	39	20	11	54	34	6
Future Vol, veh/h	39	20	11	54	34	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	3	5	2	2	2	2
Mvmt Flow	48	24	13	66	41	7

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	72	0	152	60
Stage 1	-	-	-	-	60	-
Stage 2	-	-	-	-	92	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1528	-	840	1005
Stage 1	-	-	-	-	963	-
Stage 2	-	-	-	-	932	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1528	-	832	1005
Mov Cap-2 Maneuver	-	-	-	-	832	-
Stage 1	-	-	-	-	963	-
Stage 2	-	-	-	-	924	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.2	9.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	854	-	-	1528	-
HCM Lane V/C Ratio	0.057	-	-	0.009	-
HCM Control Delay (s)	9.5	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection	
Int Delay, s/veh	6.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	15	65	31	17	4	92	8	39	1	10	3
Future Vol, veh/h	4	15	65	31	17	4	92	8	39	1	10	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	76	76	76	76	76	76	76	76	76	76	76	76
Heavy Vehicles, %	2	7	2	3	2	2	2	2	2	2	2	2
Mvmt Flow	5	20	86	41	22	5	121	11	51	1	13	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	27	0	0	106	0	0	188	182	63	211	223	25
Stage 1	-	-	-	-	-	-	73	73	-	107	107	-
Stage 2	-	-	-	-	-	-	115	109	-	104	116	-
Critical Hdwy	4.12	-	-	4.13	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.227	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1587	-	-	1479	-	-	772	712	1002	746	676	1051
Stage 1	-	-	-	-	-	-	937	834	-	898	807	-
Stage 2	-	-	-	-	-	-	890	805	-	902	800	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1587	-	-	1479	-	-	740	690	1002	683	655	1051
Mov Cap-2 Maneuver	-	-	-	-	-	-	740	690	-	683	655	-
Stage 1	-	-	-	-	-	-	934	831	-	895	784	-
Stage 2	-	-	-	-	-	-	847	782	-	842	798	-

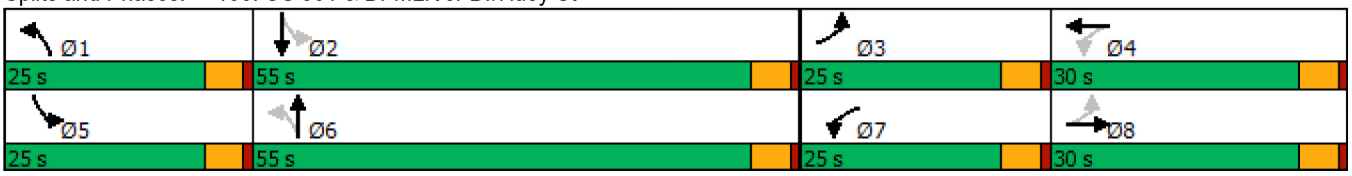
Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	4.5	10.9	10.2
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	795	1587	-	-	1479	-	-	715
HCM Lane V/C Ratio	0.23	0.003	-	-	0.028	-	-	0.026
HCM Control Delay (s)	10.9	7.3	0	-	7.5	0	-	10.2
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.9	0	-	-	0.1	-	-	0.1

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	32	34	124	75	46	1151	32	1048
Future Volume (vph)	32	34	124	75	46	1151	32	1048
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	3	8	7	4	1	6	5	2
Permitted Phases	8		4		6		2	
Detector Phase	3	8	7	4	1	6	5	2
Switch Phase								
Minimum Initial (s)	5.0	12.0	5.0	5.0	5.0	35.0	5.0	35.0
Minimum Split (s)	10.0	23.0	10.0	23.0	10.0	40.0	10.0	40.0
Total Split (s)	25.0	30.0	25.0	30.0	25.0	55.0	25.0	55.0
Total Split (%)	18.5%	22.2%	18.5%	22.2%	18.5%	40.7%	18.5%	40.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max
Act Effct Green (s)	16.0	12.3	24.3	17.4	58.2	54.2	56.7	51.8
Actuated g/C Ratio	0.17	0.13	0.25	0.18	0.61	0.57	0.59	0.54
v/c Ratio	0.14	0.27	0.40	0.52	0.18	0.66	0.14	0.62
Control Delay	28.0	31.1	31.5	34.6	10.0	19.6	9.7	19.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.0	31.1	31.5	34.6	10.0	19.6	9.7	19.8
LOS	C	C	C	C	A	B	A	B
Approach Delay		30.0		33.2		19.2		19.6
Approach LOS		C		C		B		B

Intersection Summary	
Cycle Length: 135	
Actuated Cycle Length: 95.4	
Natural Cycle: 85	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.66	
Intersection Signal Delay: 21.2	Intersection LOS: C
Intersection Capacity Utilization 67.6%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 106: US 301 & Dr MLK Jr Dr/Huey St





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	34	27	124	75	90	46	1151	46	32	1048	51
Future Volume (veh/h)	32	34	27	124	75	90	46	1151	46	32	1048	51
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1811	1870	1870	1856	1870	1870	1811	1841	1870	1841	1870
Adj Flow Rate, veh/h	34	36	29	132	80	96	49	1224	49	34	1115	54
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	6	2	2	3	2	2	6	4	2	4	2
Cap, veh/h	235	119	96	350	138	166	294	1831	73	256	1819	88
Arrive On Green	0.03	0.13	0.13	0.08	0.18	0.18	0.04	0.54	0.54	0.03	0.54	0.54
Sat Flow, veh/h	1781	928	748	1781	768	922	1781	3372	135	1781	3395	164
Grp Volume(v), veh/h	34	0	65	132	0	176	49	624	649	34	574	595
Grp Sat Flow(s),veh/h/ln	1781	0	1676	1781	0	1690	1781	1721	1787	1781	1749	1811
Q Serve(g_s), s	1.5	0.0	3.3	5.7	0.0	8.9	1.1	24.3	24.3	0.8	21.2	21.2
Cycle Q Clear(g_c), s	1.5	0.0	3.3	5.7	0.0	8.9	1.1	24.3	24.3	0.8	21.2	21.2
Prop In Lane	1.00		0.45	1.00		0.55	1.00		0.08	1.00		0.09
Lane Grp Cap(c), veh/h	235	0	215	350	0	304	294	934	970	256	937	970
V/C Ratio(X)	0.14	0.00	0.30	0.38	0.00	0.58	0.17	0.67	0.67	0.13	0.61	0.61
Avail Cap(c_a), veh/h	561	0	449	584	0	453	607	934	970	582	937	970
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.7	0.0	36.9	30.0	0.0	35.0	11.4	15.3	15.3	12.2	15.0	15.0
Incr Delay (d2), s/veh	0.3	0.0	0.8	0.7	0.0	1.7	0.3	3.8	3.7	0.2	3.0	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.2	0.0	2.5	4.5	0.0	6.8	0.7	14.3	14.8	0.5	12.9	13.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.9	0.0	37.6	30.7	0.0	36.8	11.6	19.1	19.0	12.4	18.0	17.9
LnGrp LOS	C	A	D	C	A	D	B	B	B	B	B	B
Approach Vol, veh/h		99			308			1322			1203	
Approach Delay, s/veh		36.4			34.1			18.7			17.8	
Approach LOS		D			C			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.6	55.0	7.9	21.8	7.9	55.7	12.7	17.0
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	20.0	50.0	20.0	25.0	20.0	50.0	20.0	25.0
Max Q Clear Time (g_c+I1), s	3.1	23.2	3.5	10.9	2.8	26.3	7.7	5.3
Green Ext Time (p_c), s	0.1	8.4	0.0	0.8	0.0	9.0	0.3	0.2

Intersection Summary	
HCM 6th Ctrl Delay	20.6
HCM 6th LOS	C

EAGLE EPAC TIMING SHEET

CONTROLLER SETTINGS

Mvmt.	Timing Function	Min Initial	Green Passage	Max I	Green II	Yellow Clear	All Red	Walk	F.D.W.	Recall	Det. Func.
1		5	4.0	20	30	4.0					Lock
2		35	4.0	50	50	4.0	1.0	7	20	min	Non Lock
3		5	4.0	20	30	4.0					Lock
4		5	4.0	25	50	4.0	1.0				Non Lock
5		5	4.0	20	30	4.0					Lock
6		35	4.0	50	50	4.0	1.0			min	Non Lock
7		5	4.0	20	30	4.0					Lock
8		12	4.0	20	30	4.0	1.0	8	22		Non Lock
											Off Set

COORDINATION SETTINGS

Dial 1 AVC	Dial 2/AM	Dial 3/PM
Split Sec	Split Sec	Split Sec

INTERSECTION: 5001 US301 @ CR44A/Hwy

DATE: July 2019

Appendix E

Historical Data/Trends & Future Background Volumes

Sumter County CMP Database

SEGMENT ID	COUNTY STATION	SPEED LIMIT	SEGMENT LENGTH (MI)	ROAD NAME	FROM	TO	LANES (2022)	LANES (2027)	URBAN / RURAL	DIVIDED / UNDIVIDED	ADOPTED LOS STANDARD	DAILY SERVICE VOLUME	2022 AADT	2022 DAILY V/C	2022 DAILY LOS	PEAK HOUR DIRECTIONAL SERVICE VOLUME	2022 PEAK HOUR NB/EB VOLUME	2022 PEAK HOUR SB/WB VOLUME	2022 PEAK HOUR V/C	2022 PEAK HOUR LOS	GROWTH RATE
6000	104	30	1.26	CR 213 (WALKER RD)	SR 44	CR 44A	2	2	URBAN	UNDIVIDED	D	13,320	505	0.04	C	675	34	20	0.05	C	2.75%
3528120	15	35	1.47	CR 44A	US 301/SR 35	CR 139	2	2	URBAN	UNDIVIDED	D	13,320	3,462	0.26	C	675	178	144	0.26	C	1.00%
35281102	12	35	1.54	CR 44A	SR 44 W	CR 213	2	2	URBAN	UNDIVIDED	D	24,200	1,599	0.07	B	1,200	65	103	0.09	B	7.50%
35281103	2020-1100	35	1.13	CR 44A	CR 213	US 301/SR 35	2	2	URBAN	UNDIVIDED	D	24,200	16,341	0.68	C	1,200	406	725	0.60	C	8.00%
35281301	13	35	0.52	CR 44A	CR 139	BUENA VISTA BLVD	4	4	URBAN	DIVIDED	D	30,780	7,827	0.25	C	1,549	307	374	0.24	C	1.00%
35281302	14	25	2.80	CR 44A	BUENA VISTA BLVD	SR 44 (E)	2	2	URBAN	UNDIVIDED	D	24,200	3,155	0.13	B	1,200	119	174	0.15	B	9.25%

January 2021

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2022 HISTORICAL AADT REPORT

COUNTY: 18 - SUMTER

SITE: 8026 - CR-44A, 0.58 MI E OF US-301/MAIN ST - OFF SYSTEM

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2022	3000 F	E 1600	W 1400	9.00	54.00	20.50
2021	3000 C	E 1600	W 1400	9.00	53.00	17.70
2020	2050 C	E 1100	W 950	9.00	54.70	20.20
2019	2700 C	E 1400	W 1300	9.00	53.30	22.00
2018	2300 F	E 1200	W 1100	9.00	53.70	20.00
2017	2300 C	E 1200	W 1100	9.00	53.50	20.10
2016	2500 C	E 1300	W 1200	9.00	53.10	20.90
2015	5800 T	E 3100	W 2700	9.00	54.70	20.70
2014	5600 S	E 3000	W 2600	9.00	55.10	19.80
2013	5600 F	E 3000	W 2600	9.00	56.40	20.00
2012	5600 C	E 3000	W 2600	9.00	56.30	19.50

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE
S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; R = FOURTH YEAR ESTIMATE
V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN
*K FACTOR: STARTING WITH YEAR 2011 IS STANDARDK, PRIOR YEARS ARE K30 VALUES

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2022 HISTORICAL AADT REPORT

COUNTY: 18 - SUMTER

SITE: 0200 - SR-44, 0.57 MI W OF US 301

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2022	19100 F	E 9100	W 10000	9.50	54.00	13.20
2021	19100 C	E 9100	W 10000	9.50	53.00	12.10
2020	14400 F	E 7600	W 6800	9.50	54.70	5.60
2019	15100 C	E 8000	W 7100	9.50	53.30	13.20
2018	15700 F	E 8100	W 7600	9.50	53.70	12.10
2017	15700 C	E 8100	W 7600	9.50	53.50	13.60
2016	14300 C	E 7600	W 6700	9.00	53.10	13.10
2015	13100 C	E 6700	W 6400	9.00	54.70	13.70
2014	13200 C	E 6800	W 6400	9.00	55.10	13.40
2013	12800 C	E 6500	W 6300	9.00	56.40	12.00
2012	12600 C	E 6500	W 6100	9.00	56.30	14.10
2011	12800 C	E 6500	W 6300	9.00	51.30	12.90
2010	13000 S	0	0	9.85	55.51	12.20
2008	13800 C	E 6900	W 6900	10.19	54.63	14.50
2007	14100 C	E 7100	W 7000	10.14	54.93	9.00

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE
S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; R = FOURTH YEAR ESTIMATE
V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN
*K FACTOR: STARTING WITH YEAR 2011 IS STANDARDK, PRIOR YEARS ARE K30 VALUES

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2022 HISTORICAL AADT REPORT

COUNTY: 18 - SUMTER

SITE: 0026 - ON US-301, 0.375 MI. N OF CR-44A (RVL)

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2022	26000 F	N 13000	S 13000	9.00	54.00	12.00
2021	26000 C	N 13000	S 13000	9.00	53.00	12.00
2020	22000 F	N 11000	S 11000	9.00	54.70	9.90
2019	23000 C	N 11500	S 11500	9.00	53.30	9.90
2018	21000 F	N 10500	S 10500	9.00	53.70	15.40
2017	21000 C	N 10500	S 10500	9.00	53.50	15.40
2016	20000 C	N 10000	S 10000	9.00	53.10	13.80
2015	17300 C	N 8500	S 8800	9.00	54.70	13.30
2014	16200 C	N 8200	S 8000	9.00	55.10	13.50
2013	18300 C	N 9300	S 9000	9.00	56.40	13.70
2012	18600 C	N 9500	S 9100	9.00	56.30	11.70
2011	17500 C	N 8600	S 8900	9.00	51.30	10.80
2010	19200 C	N 9800	S 9400	9.85	55.51	10.40
2009	18300 C	N 9100	S 9200	9.88	55.48	11.10
2008	18900 C	N 9600	S 9300	10.19	54.63	12.60
2007	19000 C	N 9800	S 9200	10.14	54.93	11.10

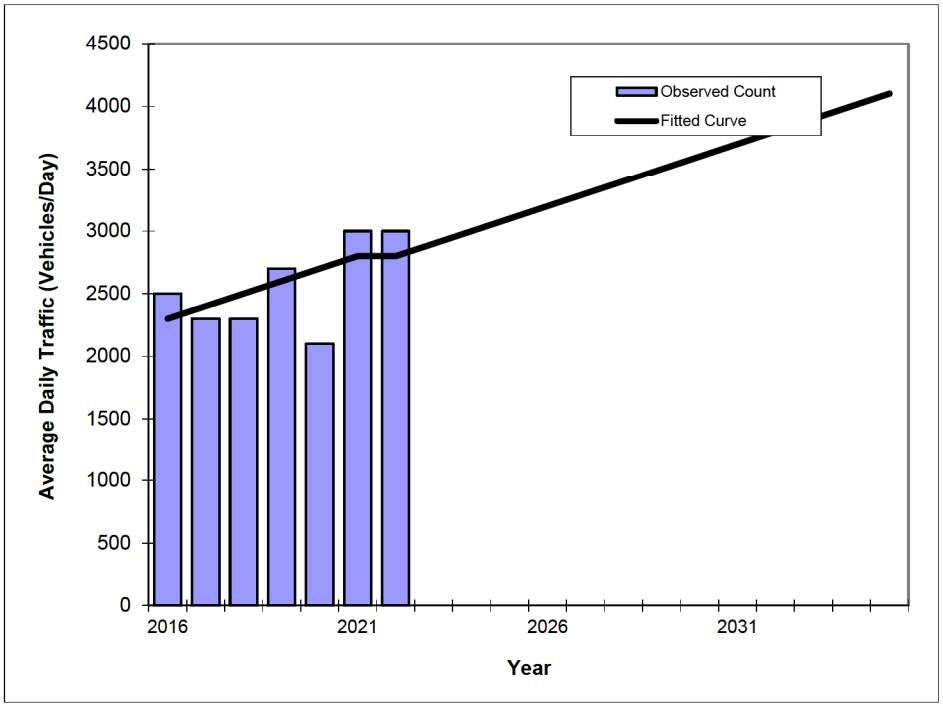
AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE
S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; R = FOURTH YEAR ESTIMATE
V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN
*K FACTOR: STARTING WITH YEAR 2011 IS STANDARDK, PRIOR YEARS ARE K30 VALUES

Traffic Trends - V03.a

CR 44A-East of US 301 --

FIN#	
Location	

County:	Sumter (18)
Station #:	0
Highway:	CR 44A-East of US 301



Year	Traffic (ADT/AADT) Count*	Trend**
2016	2500	2300
2017	2300	2400
2018	2300	2500
2019	2700	2600
2020	2100	2700
2021	3000	2800
2022	3000	2800
2024 Opening Year Trend		
2024	N/A	3000
2025 Mid-Year Trend		
2025	N/A	3100
2026 Design Year Trend		
2026	N/A	3200
TRANPLAN Forecasts/Trends		

*Axle-Adjusted

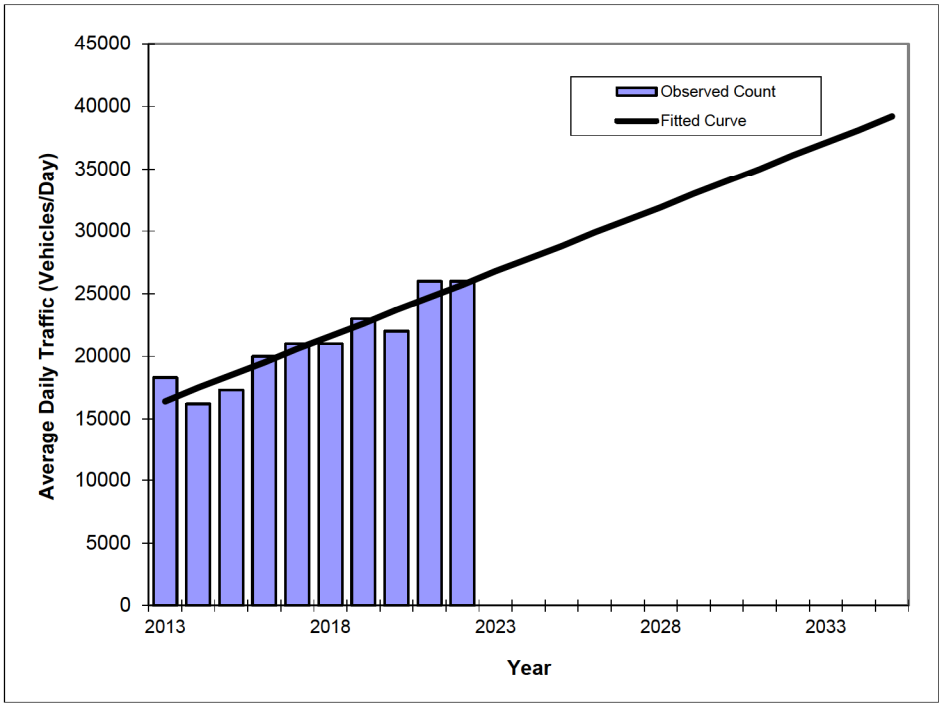
** Annual Trend Increase:	96
Trend R-squared:	34.39%
Trend Annual Historic Growth Rate:	3.62%
Trend Growth Rate (2022 to Design Year):	3.57%
Printed:	9-Oct-23
Straight Line Growth Option	

Traffic Trends - V03.a

US 301-north of CR 44A --

FIN#	
Location	

County:	Sumter (18)
Station #:	0026
Highway:	US 301-north of CR 44A



Year	Traffic (ADT/AADT) Count*	Trend**
2013	18300	16400
2014	16200	17500
2015	17300	18500
2016	20000	19500
2017	21000	20600
2018	21000	21600
2019	23000	22600
2020	22000	23700
2021	26000	24700
2022	26000	25700
2024 Opening Year Trend		
2024	N/A	27800
2025 Mid-Year Trend		
2025	N/A	28800
2026 Design Year Trend		
2026	N/A	29900
TRANPLAN Forecasts/Trends		

**** Annual Trend Increase:**	1,033
Trend R-squared:	88.03%
Trend Annual Historic Growth Rate:	6.30%
Trend Growth Rate (2022 to Design Year):	4.09%
Printed:	9-Oct-23
Straight Line Growth Option	

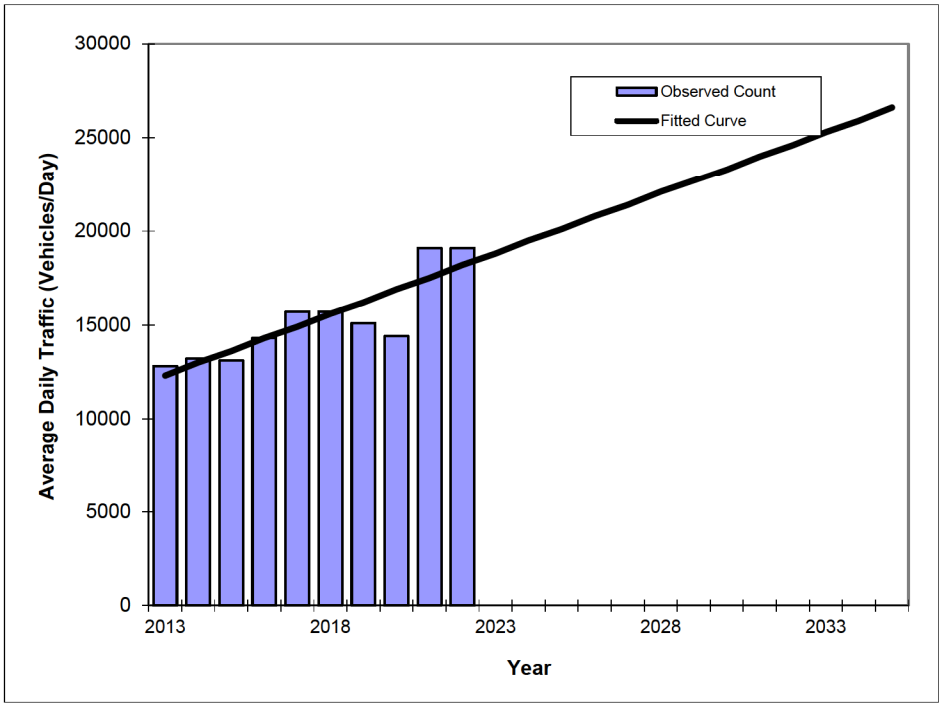
***Axle-Adjusted**

Traffic Trends - V03.a

SR 44 west of US 301 --

FIN#	
Location	

County:	Sumter (18)
Station #:	0200
Highway:	SR 44 west of US 301



Year	Traffic (ADT/AADT) Count*	Trend**
2013	12800	12300
2014	13200	13000
2015	13100	13600
2016	14300	14300
2017	15700	14900
2018	15700	15600
2019	15100	16200
2020	14400	16900
2021	19100	17500
2022	19100	18200
2024 Opening Year Trend		
2024	N/A	19500
2025 Mid-Year Trend		
2025	N/A	20100
2026 Design Year Trend		
2026	N/A	20800
TRANPLAN Forecasts/Trends		

*Axle-Adjusted

** Annual Trend Increase:	648
Trend R-squared:	74.43%
Trend Annual Historic Growth Rate:	5.33%
Trend Growth Rate (2022 to Design Year):	3.57%
Printed:	9-Oct-23
Straight Line Growth Option	

PARKVIEW AT BROWNWOOD

Project № 20034.2, v2.2
January 2021

TRAFFIC IMPACT ANALYSIS
SUMTER COUNTY
FLORIDA

Prepared by:

Traffic & Mobility Consultants
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Prepared for:

Blount Standard LLC
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3.0 PROJECT TRAFFIC

3.1 Trip Generation

The trip generation of the proposed development was calculated using the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 10th Edition*, as summarized in **Table 3**. The ITE information sheets are provided in **Appendix F**.

Table 3
Trip Generation Analysis

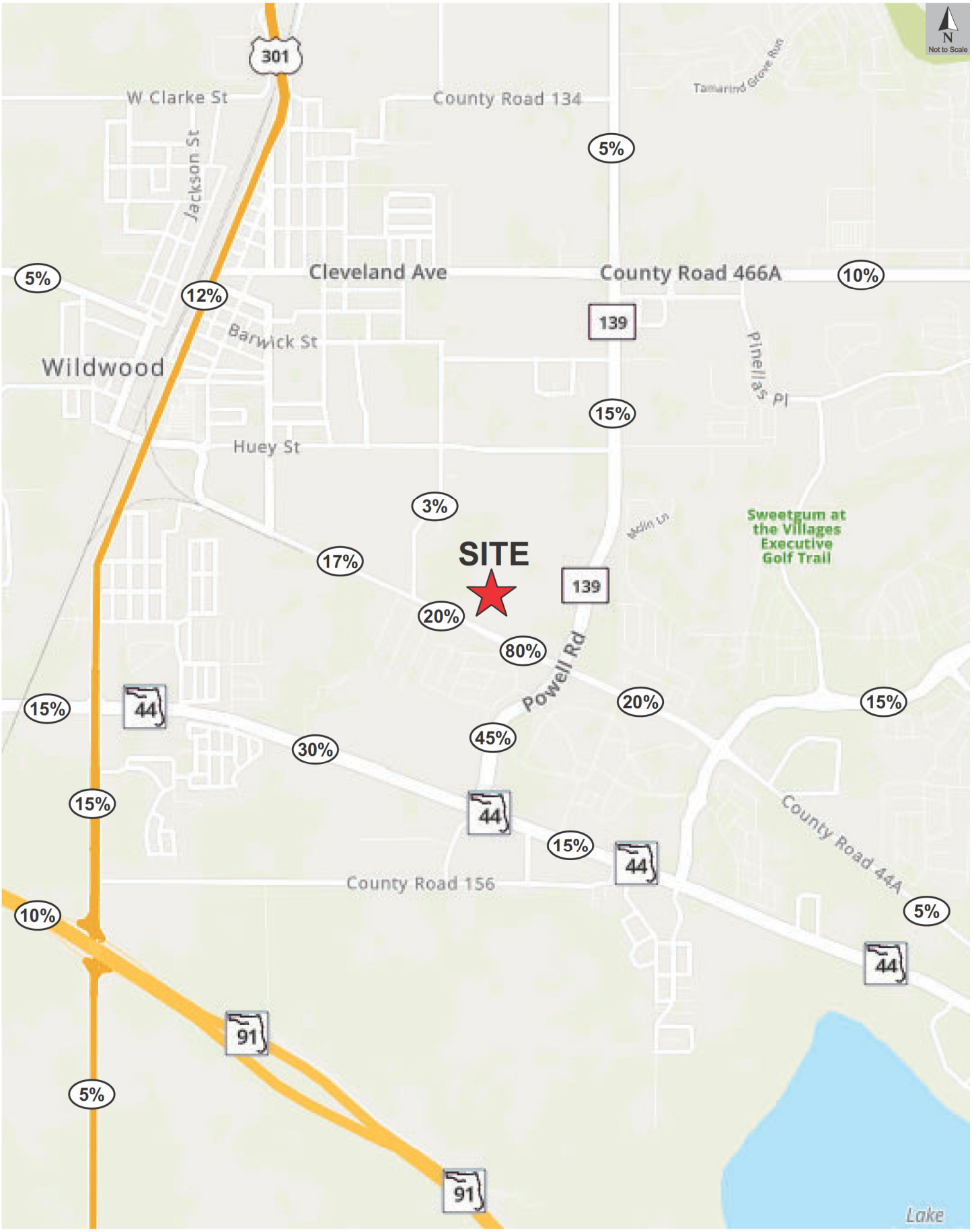
ITE Code	Land Use	Size	Daily		AM Peak Hour				PM Peak Hour			
			Rate	Trips	Rate	Total	Enter	Exit	Rate	Total	Enter	Exit
221	Multi-Family Apartments	350 DU	5.45	1,906	0.36	126	33	93	0.44	154	94	60
252	Senior Housing Attached	185 DU	3.70	685	0.20	37	13	24	0.26	48	26	22
720	Medical Office	76.23 KSF	37.27	2,841	2.30	175	137	38	3.46	264	74	190
820	Commercial	76.23 KSF	65.58	4,999	0.94	72	45	27	5.831	445	214	231
Total Gross Trip Generation				10,431		410	228	182		911	408	503
Internal Trips (12.44% Daily, 4.88% AM, 20.00% PM)				1,298		20	11	9		182	82	101
Pass-By Retail (20%)				875		14	9	5		71	34	37
Net New External Trips				8,258		376	208	168		658	292	365

Trip Generation analysis based on ITE Trip Generation Manual, 10th Edition.
The ITE equations were used when R^2 was greater than 0.75 & has 20 or more studies
Internal Capture based on ITE Trip Generation Handbook, 3rd Edition
Pass-By rate based on ITE Trip Generation Handbook, 3rd Edition is 34%; however, per Sumter County guidelines it may not exceed 20%

The proposed development is projected to generate 8,258 net external trips per day, of which 376 trips occur during the AM peak hour and 658 trips occur during the PM peak hour.

3.2 Trip Distribution

A trip distribution pattern was estimated using the *Central Florida Regional Planning Model*, version 6.1 (CFRPM v6.1) based on the *Florida Standard Urban Transportation Model Structure* (FSUTMS). The model distribution was manually adjusted based on local knowledge and engineering judgement to better reflect prevailing travel and traffic flow patterns. The project trip distribution is presented in **Figure 4**. The model output plot is included in **Appendix G**.



Project Trip Distribution
Parkview at Brownwood
20034.2, v2.2

Figure 4

TWISTED OAKS POINTE
Project № 21101
November 2021

TRAFFIC IMPACT ANALYSIS
CITY OF WILDWOOD
FLORIDA

Prepared by:

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Tampa, Florida 33637

3.0 PROJECT TRAFFIC

3.1 Trip Generation

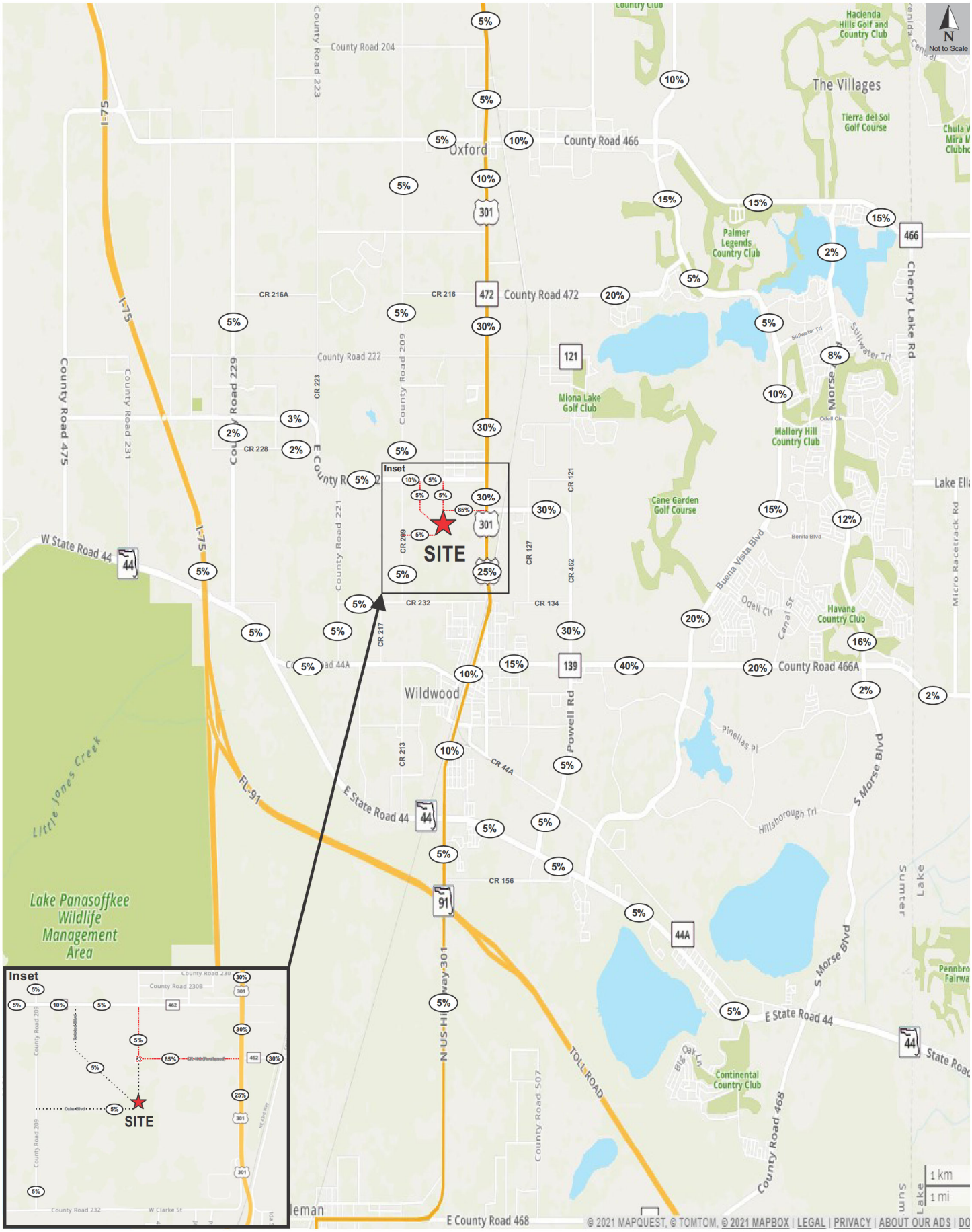
A trip generation analysis was performed for the proposed development using the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 10th Edition*. Pass-by rates were based on Sumter County TIA Guidelines, which are limited to 20%. Internal Capture was calculated based on ITE *Trip Generation Manual, 3rd Edition*. The resulting trip generation analysis is summarized in **Table 4**. ITE information sheets and internal capture calculation spreadsheets are provided in **Appendix G**.

Table 4
Trip Generation Analysis

ITE			Daily		AM Peak Hour				PM Peak Hour			
Code	Land Use	Size	Rate	Trips	Rate	Total	Enter	Exit	Rate	Total	Enter	Exit
210	Single Family Residential (Detached)	736 DU	8.86	6,521	0.72	530	133	397	0.94	692	436	256
220	Multi-Family Residential (Townhouses)	224 DU	7.38	1,653	0.46	103	24	79	0.54	121	76	45
221	Multi-Family Residential (Apartments)	300 DU	5.44	1,632	0.36	108	28	80	0.44	132	81	51
820	Retail/Commercial	162.000 KSF	51.52	8,346	0.94	152	94	58	4.79	776	372	404
	Total Trip Generation			18,152		893	279	614		1,721	965	756
	Internal Capture (12% Daily; 3.5% AM; 12% PM)			1,177		26	6	19		113	71	42
	Pass-by Retail (20%)			1,469		29	18	11		137	65	71
	Net New External Trips			**15,506**		**838**	**254**	**583**		**1,471**	**828**	**643**

Source: Trip generation analysis is based on ITE Trip Generation Manual, 10th Edition
ITE regression equations are used when R-squared is greater than 0.75 or number of studies ≥20
Internal Capture was calaculated based on ITE Trip Generation Manual, 3rd Edition and provided in the Attachments
Daily internal capture was based on the average for AM (3.5%) and PM (20.5%) calculated values. PM internal capture was limited to 12%
Pass-by rates are based on Sumter County TIA Guidelines (Max 20%)

The proposed development is projected to generate 15,506 daily external trips, of which 838 trips occur during the AM peak hour and 1,471 trips occur during the PM peak hour.



Project Trip Distribution
Twisted Oaks Pointe
21101

Figure
4

NEW HORIZON PLAZA
Project № 21170.1, v1.1
May 2023

TRAFFIC IMPACT ANALYSIS
CITY OF WILDWOOD
FLORIDA

Prepared by:

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Chimienti Realty Associates
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Bronx, New York 10461

3.0 PROJECT TRAFFIC

3.1 Trip Generation

A trip generation analysis was performed for the proposed development using the *Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition*. The resulting trip generation analysis is summarized in **Table 4**, and the calculations of internal capture and pass-by trip reductions are summarized in **Table 5**. Detailed ITE trip generation sheets are provided in **Appendix G**, and the internal capture and pass-by rates are provided in **Appendix H**.

Table 4
Trip Generation Analysis

ITE			Daily		AM Peak Hour				PM Peak Hour			
Code	Land Use	Size	Rate	Trips	Rate	Total	Enter	Exit	Rate	Total	Enter	Exit
151	Mini-Warehouse	100.00 KSF	1.45	145	0.09	9	5	4	0.15	15	7	8
710	General Office	30.00 KSF	13.57	407	1.98	59	52	7	2.04	61	10	51
720	Medical Office	30.00 KSF	36.00	1,080	2.72	82	65	17	3.96	119	36	83
822	Retail/Commercial Plaza	6.00 KSF	54.45	327	2.36	14	8	6	6.59	40	20	20
843	Automobile Parts Sales	8.00 KSF	54.57	437	2.51	20	11	9	4.90	39	19	20
848	Tire Store	6.30 KSF	27.69	174	2.61	16	10	6	3.75	23	10	13
934	Fast Food Restaurant with Drive-Through Window	3.30 KSF	467.48	1,543	44.61	147	75	72	33.03	109	57	52
937	Coffee Shop with Drive-Through Window	3.00 KSF	533.57	1,601	85.88	258	132	126	38.99	117	59	58
945	Convenience Market/Gas Station*	5.00 KSF	700.43	3,502	55.62	278	139	139	54.52	272	136	136
		Total Trip Generation		9,216		883	497	386		795	354	441
		Net New External Trips		**7,713**		**736**	**414**	**323**		**671**	**294**	**377**

Trip generation analysis is based on ITE Trip Generation Manual, 11th Edition
**Land use subcategory of 9-15 vehicle fueling positions assumed based on land use size*
***See Table 3 for Internal Capture and Passby Trip Reductions*

Tillman Oaks Subdivision

Sumter County, Florida

TRAFFIC IMPACT STUDY

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May 2023 (Revised)

3. 0 TRIP GENERATION

To determine the impact of this development, an analysis of its trip generation characteristics was conducted. This included a determination of the trips to be generated as well as their distribution and assignment to the surrounding roadways. The project buildout is 2025.

3.1 Trip Generation

Table 3 summarizes the trip generation analysis conducted using information published by the Institute of Transportation Engineers (ITE) in the *Trip Generation Manual, 11th Edition*.

The calculation indicated that the proposed development would generate a total of 2,847 daily trips of which 208 and 263 will occur during the AM and PM peak hour, respectively.

The ITE Trip Generation graphs are included as part of the *Methodology Memorandum* in **Appendix B.**

Table 3: Trip Generation

ITE Code	Land Use	Size	Daily		AM Peak Hour				PM Peak Hour			
			Rate	Trips	Rate	Enter	Exit	Total	Rate	Enter	Exit	Total
210	Single Family	203 DUs	9.53	1,935	0.91	48	137	185	0.95	122	71	193
821	Shopping Plaza - No Supermarket	15 KSF	67.52	1,013	1.73	16	10	26	5.19	38	40	78
Internally Captured Trips for Shopping Plaza			--	101	--	2	1	3	--	4	4	8
Total			**--**	**2,847**	**--**	**62**	**146**	**208**	**--**	**156**	**107**	**263**

Note: Pass-by was not assessed on the commercial property as the adjacent roadways have low volume.

3.2 Trip Distribution/Assignment

The trip distribution pattern was derived using existing traffic counts and knowledge of the traffic patterns, including planned improvements, in the area to develop a distribution pattern discussed in the Methodology Memorandum in **Appendix B**.

The trip distribution pattern used in the analysis is provided in **Figure 2.**

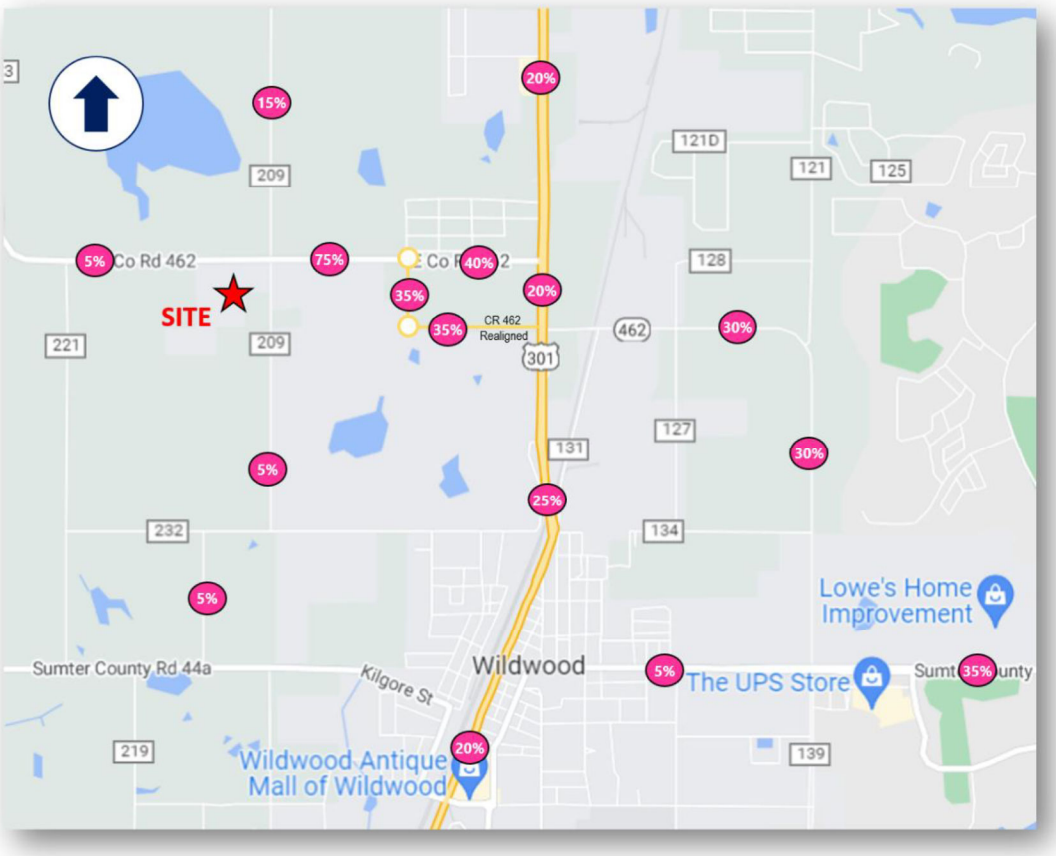


Figure 2: Trip Distribution Map

Appendix F

Turning Movement Worksheets

SR 44 at CR 213
AM Peak Hour

Existing TMCs

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Existing Count	0	14	952	0	12	0	477	42	0	0	0	0	0	39	0	1
Date of Count	10/3/2023				SF				1.01							
Adjusted Count	0	14	962	0	12	0	482	42	0	0	0	0	0	39	0	1

Future Background Year 2026

Annual Growth Rate	0.0%	3.6%	3.6%	3.6%	0.0%	3.6%	3.6%	3.6%	0.0%	0.0%	0.0%	0.0%	0.0%	2.8%	2.8%	2.8%
Simple Volume Growth	0	2	104	0	0	0	52	5	0	0	0	0	0	3	0	0
Vested Trips	West Leg				East Leg				South Leg				North Leg			
Twisted Oaks Pointe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Parkview at Brownwood	0	0	55	0	0	0	31	0	0	0	0	0	0	0	0	0
Tillman Oaks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New Horizon Plaza	0	0	41	0	0	0	32	0	0	0	0	0	0	0	0	0
Vested (Total)	0	0	96	0	0	0	63	0	0	0	0	0	0	0	0	0
Applied Bckgrnd Growth	0	2	104	0	0	0	63	5	0	0	0	0	0	3	0	0
Total Bckgrnd Pk-Hr Vols	0	16	1,066	0	12	0	545	47	0	0	0	0	0	42	0	1

* Applied backgrnd growth based on the higher of "**Simple Volume Growth**" or "**Vested (total)**"

Project Trips

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
New Ext Inbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	33.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	0	0	0	0	0	0	15	0	0	0	0	0	0	0	0
New Ext Outbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	33.0%	0.0%	0.0%
Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	44	0	0
Total Project Trips	0	0	0	0	0	0	0	15	0	0	0	0	0	44	0	0

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Total Pk-Hr Volumes	0	16	1,066	0	12	0	545	62	0	0	0	0	0	86	0	1

SR 44 at CR 213
PM Peak Hour

Existing TMCs

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Existing Count	1	5	581	0	15	3	920	47	0	1	0	1	0	36	0	10
Date of Count	10/3/2023				SF				1.01							
Adjusted Count	1	5	587	0	15	3	929	47	0	1	0	1	0	36	0	10

Future Background Year 2026

Annual Growth Rate	0.0%	3.6%	3.6%	3.6%	0.0%	3.6%	3.6%	3.6%	0.0%	0.0%	0.0%	0.0%	0.0%	2.8%	2.8%	2.8%
Simple Volume Growth	0	1	63	0	0	0	100	5	0	0	0	0	0	3	0	1
Vested Trips	West Leg				East Leg				South Leg				North Leg			
Twisted Oaks Pointe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Parkview at Brownwood	0	0	99	0	0	0	44	0	0	0	0	0	0	0	0	0
Tillman Oaks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New Horizon Plaza	0	0	29	0	0	0	38	0	0	0	0	0	0	0	0	0
Vested (Total)	0	0	128	0	0	0	82	0	0	0	0	0	0	0	0	0
Applied Bckgrnd Growth	0	1	128	0	0	0	100	5	0	0	0	0	0	3	0	1
Total Bckgrnd Pk-Hr Vols	1	6	715	0	15	3	1,029	52	0	1	0	1	0	39	0	11

* Applied backgrnd growth based on the higher of "**Simple Volume Growth**" or "**Vested (total)**"

Project Trips

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
New Ext Inbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	33.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	0	0	0	0	0	0	40	0	0	0	0	0	0	0	0
New Ext Outbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	33.0%	0.0%	0.0%
Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	28	0	0
Total Project Trips	0	0	0	0	0	0	0	40	0	0	0	0	0	28	0	0

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Total Pk-Hr Volumes	1	6	715	0	15	3	1,029	92	0	1	0	1	0	67	0	11

CR 213 at Project Driveway #1
AM Peak Hour

Existing TMCs

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Existing Count	0	0	0	0	0	0	0	0	0	0	19	0	0	0	29	0
Date of Count	10/3/2023				SF				1.01							
Adjusted Count	0	0	0	0	0	0	0	0	0	0	19	0	0	0	29	0

Future Background Year 2026

Annual Growth Rate	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.8%	0.0%	0.0%	0.0%	2.8%	0.0%
Simple Volume Growth	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0
Vested Trips	West Leg				East Leg				South Leg				North Leg			
Twisted Oaks Pointe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Parkview at Brownwood	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tillman Oaks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New Horizon Plaza	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vested (Total)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Applied Bckgrnd Growth	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0
Total Bckgrnd Pk-Hr Vols	0	0	0	0	0	0	0	0	0	0	21	0	0	0	31	0

* Applied backgrnd growth based on the higher of "**Simple Volume Growth**" or "**Vested (total)**"

Project Trips

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
New Ext Inbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	33.0%	0.0%	17.0%	0.0%	0.0%
Volume	0	0	0	0	0	0	0	0	0	0	0	15	0	7	0	0
New Ext Outbound	0.0%	0.0%	0.0%	0.0%	0.0%	33.0%	0.0%	17.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	0	0	0	0	44	0	22	0	0	0	0	0	0	0	0
Total Project Trips	0	0	0	0	0	44	0	22	0	0	0	15	0	7	0	0

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Total Pk-Hr Volumes	0	0	0	0	0	44	0	22	0	0	21	15	0	7	31	0

CR 213 at Project Driveway #1
PM Peak Hour

Existing TMCs

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Existing Count	0	0	0	0	0	0	0	0	0	0	40	0	0	0	31	0
Date of Count	10/3/2023				SF				1.01							
Adjusted Count	0	0	0	0	0	0	0	0	0	0	40	0	0	0	31	0

Future Background Year 2026

Annual Growth Rate	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.8%	0.0%	0.0%	0.0%	2.8%	0.0%
Simple Volume Growth	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	0
Vested Trips	West Leg				East Leg				South Leg				North Leg			
Twisted Oaks Pointe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Parkview at Brownwood	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tillman Oaks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New Horizon Plaza	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vested (Total)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Applied Bckgrnd Growth	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	0
Total Bckgrnd Pk-Hr Vols	0	0	0	0	0	0	0	0	0	0	43	0	0	0	34	0

* Applied backgrnd growth based on the higher of "**Simple Volume Growth**" or "**Vested (total)**"

Project Trips

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
New Ext Inbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	33.0%	0.0%	17.0%	0.0%	0.0%
Volume	0	0	0	0	0	0	0	0	0	0	0	40	0	21	0	0
New Ext Outbound	0.0%	0.0%	0.0%	0.0%	0.0%	33.0%	0.0%	17.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	0	0	0	0	28	0	14	0	0	0	0	0	0	0	0
Total Project Trips	0	0	0	0	0	28	0	14	0	0	0	40	0	21	0	0

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Total Pk-Hr Volumes	0	0	0	0	0	28	0	14	0	0	43	40	0	21	34	0

CR 213 at CR 44A
AM Peak Hour

Existing TMCs

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Existing Count	0	0	71	21	0	8	26	0	0	14	0	5	0	0	0	0
Date of Count	10/3/2023				SF				1.01							
Adjusted Count	0	0	72	21	0	8	26	0	0	14	0	5	0	0	0	0

Future Background Year 2026

Annual Growth Rate	0.0%	0.0%	7.5%	7.5%	0.0%	8.0%	8.0%	0.0%	0.0%	2.8%	0.0%	2.8%	0.0%	0.0%	0.0%	0.0%
Simple Volume Growth	0	0	16	5	0	2	6	0	0	1	0	0	0	0	0	0
Vested Trips	West Leg				East Leg				South Leg				North Leg			
Twisted Oaks Pointe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Parkview at Brownwood	0	0	18	0	0	0	10	0	0	0	0	0	0	0	0	0
Tillman Oaks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New Horizon Plaza	0	0	8	0	0	0	7	0	0	0	0	0	0	0	0	0
Vested (Total)	0	0	26	0	0	0	17	0	0	0	0	0	0	0	0	0
Applied Bckgrnd Growth	0	0	26	5	0	2	17	0	0	1	0	0	0	0	0	0
Total Bckgrnd Pk-Hr Vols	0	0	98	26	0	10	43	0	0	15	0	5	0	0	0	0

* Applied backgrnd growth based on the higher of "**Simple Volume Growth**" or "**Vested (total)**"

Project Trips

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
New Ext Inbound	0.0%	0.0%	16.0%	17.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	0	7	7	0	0	0	0	0	0	0	0	0	0	0	0
New Ext Outbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	16.0%	0.0%	0.0%	17.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	0	0	0	0	0	21	0	0	22	0	0	0	0	0	0
Total Project Trips	0	0	7	7	0	0	21	0	0	22	0	0	0	0	0	0

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Total Pk-Hr Volumes	0	0	105	33	0	10	64	0	0	37	0	5	0	0	0	0

CR 213 at CR 44A
PM Peak Hour

Existing TMCs

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Existing Count	0	0	39	20	0	11	53	0	0	34	0	6	0	0	0	0
Date of Count	10/3/2023				SF				1.01							
Adjusted Count	0	0	39	20	0	11	54	0	0	34	0	6	0	0	0	0

Future Background Year 2026

Annual Growth Rate	0.0%	0.0%	7.5%	7.5%	0.0%	8.0%	8.0%	0.0%	0.0%	2.8%	0.0%	2.8%	0.0%	0.0%	0.0%	0.0%
Simple Volume Growth	0	0	9	5	0	3	13	0	0	3	0	0	0	0	0	0
Vested Trips	West Leg				East Leg				South Leg				North Leg			
Twisted Oaks Pointe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Parkview at Brownwood	0	0	32	0	0	0	14	0	0	0	0	0	0	0	0	0
Tillman Oaks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New Horizon Plaza	0	0	6	0	0	0	8	0	0	0	0	0	0	0	0	0
Vested (Total)	0	0	38	0	0	0	22	0	0	0	0	0	0	0	0	0
Applied Bckgrnd Growth	0	0	38	5	0	3	22	0	0	3	0	0	0	0	0	0
Total Bckgrnd Pk-Hr Vols	0	0	77	25	0	14	76	0	0	37	0	6	0	0	0	0

* Applied backgrnd growth based on the higher of "**Simple Volume Growth**" or "**Vested (total)**"

Project Trips

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
New Ext Inbound	0.0%	0.0%	16.0%	17.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	0	20	21	0	0	0	0	0	0	0	0	0	0	0	0
New Ext Outbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	16.0%	0.0%	0.0%	17.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	0	0	0	0	0	13	0	0	14	0	0	0	0	0	0
Total Project Trips	0	0	20	21	0	0	13	0	0	14	0	0	0	0	0	0

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Total Pk-Hr Volumes	0	0	97	46	0	14	89	0	0	51	0	6	0	0	0	0

CR 44A at Project Driveway #2
AM Peak Hour

Existing TMCs

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Existing Count	0	0	76	0	0	0	34	0	0	0	0	0	0	0	0	0
Date of Count	10/3/2023				SF				1.01							
Adjusted Count	0	0	77	0	0	0	34	0	0	0	0	0	0	0	0	0

Future Background Year 2026

Annual Growth Rate	0.0%	0.0%	8.0%	0.0%	0.0%	0.0%	8.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Simple Volume Growth	0	0	18	0	0	0	8	0	0	0	0	0	0	0	0	0
Vested Trips	West Leg				East Leg				South Leg				North Leg			
Twisted Oaks Pointe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Parkview at Brownwood	0	0	18	0	0	0	10	0	0	0	0	0	0	0	0	0
Tillman Oaks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New Horizon Plaza	0	0	8	0	0	0	7	0	0	0	0	0	0	0	0	0
Vested (Total)	0	0	26	0	0	0	17	0	0	0	0	0	0	0	0	0
Applied Bckgrnd Growth	0	0	26	0	0	0	17	0	0	0	0	0	0	0	0	0
Total Bckgrnd Pk-Hr Vols	0	0	103	0	0	0	51	0	0	0	0	0	0	0	0	0

* Applied backgrnd growth based on the higher of "**Simple Volume Growth**" or "**Vested (total)**"

Project Trips

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
New Ext Inbound	0.0%	0.0%	0.0%	16.0%	0.0%	34.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	0	0	7	0	15	0	0	0	0	0	0	0	0	0	0
New Ext Outbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	16.0%	0.0%	34.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	0	0	0	0	0	0	0	0	21	0	45	0	0	0	0
Total Project Trips	0	0	0	7	0	15	0	0	0	21	0	45	0	0	0	0

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Total Pk-Hr Volumes	0	0	103	7	0	15	51	0	0	21	0	45	0	0	0	0

CR 44A at Project Driveway #2
PM Peak Hour

Existing TMCs

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Existing Count	0	0	45	0	0	0	64	0	0	0	0	0	0	0	0	0
Date of Count	10/3/2023				SF				1.01							
Adjusted Count	0	0	45	0	0	0	65	0	0	0	0	0	0	0	0	0

Future Background Year 2026

Annual Growth Rate	0.0%	0.0%	8.0%	0.0%	0.0%	0.0%	8.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Simple Volume Growth	0	0	11	0	0	0	16	0	0	0	0	0	0	0	0	0
Vested Trips	West Leg				East Leg				South Leg				North Leg			
Twisted Oaks Pointe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Parkview at Brownwood	0	0	32	0	0	0	14	0	0	0	0	0	0	0	0	0
Tillman Oaks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New Horizon Plaza	0	0	6	0	0	0	8	0	0	0	0	0	0	0	0	0
Vested (Total)	0	0	38	0	0	0	22	0	0	0	0	0	0	0	0	0
Applied Bckgrnd Growth	0	0	38	0	0	0	22	0	0	0	0	0	0	0	0	0
Total Bckgrnd Pk-Hr Vols	0	0	83	0	0	0	87	0	0	0	0	0	0	0	0	0

* Applied backgrnd growth based on the higher of "**Simple Volume Growth**" or "**Vested (total)**"

Project Trips

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
New Ext Inbound	0.0%	0.0%	0.0%	16.0%	0.0%	34.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	0	0	20	0	41	0	0	0	0	0	0	0	0	0	0
New Ext Outbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	16.0%	0.0%	34.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	0	0	0	0	0	0	0	0	13	0	29	0	0	0	0
Total Project Trips	0	0	0	20	0	41	0	0	0	13	0	29	0	0	0	0

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Total Pk-Hr Volumes	0	0	83	20	0	41	87	0	0	13	0	29	0	0	0	0

CR 44A at Dr. MLK Jr Drive
AM Peak Hour

Existing TMCs

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Existing Count	0	2	23	72	0	29	9	4	0	37	1	40	0	1	0	0
Date of Count	10/3/2023				SF				1.01							
Adjusted Count	0	2	23	73	0	29	9	4	0	37	1	40	0	1	0	0

Future Background Year 2026

Annual Growth Rate	0.0%	0.0%	2.0%	8.0%	0.0%	2.0%	2.0%	2.0%	0.0%	8.0%	0.0%	2.0%	0.0%	0.0%	0.0%	0.0%
Simple Volume Growth	0	0	1	18	0	2	1	0	0	9	0	2	0	0	0	0
Vested Trips	West Leg				East Leg				South Leg				North Leg			
Twisted Oaks Pointe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Parkview at Brownwood	0	0	0	18	0	0	0	0	0	10	0	0	0	0	0	0
Tillman Oaks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New Horizon Plaza	0	0	0	8	0	0	0	0	0	7	0	0	0	0	0	0
Vested (Total)	0	0	0	26	0	0	0	0	0	17	0	0	0	0	0	0
Applied Bckgrnd Growth	0	0	1	26	0	2	1	0	0	17	0	2	0	0	0	0
Total Bckgrnd Pk-Hr Vols	0	2	24	99	0	31	10	4	0	54	1	42	0	1	0	0

* Applied backgrnd growth based on the higher of "**Simple Volume Growth**" or "**Vested (total)**"

Project Trips

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
New Ext Inbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	34.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	0	0	0	0	0	0	0	0	15	0	0	0	0	0	0
New Ext Outbound	0.0%	0.0%	0.0%	34.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	0	0	45	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	0	0	45	0	0	0	0	0	15	0	0	0	0	0	0

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Total Pk-Hr Volumes	0	2	24	144	0	31	10	4	0	69	1	42	0	1	0	0

CR 44A at Dr. MLK Jr Drive
PM Peak Hour

Existing TMCs

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Existing Count	0	4	15	64	0	31	17	4	0	91	8	39	0	1	10	3
Date of Count	10/3/2023				SF				1.01							
Adjusted Count	0	4	15	65	0	31	17	4	0	92	8	39	0	1	10	3

Future Background Year 2026

Annual Growth Rate	0.0%	0.0%	2.0%	8.0%	0.0%	2.0%	2.0%	2.0%	0.0%	8.0%	0.0%	2.0%	0.0%	0.0%	0.0%	0.0%
Simple Volume Growth	0	0	1	16	0	2	1	0	0	22	0	2	0	0	0	0
Vested Trips	West Leg				East Leg				South Leg				North Leg			
Twisted Oaks Pointe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Parkview at Brownwood	0	0	0	32	0	0	0	0	0	14	0	0	0	0	0	0
Tillman Oaks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New Horizon Plaza	0	0	0	6	0	0	0	0	0	8	0	0	0	0	0	0
Vested (Total)	0	0	0	38	0	0	0	0	0	22	0	0	0	0	0	0
Applied Bckgrnd Growth	0	0	1	38	0	2	1	0	0	22	0	2	0	0	0	0
Total Bckgrnd Pk-Hr Vols	0	4	16	103	0	33	18	4	0	114	8	41	0	1	10	3

* Applied backgrnd growth based on the higher of "**Simple Volume Growth**" or "**Vested (total)**"

Project Trips

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
New Ext Inbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	34.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	0	0	0	0	0	0	0	0	41	0	0	0	0	0	0
New Ext Outbound	0.0%	0.0%	0.0%	34.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	0	0	29	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	0	0	29	0	0	0	0	0	41	0	0	0	0	0	0

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Total Pk-Hr Volumes	0	4	16	132	0	33	18	4	0	155	8	41	0	1	10	3

US 301 at Dr. MLK Jr Drive
AM Peak Hour

Existing TMCs

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Existing Count	0	31	45	16	0	68	33	38	1	12	917	98	0	103	1,063	8
Date of Count	10/3/2023				SF				1.01							
Adjusted Count	0	31	45	16	0	69	33	38	1	12	926	99	0	104	1,074	8

Future Background Year 2026

Annual Growth Rate	0.0%	8.0%	8.0%	8.0%	0.0%	3.6%	3.6%	3.6%	0.0%	4.1%	4.1%	4.1%	0.0%	4.1%	4.1%	4.1%
Simple Volume Growth	0	7	11	4	0	7	4	4	0	1	114	12	0	13	132	1
Vested Trips	West Leg				East Leg				South Leg				North Leg			
Twisted Oaks Pointe	0	0	0	0	0	0	0	0	0	0	25	0	0	0	58	0
Parkview at Brownwood	0	0	18	0	0	0	10	25	0	0	0	0	0	44	0	0
Tillman Oaks	0	0	0	0	0	0	0	0	0	0	12	0	0	0	29	0
New Horizon Plaza	0	0	0	8	0	12	0	0	0	7	65	10	0	0	83	0
Vested (Total)	0	0	18	8	0	12	10	25	0	7	102	10	0	44	170	0
Applied Bckgrnd Growth	0	7	18	8	0	12	10	25	0	7	114	12	0	44	170	1
Total Bckgrnd Pk-Hr Vols	0	38	63	24	0	81	43	63	1	19	1,040	111	0	148	1,244	9

* Applied backgrnd growth based on the higher of "**Simple Volume Growth**" or "**Vested (total)**"

Project Trips

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
New Ext Inbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	6.0%	0.0%	0.0%	2.0%	0.0%	0.0%	0.0%	0.0%	0.0%	25.0%
Volume	0	0	0	0	0	0	3	0	0	1	0	0	0	0	0	11
New Ext Outbound	0.0%	25.0%	6.0%	2.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	33	8	3	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	33	8	3	0	0	3	0	0	1	0	0	0	0	0	11

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Total Pk-Hr Volumes	0	71	71	27	0	81	46	63	1	20	1,040	111	0	148	1,244	20

US 301 at Dr. MLK Jr Drive
PM Peak Hour

Existing TMCs

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Existing Count	0	32	34	27	0	123	74	89	0	46	1,140	46	0	32	1,038	50
Date of Count	10/3/2023				SF				1.01							
Adjusted Count	0	32	34	27	0	124	75	90	0	46	1,151	46	0	32	1,048	51

Future Background Year 2026

Annual Growth Rate	0.0%	8.0%	8.0%	8.0%	0.0%	3.6%	3.6%	3.6%	0.0%	4.1%	4.1%	4.1%	0.0%	4.1%	4.1%	4.1%
Simple Volume Growth	0	8	8	6	0	13	8	10	0	6	142	6	0	4	129	6
Vested Trips	West Leg				East Leg				South Leg				North Leg			
Twisted Oaks Pointe	0	0	0	0	0	0	0	0	0	0	83	0	0	0	64	0
Parkview at Brownwood	0	0	32	0	0	0	14	35	0	0	0	0	0	79	0	0
Tillman Oaks	0	0	0	0	0	0	0	0	0	0	31	0	0	0	21	0
New Horizon Plaza	0	0	0	6	0	9	0	0	0	8	75	11	0	0	59	0
Vested (Total)	0	0	32	6	0	9	14	35	0	8	189	11	0	79	144	0
Applied Bckgrnd Growth	0	8	32	6	0	13	14	35	0	8	189	11	0	79	144	6
Total Bckgrnd Pk-Hr Vols	0	40	66	33	0	137	89	125	0	54	1,340	57	0	111	1,192	57

* Applied backgrnd growth based on the higher of "**Simple Volume Growth**" or "**Vested (total)**"

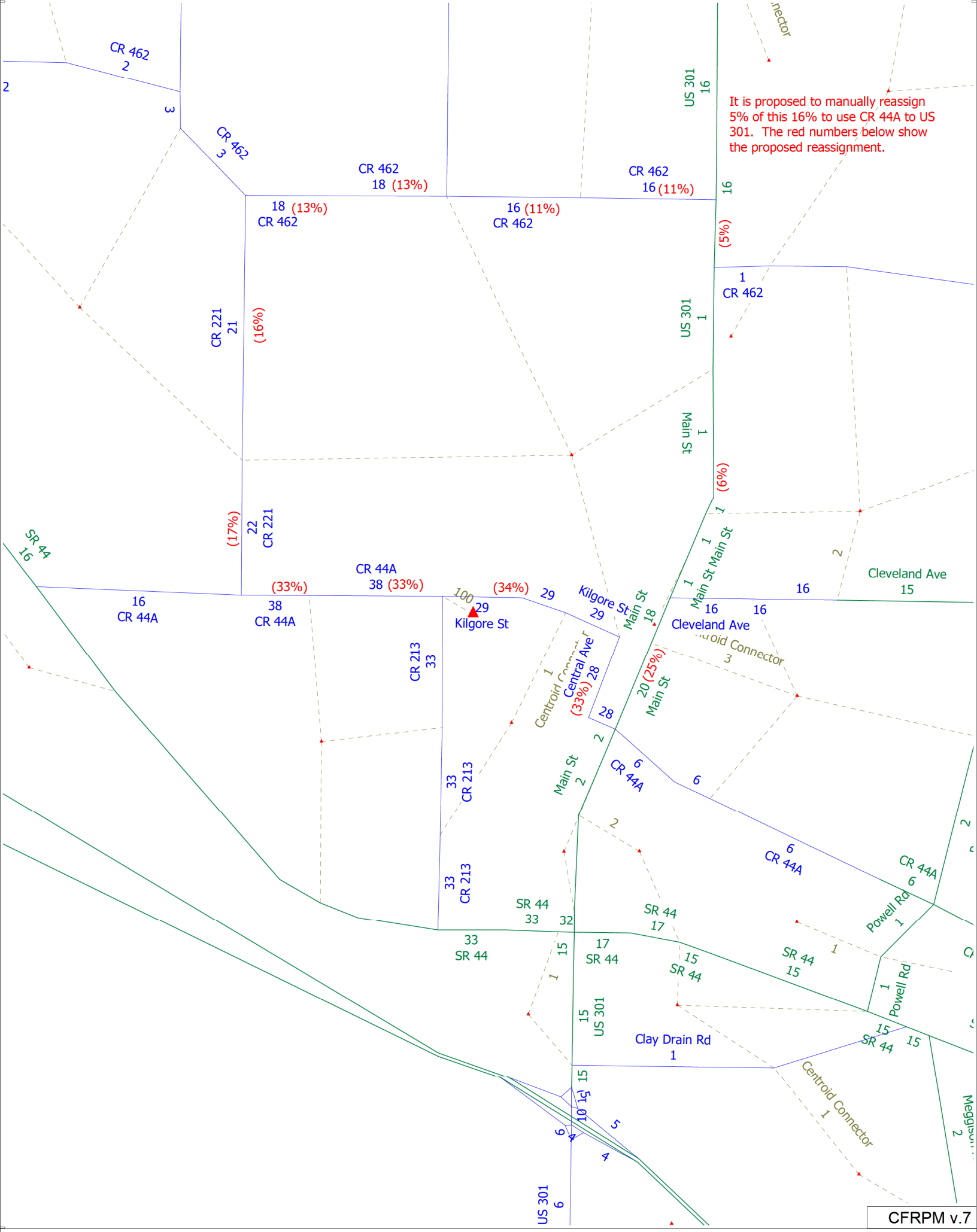
Project Trips

	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
New Ext Inbound	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	6.0%	0.0%	0.0%	2.0%	0.0%	0.0%	0.0%	0.0%	0.0%	25.0%
Volume	0	0	0	0	0	0	7	0	0	2	0	0	0	0	0	31
New Ext Outbound	0.0%	25.0%	6.0%	2.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Volume	0	21	5	2	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	21	5	2	0	0	7	0	0	2	0	0	0	0	0	31

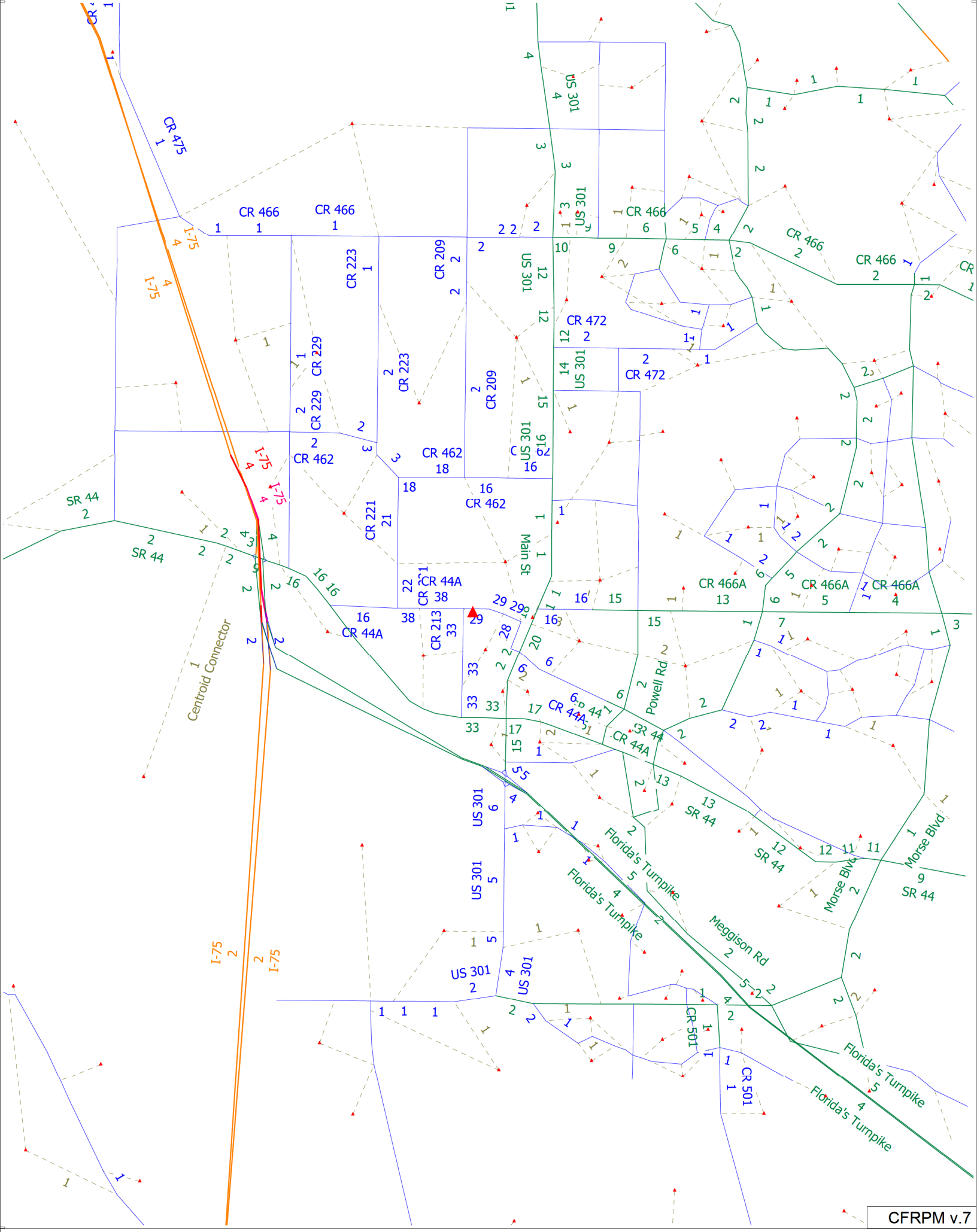
	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Total Pk-Hr Volumes	0	61	71	35	0	137	96	125	0	56	1,340	57	0	111	1,192	88

Appendix G

Select-Zone Model Plot



cube
(Licensed to)


CR 475
CR 466
CR 466
CR 466

Appendix H

Future Conditions (2026) Synchro Printouts

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	16	1066	0	12	545	62	0	0	0	86	0	1
Future Vol, veh/h	16	1066	0	12	545	62	0	0	0	86	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	375	-	225	225	-	225	-	-	-	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	25	94
Heavy Vehicles, %	29	9	2	2	12	19	2	2	2	8	2	2
Mvmt Flow	17	1134	0	13	580	66	0	0	0	91	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	646	0	0	1134	0	0	1484	1840	567	1207	1774	290
Stage 1	-	-	-	-	-	-	1168	1168	-	606	606	-
Stage 2	-	-	-	-	-	-	316	672	-	601	1168	-
Critical Hdwy	4.68	-	-	4.14	-	-	7.54	6.54	6.94	7.66	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.66	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.66	5.54	-
Follow-up Hdwy	2.49	-	-	2.22	-	-	3.52	4.02	3.32	3.58	4.02	3.32
Pot Cap-1 Maneuver	774	-	-	612	-	-	87	75	467	132	82	707
Stage 1	-	-	-	-	-	-	206	266	-	436	485	-
Stage 2	-	-	-	-	-	-	670	453	-	439	266	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	774	-	-	612	-	-	84	72	467	128	78	707
Mov Cap-2 Maneuver	-	-	-	-	-	-	165	178	-	251	179	-
Stage 1	-	-	-	-	-	-	201	260	-	426	475	-
Stage 2	-	-	-	-	-	-	655	443	-	429	260	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.2	0	27.1
HCM LOS			A	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	-	774	-	-	612	-	-	251	707
HCM Lane V/C Ratio	-	0.022	-	-	0.021	-	-	0.364	0.002
HCM Control Delay (s)	0	9.8	-	-	11	-	-	27.3	10.1
HCM Lane LOS	A	A	-	-	B	-	-	D	B
HCM 95th %tile Q(veh)	-	0.1	-	-	0.1	-	-	1.6	0

Intersection	
Int Delay, s/veh	4.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	44	22	21	15	7	31
Future Vol, veh/h	44	22	21	15	7	31
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	20	2	2	10
Mvmt Flow	50	25	24	17	8	35

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	84	33	0	0	41	0
Stage 1	33	-	-	-	-	-
Stage 2	51	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	918	1041	-	-	1568	-
Stage 1	989	-	-	-	-	-
Stage 2	971	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	913	1041	-	-	1568	-
Mov Cap-2 Maneuver	913	-	-	-	-	-
Stage 1	989	-	-	-	-	-
Stage 2	966	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.1	0	1.3
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	952	1568	-
HCM Lane V/C Ratio	-	-	0.079	0.005	-
HCM Control Delay (s)	-	-	9.1	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0	-

Intersection	
Int Delay, s/veh	2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	105	33	10	64	37	5
Future Vol, veh/h	105	33	10	64	37	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	6	10	2	2	29	20
Mvmt Flow	119	38	11	73	42	6

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	157	0	233	138
Stage 1	-	-	-	-	138	-
Stage 2	-	-	-	-	95	-
Critical Hdwy	-	-	4.12	-	6.69	6.4
Critical Hdwy Stg 1	-	-	-	-	5.69	-
Critical Hdwy Stg 2	-	-	-	-	5.69	-
Follow-up Hdwy	-	-	2.218	-	3.761	3.48
Pot Cap-1 Maneuver	-	-	1423	-	699	865
Stage 1	-	-	-	-	826	-
Stage 2	-	-	-	-	865	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1423	-	693	865
Mov Cap-2 Maneuver	-	-	-	-	693	-
Stage 1	-	-	-	-	826	-
Stage 2	-	-	-	-	858	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1	10.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	710	-	-	1423	-
HCM Lane V/C Ratio	0.067	-	-	0.008	-
HCM Control Delay (s)	10.4	-	-	7.5	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection	
Int Delay, s/veh	3.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	103	7	15	51	21	45
Future Vol, veh/h	103	7	15	51	21	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	6	2	2	2	2	2
Mvmt Flow	117	8	17	58	24	51

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	125	0	213	121
Stage 1	-	-	-	-	121	-
Stage 2	-	-	-	-	92	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1462	-	775	930
Stage 1	-	-	-	-	904	-
Stage 2	-	-	-	-	932	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1462	-	766	930
Mov Cap-2 Maneuver	-	-	-	-	766	-
Stage 1	-	-	-	-	904	-
Stage 2	-	-	-	-	921	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.7	9.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	871	-	-	1462	-
HCM Lane V/C Ratio	0.086	-	-	0.012	-
HCM Control Delay (s)	9.5	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	24	144	31	10	4	69	1	42	1	0	0
Future Vol, veh/h	2	24	144	31	10	4	69	1	42	1	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	8	2	11	2	2	2	8	2	2	2
Mvmt Flow	2	25	152	33	11	4	73	1	44	1	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	15	0	0	177	0	0	184	186	101	207	260	13
Stage 1	-	-	-	-	-	-	105	105	-	79	79	-
Stage 2	-	-	-	-	-	-	79	81	-	128	181	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.28	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.372	3.518	4.018	3.318
Pot Cap-1 Maneuver	1603	-	-	1399	-	-	777	708	938	751	645	1067
Stage 1	-	-	-	-	-	-	901	808	-	930	829	-
Stage 2	-	-	-	-	-	-	930	828	-	876	750	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1603	-	-	1399	-	-	762	690	938	701	629	1067
Mov Cap-2 Maneuver	-	-	-	-	-	-	762	690	-	701	629	-
Stage 1	-	-	-	-	-	-	900	807	-	929	809	-
Stage 2	-	-	-	-	-	-	908	808	-	833	749	-

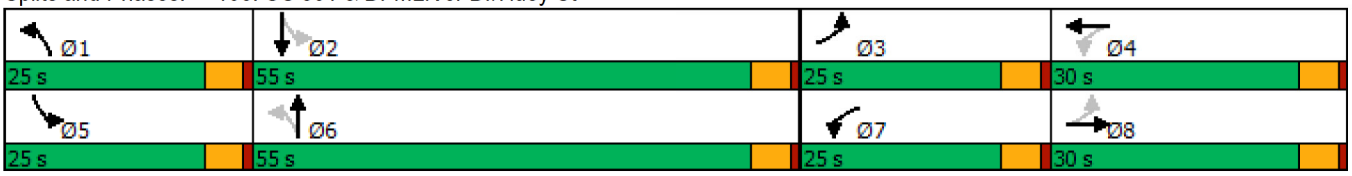
Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	5.3	10.1	10.1
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	819	1603	-	-	1399	-	-	701
HCM Lane V/C Ratio	0.144	0.001	-	-	0.023	-	-	0.002
HCM Control Delay (s)	10.1	7.2	0	-	7.6	0	-	10.1
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.5	0	-	-	0.1	-	-	0

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	71	71	81	46	21	1040	148	1244
Future Volume (vph)	71	71	81	46	21	1040	148	1244
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	3	8	7	4	1	6	5	2
Permitted Phases	8		4		6		2	
Detector Phase	3	8	7	4	1	6	5	2
Switch Phase								
Minimum Initial (s)	5.0	12.0	5.0	5.0	5.0	35.0	5.0	35.0
Minimum Split (s)	10.0	23.0	10.0	23.0	10.0	40.0	10.0	40.0
Total Split (s)	25.0	30.0	25.0	30.0	25.0	55.0	25.0	55.0
Total Split (%)	18.5%	22.2%	18.5%	22.2%	18.5%	40.7%	18.5%	40.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max
Act Effct Green (s)	20.8	13.2	22.1	13.8	56.7	50.6	67.6	63.4
Actuated g/C Ratio	0.20	0.13	0.21	0.13	0.55	0.49	0.66	0.62
v/c Ratio	0.28	0.47	0.30	0.45	0.10	0.79	0.54	0.69
Control Delay	33.2	46.0	33.4	34.2	9.8	28.5	18.6	18.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.2	46.0	33.4	34.2	9.8	28.5	18.6	18.5
LOS	C	D	C	C	A	C	B	B
Approach Delay		40.6		33.9		28.2		18.5
Approach LOS		D		C		C		B

Intersection Summary	
Cycle Length: 135	
Actuated Cycle Length: 103	
Natural Cycle: 85	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 24.6	Intersection LOS: C
Intersection Capacity Utilization 64.1%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 106: US 301 & Dr MLK Jr Dr/Huey St





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	71	71	27	81	46	63	21	1040	111	148	1244	20
Future Volume (veh/h)	71	71	27	81	46	63	21	1040	111	148	1244	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1811	1796	1870	1841	1870	1870	1870	1737	1870	1841	1737	1870
Adj Flow Rate, veh/h	78	78	30	89	51	69	23	1143	122	163	1367	22
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	6	7	2	4	2	2	2	11	2	4	11	2
Cap, veh/h	254	158	61	270	97	131	227	1607	171	297	1909	31
Arrive On Green	0.05	0.13	0.13	0.06	0.13	0.13	0.02	0.53	0.53	0.06	0.57	0.57
Sat Flow, veh/h	1725	1236	475	1753	720	975	1781	3009	321	1753	3324	53
Grp Volume(v), veh/h	78	0	108	89	0	120	23	626	639	163	678	711
Grp Sat Flow(s),veh/h/ln	1725	0	1711	1753	0	1695	1781	1650	1679	1753	1650	1727
Q Serve(g_s), s	3.6	0.0	5.5	4.1	0.0	6.2	0.5	26.7	26.8	3.8	27.8	27.9
Cycle Q Clear(g_c), s	3.6	0.0	5.5	4.1	0.0	6.2	0.5	26.7	26.8	3.8	27.8	27.9
Prop In Lane	1.00		0.28	1.00		0.57	1.00		0.19	1.00		0.03
Lane Grp Cap(c), veh/h	254	0	219	270	0	228	227	881	897	297	948	992
V/C Ratio(X)	0.31	0.00	0.49	0.33	0.00	0.53	0.10	0.71	0.71	0.55	0.72	0.72
Avail Cap(c_a), veh/h	530	0	457	539	0	453	565	881	897	558	948	992
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.0	0.0	38.0	32.7	0.0	37.7	12.6	16.4	16.4	14.5	14.4	14.4
Incr Delay (d2), s/veh	0.7	0.0	1.7	0.7	0.0	1.9	0.2	4.8	4.8	1.6	4.6	4.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.8	0.0	4.3	3.2	0.0	4.8	0.4	15.2	15.5	2.5	15.3	15.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.7	0.0	39.7	33.4	0.0	39.6	12.7	21.2	21.2	16.1	19.0	18.8
LnGrp LOS	C	A	D	C	A	D	B	C	C	B	B	B
Approach Vol, veh/h		186			209			1288			1552	
Approach Delay, s/veh		37.2			37.0			21.1			18.6	
Approach LOS		D			D			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.3	58.8	10.0	17.6	11.0	55.0	10.6	17.0
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	20.0	50.0	20.0	25.0	20.0	50.0	20.0	25.0
Max Q Clear Time (g_c+I1), s	2.5	29.9	5.6	8.2	5.8	28.8	6.1	7.5
Green Ext Time (p_c), s	0.0	9.4	0.1	0.6	0.3	8.6	0.2	0.5

Intersection Summary	
HCM 6th Ctrl Delay	21.8
HCM 6th LOS	C

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	715	0	18	1029	92	1	0	1	67	0	11
Future Vol, veh/h	7	715	0	18	1029	92	1	0	1	67	0	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	375	-	225	225	-	225	-	-	-	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	7	2	2	5	17	2	2	2	2	2	2
Mvmt Flow	8	803	0	20	1156	103	1	0	1	75	0	12

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1259	0	0	803	0	0	1437	2118	402	1614	2015	578
Stage 1	-	-	-	-	-	-	819	819	-	1196	1196	-
Stage 2	-	-	-	-	-	-	618	1299	-	418	819	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	548	-	-	817	-	-	94	50	598	~ 69	58	459
Stage 1	-	-	-	-	-	-	336	388	-	198	258	-
Stage 2	-	-	-	-	-	-	443	230	-	583	388	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	548	-	-	817	-	-	89	48	598	~ 67	56	459
Mov Cap-2 Maneuver	-	-	-	-	-	-	208	146	-	154	160	-
Stage 1	-	-	-	-	-	-	331	382	-	195	252	-
Stage 2	-	-	-	-	-	-	421	224	-	573	382	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.2	16.7	43.9
HCM LOS			C	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	309	548	-	-	817	-	-	154	459
HCM Lane V/C Ratio	0.007	0.014	-	-	0.025	-	-	0.489	0.027
HCM Control Delay (s)	16.7	11.7	-	-	9.5	-	-	48.9	13.1
HCM Lane LOS	C	B	-	-	A	-	-	E	B
HCM 95th %tile Q(veh)	0	0	-	-	0.1	-	-	2.3	0.1

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	3.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	28	14	43	40	21	34
Future Vol, veh/h	28	14	43	40	21	34
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	2	2	2	2	2	5
Mvmt Flow	34	17	52	49	26	41

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	170	77	0	0	101	0
Stage 1	77	-	-	-	-	-
Stage 2	93	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	820	984	-	-	1491	-
Stage 1	946	-	-	-	-	-
Stage 2	931	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	805	984	-	-	1491	-
Mov Cap-2 Maneuver	805	-	-	-	-	-
Stage 1	946	-	-	-	-	-
Stage 2	914	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.5	0	2.8
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	857	1491	-
HCM Lane V/C Ratio	-	-	0.06	0.017	-
HCM Control Delay (s)	-	-	9.5	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.1	-

Intersection	
Int Delay, s/veh	2.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	97	46	14	89	51	6
Future Vol, veh/h	97	46	14	89	51	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	3	5	2	2	2	2
Mvmt Flow	118	56	17	109	62	7

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	174	0	289	146
Stage 1	-	-	-	-	146	-
Stage 2	-	-	-	-	143	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1403	-	702	901
Stage 1	-	-	-	-	881	-
Stage 2	-	-	-	-	884	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1403	-	693	901
Mov Cap-2 Maneuver	-	-	-	-	693	-
Stage 1	-	-	-	-	881	-
Stage 2	-	-	-	-	873	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1	10.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	710	-	-	1403	-
HCM Lane V/C Ratio	0.098	-	-	0.012	-
HCM Control Delay (s)	10.6	-	-	7.6	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Intersection	
Int Delay, s/veh	2.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	83	20	41	87	13	29
Future Vol, veh/h	83	20	41	87	13	29
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	3	2	2	2	2	2
Mvmt Flow	101	24	50	106	16	35

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	125	0	319	113
Stage 1	-	-	-	-	113	-
Stage 2	-	-	-	-	206	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1462	-	674	940
Stage 1	-	-	-	-	912	-
Stage 2	-	-	-	-	829	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1462	-	650	940
Mov Cap-2 Maneuver	-	-	-	-	650	-
Stage 1	-	-	-	-	912	-
Stage 2	-	-	-	-	799	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.4	9.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	826	-	-	1462	-
HCM Lane V/C Ratio	0.062	-	-	0.034	-
HCM Control Delay (s)	9.6	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

Intersection	
Int Delay, s/veh	7.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	16	132	33	18	4	155	8	41	1	10	3
Future Vol, veh/h	4	16	132	33	18	4	155	8	41	1	10	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	76	76	76	76	76	76	76	76	76	76	76	76
Heavy Vehicles, %	2	7	2	3	2	2	2	2	2	2	2	2
Mvmt Flow	5	21	174	43	24	5	204	11	54	1	13	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	29	0	0	195	0	0	239	233	108	264	318	27
Stage 1	-	-	-	-	-	-	118	118	-	113	113	-
Stage 2	-	-	-	-	-	-	121	115	-	151	205	-
Critical Hdwy	4.12	-	-	4.13	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.227	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1584	-	-	1372	-	-	715	667	946	689	598	1048
Stage 1	-	-	-	-	-	-	887	798	-	892	802	-
Stage 2	-	-	-	-	-	-	883	800	-	851	732	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1584	-	-	1372	-	-	681	643	946	624	576	1048
Mov Cap-2 Maneuver	-	-	-	-	-	-	681	643	-	624	576	-
Stage 1	-	-	-	-	-	-	883	795	-	888	776	-
Stage 2	-	-	-	-	-	-	837	774	-	789	729	-

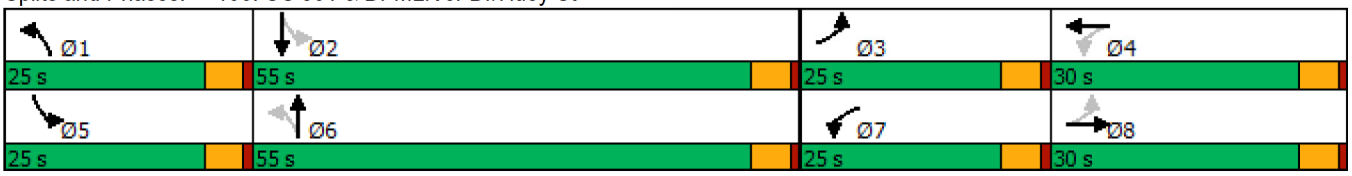
Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	4.6	12.9	10.8
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	720	1584	-	-	1372	-	-	641
HCM Lane V/C Ratio	0.373	0.003	-	-	0.032	-	-	0.029
HCM Control Delay (s)	12.9	7.3	0	-	7.7	0	-	10.8
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	1.7	0	-	-	0.1	-	-	0.1

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	61	71	137	96	56	1340	111	1192
Future Volume (vph)	61	71	137	96	56	1340	111	1192
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	3	8	7	4	1	6	5	2
Permitted Phases	8		4		6		2	
Detector Phase	3	8	7	4	1	6	5	2
Switch Phase								
Minimum Initial (s)	5.0	12.0	5.0	5.0	5.0	35.0	5.0	35.0
Minimum Split (s)	10.0	23.0	10.0	23.0	10.0	40.0	10.0	40.0
Total Split (s)	25.0	30.0	25.0	30.0	25.0	55.0	25.0	55.0
Total Split (%)	18.5%	22.2%	18.5%	22.2%	18.5%	40.7%	18.5%	40.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max
Act Effct Green (s)	22.6	14.3	31.3	20.9	57.3	50.3	62.7	54.8
Actuated g/C Ratio	0.21	0.13	0.29	0.20	0.54	0.47	0.59	0.51
v/c Ratio	0.25	0.46	0.40	0.64	0.30	0.93	0.53	0.77
Control Delay	30.0	43.9	32.1	42.3	14.4	39.0	24.2	26.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.0	43.9	32.1	42.3	14.4	39.0	24.2	26.2
LOS	C	D	C	D	B	D	C	C
Approach Delay		38.9		38.4		38.1		26.0
Approach LOS		D		D		D		C

Intersection Summary	
Cycle Length: 135	
Actuated Cycle Length: 106.5	
Natural Cycle: 85	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 33.2	Intersection LOS: C
Intersection Capacity Utilization 79.3%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 106: US 301 & Dr MLK Jr Dr/Huey St





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	61	71	35	137	96	125	56	1340	57	111	1192	88
Future Volume (veh/h)	61	71	35	137	96	125	56	1340	57	111	1192	88
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1811	1870	1870	1856	1870	1870	1811	1841	1870	1841	1870
Adj Flow Rate, veh/h	65	76	37	146	102	133	60	1426	61	118	1268	94
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	6	2	2	3	2	2	6	4	2	4	2
Cap, veh/h	197	144	70	318	126	164	246	1760	75	227	1759	130
Arrive On Green	0.04	0.13	0.13	0.09	0.17	0.17	0.04	0.52	0.52	0.05	0.53	0.53
Sat Flow, veh/h	1781	1150	560	1781	731	953	1781	3362	144	1781	3301	244
Grp Volume(v), veh/h	65	0	113	146	0	235	60	728	759	118	670	692
Grp Sat Flow(s),veh/h/ln	1781	0	1710	1781	0	1684	1781	1721	1785	1781	1749	1797
Q Serve(g_s), s	3.0	0.0	5.9	6.6	0.0	12.8	1.4	33.4	33.7	2.9	27.8	27.9
Cycle Q Clear(g_c), s	3.0	0.0	5.9	6.6	0.0	12.8	1.4	33.4	33.7	2.9	27.8	27.9
Prop In Lane	1.00		0.33	1.00		0.57	1.00		0.08	1.00		0.14
Lane Grp Cap(c), veh/h	197	0	215	318	0	290	246	900	934	227	932	957
V/C Ratio(X)	0.33	0.00	0.53	0.46	0.00	0.81	0.24	0.81	0.81	0.52	0.72	0.72
Avail Cap(c_a), veh/h	492	0	448	530	0	441	544	900	934	509	932	957
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.6	0.0	39.1	31.1	0.0	38.0	13.8	18.8	18.9	18.1	16.9	16.9
Incr Delay (d2), s/veh	1.0	0.0	2.0	1.0	0.0	6.6	0.5	7.8	7.6	1.8	4.8	4.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.4	0.0	4.6	5.2	0.0	9.7	1.0	19.8	20.5	2.1	16.5	17.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.5	0.0	41.1	32.1	0.0	44.6	14.4	26.6	26.5	20.0	21.7	21.7
LnGrp LOS	D	A	D	C	A	D	B	C	C	B	C	C
Approach Vol, veh/h		178			381			1547			1480	
Approach Delay, s/veh		39.1			39.8			26.1			21.5	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.0	55.9	9.2	21.5	9.9	55.0	13.6	17.0
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	20.0	50.0	20.0	25.0	20.0	50.0	20.0	25.0
Max Q Clear Time (g_c+I1), s	3.4	29.9	5.0	14.8	4.9	35.7	8.6	7.9
Green Ext Time (p_c), s	0.1	9.2	0.1	1.0	0.2	8.3	0.3	0.5

Intersection Summary	
HCM 6th Ctrl Delay	26.3
HCM 6th LOS	C

Appendix I

Turn-Lane Analysis Worksheets

Left-Turn Lane Analysis (AM Peak) - CR 213 at Project Driveway #1

Figure 2 - 5. Guideline for determining the need for a major-road left-turn bay at a two-way stop-controlled intersection.

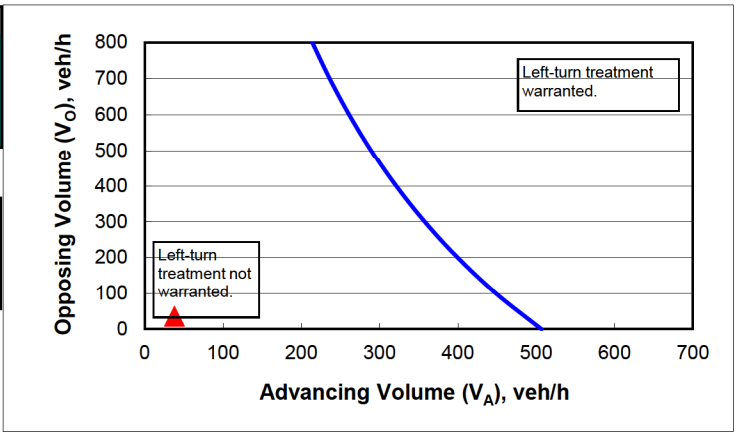
2-lane roadway (English)

INPUT

Variable	Value
85th percentile speed, mph:	30
Percent of left-turns in advancing volume (V_A), %:	18%
Advancing volume (V_A), veh/h:	38
Opposing volume (V_O), veh/h:	36

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	485
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment NOT warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Figure 2 - 5. Guideline for determining the need for a major-road left-turn bay at a two-way stop-controlled intersection.

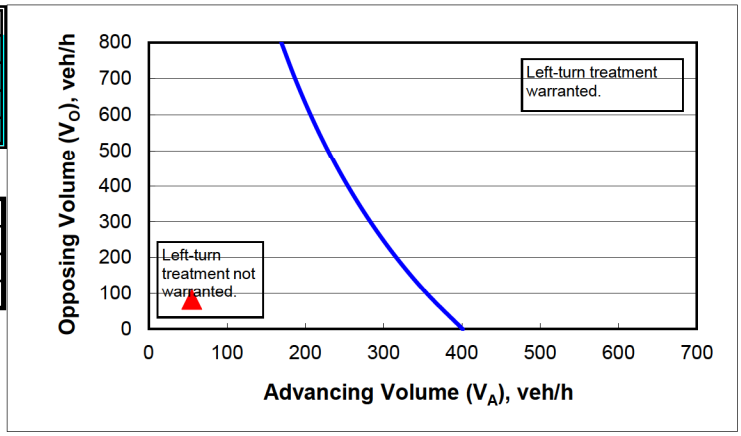
2-lane roadway (English)

INPUT

Variable	Value
85th percentile speed, mph:	30
Percent of left-turns in advancing volume (V_A), %:	38%
Advancing volume (V_A), veh/h:	55
Opposing volume (V_O), veh/h:	83

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	362
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment NOT warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Left-Turn Lane Analysis (AM Peak) - CR 44A at Project Driveway #2

Figure 2 - 5. Guideline for determining the need for a major-road left-turn bay at a two-way stop-controlled intersection.

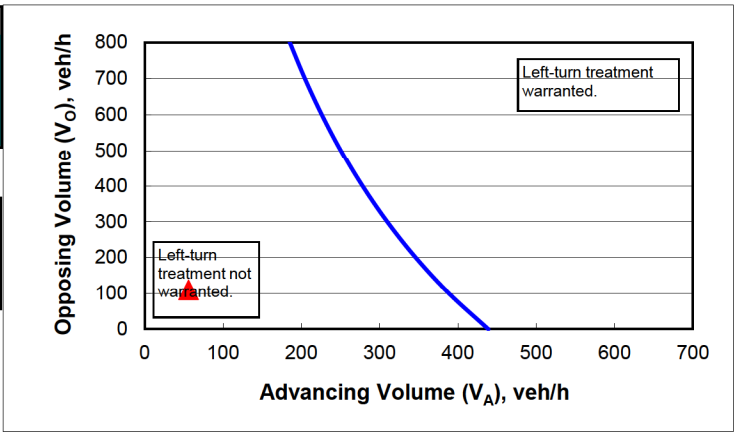
2-lane roadway (English)

INPUT

Variable	Value
85th percentile speed, mph:	35
Percent of left-turns in advancing volume (V_A), %:	23%
Advancing volume (V_A), veh/h:	56
Opposing volume (V_O), veh/h:	110

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	384
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment NOT warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Left-Turn Lane Analysis (PM Peak) - CR 44A at Project Driveway #2

Figure 2 - 5. Guideline for determining the need for a major-road left-turn bay at a two-way stop-controlled intersection.

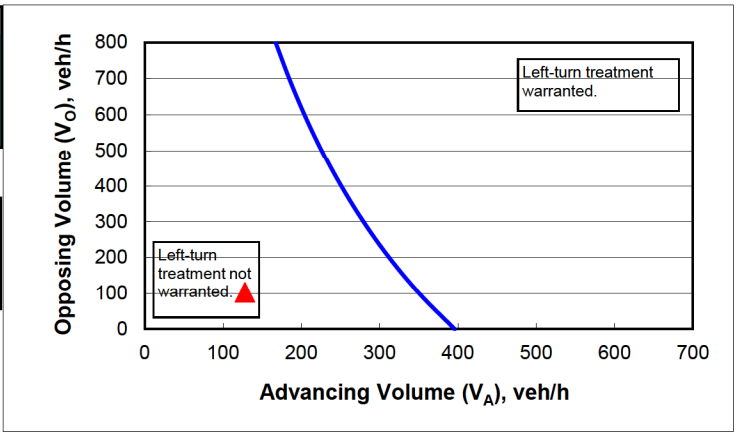
2-lane roadway (English)

INPUT

Variable	Value
85th percentile speed, mph:	35
Percent of left-turns in advancing volume (V_A), %:	32%
Advancing volume (V_A), veh/h:	128
Opposing volume (V_O), veh/h:	103

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	349
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment NOT warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

CITY COMMISSION OF THE CITY OF WILDWOOD

EXECUTIVE SUMMARY

SUBJECT: **CP 2410-003 Floeter House**

REQUESTED ACTION: Special Magistrate recommends approval.

CONTRACT:

BUDGET IMPACT:

HISTORY/FACTS/ISSUES:

Case Number	CP 2410-003 Floeter House
Ordinance Number	O2024-81
Owner(s)	Matthew R. Floeter
Applicant	Aqua Cops, Inc.
Property Location	The subject property is generally located 0.02 miles north of Forest Blvd, to the northeast of Gator Ct. Located at 102 Gator Ct.
Parcel(s)	G27B010
Date	December 30, 2024

The applicant seeks approval from the City Commission for a Small-Scale Comprehensive Plan Amendment to change the Future Land Use Map designation from Rural Residential (Sumter County) to Mobile Home Park (City) for the parcel listed above on 0.182 acres MOL. This request is accompanied by a rezoning request RZ 2410-003 (O2024-82).

ANALYSIS:

The applicant believes the proposed amendment should be granted based on the following criteria found in Land Development Regulations (LDR) §1.7(D).

(1) Justification of the proposed amendment has been adequately presented;

The applicant has submitted an application to the City of Wildwood for the proposed request to change the Future Land Use from Rural Residential (Sumter County) to Mobile Home Park (City), as supported in the 2050 Comprehensive Plan Policy 1.1.1.a. The proposed land use amendment would allow for the construction of a new single-family home, on 0.182 acres MOL. Policy 1.1.1a is intended to support a mix of agricultural and residential uses.

(2) The proposed amendment is consistent with the goals, objectives, and policies of the comprehensive plan;

The applicant finds the proposed amendment is consistent with the goals, objectives, and

policies of the comprehensive plan, with the proposed land use change from Rural Residential (Sumter County) to Mobile Home Park (City). Policy 1.1.1.a. supports the proposed land use change, intended to accommodate a mix of agricultural and residential uses. The maximum intensity is 0.3 Floor Area Ratio (FAR) or the Maximum Lot Coverage is 50%, whichever number is less. The maximum FAR for the development is 7,928 square feet and the applicant is proposing a 1,657 square-foot single-family house, which meets the criteria of the proposed land use.

(3) The proposed amendment should not be considered urban sprawl or exemplify an energy-inefficient land use pattern;
The applicant finds the amendment is not considered urban sprawl, and it does not exemplify an energy-inefficient land use pattern. The subject property is located along Gator Court. Utilities are available on the east side of Gator Court. Policy 1.2.1 states “The City shall encourage growth and development in areas where public infrastructure, services, and utilities are already present or planned to be within 3 to 5 years.” As the existing mix of land use designations is mainly Sumter County High-Density Residential with Mobile Home Housing (R6M) and Sumter County General Agricultural with Conventional Housing (A10C), an addition of Mobile Home Park (MHP) would conform with Objective 1.2 of the Comprehensive Plan. The proposed development directly combats urban sprawl by maximizing existing space for compact development, providing a wider, more efficient land use in the area. (Urban sprawl)

(4) The proposed amendment will not have an adverse effect on environmentally sensitive systems;
The applicant finds the proposed amendment will not have an adverse effect on environmentally sensitive systems. This property has been properly maintained and has not been abandoned.

(5) The proposed amendment will not adversely affect transportation, potable water, sewer, schools, or other public facilities without providing remedies to correct the system or facility;
Transportation: The property has access through Gator Court. A traffic impact analysis (TIA) exemption was accepted by Sumter County’s Public Works Department on November 5, 2024, for the erection of one (1) single-family dwelling unit.

Potable Water & Sewer: City water and sewer are available to the subject property. The applicant and owner will work with City utilities at the construction plan stage to connect to City water and sewer.

Schools: The lot is located within the Continental County Club, which is considered an age-restricted, 55+ community. Therefore, there is no expectation of a generation of school-aged children for this development.

The applicant seeks approval of Ordinance Number O2024-81.



Alexandra Lammers
Planner I, Development Services

ORDINANCE NO. O2024-81

AN ORDINANCE OF THE CITY OF WILDWOOD, FLORIDA, PROPOSING A SMALL-SCALE FUTURE LAND USE MAP AMENDMENT TO THE ADOPTED COMPREHENSIVE PLAN AND FUTURE LAND USE MAP IN ACCORDANCE WITH THE COMMUNITY PLANNING ACT OF 2011, AS AMENDED; PROVIDING FOR CODIFICATION; PROVIDING FOR CONFLICT; PROVIDING FOR SEVERABILITY; AND PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, the City of Wildwood, Florida, is proposing to amend the local Comprehensive Plan and Future Land Use Map of said City, to include a land use amendment described as follows, to-wit:

Parcels G27B010
Matthew R. Floeter
Acres 0.182+/-

LEGAL DESCRIPTION:

102 Gator court., Wildwood, Sumter County Florida 34785

Lot 10, Timberwoods Estates, Phase III, a Replat of Timberwoods Estates, according to the plat thereof, as recorded in Plat Book 5, Page(s) 48, of the Public Records of Sumter County, Florida.

This property is to be reclassified from Rural Residential (Sumter County) to Mobile Home Park (City).

AND WHEREAS, the City is proposing to amend the Future Land Use Map to include the future land use of property that shall pertain and be applicable to said amendment.

NOW, THEREFORE, BE IT ENACTED AND ORDAINED by the City Commission of the City of Wildwood, Florida, as follows:

SECTION 1. The adopted local Comprehensive Plan and Future Land Use Map for the City of Wildwood, Florida, are hereby amended to include the above-referenced property and proposed land use amendment as indicated above. The amendment to the Future Land Use Map of the local comprehensive plan is attached hereto as “Exhibit A” and incorporated herein by reference.

SECTION 2. All ordinances or parts of ordinances in conflict herewith, be, and the same are hereby repealed.

SECTION 3. If any section, sentence, clause or phrase of this Ordinance is held to be invalid or unconstitutional by a Court or competent jurisdiction, then said holding shall in no way effect the validity of the remaining portions of said Ordinance.

SECTION 4. This Ordinance shall take effect 31 days after its final reading by the City Commission of the City of Wildwood.

DONE AND ORDAINED this _____ day of _____, 2025, by the City Commission of the City of Wildwood, Florida.

CITY COMMISSION

CITY OF WILDWOOD, FLORIDA

_____
Ed Wolf, Mayor

ATTEST: _____
Jessica Barnes, City Clerk

First Reading: _____

Second Reading: _____

Approved as to form:

_____
City Attorney

EXHIBIT A



WILDWOOD FLORIDA EST. 1877

CITY OF WILDWOOD
100 North Main Street
Wildwood, FL 34785
Phone: (352) 330-1330
www.wildwood-fl.gov

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US Feet
0 65 130 260

CP 2410-003

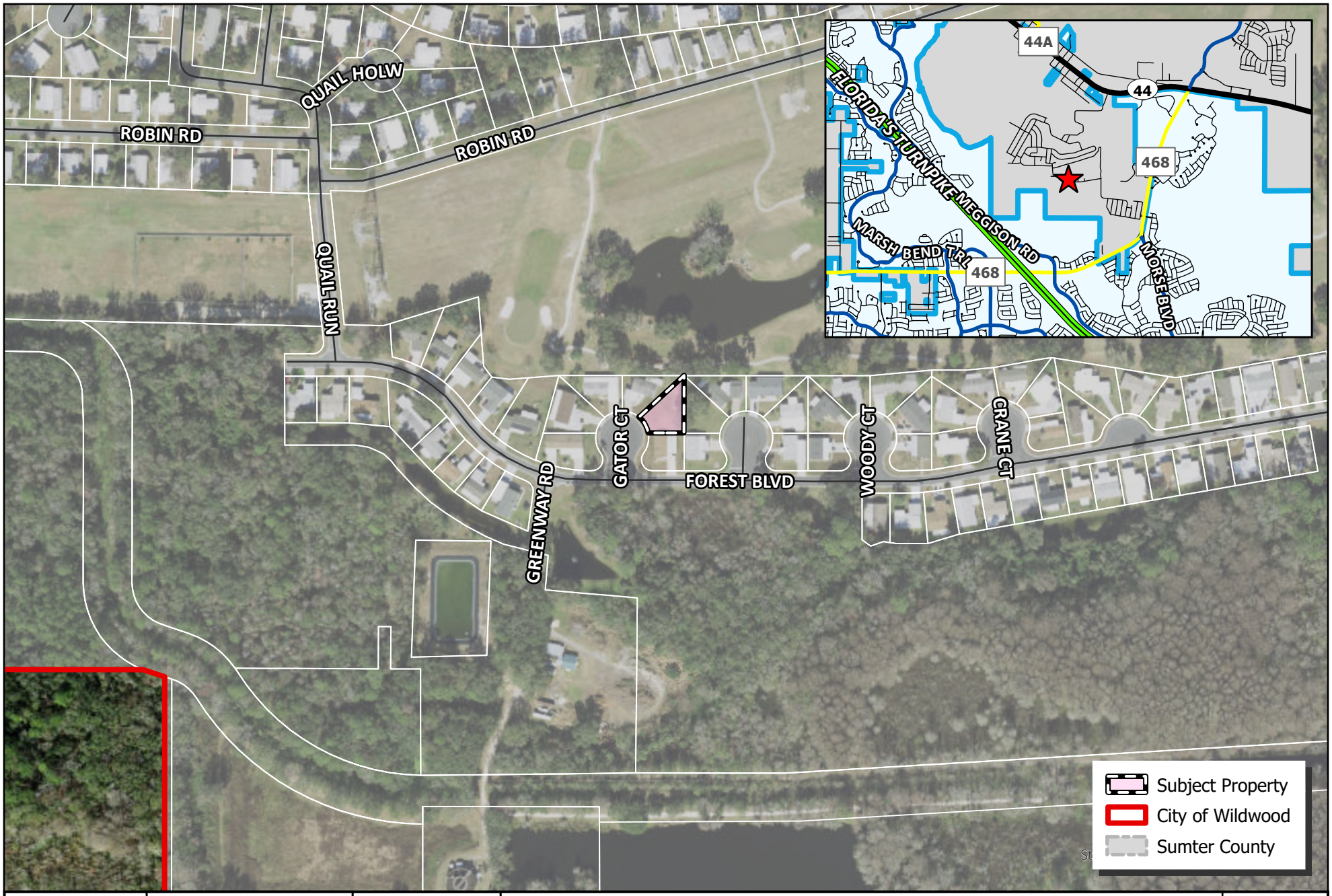
FLOETER HOUSE

PARCEL G27B010

MAP 1A

LOCATION MAP

NOV 2024



WILDWOOD FLORIDA EST. 1877

CITY OF WILDWOOD
100 North Main Street
Wildwood, FL 34785
Phone: (352) 330-1330
www.wildwood-fl.gov

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CP 2410-003

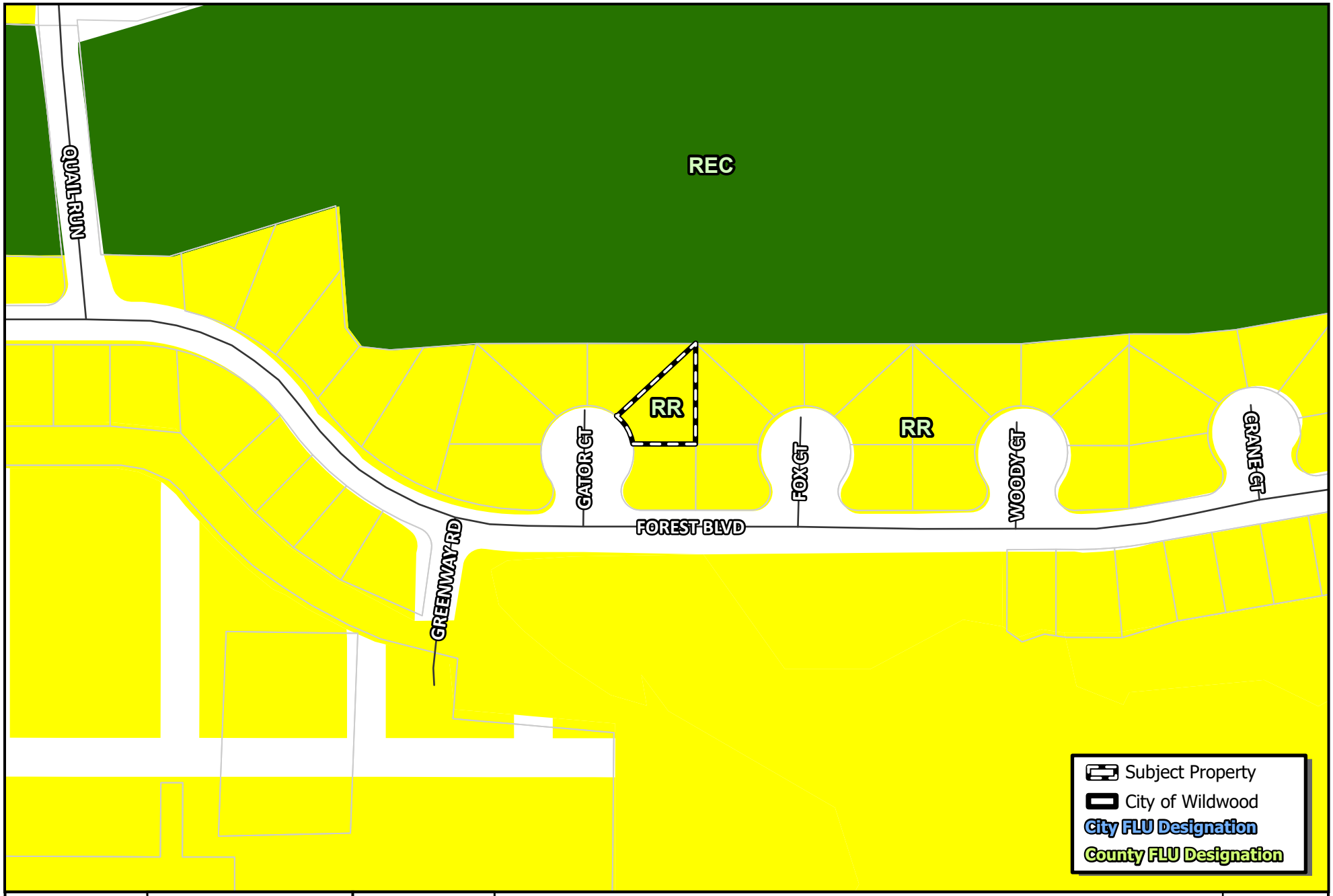
FLOETER HOUSE

PARCEL G27B010

MAP 1B

LOCATION MAP

NOV 2024



WILDWOOD FLORIDA EST. 1877

CITY OF WILDWOOD
100 North Main Street
Wildwood, FL 34785
Phone: (352) 330-1330
www.wildwood-fl.gov

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US Feet
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CP 2410-003

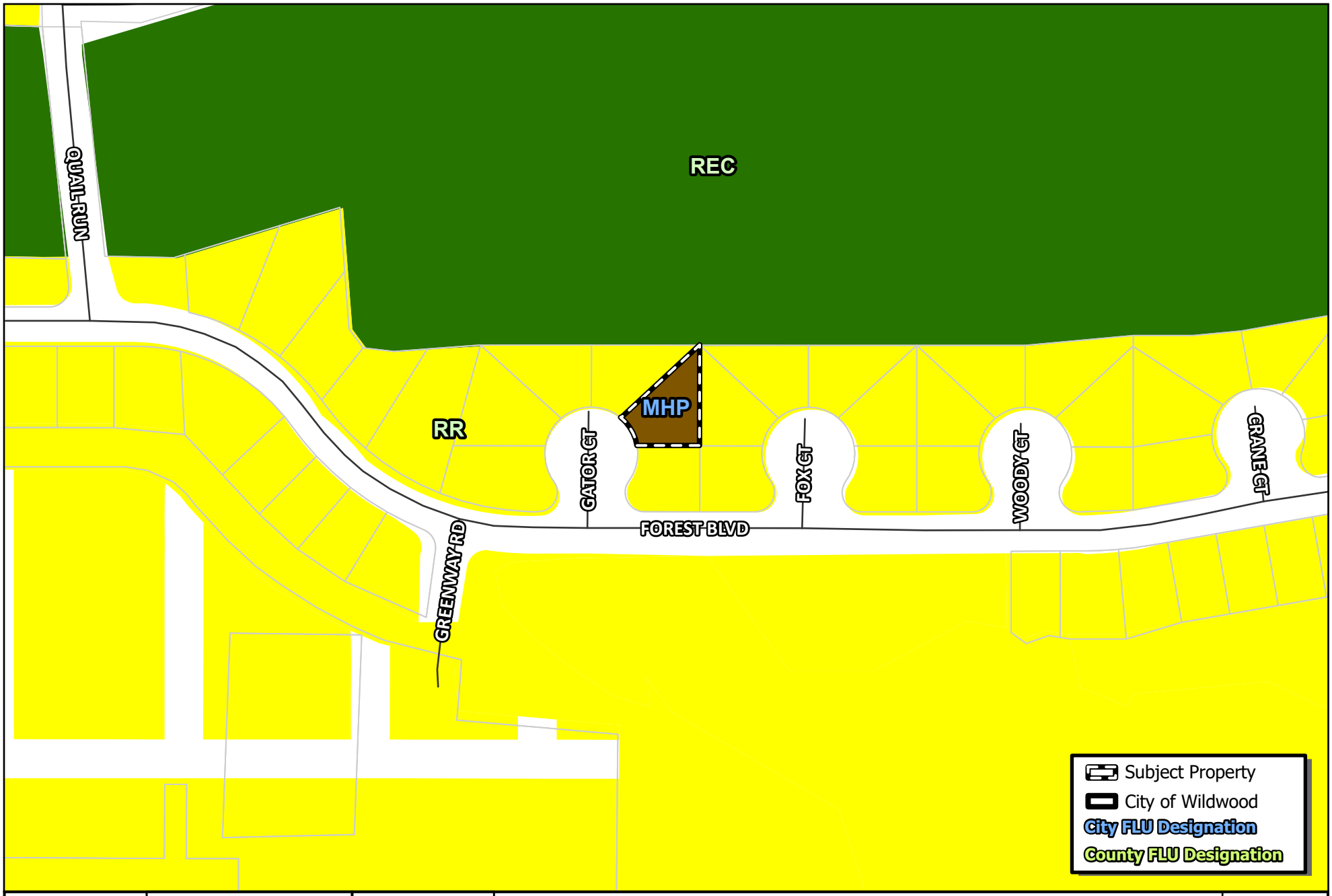
FLOETER HOUSE

PARCEL G27B010

MAP 2A

EXISTING LAND USE

NOV 2024



WILDWOOD FLORIDA EST. 1877	CITY OF WILDWOOD 100 North Main Street Wildwood, FL 34785 Phone: (352) 330-1330 www.wildwood-fl.gov	N US Feet 0 37.5 75 150	CP 2410-003 **FLOETER HOUSE** PARCEL G27B010	**MAP 2B** **PROPOSED LAND USE** **NOV 2024**

Business Impact Estimate

This form should be included in the agenda packet for the item under which the proposed ordinance is to be considered and must be posted on the City of Wildwood website by the time notice of the proposed ordinance is published.

Proposed ordinance's title/reference:O2024-81

This Business Impact Estimate is provided in accordance with section 166.041(4), Florida Statutes. If one or more boxes are checked below, a business impact estimate is not required by state law[1] for the proposed ordinance. This Business Impact Estimate may be revised following its initial posting.

- ☐ The proposed ordinance is required for compliance with Federal or State law or regulation;
- ☐ The proposed ordinance relates to the issuance or refinancing of debt;
- ☐ The proposed ordinance relates to the adoption of budgets or budget amendments, including revenue sources necessary to fund the budget;
- ☐ The proposed ordinance is required to implement a contract or an agreement, including, but not limited to, any Federal, State, local, or private grant or other financial assistance accepted by the municipal government;
- ☐ The proposed ordinance is an emergency ordinance;
- ☐ The ordinance relates to procurement; or
- ☒ The proposed ordinance is enacted to implement the following:
  a. Part II of Chapter 163, Florida Statutes, relating to growth policy, county and municipal planning, and land development regulation, including zoning, development orders, development agreements and development permits;
  b. Sections 190.005 and 190.046, Florida Statutes, regarding community development districts;
  c. Section 553.73, Florida Statutes, relating to the Florida Building Code; or
  d. Section 633.202, Florida Statutes, relating to the Florida Fire Prevention Code.

[1] See Section 166.041(4)(c), Florida Statutes.

Print

Sumter County Traffic Impact Analysis (TIA) - Submission #1273581

Date Submitted: 11/1/2024

First Name*	Last Name*	Email Address*
Alexandra	Lammers	alammers@wildwood-fl.gov

Name of Project:*

Floeter House

Phone*	Parcel Number*
3524591676	G27B010

Sumter County Traffic Impact Analysis (TIA)

In accordance with the Interlocal Service Boundary and Joint Planning Agreement between the City of Bushnell, City of Center Hill, City of Coleman, City of Webster, and the City of Wildwood, within the municipal service area, the Cities and County agree that County will review all traffic impact studies for development accessing the City or County road networks.

Sumter County Traffic Impact Analysis (TIA) exemption approval:

Matthew Tadlock

Digitally signed by Matthew Tadlock
DN: cn=Matthew Tadlock, o=Sumter County Public Works, ou=Planning and Design, email=matthew.tadlock@sumtercountyfl.gov, c=US
Date: 2024.11.05 14:13:47 -05'00'

Purpose and Applicability

The purpose of the TIA is to identify the potential traffic impacts of new development on the transportation system and to develop mitigation strategies to offset those impacts according to the methodologies and provisions as described herein. These guidelines apply to all new development within Sumter County, including its municipalities, submitting building and site plans for review. The TIA requirement applies to previously approved developments that are over five years old, changing land uses within the site plan, or extending the build-out date from a previously approved TIA. Unless otherwise required by the County Administrator or designee, a TIA, as it relates to a substandard roadway section, shall not be required for any single development generating less than 50 average daily trips, as per the Trip Generation Manual, latest edition, as published by the Institute of Transportation Engineers (ITE). The following thresholds will determine the level of study that will need to be performed depending on the number of trips a development produces:

1. Applicants proposing developments that generate 50 but less than or equal to 1,000 average daily trips (ADT), according to the ITE Trip Generation Manual, current edition, must perform a Minor TIA.
2. A Major TIA shall be required for all proposed developments generating more than 1,000 ADT, as per the ITE Trip Generation Manual, current edition..

For purposes of this section, a "single development" shall include any development, parcel of land, lot, and tract, and contiguous or nearby developments, parcels, lots, or tracts that are:

1. Developed by the same or a related development or landowner;
2. Developed as part of the same zoning plan, preliminary plan, preliminary site plan, plat, or other unified or common plan of development.

These guidelines are in addition to the requirements of the access management regulations. In the event of any conflict between these guidelines and such regulations, the more stringent requirements shall apply.

Methodology Statement

Before conducting a Major TIA, a methodology statement shall be prepared by the applicant, the applicant's representative, or the applicant's engineer/consultant and submitted for review and approval by the County. Before conducting a Minor TIA, the applicant, the applicant's representative, or the applicant's engineer/consultant shall seek confirmation from County staff on the need for a methodology statement. The purpose of the methodology statement is to establish agreed-upon methodologies and assumptions before the start of the TIA. A methodology statement shall be prepared using the guidelines provided in the following paragraphs. The methodology statement will be first reviewed by County staff, if necessary, through a methodology meeting with the applicant and or the applicant's consultant. The applicant's consultant will then revise the statement based upon agreed-upon methodologies. The applicant shall ensure the consultant does not prepare a TIA without a methodology statement approved by the appropriate County representative.

Sumter County 2023 County Annual Traffic Reports Summary Table

Click here to view the table.

Exemption

C.2 TIA Exemption.docx
Applicants can submit an exemption due to a development generating less than 50 average daily trips, as per the Trip Generation Manual, latest edition, as published by the Institute of Transportation Engineers (ITE).

Please submit your Methodology Statement

Choose File No file chosen

Please submit your TIA

Choose File No file chosen

Date of Methodology Acceptance by County

Applicable Jurisdiction

Please check the applicable Jurisdiction:

- [ ] City of Bushnell
- [ ] City of Center Hill
- [ ] City of Coleman
- [x] City of Wildwood
- [ ] Unincorporated Sumter County

Link

FDOT Systems Implementation Office

Link

FDOT Roadway Design - Florida Greenbook

Link

Lake-Sumter MPO

Link

FDOT Traffic Information

The City of Wildwood is requesting an exemption from a transportation impact analysis for the owner Matthew Floeter and applicant Austin Floeter for one (1) single-family detached home (ITE Code 210) on parcel G27B010 on 0.182 acres, more or less for personal use.

The proposed zoning is Mobile Home Park (MHP) with a maximum allowable use of 10 units per acre or 1.82 dwelling units.

City of Wildwood, Florida
Planning & Zoning Board/Special Magistrate
as Local Planning Agency

The case below was heard on Tuesday, December 3, 2024 by the Special Magistrate. The applicant seeks approval and favorable recommendation from the City of Wildwood Planning and Zoning Board/Special Magistrate as the Local Planning Agency for a Comprehensive Plan amendment to amend the FLU map designation from Rural Residential (Sumter County) to Mobile Home Park (City) on 0.182 acres MOL. The subject property is generally located 0.02 miles north of Forest Blvd, to the northeast of Gator Ct. Located at 102 Gator Ct.

Case Number: CP 2410-003 Floeter House

Applicant(s): Aqua Cops Inc.

Owner(s): Matthew R. Floeter

Parcel(s): G27B010

Under Land Development Regulation (LDR) § 1.7(C), the Planning and Zoning Board/Special Magistrate as Local Planning Agency has a duty to make a recommendation to the City Commission on all proposed Comprehensive Plan amendments.

Based upon the testimony, evidence, and information presented as to the criteria set forth in LDR § 1.7(D), the Special Magistrate

☒ recommends approval.

☐ recommends approval with the following conditions:

_____

☐ recommends denial.

Dated: December 3, 2024

Lindsay C.T. Holt
Special Magistrate City of Wildwood

CITY COMMISSION OF THE CITY OF WILDWOOD

EXECUTIVE SUMMARY

SUBJECT: **RZ 2410-003 Floeter House**

REQUESTED ACTION: Special Magistrate recommends approval.

CONTRACT:

BUDGET IMPACT:

HISTORY/FACTS/ISSUES:

Case Number	RZ 2410-003 Floeter House
Ordinance Number	O2024-82
Owner(s)	Matthew R. Floeter
Applicant	Aqua Cops Inc.
Property Location	The subject property is generally located 0.02 miles north of Forest Blvd, to the northeast of Gator Ct. Located at address 102 Gator Ct.
Parcel(s)	G27B010
Date	December 3, 2024

The applicant seeks approval from the City Commission for a Zoning Map Amendment to change the zoning district from R6M (Sumter County) to MHP (City) for the parcel listed above on 0.182 acres MOL. This request is accompanied by a concurrent Small Scale Comprehensive Plan amendment CP 2410-003 (O2024-81).

ANALYSIS:
The applicant is proposing a single-family dwelling unit.

Pursuant to Land Development Regulation (LDR) § 3.3(C)(4), the applicant believes the zoning change to MHP should be granted based on the following criteria:

(a) Whether the proposed change is consistent with the comprehensive plan
The proposed rezoning to MHP is consistent with the proposed Future Land Use Map designation of Mobile Home Park (MHP) and the intent of the Comprehensive Plan as stated in FLU Policy 1.2.7.

(b) The existing land use pattern of the surrounding area;
The land use pattern of the surrounding area is residential. The proposed MHP zoning designation will serve as a transition in this area to serve city residents and provide different

housing.

(c) <u>The possibility of adversely affecting public facilities such as schools, utilities, streets, etc;</u>
<u>Schools:</u> The Lot is located within the Continental County Club, which is considered an age-restricted, 55+ community. Therefore, there is no expectation of a generation of school-aged children for this development.

<u>Potable Water & Sewer:</u> City water and sewer are available to the subject property. The applicant/owner will work with City utilities at the construction plan stage to connect to City water and sewer.

<u>Streets:</u> A Traffic Impact Analysis exemption has been accepted by Sumter County Public Works as the property will generate less than 45 trips per day.

(d) <u>Whether changed or changing conditions make the passage of the proposed amendment necessary;</u>
The property is located within the City's Joint Planning Area (JPA) with Sumter County. The rezoning is necessary to accommodate the proposed use of the property, as the applicant intends to develop a single-family home and bring the property into compliance with the proposed Future Land Use designation.

(e) <u>Whether the proposed change will create or excessively increase traffic congestion or otherwise be a detriment to public safety;</u>
Sumter County Public Works has approved a Traffic Impact Analysis exemption due to the low traffic impact this property will generate.

(f) <u>Whether the proposed change will be a deterrent to the improvement or development of adjacent property;</u>
The proposed rezoning will not be a deterrent to the improvement or development of adjacent properties. Surrounding properties are permitted to develop in accordance with their zoning map designation.

ZONING DESIGNATION SURROUNDING PROPERTIES	
NORTH	R6M & A10C (Sumter County)
SOUTH	R6M (Sumter County)
EAST	R6M (Sumter County)
WEST	R6M (Sumter County)

If the rezoning is approved, the applicant will be required to submit a site plan to the city prior to development. The zoning clearance will be needed for Sumter County Building Dept. to issue and release a building permit. The site plan will need to follow requirements established in MHP zoning district as per the City's Land Development Regulations.

The applicant seeks approval from the City Commission for Ordinance O2024-82.



Alexandra Lammers
Planner I, Development Services

ORDINANCE NO. O2024-82

AN ORDINANCE OF THE CITY OF WILDWOOD, FLORIDA; PROPOSING A ZONING MAP AMENDMENT TO THE OFFICIAL ZONING MAP IN ACCORDANCE WITH SECTIONS 3.2 AND 3.3 OF THE LAND DEVELOPMENT REGULATIONS; PROVIDING FOR CODIFICATION; PROVIDING FOR CONFLICT; PROVIDING FOR SEVERABILITY; AND PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, the City of Wildwood, Florida, is proposing to amend the Official Zoning Map of said City, to include a rezoning of real property described as follows, to-wit:

Parcels G27B010
Matthew R. Floeter
Acres 0.182 +/-

LEGAL DESCRIPTION:

Lot 10, Timberwoods Estates, Phase III, a Replat of Timberwoods Estates, according to the plat thereof, as recorded in Plat Book 5, Page(s) 48, of the Public Records of Sumter County, Florida.

This property is to be reclassified from R6M(Sumter County) to MHP(City).

AND WHEREAS, the rezoning is consistent with the City's Comprehensive Plan and Land Development Regulations.

NOW, THEREFORE, BE IT ENACTED AND ORDAINED by the City Commission of the City of Wildwood, Florida, as follows:

SECTION 1. The Official Zoning Map of the City of Wildwood, Florida is hereby amended to include the above-referenced property as indicated above. The amendment to the Official Zoning Map is attached hereto as "Exhibit A" and incorporated herein by reference.

SECTION 2. All ordinances or parts of ordinances in conflict herewith, be, and the same are hereby repealed.

SECTION 3. If any section, sentence, clause or phrase of this Ordinance is held to be invalid or unconstitutional by a Court or competent jurisdiction, then said holding shall in no way effect the validity of the remaining portions of said Ordinance.

SECTION 4. This Ordinance shall take effect 31 days after its final reading by the

City Commission of the City of Wildwood.

DONE AND ORDAINED this _____ day of _____, 2025, by the City Commission of the City of Wildwood, Florida.

CITY COMMISSION
CITY OF WILDWOOD, FLORIDA

_____
Ed Wolf, Mayor

ATTEST: _____
Jessica Barnes, City Clerk

First Reading: _____

Second Reading: _____

Approved as to form:

_____
City Attorney

EXHIBIT A



WILDWOOD FLORIDA EST. 1877

CITY OF WILDWOOD
100 North Main Street
Wildwood, FL 34785
Phone: (352) 330-1330
www.wildwood-fl.gov

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US Feet
0 65 130 260

RZ 2410-003

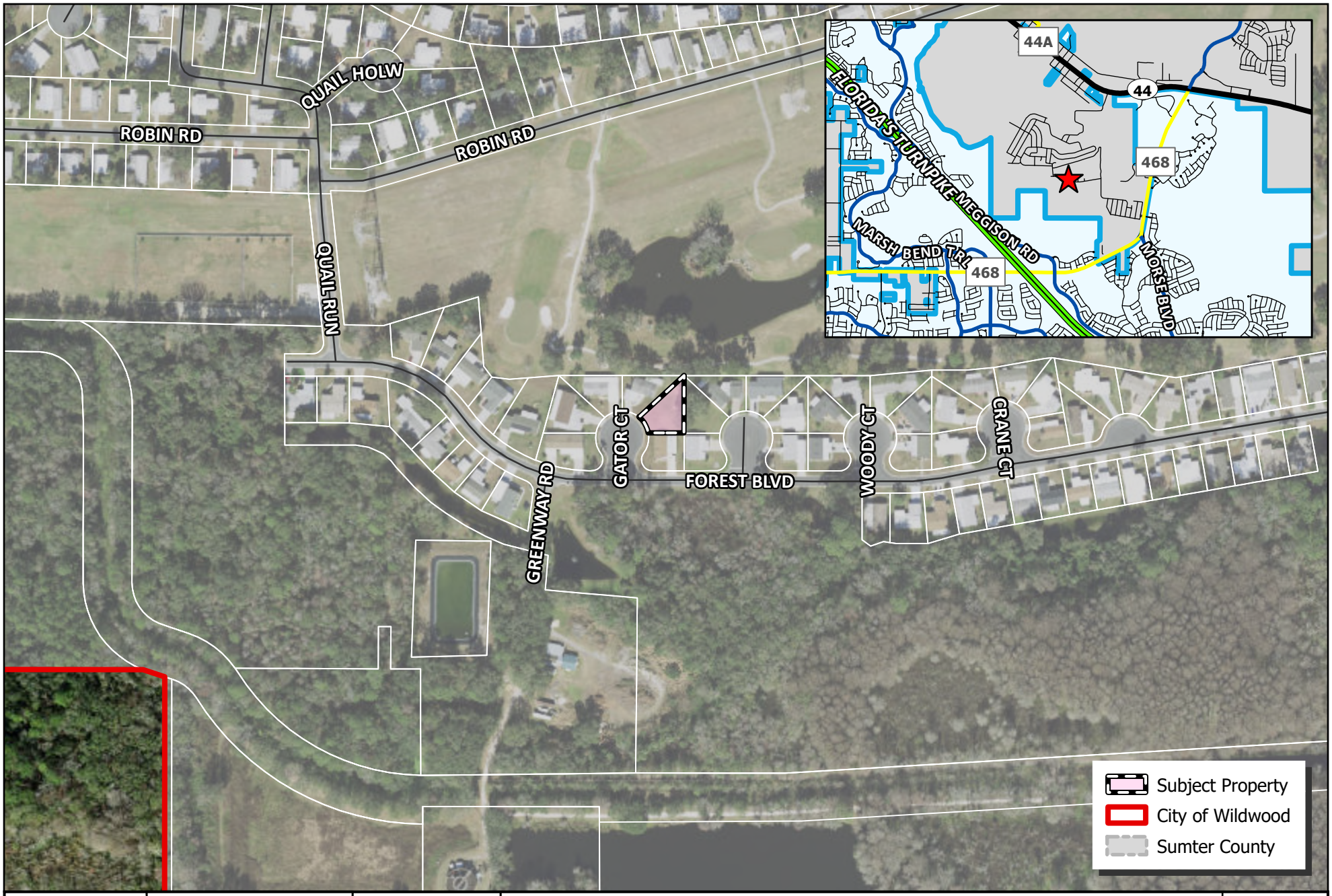
FLOETER HOUSE

PARCEL G27B010

MAP 1A

LOCATION MAP

NOV 2024



WILDWOOD FLORIDA EST. 1877

CITY OF WILDWOOD
100 North Main Street
Wildwood, FL 34785
Phone: (352) 330-1330
www.wildwood-fl.gov

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RZ 2410-003

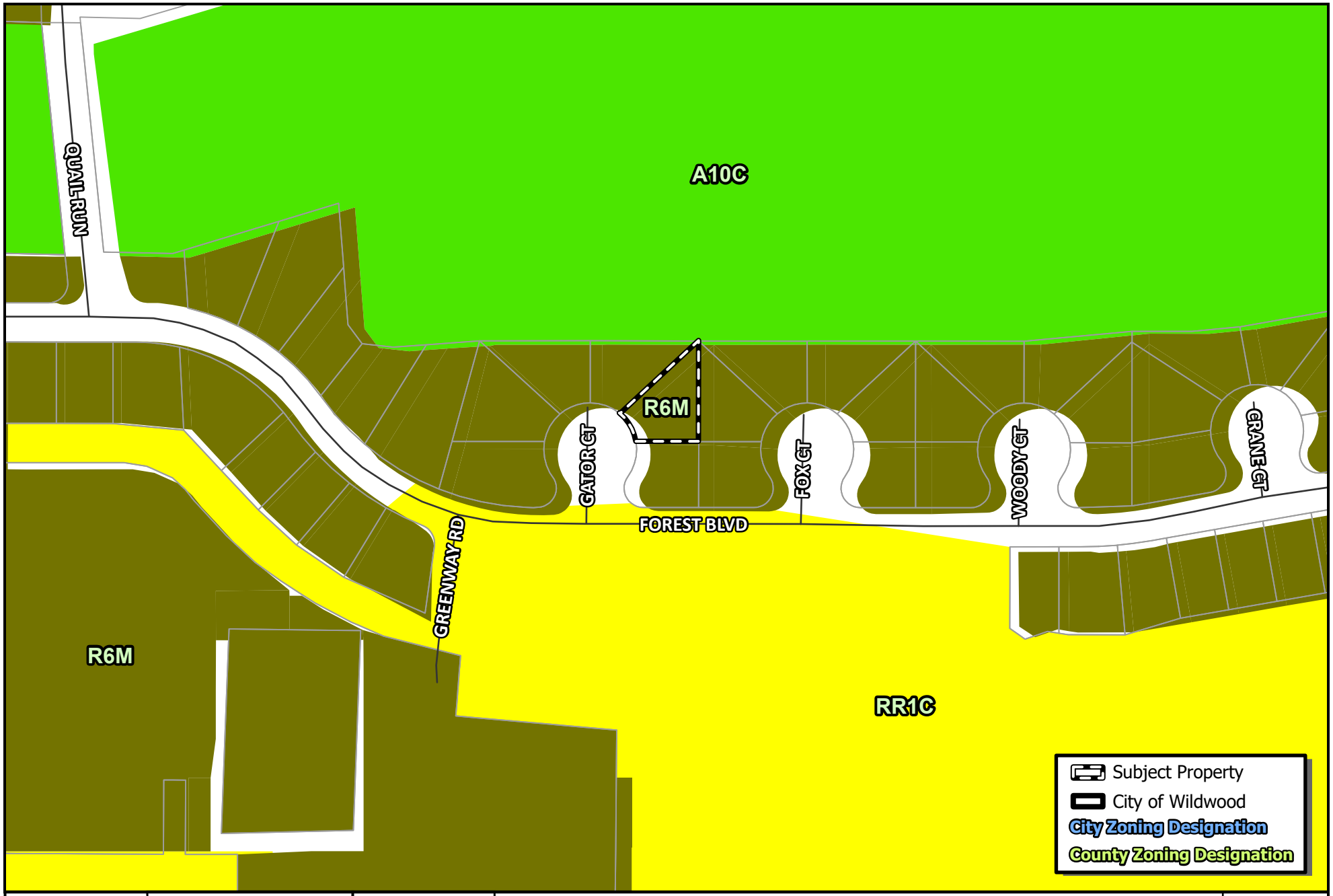
FLOETER HOUSE

PARCEL G27B010

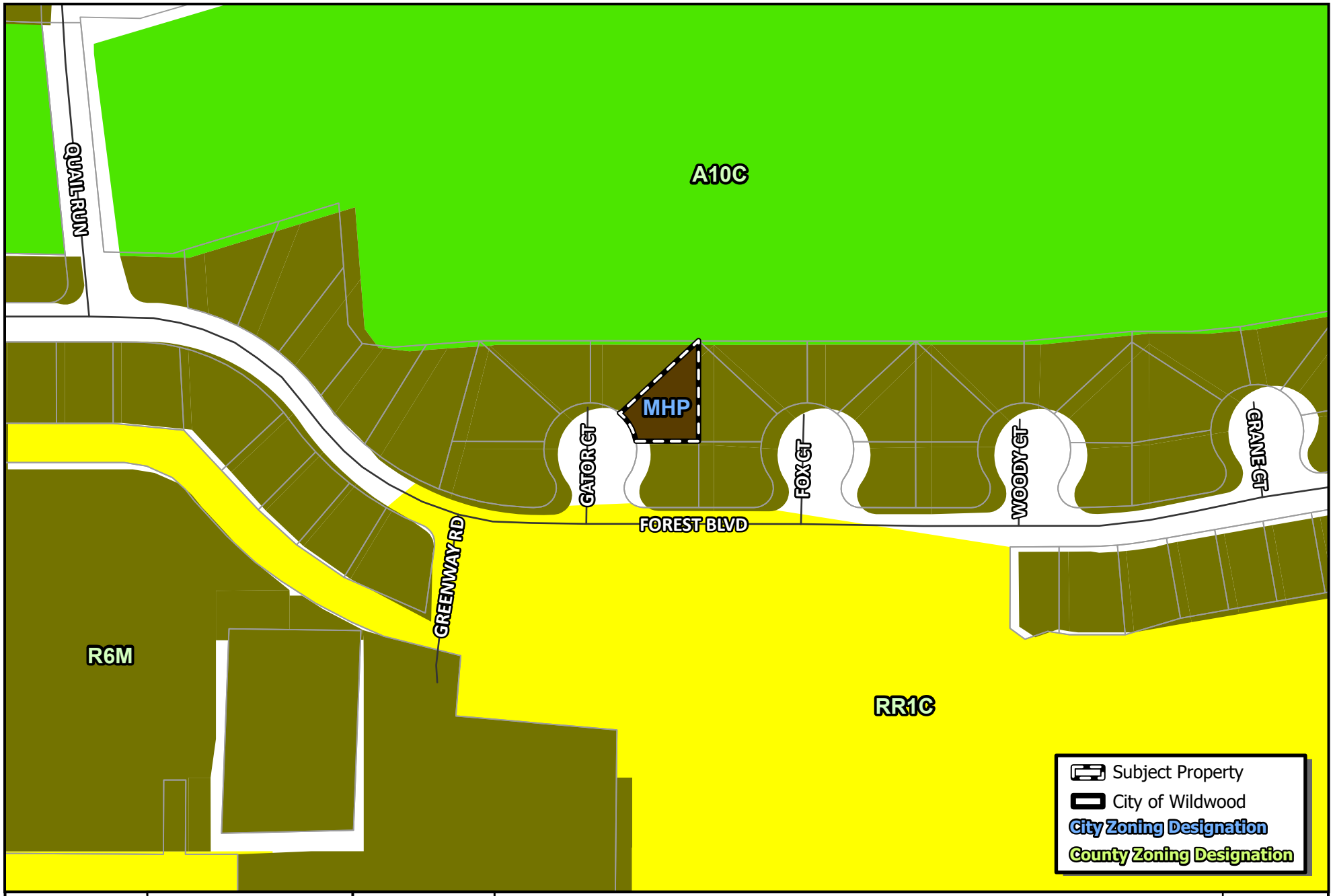
MAP 1B

LOCATION MAP

NOV 2024



WILDWOOD FLORIDA EST. 1877	CITY OF WILDWOOD 100 North Main Street Wildwood, FL 34785 Phone: (352) 330-1330 www.wildwood-fl.gov	N US Feet 0 37.5 75 150	RZ 2410-003 **FLOETER HOUSE** PARCEL G27B010	**MAP 3A** **EXISTING ZONING** **NOV 2024**



EST. 1877 WILDWOOD FLORIDA	CITY OF WILDWOOD 100 North Main Street Wildwood, FL 34785 Phone: (352) 330-1330 www.wildwood-fl.gov	N US Feet 0 37.5 75 150	RZ 2410-003 **FLOETER HOUSE** PARCEL G27B010	**MAP 3B** **PROPOSED ZONING** **NOV 2024**

Business Impact Estimate

This form should be included in the agenda packet for the item under which the proposed ordinance is to be considered and must be posted on the City of Wildwood website by the time notice of the proposed ordinance is published.

Proposed ordinance's title/reference: O2024-82

This Business Impact Estimate is provided in accordance with section 166.041(4), Florida Statutes. If one or more boxes are checked below, a business impact estimate is not required by state law[1] for the proposed ordinance. This Business Impact Estimate may be revised following its initial posting.

- ☐ The proposed ordinance is required for compliance with Federal or State law or regulation;
- ☐ The proposed ordinance relates to the issuance or refinancing of debt;
- ☐ The proposed ordinance relates to the adoption of budgets or budget amendments, including revenue sources necessary to fund the budget;
- ☐ The proposed ordinance is required to implement a contract or an agreement, including, but not limited to, any Federal, State, local, or private grant or other financial assistance accepted by the municipal government;
- ☐ The proposed ordinance is an emergency ordinance;
- ☐ The ordinance relates to procurement; or
- ☒ The proposed ordinance is enacted to implement the following:
  a. Part II of Chapter 163, Florida Statutes, relating to growth policy, county and municipal planning, and land development regulation, including zoning, development orders, development agreements and development permits;
  b. Sections 190.005 and 190.046, Florida Statutes, regarding community development districts;
  c. Section 553.73, Florida Statutes, relating to the Florida Building Code; or
  d. Section 633.202, Florida Statutes, relating to the Florida Fire Prevention Code.

[1] See Section 166.041(4)(c), Florida Statutes.

City of Wildwood, Florida
Planning & Zoning Board/Special Magistrate

The case below was heard on Tuesday, December 3, 2024 by the Special Magistrate. The applicant seeks approval and favorable recommendation from the City of Wildwood Planning and Zoning Board/Special Magistrate for a Zoning Map Amendment to change the zoning district from R6M (Sumter County) to MHP (City) on 0.182 acres MOL. The subject property is generally located 0.02 miles north of Forest Blvd, to the northeast of Gator Ct. Located at 102 Gator Ct.

Case Number: RZ 2410-0036 Floeter House

Applicant(s): Aqua Cops Inc.

Owner(s): Matthew R. Floeter

Parcel(s): G24B010

Under Land Development Regulation (LDR) § 1.7(B)(2), the Planning and Zoning Board/Special Magistrate has a duty to make a recommendation to the City Commission on all proposed Zoning Map amendments.

Based upon the testimony, evidence, and information presented as to the criteria set forth in LDR § 3.3(C)(4), the Special Magistrate

☒ recommends approval.

☐ recommends approval with the following conditions:

_____

☐ recommends denial.

Dated: December 3, 2024

Lindsay C.T. Holt
Special Magistrate City of Wildwood

CITY COMMISSION OF THE CITY OF WILDWOOD

EXECUTIVE SUMMARY

SUBJECT: **AN 2412-001 Wieckhorst**

REQUESTED ACTION: Staff recommends approval.

CONTRACT:

BUDGET IMPACT:

HISTORY/FACTS/ISSUES:

CASE NUMBER	AN 2412-001
ORDINANCE NUMBER	O2024-94
APPLICANTS	L. Norman Adams Home Builders
OWNER	Barbara Lynn Wieckhorst
PROPERTY LOCATION	The property is generally located at the southeast corner of the intersection of CR 504 and CR 511A.
PARCEL NUMBER	G29A239
DATE	January 13, 2025

The applicant, L. Norman Adams Home Builders and owner Barbara Wieckhorst have submitted a voluntary annexation of parcel G29A239. The property is approximately 2.5 acres MOL and is located at 4055 CR 511A, located at the southeast corner of the intersection of CR 504 and CR 511A. Annexation into the City is appropriate because the property is located in the City's Joint Planning Area with Sumter County.

Upon completing the annexation process, the applicant will proceed with the small-scale comprehensive plan amendment and rezoning applications. The applicant intends to apply for Estate Residential (ER) Zoning Designation, which is compatible with adjacent uses and allows for the erection of a single-family home on the site. City water and sewer is currently unavailable to the property, the applicant intends to connect to a well and septic system. At the time that the City's utility lines are available, the applicant will be required to connect.

Alex Lammers
Planner I, Development Services

ORDINANCE NO. O2024-94

AN ORDINANCE OF THE CITY OF WILDWOOD, FLORIDA, PROVIDING FOR THE VOLUNTARY ANNEXATION OF CERTAIN REAL PROPERTY CONSISTING OF APPROXIMATELY 2.5 ACRES LOCATED AT THE SOUTHEAST CORNER OF THE INTERSECTION OF CR 504 AND CR 511A, IN SECTION 29, TOWNSHIP 19 SOUTH, RANGE 23 EAST; WHICH IS LOCATED IN THE CITY'S JOINT PLANNING AREA; PROVIDING THAT SECTION 1-14 OF THE CITY OF WILDWOOD CODE OF ORDINANCES IS AMENDED TO INCLUDE THE ANNEXED PROPERTY; PROVIDING FOR CODIFICATION; PROVIDING FOR CONFLICT; PROVIDING FOR SEVERABILITY; AND PROVIDING FOR AN EFFECTIVE DATE.

NOW, THEREFORE, BE IT ENACTED AND ORDAINED by the City Commission of the City of Wildwood, Florida, as follows:

SECTION 1. Based upon the petition of the owner of the following described real property, which is approximately located at the southeast corner of the intersection of CR 504 and CR 511A to be annexed into the City, the property is hereby annexed into the City of Wildwood pursuant to Sections 171.044 and 171.204, Florida Statutes. The City Commission finds that the property is located within the City's Joint Planning Area with Sumter County; and meets all legal requirements for annexation. The annexed property lying in Sumter County, Florida, owned by Barbra Wieckhorst, is more particularly described as follows:

Parcels G29A239
Barbara Lynn Wieckhorst
Acres 2.5 +/-

LEGAL DESCRIPTION

W 35 FT OF LOT 23 & LOT 24 BLK I WILDWOOD RANCH PB3 PG29A-29B LESS THE S 195 FT OF LOT 24 & LESS THE S. 195 FT OF THE W 35 FT OF LOT 23 BLK I

SECTION 2. All of the above described annexed property shall be liable for its proportionate share of the future and existing indebtedness of the City of Wildwood.

SECTION 3. All of the above described annexed property shall be subject to the laws and ordinance of the City of Wildwood as if this territory had been a part of the City of Wildwood at the time of passage and approval of said laws and ordinances.

SECTION 4. Until such time as the City amends its comprehensive plan, the current Sumter County zoning classification and future land use regulations will remain in full force and effect.

SECTION 5. Section 1-14 of the City of Wildwood Code of Ordinances is hereby amended to include the legal description of the annexed parcel pursuant to this Ordinance. The location map identifying the property to be annexed are attached hereto as “Exhibit A” and incorporated herein by reference.

SECTION 6. If any portion of this Ordinance is declared invalid for any purpose, the remaining portion shall remain valid and in full force and effect.

SECTION 7. This Ordinance shall take effect upon final approval by the City Commission.

SECTION 8. SCRIVENER’S ERROR. The city attorney may correct scrivener’s errors found in this ordinance by filing a corrected copy of this ordinance with the city clerk.

DONE AND ORDAINED this _____ day of _____, 2025, by the City Commission of the City of Wildwood, Florida.

CITY COMMISSION
CITY OF WILDWOOD, FLORIDA

_____
Ed Wolf, Mayor

ATTEST: _____
Jessica Barnes, City Clerk

First Reading: _____

Second Reading: _____

Approved as to form:

_____
City Attorney

EXHIBIT A



WILDWOOD FLORIDA EST. 1877

CITY OF WILDWOOD
100 North Main Street
Wildwood, FL 34785
Phone: (352) 330-1330
www.wildwood-fl.gov

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AN 2412-001

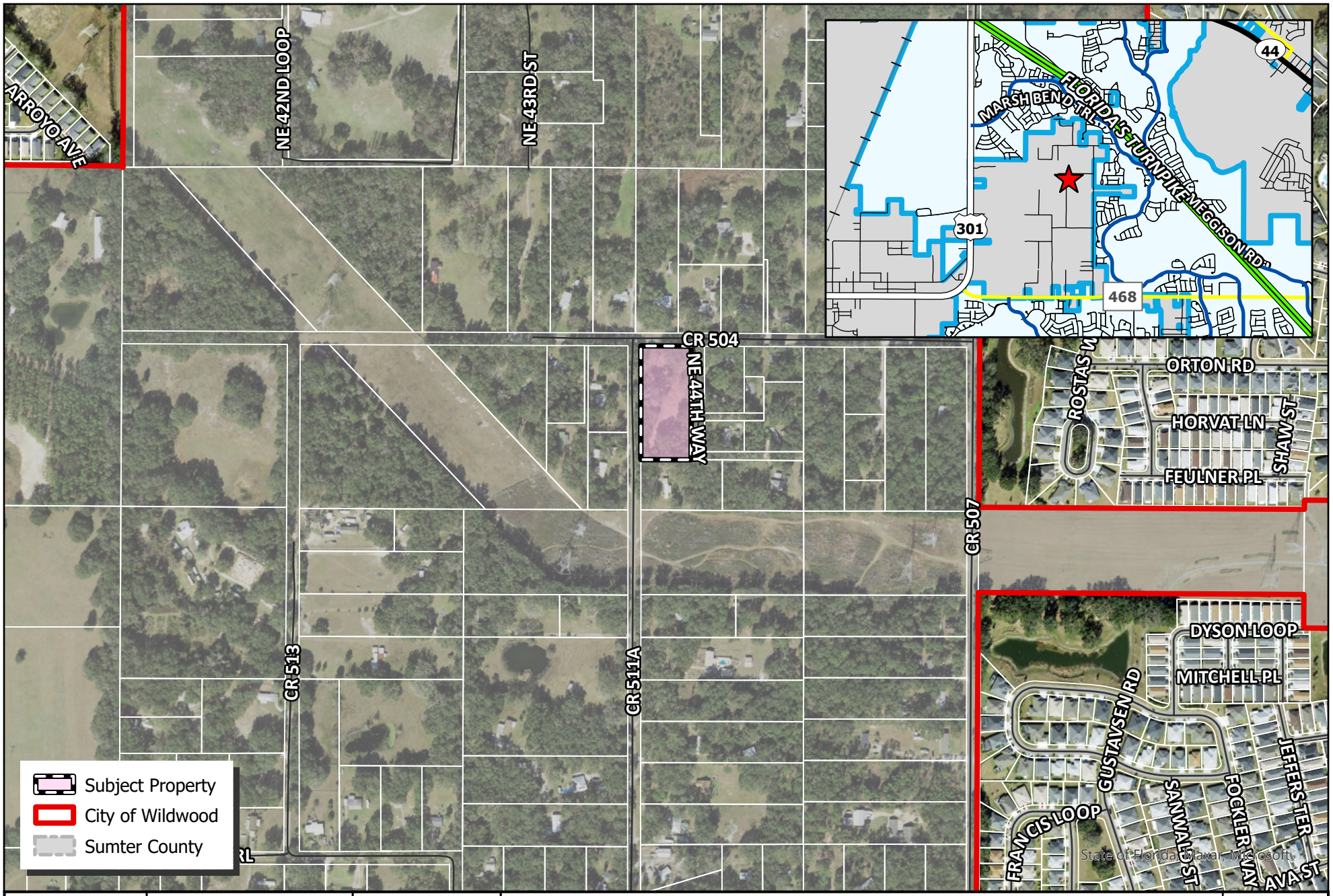
WIECKHORST ANNEXATION

PARCEL G29A239

MAP 1A

LOCATION MAP

DEC 2024



CITY OF WILDWOOD
100 North Main Street
Wildwood, FL 34785
Phone: (352) 330-1330
www.wildwood-fl.gov

AN 2412-001

WIECKHORST ANNEXATION

PARCEL G29A239

MAP 1B

LOCATION MAP

DEC 2024

Business Impact Estimate

This form should be included in the agenda packet for the item under which the proposed ordinance is to be considered and must be posted on the City of Wildwood website by the time notice of the proposed ordinance is published.

Proposed ordinance's title/reference: O2024-94

This Business Impact Estimate is provided in accordance with section 166.041(4), Florida Statutes. If one or more boxes are checked below, a business impact estimate is not required by state law[1] for the proposed ordinance. This Business Impact Estimate may be revised following its initial posting.

- ☐ The proposed ordinance is required for compliance with Federal or State law or regulation;
- ☐ The proposed ordinance relates to the issuance or refinancing of debt;
- ☐ The proposed ordinance relates to the adoption of budgets or budget amendments, including revenue sources necessary to fund the budget;
- ☐ The proposed ordinance is required to implement a contract or an agreement, including, but not limited to, any Federal, State, local, or private grant or other financial assistance accepted by the municipal government;
- ☐ The proposed ordinance is an emergency ordinance;
- ☐ The ordinance relates to procurement; or
- ☒ The proposed ordinance is enacted to implement the following:
  a. Part II of Chapter 163, Florida Statutes, relating to growth policy, county and municipal planning, and land development regulation, including zoning, development orders, development agreements and development permits;
  b. Sections 190.005 and 190.046, Florida Statutes, regarding community development districts;
  c. Section 553.73, Florida Statutes, relating to the Florida Building Code; or
  d. Section 633.202, Florida Statutes, relating to the Florida Fire Prevention Code.

[1] See Section 166.041(4)(c), Florida Statutes.

CITY COMMISSION OF THE CITY OF WILDWOOD

EXECUTIVE SUMMARY

SUBJECT: **AN 2404-002 Johary Real Estate Services**

REQUESTED ACTION: Staff recommends approval.

CONTRACT: Vendor/Entity:

Effective Date: Termination Date:

Managing Division/Department:

BUDGET IMPACT:

HISTORY/FACTS/ISSUES:

Case Number	AN 2404-002 Johary Real Estate Services
Applicant/Owner(s)	C.F. Johary
Acreage	2 +/-
Property Location	The subject property is generally located approximately 200 feet west of CR 513 and 860 feet east of CR 515, addressed as 4176 Warm Springs Avenue, Wildwood, FL 34785.
Parcel(s)	G29-008
Date	December 17, 2024

The applicant has submitted a voluntary annexation application for parcel G29-008. The property to be annexed totals 2 acres MOL and is generally located approximately 200 feet west of CR 513 and 860 feet east of CR 515. Annexation into the City is appropriate because the property is within the City's Joint Planning Area with Sumter County, which allows for voluntary annexations within the planning area that would otherwise not be permissible under statute due to the creation of a "pocket" or "enclave." The intent of the applicant is to change the Future Land Use and Zoning to accommodate a commercial use.



McKenna Page
Planner I, Development Services

ORDINANCE NO. O2024-95

AN ORDINANCE OF THE CITY OF WILDWOOD, FLORIDA, PROVIDING FOR THE VOLUNTARY ANNEXATION OF CERTAIN REAL PROPERTY CONSISTING OF APPROXIMATELY 2 ACRES LOCATED ON WARM SPRINGS AVE, APPROXIMATELY 200 FEET WEST OF CR 513 AND 860 FEET EAST OF CR 515, IN SECTION 29, TOWNSHIP 19 SOUTH, RANGE 23 EAST; WHICH IS CONTIGUOUS TO THE CITY LIMITS OF THE CITY OF WILDWOOD AND LOCATED IN THE CITY'S JOINT PLANNING AREA; PROVIDING THAT SECTION 1-14 OF THE CITY OF WILDWOOD CODE OF ORDINANCES IS AMENDED TO INCLUDE THE ANNEXED PROPERTY; PROVIDING FOR CODIFICATION; PROVIDING FOR CONFLICT; PROVIDING FOR SEVERABILITY; AND PROVIDING FOR AN EFFECTIVE DATE.

NOW, THEREFORE, BE IT ENACTED AND ORDAINED by the City Commission of the City of Wildwood, Florida, as follows:

SECTION 1. Based upon the petition of the owner of the following described real property, which is located on Warm Springs Ave, approximately 200 feet west of CR 513 and 860 feet east of CR 515, to be annexed into the City, the property is hereby annexed into the City of Wildwood pursuant to Sections 171.044 and 171.204, Florida Statutes. The City Commission finds that the property is contiguous to the City of Wildwood; is located within the City's Joint Planning Area with Sumter County; and meets all legal requirements for annexation. The annexed property lying in Sumter County, Florida, owned by Johary Real Estate Services LLC, is more particularly described as follows:

Parcels G29-008
JOHARY REAL ESTATE SERVICES LLC
2 +/- Acres

LEGAL DESCRIPTION

BEGIN AT THE SOUTHWEST CORNER OF THE EAST 1/2 OF THE SOUTHWEST 1/4 OF THE SOUTHWEST 1/4 OF SECTION 29, TOWNSHIP 19 SOUTH, RANGE 23 EAST, RUN EAST 210 FEET TO THE POINT OF BEGINNING, THENCE NORTH 210

FEET, EAST 210 FEET, SOUTH 210 FEET, WEST 210 FEET, LESS THE ROAD RIGHT-OF-WAY OF STATE ROAD NO. 468, PUBLIC RECORDS OF SUMTER COUNTY, FLORIDA. AND

BEGIN 210 FEET NORTH AND 210 FEET EAST OF THE SOUTHWEST CORNER OF THE EAST 1/2 OF THE SOUTHWEST 1/4 OF THE SOUTHWEST 1/4 OF SECTION 29, TOWNSHIP 19 SOUTH, RANGE 23 EAST, RUN NORTH 210 FEET, EAST 210 FEET, SOUTH 210 FEET, WEST 210 FEET TO THE POINT OF BEGINNING, SUMTER COUNTY, FLORIDA.

SECTION 2. All of the above described annexed property shall be liable for its proportionate share of the future and existing indebtedness of the City of Wildwood.

SECTION 3. All of the above described annexed property shall be subject to the laws and ordinance of the City of Wildwood as if this territory had been a part of the City of Wildwood at the time of passage and approval of said laws and ordinances.

SECTION 4. Until such time as the City amends its comprehensive plan, the current Sumter County zoning classification and future land use regulations will remain in full force and effect.

SECTION 5. Section 1-14 of the City of Wildwood Code of Ordinances is hereby amended to include the legal description of the annexed parcel pursuant to this Ordinance. The location map identifying the property to be annexed are attached hereto as “Exhibit A” and incorporated herein by reference.

SECTION 6. If any portion of this Ordinance is declared invalid for any purpose, the remaining portion shall remain valid and in full force and effect.

SECTION 7. This Ordinance shall take effect upon final approval by the City Commission.

SECTION 8. SCRIVENER’S ERROR. The city attorney may correct scrivener’s errors found in this ordinance by filing a corrected copy of this ordinance with the city clerk.

DONE AND ORDAINED this _____ day of _____, 2025, by the City Commission of the City of Wildwood, Florida.

CITY COMMISSION
CITY OF WILDWOOD, FLORIDA

_____
Ed Wolf, Mayor

ATTEST: _____
Jessica Barnes, City Clerk

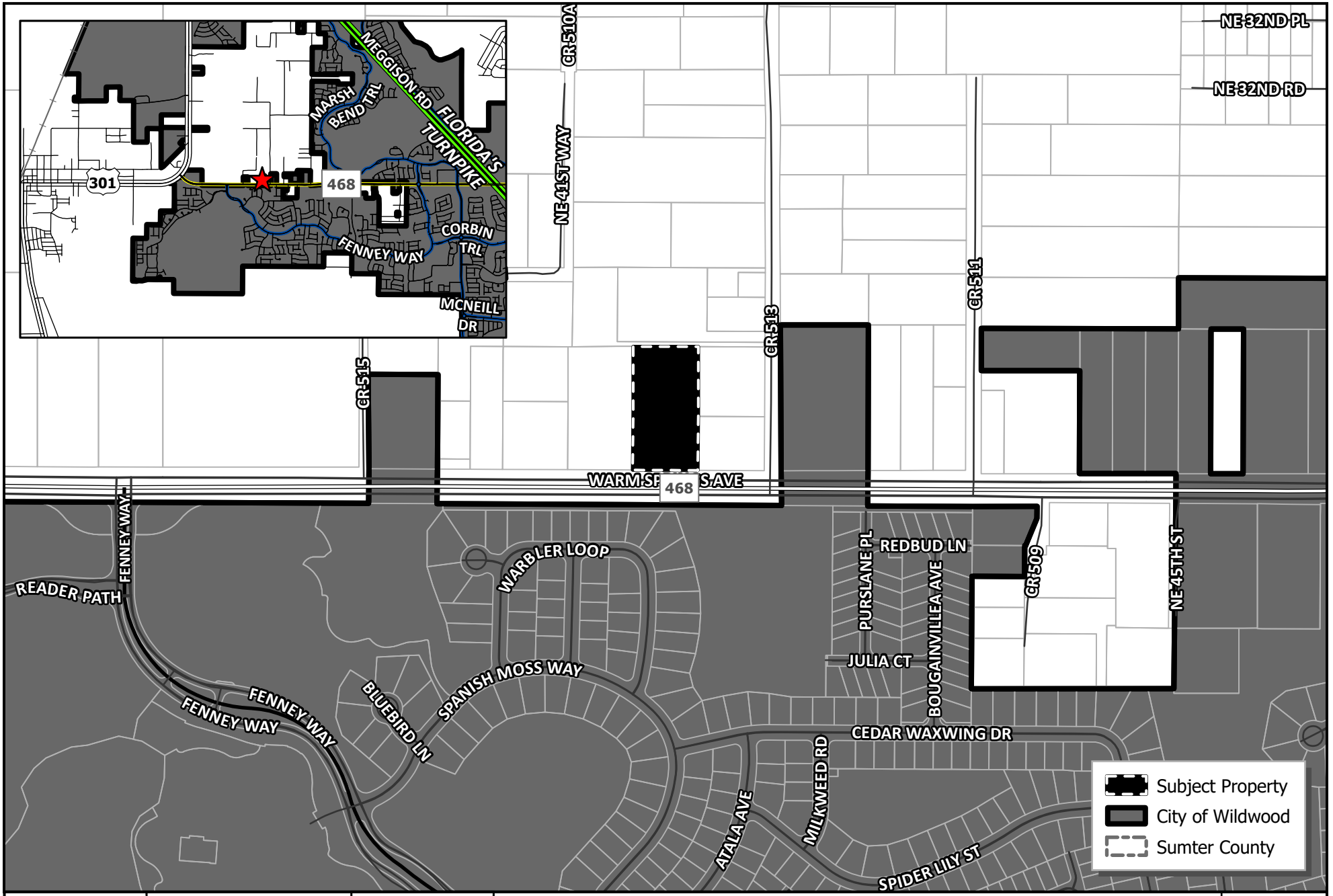
First Reading: _____

Second Reading: _____

Approved as to form:

_____
City Attorney

EXHIBIT A



WILDWOOD FLORIDA EST. 1877

CITY OF WILDWOOD
100 North Main Street
Wildwood, FL 34785
Phone: (352) 330-1330
www.wildwood-fl.gov

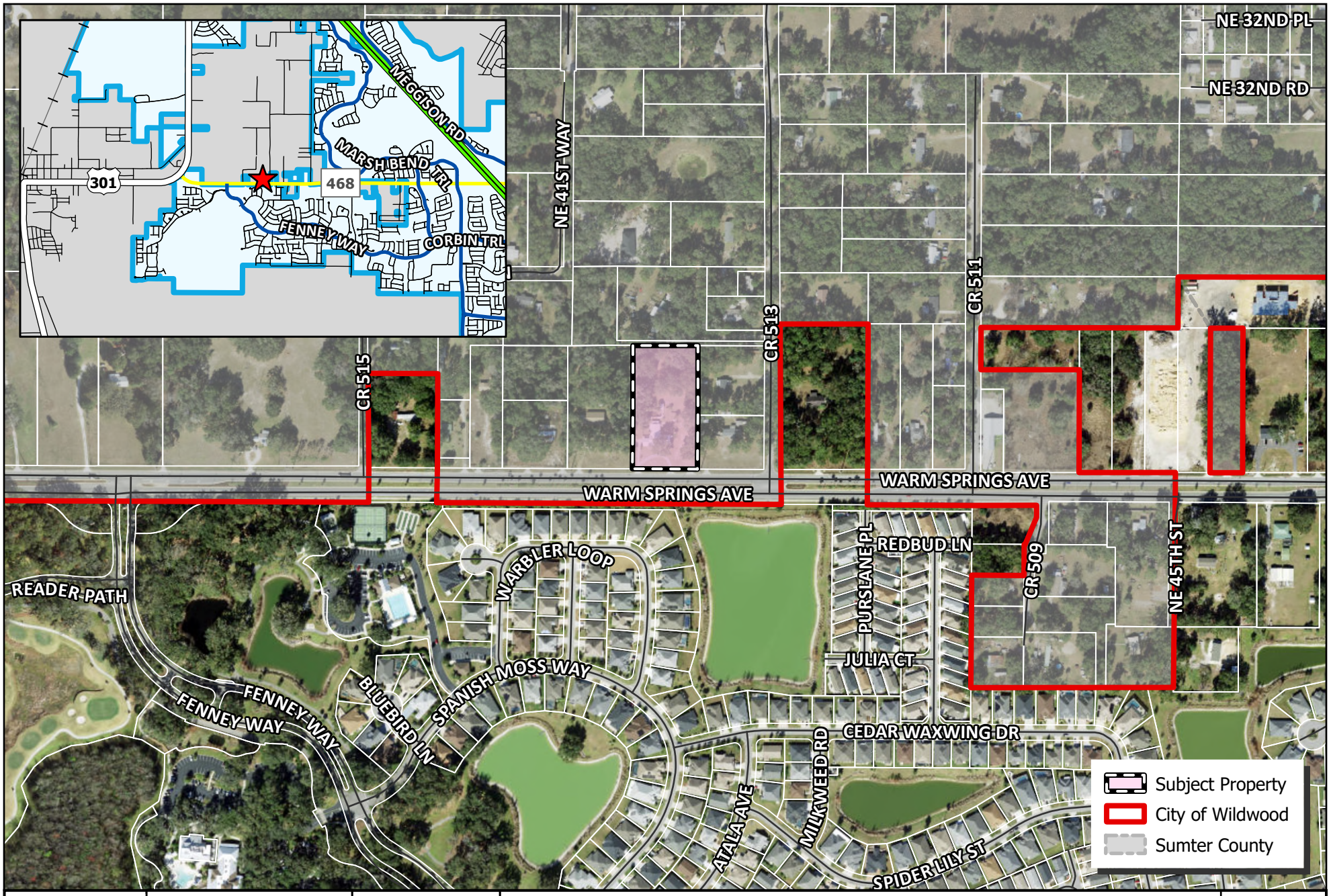
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AN 2404-002

JOHARY REAL ESTATE SERVICES

PARCEL G29-008

MAP 1A
LOCATION MAP
DEC 2024



WILDWOOD FLORIDA EST. 1877

CITY OF WILDWOOD
100 North Main Street
Wildwood, FL 34785
Phone: (352) 330-1330
www.wildwood-fl.gov

N

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Miles

AN 2404-002

JOHARY REAL ESTATE SERVICES

PARCEL G29-008

MAP 1B

LOCATION MAP

DEC 2024

Business Impact Estimate

This form should be included in the agenda packet for the item under which the proposed ordinance is to be considered and must be posted on the City of Wildwood website by the time notice of the proposed ordinance is published.

Proposed ordinance's title/reference: O2024-95

This Business Impact Estimate is provided in accordance with section 166.041(4), Florida Statutes. If one or more boxes are checked below, a business impact estimate is not required by state law[1] for the proposed ordinance. This Business Impact Estimate may be revised following its initial posting.

- ☐ The proposed ordinance is required for compliance with Federal or State law or regulation;
- ☐ The proposed ordinance relates to the issuance or refinancing of debt;
- ☐ The proposed ordinance relates to the adoption of budgets or budget amendments, including revenue sources necessary to fund the budget;
- ☐ The proposed ordinance is required to implement a contract or an agreement, including, but not limited to, any Federal, State, local, or private grant or other financial assistance accepted by the municipal government;
- ☐ The proposed ordinance is an emergency ordinance;
- ☐ The ordinance relates to procurement; or
- ☒ The proposed ordinance is enacted to implement the following:
  a. Part II of Chapter 163, Florida Statutes, relating to growth policy, county and municipal planning, and land development regulation, including zoning, development orders, development agreements and development permits;
  b. Sections 190.005 and 190.046, Florida Statutes, regarding community development districts;
  c. Section 553.73, Florida Statutes, relating to the Florida Building Code; or
  d. Section 633.202, Florida Statutes, relating to the Florida Fire Prevention Code.

[1] See Section 166.041(4)(c), Florida Statutes.

CITY COMMISSION OF THE CITY OF WILDWOOD

EXECUTIVE SUMMARY

SUBJECT: **2024 Utility System Master Plan**

REQUESTED ACTION: Staff recommends approval.

CONTRACT: Vendor/Entity:

Effective Date: Termination Date:

Managing Division/Department:

BUDGET IMPACT:

HISTORY/FACTS/ISSUES:

In January 2024, the City Commission authorized Kimley-Horn and Associates to update the City's 2019 Utility System Master Plan to reflect current hydraulic conditions and accurately forecast the City's future water, sewer, and reuse infrastructure needs. The findings of the 2024 Utility System Master Plan were presented to the City Commission by a representative of Kimley-Horn at the October 21, 2024 City Commission workshop.

The attached resolution formally adopts the City of Wildwood 2024 Utility System Master Plan completed by Kimley-Horn and Associates.

RESOLUTION NO. R2025-1

A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF WILDWOOD, FLORIDA, ADOPTING THE CITY OF WILDWOOD 2024 UTILITY SYSTEM MASTER PLAN; COMPLETED BY KIMLEY-HORN AND ASSOCIATES; PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, the City is a municipal provider of potable water, sanitary sewer, and reuse water services; and,

WHEREAS, the City recognizes the need to protect the natural resources of the City and of the State of Florida, as well as the need to ensure the environment is carefully and adequately protected; and,

WHEREAS, the City is experiencing increasing demand for its water, wastewater, and reuse water services; and,

WHEREAS, the City authorized Kimley-Horn and Associates to develop a comprehensive utility master plan for the purpose of identifying and prioritizing capital projects; and,

WHEREAS, the City wishes to adopt the City of Wildwood Utility System Master Plan so that it may be used as a guide for future utility projects and budgetary issues.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COMMISSION OF THE CITY OF WILDWOOD, FLORIDA, THAT:

Section 1. The City hereby adopts the "City of Wildwood Utility System Master Plan" (Master Plan) prepared by Kimley-Horn and Associates dated December 2024 attached herein as "Exhibit A" to this Resolution.

Section 2. The City Manager is hereby authorized to utilize the Master Plan which includes a list of recommended utility capital projects, the costs associated with said projects, and the revenue sufficiency analysis as a tool in making recommendations to the City Commission.

Section 3. The City Manager shall annually review the Master Plan and determine if an update is needed.

Section 4. This Resolution shall take effect immediately upon adopting by the City Commission.

DONE AND RESOLVED this _____ day of _____, 20____, by the City Commission of the City of Wildwood, Florida.

CITY COMMISSION
CITY OF WILDWOOD, FLORIDA

_____
Ed Wolf, Mayor

ATTEST: _____
Jessica Barnes, City Clerk

EXHIBIT A

CITY OF WILDWOOD

UTILITY SYSTEM Master Plan

Prepared for:

EST. 1877
WILDWOOD
FLORIDA

Prepared by:

Kimley»Horn
Expect More. Experience Better.

December 2024



UTILITY SYSTEM
CITY OF WILDWOOD
MASTER PLAN

Prepared for:

City of Wildwood

Prepared by:

Kimley-Horn and Associates, Inc.

142173541
December 2024
© Kimley-Horn and Associates, Inc.
1700 SE 17th Street, Suite 200
Ocala, FL 34471
352 438 3000

THIS IS TO CERTIFY THAT THE ENCLOSED ENGINEERING CALCULATIONS WERE PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION.

James E. Clayton, III, P.E.

Florida Registration Number 90813

Registry No. 35106



EXECUTIVE SUMMARY

Due to the increased growth and changes in the residential development pattern, the City of Wildwood (City) requested Kimley-Horn to update the City's 2019 Utility System Master Plan to identify potential system deficiencies and to prioritize the capital improvement projects (CIP) needed to meet future system demands. This master plan update and accompanying hydraulic modeling was assembled to assist the City in identifying and selecting the CIP's needed to efficiently and cost-effectively meet the current and future demands of the City.

WATER SYSTEM ANALYSIS

The City currently operates seven water treatment plants (WTP). All seven of the existing water treatment plants are operating within their respective Florida Department of Environmental Protection (FDEP) permitted capacities based on average and maximum daily flows. The 2019 hydraulic model was updated and re-calibrated to reflect the City's existing water system and present-day demands. Calibration of the model was done using hydrant flow data recorded in the field.

PRESENT DAY SYSTEM DEMANDS (2024) – This scenario consisted of a present day (2024) analysis of the water distribution system. The existing system scenario was used to calibrate the model to within 10% of observed system flows and pressures. Based on the present-day hydraulic analysis and discussions with the City staff, no system improvements are required.

2025 DEMANDS – The 2025 demand scenario analysis modeled the City's water distribution system with the projected 2025 water demands. Based on the 2025 hydraulic analysis and discussions with the City staff, no system improvements are required.

2030 DEMANDS – The 5-year demand scenario analysis modeled the City's water distribution system with the projected 2030 (5-year) water demands. To meet the projected demands the City will need to modify their existing water use permit (WUP) to reallocate withdrawal capacities to the Oxford WTP. The hydraulic model results demonstrated that construction of the CR 121 water main (**PWS Improvement No. 1**)**,** Phase III of the CR 209 WM extension (**PWS Improvement No. 2**), and the Oxford Oaks Interconnect (**PWS Improvement No. 3**) is required to meet the projected 2030 water demands of the City's service territory. The construction of Phase II of the Oxford WTP (**PWS Improvement No. 4**) and the high service pump and electrical upgrades at the CR 501 WTP (**PWS Improvement No. 5**) are required to meet the 2030 demands.

2035 DEMANDS – The 10-year demand scenario analysis modeled the City's water distribution system with the projected 2035 (10-year) water demands. The hydraulic model results demonstrated that construction of the Oxford WTP water main extension to CR 209 (**PWS Improvement No. 6**) will be required to meet the projected 2035 water demands of the City's service territory.

2040 DEMANDS – The 15-year demand scenario analysis modeled the City's water distribution system with the projected 2040 (15-year) water demands. To meet the projected 2040 demands the City will need construct a new WTP and the required water main extension project to connect the proposed WTP to the City's distribution system. For the analysis, two alternatives were evaluated; one evaluated a water treatment plant at the Champagne Farms site and the other evaluated a water treatment plant at the Monarch Ranch site (**PWS Improvement No. 7-8**).

BUILD OUT DEMANDS (2050) – The build-out demand scenario analysis modeled the City's water distribution system with the projected build-out (2025) water demands. To meet the projected demands the City hydraulic model results demonstrated that the existing 8-inch water main on US 301 will need to be



increased to a 12-inch (**PWS Improvement No. 9**) and additional water storage (**PWS Improvement No. 10A/B**) will need to be provided in the system in one of they build out alternatives to meet the build-out demands.

WASTEWATER SYSTEM ANALYSIS

The City currently operates two wastewater treatment facilities (WWTF) – the City of Wildwood WWTF and the Continental Country Club WWTF. Both of the City's WWTFs are currently operating within the FDEP permitted capacity. The City has planned to expand the City of Wildwood WWTF to 5.50 MGD with the ability to expand the facility to 8.00 MGD.

A hydraulic model was originally developed and calibrated for the City's wastewater collection system for the 2019 master plan. Calibration of the model was done by performing drawdown and pump performance testing utilizing Kimley-Horn's XAK-PACK pump station testing equipment. The 2019 model was updated based on the testing results, updated data provided by the City, and the present day (2024) system geometry and demands. The model results were used to identify capital improvement projects (i.e. force main extensions, lift station improvements, and wastewater treatment facility expansions) needed to meet the present day and the 2025, 2030, 2035, 2040, and Build-Out (2050).

PRESENT DAY SYSTEM DEMANDS (2024) – This scenario consisted of a present day (2024) analysis of the wastewater collection system. The present-day system scenario was used to calibrate the model to within 10% of observed system flows and pressures. Based on the present-day model analysis and discussions with the City staff, the Peter Street and Charlotte lift stations do not meet their design peak hour flows (**WW Improvement No. 1 and No. 2**) and the Beaumont lift station pumps (**WW Improvement No. 3)** are oversized resulting in system inefficiencies and velocities exceeding 6 feet per second (fps) in the Beaumont force main.

2025 DEMANDS – The 2025 demand scenario analysis modeled the City's wastewater collection system with the projected 2025 wastewater system flows. The hydraulic modeling demonstrated that the following improvements required to meet the projected 2025 wastewater flows for the City's service territory: The improvements to the Peter Street, Charlotte, and Beaumont lift station (**WW Improvement No. 1-3**) and the construction of the CR 209/Trailwinds repump/booster pump station (**WW Improvement No. 4**).

2030 DEMANDS – The 2030 demand scenario analysis modeled the City's wastewater collection system with the projected 2030 wastewater system flows. The model results demonstrated that the only recommended improvement to meet the 2030 flows is **WW Improvement No. 6A/B/C**. Based on development trends and known future developments; upgrades to the CR 229 lift station and force main (**WW Improvement No. 5**) will be required as well as the 16-inch force main from the Coleman Federal Prison should be upgraded to a 20-inch and rerouted through the Monarch Ranch property to the stub-out from the CR 219 lift station (**WW Improvement No. 8**).

2035 DEMANDS - The 2035 demand scenario analysis modeled the City's wastewater collection system with the projected 2035 wastewater system flows. The model results demonstrated that, with the recommended improvements for the previous scenarios implemented, conversion of the Oxford Point lift station to a repump station (**WW Improvement No. 7A**) or pump upgrades to the Parkwood and Steeplechase lift stations (**WW Improvement No. 7B**).

2040 DEMANDS - The 2040 demand scenario analysis modeled the City's wastewater collection system with the projected 2040 wastewater system flows. The model results demonstrated that, with the

recommended improvements for the previous scenarios implemented no additional improvements are required.

BUILD-OUT DEMANDS - The build out demand scenario analysis modeled the City's wastewater collection system with the projected build out wastewater system flows. The model results demonstrated that, with the previous recommended improvements for the previous scenarios implemented the required additional improvements for the build-out flows is an additional wastewater treatment plant (**WW Improvement No. 9**) with a capacity of 4.00 MGD in the northwestern portion of the City. The flows north of C-462 would be rerouted to the new facility. A separate analysis would need to be performed to determine the specific improvements required to reroute the flows to the new facility.

REUSE WATER ANALYSIS

The City currently operates a reuse water system consisting of a public access reuse system with a capacity of 3.30 MGD and rapid infiltration basins (RIB) with a total capacity of 1.06 MGD. A hydraulic model was developed to evaluate the existing and future reuse water system performance under projected flows and disposal capacity requirements.

Present-Day (2024) This scenario consisted of a present-day (2024) analysis of the reuse distribution system. The present-day system scenario was used to calibrate the model to within 10% of observed system pressures. The hydraulic model demonstrated that the current system can meet the existing demands and meet the established hydraulic standards. There are currently two improvements (**RW Improvement No. 1** and **No. 2**) that in progress should be completed by the end of 2025. The millennium park reuse extension is currently under construction and the design for the R-12 pump station is complete.

2025 Scenario The 2025 scenario analysis evaluated the City's reuse system with the projected 2025 effluent flows and reuse system demands. The model results, along with discussions with City staff, demonstrated that in addition to the previous system improvements, the City's RIBs will have to expanded to a capacity of 4.70 MGD (**RW Improvement No. 3**) to meet the future design capacity of the City's WWTF (5.50 MGD).

2030 Scenario The 2030 scenario analysis evaluated the City's reuse system with the projected 2030 effluent flows and reuse system demands. The model results, along with discussions with City staff, demonstrated that in addition to the previous system improvements, the City will require a new effluent pump station and additional storage for public access reuse (**RW Improvement No. 4**) at the City's WWTF to meet the future design capacity of the City's WWTF (5.50 MGD).

2035 Scenario The 2035 scenario analysis evaluated the City's reuse system with the projected 2035 effluent flows and reuse system demands. To meet the Phase II permitted capacity of the City's WWTF (8.00 MGD), the City will require additional effluent disposal capacity. This includes additional disposal locations as part of the NSU master reuse service area (**RW Improvement No. 5** and **6**) and increased hydraulic capacity for the City's effluent pump station reuse main. This can be accomplished by replacing the existing effluent main with a 24-inch main (**RW Improvement No. 7A**) or finding an alternative effluent disposal site (**RW Improvement No. 7B**) to meet the Phase II (8.00 MGD) capacity of the City's WWTF.

Build Out (2050) No improvements were identified between the 2035 and Build Out planning periods. The build out scenario analysis evaluated the City's reuse system with the projected build out effluent flows and reuse system demands. To meet the future build out capacity of the City's effluent flows (12.00 MGD) the City will have to expand or find an alternative effluent disposal site and method (**RW Improvement No. 7B**) to meet the ultimate build out capacity of the City's existing and future WWTF.

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INTRODUCTION

BACKGROUND

The City of Wildwood (City) is experiencing increased population growth and changes to the residential development pattern, subsequently increasing the water and sanitary sewer (wastewater) demands within the City's service area. In response to anticipated future demands, the City requested an update of the *2019 Utility System Master Plan* to identify potential system deficiencies and to prioritize the capital improvement projects (CIP) needed to meet the future needs of the Utility.

SCOPE AND OBJECTIVES

The primary objective of this utility system master plan update is to identify the required potable water, sanitary sewer, and reuse water capital improvement projects that are required to meet the 2025, 2030, 2035, 2040, and Build-Out requirements of the City's Utility System.

Water System Objective

- Identify the water supply, treatment, and storage capacity of the City's existing water system.
- Develop potable water demand projections (2025, 2030, 2035, 2040, and Build-Out)
- Evaluate the water distribution system under present day conditions (2025) and for the 2030, 2035, 2040, and build-out growth projections.
- Identify necessary improvements to the City's water supply, treatment, and storage capacity to meet the present day (2025), 2030, 2035, 2040, and Build-Out requirements.

Wastewater System Objectives

- Identify the capacity of the City's existing wastewater collection system.
- Develop wastewater flow projections (2025, 2030, 2035, 2040, and Build-Out).
- Evaluate the sanitary sewer collection system under present day (2025) conditions and future 2030, 2035, 2040, and Build-Out conditions.
- Identify necessary improvements to the City's wastewater sanitary sewer collection system during the present day (2025) conditions and future 2030, 2035, 2040, and Build-Out conditions.

Reuse Water System Objectives

- Identify the reuse water supply and storage capacity of the City's existing reuse water system.
- Identify potential future reuse water users and analyze the possibility of supplying reuse water to known future developments and public areas within the City's service area.
- Develop a hydraulic model to identify necessary improvements to the City's reuse water supply and storage capacity for the present day (2025), 2030, 2035, 2040, and Build-Out conditions.

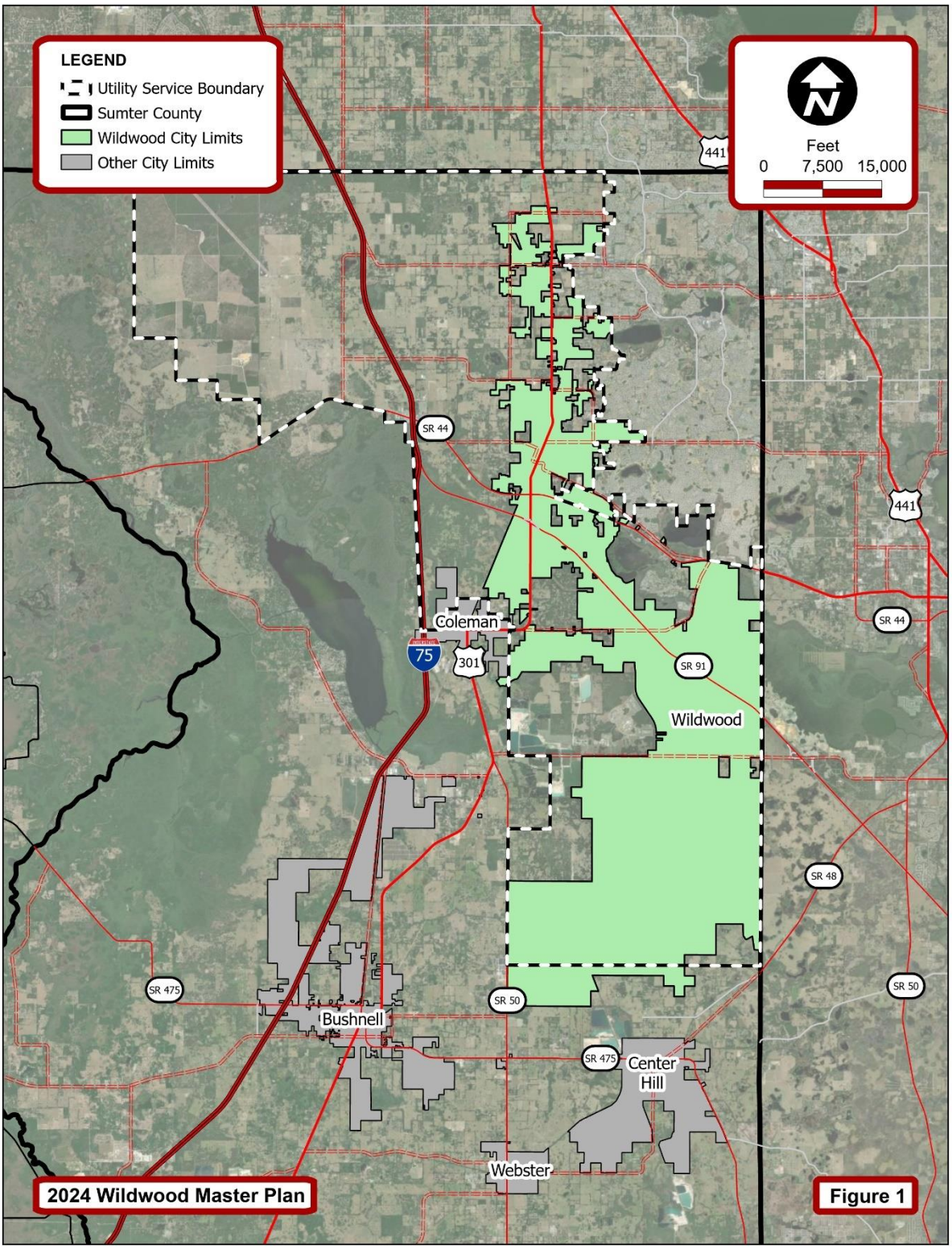
SERVICE AREA DESCRIPTION

The City of Wildwood and Sumter County entered into an Interlocal Service Boundary (ISB) and Joint Planning Area (JPA) Agreement pursuant to F.S. § 171, Part II. The City adopted the agreement by ordinance (Ordinance 02009-5) on April 13, 2009, and the City and County amended their respective comprehensive plans to include the JPA.

F.S. § 171.203(11) requires the City to amend the Comprehensive Plan to include a boundary map of the municipal service area, establish population projections, and demonstrate the ability to provide the area with public facilities and services. The amendments to the City's Comprehensive Plan include the incorporation of the municipal service area boundary, the JPA Land Use Map, and text amendments to the Future Land Use Element concerning urban sprawl, land uses within the JPA, annexation, and provisions of services. The State land planning agency is required to review the amendment under F.S. § 163, Part II.

The City of Wildwood's Utility Service Area is shown in **Figure 1**.

Figure 1: City of Wildwood Utility Service Area



DEMAND PROJECTIONS

This section presents the projected population growth within the City's utility service area. The future utility demands must first be estimated to properly determine whether the current system can support said demands and which improvements are required to support the identified demands. Identifying, quantifying, and locating these demands allows for proper analysis and planning of capital improvements necessary to efficiently and cost-effectively serve existing and new customers.

Increases in demands within the City's utility system are anticipated to occur in four distinct ways: (1) existing demands within the areas currently served by the City resulting from population changes and changing land use densities, (2) new connections in areas where infrastructure exists (existing utility infill demands), (3) increased demands from the physical expansion of the utility system and connection of new customers, and (4) demand increases driven by new development (development demands).

METHODOLOGY FOR DETERMINING POPULATION GROWTH

The methodology for determining the future population growth was based on a model developed by the Southwest Florida Water Management District (SWFWMD). SWFWMD's growth model utilizes ArcGIS and combines the population projections made by the University of Florida's Bureau of Economic and Business Research (BEBR) and the US Census block-level data. The SWFWMD model has population data at the parcel level for all of Sumter County, which allows for projecting populations for any service area. In addition to using the SWFWMD projection model, the City of Wildwood Joint Planning Area (JPA) was used for determining the future population of parcels identified by the city to have a different future land use than predicted by SWFWMD. The populations are projected for the following years: 2024 (present), 2025, 2030, 2035, 2040, and 2050 (build-out). For a further discussion of the methodologies used by SWFWMD in developing the parcel level growth projections, see **Appendix A**. For a more detailed summary of the population projections and associated water and wastewater demands, see **Appendix B**. **Figure 2** shows the City's Joint Planning Area and Existing Infill Area Layout.

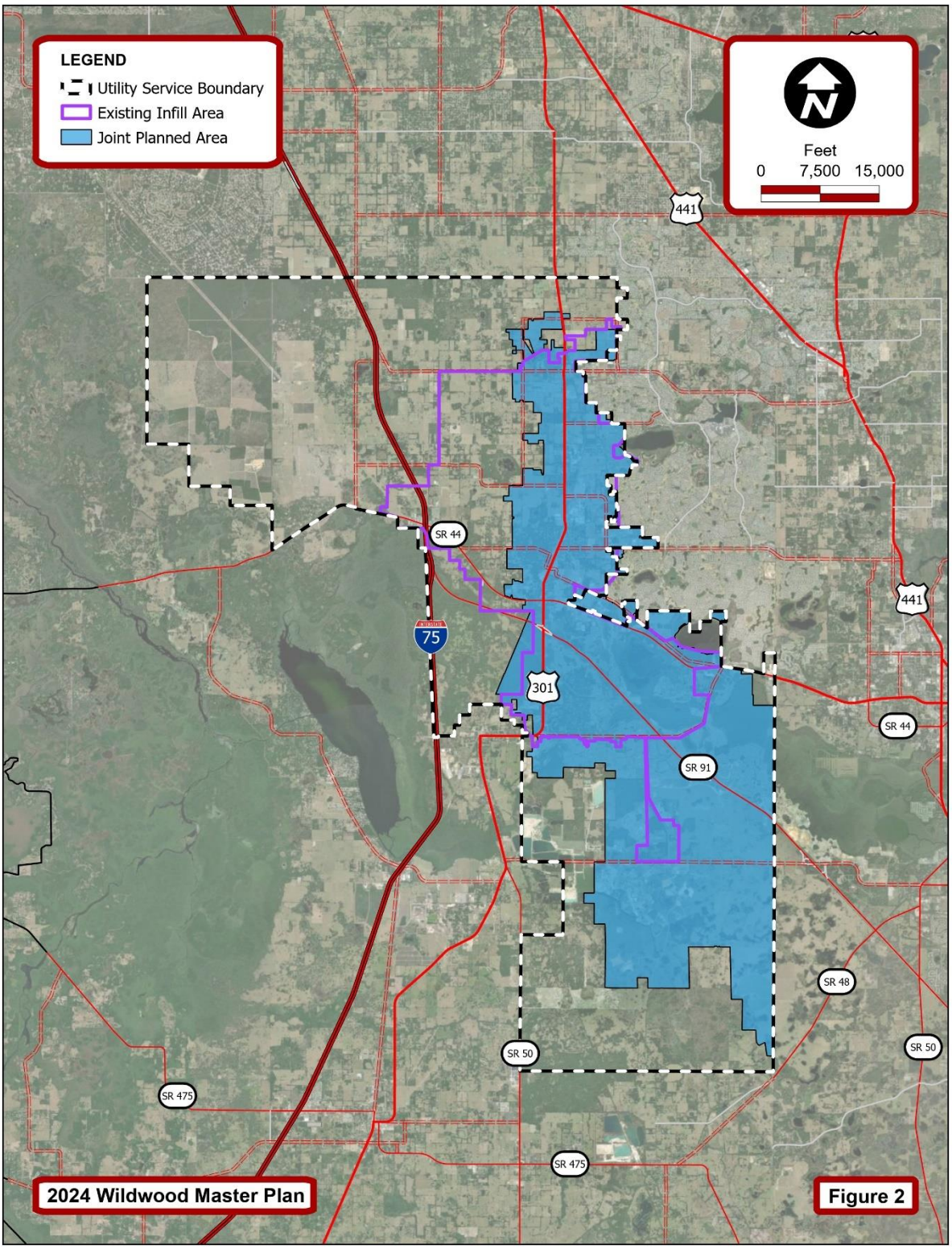
Existing Demands

To establish the existing demand growth, no physical expansion of the City's network or connection of new customers was assumed (meaning that only current customers would be considered). For this classification, the parcel level data and growth rate provided by SWFWMD only included the parcels that had billing data associated with them from January 2023 through December 2023. This growth rate was then used to project the population for the parcels already connected to the system in the planning years. The existing number of equivalent residential units (ERUs) being served was estimated using the most recent annual MOR data (February 2023 - January 2024) and the standard level of service (LOS) for water (300 gallons per day [gpd]/ERU) for each ERU. The ERUs for each future scenario were then estimated by multiplying the existing ERUs by the resulting growth rate calculated from the SWFWMD population model. **Table 1** summarizes the estimated ERUs.

Table 1: Existing Service Area ERU Projections

Service Area	2024 (Present)	2025	2030	2035	2040	2050 (Build Out)
Existing Service Area	8,688	8,727	8,923	9,123	9,328	9,751
FCC Coleman	2,266	2,276	2,327	2,379	2,432	2,500
Subtotal	**10,954**	**11,003**	**11,250**	**11,502**	**11,760**	**12,251**

Figure 2: JPA and Existing Infill Area Layout



Existing Utility Infill Demands

To establish the existing utility infill demands, an existing utility area was established to classify that all parcels within this defined area can connect to existing utilities with no other classification. Demand for infill parcels was calculated in two different ways depending on the data available for them and used the following methodology:

- For the parcels within the JPA with a City designated future land use, the City FLUM was used to estimate the number of ERUs per parcel. The allowable density and/or maximum floor area ratio (FAR) was then used to calculate the number of units allowed per parcel. If a density and FAR were provided for the given land use, then the number of ERUs was calculated utilizing the maximum allowable density and the maximum FAR. The larger of the two values was used to estimate the demands and loadings of the parcel. Demands were also calculated based on the level of service for a specific land use according to the City's 2050 comprehensive plan.
- For the infill parcels without a City designated future land use, the SWFWMD model was used to estimate the present and future population projections for the four areas. The ERUs within the infill area were then estimated by dividing the population by the persons per household (2.57) from the U.S. Census Bureau (2018-2022). Demands for these parcels were calculated using the City's standard level of service of 300 gpd/ERU for water and 250 gpd/ERU for wastewater.

Future scenario demands were estimated by multiplying the existing (present day) demands by the average growth rates determined by the SWFWMD population model for the identified infill parcels.

Utility Expansion infill Demands

Another important contributor to increased demands can be realized through physical expansion of the utility system. The expansion of the City's utility system is expected to progress with development. As the utility system is expanded to serve future developments it will also allow the City to serve water and wastewater service to presently non-served parcels. A total of three areas were identified for possible expansion in the future:

- CR209 Expansion
- CR229/CR462 Expansion
- CR229/CR466

The ERU projections for the expansion areas exclude any known future developments. The ERUs and associated demands were calculated utilizing the same methodology as the existing utility infill parcels. The estimated ERCs for infill and the expansion areas are summarized below in **Table 2**.

Table 2: Existing Utility and Expansion Infill ERU Projections

Service Area	2024 (Present)	2025	2030	2035	2040	2050 (BO)
Existing Utility Infill	-	1,034	1,518	2,229	3,273	7,054
CR209 Expansion Infill	-	-	200	293	431	928
CR229/CR462 Expansion Infill	-	-	106	156	229	493
CR229/CR466 Expansion Infill	-	-	137	201	295	635
Subtotal	**0**	**1,034**	**1,961**	**2,879**	**4,228**	**9,110**



Development Demands

The final contributor to increased demands are planned developments. The City developed a list of residential and non-residential projections based on known project entitlements anticipated to start within the next twenty years. These developments were classified in the following four categories:

- Residential developments
- Non-residential developments
- ILF/ALF developments
- Additional units to existing developments

The City provided the estimated number of units for each development over the 20-year timeline. The development entitlements were given in ERUs and staged at the approximate completion time. See **Appendix B** for the future development entitlement allocation matrix, narrative for the residential and non-residential unit projections, population projections, ERU projections, and the calculation summary. **Tables 4-6** summarize the projected ERUs to be served in the respective time frame from **Appendix B**.

Residential Developments

Residential developments are comprised of multiple land uses. The development timing and corresponding ERUs for each development were provided by the City. A summary of the known residential developments is shown in **Table 3** below.

Table 3: Planned Residential Developments and ERUs

Development	2024 (Present)	2025	2030	2035	2040	2050 (BO)
Juliette Apartments	90	182	182	182	182	182
Wildwood Landing	10	50	101	101	101	101
Solamar	100	243	243	243	243	243
Zora at Wildwood	90	130	130	130	130	130
Villas at Wildwood	135	192	192	192	192	192
Wildwood Multifamily at Turkey Run	-	80	120	120	120	120
Twisted Oaks SFD	20	100	420	420	420	734
Twisted Oaks Townhomes	100	248	248	248	248	248
Twisted Oaks Multifamily	50	231	231	231	231	231
Townhomes at Powell	-	100	128	128	128	128
Oxford BFR	-	-	154	154	154	154
Highfield at Twisted Oaks	15	75	315	315	315	374
100 Oaks	-	-	210	210	210	411
Southern Waters Capital	-	-	268	268	268	268
Sumter Springs (County)	-	-	120	120	120	274
Highland Homes (County)	-	-	160	160	160	532
The Keys at Wildwood I	-	190	190	190	190	190
The Keys at Wildwood II	25	225	302	302	302	302

Table 3: Planned Residential Developments and ERUs						
Development	**2024 (Present)**	**2025**	**2030**	**2035**	**2040**	**2050 (BO)**
Bellweather Multifamily	-	200	207	207	207	207
Cassablanca at Wildwood	-	-	45	45	45	45
Evolve Apartments	-	-	207	207	207	207
Wildwood Place PD	-	-	250	250	250	250
Tillman Villas	-	85	180	180	180	180
Commander's Pointe	-	-	531	531	531	531
Townhomes at Peppertree (Blount)	-	-	144	144	144	144
Tillman Oaks	-	-	160	160	160	160
Boulder Square	-	-	302	302	302	302
Wildwood III	-	-	350	350	350	350
Monarch Ranch	-	-	-	1,125	1,125	1,125
Wildwood RV Village North	-	-	250	250	250	250
O'steen Property	-	-	250	250	250	250
Subtotal	**635**	**2,331**	**6,590**	**7,715**	**7,715**	**8,815**

Non-Residential Developments

Non-residential developments are comprised of multiple land uses, including but not limited to commercial and industrial usage. The development timing and corresponding ERUs for each development were provided by the City. A summary of the known non-residential developments are shown in **Table 4**.

Table 4: Planned Non-Residential Developments and ERUs						
Development	**2024 (Present)**	**2025**	**2030**	**2035**	**2040**	**2050 (BO)**
Burger-Fi	2	2	2	2	2	2
Preston Place	8	14	14	14	14	14
Pearl Plaza	3	3	3	3	3	3
Wildwood Professional Plaza	6	6	6	6	6	6
Home Depot	45	45	45	45	45	45
CVS	5	5	5	5	5	5
HCA Trailwinds Hospital	0	88	88	88	88	88
Target	46	46	46	46	46	46
Wildwood Storage	1	1	1	1	1	1
Ashley Furniture	-	19	19	19	19	19
VIP Garage	6	12	12	12	12	12
Ocala Eye	6	6	6	6	6	6
Bethany Estates Medical Center	1	1	1	1	1	1
Turkey Run Hotel	-	-	72	72	72	72
Mainstay Expansion	-	18	18	18	18	18



Table 4: Planned Non-Residential Developments and ERUs						
Development	**2024 (Present)**	**2025**	**2030**	**2035**	**2040**	**2050 (BO)**
Freedom Fellowship Church	-	6	6	6	6	6
New Horizon Plaza	-	36	48	48	48	48
Oxford Overnight	-	-	73	73	73	73
Woodspring Suites	-	30	61	61	61	61
PSL Headquarters	1	1	1	1	1	1
Stipes Gutters Office	1	1	1	1	1	1
South Wildwood Industrial Park Lot 5A	-	1	1	1	1	1
Chesterfield Villages Plaza Ph 2	-	8	8	8	8	8
Clevelend Health Center	-	7	7	7	7	7
CVC - ASC - Oxford Pointe	3	3	3	3	3	3
Lucky U Cycles	-	3	3	3	3	3
7 Eleven @ C-462	-	6	6	6	6	6
Dentist Office - Oxford Professional Park	-	2	2	2	2	2
The Railyard	-	43	43	43	43	43
WaWa - Turkey Run	-	7	7	7	7	7
WaWa - SR 44 and 301	-	7	7	7	7	7
Chipolte @ Signature Dr.	-	5	5	5	5	5
Panda Express	8	8	8	8	8	8
Trailwinds Shoppes III	15	30	30	30	30	30
Mister Car Wash	-	13	13	13	13	13
A-1 Ready Mix Block Plant	-	1	1	1	1	1
Storage at Powell	-	1	1	1	1	1
Cleveland Law Office	-	2	2	2	2	2
Karparti Law	-	2	2	2	2	2
Premier Psychological	-	1	1	1	1	1
Werner Trucking (County)	-	20	20	20	20	20
Old Dominion Trucking (County)	-	-	20	20	20	20
Parcel C33-045 Commercial (County)	-	-	-	370	370	370
Pike 75	-	-	-	1,100	1,100	1,100
Wildwood Micro-Hospital	-	7	19	25	25	25
Subtotal	**157**	**517**	**737**	**2,213**	**2,213**	**2,213**

ILF/ALF Developments

The ILF/ALF (independent and assisted living facilities) developments comprise multiple existing land uses. The timing and estimated ERUs of each development were provided by the City. A summary of the new ILF/ALF developments is shown in **Table 5**.

Table 5: Planned ILF/ALF Developments and ERUs						
Development	**2024 (Present)**	**2025**	**2030**	**2035**	**2040**	**2050 (BO)**
Parkview Independent Living Facility	-	134	134	134	134	134
ALF CR 462	-	110	110	110	110	110
Subtotal	**0**	**244**	**244**	**244**	**244**	**244**

Additional Units for Existing Developments

The City has identified existing developments with remaining entitlements. The timing and remaining ERUs of each development were provided by the City. A summary of the additional units are summarized below in **Table 6**.

Table 6: Additional Residential Developments and ERUs						
Development	**2024 (Present)**	**2025**	**2030**	**2035**	**2040**	**2050 (BO)**
Lakeside Landings	4	4	4	4	4	4
Triumph South (Phase 2)	20	40	72	72	72	72
Simple Life Tiny Homes	8	16	72	72	72	136
Beaumont	8	10	10	10	10	10
Densan Park (Phase 1 & 2)	8	16	58	68	78	88
Grand Oaks Manor (Phase 1)	-	8	52	52	52	145
West Village Apartments	28	28	28	28	28	28
The Mark at Wildwood	87	87	87	87	87	87
Sundance Trails at Beaumont	200	250	250	250	250	250
Wildwood Cottages	35	35	35	35	35	35
The Wilds (Phase 2 & Phase 3)	140	182	182	182	182	182
Grand Oaks Manor (Phase 2)	-	-	365	365	365	365
Oxford Crossing	-	-	600	600	600	600
Lake Andrews Preserve	-	-	190	190	190	190
Subtotal	**538**	**676**	**2,005**	**2,015**	**2,025**	**2,192**

Connection to the City of Coleman

The City of Wildwood and the City of Coleman entered into a Utility Service Area Agreement for the City of Wildwood to provide sanitary sewer service to the City of Coleman. Currently, all the parcels in the City of Coleman are on septic tanks. A Feasibility Study was completed in May 2023, which estimated the future demands for the City of Coleman and analyzed alternatives for providing sanitary sewer service for the City of Coleman. For reference the feasibility study is attached as **Appendix C**. The estimated build-out sanitary flows from the Feasibility Study are 74,406 gpd and for the purposes of the Master Plan were estimated to be online by the year 2030.

Connection of OSTDS to Wildwood Utilities

In 2020, the Florida legislature passed a bill known as the Clean Waterways Act, which became effective in 2021 to address issues surrounding pollution and water quality affecting local water systems. In compliance with this act, the City of Wildwood contracted Halff and Associates Inc. to create a basin management action plan (BMAP) report addressing the issues affecting the basin and create a remediation plan (Attached as **Appendix D**). As a part of the remediation plan, any onsite sewage treatment and disposal systems (OSTDS) within the BMAP are to be connected to the City's existing wastewater collection system. A summary of the projected OSDTS to connect to the City's existing system until 2050 are summarized below in **Table 7**.

Table 7: OSDTS Connections and ERUs

Service Area	2024 (Present)	2025	2030	2035	2040	2050 (BO)
OSTDS Connections	-	-	12	385	423	498

Summary of Growth Projections

Table 8 below summarizes the projected City utility system growth until 2050. See **Appendix B** for the comprehensive future demand projections for the City. **Figures 3** and **4** show the classification of each parcel within the City's utility service area included in the demand projections.

Table 8: Summary of Projected ERUs

Demand	2024 (Present)	2025	2030	2035	2040	2050 (BO)
Existing Service Area	8,688	8,727	8,923	9,123	9,328	9,751
FCC Coleman	2,266	2,276	2,327	2,379	2,432	2,500
Existing Utility Infill	-	1,034	1,518	2,229	3,273	7,054
CR209 Expansion Infill	-	-	200	293	431	928
CR229/CR462 Expansion Infill	-	-	106	156	229	493
CR229/CR466 Expansion Infill	-	-	137	201	295	635
Residential Developments	635	2,331	6,590	7,715	7,715	8,815
Non-Residential Developments	157	517	737	2,213	2,213	2,213
ILF/ALF Developments	-	244	244	244	244	244
Additional Unit Development	538	676	2,005	2,015	2,025	2,192
Connection to Coleman	-	-	298	298	298	298
OSTDS Connection	-	-	12	385	423	498
Total	**12,284**	**15,805**	**22,999**	**27,153**	**28,808**	**35,523**

Figure 3: Infill Parcels

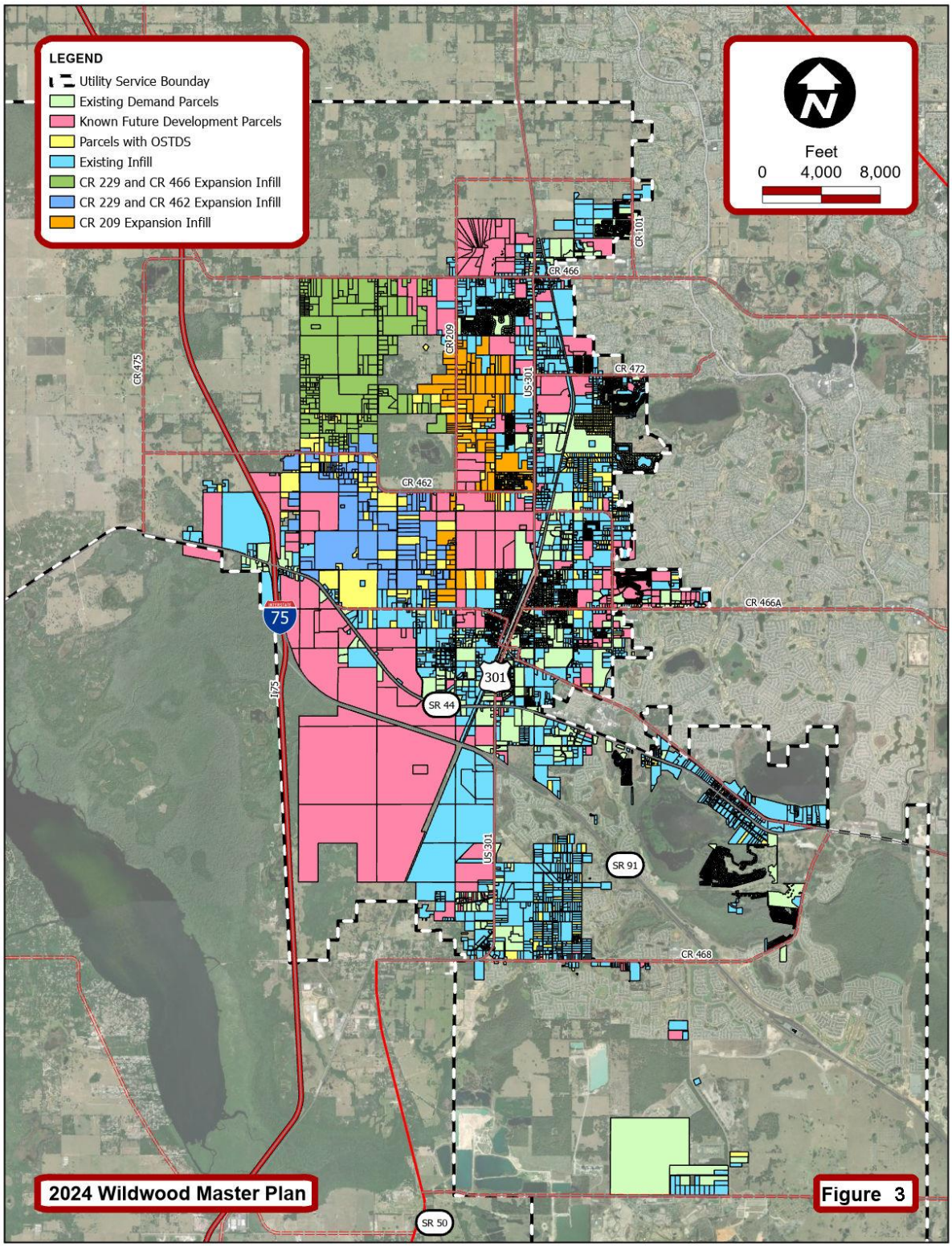
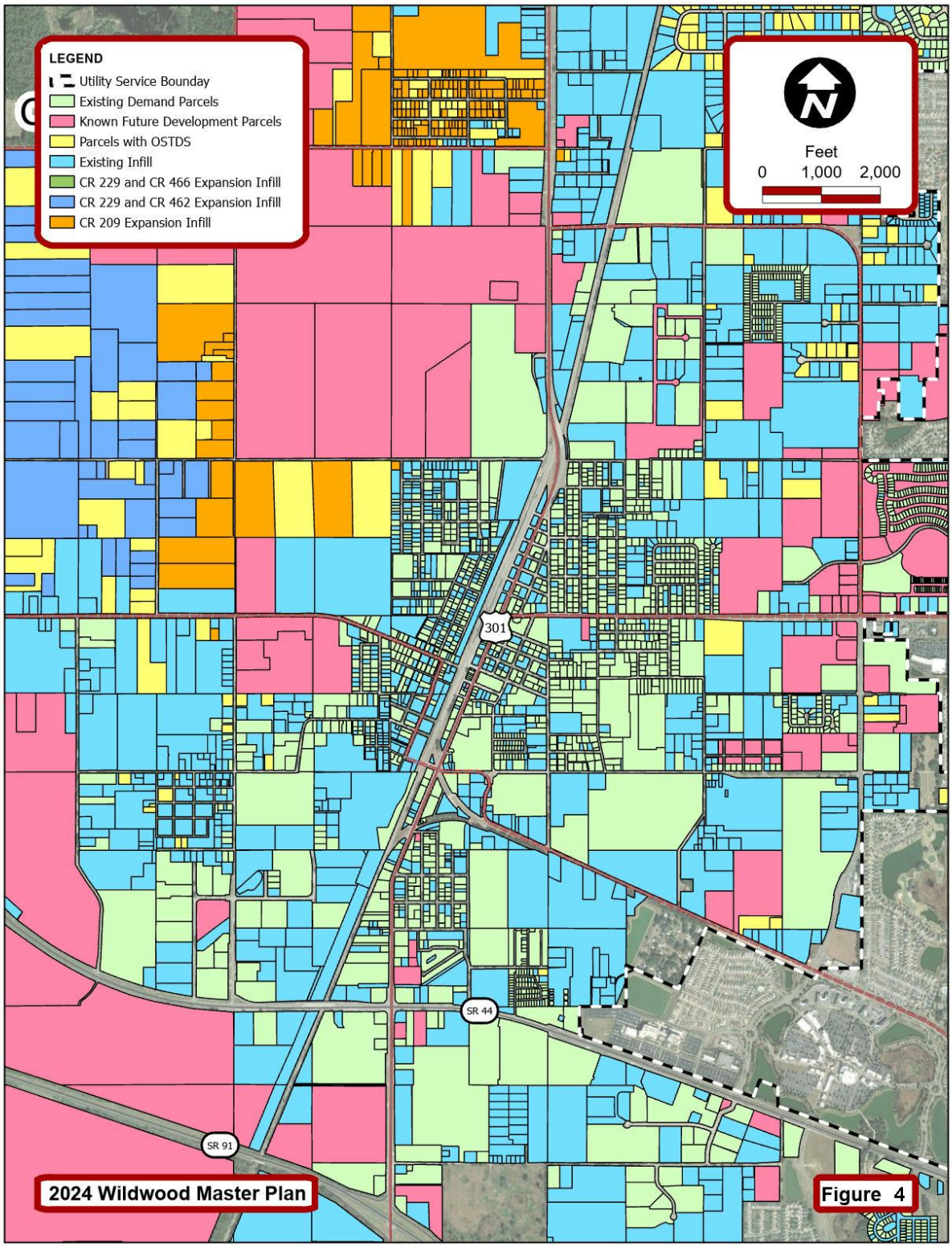


Figure 4: Downtown Parcels Layout



EXISTING WATER SYSTEM

This section discusses the location, condition, and capacity of the existing potable water systems owned and operated by the City. Also included is a summary of the current permitting status and regulatory issues affecting the water systems, including treatment limitations and regulatory concerns.

WATER SUPPLY PERMITTING AGENCIES

Florida Department of Environmental Protection

The Florida Department of Environmental Protection is responsible for permitting the design and construction of new potable water supply systems that provide water to 25 or more people for at least 60 days each year or serves 15 or more service connections. The construction of water wells, both public and private, and the quantities of water that may be extracted, are regulated by the Water Management Districts.

After water treatment plants have been built, FDEP is responsible for enforcing compliance with drinking water standards. Most notably, the FDEP reviews routine reports submitted by the City and inspects the plants at regular intervals to generate a “Sanitary Survey Report”. All the components of the plant are inspected during the sanitary survey, including the well heads, disinfection systems, storage facilities, high service pumps, treatment components (i.e. - aeration equipment), and the records that are required on-site. Any deficiencies observed during the inspection are noted and included in the Sanitary Survey Report.

Southwest Florida Water Management District (SWFWMD)

SWFWMD is responsible for permitting and monitoring the quantities of groundwater pumped to potable water supply systems. The City has one water use permit (WUP) issued by SWFWMD. All the City’s active wells and facilities are permitted under the one WUP. None of the wells owned and operated by the City fall within the SWFWMD Water Use Caution Area (WUCA). Water Use Caution Areas are defined by SWFWMD as “a geographic region within the District which exhibits resource problems or is predicted to exhibit resource problems, and for which special regulations are enacted by the Governing Board.”

Table 9: Water Use Permit below summarizes information regarding the City’s water use permit issued by SWFWMD.

Table 9: Water Use Permit

Permit Number	Permit Type	Issuing Agency	No. of Wells	Date of Issue	Date of Expiration	Annual Average Permitted Withdraw	Peak Month Permitted Withdraw
20008135.016	Individual Water Use Permit	SWFWMD	13	11/7/23	3/31/35	4,583,200	6,870,400

EXISTING WATER DISTRIBUTION SYSTEM

The City’s water distribution system is identified by the FDEP as PWS-ID No. 6600331. According to the December 2023 monthly operating report (MOR), the total population served by the system is 21,872, with approximately 7,466 connections to the distribution system. The overall permitted design treatment capacity of the system is 8.297 MGD maximum day demand (MDD).

The existing distribution system covers a large area measuring approximately 9 miles wide (east to west) and 15 miles long (north to south). Due to anticipated future development, the distribution system will increase to approximately 9.5 miles wide (east to west) and 17.5 miles long (north to south).

Table 10: summarizes the existing distribution system's pipe sizes (diameter) and lengths. The pipe materials include PVC, galvanized, asbestos-cement, and ductile iron pipe.

Table 10: Existing Pipe Lengths	
Pipe Size (diameter)	**Approximate Length of Pipe (feet)**
24–inch	601
20–inch	32,098
16–inch	26,359
12–inch	325,707
10–inch	45,932
8–inch	263,434
6–inch	163,237
4–inch	20,486
2–inch	80,532

EXISTING WATER TREATMENT AND STORAGE FACILITIES

This section contains a detailed discussion of the City's existing water treatment plants. The discussion includes a capacity analysis of each plant and a capacity analysis of the individual plant component systems (wells, storage systems, disinfection systems, and high-service pumps).

The City's water system currently operates with seven water treatment plants. The permitted capacity of the City Potable Water System (PWS) is currently 7.937 MGD. The system capacity is determined via capacity analysis which rates each plant individually and sums their available capacities. The individual plant capacities were calculated using the rules established by the FDEP FAC Section 62-555. The City's water treatment plants are discussed in the following sections.

CR-501 WTP

The CR 501 WTP is located along Warm Springs Avenue, a half mile north of C-470. According to the MOR data from June 2023 to May 2024, the plant produced an average of 1.50 MGD for the system. The maximum daily production during this time was 1.93 MGD. The current FDEP permitted MDD capacity is 2.66 MGD MDD.

The raw water source for the CR 501 WTP is groundwater from the upper Floridan aquifer (UFA). Groundwater is currently pumped into the plant using three groundwater wells. Wells AAC0383 and Well No. 3 operate as the primaries at this plant with well AAC0384 being used as a standby.



See **Table 11** for a summary of the wells and well pumps after the improvements are completed.

Table 11: CR 501 WTP Wells							
Well Number	**Dia. (in.)**	**Total Depth (ft.)**	**Casing Depth (ft.)**	**Pump Type**	**Pump Horsepower**	**Pump Capacity (gpm)**	**Pump Capacity (gpd)**
AAC0383	12	360	128	Vertical Turbine	50	1,100	1,584,000
AAC0384 (Standby)	12	360	176	Vertical Turbine	25	600	864,000
Well No. 3	12	250	103	Vertical Turbine	50	1,100	1,584,000

The raw groundwater is treated by a cascading tray aeration system for hydrogen sulfide removal and disinfection using liquid chlorination. This plant is equipped with two aerators (one mounted on each of the ground storage tanks) with a combined treatment capacity of 4,900 gpm (7.05 MGD). The treatment capacity of the first unit is 3,000 gpm. The second aerator has a treatment capacity of 1,900 gpm.

Finished water storage is provided by two on-site concrete ground storage tanks. The first storage tank is a 500,000-gallon circular concrete tank equipped with a cascading tray aeration system. The second tank is a 1,000,000-gallon circular tank equipped with a cascading tray aeration system.

Disinfection is provided by flow proportional sodium hypochlorite injection. Storage of the liquid chlorine is provided on-site. A stand-alone chlorine storage/dosing system chlorinates the water prior to the ground storage tank. In addition to chlorine, polyphosphate is injected into the water system for iron sequestration and corrosion control within the distribution system.

The City permitted adding an iron filtration system at the CR 501 WTP to remove the iron from the raw water source. The proposed improvements are anticipated to be completed in the fall of 2025.

High-service pumps provide the final delivery of water into the distribution. The plant is equipped with four high-service pumps. See **Table 12** for a summary of the pump capacities.

Table 12: 501 WTP Pump Capacities			
Pump Number	**Pump Type**	**Horsepower**	**Capacity (gpm)**
HSP 1	Horizontal Split Case	60	1,050
HSP 2	Horizontal Split Case	60	1,050
HSP 3	Horizontal Split Case	60	1,500
Jockey	Horizontal Split Case	20	400

Using the data above, a capacity evaluation of the CR 501 WTP was performed, and the evaluation is shown in **Appendix E**. As required by FAC 62-555.320 (15)(c), the capacity evaluation must be performed with the assumption that one of the well pumps is out of service (firm capacity). The calculated firm capacity of this plant is 2.664 MGD. The current limiting component of this plant is the well pumping capability. Once the current improvements are complete, the high service pumping capacity will be the limiting capability of the plant.

Huey Street WTP

The Huey Street WTP is located at 801 Huey Street, Wildwood. According to the MOR's from June 2023 - May 2024 the plant produces an average of 0.40 MGD. The maximum daily production during this time is 1.27 MGD. The FDEP permitted MDD capacity is 0.720 MGD MDD.

The raw water source for the Huey Street WTP is groundwater from the UFA. Groundwater is pumped into the plant using a single groundwater well. See **Table 13**: for a summary of the well and well pump capacity. No redundant pumping system is provided at this site.

Table 13: Huey WTP Well

Well Number	Dia. (in.)	Total Depth (ft.)	Casing Depth (ft.)	Pump Type	Pump Horsepower	Pump Capacity (gpm)	Pump Capacity (gpd)
11	12	202	168	Vertical Turbine	40	500	720,000

The groundwater quality at the Huey Street WTP is such that no treatment, other than disinfection, is required. Disinfection for this plant is provided by flow proportional sodium hypochlorite liquid injection. On-site chemical storage consists of a 500-gallon storage tank. In addition to chlorine, polyphosphate is injected into the water system for iron sequestration and corrosion control within the distribution system.

The on-site storage for this plant is provided by a 500,000-gallon elevated storage tank (EST). It contains fully treated water and floats on the distribution system to help maintain pressure, support local fire flows and peak hour demands.

A capacity evaluation of Huey WTP was performed using the data above. The evaluation was conducted with Huey WTP as a stand-alone facility. The evaluation is shown in **Appendix E**. As required by FAC 62-555.320 (15)(c), the capacity evaluation must be performed with the assumption that one of the well pumps is out of service (firm capacity). With this assumption, the Huey WTP has an individually rated capacity of 0.0 MGD. However, FDEP allows plants that provide onsite elevated storage and provides adequate max day demand plus fire flow storage to be rated based on the full capacity of the well pump. Therefore, the rated capacity of the Huey WTP is 720,000 gpd. With only one source for raw water for the plant, the limiting capacity factor for this plant is the well production.

Fairways WTP

The Fairways WTP is located at 5124 CR 125B-1, Wildwood. According to MOR's from June 2023 -May 2024, the plant produces an average of 0.130 MGD. The maximum daily production during this time is 0.560 MGD. The FDEP permitted MDD capacity is 0.504 MGD.

The plant has one groundwater well that pumps raw groundwater from the UFA into a 5,000-gallon hydropneumatic tank. See **Table 14** for a summary of the well and well pump.

Table 14: Fairways WTP Well

Well Number	Dia. (in.)	Total Depth (ft.)	Casing Depth (ft.)	Pump Type	Pump Horsepower	Pump Capacity (gpm)
FW 1	5	160	70	Vertical Turbine	50	700

On-site storage for this plant is provided by a 5,000-gallon hydropneumatic tank. Disinfection for this plant is provided by a flow proportional sodium hypochlorite liquid injection.

A capacity evaluation of Fairways WTP was performed using the data above. The evaluation was conducted with Fairways WTP as a stand-alone facility. The evaluation is shown in **Appendix E**. As required by FAC 62-555.320 (15)(c), the capacity evaluation must be performed with the assumption that one of the well pumps is out of service (firm capacity). With this assumption, the Fairways WTP has a rated capacity of 0.0 MGD. However, FDEP allows plants with hydropneumatic tanks to be rated for half of their well pumping capacity and the entire system (PWS) to be rated with only one of the largest pumps on the entire system out of service. Therefore, the rated capacity of the Fairways WTP is 504,000 gpd. With only one source for raw water for the plant, the limiting capacity factor for this plant is well production.

Ashley WTP

The Ashley WTP is located near the northwest corner of the intersection of SR 44 and CR 231. According to MOR's from June 2023 – May 2024, the plant produces an average of 0.127 MGD and a maximum flow of 0.784 MGD. The FDEP permitted max day capacity of the Ashley WTP is 0.36 MGD MDD.

The plant is equipped with two groundwater wells that pump raw groundwater from the UFA into two 5,000-gallon hydropneumatic tanks. See **Table 15**: for a summary of the well and well pump.

Table 15: Ashley WTP Well

Well Number	Dia. (in.)	Total Depth (ft.)	Casing Depth (ft.)	Pump Type	Pump Horsepower	Pump Capacity (gpm)
Ashley 1	10	135	116	Vertical Turbine	40	500
Ashley 2	14	250	124	Vertical Turbine	40	500

Two 10,000-gallon hydropneumatic tanks provide on-site storage for this plant. Disinfection for this plant is provided by a flow-proportional sodium hypochlorite liquid injection.

A capacity evaluation of the Ashley WTP was performed using the data above. The evaluation was conducted with Ashley WTP as a stand-alone facility. The evaluation is shown in **Appendix E**. As required by FAC 62-555.320 (15)(c), the capacity evaluation must be performed with the assumption that one of the well pumps is out of service (firm capacity). Recently, the plant has had a second well installed with a pumping capacity of 500 gpm. With this improvement, the Ashley WTP has a rated capacity of 0.72 MGD.

Continental County Club (CCC) WTP No. 1

Continental Country Club (CCC) WTP No. 1 is located at the intersection of Timber Way and South Timber Trail in CCC. According to the MORs, from June 2023 - May 2024, the plant produced an average daily flow of 25,500 gpd. The maximum daily production during this time is 162,000 gpd. The FDEP permitted MDD capacity is 0.835 MGD.

The plant is directly connected to the water distribution system and has one groundwater well that pumps from the UFA. **Table 16** summarizes the well and well pump.

Table 16: CCC WTP No. 1 Well No. 1 (AAC3478)					
Well Number	**Dia. (in.)**	**Total Depth (ft.)**	**Pump Type**	**Pump Horsepower**	**Pump Capacity (gpm)**
CCC No.1	8	500	Vertical Turbine	25	750

Disinfection for this plant is provided by a flow proportional sodium hypochlorite liquid injection. On-site storage for this plant is provided by a 100,000-gallon elevated storage tank (EST). The EST is hydraulically connected to the distribution system, and the volume of water in the tank tends to maintain system pressures at a uniform level (i.e. the elevated storage tank "floats" on the system).

A capacity evaluation of the CCC WTP No.1 was performed using the data above. The evaluation was conducted with CCC WTP 1 as a stand-alone facility. The evaluation is shown in **Appendix E**. As required by FAC 62-555.320 (15)(c), the capacity evaluation must be performed with the assumption that one of the well pumps is out of service (firm capacity). With this assumption, the CCC No.1 WTP has a rated capacity of 0.00 MGD. However, the FDEP allows plants that provide onsite elevated storage and adequate max day demand plus fire flow storage to be rated based on the full capacity of the well pump. Therefore, the permitted capacity of the CCC WTP No.1 is 0.835 MGD. With only one source for raw water for the plant, the limiting capacity factor for this plant is the well production.

CCC WTP No. 2

Continental Country Club (CCC) WTP No. 2 is located on Grove Trail between Hester Trail and West Quail Run. According to the MORs, from June 2023 - May 2024, the plant produced an average of 111,535 gpd. The maximum daily production during this time is 270,000 gpd. The FDEP permitted MDD capacity is 0.504 MGD.

The plant is equipped with one hydropneumatic tank and one groundwater well that pumps from the UFA. See **Table 17** for a summary of the well and well pump.

Table 17: CCC WTP No. 2 Well No. 6						
Well Number	**Dia. (in.)**	**Total Depth (ft.)**	**Well Yield (gpm)**	**Pump Type**	**Pump Horsepower**	**Pump Capacity (gpm)**
CCC No.2	8	500	750	Vertical Turbine	30	750

On-site storage for this plant is provided by one 15,000-gallon hydropneumatic tank. Disinfection for this plant will be provided by a flow proportional sodium hypochlorite liquid injection.

A capacity evaluation of the CCC WTP No.1 was performed using the data above. The evaluation was conducted with CCC WTP 2 as a stand-alone facility. The evaluation is shown in **Appendix E**. As required by FAC 62-555.320 (15)(c), the capacity evaluation must be performed with the assumption that one of the well pumps is out of service (firm capacity). With this assumption, the CCC WTP No. 2 has a rated capacity of 0.00 MGD. However, FDEP allows plants with hydropneumatic tanks to be rated for half of their well pumping capacity and the entire system (PWS) to be rated with only one of the largest pumps on the entire

system out of service. Therefore, the rated capacity of the CCC WTP No. 2 is 360,000 gpd. With only one source for raw water for the plant, the limiting capacity factor for this plant is the well production.

Oxford WTP

The Oxford WTP is located near the Southwest corner of the intersection of US 301 and C466-West. According to the MORs, from June 2023 – May 2024, the plant produced an average of 0.99 MGD. The maximum daily production during this time is 1.86 MGD. The FDEP permitted capacity is 2.35 MGD MDD with the designed expansion capacity of 6.62 MGD MDD.

The raw water source for the Oxford WTP is groundwater from the Lower Floridan Aquifer (LFA). Groundwater is pumped into the plant using two vertical turbine groundwater well pumps. See **Table 18**: for a summary of the wells.

Table 18: Oxford WTP Wells

Well Number	Dia. (in.)	Total Depth (ft.)	Casing Depth (ft.)	Well Yield (gpm)	Pump Type	Pump Horsepower	Pump Capacity (gpm)	Pump Capacity (gpd)
NW-51	16	1,500	600	2,600	Vertical Turbine	125	2,600	3,744,000
NW-52	16	1,500	600	2,600	Vertical Turbine	125	2,600	3,744,000

Treatment of the raw groundwater for total sulfides is provided by pH adjustment via sulfuric acid and two 1,650 gpm packed tower aeration systems. The treated water is temporarily stored in a transfer tank, where sodium hypochlorite is added for disinfection, and then it is pumped to the GST for finished water storage. The odors released through the aeration process are treated by biological odor control scrubbers that remove the high levels of hydrogen sulfide (H2S) gas released during the aeration process.

Disinfection is provided by flow-proportional sodium hypochlorite injection. Storage of the liquid chlorine is provided on-site. A stand-alone chlorine storage/dosing room chlorinates the water in the finished water transfer tank. A summary of the transfer pumps and their capacity can be found in **Table 19**: . The finished water is then pumped from the transfer tank to a 1.00 MG concrete GST using two vertical turbine pumps.

Table 19: Oxford WTP Transfer Pumps

Pump Number	Pump Type	Horsepower	Capacity (gpm)
Transfer 1	Vertical	25	1,650
Transfer 2	Vertical	25	1,650
Transfer 3 (Phase II)	Vertical	25	1,650



High-service pumps provide final delivery of water into the distribution. The plant is equipped with three high-service pumps plus a jockey pump. See **Table 20** below for a summary of the pump capacities.

Table 20: Oxford WTP HSP Pump Capacities

Pump Number	Pump Type	Horsepower	Capacity Phase I (gpm)	Capacity Phase II (gpm)
HSP 1	Horizontal Split Case	75	1,650	2,400
HSP 2	Horizontal Split Case	75	1,650	2,400
HSP 3	Horizontal Split Case	75	1,650	2,400
Jockey	Horizontal Split Case	30	500	2,400
Jockey	Horizontal Split Case	30	500	2,400

As required by FAC 62-555.320 (15)(c), the capacity evaluation must be performed with the assumption that one of the pumps is out of service (firm capacity). The calculated firm capacity of this plant is 2.35 MGD MDD. The current limiting component of this plant is the high service pumping capability.

FLOW DATA

The water demands for each of the existing water treatment plants were determined from the MOR data submitted to the FDEP from June 2023 to May 2024. **Figure 5** and **Figure 6** on the following pages summarizes individual plant performance and total PWS performance, respectively. See **Table 21** below for a summary of the City's average daily flow and maximum daily flow.

Table 21: Existing Potable Water Flows

WTP	Base Flows (gpd)		Permitted Flows (gpd)	Percentage of Permitted Capacity	Percent of Average System Flow
	Avg	Max[1]	Max		
Huey Street	400,098	1,266,000	720,000	176%	12%
CR-501	1,507,271	1,931,000	2,664,000	72%	46%
Fairways	130,881	560,000	504,000	111%	4%
Ashley Well	126,934	784,000	720,000	109%	4%
CCC No.1	25,500	161,000	835,230	19%	1%
CCC No.2	111,535	270,000	504,000	54%	3%
Oxford	987,034	1,860,000	2,350,000	79%	30%
Total PWS	**3,289,253**	**4,624,000**	**8,297,230**	**56%**	**100%**

[1.] Total PWS maximum flow is the maximum daily flow from the total PWS system and not the sum of the max day flows from each individual WTP

Figure 5: City of Wildwood Average Flow

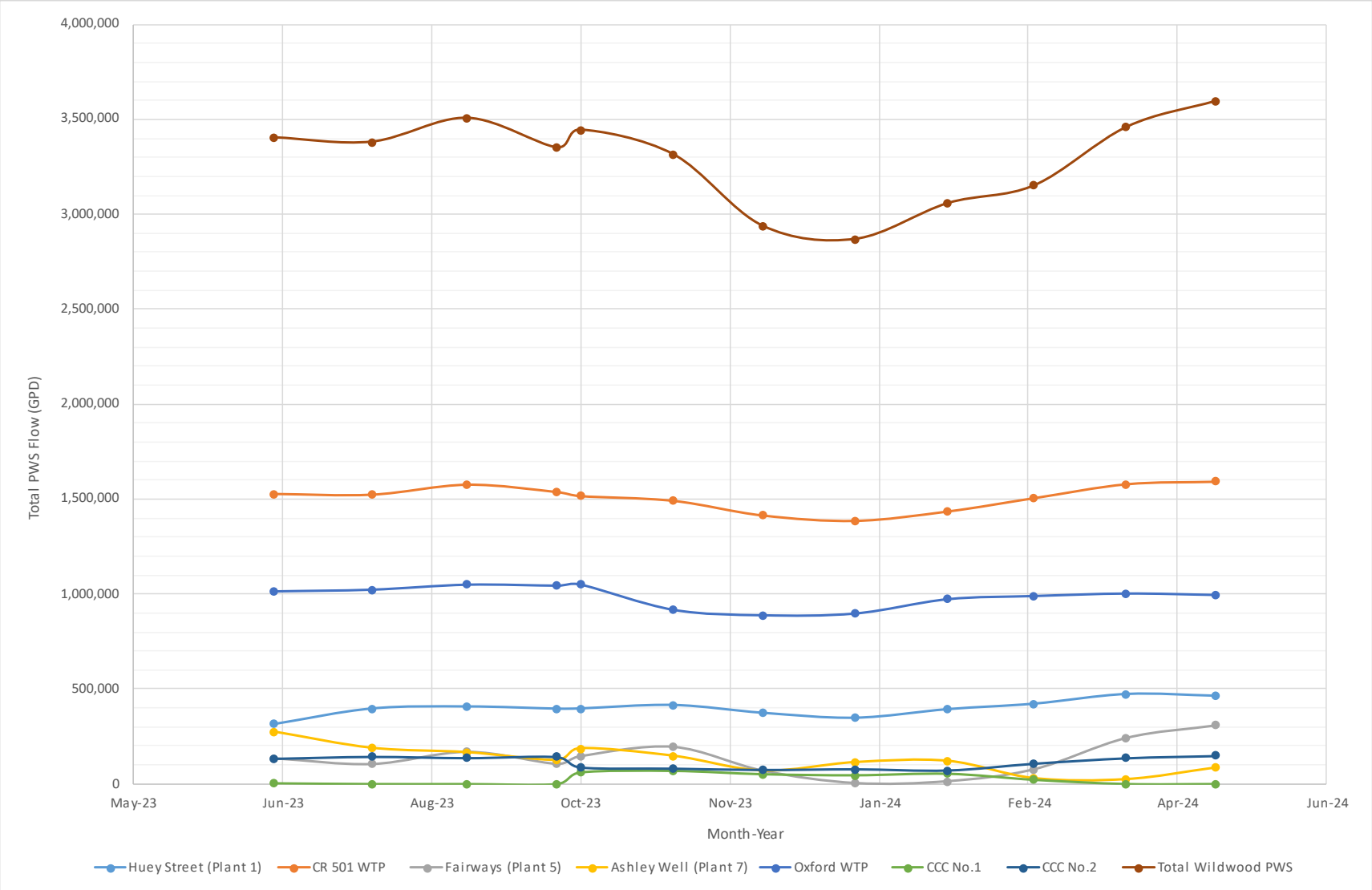
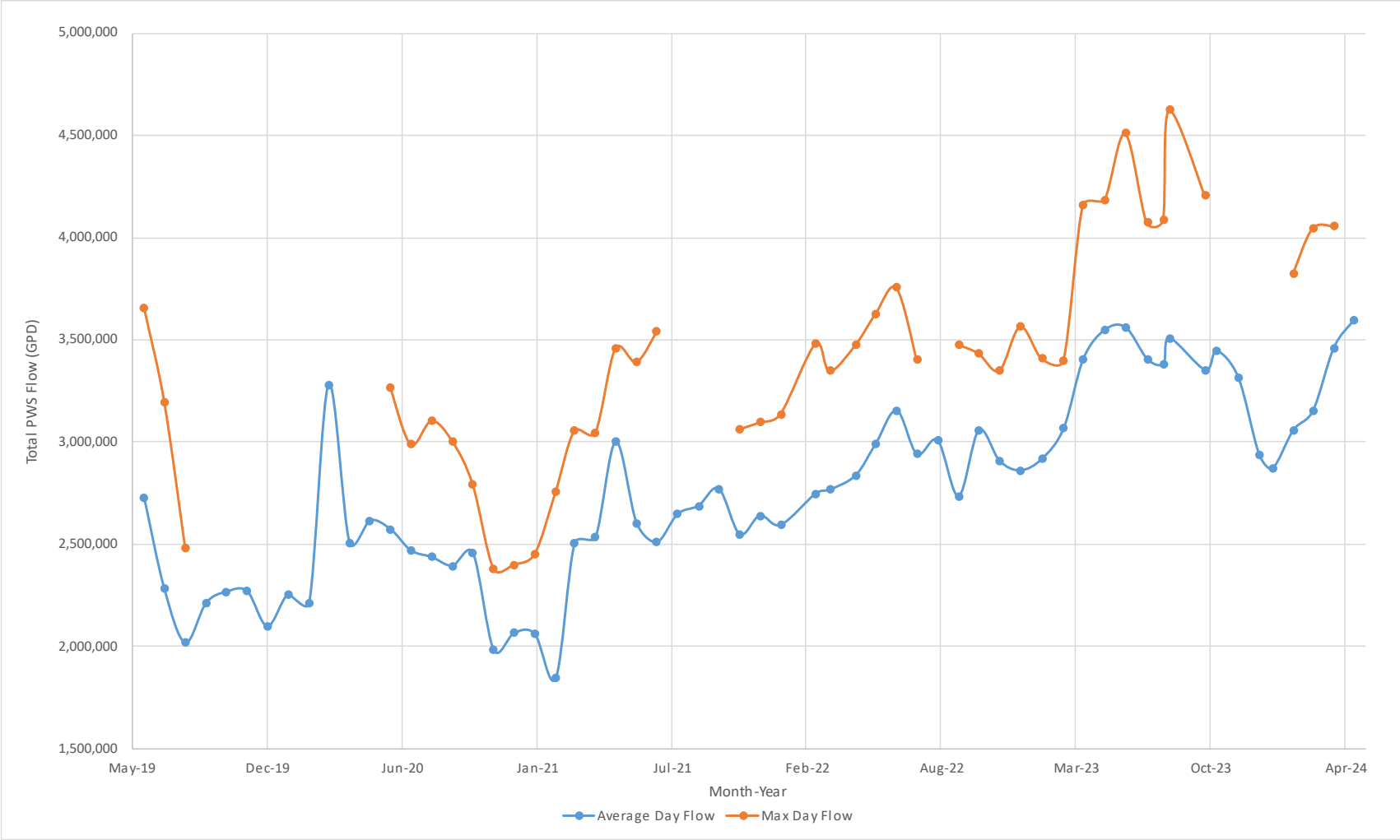


Figure 6: Total City of Wildwood Average and Max Day Flow





WATER SYSTEM ANALYSIS AND METHODOLOGY

This section provides an overview of the methodologies that were used in developing the hydraulic model. An analysis of the distribution system was performed to assess the improvements that will be needed during the present day (2024), 2025, 2030, 2035, 2040, and build-out planning timelines. Analyzing the system over time allows improvements to be prioritized and will help the City utilize funds for capital improvements in the most efficient manner possible.

HYDRAULIC MODEL DEVELOPMENT

The software used for the model development was Bentley WaterCAD V8i (SELECTseries 1). WaterCAD is a computer-based program that, with user input, calculates a wide variety of system parameters. The most useful output from the calculations is the pressure and available fire flow results. These results assist designers in identifying locations in the system where the pressures or available fire flows are below minimum acceptable values. The model can be used to assess the existing system and how the system will respond to future increases in demand. It also allows the designer to modify or add/remove system components and establish how the water system responds to these changes. This feature is very useful for identifying capital improvement projects that will help the system's hydraulic performance.

The model operates primarily based on user input. All the elements of the existing system (i.e. pipes, valves, junctions, water treatment plants, demands, etc.) must be input into the model. The water treatment plants provide the water sources for the model, and the piping network distributes the water throughout the system to meet the demands. Calibration of the model is accomplished using fire hydrant flows and pressure information gathered in the field. The fire flow demands are input into the model and the corresponding pressures are checked to ensure that the model reasonably predicts what was observed in the field. During the calibration process, elements within the model (i.e. pipe frictional coefficients) may be adjusted to tune the model against field observations.

To develop the model, the following steps were taken:

- The existing pipe network layout for each of the City's public water supply system was determined utilizing the City's latest GIS mapping.
- The existing demand distribution was determined in the following manner:
    - The City provided one year of billing information ranging from Jan 2023 – Dec 2023.
    - The existing billing data provided the demands per active water service. To avoid overcomplicating the model, groups of individual demands within the vicinity of a pipe were assigned to that pipe and then split evenly between the junction nodes at either end of the pipe.
- The operating pressures of the water treatment plants were obtained from City Utility Staff. These operating pressures were initially utilized for the initial calibration of the model. WTP settings were then adjusted in the model to calibrate the model. The WTP and model setpoints are summarized below in **Table 22**.

Table 22: Existing System Operating Pressures			
WTP/EST	Operating Pressures		Model Pressure/HGL
	On/High	Off/Low	
CR-501*	67 psig	N/A	67 psig
Huey Street	49 psig	55 psig	52 psig
Huey EST	57 psig	54 psig	56.3 psig/208 ft.
Fairways	45 psig	75 psig	63 psig
Ashley WTP	50 psig	76.50 psig	67.50 psig
CCC No.1 WTP	38 psig	50 psig	44.55 psig
CCC No.2 WTP	40 psig	55 psig	48.40 psig
CCC EST	45 psig	38 psig	45 psig/176 ft.
Oxford WTP*	55 psig	N/A	55 psig
*HSP operates on a VFD to maintain an operator-preset pressure			

HYDRAULIC MODEL CALIBRATION

Before proposed improvements could be evaluated for the system, the hydraulic model had to be calibrated to ensure that it accurately reflected the conditions of the system in the field. The following steps were taken to calibrate the model:

Data Collection

The City staff, along with Kimley-Horn staff, conducted fire hydrant flow/pressure tests at 12 locations throughout the City on March 5, 2024, and March 6, 2024. Kimley-Horn staff recorded the pressures and flow readings for each of the tests. Each test used two hydrants (one pressure hydrant and one flow hydrant). Three readings were recorded for each pair of hydrants. First, the flow hydrant was completely closed, and a static pressure reading was taken at the pressure hydrant. Second, the flow hydrant was opened partially. A flow reading and the residual pressure measurement were recorded for the partial flow condition. Finally, the flow hydrant was opened fully, and the corresponding flow rate and residual pressure were recorded.

Model Calibration

The fire hydrant flow data were input into the model and simulated one at a time. The corresponding pressures were checked at the corresponding pressure hydrants to ensure that the model reasonably predicted what was observed in the field. During the calibration process, elements within the model (i.e. demands, operating pressure, C value) may be adjusted to tune the model against field observations. For the City's model, a C value of 130 was used for all piping infrastructure. All water treatment plants and elevated storage tanks (ESTs) were set to the operating pressures shown in **Table 22**. For each separate hydrant test that was run in the model, a separate demand set was created based on the recorded flow from the plants to accurately reflect the demand on the City's system during each specific hydrant test. A model is generally considered calibrated when it can simulate a pressure drop and flow within 10% of those measured in the field.

WATER DEMAND PROJECTIONS

The population projections described in the "Population Growth Projections" section served as the basis for projecting future water demands. The future demands were estimated based on one of the methodologies described below. The resulting demand projections are presented in **Appendix B**.

Parcels with existing water usage – For parcels with existing water usage, the demands were determined by the water billing data that was provided by the City. The calculated average day demand from the billing data was then multiplied by the projected growth rates as determined by SWFWMD population projections for 2025, 2030, 2034, 2040, and 2050 to estimate future demands.

Parcels without existing water usage – First, equivalent residential unit (ERU) determinations were made for each parcel using one of the methodologies described in Section 2. Then, the ERU estimate for each parcel was multiplied by the City's water level of service standard of 300 gpd/ERU to determine the resulting water demand.

PEAKING FACTORS

The demands calculated above represent average day demand (ADD) conditions for the modeling analysis max day demand (MDD) and Peak Hour Flow (PHF) conditions needed to be estimated. It is common practice to approximate the MDD and PHF conditions by multiplying the average day demands by a factor. The FDEP estimates these factors as 2.25 for the ADF to MDD conversion and 2.0 for the MDD to PHF conversion when historical data is not available. The FDEP allows alternative factors to be used, provided sufficient historical information is available to accurately determine more appropriate factors. These factors have a significant impact on the modeling results and the sizing of future components. For the purposes of this analysis and report, a review of the historic MOR data was used to approximate the ADF to MDD factor. Kimley-Horn reviewed MOR data for January 2023 – December 2023 to compare historic MDD flows to ADF flows. The calculated historical ADF to MDD ratio was 1.37. The FDEP MDD to PHF factor used in the model was 2.0. The resulting PHF used in the model was 2.74.

- MDD Peaking Factor (ADD:MDD) = 1.37
- PHF Peaking Factor (ADD:PHF) = 2.74

SYSTEM HYDRAULIC STANDARDS

Before identifying system deficiencies, system hydraulic standards needed to be established. The following hydraulic standards were used to evaluate the hydraulic model for deficiencies:

- Minimum System Pressure with Max Day plus Fire Flow Demand: 20 psi
- Minimum System Pressure with Peak Hour Demand: 20 psi
- Maximum System Pressure: 90 psi
- Typical Network Operating Pressure Range: 45-70 psi
- Fire Flow Demand: 1,000 gpm (minimum)

METHODOLOGY

One of the primary objectives of this report is to identify the water treatment plant and distribution system improvements needed to meet future potable water demands. To ensure future distribution system and

water treatment improvements are made with the future system in mind, the analysis first establishes the Build Out (2050) demands. Then, the hydraulic model was used to identify the distribution and treatment improvements required to meet the Build Out (2050) demands. After establishing the required improvement sizes (i.e., water mains and plants), the immediate and intermediate demands for the 2025, 2030, 2035, and 2040 scenarios were modeled. The required system improvements for each time step were then identified using the hydraulic model while taking future needs into account.

The approach for modeling the system was to consider as many reasonable system configurations as possible for the Build Out (2050) demand scenario and evaluate the required improvements. This evaluation included the plant capacities and distribution line sizes. The minimum system pressures and available fire flows for each scenario were compared to the hydraulic standards presented above to determine adequacy of the system components and sizes. Once the optimal Build-Out (2050) system configuration was decided, the model was then loaded with the 2025, 2030, 2035, and 2040 demands to evaluate the intermediate system performance.

In the model analysis, special attention was paid to the net flows coming from each plant in the various scenarios. Since each plant has a fixed existing capacity, the model results were checked against those capacities to ensure the scenario stayed within those limits. Any scenario allowing flow greater than the existing capacity represented a situation where the plant would need to be expanded to accommodate the additional demand. The model assessed the required plant expansions and/or capacities of new facilities. In addition, the impacts of water main sizes on plant capacities were reviewed to ensure that water mains were sized as efficiently as possible, given the treatment plants that were online.

A total of 21 physical scenarios were modeled to evaluate the impact of adding water treatment plants, various proposed system improvements, and the physical expansion and growth of the City. The relevant model scenarios are discussed in the following sections. The discussions are organized chronologically for the present, 1-year, 6-year, 11-year, 16-year, and 26-year design time frames. A summary is included at the end to summarize the results of the analysis and how it may impact the water distribution system.

PRESENT DAY (2024) ANALYSIS

This section includes the results of scenarios for the present system configuration. The scenario analyses are described in detail below:

Scenario 1: Present-Day Existing System

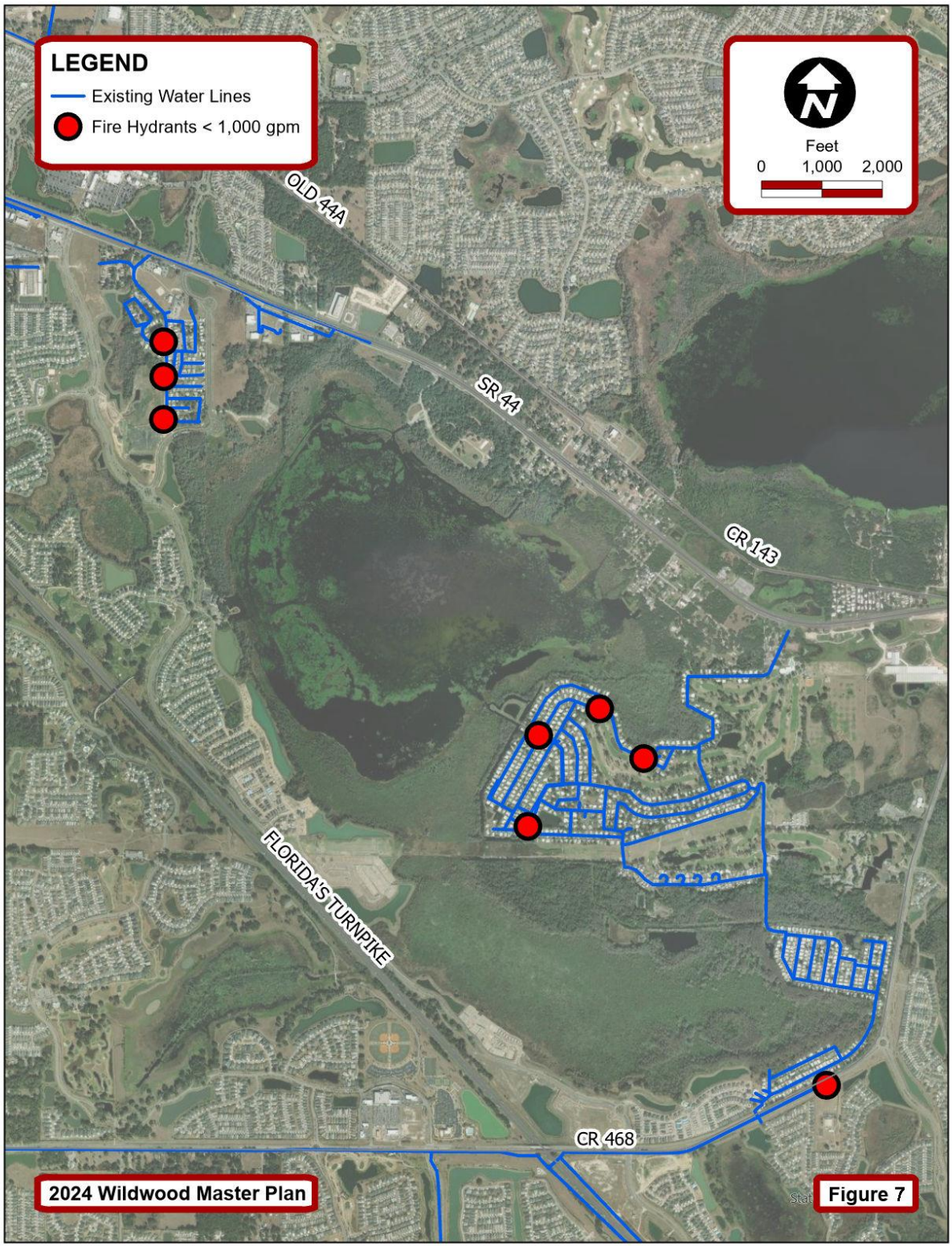
Scenario 1 modeled the existing conditions of the City's PWS at ADD, MDD, and PHF. In this scenario, all existing WTPs were connected to the distribution system and were operating at the operating pressures provided by the City. This scenario was used for calibration and is the basis for system pressure and fire flow analysis. **Table 23** summarizes the results of Scenario 1.

Table 23: Model Results for Scenario 1

Demands	Min. System Pressure (psi)	Avg. System Pressure (psi)	Min. Available Fire Flow (gpm)
ADD	48	64	-
MDD	48	64	574
PHF	45	60	-

Overall, the system operates within the minimum system pressure standards established by the FDEP. The average system pressure is above the typical operating pressure of 55 psi. The minimum pressure is above 20 psi at PHF (FDEP minimum threshold). The minimum fire flow is below the 1,000-gpm hydraulic standard. There are 8 locations in the present-day scenario that have fire flows below the minimum of 1,000 gpm. These hydrants can be seen in **Figure 7**.

Figure 7: Present Day (2024) Scenario – Fire Flow Below 1,000 GPM





SCENARIOS: 2025 ANALYSIS

This section provides an analysis of the 1-year planning horizon for the City's PWS. Several new developments are planned to come online within this time span. The demands associated with these developments were added to the model for the 1-year analysis based on the demand projections located in **Appendix B.**

Scenario 2: 2025 without Improvements

Scenario 2 models the City's PWS from Scenario 1 with the projected 2025 demands. The demands at MDD, MDD+FF, and PHF were analyzed without additional improvements.

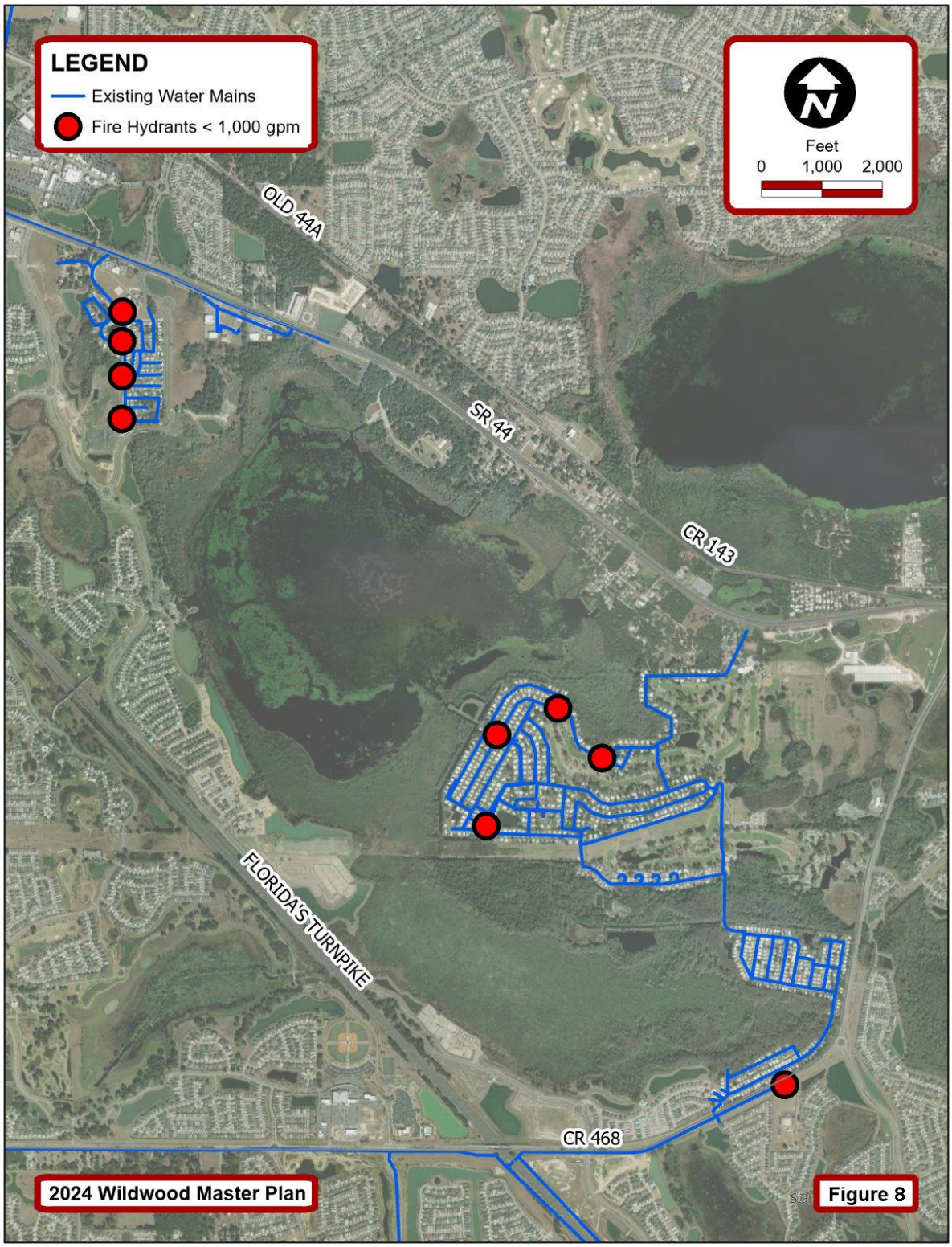
The resulting system performance for this scenario is summarized in **Table 24**.

Table 24: Model Results for Scenario 3

Demands	Min. System Pressure (psi)	Avg. System Pressure (psi)	Min. Available Fire Flow (gpm)
ADD	48	64	-
MDD	48	63	572
PHD	28	52	-

The existing system will be able to provide sufficient flow and pressure for the 2025 demands modeled. The results demonstrate that the existing system with the projected 2025 demands operates below the City's average system operating pressure of 55 psi but stays above 20 psi at PHF. Available fire flow coverage is consistent with the present-day (2024), having 9 hydrants below 1,000 gpm located in the same areas. These hydrants can be seen in **Figure 8** below. The existing system is to be able to provide sufficient flow and pressure for the 2025 modeled scenario, and no immediate improvements are required.

Figure 8: 2025 Scenario – Fire Flow Below 1,000 GPM





SCENARIOS: 2030 ANALYSIS

This scenario includes the anticipated additional demands from the existing service area and continued anticipated expansion areas associated with the 2030 growth projections. The increase in average day demands from 2025 to 2030 is estimated to be 2.16 MGD. A detailed summary of new developments that are planned to be online in 2030 and their associated demands can be found in **Appendix B.**

Scenario 3: 2030 with Improvements

Scenario 3 models the City's PWS with required improvements to be able to meet the projected 2030 demands. The ADD, MDD+FF, and PFH were analyzed. Water system improvements needed to meet 2030 demands not only include piping upgrades but improvements to existing WTPs. The necessary improvements are shown in **Figure 9** and summarized below:

- **PWS Improvement No. 1:** Construct the CR 121 water main (Approx. 4,300 linear feet of 12-inch water main).
- **PWS Improvement No. 2:** Construct Phase 3 of the CR 209 water main (Approx. 9,000 linear feet of 20-inch water main)
- **PWS Improvement No. 3:** Construct 12-inch watermain along US 301 connecting the two existing 12-inch watermains at the southernmost point of Oxford Oaks.
- **PWS Improvement No. 4:** Construct Phase 2 of the Oxford WTP and increase the permitted max day capacity of the Oxford WTP to 6.62 MGD.
- **PWS Improvement No. 5:** Expand high service pumping capacity at CR 501 WTP to have a firm capacity of 3,600 gpm.

The resulting system performance for this scenario is summarized in **Table 25** below.

Table 25: Model Results for Scenario 3

Demands	Min. System Pressure (psi)	Avg. System Pressure (psi)	Min. Available Fire Flow (gpm)
ADD	48	64	-
MDD	47	63	568
PHD	24	44	-

The results demonstrate that with the projected 2030 demands and proposed system improvements, the system operates within the minimum system pressures standards established by FDEP and the City. Available fire flow coverage is consistent with present day (2024) scenario as there are 9 hydrants below 1,000 gpm. These hydrants can be seen in **Figure 10** below.

Figure 9: 2030 PWS Improvements

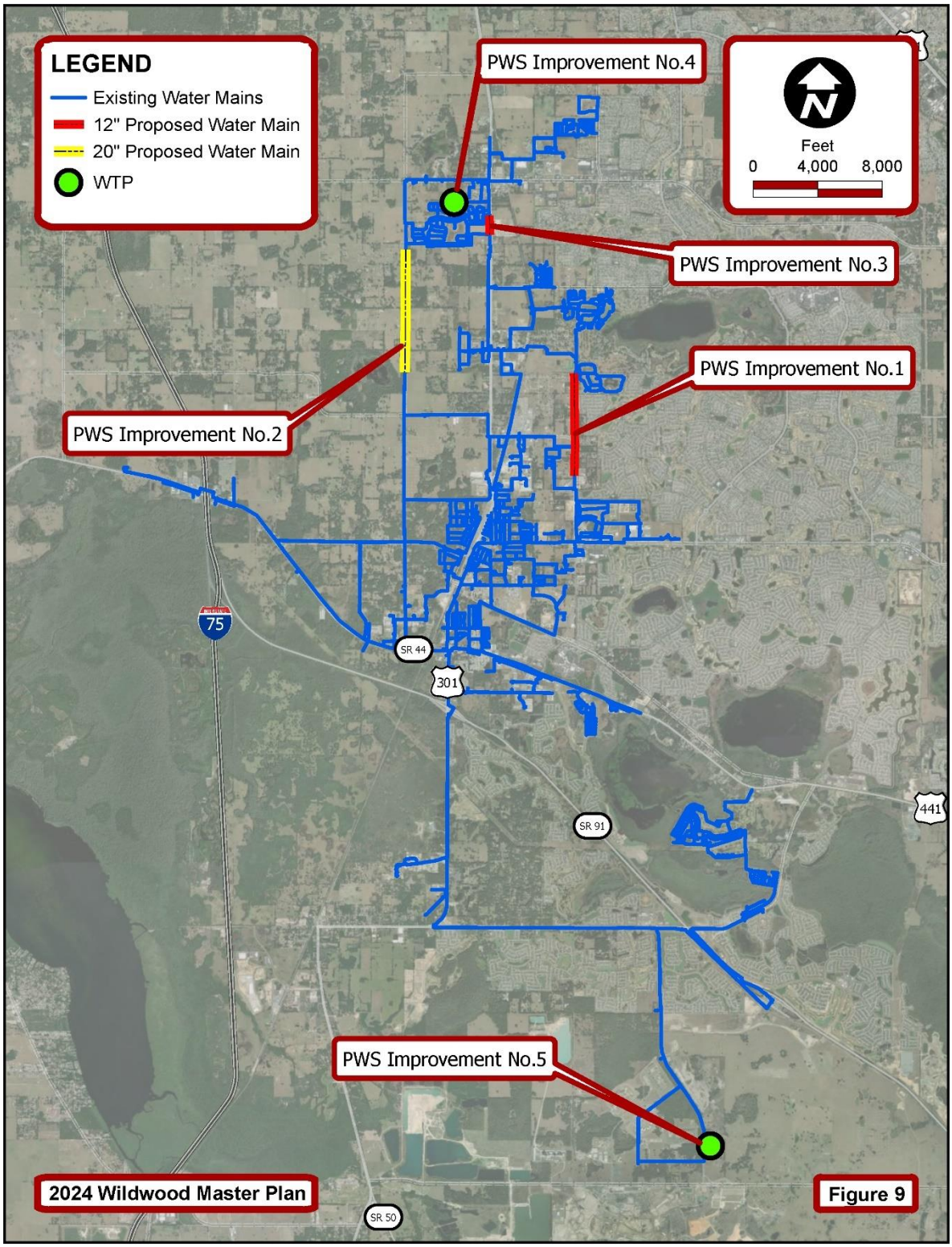
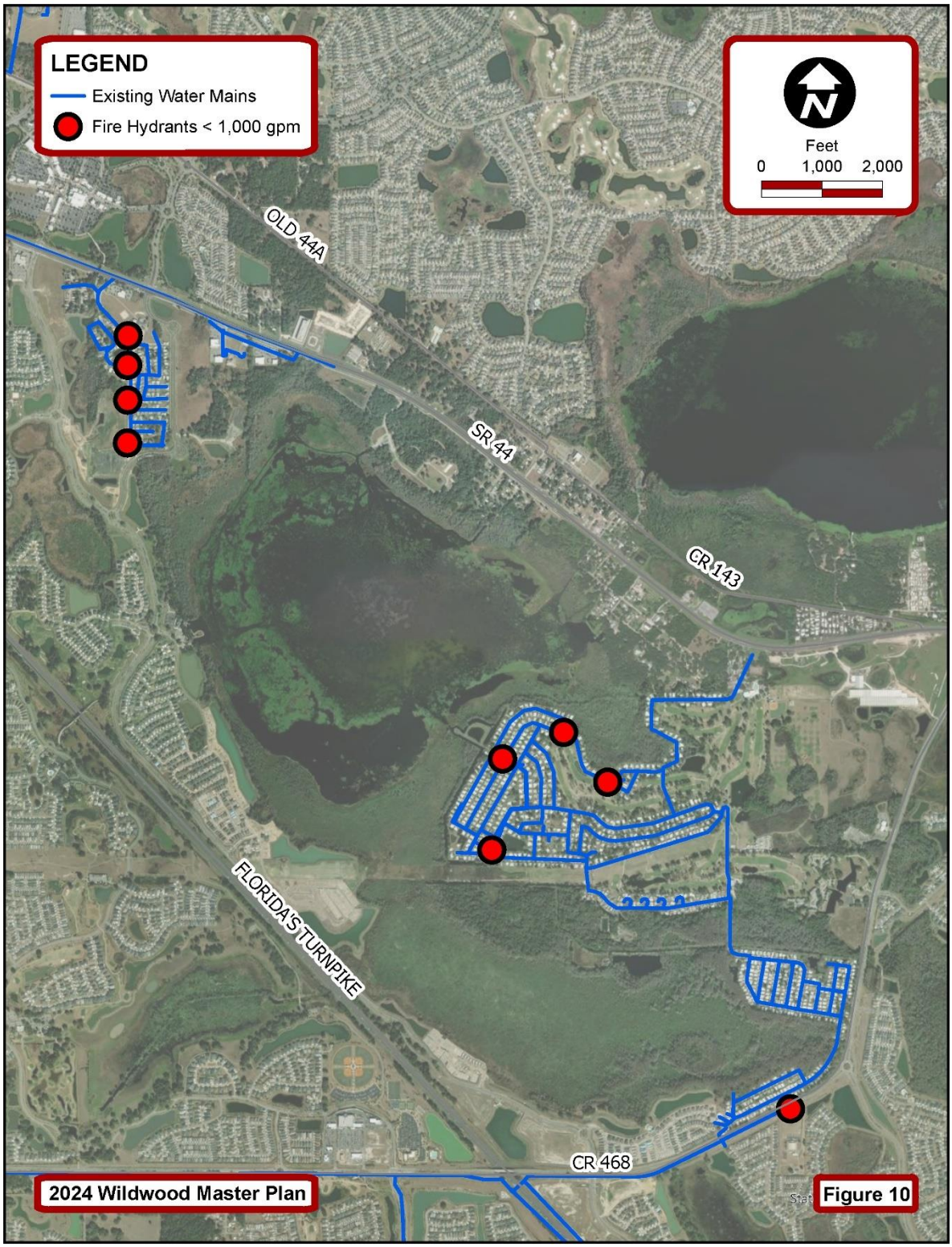


Figure 10: Scenario 3 (2030) – Fire Flow Below 1,000 GPM



SCENARIOS: 2035 ANALYSIS

This scenario includes the anticipated additional demands from the existing service area and continued anticipated expansion areas associated with the 2035 growth projections. The increase in average demands from 2030 to 2035 is estimated to be 1.25 MGD. A detailed summary of new developments that are planned to be online in 2035 and their associated demands can be found in **Appendix B**.

Scenario 4: 11-Year (2035) with Improvements

Scenario 4 models the City's PWS from Scenario 3 with the 2035 ADD, MDD+FF, and PHD demands and the necessary additional improvements to meet the minimum system requirements. The necessary improvements for Scenario 4 are shown in **Figure 11** and summarized below:

- **PWS Improvement No. 6:** Construct 20-inch watermain from the Oxford WTP to CR 209. Construct approximately 2,500 linear feet of 20-inch watermain south along CR 209 to CR 214.

The resulting system performance for this scenario is summarized in **Table 26** below.

Table 26: Model Results for Scenario 4

Demands	Min. System Pressure (psi)	Avg. System Pressure (psi)	Min. Available Fire Flow (gpm)
ADD	48	64	-
MDD	47	63	552
PHD	23	44	-

The results demonstrate that with the projected 2035 demands and proposed system improvements, the system operates within the minimum system pressure standards established by the FDEP and the City. Available fire flow coverage is consistent with present day (2024) scenario as there are nine hydrants below 1,000 gpm. These hydrants can be seen in **Figure 12** below.

Figure 11: 2035 Improvements

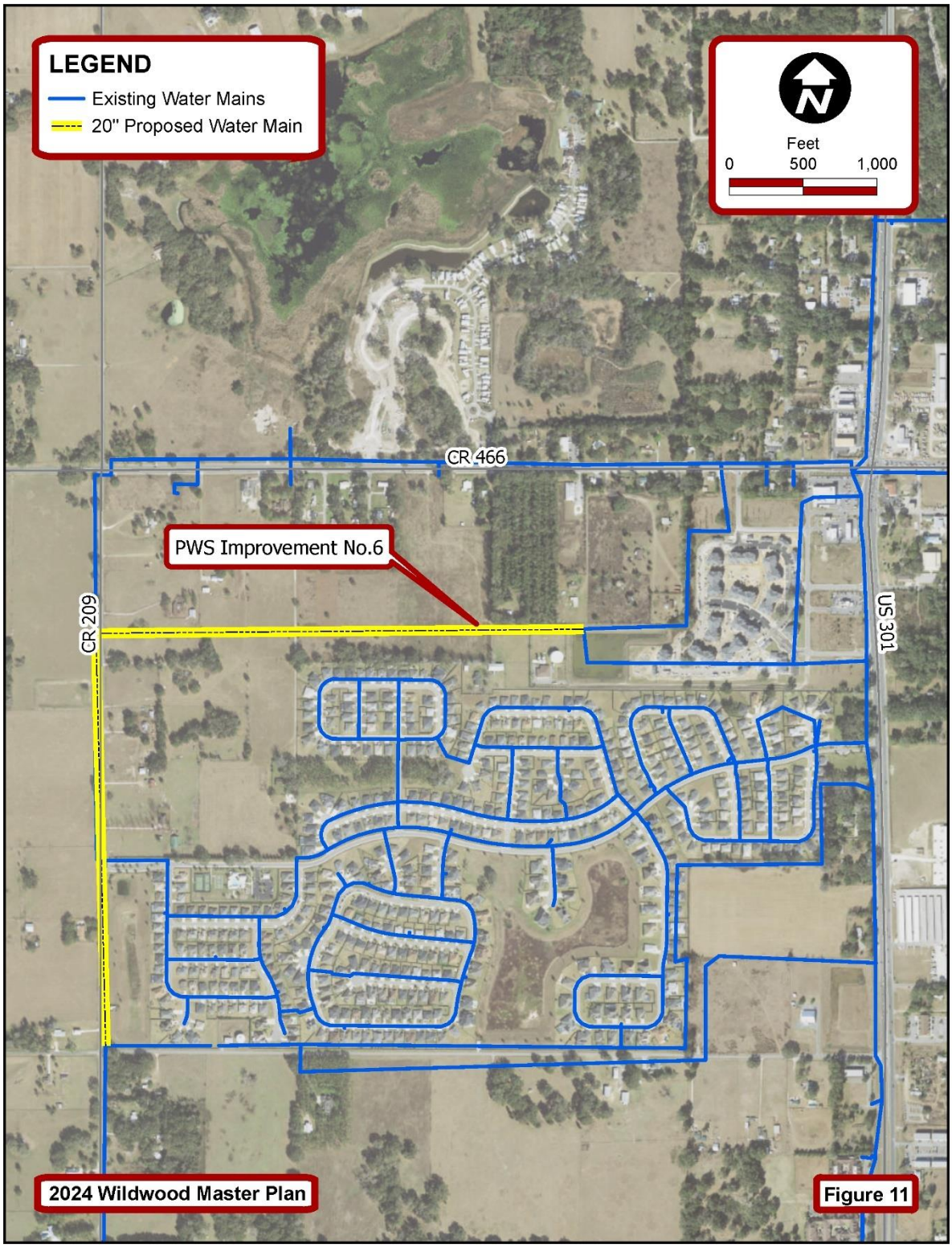
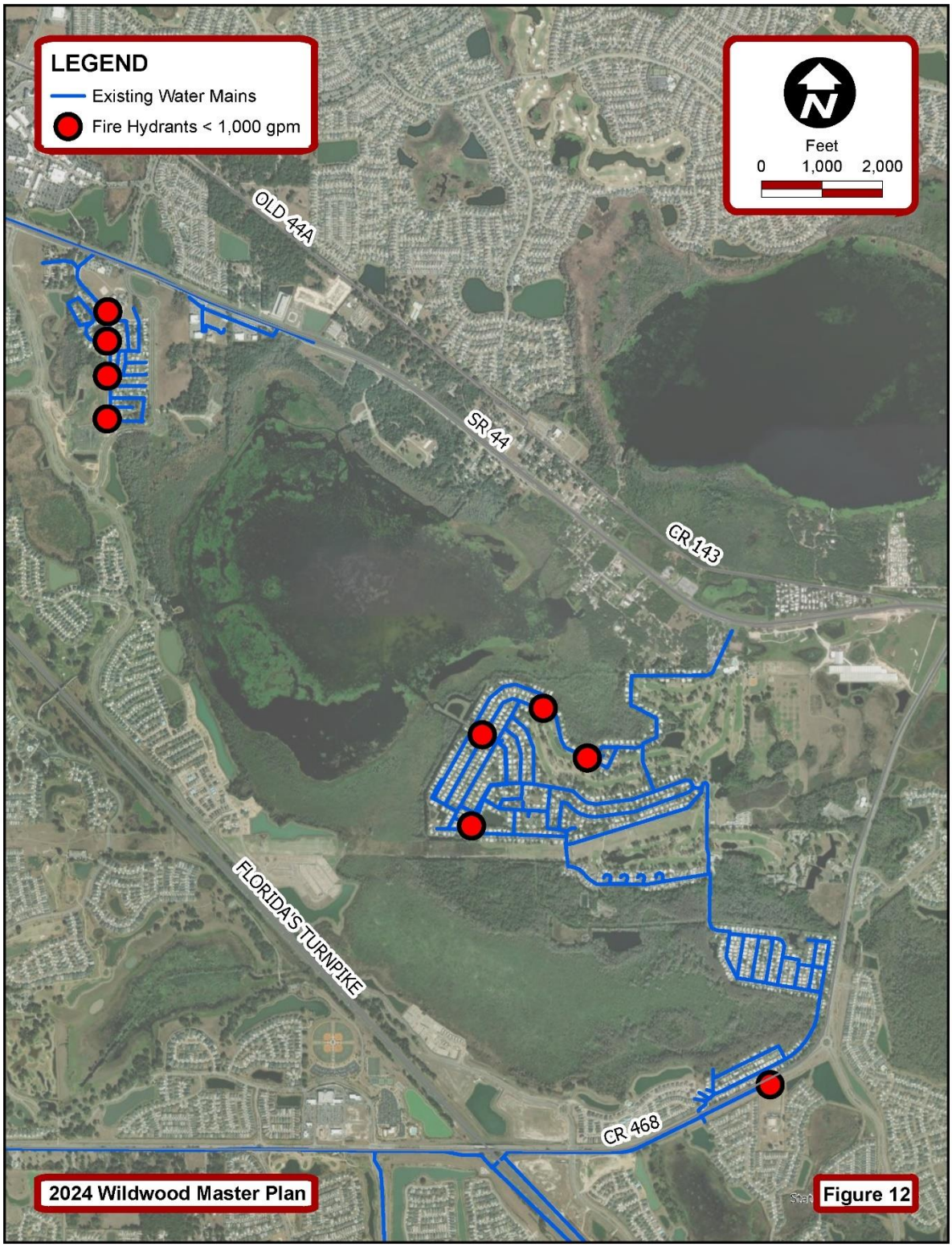


Figure 12: Scenario 4 (2035) – Fire Flow Below 1,000 GPM



SCENARIOS: 2040 ANALYSIS

The following scenarios include the anticipated additional demands from the existing service area and continued anticipated expansion areas associated with the 2040 growth projections. The increase in average day demands from 2035 to 2040 is estimated to be an additional 0.496 MGD ADD. A detailed summary of new developments that are planned to be online in 2040 and their associated demands can be found in **Appendix B.** To meet the anticipated 2040 demands a new water treatment plant is required, as well as additional watermain improvements. Two alternatives were modeled with two different water treatment plant locations and the associated required water main improvements to meet the projected 2040 demand projections.

Scenario 5A: 2040 with Champagne WTP

Scenario 5A models the City's PWS from Scenario 4 with 2040 demands and the necessary improvements to meet the hydraulic requirement. The necessary improvements are shown in **Figure 13** and listed below:

- **PWS Improvement No. 7A:** Construct the Champagne Farms WTP located at Champagne Farms.
- **PWS Improvement No. 8A:** Construct 16-inch line along CR462 and a 20-inch line along CR 462 between CR 231 and CR 223 to connect the Champagne Farms WTP to the City's system.

The resulting system performance for this scenario is summarized in **Table 27** below.

Table 27: Model Results for Scenario 5A

Demands	Min. System Pressure (psi)	Avg. System Pressure (psi)	Min. Available Fire Flow (gpm)
ADD	47	65	-
MDD	47	63	544
PHD	27	49	-

The results demonstrate that with the projected 2040 demands and proposed system improvements, including a new WTP at Champagne Farms, the system is operating within the minimum system pressures standards established by FDEP and the City. Available fire flow coverage is consistent with present day (2024) scenario as there are 8 hydrants below 1,000 gpm. These fire hydrants are shown in **Figure 11** below.

Scenario 5B: 2040 with Monarch WTP

Scenario 5B models the City's PWS from Scenario 4 with the projected 2040 demands. This scenario models a new WTP located at Monarch Rach and the required water main improvements to meet the projected 2040 demands. These necessary improvements are shown in **Figure 14** and are listed below:

- **PWS Improvement No. 7B:** Construct the Monarch Ranch WTP located at Monarch Ranch.
- **PWS Improvement No. 8B:** Construct 20-inch water main approximately 5,300 linear feet (LF) connecting the Monarch Ranch WTP to the existing 12-inch water mains along SR 44 and US 301.

The resulting system performance for this scenario is summarized in **Table 28** below.

Table 28: Model Results for Scenario 5B

Demands	Min. System Pressure (psi)	Avg. System Pressure (psi)	Min. Available Fire Flow (gpm)
ADD	47	64	-
MDD	47	62	544
PHD	21	44	-

The results demonstrate that with the projected 2040 demands and proposed system improvements, including a new WTP at Champagne Farms, the system operates within the minimum system pressure standards established by the FDEP and the City. Available fire flow coverage is consistent with present day (2024) scenario as there are 8 hydrants below 1,000 gpm. Additionally, these are the same hydrants identified in Scenario 5A which are shown in **Figure 14**.

Figure 13: 2040 Scenario Improvements

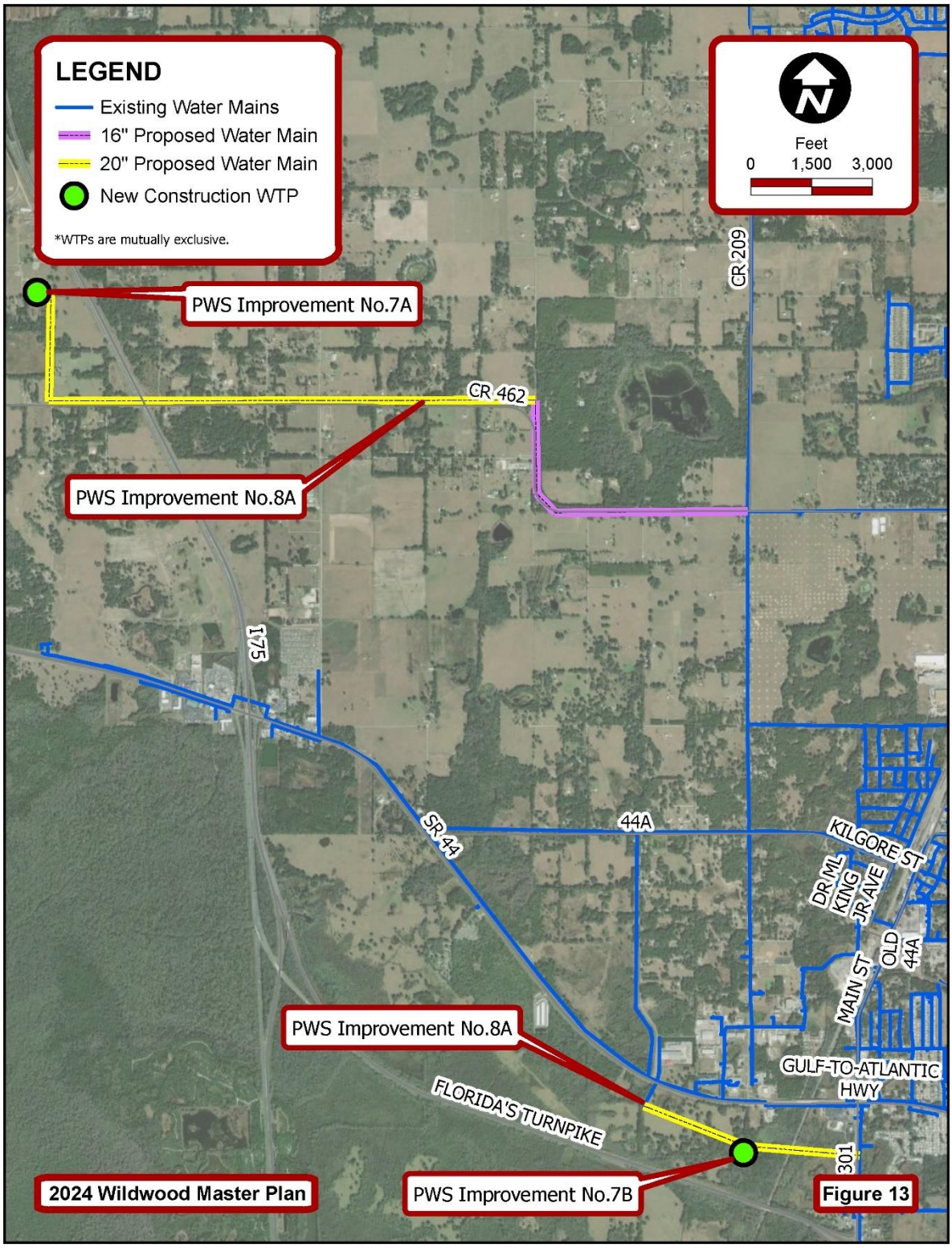
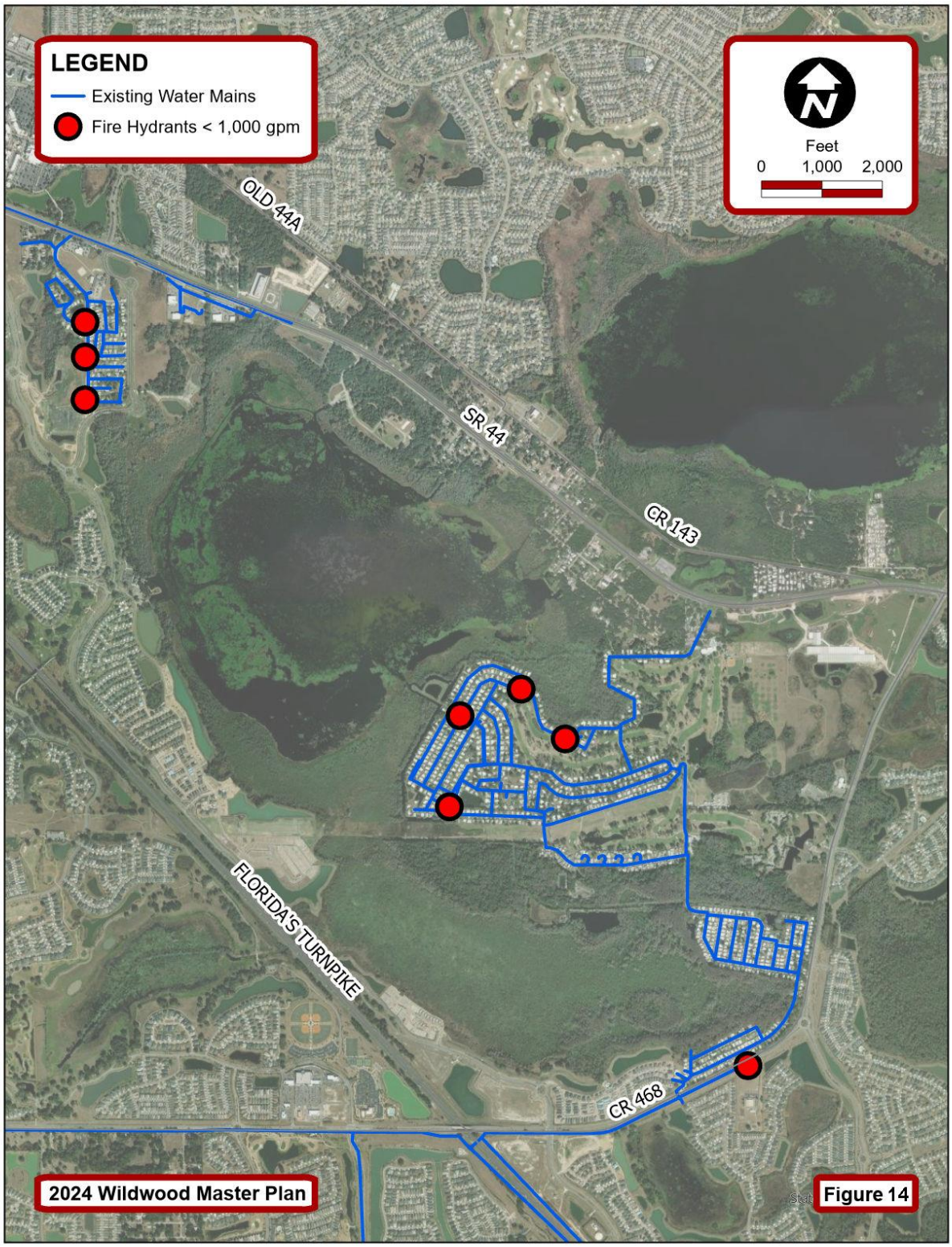


Figure 14: 2040 Scenario – Fire Flow Below 1,000 GPM





SCENARIOS: 2050 BUILD OUT ANALYSIS

This scenario includes the anticipated additional demands from the existing service area and continued anticipated expansion areas associated with the projected Build-Out (2050) demands. The increase in average demands from 2040 to Build Out is estimated to be an additional 3.98 MGD ADD. A detailed summary of new developments that are planned to be online by build-out and their associated demands can be found in **Appendix B**. To meet the anticipated build-out demands various alternatives were modeled to determine the required improvements to meet the anticipated build-out demands. Improvements that are required to meet anticipated build-out demands for each of the build-out scenarios are listed below.

- **PWS Improvement No. 9:** Upsize 5,000 LF 8-inch line to 12-inch along US 301 between CR 462 and CR 232

Scenario 6A: Build Out (2050) with Champagne WTP & CR 214 Repump Station

Scenario 6A models the City's PWS projected Build Out (2050) demands. This scenario models the required improvements to meet the projected build-out demands. These necessary improvements are shown in **Figure 15** and are listed below:

- **PWS Improvement No. 10A:** Rehabilitate the CR 214 repump station to have a firm pumping capacity of 2.88 MGD MDD.

The resulting system performance for this scenario is summarized in **Table 29** below.

Table 29: Model Results for Scenario 6A

Demands	Min. System Pressure (psi)	Avg. System Pressure (psi)	Min. Available Fire Flow (gpm)
ADD	51	63	-
MDD	49	61	779
PHD	20	41	-

The results demonstrate that with the projected build-out (2050) demands and proposed system improvements, the system operates within the minimum system pressure standards established by the FDEP and the City. During the MDD scenario there are 10 hydrants that are below 1,000 gpm. Fire hydrants performing below 1,000 gpm can be seen in **Figure 16**.

Scenario 6B: Build Out (2050) with Champagne WTP and CR 209/CR 222 EST

Scenario 6B models the City's PWS with the build-out (2050) demands and the necessary system improvements to meet the projected demands. These improvements are shown in **Figure 15** and are listed below:

- **PWS Improvement No. 10B:** Construct EST located across CR 209 from the NE corner of the Girl Scout property. The tank will have a volume of 500,000 gallons.

The resulting system performance for this scenario is summarized in **Table 30** below.

Table 30: Model Results for Scenario 6B			
Demands	**Min. System Pressure (psi)**	**Avg. System Pressure (psi)**	**Min. Available Fire Flow (gpm)**
ADD	50	63	-
MDD	49	61	778
PHD	21	41	-

The results demonstrate that with the projected build-out (2050) demands and proposed system improvements, the system operates within the minimum system pressure standards established by FDEP and the City. During the MDD scenario there are 10 hydrants that are below 1,000 gpm, consistent with Scenario 6A. Fire hydrants performing below 1,000 gpm can be seen in **Figure 16**.

Scenario 7A: Build Out (2050) with Monarch WTP

Scenario 7A models the City's PWS with Build-Out (2050) demands and the necessary improvements to meet these demands. These improvements are shown in **Figure 15**.

The resulting system performance for this scenario is summarized in **Table 31** below.

Table 31: Model Results for Scenario 7A			
Demands	**Min. System Pressure (psi)**	**Avg. System Pressure (psi)**	**Min. Available Fire Flow (gpm)**
ADD	44	61	-
MDD	43	59	867
PHD	24	44	-

The results demonstrate that with the projected build-out (2050) demands and proposed system improvements, the system is operating within the minimum system pressure standards established by FDEP and the City. During the max day demand scenario, there are 10 hydrants that are below 1,000 gpm. Fire hydrants performing below 1,000 gpm can be seen in **Figure 17**.

The complete water scenario analysis and modeling results are attached as **Appendix F**.

Figure 15: Build Out (2050) Scenario Improvements

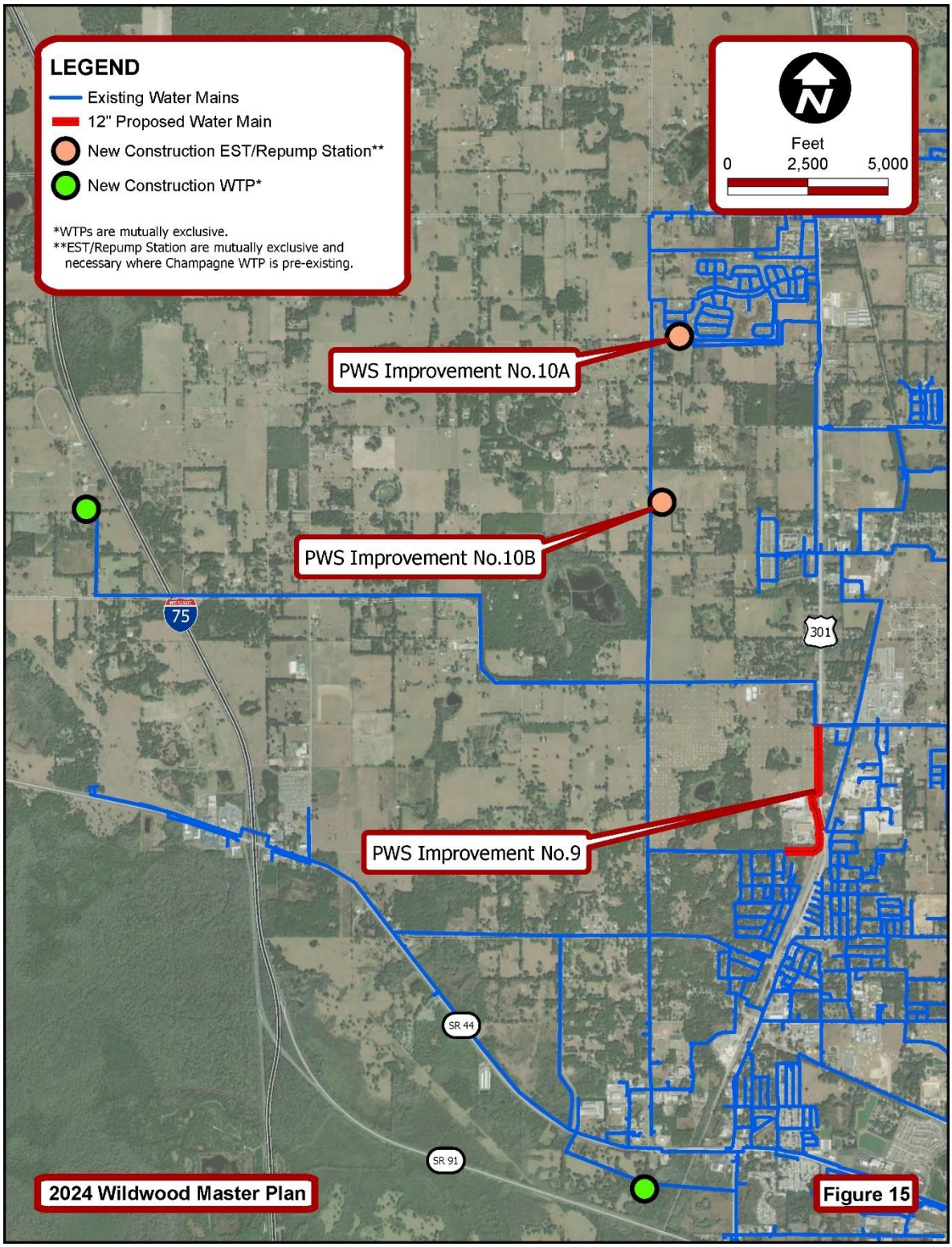


Figure 16: Build Out (2050, Champagne WTP) Scenario – Fire Flow Below 1,000 GPM

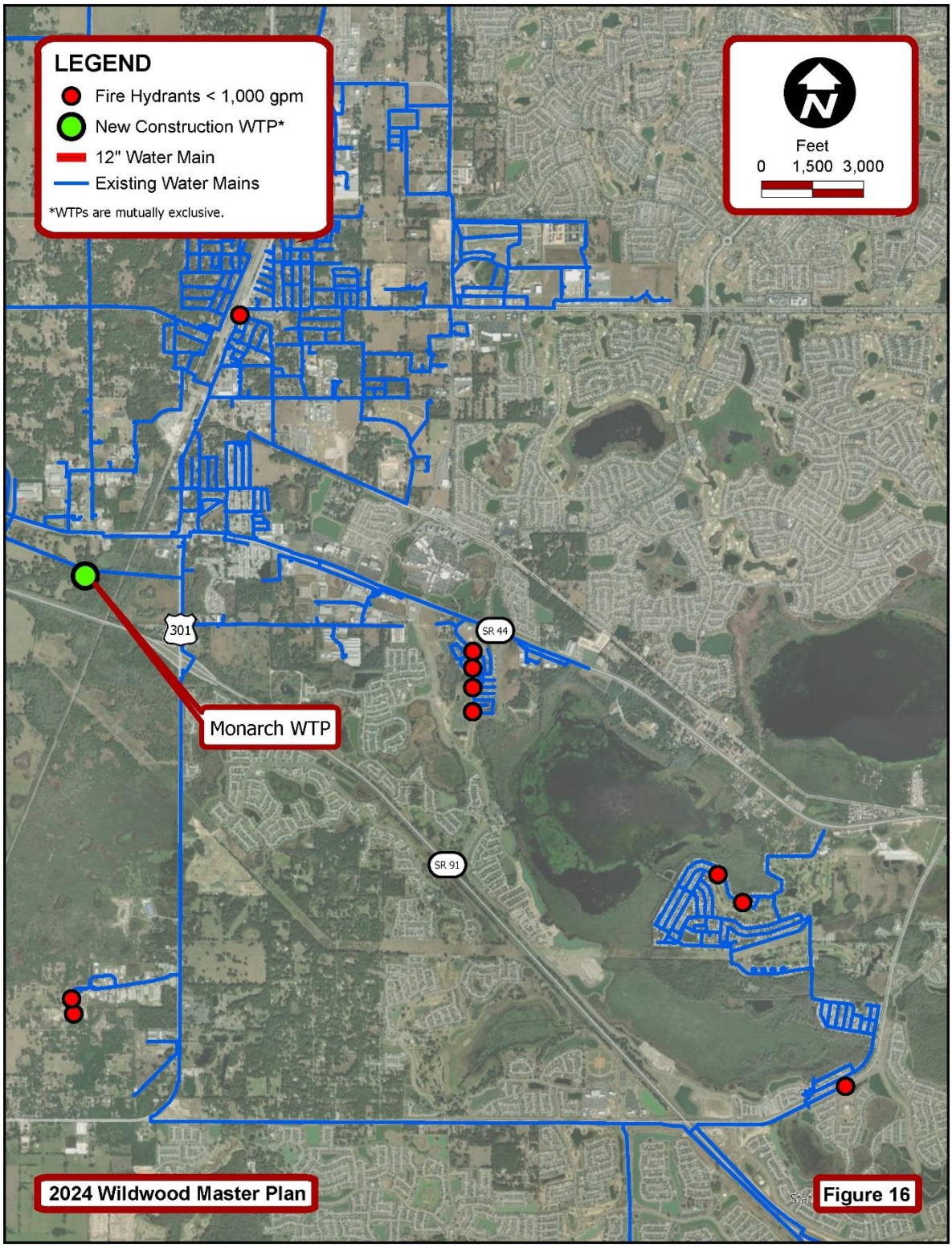
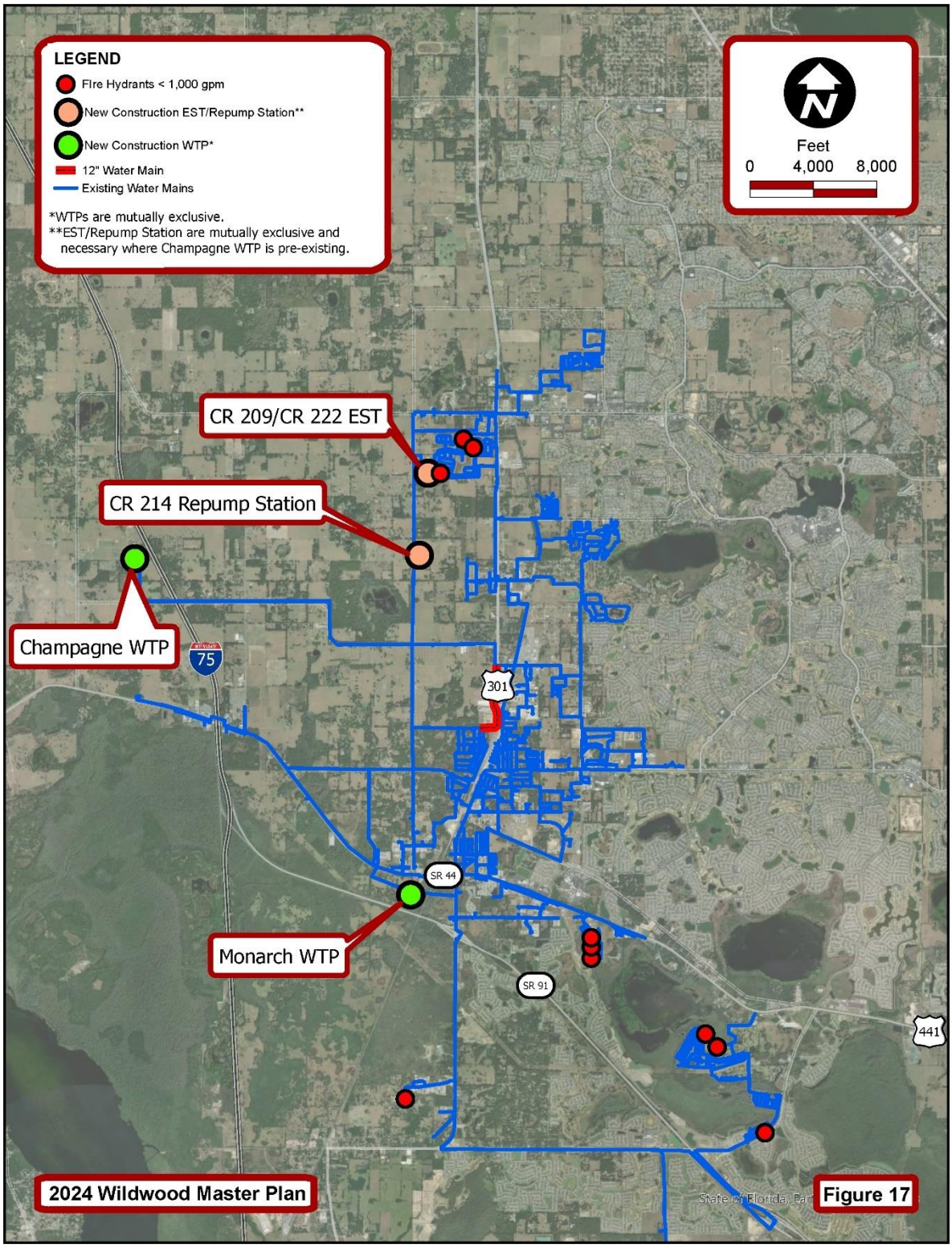


Figure 17: Build Out (2050, Monarch WTP) Scenario – Fire Flow Below 1,000 GPM





RECOMMENDED WATER SYSTEM CAPITAL IMPROVEMENT PROJECTS

This section provides a discussion of the capital improvement projects developed to address current deficiencies and meet future potable water demands. Included in this section is a project list with probable costs of construction for recommended projects at the present year (2024), 2025, 2030, 2035, 2040, and Build-Out planning years. See **Appendix G** for the overall list with budget years and the detailed breakdown of the estimated construction costs for each of the capital improvement projects, and a preliminary timeline for project implementation. See **Figure 18** for an overall map of the capital projects.

WATER SYSTEM IMPROVEMENTS

The following capital improvement projects were separated into two categories based on the variables that triggered the requirement for each improvement. First, there are improvements that are driven by existing system growth and infill. These time-sensitive improvements must be completed to meet the projected system demand. Second, there are developer-driven improvements. These improvements must be completed to serve and meet the projected flows of known developments. A summary of the CIP projects and the individual opinions of probable costs are attached in **Appendix G**.

Immediate System Improvements (2025)

The City's water system does not require immediate system improvements.

Within the Next 5 Years (2030)

PWS Improvement No. 1: CR 121 Water Main Interconnect - The project will consist of approximately 6,500 LF of 12-inch water main connecting the existing 12-inch water main on CR 121 from CR 125 south to the existing 10-inch water main located on CR 462. The project has an estimated cost of $1,580,000.

PWS Improvement No. 2: CR 209 Phase 3 Water Main Extension – Construction of approximately 9,000 LF of 20-inch water main along CR 209 from CR 462 to CR 214. The project has an estimated cost of $5,220,000.

PWS Improvement No. 3: Oxford Oaks Interconnect – Construction of approximately 1,200 LF of water main to connect the parallel 12-inch water mains along US 301 from Oxford Oaks south to CR 214. The project has an estimated cost of $290,000.

PWS Improvement No. 4: Oxford WTP Phase 2 Expansion to 6.62 MGD MDD – Installation of an additional packed tower aerator, odor control system, a second 1,000,000-gallon prestressed GST, and replacement of the existing jockey and high service pumps to increase the firm pumping capacity to 9,600 gpm. The project has an estimated cost of $3,630,000.

PWS Improvement No. 5: CR 501 WTP Expansion – Expand the high-service pump station at the plant by replacing the current jockey pump and fire pump with 1,200 gpm units. This will bring the plant's firm capacity to 3,600 gpm to meet peak hour demand. The project has an estimated cost of $3,040,000.

Within the Next 10 Years (2035)

PWS Improvement No. 6: Oxford WTP Water Main Extension – Construction of approximately 6,200 LF of 20-inch water main from the existing 20-inch transmission main from the Oxford WTP west to CR 209 and then south to CR 214. The project has an estimated cost of $3,810,000.

Within the Next 15 Years (2040)

PWS Improvement No. 7A: Champagne Farms WTP - Construct the Champagne Farms WTP with a permitted max day capacity of 6.71 MGD. Champagne Farms WTP would consist of two LFA wells, each with a pumping capacity of 2,400 gpm, two 1.00 MG ground storage tanks, four 2.00 MG Nanofiltration (NF) treatment train, and a high-service pump station with a firm pumping capacity of 10,800 gpm. The project has an estimated cost of $126,490,000.

PWS Improvement No. 8A: Champagne Farms WTP Watermain Extension – Construction of 15,000 LF of 20-inch and 7,900 LF of 16-inch water main along CR 462 from CR 231 to CR 209. This project is contingent on the construction of Champagne WTP. The project has an estimated cost of $11,580,000.

PWS Improvement No. 7B: Monarch WTP – Construct the Monarch Ranch WTP with a permitted max day capacity of 6.71 MGD. The Monarch Ranch WTP would consist of two LFA wells, each with a pumping capacity of 2,400 gpm, two 1.00 MG ground storage tanks, four 2.00 MG Nanofiltration (NF) treatment train, and a high-service pump station with a firm pumping capacity of 10,800 gpm. The project has an estimated cost of $126,490,000.

PWS Improvement No. 8B: Monarch WTP Watermain Extension – Construction of 5,300 LF of 20-inch water main connecting Monarch WTP to the existing 12-inch watermains on SR 44 and US 301. The project has an estimated cost of $3,080,000.

Through Build Out (2050)

PWS Improvement No.9: US 301 Water Main Upsize - Upsizing of the existing 8-inch water main to 12-inch along US 301 between CR 462 and CR 232. The project will consist of approximately 5,000 LF of water main replacement and construction. The project has an estimated cost of $1,200,000.

PWS Improvement No. 10A: CR 214 Repump Station Rehabilitation – Rehabilitation of the CR 214 Repump Station. The rehabilitation of the CR 214 Repump Station is only required in Scenario 6A. The project has an estimated cost of $2,100,000.

PWS Improvement No. 10B: CR 209/CR 222 EST – Construction of a 500,000-gallon EST located at the northeast corner of CR 222 and CR 209. The construction of a new 500,000-gallon EST is only required in **Scenario 6B.** The project has an estimated cost of $1,820,000**.**

Continuing Capital Projects

PWS Improvement No.11 (Annual Watermain Replacement Program): These projects will consist of installing new water mains and replacing and upsizing the existing water mains in the areas shown in **Figure 19**. Most of these water mains consist of 4-inch or smaller cast iron piping, which will be replaced with an 8-inch PVC or Ductile Iron water main. The other areas contain an Asbestos Cement (AC) water main, which will be replaced with a PVC or Ductile Iron water main. Additionally, new water mains are proposed in current areas where they are not currently installed to improve system hydraulics and provide service to

future customers. The current program is budgeted for $100,000 of improvements per year. This should be increased to at least $200,000 per year.

Developer Driven Water Mains

PWS Improvement No.12: Main Street/US 301 New Water Main – Installation of a new 12-inch water to service development along Main Street North/US 301. This project will be driven and dependent on improvements to North Main Street/US 301. The project will consist of approximately 2,000 LF of water main construction. The project has an estimated cost of $870,000. This improvement is shown in **Figure 19**.

Developer Driven Water Mains: These projects will consist of water main extensions that will be required to serve known and unknown future developments. These projects are not required capital projects for the City's system and are not required by a certain planning period but instead are triggered by new development. These expansions will be the responsibility of the developers of the adjacent parcels. The required size and proposed location are shown in **Figure 20**.

Figure 18: Overall Water Capital Improvement Map

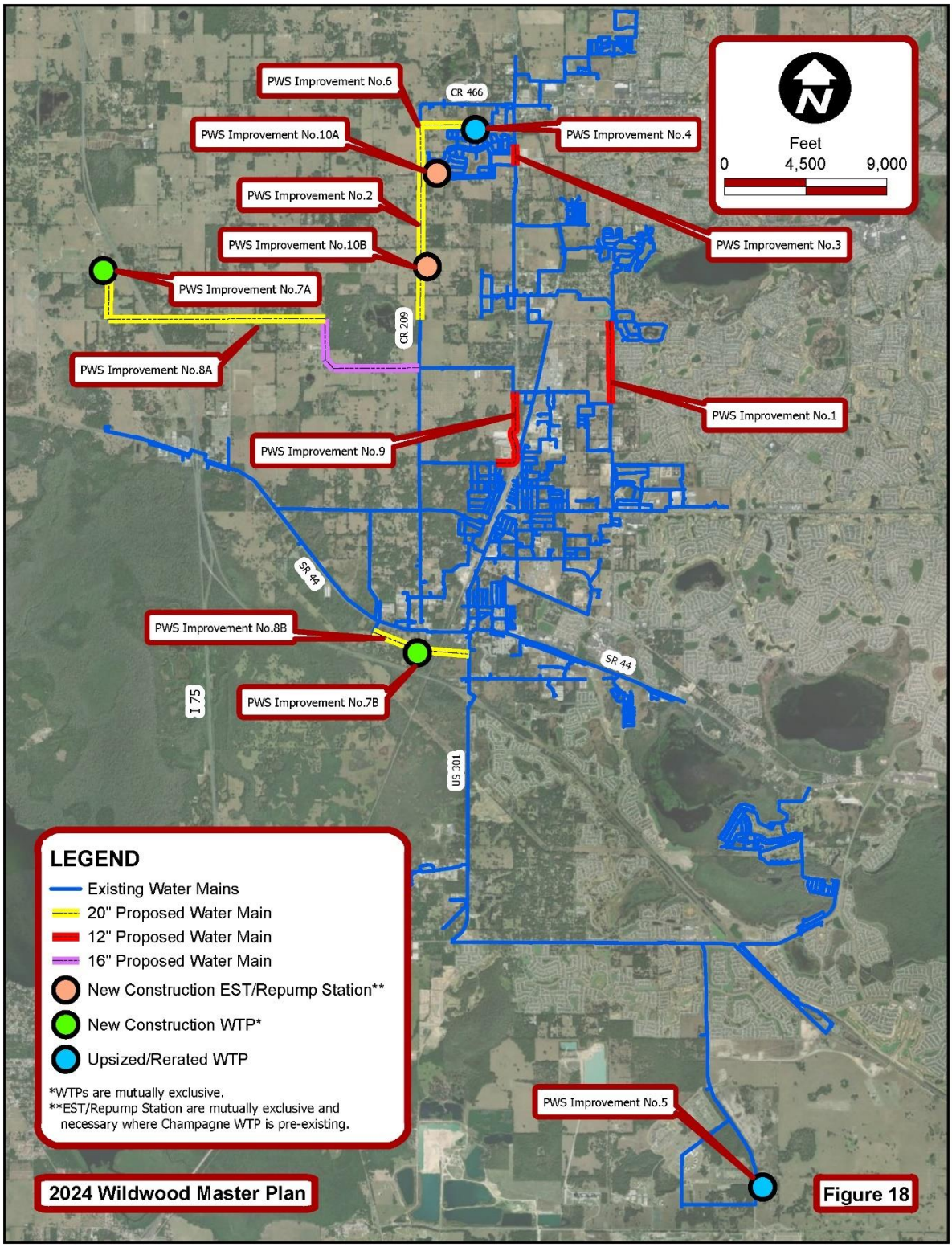


Figure 19: Watermain Replacement Program

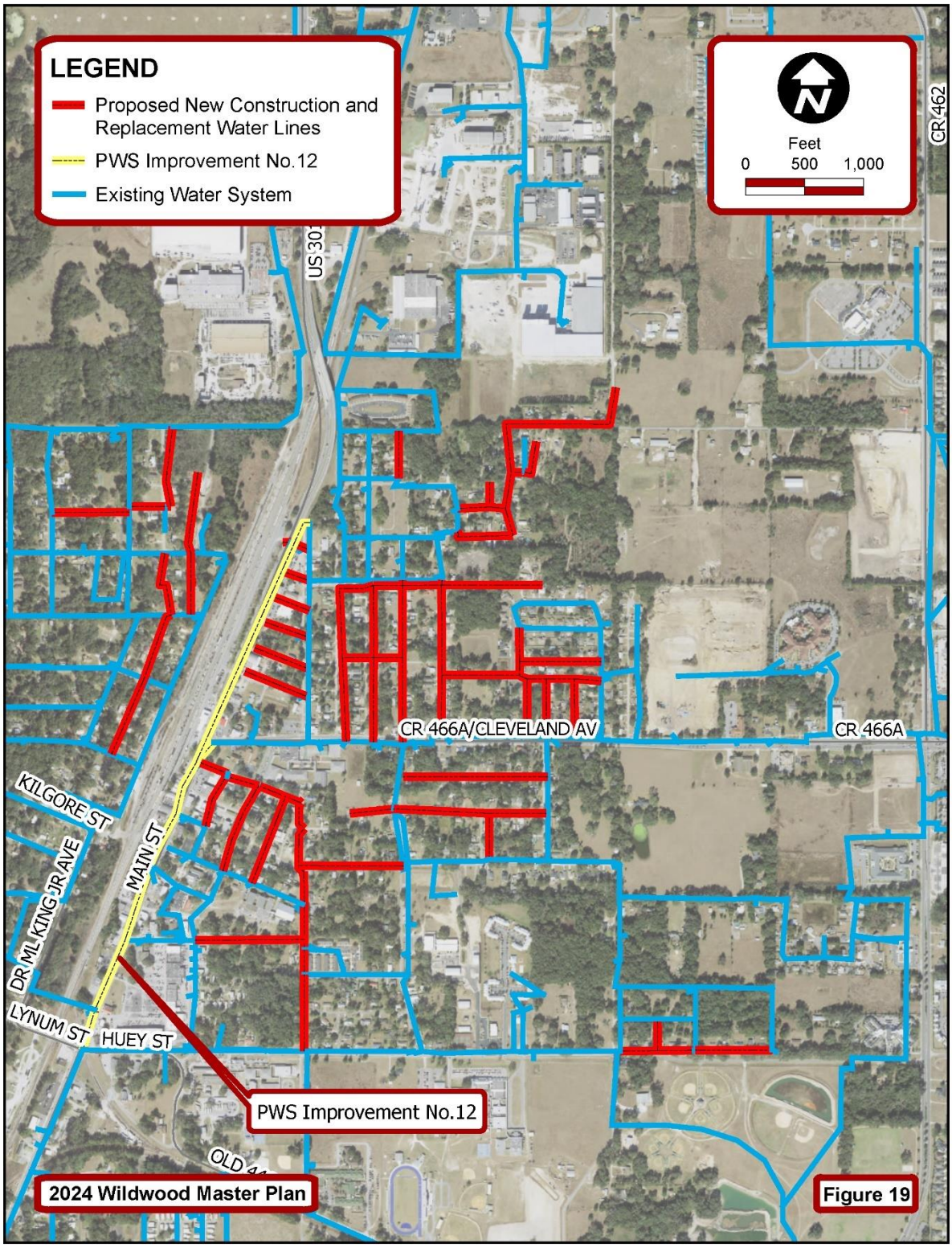
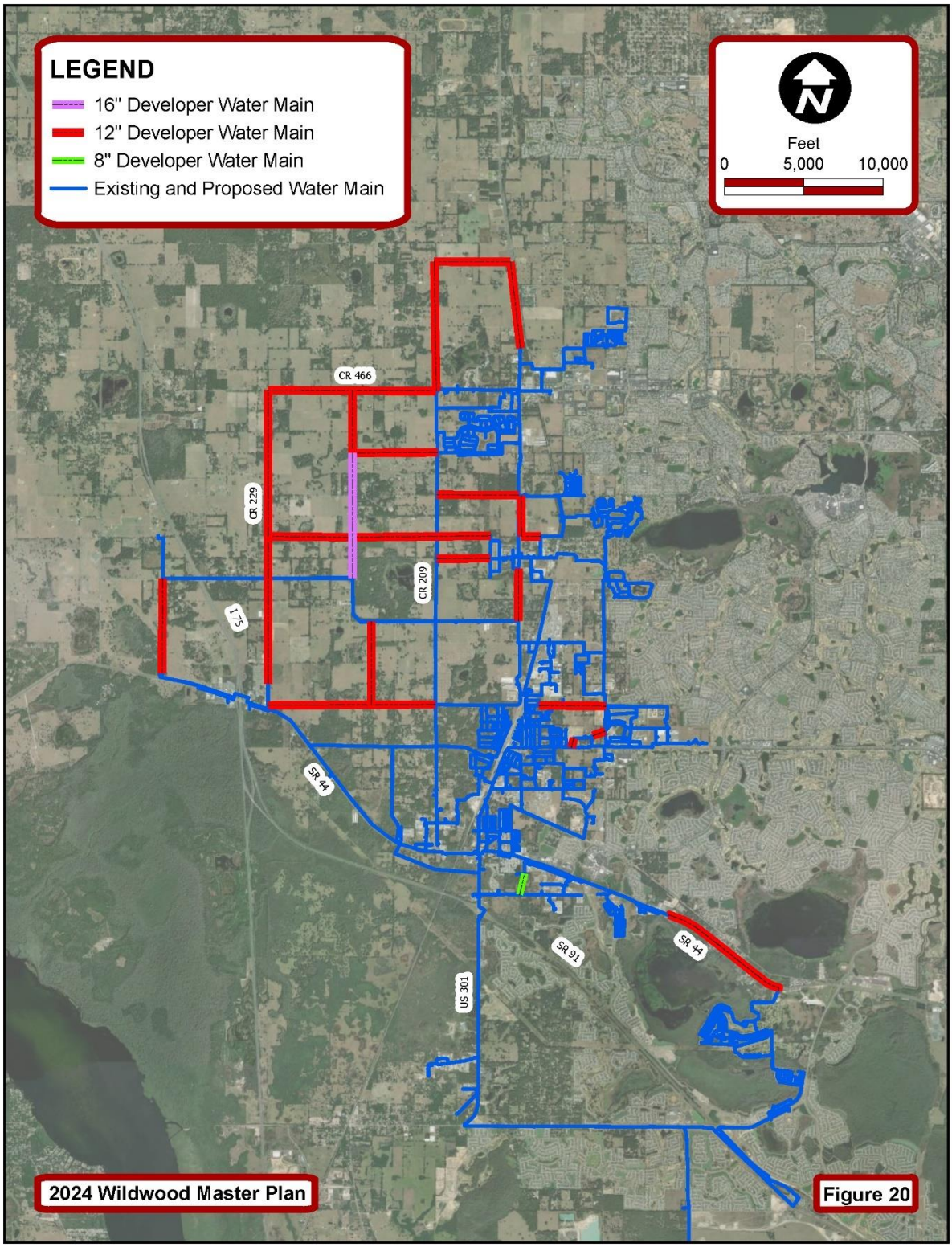


Figure 20: Developer Driven Watermain Projects





CAPACITY ANALYSIS

As part of the analysis of the City Utility System Master Plan, a capacity analysis of the system was performed. Typically, where multiple treatment facilities are connected to a single water system, the FDEP assumes the total system capacity is the sum of the individual treatment facility's permitted capacities. Using this methodology, the combined system capacity is 7,937,230 gpd. See **Appendix E** for the capacity analysis calculations and summary.

The City's water system will be rerated when improvements, including an EST and an additional WTP, are made. These projects have only been identified during the analysis of the current PWS and its preparedness for future expansion, therefore, their capacities are not developed enough yet to consider rerating. FDEP rerates the system capacity as the sum of individual WTP capacity as the overall permitted design capacity. Where WTPs are hydropneumatic tank treatment plants and would have a design capacity of 0.00 MGD per 62-555, FDEP assumes that the permitted capacity is half of the total well pump capacity. **Table 32** summarizes the existing FDEP permitted capacity as well as the projected future capacity of the City's PWS and compares it to the projected water system demands.

Table 32: City of Wildwood PWS 6600331 (Rated Capacity)

WTP	MDD Rated Capacity by Year (GPD)				
	2025	2030	2035	2040	2050
Huey St.	720,000	720,000	720,000	720,000	720,000
Ashley WTP	360,000	720,000	720,000	720,000	720,000
Fairways	504,000	504,000	504,000	504,000	504,000
Oxford WTP	2,350,000	6,620,000	6,620,000	6,620,000	6,620,000
CR 501 WTP	2,664,000	2,664,000	2,664,000	2,664,000	2,664,000
CCC No.1	835,230	835,230	835,230	835,230	835,230
CCC No.1	504,000	504,000	504,000	504,000	504,000
New WTP	-	-	-	6,711,000	6,711,000
Permitted Capacity (MDD)	**7,937,230**	**12,567,230**	**12,567,230**	**19,278,230**	**19,278,230**
Total Water System Demand (MDD)	**6,495,691**	**9,452,327**	**11,159,843**	**11,839,669**	**17,286,444**
Projected Remaining Permitted Capacity	**1,441,539**	**3,114,903**	**1,407,387**	**7,438,561**	**1,991,786**

WASTEWATER SYSTEM

This section discusses the existing wastewater collection and treatment system owned and operated by the City of Wildwood.

EXISTING WASTEWATER TREATMENT AND COLLECTION SYSTEM OVERVIEW

The City's wastewater collection system consists of the Wildwood Wastewater Treatment Facility (WWTF), sanitary sewer lift stations, a pressurized force main collection system, and a gravity sewer collection system.

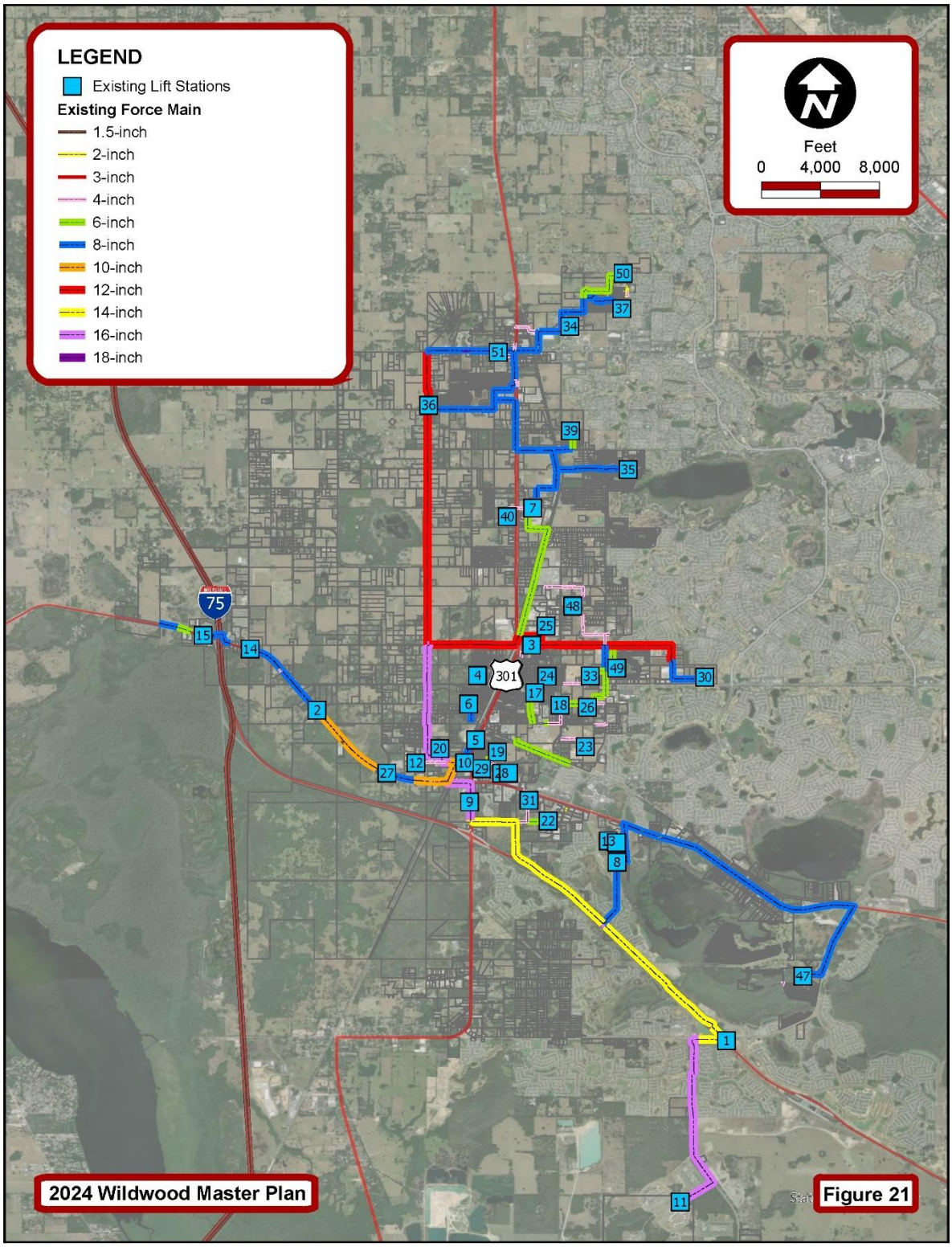
SANITARY SEWER COLLECTION SYSTEM

Wastewater system data was obtained though GIS data that was provided by the City of Wildwood. The GIS data that was provided by the City was used to create and model the conditions of the existing collection system and alternative future scenarios of the collection system. The approximate length of each pipe size was calculated from the GIS data provided by the City of Wildwood. The City's wastewater collection system is shown in **Figure 21**. The components (approximately) of the City's wastewater collection system are summarized below in **Table 33**. The gravity sewer pipe consists of vitrified clay pipe (VCP), cured in place (CIPP) line VCP, and polyvinyl chloride (PVC). The pressurized force main network consists of PVC pipe, ductile iron pipe, and high-density polyethylene (HDPE) pipe.

Table 33: Wastewater Collection System Elements

Type of Element	Quantity
Lift Stations	53
Manholes	1,252
4-inch Gravity Main (feet)	855
6-inch Gravity Main (feet)	2,056
8-inch Gravity Main (feet)	181,121
10-inch Gravity Main (feet)	22,154
12-inch Gravity Main (feet)	2,884
2-inch Force Main (feet)	539
4-inch Force Main (feet)	37,497
6-inch Force Main (feet)	38,837
8-inch Force Main (feet)	65,177
10-inch Force Main (feet)	3,710
12-inch Force Main (feet)	48,385
14-inch Force Main (feet)	24,370
16-inch Force Main (feet)	24,195

Figure 21: Existing Wastewater Collection System





Wastewater Treatment Plant

The City of Wildwood WWTF is a Category III, Class B facility that is permitted for 3.55 MGD annual average daily flow (AADF) in accordance with F.A.C. Chapter 62-699. The facility is comprised of a rotary drum screen, flow equalization, oxidation ditches, cloth-media disc filters, chlorine contact basins, an aerobic biosolids digester, a belt press for biosolids dewatering, and two lined reject holding ponds. Secondary treatment is performed with high-level disinfectant (sodium hypochlorite) and meets Class I reliability standards.

Effluent disposal is comprised of two disposal methods:

- **Land Application R-001:** Slow-rate public access system (R-001) permitted at 3.30 MGD annual average daily flow (AADF). The system consists of 1.30 MGD of reuse water used for irrigation within the approved local Reuse Service Area and approximately 2.00 MGD AADF to the North Sumter Utility (NSU) Service Area through an interconnection with the North Sumter Utilities WWTF.
- **Land Application R-002:** Rapid Infiltration Basin (RIB) system with a permitted capacity of 1.06 MGD AADF and consists of nine (9) RIBs with a total wetted area of 11.68 acres. R-002 serves as an alternative disposal system to R-001 during periods of wet weather. Wet weather storage is provided by 2.65 MG and 6.93 MG lined ponds at the RIB site for a total volume of 9.58 MG in wet weather storage. R-002 also serves as an alternative disposal method when the effluent does not meet the requirements of slow-rate public access reuse.

The FDEP DMR data from June 2019 to May 2024 was evaluated to determine the average plant flow rates and the current treatment efficiency. Based on the DMR data from FDEP from June 2023 to May 2024, the annual average daily flow is currently 2.32 MGD, or 65% of the permitted capacity, and the max day flow was 4.47 MGD. **Table 34** summarizes the City's WWTF DMR data and flow projections. A graph depicting the flows into the City's WRF can be seen in **Figure 22**.

Table 34: City of Wildwood WWTF DMR Data and Flow Projections

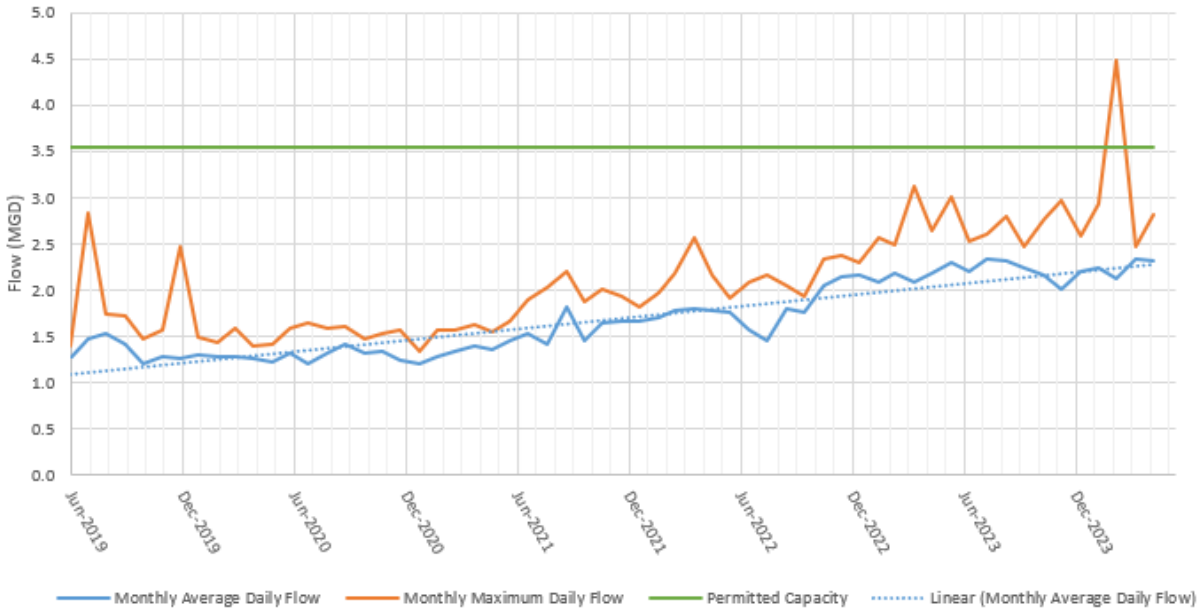
Month-Year	Monthly Average Day Flow (MGD)	Monthly Max Month Day Flow (MGD)
Jun-2019	1.259	1.391
Jul-2019	1.473	2.832
Aug-2019	1.531	1.749
Sep-2019	1.409	1.722
Oct-2019	1.204	1.472
Nov-2019	1.280	1.574
Dec-2019	1.266	2.468
Jan-2020	1.305	1.485
Feb-2020	1.278	1.428
Mar-2020	1.286	1.579
Apr-2020	1.253	1.390
May-2020	1.224	1.420
Jun-2020	1.316	1.591
Jul-2020	1.202	1.647

Table 34: City of Wildwood WWTF DMR Data and Flow Projections		
Month-Year	**Monthly Average Day Flow (MGD)**	**Monthly Max Month Day Flow (MGD)**
Aug-2020	1.308	1.594
Sep-2020	1.406	1.610
Oct-2020	1.321	1.472
Nov-2020	1.341	1.535
Dec-2020	1.236	1.570
Jan-2021	1.200	1.334
Feb-2021	1.284	1.564
Mar-2021	1.333	1.564
Apr-2021	1.394	1.618
May-2021	1.353	1.551
Jun-2021	1.454	1.667
Jul-2021	1.521	1.902
Aug-2021	1.412	2.034
Sep-2021	1.808	2.205
Oct-2021	1.459	1.870
Nov-2021	1.653	2.004
Dec-2021	1.658	1.932
Jan-2022	1.666	1.822
Feb-2022	1.693	1.973
Mar-2022	1.774	2.174
Apr-2022	1.796	2.567
May-2022	1.769	2.161
Jun-2022	1.763	1.907
Jul-2022	1.565	2.077
Aug-2022	1.452	2.159
Sep-2022	1.799	2.046
Oct-2022	1.752	1.934
Nov-2022	2.054	2.343
Dec-2022	2.145	2.377
Jan-2023	2.169	2.305
Feb-2023	2.089	2.558
Mar-2023	2.180	2.481
Apr-2023	2.084	3.114
May-2023	2.189	2.633
Jun-2023	2.303	3.000
Jul-2023	2.202	2.530

Table 34: City of Wildwood WWTF DMR Data and Flow Projections		
Month-Year	**Monthly Average Day Flow (MGD)**	**Monthly Max Month Day Flow (MGD)**
Aug-2023	2.338	2.600
Sep-2023	2.313	2.800
Oct-2023	2.238	2.470
Nov-2023	2.171	2.760
Dec-2023	2.007	2.960
Jan-2024	2.192	2.588
Feb-2024	2.248	2.930
Mar-2024	2.121	4.474
Apr-2024	2.327	2.472
May-2024	2.318	2.808

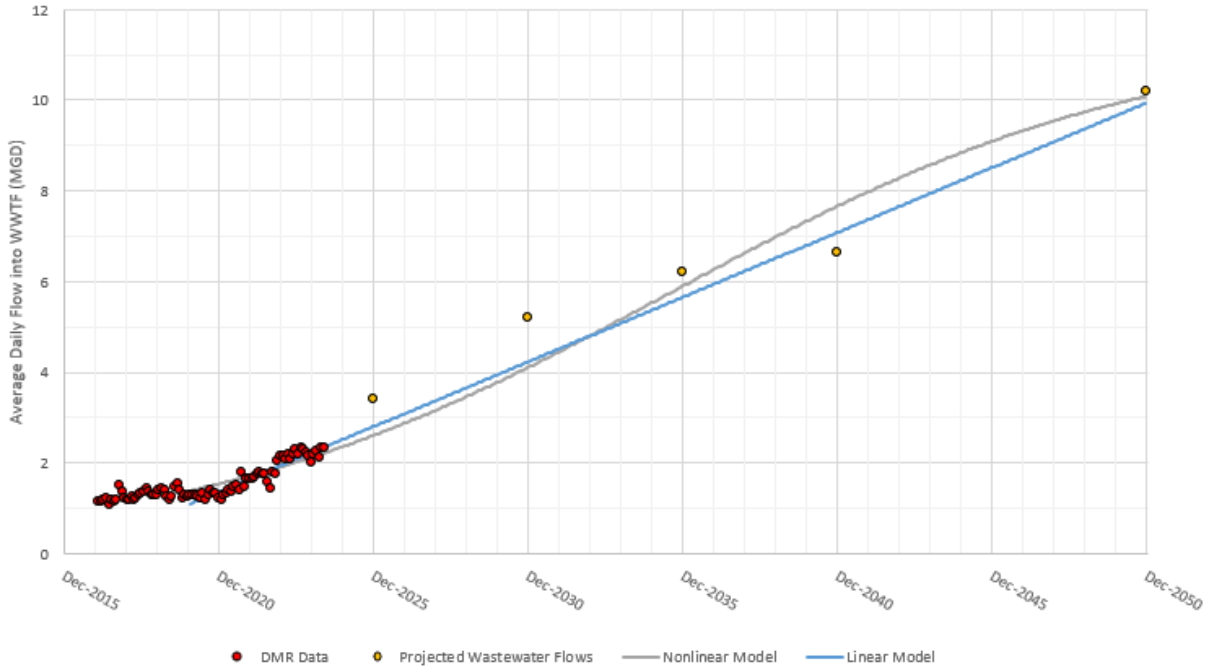
The monthly average increase in the wastewater system demand from June 2019 to May 2024 was approximately 20,000 gallons per month or approximately 240,000 gallons per year. This increase corresponds to an average annual growth rate of 13.8%.

Figure 22: Max Day and Average Day Flow Wildwood WWTF



Future flows for the City of Wildwood WWTF were determined using the population projections and the historical DMR data. The DMR and projected flows were fit to both linear and nonlinear regression models to determine growth rates and approximate timelines for improvements. **Figure 23** depicts the DMR data from June 2019 – March 2024 with the projected demands from **Appendix B**.

Figure 23: City of Wildwood Wastewater Flow Projections



From the demand projections, the average linear growth rate is approximately 24,000 gallons per month, or approximately 288,000 additional gallons per year to the wastewater system. Assuming this growth rate, the existing WWTF facility will reach its average day permitted capacity of 3.55 MGD in 2028. Facility upgrades to increase the capacity for the existing WWTF projected for 2028 are recommended to start in early 2025. Assuming a linear growth rate, the existing WWTF is projected to exceed 8 MGD in capacity in 2044. Planning for constructing a new WWTF in northwest Wildwood is recommended to start in 2036.

WASTEWATER SYSTEM ANALYSIS AND METHODOLOGY

This section provides an overview of the City's wastewater system hydraulic model development, scenario analysis, and the required wastewater collection system infrastructure improvements required to meet the projected future flows.

Hydraulic Model Development

Data provided by the City of Wildwood was used to update the existing wastewater collection system model developed for the 2019 Utility Master Plan. The hydraulic model was developed using Bentley SewerGems modeling software and was utilized to model the City's pressurized (lift stations and force mains) system. The system-wide model was used to (1) evaluate the performance and capacity of the City's lift stations and force mains and (2) identify system deficiencies and required system improvements.

Lift Station Testing

Kimley-Horn conducted 19 lift station evaluations, consisting of pump performance testing and condition assessments. The lift station pumps were tested utilizing Kimley-Horn's XAC-PACK® pump testing hardware and software. The XAC-PACK® testing generated reports summarizing the operating conditions of the pumps and created equivalent affinity law curves for each pump, so the performance of the pumps



could be compared to the manufacture provided pump curves. Pump curves and pump data for the model were provided by the City of Wildwood and through coordination with the pump manufacturer representatives. The XAC-PACK® also generated theoretical system curves for each lift station to aid in the calibration of the hydraulic model. The individual reports for each station are attached in **Appendix H.** Only manifolding stations were included in the testing, and all other lift stations were calibrated using historic drawdown tests and runtime data provided by the City. A summary of the lift station testing data can be found in **Table 35**.

Table 35: Lift Station Testing Results

Lift Station Number	Lift Station Name	Pump 1 Flow (gpm)	Pump 1 Total Dynamic Head (feet)	Pump 2 Flow (gpm)	Pump 2 Total Dynamic Head (feet)
1	CR 468	1174	93.3	1130	97.9
5	Main St N	591	73.1	0	0.0
6	Peters Street	201	70.3	211	75.4
7	Charlotte	445	68.5	551	99.6
9	Main St S	362	98.0	385	95.0
10	Kentucky	163	41.5	218	43.0
11	Prison	1447	118.0	1804	129.5
12	Industrial	90	57.9	93	57.5
14	CR 229 DD	598	50.3	555	57.1
30	Trailwinds	604	121.4	442	103.6
33	American House	316	52.6	443	74.1
34	Steeplechase	269	47.1	185	67.8
35	Lakeside Landing	283	82.7	258	79.1
36	CR 209	1773	100.9	2008	108.1
37	Vill of Parkwood	282	99.1	173	76.4
39	Grand Oaks Manor	359	77.6	298	76.6
48	Triumph South	107	96.1	109	98.3
49	Beaumont	886	163.8	887	162.1
51	Oxford Pointe	342	53.7	352	51.9

Model Calibration

Model calibration is the process of adjusting estimated model parameters to match the observed system conditions. Calibration of the hydraulic model focused on adjusting hydraulic inputs in the model after performing lift station testing and field observations. Hydraulic inputs were adjusted until the pumping results of the model were within ±10% of the XAC-PACK® pumping rates shown in **Table 35** above. First, pipe diameters and elevations were confirmed based on the as-built data provided by the City, data gathered in the field, and raster and LIDAR terrain data. Secondly, as part of the XAC-PACK® testing, an equivalent affinity law curve was developed for each pump based on the performance of the pump testing compared to the manufacturer pump curve. Where it was observed that the pumps were performing below their design curve, the speed of the pump was adjusted in the model to match the equivalent affinity law

curve that was developed for each pump. Finally, the Hazen-Williams C-factors were adjusted within a range of 100-140. Model calibration results are summarized in **Appendix I**.

Note: Main Street North lift station's pump 2 was out of service during the time of testing.

System Hydraulic Standards

The wastewater system hydraulic standards and operating guidelines were developed from FDEP standards, 10-State Standards, and with information provided by the City. The wastewater system hydraulic standards for evaluating the City's pressurized collection system are described below.

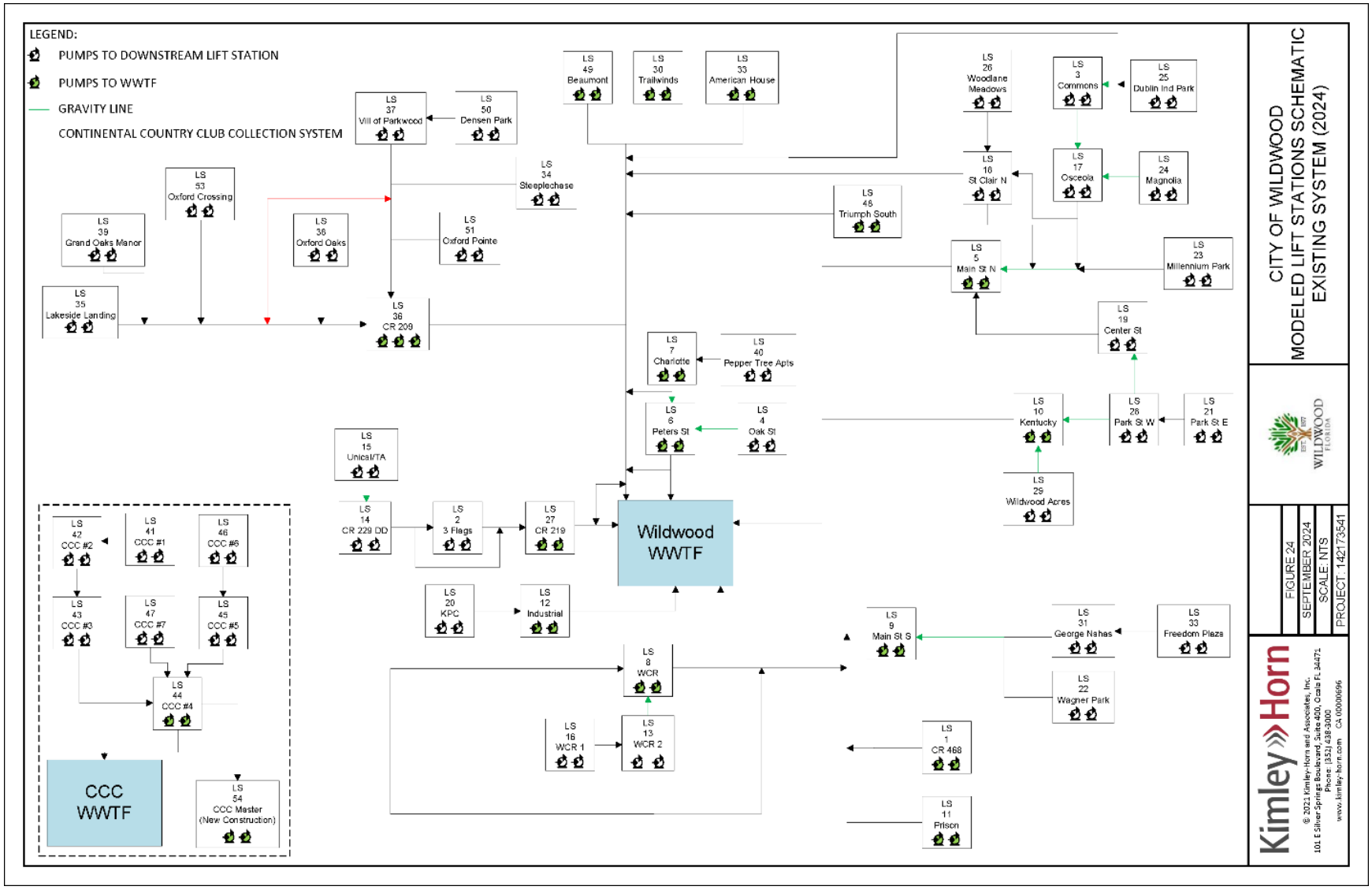
- Minimum force main design velocity: 2 fps
- Maximum force main design velocity: 9 fps
- Maximum force main pressure: 82.5 psig
- Maximum gravity pipe capacity: 80% full flow

System Hydraulic Assumptions

The following assumptions were used in the wastewater model analysis:

- The current flow directions and lift station connectivity of the pressurized wastewater system are shown in the modeled wastewater schematic below in **Figure 24**.
- Model scenarios were evaluated under an extended period simulation. An extended period simulation utilizes a diurnal sanitary loading curve. This curve simulates varying flow rates throughout the day based on real-time data collected.
- The following hydraulic parameters were used to evaluate the model for deficiencies:
    - Lift Stations – Identified as not having capacity if the primary duty pump(s) could not pump the estimated peak hour flows during the EPS.
    - Force Mains – Identified as not having capacity if velocities exceeded 8.0 feet per second (fps). If velocities were less than 2 fps, the force main was identified as not meeting cleansing velocities and identified for potential maintenance requirements or other improvements. Pressures were set to not exceed one-half of the force main pipe pressure rating. Since the pressure rating of the force mains was unknown, a conservative assumption of DR-25 (165 psig) pipe was assumed.

Figure 24: Existing Pressurized Collection System Schematic



SANITARY SEWER FLOW PROJECTIONS

The section below discusses the methodology for estimating the existing sanitary sewer flows for each lift station and the process for developing future flow projections for each lift station.

Existing Flows

The City provided runtime data from (October 2023 to February 2024) for each lift station. The runtime data was used to calibrate the current average sanitary flows from each sewershed. A sewershed is defined in this analysis as the area that contributes gravity sewer flows to a lift station. The delineated sewersheds for the analysis are shown in **Figure 25**. The daily total flow volume (gallons) for each station was calculated by multiplying the total daily run time for each pump by the pumping capacity of the pump (as determined from field testing). The volumes pumped for each pump were then summed to determine the total daily flow of the station. The annual average daily flow (AADF) for each station was then determined. To estimate the peak hour flow (PHF) at each lift station, land use data was used to estimate the total population per sewershed. Based on current census data (2018-2022), a population density of 2.57 people/ERC was used to estimate the population per sewershed. The peaking factor for each sewershed was calculated using the peak flow equation (**Equation 1)** from "*Water Supply and Wastewater Disposal"; Fair, G.M. and Geyer, J.C., 1st Edition., John Wiley & Sons, Inc., New York (1954), p. 136.* The results of these calculations are shown below in **Table 36**.

Equation 1:

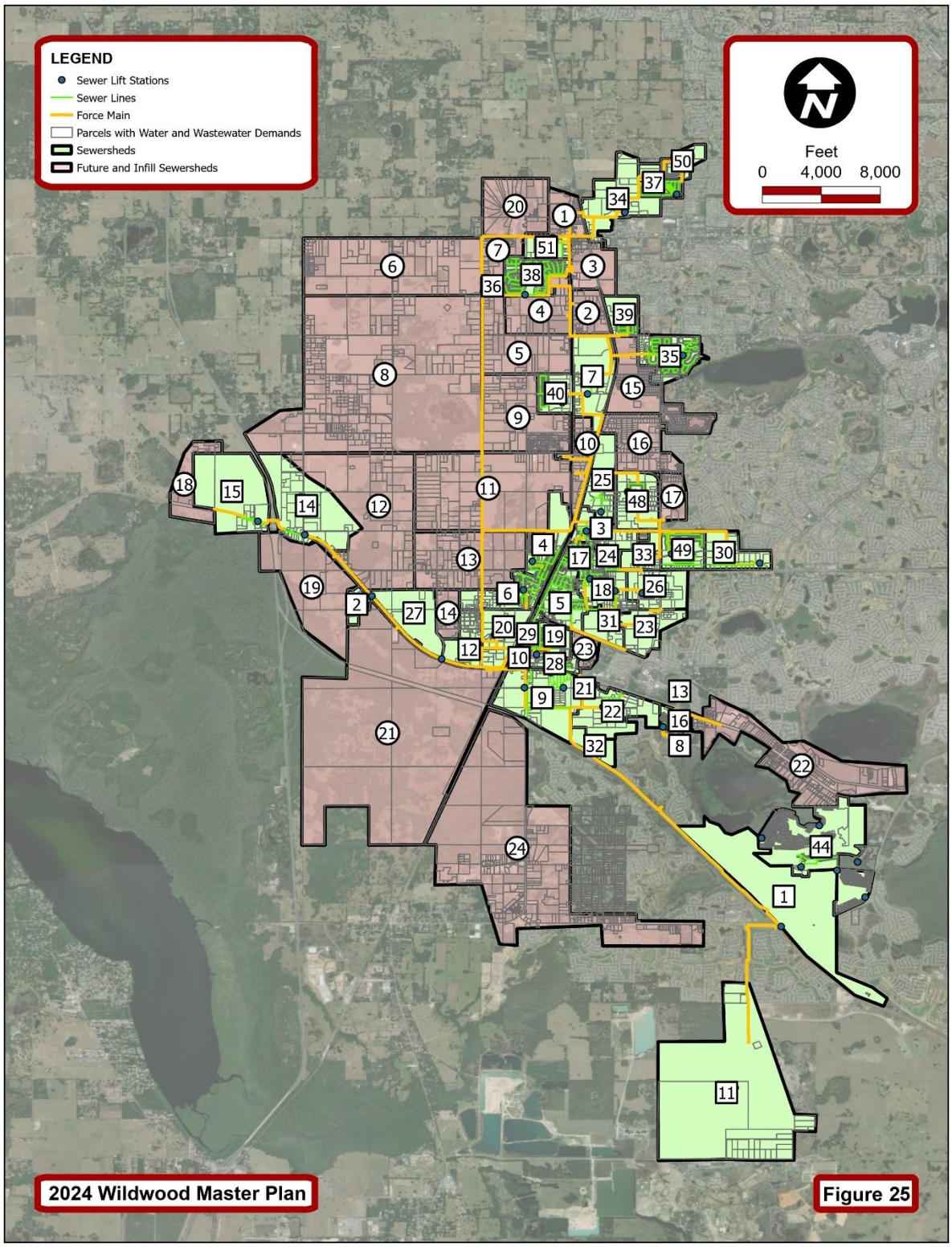
$$Peaking\ Factor = \frac{18+\sqrt{P}}{4+\sqrt{P}} \qquad (P = Population\ in\ thousands)$$

Table 36: Existing Sewershed Flows

Lift Station Number	Lift Station Name	Total Population Being Served by the LS	Total Population Peaking Factor	Average Day Flow from Lift Station (gpm)	Peak Hour flow from Lift Station (gpm)
1	CR 468	165	4.18	29	121
5	Main St N	1,265	3.73	220	821
6	Peters Street	2,159	3.56	375	1335
7	Charlotte	1,336	3.72	232	862
9	Main St S	1,017	3.80	177	672
10	Kentucky	155	4.19	27	113
11	Prison	5,835	3.18	1,013	3224
12	Industrial	306	4.07	53	216
14	CR 229 DD	934	3.82	162	619
30	Trailwinds	589	3.94	102	402

Table 36: Existing Sewershed Flows					
Lift Station Number	**Lift Station Name**	**Total Population Being Served by the LS**	**Total Population Peaking Factor**	**Average Day Flow from Lift Station (gpm)**	**Peak Hour flow from Lift Station (gpm)**
33	American House	342	4.05	59	239
34	Steeplechase	513	3.97	89	353
35	Lakeside Landing	833	3.85	145	558
36	CR 209	5,919	3.18	1,028	3265
37	Vill of Parkwood	1,354	3.71	235	872
39	Grand Oaks Manor	145	4.20	25	105
48	Triumph South	488	3.98	85	338
49	Beaumont	1,537	3.67	267	980
51	Oxford Pointe	167	4.18	29	121

Figure 25: Sanitary Sewersheds



Future Flow Projections

The population projections described in the "Population Growth Projections" section served as the basis for projecting future sanitary sewer demands. The future demands were estimated based on one of the methodologies described below. The resulting demand projections are presented in **Appendix B**.

- **Parcels with existing wastewater usage -** Wastewater demands were based on the water service demand calculations multiplied by the wastewater/water (WW/W) flow ratio of 0.83. This ratio was calculated by dividing the level of service (LOS) for the City of Wildwood's wastewater by the water (250 gpd/300 gpd).
- **Parcels without existing wastewater usage -** First, ERU determinations were made for each parcel using one of the methodologies described below. Then, the ERU estimate for each parcel was multiplied by the City wastewater level of service standard of 250 gpd/ERU to determine the resulting wastewater demand.
- **Parcels with a future land use designation in the 2050 Comprehensive Plan** - ERU values were assigned to a parcel based on the appropriate residential density or a maximum FAR that corresponds to the future land use shown in the 2050 Comprehensive Plan. For residential land uses with a range density range (i.e. 3-6 units per acre), the maximum density was used for the demand calculations. Demands were calculated from the FAR by assigning an appropriate demand per allowable unit area of development.
- **Parcels without a future land use designation in the 2037 Comprehensive Plan** - The SWFWMD parcel level population projections were divided by 2.57 residents per ERU then multiplied by the City's 250 gpd/ERU to determine the future demands.
- **New large-scale developments -** The City provided a list of known developments with a buildout timeline. The projected development ERUs were then multiplied by 250 gpd/ERU to determine the development's demands based on the given development schedule provided by the City. These demands are summarized in **Appendix B**.

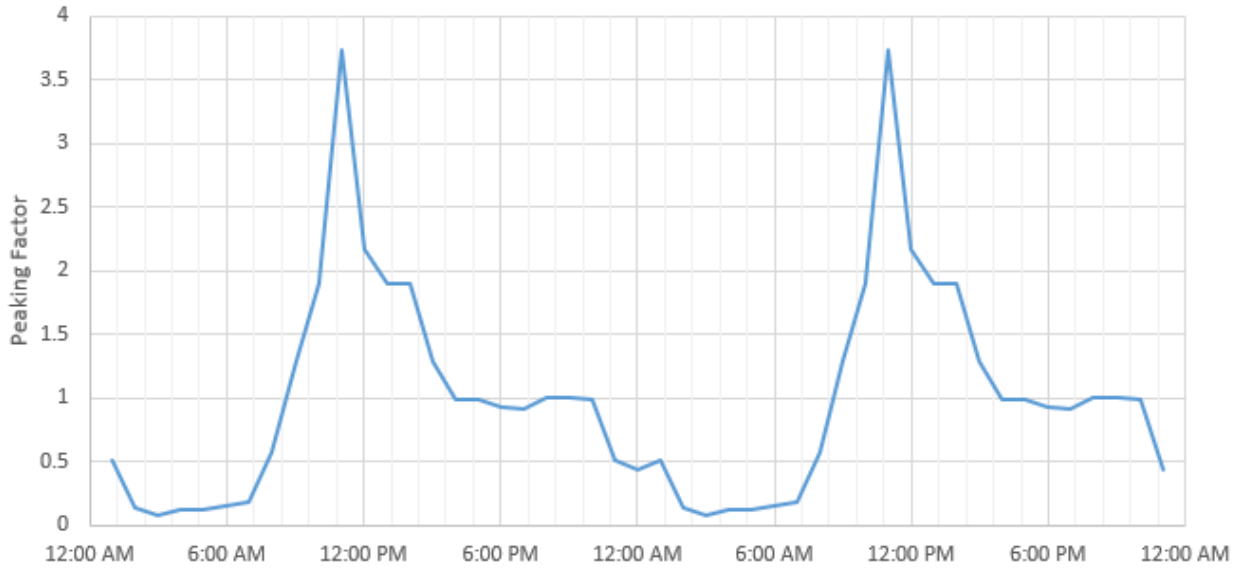
METHODOLOGY

The wastewater system hydraulic model was used to analyze and aid in sizing various elements of the collection system to meet the existing (2024), 2025, 2030, 2035, 2040, and build-out (2050) projected demands.

Lift Stations

After calibration was achieved for each lift station, the system was modeled based on a 48-hour extended period simulation (EPS). The EPS allows sanitary loadings to be varied based on their diurnal flow pattern over a 48-hour period, during which time the system experiences varying flow and head conditions. Each lift station had a diurnal flow pattern, the peak was equal to the calculated peaking factor for the given sewershed population, and all lift stations shared a characteristic curve based on historical DMR data from an equivalent wastewater system. The flow pattern for the Main Street North lift station is shown below in **Figure 26**.

Figure 26: Main Street North (LS #5) 48-Hour Diurnal Flow Curve



The high head condition exhibits the limiting flow for each lift station. The capacity of the station was evaluated based on the station to meet firm pump capacity while meeting the peak hour flow at the high head condition.

Force main capacity is determined based on the resulting maximum flow through the line, resulting in maximum velocities and increased pressures in the force main. Force mains were determined to need improvements if their velocities exceeded 9 fps or the maximum operating pressure in the line exceeded 82.5 psig (half of the assumed max pressure of 165 psig for C900 PVC DR-25 pipe).

PRESENT DAY (2024) ANALYSIS

This section includes the results of scenarios for the present wastewater system configuration and proposed improvements under present day demands. The scenario analyses are described in detail below:

Scenario 1: Present Day Demands (2024) with Existing System

Scenario 1 modeled the existing conditions of the City's wastewater system over 48 hours (EPS) after calibration on the lift stations was done to match results from lift station testing. In this scenario, all lift stations were run simultaneously, and the limits of the flow and head conditions were recorded for each station. Maximum pressure and velocity in the system were monitored and used to determine required system improvements. **Table 37** summarizes the wastewater model results for Scenario 1.

Table 37: Wastewater Model Results for Scenario 1			
Lift Station/Location	**System Deficiency**	**Value**	**Unit**
Peter Street (LS #6)	Existing pumps do not have firm capacity during peak flows.	146.9	gpm
Charlotte (LS #7)	Existing pumps do not have firm capacity during peak flows.	210.8	gpm
Beaumont (LS #49)/6-inch FM	Exceeds maximum operating velocity in existing 6-inch force main from Beaumont.	9.49	fps

Scenario 1 demonstrates that the existing wastewater system does not meet the established hydraulic standards. The Peter's Street (LS 6) and Charlotte (LS 7) lift stations are not able to meet their peak hour flows at firm capacity and the 6-inch force main from the Beaumont (LS 49) lift station exceeds the maximum operating velocity in a force main. The Triumph South lift station is pumping below peak hour capacity but still meets pump firm capacity and does not need to be improved in this scenario. All other stations have operating capacity above their peak hourly loading. Complete model results for Scenario 1 are summarized in **Appendix I**.

Scenario 2: Present-Day Demands (2024) with System Improvements

Scenario 2 models the City's wastewater system from **Scenario 1** with the required improvements to meet the system's minimum hydraulic standards. The required improvements that were identified in Scenario 1 are listed below:

- **WW Improvement No. 1:** The force main at Peters Street (LS #6) should be upsized. Replace approximately 4,900 LF of existing 4-inch force main to 8-inch to reduce total dynamic head and achieve design peak hour firm pumping capacity of the lift station.
- **WW Improvement No. 2:** The pumps at Charlotte (LS #7) should be upsized to a capacity of 750 gpm to achieve firm capacity of the lift station.
- **WW Improvement No. 3:** The pump capacity at Beaumont (LS #49) should be decreased to approximately 375 gpm to decrease the high pressures in the Trailwinds force main and the high velocities in the 6-inch Beaumont force main.

Scenario 2 demonstrates that with the implementation of the recommended system improvements, the City's pressurized wastewater collection system can meet the minimum hydraulic standards. Model results for Scenario 2 can be found in **Appendix I**.

2025 ANALYSIS

This section includes the results of scenarios for the present wastewater system configuration and proposed improvements under projected 2025 demands. The scenario analyses are described in detail below:

Scenario 3: 2025 Demands with Existing System

Scenario 3 modeled the existing configuration of the City's wastewater system from Scenario 1 over 48 hours (EPS) under the projected 2025 demands. In this scenario, all lift stations were run simultaneously, and the limits of the flow and head conditions were recorded for each station. Maximum pressure and

velocity in the system were monitored and used to determine required system improvements. **Table 38** summarizes the wastewater model results for Scenario 3.

Table 38: Wastewater Model Results for Scenario 3

Lift Station/Location	System Deficiency	Value	Unit
Peter Street (LS #6)	Existing pumps do not have firm capacity during peak flows.	146.9	gpm
Charlotte (LS #7)	Existing pumps do not have firm capacity during peak flows.	210.8	gpm
American House (LS #33)	Existing pumps do not have firm capacity during peak flows.	0.48	gpm
Triumph South Phase 1 (LS #48)	Existing pumps do not have firm capacity during peak flows.	12.52	gpm
Beaumont (LS #49)/6-inch FM	Exceeds maximum operating velocity in existing 6-inch force main from Beaumont.	9.49	fps

The existing system does not support the projected 2025 demands and requires improvements. Improvements to Peter Street and Beaumont lift stations are necessary to meet the peak hour demands in the system. Additionally, increased demands from planned developments along the Trailwinds and CR 209 force main contribute to high head conditions at multiple lift stations along the Trailwinds force main, including Charlotte (LS 7), American House (LS 33), and Triumph South (LS 48). Model results for Scenario 3 can be found in **Appendix I**.

Scenario 4: 2025 Demands with System Improvements

Scenario 4 models the City's wastewater system from Scenario 2 with the projected 2025 wastewater system demands. In this scenario, all lift stations were run simultaneously, and the limits of the flow and head conditions were recorded for each station. Maximum pressure and velocity in the system were monitored and used to determine required system improvements. The required improvements that were identified in Scenario 1 are listed below and summarized in **Table 39**:

- **WW Improvement No. 1:** The force main at Peters Street (LS #6) should be upsized. Replace approximately 4,900 LF of existing 4-inch force main to 8-inch to reduce total dynamic head and achieve design peak hour firm pumping capacity of the lift station.
- **WW Improvement No. 2:** The pumps at Charlotte (LS #7) should be upsized to a capacity of 750 gpm to achieve firm capacity of the lift station.
- **WW Improvement No. 3:** The pump capacity at Beaumont (LS #49) should be decreased to approximately 375 gpm to decrease the high pressures in the Trailwinds force main and the high velocities in the 6-inch Beaumont force main.

Table 39: Wastewater Model Results for Scenario 4			
Lift Station/Location	**System Deficiency**	**Value**	**Unit**
American House (LS #33)	Existing pumps do not have firm capacity during peak flows.	33.16	gpm
Triumph South Phase 1 (LS#48)	Existing pumps do not have firm capacity during peak flows.	9.08	gpm

In summary, the system configuration with WW Improvements No.1-3 does not support the projected 2025 demands. WW Improvements No.1-3 improve the capacity of lift stations along the Trailwinds force main and lift station 36 (CR 209 lift station). Lift stations #7, #18, #30, #33, #36, and #48 show an increase in capacity and allow all lift stations in the system to meet firm capacity. However, the additional projected flows along the Trailwinds increase the operating pressure of the force main to above 80 psi, and American House LS and Triumph South LS are still not able to meet their design peak hour flows. Model results for Scenario 4 can be found in **Appendix I**.

Scenario 5: 2025 Demands with System Improvements

Scenario 5 modeled the existing configuration of the City's wastewater system over 48 hours (EPS) under the projected 2025 demands. In this scenario, all lift stations were run simultaneously, and the limits of the flow and head conditions were recorded for each station. Maximum pressure and velocity in the system were monitored and used to determine required system improvements. The required improvements are listed below:

- **WW Improvement No. 1:** The force main at Peters Street (LS #6) should be upsized. Replace approximately 4,900 LF of existing 4-inch force main to 8-inch to reduce total dynamic head and achieve design peak hour firm pumping capacity of the lift station.
- **WW Improvement No. 2:** The pumps at Charlotte (LS #7) should be upsized to a capacity of 750 gpm to achieve firm capacity of the lift station.
- **WW Improvement No. 3:** The pump capacity at Beaumont (LS #49) should be decreased to approximately 375 gpm to decrease the high pressures in the Trailwinds force main and the high velocities in the 6-inch Beaumont force main.
- **WW Improvement No.4**: Construction of the CR 209/Trailwinds booster/repump station at the manifolding location of the Trailwinds and CR 209 force main. The booster/repump station would decrease operating pressures and increase the capacity of the lift stations along the CR 209 and Trailwinds force main.

The system configuration with WW Improvement No.1-4 supports the projected 2025 wastewater demands. Upsizing the Peters Street force main to 8-inch in diameter allows the lift station to meet firm capacity, upsizing the pumps at Charlotte allows firm capacity to be met, and the downsizing of Beaumont's capacity (new pumps/impellers or VFD) increases the capacity of lift stations and reduces pressures along the Trailwinds force main while maintaining firm capacity at Beaumont. Adding the booster/repump station allows American House and Triumph South lift stations to operate at firm capacity and reduces the overall pressures in the CR 209 and Trailwinds force mains. With these improvements, all lift stations meet firm capacity while pressures and velocities are maintained below 80 psi and 9 fps, respectively. Model results for Scenario 5 can be found in **Appendix I**.



2030 ANALYSIS

This section includes the results of scenarios for the present wastewater system configuration and proposed improvements under projected 2030 demands. The scenario analyses are described in detail below:

Scenario 6: 2030 Demands with Improvements

Scenario 6 models the system configuration of Scenario 5 with WW Improvements No.1 - 4 over 48 hours (EPS) with the projected 2030 demands. In this scenario, all lift stations were run simultaneously, and the limits of the flow and head conditions were recorded for each station. **Table 40** summarizes the wastewater model results for Scenario 6. Maximum pressure and velocity in the system were monitored and used to determine required system improvements. The required improvements are listed below:

- **WW Improvement No. 1:** The force main at Peters Street (LS #6) should be upsized. Replace approximately 4,900 LF of existing 4-inch force main to 8-inch to reduce total dynamic head and achieve design peak hour firm pumping capacity of the lift station.
- **WW Improvement No. 2:** The pumps at Charlotte (LS #7) should be upsized to a capacity of 750 gpm to achieve firm capacity of the lift station.
- **WW Improvement No. 3:** The pump capacity at Beaumont (LS #49) should be decreased to approximately 375 gpm to decrease the high pressures in the Trailwinds force main and the high velocities in the 6-inch Beaumont force main.
- **WW Improvement No.4**: Construction of the CR 209/Trailwinds booster/repump station at the manifolding location of the Trailwinds and CR 209 force main. The booster/repump station would decrease operating pressures and increase capacity of the lift stations along the CR 209 and Trailwinds force main.

Table 40: Wastewater Model Results for Scenario 6

Lift Station/Location	System Deficiency	Value	Unit
St. Clair (LS #18)	Existing pumps do not have firm capacity during peak flows.	215.7	gpm
Triumph South Phase 1 (LS #48)	Existing pumps do not have firm capacity during peak flows.	27.3	gpm
CR 229 Force Main	Projected flows in the CR 229 force main exceed 9.0 fps	9.33	fps

WW Improvements No. 1-4 do not support the projected 2030 demands. In this scenario, increased flow in the Trailwinds force main causes high pressures. Velocities in the 10-inch force main from the CR 229 lift station exceed a velocity of 9 fps. Both the St. Clair and Triumph South lift stations are unable to meet firm capacity due to the high pressures in the Trailwinds force main. Model results for Scenario 6 can be found in **Appendix I**.

Scenario 7: 2030 Demands with Improvements

Scenario 7 modeled the system configuration of Scenario 6 with WW Improvements No.1-6A over 48 hours (EPS) under the projected 2030 demands. In this scenario, all lift stations were run simultaneously, and the limits of the flow and head conditions were recorded for each station. Maximum pressure and velocity in



the system were monitored and used to determine required system improvements. The required additional improvements are detailed below:

- **WW Improvement No. 5:** Upsize pumps at the CR 229 lift station and upsize approximately 12,000 LF of 10-inch force main with 16-inch force main.
- **WW Improvement No. 6A:** Construction of a repump or in-line booster station that accepts and discharges flows in the Trailwinds force main.

With these improvements, the system can meet the projected 2030 flows while maintaining the system's hydraulic standards. Model results for Scenario 7 can be found in **Appendix I**.

Scenario 8: 2030 Demands with Improvements

Scenario 8 modeled the system configuration in Scenario 6 with WW Improvements No.1-6B over 48 hours (EPS) under the projected 2030 demands. In this scenario, all lift stations were run simultaneously, and the limits of the flow and head conditions were recorded for each station. Maximum pressure and velocity in the system were monitored and used to determine required system improvements. The required additional improvements are detailed below:

- **WW Improvement No. 5:** Upsize pumps at the CR 229 lift station and upsize approximately 12,000 LF of 10-inch force main with 16-inch force main.
- **WW Improvement No. 6B:** Upsize both the American House (LS #33) and Triumph South (LS #48) lift station pumps.

With these improvements, the system can meet the projected 2030 flows while maintaining the system hydraulic standards. Model results for Scenario 8 can be found in **Appendix I**

Scenario 9: 2030 Demands with Improvements

Scenario 9 modeled the system configuration of Scenario 6 with WW Improvements No.1-6C over 48 hours (EPS) under the projected 2030 demands. In this scenario, all lift stations were run simultaneously, and the limits of the flow and head conditions were recorded for each station. Maximum pressure and velocity in the system were monitored and used to determine required system improvements. The required additional improvements are detailed below:

- **WW Improvement No. 5:** Upsize pumps at the CR 229 lift station and upsize approximately 12,000 LF of 10-inch force main with 16-inch force main.
- **WW Improvement No. 6C:** Rerouting the flows from the Triumph South lift stations through a 4-inch force main that outfalls to the Dublin Industrial lift station.

The system configuration with WW Improvements No.1-6C supports the projected 2030 demands. Rerouting the Triumph South lift stations to outfall into the Dublin Industrial lift station allows Triumph South to meet firm capacity and increases the capacity of American House and Trailwinds lift stations. High pressures in the St. Clair lift station persist for approximately 15 minutes during peak hour flow. With these improvements, all lift stations except St. Clair meet firm capacity while pressures and velocities are maintained below 80 psi and 9 fps, respectively. Model results for Scenario 9 can be found in **Appendix I**.



2035 ANALYSIS

This section includes the results of scenarios for the present wastewater system configuration and proposed improvements under projected 2035 demands. The scenario analyses are described in detail below:

Scenario 10: 2035 Demands with Improvements

Scenario 10 modeled the system configuration in Scenario 7 with WW Improvements No.1-6A over 48 hours (EPS) under the projected 2035 demands. In this scenario, all lift stations were run simultaneously, and the limits of the flow and head conditions were recorded for each station. **Table 41** shows the wastewater model results for Scenario 10. Maximum pressure and velocity in the system were monitored and used to determine required system improvements.

Table 41: Wastewater Model Results for Scenario 10

Lift Station/Location	System Deficiency	Value	Unit
Steeplechase (LS #34)	Existing pumps do not have firm capacity during peak flows.	89.66	gpm

The system configuration with WW Improvements No.1-6A does not support the projected 2035 demands. The Steeplechase lift station (LS #34) does not currently meet firm capacity due to the increased demand in the surrounding area and requires improvements to be made. Model results for Scenario 10 can be found in **Appendix I**.

Scenario 11: 2035 Demands with Improvements

Scenario 11 modeled the system configuration in Scenario 10 with the required improvements over 48 hours (EPS) under the projected 2035 demands. In this scenario, all lift stations were run simultaneously, and the limits of the flow and head conditions were recorded for each station. Maximum pressure and velocity in the system were monitored and used to determine required system improvements. The recommended improvements are detailed below:

- **WW Improvement No. 7A:** Convert Oxford Pointe lift station (LS #51) into a repump station to accept flows from Steeplechase and Parkwood to reduce the head conditions at Steeplechase and Parkwood.

The Scenario 11 system configuration supports the projected 2035 demands. WW Improvement No. 7A reduces peak pressures experienced at the Steeplechase and Parkwood lift stations (LS #34 and 37) and allows them to meet firm capacity. Oxford Point lift station (LS #51) can repump flows within capacity until build-out conditions (2050) and is listed as a separate improvement but may be done in conjunction with the rerouting if preferred by the City. With these improvements, all lift stations meet firm capacity while pressures and velocities are maintained below 80 psi and 9 fps, respectively. Model results for Scenario 11 can be found in **Appendix I.**

Scenario 12: 2035 Demands with Improvements

Scenario 12 modeled the system configuration in Scenario 10 with the required improvements over 48 hours (EPS) under the projected 2035 demands. In this scenario, all lift stations were run simultaneously, and the limits of the flow and head conditions were recorded for each station. Maximum pressure and velocity in the system were monitored and used to determine required system improvements. Wastewater system improvement #7B is detailed below.



- **WW Improvement No. 7B:** Upsize both the Steeplechase (LS #34) and Parkwood (LS #37) lift station pumps to meet design peak hour flows.

The system configuration with the proposed improvements supports the projected 2035 demands. Upsizing both the Steeplechase and Parkwood pumps causes an increase in the pressures in the force main higher than Scenario 11 and WW Improvement No.7A. With these improvements, all lift stations meet firm capacity while pressures and velocities are maintained below 80 psi and 9 fps, respectively. Model results for Scenario 12 can be found in **Appendix I.**

2040 ANALYSIS

This section includes the results of scenarios for the present wastewater system configuration and proposed improvements under projected 2040 demands. The scenario analyses are described in detail below:

Scenario 13: 2040 Demands with Improvements

Scenario 13 modeled the system configuration in Scenario 11 over 48 hours (EPS) under the projected 2040 demands. In this scenario, all lift stations were run simultaneously, and the limits of the flow and head conditions were recorded for each station. **Table 42** shows the wastewater model results for Scenario 13. Maximum pressure and velocity in the system were monitored to determine possible improvements.

Table 42: Wastewater Model Results for Scenario 13

Lift Station/Location	System Deficiency	Value	Unit
Main Street South (LS #9)	Existing pumps do not have firm capacity during peak flows and velocities greater than 9 fps.	376.4/10.22	gpm/fps

The system configuration with WW Improvement No.1-7A does not support the projected 2040 demands. Main Street South lift station (LS #9) exhibits force main velocities greater than 9 fps, and high flows coming from the lift station decrease capacities in the Prison and Wildwood Estates Master lift stations (LS #11 and 8, respectively). Model results for Scenario 13 can be found in **Appendix I.**

Scenario 14: 2040 Demands with Improvements #1-8

Scenario 14 modeled the system configuration in Scenario 13 with the required improvements over 48 hours (EPS) under the projected 2040 demands. In this scenario, all lift stations were run simultaneously, and the limits of the flow and head conditions were recorded for each station. Maximum pressure and velocity in the system were monitored and used to determine the required system improvements. The additional required improvements are detailed below:

- **WW Improvement No. 8**: Replace the existing 16-inch force main with a 20-inch force main, reroute the force main through Monarch Ranch, and connect the 20-inch stub out from the CR-219 force main. Reverse the flows from Main Street South lift station south through the proposed 20-inch force main.

The system configuration with the proposed improvements from Scenario 14 supports the projected 2040 demands. Rerouting the flows south of Main Street South (LS #9) through the proposed Monarch Ranch 20-inch force main will allow Main Street South and all other lift stations to meet their firm capacity. Capacity to both the master Wildwood Estates and Prison lift stations (LS #8 and 11) are increased by this improvement as well. With these improvements, all lift stations meet firm capacity while pressures and velocities are maintained below 80 psi and 9 fps, respectively. Model results for Scenario 14 can be found in **Appendix I**.

BUILD OUT (2050) ANALYSIS

This section includes the results of scenarios for the present wastewater system configuration and proposed improvements under projected Build Out (2050) demands. The scenario analyses are described in detail below:

Scenario 15: 2050 Demands with Improvements

Scenario 15 modeled the system configuration from Scenario 14 with WW Improvements No.1-8 over 48 hours (EPS) under the projected build-out (2050) demands. In this scenario, all lift stations were run simultaneously, and the limits of the flow and head conditions were recorded for each station. **Table 43** shows the wastewater model results for Scenario 15. Maximum pressure and velocity in the system were monitored and used to determine the required system improvements.

Table 43: Wastewater Model Results for Scenario 15

Lift Station/Location	System Deficiency	Value	Unit
Steeplechase (LS #34)	Existing pumps do not have firm capacity during peak flows.	17.69	gpm
Lakeside Landing (LS #35)	Existing pumps do not have firm capacity during peak flows.	11.62	gpm
CR 209 (LS #36)	Existing pumps do not have firm capacity during peak flows.	648.7	gpm
Parkwood (LS #37)	Existing pumps do not have firm capacity during peak flows.	75.8	gpm
Grand Oaks Manor (LS #39)	Existing pumps do not have firm capacity during peak flows.	129.8	gpm
Oxford Pointe (LS #51)	Existing pumps do not have firm capacity during peak flows.	389.7	gpm

The system configuration with WW Improvements No.1-8 does not support the projected 2050 demands, and the projected build-out demands exceed the proposed build-out capacity of the City's WWTF. Due to increased flows in the CR 209 force main, the CR 209 lift station (LS #36) does not meet the peak hour pumping capacity and impacts the capacity of all of the upstream lift stations. In this scenario, multiple points in the system exceed 80 psi. Additional improvements are required to increase the total capacity of the wastewater system and to allow the lift stations upstream of the CR 209 lift station to meet their peak hour firm pumping capacity. Model results for Scenario 15 can be found in **Appendix I**.

Scenario 16: 2050 Demands with Improvements

Scenario 16 modeled the system configuration in Scenario 15 with the required improvements over 48 hours (EPS) under the projected 2050 demands. In this scenario, all lift stations were run simultaneously, and the limits of the flow and head conditions were recorded for each station. Maximum pressure and velocity in the system were monitored to determine possible improvements. The required system improvements are detailed below.

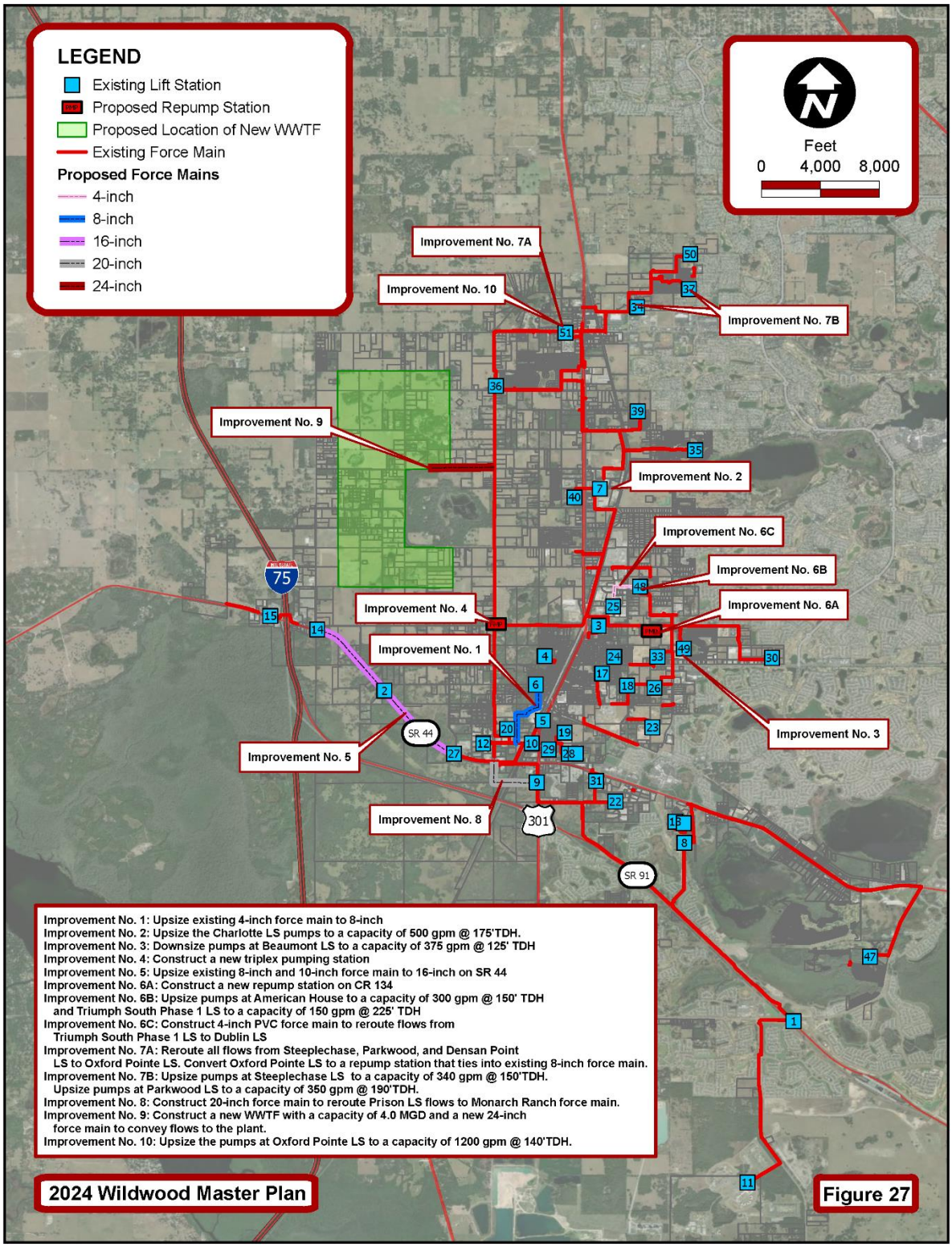
- **WW Improvement No. 9:** Construction of a new wastewater treatment facility in northwest Wildwood with an initial treatment capacity of 4.00 MG. Reroute flows from the CR 209 and Trailwinds force main to the new WWTF.
- **WW Improvement No. 10:** Upsizing the pumps at Oxford Pointe lift station (LS #51).

The system configuration from Scenario 16 with WW Improvements No.1-10 supports the projected build-out demands. The proposed additional wastewater treatment facility allows the CR 209 lift station (LS #36) to meet firm capacity and improves the capacity of all lift stations north of the proposed repump station at the intersection of the CR 209 and Trailwinds force mains. The redirection of a portion of the system flows to the proposed WWTF reduces pipe velocities in the CR 209 force main to less than 9 fps at peak hour conditions. Improvements to the Oxford Point lift station (LS #51) allow Steeplechase and Parkwood (LS #34 and 37) to meet their peak hour firm pumping capacity. With these improvements, the system meets the system hydraulic standards. Model results for Scenario 16 can be found in **Appendix I**.

RECOMMENDED WASTEWATER SYSTEM CAPITAL IMPROVEMENT PROJECTS

This section provides a discussion of capital improvement projects for addressing current deficiencies and meeting future demands. Included in this chapter is a project list with probable costs of construction for recommended projects. See **Appendix G** for the detailed breakdown of the estimated construction costs for each of the capital improvement projects and a preliminary timeline for project implementation. Many of the capital improvement projects are large and will require implementation over several years that may overlap additional planning time periods. See **Figure 27** for an overall map of the wastewater capital improvement projects.

Figure 27: Overall Wastewater Capital Improvement Map





WASTEWATER SYSTEM IMPROVEMENTS

The following capital improvement projects were separated into two categories based on the variables that triggered the requirement for each improvement. First, there are improvements that are driven by existing system growth and infill. These time-sensitive improvements must be completed to meet the projected system flows. Second, there are developer-driven improvements. These improvements must be completed to serve and meet the projected flows of known developments. These improvements should be considered for improving the sanitary sewer system for the safety and reliability of the sanitary sewer service throughout the City. A summary of the CIP projects and the individual opinions on probable costs are attached in **Appendix G**.

Immediate System Improvements (2025)

WW Improvement No. 1 – Peters Street Force Main Upgrades

Replacement of 3,900 LF of 4-inch force main from the Peter Street lift station with 8-inch PVC force main to reduce velocities and increase capacity of the Peter Street Lift Station. The project has an estimated cost of $1,230,000.

WW Improvement No. 2 – Charlotte Lift Station Pump Replacement

Due to increases in sanitary loading in Charlotte lift station's sewershed and increased flows in the Trailwinds force main, Charlotte's loading is expected to exceed its peak hour firm pumping capacity. Upsizing the pumps at Charlotte would allow for capacity to be met and improve overall system efficiency. The cost of construction and implementation for this improvement is approximately $290,000.

WW Improvement No. 3 – Reduce Beaumont Design Capacity

The pumps at Beaumont are currently operating above the design peak hour flow conditions of the station and impacting the efficiency of the other manifolding lift stations. Listed below are alternative improvements to reduce the flows from Beaumont and improve overall system efficiency:

WW Improvement No. 3A – Replace Pumps at Beaumont

Replacing the pumps at Beaumont would increase the capacity of the Trailwinds force main at peak hour flows. The proposed improvement assumes that new pumps and a new control panel will be installed at the station. The estimated replacement cost for this improvement is approximately $290,000.

WW Improvement No. 3B – Replace Pump Impellers at Beaumont

To reduce the operating conditions of the existing pump, the impeller would be replaced to reduce the flow from Beaumont. This would be the most economical alternative to reduce the flows from Beaumont. The cost of replacing the pump impeller would be approximately $12,000.

WW Improvement No. 3C – Install Variable Frequency Drives at Beaumont

Installing variable frequency drives on the existing pumps would allow the City to modulate the speed at which the pumps operate in order to reduce flows from Beaumont and maximize the efficiency of the system. The cost of the implementation for the VFDs is approximately $90,000.



WW Improvement No. 4 - Trailwinds and 209 FM Repump Station:

Construction of a new in-line pumping station or repump station where the Trailwinds and 209 force main manifold to reduce the operating pressures in both force mains and the manifolding force main. The project would consist of piping improvements and a triplex pump station. The estimated design and construction cost for this improvement is approximately $3,130,000.

Within the Next 5 Years (2030)

WW Improvement No. 5 - Upsize 229 Lift Station and Force Main

With the increase in development around SR 44 and the projected velocities exceeding 9 feet per second when the nearby developments come online, the pumps in the CR 229 LS and the force main require upsizing. This will allow for greater expansion in the west area near I-75 and improve the supporting hydraulics. The cost of removing and replacing approximately 12,000 LF of force main and upgrading the lift station is approximately $3,650,000. This project will be facilitated by development and is contingent upon known developments along SR-44 and CR 229. A previous analysis was performed to evaluate what improvements would be required to the CR 229 lift station and force main to serve future developments. This technical memorandum is attached as **Appendix I**.

WW Improvement No. 6A – Repump Station for Trailwinds Force main on CR 134

Pressures in the Trailwinds line increase because of development in the area, increasing the velocities and pressures in the force main. The proposed repump station would reduce pressures in the force main and allow upstream lift stations to operate at firm capacity. The project would consist of piping improvements and a triplex pump station. The estimated design and construction cost for this improvement is approximately $2,460,000.

WW Improvement No. 6B - Upsize American House and Triumph South Phase 1 Pumps

As pressures in the Trailwinds line increase due to higher sanitary loading and more frequent lift station cycles, American House and Triumph South are projected to be unable to meet firm capacity requirements starting in 2030. By upsizing pumps, American House and Triumph South Phase 1 will be able to meet peak hour flow demands and overcome the head losses in the force mains that connect the lift stations to Trailwinds. The construction and implementation costs associated with this improvement are approximately $580,000.

WW Improvement No. 6C - Triumph South Phase 1 Flow Reroute to Dublin Lift Station

An alternative to increasing the pump size at the Triumph South Phase 1 lift station would be to create a new 4-inch force main that ties into the Dublin Industrial LS. This would allow for the existing pumps to remain operational and to improve system utilization/hydraulics. The construction and implementation costs are approximately $340,000.

Within the Next 10 Years (2035)

WW Improvement No. 7A - Oxford Pointe Repump Station Conversion

As development in the region north of the 209 lift station increases, the flows and head losses accrued in the pipe downstream of the lift stations increase to the point of exceeding the Steeplechase and Parkwood

lift station's firm capacity. By rerouting all flows from the north into the Oxford Pointe lift station and tying the lift station directly into the existing 8-inch force main, Oxford Pointe would act as a repump station and would increase the capacity of Steeplechase and Parkwood. The cost of design and construction for this improvement would be approximately $370,000.

WW Improvement No. 7B - Upsize Steeplechase and Parkwood Pumps

An alternative to turning the Oxford Pointe lift station into a repump station would be to upsize both the Steeplechase and Parkwood pumps. Upsizing the pumps would allow the lift stations to be able to meet their peak hour flows and increase their overall capacity. The cost of upsizing both lift station's pumps is approximately $580,000.

Within the Next 15 Years (2040)

WW Improvement No. 8 - Reroute Prison flows through Monarch Ranch Force main

Development in the Main Street South lift station's sewershed drives higher flows through the section of 12-inch force main upstream of the Main Street South lift station. High velocities also exist in this line. Installation of a 20-inch force main rerouting the main street south and prison flows to the west, tying into the developer-driven Monarch Ranch force main, would allow for greater capacity in both the Main Street South and Prison lift stations due to decreased friction losses. The cost of construction and implementation of this improvement is approximately $1,420,000. The proposed development timeline requires this improvement by the year 2040, however development trendline changes could require that this project be expedited. Therefore, the project is budgeted for the 2030 planning period.

Through Build Out (2050)

WW Improvement No. 9 – Design and Construction of the North Wildwood WWTF: The City of Wildwood's existing WWTF is projected to exceed the assumed build-out capacity of 8.00 MGD by 2041. The new WWTF should have a permitted capacity of at least 4.00 MGD to the projected build-out flows. See **Figure 27** for an ideal location for the new WWTF based on the redirection of flows and system hydraulics. The cost of design and construction of the proposed WWTF is $203,000,000 and does not include property acquisition, effluent disposal, or the required improvements in the system to redirect flows to the proposed WWTF.

WW Improvement No. 10 - Upsize Oxford Pointe Pumps: Increased development in the areas north of the 209 lift station contributes to sanitary loadings that exceed the capacity of the proposed Oxford Pointe repump lift station starting from 2043 to 2044 from our model projections. This would improve the overall capacity of the north region and allow future flows to be repumped as well. The cost of the construction and implementation of this improvement is approximately $290,000.

Additional Developer Driven Improvements

US 301 Force Main/100 Oaks Force Main

Proposed developments along US 301 south of the Turnpike will require the extension of sanitary sewer services. There is no timeline associated with the project as it is contingent upon development. The project would consist of 9,000 LF of 12-inch force main to serve future developments along with the City of Coleman. A previous analysis was performed to evaluate what improvements would be required to serve the known future developments. This technical memorandum is attached as **Appendix J**.

REUSE WATER SYSTEM

EXISTING REUSE WATER SYSTEM

This section discusses the City of Wildwood's existing reuse water system.

System Overview

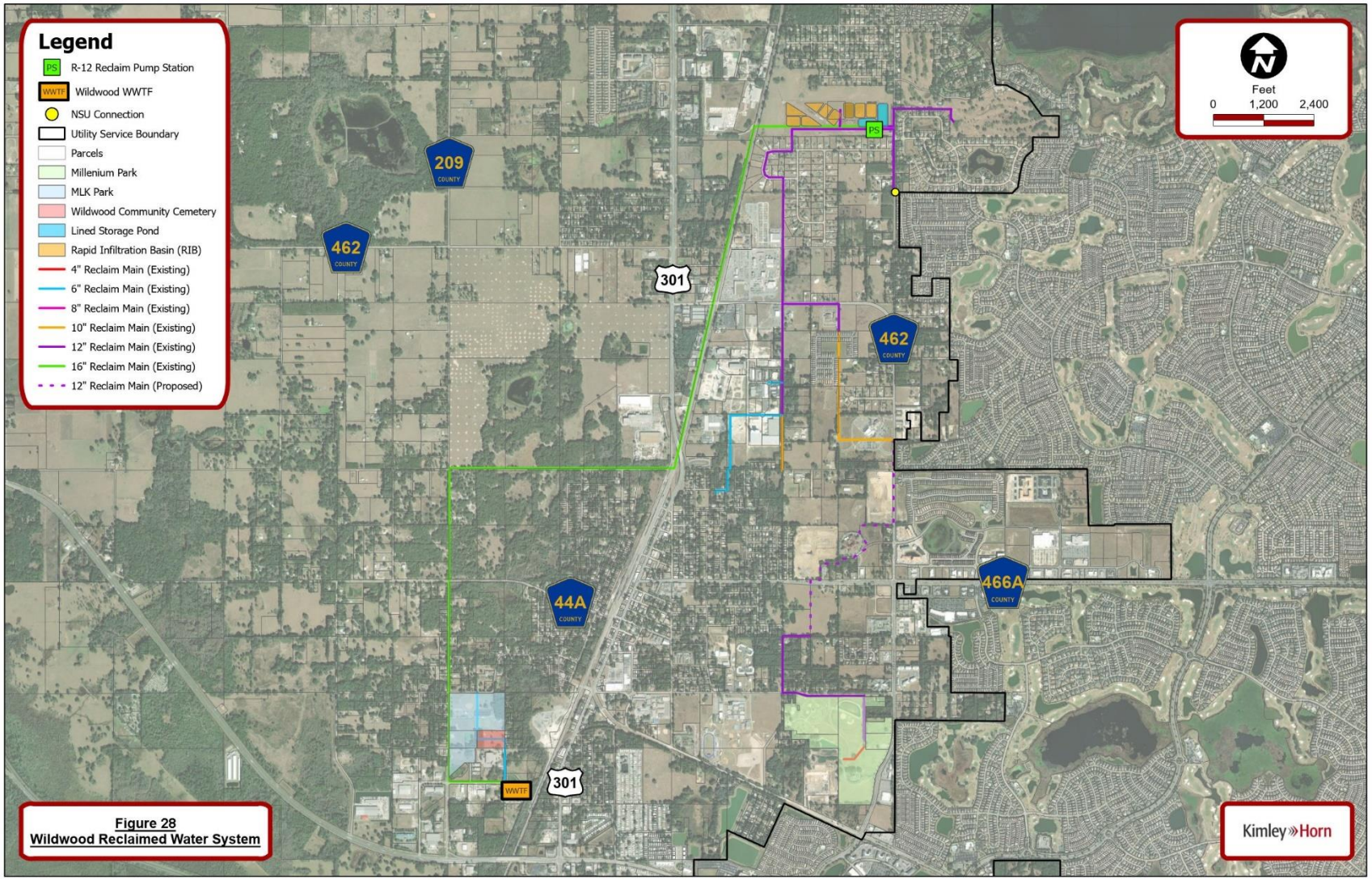
The City's existing reuse water system consists of the following land application systems:

- **R-001** - A part III public access reuse system (F.A.C. Chapter 62-610) with a capacity of 3.30 million gallons per day (MGD) annual average daily flow (AADF).
- **R-002** – A Part IV rapid-rate land application system with a permitted capacity of 1.06 MGD AADF. R-002 consists of nine rapid infiltration basins (RIBs) with a total wetted area of 11.68 acres.

The components of each of these systems are summarized below in **Table 44**. An overview of the existing reuse system is provided in **Figure 28**.

Table 44: Existing System Overview	
Major System Component	**Description**
Reuse Water Disposal	1. 1.3 MGD AADF public access irrigation use in local Reuse Service Area (R-001)
	2. 2.0 MGD AADF North Sumter Utility (NSU) Reuse Service Area (R-001)
	3. 1.06 MGD AADF 11.68-acre wetted area rapid infiltration basin(s) (RIBs) (R-002)
Reuse Water Storage	1. 3.5 MG on-site holding ponds (R-001)
	2. 2.65 MG and 6.93 MG lined wet weather storage ponds (R-001)
Reuse Water Distribution System	1. High service pump station
	2. 55,512 linear feet of reuse water piping ranging from 6-inch to 16-inch in diameter
Reclaim Water System Pipe Lengths	
Pipe Size (diameter)	**Total Length of Pipe (feet)**
6 – inch	6,812
8 – inch	1,012
10 – inch	5,370
12 – inch	16,698
16 – inch	25,620

Figure 28: Existing Reuse System





Existing Public Access Reuse Water Customers

The primary existing public access reuse water customer is the North Sumter Utility Reuse Service Area. Additionally, the City has a master reuse service area that provides reuse to Miona Golf Course and other City Parks and landscape areas. **Table 45** summarizes the existing customers and irrigable acreage currently permitted to receive public access reuse water as part of R-001.

Table 45: Existing Public Access Major Users

Customer Name	Site Number	User Type	Irrigable Acreage	Capacity (MGD)
North Sumter Utility (NSU) Reuse Service Area	PAA-002	Other Landscape Irrigation	N/A	2.0
Miona Lake Golf Course	PAA-001A	Golf Course	95	1.0
Wildwood Community Cemetery	PAA-001B	Other Landscape Irrigation	N/A	N/A
Greenwood Cemetery	PAA-001C	Other Landscape Irrigation	N/A	N/A
MLK Park	PAA-001D	Athletic Complexes and Parks	N/A	N/A
Millennium Park	PAA-001E	Athletic Complexes and Parks	N/A	0.267
		Total	**129.4**	**3.3**

System Storage and Pumping Facilities

Storage of reclaim water is comprised of on-site holding ponds located at the City's WWTF and lined storage ponds, which are located at the RIBs site. A summary of existing system storage is provided in **Table 46**.

Table 46: Model Results for Scenario 1

Storage Facility Name	Access
Lined Storage Pond No. 1	2.65 MG
Lined Storage Pond No. 4	6.93 MG
On-Site Holding Pond No. 1	1.00 MG
On-Site Holding Pond No. 2	2.50 MG
Total Storage Volume Available	**13.08 MG**

The reuse water distribution system comprises high-service pumps, reuse water transmission mains, storage tanks, and storage ponds. **Table 47** provides a list of pertinent design criteria for the existing reuse water pumping facilities owned and operated by the City.

Table 47: Existing Reuse Pumping Facilities

	Pump Station (PS) Name	Number of Pumps	Type of Pump	Design Capacity per Pump (gpm)
WWTF	WWTF Effluent Pumps	3	Vertical	1,480
	WWTF Reuse Pump	1	Vertical	N/a
RIB Site	HSPS Jockey (R-002)	1	Vertical	150
	Millenium Park Service (R-002)	1	Vertical	1,000
	NSU Pump (R-002)	1	Vertical	1,400

Permit Requirements

Treated effluent must meet limitations prescribed by the FDEP operating permit for each of the permitted disposal options. **Table 48** and **Table 49** list the permitted effluent quality requirements for each of the disposal systems:

- R-001 – Public Access Reuse System (Spray Fields)
- R-002 – Rapid Infiltration Basins (RIBs)

Water quality not meeting Part III public access reuse requirements will be sent to the RIBS (R-002).

Table 48: Permit Effluent Limitations Restricted Access System (R-001)

Parameter	Units	Max/Min	Annual Average	Monthly Average	Weekly Average	Single Sample
Flow, to R-001	MGD	Maximum	3.3	Report	-	-
BOD, Carbonaceous 5 day, 20C	mg/L	Maximum	20	30	45	60
TSS	mg/L	Maximum	-	-	-	5
Coliform, Fecal	#/100mL	Maximum	-	-	-	25
pH	s.u.	Range	-	-	-	6.00-8.50
TRC (for Disinfection)	mg/L	Minimum	-	-	-	1
Nitrogen, Total	mg/L	Maximum	Report	Report	-	-
Phosphorus, Total (as P)	mg/l	Maximum	Report	Report	-	-

**Geometric Mean*

Table 49: Permit Effluent Limitations Public Access System (R-002)						
Parameter	**Units**	**Max/Min**	**Annual Average**	**Monthly Average**	**Weekly Average**	**Single Sample**
Flow, to R-002	MGD	Maximum	1.06	Report	-	-
BOD, Carbonaceous 5 day, 20C	mg/L	Maximum	20	30	45	60
TSS	mg/L	Maximum	20	30	45	60
Coliform, Fecal	#/100mL	Maximum	200	200*	-	800
pH	s.u.	Range	-	-	-	6.00-8.50
TRC (for Disinfection)	mg/L	Minimum	-	-	-	0.5
Turbidity	NTU	Maximum	-	-	-	-
Nitrogen, Total	mg/L	Maximum	-	-	-	12
Phosphorus, Total (as P)	mg/l	Maximum	-	-	-	-
Giardia	cysts/100L	Maximum	-	-	-	-
Cryptosporidium	oocysts/100L	Maximum	-	-	-	-
**Geometric Mean*						

Groundwater Monitoring Requirements

To ensure the land application of treated effluent has no adverse impacts on groundwater, the City is required to perform quarterly monitoring of groundwater quality at each monitoring well location listed in **Table 50**. The quarterly groundwater monitoring requirements are provided in **Table 51**.

Table 50: Groundwater Monitoring Well Summary							
Well ID	**Description of Monitoring Location**	**Reuse System**	**Latitude**	**Longitude**	**Aquifer Monitored**	**Well Type**	**New or Existing**
MWB-01	MW-1 Lake Miona, MWB-24612	R-001	28° 53' 53.6543"	82° 0' 44.5452"	Floridan	Background	Existing
MWC-01	MW-4 Lake Miona, MWC-24615	R-001	28° 53' 40.4464"	82° 0' 34.5061"	Floridan	Compliance	Existing
MWC-03	MW-6 Lake Miona, MWC-24617	R-001	28° 53' 40.3416"	82° 0' 56.9214"	Floridan	Compliance	Existing
MWI-02	MW-3 Lake Miona, MWI-24614	R-001	28° 53' 44.4024"	82° 0' 46.0099"	Floridan	Intermediate	Existing
MWC-07	MW-7 RIB, MWC-24624	R-002	28° 53' 46.5212"	82° 1' 14.4135"	Floridan	Compliance	Existing

Table 50: Groundwater Monitoring Well Summary							
Well ID	**Description of Monitoring Location**	**Reuse System**	**Latitude**	**Longitude**	**Aquifer Monitored**	**Well Type**	**New or Existing**
MWC-09	MW-9 RIB, MWC-24626	R-002	28° 53' 40.8018"	82° 1' 27.3153"	Floridan	Compliance	Existing
MWI-04	MW-6 RIB, MWI-24623	R-002	28° 53' 44.7792"	82° 1' 21.9536"	Floridan	Intermediate	Existing

Table 51: Quarterly Groundwater Monitoring Requirements			
Parameter	**Compliance Well Limit**	**Units**	**Sample Type**
Water Level	Report	Ft NGVD	In Situ
Nitrate (as N)	10	mg/L	Grab
Total Dissolved Solids	500	mg/L	Grab
Chloride	250	mg/L	Grab
Fecal Coliform	4	#/100mL	Grab
pH	6.5-8.5	s.u.	Grab
Turbidity	Report	NTU	Grab

EVALUATION OF HISTORICAL FLOWS

A review of the historical effluent flows from the City's WRF was performed, and a summary of monthly average daily flows (MADF) for May 2019 – December 2023 are presented in **Tables 52-56**. Additionally, the historical flows are presented in **Figure 29**.

Table 52: 2019 Historical WWTF Effluent Flows (MADF)				
Month/Year	**Flow to R-001 (Public Access) (MGD)**	**Flow to R-002 (RIBs) (MGD)**	**Total (MGD)**	**Rainfall (inches)**
Jan-19	-	-	-	-
Feb-19	-	-	-	-
Mar-19	-	-	-	-
Apr-19	-	-	-	-
May-19	1.05	0.11	1.16	4.31
Jun-19	1.28	0	1.28	6.91
Jul-19	1.27	0.18	1.45	12.09
Aug-19	0.63	0.81	1.44	9.59
Sep-19	1.19	0.25	1.44	2.53
Oct-19	1.09	0.03	1.12	6.27
Nov-19	1.17	0	1.17	2.1
Dec-19	1.21	0	1.21	4.61
2019 AADF	**1.11**	**0.17**	**1.28**	**48.41**

Table 53: 2020 Historical WWTF Effluent Flows (MADF)				
Month/Year	**Flow to R-001 (Public Access) (MGD)**	**Flow to R-002 (RIBs) (MGD)**	**Total (MGD)**	**Rainfall (inches)**
Jan-20	1.24	0	1.24	0.33
Feb-20	1.24	0	1.24	2.78
Mar-20	1.2	0	1.2	0
Apr-20	1.26	0.1	1.36	3.86
May-20	1.16	0	1.16	3.14
Jun-20	1.19	0.05	1.24	6.47
Jul-20	1.23	0	1.23	7.84
Aug-20	1.17	0.09	1.26	9.69
Sep-20	1.01	0.15	1.16	6.15
Oct-20	1.11	0.11	1.22	2.01
Nov-20	1.15	0.04	1.19	5.27
Dec-20	1.19	0.12	1.31	1.73
2020 AADF	**1.18**	**0.06**	**1.23**	**49.27**

Table 54: 2021 Historical WWTF Effluent Flows (MADF)				
Month/Year	**Flow to R-001 (Public Access) (MGD)**	**Flow to R-002 (RIBs) (MGD)**	**Total (MGD)**	**Rainfall (inches)**
Jan-21	1.12	0.04	1.16	0.71
Feb-21	1.16	0.1	1.26	4.54
Mar-21	1.21	0	1.21	1.18
Apr-21	1.21	0.14	1.35	6.29
May-21	1.21	0.06	1.27	0.36
Jun-21	1.24	0.1	1.34	9.53
Jul-21	0.99	0.17	1.16	7.99
Aug-21	1.06	0.72	1.78	6.93
Sep-21	1.22	0.64	1.86	9.84
Oct-21	1.45	0.45	1.9	3.25
Nov-21	1.37	0.24	1.61	3.09
Dec-21	1.49	0.14	1.63	1.66
2021 AADF	**1.23**	**0.23**	**1.46**	**55.37**

Table 55: 2022 Historical WWTF Effluent Flows (MADF)				
Month/Year	**Flow to R-001 (Public Access) (MGD)**	**Flow to R-002 (RIBs) (MGD)**	**Total (MGD)**	**Rainfall (inches)**
Jan-22	1.49	0.14	1.63	1.09
Feb-22	1.42	0.19	1.61	1.19
Mar-22	1.52	0.22	1.74	7.03
Apr-22	1.64	0.09	1.73	4.55
May-22	1.49	0.16	1.65	5.07
Jun-22	1.56	0	1.56	3.75
Jul-22	1.52	0.21	1.73	6.61
Aug-22	1.45	0.28	1.73	8.81
Sep-22	1.3	0.26	1.56	12
Oct-22	1.68	0.16	1.84	1.38
Nov-22	1.71	0.28	1.99	3.56
Dec-22	1.64	0.27	1.91	1
2022 AADF	**1.54**	**0.19**	**1.72**	**56.04**

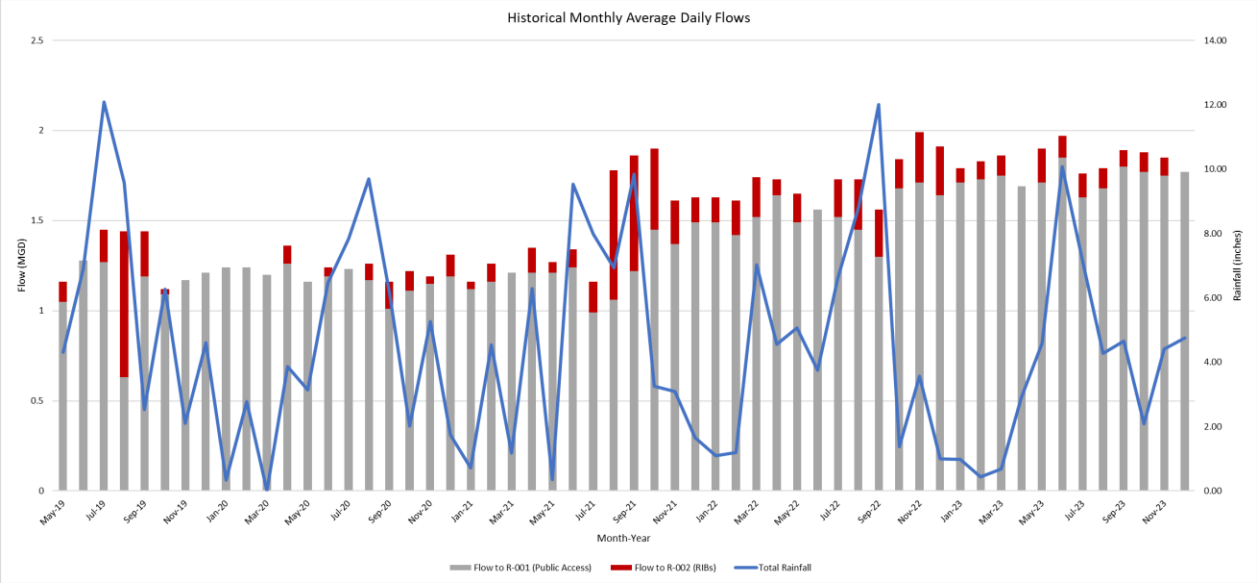
Table 56: 2023 Historical WWTF Effluent Flows (MADF)				
Month/Year	**Flow to R-001 (Public Access) (MGD)**	**Flow to R-002 (RIBs) (MGD)**	**Total (MGD)**	**Rainfall (inches)**
Jan-23	1.71	0.08	1.79	0.98
Feb-23	1.73	0.1	1.83	0.44
Mar-23	1.75	0.11	1.86	0.68
Apr-23	1.69	0	1.69	2.91
May-23	1.71	0.19	1.9	4.59
Jun-23	1.85	0.12	1.97	10.07
Jul-23	1.63	0.13	1.76	7.1
Aug-23	1.68	0.11	1.79	4.28
Sep-23	1.8	0.09	1.89	4.66
Oct-23	1.77	0.11	1.88	2.09
Nov-23	1.75	0.1	1.85	4.4
Dec-23	1.77	0	1.77	4.75
2023 AADF	**1.74**	**0.10**	**1.83**	**46.95**

On average, the City has sent approximately 90% of the treated flow to the public access reuse system and the other 10% to the RIBs system.

A review of the historical flows indicates the following:

- Total historical monthly average flows between May 2019 and December 2023 vary between 1.12 MGD and 1.99 MGD.
- Treated flows sent to the public access reuse system vary between 0.63 MGD and 1.85 MGD, which corresponds to 44% - 100% of the wastewater treated.
- Treated flows sent to the RIBs vary between 0.00 MGD and 0.81 MGD, which corresponds to 0% - 56% of the wastewater treated.
- The monthly total rainfall data and the monthly average WWTF flows from May 2019 to December 2023, shown in **Figure 29**, show some correlation between high rainfall totals and flow to the RIBs, but not consistently.

Figure 29: Public Access, RIB flows, and rainfall data from May 2019 to December 2023.



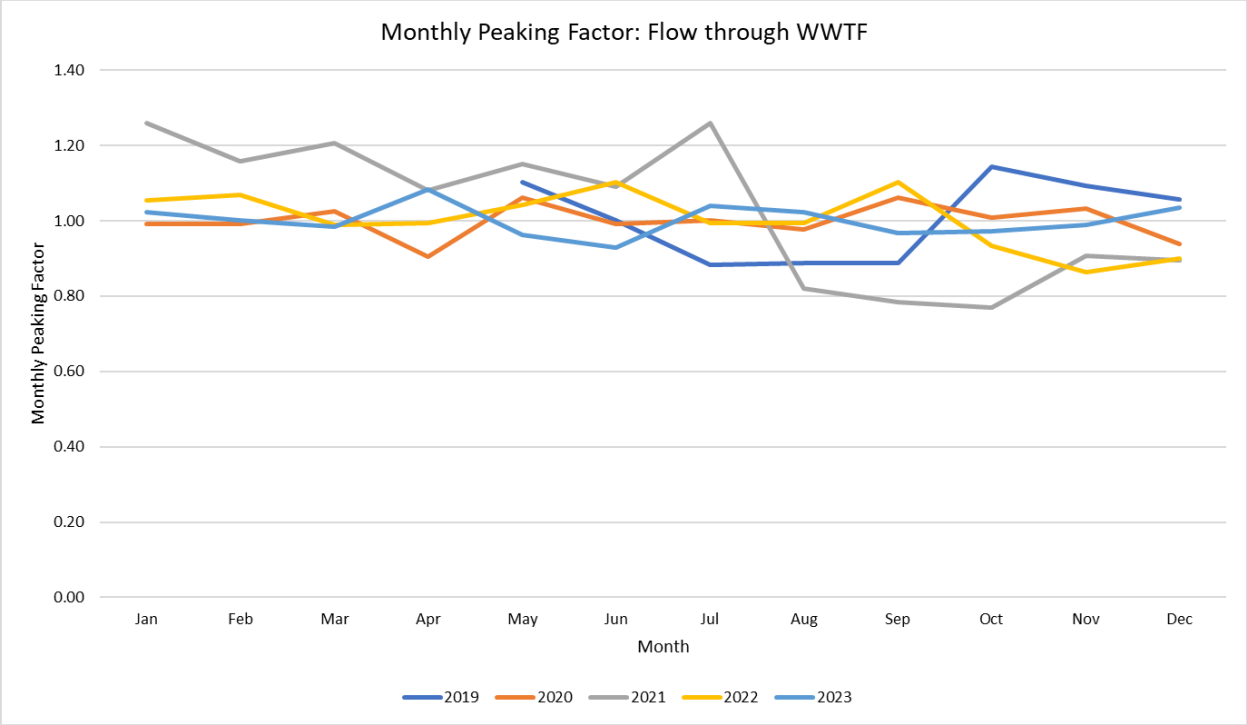
Historical Seasonal Variability in WRF Flows

A review of the monthly peaking factors was performed to further evaluate any seasonal trends that should be considered when evaluating future projected flows and disposal options. **Table 57** provides a summary of the 2019- 2023 peaking factors. **Figure 30** graphically depicts historical peaking factors for the WRF. A review of the historical flows suggests that flows to the facility vary, with the average monthly peaking factor for flow through the WRF ranging from 0.94 in August to 1.08 in January. This is 13-15% variability in flows, with the higher flows corresponding to winter months.

Table 57: Historical WWTF Peaking Factors

Month	2019	2020	2021	2022	2023
Jan		0.99	1.26	1.06	1.02
Feb		0.99	1.16	1.07	1.00
Mar		1.03	1.21	0.99	0.98
Apr		0.90	1.08	0.99	1.08
May	1.10	1.06	1.15	1.04	0.96
Jun	1.00	0.99	1.09	1.10	0.93
Jul	0.88	1.00	1.26	0.99	1.04
Aug	0.89	0.98	0.82	0.99	1.02
Sep	0.89	1.06	0.78	1.10	0.97
Oct	1.14	1.01	0.77	0.93	0.97
Nov	1.09	1.03	0.91	0.86	0.99
Dec	1.06	0.94	0.90	0.90	1.03

Figure 30: Historical Monthly Peaking Factors



Historical Irrigation Demands

The City provides irrigation water from the WWTF for the local and North Sumter Utility (NSU) reuse service areas. A review of historical irrigation water usage was performed to determine the irrigation needs based on metered flows from the high-service pump station. A summary of irrigation water use is presented in **Table 58**.

Table 58: 2021-2023 Historical Irrigation Water Demands

Year	Local Reuse	NSU	Lake Miona	Total
	(MGY)	(MGY)	(MGY)	(MGY)
2021	1.737	438	0	439.737
2022	0.664	554.8	0	555.464
2023	1.644	631.45	0	633.094
Annual Average	**1.348**	**541.417**	**0.000**	**542.765**

Millennium Park irrigation flows are currently augmented by an irrigation well operating under SWFWMD WUP No.5055.003. The Millennium Park WUP is permitted for the average rate of 58,000 gpd. There is no available meter data for the irrigation well for Millennium Park. The Millennium Park reuse extension is currently in design and construction to provide reuse water can be provided to the park for irrigation.

FUTURE RECLAIMED WATER FLOWS AND USERS

Future Wastewater Projections

Wastewater flow projections were developed to support wastewater infrastructure planning. **Table 59** summarizes the wastewater flow projections through Build Out (2050). The table also provides the anticipated phased expansions and the estimated buildout wastewater flow projections.

Table 59: Wastewater Projection and Proposed WRF Capacity

Month/Year	Projected WWTF Flows (MGD)	Plant Capacity
2025	3.42	3.55 MGD (Existing)
2030	5.20	5.50 MGD (Phase 1)
2035	6.23	8.00 MGD (Phase 2)
2040	6.63	
Build Out	10.20	8.00 MGD (Existing Facility) 4.00 MGD Future Facility)

The expansion of the wastewater service area will increase the production of reuse water and the requirements for effluent disposal. To increase the effluent disposal capacity of the City's reuse system, the existing public access reuse system will need to be expanded through the addition of new customers adjacent to the existing reuse mains and the expansion of the reuse system to future developments. Additional effluent disposal alternatives will also need to be evaluated, along with increased wet weather disposal alternatives.

EFFLUENT DISPOSAL

The section below evaluates the capacity of the existing effluent disposal systems and future alternative effluent disposal methods to meet the future capacity of the City's WWTF.

Existing System

The City has two means of effluent disposal. R-001 is a Part III public access reuse system (F.A.C. Chapter 62-610) with a capacity of 3.30 MGD AADF, and R-002 is a Part IV rapid-rate land application system with a permitted capacity of 1.06 MGD AADF. The City's existing effluent disposal system has a total permitted disposal capacity of 4.36 MGD AADF.

Public Access Reclaimed Water System

The existing reuse water system is permitted for 3.30 MGD. To meet the future needs of the City's WWTF, the City could increase the capacity of the R-001 Public Access system. Increasing the opportunity for public access reuse can be achieved by:

- Optimizing the ability to increase reclaimed water service to existing customers
- Expanding the public access reuse system to provide reclaimed water to additional customers

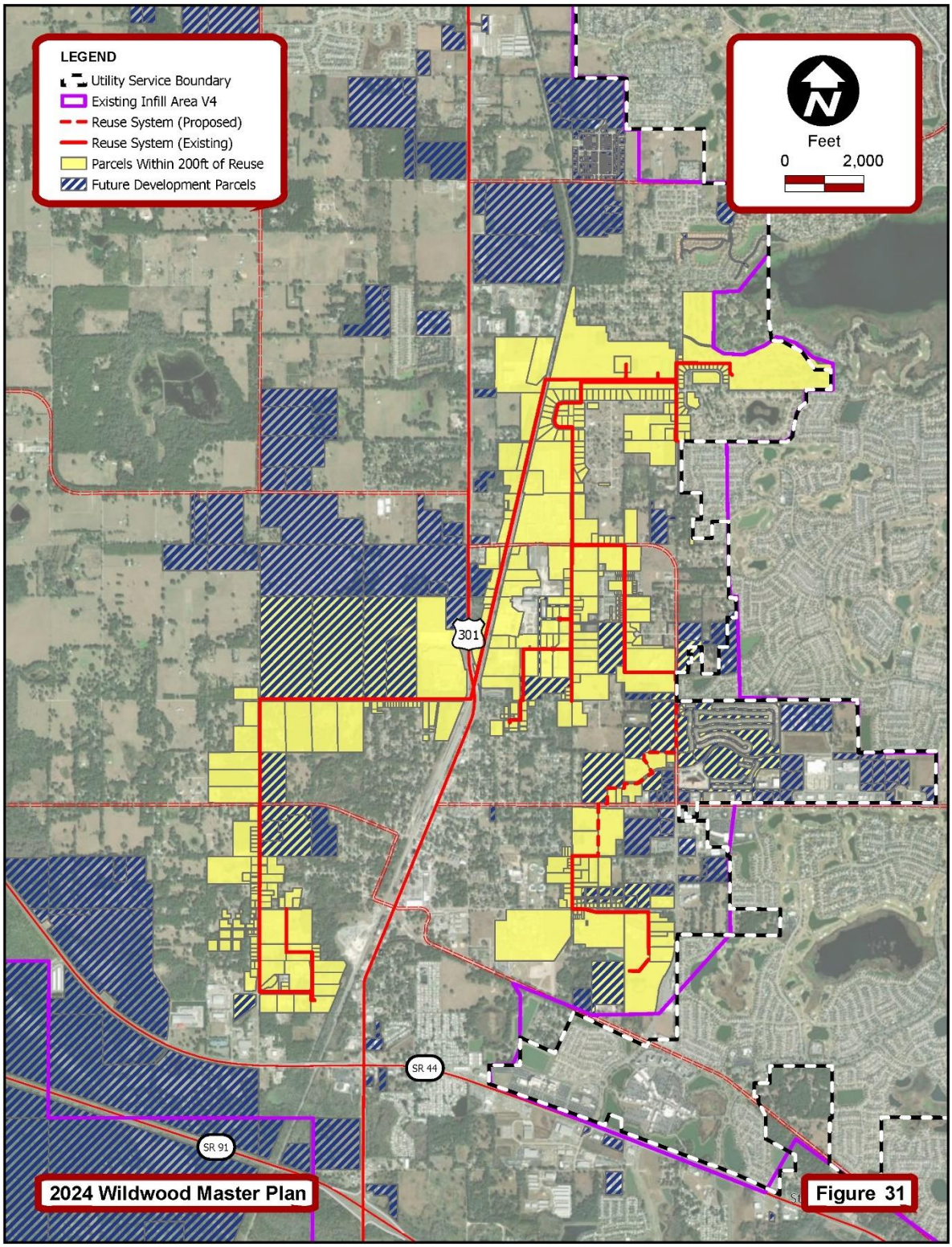


Expand Reclaimed Water System/Optimize Existing Reclaimed Water System: The existing reuse water system is permitted for 3.30 MGD on an annual average basis, and 90% of the reuse flow is sent to the NSU master service area for annual average daily flow of 1.48 MGD between 2021 and 2023. The flow to NSU is currently hydraulically limited by the existing NSU pump station and only a single point of connection. Additional public access customers (Millennium Park Public Access Reuse Area) only account for 3,693 gpd of reuse demand. The remainder of effluent flow is sent to the RIBs. Increasing the opportunity for beneficial reuse shall be prioritized by the City to increase effluent disposal capacity and can be achieved by:

- Optimizing the ability to increase reclaimed water service to NSU by increasing the capacity of the NSU pump station and adding additional points of connection to the NSU master reuse service area.
- Expand the public access reuse system to provide reclaimed water to future developments. As reuse water production increases through the increase of wastewater flows, the City should consider expanding the existing reuse water system to serve the following areas:
    - Existing and Future Developments
    - Common areas currently irrigated with potable water
    - New landscaped common areas and medians

Potential future reuse customers within 200 linear feet of the existing reuse system are shown in **Figure 31**.

Figure 31: Potential Reuse Customers



To meet the effluent disposal requirements of the City's WWTF through public access reuse, the City would have to expand the permitted capacity of R-001 by the capacity outlined below in **Table 60**.

Table 60: Public Access Capacity Requirements

Phase	WWTF Permitted Capacity (MGD AADF)	Required Public Access Reuse Capacity (MGD AADF)[1]	Existing Capacity (MGD AADF)	Required Public Access Reuse Capacity (MGD AADF)
1	5.50	4.44	3.30	1.14
2	8.00	6.94	3.30	3.64

[1]WWTF Permitted capacity less 1.06 MGD capacity of R-002

The above table assumes that the City would maintain R-002 at its existing capacity of 1.06 MGD, and the City's public access reuse system would be expanded to meet the effluent disposal requirements. If R-001 is utilized as the main method of disposal, additional siting requirements are necessary for wet weather storage per F.A.C. 62-610.464. Minimum storage requirements must meet the volume of three times the capacity of the reuse system, of which no alternative disposal system is required. The additional storage requirements that would be required for R-001 are summarized below in **Table 61**.

Table 61: Wet Weather Storage Requirements

Phase	WWTF Permitted Capacity (MGD AADF)	Required Public Access Reuse Capacity (MGD)	Wet Weather Storage Requirements (MG)	Existing Wet Weather Storage (MG)	Additional Required Wet Weather Storage (MG)
1	5.50	4.44	13.32	9.58	3.74
2	8.00	6.94	20.82	9.58	11.24

If the City were to expand the capacity of the R-001 system to meet the Phase 1 (5.00 MGD) and Phase 2 (8.00 MGD) capacity of the WWTF, it would require additional wet weather storage volume of 3.74 MG and 7.50 MG, respectively, for a total of 11.24 MG of additional wet weather storage capacity. The required hydraulic requirements to meet the required disposal capacities are not included in this analysis. A limited hydraulic analysis is included in the Reuse Water System Hydraulic Analysis section of this report.

Expand Existing Rapid Infiltration Basin Site

The City's existing RIB site is permitted for 1.06 MGD AADF. The RIB system is currently utilized as alternative disposal when the NSU master reuse area (R-001) is unable to take the City's effluent, which typically occurs during wet weather events. To increase the capacity of the City's effluent disposal system to meet the future capacity of the WWTF, the City could increase or expand the existing RIB site. The City's existing RIBs are permitted at an annual average application rate of 2.08 gpd/ft^2. An analysis of the additional RIB capacity and land that would be required to meet the Phase 1 and Phase 2 capacity of the City's WWTF is performed in the following section of the report.

Alternative Effluent Disposal Options

Within Florida, the management of public access reclaimed water is handled using storage facilities such as wet weather storage ponds and tanks to store excess reclaimed water when irrigation demands are low. Additionally, the management of public access reclaimed water systems requires alternative disposal systems that send excess effluent flow into groundwater systems. Initial water reclamation facilities permitted in Florida may have utilized spray fields and/or percolation ponds to dispose of treated effluent when irrigation demands are low or water quality dictates alternative disposal means. Over time, disposal strategies have been modified. Since the value of land is increasing, these types of installations as a means of wet weather disposal are becoming less common.

As the wastewater system is expanded and a new treatment facility is constructed, the quantity of treated reclaimed water will exceed the existing demands, and the City will need to expand effluent management strategies, which will include extending public access to reclaimed water service, as well as expanding alternative disposal capacity.

Six alternative effluent disposal methods were considered as part of this evaluation. The options reviewed here are only for the wastewater effluent. The methods considered for the WRF alternative effluent disposal are:

- Spray Fields
- Rapid Infiltration Basins (RIBs)
- RIBs with Constructed Wetland
- Managed Aquifer Recharge Well (AR)
- Deep Injection Well

All options offer some form of Aquifer Recharge; however, the receiving groundwater body dictates which options are feasible, the required level of treatment, and how the system is permitted. The following provides an evaluation of these alternative disposal strategies. The discussion below also identifies the permitting requirements, planning level opinion of probable cost, and preliminary permitting and construction schedules.

For the purpose, of this evaluation, disposal options were evaluated based on the permitting of a 5.50 MGD and 8.00 MGD AADF wastewater treatment facility. The City is currently in the design process to expand the City's existing WWTF from 3.55 MGD to 5.50 MGD by 2030, with a later expansion to 8.00 MGD. Effluent strategies that are feasible to be constructed within the existing site are considered more desirable than options that require additional land acquisition. A detailed summary of each option is discussed further below.

Spray Fields

Spray fields have been used for effluent disposal within Florida for decades. As expected, spray fields have lower capacity for disposal during the wet season than during the dry season due to high rainfall in this area during the wet season and the high groundwater levels. A site-specific soil testing and test well drilling program, aquifer testing, and computer modeling are required to properly design the spray field system to determine the actual hydraulic capacity of the system that minimizes mounding and maximizes the system disposal capacity. The evaluation of hydraulic capacity will also need to consider the assimilative capacity of the soil-plant system and the impacts of evapotranspiration.

Additional requirements associated with spray fields are defined in Section 62-610– Part II Slow Rate Land Application System; Restricted Public Access and a detailed engineering report must be submitted as part of the permitting process. Additional requirements associated with the design and operational considerations of spray field systems include the following:

Water quality requirements are defined in Section 62-610.410 and include a minimum, secondary treatment, and basic disinfection levels before the land application. Systems using subsurface application systems can be subject to the following additional limitations on TSS. The reclaimed water shall always contain no more than 10 mg/L of TSS, unless the application system has been designed to provide specific flexibility and reliability in operation and maintenance of the system. The FDEP shall approve alternatives to the specified TSS limitation if the applicant provides reasonable assurances in the engineering report that the alternative control measures will ensure non-clogging of the system.

Groundwater monitoring of the surficial aquifer is required and defined in Section 62-610.412

System storage is not required if it is demonstrated in the engineering report that percolation will function adequately under high groundwater conditions. In Florida, system storage is typically required due to intensity and duration of wet weather events, and systems without wet weather storage can be an operational challenge. Storage requirements are defined in section 62-610.414 and, at a minimum, is required to have a capacity of 3 days of storage of the reuse system for which no alternative disposal is required. For the case of CITY, wet weather storage would be required for three days of storage for the permitted capacity.

Site setback requirements are required and defined in Section 62-610.421.

Hydraulic loading rates are defined in Section 62-610.423. Since soil-plant relationships are complex, the initial design loading rate shall be conservative; a maximum annual average of two inches per week is recommended. The FDEP will consider a rate higher than the two inches per week average provided the rate is justified in the engineering report based on the renovating and hydraulic capacity of the soil-plant system, the existing quality, and the use of surface or groundwater in the area, and other hydrogeologic conditions.

A conceptual sizing analysis was performed to identify site requirements associated with a spray field system being constructed as an alternative disposal system for the City's WWTF. The land required for the spray field system is based on a maximum application rate of 2 inches per week, in accordance with 62-610.423. However, a site-specific mounding analysis and engineering report can increase the permitted application rate.

Table 62 summarizes the site requirements associated with the phased expansion of the City's WWTF. For this option, the City would need to acquire land to construct a spray field of the required area to meet the future WWTF Capacity. Additionally, piping and pumping facilities adequately sized to convey treated effluent to the proposed spray field site would be required. As previously stated, a hydrogeologic study would be required, and land requirements can be reduced based on site-specific hydraulic requirements.

Table 62: WWTF Site Requirements						
Phase	**WWTF Permitted Capacity (MGD)**	**Spray Field Capacity (MGD)**	**Average Annual Application Rate**	**Spray Field Site Requirements (Acres)**	**Existing Spray Field**	**Additional Site Needs Per Phase (Acres)**
1	5.50	1.14	2 inches/week	150	N/A	150
2	8.00	3.64	2 inches/week	470	N/A	470

If the City proceeds with this option, a site-specific hydrologic evaluation will be performed to identify suitable application rates relative to the soil-plant system, evapotranspiration, site hydraulic conductivity, infiltration capacity, and geologic materials underlying the site. The results of the hydrologic study could reduce the site requirements; therefore, these estimates are considered conservative in nature and suitable for this planning exercise. The estimated site needs also include ancillary needs including groundwater monitoring, site access, and operations.

If a spray field is utilized as a backup means of disposal, additional siting requirements are necessary for wet weather storage. Minimum storage requirements must meet the volume of three times the capacity of the reuse system, of which no alternative disposal system is required.

The existing public access reclaimed water system currently has a capacity of 3.30 MGD, and the RIB site is permitted for 1.06 MGD. The wet weather storage requirements will be a function of providing wet weather storage equal to three times the volume of the difference between the public access reclaimed water system and the spray field system. For this analysis, it is assumed that no additional customers will be added to the public access reclaimed system. **Table 63** summarizes the wet weather storage requirements for each phased expansion, based on the public access reclaimed water system maintaining the current capacity of 1.25 MGD.

Wet weather storage can consist of lined storage ponds and/or groundwater storage tanks. It is assumed that groundwater storage tanks (GST) will be utilized for wet weather storage; while the capital cost may be higher, it will significantly reduce the land requirements. If additional customers do come online, the buildout wet weather storage requirements can be reduced, and there may be a chance to use customer stormwater ponds to provide additional wet weather storage capacity.

Table 63: Wet Weather Storage Requirements			
Phase	**WWTF Permitted Capacity (MGD AADF)**	**Spray Field Capacity (MGD)**	**Additional Wet Weather Storage Requirements (MG)**
1	5.50	1.14	3.42 (1.14 X 3 Days)
2	8.00	3.64	10.92 (3.64 X 3 Days)

A preliminary implementation schedule was developed for the testing, design, permitting, and construction of the Phase 1 spray field system, which would have a capacity of 1.14 MGD and include the construction of wet weather storage. This schedule assumes a 6-month period is needed to secure the additional property for Phase 1, which is 150 acres. It is also anticipated that the site-specific hydrogeological study could result in an increased application rate, resulting in a reduction in site requirements. **Table 64** shows the Spray Field Implementation Schedule.

Table 64: Spray Field Implementation Schedule	
Phase Duration	**Implementation Schedule (months)**
Testing and Modeling	4 months
Design	4 months
Permit and Land Acquisition	6 months
Construction	18 months
Total Duration	**32 months**

An Engineer's Conceptual Opinion of Probable Cost (OPC) was developed for the construction and permitting of the spray field system option and is presented in **Table 65**. This OPC does not include the cost of land or the piping necessary to convey treated effluent to the proposed spray field site. Additionally, the OPC does not include the costs associated with the wet weather storage needs, as the wet weather storage will be provided for the public access reclaimed water system and will meet the requirements of both disposal systems.

Table 65: Engineer's Opinion of Probable Cost - Spray Field System		
	Phase 1	**Phase 2**
New Spray Field Improvements	$1,100,000	$1,400,000
Hydrogeological and Geotechnical Investigations, Design, Permitting, Services During Construction (25%)	$275,000	$350,000
Contingency (30%)	$330,000	$420,000
Total Engineer's Opinion of Probable Cost	**$1,705,000**	**$2,170,000**
Incremental Increase in Spay Field System Capacity (MGD)	1.14	2.50
Cost per Gallon of Additional Disposal Capacity	$1.50	$0.87
Total Cost per Gallon	$1.06	

Rapid Infiltration Basins (RIBs)

Rapid infiltration basin systems (also called percolation ponds) can be used as a means of wet weather disposal in areas where the surficial aquifer has sufficient permeability and thickness to accept relatively large volumes of water. The depth to the first area's consistently low permeability layer is an important factor in evaluating a site for use as a percolation pond. The ambient wet season water table elevation in the surficial aquifer is also an important consideration. Thus, areas away from wetlands are better suited for percolation ponds.

A site-specific soil testing and test well drilling program, aquifer testing, and computer modeling would be needed to properly design a percolation pond system to minimize the mounding impacts associated with loading these ponds. Additionally, the soils, hydrogeologic conditions, loading rates, quality of reclaimed

water, and expected travel time of groundwater to site property line(s) would need to be evaluated to provide assurance that applicable water quality standards would not be violated.

Percolation ponds for municipal effluent disposal are regulated under FAC Chapter 62-610 – Part IV Rapid Rate Land Application Systems. Under this section, RIBs must be divided into a minimum of two cells to allow for alternate loading and resting. Additional requirements for RIB systems include:

Groundwater monitoring of the surficial aquifer is required.

Per Section 62-610.514, system storage is not required for rapid-rate land application systems if it is demonstrated in the engineering report that percolation will function adequately under high groundwater conditions and that reclaimed water storage or other discharge provisions are not required.

Site setbacks are required and defined in 62-610.521.

Hydraulic loading rates are required by 62-610.523 to be developed based on percolation tests, which simulate actual loading conditions that will prevail during the design life of the rapid-rate system. The design hydraulic loading and application rate shall be related to the hydraulic conductivity and transmissivity and of the geologic formations at the project site. The initial average annual hydraulic loading rates are limited to 3 inches per day, or 1.9 gpd/ft^2. A maximum application rate of 9.0 gpd/ft^2 may be permitted and based on engineering investigations and report. The existing RIBs are currently permitted at a rate of 2.08 gpd/ft^2.

A desktop evaluation of site needs associated with a RIBs system being constructed as an alternative disposal system for phased expansion was performed. The land required for the RIBs system is based on an annual average application rate of 2.08 gpd/ft^2. If City proceeds with this option, a site-specific hydrologic evaluation will be performed to identify suitable application rates related to site hydraulic conductivity, transmissivity, and site-specific geologic formations. The results of the hydrogeologic study will likely reduce the site requirements, and therefore these estimates are considered conservative in nature and suitable for this planning exercise. The estimated site needs also includes the construction of three RIB cells, which allows for the cycling of the system so one cell is always resting, and two cells are sized adequately to handle the average annual daily flow, which corresponds to the WRF phased expansion. The site requirements also include acreage associated with ancillary facilities such as groundwater monitoring, access, and site buffers. RIB site requirements are presented in **Table 66** below.

Table 66: RIBs Site Requirements

Phase	WWTF Capacity (MGD AADF)	Additional Required RIB Capacity (MGD AADF)	Average Annual Application Rate (gpd/ft^2)	Additional RIB Site Requirements (Wetted Acres)
1	5.50	1.14	2.08	12.58
2	8.00	3.64	2.08	40.17

A preliminary implementation schedule was developed for the testing, design, permitting, and construction of the Phase 1 RIB system which would have a capacity of 1.14 MGD. This schedule assumes the existing RIB site will have adequate site to accommodate the proposed Phase 1 RIBs system in addition to the existing RIBs site. **Table 67** below illustrates the RIBs implementation schedule.

Table 67: RIBs Implementation Schedule	
Phase Duration	**Implementation Schedule (months)**
Testing and Modeling	4 months
Design	4 months
Permit	6 months
Construction	10 months
Total Duration	**24 months**

For this analysis, it can be assumed that the expansion of the RIBs system required as part of the Phase 2 expansion would require a 24-month effort to test, model, design, permit, and construction the RIBs system.

An OPC was developed for constructing and permitting the system and is presented in **Table 68**. There may be some cost savings associated with the re-rating and use of existing RIBs system. Additionally, it is anticipated that the site-specific hydrogeological study could result in an increased application rate, resulting in a reduction in site requirements. The OPC presented below does not account for the piping necessary to convey the treated effluent to the RIBs site.

Table 68: Engineer's Opinion of Probable Cost - RIBs System		
	Phase 1	**Phase 2**
Construction of RIBs Improvements	$1,500,000	$1,500,000
Hydrogeological and Geotechnical Investigations, Design, Permitting, and Services During Construction (25%)	$375,000	$375,000
Contingency (30%)	$450,000	$450,000
Total Engineer's Opinion of Probable Cost	**$2,325,000**	**$2,325,000**
Incremental Increase in RIBs System Capacity (MGD)	1.14	2.5
Cost per Gallon of Additional Disposal Capacity	$2.04	$0.93
Total Cost per Gallon	$1.28	

RIBs with Constructed Wetland

A constructed wetland incorporated into a RIBs type system could add additional treatment as well as additional social and environmental benefits by creating a park-like setting out of what would otherwise be just a water disposal design. The wetland itself is typically a planted gravel bed fed by pipes or outfalls from upstream elements. The wetlands portion of the design would be unlined and would serve as an infiltration area. Therefore, no additional area beyond what is required for the RIBs would be needed. There is no standard for incorporating wetlands into rapid infiltration basins. Three possible ways to integrate them would be:

- Create a planting shelf with the wetlands around the perimeter of the RIBs.
- Create cells where some cells are standard RIBs, and others are constructed wetlands.
- Locate the wetlands at the center of the RIBs, where they would receive the longest exposure to water at the lowest point.

Constructed wetlands can be designed in conjunction with rapid infiltration basins to add additional effluent polishing while also providing aesthetic, educational, and recreational amenities. They also provide habitat for birds, pollinators, and other species. Additionally, they may provide an alternate route to dispose of water through evapotranspiration.

In addition to the benefits of traditional RIBs, incorporating wetlands into the disposal design would provide additional removal of organics and nutrients through plant uptake. Since nutrient pollution is such a major issue, the added cost of the planted gravel beds may very well be offset by the residual nutrient polishing.

Constructed wetlands are intended to mimic their naturally occurring counterparts, which means that they are as passive as possible by design. There are minimal equipment requirements, with plants and gravel comprising the bulk of the materials. Therefore, maintenance tasks are more akin to landscaping than traditional water operations. Operation and maintenance efforts would include periodic (quarterly) observation of plant health and assessing the gravel beds for bare spots, sedimentation buildup, or water surfacing above the gravel. Plants would need to be tended to on an annual basis, removing overgrown vegetation, removing dead plants, planting bare areas, and removing growth from inlets and outlets.

A preliminary implementation schedule was developed for the testing, design, permitting, and construction of the Phase 1 RIB system with a 2.5-acre constructed wetland, which would have a capacity of 1.14 MGD. This schedule assumes the City would procure the required site for the RIB system. **Table 69** depicts RIBs with Constructed Wetland.

Table 69: RIBs with Constructed Wetland

Phase Duration	Implementation Schedule (months)
Testing and Modeling	4 months
Design	8 months
Permit	8 months
Construction	14 months
Total Duration	**34 months**

For this analysis, it can be assumed that the expansion of the RIBs system required as part of the Phase 2 expansion would require a 34-month effort to test, model, design, permit, and construct the RIBs system.

An OPC was developed for the construction and permitting of the RIBS system with the addition of a 2.5-acre wetland associated with each phase is presented in **Table 70**. There may be some cost savings associated with the re-rating and use of the existing RIBs system. Additionally, it is anticipated that the site-specific hydrogeological study could result in an increased application rate, resulting in a reduction in site requirements. The OPC presented below does not account for the piping necessary to convey the treated effluent to the RIBs site.

Table 70: Engineer's Opinion of Probable Cost - RIBs System with Constructed Wetlands		
	Phase 1	**Phase 2**
Subtotal RIBs Improvements	$2,500,000	$2,500,000
Hydrogeological and Geotechnical Investigations, Design, Permitting, Services During Construction (25%)	$625,000	$625,000
Contingency (30%)	$750,000	$750,000
Total Engineer's Opinion of Probable Cost	**$3,875,000**	**$3,875,000**
Incremental Increase in RIBs System Capacity (MGD)	1.14	2.5
Cost per Gallon of Additional Disposal Capacity	$3.40	$1.55
Total Cost per Gallon	$1.57	

Managed Aquifer Recharge Well (AR)

Managed Aquifer Recharge (AR) includes the injection of treated effluent into a subsurface zone without any intent to recover the water. Managed AR wells are classified as Class V (Group 3) injection wells, and they are regulated by FAC 62-528 and 62-610.560. To permit this option, a benefit for the recharge must be established and computer modeling will be required, and a groundwater quality evaluation would be necessary to evaluate the efficiency and risks associated with the AR system. Additionally, a test well will be installed to perform aquifer testing to support the evaluation feasibility. Specific regulations per 62-610 as it pertains to managed aquifer recharge include:

Injection of reclaimed water into Class F-I, G-I, or G-II groundwater shall be considered as groundwater recharge.

Reclaimed water injected into Class G-II groundwater containing 3,000 mg/L or less of total dissolved solids or into Class G-I or F-I groundwater shall meet the full treatment and disinfection requirements contained in subsection 62-610.563(3), F.A.C.

Reclaimed water may be injected into Class G-II groundwater containing greater than 3,000 mg/L of total dissolved solids if the following conditions are met:

The reclaimed water shall meet the principal treatment and disinfection requirements contained in subsection 62-610.563(2), F.A.C.

The reclaimed water shall meet the primary drinking water standards as described in paragraph 62-610.563(3)(b), F.A.C., before injection. The disinfection standards in sub-subparagraph 62-610.563(3)(b)1.a., F.A.C., shall govern. The fecal coliform limitations associated with high-level disinfection shall not apply. Zones of discharge shall not be provided for parameters listed as primary drinking water standards (except for sodium).



(c) The reclaimed water does not have to comply with the secondary drinking water standards before injection. A zone of discharge, as described in Rule 62-522.410, F.A.C., shall be provided for the parameters included in the secondary drinking water standards and for sodium. The groundwater shall meet all groundwater quality standards at the edge of the zone of discharge. If the natural background groundwater quality does not meet the groundwater quality standards, the injection system shall be operated such that the groundwater quality will be no worse than the natural background groundwater quality at the edge of the zone of discharge.

The zone of discharge shall not extend into zones having TDS concentrations less than 3,000 mg/L (based on the initial TDS characterization in the engineering report).

Total nitrogen shall be limited to 10 mg/L as nitrogen as a maximum annual average limitation. Monthly average and single sample permit limitations shall be established using the multipliers in subparagraph 62-600.740(1)(b)2., F.A.C. Setback requirements are provided in 62-610.871.

System storage is not required; however, a separate reject storage system is required.

A backup means is required for the AR system. Some utilities install an AR well, while others use storage ponds for short periods when an injection well needs to be taken out of service. If a secondary AR well is not constructed, a minimum of three days of storage is also required by regulation in the design of storage ponds.

A preliminary implementation schedule was developed for the testing, design, permitting, and construction of the AR system. It is assumed that the AR system would be constructed and sized to accommodate the buildout system of 8.00 MGD. This implementation schedule shown in **Table 71** assumes that the existing WRF site will be deemed suitable for the AR system, and no additional land will be required.

Table 71: Managed AR System Implementation Plan

Phase Duration	Implementation Schedule
Computer Modeling and Preliminary Design	12 months
Permit and Install Test Well	12 months
Permit and Construct Pilot System	12 months
Operational Testing	24 months
Total Duration	**60 months**

An OPC was developed for constructing and permitting the AR system, which includes a backup AR well and groundwater monitoring system and is presented in **Table 72**. This estimate assumes that the AR system is located at the proposed WRF site and that no additional land is required for this option. Additionally, the OPC does not include the cost associated with the wet weather storage needs, as the wet weather storage will be provided by a public access reclaimed water system and will meet the requirements of both disposal systems.

Table 72: Engineer's Opinion of Probable Cost (Managed AR System)	
Engineer's Opinion of Probable Cost - Managed Aquifer Recharge	**Phase 1**
AR Wells (3) and Groundwater Monitoring System	$12,000,000
Electrical/I&C (10%)	$1,200,000
Mobilization /Demobilization (12%)	$1,440,000
Site Work (10%)	$1,200,000
Subtotal	**$15,840,000**
General Requirements (5%)	$792,000
Contractor Overhead and Profit (15%)	$2,376,000
Construction Contingency (30%)	$4,752,000
Total Construction Costs	**$23,760,000**
Hydrogeological Investigations, Design, Permitting, Services During Construction (25%)	$5,940,000
Contingency (30%)	$7,128,000
Total Technical Services	**$13,068,000**
Total Project Costs	**$36,828,000**
AR System Capacity (MGD)	3.64
Cost per Gallon of Additional Disposal Capacity	$10.12

Deep Injection Well

Deep injection wells (DIW), via Class I injection wells, are a common method of wet season effluent disposal in parts of Florida. Class I injection wells are regulated by FAC 62-528.405-460. An injection well system typically consists of an injection well and a dual zone monitoring well (DZMW). The lower zone of the DZMW monitors the first permeable zone above the confinement overlying the injection zone. It is intended to be below the base of the underground source of drinking water (USDW). The upper monitoring zone is a permeable zone above the base of the USDW. A test well would be required to establish the total depth required.

A backup means is required for an injection well system. Some utilities install a second injection well, while others use storage ponds for short periods when an injection well needs to be taken out of service. If a secondary DIW is not constructed, a minimum of three days of storage is also required by regulation in the design of storage ponds, which would be an equivalent of 15.0 MG of storage for the buildout capacity of the effluent management system.

A preliminary implementation schedule was developed for the testing, design, permitting, and construction of the DIW system. It is assumed that the DIW system would be constructed and sized to accommodate the buildout system of 5.0 MGD. This implementation schedule assumes that the existing WR site will be deemed suitable for the DIW system, and no additional land will be required. **Table 73** depicts the DIW System Implementation Plan.



Table 73: DIW System Implementation Plan	
Phase Duration	**Implementation Schedule**
Design and Permit	24 months
Construct and Develop Well	36 months
Total Duration	**60 months**

An OPC was developed for the construction and permitting of the DIW system, which includes a backup DIW and DZGM well system and is presented in **Table 74**. Additionally, the OPC does not include the cost associated with the wet weather storage needs, as the wet weather storage will be provided for the public access reclaimed water system and will meet the requirements of both disposal systems.

Table 74: Engineer's Opinion of Probable Cost (Deep Injection Well)	
Engineer's Opinion of Probable Cost - Deep Injection Wells	**Phase 1**
DIW Wells (3) and Groundwater Monitoring System	$20,000,000
Electrical/I&C (10%)	$2,000,000
Mobilization /Demobilization (12%)	$2,400,000
Site Work (10%)	$2,000,000
Subtotal	**$26,400,000**
General Requirements (5%)	$1,320,000
Contractor Overhead and Profit (20%)	$5,280,000
Construction Contingency (30%)	$7,920,000
Total Construction Costs	**$40,920,000**
Hydrogeological Investigations, Design, Permitting, Services During Construction (25%)	$10,230,000
Contingency (30%)	$12,276,000
Total Technical Services	**$22,506,000**
Total Project Costs	**$63,426,000**
DIW System Capacity (MGD)	3.64
Cost per Gallon of Additional Disposal Capacity	$17.42

Summary of Alternative Disposal Options

A summary of the evaluation of alternative disposal options is presented in **Table 75**. Effluent strategies that are feasible to be constructed utilizing the City's existing infrastructure and sites are considered more desirable than options that require additional land acquisition. A detailed summary of each option is discussed further below.

Table 75: Evaluation of Alternative Disposal Options								
Option	Description	Land Requirements (Acre)		Implementation Schedule (months)		Cost		
		Phase 1	Phase 2	Phase 1	Phase 2	Phase 1	Phase 2	Total
1	Spray Field	150	470	32	32	$1,705,000	$2,170,000	**$3,875,000**
2	RIBs	13	41	24	24	$2,325,000	$2,325,000	**$4,650,000**
3	RIBs with Wetland	20	60	34	34	$3,875,000	$3,875,000	**$7,750,000**
4	AR	N/A		60		$36,828,000		**$36,828,000**
5	DIW	N/A		60		$63,426,000		**$63,426,000**

Spray Fields – This option was estimated to cost $1.705M for Phase 1 and an additional $2.17M to achieve a total disposal capacity of 3.64 MGD to the required effluent disposal requirement of 8.00 MGD. These estimates assume that the City continues to utilize the existing RIBs and Public Access Reuse system. The preliminary sizing of the spray fields suggests an additional 150 acres are needed to accommodate the first phase of construction (5.50 MGD) and an additional 320 acres to accommodate the full 8.00 MGD for a total area of 470 acres. An engineering investigation and site-specific hydrologic analysis are required to be performed, and it is anticipated that the hydraulic loading rate may be increased, and the land required for the spray field system will be less than initially estimated. The timing associated with implementation for Phase 1, including investigation, engineering, permitting, and construction is 32 months. **Due to the land requirements associated with this option, spray fields are not considered a desirable disposal option.**

Rapid Infiltration Basins (RIBs) – This option is estimated to cost $2.325M for Phase 1 (5.50 MGD) and an additional $2.325M for Phase 2 (8.00 MGD) to achieve a total disposal capacity of 8.0 MGD. This option assumed that the existing RIBs site would be utilized. Additional land requirements for this option are estimated to require an additional 41 acres of wetted area. An engineering investigation and site-specific hydrologic analysis are required to be performed to confirm hydraulic loading rates. The timing associated with implementation for Phase 1, including investigation, engineering, permitting, and construction is 24 months. This option is the low-cost option, and initial investigations may indicate that the proposed RIB site has adequate land to accommodate the Phase 1 improvements. Phase 2 disposal capacity could require securing additional property. **This option is the recommended option for Phase 1 and Phase 2.**

RIBs with Constructed Wetland – As an enhanced option, a RIB system can provide additional nutrient reduction with the inclusion of a constructed wetland. In addition to the costs of the RIBs, this option may require an additional footprint to accommodate the plantings. This is estimated to cost $3.875M for Phase 1 which includes a wetland within the RIBs system. This option is estimated to cost an additional $3.875M for Phase 2. These estimates include the construction of wetlands for Phase 1 and additional wetlands within the RIB system constructed as part of Phase 2. Both phases would include aesthetic, educational, and recreational amenities.

This option assumed that the existing RIBs would still be utilized. Land requirements for this option are estimated to range between 20 and 60 acres to accommodate the Phase 2 capacity. An engineering investigation and site-specific hydrologic analysis is required to be performed to confirm hydraulic loading



rates. The timing associated with implementation for Phase 1, including investigation, engineering, permitting, and construction (28 months.)

The construction of wetlands as part of the RIB system can also provide an opportunity to develop a future community amenity. However**, the construction of wetlands is not required as part of the regulatory framework.**

Managed Aquifer Recharge Well (AR) - This option is estimated to cost $36.83M, and the full permitted capacity of the system would be constructed as a single phase. This option assumes that the existing WWTF site has adequate land for the AR system. A detailed hydrologic and engineering investigation is required to be performed to confirm that recharge can be established. The timing associated with the implementation of this option, including hydrologic investigations and modeling, engineering, permitting, and construction is 56 months. This option is not recommended as the timing associated with this option is significantly greater. It is recommended, however, that the evaluation of a Managed Aquifer recharge system be performed to meet future Phase 2 effluent disposal needs, as it may be a suitable alternative to constructing an additional RIBs system as part of Phase 2.

Deep Injection Well - This option is estimated to cost $63.43M and the full permitted capacity of the system would be constructed as a single phase. This option assumes that the existing WWTF has adequate land for the AR system. A detailed hydrologic and engineering investigation is required to be performed to confirm that recharge can be established. The timing associated with the implementation of this option, including hydrologic investigations and modeling, engineering, permitting, and construction is 60 months. This option is estimated to be of higher cost than Spray Field or RIBs and is not recommended as part of the proposed Phase 1 improvements. It is recommended, however, that the evaluation of a Deep Injection Well be performed to meet future Phase 2 effluent disposal needs, as it may be a suitable alternative to constructing an additional RIB system as part of Phase 2.

REUSE WATER SYSTEM HYDRAULIC ANALYSIS AND METHODOLOGY

The software used for the model development was Bentley WaterCAD V8i (SELECTseries 1). WaterCAD is a computer-based program that, with user input, calculates a wide variety of system parameters. The model can be used to assess the existing system and how the system will respond to future increases in reuse water demand. The model can subsequently be modified to add or remove system components and establish how the system responds to these changes. This feature is very useful for identifying capital improvement projects that will help overall system hydraulic performance.

System Hydraulic Parameters

It is necessary to establish system hydraulic standards to determine acceptable hydraulic parameters for the distribution network prior to the system analysis to better identify system deficiencies and establish design criteria for system improvements.

The following hydraulic parameters were used to evaluate the reuse water system hydraulic model:

- Minimum system pressure: 40 psig
- Maximum system pressure: 92.5 psig
- Design Maximum Velocity: 8.0 fps
- Design AADF: PHF (After EQ): 1.50

Methodology

The primary objective of this analysis is to identify the reuse system improvements needed to meet future effluent disposal requirements, future reuse demands, and balance system flows from the City's WWTF to the City's RIB site, and to the City's public reuse customers and the NSU master reuse service area.

With the model properly calibrated, the following scenarios and system configurations could be modeled. In total, there were numerous different model configurations and scenarios that were evaluated. The scenarios were analyzed using different reuse customers and sites, water surface elevations, system operating pressures, and proposed improvements and configurations. The results of the following scenarios were used to identify the required improvements that are needed to meet the reuse system goals that were outlined in each specific scenario.

Model Results

Scenario 1: City WWTF to Lined Storage Ponds at the RIB Site

Scenario 1 modeled the existing effluent reclaimed system from the City's WWTF to the R-001 lined ponds at the RIB site. This scenario was modeled to determine the hydraulic capacity of the reuse main and the existing effluent transfer pumps at the City's WWTF. **Table 76** below summarizes the assumptions and results of Scenario 1.

Table 76: Scenario 1 – Wildwood WWTF Effluent Pump Station to RIB Site (Firm Capacity)

Model Conditions Summary	Conditions and Results
Effluent Transfer Pump Station WSEL (ft.)	64.5
RIB/Storage Pond WSEL (ft.)	67
C value	130
Flow per Pump (gpm)	1,504
Total Head (ft)	155
Number of Pumps Operating	2
Total Flow to RIB Site (gpm)	3,007
Total Flow (MGD)	4.33
Max Operating Pressure (psig)	69
Max Velocity (fps)	8.67

The model results demonstrate that the existing effluent pumps have a firm pumping capacity of 4.33 MGD. The existing pump station has sufficient firm pumping capacity to meet the permitted capacity of the City's WWTF at 3.55 MGD. However, Table 2.11 of Water Environment Federation (WEF) Manual of Practice (MOP) No.8 recommends that pumps shall be able to meet the design peak hour flow of the facility. The design peak hour flow after equalization of the facility is 5.33 MGD based on the original preliminary design report prepared by Barnes, Ferland, and Associates. Therefore, the existing pumps do not have the capacity to meet the design PHF.

Scenario 2: City WWTF to Lined Storage Ponds at the RIB Site with Pump Improvements

Scenario 2 modeled the City's reuse system from Scenario 1 with upsized pumps to meet the design PHF of 5.33 MGD. **Table 77** below summarizes the assumptions and results of Scenario 2.

Table 77: Scenario 2 – Wildwood WWTF Effluent Pump Station to RIB Site	
Model Conditions Summary	**Conditions and Results**
Effluent Transfer Pump Station WSEL (ft.)	64.5
RIB/Storage Pond WSEL (ft.)	67
C value	130
Flow per Pump (gpm)	1,850
Total Head (ft)	226.32
Number of Pumps Operating	2
Total Flow to RIB Site (gpm)	3,700
Total Flow (MGD)	5.33
Max Operating Pressure (psig)	**100**
Max Velocity (fps)	**10.67**

The model results demonstrate that the upsized effluent pumps have a firm pumping capacity of 5.33 MGD and can meet the design PHF of the City's WWTF. However, the max operating pressure and the max velocity in Scenario 2 exceed the City's reuse system hydraulic parameters.

Scenario 3: City WWTF to Lined Storage Ponds at the RIB Site with Pump and Piping Improvements

Scenario 3 modeled the City's reuse system from Scenario 2 with approximately 1,700 LF of 12-inch reuse main upsized to 16-inch. **Table 78** below summarizes the assumptions and results of Scenario 3.

Table 78: Scenario 3 – Wildwood WWTF Effluent Pump Station to RIB Site	
Model Conditions Summary	**Conditions and Results**
Effluent Transfer Pump Station WSEL (ft.)	64.5
RIB/Storage Pond WSEL (ft.)	67
C value	130
Flow per Pump (gpm)	1,850
Total Head (ft)	198.31
Number of Pumps Operating	2
Total Flow to RIB Site (gpm)	3,700
Total Flow (MGD)	5.33
Max Operating Pressure (psig)	87
Max Velocity (fps)	6.05

The model results demonstrate that with the upsized effluent pumps and the upsized reuse piping, the effluent pump station meets the design PHF of the City's WWTF and meets the City's reuse system hydraulic parameters.

Scenario 4: Phase 1 Expansion to 5.50 MGD to Lined Storage Ponds at the RIB Site with Pump and Piping Improvements

Scenario 4 modeled the City's reuse system from Scenario 4 with increased pumps to meet the Phase 1 (5.50 MGD) design capacity of the City's WWTF. The assumed design PHF for Phase 1 of the City's WWTF expansion is 8.25 MGD. **Table 79** below summarizes the assumptions and results of Scenario 4.

Table 79: Scenario 4 – Wildwood WWTF Effluent Pump Station to RIB Site	
Model Conditions Summary	**Conditions and Results**
Effluent Transfer Pump Station WSEL (ft.)	64.5
RIB/Storage Pond WSEL (ft.)	67
C value	130
Flow per Pump (gpm)	2,865
Total Head (ft)	443
Number of Pumps Operating	2
Total Flow to RIB Site (gpm)	5,730
Total Flow (MGD)	8.25
Max Operating Pressure (psig)	**191**
Max Velocity (fps)	**9.38**

The model results demonstrate that the upsized effluent pumps and the upsized reuse piping meet the future Phase 1 peak hour flow rate of 8.25 MGD. However, the max operating pressure and the max velocity in Scenario 4 exceed the City's reuse system hydraulic parameters

Scenario 5A: Phase 1 Expansion to 5.50 MGD to Lined Storage Ponds at the RIB Site with Pump, Piping, and Storage Improvements.

Scenario 5A modeled the City's reuse system from Scenario 4 with a reduced peak hour flow rate of 5.50 MGD. The effluent peak hour flow would be equalized from 8.25 MGD to 5.50 MGD with the installation of at least a 1.50 MG ground storage tank or a 1.50 MG lined storage pond at the City's WWTF. **Table 80** below summarizes the assumptions and results of Scenario 5.

Table 80: Scenario 5A – Wildwood WWTF Effluent Pump Station to RIB Site	
Model Conditions Summary	**Conditions and Results**
Effluent Transfer Pump Station WSEL (ft.)	64.5
RIB/Storage Pond WSEL (ft.)	67
C value	130
Flow per Pump (gpm)	1,910
Total Head (ft)	208
Number of Pumps Operating	2
Total Flow to RIB Site (gpm)	3,820
Total Flow (MGD)	5.50
Max Operating Pressure (psig)	92

Table 80: Scenario 5A – Wildwood WWTF Effluent Pump Station to RIB Site	
Model Conditions Summary	**Conditions and Results**
Max Velocity (fps)	6.25

The model results demonstrate that with the upsized effluent pumps, upsized reuse piping, and the installation of at least 1.50 MG of effluent storage at the City's WWTF, the effluent pump station meets the design PHF of the City's WWTF and meets the City's reuse system hydraulic parameters.

Scenario 5B: Phase 1 Expansion to 5.50 MGD to Lined Storage Ponds at the RIB Site with Pump and Piping Improvements.

Scenario 5B modeled the City's reuse system from Scenario 4 with the replacement of approximately 26,000 LF of existing 16-inch reuse main with 24-inch reuse main from the City's WWTF to the RIB site. **Table 81** below summarizes the assumptions and results of Scenario 5B.

Table 81: Scenario 5B – Wildwood WWTF Effluent Pump Station to RIB Site	
Model Conditions Summary	**Conditions and Results**
Effluent Transfer Pump Station WSEL (ft.)	64.5
RIB/Storage Pond WSEL (ft.)	67
C value	130
Flow per Pump (gpm)	2,865
Total Head (ft)	79.2
Number of Pumps Operating	2
Total Flow to RIB Site (gpm)	5,730
Total Flow (MGD)	8.25
Max Operating Pressure (psig)	36
Max Velocity (fps)	4.5

The model results demonstrate that with the upsized effluent pumps and upsized piping, the effluent pump station meets the design PHF of the City's WWTF and meets the City's reuse system hydraulic parameters.

Scenario 6A: Phase 2 Expansion to 8.00 MGD to Lined Storage Ponds at the RIB Site with Pump Piping and Storage Improvements.

Scenario 6A modeled the City's reuse system from Scenario 5B with the addition of a ground storage tank or lined storage pond with a capacity of 2.00 MG to equalize the Phase 2 peak hour flows from 12.00 MGD to 8.00 MGD. **Table 82** below summarizes the assumptions and results of Scenario 6A.

Table 82: Scenario 6B – Wildwood WWTF Effluent Pump Station to RIB Site	
Model Conditions Summary	**Conditions and Results**
Effluent Transfer Pump Station WSEL (ft.)	64.5
RIB/Storage Pond WSEL (ft.)	67
C value	130

Table 82: Scenario 6B – Wildwood WWTF Effluent Pump Station to RIB Site	
Model Conditions Summary	**Conditions and Results**
Flow per Pump (gpm)	2,778
Total Head (ft)	75
Number of Pumps Operating	2
Total Flow to RIB Site (gpm)	5,556
Total Flow (MGD)	8.00
Max Operating Pressure (psig)	64
Max Velocity (fps)	4.38

The model results demonstrate that with the upsized effluent pumps, piping, and addition of reuse storage at the WWTF, the effluent pump station meets the design PHF of the City's WWTF at Phase 2 and meets the City's reuse system hydraulic parameters.

Scenario 6B: Phase 2 Expansion to 8.00 MGD to Lined Storage Ponds at the RIB Site with Pump and Piping Improvements.

Scenario 6B modeled the City's reuse system from Scenario 5B with increased pump capacity to meet the Phase 2 peak hour flow rate of 12.00 MGD (8.00 MGD x 1.5). **Table 83** below summarizes the assumptions and results of Scenario 6B.

Table 83: Scenario 6B – Wildwood WWTF Effluent Pump Station to RIB Site	
Model Conditions Summary	**Conditions and Results**
Effluent Transfer Pump Station WSEL (ft.)	64.5
RIB/Storage Pond WSEL (ft.)	67
C value	130
Flow per Pump (gpm)	4,167
Total Head (ft)	156
Number of Pumps Operating	2
Total Flow to RIB Site (gpm)	8,334
Total Flow (MGD)	12.00
Max Operating Pressure (psig)	67
Max Velocity (fps)	6.57

The model results demonstrate that with the upsized effluent pumps and upsized piping, the effluent pump station meets the design PHF of the City's WWTF at Phase 2 and meets the City's reuse system hydraulic parameters.

Scenario 7: R-12 Pump Station to Millennium Park

Scenario 7 modeled the existing R-12 pump station pumping to Millennium Park. Scenario 7 would require the implementation of RW Improvement No. 1 and No. 2. **Table 84** below summarizes the assumptions and results of Scenario 7, and the proposed improvements are summarized below:



- **RW Improvement No. 1:** Construction of approximately 11,500 LF of 12-inch reuse main to connect the City's public access reuse system to Millennium Park and deliver public access reuse water for irrigation of Millennium Park.
- **RW Improvement No. 2:** Construction of new public access reuse pump station at the R-12 Pond Site with a firm pumping capacity of 1.44 MGD to the Millennium Park reuse service area and firm pumping capacity to the NSU Service Area of **2.16** MGD.

Table 84: Scenario 7 - R-12 Pump Station to MP	
Model Conditions Summary	**Conditions and Results**
RIB/Storage Pond WSEL (ft.)	67
MP Elevation (ft.)	74
Delivery Pressure (psig)	60
C value	130
Total Flow to MP (gpm)	518
Total Flow (MGD)	0.75
Total Head (ft)	170.53
Number of Pumps Operating	1

The model results for **Scenario 7** demonstrate that the proposed improvements will be able to deliver sufficient water at a sufficient pressure for irrigation purposes at Millennium Park while meeting the existing irrigation demands of the system.

Scenario 8: R-12 Pump Station to NSU

Scenario 8 modeled the existing R-12 pump station pumping to NSU. Scenario 8 is the baseline scenario for pumping to the NSU Resue service area and was used for the calibration of the City's reuse system to NSU. **Table 85** below summarizes the assumptions and results of Scenario 8.

Table 85: Scenario 8 - R-12 Pump Station to NSU	
Model Conditions Summary	**Conditions and Results**
RIB/Storage Pond WSEL (ft.)	67
NSU Pond WSEL (ft.)	74
C value	130
Total Flow to NSU Site (gpm)	1,136
Total Flow (MGD)	1.64
Total Head (ft)	122.6
Number of Pumps Operating	1

The model results reflect the field results based on the data collected by the City.



Scenario 9: New R-12 Pump Station to NSU (Firm Capacity)

Scenario 9 models the City's reuse system to NSU with the implementation of RW Improvement No. 2. **Table 86** below summarizes the assumptions and results of Scenario 9, and the proposed improvements are summarized below:

- **RW Improvement No. 2:** Construction of a new public access reuse pump station at the R-12 Pond Site with a firm pumping capacity of 1.44 MGD to the Millennium Park reuse service area and firm pumping capacity to the NSU Service Area of 2.16 MGD.

Table 86: Scenario 9 - Proposed Pumps to NSU (Firm Capacity)	
Model Conditions Summary	**Conditions and Results**
RIB/Storage Pond WSEL (ft.)	67
NSU Pond WSEL (ft.)	74
C value	130
Total Flow to NSU Site (gpm)	1,338
Total Flow (MGD)	1.93
Total Head (ft)	142.4
Number of Pumps Operating	1

The model results for Scenario 9 demonstrate that the proposed improvements will be able to deliver 0.29 MGD of water than the existing pump.

Scenario 10: New R-12 Pump Station to NSU

Scenario 10 models City's reuse system to NSU from Scenario 9, but with both of the proposed pumps operation. **Table 87** below summarizes the assumptions and results of Scenario 10, and the proposed improvements are summarized below:

- **RW Improvement No. 2:** Construction of new public access reuse pump station at the R-12 Pond Site with a firm pumping capacity of 1.44 MGD to the Millennium Park reuse service area and firm pumping capacity to the NSU Service Area of 2.16 MGD.

Table 87: Scenario 10 – Proposed Pumps to NSU	
Model Conditions Summary	**Conditions and Results**
RIB/Storage Pond WSEL (ft.)	67
NSU Pond WSEL (ft.)	74
C value	130
Total Flow to NSU Site (gpm)	1,572
Total Flow (MGD)	2.26
Total Head (ft)	184.83
Number of Pumps Operating	2

The model results for Scenario 10 demonstrate that the proposed improvements will be able to deliver 0.63 MGD of water than the existing pump.

Scenario 11: New R-12 Pump Station to VWCA (8/10)

Scenario 11 models the City's reuse system to NSU from Scenario 10 but with a new proposed outfall location at the Villages Water Conservation Authority (VWCA). **Table 88** below summarizes the assumptions and results of Scenario 11, and the proposed improvements are summarized below:

- **RW Improvement No. 2:** Construction of a new public access reuse pump station at the R-12 Pond Site with a firm pumping capacity of 1.44 MGD to the Millennium Park reuse service area and firm pumping capacity to the NSU Service Area of 2.16 MGD.
- **RW Improvement No. 5:** Construction of approximately 1,000 LF of 12-inch reuse main and the required valving and meter improvements to provide an outfall to VWCA 8/10 from the existing NSU reuse line.

Table 88: New R-12 Pump Station to VWCA 8/10	
Model Conditions Summary	**Conditions and Results**
RIB/Storage Pond WSEL (ft.)	67
VWCA 8/10 Pond WSEL (ft.)	60
C value	130
Total Flow to VWCA 8/10 Site (gpm)	2,105
Total Flow (MGD)	3.03
Total Head (ft)	166.73
Number of Pumps Operating	2

The model results for Scenario 11 demonstrate that the proposed improvements will be able to deliver 3.03 MGD of water to VWCA areas 8/10.

Scenario 12: New R-12 Pump Station to VWCA (8/10)

Scenario 12 models the City's reuse system to NSU from Scenario 10 but with a new proposed outfall location at the Villages Water Conservation Authority (VWCA). **Table 89** below summarizes the assumptions and results of Scenario 11, and the proposed improvements are summarized below:

- **RW Improvement No. 2:** Construction of a new public access reuse pump station at the R-12 Pond Site with a firm pumping capacity of 1.44 MGD to the Millennium Park reuse service area and firm pumping capacity to the NSU Service Area of 2.16 MGD.
- **RW Improvement No. 6:** Construction of approximately 1,000 LF of 12-inch reuse main and the required valving and meter improvements to provide an outfall to VWCA 3/6 from the existing NSU reuse line.

Table 89: New R-12 Pump Station to VWCA 3/6	
Model Conditions Summary	**Conditions and Results**
RIB/Storage Pond WSEL (ft.)	67
VWCA 3/6 Pond WSEL (ft.)	64
C value	130

Table 89: New R-12 Pump Station to VWCA 3/6	
Model Conditions Summary	**Conditions and Results**
Total Flow to VWCA 3/6 Site (gpm)	1,721
Total Flow (MGD)	2.48
Total Head (ft)	180.19
Number of Pumps Operating	2

The model results for Scenario 11 demonstrate that the proposed improvements will be able to deliver 2.48 MGD of water to VWCA areas 8/10.

EFFLUENT DISPOSAL AND REUSE WATER SYSTEMS IMPROVEMENTS

This section provides a discussion of the capital improvement projects developed to address current effluent disposal deficiencies and meet future reuse water demands. Included in this section is a project list with probable costs of construction for recommended projects at the present year, 5-year, 10-year, 15-year, 20-year, and build-out planning projections. See **Appendix G** for the overall list with budget years, the detailed breakdown of the estimated construction costs for each of the capital improvement projects, and a preliminary timeline for project implementation. See **Figure 32** for an overall map of the capital projects.

Improvements Within the Next Year

RW Improvement No. 1 – Millennium Park Reuse Extension: Complete the remaining phases of the Millennium Park Reuse Extension. Construction of approximately 7,000 LF of 16-inch reuse main. The approximate cost of construction is $1,510,000.

RW Improvement No. 2 – R-12 Pump Station: Construction of the R-12 Reuse Pump Station at the City's RIB site. The pump station will consist of three vertical turbine pumps dedicated to the Millennium Park reuse service area with a firm pump capacity of 1.44 MGD and two vertical turbine pumps dedicated to the NSU Reclaimed Pump Station with a design firm capacity of 5.18 MGD. The initial phase of the pump station will consist of three high-service pumps with a design capacity of 1,800 gpm at 180 feet of total dynamic head. This design for this project is complete. The approximate cost of construction is estimated to be $4,390,000.

Improvements Within the Next 5 Years

RW Improvement No. 3 – Expansion of existing RIB Site: Expansion of the City's existing RIB site from a capacity of 1.06 MGD to a total capacity of 4.70 MGD. Upsize existing onsite piping from 12-inch to 16-inch. The estimated cost of design, permitting, and construction for this project is $4,650,000.

RW Improvement No. 4 – Effluent Pump Station and Storage Improvements at the City's WWTF: This project consists of a new effluent pump station with a firm pumping capacity of 5.50 MGD and 4.00 MG Prestressed Ground Storage Tank at the City's WWTF. The estimated cost of design, permitting, and construction for this project is $7,300,000.



Improvements Within the Next 10 Years

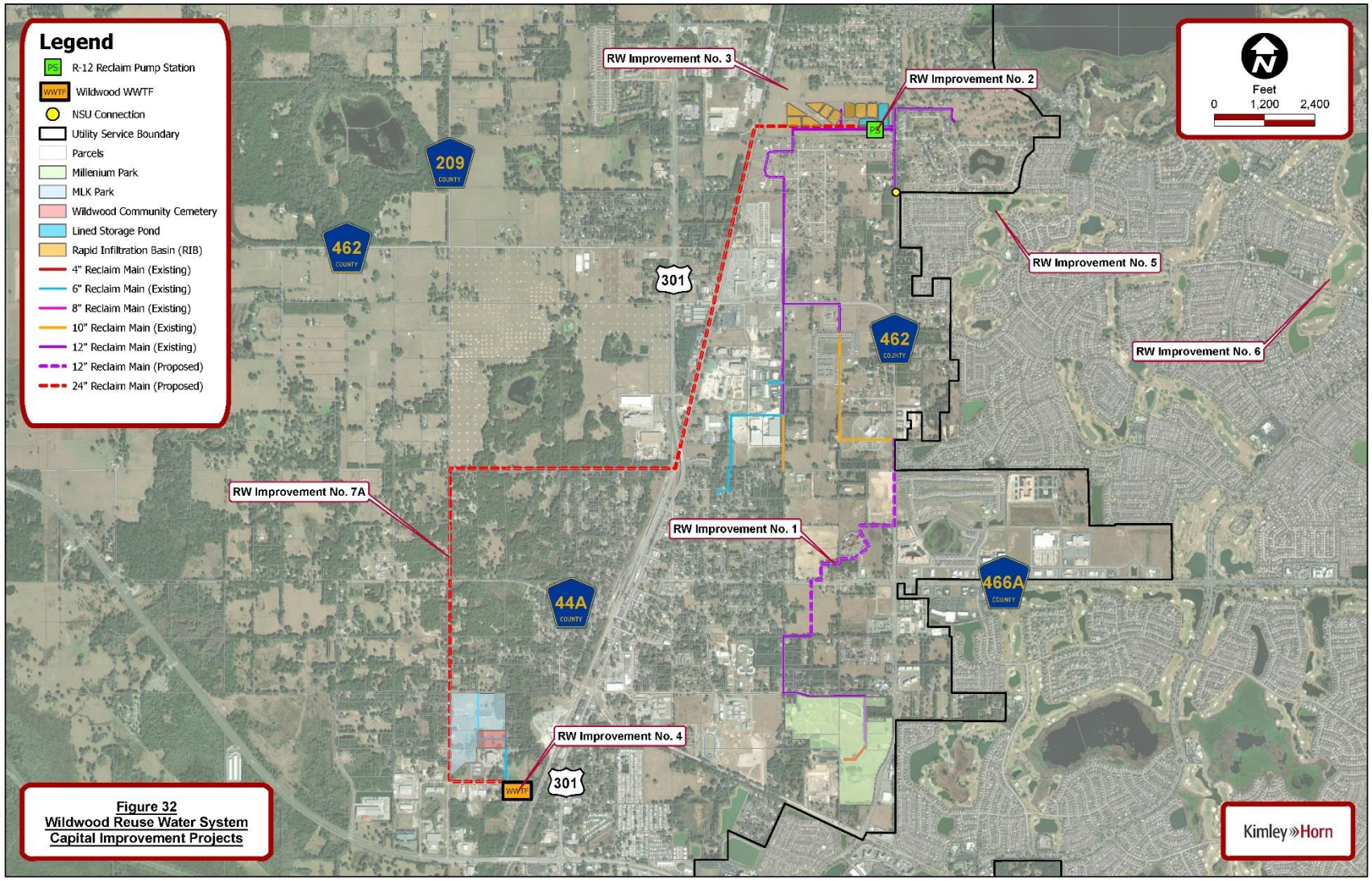
RW Improvement No. 5 – VWCA 8/10: This project consists of approximately 1,000 LF of 12-inch reuse main and the required pressure control valve, and necessary electrical and instrumentation improvements to deliver reuse flow to VWCA 8/10. The estimated cost of design, permitting, and construction for this project is $460,000.

RW Improvement No. 6 – VWCA 3/6: This project consists of approximately 1,000 LF of 12-inch reuse main, the required pressure control valve, and necessary electrical and instrumentation improvements to deliver reuse flow to VWCA 3/6. The estimated cost of design, permitting, and construction for this project is $460,000.

RW Improvement No. 7A – Upsize Existing Effluent Main: To increase the effluent disposal and hydraulic capacity of the effluent main to the City's RIB site to meet the Phase II capacity of the City's WWTF (8.00 MGD), the existing 16-inch main will need to be upsized to a 24-inch main. The project will consist of installing 24,000 LF of 24-inch reuse main. The estimated cost of design, permitting, and construction for this project is $17,400,000.

RW Improvement No. 7B – Find alternative effluent disposal site/method: The existing 16-inch effluent main to the City's RIB site and public access reuse storage site cannot meet the proposed Phase II capacity of the City's WWTF (8.00 MGD). Alternatively, to upsize the main to a 24-inch main, the City can acquire and construct an alternative or second effluent disposal and storage site. There is not an estimated cost for this project since the full scope of the project is unknown.

Figure 32: Overall Reuse Capital Improvement Map

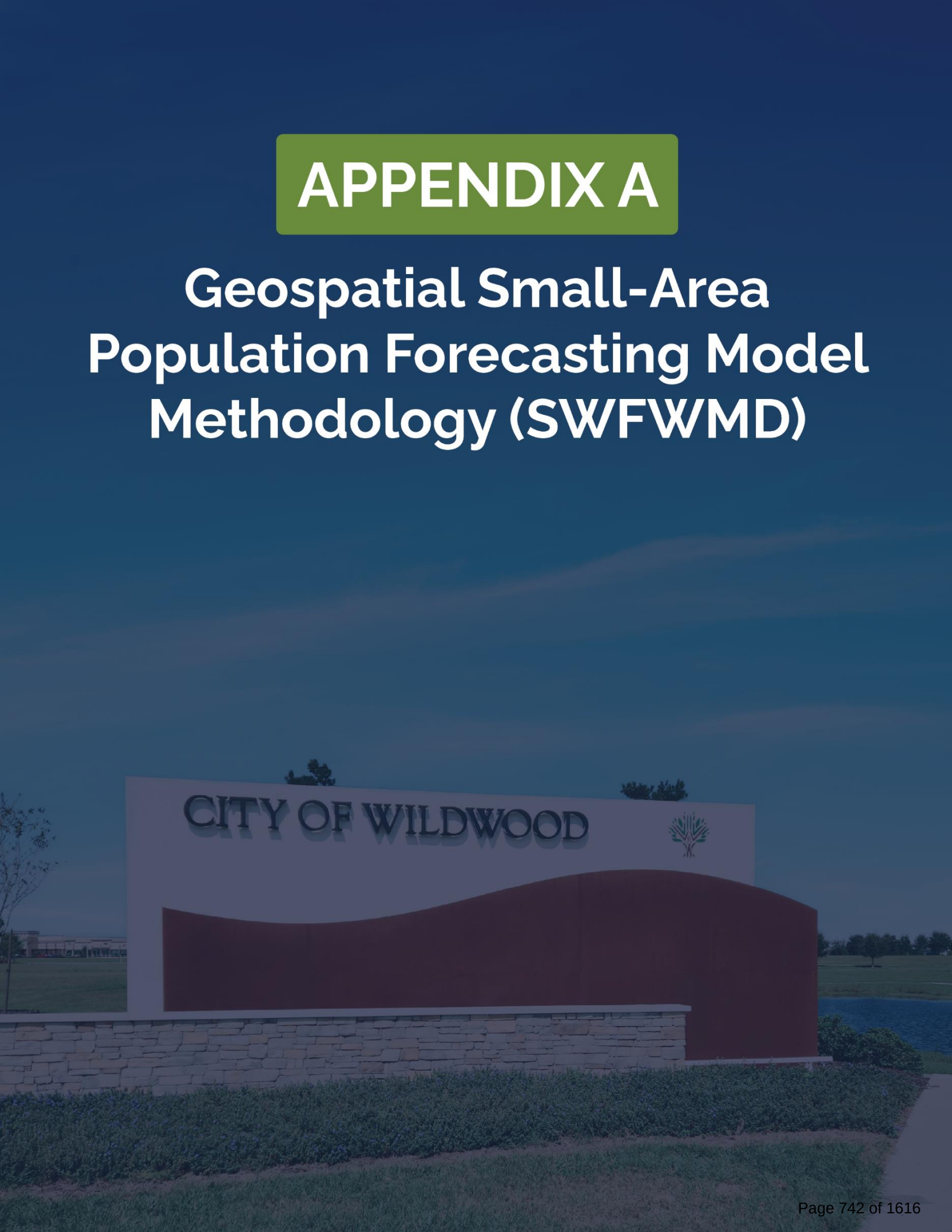


APPENDICES



APPENDIX A

Geospatial Small-Area Population Forecasting Model Methodology (SWFWMD)



The Geospatial Small-Area Population Forecasting Model Methodology Used by the Southwest Florida Water Management District

Prepared For

Southwest Florida Water Management District
Agreement 19CN0002026
TWA 23TW0004186

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February 7, 2024

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INTRODUCTION

This document describes the methodologies used to develop small-area population projections for the Southwest Florida Water Management District (SWFWMD) in support of water supply planning and water use permitting. The county-level projections available from the Bureau of Economic and Business Research (BEBR) at the University of Florida are the official projections for the State of Florida and the generally accepted standard throughout the state, but accurately projecting future water demand for water utility potable service areas requires more precision than is offered by county-level projections. In addition, the Census Population Cohort projected by BEBR does not include important non-resident populations, such as seasonal, tourist, or commuter populations. For these reasons, SWFWMD contracted GIS Associates, Inc. (GISA) through Water & Air Research to provide small-area population projections for the 17 SWFWMD counties. (Note that there are only 16 counties located partly or entirely within SWFWMD, but forecasts were also made for two utility service areas in the northern part of Lee County that have water use permits with SWFWMD.) This was achieved by implementing GIS Associates' Geospatial Small-Area Population Forecasting Model ("Population Model"), which makes Census Population Cohort projections at the 2020 Census Tract level, and spatially distributes those projections to individual land parcels to facilitate aggregation by utility or other boundaries. In addition, GISA applied SWFWMD methods for projecting non-resident population to the Census Population Cohort projections derived from the Population Model. This document describes these projection methodologies and their use to project future populations. Ultimately, these small-area population projections are used as a basis for making future water demand projections for SWFWMD.

GEOSPATIAL SMALL-AREA POPULATION FORECASTING MODEL OVERVIEW

The geographic information system (GIS) based Population Model projected future Census Population Cohort population growth at the parcel level and controlled those projections to BEBR's latest county-level forecasts. Figure 1 on the following page is a process flow chart of the population projection and distribution methodology. First, County Build-out Submodels were developed using property parcel data for each of the 17 counties that are entirely or partly within SWFWMD. The purpose of the County Build-out Submodel is to develop maximum residential development potential at the parcel level. A detailed description of this model is included in the chapter titled "County Build-out Submodels". Current resident population was estimated and then the maximum population to which a county can grow was projected at the parcel level by the County Build-out Submodels. Areas which cannot physically or lawfully allow residential development (built-out areas, water bodies, public lands, commercial areas, etc.) were excluded from the County Build-out Submodel. Conversely, the model identified areas where growth is more likely to occur based on proximity to features that drive growth (e.g., roads). This is discussed in detail in chapter titled "Growth Drivers Submodel".

Next, population growth was modeled between the launch year population (2022) and the build-out population. Projections are based on a combination of historic growth trends and spatial constraints and influences, which both restrict and direct growth. This process is described in detail in the section titled "Geospatial Small-Area Population Estimation and Forecasting Model". Population growth calculations were controlled to BEBR's 2022 medium projections (BEBR's latest population forecasts for the years 2025 through 2050), which were available in five-year increments. The source of this data is the BEBR publication *Projections of Florida Population by County, 2025-2050, with Estimates for 2022.* (Florida Population Studies, Volume 56, Bulletin 195, April 2023).

The launch year for the version of the model described in this document was 2022, which was calibrated to the 2022 BEBR population estimates. Projections were made for April 1, 2025 to April 1, 2050 in five-year increments.

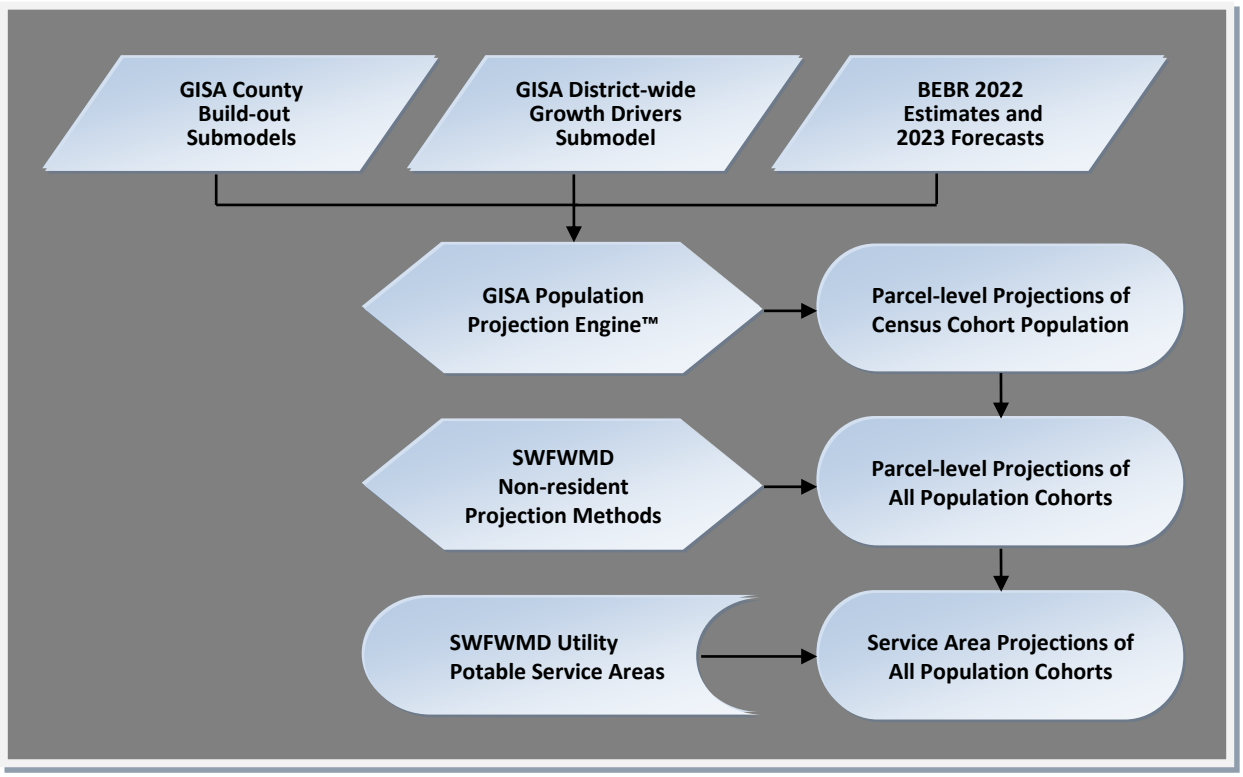


Figure 1. SWFWMD population projection process flowchart

Finally, the parcel level projections were summarized by water utility service area boundaries that SWFWMD maintains in a spatial (GIS) database. These summaries were exported to a Microsoft Excel spreadsheet with separate tabs for each county to facilitate the review and distribution of the results.

COUNTY BUILD-OUT SUBMODELS

The County Build-out Submodels were composed of multiple GIS data elements. Each model was based on each county property appraiser's GIS parcel database, including the associated tax roll information. Other GIS data elements included the 2020 Decennial Census data, local government future land use data, planned developments, SWFWMD wate/wetland data, and BEBR's official population estimates.

Parcels

GIS parcel layers and county tax roll databases were obtained from each county property appraiser's office. Parcel geometry was checked for irregular topology, particularly overlaps and fragments. Parcel tables were checked for errors, particularly non-unique parcel identifiers and missing values. Required tax roll table fields include actual year built, Florida Department of Revenue (DOR) land use code, and the total number of existing residential units for each parcel.

In cases where attribute data was missing or appeared to be in error, other data were used. For example, data reported by the State of Florida, military bases, and colleges and universities were used to identify the number of residential units (and population) in large group quarters facilities. In cases where mobile home parks without individually platted parcels did not appear to have the correct number of units within the property appraiser data, the number of residential units were estimated using other data from the county, information on the mobile home park websites, or even hand counts from recent imagery.

2020 US Census Data

Some of the essential data to translate parcels to population in the County Build-out Submodels were derived from the 2020 Decennial Census. Average housing unit occupancy and population per household by census tract were calculated for each census tract and then transferred to each county's parcel data. When combined with parcel-level housing units from property appraiser data, these were used to estimate 2022 population in households at the parcel level. When added to our estimates of population in group quarters (estimated using property appraiser bed counts, 2022 BEBR surveys of large group quarters, and 2020 Census counts), the resulting estimates were then controlled at county and place levels to the 2022 BEBR population estimates.

Wetlands

Wetlands (including surface water) are an important consideration when modeling a county's build-out. SWFWMD maintains a detailed wetlands GIS data layer. This data layer contains the location and spatial extent of the wetlands, as well as the specific types of wetlands as defined by SWFWMD land cover classifications. Certain wetland types were identified that would be difficult and expensive to convert to residential development. These areas were identified in the

SWFWMD wetland database and applied to the appropriate County Build-out Submodel. The wetland types are listed in Table 1.

Table 1. Wetland land cover codes and descriptions used in the County Build-out Submodels

Code	Description	Code	Description
5100	Streams and waterways	5600	Slough waters
5200	Lakes	6110	Wetland Hardwood Forests
5250	Marshy Lakes	6120	Mangrove swamp
5300	Reservoirs	6170	Mixed wetland hardwoods
5400	Bays and estuaries	6180	Cabbage palm wetland
6181	Cabbage palm hammock	6410	Freshwater marshes
6200	Wetland Coniferous Forest	6420	Saltwater marshes
6210	Cypress	6430	Wet prairies
6220	Pond pine	6440	Emergent aquatic vegetation
6250	Hydric pine flatwoods	6460	Mixed scrub-shrub wetland
6300	Wetland Forested Mixed	6500	Non-vegetated Wetland

Wetland GIS data (using the above classifications) were overlaid with a county's land parcels. The area of wetlands within parcels were calculated and recorded as the water area for that parcel. If the area covered by water within a parcel exceeded ½ acre, it was subtracted from the total area of the parcel feature to determine the relative developable area in that parcel. There were exceptions to this rule. In some cases, parcels with little or no developable area after wetlands were removed were already developed, thus the estimated unit total was not reduced by the wetland acreage. In other cases, inaccurate wetland delineations were overridden, such as when a newly platted residential parcel was shown to be covered by a wetland (Figure 2). In such a case, the parcel was considered developable by the submodel.

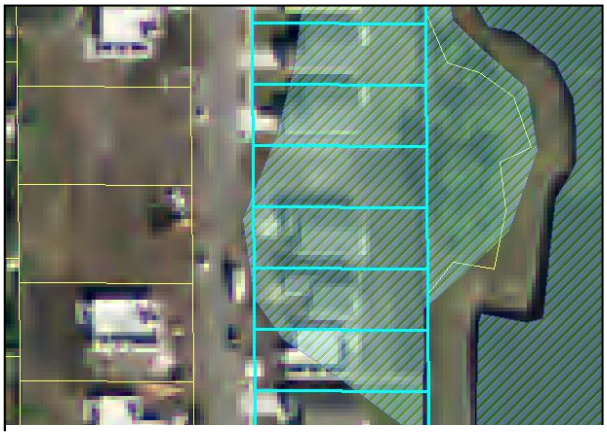


Figure 2. Example of inconsistencies between wetland delineation and residential parcels (outlined here in light blue)

Future Land Use

Future land use maps are essential elements of the County Build-out Submodels. These maps help guide where and at what density residential development could occur within a county. Future land use maps are a part of the local government comprehensive plans required for all local governments by Chapter 163, Part II, Florida Statutes. They are typically developed by the local government's planning department, or, in some cases, a regional planning council on behalf of the local government. The planning horizons for these are a minimum of 10 years, and they often extend for 15 to 20 years into the future. Although these future land use maps may be revised

over time, they reflect the most up-to-date plan for future growth areas and densities. The latest available future land use maps were obtained and applied to the County Build-out Submodels.

Each land parcel in the County Build-out Submodels received a future land use designation. In places where parcels overlapped multiple future land use areas, the parcel was assigned the future land use class within which its centroid fell. Build-out population was modeled only for future land use classes that allow residential development, as shown in the yellow parcels in Figure 3. These include all residential uses, mixed use, and agricultural use, and in some cases institutional, commercial, and other uses, depending on the use type and jurisdiction's comprehensive plan.

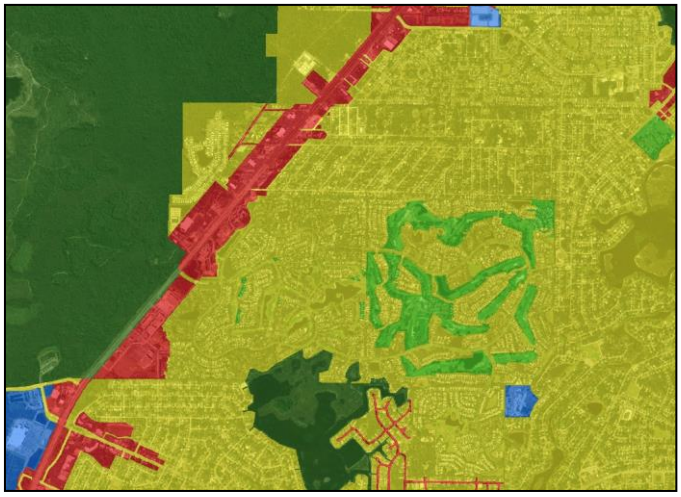


Figure 3. Future land use helps identify future residential areas (here shaded in yellow)

Development typically does not occur at the maximum densities allowed for each future land use category, so recent development densities were considered a better proxy for future densities than the maximum allowable density. For this reason, the County Build-out Submodels reflect the median density of recent development for each future land use category in the specific incorporated place. For example, if a city's medium density residential future land use designation allows up to 8 housing units per acre, but the median density of units built over the last 10 years is 5.7 housing units per acre, the submodel assumed future densities at 5.7 housing units per acre for that future land use designation in that city.

Typically, the median density calculation was limited to the last 10 years of development within each unique combination of land use and jurisdiction, as more recent development was deemed a better proxy for future densities than older development. In some cases, limiting the historical data to the last 10 years resulted in too small a sample, so either county average values were used (extended beyond the jurisdiction) or a longer base period was used (not limited to the last 10 years). In those cases, the determination of which sample to use depended upon the heterogeneity of the category across county jurisdictions, the heterogeneity of historical densities prior to the last 10 years, and our professional judgement. In some cases, where very few or no historical examples of residential parcels fell within a future land use category, a density from a similar future land use within the county (with sufficient historical samples) was used as a surrogate. Also, vacant or open parcels less than one acre in size were typically considered single family residential, with one housing unit as the maximum allowable density.

Administrative Boundaries

Each parcel in the County Build-out Submodels was also attributed with administrative boundaries, including:

1. County and city name (or unincorporated area) from the most recent (2022) boundaries from the U.S. Census Bureau,
2. Water management district boundaries (from SWFWMD's GIS data), and
3. SWFWMD water utility service area id.

These attributes enable queries and summaries of the county submodels by any combination of these boundaries.

Build-out Density Calculation

Using GIS overlay techniques, attributes of the census, political boundary, wetlands, future land use, and planned development data were attributed to each county's parcel map to develop the County Build-out Submodels. These submodels forecast the maximum residential population by parcel at build-out. Figure 4 depicts an example in southern Pinellas County, showing lower densities at build-out in yellow and higher ones in brown. Non-residential uses are not shaded.

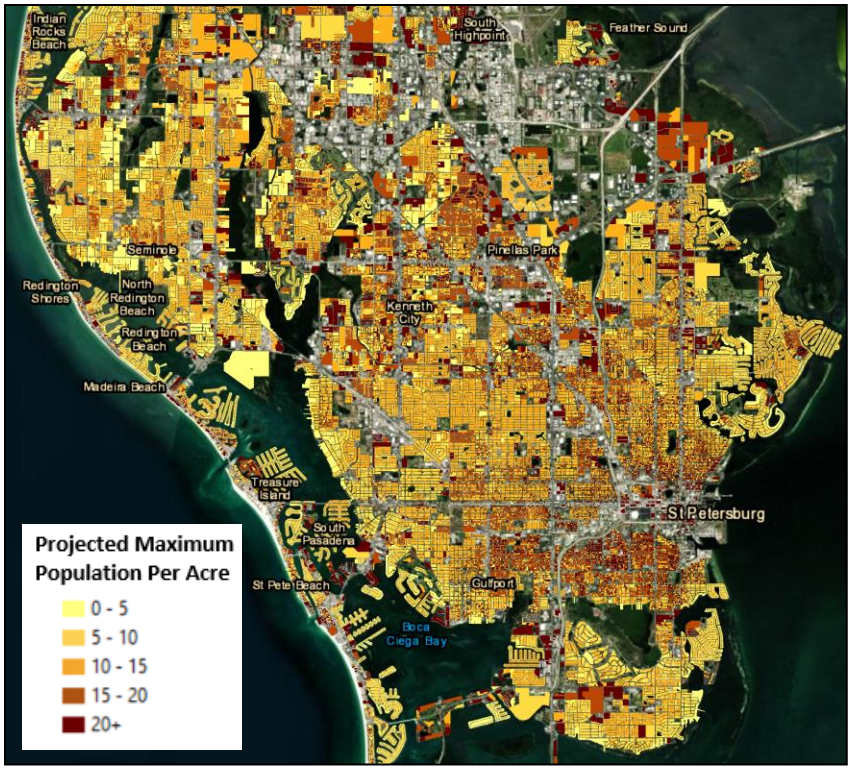


Figure 4. Inset map of Pinellas County Build-out Density Submodel shaded by maximum population per acre

To estimate and project population from parcel-level housing units, the 2020 Census average household size was multiplied by the average housing unit occupancy rate at the tract level. In some cases, small group quarters population was included in the calculation by dividing the 2020 tract popualtion by its housing units. Also, if there were tracts with 2020 census values for persons per housing unit that were unusually high or low and based on a small number of homes (or no homes), the county's average persons per housing unit was typically used for projected growth in that tract. For group quarters facilities, population was based on annual BEBR surveys and bedroom counts, not average household size.

Residential Development Plans

The final step in the construction of the County Build-out Submodels was adjusting build-out densities within residential developments to correspond with approved development plans wherever their boundaries are available in a GIS format. Although developments may not develop as originally planned by the developer, the total number of units planned (regardless of timing) is likely to be a better forecast of the units at build-out than one based on the median historic densities. Therefore, in each of the County Build-out Submodels, parcels with centroids within a planned development were attributed with the name of the development. (Sometimes this included non-residential parcels.) The build-out densities for those parcels were adjusted so that the total housing units at build-out for the development was consistent with the development plan, and the build-out population for that area was recalculated.

GROWTH DRIVERS SUBMODEL

The Growth Drivers Submodel is a district-wide, raster (cell-based) GIS model representing development potential. The submodel is a continuous surface of 10-meter cells containing values of 0-100, with '100' having the highest development potential and '0' having the lowest development potential. It influences the Population Model by factoring in the attraction of certain spatial features, or growth drivers on development. These drivers were identified from transportation and land use/land cover data and included the following:

1. Proximity to roads and interchanges (with each road type modeled separately)
2. Proximity to developments
3. Proximity to existing commercial parcels (commercial parcels with land uses deemed an attractor to residential growth)
4. Proximity to existing residential parcels
5. Proximity to coastal and inland waters

Data used for generating the Growth Drivers Submodel are listed in Table 3 below.

Table 2. GIS datasets used in the Growth Drivers Submodel

Growth Driver	Data Source
Roads and Limited Access Road Interchanges	Florida Department of Transportation (FDOT) Major Roads: Functional Classification (FUNCLASS), and FDOT Limited Access Road Interchanges
Developments	Multiple sources, including Regional Planning Councils, local governments, SWFWMD, GIS Associates, and BEBR
Selected Existing Commercial Land Uses	County Property Appraiser Parcel Data
Existing Residential Land Uses	County Property Appraiser Parcel Data
Coastal and Inland Waters	SWFWMD Land Cover Data, and Florida Geographic Data Library (FGDL) Coastline Data

Each of the drivers listed in Table 3 were used as independent variables in a logistic regression equation. Dependent variables included existing residential units built during or after 1995 as the measure of "presence", and large undeveloped vacant parcels outside of large, planned developments were used to measure "absence". The resulting equation could then be applied back to each of the regional grids resulting in a single regional grid with values 0 through 100, for which a value of 0 represented the lowest relative likelihood of development, and a value of 100 represented the highest relative likelihood of development.

Some adjustments were made to the default driver values. First, any parcels with vacant land uses that were developed during or after the launch year (2022) were assigned a driver value of 100 to ensure they would be built by 2025. Second, the driver values for any vacant platted residential parcels within a development were averaged with a higher value to boost their development potential. (This value was typically 99 but sometimes slightly varied by county.) Third, the driver values for vacant non-platted parcels within developments were averaged with a higher value to boost their development potential. (This value was typically 90 but sometimes slightly varied by county.)

This seamless, "regional" submodel covers all the counties that are all or partially within the Southwest Florida Water Management District, plus a one-county buffer to account for growth drivers outside the District that could influence growth within the District. It was then reclassified to stretch its mean driver values between 0 and 100, to better differentiate the relative probability of development.

Figure 5 depicts the Growth Drivers Submodel for SWFWMD, with high development potential in red, moderate development potential in yellow and low development potential in blue. This submodel was then used by the Population Model to rank undeveloped parcels based on their development potential, which is explained in the "Growth Calculation Methodology" section. Note that growth may still occur in areas assigned relatively low values from this model based on the historical growth trends. This submodel was used by the Model to rank undeveloped parcels based on their development potential, which is explained in the Growth Calculation Methodology section.

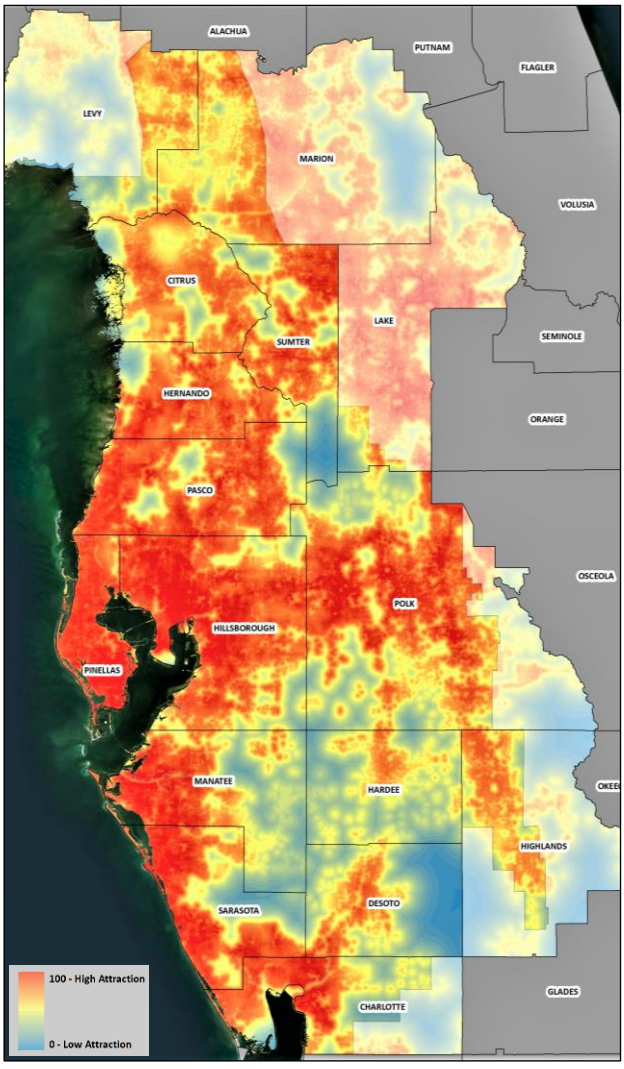


Figure 5. Growth Drivers Submodel

GEOSPATIAL SMALL-AREA POPULATION FORECASTING MODEL

GISA's Geospatial Small-Area Population Forecasting Model (Population Model) integrates the County Build-out Submodels and the Growth Drivers Submodel with the GISA Population Projection Engine, which makes the projection calculations using a combination of those submodels, historic growth trends, and growth controls from BEBR's county-level forecasts.

Historic Growth Trends

The historic growth trends were based on historic population counts from the 1990, 2000, 2010, and 2020 censuses. For 1990, 2000, and 2010, census block population counts were summarized at the 2020 tract level and combined with the 2020 tract population counts. These counts were used to produce twelve tract level projections using five different demographic extrapolation methods using multiple base periods. The length of the base was adjusted to roughly match the length of the projection horizon. For example, a 22-year historical period (2000-2022) was used to establish the growth trends for a 23-year projection horizon (2022-2045). The number of trend calculations varied based on the length of the base period used, and the highest and lowest calculations were discarded to moderate the effects of extreme projections. The remaining projections were then averaged.

The five demographic extrapolation methods for projecting population utilized by the model were Linear, Exponential, Constant Share, Share-of-Growth and Shift-Share. The Linear and Exponential techniques employ a bottom-up approach, extrapolating the historic growth trends of each census tract with no consideration for the county's overall growth. The Constant Share, Share-of-Growth and Shift-Share techniques employ a ratio allocation, or top-down approach, allocating a portion of the total projected county population or growth to each census tract based on that census tract's percentage of county population or growth over the historical period. Each of the five methods is a good predictor of growth in different situations and growth patterns, so using a combination of all five and discarding the highest and lowest results was the best way to avoid the largest possible errors resulting from the least appropriate techniques for each census tract within the 17 counties. This approach is similar to BEBR's county population forecast methods, but the base periods and the number of projections are somewhat different because annual estimates are not available at the tract level.

The calculations associated with the five statistical methods are described on the following pages. The launch year was 2022, and the projections were made for 2025, 2030, 2035, 2040, 2045, and 2050. Note that for the 2022-2025 iteration, the typical five-year growth was reduced to reflect only a three-year change.

The calculations used are provided on the following pages.

1. **Linear Projection Method:** The Linear Projection Method assumes that the average annual change in the number of persons for each census tract will be the same as during the base period (Rayer, 2023). Four linear growth rate calculations were made, 1990 to 2022, 2000 through 2022, 2010 through 2022, and 2020 through 2022. In the Linear methods (LIN), population growth was calculated using the following formulas:

$$LIN32 = \frac{(TractPop2022 - TractPop1990)}{32} * 5$$

$$LIN22 = \frac{(TractPop2022 - TractPop2000)}{22} * 5$$

$$LIN12 = \frac{(TractPop2022 - TractPop2010)}{12} * 5$$

$$LIN2 = \frac{(TractPop2022 - TractPop2020)}{2} * 5$$

2. **Exponential Projection Method:** The Exponential Projection Method assumes that population will continue to change at the same percentage rate as it did during the base period (Rayer, 2023). One calculation was made from 2010 through 2022. In the Exponential method (EXP), population growth was calculated using the following formula:

$$EXP12 = (TractPop2022 * e^{5r}) - TractPop2022$$

$$Where, r = \frac{ln\frac{TractPop2022}{TractPop2010}}{12}$$

3. **Constant Share Projection Method:** The Constant Share Projection Method assumes that each census tract's percentage of the county's total population (CntyPop) will be the same as over the base year (Rayer, 2023). One calculation was made using the 2022 share of county population. In the Constant Share method (CS), population growth was calculated using the following formula (using 2025–2030 as an example):

$$CS = \frac{TractPop2022}{CntyPop2022} * (CntyPop2030 - CntyPop2025)$$

4. **Share-of-Growth Projection Method**: The Share-of-Growth Projection Method assumes that each census tract's percentage of the county's total growth will be the same as over the base period (Rayer, 2023). However, if population change is negative at the tract level and positive at the county level (or vice versa), higher county-level projections would result in larger declines in tract projections. This is counterintuitive, so the "Plus-minus" variant of the Share-of-Growth Method was used (Rayer, 2015). Three Share-of-Growth (SOG) calculations were made, 1990 through 2022 2000 through 2022, and 2010 through 2022. Population growth was calculated using the following formulas if the changes in growth over the base period for the tract and county were both positive or both negative (using 2025–2030 as an example):

$$SOG32 = \frac{(TractPop2022 - TractPop1990)}{(CntyPop2022 - CntyPop1990)} * (CntyPop2030 - CntyPop2025)$$

$$SOG22 = \frac{(TractPop2022 - TractPop2000)}{(CntyPop2022 - CntyPop2000)} * (CntyPop2030 - CntyPop2025)$$

$$SOG12 = \frac{(TractPop2022 - TractPop2010)}{(CntyPop2022 - CntyPop2010)} * (CntyPop2030 - CntyPop2025)$$

If the changes in growth over the base period were negative at the tract level and positive at the county level or vice versa, the population growth was calculated using the following formulas (using 2025–2030 as an example):

$$SOG = \left[\frac{SOG}{CntyPop2030 - CntyPop2025}/5\right] * \left[\begin{array}{l}\left[CntySum\left[\frac{ABS(SOG)}{CntyPop2030 - CntyPop2025}\right]\right] \\ +\left[1 - CntySum\left[\frac{SOG}{CntyPop2030 - CntyPop2025}\right]\right]\end{array}\right] \div \left[CntySum\left[\frac{ABS(SOG)}{CntyPop2030 - CntyPop2025}\right]\right] * (CntyPop2030 - CntyPop2025)$$

Where:

1) $SOG32 = \frac{(TractPop2022 - TractPop1990)}{(CntyPop2022 - CntyPop1990)} * (CntyPop2030 - CntyPop2025)$
2) $SOG22 = \frac{(TractPop2022 - TractPop2000)}{(CntyPop2022 - CntyPop2000)} * (CntyPop2030 - CntyPop2025)$
3) $SOG12 = \frac{(TractPop2022 - TractPop2010)}{(CntyPop2022 - CntyPop2010)} * (CntyPop2030 - CntyPop2025)$
4) $CntySum = County\ sum\ of\ the\ tract\ projections$
5) $ABS = Absolute\ Value$

5. **Shift-Share Projection Method:** The Shift-Share Projection Method assumes that each census tract's percentage of the county's population will change by the same annual amount as over the base period (Rayer, 2023). Three Shift-Share calculations were made, 1990 through 2022, 2000 through 2022, and 2010 through 2022. In the three Shift-Share Projection Method (SSH) calculations, population growth was calculated using the following formulas (using the five years from 2025–2030 as an example):

$$SSH32 = \left[\frac{TractPop2022}{CntyPop2022} + \left[\frac{\left(\frac{TractPop2022}{CntyPop2022} - \frac{TractPop1990}{CntyPop1990}\right)}{32} * 5\right]\right] * \begin{pmatrix} CntyPop2030 \\ -CntyPop2025 \end{pmatrix}$$

$$SSH22 = \left[\frac{TractPop2022}{CntyPop2022} + \left[\frac{\left(\frac{TractPop2022}{CntyPop2022} - \frac{TractPop2000}{CntyPop2000}\right)}{22} * 5\right]\right] * \begin{pmatrix} CntyPop2030 \\ -CntyPop2025 \end{pmatrix}$$

$$SSH12 = \left[\frac{TractPop2022}{CntyPop2022} + \left[\frac{\left(\frac{TractPop2022}{CntyPop2022} - \frac{TractPop2010}{CntyPop2010}\right)}{12} * 5\right]\right] * \begin{pmatrix} CntyPop2030 \\ -CntyPop2025 \end{pmatrix}$$

6. **Average of the Projection Extrapolations:** Because the number of trend calculations varied based on the length of the base period used, different combinations of projections were averaged for different forecast years.

    a. For the 2025, 2030, and 2035 projections, six calculations with base periods up to 12 years were used. The lowest and highest of the six were excluded to moderate the most extreme results of the census tracts throughout the 17 counties, and the remaining four were averaged.

    b. For the 2040 and 2045 projections, nine calculations with base periods up to 22 years were used. The two lowest and two highest of the nine were excluded, and the remaining five were averaged.

    c. For the 2050 projections, twelve calculations with base periods up to 32 years were used. The three lowest and three highest of the twelve were excluded, and the remaining six were averaged.

Growth Calculation Methodology

The Population Projection Model then automated growth calculations using the historic growth trends and queries of the County Build-out Submodels and the Growth Drivers Submodel. The methodology for calculating growth for each projection increment included the following steps:

1. Apply the tract-level projected growth to parcels within each tract, distributing growth to parcels with the highest driver values first.
2. Check growth projections against build-out population, and reduce any projections exceeding build-out to equal the build-out numbers.
3. After projecting growth for all census tracts within a particular county, summarize the resulting growth and compare it against countywide BEBR target growth. For each model iteration, this step led to one of two scenarios:
    a. If the Small-Area Population Forecasting Model's projections exceeded the BEBR target growth, reduce the projected growth for parcels with the lowest growth driver values until the county growth equaled the target.
    b. If the Small-Area Population projection model's projections were less than the BEBR target, develop parcels with the highest growth driver values and available capacity until the BEBR target growth is reached.

Counties that are partially within another water management district were processed in their entirety and controlled to the BEBR-based target growth.

NON-RESIDENT POPULATION PROJECTIONS

In addition to the Census Population Cohort projections generated by the Population Model, projections of non-resident population were also made. Those projections include peak seasonal population, functionalized seasonal population, tourist population and net commuter population. The methods were originally developed by SWFWMD and are now implemented by GIS Associates for projecting those population types are described in this section.

Peak Seasonal Population Cohort

Seasonal population was estimated by SWFWMD using a combination of 2010 census data and emergency room admissions data, both at the Zip Code Tabulation Area (ZCTA) level. Average 2009 - 2011 emergency room admissions data was utilized for the 45-74 age cohort, which is typical of seasonal population. A "Seasonal Resident Ratio" was calculated by ZCTA to estimate the proportion of peak (including seasonal) to resident population.

The Seasonal Resident Ratio was derived using the following steps:

1. Subtract the sum of the 2009 - 2011 third quarter (July, August, and September) hospital admissions from the sum of the 2009 - 2011 first quarter (January, February, and March) admissions.
2. Calculate the average annual difference between the first quarter and third quarter by dividing above result by three.
3. Calculate a seasonal population estimate for each ZCTA by dividing the above difference by the probability of the population in the 45-74 age cohort being admitted to the emergency room (approximately 2.23%).
4. Calculate the Seasonal Resident Ratio by adding the seasonal population to the resident population and dividing that total by the resident population.

The number of seasonal households was then estimated using the following steps:

1. Multiply the resident population in households (from the 2010 census) by the Seasonal Resident Ratio.
2. Subtract the resident population in households from above result.
3. Divide above result by the lesser of SWFWMD's seasonal persons per household (1.95) or the census resident persons per household for each ZCTA.

The ratio of seasonal to total households was then calculated by dividing seasonal households by the sum of seasonal and resident households. Seasonal peak population was then calculated using the following steps:

1. Subtract vacant housing units for reasons other than seasonal, recreational, or occasional use from total housing units (from the 2010 census).
2. Multiply above result times the seasonal to total household ratio.
3. Multiply above result times the lesser of SWFWMD's seasonal persons per household (1.95) or the census resident persons per household for each ZCTA.

Because the Census Population Cohort contains some non-residents who complete the census forms in Florida but reside for part of the year elsewhere, it was also necessary to calculate resident population. It was calculated using the following steps:

1. Subtract vacant housing units for reasons other than seasonal, recreational, or occasional use from total housing units (from the 2010 census).
2. Multiply above result times one minus the seasonal to total household ratio.
3. Multiply above result times the census resident persons per household for each ZCTA.

The ratio of total unadjusted peak population to total census population was then calculated by dividing the sum of the seasonal peak population, the resident population in households, and the group quarters population (from the 2010 census) by the total census population. This ratio was then applied by GISA to the future projections of the Census Population Cohort from the Population Model to derive parcel level peak population projections (which also includes residents).

Functionalized Seasonal Population Cohort

The functional population is the peak seasonal population reduced to account for the percentage of the year seasonal population typically reside elsewhere, and the absence of indoor water use during that time. It was calculated using the following generalized steps:

1. Utilize the following metrics previously derived by SWFWMD data and surveys:
    a. The estimated portion of the year seasonal residents spend in Florida, which varies from beach destination counties (44.2%) to non-beach destination counties (56.7%).
    b. The seasonal resident adjustment based on average per capita water use.
        i. The five-year District-wide average per capita use is 132 gallons per person per day, and 69.3 gallons is estimated indoor use and 62.7 gallons for outdoor use.
        ii. The adjustment calculation for "beach destination" counties (Charlotte, Manatee, Pinellas and Sarasota) is:

            ((0.442 x 132 gpd) + ((1 – 0.442) x 62.7 gpd)) / 132 gpd = 0.707
        iii. The adjustment calculation for "non-beach destination counties" is:

            ((0.567 x 132 gpd) + ((1 – 0.567) x 62.7 gpd)) / 132 gpd = 0.773
2. Calculate "functionalized" seasonal population by multiplying the seasonal peak population by the appropriate seasonal resident adjustment factor for the particular county (0.707 or 0.773).

The ratio of total functional to total census population was then calculated by dividing the sum of the functionalized seasonal population, the resident population, and the group quarters population by the total census population. This ratio was then applied by GISA to the future projections of the Census Population Cohort from the Population Model to derive parcel level functionalized seasonal population projections (which also includes residents).

Tourist Population Cohort

The tourist population projections were based on 27 years (1996-2022) of county-level lodging room data from the Florida Department of Business and Professional Regulation (DBPR). The SWFWMD methodology for projecting future tourist rooms by county utilizes two different methods and averages the two results for each county.

The first method projects the increase in rooms by county by extrapolating the linear trend using the least squares method derived from the last 27 years of county total room estimates.

A second method projects future rooms based on projections of employment in the Accommodation and Food Services industries (from data from Woods and Poole). This is also an extrapolation of a linear trend using the least squares method, but rooms by county are projected as a function of a county's employment projections rather than time.

SWFWMD staff previously tested both methods by projecting values for the years 2007-2013 using room estimates from 1996-2006. Based on the differences between actual room estimates and projected values for 2007-2013, neither method was clearly superior to the other. For that reason, SWFWMD staff opted to use both methods. The results of both methods were averaged, but only after adjusting for the average 2007-2013 error for each projection in each county.

These projections of future rooms were then converted to "functionalized" tourist population by applying various county-level average unit occupancy and party size ratios derived from SWFWMD surveys. SWFWMD also updated the values associated with locations identified as short-term rentals for this projection set based on SWFWMD research.

These projections of tourist population were joined to the existing lodging facility locations, which were geocoded by SWFWMD. No attempt was made to forecast new locations of lodging facilities, as:

1. The precise locations would be highly speculative.
2. It was assumed that lodging facilities often are built in the general vicinity of existing lodging facilities, or at least in close enough proximity to be within the same utility service area.

Net Commuter Population Cohort

The net commuter population projections were based on net commuter data provided by SWFWMD. A census tract ratio was developed of net commuters to total census population. This ratio was then applied to the future projections of the Census Population Cohort from the Population Model to derive parcel level projections for net commuter population. That population was then "functionalized" with the following ratios:

1. 8 / 24 (typical working hours per day)
2. 5 / 7 (typical working days per week)

By applying both of these ratios to the net commuter population, the resulting functional net commuter population is 23.8% of the actual net commuter population. This functional number better reflects the water use that is expected for net commuters.

Note that the net commuter population projection summaries by utility service area were often negative, as many utilities serve "bedroom communities" and other areas where more residents work outside the utility service area than the population (residents and non-residents) employed within it. Only positive net commuter populations were included in a utility's total functional population.

UTILITY SERVICE AREA POPULATION SUMMARIES

The parcel level population projections for all population cohorts discussed above were then summarized by water utility service area boundaries for all utilities mapped by SWFWMD, which typically are those that average more than 0.1 million gallons per day (mgd) of total water use. These service areas, maintained by SWFWMD, were overlaid with each county's parcel level results, and each parcel within a service area was assigned a unique identifier for that service area. The projected population was then summarized by that identifier and joined to SWFWMD's public service area boundary database to produce tabular and spatial output. Note that these service areas change over time, so for any future use of these deliverables, it is important to match this projection set only with the service areas included in the GIS deliverables for this project.

PROJECTION DELIVERABLES

The final population projections were delivered in multiple formats, including:

1. GIS – Esri file geodatabases, with individual feature classes for each county containing parcel level results, and a single feature class districtwide of utility service areas and their population summaries.
2. Tabular – Excel spreadsheet summaries by utility service area

The summaries of population outside of service areas include population with private wells for potable use (considered to be domestic self-supply, or DSS) or small utilities without a service area boundary in SWFWMD's database. Small utilities are generally defined as those utilities permitted for less than 100,000 gallons per day (gpd). However, there are some small utilities in that category that are included here because their service area boundaries are in SWFWMD's database.

Also note that these service area population summaries may include some self-supplied populations (or populations with private wells) that reside within the service areas. The population projections utilized for SWFWMD's planning and permitting may vary from the raw functional population projections developed with the model due to service area boundary changes, self-supplied population, and current population served reported by utility using the required population estimation methodology in Part D of the Water Use Permitting Manual.

The tabular deliverables were parcel summaries at the utility level. Table 3 below includes the service area population projection summaries table for Manatee County as an example.

Table 3. Utility service area population projection summaries table for Manatee County

BEBR / Census Population (Permanent Resident Population)							
Utility Name	**2022**	**2025**	**2030**	**2035**	**2040**	**2045**	**2050**
OUTSIDE SERVICE AREAS	10,970	11,239	11,370	11,379	11,394	12,274	13,424
CITY OF BRADENTON PUBLIC WORKS	56,957	57,372	58,383	59,015	59,869	60,876	62,048
CITY OF PALMETTO PUBLIC WORKS	14,373	14,421	14,684	14,989	15,367	15,646	16,094
MANATEE COUNTY UTILITIES DEPARTMENT	336,599	361,898	398,974	429,029	452,082	470,616	487,345
TOWN OF LONGBOAT KEY	2,758	2,759	2,778	2,778	2,778	2,778	2,778
PALMETTO PARK	22	22	22	22	22	22	22
PINES TRAILER PARK	43	43	43	43	43	43	43
LAZY ACRES	46	46	46	46	46	46	46

Peak Seasonal Population (Includes BEBR / Census)							
Utility Name	**2022**	**2025**	**2030**	**2035**	**2040**	**2045**	**2050**
OUTSIDE SERVICE AREAS	11,271	11,558	11,698	11,707	11,724	12,666	13,898
CITY OF BRADENTON PUBLIC WORKS	60,684	61,119	62,170	62,827	63,714	64,761	65,978
CITY OF PALMETTO PUBLIC WORKS	15,993	16,047	16,340	16,679	17,099	17,409	17,908
MANATEE COUNTY UTILITIES DEPARTMENT	370,070	397,217	436,967	468,963	493,389	512,992	530,720
TOWN OF LONGBOAT KEY	5,881	5,883	5,923	5,923	5,923	5,923	5,923
PALMETTO PARK	25	25	25	25	25	25	25
PINES TRAILER PARK	80	80	80	80	80	80	80
LAZY ACRES	51	51	51	51	51	51	51

Functionalized Seasonal Population (Includes BEBR / Census)							
Utility Name	**2022**	**2025**	**2030**	**2035**	**2040**	**2045**	**2050**
OUTSIDE SERVICE AREAS	11,173	11,457	11,596	11,605	11,621	12,548	13,760
CITY OF BRADENTON PUBLIC WORKS	59,514	59,941	60,973	61,617	62,487	63,514	64,708
CITY OF PALMETTO PUBLIC WORKS	15,546	15,598	15,883	16,213	16,621	16,923	17,407
MANATEE COUNTY UTILITIES DEPARTMENT	362,290	388,942	427,937	459,342	483,348	502,604	520,003
TOWN OF LONGBOAT KEY	5,466	5,468	5,505	5,505	5,505	5,505	5,505
PALMETTO PARK	24	24	24	24	24	24	24
PINES TRAILER PARK	76	76	76	76	76	76	76
LAZY ACRES	50	50	50	50	50	50	50

Functionalized Net Commuter Population							
Utility Name	**2022**	**2025**	**2030**	**2035**	**2040**	**2045**	**2050**
OUTSIDE SERVICE AREAS	9	10	11	12	14	15	17
CITY OF BRADENTON PUBLIC WORKS	2,161	2,292	2,600	2,930	3,283	3,660	4,065
CITY OF PALMETTO PUBLIC WORKS	25	27	30	34	38	43	47
MANATEE COUNTY UTILITIES DEPARTMENT	14,039	14,891	16,890	19,031	21,324	23,779	26,405
TOWN OF LONGBOAT KEY	1,092	1,159	1,314	1,481	1,659	1,850	2,054
PALMETTO PARK	-	-	-	-	-	-	-
PINES TRAILER PARK	-	-	-	-	-	-	-
LAZY ACRES	-	-	-	-	-	-	-

Total Functional Population (Functionalized Seasonal + Tourist + Positive Net Commuter)							
Utility Name	**2022**	**2025**	**2030**	**2035**	**2040**	**2045**	**2050**
OUTSIDE SERVICE AREAS	11,182	11,467	11,607	11,617	11,635	12,563	13,777
CITY OF BRADENTON PUBLIC WORKS	64,629	65,530	66,918	67,887	69,119	70,526	72,101
CITY OF PALMETTO PUBLIC WORKS	15,571	15,625	15,913	16,247	16,659	16,965	17,455
MANATEE COUNTY UTILITIES DEPARTMENT	376,329	403,833	444,826	478,373	504,672	526,383	546,409
TOWN OF LONGBOAT KEY	6,698	6,766	6,960	7,127	7,305	7,496	7,700
PALMETTO PARK	24	24	24	24	24	24	24
PINES TRAILER PARK	77	77	77	77	77	77	77
LAZY ACRES	50	50	50	50	50	50	50

The GIS outputs are useful for quality assuring the results and inputs, for maintaining the projection inputs over time, and for graphically depicting projected patterns of future population growth. Figure 6 below is an example of this data in southern Pinellas County. Projected 2050 population per acre is depicted with lower densities in blue, medium densities in yellow, and high densities in red. Non-residential uses are not shaded.

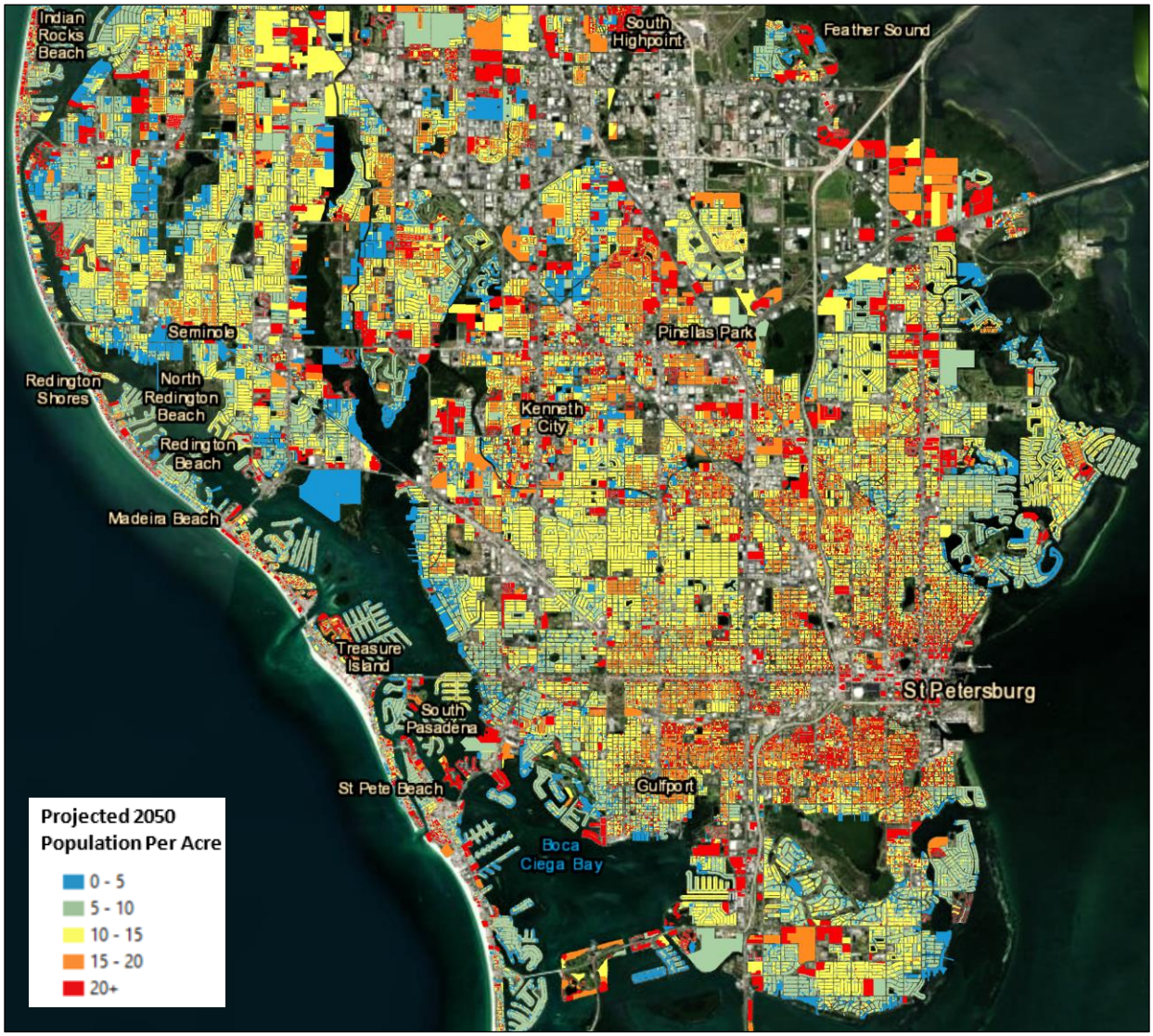


Figure 6. Parcels with projected 2050 population per acre in southern Pinellas County.

CONCLUSIONS

Small area population projections have become increasingly important for planning and permitting, particularly in an area experiencing rapid growth. With ever changing population dynamics and requirements for water supply planning and permitting, it is critical for SWFWMD to be able to accurately forecast population and water demand for small areas, and to be able to update

these projections regularly and in a consistent and cost-effective manner. For these reasons, GIS Associates updated and implemented its Geospatial Small-Area Population Forecasting Model and implemented SWFWMD methods for projecting seasonal, tourist and net commuter populations. The Population Model was updated with current data to project population in an efficient and consistent manner throughout the entire 17-county region. Controlling the projections to BEBR's county-level forecasts provided consistency with other projections made by state and local governments, while at the same time providing the spatial precision needed for water supply planning, water use permitting and groundwater modeling.

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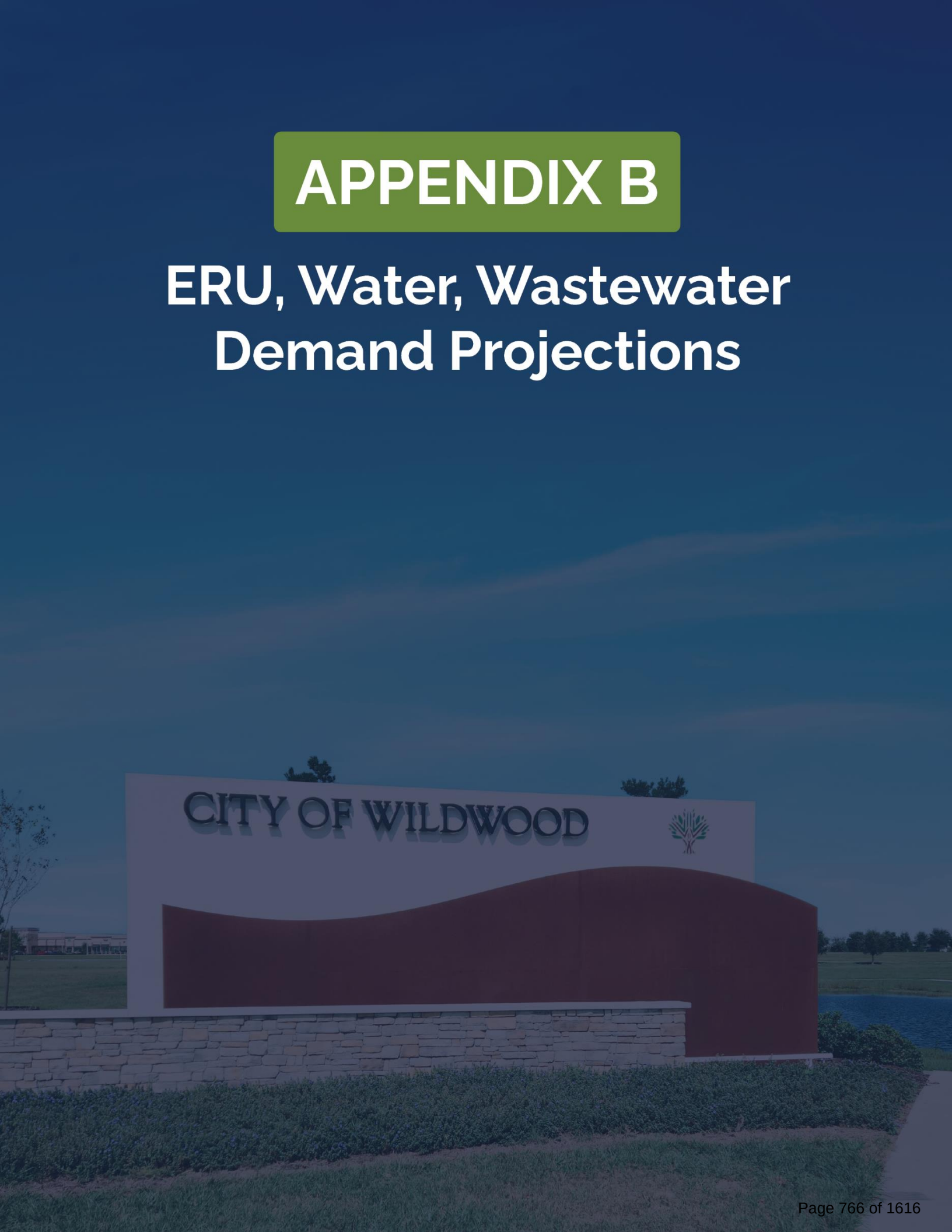
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APPENDIX B

ERU, Water, Wastewater Demand Projections



CITY OF WILDWOOD
UTILITY MASTER PLAN
ERU, WATER, WASTEWATER DEMAND PROJECTIONS

	AREA	2024				2025				2030				2035				2040				Build Out (2050)			
		Population	ERUs	Water (GPD)	Wastewater (GPD)	Population	ERUs	Water (GPD)	Wastewater (GPD)	Population	ERUs	Water (GPD)	Wastewater (GPD)	Population	ERUs	Water (GPD)	Wastewater (GPD)	Population	ERUs	Water (GPD)	Wastewater (GPD)	Population	ERUs	Water (GPD)	Wastewater (GPD)
EXISTING SERVICE AREA	**Existing Served Area based on Billing Data**	22,328	8,688	2,606,439	1,695,247	22,428	8,727	2,618,039	1,702,791	22,931	8,923	2,676,817	1,741,021	23,446	9,123	2,736,915	1,780,109	23,973	9,328	2,798,400	1,820,100	25,061	9,752	2,925,600	1,902,831
	Coleman Prison based on Billing Data	6,797	2,266	679,671	509,753	6,827	2,276	682,696	512,022	6,980	2,327	698,024	523,518	7,137	2,379	713,695	535,271	7,297	2,433	729,718	547,289	7,500	2,500	750,000	562,500
	Subtotal	**29,125**	**10,954**	**3,286,110**	**2,205,000**	**29,255**	**11,002**	**3,300,735**	**2,214,813**	**29,912**	**11,249**	**3,374,841**	**2,264,539**	**30,583**	**11,502**	**3,450,610**	**2,315,381**	**31,270**	**11,761**	**3,528,118**	**2,367,388**	**32,561**	**12,252**	**3,675,600**	**2,465,331**
INFILL AREA	Infill from Existing Water Main	-	-	-	-	2,658	1,034	310,245	258,538	3,902	1,518	455,484	379,570	5,729	2,229	668,715	557,262	8,410	3,273	981,767	818,140	18,128	7,054	3,589,907	3,230,916
	Infill from CR209 Expansion	-	-	-	-	-	-	-	-	513	200	59,938	49,948	754	293	87,997	73,331	1,107	431	129,192	107,660	2,386	928	240,592	216,533
	Infill from CR229/CR462 Expansion	-	-	-	-	-	-	-	-	273	106	31,842	26,535	400	156	46,749	38,958	588	229	68,634	57,195	1,267	493	208,253	187,428
	Infill from CR229/CR466 Expansion	-	-	-	-	-	-	-	-	351	137	41,004	34,170	516	201	60,200	50,167	757	295	88,382	73,652	1,632	635	204,890	184,401
	Subtotal	**-**	**-**	**-**	**-**	**2,658**	**1,034**	**310,245**	**258,538**	**5,039**	**1,961**	**588,268**	**490,223**	**7,399**	**2,879**	**863,661**	**719,717**	**10,862**	**4,227**	**1,267,976**	**1,056,647**	**23,413**	**9,110**	**4,243,643**	**3,819,278**
NEW DEVELOPMENT	Juliette Apartments	231	90	27,000	22,500	468	182	54,600	45,500	468	182	54,600	45,500	468	182	54,600	45,500	468	182	54,600	45,500	468	182	54,600	45,500
	Wildwood Landing	26	10	3,000	2,500	129	50	15,000	12,500	260	101	30,300	25,250	260	101	30,300	25,250	260	101	30,300	25,250	260	101	30,300	25,250
	Solamar	257	100	30,000	25,000	625	243	72,900	60,750	625	243	72,900	60,750	625	243	72,900	60,750	625	243	72,900	60,750	625	243	72,900	60,750
	Zora at Wildwood	231	90	27,000	22,500	334	130	39,000	32,500	334	130	39,000	32,500	334	130	39,000	32,500	334	130	39,000	32,500	334	130	39,000	32,500
	Villas at Wildwood	347	135	40,500	33,750	493	192	57,600	48,000	493	192	57,600	48,000	493	192	57,600	48,000	493	192	57,600	48,000	493	192	57,600	48,000
	Wildwood Multifamily at Turkey Run	-	-	-	-	206	80	24,000	20,000	308	120	36,000	30,000	308	120	36,000	30,000	308	120	36,000	30,000	308	120	36,000	30,000
	Twisted Oaks SFD	51	20	6,000	5,000	257	100	30,000	25,000	1,079	420	126,000	105,000	1,079	420	126,000	105,000	1,079	420	126,000	105,000	1,886	734	220,200	183,500
	Twisted Oaks Townhomes	257	100	30,000	25,000	637	248	74,400	62,000	637	248	74,400	62,000	637	248	74,400	62,000	637	248	74,400	62,000	637	248	74,400	62,000
	Twisted Oaks Multifamily	129	50	15,000	12,500	594	231	69,300	57,750	594	231	69,300	57,750	594	231	69,300	57,750	594	231	69,300	57,750	594	231	69,300	57,750
	Townhomes at Powell	-	-	-	-	257	100	30,000	25,000	329	128	38,400	32,000	329	128	38,400	32,000	329	128	38,400	32,000	329	128	38,400	32,000
	Oxford BFR	-	-	-	-	-	-	-	-	396	154	46,200	38,500	396	154	46,200	38,500	396	154	46,200	38,500	396	154	46,200	38,500
	Highfield at Twisted Oaks	39	15	4,500	3,750	193	75	22,500	18,750	810	315	94,500	78,750	810	315	94,500	78,750	810	315	94,500	78,750	961	374	112,200	93,500
	100 Oaks	-	-	-	-	-	-	-	-	540	210	63,000	52,500	540	210	63,000	52,500	540	210	63,000	52,500	1,056	411	123,300	102,750
	Southern Waters Capital	-	-	-	-	-	-	-	-	689	268	80,400	67,000	689	268	80,400	67,000	689	268	80,400	67,000	689	268	80,400	67,000
	Sumter Springs (County)	-	-	-	-	-	-	-	-	308	120	36,000	30,000	308	120	36,000	30,000	308	120	36,000	30,000	704	274	82,200	68,500
	Highland Homes (County)	-	-	-	-	-	-	-	-	411	160	48,000	40,000	411	160	48,000	40,000	411	160	48,000	40,000	1,367	532	159,600	133,000
	The Keys at Wildwood I	-	-	-	-	488	190	57,000	47,500	488	190	57,000	47,500	488	190	57,000	47,500	488	190	57,000	47,500	488	190	57,000	47,500
	The Keys at Wildwood II	64	25	7,500	6,250	578	225	67,500	56,250	776	302	90,600	75,500	776	302	90,600	75,500	776	302	90,600	75,500	776	302	90,600	75,500
	Bellweather Multifamily	-	-	-	-	514	200	60,000	50,000	532	207	62,100	51,750	532	207	62,100	51,750	532	207	62,100	51,750	532	207	62,100	51,750
	Cassablanca at Wildwood	-	-	-	-	-	-	-	-	116	45	13,500	11,250	116	45	13,500	11,250	116	45	13,500	11,250	116	45	13,500	11,250
	Evolve Apartments	-	-	-	-	-	-	-	-	532	207	62,100	51,750	532	207	62,100	51,750	532	207	62,100	51,750	532	207	62,100	51,750
	Wildwood Place PD	-	-	-	-	-	-	-	-	643	250	75,000	62,500	643	250	75,000	62,500	643	250	75,000	62,500	643	250	75,000	62,500
	Tillman Villas	-	-	-	-	218	85	25,500	21,250	463	180	54,000	45,000	463	180	54,000	45,000	463	180	54,000	45,000	463	180	54,000	45,000
	Commander's Pointe	-	-	-	-	-	-	-	-	1,365	531	159,300	132,750	1,365	531	159,300	132,750	1,365	531	159,300	132,750	1,365	531	159,300	132,750
	Townhomes at Peppertree (Blount)	-	-	-	-	-	-	-	-	370	144	43,200	36,000	370	144	43,200	36,000	370	144	43,200	36,000	370	144	43,200	36,000
	Tillman Oaks	-	-	-	-	-	-	-	-	411	160	48,000	40,000	411	160	48,000	40,000	411	160	48,000	40,000	411	160	48,000	40,000
	Boulder Square	-	-	-	-	-	-	-	-	776	302	90,600	75,500	776	302	90,600	75,500	776	302	90,600	75,500	776	302	90,600	75,500
	Wildwood III	-	-	-	-	-	-	-	-	900	350	105,000	87,500	900	350	105,000	87,500	900	350	105,000	87,500	900	350	105,000	87,500
	Monarch Ranch									-		-	-	2,891	1,125	337,500	281,250	2,891	1,125	337,500	281,250	2,891	1,125	337,500	281,250
	Wildwood RV Village North									643	250	75,000	62,500	643	250	75,000	62,500	643	250	75,000	62,500	643	250	75,000	62,500
	O'steen Property									643	250	75,000	62,500	643	250	75,000	62,500	643	250	75,000	62,500	643	250	75,000	62,500
	Brown Property													-	-	-	-	-	-	-	-	3,855	1,500	450,000	375,000
	Subtotal	**1,632**	**635**	**190,500**	**158,750**	**5,991**	**2,331**	**699,300**	**582,750**	**16,936**	**6,590**	**1,977,000**	**1,647,500**	**19,828**	**7,715**	**2,314,500**	**1,928,750**	**19,828**	**7,715**	**2,314,500**	**1,928,750**	**22,655**	**8,815**	**3,094,500**	**2,578,750**
Existing Residential Developments (Additional Units)	Lakeside Landings	10	4	1,200	1,000	10	4	1,200	1,000	10	4	1,200	1,000	10	4	1,200	1,000	10	4	1,200	1,000	10	4	1,200	1,000
	Triumph South (Phase 2)	51	20	6,000	5,000	103	40	12,000	10,000	185	72	21,600	18,000	185	72	21,600	18,000	185	72	21,600	18,000	185	72	21,600	18,000
	Simple Life Tiny Homes	21	8	2,400	2,000	41	16	4,800	4,000	185	72	21,600	18,000	185	72	21,600	18,000	185	72	21,600	18,000	350	136	40,800	34,000
	Beaumont	21	8	2,400	2,000	26	10	3,000	2,500	26	10	3,000	2,500	26	10	3,000	2,500	26	10	3,000	2,500	26	10	3,000	2,500
	Densan Park (Phase 1 & 2)	21	8	2,400	2,000	41	16	4,800	4,000	149	58	17,400	14,500	175	68	20,400	17,000	200	78	23,400	19,500	226	88	26,400	22,000
	Grand Oaks Manor (Phase 1)	-	-	-	-	21	8	2,400	2,000	134	52	15,600	13,000	134	52	15,600	13,000	134	52	15,600	13,000	373	145	43,500	36,250
	West Village Apartments	72	28	8,400	7,000	72	28	8,400	7,000	72	28	8,400	7,000	72	28	8,400	7,000	72	28	8,400	7,000	72	28	8,400	7,000
	The Mark at Wildwood	224	87	26,100	21,750	224	87	26,100	21,750	224	87	26,100	21,750	224	87	26,100	21,750	224	87	26,100	21,750	224	87	26,100	21,750
	Sundance Trails at Beaumont	514	200	60,000	50,000	643	250	75,000	62,500	643	250	75,000	62,500	643	250	75,000	62,500	643	250	75,000	62,500	643	250	75,000	62,500
	Wildwood Cottages	90	35	10,500	8,750	90	35	10,500	8,750	90	35	10,500	8,750	90	35	10,500	8,750	90	35	10,500	8,750	90	35	10,500	8,750
	The Wilds (Phase 2 & Phase 3)	360	140	42,000	35,000	468	182	54,600	45,500	468	182	54,600	45,500	468	182	54,600	45,500	468	182	54,600	45,500	468	182	54,600	45,500
	Grand Oaks Manor (Phase 2)	-	-	-	-	-	-	-	-	938	365	109,500	91,250	938	365	109,500	91,250	938	365	109,500	91,250	938	365	109,500	91,250
	Oxford Crossing	-	-	-	-	-	-	-	-	1,542	600	180,000	150,000	1,542	600	180,000	150,000	1,542	600	180,000	150,000	1,542	600	180,000	150,000
	Lake Andrews Preserve	-	-	-	-	-	-	-	-	488	190	57,000	47,500	488	190	57,000	47,500	488	190	57,000	47,500	488	190	57,000	47,500
	Subtotal	**1,383**	**538**	**161,400**	**134,500**	**1,737**	**676**	**202,800**	**169,000**	**5,153**	**2,005**	**601,500**	**501,250**	**5,179**	**2,015**	**604,500**	**503,750**	**5,204**	**2,025**	**607,500**	**506,250**	**5,633**	**2,192**	**657,600**	**548,000**

CITY OF WILDWOOD
UTILITY MASTER PLAN
ERU, WATER, WASTEWATER DEMAND PROJECTIONS

	AREA	2024				2025				2030				2035				2040				Build Out (2050)			
		Population	ERUs	Water (GPD)	Wastewater (GPD)	Population	ERUs	Water (GPD)	Wastewater (GPD)	Population	ERUs	Water (GPD)	Wastewater (GPD)	Population	ERUs	Water (GPD)	Wastewater (GPD)	Population	ERUs	Water (GPD)	Wastewater (GPD)	Population	ERUs	Water (GPD)	Wastewater (GPD)
ILF/ALF Developments	Parkview Independent Living Facility	-	-	-	-	344	134	40,200	33,500	344	134	40,200	33,500	344	134	40,200	33,500	344	134	40,200	33,500	344	134	40,200	33,500
	ALF CR 462	-	-	-	-	283	110	33,000	27,500	283	110	33,000	27,500	283	110	33,000	27,500	283	110	33,000	27,500	283	110	33,000	27,500
	Subtotal	**-**	**-**	**-**	**-**	**627**	**244**	**73,200**	**61,000**	**627**	**244**	**73,200**	**61,000**	**627**	**244**	**73,200**	**61,000**	**627**	**244**	**73,200**	**61,000**	**627**	**244**	**73,200**	**61,000**
Notable Non-Residential Developments	Burger-Fi	5	2	600	500	5	2	600	500	5	2	600	500	5	2	600	500	5	2	600	500	5	2	600	500
	Preston Place	21	8	2,400	2,000	36	14	4,200	3,500	36	14	4,200	3,500	36	14	4,200	3,500	36	14	4,200	3,500	36	14	4,200	3,500
	Pearl Plaza	8	3	900	750	8	3	900	750	8	3	900	750	8	3	900	750	8	3	900	750	8	3	900	750
	Wildwood Professional Plaza	15	6	1,800	1,500	15	6	1,800	1,500	15	6	1,800	1,500	15	6	1,800	1,500	15	6	1,800	1,500	15	6	1,800	1,500
	Home Depot	116	45	13,500	11,250	116	45	13,500	11,250	116	45	13,500	11,250	116	45	13,500	11,250	116	45	13,500	11,250	116	45	13,500	11,250
	CVS	13	5	1,500	1,250	13	5	1,500	1,250	13	5	1,500	1,250	13	5	1,500	1,250	13	5	1,500	1,250	13	5	1,500	1,250
	HCA Trailwinds Hospital	-	-	-	-	226	88	26,400	22,000	226	88	26,400	22,000	226	88	26,400	22,000	226	88	26,400	22,000	226	88	26,400	22,000
	Target	118	46	13,800	11,500	118	46	13,800	11,500	118	46	13,800	11,500	118	46	13,800	11,500	118	46	13,800	11,500	118	46	13,800	11,500
	Wildwood Storage	3	1	300	250	3	1	300	250	3	1	300	250	3	1	300	250	3	1	300	250	3	1	300	250
	Ashley Furniture	-	-	-	-	49	19	5,700	4,750	49	19	5,700	4,750	49	19	5,700	4,750	49	19	5,700	4,750	49	19	5,700	4,750
	VIP Garage	15	6	1,800	1,500	31	12	3,600	3,000	31	12	3,600	3,000	31	12	3,600	3,000	31	12	3,600	3,000	31	12	3,600	3,000
	Ocala Eye	15	6	1,800	1,500	15	6	1,800	1,500	15	6	1,800	1,500	15	6	1,800	1,500	15	6	1,800	1,500	15	6	1,800	1,500
	Bethany Estates Medical Center	3	1	300	250	3	1	300	250	3	1	300	250	3	1	300	250	3	1	300	250	3	1	300	250
	Turkey Run Hotel	-	-	-	-	-	-	-	-	185	72	21,600	18,000	185	72	21,600	18,000	185	72	21,600	18,000	185	72	21,600	18,000
	Mainstay Expansion	-	-	-	-	46	18	5,400	4,500	46	18	5,400	4,500	46	18	5,400	4,500	46	18	5,400	4,500	46	18	5,400	4,500
	Freedom Fellowship Church	-	-	-	-	15	6	1,800	1,500	15	6	1,800	1,500	15	6	1,800	1,500	15	6	1,800	1,500	15	6	1,800	1,500
	New Horizon Plaza	-	-	-	-	93	36	10,800	9,000	123	48	14,400	12,000	123	48	14,400	12,000	123	48	14,400	12,000	123	48	14,400	12,000
	Oxford Overnight	-	-	-	-	-	-	-	-	188	73	21,900	18,250	188	73	21,900	18,250	188	73	21,900	18,250	188	73	21,900	18,250
	Woodspring Suites	-	-	-	-	77	30	9,000	7,500	157	61	18,300	15,250	157	61	18,300	15,250	157	61	18,300	15,250	157	61	18,300	15,250
	PSL Headquarters	3	1	300	250	3	1	300	250	3	1	300	250	3	1	300	250	3	1	300	250	3	1	300	250
	Stipes Gutters Office	3	1	300	250	3	1	300	250	3	1	300	250	3	1	300	250	3	1	300	250	3	1	300	250
	South Wildwood Industrial Park Lot 5A	-	-	-	-	3	1	300	250	3	1	300	250	3	1	300	250	3	1	300	250	3	1	300	250
	Chesterfield Villages Plaza Ph 2	-	-	-	-	21	8	2,400	2,000	21	8	2,400	2,000	21	8	2,400	2,000	21	8	2,400	2,000	21	8	2,400	2,000
	Clevelend Health Center	-	-	-	-	18	7	2,100	1,750	18	7	2,100	1,750	18	7	2,100	1,750	18	7	2,100	1,750	18	7	2,100	1,750
	CVC - ASC - Oxford Pointe	8	3	900	750	8	3	900	750	8	3	900	750	8	3	900	750	8	3	900	750	8	3	900	750
	Lucky U Cycles	-	-	-	-	8	3	900	750	8	3	900	750	8	3	900	750	8	3	900	750	8	3	900	750
	7 Eleven @ C-462	-	-	-	-	15	6	1,800	1,500	15	6	1,800	1,500	15	6	1,800	1,500	15	6	1,800	1,500	15	6	1,800	1,500
	Dentist Office - Oxford Professional Park	-	-	-	-	5	2	600	500	5	2	600	500	5	2	600	500	5	2	600	500	5	2	600	500
	The Railyard	-	-	-	-	111	43	12,900	10,750	111	43	12,900	10,750	111	43	12,900	10,750	111	43	12,900	10,750	111	43	12,900	10,750
	WaWa - Turkey Run	-	-	-	-	18	7	2,100	1,750	18	7	2,100	1,750	18	7	2,100	1,750	18	7	2,100	1,750	18	7	2,100	1,750
	WaWa - SR 44 and 301	-	-	-	-	18	7	2,100	1,750	18	7	2,100	1,750	18	7	2,100	1,750	18	7	2,100	1,750	18	7	2,100	1,750
	Chipolte @ Signature Dr.	-	-	-	-	13	5	1,500	1,250	13	5	1,500	1,250	13	5	1,500	1,250	13	5	1,500	1,250	13	5	1,500	1,250
	Panda Express	21	8	2,400	2,000	21	8	2,400	2,000	21	8	2,400	2,000	21	8	2,400	2,000	21	8	2,400	2,000	21	8	2,400	2,000
	Trailwinds Shoppes III	39	15	4,500	3,750	77	30	9,000	7,500	77	30	9,000	7,500	77	30	9,000	7,500	77	30	9,000	7,500	77	30	9,000	7,500
	Mister Car Wash	-	-	-	-	33	13	3,900	3,250	33	13	3,900	3,250	33	13	3,900	3,250	33	13	3,900	3,250	33	13	3,900	3,250
	A-1 Ready Mix Block Plant	-	-	-	-	3	1	300	250	3	1	300	250	3	1	300	250	3	1	300	250	3	1	300	250
	Storage at Powell	-	-	-	-	3	1	300	250	3	1	300	250	3	1	300	250	3	1	300	250	3	1	300	250
	Cleveland Law Office	-	-	-	-	5	2	600	500	5	2	600	500	5	2	600	500	5	2	600	500	5	2	600	500
	Karparti Law	-	-	-	-	5	2	600	500	5	2	600	500	5	2	600	500	5	2	600	500	5	2	600	500
	Premier Psychological	-	-	-	-	3	1	300	250	3	1	300	250	3	1	300	250	3	1	300	250	3	1	300	250
	Werner Trucking (County)	-	-	-	-	51	20	6,000	5,000	51	20	6,000	5,000	51	20	6,000	5,000	51	20	6,000	5,000	51	20	6,000	5,000
	Old Dominion Trucking (County)	-	-	-	-	-	-	-	-	51	20	6,000	5,000	51	20	6,000	5,000	51	20	6,000	5,000	51	20	6,000	5,000
	Parcel C33-045 Commercial (County)	-	-	-	-	-	-	-	-	-	-	-	-	951	370	111,000	92,500	951	370	111,000	92,500	951	370	111,000	92,500
	Pike 75	-	-	-	-	-	-	-	-	-	-	-	-	2,827	1,100	330,000	275,000	2,827	1,100	330,000	275,000	2,827	1,100	330,000	275,000
	Wildwood Micro-Hospital	-	-	-	-	18	7	2,100	1,750	49	19	5,700	4,750	64	25	7,500	6,250	64	25	7,500	6,250	64	25	7,500	6,250
	Subtotal	**403**	**157**	**47,100**	**39,250**	**1,329**	**517**	**155,100**	**129,250**	**1,894**	**737**	**221,100**	**184,250**	**5,687**	**2,213**	**663,900**	**553,250**	**5,687**	**2,213**	**663,900**	**553,250**	**5,687**	**2,213**	**663,900**	**553,250**
Other	OSTDS to City Sewer Connections	-	-	-	-	-	-	-	-	31	12	3,600	3,000	989	385	115,500	96,250	1,087	423	126,900	105,750	1,280	498	149,400	124,500
	City of Coleman									514	200	60,000	50,000	514	200	60,000	50,000	514	200	60,000	50,000	514	200	60,000	50,000
	Subtotal	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**545**	**212**	**63,600**	**53,000**	**1,503**	**585**	**175,500**	**146,250**	**1,601**	**623**	**186,900**	**155,750**	**1,794**	**698**	**209,400**	**174,500**
	Total	***32,543***	***12,284***	***3,685,110***	***2,537,500***	***41,596***	***15,805***	***4,741,380***	***3,415,351***	***60,106***	***22,998***	***6,899,509***	***5,201,762***	***70,806***	***27,153***	***8,145,871***	***6,228,098***	***75,080***	***28,808***	***8,642,094***	***6,629,035***	***92,371***	***35,524***	***12,617,843***	***10,200,110***

1 Existing serviced area uses 300 gpd/ERU (water) and 250 gpd/ERU (sewer) per City of Wildwood level of service standard
2 Future Infill and Expansion use the City of Wildwood Level of Service 300 gpd/ERU (water) and 250 gpd/ERU (sewer)
3 Person per Household (2.57) from U.S. Census (2018-2022)
4 Existing prison demands based on 2022-2023 billing data. Demand projections for the prison assumes the maximum prison population of 7,499 and 100 gpd/inmate. Calculation: Total of 749,900 gpd divided by City LOS of 300 gpd/ERU = 2,500 ERUs.
5 Wastewater to Water ratio based on DMR/MOR data (0.76) is used for the existing users.
6 Wastewater to Water ratio based on LOS (250 GPD/300 GPD = 0.83) is used for all infill and future developments
7 Villages DRI uses 100 gpd/ERU for Water and 86 gpd/ERU for WW.
8 Infill populations were calculated directly from SWFWMD Sumter County small area population projections for parcels within 200ft of water main and not served
9 Coleman flows calculated using MOR data. 200 ERUs assumed.

Parcels with Existing Usage		
Field	Population	Factor
POP 21	16457	
POP 25	17249	**1.048125418**
POP 30	17310	**1.051861214**
POP 35	17349	**1.054201859**
POP 40	17368	**1.055356383**
POP 45	17375	**1.055781734**
POP_BO_P (50)	18581	**1.12906362**

These numbers were used in the main spreadsheet to project the future use of the users with existing water use data

* The shapefile was created by clipping the SWFWMD population points based on the parcels that have existing usage.

Existing Usage	Chosen Rate Values
Year-by-Year Average Increase	1.004
5-Year Growth Rate	1.022
10-Year Growth Rate	1.045

Parcels for Infill		
Field	Population	Factor
POP 25	4928	
POP 30	7235	**1.468141234**
POP 35	8284	**1.681006494**
POP 40	8798	**1.785308442**
POP_BO_P (50)	10286	**2.087256494**

These numbers were used in the main spreadsheet to project the future demand of infill and expansion parcels, obtained from SWFWMD.

The shapefile was created by clipping the SWFWMD population points based on the parcels that met the infill or expansion standards

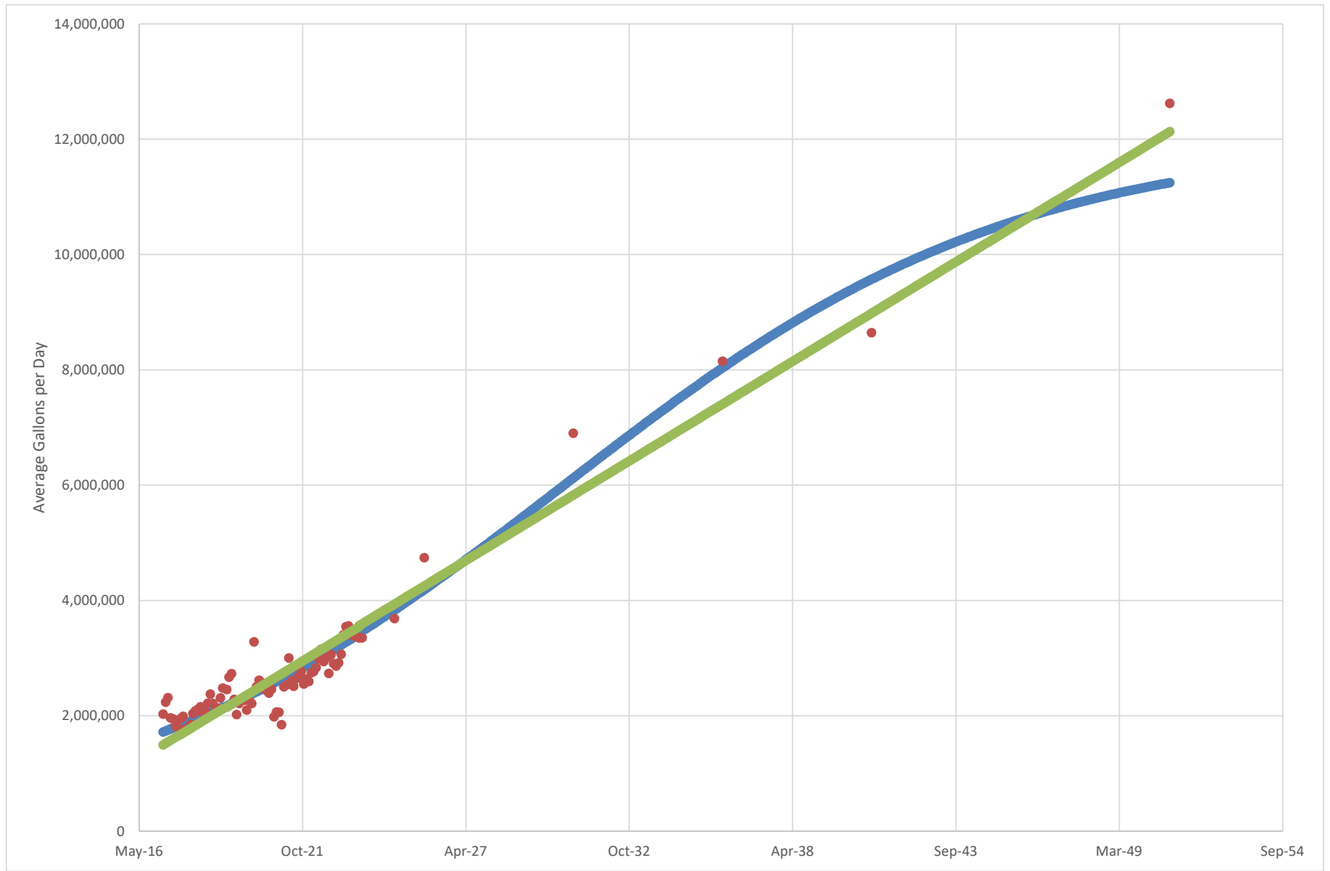
Chosen Rate Values	
Existing Water Main Infill	
5 Year Growth Rate	1.468
1 Year Growth Rate	1.080
Expansion Areas	
5 Year Growth Rate	1.468
1 Year Growth Rate	1.080

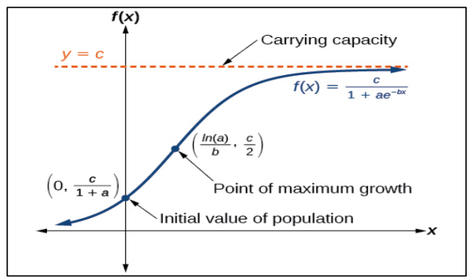
CITY OF WILDWOOD
UTILITY MASTER PLAN
ERU, WATER, WASTEWATER DEMAND PROJECTIONS

TOTAL WILDWOOD PWS DEMAND FROM MARCH 2017-DECEMBER 2023 MODEL							
NONLINEAR MODEL				LINEAR MODEL			
a	5.976554126	SSE	9.207E+12	M	26,265.15	SSE	1.096E+13
b	0.011079871	RSQ	0.74576	B	1,492,406.51	RSQ	0.72507
c	12,000,000						

DATE	YEAR	MONTHS SINCE MARCH 2017	MOR DATA AND PROJECTIONS	NONLINEAR MODEL DATA	LINEAR MODEL DATA
Mar-17	2017	0	2,027,022	1,720,047	1,492,407
Apr-17	2017	1	2,235,200	1,736,438	1,518,672
May-17	2017	2	2,313,161	1,752,958	1,544,937
Jun-17	2017	3	1,962,166	1,769,608	1,571,202
Jul-17	2017	4	1,947,426	1,786,389	1,597,467
Aug-17	2017	5	1,826,933	1,803,302	1,623,732
Sep-17	2017	6	1,785,734	1,820,345	1,649,997
Oct-17	2017	7	1,951,699	1,837,521	1,676,263
Nov-17	2017	8	1,990,101	1,854,829	1,702,528
Dec-17	2017	9	1,769,867	1,872,270	1,728,793
Jan-18	2018	10	1,784,234	1,889,845	1,755,058
Feb-18	2018	11	1,848,833	1,907,554	1,781,323
Mar-18	2018	12	2,037,000	1,925,397	1,807,588
Apr-18	2018	13	2,085,333	1,943,374	1,833,853
May-18	2018	14	2,112,867	1,961,487	1,860,119
Jun-18	2018	15	2,156,000	1,979,736	1,886,384
Jul-18	2018	16	2,054,667	1,998,120	1,912,649
Aug-18	2018	17	2,076,799	2,016,641	1,938,914
Sep-18	2018	18	2,218,266	2,035,299	1,965,179
Oct-18	2018	19	2,373,466	2,054,093	1,991,444
Nov-18	2018	20	2,213,706	2,073,025	2,017,709
Dec-18	2018	21	2,066,334	2,092,095	2,043,975
Jan-19	2019	22	2,133,240	2,111,303	2,070,240
Feb-19	2019	23	2,309,033	2,130,650	2,096,505
Mar-19	2019	24	2,480,701	2,150,135	2,122,770
Apr-19	2019	25	2,452,632	2,169,759	2,149,035
May-19	2019	26	2,667,771	2,189,522	2,175,300
Jun-19	2019	27	2,728,899	2,209,425	2,201,565
Jul-19	2019	28	2,283,377	2,229,468	2,227,831
Aug-19	2019	29	2,018,515	2,249,651	2,254,096
Sep-19	2019	30	2,211,832	2,269,974	2,280,361
Oct-19	2019	31	2,266,900	2,290,438	2,306,626
Nov-19	2019	32	2,270,130	2,311,042	2,332,891
Dec-19	2019	33	2,098,675	2,331,787	2,359,156
Jan-20	2020	34	2,254,868	2,352,673	2,385,421
Feb-20	2020	35	2,211,101	2,373,701	2,411,687
Mar-20	2020	36	3,280,222	2,394,869	2,437,952
Apr-20	2020	37	2,507,598	2,416,179	2,464,217
May-20	2020	38	2,615,772	2,437,631	2,490,482
Jun-20	2020	39	2,572,066	2,459,224	2,516,747
Jul-20	2020	40	2,468,967	2,480,958	2,543,012
Aug-20	2020	41	2,436,887	2,502,835	2,569,277
Sep-20	2020	42	2,393,634	2,524,853	2,595,543
Oct-20	2020	43	2,458,100	2,547,013	2,621,808
Nov-20	2020	44	1,982,567	2,569,314	2,648,073
Dec-20	2020	45	2,065,233	2,591,757	2,674,338
Jan-21	2021	46	2,060,667	2,614,342	2,700,603
Feb-21	2021	47	1,844,900	2,637,069	2,726,868

*Model using data from 2017-2023 yields similar results to the model using 2020-2023 data





LINEAR GROWTH RATE	
ANNUAL GROWTH RATE	21.1190%
5-YR GROWTH RATE	126.714%
10-YR GROWTH RATE	211.190%

NONLINEAR GROWTH RATE	
ANNUAL GROWTH RATE	11.9386%
5-YR GROWTH RATE	88.990%
10-YR GROWTH RATE	170.271%

CITY OF WILDWOOD
UTILITY MASTER PLAN
ERU, WATER, WASTEWATER DEMAND PROJECTIONS

DATE	YEAR	MONTHS SINCE MARCH 2017	MOR DATA AND PROJECTIONS	NONLINEAR MODEL DATA	LINEAR MODEL DATA
Mar-21	2021	48	2,502,101	2,659,937	2,753,133
Apr-21	2021	49	2,532,500	2,682,947	2,779,399
May-21	2021	50	2,999,618	2,706,098	2,805,664
Jun-21	2021	51	2,603,634	2,729,391	2,831,929
Jul-21	2021	52	2,509,323	2,752,824	2,858,194
Aug-21	2021	53	2,646,677	2,776,398	2,884,459
Sep-21	2021	54	2,687,637	2,800,114	2,910,724
Oct-21	2021	55	2,770,514	2,823,969	2,936,990
Nov-21	2021	56	2,548,200	2,847,965	2,963,255
Dec-21	2021	57	2,639,646	2,872,101	2,989,520
Jan-22	2022	58	2,593,935	2,896,377	3,015,785
Feb-22	2022	59	2,747,299	2,920,793	3,042,050
Mar-22	2022	60	2,765,806	2,945,348	3,068,315
Apr-22	2022	61	2,835,399	2,970,041	3,094,580
May-22	2022	62	2,990,484	2,994,873	3,120,846
Jun-22	2022	63	3,152,433	3,019,844	3,147,111
Jul-22	2022	64	2,939,387	3,044,952	3,173,376
Aug-22	2022	65	3,005,839	3,070,197	3,199,641
Sep-22	2022	66	2,733,634	3,095,580	3,225,906
Oct-22	2022	67	3,056,033	3,121,099	3,252,171
Nov-22	2022	68	2,905,067	3,146,754	3,278,436
Dec-22	2022	69	2,860,194	3,172,544	3,304,702
Jan-23	2023	70	2,917,161	3,198,470	3,330,967
Feb-23	2023	71	3,066,679	3,224,530	3,357,232
Mar-23	2023	72	3,403,580	3,250,723	3,383,497
Apr-23	2023	73	3,546,166	3,277,051	3,409,762
May-23	2023	74	3,557,968	3,303,511	3,436,027
Jun-23	2023	75	3,403,433	3,330,103	3,462,292
Jul-23	2023	76	3,380,778	3,356,826	3,488,558
Aug-23	2023	77	3,505,871	3,383,680	3,514,823
Sep-23	2023	78	3,350,801	3,410,665	3,541,088
Oct-23	2023	79	3,351,806	3,437,778	3,567,353
Nov-23	2023	80	3,352,812	3,465,020	3,593,618
Dec-23	2023	81		3,492,390	3,619,883
Jan-24	2024	82		3,519,887	3,646,148
Feb-24	2024	83		3,547,511	3,672,414
Mar-24	2024	84		3,575,259	3,698,679
Apr-24	2024	85		3,603,132	3,724,944
May-24	2024	86		3,631,129	3,751,209
Jun-24	2024	87		3,659,249	3,777,474
Jul-24	2024	88		3,687,490	3,803,739
Aug-24	2024	89		3,715,852	3,830,004
Sep-24	2024	90		3,744,335	3,856,270
Oct-24	2024	91		3,772,936	3,882,535
Nov-24	2024	92		3,801,654	3,908,800
Dec-24	2024	93	3,685,110	3,830,490	3,935,065
Jan-25	2025	94		3,859,442	3,961,330
Feb-25	2025	95		3,888,508	3,987,595
Mar-25	2025	96		3,917,687	4,013,860
Apr-25	2025	97		3,946,979	4,040,126
May-25	2025	98		3,976,383	4,066,391
Jun-25	2025	99		4,005,896	4,092,656
Jul-25	2025	100		4,035,518	4,118,921
Aug-25	2025	101		4,065,248	4,145,186
Sep-25	2025	102		4,095,085	4,171,451

*Model using data from 2017-2023 yields similar results to the model using 2020-2023 data

Year	NONLINEAR ERC PROJECTIONS		LINEAR ERC PROJECTIONS	
	Projected GPD	Projected ERCs	Projected GPD	Projected ERCs
2017	1,795,371	5,985	1,610,600	5,369
2018	1,989,722	6,632	1,899,516	6,332
2019	2,220,263	7,401	2,214,698	7,382
2020	2,470,917	8,236	2,529,880	8,433
2021	2,741,930	9,140	2,845,061	9,484
2022	3,033,200	10,111	3,160,243	10,534
2023	3,344,229	11,147	3,475,425	11,585
2024	3,674,077	12,247	3,790,607	12,635
2025	4,021,339	13,404	4,105,788	13,686
2026	4,384,134	14,614	4,420,970	14,737
2027	4,760,128	15,867	4,736,152	15,787
2028	5,146,574	17,155	5,051,334	16,838
2029	5,540,381	18,468	5,366,515	17,888
2030	5,938,211	19,794	5,681,697	18,939
2031	6,336,584	21,122	5,996,879	19,990
2032	6,732,004	22,440	6,312,061	21,040
2033	7,121,076	23,737	6,627,242	22,091
2034	7,500,620	25,002	6,942,424	23,141
2035	7,867,777	26,226	7,257,606	24,192
2036	8,220,076	27,400	7,572,788	25,243
2037	8,555,493	28,518	7,887,969	26,293
2038	8,872,477	29,575	8,203,151	27,344
2039	9,169,945	30,566	8,518,333	28,394
2040	9,447,264	31,491	8,833,515	29,445
2041	9,704,217	32,347	9,148,696	30,496
2042	9,940,947	33,136	9,463,878	31,546
2043	10,157,904	33,860	9,779,060	32,597
2044	10,355,786	34,519	10,094,242	33,647
2045	10,535,478	35,118	10,409,423	34,698
2046	10,698,003	35,660	10,724,605	35,749
2047	10,844,472	36,148	11,039,787	36,799
2048	10,976,043	36,587	11,354,969	37,850
2049	11,093,887	36,980	11,670,150	38,901
2050	11,199,158	37,331	11,985,332	39,951

DATE	YEAR	MONTHS SINCE MARCH 2017	MOR DATA AND PROJECTIONS	NONLINEAR MODEL DATA	LINEAR MODEL DATA
Oct-25	2025	103		4,125,026	4,197,716
Nov-25	2025	104		4,155,072	4,223,982
Dec-25	2025	105	4,741,380	4,185,220	4,250,247
Jan-26	2026	106		4,215,469	4,276,512
Feb-26	2026	107		4,245,818	4,302,777
Mar-26	2026	108		4,276,265	4,329,042
Apr-26	2026	109		4,306,809	4,355,307
May-26	2026	110		4,337,450	4,381,573
Jun-26	2026	111		4,368,184	4,407,838
Jul-26	2026	112		4,399,011	4,434,103
Aug-26	2026	113		4,429,929	4,460,368
Sep-26	2026	114		4,460,938	4,486,633
Oct-26	2026	115		4,492,034	4,512,898
Nov-26	2026	116		4,523,217	4,539,163
Dec-26	2026	117		4,554,485	4,565,429
Jan-27	2027	118		4,585,837	4,591,694
Feb-27	2027	119		4,617,271	4,617,959
Mar-27	2027	120		4,648,785	4,644,224
Apr-27	2027	121		4,680,378	4,670,489
May-27	2027	122		4,712,048	4,696,754
Jun-27	2027	123		4,743,794	4,723,019
Jul-27	2027	124		4,775,613	4,749,285
Aug-27	2027	125		4,807,504	4,775,550
Sep-27	2027	126		4,839,465	4,801,815
Oct-27	2027	127		4,871,495	4,828,080
Nov-27	2027	128		4,903,592	4,854,345
Dec-27	2027	129		4,935,754	4,880,610
Jan-28	2028	130		4,967,979	4,906,875
Feb-28	2028	131		5,000,266	4,933,141
Mar-28	2028	132		5,032,612	4,959,406
Apr-28	2028	133		5,065,016	4,985,671
May-28	2028	134		5,097,477	5,011,936
Jun-28	2028	135		5,129,991	5,038,201
Jul-28	2028	136		5,162,557	5,064,466
Aug-28	2028	137		5,195,174	5,090,731
Sep-28	2028	138		5,227,840	5,116,997
Oct-28	2028	139		5,260,552	5,143,262
Nov-28	2028	140		5,293,309	5,169,527
Dec-28	2028	141		5,326,108	5,195,792
Jan-29	2029	142		5,358,949	5,222,057
Feb-29	2029	143		5,391,828	5,248,322
Mar-29	2029	144		5,424,744	5,274,587
Apr-29	2029	145		5,457,695	5,300,853
May-29	2029	146		5,490,680	5,327,118
Jun-29	2029	147		5,523,695	5,353,383
Jul-29	2029	148		5,556,739	5,379,648
Aug-29	2029	149		5,589,811	5,405,913
Sep-29	2029	150		5,622,907	5,432,178
Oct-29	2029	151		5,656,027	5,458,443
Nov-29	2029	152		5,689,167	5,484,709
Dec-29	2029	153		5,722,327	5,510,974
Jan-30	2030	154		5,755,503	5,537,239
Feb-30	2030	155		5,788,695	5,563,504
Mar-30	2030	156		5,821,900	5,589,769
Apr-30	2030	157		5,855,115	5,616,034

*Model using data from 2017-2023 yields similar results to the model using 2020-2023 data

DATE	YEAR	MONTHS SINCE MARCH 2017	MOR DATA AND PROJECTIONS	NONLINEAR MODEL DATA	LINEAR MODEL DATA
May-30	2030	158		5,888,339	5,642,299
Jun-30	2030	159		5,921,571	5,668,565
Jul-30	2030	160		5,954,807	5,694,830
Aug-30	2030	161		5,988,045	5,721,095
Sep-30	2030	162		6,021,285	5,747,360
Oct-30	2030	163		6,054,523	5,773,625
Nov-30	2030	164		6,087,758	5,799,890
Dec-30	2030	165	6,899,509	6,120,987	5,826,155
Jan-31	2031	166		6,154,209	5,852,421
Feb-31	2031	167		6,187,422	5,878,686
Mar-31	2031	168		6,220,623	5,904,951
Apr-31	2031	169		6,253,811	5,931,216
May-31	2031	170		6,286,983	5,957,481
Jun-31	2031	171		6,320,137	5,983,746
Jul-31	2031	172		6,353,272	6,010,012
Aug-31	2031	173		6,386,385	6,036,277
Sep-31	2031	174		6,419,475	6,062,542
Oct-31	2031	175		6,452,539	6,088,807
Nov-31	2031	176		6,485,575	6,115,072
Dec-31	2031	177		6,518,582	6,141,337
Jan-32	2032	178		6,551,557	6,167,602
Feb-32	2032	179		6,584,499	6,193,868
Mar-32	2032	180		6,617,405	6,220,133
Apr-32	2032	181		6,650,273	6,246,398
May-32	2032	182		6,683,103	6,272,663
Jun-32	2032	183		6,715,890	6,298,928
Jul-32	2032	184		6,748,635	6,325,193
Aug-32	2032	185		6,781,334	6,351,458
Sep-32	2032	186		6,813,986	6,377,724
Oct-32	2032	187		6,846,589	6,403,989
Nov-32	2032	188		6,879,141	6,430,254
Dec-32	2032	189		6,911,640	6,456,519
Jan-33	2033	190		6,944,085	6,482,784
Feb-33	2033	191		6,976,473	6,509,049
Mar-33	2033	192		7,008,803	6,535,314
Apr-33	2033	193		7,041,072	6,561,580
May-33	2033	194		7,073,280	6,587,845
Jun-33	2033	195		7,105,424	6,614,110
Jul-33	2033	196		7,137,502	6,640,375
Aug-33	2033	197		7,169,513	6,666,640
Sep-33	2033	198		7,201,455	6,692,905
Oct-33	2033	199		7,233,326	6,719,170
Nov-33	2033	200		7,265,125	6,745,436
Dec-33	2033	201		7,296,849	6,771,701
Jan-34	2034	202		7,328,498	6,797,966
Feb-34	2034	203		7,360,069	6,824,231
Mar-34	2034	204		7,391,560	6,850,496
Apr-34	2034	205		7,422,971	6,876,761
May-34	2034	206		7,454,300	6,903,026
Jun-34	2034	207		7,485,544	6,929,292
Jul-34	2034	208		7,516,703	6,955,557
Aug-34	2034	209		7,547,775	6,981,822
Sep-34	2034	210		7,578,758	7,008,087
Oct-34	2034	211		7,609,651	7,034,352
Nov-34	2034	212		7,640,452	7,060,617

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DATE	YEAR	MONTHS SINCE MARCH 2017	MOR DATA AND PROJECTIONS	NONLINEAR MODEL DATA	LINEAR MODEL DATA
Dec-34	2034	213		7,671,160	7,086,882
Jan-35	2035	214		7,701,774	7,113,148
Feb-35	2035	215		7,732,291	7,139,413
Mar-35	2035	216		7,762,711	7,165,678
Apr-35	2035	217		7,793,032	7,191,943
May-35	2035	218		7,823,253	7,218,208
Jun-35	2035	219		7,853,372	7,244,473
Jul-35	2035	220		7,883,389	7,270,738
Aug-35	2035	221		7,913,301	7,297,004
Sep-35	2035	222		7,943,107	7,323,269
Oct-35	2035	223		7,972,807	7,349,534
Nov-35	2035	224		8,002,399	7,375,799
Dec-35	2035	225	8,145,871	8,031,882	7,402,064
Jan-36	2036	226		8,061,254	7,428,329
Feb-36	2036	227		8,090,515	7,454,595
Mar-36	2036	228		8,119,663	7,480,860
Apr-36	2036	229		8,148,697	7,507,125
May-36	2036	230		8,177,616	7,533,390
Jun-36	2036	231		8,206,419	7,559,655
Jul-36	2036	232		8,235,104	7,585,920
Aug-36	2036	233		8,263,672	7,612,185
Sep-36	2036	234		8,292,121	7,638,451
Oct-36	2036	235		8,320,449	7,664,716
Nov-36	2036	236		8,348,656	7,690,981
Dec-36	2036	237		8,376,742	7,717,246
Jan-37	2037	238		8,404,704	7,743,511
Feb-37	2037	239		8,432,542	7,769,776
Mar-37	2037	240		8,460,256	7,796,041
Apr-37	2037	241		8,487,844	7,822,307
May-37	2037	242		8,515,305	7,848,572
Jun-37	2037	243		8,542,639	7,874,837
Jul-37	2037	244		8,569,845	7,901,102
Aug-37	2037	245		8,596,923	7,927,367
Sep-37	2037	246		8,623,871	7,953,632
Oct-37	2037	247		8,650,688	7,979,897
Nov-37	2037	248		8,677,375	8,006,163
Dec-37	2037	249		8,703,930	8,032,428
Jan-38	2038	250		8,730,353	8,058,693
Feb-38	2038	251		8,756,642	8,084,958
Mar-38	2038	252		8,782,799	8,111,223
Apr-38	2038	253		8,808,821	8,137,488
May-38	2038	254		8,834,709	8,163,753
Jun-38	2038	255		8,860,461	8,190,019
Jul-38	2038	256		8,886,078	8,216,284
Aug-38	2038	257		8,911,559	8,242,549
Sep-38	2038	258		8,936,903	8,268,814
Oct-38	2038	259		8,962,110	8,295,079
Nov-38	2038	260		8,987,179	8,321,344
Dec-38	2038	261		9,012,111	8,347,609
Jan-39	2039	262		9,036,904	8,373,875
Feb-39	2039	263		9,061,559	8,400,140
Mar-39	2039	264		9,086,074	8,426,405
Apr-39	2039	265		9,110,451	8,452,670
May-39	2039	266		9,134,687	8,478,935
Jun-39	2039	267		9,158,784	8,505,200

*Model using data from 2017-2023 yields similar results to the model using 2020-2023 data

CITY OF WILDWOOD
UTILITY MASTER PLAN
ERU, WATER, WASTEWATER DEMAND PROJECTIONS

DATE	YEAR	MONTHS SINCE MARCH 2017	MOR DATA AND PROJECTIONS	NONLINEAR MODEL DATA	LINEAR MODEL DATA
Jul-39	2039	268		9,182,741	8,531,465
Aug-39	2039	269		9,206,557	8,557,731
Sep-39	2039	270		9,230,233	8,583,996
Oct-39	2039	271		9,253,768	8,610,261
Nov-39	2039	272		9,277,162	8,636,526
Dec-39	2039	273		9,300,414	8,662,791
Jan-40	2040	274		9,323,526	8,689,056
Feb-40	2040	275		9,346,496	8,715,321
Mar-40	2040	276		9,369,324	8,741,587
Apr-40	2040	277		9,392,011	8,767,852
May-40	2040	278		9,414,557	8,794,117
Jun-40	2040	279		9,436,960	8,820,382
Jul-40	2040	280		9,459,222	8,846,647
Aug-40	2040	281		9,481,342	8,872,912
Sep-40	2040	282		9,503,320	8,899,178
Oct-40	2040	283		9,525,157	8,925,443
Nov-40	2040	284		9,546,852	8,951,708
Dec-40	2040	285	8,642,094	9,568,405	8,977,973
Jan-41	2041	286		9,589,817	9,004,238
Feb-41	2041	287		9,611,087	9,030,503
Mar-41	2041	288		9,632,216	9,056,768
Apr-41	2041	289		9,653,203	9,083,034
May-41	2041	290		9,674,050	9,109,299
Jun-41	2041	291		9,694,756	9,135,564
Jul-41	2041	292		9,715,320	9,161,829
Aug-41	2041	293		9,735,744	9,188,094
Sep-41	2041	294		9,756,028	9,214,359
Oct-41	2041	295		9,776,172	9,240,624
Nov-41	2041	296		9,796,175	9,266,890
Dec-41	2041	297		9,816,039	9,293,155
Jan-42	2042	298		9,835,763	9,319,420
Feb-42	2042	299		9,855,349	9,345,685
Mar-42	2042	300		9,874,795	9,371,950
Apr-42	2042	301		9,894,102	9,398,215
May-42	2042	302		9,913,272	9,424,480
Jun-42	2042	303		9,932,303	9,450,746
Jul-42	2042	304		9,951,196	9,477,011
Aug-42	2042	305		9,969,952	9,503,276
Sep-42	2042	306		9,988,571	9,529,541
Oct-42	2042	307		10,007,054	9,555,806
Nov-42	2042	308		10,025,400	9,582,071
Dec-42	2042	309		10,043,611	9,608,336
Jan-43	2043	310		10,061,685	9,634,602
Feb-43	2043	311		10,079,625	9,660,867
Mar-43	2043	312		10,097,430	9,687,132
Apr-43	2043	313		10,115,101	9,713,397
May-43	2043	314		10,132,639	9,739,662
Jun-43	2043	315		10,150,043	9,765,927
Jul-43	2043	316		10,167,314	9,792,192
Aug-43	2043	317		10,184,452	9,818,458
Sep-43	2043	318		10,201,459	9,844,723
Oct-43	2043	319		10,218,334	9,870,988
Nov-43	2043	320		10,235,078	9,897,253
Dec-43	2043	321		10,251,692	9,923,518
Jan-44	2044	322		10,268,176	9,949,783

*Model using data from 2017-2023 yields similar results to the model using 2020-2023 data

DATE	YEAR	MONTHS SINCE MARCH 2017	MOR DATA AND PROJECTIONS	NONLINEAR MODEL DATA	LINEAR MODEL DATA
Feb-44	2044	323		10,284,531	9,976,048
Mar-44	2044	324		10,300,756	10,002,314
Apr-44	2044	325		10,316,854	10,028,579
May-44	2044	326		10,332,823	10,054,844
Jun-44	2044	327		10,348,665	10,081,109
Jul-44	2044	328		10,364,381	10,107,374
Aug-44	2044	329		10,379,970	10,133,639
Sep-44	2044	330		10,395,434	10,159,904
Oct-44	2044	331		10,410,773	10,186,170
Nov-44	2044	332		10,425,987	10,212,435
Dec-44	2044	333		10,441,078	10,238,700
Jan-45	2045	334		10,456,045	10,264,965
Feb-45	2045	335		10,470,889	10,291,230
Mar-45	2045	336		10,485,612	10,317,495
Apr-45	2045	337		10,500,213	10,343,760
May-45	2045	338		10,514,693	10,370,026
Jun-45	2045	339		10,529,053	10,396,291
Jul-45	2045	340		10,543,294	10,422,556
Aug-45	2045	341		10,557,415	10,448,821
Sep-45	2045	342		10,571,418	10,475,086
Oct-45	2045	343		10,585,304	10,501,351
Nov-45	2045	344		10,599,072	10,527,617
Dec-45	2045	345		10,612,724	10,553,882
Jan-46	2046	346		10,626,260	10,580,147
Feb-46	2046	347		10,639,681	10,606,412
Mar-46	2046	348		10,652,987	10,632,677
Apr-46	2046	349		10,666,180	10,658,942
May-46	2046	350		10,679,259	10,685,207
Jun-46	2046	351		10,692,226	10,711,473
Jul-46	2046	352		10,705,081	10,737,738
Aug-46	2046	353		10,717,825	10,764,003
Sep-46	2046	354		10,730,458	10,790,268
Oct-46	2046	355		10,742,982	10,816,533
Nov-46	2046	356		10,755,396	10,842,798
Dec-46	2046	357		10,767,701	10,869,063
Jan-47	2047	358		10,779,899	10,895,329
Feb-47	2047	359		10,791,990	10,921,594
Mar-47	2047	360		10,803,974	10,947,859
Apr-47	2047	361		10,815,852	10,974,124
May-47	2047	362		10,827,625	11,000,389
Jun-47	2047	363		10,839,294	11,026,654
Jul-47	2047	364		10,850,858	11,052,919
Aug-47	2047	365		10,862,320	11,079,185
Sep-47	2047	366		10,873,679	11,105,450
Oct-47	2047	367		10,884,937	11,131,715
Nov-47	2047	368		10,896,093	11,157,980
Dec-47	2047	369		10,907,149	11,184,245
Jan-48	2048	370		10,918,105	11,210,510
Feb-48	2048	371		10,928,962	11,236,775
Mar-48	2048	372		10,939,721	11,263,041
Apr-48	2048	373		10,950,382	11,289,306
May-48	2048	374		10,960,946	11,315,571
Jun-48	2048	375		10,971,413	11,341,836
Jul-48	2048	376		10,981,785	11,368,101
Aug-48	2048	377		10,992,062	11,394,366

*Model using data from 2017-2023 yields similar results to the model using 2020-2023 data

CITY OF WILDWOOD
UTILITY MASTER PLAN
ERU, WATER, WASTEWATER DEMAND PROJECTIONS

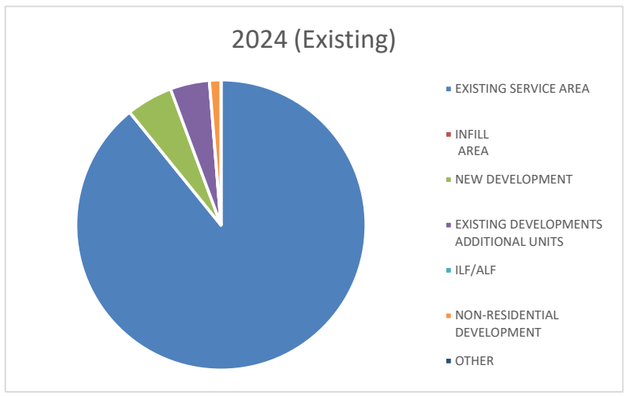
DATE	YEAR	MONTHS SINCE MARCH 2017	MOR DATA AND PROJECTIONS	NONLINEAR MODEL DATA	LINEAR MODEL DATA
Sep-48	2048	378		11,002,245	11,420,631
Oct-48	2048	379		11,012,334	11,446,897
Nov-48	2048	380		11,022,331	11,473,162
Dec-48	2048	381		11,032,234	11,499,427
Jan-49	2049	382		11,042,047	11,525,692
Feb-49	2049	383		11,051,768	11,551,957
Mar-49	2049	384		11,061,399	11,578,222
Apr-49	2049	385		11,070,941	11,604,487
May-49	2049	386		11,080,393	11,630,753
Jun-49	2049	387		11,089,757	11,657,018
Jul-49	2049	388		11,099,034	11,683,283
Aug-49	2049	389		11,108,224	11,709,548
Sep-49	2049	390		11,117,327	11,735,813
Oct-49	2049	391		11,126,345	11,762,078
Nov-49	2049	392		11,135,278	11,788,343
Dec-49	2049	393		11,144,126	11,814,609
Jan-50	2050	394		11,152,891	11,840,874
Feb-50	2050	395		11,161,573	11,867,139
Mar-50	2050	396		11,170,173	11,893,404
Apr-50	2050	397		11,178,691	11,919,669
May-50	2050	398		11,187,127	11,945,934
Jun-50	2050	399		11,195,484	11,972,200
Jul-50	2050	400		11,203,760	11,998,465
Aug-50	2050	401		11,211,958	12,024,730
Sep-50	2050	402		11,220,076	12,050,995
Oct-50	2050	403		11,228,117	12,077,260
Nov-50	2050	404		11,236,081	12,103,525
Dec-50	2050	405	12,617,843	11,243,968	12,129,790

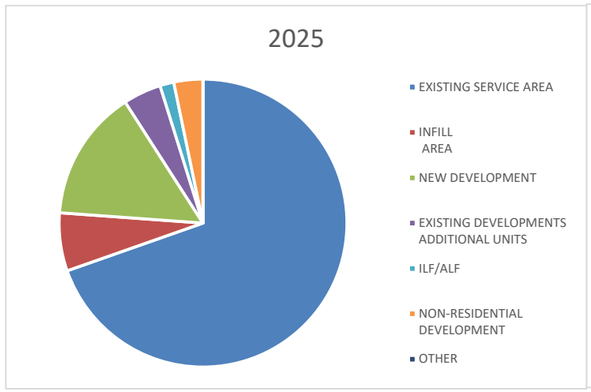
*Model using data from 2017-2023 yields similar results to the model using 2020-2023 data

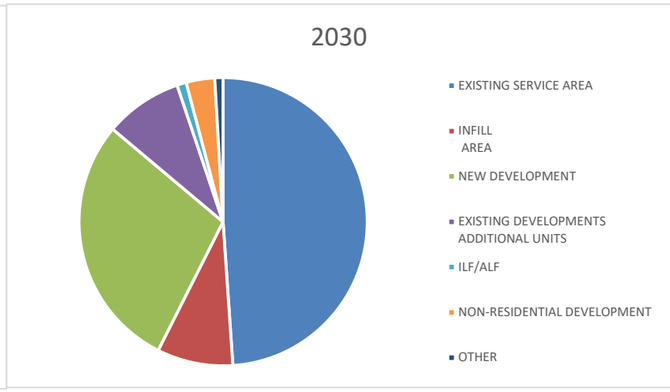
CITY OF WILDWOOD
UTILITY MASTER PLAN
ERU, WATER, WASTEWATER DEMAND PROJECTIONS

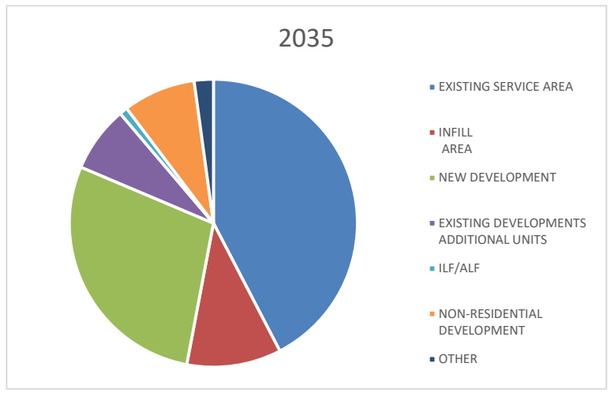
WILDWOOOD GROWTH BY DEVELOPMENT (ERCs)								
YEAR	EXISTING SERVICE AREA	INFILL AREA	NEW DEVELOPMENT	EXISTING DEVELOPMENTS ADDITIONAL UNITS	ILF/ALF	NON-RESIDENTIAL DEVELOPMENT	OTHER	TOTAL
2024 (Existing)	10,954	-	635	538	-	157	-	**12,284**
2025	11,002	1,034	2,331	676	244	517	-	**15,805**
2030	11,249	1,961	6,590	2,005	244	737	212	**22,998**
2035	11,502	2,879	7,715	2,015	244	2,213	585	**27,153**
2040	11,761	4,227	7,715	2,025	244	2,213	623	**28,808**
2050 (Build Out)	12,252	9,110	8,815	2,192	244	2,213	698	**35,524**

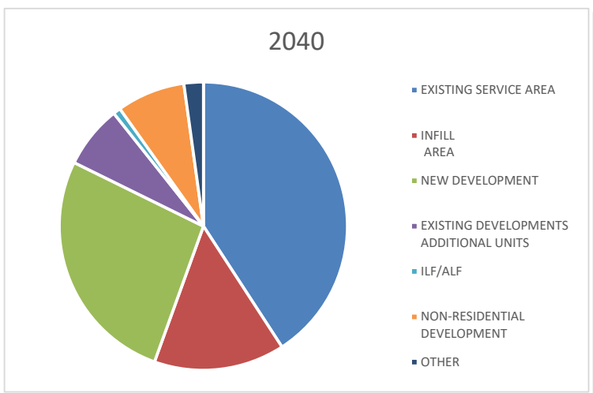
Timeframe	EXISTING SERVICE AREA	INFILL AREA	NEW DEVELOPMENT	EXISTING DEVELOPMENTS ADDITIONAL UNITS	ILF/ALF	NON-RESIDENTIAL DEVELOPMENT	OTHER
2024 (Existing)	89.2%	0.0%	5.2%	4.4%	0.0%	1.3%	0.0%
2025	69.6%	6.5%	14.7%	4.3%	1.5%	3.3%	0.0%
2030	48.9%	8.5%	28.7%	8.7%	1.1%	3.2%	0.9%
2035	42.4%	10.6%	28.4%	7.4%	0.9%	8.2%	2.2%
2040	40.8%	14.7%	26.8%	7.0%	0.8%	7.7%	2.2%
2050 (Build Out)	34.5%	25.6%	24.8%	6.2%	0.7%	6.2%	2.0%

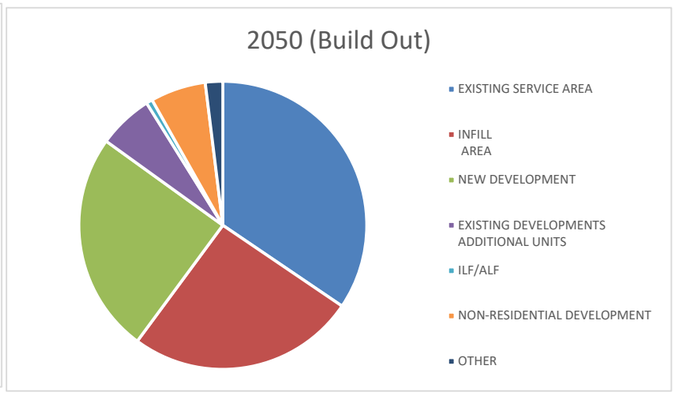






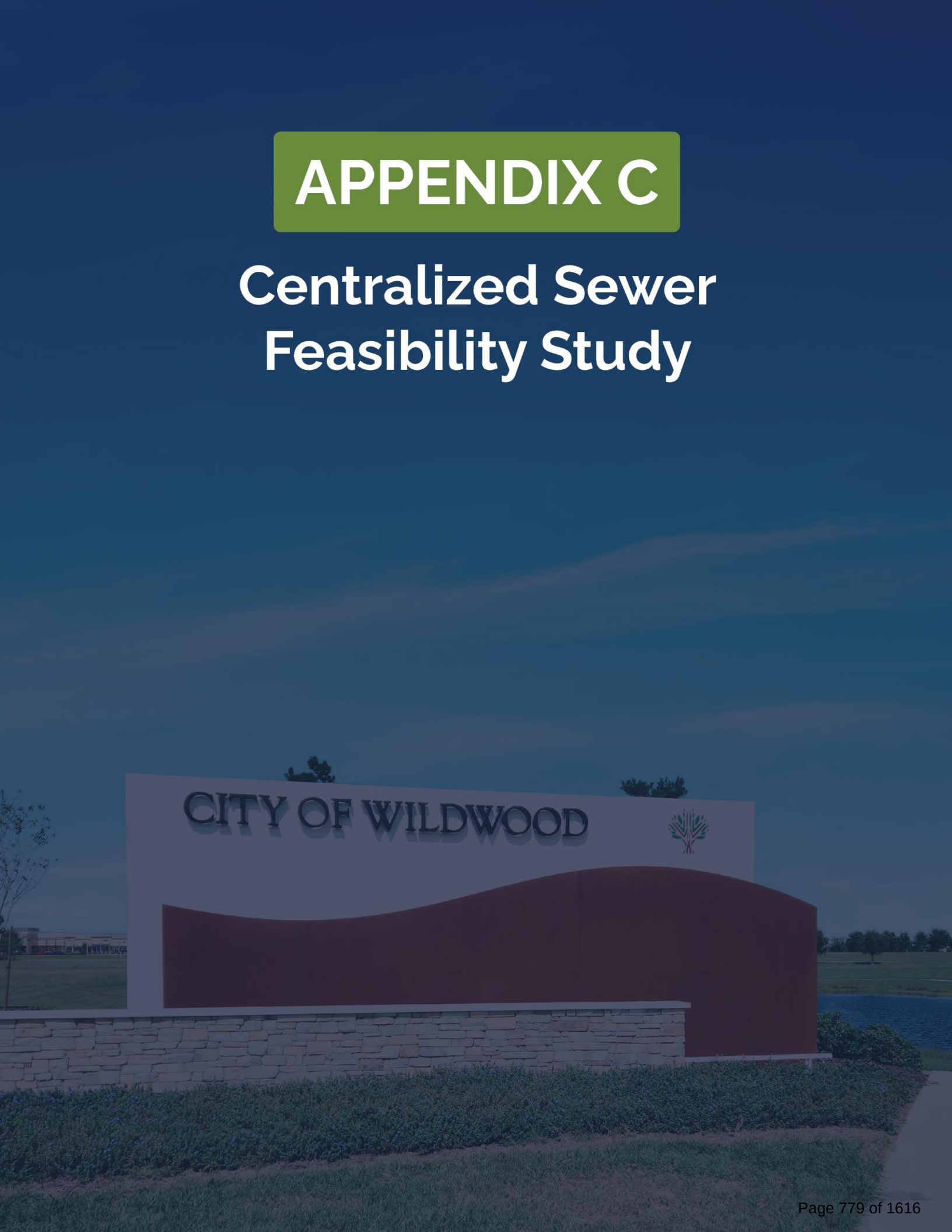






APPENDIX C

Centralized Sewer Feasibility Study



CITY OF COLEMAN CENTRALIZED SEWER FEASIBILITY STUDY

Prepared for:

The Florida Governmental Utility Authority (FGUA)

Prepared by:

Kimley-Horn and Associates, Inc.

142411013
May 2023
© Kimley-Horn and Associates, Inc.
12740 Gran Bay Parkway, Suite 3250
Jacksonville, FL 32258
904 828 3900

Kimley»Horn

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APPENDIX

APPENDIX A: Gravity System OPC

APPENDIX B: Geospatial Small-Area Population Forecasting Model Methodology Used by the Southwest Florida Water Management District

1.0 INTRODUCTION

The Sumter County Board of Commissioners, the City of Wildwood (Wildwood), and the City of Coleman (Coleman) are interested in evaluating the feasibility of providing a centralized wastewater system in Coleman. Currently, Coleman has a potable water system, but relies on onsite sewage treatment and disposal systems (OSTDS) commonly referred to as septic systems, for wastewater treatment and disposal. If the centralized wastewater system were to be constructed, Wildwood would receive flow from Coleman; a flow meter would be installed at a master lift station prior to connecting to the existing Wildwood wastewater system in order for flow to be properly monitored.

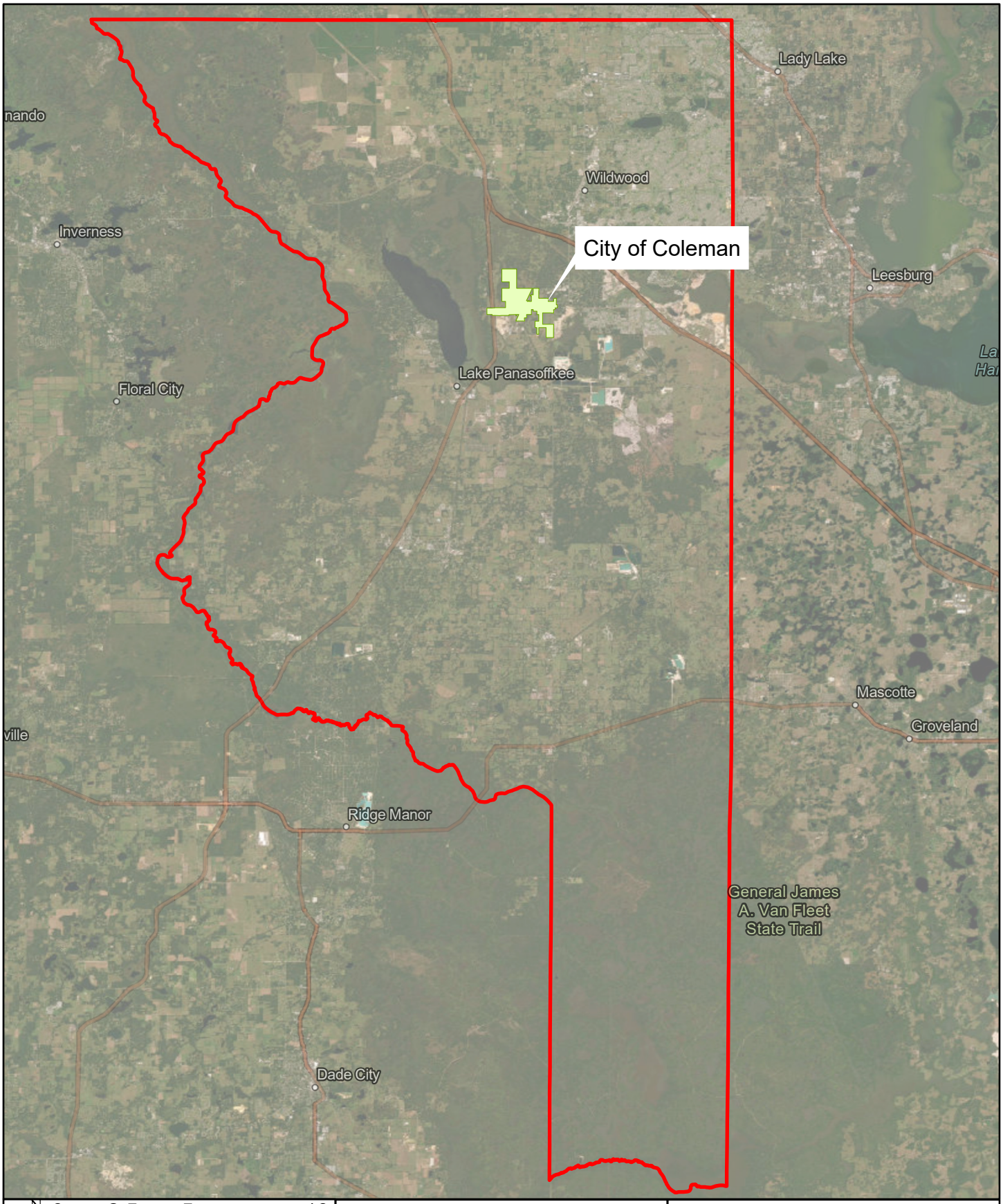
Under a Professional Services Agreement between the Florida Governmental Utility Authority (FGUA) and Kimley-Horn and Associates, Inc. (Kimley-Horn), the following feasibility analysis was conducted to assess the feasibility of providing a centralized wastewater system in Coleman through a phased implementation plan. Coleman is located in Sumter County as shown in **Figure 1.1.** Coleman has an existing utility service area larger than its City limits. The existing utility service area encapsulates the entire City of Coleman and is show in **Figure 1.2.**

1.1 OBJECTIVES

The purpose of this analysis is to identify and evaluate centralized sewer infrastructure for Coleman. This report details the analysis and provides a summary of the:

- Capital improvements required to serve the estimated existing developed parcels
- A phased implementation plan of a sanitary sewer collection and conveyance system
- Identify the number of onsite sewage treatment and disposal systems
- Present a preliminary design for the sewage collection system needed for the future wastewater collection system
- Provide an opinion of probable costs (OPC) for design, permitting, and construction of the new wastewater collection system.

The analyses presented herein are based on certain assumptions, hydraulic requirements, and standards which should be updated as conditions change with time.



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Kimley»Horn

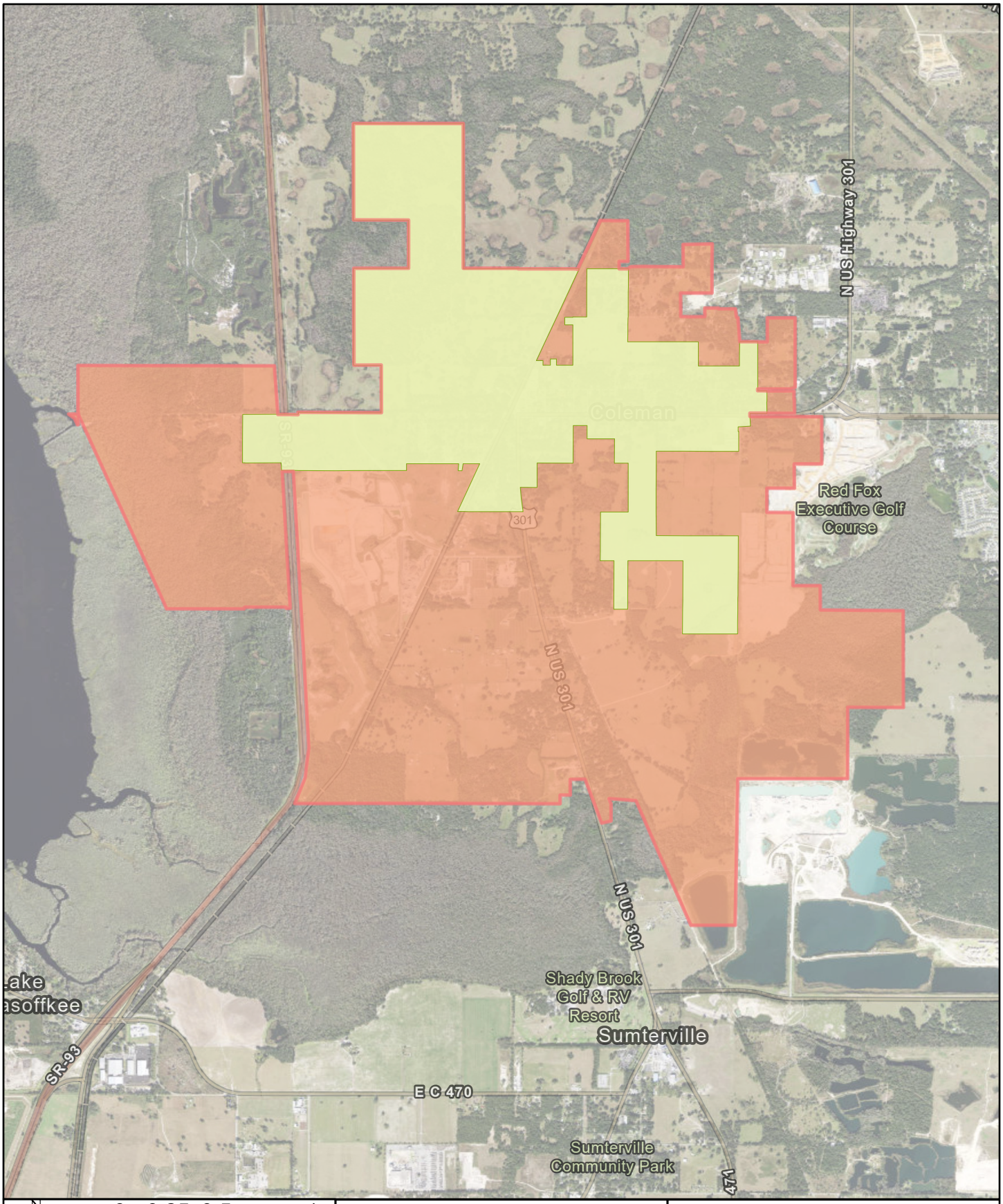
Figure 1.1

City of Coleman Location

Legend

City of Coleman

Sumter County Limit


N US Highway 301
Red Fox
Executive Golf
Course
301
N US 301
N US 301
Shady Brook
Golf & RV
Resort
Sumterville
SR-93
E C 470
Sumterville
Community Park
471
N
0 0.25 0.5 1
Miles
Kimley»Horn
Figure 1.2
City of Coleman Utility Service Area
Legend
City of Coleman
Coleman Utility Service Area

2.0 DATA COLLECTION

2.1 DATA REQUEST

Information and data for this project was collected using the Florida Department of Environmental Protection (FDEP) OCULUS database as well as the Southwest Florida Water Management District (SWFWMD) Water Management Information System. The following documents were reviewed in the preliminary phase of research:

- Water Use Permits
- US Census Reports
- Monthly Operation Reports (MOR)
- SWFWMD Population Projections

Further data was required for the feasibility analysis as outlined in the scope of Work Authorization No. KH 22-02. The following documents were requested from FGUA, Coleman, and Sumter County:

- Billing data
- Service area and general location maps for the utility systems, water main/WTP locations, etc.
- Prior inspection reports or studies
- Proposed Capital Improvement Plans (CIP)
- Current and proposed utility system operating budgets
- Developer/large user agreements or any that are soon to come

2.2 SUMMARY OF PROJECT MEETINGS

A series of meetings were held to facilitate this evaluation. **Table 2.1** provides a summary of both past and projected meetings.

Table 2.1: Summary of Past and Projected Meetings

Date	Purpose of the Meeting	Attendees
12/09/2022	Project Kick-Off	FGUA, City of Coleman, Kimley-Horn
3/08/2023	Progress Meeting	FGUA, City of Coleman, Kimley-Horn, Sumter County, Raftelis
5/12/2023	Progress Meeting	FGUA, City of Coleman, Kimley-Horn, Sumter County, Raftelis
6/5/2023	Draft Feasibility Study Review	FGUA, Kimley-Horn

3.0 POTABLE WATER AND WASTEWATER SYSTEM OVERVIEW

3.1 POTABLE WATER SYSTEM

Coleman currently has a potable water system and does not have a centralized sewer system. The existing potable water treatment system (PWS 6604861) consists of one water treatment plant, located at 1848 Anderson Road, and has a permitted capacity of 495,000 gallons per day (gpd).

Coleman has a total permitted water withdrawal capacity of 94,800 gpd annual average demand (ADD) per Water Use Permit (WUP) number 10488 authorized by SWFWMD. This WUP was issued on March 14, 2012 and will expire on March 14, 2032. There are two public supply wells within in the system and one monitoring well. Public Supply Well #1 and Public Supply Well #2 both are located at 1848 Anderson Road, are 200 ft deep and have an average withdrawal of 47,400 gpd. Per the WUP the City's water use is comprised of six categories as shown in **Table 3.1**.

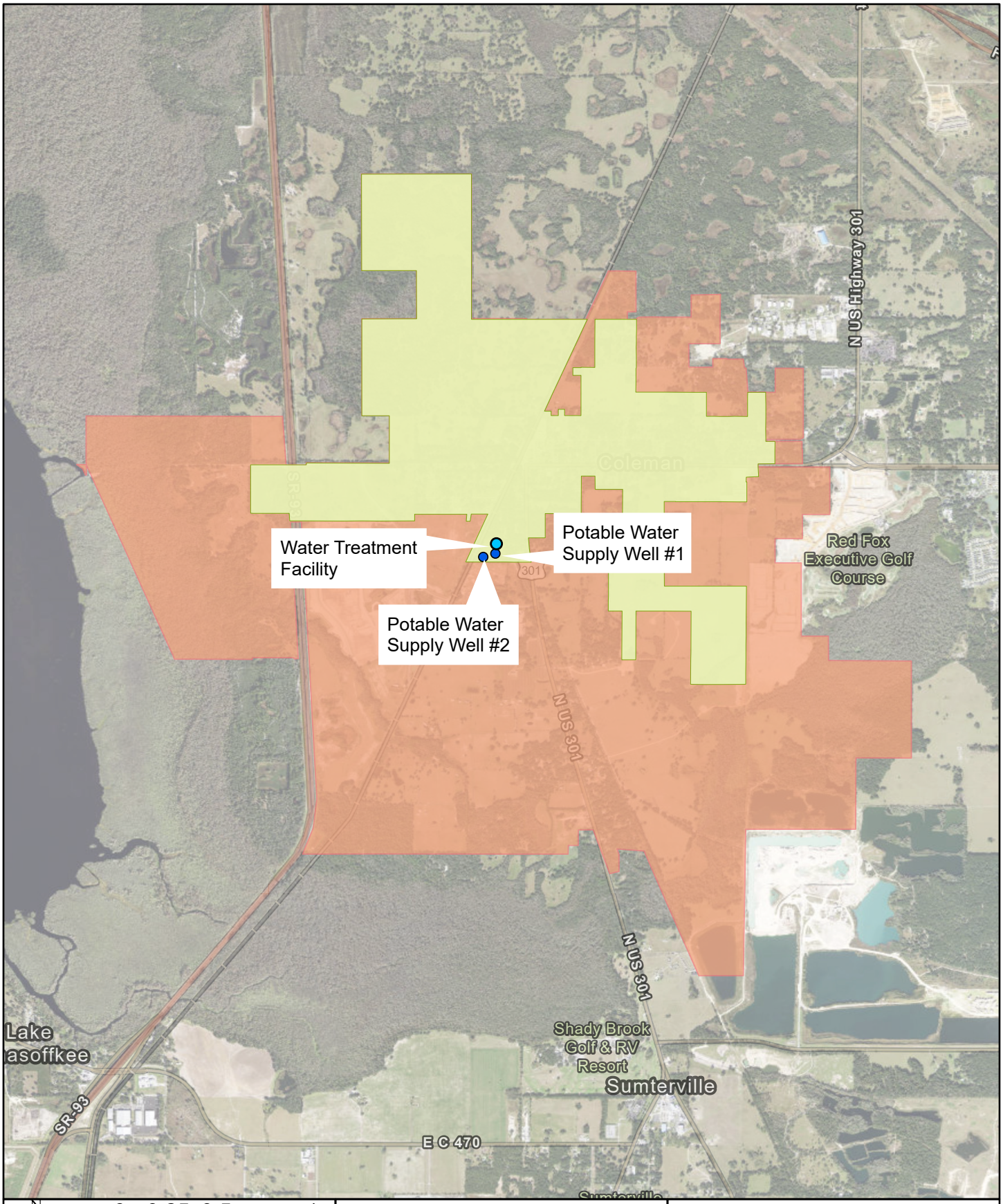
Table 3.1: Water Use Permit 10488 Water Allocations

Use Type	Average GPD	Peak GPD
Commercial/Industrial	9,500	12,200
Fire Fighting/Testing	7,600	9,800
Residential Mobile Home	8,500	11,000
Residential Single Family	62,600	80,700
Treatment Losses	1,900	2,400
Water Utility Use	4,700	6,100

The location of the existing wells and water treatment plant are shown in **Figure 3.1.**

Coleman currently has potable water infrastructure in a portion of the utility service area. **Figure 3.2** shows existing potable water infrastructure and parcels which currently have potable water service within the utility service area.

The potable water system was utilized as the basis for the proposed wastewater system layout. In addition, the data reviewed for the potable water system, including billing data and monthly operating reports, was utilized to determine the projected wastewater demand as described in **Section 4.2**.



N

0 0.25 0.5 1

Miles

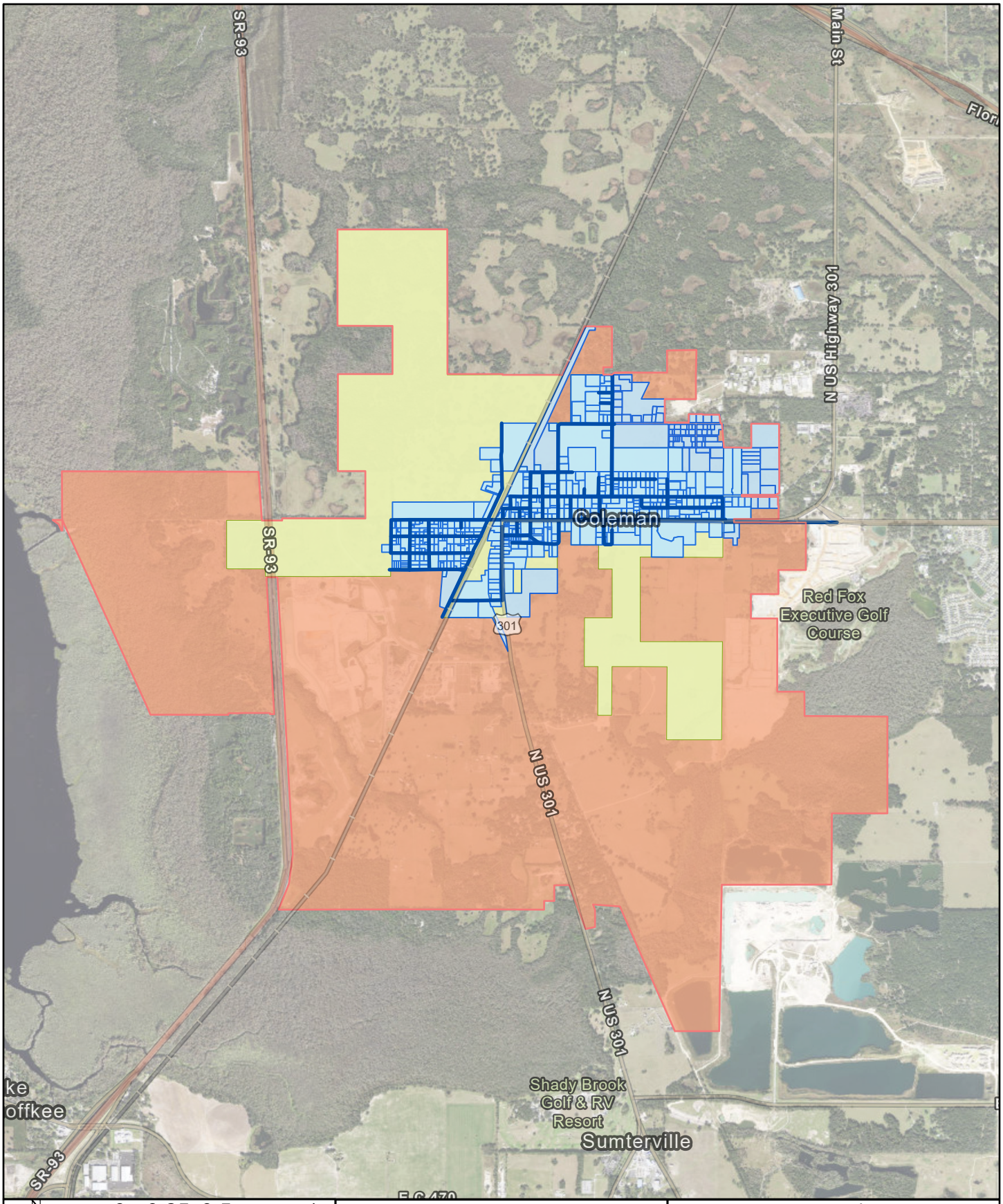
Kimley»Horn

Figure 3.1

City of Coleman PWS ID # 6604861

Legend

- Water Treatment Facility
- Public Water Supply Wells
- City of Coleman
- Coleman Utility Service Area


SR-93
Main St
N US Highway 301
Coleman
SR-93
301
Red Fox
Executive Golf
Course
N US 301
N US 301
Shady Brook
Golf & RV
Resort
Sumterville
SR-93
N
0 0.25 0.5 1
Miles
Kimley»Horn
Figure 3.2
City of Coleman Existing Water Service Area
Legend
Coleman Water Mains
Existing Water Service Area
City of Coleman
Coleman Utility Service Area

A review of billing data and monthly operating reports (MOR) for the period January 2019 to December 2022 was performed. Based on this review and for the purpose of this study, the billing data was utilized. According to the billing data spanning from 2019 to 2022, the average daily flow for Coleman is 94,914 gpd with a maximum day flow average of 137,176 gpd. **Table 3.2** provides a summary of the billing data including the annual average (ADD) and maximum day average day demand (MDD). Additionally, the table provides historical peaking factors, average connections, population served per the Bureau of Economic and Business Research (BEBR), population per connection, and per capita use.

Table 3.2: Average Daily Demand and Corresponding Peaking Factors

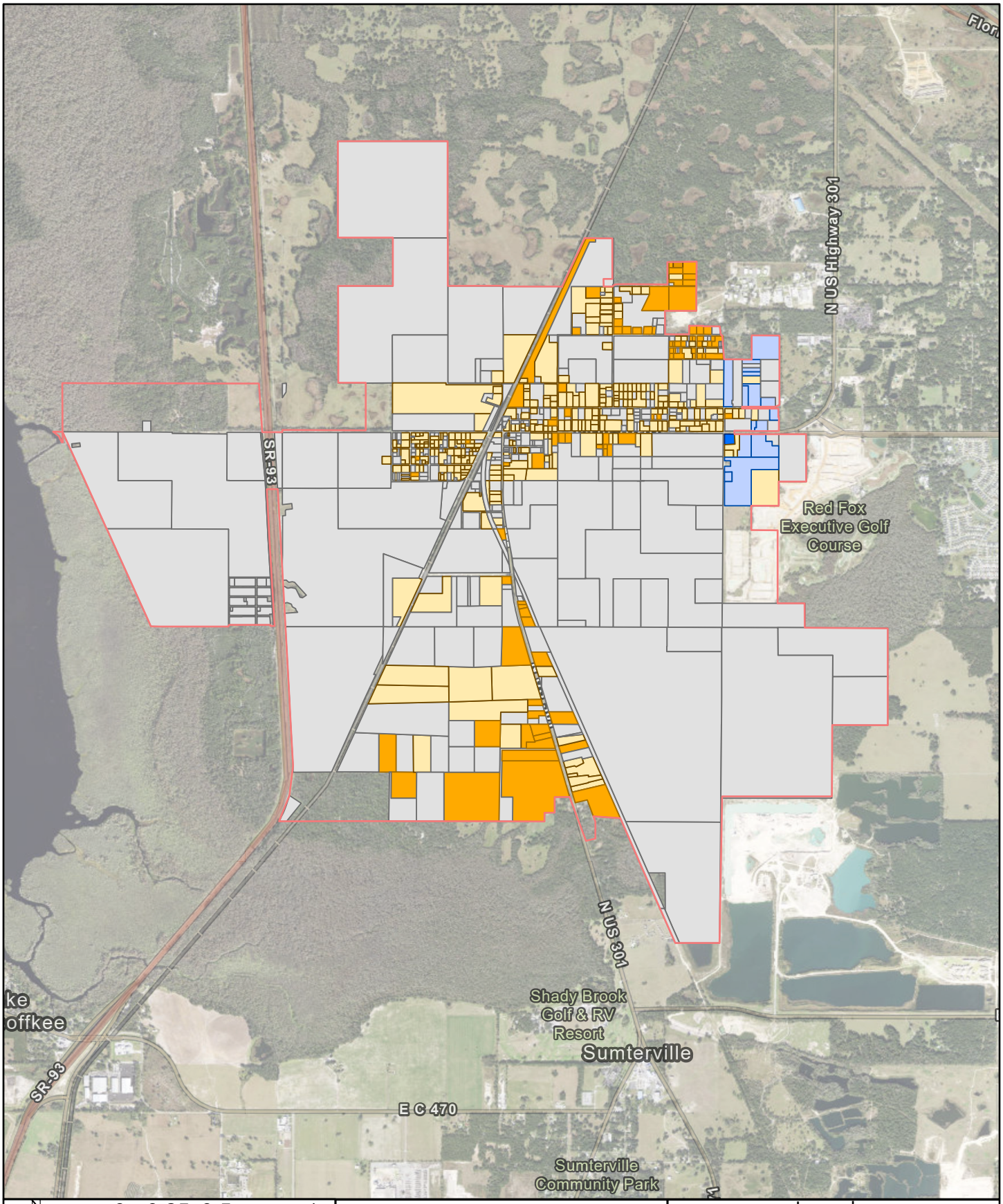
Year	Population Served	Annual Average Daily Demand (ADD) (GPD)	Population/ Connections	Average Customer Connections	Per Capita Use (gpcd)	Maximum Day Demand (MDD) (GPD)	Max Day Factor (MDD/ADD)	Peak Hour Factor
2019	642	99,923	2.03	316	156	121,598	1.22	2.43
2020	642	130,497	2.01	319	203	174,348	1.34	2.67
2021	642	87,229	2.03	317	136	126,256	1.45	2.89
2022	642	62,007	2.03	316	97	126,504	2.04	4.08
Average	**642**	**94,914**	**2.03**	**317**	**148**	**137,176**	**1.51**	**3.02**

3.2 WASTEWATER SYSTEM

Coleman currently does not have a wastewater collection system or a wastewater treatment system. With no centralized wastewater system in the City, it is estimated that all parcels within the utility service area rely on onsite sewage treatment and disposal systems (OSTDS), commonly known as septic tanks. A summary of OSTDS data from the Florida Department of Health (FDOH) located within Coleman's utility service area is presented in **Table 3.3**. The total number of parcels in the FDOH data differs from the Sumter County property appraiser parcel data due to the timing of the FDOH OSTDS surveys. The locations of these known and likely sites with septic tanks are provided in **Figure 3.3**. As there are no existing wastewater plants in the area, and based on available data, it is likely that the majority of parcels located in the service area have OSTDS.

Table 3.3: Summary of Septic Systems

Description	Number of Parcels
Known Septic	303
Likely Septic	86
Likely Sewer	15
Unknown/ N/A	310
TOTAL per FDOH	**714**


N US Highway 301
SR-93
Red Fox
Executive Golf
Course
N US 301
Shady Brook
Golf & RV
Resort
Sumterville
SR-93
E C 470
Sumterville
Community Park
0 0.25 0.5 1
Miles
N
Kimley»Horn
Figure 3.3
Septic Systems within Coleman
Utility Service Area
Legend
Coleman Utility Service Area
Known Septic System
Likely Septic System
Likely Sewer
Somewhat Likely Septic System
Somewhat Likely Sewer
Unknown

3.2.1 ENVIRONMENTAL IMPACTS

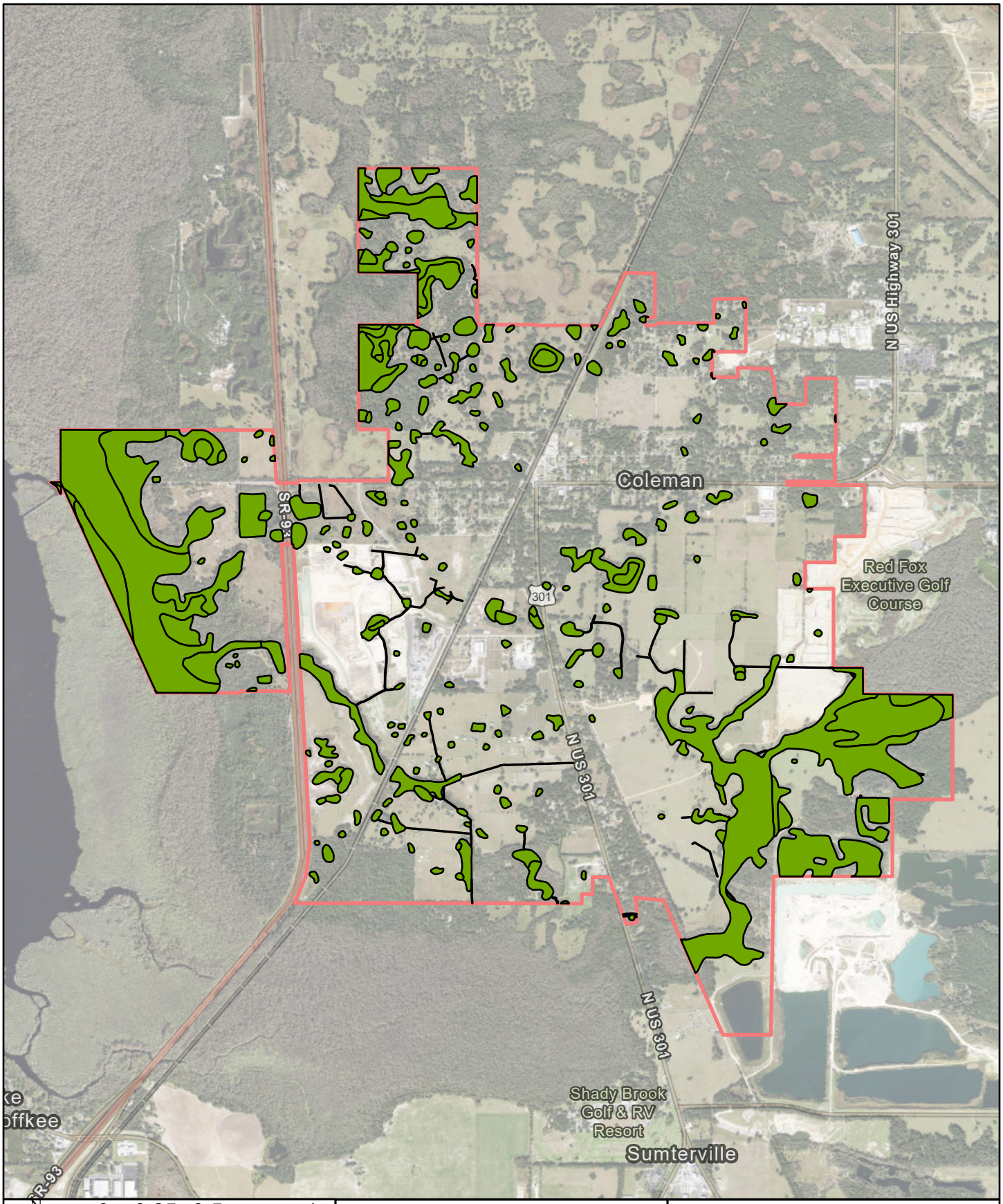
There are approximately 389 parcels with septic systems per the FDOH. However, as there is no wastewater system within the Coleman utility service area it is likely that all parcels have a septic system. For the purposes of this evaluation, it was assumed that there are 732 parcels with septic systems within the utility service area based on the parcel count obtained from the Sumter County property appraiser.

The environmental impacts of these septic systems as well as the implementation of a new centralized sanitary sewer system were reviewed. This review included Florida State wetland data as shown in **Figure 3.4**. Based on this review it was determined that the current potable water system and the resulting proposed wastewater system do not come in contact with any large wetlands within the utility service area. There are a number of parcels within the utility service area that come in contact with smaller wetlands. These parcels are likely utilizing a septic system and the conversion of these septic systems to a centralized sewer system will result in less nutrients being released into the soils and subsequent wetlands. Parcels with septic systems, along with the existing potable water system, and the wetlands within the utility service area are shown in **Figure 3.5**.

Based on this preliminary environmental review, no significant negative environmental impacts are anticipated when considering the implementation of a wastewater system.

3.2.1 WILDWOOD WASTEWATER INTERCONNECT

In August of 2022 Coleman entered into an interlocal agreement with Wildwood to establish the use of potable water, sanitary sewer, and reuse water services. Under this agreement Coleman is responsible for the construction and installation of a sanitary sewer system to serve its residents and businesses. The interconnection between Wildwood and the proposed Coleman sanitary sewer system will be located along CR 521 and include a master lift station and master meter at the lift station. The installation of a master meter at the lift station will allow for an accurate measurement of the wastewater flow Coleman is pumping to Wildwood for treatment. When the wastewater infrastructure is constructed and installed the City of Wildwood will treat the wastewater produced in Coleman. Currently Wildwood is planning to install a 12-inch sanitary sewer force main south along US Hwy 301 to serve a residential development; this force main will need to be extended to connect to Coleman along CR 521 as shown in **Figure 3.6**.


Coleman
N US Highway 301
SR-93
301
Red Fox
Executive Golf
Course
N US 301
N US 301
Shady Brook
Golf & RV
Resort
Sumterville
SR-93
0 0.25 0.5 1
Miles
Kimley»Horn
Figure 3.4
Wetlands within City of Coleman
Utility Service Area
Legend
Wetlands
Coleman Utility Service Area

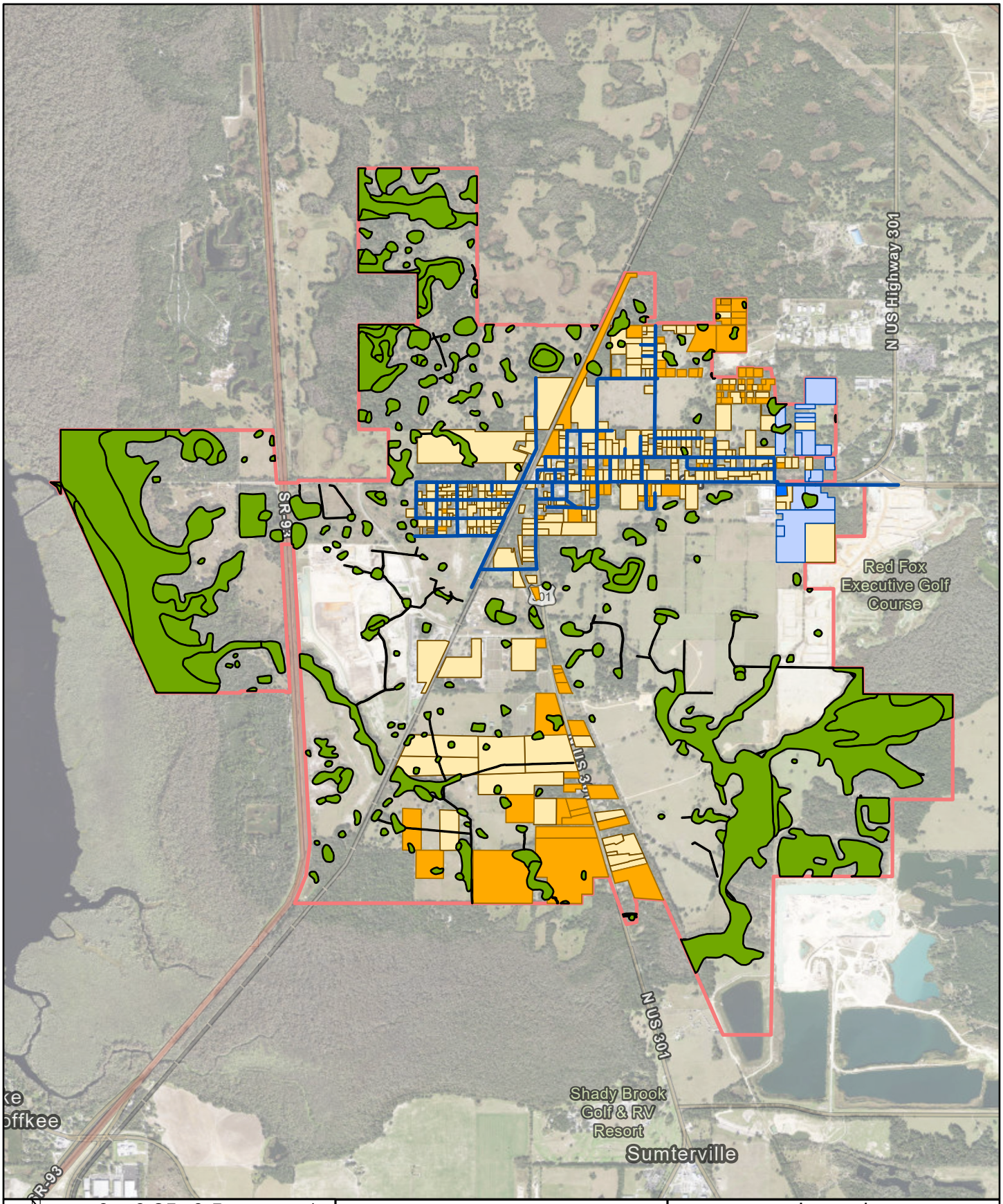
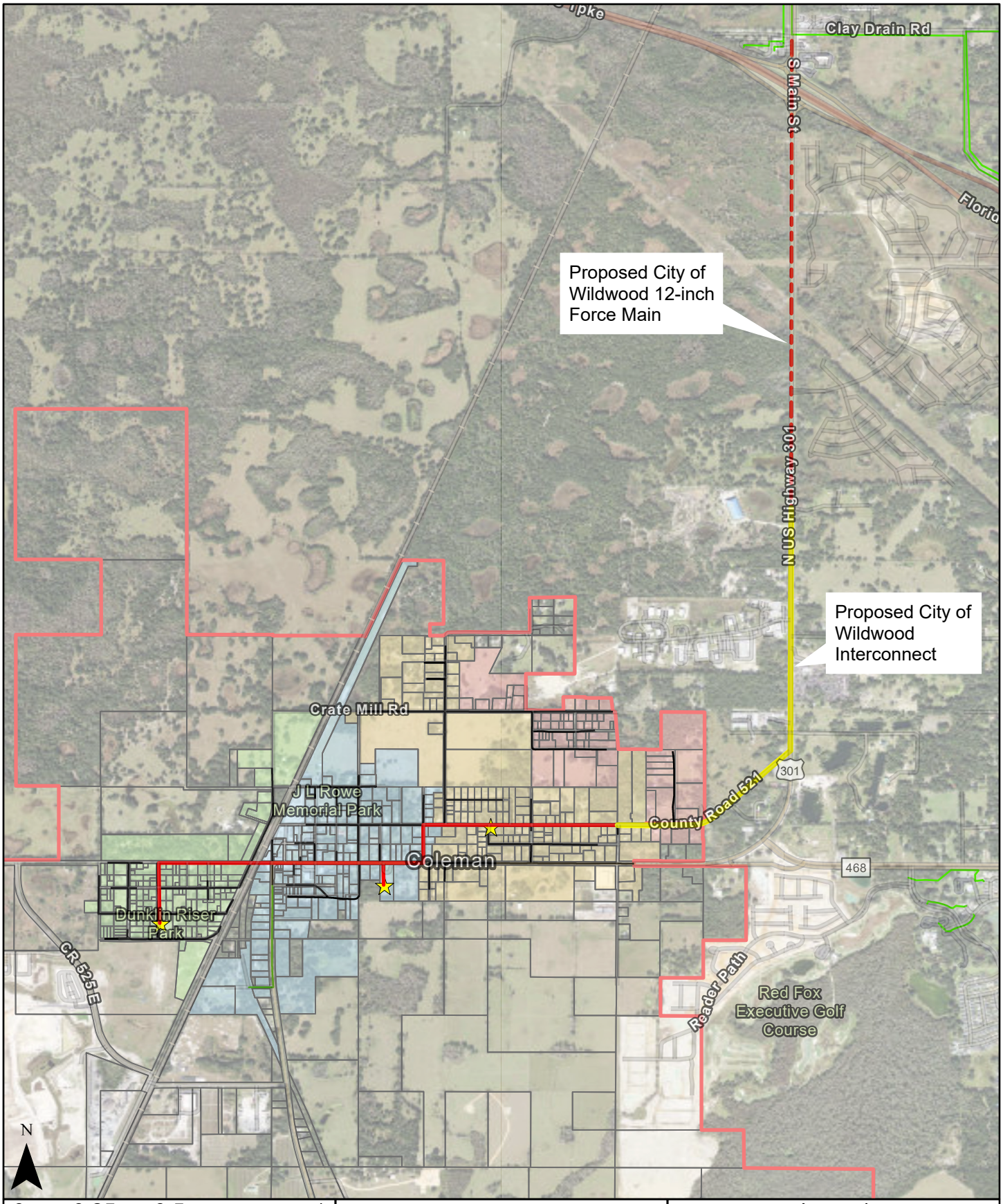


Figure 3.5
Wetlands, Septic Systems, and Potable Infrastructure within Coleman Utility Service Area


Clay Drain Rd
S Main St
N US Highway 301
Proposed City of Wildwood 12-inch Force Main
Proposed City of Wildwood Interconnect
Crate Mill Rd
J L Rowe Memorial Park
County Road 521
301
Coleman
468
Dunklin Riser Park
CR 525 E
Reader Path
Red Fox Executive Golf Course
N
0
0.25
0.5
1
Miles
Kimley»Horn
Figure 3.6
City of Wildwood Interconnect
Legend
Force Main Interconnect
Proposed Coleman Force Main
Proposed Lift Station
Wildwood Proposed 12-inch Force Main
Proposed Coleman Gravity Main
Existing Wildwood Force Main

4.0 DEMAND PROJECTIONS

4.1 EXISTING SERVICE AREA

An evaluation was performed to determine the number of vacant parcels within the existing service area. Should a wastewater collection system be constructed, the parcels currently served by the potable water system would be connected to the wastewater system and vacant lots could be connected in the future as they are built out.

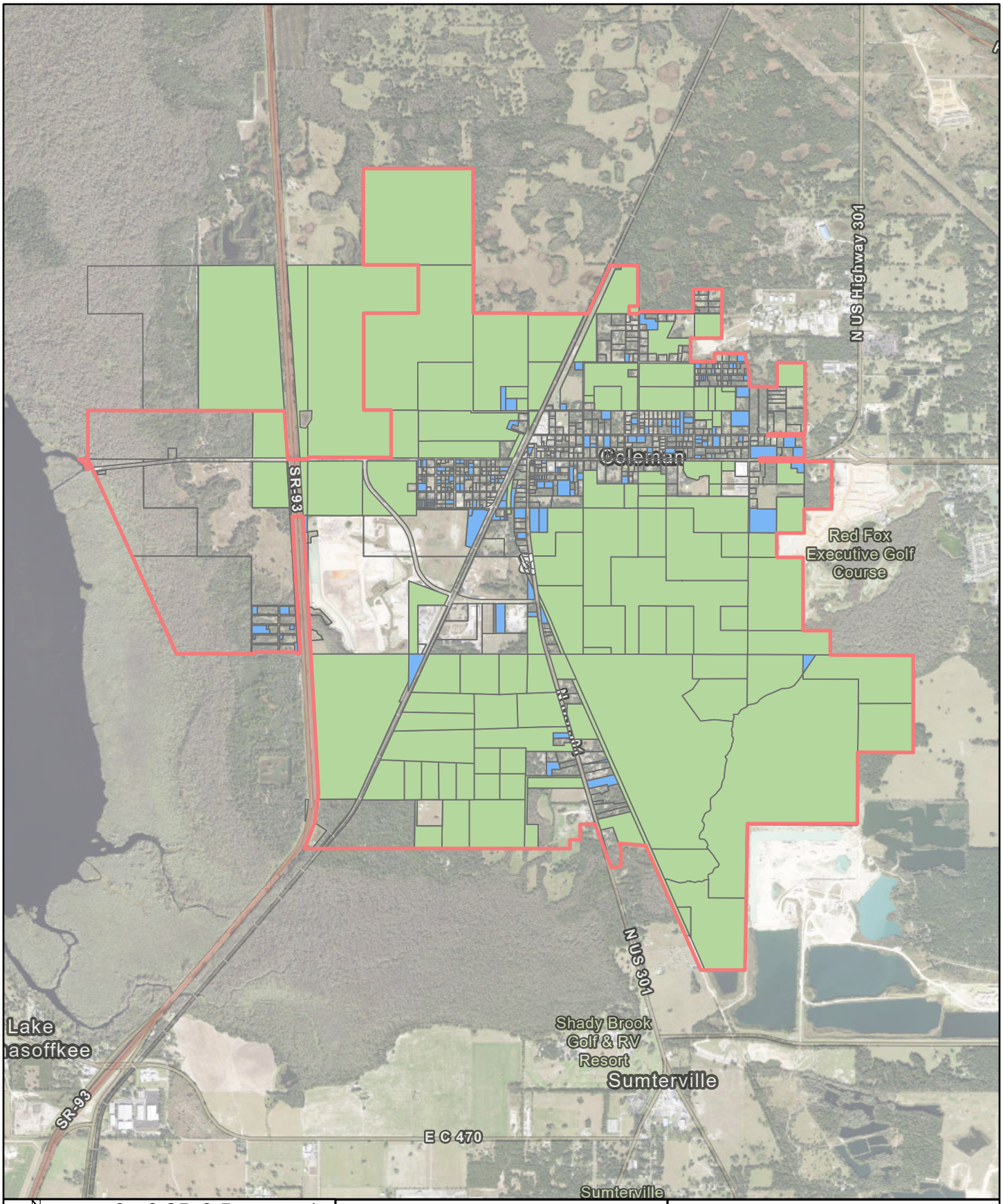
Parcel-level population projections are based on the *Small-Area Population Projection Methodology* provided by SWFWMD (**Appendix B**). These projections are based on BEBR population projections by County. The population values were obtained from SWFWMD population projections GIS spatial data and summarized for the years 2023, 2025, 2030, and 2040. The projections utilized were of the peak seasonal population which includes the permanent, commuter, tourist, and short-term rental populations.

A summary of the parcel types and projected population for each type within the utility service area is provided in **Table 4.1**.

Table 4.1: Population Projection by Parcel Type

Parcel Type	Number of Parcels	Population			
		2023	2025	2030	2040
Agriculture/Vacant	106	54	298	499	846
Commercial	22	6	6	6	6
Industrial	11	0	0	0	0
Institutional	45	8	8	8	8
Mining, Landfill, Row, Lake	1	0	0	0	0
Mobile Home	130	241	241	241	241
Multi-Family <10 Units	3	12	12	12	12
Single Family Residential	275	542	542	542	542
Vacant Residential	139	0	11	22	60
TOTAL	**732**	**863**	**1,117**	**1,329**	**1,714**

These projections, based on SWFWMD data, represent all parcels within the Coleman utility service area. There were slight differences noted between SWFEMD data and Sumter County property appraiser data. **Figure 4.1** shows the 245 vacant residential and agricultural/vacant parcels based on SWFWMD data while **Figure 4.2** shows 157 vacant parcels based on the Sumter County Property Appraiser data. The difference in the number of vacant parcels may be due to when the parcel data was collected. These data sources were also compared to December 2022 potable water billing data, this was done to ensure the correct count of vacant parcels was being utilized. It was determined that there were five parcels in both the Property Appraiser and SWFWMD data that were listed as vacant and had a December 2022 water bill. These parcels were re-categorized as single family residential, updated population projections by parcel type are shown below in **Table 4.2**.



N

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Miles

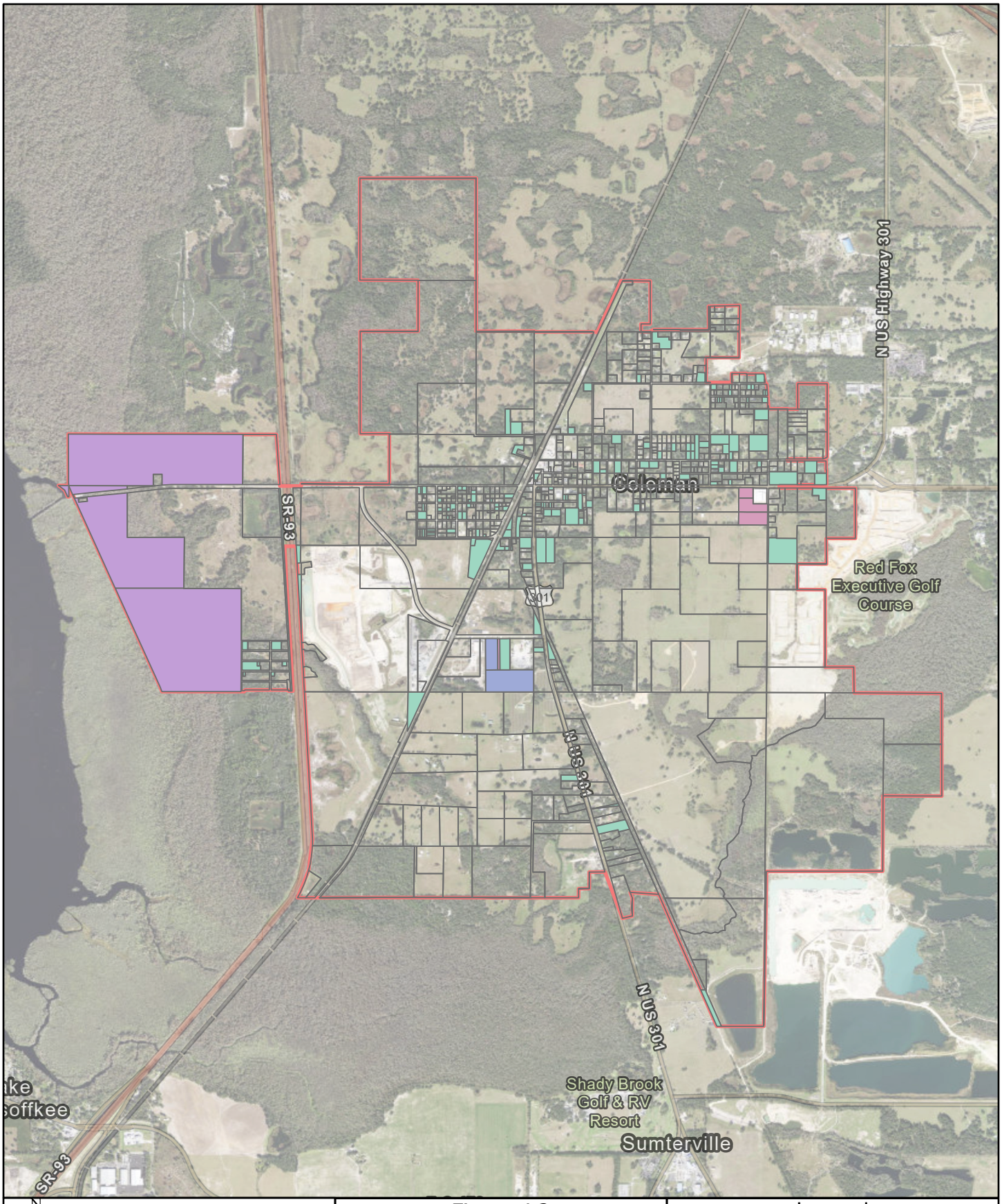
Kimley»Horn

Figure 4.1

Vacant Parcels within the City of Coleman Based on SWFWMD

Legend

- Coleman Utility Service Area
- VACANT RESIDENTIAL
- AGRICULTURE/VACANT
- City of Coleman Parcels



N

0 0.25 0.5 1 Miles

Kimley»Horn

Figure 4.2

Vacant Parcels within the City of Coleman Based on Sumter County Property Appraiser

Legend

- VACANT COMMERCIAL
- VACANT GOVERNMENTAL
- VACANT INDUSTRIAL
- VACANT RESIDENTIAL
- Coleman Utility Service Area

Table 4.2: Updated Population Projection by Parcel Type					
Parcel Type	**Number of Parcels**	**Population**			
		2023	**2025**	**2030**	**2040**
Agriculture/Vacant	106	54	298	499	846
Commercial	22	6	6	6	6
Industrial	11	0	0	0	0
Institutional	45	8	8	8	8
Mining, Landfill, Row, Lake	1	0	0	0	0
Mobile Home	130	241	241	241	241
Multi-Family <10 Units	3	12	12	12	12
Single Family Residential	280	542	551	551	551
Vacant Residential	134	0	10	21	58
TOTAL	**732**	**863**	**1,125**	**1,337**	**1,721**

SWFWMD population projections were then determined for all parcels within the existing potable water service area as shown in **Table 4.3.** These projections represent the parcels that are currently being served by the Coleman potable water system and do not include vacant parcels. **Table 4.4** shows the parcels currently being served by the potable water system as well as the vacant parcels within the potable water service area (infill).

Table 4.3: Existing Potable Water Customer Population Projection by Parcel Type					
Parcel Type	**Number of Parcels**	**Population**			
		2023	**2025**	**2030**	**2040**
Commercial	16	2	2	2	2
Industrial	1	0	0	0	0
Institutional	27	2	2	2	2
Mining, Landfill, Row, Lake	1	0	0	0	0
Mobile Home	74	153	153	153	153
Multi-Family <10 Units	2	9	9	9	9
Single Family Residential	237	471	471	471	471
TOTAL	**358**	**636**	**636**	**636**	**636**

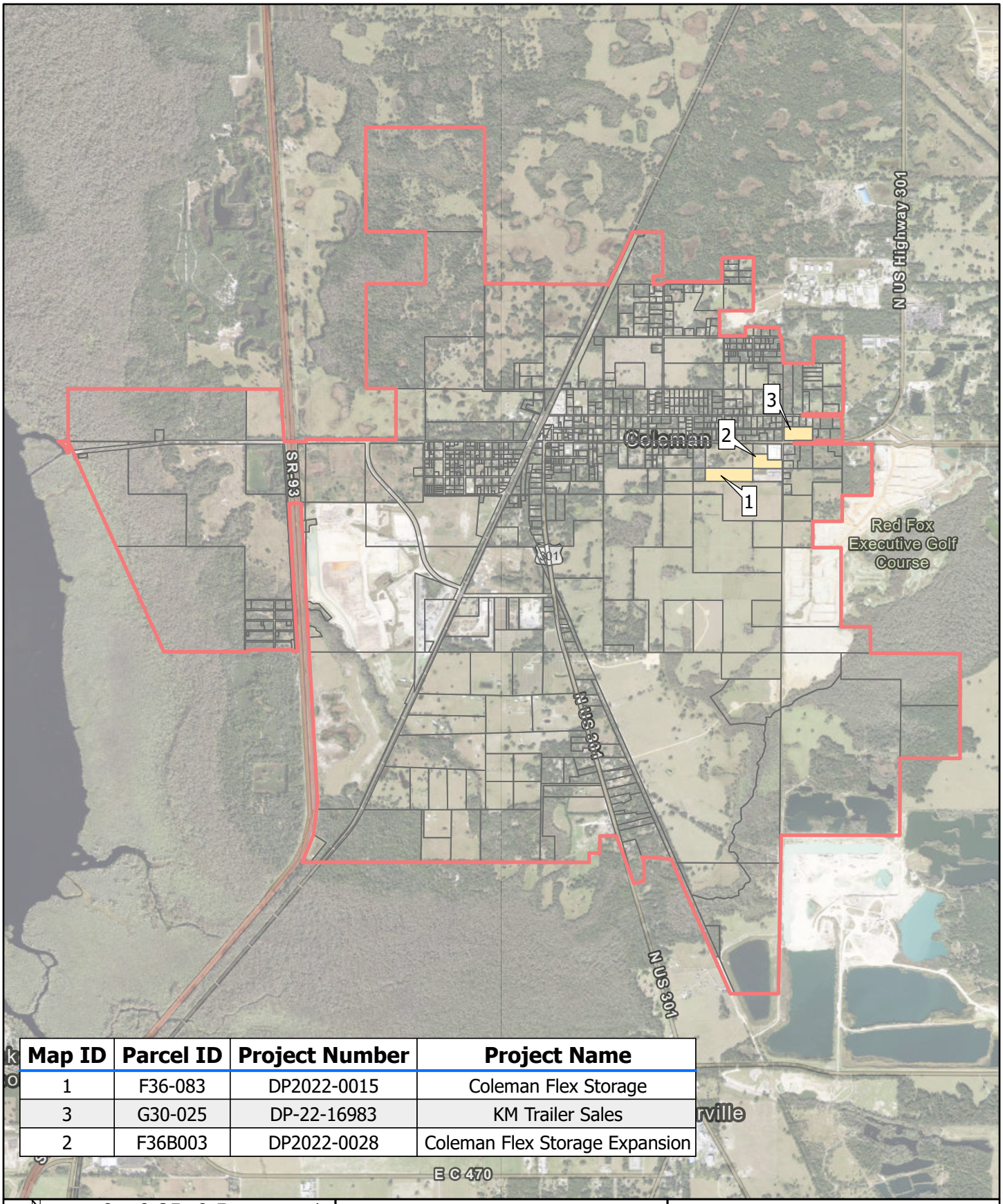
Table 4.4: Existing Potable Water Customer and Infill Population Projection by Parcel Type					
Parcel Type	**Number of Parcels**	**Population**			
		2023	**2025**	**2030**	**2040**
Agriculture/Vacant	19	8	30	49	77
Commercial	16	2	2	2	2
Industrial	1	0	0	0	0
Institutional	27	2	2	2	2
Mining, Landfill, Row, Lake	1	0	0	0	0
Mobile Home	74	153	153	153	153
Multi-Family <10 Units	2	9	9	9	9
Single Family Residential	237	471	471	471	471
Vacant Residential	96	0	7	12	37
TOTAL	**473**	**644**	**673**	**697**	**750**

Coleman is not expecting large scale developments within its City limits. **Figure 4.3** shows the approved future developments within Coleman, all of which are commercial properties and are expected to be completed within two years. These developments were included in the buildout (existing customers, infill, and new developments) projections and were based on the equivalent water and wastewater usage of one single family residential unit. The buildout projections are provided in **Table 4.5**. Additionally, the parcels categorized as agriculture/vacant have the potential to be used for future large-scale developments, which is reflected in the SWFWMD population projections previously shown in **Table 4.1** and **Table 4.2**.

Table 4.5: Buildout Population Projection by Parcel Type					
Parcel Type	**Number of Parcels**	**Population**			
		2023	**2025**	**2030**	**2040**
Agriculture/Vacant	19	8	30	49	77
Commercial	16	2	2	2	2
Industrial	1	0	0	0	0
Institutional	27	2	2	2	2
Mining, Landfill, Row, Lake	1	0	0	0	0
Mobile Home	74	153	153	153	153
Multi-Family <10 Units	2	9	9	9	9
Single Family Residential	239	475	475	475	475
Vacant Residential	96	0	7	12	37
TOTAL	**475**	**647**	**676**	**700**	**753**

Table 4.6 shows all parcels currently being served, infill, new developments, and two adjacent neighborhoods that could be served in the future, these neighborhoods are discussed further in **Section 5.0.**

Table 4.6: Buildout and Adjacent Neighborhoods Population Projection by Parcel Type					
Parcel Type	**Number of Parcels**	**Population**			
		2023	**2025**	**2030**	**2040**
Agriculture/Vacant	24	11	36	57	89
Commercial	16	2	2	2	2
Industrial	1	0	0	0	0
Institutional	28	2	2	2	2
Mining, Landfill, Row, Lake	1	0	0	0	0
Mobile Home	116	217	217	217	217
Multi-Family <10 Units	2	9	9	9	9
Single Family Residential	247	487	487	487	487
Vacant Residential	109	0	9	16	43
TOTAL	**544**	**727**	**762**	**790**	**851**



Map ID	Parcel ID	Project Number	Project Name
1	F36-083	DP2022-0015	Coleman Flex Storage
3	G30-025	DP-22-16983	KM Trailer Sales
2	F36B003	DP2022-0028	Coleman Flex Storage Expansion

N

0 0.25 0.5 1

Miles

Kimley»Horn

Figure 4.3

Approved Developments in the City of Coleman

Legend

Approved Developments

Coleman Utility Service Area

4.2 WASTEWATER DEMAND PROJECTIONS

To determine the future wastewater generation projections, it was necessary to understand the projected population growth within the Coleman service area. Population growth was evaluated and included the existing population, infill population, buildout population, and the population associated with adjacent neighborhoods. Existing population included the population connected to the potable water system; infill population is the population associated with the development of vacant residential parcels; buildout population included the population associated within developments within the service area; population associated with adjacent neighborhoods includes the two neighborhoods adjacent to the existing potable water system.

The population projections presented in **Table 4.1** and **Table 4.2** were utilized along with per capita use for potable water which previously described in **Section 3.1** to determine wastewater generation projections. As there is no wastewater collection system in Coleman, the wastewater generation were projected using a ratio of 169 gpd for water to 100 gpd for wastewater per Sumter County Ordinances Sec. 13-531 and Sec. 13-532. The average per capita water consumption rate from the billing data was utilized for water use projections. The resulting flow projections for the existing utility service area, as well as infill, were determined utilizing the billing data for potable water and calculated wastewater flow in conjunction with the SWFWMD population projections. The projections are provided in **Table 4.7** below:

Table 4.7: Projections for Coleman Existing Utility Service Area

Year	Population	Water gpd/person	Total Water gpd	Wastewater gpd/person	Total Wastewater gpd
2025	1,117	148	165,144	87	97,719
2030	1,329	148	196,541	87	116,297
2040	1,714	148	253,400	87	149,941

Water and wastewater projections were also determined for the existing potable water customers based on **Table 4.3** and are presented in **Table 4.8**.

Table 4.8: Projections for Coleman Existing Potable Water Customers

Year	Population	Water gpd/person	Total Water gpd	Wastewater gpd/person	Total Wastewater gpd
2025	636	148	94,024	87	55,636
2030	636	148	94,024	87	55,636
2040	636	148	94,024	87	55,636

In addition, water and wastewater generation projections were determined for existing potable water customers and infill based on **Table 4.4**, as well as existing customers, infill, and new developments based on **Table 4.5,** and the two adjacent neighborhoods based on **Table 4.6**. These projections are presented in **Table 4.9**, **Table 4.10**, and **Table 4.11**.

Table 4.9: Projections for Coleman Existing Potable Water Customers and Infill					
Year	**Population**	**Water gpd/person**	**Total Water gpd**	**Wastewater gpd/person**	**Total Wastewater gpd**
2025	673	148	99,481	87	58,864
2030	697	148	102,997	87	60,945
2040	750	148	110,865	87	65,600

Table 4.10: Projections for Coleman Existing Potable Water Customers, Infill, and New Developments					
Year	**Population**	**Water gpd/person**	**Total Water gpd**	**Wastewater gpd/person**	**Total Wastewater gpd**
2025	676	148	99,983	87	59,162
2030	700	148	103,500	87	61,242
2040	753	148	111,367	87	65,898

Table 4.11: Projections for Buildout and Adjacent Neighborhoods					
Year	**Population**	**Water gpd/person**	**Total Water gpd**	**Wastewater gpd/person**	**Total Wastewater gpd**
2025	762	148	112,624	87	66,642
2030	790	148	116,823	87	69,126
2040	851	148	125,747	87	74,406

5.0 POTENTIAL WASTEWATER SYSTEM

To evaluate the potential wastewater system Coleman was divided into three sewersheds, as shown in **Figure 5.1,** and sanitary sewer layouts for a gravity system and low-pressure system were evaluated. To determine the layout of the potential gravity sewer system and the potential low-pressure system a review of parcels within the utility service area was completed. Coleman owned parcels were identified and are shown in **Figure 5.2**. These parcels were identified determine where lift stations could be installed within the system to limit the acquisition of easements or land for a lift station.

The system will comprise of three lift stations, one in each sewershed. These lift stations will be connected through a force main. The force main will pump wastewater from sewershed 2 and manifold with the force main in sewershed 3. These force main systems will be manifolded to reduce repumping of wastewater and to remain energy efficient. The force main will then connect to the lift station in sewershed 1. The lift station in sewershed 1 will be a master lift station and pump wastewater to Wildwood.

5.1 GRAVITY SYSTEM

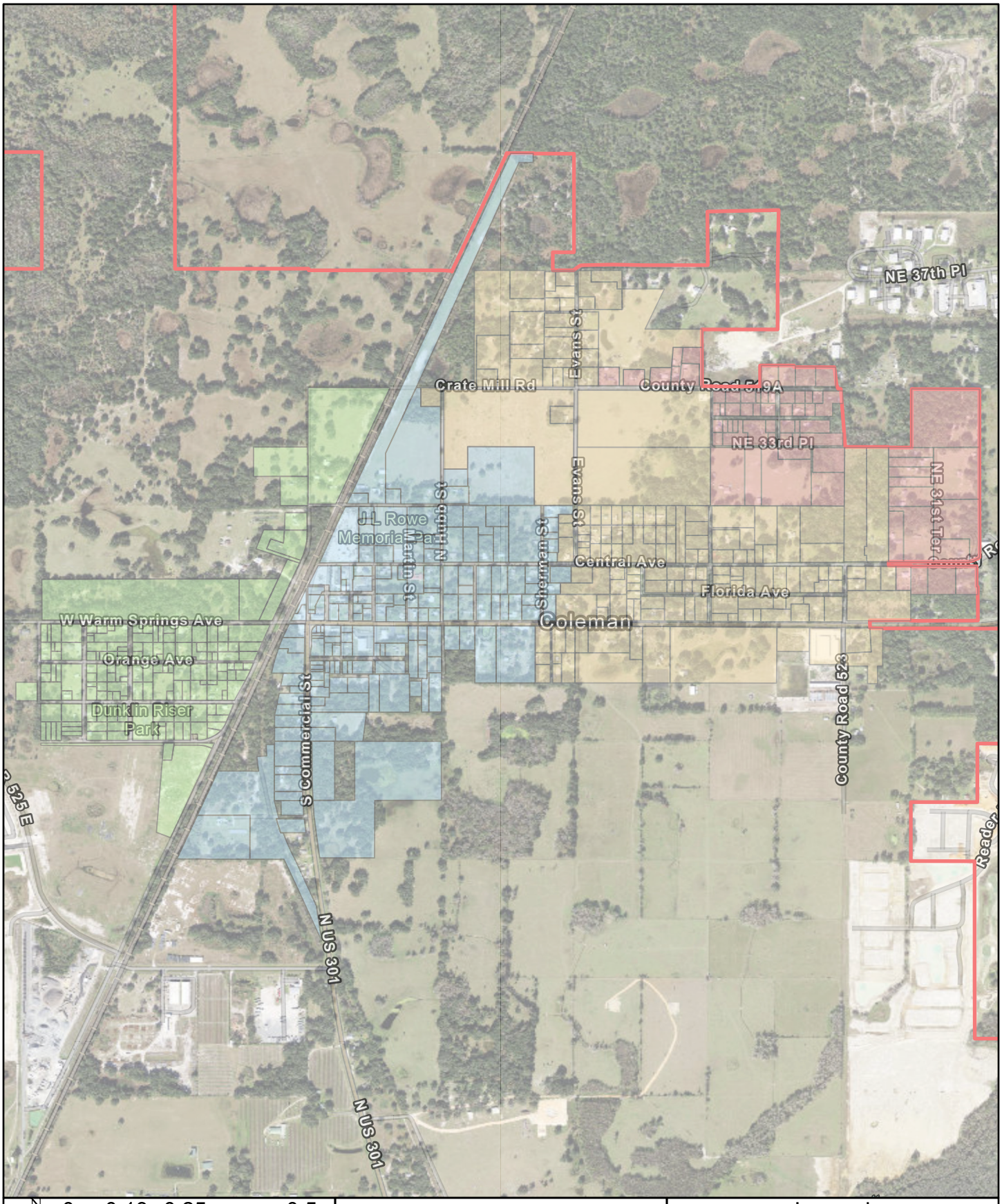
Each area of Coleman was evaluated and divided into three distinct areas, sewersehds, that are currently being served by Coleman potable water system. These areas were evaluated using an ESRI ArcGIS model developed by Kimley-Horn. The model utilized the topography within Coleman to partially automate the development of the gravity system in each area. The model was used to layout the gravity sewer, determine the depth of the sewer layout, and assign parcels to their specific sewershed. Each sewershed represents a collection of parcels that will be served by one lift station located at a Coleman owned parcel.

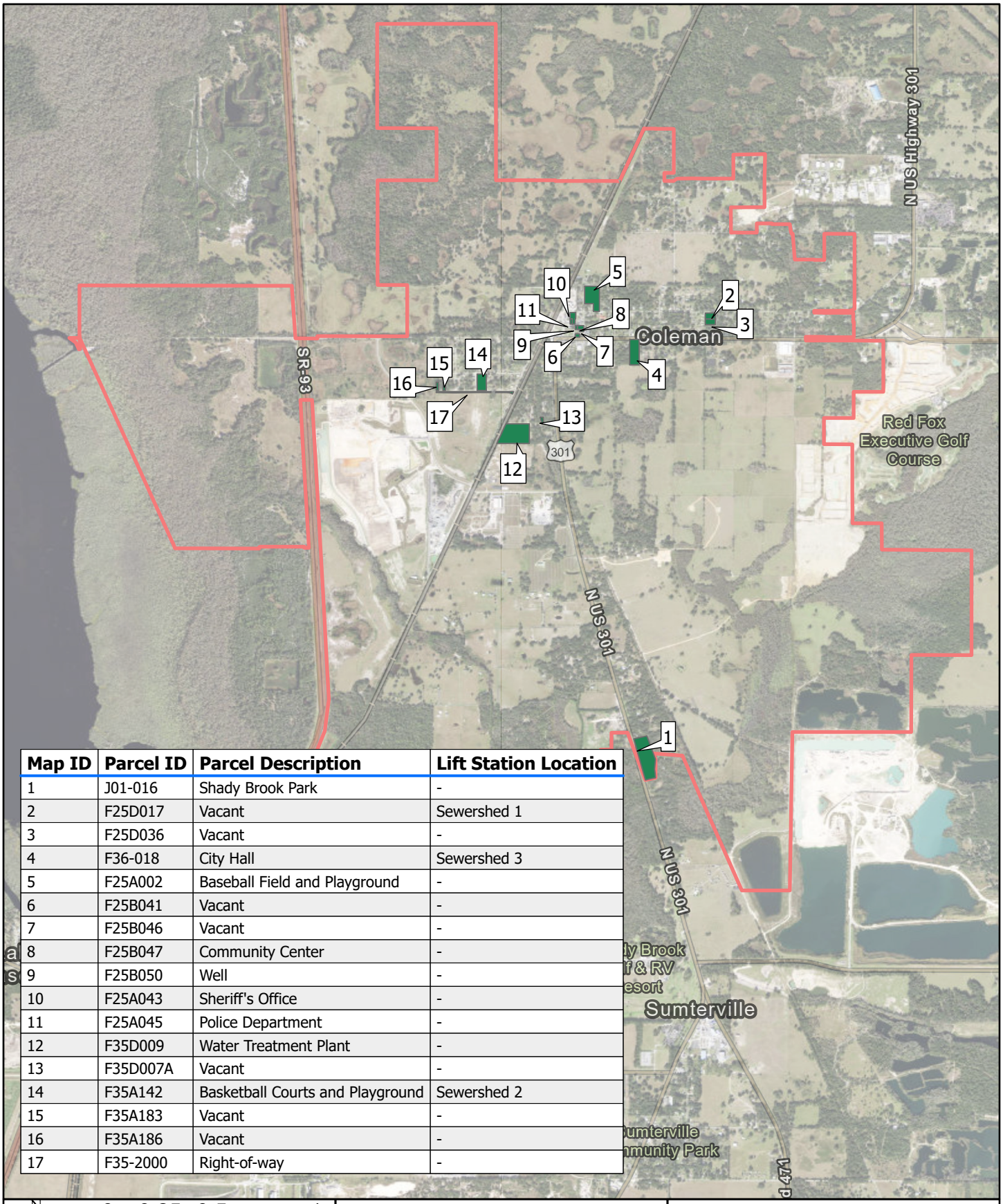
Within the GIS model, topographic one-foot contour data was converted to a 3-D surface in ArcGIS. The model then used the 3-D surface to create a 3-D line along each roadway throughout the three areas analyzed. These 3-D lines were color coded based on elevation with blue being low in elevation and red being high in elevation; this allowed the topographic changes along the roadways to be visually displayed. The topographic “heat map” is shown below in **Figure 5.3**.

As the elevation throughout Coleman is relatively consistent, with the exception of two high areas discussed in **Section 5.3**, lift station location was not elevation dependent and Coleman owned parcels were utilized for lift station locations. Once these sites were chosen, the 3-D lines generated from the GIS model were modified to represent the proposed gravity sewer system. The model was then used to generate a profile for each gravity sewer run being considered. The following design criteria were utilized when evaluating the gravity sewer system and gravity run profiles:

- Minimum Gravity Pipe Slope: 0.45%
- Minimum Gravity Pipe Cover: 3-feet
- Manhole Depth not to Exceed: 16-feet
- Lift Station Wet Well Depth not to Exceed: 20-feet
- *Exceptions – in a design scenario where proposing deeper manholes would eliminate the need for an additional lift station, a manhole depth of up to 25-feet is permissible; in this design scenario a wet well depth of 30-feet is permissible.*

The proposed sewersheds and gravity sewer layouts are provided below in **Figure 5.4, 5.5,** and **5.6**. Each sewershed was designed to maximize the size for each lift station while satisfying the design criteria above. In addition to the three sewersheds which are receiving water service, an alternative was developed and shown in **Figure 3.7**. This alternative includes two neighborhoods that are near the existing water system and proposed gravity system and could be considered for potential wastewater connection in the future.


NE 37th Pl
Crate Mill Rd
Evans St
NE 33rd Pl
NE 31st Ter
J L Rowe Memorial Park
N 4th St
Sherman St
Central Ave
Florida Ave
Coleman
W Warm Springs Ave
Orange Ave
Dunklin Riser Park
S Commercial St
County Road 523
525 E
N US 301
N US 301
N
0 0.13 0.25 0.5
Miles
Kimley»Horn
Figure 5.1
City of Coleman Proposed Sewersheds
Legend
Gravity Sewershed 1 Adjacent Neighborhoods
Gravity Sewershed 1
Gravity Sewershed 3
Gravity Sewershed 2
Coleman Utility Service Area



Map ID	Parcel ID	Parcel Description	Lift Station Location
1	J01-016	Shady Brook Park	-
2	F25D017	Vacant	Sewershed 1
3	F25D036	Vacant	-
4	F36-018	City Hall	Sewershed 3
5	F25A002	Baseball Field and Playground	-
6	F25B041	Vacant	-
7	F25B046	Vacant	-
8	F25B047	Community Center	-
9	F25B050	Well	-
10	F25A043	Sheriff's Office	-
11	F25A045	Police Department	-
12	F35D009	Water Treatment Plant	-
13	F35D007A	Vacant	-
14	F35A142	Basketball Courts and Playground	Sewershed 2
15	F35A183	Vacant	-
16	F35A186	Vacant	-
17	F35-2000	Right-of-way	-

N

0 0.25 0.5 1

Miles

Kimley»Horn

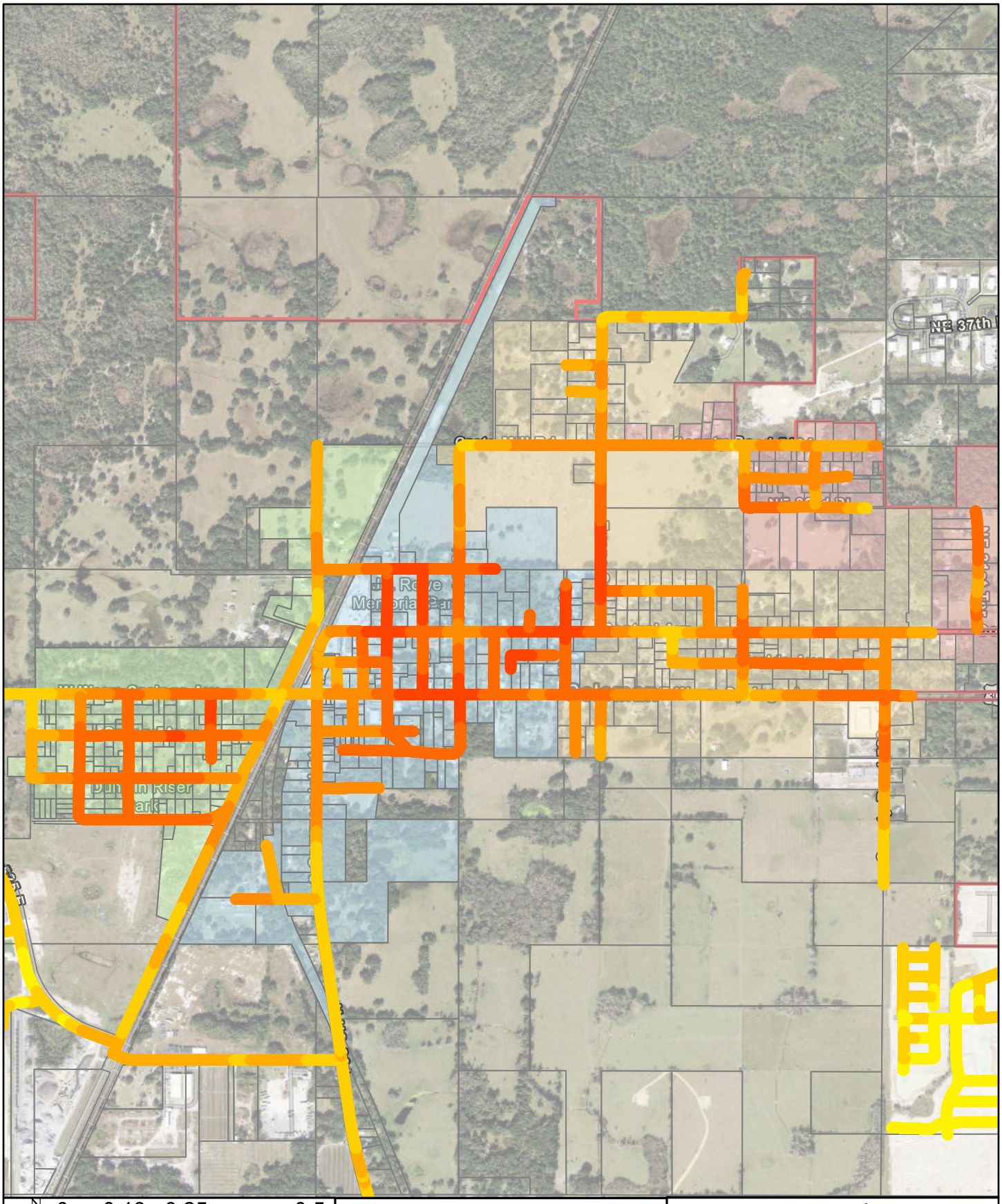
Figure 5.2

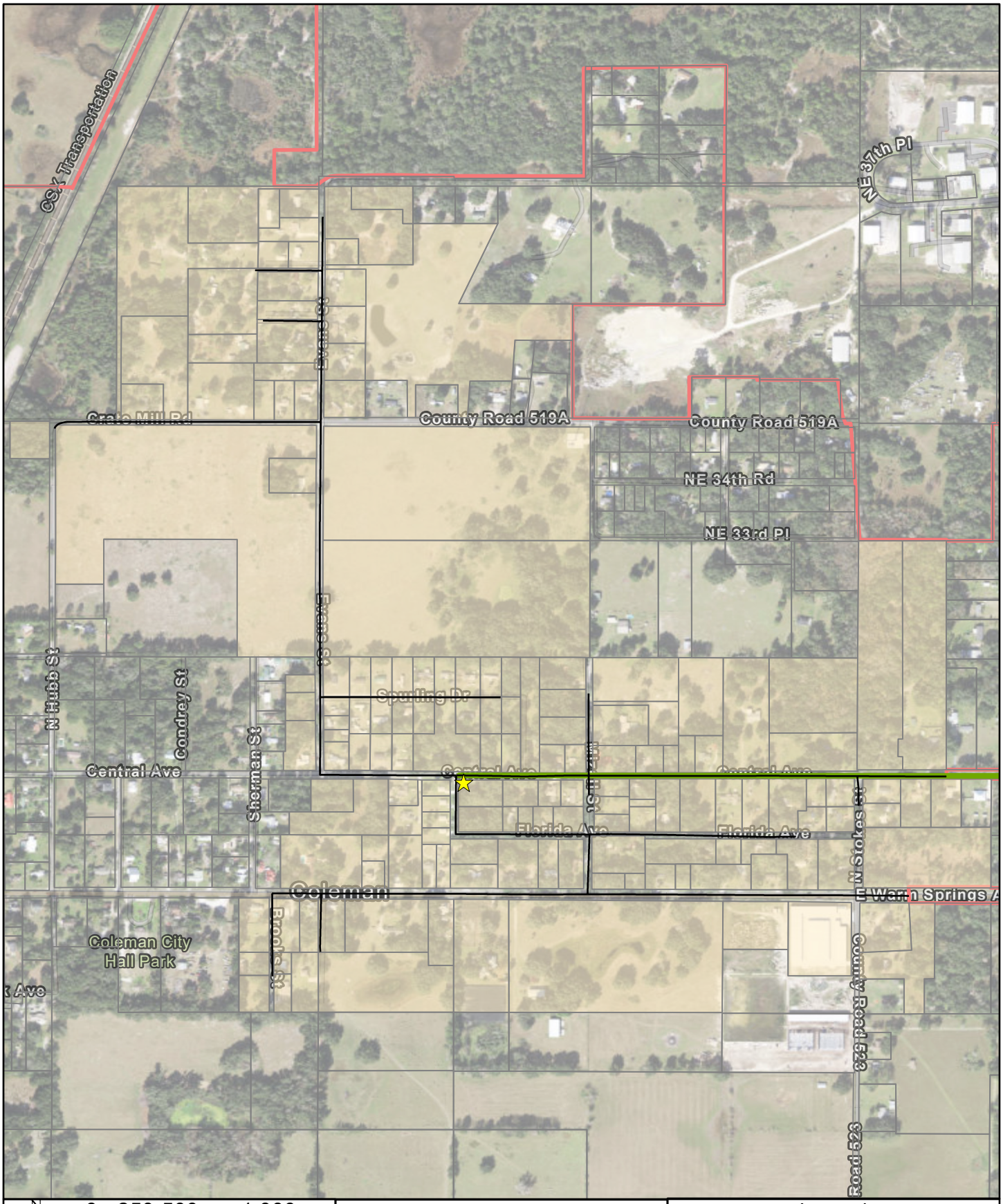
City of Coleman Owned Parcels

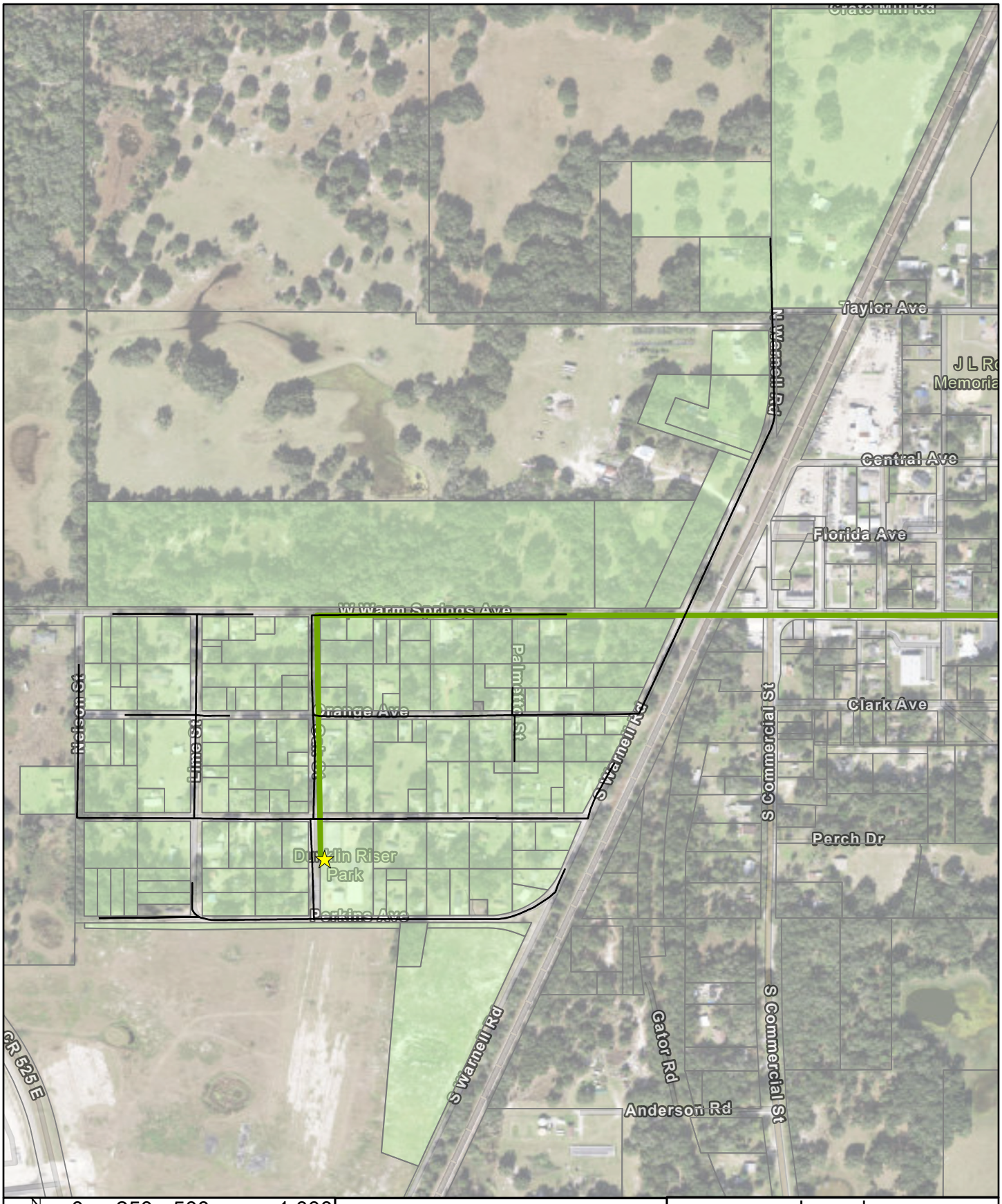
Legend

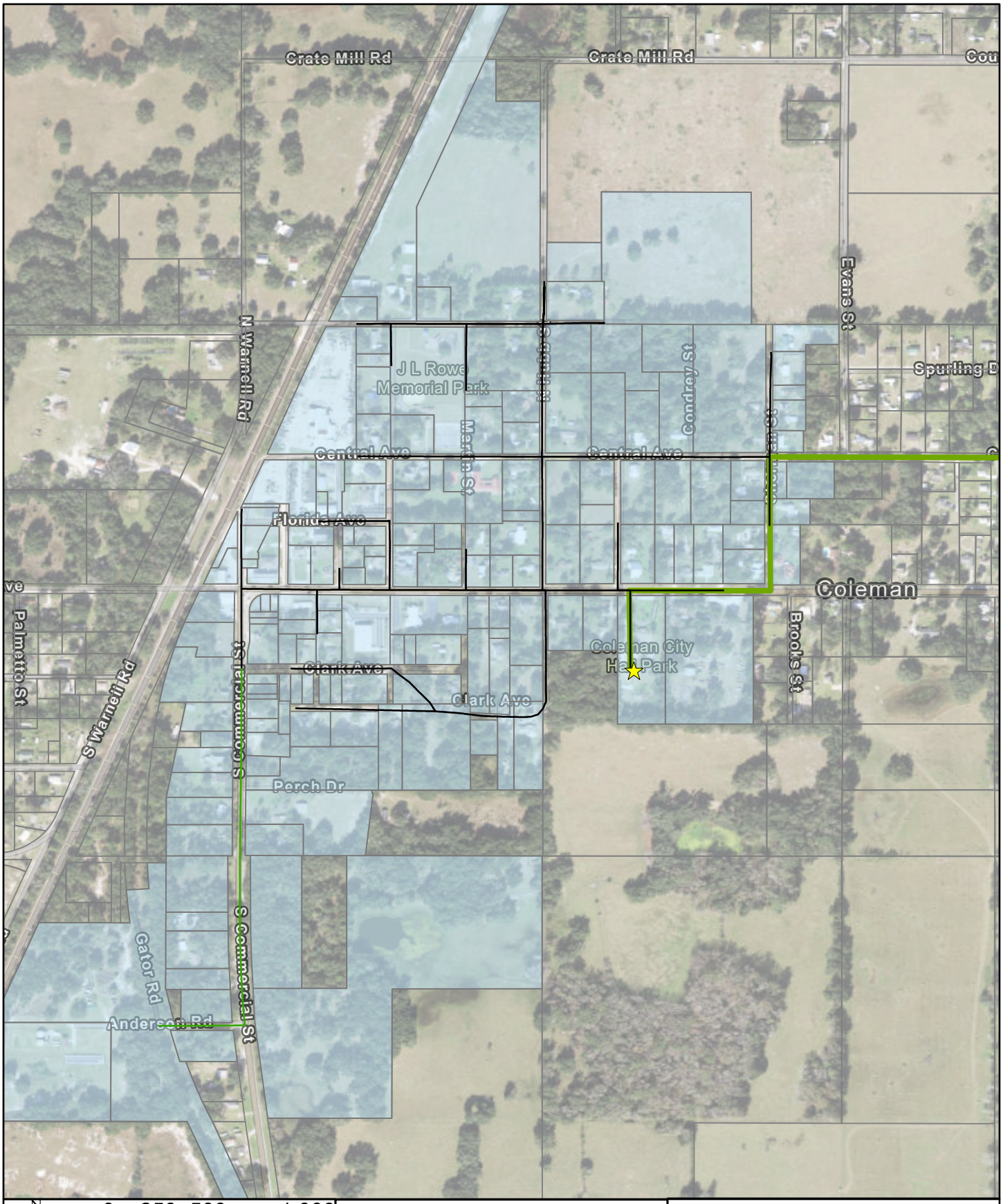
City of Coleman Owned Parcels

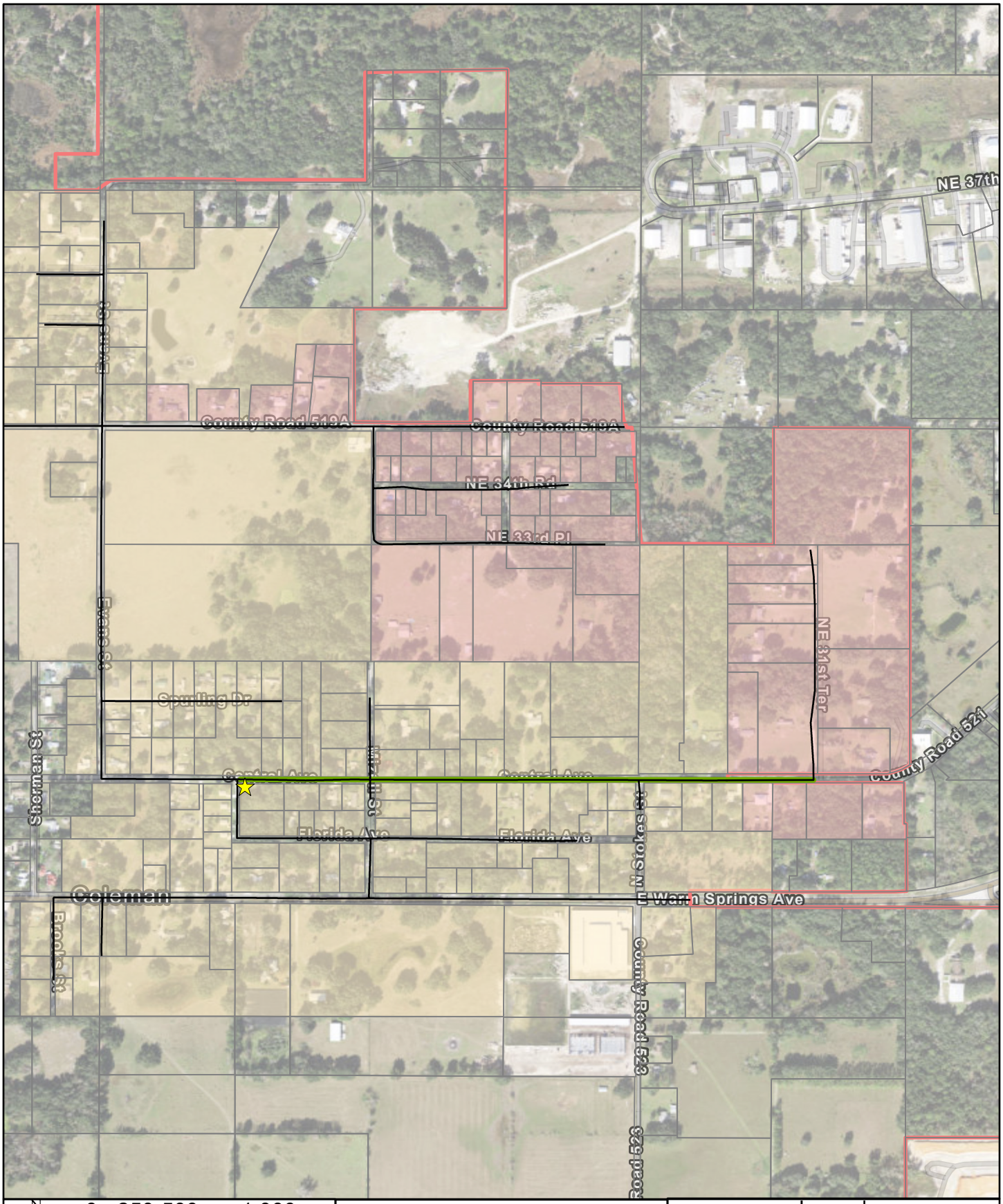
Coleman Utility Service Area


NE 37th
N
0 0.13 0.25 0.5
Miles
Kimley»Horn
Figure 5.3
City of Coleman Gravity Layout Heat Map
Legend
Gravity Sewershed 1 Adjacent Neighborhoods
Gravity Sewershed 1
Gravity Sewershed 3
Gravity Sewershed 2
Coleman Utility Service Area


CSX Transportation
NE 37th Pl
Evans St
Crate Mill Rd
County Road 519A
County Road 519A
NE 34th Rd
NE 33rd Pl
Evans St
N Hubb St
Condrey St
Sherman St
Spurling Dr
Central Ave
Central Ave
Central Ave
Florida Ave
Florida Ave
N Stokes St
Coleman
E Warm Springs A
Coleman City Hall Park
Brooks St
County Road 528
Road 528
N
0 250 500 1,000
Feet
Kimley»Horn
Figure 5.4
City of Coleman Gravity Layout
Sewershed 1
Legend
Proposed Lift Station Location
Proposed Force Main
Proposed Gravity Main
Gravity Sewershed 1
Coleman Utility Service Area


Crate Mill Rd
Taylor Ave
N Warnell Rd
Central Ave
Florida Ave
W Warm Springs Ave
Palmetto St
Nelson St
Lime St
Orange Ave
S Warnell Rd
S Commercial St
Clark Ave
Perch Dr
Dublin Riser Park
Perkins Ave
Gator Rd
Anderson Rd
CR 525 E
N
0 250 500 1,000
Feet
Kimley»Horn
Figure 5.5
City of Coleman Gravity Layout
Sewershed 2
Legend
Proposed Lift Station Location
Proposed Gravity Main
Proposed Force Main
Gravity Sewershed 2
Coleman Utility Service Area


Crate Mill Rd
Crate Mill Rd
Evans St
N Warnell Rd
J L Rowe Memorial Park
Central Ave
Central Ave
Florida Ave
Coleman
Coleman City Hall Park
Brooks St
Clark Ave
Clark Ave
S Warnell Rd
Palmetto St
S Commercial St
Perch Dr
Gator Rd
Anderson Rd
0 250 500 1,000
Feet
N
Kimley»Horn
Figure 5.6
City of Coleman Gravity Layout
Sewershed 3
Legend
Proposed Lift Station Location
Proposed Gravity Main
Proposed Low Pressure System
Proposed Force Main
Gravity Sewershed 3
Coleman Utility Service Area



N

0 250 500 1,000

Feet

Kimley»Horn

Figure 5.7

City of Coleman Gravity Layout
Sewershed 1 - Adjacent Neighborhoods

Legend

- Proposed Lift Station Location
- Proposed Gravity Main
- Proposed Force Main
- Gravity Sewershed 1
- Gravity Sewershed 1 Adjacent Neighborhoods
- Coleman Utility Service Area

5.2 LOW PRESSURE SYSTEM

A Low-Pressure System (LPS) can be considered as an alternative to a conventional gravity sewer system. These systems typically have a lower initial front-end cost, utilize smaller pipes, and have less infiltration than gravity sewer. Additionally, due to the smaller pipe sizes, ranging from 2-inches in diameter to 4 inches in diameter, the surface disruption during installation is typically less than that of a conventional gravity sewer system.

LPS systems are comprised of conventional drain, waste, and vent piping within the residence or business which connect to a grinder pump. The grinder pump discharges a finely ground wastewater slurry into small diameter pressure piping which is ultimately pumped through the pressurized pipes to a wastewater treatment facility.

In a LPS, grinder pumps are installed at each connection and are able to pump and discharge wastewater into the wastewater transmission system. The pump discharges the wastewater slurry at a low flow rate with a capability of satisfying high pressure head scenarios. The pumps and motors rely on electrical power from the residence or business in order to operate. However, the pump's running time is short and power consumption is typically low. In the event of a power outage, the grinder pumps provide storage capacity to prevent overflows.

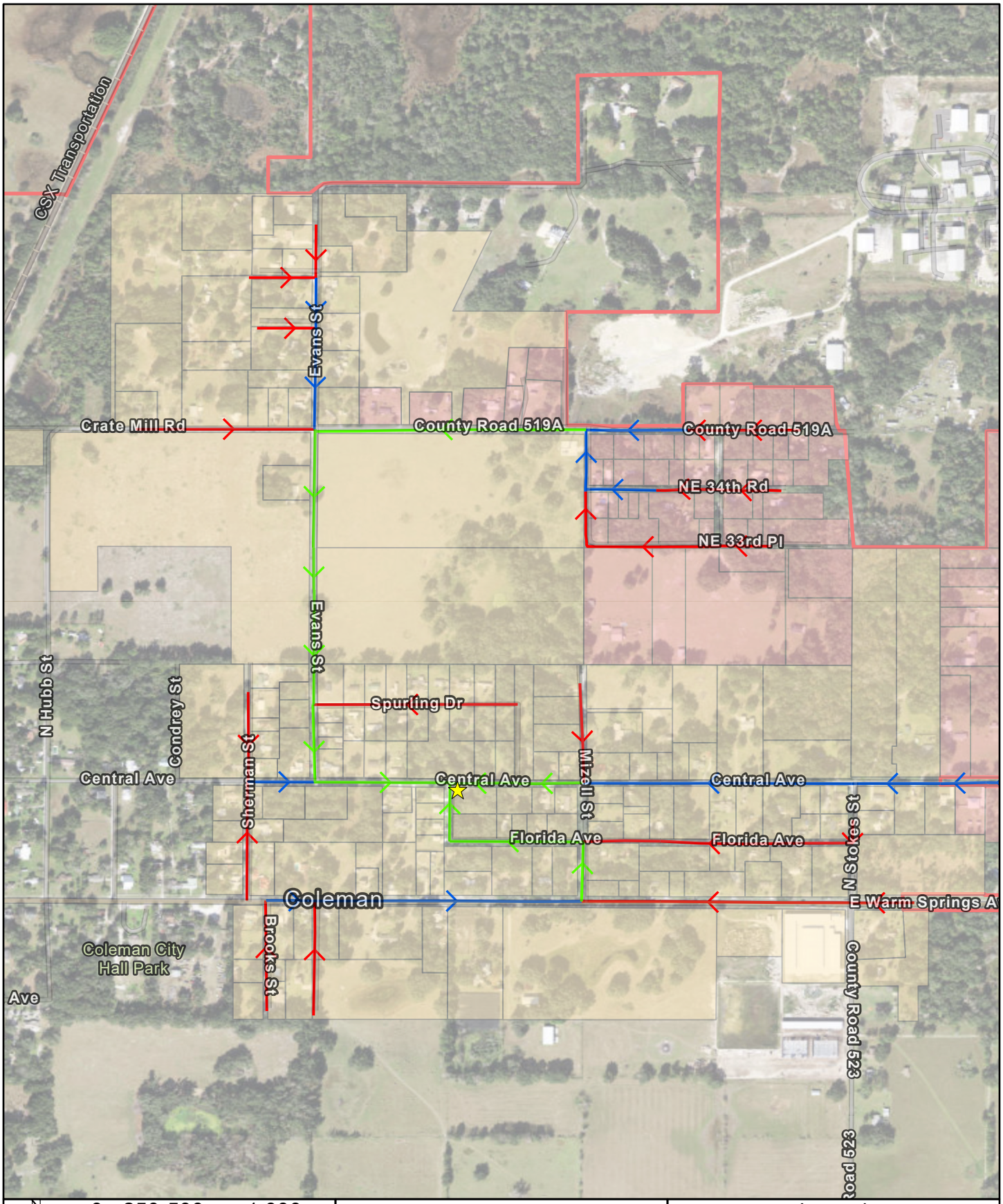
The LPS layout was designed to give the shortest runs of pipe, the fewest changes in direction, and avoid loops in the system. The system was first divided into sewersheds as previously described. Each sewershed was then divided into zones to facilitate the selection of pipe sizes. The pipe size must be appropriate in relation to the requirements of the flow velocity within the system and the number of residential and business connections. Zones are determined by the number of pumps within the system and the predicted number of pumps that will operate simultaneously. The design criteria utilized for the zone designation and pipe size are presented below:

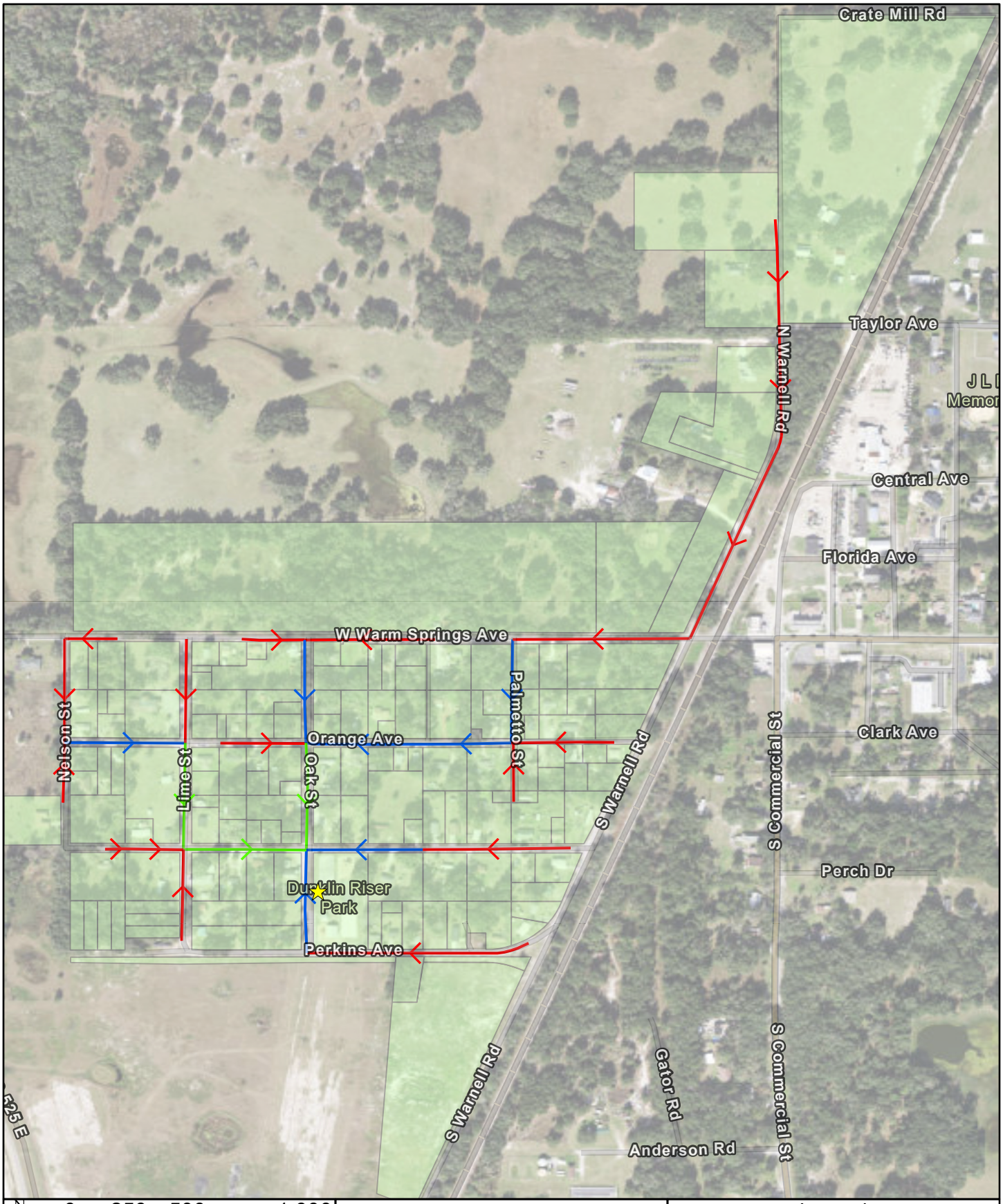
- 2-inch force main: 0 – 9 accumulated pumps per zone
- 3-inch force main: 10 – 67 accumulated pumps per zone
- 4-inch force main: 68+ accumulated pumps per zone

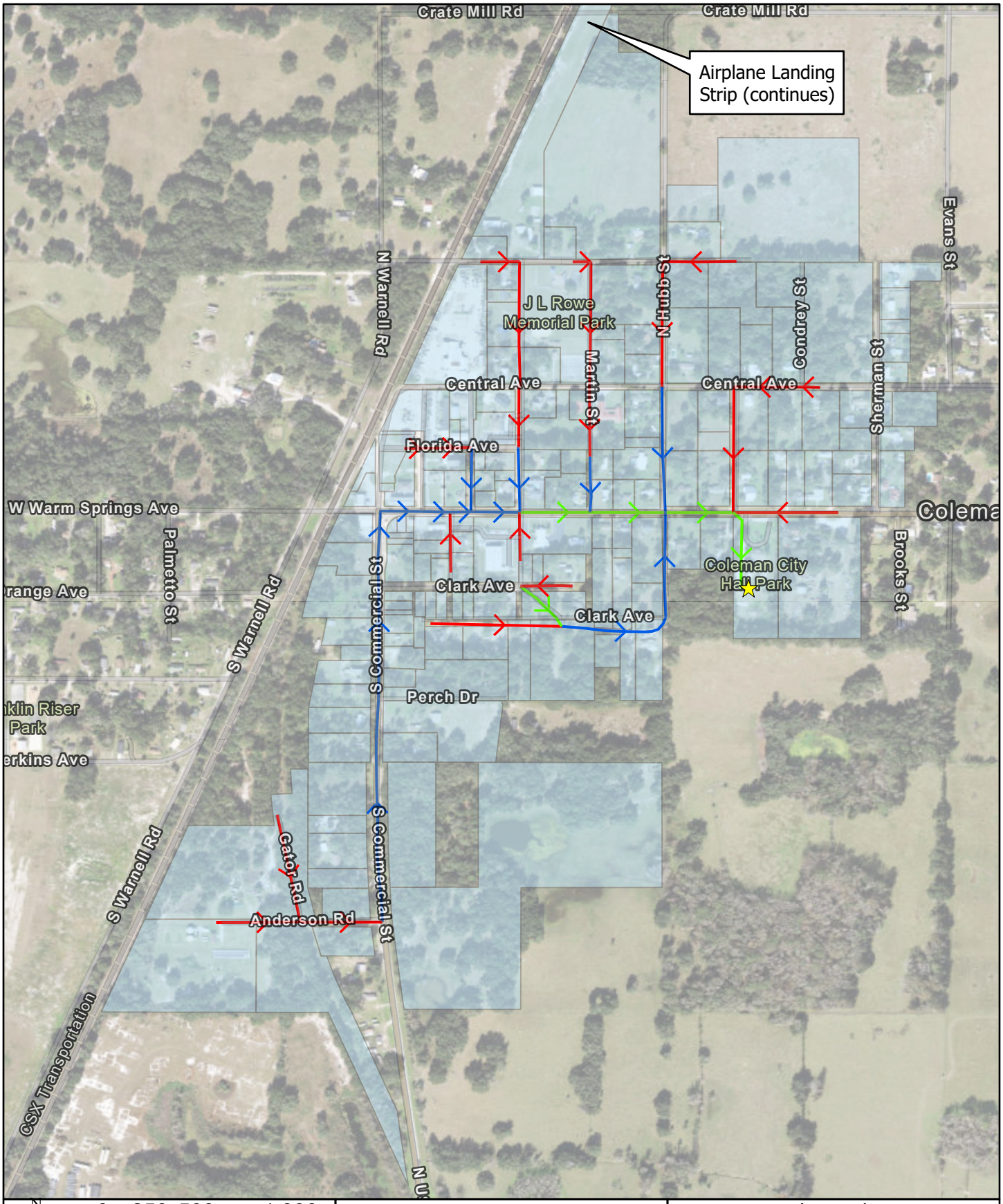
The proposed sewersheds and LPS layouts are provided below in **Figure 5.8, 5.9, 5.10** and **5.11**. Each sewershed was designed to maximize the size for each lift station while satisfying the design criteria above.

The LPS is provided as an alternative to the gravity sewer system. Hydraulic modeling was not performed as part of this report; the design was based on the criteria described above as well as LPS of similar size throughout Florida. If the LPS were to be constructed, a hydraulic model would need to be performed to ensure all pipes are sized correctly and wastewater will flow properly.

After discussions with Coleman, it was determined that Coleman would prefer a gravity system over a LPS. However, a LPS is recommended for sections of road where conventional gravity sewer will not satisfy the design criteria. This includes the area in sewershed 3 from the water treatment facility along South Commercial Street to Clark Avenue.


CSX Transportation
Evans St
Crate Mill Rd
County Road 519A
County Road 519A
NE 34th Rd
NE 33rd Pl
Evans St
N Hubb St
Condrey St
Spurling Dr
Sherman St
Mizell St
Central Ave
Central Ave
Central Ave
Florida Ave
Florida Ave
N Stokes St
Coleman
E Warm Springs A
Brooks St
Coleman City Hall Park
Ave
County Road 523
Road 523
N
0 250 500 1,000
US Feet
Kimley»Horn
Figure 5.8
City of Coleman LPS Layout
Sewershed 1
Legend
Proposed Lift Station Location
Gravity Sewershed 3
Coleman Utility Service Area
LPS Pipe Size
2-inch
3-inch
4-inch


Crate Mill Rd
Taylor Ave
N Warnell Rd
Central Ave
Florida Ave
W Warm Springs Ave
Nelson St
Lime St
Orange Ave
Oak St
Palmetto St
S Warnell Rd
S Commercial St
Clark Ave
Perch Dr
Dunklin Riser Park
Perkins Ave
Gator Rd
Anderson Rd
N
0 250 500 1,000
US Feet
Kimley»Horn
Figure 5.9
City of Coleman LPS Layout
Sewershed 2
Legend
Proposed Lift Station Location
Gravity Sewershed 2
Coleman Utility Service Area
LPS Pipe Size
2-inch
3-inch
4-inch



N

0 250 500 1,000

US Feet

Kimley»Horn

Figure 5.10

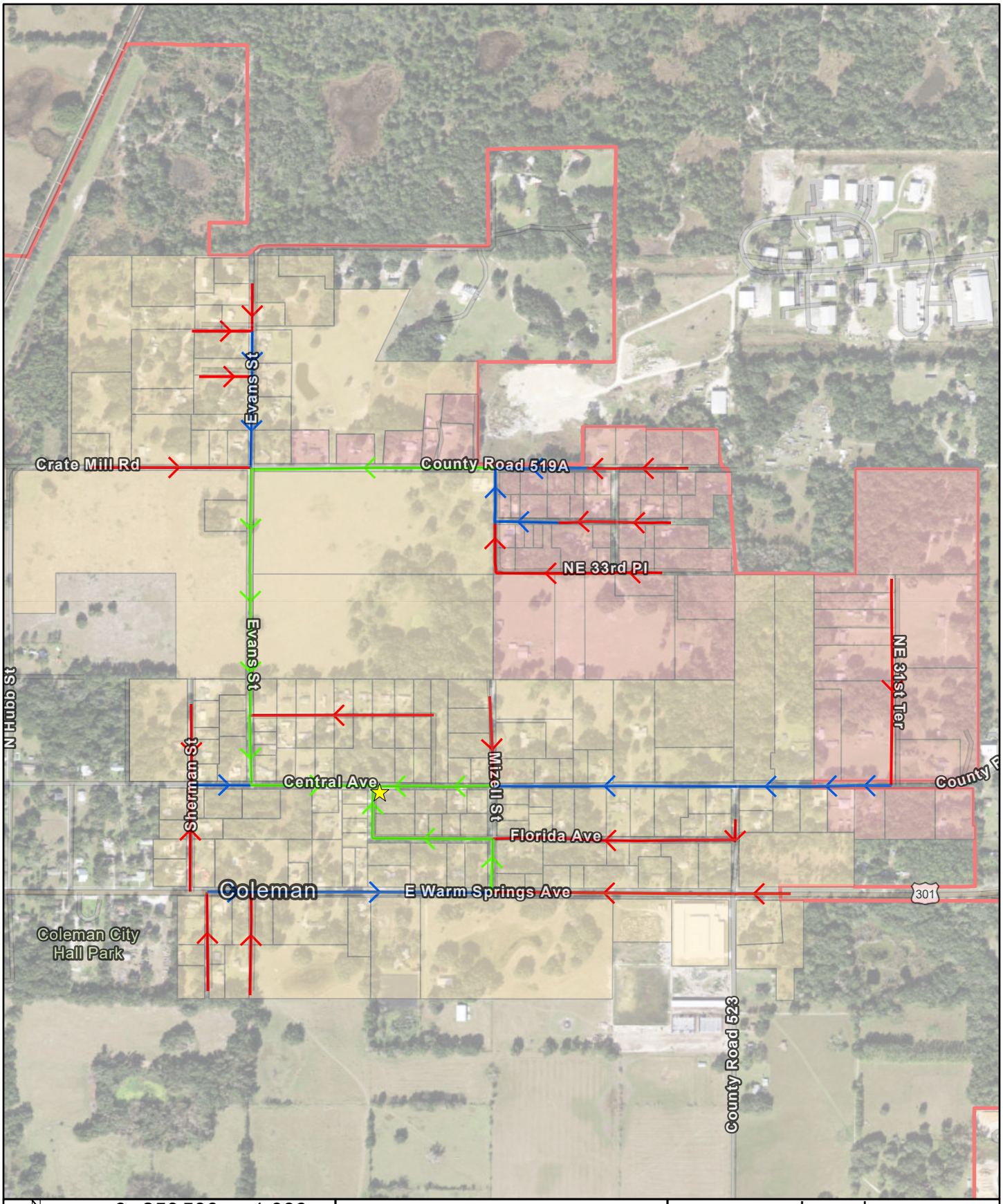
City of Coleman LPS Layout
Sewershed 3

Legend

- Proposed Lift Station Location
- Gravity Sewershed 3
- Coleman Utility Service Area

LPS Pipe Size

- 2-inch
- 3-inch
- 4-inch


Evans St
Crate Mill Rd
County Road 519A
NE 33rd Pl
Evans St
N Hubb St
Sherman St
Central Ave
Mizell St
NE 31st Ter
Florida Ave
Coleman
E Warm Springs Ave
301
Coleman City Hall Park
County Road 523
N
0 250 500 1,000
US Feet
Kimley»Horn
Figure 5.11
City of Coleman LPS Layout
Sewershed 1 - Adjacent Neighborhoods
Legend
Proposed Lift Station Location
Gravity Sewershed 1
Gravity Sewershed 1 - Adjacent Neighborhoods
Coleman Utility Service Area
LPS Pipe Size
2-inch
3-inch
4-inch

5.3 GRAVITY SEWER PHASING AREAS

After discussions with Coleman, it was determined that Coleman would prefer a gravity system over a LPS. Based on this determination phasing areas were only developed for the gravity sewer system. An evaluation of the existing potable water service area as well as the proposed gravity sewersheds was performed with the intent of determining a phasing plan for wastewater infrastructure to be installed and constructed.

The phasing areas were limited to a maximum of 80 parcels per phasing area which are currently being served by the potable water system. These phasing areas are intended to give guidance on where to construct portions of the wastewater system under a reasonable timeline as funding allows. However, the phasing areas are preliminary and can be modified or further delineated as necessary.

The sewersheds were delineated into separate areas based on natural breaks in development or geography and are shown in **Figure 5.12**. These phasing areas were used to determine a potential sequencing plan in the buildout of the wastewater system throughout the Coleman potable water service area. Based on the location of the City of Wildwood interconnection described in **Section 3.2.1** the phases were numbered to show the easternmost phase near CR 521 as the first to be constructed.

Phases were numbered based on sewershed and then phasing area, i.e. 1-1, 2-1, 3-1. While phasing areas were numbered sequentially, they do not need to be constructed in that order. However, phasing area 1-1 must be constructed first as this area contains the master lift station which will connect to the City of Wildwood. Additionally, phasing areas 2-1 and 3-1 must be the first phases constructed in their respective sewersheds as they contain the lift station for the sewershed. The construction of phases 2-2, 2-3, 3-2, and 3-3 can be completed in any order Coleman deems necessary.

The total number of parcels was limited to a maximum of 80 parcels to ensure phasing areas are of reasonable size for construction and installation purposes. Using the previously established per capita wastewater production rate, the projected wastewater flow for each sewershed and phasing area from 2025 to 2040 were estimated and are shown in **Table 5.1** and **Table 5.2**. The linear feet of roadway within each phasing area were also determined for use in the development of the gravity layout previously described.

Table 5.1: Population Projection and Wastewater Generation for Each Sewershed

Sewershed	No. Parcels	Population 2023	Wastewater Generation 2023 (gpd)	Population 2040	Wastewater Generation 2040 (gpd)	Linear Feet of roadway
1	161	202	17,549	254	22,064	16,184
2	150	268	23,300	283	24,634	15,010
3	164	178	15,449	217	18,838	14,666
1 A	69	80	6,946	97	8,462	7,990
Total	**544**	**727**	**63,244**	**851**	**73,998**	**53,850**

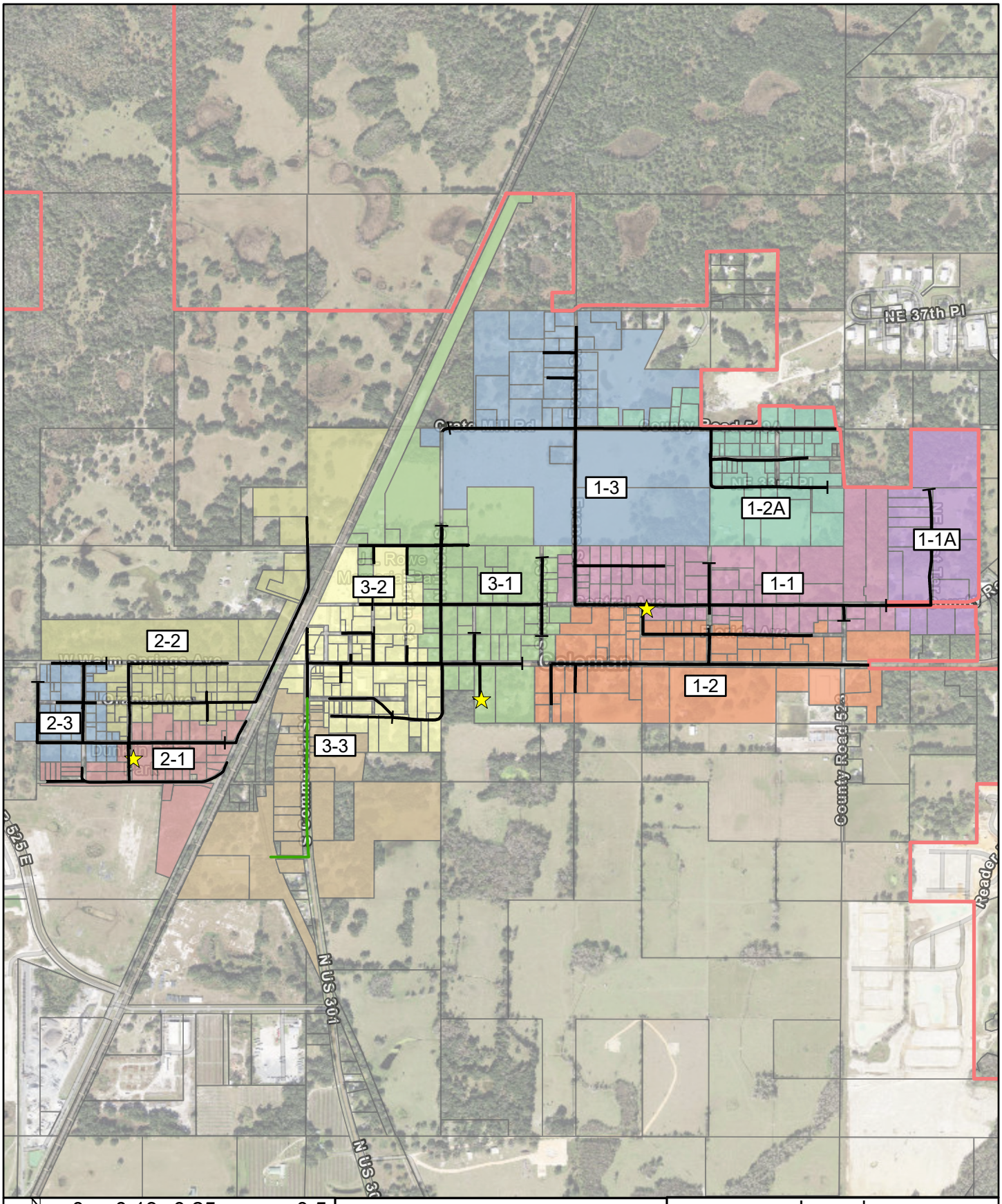


Figure 5.12

City of Coleman Wastewater Phasing Areas

Table 5.2: Population Projection and Wastewater Generation for Each Phasing Area							
Sewershed	**Phasing Area**	**No. Parcels**	**Population 2023**	**Wastewater Generation 2023 (gpd)**	**Population 2040**	**Wastewater Generation 2040 (gpd)**	**Linear Feet of roadway**
1	1-1	69	85	7,379	96	8,395	5,337
	1-2	59	77	6,721	81	7,063	6,192
	1-3	33	40	3,449	76	6,605	4,655
2	2-1	44	72	6,273	74	6,458	3,800
	2-2	67	129	11,202	138	12,017	7,710
	2-3	39	67	5,825	71	6,159	3,500
3	3-1	55	85	7,367	93	8,098	5,660
	3-2	78	59	5,102	65	5,658	7,250
	3-3	31	34	2,980	58	5,082	2,150
1A	1-1A	15	21	1,847	27	2,327	1,750
	1-2A	54	59	5,099	71	6,135	6,240
Total		**544**	**727**	**63,244**	**851**	**73,998**	**53,850**

The number of vacant parcels within each phasing area were evaluated to determine the number of existing populated parcels in each service area. The wastewater system to be constructed will follow the layout of the existing potable water system and, with the exception of sewershed 1A, serve the same customers. It can be assumed that only parcels currently populated will be served and vacant parcels could be served in the future. A summary of the populated parcels within each phasing area is proved in **Table 5.3** and **Figure 5.13**.

Table 5.3: Projections and Wastewater Generation for Each Phasing Area – Excluding Vacant Parcels							
Sewershed	**Phasing Area**	**No. Parcels**	**Population 2023**	**Wastewater Generation 2023 (gpd)**	**Population 2040**	**Wastewater Generation 2040 (gpd)**	**Linear Feet of roadway**
1	1-1	51	85	7,379	85	7,379	5,337
	1-2	48	77	6,721	77	6,721	6,192
	1-3	25	40	3,449	40	3,449	4,655
2	2-1	32	72	6,273	72	6,273	3,800
	2-2	47	121	10,530	121	10,530	7,710
	2-3	28	67	5,825	67	5,825	3,500
3	3-1	47	85	7,367	85	7,367	5,660
	3-2	60	59	5,102	59	5,102	7,250
	3-3	22	34	2,980	34	2,980	2,150
1A	1-1A	13	20	1,717	20	1,717	1,750
	1-2A	38	57	4,944	57	4,944	6,240
Total		**411**	**716**	**62,287**	**716**	**62,287**	**53,850**

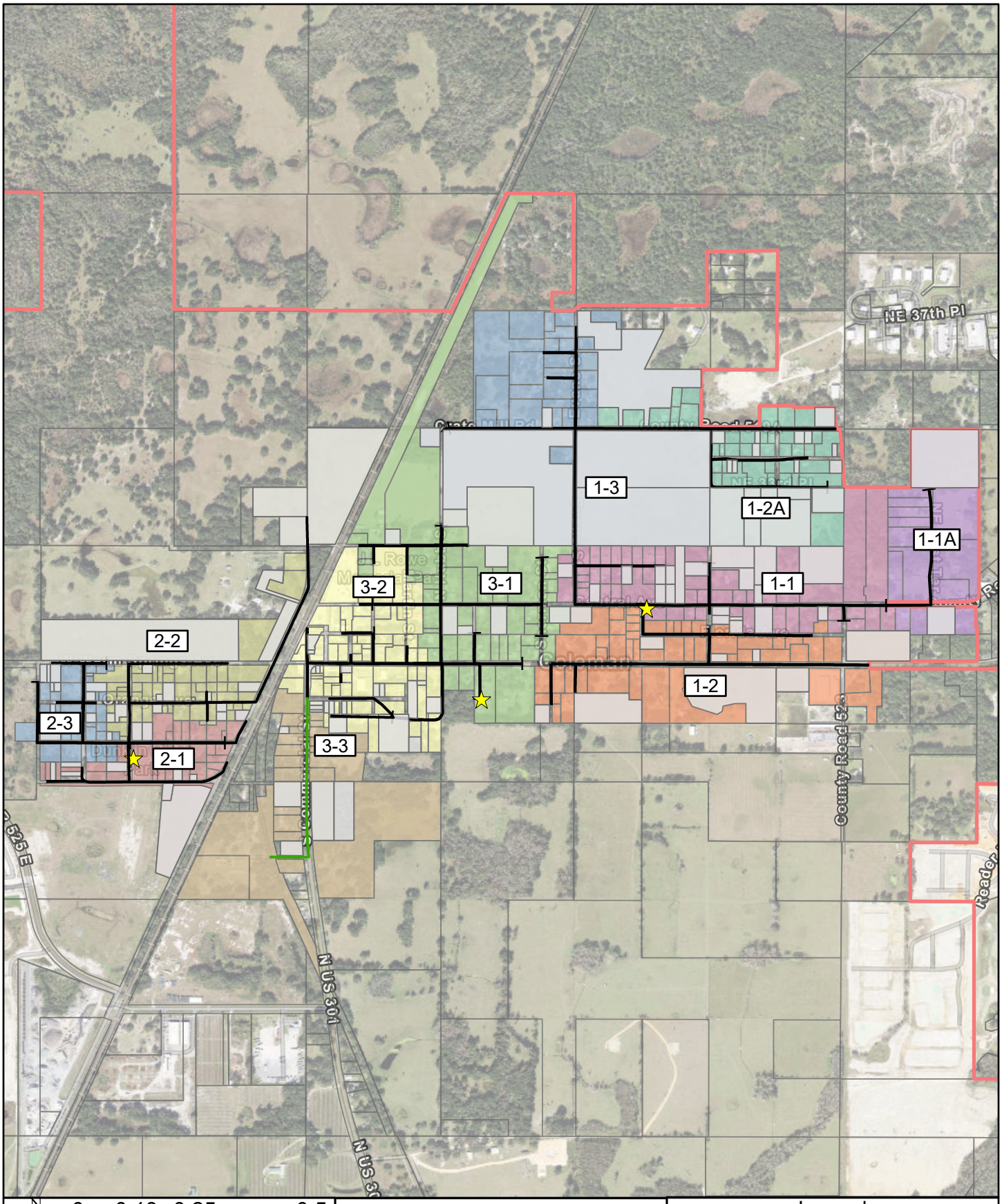


Figure 5.13
City of Coleman Wastewater
Phasing Areas Excluding Vacant
Parcels

Elevation data was obtained through topographic inputs into GIS and the GIS Model that was discussed in **Section 5.1.** Within these phasing areas there is a section within phasing areas 1-3 and 3-2 which has a higher elevation than the rest of the system. A phasing area heat map is shown in **Figure 5.16**. In phasing area 1-3 the highest point of elevation is 72-feet. From north to south along Evans Street, the elevation increases from 68-feet to 72-feet over approximately 900 linear feet; the elevation then decreases from 72-feet to 62-feet over approximately 900 linear feet. A profile of this area is provided in **Figure 5.14**. In phasing area 3-2 the highest point of elevation is 72-feet. The elevation increases from 62-feet to 72-feet over approximately 1500 linear feet; the elevation then decreases from 72-feet to 68-feet over approximately 500 linear feet. A profile of this area is provided in **Figure 5.15**

In areas with higher elevations the gravity system has the potential to be a maximum of 20-feet deep. To accommodate the deeper gravity pipe, deeper manholes and a deeper wet well could be necessary as described in the exceptions to design criteria in **Section 5.1**. To avoid a deeper gravity pipe, wet well, and manholes, additional lift stations could be installed in these phasing areas to avoid having gravity sewer in the areas of high elevation.

Figure 5.14: City of Coleman Phasing Area 1-3 Elevation Profile Graph

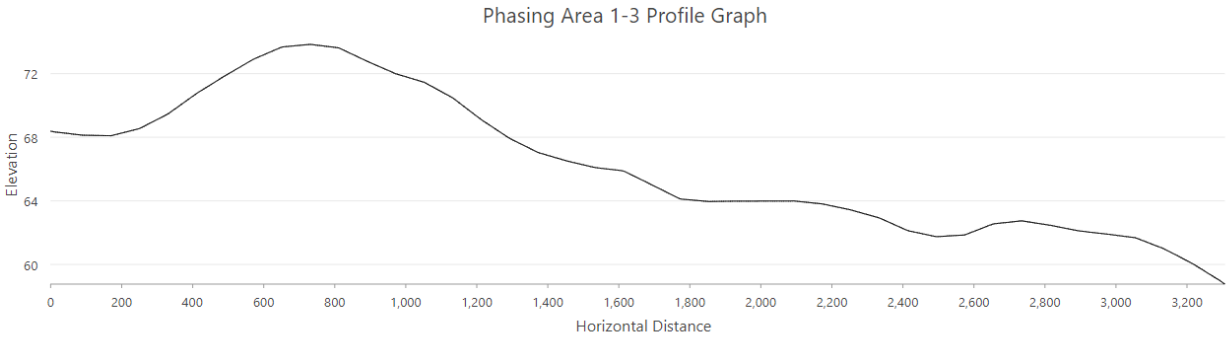
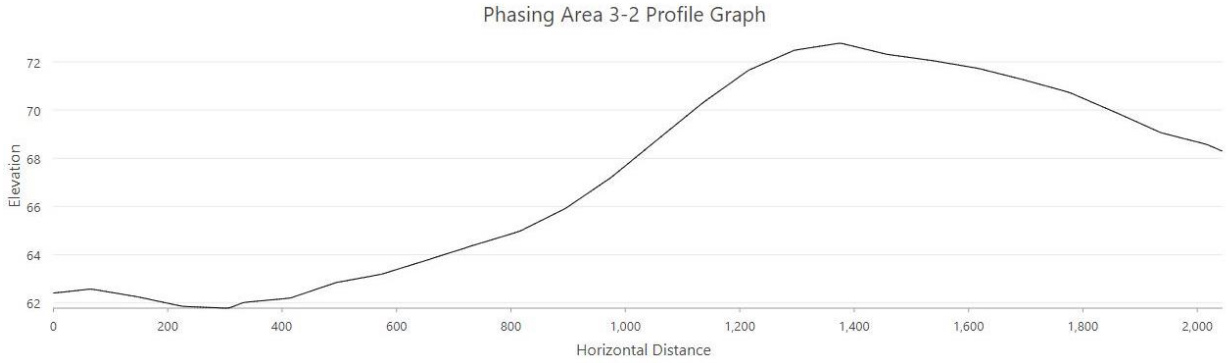


Figure 5.15: City of Coleman Phasing Area 3-2 Elevation Profile Graph



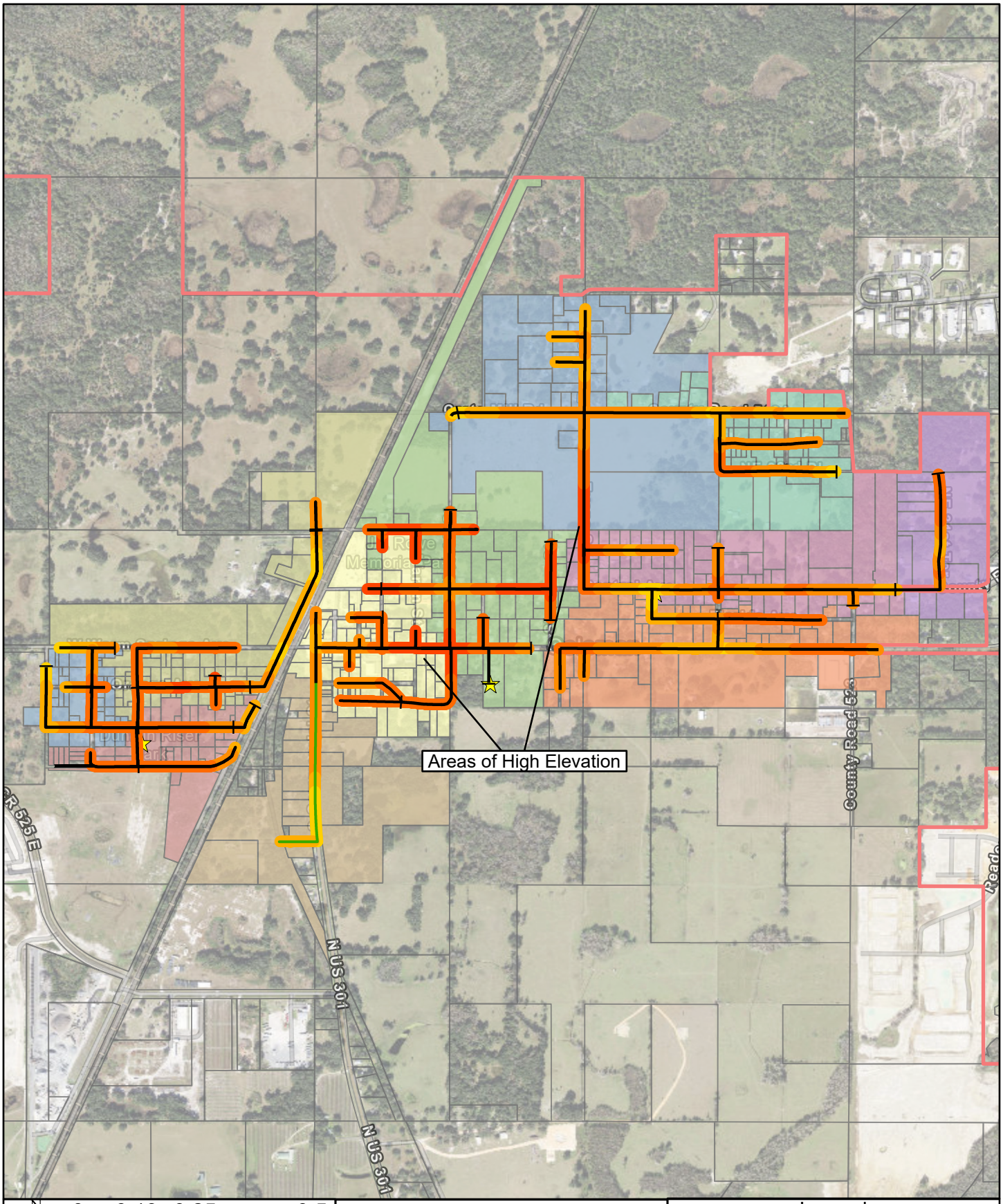


Figure 5.16

City of Coleman Wastewater Phasing Areas Heat Map

6.0 CONCLUSION

The centralized wastewater system feasibility analysis was conducted to identify and evaluate the feasibility of providing a centralized wastewater system in Coleman through a phased implementation plan. Historical data including billing records and MORs were reviewed. This data along with SWFWMD population projections was utilized to create future wastewater demand projections. Neighborhoods adjacent to the current potable water service were also examined to show demands if the customer base were to increase.

The Coleman potable water service area was used as a basis for the generation of wastewater sewersheds which were used to delineate Coleman and develop a preliminary gravity wastewater system layout as well as a low-pressure system layout. Conventional gravity sewer was preferred option for the wastewater collection system. However, low-pressure grinder sewer is recommended for sections of road where conventional gravity sewer will not satisfy the design criteria utilized. Phasing area 3-3 has been identified as a portion of the system were low-pressure will be necessary, this is due to the change in elevation between the lift station for phasing area 3 and the elevation of South Commercial Street from the water treatment facility to Clark Avenue.

The recommended gravity system was then further delineated into phasing areas. These phasing areas will allow Coleman to construct the proposed gravity wastewater system in smaller increments as funding and construction availability allows. Neighborhoods adjacent to the existing potable water system were evaluated and presented so the current customer based within Coleman could be increased as the wastewater system is constructed. As funding allows and new developments are approved Coleman will have the opportunity to create more phasing areas to expand the system. The proposed wastewater system will connect to Wildwood along CR 521 per an interlocal agreement between the two cities. The lift station located in phasing area 1-1 will contain a master lift station and flow meter which will pump and measure the flow of wastewater to Wildwood for treatment.

APPENDIX A:
Gravity System OPC

COST ESTIMATE FOR CONCEPTUAL PHASING PLAN FGUA CITY OF COLEMAN SEWER FEASIBILTY STUDY - SUMMARY			
Phasing Area	**Phasing Area Total Cost**	**Cost Per Parcel Excluding Vacant**	**Cost Per Parcel Including Vacant**
1-1	$ 3,956,000.00	$ 77,568.63	$ 57,333.33
1-2	$ 1,910,000.00	$ 39,791.67	$ 32,372.88
1-3	$ 1,394,000.00	$ 55,760.00	$ 42,242.42
2-1	$ 1,995,000.00	$ 62,343.75	$ 45,340.91
2-2	$ 2,311,000.00	$ 49,170.21	$ 34,492.54
2-3	$ 1,085,000.00	$ 38,750.00	$ 27,820.51
3-1	$ 2,691,000.00	$ 57,255.32	$ 48,927.27
3-2	$ 2,154,000.00	$ 35,900.00	$ 27,615.38
3-3	$ 595,000.00	$ 27,045.45	$ 19,193.55
Sub-Total	**$ 18,091,000.00**	**$ 50,533.52**	**$ 38,086.32**
1-1A	$ 549,000.00	$ 42,230.77	$ 36,600.00
1-2A	$ 1,861,000.00	$ 48,973.68	$ 34,462.96
Total	**$ 20,501,000.00**	**$ 50,124.69**	**$ 37,685.66**

COST ESTIMATE FOR CONCEPTUAL PHASING PLAN FGUA CITY OF COLEMAN SEWER FEASIBILTY STUDY - SUMMARY WITHOUT ROADWAY COSTS			
Phasing Area	**Phasing Area Total Cost**	**Cost Per Parcel Excluding Vacant**	**Cost Per Parcel Including Vacant**
1-1	$ 3,304,000.00	$ 64,784.31	$ 47,884.06
1-2	$ 1,147,000.00	$ 23,895.83	$ 19,440.68
1-3	$ 815,000.00	$ 32,600.00	$ 24,696.97
2-1	$ 1,527,000.00	$ 47,718.75	$ 34,704.55
2-2	$ 1,362,000.00	$ 28,978.72	$ 20,328.36
2-3	$ 654,000.00	$ 23,357.14	$ 16,769.23
3-1	$ 1,976,000.00	$ 42,042.55	$ 35,927.27
3-2	$ 1,305,000.00	$ 21,750.00	$ 16,730.77
3-3	$ 320,000.00	$ 14,545.45	$ 10,322.58
Sub-Total	**$ 12,410,000.00**	**$ 34,664.80**	**$ 26,126.32**
1-1A	$ 327,000.00	$ 25,153.85	$ 21,800.00
1-2A	$ 1,098,000.00	$ 28,894.74	$ 20,333.33
Total	**$ 13,835,000.00**	**$ 33,826.41**	**$ 25,431.99**

COST ESTIMATE FOR CONCEPTUAL PHASING PLAN
FGUA
CITY OF COLEMAN SEWER FEASIBILTY STUDY - PHASE 1-1 (GRAVITY SEWER)

ITEM	DESCRIPTION	QUANTITY		UNIT PRICE	AMOUNT
1	SEPTIC TANK ABANDONMENT AND CONNECTION TO SEWER	51	EA	$ 4,000	204,000.00
2	GRAVITY SEWER (INCLUDES ALL CONSTRUCTION RELATED COMPONENTS)	5,300	LF	$ 75	398,000.00
3	MANHOLE (APPROXIMATE)	18	EA	$ 7,500	135,000.00
4	FORCE MAIN (INCLUDES ALL CONSTRUCTION RELATED COMPONENTS)	9,200	LF	$ 150	1,380,000.00
5	LIFT STATION	1	LS	$ 500,000	500,000.00
6	DEMO & RECONSTRUCTION OF EXISTING ASPHALT ROADWAY (2-LANE UNDIVIDED)	1.00	MI	$ 650,000	652,000.00
7	DESIGN / PERMITTING / ADMINISTRATION (10%)	1	LS	$ 327,000	327,000.00
8	CONTIGENCY (10%)	1	LS	$ 360,000	360,000.00
				TOTAL	**$ 3,956,000.00**

Opinions of probable costs provided herein are based on the information known to Engineer at this time and represent only the Engineer's judgment as a design professional familiar with the construction industry. Total cost are rounded to the nearest $1,000.

COST ESTIMATE FOR CONCEPTUAL PHASING PLAN
FGUA
CITY OF COLEMAN SEWER FEASIBILTY STUDY - PHASE 1-2 (GRAVITY SEWER)

ITEM	DESCRIPTION	QUANTITY		UNIT PRICE	AMOUNT
1	SEPTIC TANK ABANDONMENT AND CONNECTION TO SEWER	48	EA	$ 4,000	192,000.00
2	GRAVITY SEWER (INCLUDES ALL CONSTRUCTION RELATED COMPONENTS)	6,200	LF	$ 75	465,000.00
3	MANHOLE (APPROXIMATE)	21	EA	$ 7,500	158,000.00
4	DEMO & RECONSTRUCTION OF EXISTING ASPHALT ROADWAY (2-LANE UNDIVIDED)	1.17	MI	$ 650,000	763,000.00
5	DESIGN / PERMITTING / ADMINISTRATION (10%)	1	LS	$ 158,000	158,000.00
6	CONTIGENCY (10%)	1	LS	$ 174,000	174,000.00
				TOTAL	**$ 1,910,000.00**

Opinions of probable costs provided herein are based on the information known to Engineer at this time and represent only the Engineer's judgment as a design professional familiar with the construction industry. Total cost are rounded to the nearest $1,000.

COST ESTIMATE FOR CONCEPTUAL PHASING PLAN
FGUA
CITY OF COLEMAN SEWER FEASIBILTY STUDY - PHASE 1-3 (GRAVITY SEWER)

ITEM	DESCRIPTION	QUANTITY		UNIT PRICE	AMOUNT
1	SEPTIC TANK ABANDONMENT AND CONNECTION TO SEWER	25	EA	$ 4,000	100,000.00
2	GRAVITY SEWER (INCLUDES ALL CONSTRUCTION RELATED COMPONENTS)	4,700	LF	$ 75	353,000.00
3	MANHOLE (APPROXIMATE)	16	EA	$ 7,500	120,000.00
4	DEMO & RECONSTRUCTION OF EXISTING ASPHALT ROADWAY (2-LANE UNDIVIDED)	0.89	MI	$ 650,000	579,000.00
5	DESIGN / PERMITTING / ADMINISTRATION (10%)	1	LS	$ 115,000	115,000.00
6	CONTIGENCY (10%)	1	LS	$ 127,000	127,000.00
				TOTAL	**$ 1,394,000.00**

Opinions of probable costs provided herein are based on the information known to Engineer at this time and represent only the Engineer's judgment as a design professional familiar with the construction industry. Total cost are rounded to the nearest $1,000.

COST ESTIMATE FOR CONCEPTUAL PHASING PLAN
FGUA
CITY OF COLEMAN SEWER FEASIBILTY STUDY - PHASE 1-1A (GRAVITY SEWER)

ITEM	DESCRIPTION	QUANTITY		UNIT PRICE	AMOUNT
1	SEPTIC TANK ABANDONMENT AND CONNECTION TO SEWER	13	EA	$ 4,000	52,000.00
2	GRAVITY SEWER (INCLUDES ALL CONSTRUCTION RELATED COMPONENTS)	1,800	LF	$ 75	135,000.00
3	MANHOLE (APPROXIMATE)	6	EA	$ 7,500	45,000.00
4	DEMO & RECONSTRUCTION OF EXISTING ASPHALT ROADWAY (2-LANE UNDIVIDED)	0.34	MI	$ 650,000	222,000.00
5	DESIGN / PERMITTING / ADMINISTRATION (10%)	1	LS	$ 45,000	45,000.00
6	CONTIGENCY (10%)	1	LS	$ 50,000	50,000.00
				TOTAL	**$ 549,000.00**

Opinions of probable costs provided herein are based on the information known to Engineer at this time and represent only the Engineer's judgment as a design professional familiar with the construction industry. Total cost are rounded to the nearest $1,000.

COST ESTIMATE FOR CONCEPTUAL PHASING PLAN
FGUA
CITY OF COLEMAN SEWER FEASIBILTY STUDY - PHASE 1-2A (GRAVITY SEWER)

ITEM	DESCRIPTION	QUANTITY		UNIT PRICE	AMOUNT
1	SEPTIC TANK ABANDONMENT AND CONNECTION TO SEWER	38	EA	$ 4,000	152,000.00
2	GRAVITY SEWER (INCLUDES ALL CONSTRUCTION RELATED COMPONENTS)	6,200	LF	$ 75	465,000.00
3	MANHOLE (APPROXIMATE)	21	EA	$ 7,500	158,000.00
4	DEMO & RECONSTRUCTION OF EXISTING ASPHALT ROADWAY (2-LANE UNDIVIDED)	1.17	MI	$ 650,000	763,000.00
5	DESIGN / PERMITTING / ADMINISTRATION (10%)	1	LS	$ 154,000	154,000.00
6	CONTIGENCY (10%)	1	LS	$ 169,000	169,000.00
				TOTAL	**$ 1,861,000.00**

Opinions of probable costs provided herein are based on the information known to Engineer at this time and represent only the Engineer's judgment as a design professional familiar with the construction industry. Total cost are rounded to the nearest $1,000.

COST ESTIMATE FOR CONCEPTUAL PHASING PLAN
FGUA
CITY OF COLEMAN SEWER FEASIBILTY STUDY - PHASE 2-1 (GRAVITY SEWER)

ITEM	DESCRIPTION	QUANTITY		UNIT PRICE	AMOUNT
1	SEPTIC TANK ABANDONMENT AND CONNECTION TO SEWER	32	EA	$ 4,000	128,000.00
2	GRAVITY SEWER (INCLUDES ALL CONSTRUCTION RELATED COMPONENTS)	3,800	LF	$ 75	285,000.00
3	MANHOLE (APPROXIMATE)	13	EA	$ 7,500	98,000.00
4	FORCE MAIN (INCLUDES ALL CONSTRUCTION RELATED COMPONENTS)	2,700	LF	$ 100	270,000.00
5	LIFT STATION	1	LS	$ 400,000	400,000.00
6	DEMO & RECONSTRUCTION OF EXISTING ASPHALT ROADWAY (2-LANE UNDIVIDED)	0.72	MI	$ 650,000	468,000.00
7	DESIGN / PERMITTING / ADMINISTRATION (10%)	1	LS	$ 165,000	165,000.00
8	CONTIGENCY (10%)	1	LS	$ 181,000	181,000.00
				TOTAL	**$ 1,995,000.00**

Opinions of probable costs provided herein are based on the information known to Engineer at this time and represent only the Engineer's judgment as a design professional familiar with the construction industry. Total cost are rounded to the nearest $1,000.

COST ESTIMATE FOR CONCEPTUAL PHASING PLAN
FGUA
CITY OF COLEMAN SEWER FEASIBILTY STUDY - PHASE 2-2 (GRAVITY SEWER)

ITEM	DESCRIPTION	QUANTITY		UNIT PRICE	AMOUNT
1	SEPTIC TANK ABANDONMENT AND CONNECTION TO SEWER	47	EA	$ 4,000	188,000.00
2	GRAVITY SEWER (INCLUDES ALL CONSTRUCTION RELATED COMPONENTS)	7,710	LF	$ 75	578,000.00
3	MANHOLE (APPROXIMATE)	26	EA	$ 7,500	195,000.00
4	DEMO & RECONSTRUCTION OF EXISTING ASPHALT ROADWAY (2-LANE UNDIVIDED)	1.46	MI	$ 650,000	949,000.00
5	DESIGN / PERMITTING / ADMINISTRATION (10%)	1	LS	$ 191,000	191,000.00
6	CONTIGENCY (10%)	1	LS	$ 210,000	210,000.00
				TOTAL	**$ 2,311,000.00**

Opinions of probable costs provided herein are based on the information known to Engineer at this time and represent only the Engineer's judgment as a design professional familiar with the construction industry. Total cost are rounded to the nearest $1,000.

COST ESTIMATE FOR CONCEPTUAL PHASING PLAN
FGUA
CITY OF COLEMAN SEWER FEASIBILTY STUDY - PHASE 2-3 (GRAVITY SEWER)

ITEM	DESCRIPTION	QUANTITY		UNIT PRICE	AMOUNT
1	SEPTIC TANK ABANDONMENT AND CONNECTION TO SEWER	28	EA	$ 4,000	112,000.00
2	GRAVITY SEWER (INCLUDES ALL CONSTRUCTION RELATED COMPONENTS)	3,500	LF	$ 75	263,000.00
3	MANHOLE (APPROXIMATE)	12	EA	$ 7,500	90,000.00
4	DEMO & RECONSTRUCTION OF EXISTING ASPHALT ROADWAY (2-LANE UNDIVIDED)	0.66	MI	$ 650,000	431,000.00
5	DESIGN / PERMITTING / ADMINISTRATION (10%)	1	LS	$ 90,000	90,000.00
6	CONTIGENCY (10%)	1	LS	$ 99,000	99,000.00
				TOTAL	**$ 1,085,000.00**

Opinions of probable costs provided herein are based on the information known to Engineer at this time and represent only the Engineer's judgment as a design professional familiar with the construction industry. Total cost are rounded to the nearest $1,000.

COST ESTIMATE FOR CONCEPTUAL PHASING PLAN
FGUA
CITY OF COLEMAN SEWER FEASIBILTY STUDY - PHASE 3-1 (GRAVITY SEWER)

ITEM	DESCRIPTION	QUANTITY		UNIT PRICE	AMOUNT
1	SEPTIC TANK ABANDONMENT AND CONNECTION TO SEWER	47	EA	$ 4,000	188,000.00
2	GRAVITY SEWER (INCLUDES ALL CONSTRUCTION RELATED COMPONENTS)	5,700	LF	$ 75	428,000.00
3	MANHOLE (APPROXIMATE)	19	EA	$ 7,500	143,000.00
4	FORCE MAIN (INCLUDES ALL CONSTRUCTION RELATED COMPONENTS)	2,800	LF	$ 125	350,000.00
5	LIFT STATION	1	LS	$ 400,000	400,000.00
6	DEMO & RECONSTRUCTION OF EXISTING ASPHALT ROADWAY (2-LANE UNDIVIDED)	1.10	MI	$ 650,000	715,000.00
7	DESIGN / PERMITTING / ADMINISTRATION (10%)	1	LS	$ 222,000	222,000.00
8	CONTIGENCY (10%)	1	LS	$ 245,000	245,000.00
				TOTAL	**$ 2,691,000.00**

Opinions of probable costs provided herein are based on the information known to Engineer at this time and represent only the Engineer's judgment as a design professional familiar with the construction industry. Total cost are rounded to the nearest $1,000.

COST ESTIMATE FOR CONCEPTUAL PHASING PLAN
FGUA
CITY OF COLEMAN SEWER FEASIBILTY STUDY - PHASE 3-2 (GRAVITY SEWER)

ITEM	DESCRIPTION	QUANTITY		UNIT PRICE	AMOUNT
1	SEPTIC TANK ABANDONMENT AND CONNECTION TO SEWER	60	EA	$ 4,000	240,000.00
2	GRAVITY SEWER (INCLUDES ALL CONSTRUCTION RELATED COMPONENTS)	6,900	LF	$ 75	518,000.00
3	MANHOLE (APPROXIMATE)	23	EA	$ 7,500	172,500.00
4	DEMO & RECONSTRUCTION OF EXISTING ASPHALT ROADWAY (2-LANE UNDIVIDED)	1.31	MI	$ 650,000	849,000.00
5	DESIGN / PERMITTING / ADMINISTRATION (10%)	1	LS	$ 178,000	178,000.00
6	CONTIGENCY (10%)	1	LS	$ 196,000	196,000.00
				TOTAL	**$ 2,154,000.00**

Opinions of probable costs provided herein are based on the information known to Engineer at this time and represent only the Engineer's judgment as a design professional familiar with the construction industry. Total cost are rounded to the nearest $1,000.

COST ESTIMATE FOR CONCEPTUAL PHASING PLAN
FGUA
CITY OF COLEMAN SEWER FEASIBILTY STUDY - PHASE 3-3 (LOW PRESSURE SEWER)

ITEM	DESCRIPTION	QUANTITY		UNIT PRICE	AMOUNT
1	SEPTIC TANK ABANDONMENT AND CONNECTION TO SEWER	22	EA	$ 4,000	88,000.00
2	LOW PRESSURE MAIN	2,200	LF	$ 60	132,000.00
3	GRINDER STATION	22	EA	$ 12,500	275,000.00
4	DESIGN / PERMITTING / ADMINISTRATION (10%)	1	LS	$ 50,000	50,000.00
5	CONTIGENCY (10%)	1	LS	$ 50,000	50,000.00
				TOTAL	**$ 595,000.00**

Opinions of probable costs provided herein are based on the information known to Engineer at this time and represent only the Engineer's judgment as a design professional familiar with the construction industry. Total cost are rounded to the nearest $1,000.

APPENDIX B:
Geospatial Small-Area Population Forecasting Model Methodology Used by the Southwest Florida Water Management District

The Geospatial Small-Area Population Forecasting (GSAPF) Model Methodology Used by the Southwest Florida Water Management District

Prepared For

Southwest Florida Water Management District
Agreement 19CN0002133
TWA 21TW0003642

Prepared By

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Under Subcontract With

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December 21, 2021

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INTRODUCTION

This document describes the methodologies used by the Southwest Florida Water Management District (SWFWMD) to develop small-area population projections in support of water supply planning and water use permitting. The county-level projections available from the Bureau of Economic and Business Research (BEBR) at the University of Florida are the official projections for the State of Florida and the generally accepted standard throughout the state, but accurately projecting future water demand for water utility potable service areas requires more precision than is offered by county-level projections. In addition, the Census Population Cohort projected by BEBR does not include important non-permanent populations, such as seasonal residents, tourists, or commuters. For these reasons, SWFWMD contracted GIS Associates, Inc. (GISA) through WRA Engineering to provide small-area population projections for the 17 SWFWMD counties. (Note that there are only 16 counties located partly or entirely within SWFWMD, but forecasts were also made for two utility service areas in the northern part of Lee County that have water use permits with SWFWMD.) This was achieved by implementing GIS Associates' Geospatial Small-Area Population Forecasting Model (GSAPF Model), which makes Census Population Cohort projections at the 2020 Census Tract level, and spatially distributes those projections to individual land parcels to facilitate aggregation by utility or other boundaries. In addition, GISA applied SWFWMD methods for projecting non-permanent population to the Census Population Cohort projections derived from the GSAPF Model. This document describes these projection methodologies and their use to project future populations. Ultimately, these small-area population projections are used as a basis for making future water demand projections for SWFWMD.

GEOSPATIAL SMALL-AREA POPULATION FORECASTING MODEL OVERVIEW

The geographic information system (GIS) based GSAPF Model projected future Census Population Cohort population growth at the parcel level and controlled those projections to BEBR's latest county-level forecasts. Figure 1 on the following page is a process flow chart of the population projection and distribution methodology. First, County Build-out Submodels were developed using property parcel data for each of the 17 counties that are entirely or partly within SWFWMD. The purpose of the County Build-out Submodel is to develop maximum residential development potential at the parcel level. A detailed description of this model is included in the chapter titled "County Build-out Submodels". Current permanent population was estimated and then the maximum population to which a county can grow was modeled by the County Build-out Submodels. Areas which cannot physically or lawfully allow residential development (built-out areas, water bodies, public lands, commercial areas, etc.) were excluded from the County Build-out Submodel. Conversely, the model identified areas where growth is more likely to occur based on proximity to existing infrastructure. This is discussed in detail in chapter titled "Growth Drivers Submodel".

Next, future population change was forecasted from the 2020 launch year estimates to a horizon of 2045 in five-year increments. Projections are based on a combination of historic growth trends

(using an approach similar to what BEBR uses for its county-level projections), and spatial constraints and influences, which both restrict and direct growth. Population growth calculations were controlled to BEBR's 2021 medium growth projections (BEBR's latest population forecasts for the years 2025 through 2045), which were available in five-year increments. Because the 2020 Census counts were released during this project, they were used instead of the 2020 BEBR estimates for the county growth controls. The source of the projections is the BEBR publication *Projections of Florida Population by County, 2025-2045, with Estimates for 2020* (Florida Population Studies, Volume 54, Bulletin 189, April 2021), and the source for the 2020 estimates is the 2020 Census. The process is described in the chapter titled "Geospatial Small-Area Population Forecasting Model".

The launch year for the version of the model described in this document was 2020, which was calibrated to the 2020 Census population counts. Projections were made for April 1, 2025 to April 1, 2045 in five-year increments.

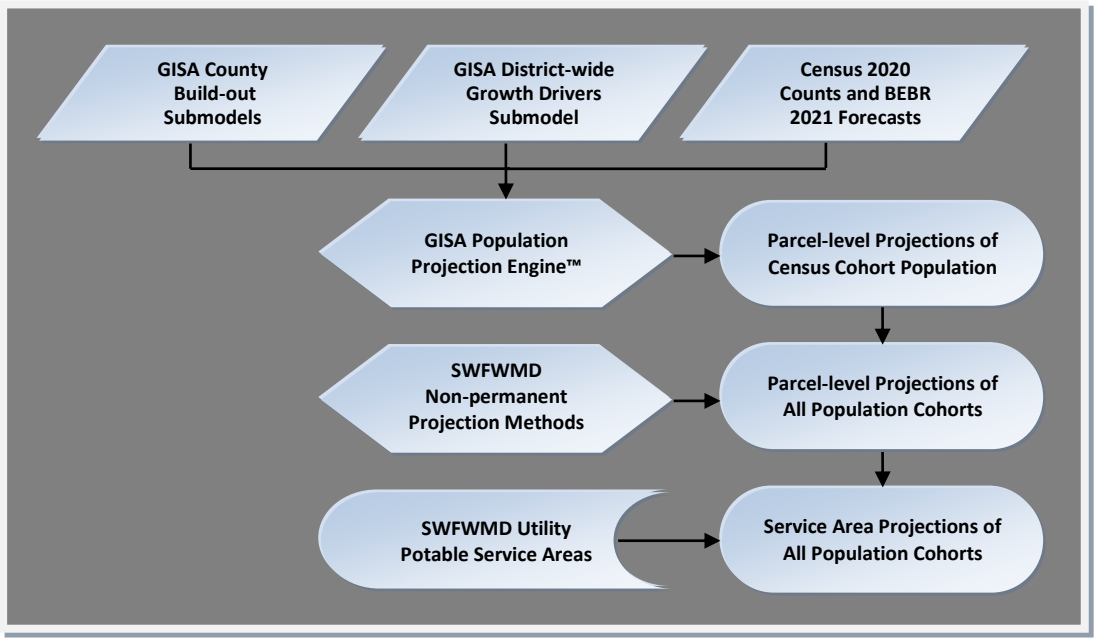


Figure 1. SWFWMD population projection process flowchart

Finally, the parcel level projections were summarized by water utility service area boundaries that SWFWMD maintains in a spatial (GIS) database. These summaries were exported to a Microsoft Excel spreadsheet with separate tabs for each county to facilitate the review and distribution of the results.

COUNTY BUILD-OUT SUBMODELS

The County Build-out Submodels were composed of multiple GIS data elements. Each model was based on each county property appraiser's GIS parcel database, including the associated tax roll information. Other GIS data elements included the 2020 Decennial Census data, SWFWMD wetland data, local government future land use maps, and planned developments.

Parcels

GIS parcel layers and county tax roll databases were obtained from each county property appraiser's office. Parcel geometry was checked for irregular topology, particularly overlaps and fragments. Parcel tables were checked for errors, particularly non-unique parcel identifiers and missing values. Required tax roll table fields include actual year built, Florida Department of Revenue (DOR) land use code, and the total number of existing residential units for each parcel. In cases where values or fields were missing, other data were used. For example, data reported by the State of Florida, military bases, and colleges and universities were used to identify the number of residential units (and population) in some large group quarters facilities.

2020 US Census Data

Some of the essential attribute information to translate parcels to population in the County Build-out Submodels were derived from data from the 2020 Decennial Census. Average housing unit occupancy and population per household by census tract were calculated and then transferred to each county's parcel data. When combined with parcel-level housing units from the property appraisers, these were used to estimate 2020 population at the parcel level. Those estimates were then controlled at county and place levels to the 2020 Census population counts.

In cases where property appraiser data were missing or incomplete, other data were used. For example, because mobile home parks without individually platted parcels may not contain the number of units within the property appraiser data, the number of residential units for some of the parks had to be estimated using information on their websites or hand counts from recent imagery.

Water Management District Boundaries

Each parcel in the County Build-out Submodels was also attributed with water management district boundaries (from SWFWMD's GIS boundary file), which enabled the county submodels for any counties split between two or more water management districts to be summarized by district.

Wetlands

Wetlands (including surface water) are an important consideration when modeling a county's build-out. SWFWMD maintains a detailed wetlands GIS data layer. This data layer contains the location and spatial extent of the wetlands, as well as the specific types of wetlands as defined by SWFWMD land cover classifications. Certain wetland types were identified that would be difficult and expensive to convert to residential development. These areas were identified in the SWFWMD wetland database and applied to the appropriate County Build-out Submodel. The wetland types are listed in Table 1.

Table 1. Wetland land cover codes and descriptions used in the County Build-out Submodels

Code	Description	Code	Description
5100	Streams and waterways	5600	Slough waters
5200	Lakes	6110	Wetland Hardwood Forests
5250	Marshy Lakes	6120	Mangrove swamp
5300	Reservoirs	6170	Mixed wetland hardwoods
5400	Bays and estuaries	6180	Cabbage palm wetland
6181	Cabbage palm hammock	6410	Freshwater marshes
6200	Wetland Coniferous Forest	6420	Saltwater marshes
6210	Cypress	6430	Wet prairies
6220	Pond pine	6440	Emergent aquatic vegetation
6250	Hydric pine flatwoods	6460	Mixed scrub-shrub wetland
6300	Wetland Forested Mixed	6500	Non-vegetated Wetland

Wetland GIS data (using the above classifications) were overlaid with a county's land parcels. The area of wetlands within parcels were calculated and recorded as the water area for that parcel. If the area covered by water within a parcel exceeded ½ acre, it was subtracted from the total area of the parcel feature to determine the relative developable area in that parcel. There were exceptions to this rule. In some cases, parcels with little or no developable area after wetlands were removed were already developed, thus the estimated unit total was not reduced by the wetland acreage. In other cases, inaccurate wetland delineations were overridden, such as when a newly platted residential parcel was shown to be covered by a wetland (Figure 2). In such a case, the parcel was considered developable by the submodel.

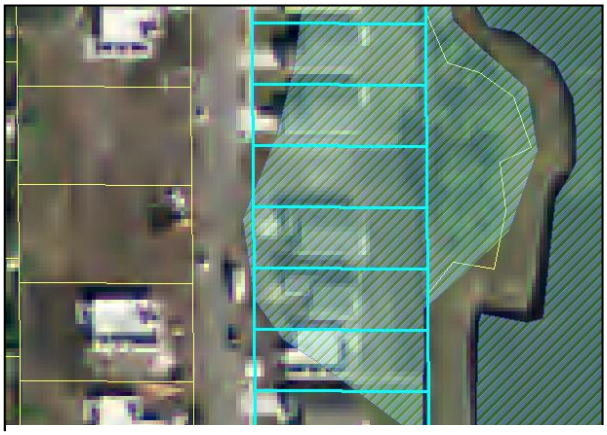


Figure 2. Example of inconsistencies between wetland delineation and residential parcels (outlined here in light blue)

Future Land Use

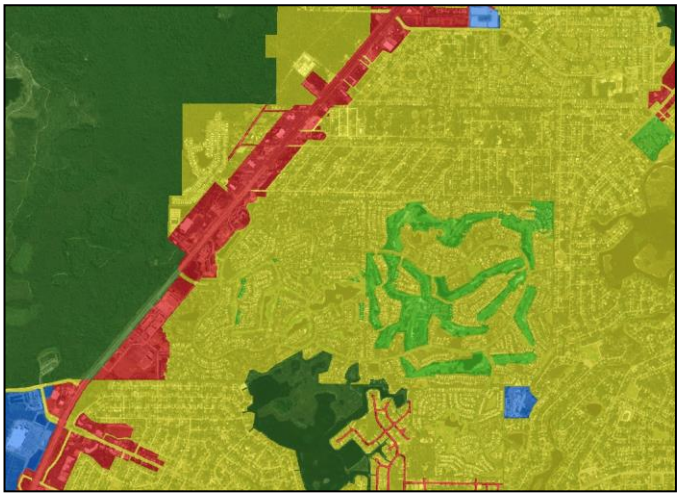


Figure 3. Future land use helps identify future residential areas (here shaded in yellow)

Future land use maps are essential elements of the County Build-out Submodels. These maps help guide where and at what density residential development could occur within a county (Figure 3). Future land use maps are a part of the local government comprehensive plans required for all local governments by Chapter 163, Part II, Florida Statutes. They are typically developed by the local government's planning department, or, in some cases, a regional planning council on behalf of the local government. The planning horizons for these are a minimum of 10 years, and they often extend for 15 to 20 years into the future. Although these future land use maps may be revised over time, they reflect the most up-to-date plan for future growth areas and densities. The latest available future land use maps were obtained and applied to the County Build-out Submodels.

Each land parcel in the County Build-out Submodels received a future land use designation. In places where parcels overlapped multiple future land use areas, the parcel was assigned the future land use class within which its centroid fell. Build-out population was modeled only for future land use classes that allow residential development (which include agriculture and mixed use). Table 2 shows which future land use map classes are typically assigned residential densities in the County Build-out Submodels. There are exceptions to this, as some commercial, institutional and other uses allow residential development in some cases. These are determined on a case-by-case basis, driven largely by each jurisdiction's comprehensive plan.

Table 2. Generalized future land use classes allowing future residential development

Generalized Future Land Use Classes	New Residential Development Allowed by Model
Agricultural	Yes
Low Density Residential	Yes
Medium Density Residential	Yes
High Density Residential	Yes
Mixed Use	Yes
Commercial	No
Recreation / Open Space	No
Conservation / Preservation	No
Industrial	No
Institutional	No
Right of Way	No
Water	No

Development typically does not occur at the maximum densities allowed for each future land use category, so recent development densities were considered a better proxy for future densities than the maximum allowable density. For this reason, the County Build-out Submodels reflect the median density of recent development for each future land use category in the specific incorporated place. For example, if a city's medium density residential future land use designation allows up to 8 housing units per acre, but the median density of units built over the last 20 years is 5.7 housing units per acre, the submodel assumed future densities at 5.7 housing units per acre for that future land use designation in that city. Typically, the median density calculation was limited to the last 20 years of development within each unique combination of land use and jurisdiction, as more recent development was deemed a better proxy for future densities than older development.

In some cases, limiting the historical data to the last 20 years resulted in too small a sample, so either county average values were used (extended beyond the jurisdiction) or all historical development was used (not limited to the last 20 years). In those cases, the determination of which sample to use depended upon the heterogeneity of the category across county jurisdictions, the heterogeneity of historical densities prior to the last 20 years, and our professional judgement. Also, vacant or open parcels less than one acre in size were typically considered single family residential, with one housing unit as the maximum allowable density.

Build-out Density Calculation

Using GIS overlay techniques, attributes of the census, political boundary, wetlands, and future land use data were attributed to each county's parcel map to develop the County Build-out Submodels. These submodels forecast the maximum residential population by parcel at build-out. Figure 4 depicts an example in Highlands County, showing lower densities at build-out in yellow and higher ones in brown.

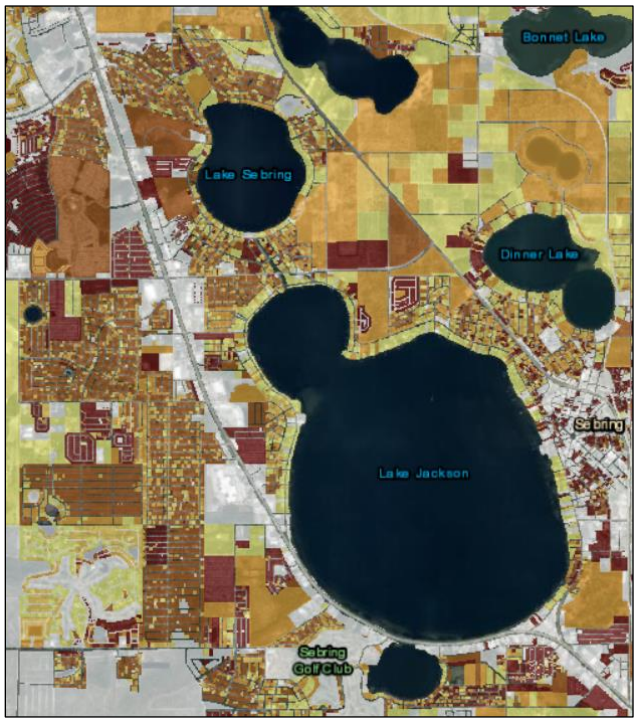


Figure 4. Example of Build-out Density Submodel for Highlands County shaded by housing units per acre

Census tracts where the 2020 population was zero, and therefore the average persons per housing unit was zero, were assigned the county's average persons per housing unit. Also, if there were tracts with 2020 census values for persons per housing unit greater than zero that were based on a small number of homes with greater than five persons per housing unit, the county's average persons per housing unit was typically used.

Planned Developments

The final step in the development of the County Build-out Submodels was adjusting build-out densities within planned developments to correspond with approved development plans wherever their boundaries are available in a GIS format. Although planned developments often do not develop as originally planned by the developer, the total number of units planned (regardless of timing) is likely to be a better forecast of the units at build-out than one based on the median historic densities. Therefore, in each of the County Build-out Submodels, parcels with centroids within a planned development were attributed with the name of the development. The build-out densities for those parcels were adjusted so that the total build-out for the development was consistent with the development plan, and the build-out population for that area was recalculated.

GROWTH DRIVERS SUBMODEL

The Growth Drivers Submodel is a district-wide, raster (cell-based) GIS model representing development potential. The submodel is a continuous surface of 10-meter cells containing values of 0-100, with '100' having the highest development potential and '0' having the lowest development potential. It influences the GSAPF Model by factoring in the attraction of certain spatial features, or growth drivers on development. These drivers were identified from transportation and land use/land cover data. They included the following:

1. Proximity to roads and interchanges prioritized by level of use (with each road type modeled separately)
2. Proximity to planned developments
3. Proximity to existing commercial development (based on parcels with commercial land use codes deemed attractors to residential growth)
4. Proximity to existing residential development
5. Proximity to coastal and inland waters

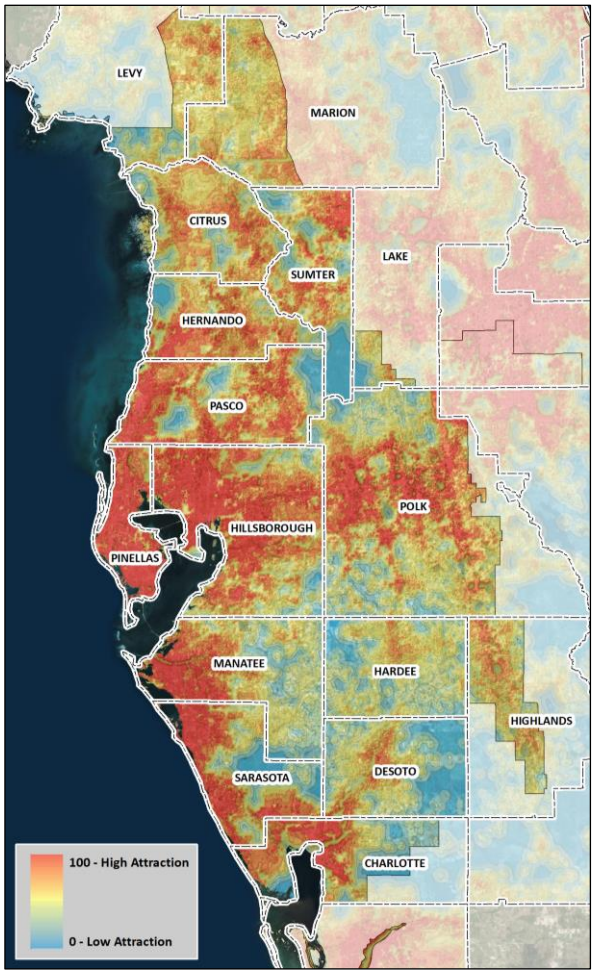


Figure 5. Growth Drivers Submodel

Figure 5 depicts the Growth Drivers Submodel for SWFWMD, with high development potential in red, moderate development potential in yellow and low development potential in blue.

Data used for generating the Growth Drivers Submodel and their sources are listed in Table 3 below.

Table 3. GIS datasets used in the Growth Drivers Submodel

Growth Driver	Data Source
Roads and Limited Access Road Interchanges	Florida Department of Transportation (FDOT) Major Roads: Functional Classification (FUNCLASS), and FDOT Limited Access Road Interchanges
Existing Residential Land Uses	County Property Appraiser Parcel Data
Selected Existing Commercial Land Uses	County Property Appraiser Parcel Data
Coastal and Inland Waters	SWFWMD Land Cover Data, and Florida Geographic Data Library (FGDL) Coastline Data
Planned developments	Multiple sources, including Regional Planning Councils, local governments, SWFWMD and GIS Associates

Each of the drivers listed in Table 3 were used as independent variables in a logistic regression equation. Dependent variables included existing residential units built during or after 1995 as the measure of "presence", and large undeveloped vacant parcels outside of large, planned developments were used to measure "absence". The resulting equation could then be applied back to each of the regional grids resulting in a single regional grid with values 0 through 100, for which a value of 0 represented the lowest relative likelihood of development, and a value of 100 represented the highest relative likelihood of development.

This seamless, "regional" submodel covers all the counties that are all or partially within the Southwest Florida Water Management District, plus a one-county buffer to account for growth drivers outside the District that could influence growth within the District. Each county was then individually reclassified to stretch its mean driver values between 0 and 100, to better differentiate the highest values relative to the rest of the county.

This submodel was then used by the GSAPF Model to rank undeveloped parcels based on their development potential, which is explained in the "Growth Calculation Methodology" section. Note that growth may still occur in areas assigned relatively low values from this model based on the historical growth trends. This model only helps guide growth when the county Model projection totals are below the BEBR targets.

GEOSPATIAL SMALL-AREA POPULATION FORECASTING MODEL

GISA's Geospatial Small-Area Population Forecasting Model (GSAPF Model) integrates the County Build-out Submodels and the Growth Drivers Submodel with the GISA Population Projection Engine™, which makes the projection calculations using a combination of those submodels, historic growth trends, and growth controls from BEBR's county-level forecasts.

Historic Growth Trends

The historic growth trends were based on historic population counts from the 1990, 2000, 2010, and 2020 censuses. For 1990, 2000, and 2010, census block population counts from the Florida House of Representatives Redistricting Data (available at the Office of Economic and Demographic Research's website http://edr.state.fl.us/Content/population-demographics/redistricting/2010-redistricting/index.cfm) were summarized at the 2020 tract level, and combined with the 2020 tract population estimates. These estimates were used to produce twelve tract level projections using five different demographic extrapolation methods. The three highest and three lowest calculations were discarded to moderate the effects of extreme projections (Smith and Rayer 2004). The remaining six projections were then averaged.

The five demographic extrapolation methods for projecting population utilized by the model were:

1. Linear
2. Exponential
3. Constant Share
4. Share-of-Growth
5. Shift-Share

The Linear and Exponential techniques employ a bottom-up approach, extrapolating the historic growth trends of each census tract with no consideration for the county's overall growth. The Constant Share, Share-of-Growth and Shift-Share techniques employ a ratio allocation, or top-down approach, allocating a portion of the total projected county population or growth to each census tract based on that census tract's percentage of county population or growth over the historical period. Each of the five methods is a good predictor of growth in different situations and growth patterns, so using a combination of all five was the best way to avoid the largest possible errors resulting from the least appropriate techniques for each census tract within the 17-county area (Sipe and Hopkins 1984). This approach is similar to the one BEBR uses for its county population forecasts, but the base periods and the number of projections are somewhat different because annual estimates are not available at the tract level.

The calculations associated with the five statistical methods are described on the following pages. The launch year was 2020, and the projections were made for 2025, 2030, 2035, 2040, and 2045.

1. **Linear Projection Method:** The Linear Projection Method assumes that the change in the number of persons for each census tract will be the same as during the base period (Rayer and Wang, 2020). Three linear growth rate calculations were made, 1990 to 2000, 2000 through 2020, and 2010 through 2020. In the three Linear methods (LIN), population growth was calculated using the following formulas:

$$LIN1 = \frac{(TractPop2020 - TractPop1990)}{30} * 5$$

$$LIN2 = \frac{(TractPop2020 - TractPop2000)}{20} * 5$$

$$LIN3 = \frac{(TractPop2020 - TractPop2010)}{10} * 5$$

2. **Exponential Projection Method:** The Exponential Projection Method assumes that population will continue to change at the same percentage rate as during the base period (Rayer and Wang, 2020). One calculation was made from 2010 through 2020. In the Exponential method (EXP), population growth was calculated using the following formula:

$$EXP = (TractPop2020 * e^{5r}) - TractPop2020$$

$$Where, r = \frac{ln\frac{TractPop2020}{TractPop2010}}{10}$$

3. **Constant Share Projection Method:** The Constant Share Projection Method assumes that each census tract's percentage of the county's total population (CntyPop) will be the same as over the base period (Rayer and Wang, 2020). One Constant Share (CS) calculation was made based on 2020 shares, but the weight was doubled for this method. Population growth was calculated using the following formula (using 2020–2025 as an example):

$$CS = \frac{TractPop2020}{CntyPop2020} * (CntyPop2025 - CntyPop2020)$$

4. **Share-of-Growth Projection Method**: The Share-of-Growth Projection Method assumes that each census tract's percentage of the county's total growth will be the same as over the base period (Rayer and Wang, 2020). However, if population change is negative at the tract level and positive at the county level (or vice versa), higher county-level projections would result in larger declines in tract projections. This is counterintuitive, so the "Plus-minus" variant of the Share-of-Growth Method was used (Rayer, 2015). Three Share-of-Growth calculations were made, 1990 through 2020 2000 through 2020, and 2010 through 2020.

In the three Share-of-Growth (SOG) calculations, population growth was calculated using the following formulas if the changes in growth over the base period for the tract and county were both positive or both negative (using 2020–2025 as an example):

$$SOG1 = \left[\frac{SOG}{CntyPop2025 - CntyPop2020}\right] * \left[\begin{array}{l}\left[CntySum\left[\frac{ABS(SOG)}{CntyPop2025 - CntyPop2020}\right]\right] \\ +\left[1 - CntySum\left[\frac{SOG}{CntyPop2025 - CntyPop2020}\right]\right]\end{array}\right] \div \left[CntySum\left[\frac{ABS(SOG)}{CntyPop2025 - CntyPop2020}\right]\right] * (CntyPop2025 - CntyPop2020)$$

Where,
$SOG = \frac{(TractPop2020 - TractPop1990)}{(CntyPop2020 - CntyPop1990)} * (CntyPop2025 - CntyPop2020)$
and $ABS = Absolute\ Value$

$$SOG2 = \left[\frac{SOG}{CntyPop2025 - CntyPop2020}\right] * \left[\begin{array}{l}\left[CntySum\left[\frac{ABS(SOG)}{CntyPop2025 - CntyPop2020}\right]\right] \\ +\left[1 - CntySum\left[\frac{SOG}{CntyPop2025 - CntyPop2020}\right]\right]\end{array}\right] \div \left[CntySum\left[\frac{ABS(SOG)}{CntyPop2025 - CntyPop2020}\right]\right] * (CntyPop2025 - CntyPop2020)$$

Where,
$SOG = \frac{(TractPop2020 - TractPop2000)}{(CntyPop2020 - CntyPop2000)} * (CntyPop2025 - CntyPop2020)$
and $ABS = Absolute\ Value$

$$SOG3 = \left[\frac{SOG}{CntyPop2025 - CntyPop2020}\right] * \left[\begin{array}{l}\left[CntySum\left[\frac{ABS(SOG)}{CntyPop2025 - CntyPop2020}\right]\right] \\ +\left[1 - CntySum\left[\frac{SOG}{CntyPop2025 - CntyPop2020}\right]\right]\end{array}\right] \div \left[CntySum\left[\frac{ABS(SOG)}{CntyPop2025 - CntyPop2020}\right]\right] * (CntyPop2025 - CntyPop2020)$$

Where,
$SOG = \frac{(TractPop2020 - TractPop2010)}{(CntyPop2020 - CntyPop2010)} * (CntyPop2025 - CntyPop2020)$
and $ABS = Absolute\ Value$

If the changes in growth over the base period were negative at the tract level and positive at the county level or vice versa, the population growth was calculated using the following formulas (using 2020–2025 as an example):

$$SOG1 = \left[\frac{SOG}{CntyPop2025 - CntyPop2020}/5\right] * \left[\begin{array}{l}\left[CntySum\left[\frac{ABS(SOG)}{CntyPop2025 - CntyPop2020}\right]\right] \\ +\left[1 - CntySum\left[\frac{SOG}{CntyPop2025 - CntyPop2020}\right]\right]\end{array}\right] \div \left[CntySum\left[\frac{ABS(SOG)}{CntyPop2025 - CntyPop2020}\right]\right] * (CntyPop2025 - CntyPop2020)$$

Where,

$$SOG = \frac{(TractPop2020 - TractPop1990)}{(CntyPop2020 - CntyPop1990)} * (CntyPop2025 - CntyPop2020)$$

and $ABS = Absolute\ Value$

$$SOG2 = \left[\frac{SOG}{CntyPop2025 - CntyPop2020}/5\right] * \left[\begin{array}{l}\left[CntySum\left[\frac{ABS(SOG)}{CntyPop2025 - CntyPop2020}\right]\right] \\ +\left[1 - CntySum\left[\frac{SOG}{CntyPop2025 - CntyPop2020}\right]\right]\end{array}\right] \div \left[CntySum\left[\frac{ABS(SOG)}{CntyPop2025 - CntyPop2020}\right]\right] * (CntyPop2025 - CntyPop2020)$$

Where,

$$SOG = \frac{(TractPop2020 - TractPop2000)}{(CntyPop2020 - CntyPop2000)} * (CntyPop2025 - CntyPop2020)$$

and $ABS = Absolute\ Value$

$$SOG3 = \left[\frac{SOG}{CntyPop2025 - CntyPop2020}/5\right] * \left[\begin{array}{l}\left[CntySum\left[\frac{ABS(SOG)}{CntyPop2025 - CntyPop2020}\right]\right] \\ +\left[1 - CntySum\left[\frac{SOG}{CntyPop2025 - CntyPop2020}\right]\right]\end{array}\right] \div \left[CntySum\left[\frac{ABS(SOG)}{CntyPop2025 - CntyPop2020}\right]\right] * (CntyPop2025 - CntyPop2020)$$

Where,

$$SOG = \frac{(TractPop2020 - TractPop2010)}{(CntyPop2020 - CntyPop2010)} * (CntyPop2025 - CntyPop2020)$$

and $ABS = Absolute\ Value$

6. **Shift-Share Projection Method:** The Shift-Share Projection Method assumes that each census tract's percentage of the county's total annual growth will change by the same annual amount as over the base period (Rayer and Wang, 2020). Three Shift-Share calculations were made, 1990 through 2020, 2000 through 2020, and 2010 through 2020. In the three Shift-Share Projection Method (SSH) calculations, population growth was calculated using the following formulas (using the five years from 2020–2025 as an example):

$$SSH_1 = \left[\frac{TractPop2020}{CntyPop2020} + \left[\frac{\left(\frac{TractPop2020}{CntyPop2020} - \frac{TractPop1990}{CntyPop1990}\right)}{30} * 5\right]\right] * \begin{pmatrix} CntyPop2025 \\ -CntyPop2020 \end{pmatrix}$$

$$SSH_1 = \left[\frac{TractPop2020}{CntyPop2020} + \left[\frac{\left(\frac{TractPop2020}{CntyPop2020} - \frac{TractPop2000}{CntyPop2000}\right)}{20} * 5\right]\right] * \begin{pmatrix} CntyPop2025 \\ -CntyPop2020 \end{pmatrix}$$

$$SSH_2 = \left[\frac{TractPop2020}{CntyPop2020} + \left[\frac{\left(\frac{TractPop2020}{CntyPop2020} - \frac{TractPop2010}{CntyPop2010}\right)}{10} * 5\right]\right] * \begin{pmatrix} CntyPop2025 \\ -CntyPop2020 \end{pmatrix}$$

7. **Average of the Projection Extrapolations:** The three minimum and three maximum of the twelve calculations for each census tract were removed to eliminate the most extreme results of the thousands of heterogeneous census tracts within the 17-county area. The six remaining calculations were averaged to account for the considerable variation in growth rates and patterns over all of the census tracts within the 17-county area. All four remaining methods were weighted equally, and the average was calculated using the following formula:

$$AVG = \frac{(LIN1 + LIN2 + LIN3 + EXP + CS + CS + SOG1 + SOG2 + SOG3 + SSH1 + SSH2 + SSH3) - (MIN1 + MIN2 + MIN3 + MAX1 + MAX2 + MAX3)}{6}$$

Where,
$MIN1 - MIN3$ *are the four lowest growth calculations for each tract, and*
$MAX1 - MAX3$ *are the four highest growth calculations for each tract.*

Growth Calculation Methodology

After the development of the County Build-out Submodels, the Growth Drivers Submodel, and the historic growth trends, the GISA Population Projection Engine™ was used to make the growth calculations. The methodology for calculating growth for each projection increment included the following steps:

1. Applying the tract-level projected growth to parcels within a particular tract.
2. Checking growth projections against build-out population, and reducing any projections exceeding build-out to the build-out numbers.
3. After projecting growth for all census tracts within a particular county, summarizing the resulting growth and comparing it against countywide BEBR target growth. This step led to two scenarios:
    a. If the Small-Area Population Forecasting Model's projections exceeded the BEBR target growth, projected growth for all tracts was reduced by the percentage that the projections exceeded the BEBR target.
    b. If the Small-Area Population projection model's projections were less than the BEBR target, the model would continue growing the county using the Growth Drivers Submodel until the BEBR target growth for each five-year increment was reached. This process involved developing parcels with growth driver values in the highest decile that had available capacity for growth.

Counties that are partially within another water management district were processed in their entirety and controlled to the BEBR-based target growth.

NON-PERMANENT POPULATION PROJECTIONS

In addition to the Census Population Cohort projections generated by the GSAPF Model, projections of non-permanent population were also made. Those projections include peak seasonal population, functionalized seasonal population, tourist population and net commuter population. The methods were developed by SWFWMD and implemented by GIS Associates for projecting those population types are described in this section.

Peak Seasonal Population Cohort

Seasonal population was estimated by SWFWMD using a combination of 2010 census data and emergency room admissions data, both at the Zip Code Tabulation Area (ZCTA) level. Average 2009 - 2011 emergency room admissions data was utilized for the 45-74 age cohort, which is typical of seasonal residents. A "Seasonal Resident Ratio" was calculated by ZCTA to estimate the proportion of peak (including seasonal) to permanent population.

The Seasonal Resident Ratio was derived using the following steps:

1. Subtract total 2009 - 2011 total third quarter (Q3, or July, August and September) hospital admissions from first quarter (Q1, or January, February and March) admissions.
2. Calculate the average annual difference between Q1 and Q3 by dividing above result by three.
3. Calculate a seasonal population estimate for each ZCTA by dividing the above difference by the probability of the population in the 45-74 age cohort being admitted to the emergency room (approximately 2.23%).
4. Calculate the Seasonal Resident Ratio by adding the seasonal population to the permanent population and dividing that total by the permanent population.

The number of seasonal households was then estimated using the following steps:

1. Multiply the permanent population in households (from the 2010 census) by the Seasonal Resident Ratio.
2. Subtract the permanent population in households from above result.
3. Divide above result by the lesser of SWFWMD's seasonal persons per household (1.95) or the census permanent persons per household for each ZCTA.

The ratio of seasonal to total households was then calculated by dividing seasonal households by the sum of seasonal and permanent households. Seasonal peak population was then calculated using the following steps:

1. Subtract vacant housing units for reasons other than seasonal, recreational, or occasional use from total housing units (from the 2010 census).
2. Multiply above result times the seasonal to total household ratio.
3. Multiply above result times the lesser of SWFWMD's seasonal persons per household (1.95) or the census permanent persons per household for each ZCTA.

Because the Census Population Cohort contains some non-permanent residents who complete the census forms in Florida but reside for part of the year outside of Florida, it was also necessary to calculate the permanent population. Permanent population was calculated using the following steps:

1. Subtract vacant housing units for reasons other than seasonal, recreational, or occasional use from total housing units (from the 2010 census).
2. Multiply above result times one minus the seasonal to total household ratio.
3. Multiply above result times the census permanent persons per household for each ZCTA.

The ratio of total unadjusted peak population to total census population was then calculated by dividing the sum of the seasonal peak population, the permanent population in households, and the group quarters population (from the 2010 census) by the total census population. This ratio was then applied by GISA to the future projections of the Census Population Cohort from the GSAPF Model to derive parcel level peak population projections (which also includes permanent residents).

Functionalized Seasonal Population Cohort

The functional population is the peak seasonal resident population reduced to account for the percentage of the year seasonal residents typically reside elsewhere, and the absence of indoor water use during that time. It was calculated using the following generalized steps:

1. Utilize the following metrics previously derived by SWFWMD data and surveys:
    a. The appropriate proportion of the year seasonal residents spend in Florida, which varies from beach destination counties (44.2%) to non-beach destination counties (56.7%).
    b. The seasonal resident adjustment based on average per capita water use.
        i. The five-year District-wide average per capita use is 132 gallons per person per day, and 69.3 gallons is estimated indoor use and 62.7 gallons for out-door use.
        ii. The adjustment factor is calculated using the following equation for "beach destination" counties (Charlotte, Manatee, Pinellas and Sarasota):
        ((0.442 x 132 gpd) + ((1 – 0.442) x 62.7 gpd)) / 132 gpd = 0.707
        iii. The adjustment factor is calculated using the following equation for "non-beach destination counties":
        ((0.567 x 132 gpd) + ((1 – 0.567) x 62.7 gpd)) / 132 gpd = 0.773
2. Calculate "functionalized" seasonal population by multiplying the seasonal peak population by the appropriate seasonal resident adjustment factor for the particular county (0.707 or 0.773).

The ratio of total functional to total census population was then calculated by dividing the sum of the functionalized seasonal population, the permanent population, and the group quarters population (from the 2010 census) by the total census population. This ratio was then applied by GISA to the future projections of the Census Population Cohort from the GSAPF Model to derive parcel level functionalized seasonal population projections (which also includes permanent residents).

Tourist Population Cohort

The tourist population projections were based on 25 years (1996-2020) of county-level lodging room data from the Florida Department of Business and Professional Regulation (DBPR). The SWFWMD methodology for projecting future tourist rooms by county utilizes two different methods and averages the two results for each county.

The first method projects the increase in rooms by county by extrapolating the linear trend using the least squares method derived from the last 25 years of county total room estimates.

A second method projects future rooms based on projections of employment in the Accommodation and Food Services industries (from data from Woods and Poole). This is also an extrapolation of a linear trend using the least squares method, but rooms by county are projected as a function of a county's employment projections rather than time.

SWFWMD staff previously tested both methods by projecting values for the years 2007-2013 using room estimates from 1996-2006. Based on the differences between actual room estimates and projected values for 2007-2013, neither method was clearly superior to the other. For that reason, SWFWMD staff opted to use both methods. The results of both methods were averaged, but only after adjusting for the average 2007-2013 error for each projection in each county.

These projections of future rooms were then converted to "functionalized" tourist population by applying various county-level average unit occupancy and party size ratios derived from SWFWMD surveys. SWFWMD also updated the values associated with locations identified as short term rentals for this projection set based on SWFWMD research.

These projections of tourist population were joined to the existing lodging facility locations, which were geocoded by SWFWMD. No attempt was made to forecast new locations of lodging facilities, as:

1. The precise locations would be highly speculative.
2. It was assumed that lodging facilities often are built in the general vicinity of existing lodging facilities, or at least in close enough proximity to be within the same utility service area.

Net Commuter Population Cohort

The net commuter population projections were based on net commuter data provided by SWFWMD. A census tract ratio was developed of net commuters to total census population. This ratio was then applied to the future projections of the Census Population Cohort from the GSAPF Model to derive parcel level projections for net commuter population. That population was then "functionalized" with the following ratios:

1. 8 / 24 (typical working hours per day)
2. 5 / 7 (typical working days per week)

By applying both of these ratios to the net commuter population, the resulting functional net commuter population is 23.8% of the actual net commuter population. This functional number better reflects the water use that is expected for net commuters.

Note that the net commuter population projection summaries by utility service area were often negative, as many utilities serve "bedroom communities" and other areas where more residents work outside the utility service area than the population (residents and non-residents) employed within it. Only positive net commuter populations were included in a utility's total functional population.

UTILITY SERVICE AREA POPULATION SUMMARIES

The parcel level population projections for all population cohorts discussed above were then summarized by water utility service area boundaries for all utilities mapped by SWFWMD, which typically are those that average more than 0.1 million gallons per day (mgd) of total water use. These service areas, maintained by SWFWMD, were overlaid with each county's parcel level results, and each parcel within a service area was assigned a unique identifier for that service area. The projected population was then summarized by that identifier and joined to SWFWMD's public service area boundary database to produce tabular and spatial output. Note that these service areas change over time, so for any future use of these deliverables, it is important to match this projection set only with the service areas included in the GIS deliverables for this project.

PROJECTION DELIVERABLES

The final population projections were delivered in multiple formats, including:

1. GIS – Esri file geodatabases, with individual feature classes for each county containing parcel level results, and a single feature class districtwide of utility service areas and their population summaries.
2. Tabular – Excel spreadsheet summaries by utility service area

The summaries of population outside of service areas include population with private wells for potable use (considered to be domestic self-supply, or DSS) or small utilities without a service area boundary in SWFWMD's database. Small utilities are generally defined as those utilities permitted for less than 100,000 gallons per day (gpd). However, there are some small utilities in that category that are included here because their service area boundaries are in SWFWMD's database.

Note that these service area population summaries may include some self-supplied populations (or populations with private wells) that reside within the service areas. The population projections utilized for SWFWMD's planning and permitting may vary from the raw functional population projections developed with the model due to service area boundary changes, self-supplied population, and current population served reported by utility using the required population estimation methodology in Part D of the Water Use Permitting Manual.

The tabular deliverables were parcel summaries at the utility level. Table 4 on the following page shows the service area population projection summaries table for Manatee County.

The GIS outputs are useful for quality assuring the results and inputs, for maintaining the projection inputs over time, and for graphically depicting projected patterns of future population growth. Figure 7 on Page 22 is an example of this data in the Tampa Bay area, depicting current population in white and projected 2025-2045 growth in red.

Table 4. Utility service area population projection summaries table for Manatee County

BEBR / Census Population (Permanent Resident Population)						
Utility Name	**POP20**	**POP25**	**POP30**	**POP35**	**POP40**	**POP45**
OUTSIDE SERVICE AREAS	12,014	12,744	13,357	13,882	14,350	14,779
CITY OF BRADENTON PUBLIC WORKS	55,698	58,696	60,089	61,043	61,260	61,360
CITY OF PALMETTO PUBLIC WORKS	14,225	15,215	16,187	17,220	17,928	18,574
MANATEE COUNTY UTILITIES DEPARTMENT	314,921	349,187	379,211	404,099	427,303	447,925
TOWN OF LONGBOAT KEY	2,746	2,859	2,859	2,859	2,859	2,859
PALMETTO PARK	25	26	26	26	26	26
PINES TRAILER PARK	41	40	40	39	42	46
LAZY ACRES	39	39	39	39	39	39

Peak Seasonal Population (Includes BEBR / Census)						
Utility Name	**POP20_P**	**POP25_P**	**POP30_P**	**POP35_P**	**POP40_P**	**POP45_P**
OUTSIDE SERVICE AREAS	12,334	13,081	13,707	14,245	14,723	15,162
CITY OF BRADENTON PUBLIC WORKS	59,438	62,580	64,034	65,029	65,254	65,358
CITY OF PALMETTO PUBLIC WORKS	15,829	16,930	18,012	19,161	19,949	20,667
MANATEE COUNTY UTILITIES DEPARTMENT	347,083	384,055	416,396	443,212	468,091	490,172
TOWN OF LONGBOAT KEY	5,855	6,097	6,097	6,097	6,097	6,097
PALMETTO PARK	28	28	28	29	29	29
PINES TRAILER PARK	77	75	74	73	79	85
LAZY ACRES	43	43	43	43	43	44

Functionalized Seasonal Population (Includes BEBR / Census)						
Utility Name	**PERMSEAS20**	**PERMSEAS25**	**PERMSEAS30**	**PERMSEAS35**	**PERMSEAS40**	**PERMSEAS45**
OUTSIDE SERVICE AREAS	12,229	12,969	13,591	14,124	14,599	15,034
CITY OF BRADENTON PUBLIC WORKS	58,288	61,370	62,797	63,772	63,993	64,095
CITY OF PALMETTO PUBLIC WORKS	15,386	16,457	17,508	18,625	19,392	20,089
MANATEE COUNTY UTILITIES DEPARTMENT	339,792	376,049	407,774	434,057	458,510	480,217
TOWN OF LONGBOAT KEY	5,443	5,667	5,667	5,667	5,667	5,667
PALMETTO PARK	28	28	28	28	28	28
PINES TRAILER PARK	74	72	71	70	75	82
LAZY ACRES	42	42	42	42	42	42

Functionalized Tourist Population						
Utility Name	**POP20_T**	**POP25_T**	**POP30_T**	**POP35_T**	**POP40_T**	**POP45_T**
OUTSIDE SERVICE AREAS	5	6	7	8	9	10
CITY OF BRADENTON PUBLIC WORKS	1,810	2,058	2,340	2,645	2,975	3,333
CITY OF PALMETTO PUBLIC WORKS	21	24	27	30	34	38
MANATEE COUNTY UTILITIES DEPARTMENT	12,266	13,944	15,854	17,920	20,157	22,581
TOWN OF LONGBOAT KEY	1,084	1,232	1,401	1,583	1,781	1,995
PALMETTO PARK	-	-	-	-	-	-
PINES TRAILER PARK	-	-	-	-	-	-
LAZY ACRES	-	-	-	-	-	-

Functionalized Net Commuter Population						
Utility Name	**POP20_NC**	**POP25_NC**	**POP30_NC**	**POP35_NC**	**POP40_NC**	**POP45_NC**
OUTSIDE SERVICE AREAS	(717)	(762)	(799)	(831)	(860)	(886)
CITY OF BRADENTON PUBLIC WORKS	1,255	1,505	1,728	1,825	1,849	1,846
CITY OF PALMETTO PUBLIC WORKS	(362)	(405)	(450)	(502)	(546)	(587)
MANATEE COUNTY UTILITIES DEPARTMENT	(7,627)	(8,497)	(9,290)	(10,085)	(10,799)	(11,409)
TOWN OF LONGBOAT KEY	129	133	133	133	133	133
PALMETTO PARK	(2)	(2)	(2)	(2)	(2)	(2)
PINES TRAILER PARK	-	-	-	-	-	-
LAZY ACRES	-	-	-	-	-	-

Total Functional Population (Functionalized Seasonal + Tourist + Positive Net Commuter)						
Utility Name	**POP20_TF**	**POP25_TF**	**POP30_TF**	**POP35_TF**	**POP40_TF**	**POP45_TF**
OUTSIDE SERVICE AREAS	12,234	12,975	13,597	14,131	14,607	15,043
CITY OF BRADENTON PUBLIC WORKS	61,353	64,933	66,865	68,242	68,817	69,274
CITY OF PALMETTO PUBLIC WORKS	15,407	16,481	17,535	18,655	19,426	20,128
MANATEE COUNTY UTILITIES DEPARTMENT	352,058	389,993	423,628	451,977	478,667	502,798
TOWN OF LONGBOAT KEY	6,655	7,032	7,201	7,383	7,581	7,795
PALMETTO PARK	28	28	28	28	28	28
PINES TRAILER PARK	74	73	72	71	76	82
LAZY ACRES	42	42	42	42	42	42

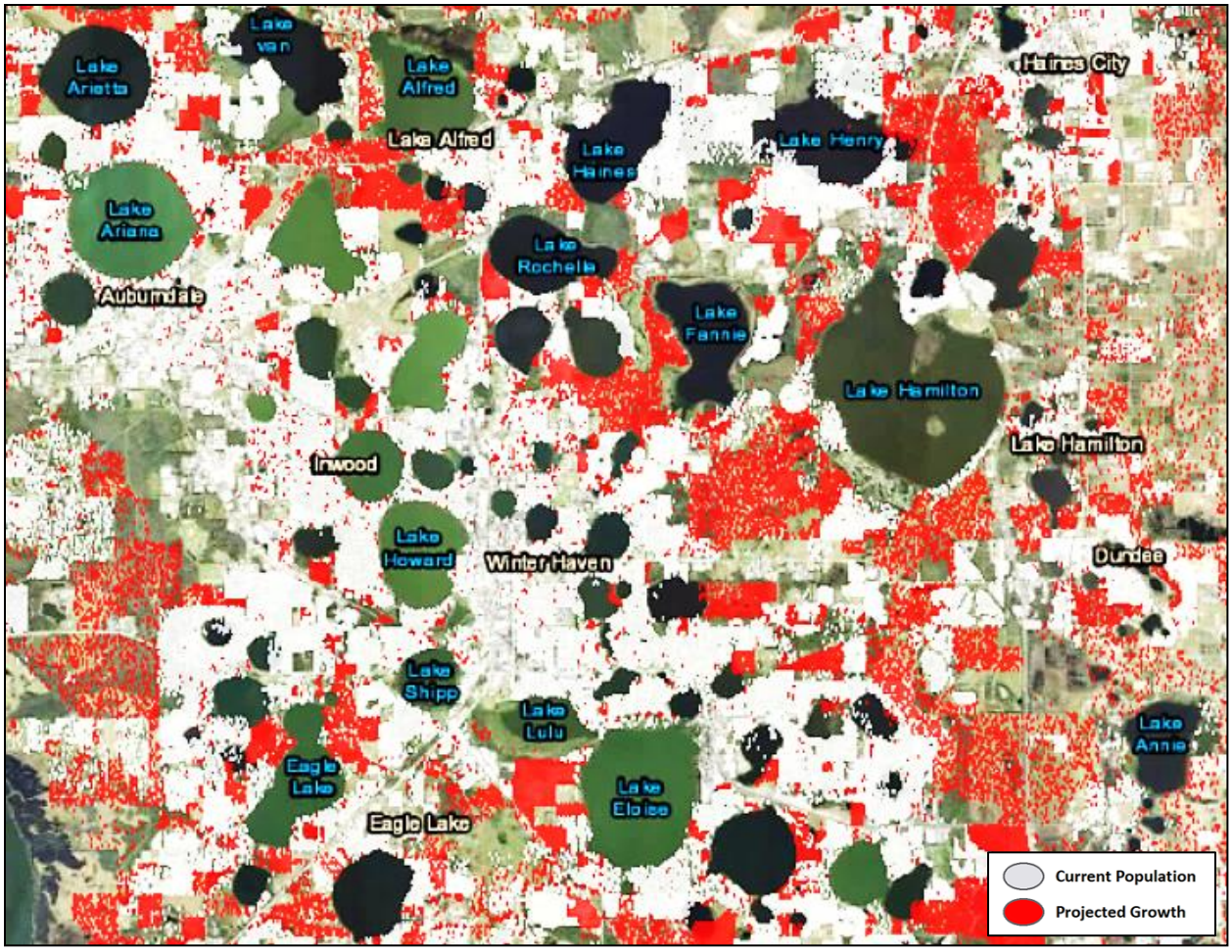


Figure 6. Parcels with 2020 population (white) and projected 2045 growth (red) in Polk County.

CONCLUSIONS

Small area population projections have become increasingly important for planning and permitting, particularly in an area experiencing rapid growth. With ever changing population dynamics and requirements for water supply planning and permitting, it is critical for SWFWMD to be able to accurately forecast population and water demand for small areas, and to be able to update these projections regularly and in a consistent and cost-effective manner. For these reasons, GIS Associates updated and implemented its Geospatial Small-Area Population Forecasting Model (GSAPF Model) and implemented SWFWMD methods for projecting seasonal, tourist and net commuter populations. The GSAPF Model was updated with current data to project population in an efficient and consistent manner throughout the entire 17-county region. Controlling the projections to BEBR's county-level forecasts provided consistency with other projections made by state and local governments, while at the same time providing the spatial precision needed for water supply planning, water use permitting and groundwater modeling.

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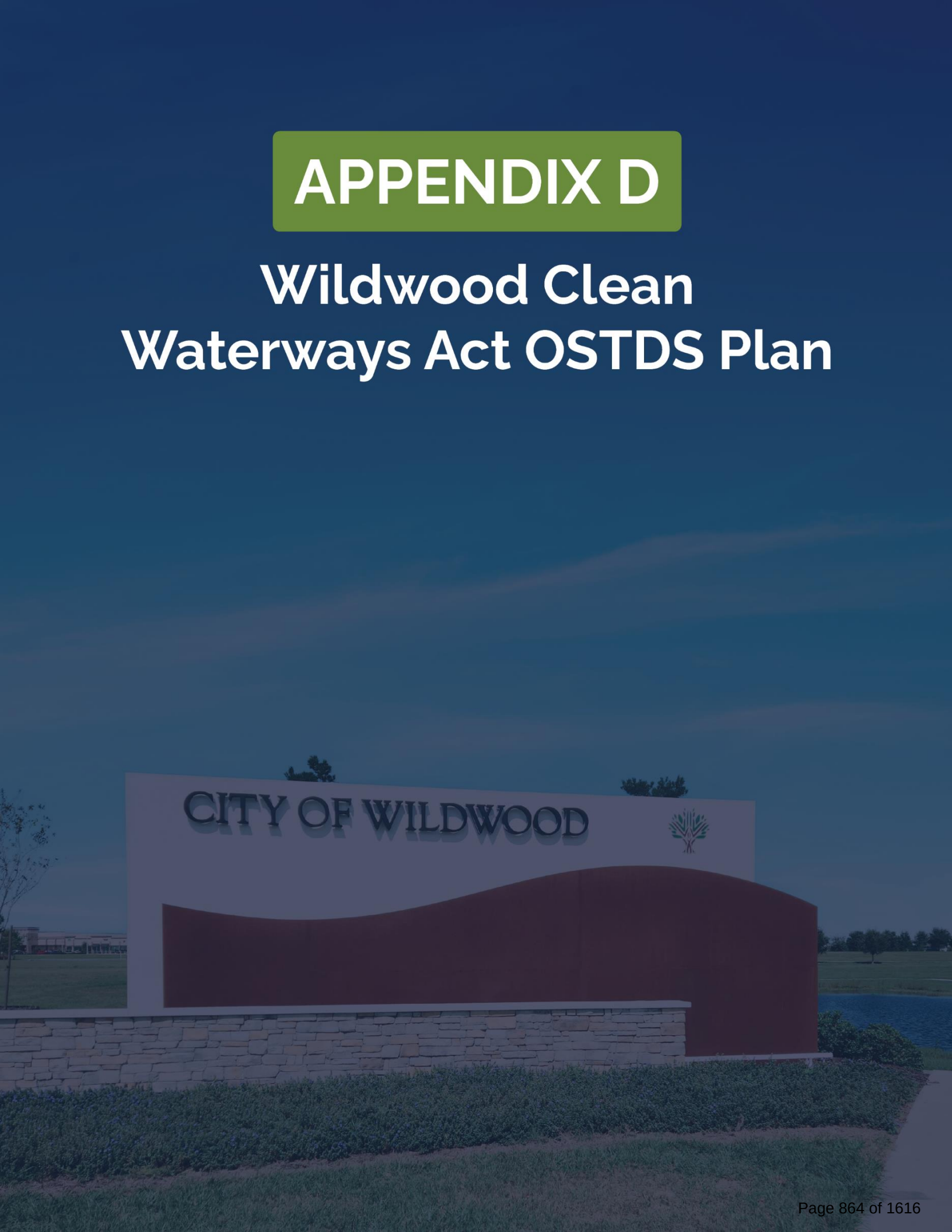
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APPENDIX D

Wildwood Clean Waterways Act OSTDS Plan





Clean Waterways Act
OSTDS Plan

AVO 054387.006
January 2024

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Section 1: Introduction

1.1 Background

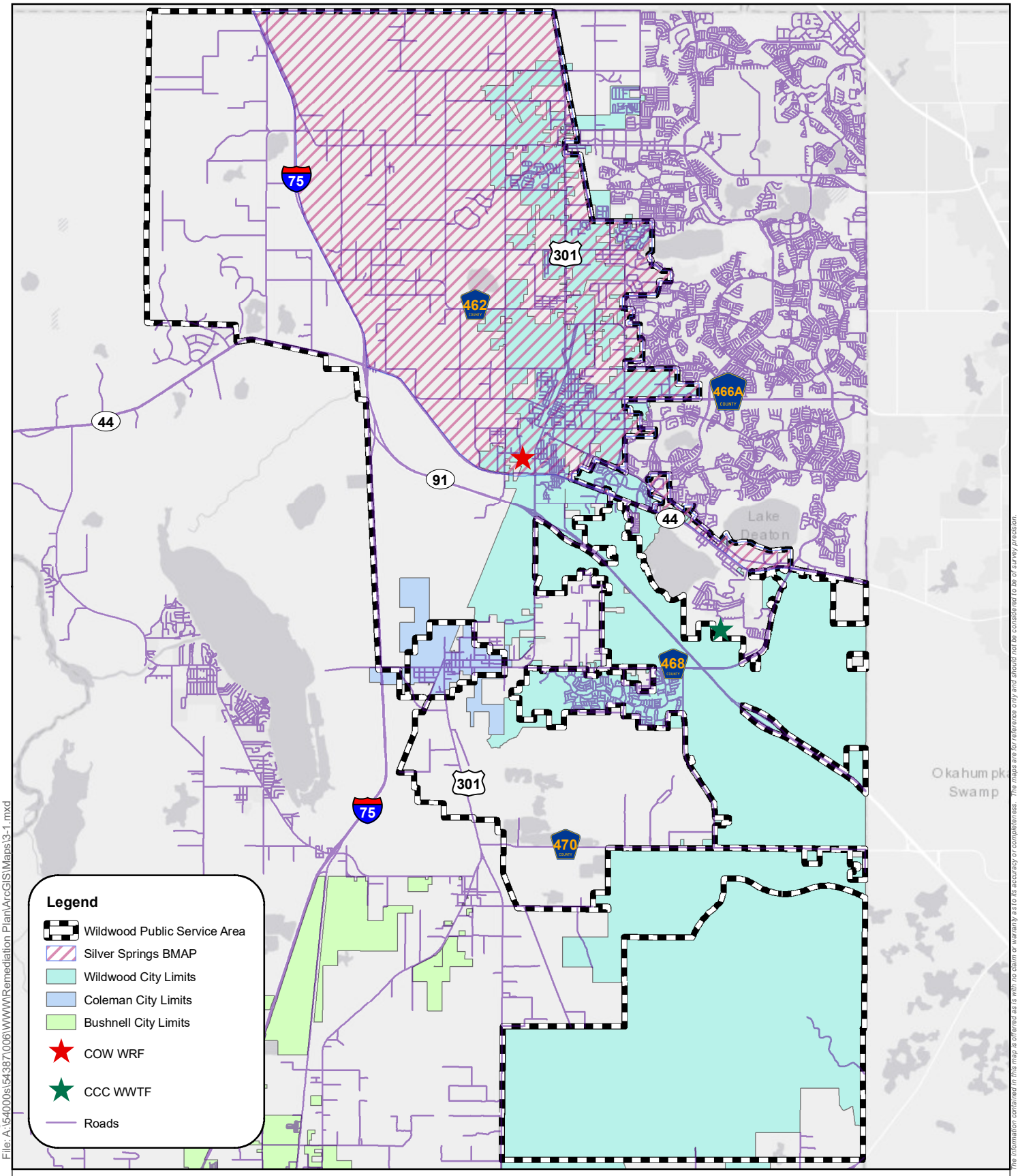
The Clean Waterways Act – Senate Bill 712 (2020) subparagraph 403.067(7)(a)9 Florida Statutes requires all counties and municipalities within a Basin Management Action Plan (BMAP) to develop a wastewater treatment plant remediation plan to quantify nitrogen and phosphorus loading in the wastewater effluent and develop a list and ranking of improvement projects required to meet the nutrient removal goals of the BMAP, along with an implementation schedule.

The Silver Springs Basin Management Action Plan for Silver Springs, Silver Springs Group, and Upper Silver River encompasses the portion of the City of Wildwood located north of State Route 44 and east of Interstate Route 75. While the City collects wastewater for treatment at two wastewater treatment facilities, onsite sewage treatment and disposal systems (OSTDS), also known as septic tanks, are located in clusters throughout the service area, and remain the primary means of wastewater treatment for larger and more rural properties.

1.2 Wastewater Service Area

The City's wastewater service area includes both the area within the city limits, as well as portions of unincorporated Sumter County. Currently the majority of the City's connections are located in the northeastern portion of the service area, which includes the city limits, and is located within the BMAP. The southern and western portions of the service area are rural in nature, with large tracts of undeveloped land and few connections, although the service area is experiencing rapid growth. The limits of the City's current wastewater service area are presented in **Figure 1-1**.

Wastewater generated within the City's service area is treated at the Wildwood Water Reclamation Facility (WRF) and the Continental Country Club Wastewater Treatment Facility (WWTF). Proposed improvements to the WRF and WWTF to meet the goals of the BMAP are not included in this report.



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Figure 1-1
City Of Wildwood Wastewater Service Area

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OSTDS Remediation Plan

Section 2: OSTDS Inventory

2.1 Existing OSTDS Inventory

An initial inventory of OSTDS within the City's wastewater service area was developed based upon permit records obtained from the Sumter County Department of Health. As of July 21, 2023, a total of 930 septic tanks were identified within the City's service area. A map showing the locations of these properties is presented as **Figure 2-1**.

As the City's service area only partially overlaps with the Silver Springs BMAP, the locations of the identified OSTDS were reviewed to determine the number of OSTDS located within the limits of the BMAP. Approximately eight percent of the septic tanks within the service area could not be located due to incomplete address information in the permit data. However, nearly 70 percent of the OSTDS that could be located are within the limits of the BMAP. A breakdown of the locations of the identified OSTDS is shown in **Table 2-1**.

Table 2-1: OSTDS Locations within the Service Area

Location	Number of OSTDS
Inside the BMAP	600
Outside the BMAP	258
Unable to Locate	72
Total	**930**

A complete listing of all of the OSTDS located in the City's service area, including those located outside the BMAP is presented in **Appendix A**.

2.2 OSTDS Growth

The City's Code of Ordinances, Section 19-184 requires connection to the sanitary sewer system when a gravity sewer is located within 200 linear feet of the property. However, the City's service area west of County Road 209 is primarily undeveloped, and sanitary sewer service is generally not available. It is anticipated that additional OSTDS will continue to be constructed within the BMAP. Historical records from the Sumter County Department of Health were reviewed to estimate the rate of new OSTDS being constructed within the service area. A summary of the number of new OSTDS permits issued annually within the service area for the last five years is presented in **Table 2-2**.

Table 2-2: Historical Summary of New OSTDS Permits Issued Annually

Year	Number of New OSTDS Permits
2018	33
2019	35
2020	35

2021	27
2022	31
Total	**161**
Five Year Annual Average	**32**
Projected 2023 through 2043	**640**

The number of new OSTDS permits issued for the City's service area has remained relatively consistent over the part five years ranging from 27 to 35, with an average of 32. Assuming new OSTDS permits are issued at the same rate over the next 20 years, approximately 640 news OSTDS permits are anticipated to be issued.

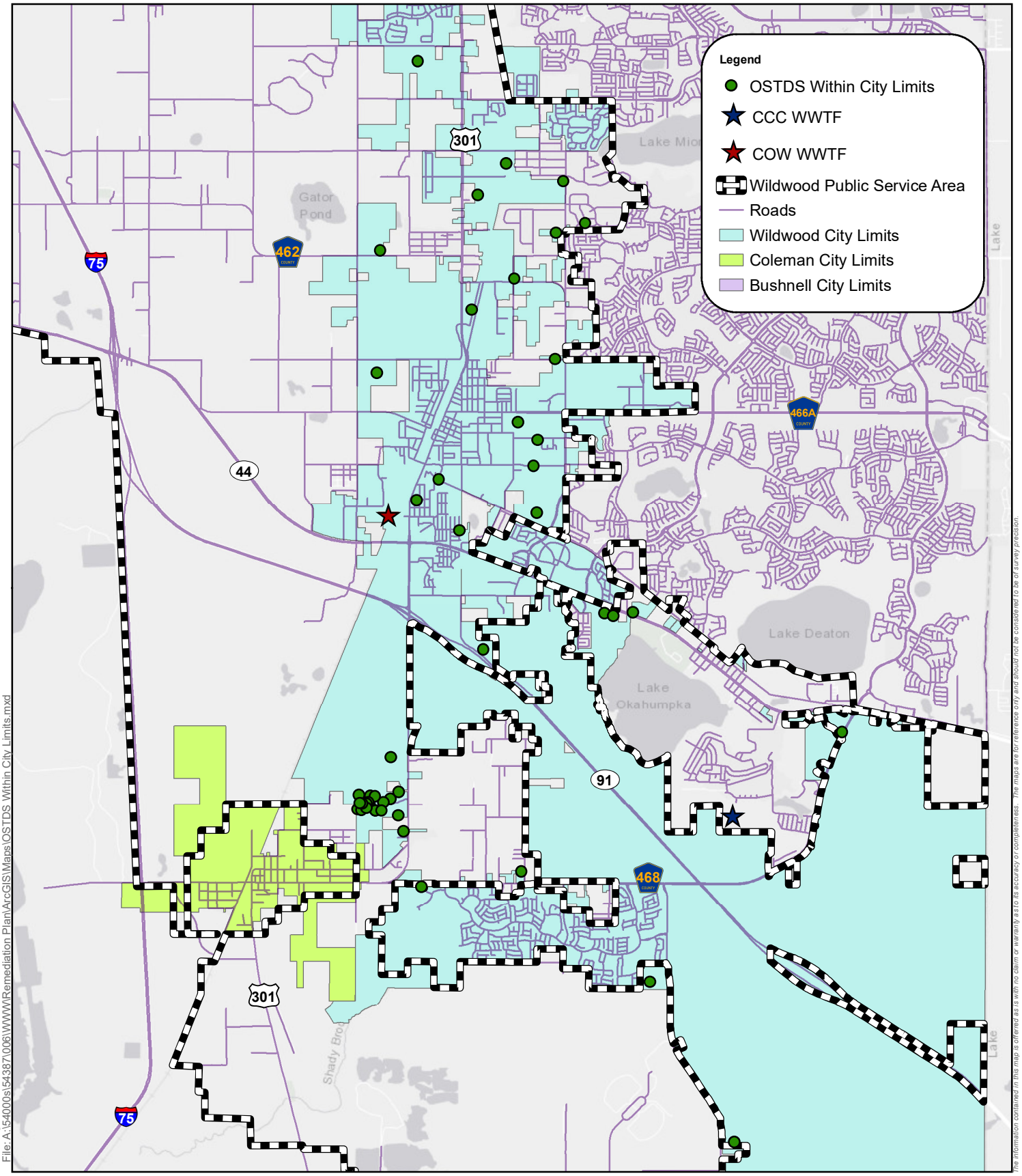


Figure 2-1
OSTDS Within the City Limits

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Section 3: OSTDS Improvements

Elimination or improvements to OSTDS located in the City's service area, but outside of the BMAP are not included in this section. The recommended improvements presented below include only currently constructed OSTDS located within the City's service area and the Silver Springs BMAP.

3.1 OSTDS to be Removed from Service

Extension of the City's wastewater collection system to currently unsewered areas was evaluated to allow for the elimination of OSTDS within the Silver Springs BMAP area. The locations of identified OSTDS were reviewed to determine the distance from the City's existing wastewater collection system, as well as to identify clusters of OSTDS. Individual OSTDS close to the existing wastewater collection system, and high densities of OSTDS offer a lower cost per connection, making the projects more economical.

Three wastewater collection system projects were identified that would eliminate a total of 536 OSTDS within the Silver Springs BMAP area. All of these projects have a cost per connection that exceeds that of upgrading the OSTDS to provide enhanced nutrient removal. Grant funding that is available to support the elimination of OSTDS within the BMAP has the potential to offset the cost of connection to make the projects economically feasible.

3.1.1 Fairways and Fox Hollow Wastewater Collection System Extension

The highest density of OSTDS in the City's service area is in the Fairways and Fox Hollow subdivisions along County Road 121. Extension of the City's wastewater collection system into both subdivisions, as well as north along County Road 121 to County Road 114 to connect the currently unsewered area between County Road 117 A, and County Road 120, and south along County Road 121 to County Road 134 B to connect the Green Acres subdivision to municipal sewer is proposed as part of this project. The project includes the construction of sanitary sewer extensions, a new lift station and wastewater force main to connect to the City's existing wastewater collection system on County Road 124 A. A map depicting the limits of the proposed project is shown in **Figure 3-1**. The opinion of probable cost for the project is $8,300,000, as shown in **Table 3-1**.

Table 3-1: Fairways and Fox Hollow Wastewater Collection System Extension Conceptual Opinion of Probable Cost

Item	Quantity	Unit Cost	Total Cost
8" PVC Wastewater Gravity Sewer	48,500 LF	$80	$3,880,000
Manholes	130 Each	$7,500	$975,000
6" PVC Wastewater Force Main	3,360 LF	$60	$201,600
Lift Station Complete	1 LS	$500,000	$500,000
Subtotal			**$5,556,600**
General Conditions		10%	$555,660
Subtotal			**$6,112,260**

Contingency		20%	$1,222,452
Engineering and Construction Admin.		15%	$916,839
Total			**$8,251,551**

Upon completion of the project 373 OSTDS will be eliminated from service, at an approximate cost of $22,000 per connection.

3.1.2 CR 205 – CR 230 Wastewater Collection System Extension

A second area that was identified with a high concentration of septic tanks was along County Roads 230, 230 A, 230 B, and 230 C. Extension of the City's wastewater collection system along these roads, as well as north along County Road 205 to a new lift station is proposed as part of this project. The project includes the construction of sanitary sewer extensions, a new lift station and wastewater force main to connect to the City's existing wastewater collection system on County Road 205. A map depicting the limits of the proposed project is shown in **Figure 3-2**. The opinion of probable cost for the project is $3,300,000, as shown in **Table 3-2**.

Table 3-2: CR 205 – CR 230 Wastewater Collection System Extension Conceptual Opinion of Probable Cost

Item	Quantity	Unit Cost	Total Cost
8" PVC Wastewater Gravity Sewer	16,100 LF	$80	$1,288,000
Manholes	45 Each	$7,500	$337,500
6" PVC Wastewater Force Main	1,600 LF	$60	$96,000
Lift Station Complete	1 LS	$500,000	$500,000
Subtotal			**$2,221,500**
General Conditions		10%	$222,150
Subtotal			**$2,443,650**
Contingency		20%	$488,730
Engineering and Construction Admin.		15%	$366,457
Total			**$3,298,837**

Upon completion of the project 38 OSTDS will be eliminated from service, at an approximate cost of $85,000 per connection. The project is not economically feasible without the aid of grant funding.

3.1.3 CR 462 – CR 229 Wastewater Collection System Extension

The final area that was identified with a high concentration of septic tanks was along County Roads 229 and 462 East, just north of the State Route 44 and Interstate Route 75 interchange. Extension of the City's wastewater collection system along these roads, as well as around the Royal Park to an existing gravity sewer on State Route 44 is proposed as part of this project. A map depicting the limits of the proposed project is shown in **Figure 3-3**. The opinion of probable cost for the project is $5,800,000, as shown in **Table 3-3**.

Table 3-3: CR 462 – CR 229 Wastewater Collection System Extension Conceptual Opinion of Probable Cost

Item	Quantity	Unit Cost	Total Cost
8” PVC Wastewater Gravity Sewer	37,800 LF	$80	$3,024,000
Manholes	110 Each	$7,500	$825,000
6” PVC Wastewater Force Main	0 LF	$60	$0
Lift Station Complete	0 LS	$500,000	$0
Subtotal			**$3,849,000**
General Conditions		10%	$384,900
Subtotal			**$4,233,900**
Contingency		20%	$846,780
Engineering and Construction Admin.		15%	$635,085
Total			**$5,715,765**

Upon completion of the project 75 OSTDS will be eliminated from service, at an approximate cost of $77,000 per connection. The project is not economically feasible without the aid of grant funding.

3.1.4 OSTDS Connection to Existing Wastewater Collection System Extension

An additional 12 properties with an OSTDS were identified that are within 800 linear feet of the City’s existing wastewater collection system. While the City’s Code of Ordinances only requires connection to the wastewater collection system if the property line is within 200 linear feet, connection to the municipal system is anticipated to be more economical than upgrading the OSTDS to provide enhanced nutrient removal, with an approximate average cost of connection of $20,000. A map depicting the limits of the proposed project is shown in **Figure 3-4**.

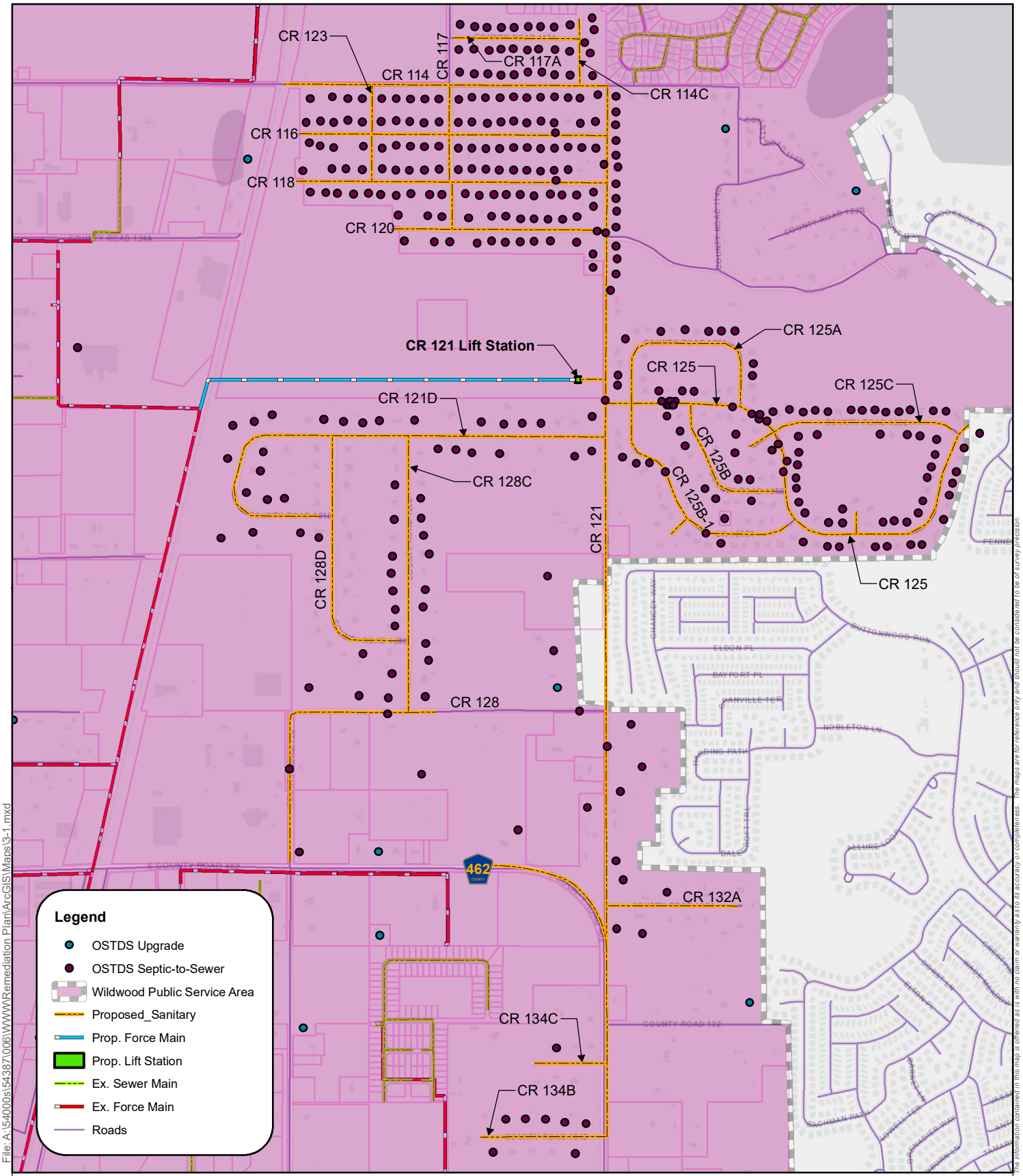
3.2 OSTDS Enhanced Nutrient Removal Improvements

While preferable to eliminate OSTDS within the BMAP area, the rural nature and large properties in portions of the service area presents situations where the construction of a significant amount of infrastructure would be required to serve no more than three to five connections. In these instances, connection to the municipal wastewater collection system is not financially feasible, and upgrades to the OSTDS to provide enhanced nutrient removal is proposed. A total of 94 OSTDS are proposed to remain, with enhanced nutrient removal improvements. As the City’s wastewater collection system is extended, and as growth in the service area continues, elimination of these OSTDS may become economical. The opinion of probable construction cost, assuming the conversion of all 94 OSTDS to provide enhanced nutrient removal is $2.6 million. A breakdown of the opinion of probable construction cost is presented in **Table 3-4**.

Table 3-4: OSTDS Enhanced Nutrient Removal Improvements Conceptual Opinion of Probable Construction Cost

Item	Number of OSTDS	Unit Cost	Total Cost
OSTDS - Enhanced Nutrient Removal	94	$23,000	$2,162,000
Contingency		20%	$432,400
Total			**$2,594,400**

A listing of the OSTDS proposed to be upgraded to provide enhanced nutrient removal is presented in **Appendix C**.



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Figure 3-1

Fairways and Fox Hollow Wastewater Collection System Extension

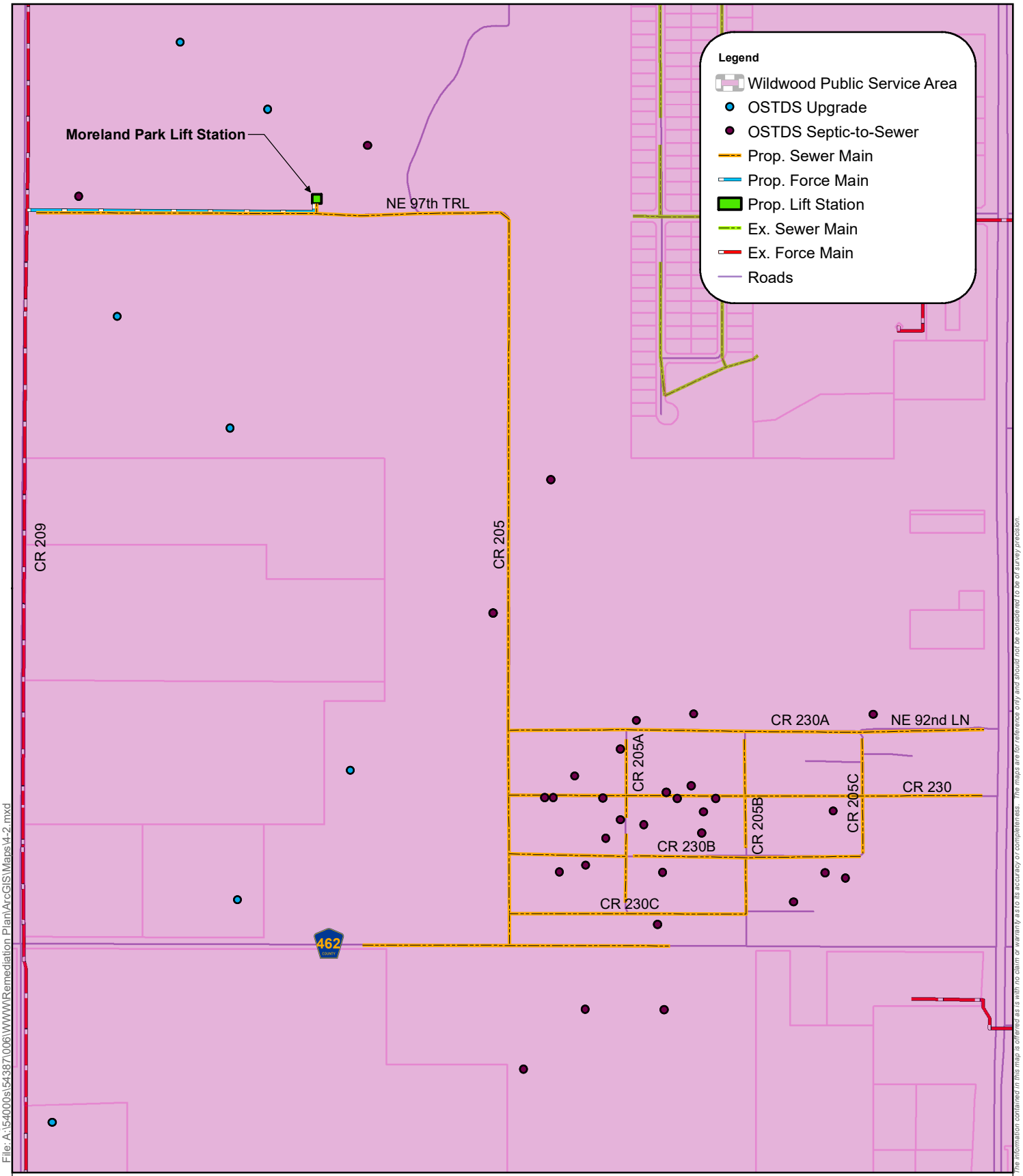
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Figure 3-2

CR 205 - CR 230 Wastewater Collection System Extension

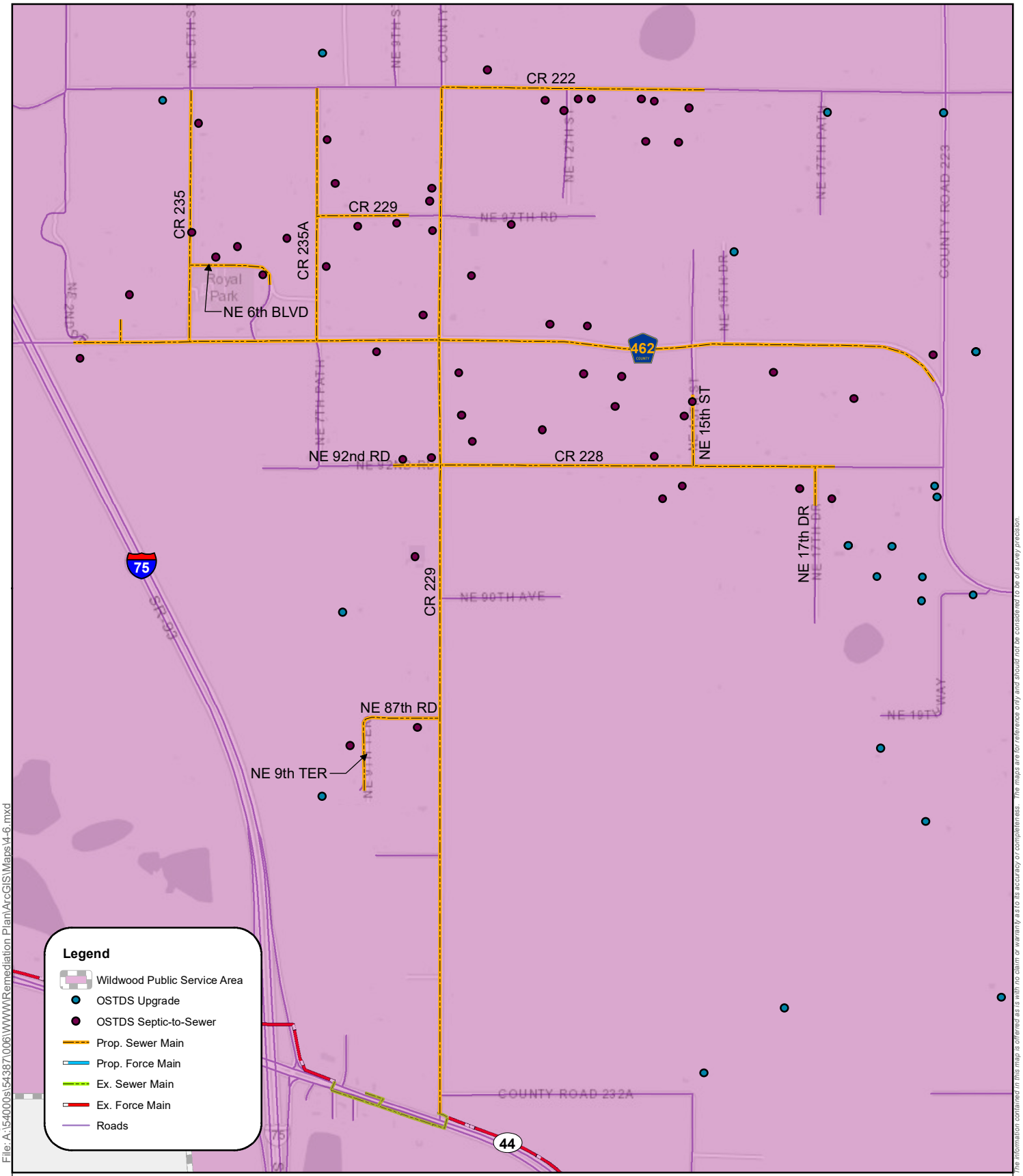
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Figure 3-3

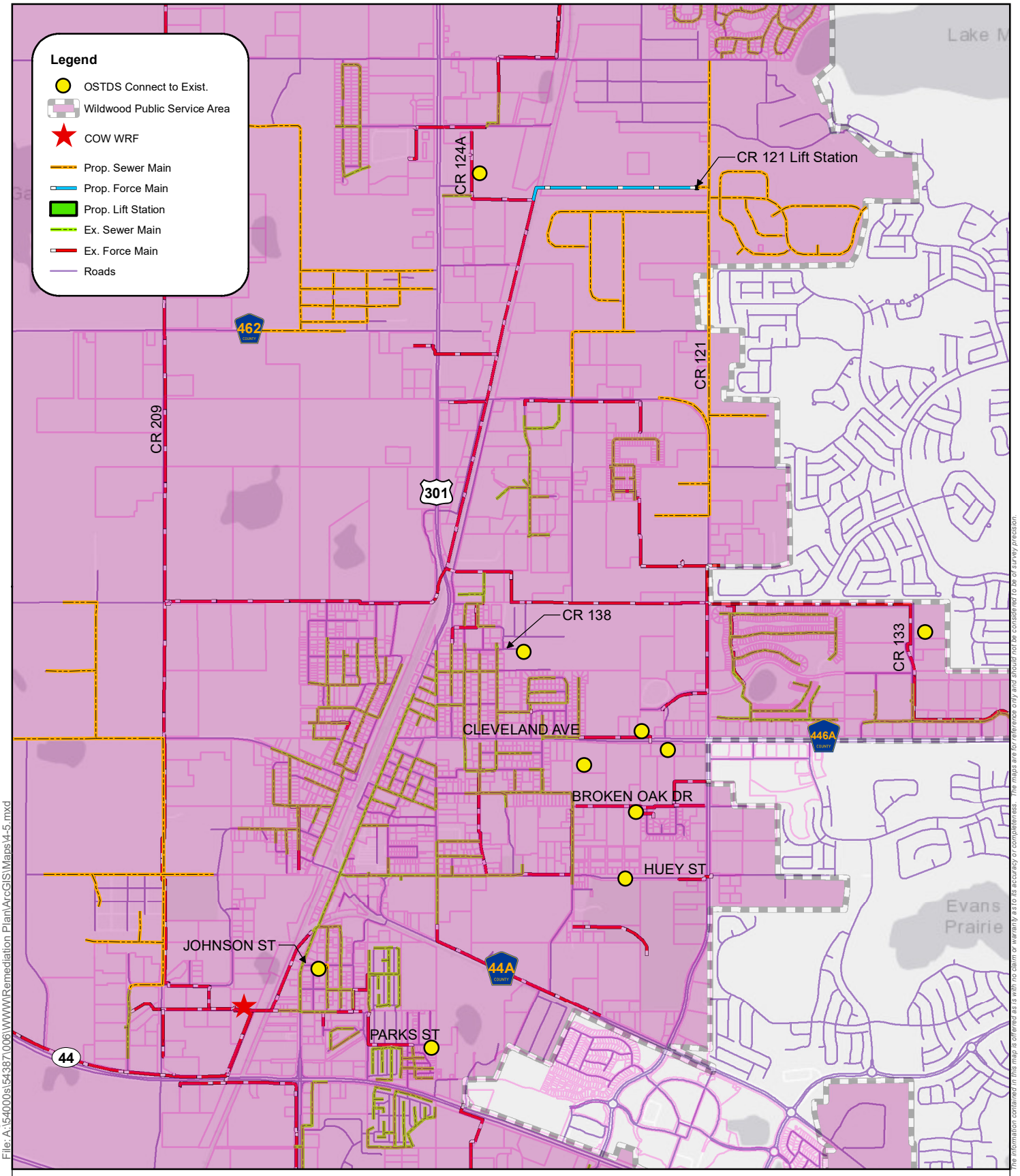
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Figure 3-4

OSTDS Connections to Existing Collection System

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Section 4: Implementation Plan

4.1 Implementation Plan Development

The proposed implementation plan includes nearly $16 million over the next twenty years in new capital projects to provide extensions of the City's wastewater collection system, while removing 387 OSTDS from service. An additional $2.6 million will be required to upgrade 97 OSTDS to provide enhanced nutrient removal. The implementation plan was developed in January 2024 based upon information that is currently available. Changes in development patterns, rate of growth, or observed wastewater flow may necessitate changes to the phasing of the improvements. The proposed implementation plan for extension of the City's wastewater collection system and elimination of OSTDS is presented in **Table 4-1**.

Table 4-1: Proposed Implementation Plan

Year	Project	Project Cost
2029	OSTDS Connection to Existing Collection System	$200,000
2034	Fairways and Fox Hollow Collection System Extension	$8,300,000
2039	County Roads 205 & 230 Collection System Extension	$3,300,000
2044	County Roads 462 & 229 Collection System Extension	$5,800,000

APPENDIX A

ALL OSTDS

Permit #	Address	Location
PR580867	1408 Brokenoak	Inside the BMAP
PR986922	1100 Cleveland Avenue	Inside the BMAP
PR140960	4323 CR 110	Inside the BMAP
PR585477	4523 CR 114	Inside the BMAP
PR584593	9932 CR 114 A	Inside the BMAP
PR102716	4525 CR 116	Inside the BMAP
PR580882	4832 Cr 117a	Inside the BMAP
PR585159	4741 CR 118	Inside the BMAP
PR134999	8743 CR 121	Inside the BMAP
PR583408	8743 CR 121	Inside the BMAP
PR171929	8842 CR 121	Inside the BMAP
PR103414	8865 CR 121	Inside the BMAP
PR642202	8915 CR 121	Inside the BMAP
PR585880	8949 CR 121	Inside the BMAP
PR584969	8981 County 121 Road	Inside the BMAP
PR581798	9100 CR 121	Inside the BMAP
PR118300	9174 CR 121	Inside the BMAP
PR583641	9675 CR 121	Inside the BMAP
PR585580	9989 CR 121	Inside the BMAP
PR584938	County 121 Road	Inside the BMAP
PR583129	CR 121	Inside the BMAP
PR585964	CR 121	Inside the BMAP
PR586395	CR 121	Inside the BMAP
PR587069	CR 121	Inside the BMAP
PR587161	NW Cor of CR 121 & CR 121	Inside the BMAP
PR586725	CR121B-1	Inside the BMAP
PR585554	4130 CR 121D	Inside the BMAP
PR586235	4141 CR 121D	Inside the BMAP
PR586844	4190 CR 121D	Inside the BMAP
PR103237	4277 CR 121D	Inside the BMAP
PR909729	4393 CR 121D	Inside the BMAP
PR135218	4420 CR 121D	Inside the BMAP
PR745240	4430 CR 121D	Inside the BMAP
PR587600	4640 CR 121D	Inside the BMAP
PR584493	4670 County Road 121D	Inside the BMAP
PR584343	4700 County Road 121D	Inside the BMAP
PR584368	4725 County Road 121D	Inside the BMAP
PR584026	4755 CR 121D	Inside the BMAP
PR586823	4760 CR 121 D	Inside the BMAP
PR584739	4785 CR 121D	Inside the BMAP
PR584140	4790 COUNTY ROAD 121D	Inside the BMAP
PR584643	4815 County Road 121D	Inside the BMAP
PR587060	4820 Cr 121D	Inside the BMAP
PR584198	4845 CR 121 D	Inside the BMAP
PR884080	4850 CR 121D	Inside the BMAP
PR584384	4880 County Road 121D	Inside the BMAP
PR584945	CR 121 D	Inside the BMAP
PR100666	CR 121D	Inside the BMAP
PR584954	CR 121D	Inside the BMAP
PR584961	CR 121D	Inside the BMAP
PR585330	CR 121D	Inside the BMAP
PR585413	CR 121D	Inside the BMAP
PR585498	CR 121D	Inside the BMAP
PR586337	CR 121D	Inside the BMAP

PR587582	CR 121D	Inside the BMAP
PR942702	CR 121D	Inside the BMAP
PR586843	CR 121-D	Inside the BMAP
PR586892	CR 121-D	Inside the BMAP
PR111679	cr-121D	Inside the BMAP
PR929788	4965 CR 121-D	Inside the BMAP
PR125331	5410 CR 122N	Inside the BMAP
PR584418	4099 County Road 124A	Inside the BMAP
PR585151	4418 CR 124A	Inside the BMAP
PR584612	5341 CR 125	Inside the BMAP
PR135133	5363 CR 125	Inside the BMAP
PR915043	5371 CR 125	Inside the BMAP
PR585599	5407 CR 125	Inside the BMAP
PR586419	5422 CR 125	Inside the BMAP
PR586586	5438 CR 125	Inside the BMAP
PR586088	5453 CR 125	Inside the BMAP
PR586526	5456 Cr 125	Inside the BMAP
PR586240	5474 CR 125	Inside the BMAP
PR585605	5477 CR 125	Inside the BMAP
PR821023	5483 CR 125	Inside the BMAP
PR585137	CR 125	Inside the BMAP
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PR585664	CR 125	Inside the BMAP
PR585665	CR 125	Inside the BMAP
PR585731	CR 125	Inside the BMAP
PR585812	CR 125	Inside the BMAP
PR585854	CR 125	Inside the BMAP
PR585907	CR 125	Inside the BMAP
PR586037	CR 125	Inside the BMAP
PR586038	CR 125	Inside the BMAP
PR586039	CR 125	Inside the BMAP
PR586087	Cr 125	Inside the BMAP
PR586242	CR 125	Inside the BMAP
PR586253	CR 125	Inside the BMAP
PR586801	CR 125	Inside the BMAP
PR586809	CR 125	Inside the BMAP
PR585507	CR 125 & 125C Circle	Inside the BMAP
PR585855	CR 125 & 125D Circle	Inside the BMAP
PR585214	5067 CR 125 Boulevard	Inside the BMAP
PR583123	5008 CR 125A	Inside the BMAP
PR586204	5194 CR 125A	Inside the BMAP
PR586008	5258 CR 125A	Inside the BMAP
PR585622	CR 125 A	Inside the BMAP
PR585520	CR 125A	Inside the BMAP
PR585521	CR 125A	Inside the BMAP
PR585562	CR 125A	Inside the BMAP
PR585609	CR 125A	Inside the BMAP
PR586059	CR 125A	Inside the BMAP
PR586085	CR 125A	Inside the BMAP
PR586166	CR 125A	Inside the BMAP
PR586817	5109 CR 125 B-2	Inside the BMAP

PR586816	5110 CR 125B-2	Inside the BMAP
PR586895	5111 CR 125B-2	Inside the BMAP
PR586802	5113 CR 125B-2	Inside the BMAP
PR586810	5144 CR 125	Inside the BMAP
PR586756	5153 CR 125B-1	Inside the BMAP
PR584885	5239 County Road 125B-1	Inside the BMAP
PR585265	9300 CR 125 B	Inside the BMAP
PR584620	9325 County Road 125B	Inside the BMAP
PR585238	9454 CR 125B	Inside the BMAP
PR586757	CR 125 B1	Inside the BMAP
PR586828	CR 125 B-1	Inside the BMAP
PR586830	CR 125 B-1	Inside the BMAP
PR585239	CR 125B	Inside the BMAP
PR585240	CR 125B	Inside the BMAP
PR585244	CR 125B	Inside the BMAP
PR585511	CR 125B	Inside the BMAP
PR586661	Cr 125b	Inside the BMAP
PR586664	Cr 125b	Inside the BMAP
PR585509	CR 125B-1	Inside the BMAP
PR585611	CR 125B-1	Inside the BMAP
PR585616	CR 125B-1	Inside the BMAP
PR585623	CR 125B-1	Inside the BMAP
PR585654	CR 125B-1	Inside the BMAP
PR586011	CR 125B-1	Inside the BMAP
PR586060	CR 125B-1	Inside the BMAP
PR586061	CR 125B-1	Inside the BMAP
PR586316	CR 125B-1	Inside the BMAP
PR586659	Cr 125b-1	Inside the BMAP
PR586660	Cr 125b-1	Inside the BMAP
PR586662	Cr 125b-1	Inside the BMAP
PR586663	Cr 125b-1	Inside the BMAP
PR586672	CR 125B-1	Inside the BMAP
PR586893	CR 125B-1	Inside the BMAP
PR586673	CR125 B-1	Inside the BMAP
PR585663	9491 CR 125C	Inside the BMAP
PR585598	9497 County Road 125 C	Inside the BMAP
PR586420	9514 CR 125C	Inside the BMAP
PR585872	9520 CR 125C	Inside the BMAP
PR585594	9529 CR 125C	Inside the BMAP
PR586144	9544 CR 125C	Inside the BMAP
PR107476	9544 cr-125C	Inside the BMAP
PR586527	9562 CR 125C	Inside the BMAP
PR585720	9565 CR 125C	Inside the BMAP
PR585692	CR 125 C	Inside the BMAP
PR586040	CR 125 C	Inside the BMAP
PR585606	CR 125C	Inside the BMAP
PR585640	CR 125C	Inside the BMAP
PR585697	CR 125C	Inside the BMAP
PR585936	CR 125C	Inside the BMAP
PR586086	CR 125C	Inside the BMAP
PR586205	CR 125C	Inside the BMAP
PR586254	CR 125C	Inside the BMAP
PR586285	CR 125C	Inside the BMAP
PR586286	CR 125C	Inside the BMAP
PR586335	CR 125C	Inside the BMAP

PR586401	CR 125C	Inside the BMAP
PR586584	CR 125C	Inside the BMAP
PR585613	CR 125D	Inside the BMAP
PR755581	4057 CR 126	Inside the BMAP
PR124465	8165 cr 127	Inside the BMAP
PR584320	8483 County 127 Road	Inside the BMAP
PR586251	4518 CR 128	Inside the BMAP
PR110332	4606 c-128	Inside the BMAP
PR674225	4606 CR 128	Inside the BMAP
PR584873	4713 County 128 Road	Inside the BMAP
PR585737	4916 CR 128	Inside the BMAP
PR584359	9085 County Road 128C	Inside the BMAP
PR584003	9020 CR 128C	Inside the BMAP
PR583939	9025 CR 128C	Inside the BMAP
PR584154	9060 COUNTY ROAD 128C	Inside the BMAP
PR768376	9060 COUNTY ROAD 128C	Inside the BMAP
PR104990	9065 CR 128C	Inside the BMAP
PR584426	9100 CR 128 C	Inside the BMAP
PR584103	9120 CR 128C	Inside the BMAP
PR584474	9140 County Road 128C	Inside the BMAP
PR584217	9145 CR 128 C	Inside the BMAP
PR587107	9160 CR 128C	Inside the BMAP
PR584463	9185 County Road 128C	Inside the BMAP
PR584404	9200 County Road 128 C	Inside the BMAP
PR587121	9205 CR 128C	Inside the BMAP
PR584837	9220 County Road 128C	Inside the BMAP
PR584666	9225 County Road 128C	Inside the BMAP
PR584724	9245 County Road 128 C	Inside the BMAP
PR583883	9260 CR 128 C	Inside the BMAP
PR583913	CR 128C	Inside the BMAP
PR585040	CR 128C	Inside the BMAP
PR585501	CR 128C	Inside the BMAP
PR584246	4649 CR 128D	Inside the BMAP
PR586452	9105 CR 128D	Inside the BMAP
PR586315	9195 CR 128D	Inside the BMAP
PR585904	9215 CR 128D	Inside the BMAP
PR585525	9230 CR 128D	Inside the BMAP
PR181529	9275 CR 128D	Inside the BMAP
PR861016	9295 CR 128D	Inside the BMAP
PR587135	9315 CR 128D	Inside the BMAP
PR585039	County Road 128D	Inside the BMAP
PR585892	County Road 128-D	Inside the BMAP
PR585555	CR 121D & 128D Circle	Inside the BMAP
PR585161	CR 128D	Inside the BMAP
PR585329	CR 128D	Inside the BMAP
PR585450	CR 128D	Inside the BMAP
PR585581	CR 128D	Inside the BMAP
PR585582	CR 128D	Inside the BMAP
PR585671	CR 128D	Inside the BMAP
PR585937	CR 128D	Inside the BMAP
PR586111	CR 128D	Inside the BMAP
PR586125	CR 128D	Inside the BMAP
PR586149	CR 128D	Inside the BMAP
PR586244	CR 128D	Inside the BMAP
PR808154	5102 CR 132A	Inside the BMAP

PR584383	7857 County 133 Road	Inside the BMAP
PR585133	4605 CR 134	Inside the BMAP
PR139214	4727 CR 134	Inside the BMAP
PR583975	4905 CR 134B	Inside the BMAP
PR586770	4910 CR 134B	Inside the BMAP
PR585466	4940 CR 134B	Inside the BMAP
PR586058	4950 CR 134B	Inside the BMAP
PR585379	4944 CR 134C	Inside the BMAP
PR751943	4321 CR 138	Inside the BMAP
PR584034	7177 Cr 139	Inside the BMAP
PR586822	4585 CR 141	Inside the BMAP
PR709226	4841 CR 141	Inside the BMAP
PR105563	5351 CR 144	Inside the BMAP
PR583297	5391 Cr144	Inside the BMAP
PR583311	6369 Cr154a	Inside the BMAP
PR188024	6424 CR 154 A	Inside the BMAP
PR584403	6439 County Road 154A	Inside the BMAP
PR983838	5168 CR 165	Inside the BMAP
PR768944	5189 CR 165	Inside the BMAP
PR584866	5253 County 171 Road	Inside the BMAP
PR585885	5716 CR 173	Inside the BMAP
PR179773	5734 CR 173	Inside the BMAP
PR165089	5678 CR 173 E	Inside the BMAP
PR137919	9467 CR 205	Inside the BMAP
PR113889	cr 205	Inside the BMAP
PR583384	9132 Cr205a	Inside the BMAP
PR116959	9196 cr 205A	Inside the BMAP
PR587101	Corner of 205A & 230C	Inside the BMAP
PR587102	Corner of 205A & 230C	Inside the BMAP
PR584276	9361 County Road 205 C	Inside the BMAP
PR584277	9361 County Road 205 C	Inside the BMAP
PR583796	CR 205 C	Inside the BMAP
PR584526	8326 County 209 Road	Inside the BMAP
PR152430	8600 CR 209	Inside the BMAP
PR862177	8772 CR 209	Inside the BMAP
PR781520	9501 Cr 209	Inside the BMAP
PR128142	9647 CR 209	Inside the BMAP
PR584594	7051 County Raod 213	Inside the BMAP
PR584901	7144 County 213 Road	Inside the BMAP
PR585066	7203 County 213 Road	Inside the BMAP
PR831581	7203 CR 213	Inside the BMAP
PR583519	7224 Cr213	Inside the BMAP
PR583500	7237 Cr 213	Inside the BMAP
PR584007	6908 CR 215	Inside the BMAP
PR774657	6925 CR 215	Inside the BMAP
PR580773	9815 CR 215	Inside the BMAP
PR159509	7442 CR 217	Inside the BMAP
PR135330	7516 CR 217	Inside the BMAP
PR137757	7572 CR 217	Inside the BMAP
PR172357	7662 CR 217	Inside the BMAP
PR586465	7631 County 221 Road	Inside the BMAP
PR102371	8202 CR 221	Inside the BMAP
PR583880	8345 CR 221	Inside the BMAP
PR584517	8608 County 221 Road	Inside the BMAP
PR584420	8643 County 221 Road	Inside the BMAP

PR584912	1076 CR 222	Inside the BMAP
PR583169	1211 Cr 222	Inside the BMAP
PR585898	1299 CR 222	Inside the BMAP
PR103465	1365 CR 222	Inside the BMAP
PR914239	1405 CR 222	Inside the BMAP
PR770881	1417 CR 222	Inside the BMAP
PR583601	1485 CR 222	Inside the BMAP
PR585026	1509 CR 222	Inside the BMAP
PR584400	1765 CR 222	Inside the BMAP
PR120145	760 CR 222	Inside the BMAP
PR584075	2488 CR 222	Inside the BMAP
PR584131	2676 CR 222	Inside the BMAP
PR583555	2888 CR 222	Inside the BMAP
PR996072	3175 CR 222	Inside the BMAP
PR173698	3211 CR 222	Inside the BMAP
PR584778	3254 County 222 Road	Inside the BMAP
PR587045	443 Cr222	Inside the BMAP
PR643363	98 CR 222	Inside the BMAP
PR583920	1267 Cr 222	Inside the BMAP
PR125142	12856 CR 223	Inside the BMAP
PR581543	9537 Cr 223	Inside the BMAP
PR581544	9537 Cr 223	Inside the BMAP
PR117100	9583 CR 223 Cabin A	Inside the BMAP
PR117101	9583 CR 223 Cabin B	Inside the BMAP
PR117091	9583 CR 223 Cabin C	Inside the BMAP
PR581988	7678 CR 225	Inside the BMAP
PR125239	7883 CR 225	Inside the BMAP
PR584020	1060 Cr 228	Inside the BMAP
PR895422	1172 CR 228	Inside the BMAP
PR583941	1434 CR 228	Inside the BMAP
PR584585	1447 County 228 Road	Inside the BMAP
PR585916	1489 CR 228	Inside the BMAP
PR583375	1969 Cr228	Inside the BMAP
PR583742	CR 228	Inside the BMAP
PR583790	CR 228	Inside the BMAP
PR584015	11242 CR 229	Inside the BMAP
PR587196	11535 CR 229	Inside the BMAP
PR585091	8920 CR 229	Inside the BMAP
PR989632	9038 CR 229	Inside the BMAP
PR120049	9359 CR 229	Inside the BMAP
PR188436	9387 CR 229	Inside the BMAP
PR103422	9568 CR 229	Inside the BMAP
PR588516	9677 CR 229	Inside the BMAP
PR704819	9698 cr 229	Inside the BMAP
PR587237	9782 CR 229	Inside the BMAP
PR707013	9798 CR 229	Inside the BMAP
PR584069	CR 229	Inside the BMAP
PR582956	Cr229	Inside the BMAP
PR119711	833 CR 229P	Inside the BMAP
PR584904	913 CR 229P	Inside the BMAP
PR151286	3568 CR 230	Inside the BMAP
PR583659	3829 Cr 230	Inside the BMAP
PR950226	3652 cr 230A	Inside the BMAP
PR115460	3688 cr 230 A	Inside the BMAP
PR583622	CR 230 A	Inside the BMAP

PR880724	3551 CR 230B	Inside the BMAP
PR584182	3583 CR 230B	Inside the BMAP
PR585442	3594 CR 230B	Inside the BMAP
PR583075	3641 CR 230B	Inside the BMAP
PR130376	3661 CR 230B	Inside the BMAP
PR740183	3706 CR 230 B	Inside the BMAP
PR743339	3847 CR 230 B	Inside the BMAP
PR584038	Cr 230B	Inside the BMAP
PR585459	3533 CR 230C	Inside the BMAP
PR585463	3543 CR 230C	Inside the BMAP
PR584156	3611 COUNTY ROAD 230C	Inside the BMAP
PR581951	3715 CR 230C	Inside the BMAP
PR582334	Cr 230 C	Inside the BMAP
PR582335	Cr 230 C	Inside the BMAP
PR112281	cr 230C	Inside the BMAP
PR585222	CR 230C	Inside the BMAP
PR586176	CR 230C	Inside the BMAP
PR586182	CR 230C	Inside the BMAP
PR586183	CR 230C	Inside the BMAP
PR587152	3409 CR 232	Inside the BMAP
PR168943	1528 CR 232A	Inside the BMAP
PR156808	2591 CR 232	Inside the BMAP
PR112306	cr-232A	Inside the BMAP
PR960006	9657 CR 235	Inside the BMAP
PR584536	9695 County 235 Road	Inside the BMAP
PR583999	9719 CR 235	Inside the BMAP
PR586686	9641 CR 235A	Inside the BMAP
PR104215	9682 CR 235A	Inside the BMAP
PR587503	9813 CR 235A	Inside the BMAP
PR583128	9897 CR 235A	Inside the BMAP
PR584537	10476 County 237 Road	Inside the BMAP
PR132444	2649 cr 238	Inside the BMAP
PR818864	2821 CR 238	Inside the BMAP
PR585126	3108 CR 238	Inside the BMAP
PR886885	2816 CR 244	Inside the BMAP
PR924008	2840 CR 244	Inside the BMAP
PR584797	3658 C-44 A	Inside the BMAP
PR584530	1921 C-44A	Inside the BMAP
PR584884	2253 C-44A	Inside the BMAP
PR103892	2887 C-44A	Inside the BMAP
PR584660	33137 C-44A	Inside the BMAP
PR585528	4840 C-44A	Inside the BMAP
PR105526	6042 cr 44 A	Inside the BMAP
PR106895	4638 E cr 462	Inside the BMAP
PR762706	4932 E C-462	Inside the BMAP
PR585375	3220 E C-462	Inside the BMAP
PR167272	3334 E C-462	Inside the BMAP
PR176304	3515 E C-462	Inside the BMAP
PR749467	3587 E CR 462	Inside the BMAP
PR586687	566 W C-462	Inside the BMAP
PR587546	644 W C-462	Inside the BMAP
PR833902	800 W C-462	Inside the BMAP
PR584616	895 E C-462	Inside the BMAP
PR584237	1248 E CR 462	Inside the BMAP
PR145303	1265 E C-462 E	Inside the BMAP

PR125377	1292 E C-462	Inside the BMAP
PR145438	1425 E C-462 E	Inside the BMAP
PR140782	1679 E C-462	Inside the BMAP
PR714796	1934 E C-462	Inside the BMAP
PR964803	1945 E C-462	Inside the BMAP
PR583741	2025 CR 462 E	Inside the BMAP
PR101542	2055 E C-462	Inside the BMAP
PR955365	2055 E C-462	Inside the BMAP
PR988102	2057 E C-462	Inside the BMAP
PR929559	2061 E c 462	Inside the BMAP
PR124123	2517 E C-462	Inside the BMAP
PR796649	287 E C-462	Inside the BMAP
PR132262	368 E C-462	Inside the BMAP
PR587243	4510 E CR 462	Inside the BMAP
PR583984	4621 CR 462E	Inside the BMAP
PR139230	3667 E C-462 E	Inside the BMAP
PR108915	498 W C-462 W	Inside the BMAP
PR582968	4884 C466a	Inside the BMAP
PR586988	4758 CR 466-A	Inside the BMAP
PR580794	4855 CR 466-A	Inside the BMAP
PR583357	10295 Cr115a	Inside the BMAP
PR583088	1402 Huey Street	Inside the BMAP
PR194090	NE 19th Way	Inside the BMAP
PR974552	NE 19th Way	Inside the BMAP
PR707284	2625 NE 108th Lane	Inside the BMAP
PR179955	9988 NE 12th Street	Inside the BMAP
PR581926	1138 NE 137th Land	Inside the BMAP
PR952833	9689 NE 15TH Drive	Inside the BMAP
PR585833	NE 15th Street	Inside the BMAP
PR149575	9358 NE 15th Street	Inside the BMAP
PR110202	9228 NE 17th Drive	Inside the BMAP
PR584496	8996 NE 19th Way	Inside the BMAP
PR583661	8105 NE 27th Drive	Inside the BMAP
PR940288	8144 NE 27th Drive	Inside the BMAP
PR885824	8222 NE 27th Drive	Inside the BMAP
PR583035	9846 NE 34th Boulevard	Inside the BMAP
PR587536	7990 NE 42nd Terrace	Inside the BMAP
PR997792	6938 NE 52nd Terrace	Inside the BMAP
PR584005	6167 NE 54th Boulevard	Inside the BMAP
PR584907	9632 NE 6th Boulevard	Inside the BMAP
PR583898	2562 NE 77TH Road	Inside the BMAP
PR120778	4500 NE 90th Plaza	Inside the BMAP
PR587459	4506 NE 90th Place	Inside the BMAP
PR109551	3870 NE 92nd	Inside the BMAP
PR172334	952 NE 92nd Road	Inside the BMAP
PR711559	990 NE 92nd Road	Inside the BMAP
PR582898	810 NE 97th Road	Inside the BMAP
PR870449	10 NE 99th Blvd	Inside the BMAP
PR986524	8574 NE 9th Terrace	Inside the BMAP
PR103317	8696 NE 9th Terrace	Inside the BMAP
PR585264	Palmer Way	Inside the BMAP
PR135359	817 Parks Street	Inside the BMAP
PR583575	Pine Street N	Inside the BMAP
PR115344	5688 E SR 44	Inside the BMAP
PR582104	11495 N 301	Inside the BMAP

PR586957	81st	Unable to Locate
PR580799	25 Clinton Street	Unable to Locate
PR585414	CR 118	Unable to Locate
PR102344	CR 120	Unable to Locate
PR115525	co rd 127	Unable to Locate
PR585984	CR 132	Unable to Locate
PR585160	County 134 Road	Unable to Locate
PR583805	CR 134	Unable to Locate
PR584936	CR 134	Unable to Locate
PR585390	County Road 134B	Unable to Locate
PR585211	CR 134B	Unable to Locate
PR585322	CR 134B	Unable to Locate
PR584818	7227 County 137 Road	Unable to Locate
PR585412	CR 141	Unable to Locate
PR587442	4930 CR 143B	Unable to Locate
PR586903	CR 200	Unable to Locate
PR585129	CR 209	Unable to Locate
PR586657	Cr 209	Unable to Locate
PR586744	CR 209	Unable to Locate
PR586760	CR 209	Unable to Locate
PR587420	CR 213	Unable to Locate
PR586764	CR 214	Unable to Locate
PR807419	CR 214	Unable to Locate
PR585819	CR 216	Unable to Locate
PR154665	CR 217	Unable to Locate
PR586702	Cr 219	Unable to Locate
PR118310	cr 221	Unable to Locate
PR167323	CR 221	Unable to Locate
PR586112	CR 221	Unable to Locate
PR586755	CR 221	Unable to Locate
PR586490	County 222 Road	Unable to Locate
PR124897	CR 223	Unable to Locate
PR584081	CR 232	Unable to Locate
PR583678	CR 245D	Unable to Locate
PR587498	CR 44A	Unable to Locate
PR583188	CR 462	Unable to Locate
PR583862	CR 462	Unable to Locate
PR585641	CR 462	Unable to Locate
PR179323	E C-462	Unable to Locate
PR176408	W C-462	Unable to Locate
PR580990	466 A	Unable to Locate
PR119871	cr 468	Unable to Locate
PR586062	CR 468	Unable to Locate
PR586875	CR 501	Unable to Locate
PR105405	cr 502	Unable to Locate
PR586540	Cr 502	Unable to Locate
PR586836	CR 502	Unable to Locate
PR587303	CR 502	Unable to Locate
PR583462	Cr503	Unable to Locate
PR919967	CR 505	Unable to Locate
PR990067	CR 505	Unable to Locate
PR585176	CR 523	Unable to Locate
PR975011	Jane Avenue	Unable to Locate
PR587509	Mill Creek Drive	Unable to Locate
PR587044	NE 107th Road	Unable to Locate

PR586960	NE 108th Lane	Unable to Locate
PR584893	NE 23rd Avenue	Unable to Locate
PR585145	NE 27th Drive	Unable to Locate
PR101900	NE 31st Terrace	Unable to Locate
PR583204	NE 32nd Ramp	Unable to Locate
PR186100	2901 NE 45th Street	Unable to Locate
PR585215	NE 47th Drive	Unable to Locate
PR583268	NE 87th Road	Unable to Locate
PR100071	NW 26th Street	Unable to Locate
PR101483	NW 26th Street	Unable to Locate
PR878295	E SR 44	Unable to Locate
PR850196	W SR 44	Unable to Locate
PR585740	US 301	Unable to Locate
PR585889	US 301	Unable to Locate
PR582989	472	Unable to Locate
PR581118	P O Box 451	Unable to Locate
PR580801	Po Box 491030	Unable to Locate
PR587293	4074 42nd Loop	Outside of BMAP
PR746140	9615 Central Avenue	Outside of BMAP
PR149531	93 Continental Boulevard	Outside of BMAP
PR158030	6919 CR 148	Outside of BMAP
PR586655	6959 CR 148	Outside of BMAP
PR120864	6745 CR 150	Outside of BMAP
PR712320	5205 CR 171	Outside of BMAP
PR584055	4180 Cr 181	Outside of BMAP
PR140854	419 CR 231	Outside of BMAP
PR128358	467 CR 231	Outside of BMAP
PR584673	539 County 231 Road	Outside of BMAP
PR179863	8708 CR 231	Outside of BMAP
PR583948	9019 CR 231	Outside of BMAP
PR151609	9192 CR 231	Outside of BMAP
PR149436	9269 CR 231	Outside of BMAP
PR583867	9339 CR 231	Outside of BMAP
PR100229	9377 CR 231	Outside of BMAP
PR583554	9431 CR 231	Outside of BMAP
PR124405	2214 cr 234B	Outside of BMAP
PR755102	9072 CR 241	Outside of BMAP
PR586795	9107 CR 241	Outside of BMAP
PR859730	9196 CR 241	Outside of BMAP
PR756069	9260 CR 241	Outside of BMAP
PR919954	9456 CR 241	Outside of BMAP
PR176435	2040 CR 243	Outside of BMAP
PR159963	8556 243	Outside of BMAP
PR132668	8641 CR 243	Outside of BMAP
PR108435	cr 243	Outside of BMAP
PR158130	CR 243	Outside of BMAP
PR586499	CR 243	Outside of BMAP
PR130541	1826 CR 243B	Outside of BMAP
PR124411	1881 cr 243B	Outside of BMAP
PR876464	1671 CR 243A	Outside of BMAP
PR914495	1816 CR 243A	Outside of BMAP
PR112196	Basswood Dr (CR 243A)	Outside of BMAP
PR113927	c-243A	Outside of BMAP
PR108571	CR 243 A	Outside of BMAP
PR145572	CR 243 A	Outside of BMAP

PR108772	CR 243A	Outside of BMAP
PR120105	CR 243A	Outside of BMAP
PR120211	cr 243A	Outside of BMAP
PR585859	CR 243A	Outside of BMAP
PR880470	CR 243A	Outside of BMAP
PR100751	Westwood (CR 243A) Boulevard	Outside of BMAP
PR124076	1522 cr 243B	Outside of BMAP
PR587159	1973 CR 243B	Outside of BMAP
PR585607	2076 CR 243B	Outside of BMAP
PR586075	2601 CR 243B	Outside of BMAP
PR120089	CR 243B	Outside of BMAP
PR152207	CR 243B	Outside of BMAP
PR585246	CR 243B	Outside of BMAP
PR585436	CR 243B	Outside of BMAP
PR585470	CR 243B	Outside of BMAP
PR585917	CR 243B	Outside of BMAP
PR587427	CR 243B	Outside of BMAP
PR944427	CR 243B	Outside of BMAP
PR998104	CR 243B	Outside of BMAP
PR584513	1902 County Road 243C	Outside of BMAP
PR131903	2333 CR 243C	Outside of BMAP
PR121368	cr 243 C	Outside of BMAP
PR119573	cr 243C	Outside of BMAP
PR179190	CR 243C	Outside of BMAP
PR587039	Cr 243C	Outside of BMAP
PR977883	CR 243C	Outside of BMAP
PR990869	CR 243C	Outside of BMAP
PR586877	CR 243-C	Outside of BMAP
PR112363	cr-243 C	Outside of BMAP
PR585739	CR 243B & 243D	Outside of BMAP
PR587340	CR 243D	Outside of BMAP
PR971048	2116 CR 243E	Outside of BMAP
PR125175	2164 cr 243E	Outside of BMAP
PR113904	2188 cr 243 E	Outside of BMAP
PR137669	2212 CR 243 E	Outside of BMAP
PR587439	2236 CR 243E	Outside of BMAP
PR179861	CR 243 E	Outside of BMAP
PR111934	cr 243 E	Outside of BMAP
PR101116	CR 243E	Outside of BMAP
PR106324	CR 243E	Outside of BMAP
PR112359	cr 243E	Outside of BMAP
PR585751	CR 243E	Outside of BMAP
PR586115	CR 243E	Outside of BMAP
PR586489	Cr243e	Outside of BMAP
PR145519	2408 CR 243 F	Outside of BMAP
PR173592	CR 243 F	Outside of BMAP
PR176093	CR 243 F	Outside of BMAP
PR158120	CR 243F	Outside of BMAP
PR176484	CR 243F	Outside of BMAP
PR586718	Cr 243F	Outside of BMAP
PR583345	13213 Cr245	Outside of BMAP
PR980875	16 W CR 462	Outside of BMAP
PR583574	44 W CR 462	Outside of BMAP
PR584602	481 W C-462	Outside of BMAP
PR587270	12100 E Warm Springs Avenue	Outside of BMAP

PR767140	3641 E C-468	Outside of BMAP
PR585978	3718 E C-468	Outside of BMAP
PR103218	4517 C-468	Outside of BMAP
PR586201	5069 E C-468	Outside of BMAP
PR822454	4340 E CR 468E	Outside of BMAP
PR584369	11492 N C-475	Outside of BMAP
PR587315	547 CR 501	Outside of BMAP
PR583354	6989 Marsh Bend Trail	Outside of BMAP
PR584016	4292 CR 502	Outside of BMAP
PR583936	4296 CR 502	Outside of BMAP
PR581436	5491 Cr 503c	Outside of BMAP
PR979078	5405 CR 503E	Outside of BMAP
PR949153	5457 CR 503E	Outside of BMAP
PR982663	4496 CR 504	Outside of BMAP
PR586886	2226 CR 505	Outside of BMAP
PR586967	2274 Cr 505	Outside of BMAP
PR583623	3102 CR 507	Outside of BMAP
PR169159	3312 CR 507	Outside of BMAP
PR104614	3370 CR 507	Outside of BMAP
PR582955	3482 Cr507	Outside of BMAP
PR587221	3776 CR 507	Outside of BMAP
PR119458	3836 cr 507	Outside of BMAP
PR584185	3932 CR 507	Outside of BMAP
PR585633	CR 507	Outside of BMAP
PR584098	SW Corner of CR 507 & 504	Outside of BMAP
PR583752	4356 CR 508	Outside of BMAP
PR875488	2899 CR 509	Outside of BMAP
PR585745	4094 CR 510	Outside of BMAP
PR584273	4141 CR 510	Outside of BMAP
PR581439	3302 Cr 510a	Outside of BMAP
PR715950	3336 CR 510 A	Outside of BMAP
PR673978	3354 CR 510A	Outside of BMAP
PR585146	3190 CR 511	Outside of BMAP
PR587592	3239 CR 511	Outside of BMAP
PR585503	3670 CR 511	Outside of BMAP
PR128254	3822 CR 511A	Outside of BMAP
PR958541	3873 CR 511A	Outside of BMAP
PR124739	3303 cr 513	Outside of BMAP
PR583386	3699 CR 513	Outside of BMAP
PR584967	3764 CR 513	Outside of BMAP
PR584108	3979 County 513 Road	Outside of BMAP
PR585523	CR 513	Outside of BMAP
PR587032	3266 Cr 522a	Outside of BMAP
PR582897	2635 CR 523	Outside of BMAP
PR584160	2919 COUNTY 523 Road	Outside of BMAP
PR585741	12280 CR 721	Outside of BMAP
PR587414	412 Mockingbird Avenue	Outside of BMAP
PR829644	4763 NE 23rd Avenue	Outside of BMAP
PR586029	4825 NE 23rd Avenue	Outside of BMAP
PR583336	4599 NE 32 Place	Outside of BMAP
PR583952	4534 NE 32 Road	Outside of BMAP
PR179963	4409 NE 32nd Place	Outside of BMAP
PR179294	4506 NE 32nd Place	Outside of BMAP
PR159481	4524 NE 32nd Place	Outside of BMAP
PR987585	4507 NE 32nd Road	Outside of BMAP

PR742004	4574 NE 32nd Road	Outside of BMAP
PR584074	4525 NE 33rd Lane	Outside of BMAP
PR642813	4575 NE 33rd Lane	Outside of BMAP
PR585294	2975 NE 33rd Place	Outside of BMAP
PR790847	3012 NE 37th Loop	Outside of BMAP
PR811082	3016 NE 37th Place	Outside of BMAP
PR128994	3069 NE 37th Place	Outside of BMAP
PR149338	3079 NE 37th Place	Outside of BMAP
PR103874	3087 NE 37th Place	Outside of BMAP
PR932898	3100 NE 37th Place	Outside of BMAP
PR105674	3109 NE 37th Place	Outside of BMAP
PR891648	3120 NE 37th Place	Outside of BMAP
PR852366	3133 NE 37th Place	Outside of BMAP
PR154512	3180 NE 37th Place	Outside of BMAP
PR167404	3180 NE 37th Place	Outside of BMAP
PR758470	3187 NE 37th Place	Outside of BMAP
PR704468	3200 NE 37th Place	Outside of BMAP
PR760382	3238 NE 37th Place	Outside of BMAP
PR176410	3278 NE 37th Place	Outside of BMAP
PR120986	3367 NE 37th Place	Outside of BMAP
PR122613	3368 NE 37th Place	Outside of BMAP
PR582750	3404 NE 37th Place	Outside of BMAP
PR109685	3530 NE 37th Place	Outside of BMAP
PR584097	NE 37th Place	Outside of BMAP
PR584653	4028 NE 37th Trail	Outside of BMAP
PR586820	3690 NE 41st Lane	Outside of BMAP
PR584451	4273 NE 43rd Avenue	Outside of BMAP
PR716662	4085 NE 44th Way	Outside of BMAP
PR584137	4295 NE 46TH Trail	Outside of BMAP
PR584061	4555 NE 47th Terrace	Outside of BMAP
PR188419	1177 NW 102nd Boulevard	Outside of BMAP
PR188425	1427 NW 102nd Boulevard	Outside of BMAP
PR586491	1760 NW 102 Nd Boulevard	Outside of BMAP
PR114195	1824 NW 102nd Boulevard	Outside of BMAP
PR125345	1909 NW 102nd Boulevard	Outside of BMAP
PR587156	2088 NW 102nd Road	Outside of BMAP
PR105958	2384 NW 102nd Boulevard	Outside of BMAP
PR194009	2393 NW 102nd Boulevard	Outside of BMAP
PR585046	2393 NW 102nd Boulevard	Outside of BMAP
PR887479	2450 NW 102nd Boulevard	Outside of BMAP
PR124305	2462 NW 102nd Boulevard	Outside of BMAP
PR925572	2499 NW 102nd Boulevard	Outside of BMAP
PR108626	2515 NW 102nd Boulevard	Outside of BMAP
PR134790	2515 NW 102nd Boulevard	Outside of BMAP
PR151423	2576 NW 102nd Boulevard	Outside of BMAP
PR586477	2655 NE 102nd Boulevard	Outside of BMAP
PR585862	2755 NW 102nd Boulevard	Outside of BMAP
PR176201	NW 102nd Boulevard	Outside of BMAP
PR188428	NW 102nd Boulevard	Outside of BMAP
PR584623	1124 NW 105th Avenue	Outside of BMAP
PR587387	1282 NW 105th Avenue	Outside of BMAP
PR585105	764 NW 111th Lane	Outside of BMAP
PR121426	904 NW 11th Lane	Outside of BMAP
PR584094	7479 NW 18 Way	Outside of BMAP
PR101348	NW 19th Street	Outside of BMAP

PR587188	NW 19th Street	Outside of BMAP
PR587561	NW 19th Street	Outside of BMAP
PR953535	NW 19th Street, Lot 72	Outside of BMAP
PR158162	8684 NW 19th Street	Outside of BMAP
PR103975	8719 NW 19th Street	Outside of BMAP
PR107868	8892 NW 19th Street	Outside of BMAP
PR140846	9047 NW 19th Street	Outside of BMAP
PR179293	8803 NW 21st Street	Outside of BMAP
PR158223	8816 NW 21st Street	Outside of BMAP
PR138087	8819 NW 21st Street	Outside of BMAP
PR120552	8881 NW 21st Street	Outside of BMAP
PR156632	NW 21st Street	Outside of BMAP
PR587134	NW 21st Street	Outside of BMAP
PR186085	8219 NW 26th Street	Outside of BMAP
PR129004	8316 NW 26th Street	Outside of BMAP
PR124705	8705 NW 26th Street	Outside of BMAP
PR130113	9062 NW 26th Street	Outside of BMAP
PR106828	9127 NW 26th Street	Outside of BMAP
PR586994	9202 NW 26th Street	Outside of BMAP
PR172324	9280 NW 26th Street	Outside of BMAP
PR110251	9466 NW 26th Street	Outside of BMAP
PR155136	9722 NW 26th Street	Outside of BMAP
PR146902	9894 NW 26th Street	Outside of BMAP
PR585897	10024 NW 27th Drive	Outside of BMAP
PR176290	10067 NW 27th Drive	Outside of BMAP
PR149448	10135 NW 27th Drive	Outside of BMAP
PR988077	10808 NW 27th Drive	Outside of BMAP
PR107885	8158 NW 28th Street	Outside of BMAP
PR107087	8169 NW 28th Street	Outside of BMAP
PR159958	8169 NW 28th Street	Outside of BMAP
PR162516	2297 NW 81st Ave	Outside of BMAP
PR124820	2400 NW 81st Avenue	Outside of BMAP
PR969862	2530 NW 81st Avenue	Outside of BMAP
PR966940	2659 NW 81st Avenue	Outside of BMAP
PR587479	302 NW 85th Boulevard	Outside of BMAP
PR586856	350 NW 85th Boulevard	Outside of BMAP
PR112661	2744 NW 87th Avenue	Outside of BMAP
PR995402	2870 NW 87th Avenue	Outside of BMAP
PR115509	2887 NW 87th Avenue	Outside of BMAP
PR104127	2934 NW 87th Avenue	Outside of BMAP
PR115393	9643 NW 87th Avenue	Outside of BMAP
PR164622	Spencer Court	Outside of BMAP
PR182809	Spencer Court	Outside of BMAP
PR106121	492 W SR 44	Outside of BMAP
PR120711	5431 E SR 44	Outside of BMAP
PR108284	5571 E SR 44	Outside of BMAP
PR119467	1430 W SR 44	Outside of BMAP
PR124725	8937 E SR 44	Outside of BMAP
PR583562	9003 E SR 44	Outside of BMAP
PR582221	104 Timber Way	Outside of BMAP
PR126621	3373 N US 301	Outside of BMAP
PR111667	3389 US hwy 301	Outside of BMAP
PR930106	3494 N US 301	Outside of BMAP
PR715746	3789 N US 301	Outside of BMAP
PR926222	4222 N US 301	Outside of BMAP

APPENDIX B

OSTDS TO BE ELIMINATED

Permit #	Address	Zip	Sort Address	Project
PR1349996	8743 CR 121	34785	CR 121	Fairways and Fox Hollow WW CS Extension
PR583408	8743 CR 121	34785	CR 121	Fairways and Fox Hollow WW CS Extension
PR1719296	8842 CR 121	34785	CR 121	Fairways and Fox Hollow WW CS Extension
PR1034148	8865 CR 121	34785	CR 121	Fairways and Fox Hollow WW CS Extension
PR642202	8915 CR 121	34785	CR 121	Fairways and Fox Hollow WW CS Extension
PR585880	8949 CR 121	34785	CR 121	Fairways and Fox Hollow WW CS Extension
PR584969	8981 County 121 Road	34785	CR 121	Fairways and Fox Hollow WW CS Extension
PR581798	9100 CR 121	34785	CR 121	Fairways and Fox Hollow WW CS Extension
PR1183004	9174 CR 121	34785	CR 121	Fairways and Fox Hollow WW CS Extension
PR583641	9675 CR 121	34785	CR 121	Fairways and Fox Hollow WW CS Extension
PR585580	9989 CR 121	34785	CR 121	Fairways and Fox Hollow WW CS Extension
PR584938	County 121 Road	34785	CR 121	Fairways and Fox Hollow WW CS Extension
PR583129	CR 121	34785	CR 121	Fairways and Fox Hollow WW CS Extension
PR585964	CR 121	34785	CR 121	Fairways and Fox Hollow WW CS Extension
PR586395	CR 121	34785	CR 121	Fairways and Fox Hollow WW CS Extension
PR587069	CR 121	34785	CR 121	Fairways and Fox Hollow WW CS Extension
PR587161	NW Cor of CR 121 & CR 121	34785	CR 121	Fairways and Fox Hollow WW CS Extension
PR586725	CR121B-1	34785	CR 121 B	Fairways and Fox Hollow WW CS Extension
PR585554	4130 CR 121D	34785	CR 121 D	Fairways and Fox Hollow WW CS Extension
PR586235	4141 CR 121D	34785	CR 121 D	Fairways and Fox Hollow WW CS Extension
PR586844	4190 CR 121D	34785	CR 121 D	Fairways and Fox Hollow WW CS Extension
PR1032371	4277 CR 121D	34785	CR 121 D	Fairways and Fox Hollow WW CS Extension
PR909729	4393 CR 121D	34785	CR 121 D	Fairways and Fox Hollow WW CS Extension
PR1352182	4420 CR 121D	34785	CR 121 D	Fairways and Fox Hollow WW CS Extension
PR745240	4430 CR 121D	34785	CR 121 D	Fairways and Fox Hollow WW CS Extension
PR587600	4640 CR 121D	34785	CR 121 D	Fairways and Fox Hollow WW CS Extension
PR584493	4670 County Road 121D	34785	CR 121 D	Fairways and Fox Hollow WW CS Extension
PR584343	4700 County Road 121D	34785	CR 121 D	Fairways and Fox Hollow WW CS Extension
PR584368	4725 County Road 121D	34785	CR 121 D	Fairways and Fox Hollow WW CS Extension
PR584026	4755 CR 121D	34785	CR 121 D	Fairways and Fox Hollow WW CS Extension
PR586823	4760 CR 121 D	34785	CR 121 D	Fairways and Fox Hollow WW CS Extension
PR584739	4785 CR 121D	34785	CR 121 D	Fairways and Fox Hollow WW CS Extension
PR584140	4790 COUNTY ROAD 121D	34785	CR 121 D	Fairways and Fox Hollow WW CS Extension
PR584643	4815 County Road 121D	34785	CR 121 D	Fairways and Fox Hollow WW CS Extension
PR587060	4820 Cr 121D	34785	CR 121 D	Fairways and Fox Hollow WW CS Extension
PR584198	4845 CR 121 D	34785	CR 121 D	Fairways and Fox Hollow WW CS Extension
PR884080	4850 CR 121D	34785	CR 121 D	Fairways and Fox Hollow WW CS Extension
PR584384	4880 County Road 121D	34785	CR 121 D	Fairways and Fox Hollow WW CS Extension
PR584945	CR 121 D	34785	CR 121 D	Fairways and Fox Hollow WW CS Extension
PR1006665	CR 121D	34785	CR 121 D	Fairways and Fox Hollow WW CS Extension
PR584954	CR 121D	34785	CR 121 D	Fairways and Fox Hollow WW CS Extension
PR584961	CR 121D	34785	CR 121 D	Fairways and Fox Hollow WW CS Extension
PR585330	CR 121D	34785	CR 121 D	Fairways and Fox Hollow WW CS Extension
PR585413	CR 121D	34785	CR 121 D	Fairways and Fox Hollow WW CS Extension
PR585498	CR 121D	34785	CR 121 D	Fairways and Fox Hollow WW CS Extension
PR586337	CR 121D	34785	CR 121 D	Fairways and Fox Hollow WW CS Extension
PR587582	CR 121D	34785	CR 121 D	Fairways and Fox Hollow WW CS Extension
PR942702	CR 121D	34785	CR 121 D	Fairways and Fox Hollow WW CS Extension
PR586843	CR 121-D	34785	CR 121 D	Fairways and Fox Hollow WW CS Extension
PR586892	CR 121-D	34785	CR 121 D	Fairways and Fox Hollow WW CS Extension
PR1116793	cr-121D	34785	CR 121 D	Fairways and Fox Hollow WW CS Extension
PR929788	4965 CR 121-D	34785	CR 121-D	Fairways and Fox Hollow WW CS Extension
PR584612	5341 CR 125	34785	CR 125	Fairways and Fox Hollow WW CS Extension
PR1351332	5363 CR 125	34785	CR 125	Fairways and Fox Hollow WW CS Extension

PR915043	5371 CR 125	34785	CR 125	Fairways and Fox Hollow WW CS Extension
PR585599	5407 CR 125	34785	CR 125	Fairways and Fox Hollow WW CS Extension
PR586419	5422 CR 125	34785	CR 125	Fairways and Fox Hollow WW CS Extension
PR586586	5438 CR 125	34785	CR 125	Fairways and Fox Hollow WW CS Extension
PR586088	5453 CR 125	34785	CR 125	Fairways and Fox Hollow WW CS Extension
PR586526	5456 Cr 125	34785	CR 125	Fairways and Fox Hollow WW CS Extension
PR586240	5474 CR 125	34785	CR 125	Fairways and Fox Hollow WW CS Extension
PR585605	5477 CR 125	34785	CR 125	Fairways and Fox Hollow WW CS Extension
PR821023	5483 CR 125	34785	CR 125	Fairways and Fox Hollow WW CS Extension
PR585137	CR 125	34785	CR 125	Fairways and Fox Hollow WW CS Extension
PR585446	CR 125	34785	CR 125	Fairways and Fox Hollow WW CS Extension
PR585615	CR 125	34785	CR 125	Fairways and Fox Hollow WW CS Extension
PR585620	CR 125	34785	CR 125	Fairways and Fox Hollow WW CS Extension
PR585655	CR 125	34785	CR 125	Fairways and Fox Hollow WW CS Extension
PR585656	CR 125	34785	CR 125	Fairways and Fox Hollow WW CS Extension
PR585664	CR 125	34785	CR 125	Fairways and Fox Hollow WW CS Extension
PR585665	CR 125	34785	CR 125	Fairways and Fox Hollow WW CS Extension
PR585731	CR 125	34785	CR 125	Fairways and Fox Hollow WW CS Extension
PR585812	CR 125	34785	CR 125	Fairways and Fox Hollow WW CS Extension
PR585854	CR 125	34785	CR 125	Fairways and Fox Hollow WW CS Extension
PR585907	CR 125	34785	CR 125	Fairways and Fox Hollow WW CS Extension
PR586037	CR 125	34785	CR 125	Fairways and Fox Hollow WW CS Extension
PR586038	CR 125	34785	CR 125	Fairways and Fox Hollow WW CS Extension
PR586039	CR 125	34785	CR 125	Fairways and Fox Hollow WW CS Extension
PR586087	Cr 125	34785	CR 125	Fairways and Fox Hollow WW CS Extension
PR586242	CR 125	34785	CR 125	Fairways and Fox Hollow WW CS Extension
PR586253	CR 125	34785	CR 125	Fairways and Fox Hollow WW CS Extension
PR586801	CR 125	34785	CR 125	Fairways and Fox Hollow WW CS Extension
PR586809	CR 125	34785	CR 125	Fairways and Fox Hollow WW CS Extension
PR585507	CR 125 & 125C Circle	34785	CR 125	Fairways and Fox Hollow WW CS Extension
PR585855	CR 125 & 125D Circle	34785	CR 125	Fairways and Fox Hollow WW CS Extension
PR585214	5067 CR 125 Boulevard	34785	CR 125	Fairways and Fox Hollow WW CS Extension
PR583123	5008 CR 125A	34785	CR 125 A	Fairways and Fox Hollow WW CS Extension
PR586204	5194 CR 125A	34785	CR 125 A	Fairways and Fox Hollow WW CS Extension
PR586008	5258 CR 125A	34785	CR 125 A	Fairways and Fox Hollow WW CS Extension
PR585622	CR 125 A	34785	CR 125 A	Fairways and Fox Hollow WW CS Extension
PR585520	CR 125A	34785	CR 125 A	Fairways and Fox Hollow WW CS Extension
PR585521	CR 125A	34785	CR 125 A	Fairways and Fox Hollow WW CS Extension
PR585562	CR 125A	34785	CR 125 A	Fairways and Fox Hollow WW CS Extension
PR585609	CR 125A	34785	CR 125 A	Fairways and Fox Hollow WW CS Extension
PR586059	CR 125A	34785	CR 125 A	Fairways and Fox Hollow WW CS Extension
PR586085	CR 125A	34785	CR 125 A	Fairways and Fox Hollow WW CS Extension
PR586166	CR 125A	34785	CR 125 A	Fairways and Fox Hollow WW CS Extension
PR586817	5109 CR 125 B-2	34785	CR 125 B	Fairways and Fox Hollow WW CS Extension
PR586816	5110 CR 125B-2	34785	CR 125 B	Fairways and Fox Hollow WW CS Extension
PR586895	5111 CR 125B-2	34785	CR 125 B	Fairways and Fox Hollow WW CS Extension
PR586802	5113 CR 125B-2	34785	CR 125 B	Fairways and Fox Hollow WW CS Extension
PR586810	5144 CR 125	34785	CR 125 B	Fairways and Fox Hollow WW CS Extension
PR586756	5153 CR 125B-1	34785	CR 125 B	Fairways and Fox Hollow WW CS Extension
PR584885	5239 County Road 125B-1	34785	CR 125 B	Fairways and Fox Hollow WW CS Extension
PR585265	9300 CR 125 B	34785	CR 125 B	Fairways and Fox Hollow WW CS Extension
PR584620	9325 County Road 125B	34785	CR 125 B	Fairways and Fox Hollow WW CS Extension
PR585238	9454 CR 125B	34785	CR 125 B	Fairways and Fox Hollow WW CS Extension
PR586757	CR 125 B1	34785	CR 125 B	Fairways and Fox Hollow WW CS Extension
PR586828	CR 125 B-1	34785	CR 125 B	Fairways and Fox Hollow WW CS Extension

PR586830	CR 125 B-1	34785	CR 125 B	Fairways and Fox Hollow WW CS Extension
PR585239	CR 125B	34785	CR 125 B	Fairways and Fox Hollow WW CS Extension
PR585240	CR 125B	34785	CR 125 B	Fairways and Fox Hollow WW CS Extension
PR585244	CR 125B	34785	CR 125 B	Fairways and Fox Hollow WW CS Extension
PR585511	CR 125B	34785	CR 125 B	Fairways and Fox Hollow WW CS Extension
PR586661	Cr 125b	34785	CR 125 B	Fairways and Fox Hollow WW CS Extension
PR586664	Cr 125b	34785	CR 125 B	Fairways and Fox Hollow WW CS Extension
PR585509	CR 125B-1	34785	CR 125 B	Fairways and Fox Hollow WW CS Extension
PR585611	CR 125B-1	34785	CR 125 B	Fairways and Fox Hollow WW CS Extension
PR585616	CR 125B-1	34785	CR 125 B	Fairways and Fox Hollow WW CS Extension
PR585623	CR 125B-1	34785	CR 125 B	Fairways and Fox Hollow WW CS Extension
PR585654	CR 125B-1	34785	CR 125 B	Fairways and Fox Hollow WW CS Extension
PR586011	CR 125B-1	34785	CR 125 B	Fairways and Fox Hollow WW CS Extension
PR586060	CR 125B-1	34785	CR 125 B	Fairways and Fox Hollow WW CS Extension
PR586061	CR 125B-1	34785	CR 125 B	Fairways and Fox Hollow WW CS Extension
PR586316	CR 125B-1	34785	CR 125 B	Fairways and Fox Hollow WW CS Extension
PR586659	Cr 125b-1	34785	CR 125 B	Fairways and Fox Hollow WW CS Extension
PR586660	Cr 125b-1	34785	CR 125 B	Fairways and Fox Hollow WW CS Extension
PR586662	Cr 125b-1	34785	CR 125 B	Fairways and Fox Hollow WW CS Extension
PR586663	Cr 125b-1	34785	CR 125 B	Fairways and Fox Hollow WW CS Extension
PR586672	CR 125B-1	34785	CR 125 B	Fairways and Fox Hollow WW CS Extension
PR586893	CR 125B-1	34785	CR 125 B	Fairways and Fox Hollow WW CS Extension
PR586673	CR125 B-1	34785	CR 125 B	Fairways and Fox Hollow WW CS Extension
PR585663	9491 CR 125C	34785	CR 125 C	Fairways and Fox Hollow WW CS Extension
PR585598	9497 County Road 125 C	34785	CR 125 C	Fairways and Fox Hollow WW CS Extension
PR586420	9514 CR 125C	34785	CR 125 C	Fairways and Fox Hollow WW CS Extension
PR585872	9520 CR 125C	34785	CR 125 C	Fairways and Fox Hollow WW CS Extension
PR585594	9529 CR 125C	34785	CR 125 C	Fairways and Fox Hollow WW CS Extension
PR586144	9544 CR 125C	34785	CR 125 C	Fairways and Fox Hollow WW CS Extension
PR1074769	9544 cr-125C	34785	CR 125 C	Fairways and Fox Hollow WW CS Extension
PR586527	9562 CR 125C	34785	CR 125 C	Fairways and Fox Hollow WW CS Extension
PR585720	9565 CR 125C	34785	CR 125 C	Fairways and Fox Hollow WW CS Extension
PR585692	CR 125 C	34785	CR 125 C	Fairways and Fox Hollow WW CS Extension
PR586040	CR 125 C	34785	CR 125 C	Fairways and Fox Hollow WW CS Extension
PR585606	CR 125C	34785	CR 125 C	Fairways and Fox Hollow WW CS Extension
PR585640	CR 125C	34785	CR 125 C	Fairways and Fox Hollow WW CS Extension
PR585697	CR 125C	34785	CR 125 C	Fairways and Fox Hollow WW CS Extension
PR585936	CR 125C	34785	CR 125 C	Fairways and Fox Hollow WW CS Extension
PR586086	CR 125C	34785	CR 125 C	Fairways and Fox Hollow WW CS Extension
PR586205	CR 125C	34785	CR 125 C	Fairways and Fox Hollow WW CS Extension
PR586254	CR 125C	34785	CR 125 C	Fairways and Fox Hollow WW CS Extension
PR586285	CR 125C	34785	CR 125 C	Fairways and Fox Hollow WW CS Extension
PR586286	CR 125C	34785	CR 125 C	Fairways and Fox Hollow WW CS Extension
PR586335	CR 125C	34785	CR 125 C	Fairways and Fox Hollow WW CS Extension
PR586401	CR 125C	34785	CR 125 C	Fairways and Fox Hollow WW CS Extension
PR586584	CR 125C	34785	CR 125 C	Fairways and Fox Hollow WW CS Extension
PR585613	CR 125D	34785	CR 125 D	Fairways and Fox Hollow WW CS Extension
PR586251	4518 CR 128	34785	CR 128	Fairways and Fox Hollow WW CS Extension
PR1103321	4606 c-128	34785	CR 128	Fairways and Fox Hollow WW CS Extension
PR674225	4606 CR 128	34785	CR 128	Fairways and Fox Hollow WW CS Extension
PR584873	4713 County 128 Road	34785	CR 128	Fairways and Fox Hollow WW CS Extension
PR585737	4916 CR 128	34785	CR 128	Fairways and Fox Hollow WW CS Extension
PR584359	9085 County Road 128C	34785	CR 128 C	Fairways and Fox Hollow WW CS Extension
PR584003	9020 CR 128C	34785	CR 128 C	Fairways and Fox Hollow WW CS Extension
PR583939	9025 CR 128C	34785	CR 128 C	Fairways and Fox Hollow WW CS Extension

PR584154	9060 COUNTY ROAD 128C	34785	CR 128 C	Fairways and Fox Hollow WW CS Extension
PR768376	9060 COUNTY ROAD 128C	34785	CR 128 C	Fairways and Fox Hollow WW CS Extension
PR1049904	9065 CR 128C	34785	CR 128 C	Fairways and Fox Hollow WW CS Extension
PR584426	9100 CR 128 C	34785	CR 128 C	Fairways and Fox Hollow WW CS Extension
PR584103	9120 CR 128C	34785	CR 128 C	Fairways and Fox Hollow WW CS Extension
PR584474	9140 County Road 128C	34785	CR 128 C	Fairways and Fox Hollow WW CS Extension
PR584217	9145 CR 128 C	34785	CR 128 C	Fairways and Fox Hollow WW CS Extension
PR587107	9160 CR 128C	34785	CR 128 C	Fairways and Fox Hollow WW CS Extension
PR584463	9185 County Road 128C	34785	CR 128 C	Fairways and Fox Hollow WW CS Extension
PR584404	9200 County Road 128 C	34785	CR 128 C	Fairways and Fox Hollow WW CS Extension
PR587121	9205 CR 128C	34785	CR 128 C	Fairways and Fox Hollow WW CS Extension
PR584837	9220 County Road 128C	34785	CR 128 C	Fairways and Fox Hollow WW CS Extension
PR584666	9225 County Road 128C	34785	CR 128 C	Fairways and Fox Hollow WW CS Extension
PR584724	9245 County Road 128 C	34785	CR 128 C	Fairways and Fox Hollow WW CS Extension
PR583883	9260 CR 128 C	34785	CR 128 C	Fairways and Fox Hollow WW CS Extension
PR583913	CR 128C	34785	CR 128 C	Fairways and Fox Hollow WW CS Extension
PR585040	CR 128C	34785	CR 128 C	Fairways and Fox Hollow WW CS Extension
PR585501	CR 128C	34785	CR 128 C	Fairways and Fox Hollow WW CS Extension
PR584246	4649 CR 128D	34785	CR 128 D	Fairways and Fox Hollow WW CS Extension
PR586452	9105 CR 128D	34785	CR 128 D	Fairways and Fox Hollow WW CS Extension
PR586315	9195 CR 128D	34785	CR 128 D	Fairways and Fox Hollow WW CS Extension
PR585904	9215 CR 128D	34785	CR 128 D	Fairways and Fox Hollow WW CS Extension
PR585525	9230 CR 128D	34785	CR 128 D	Fairways and Fox Hollow WW CS Extension
PR1815290	9275 CR 128D	34785	CR 128 D	Fairways and Fox Hollow WW CS Extension
PR861016	9295 CR 128D	34785	CR 128 D	Fairways and Fox Hollow WW CS Extension
PR587135	9315 CR 128D	34785	CR 128 D	Fairways and Fox Hollow WW CS Extension
PR585039	County Road 128D	34785	CR 128 D	Fairways and Fox Hollow WW CS Extension
PR585892	County Road 128-D	34785	CR 128 D	Fairways and Fox Hollow WW CS Extension
PR585555	CR 121D & 128D Circle	34785	CR 128 D	Fairways and Fox Hollow WW CS Extension
PR585161	CR 128D	34785	CR 128 D	Fairways and Fox Hollow WW CS Extension
PR585329	CR 128D	34785	CR 128 D	Fairways and Fox Hollow WW CS Extension
PR585450	CR 128D	34785	CR 128 D	Fairways and Fox Hollow WW CS Extension
PR585581	CR 128D	34785	CR 128 D	Fairways and Fox Hollow WW CS Extension
PR585582	CR 128D	34785	CR 128 D	Fairways and Fox Hollow WW CS Extension
PR585671	CR 128D	34785	CR 128 D	Fairways and Fox Hollow WW CS Extension
PR585937	CR 128D	34785	CR 128 D	Fairways and Fox Hollow WW CS Extension
PR586111	CR 128D	34785	CR 128 D	Fairways and Fox Hollow WW CS Extension
PR586125	CR 128D	34785	CR 128 D	Fairways and Fox Hollow WW CS Extension
PR586149	CR 128D	34785	CR 128 D	Fairways and Fox Hollow WW CS Extension
PR586244	CR 128D	34785	CR 128 D	Fairways and Fox Hollow WW CS Extension
PR583975	4905 CR 134B	34785	CR 134 B	Fairways and Fox Hollow WW CS Extension
PR586770	4910 CR 134B	34785	CR 134 B	Fairways and Fox Hollow WW CS Extension
PR585466	4940 CR 134B	34785	CR 134 B	Fairways and Fox Hollow WW CS Extension
PR586058	4950 CR 134B	34785	CR 134 B	Fairways and Fox Hollow WW CS Extension
PR585379	4944 CR 134C	34785	CR 134 C	Fairways and Fox Hollow WW CS Extension
PR1068954	4638 E cr 462	34785	CR 462	Fairways and Fox Hollow WW CS Extension
PR762706	4932 E C-462	34785	CR 462	Fairways and Fox Hollow WW CS Extension
PR583984	4621 CR 462E	34785	CR 462 E	Fairways and Fox Hollow WW CS Extension
PR1379199	9467 CR 205	34785	CR 205	CR 205 - CR 230 WW CS Extension
PR1138898	cr 205	34785	CR 205	CR 205 - CR 230 WW CS Extension
PR583384	9132 Cr205a	34785	CR 205 A	CR 205 - CR 230 WW CS Extension
PR1169598	9196 cr 205A	34785	CR 205 A	CR 205 - CR 230 WW CS Extension
PR587101	Corner of 205A & 230C	34785	CR 205 A	CR 205 - CR 230 WW CS Extension
PR587102	Corner of 205A & 230C	34785	CR 205 A	CR 205 - CR 230 WW CS Extension
PR584276	9361 County Road 205 C	34785	CR 205 C	CR 205 - CR 230 WW CS Extension

PR584277	9361 County Road 205 C	34785	CR 205 C	CR 205 - CR 230 WW CS Extension
PR583796	CR 205 C	34785	CR 205 C	CR 205 - CR 230 WW CS Extension
PR1512863	3568 CR 230	34785	CR 230	CR 205 - CR 230 WW CS Extension
PR583659	3829 Cr 230	34785	CR 230	CR 205 - CR 230 WW CS Extension
PR950226	3652 cr 230A	34785	CR 230 A	CR 205 - CR 230 WW CS Extension
PR1154606	3688 cr 230 A	34785	CR 230 A	CR 205 - CR 230 WW CS Extension
PR583622	CR 230 A	34785	CR 230 A	CR 205 - CR 230 WW CS Extension
PR880724	3551 CR 230B	34785	CR 230 B	CR 205 - CR 230 WW CS Extension
PR584182	3583 CR 230B	34785	CR 230 B	CR 205 - CR 230 WW CS Extension
PR585442	3594 CR 230B	34785	CR 230 B	CR 205 - CR 230 WW CS Extension
PR583075	3641 CR 230B	34785	CR 230 B	CR 205 - CR 230 WW CS Extension
PR1303766	3661 CR 230B	34785	CR 230 B	CR 205 - CR 230 WW CS Extension
PR740183	3706 CR 230 B	34785	CR 230 B	CR 205 - CR 230 WW CS Extension
PR743339	3847 CR 230 B	34785	CR 230 B	CR 205 - CR 230 WW CS Extension
PR584038	Cr 230B	34785	CR 230 B	CR 205 - CR 230 WW CS Extension
PR585459	3533 CR 230C	34785	CR 230 C	CR 205 - CR 230 WW CS Extension
PR585463	3543 CR 230C	34785	CR 230 C	CR 205 - CR 230 WW CS Extension
PR584156	3611 COUNTY ROAD 230C	34785	CR 230 C	CR 205 - CR 230 WW CS Extension
PR581951	3715 CR 230C	34785	CR 230 C	CR 205 - CR 230 WW CS Extension
PR582334	Cr 230 C	34785	CR 230 C	CR 205 - CR 230 WW CS Extension
PR582335	Cr 230 C	34785	CR 230 C	CR 205 - CR 230 WW CS Extension
PR1122814	cr 230C	34785	CR 230 C	CR 205 - CR 230 WW CS Extension
PR585222	CR 230C	34785	CR 230 C	CR 205 - CR 230 WW CS Extension
PR586176	CR 230C	34785	CR 230 C	CR 205 - CR 230 WW CS Extension
PR586182	CR 230C	34785	CR 230 C	CR 205 - CR 230 WW CS Extension
PR586183	CR 230C	34785	CR 230 C	CR 205 - CR 230 WW CS Extension
PR585375	3220 E C-462	34785	CR 462	CR 205 - CR 230 WW CS Extension
PR1672720	3334 E C-462	34785	CR 462	CR 205 - CR 230 WW CS Extension
PR1763045	3515 E C-462	34785	CR 462	CR 205 - CR 230 WW CS Extension
PR749467	3587 E CR 462	34785	CR 462	CR 205 - CR 230 WW CS Extension
PR1392302	3667 E C-462 E	34785	CR 462 E	CR 205 - CR 230 WW CS Extension
PR584912	1076 CR 222	34785	CR 222	CR 462 - CR 229 WW CS Extension
PR583169	1211 Cr 222	34785	CR 222	CR 462 - CR 229 WW CS Extension
PR585898	1299 CR 222	34785	CR 222	CR 462 - CR 229 WW CS Extension
PR1034655	1365 CR 222	34785	CR 222	CR 462 - CR 229 WW CS Extension
PR914239	1405 CR 222	34785	CR 222	CR 462 - CR 229 WW CS Extension
PR770881	1417 CR 222	34785	CR 222	CR 462 - CR 229 WW CS Extension
PR583601	1485 CR 222	34785	CR 222	CR 462 - CR 229 WW CS Extension
PR585026	1509 CR 222	34785	CR 222	CR 462 - CR 229 WW CS Extension
PR584400	1765 CR 222	34785	CR 222	CR 462 - CR 229 WW CS Extension
PR1201456	760 CR 222	34785	CR 222	CR 462 - CR 229 WW CS Extension
PR584020	1060 Cr 228	34785	CR 228	CR 462 - CR 229 WW CS Extension
PR895422	1172 CR 228	34785	CR 228	CR 462 - CR 229 WW CS Extension
PR583941	1434 CR 228	34785	CR 228	CR 462 - CR 229 WW CS Extension
PR584585	1447 County 228 Road	34785	CR 228	CR 462 - CR 229 WW CS Extension
PR585916	1489 CR 228	34785	CR 228	CR 462 - CR 229 WW CS Extension
PR583375	1969 Cr228	34785	CR 228	CR 462 - CR 229 WW CS Extension
PR583742	CR 228	34785	CR 228	CR 462 - CR 229 WW CS Extension
PR583790	CR 228	34785	CR 228	CR 462 - CR 229 WW CS Extension
PR584015	11242 CR 229	34785	CR 229	CR 462 - CR 229 WW CS Extension
PR587196	11535 CR 229	34785	CR 229	CR 462 - CR 229 WW CS Extension
PR585091	8920 CR 229	34785	CR 229	CR 462 - CR 229 WW CS Extension
PR989632	9038 CR 229	34785	CR 229	CR 462 - CR 229 WW CS Extension
PR1200498	9359 CR 229	34785	CR 229	CR 462 - CR 229 WW CS Extension
PR1884365	9387 CR 229	34785	CR 229	CR 462 - CR 229 WW CS Extension

PR1034220	9568 CR 229	34785	CR 229	CR 462 - CR 229 WW CS Extension
PR588516	9677 CR 229	34785	CR 229	CR 462 - CR 229 WW CS Extension
PR704819	9698 cr 229	34785	CR 229	CR 462 - CR 229 WW CS Extension
PR587237	9782 CR 229	34785	CR 229	CR 462 - CR 229 WW CS Extension
PR707013	9798 CR 229	34785	CR 229	CR 462 - CR 229 WW CS Extension
PR584069	CR 229	34785	CR 229	CR 462 - CR 229 WW CS Extension
PR582956	Cr229	34785	CR 229	CR 462 - CR 229 WW CS Extension
PR1197114	833 CR 229P	34785	CR 229 P	CR 462 - CR 229 WW CS Extension
PR584904	913 CR 229P	34785	CR 229 P	CR 462 - CR 229 WW CS Extension
PR1689435	1528 CR 232A	34785	CR 232 A	CR 462 - CR 229 WW CS Extension
PR1568085	2591 CR 232	34785	CR 232 A	CR 462 - CR 229 WW CS Extension
PR1123069	cr-232A	34785	CR 232 A	CR 462 - CR 229 WW CS Extension
PR960006	9657 CR 235	34785	CR 235	CR 462 - CR 229 WW CS Extension
PR584536	9695 County 235 Road	34785	CR 235	CR 462 - CR 229 WW CS Extension
PR583999	9719 CR 235	34785	CR 235	CR 462 - CR 229 WW CS Extension
PR586686	9641 CR 235A	34785	CR 235 A	CR 462 - CR 229 WW CS Extension
PR1042153	9682 CR 235A	34785	CR 235 A	CR 462 - CR 229 WW CS Extension
PR587503	9813 CR 235A	34785	CR 235 A	CR 462 - CR 229 WW CS Extension
PR583128	9897 CR 235A	34785	CR 235 A	CR 462 - CR 229 WW CS Extension
PR586687	566 W C-462	34785	CR 462	CR 462 - CR 229 WW CS Extension
PR587546	644 W C-462	34785	CR 462	CR 462 - CR 229 WW CS Extension
PR833902	800 W C-462	34785	CR 462	CR 462 - CR 229 WW CS Extension
PR584616	895 E C-462	34785	CR 462	CR 462 - CR 229 WW CS Extension
PR584237	1248 E CR 462	34785	CR 462	CR 462 - CR 229 WW CS Extension
PR1453035	1265 E C-462 E	34785	CR 462	CR 462 - CR 229 WW CS Extension
PR1253776	1292 E C-462	34785	CR 462	CR 462 - CR 229 WW CS Extension
PR1454380	1425 E C-462 E	34785	CR 462	CR 462 - CR 229 WW CS Extension
PR1407826	1679 E C-462	34785	CR 462	CR 462 - CR 229 WW CS Extension
PR714796	1934 E C-462	34785	CR 462	CR 462 - CR 229 WW CS Extension
PR964803	1945 E C-462	34785	CR 462	CR 462 - CR 229 WW CS Extension
PR583741	2025 CR 462 E	34785	CR 462	CR 462 - CR 229 WW CS Extension
PR1015429	2055 E C-462	34785	CR 462	CR 462 - CR 229 WW CS Extension
PR955365	2055 E C-462	34785	CR 462	CR 462 - CR 229 WW CS Extension
PR988102	2057 E C-462	34785	CR 462	CR 462 - CR 229 WW CS Extension
PR929559	2061 E c 462	34785	CR 462	CR 462 - CR 229 WW CS Extension
PR1241238	2517 E C-462	34785	CR 462	CR 462 - CR 229 WW CS Extension
PR796649	287 E C-462	34785	CR 462	CR 462 - CR 229 WW CS Extension
PR1322625	368 E C-462	34785	CR 462	CR 462 - CR 229 WW CS Extension
PR1089154	498 W C-462 W	34785	CR 462 W	CR 462 - CR 229 WW CS Extension
PR1799553	9988 NE 12th Street	34785	NE 12TH ST	CR 462 - CR 229 WW CS Extension
PR952833	9689 NE 15TH Drive	34785	NE 15TH DR	CR 462 - CR 229 WW CS Extension
PR585833	NE 15th Street	34785	NE 15TH ST	CR 462 - CR 229 WW CS Extension
PR1495755	9358 NE 15th Street	34785	NE 15TH ST	CR 462 - CR 229 WW CS Extension
PR1102024	9228 NE 17th Drive	34785	NE 17TH DR	CR 462 - CR 229 WW CS Extension
PR584907	9632 NE 6th Boulevard	34785	NE 6TH BLVD	CR 462 - CR 229 WW CS Extension
PR1095516	3870 NE 92nd	34785	NE 92ND RD	CR 462 - CR 229 WW CS Extension
PR1723345	952 NE 92nd Road	34785	NE 92ND RD	CR 462 - CR 229 WW CS Extension
PR711559	990 NE 92nd Road	34785	NE 92ND RD	CR 462 - CR 229 WW CS Extension
PR582898	810 NE 97th Road	34785	NE 97TH RD	CR 462 - CR 229 WW CS Extension
PR986524	8574 NE 9th Terrace	34785	NE 9TH TR	CR 462 - CR 229 WW CS Extension
PR1033176	8696 NE 9th Terrace	34785	NE 9TH TR	CR 462 - CR 229 WW CS Extension
PR584418	4099 County Road 124A	34785	CR 124 A	OSTDS Connection to Existing Collection System
PR580867	1408 Brokenoak	34785	BROKEN OAK	OSTDS Connection to Existing Collection System
PR986922	1100 Cleveland Avenue	34785	CLEVELAND AVE	OSTDS Connection to Existing Collection System
PR584383	7857 County 133 Road	34785	CR 133	OSTDS Connection to Existing Collection System

PR751943	4321 CR 138	34785	CR 138	OSTDS Connection to Existing Collection System
PR587243	4510 E CR 462	34785	CR 462	OSTDS Connection to Existing Collection System
PR582968	4884 C466a	34785	CR 466 a	OSTDS Connection to Existing Collection System
PR586988	4758 CR 466-A	34785	CR 466-A	OSTDS Connection to Existing Collection System
PR580794	4855 CR 466-A	34785	CR 466-A	OSTDS Connection to Existing Collection System
PR583088	1402 Huey Street	34785	HUEY ST	OSTDS Connection to Existing Collection System
PR585264	Palmer Way	34785	PALMER WAY	OSTDS Connection to Existing Collection System
PR1353596	817 Parks Street	34785	PARKS ST	OSTDS Connection to Existing Collection System
PR583575	Pine Street N	34785	PINE ST	OSTDS Connection to Existing Collection System
	4685 CR 120			Fairways and Fox Hollow WW CS Extension
	4729 CR 120			Fairways and Fox Hollow WW CS Extension
	4753 CR 120			Fairways and Fox Hollow WW CS Extension
	4797 CR 120			Fairways and Fox Hollow WW CS Extension
	4817 CR 120			Fairways and Fox Hollow WW CS Extension
	4843 CR 120			Fairways and Fox Hollow WW CS Extension
	4863 CR 120			Fairways and Fox Hollow WW CS Extension
	4885 CR 120			Fairways and Fox Hollow WW CS Extension
	4909 CR 120			Fairways and Fox Hollow WW CS Extension
	4955 CR 120			Fairways and Fox Hollow WW CS Extension
	9752 CR 121			Fairways and Fox Hollow WW CS Extension
	9708 CR 121			Fairways and Fox Hollow WW CS Extension
	9723 CR 121			Fairways and Fox Hollow WW CS Extension
	9745 CR 121			Fairways and Fox Hollow WW CS Extension
	9845 CR 121			Fairways and Fox Hollow WW CS Extension
	9823 CR 121			Fairways and Fox Hollow WW CS Extension
	9797 CR 121			Fairways and Fox Hollow WW CS Extension
	9775 CR 121			Fairways and Fox Hollow WW CS Extension
	9893 CR 121			Fairways and Fox Hollow WW CS Extension
	9907 CR 121			Fairways and Fox Hollow WW CS Extension
	9939 CR 121			Fairways and Fox Hollow WW CS Extension
	9963 CR 121			Fairways and Fox Hollow WW CS Extension
	9872 CR 121			Fairways and Fox Hollow WW CS Extension
	4956 CR 120			Fairways and Fox Hollow WW CS Extension
	4932 CR 120			Fairways and Fox Hollow WW CS Extension
	4908 CR 120			Fairways and Fox Hollow WW CS Extension
	4886 CR 120			Fairways and Fox Hollow WW CS Extension
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	4840 CR 120			Fairways and Fox Hollow WW CS Extension
	4780 CR 120			Fairways and Fox Hollow WW CS Extension
	4740 CR 120			Fairways and Fox Hollow WW CS Extension
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	4668 CR 120			Fairways and Fox Hollow WW CS Extension
	9806 CR 121			Fairways and Fox Hollow WW CS Extension
	9828 CR 121			Fairways and Fox Hollow WW CS Extension
	4953 CR 118			Fairways and Fox Hollow WW CS Extension
	4931 CR 118			Fairways and Fox Hollow WW CS Extension
	4909 CR 118			Fairways and Fox Hollow WW CS Extension
	4887 CR 118			Fairways and Fox Hollow WW CS Extension
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	4799 CR 118			Fairways and Fox Hollow WW CS Extension
	4773 CR 118			Fairways and Fox Hollow WW CS Extension
	4719 CR 118			Fairways and Fox Hollow WW CS Extension
	4691 CR 118			Fairways and Fox Hollow WW CS Extension
	4643 CR 118			Fairways and Fox Hollow WW CS Extension
	4619 CR 118			Fairways and Fox Hollow WW CS Extension

	4597 CR 118			Fairways and Fox Hollow WW CS Extension
	4577 CR 118			Fairways and Fox Hollow WW CS Extension
	4553 CR 118			Fairways and Fox Hollow WW CS Extension
	4529 CR 118			Fairways and Fox Hollow WW CS Extension
	4516 CR 118			Fairways and Fox Hollow WW CS Extension
	4566 CR 118			Fairways and Fox Hollow WW CS Extension
	4582 CR 118			Fairways and Fox Hollow WW CS Extension
	4612 CR 118			Fairways and Fox Hollow WW CS Extension
	4642 CR 118			Fairways and Fox Hollow WW CS Extension
	4666 CR 118			Fairways and Fox Hollow WW CS Extension
	4688 CR 118			Fairways and Fox Hollow WW CS Extension
	4712 CR 118			Fairways and Fox Hollow WW CS Extension
	4736 CR 118			Fairways and Fox Hollow WW CS Extension
	4766 CR 118			Fairways and Fox Hollow WW CS Extension
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	4856 CR 118			Fairways and Fox Hollow WW CS Extension
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	4898 CR 118			Fairways and Fox Hollow WW CS Extension
	4920 CR 118			Fairways and Fox Hollow WW CS Extension
	4940 CR 118			Fairways and Fox Hollow WW CS Extension
	4926 CR 118			Fairways and Fox Hollow WW CS Extension
	4985 CR 116			Fairways and Fox Hollow WW CS Extension
	4963 CR 116			Fairways and Fox Hollow WW CS Extension
	4937 CR 116			Fairways and Fox Hollow WW CS Extension
	4919 CR 116			Fairways and Fox Hollow WW CS Extension
	4897 CR 116			Fairways and Fox Hollow WW CS Extension
	4875 CR 116			Fairways and Fox Hollow WW CS Extension
	4853 CR 116			Fairways and Fox Hollow WW CS Extension
	4833 CR 116			Fairways and Fox Hollow WW CS Extension
	4809 CR 116			Fairways and Fox Hollow WW CS Extension
	4787 CR 116			Fairways and Fox Hollow WW CS Extension
	4765 CR 116			Fairways and Fox Hollow WW CS Extension
	4735 CR 116			Fairways and Fox Hollow WW CS Extension
	4713 CR 116			Fairways and Fox Hollow WW CS Extension
	4691 CR 116			Fairways and Fox Hollow WW CS Extension
	4663 CR 116			Fairways and Fox Hollow WW CS Extension
	4645 CR 116			Fairways and Fox Hollow WW CS Extension
	4611 CR 116			Fairways and Fox Hollow WW CS Extension
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	4545 CR 116			Fairways and Fox Hollow WW CS Extension
	4522 CR 116			Fairways and Fox Hollow WW CS Extension
	4546 CR 116			Fairways and Fox Hollow WW CS Extension
	4566 CR 116			Fairways and Fox Hollow WW CS Extension
	4578 CR 116			Fairways and Fox Hollow WW CS Extension
	4612 CR 116			Fairways and Fox Hollow WW CS Extension
	4642 CR 116			Fairways and Fox Hollow WW CS Extension
	4666 CR 116			Fairways and Fox Hollow WW CS Extension
	4690 CR 116			Fairways and Fox Hollow WW CS Extension
	4710 CR 116			Fairways and Fox Hollow WW CS Extension
	4732 CR 116			Fairways and Fox Hollow WW CS Extension
	4764 CR 116			Fairways and Fox Hollow WW CS Extension
	4788 CR 116			Fairways and Fox Hollow WW CS Extension
	4808 CR 116			Fairways and Fox Hollow WW CS Extension
	4832 CR 116			Fairways and Fox Hollow WW CS Extension
	4852 CR 116			Fairways and Fox Hollow WW CS Extension

	4874 CR 116			Fairways and Fox Hollow WW CS Extension
	4896 CR 116			Fairways and Fox Hollow WW CS Extension
	4918 CR 116			Fairways and Fox Hollow WW CS Extension
	4924 CR 116			Fairways and Fox Hollow WW CS Extension
	4964 CR 116			Fairways and Fox Hollow WW CS Extension
	9940 CR 121			Fairways and Fox Hollow WW CS Extension
	4565 CR 114			Fairways and Fox Hollow WW CS Extension
	4589 CR 114			Fairways and Fox Hollow WW CS Extension
	4613 CR 114			Fairways and Fox Hollow WW CS Extension
	4641 CR 114			Fairways and Fox Hollow WW CS Extension
	4665 CR 114			Fairways and Fox Hollow WW CS Extension
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	4917 CR 114			Fairways and Fox Hollow WW CS Extension
	4943 CR 114			Fairways and Fox Hollow WW CS Extension
	4961 CR 114			Fairways and Fox Hollow WW CS Extension
	9982 CR 121			Fairways and Fox Hollow WW CS Extension
	4974 CR 114			Fairways and Fox Hollow WW CS Extension
	10049 CR 114C			Fairways and Fox Hollow WW CS Extension
	10069 CR 114C			Fairways and Fox Hollow WW CS Extension
	10085 CR 114C			Fairways and Fox Hollow WW CS Extension
	10109 CR 114C			Fairways and Fox Hollow WW CS Extension
	4942 CR 114			Fairways and Fox Hollow WW CS Extension
	4918 CR 114			Fairways and Fox Hollow WW CS Extension
	4898 CR 114			Fairways and Fox Hollow WW CS Extension
	4876 CR 114			Fairways and Fox Hollow WW CS Extension
	4852 CR 114			Fairways and Fox Hollow WW CS Extension
	4830 CR 114			Fairways and Fox Hollow WW CS Extension
	4810 CR 114			Fairways and Fox Hollow WW CS Extension
	4788 CR 114			Fairways and Fox Hollow WW CS Extension
	10017 CR 117			Fairways and Fox Hollow WW CS Extension
	10053 CR 117			Fairways and Fox Hollow WW CS Extension
	4789 CR 117A			Fairways and Fox Hollow WW CS Extension
	4811 CR 117A			Fairways and Fox Hollow WW CS Extension
	4829 CR 117A			Fairways and Fox Hollow WW CS Extension
	4851 CR 117A			Fairways and Fox Hollow WW CS Extension
	4877 CR 117A			Fairways and Fox Hollow WW CS Extension
	4893 CR 117A			Fairways and Fox Hollow WW CS Extension
	4917 CR 117A			Fairways and Fox Hollow WW CS Extension
	10050 CR 114C			Fairways and Fox Hollow WW CS Extension
	4938 CR 117A			Fairways and Fox Hollow WW CS Extension
	4914 CR 117A			Fairways and Fox Hollow WW CS Extension
	4894 CR 117A			Fairways and Fox Hollow WW CS Extension
	4872 CR 117A			Fairways and Fox Hollow WW CS Extension
	4854 CR 117A			Fairways and Fox Hollow WW CS Extension
	4808 CR 117A			Fairways and Fox Hollow WW CS Extension
	4786 CR 117A			Fairways and Fox Hollow WW CS Extension
	4766 CR 117A			Fairways and Fox Hollow WW CS Extension

APPENDIX C

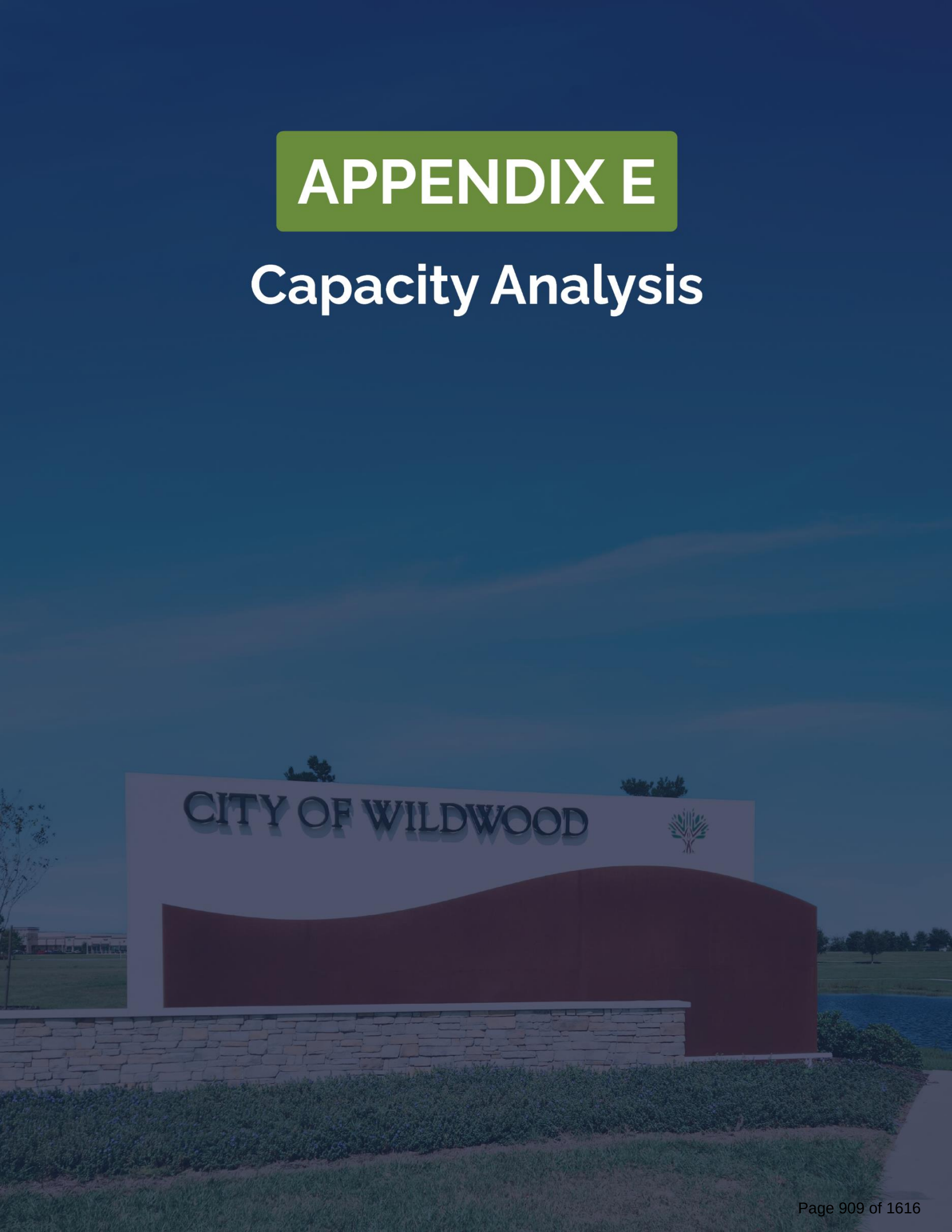
OSTDS UPGRADES

Permit #	Address	Project
PR1409603	4323 CR 110	Upgrade OSTDS
PR585477	4523 CR 114	Upgrade OSTDS
PR584593	9932 CR 114 A	Upgrade OSTDS
PR1027167	4525 CR 116	Upgrade OSTDS
PR580882	4832 Cr 117a	Upgrade OSTDS
PR585159	4741 CR 118	Upgrade OSTDS
PR1253316	5410 CR 122N	Upgrade OSTDS
PR585151	4418 CR 124A	Upgrade OSTDS
PR755581	4057 CR 126	Upgrade OSTDS
PR1244655	8165 cr 127	Upgrade OSTDS
PR584320	8483 County 127 Road	Upgrade OSTDS
PR808154	5102 CR 132A	Upgrade OSTDS
PR585133	4605 CR 134	Upgrade OSTDS
PR1392146	4727 CR 134	Upgrade OSTDS
PR586822	4585 CR 141	Upgrade OSTDS
PR709226	4841 CR 141	Upgrade OSTDS
PR1055639	5351 CR 144	Upgrade OSTDS
PR583297	5391 Cr144	Upgrade OSTDS
PR583311	6369 Cr154a	Upgrade OSTDS
PR1880240	6424 CR 154 A	Upgrade OSTDS
PR584403	6439 County Road 154A	Upgrade OSTDS
PR983838	5168 CR 165	Upgrade OSTDS
PR768944	5189 CR 165	Upgrade OSTDS
PR584866	5253 County 171 Road	Upgrade OSTDS
PR585885	5716 CR 173	Upgrade OSTDS
PR1797732	5734 CR 173	Upgrade OSTDS
PR1650892	5678 CR 173 E	Upgrade OSTDS
PR584594	7051 County Raod 213	Upgrade OSTDS
PR584901	7144 County 213 Road	Upgrade OSTDS
PR585066	7203 County 213 Road	Upgrade OSTDS
PR831581	7203 CR 213	Upgrade OSTDS
PR583519	7224 Cr213	Upgrade OSTDS
PR583500	7237 Cr 213	Upgrade OSTDS
PR584007	6908 CR 215	Upgrade OSTDS
PR774657	6925 CR 215	Upgrade OSTDS
PR580773	9815 CR 215	Upgrade OSTDS
PR1595099	7442 CR 217	Upgrade OSTDS
PR1353307	7516 CR 217	Upgrade OSTDS
PR1377574	7572 CR 217	Upgrade OSTDS
PR1723577	7662 CR 217	Upgrade OSTDS
PR586465	7631 County 221 Road	Upgrade OSTDS
PR1023719	8202 CR 221	Upgrade OSTDS
PR583880	8345 CR 221	Upgrade OSTDS
PR584517	8608 County 221 Road	Upgrade OSTDS
PR584420	8643 County 221 Road	Upgrade OSTDS
PR584075	2488 CR 222	Upgrade OSTDS
PR584131	2676 CR 222	Upgrade OSTDS
PR583555	2888 CR 222	Upgrade OSTDS
PR996072	3175 CR 222	Upgrade OSTDS
PR1736981	3211 CR 222	Upgrade OSTDS
PR584778	3254 County 222 Road	Upgrade OSTDS
PR587045	443 Cr222	Upgrade OSTDS
PR643363	98 CR 222	Upgrade OSTDS
PR583920	1267 Cr 222	Upgrade OSTDS

PR1251425	12856 CR 223	Upgrade OSTDS
PR581543	9537 Cr 223	Upgrade OSTDS
PR581544	9537 Cr 223	Upgrade OSTDS
PR1171000	9583 CR 223 Cabin A	Upgrade OSTDS
PR1171010	9583 CR 223 Cabin B	Upgrade OSTDS
PR1170917	9583 CR 223 Cabin C	Upgrade OSTDS
PR581988	7678 CR 225	Upgrade OSTDS
PR1252390	7883 CR 225	Upgrade OSTDS
PR587152	3409 CR 232	Upgrade OSTDS
PR584537	10476 County 237 Road	Upgrade OSTDS
PR1324446	2649 cr 238	Upgrade OSTDS
PR818864	2821 CR 238	Upgrade OSTDS
PR585126	3108 CR 238	Upgrade OSTDS
PR886885	2816 CR 244	Upgrade OSTDS
PR924008	2840 CR 244	Upgrade OSTDS
PR584530	1921 C-44A	Upgrade OSTDS
PR584884	2253 C-44A	Upgrade OSTDS
PR1038928	2887 C-44A	Upgrade OSTDS
PR584660	33137 C-44A	Upgrade OSTDS
PR585528	4840 C-44A	Upgrade OSTDS
PR1055268	6042 cr 44 A	Upgrade OSTDS
PR583357	10295 Cr115a	Upgrade OSTDS
PR1940901	NE 19th Way	Upgrade OSTDS
PR974552	NE 19th Way	Upgrade OSTDS
PR707284	2625 NE 108th Lane	Upgrade OSTDS
PR581926	1138 NE 137th Land	Upgrade OSTDS
PR584496	8996 NE 19th Way	Upgrade OSTDS
PR583661	8105 NE 27th Drive	Upgrade OSTDS
PR940288	8144 NE 27th Drive	Upgrade OSTDS
PR885824	8222 NE 27th Drive	Upgrade OSTDS
PR583035	9846 NE 34th Boulevard	Upgrade OSTDS
PR587536	7990 NE 42nd Terrace	Upgrade OSTDS
PR997792	6938 NE 52nd Terrace	Upgrade OSTDS
PR584005	6167 NE 54th Boulevard	Upgrade OSTDS
PR583898	2562 NE 77TH Road	Upgrade OSTDS
PR1207780	4500 NE 90th Plaza	Upgrade OSTDS
PR587459	4506 NE 90th Place	Upgrade OSTDS
PR870449	10 NE 99th Blvd	Upgrade OSTDS
PR1153444	5688 E SR 44	Upgrade OSTDS
PR582104	11495 N 301	Upgrade OSTDS

APPENDIX E

Capacity Analysis



Ashley WTP Capacity Analysis
Facility Type - Well and Hydropneumatic Tank

SYSTEM PARAMETERS

Fire Flow Rate	1,000	gpm
Fire Flow Duration	2	hrs
Fire Flow Demand	120,000	gallons
Fire Flow Replenishment Rate	83.33	gpm
Average Day Demand (From 2023-2024 MORs)	126,934	gpd
Average Day Demand	88	gpm
Maximum Day Demand (Calculated)	173,900	gpd
Maximum Day Demand (From 2023-2024 MORs)	784,000	gpd
Maximum Day Demand	121	gpm
Max Day Factor (MDF/ADF)	1.37	
Peak Hour Factor	2.74	
Peak Hour Demand (PHF x ADF)	242	gpm
Peak Instantaneous Factor	7	
Peak Instantaneous Demand (PIF x ADF)	617	gpm
Tank Low Pressure (Well Pump On)	50	psi
Tank High Pressure (Well Pump Off)	77	psi
Number of Connections (total system)	unknown	connections
Population Served (total system)	unknown	capita
Is Elevated Storage Available?	no	"yes" or "no"
Total EST Storage Available to WTP's Service Area	0	gallons

NOTE:
Fire-flow demand as defined by 62-555.520(4)(a)3c is fire-flow rate times duration.
Fire replenishment rate is the fire-flow demand divided by 24 hours.

WELL CAPACITY

Criteria #1

According to FDEP Rule 62-555.315 (3), the total well capacity for a water system using only ground water shall equal at least the system's design maximum day water demand (including design fire flow demand if fire protection is being provided).

Criteria #2

In addition, for community systems serving 350 or more persons (or 150 or more service connections), the total well capacity with the largest producing well out of operation shall be equal to the design average daily flow (ADF) and preferably the design maximum daily flow (MDF).

Well Name	Pumping Capacity (gpm)
AW 1	500
AW 2	500

Criteria #1

Total Available Well Capacity	1,000	gpm
Fire-flow Demand	1,000	gpm
Net Available Total Well Capacity	1,000	gpm
Available Max Day Demand	1,440,000	gpd
Rated Capacity (MDF)	1,000	gpm
Rated Capacity (MDF)	1,440,000	gpd

Criteria #2

Total Well Capacity	1,000	gpm
Largest Well	500	gpm
Well Capacity w/ Largest Well Out of Service	500	gpm
Rated Capacity (ADF or MDF)	500	gpm
Rated Capacity Assuming ADF is met with largest well out of service (MDF)	986,400	GPD
Rated Capacity Assuming MDF is met with largest well out of service (MDF)	720,000	GPD

FINISHED WATER STORAGE CAPACITY

Criteria #1

According to FDEP Rule 62-555.320 (19)(b)2, A demonstration showing that, in conjunction with the capacity of the water system's source, treatment, and finished-water pumping facilities, the water system's total useful finished-water storage capacity (excluding any storage capacity for fire protection) is sufficient to meet the water system's peak-hour water demand for at least four consecutive hours. For small water systems with hydropneumatic tanks that are installed under a construction permit for which the Department receives a complete application on or after August 28, 2003, the supplier of water or construction permit applicant also shall demonstrate that, in conjunction with the capacity of the water system's source, treatment, and finished-water pumping facilities, the water system's total useful finished-water storage capacity (i.e., the water system's total effective hydropneumatic tank volume) is sufficient to meet the water system's peak instantaneous water demand for at least 20 consecutive minutes.

Criteria #2

According to FDEP Rule 62-555.320 (20), hydropneumatic tanks shall be designed and constructed in accordance with Section 7.2 of the 10 States Standards.

Section 7.2 of the 10 States Standards requires the gross volume of a hydropneumatic tank to be 10 times the capacity of the largest pump, rated in gallons per minute. For example, a 250 gpm pump should have a 2,500 gallon pressure tank.

Hydro Tank Name	Type of Storage	Total Volume (gallons)	Useable Volume (gallons)
H1	Hydro Tank	10,000	2,906
H2	Hydro Tank	10,000	2,906

Criteria #1

Well Pumping Capacity	500	gpm
Hydropneumatic Tank Useful Storage Volume	5,811	gallons
Useful Hydropneumatic Tank Storage Capacity (gpm for 4 hours)	24	gpm
Total Combined Capacity Available for Peak Hour Flow (4 hours) Excluding Fire Flow	(476)	gpm
Useful Hydropneumatic Tank Storage Capacity (gpm for 20 minutes)	1,937	gpm
Total Combined Capacity Available for Peak Instantaneous Flow (20 minutes)	2,437	gpm
Capacity Based on Meeting Peak Hour Flow for 4 Consecutive Hours (MDF)	(342,566)	gpd
Capacity Based on Meeting Peak Instantaneous Demand for 20 Minutes (MDF)	686,854	gpd

Criteria #2

Total Gross Hydropneumatic Tank Volume	20,000	gallons
Allowable Pumping Rate Based on Hydropneumatic Tank Gross Volume	2,000	gpm
Largest Well Pump	500	gpm
Controlling Pumping Rate	500	gpm
Capacity Based on Hydropneumatic Tank Gross Volume Limitations (MDF)	720,000	gpd

PUMPING CAPACITY

Criteria #1

According to FDEP Rule 62-555.320 (15) (a), unless elevated finished drinking water storage is provided, the total capacity of all high-service pumping stations connected to a water system, or the capacity of booster pumping stations, shall be sufficient to meet at least the water system's, or booster station services area's, peak-hour water demand (and if fire protection is being provided, meet at least the water system's, or booster station service area's, design fire-flow rate plus a background water demand equivalent to the maximum-day demand other than fire-flow demand); and maintain a minimum system pressure of 20 pounds per square inch.

Criteria #2

According to FDEP Rule 62-555.320 (15) (a), unless elevated finished drinking water storage is provided, the total capacity of all high-service pumping stations connected to a water system, or the capacity of booster pumping stations, shall be sufficient to meet at least the water system's, or booster station services area's, peak-hour water demand (and if fire protection is being provided, meet at least the water system's, or booster station service area's, design fire-flow rate plus a background water demand equivalent to the maximum-day demand other than fire-flow demand); and maintain a minimum system pressure of 20 pounds per square inch.

Criteria #3

In addition, per FDEP Rule 62-555.320 (15) (b), the total capacity of the high-service pumping stations, or the capacity of the booster pumping station, *combined* with the useful elevated finished-water storage capacity shall be sufficient to meet the water system's, or the booster station service area's, peak-hour water demand for at least four consecutive hours (and if fire protection is being provided, shall be sufficient to meet the water system's, or the booster station service area's, design fire-flow rate plus a background water demand equivalent to the maximum-day demand other than fire-flow demand for the design fire-flow duration).

HSP Name	Pumping Capacity (gpm)
AW 1	500
AW 2	500

Criteria #1

Total HSP Pumping Capacity	1,000	gpm
HSP Pumping Capacity with Largest Unit Out of Service	500	gpm
Fire Flow Rate	1,000	gpm
Max Day Factor	1.37	
Peak Hour Factor	2.7	
Capacity Based on Meeting Peak Hour Demand (MDF)	360,000	gpm
Capacity Based on Meeting Fire Flow @ Max Day Demand	0	gpm

Criteria #2

Total HSP Pumping Capacity	N/A	gpm
HSP Pumping Capacity with Largest Unit Out of Service	N/A	gpm
Fire Flow Demand (Replenishment Rate)	N/A	gpm
Net Available Pumping Capacity	N/A	gpm
Potential Rated Capacity (MDF)	N/A	gpd

Criteria #3a

Total HSP Pumping Capacity	N/A	gpm
HSP Pumping Capacity with Largest Unit Out of Service	N/A	gpm
Elevated Storage Available to WTP's Service Area	N/A	gallons
Useful EST Storage Capacity (gpm for 4 hours)	N/A	gpm
Combined Useful EST and HSP Capacity Available for Peak Hour Flow for 4 Hours	N/A	gpm
Capacity Based on Meeting Peak Hour Flow for 4 Consecutive Hours (MDF)	N/A	gpd

Criteria #3b

Total HSP Pumping Capacity	N/A	gpm
HSP Pumping Capacity with Largest Unit Out of Service	N/A	gpm
Elevated Storage Available to WTP's Service Area	N/A	gallons
Useful EST Storage Capacity Available for Max Day Demand for the Fire Flow Duration	N/A	gpm
Combined Useful EST and HSP Capacity Available for MDF and Fire Flow Rate for Fire Flow Duration	N/A	gpm
Capacity Based on Meeting Fire Flow Rate plus MDF for Fire Flow Duration (MDF)	N/A	gpd

Huey WTP Capacity Analysis
Facility Type - High Service Pump w/ Elevated Storage

SYSTEM PARAMETERS

Fire Flow Rate	1,000	gpm
Fire Flow Duration	2	hrs
Fire Flow Demand	120,000	gallons
Fire Flow Replenishment Rate	83.33	gpm
Average Day Demand (from 2023-2024 MORs)	400,098	gpd
Average Day Demand	278	gpm
Maximum Day Demand (Calculated)	548,134	gpd
Maximum Day Demand (from 2023-2024 MORs)	1,266,000	gpd
Maximum Day Demand	381	gpm
Max Day Factor (MDF/ADF)	1.37	
Peak Hour Factor	2.74	
Peak Hour Demand (PHF x ADF)	761	gpm
Number of Connections (total system)	unknown	connections
Population Served (total system)	unknown	capita
Is Elevated Storage Available?	yes	"yes" or "no"
Total EST Storage Available to WTP's Service Area	500,000	gallons

NOTE:
Fire-flow demand as defined by 62-555.520(4)(a)3c is fire-flow rate times duration.
Fire replenishment rate is the fire-flow demand divided by 24 hours.

WELL CAPACITY

Criteria #1 According to FDEP Rule 62-555.315 (3), the total well capacity for a water system using only ground water shall equal at least the system's design maximum day water demand (including design fire flow demand if fire protection is being provided).

Criteria #2 In addition, for community systems serving 350 or more persons (or 150 or more service connections), the total well capacity with the largest producing well out of operation shall be equal to the design average daily flow (ADF) and preferably the design maximum daily flow (MDF).

Well Name		Pumping Capacity (gpm)
11		500

Criteria #1

Total Available Well Capacity	500	gpm
Fire-flow Demand (EST replenishment rate)	83	gpm
Net Available Total Well Capacity	417	gpm
Available Max Day Demand	600,000	gpd
Rated Capacity (MDF)	417	gpm
Rated Capacity (MDF)	600,000	gpd

Criteria #2

Total Well Capacity	500	gpm
Largest Well	500	gpm
Well Capacity w/ Largest Well Out of Service	0	gpm
Rated Capacity (ADF or MDF)	-	gpm
Rated Capacity Assuming ADF is met with largest well out of service (MDF)	-	GPD
Rated Capacity Assuming MDF is met with largest well out of service (MDF)	-	GPD

FINISHED WATER STORAGE CAPACITY

Criteria #1 According to FDEP Rule 62-555.320 (19), the total useful finished-water storage capacity (excluding any storage capacity for fire protection) connected to a water system shall at least equal 25 percent of the system's maximum-day water demand, excluding any design fire-flow demand.

Criteria #2 FDEP Rule 62-555.320 (19) also requires additional finished water storage capacity to meet the design fire flow rate for the design fire flow duration.

Storage Tank Name	Type of Storage	Capacity (gallons)
1	Elevated Storage	500,000

Criteria #1

Total Finished Water Storage Available	500,000	gallons
Fire Flow Storage Required	120,000	gallons
Useful Finished Water Storage Capacity	380,000	gallons
Rated Capacity (Based on 25% of MDF)	1,520,000	gpd

Criteria #2

Fire-flow Demand (Rate x Duration)	120,000	gallons
Total Storage Capacity	500,000	gallons
Net Available Storage Capacity	380,000	gallons
Rated Capacity (MDF)	1,520,000	gpd

PUMPING CAPACITY

Criteria #1 — According to FDEP Rule 62-555.320 (15) (a), unless elevated finished drinking water storage is provided, the total capacity of all high-service pumping stations connected to a water system, or the capacity of booster pumping stations, shall be sufficient to meet at least the water system's, or booster station services area's, peak-hour water demand (and if fire protection is being provided, meet at least the water system's, or booster station service area's, design fire-flow rate plus a background water demand equivalent to the maximum-day demand other than fire-flow demand); and maintain a minimum system pressure of 20 pounds per square inch.

Criteria #2 — According to FDEP Rule 62-555.320 (15) (b), where elevated finished drinking water storage is provided, the total capacity of all high service pumping stations shall be sufficient to meet the maximum day water demand (including design fire flow demand) and to maintain a minimum system pressure of 20 pounds per square inch.

Criteria #3 — In addition, per FDEP Rule 62-555.320 (15) (b), the total capacity of the high-service pumping stations, or the capacity of the booster pumping station, *combined* with the useful elevated finished-water storage capacity shall be sufficient to meet the water system's, or the booster station service area's, peak-hour water demand for at least four consecutive hours (and if fire protection is being provided, shall be sufficient to meet the water system's, or the booster station service area's, design fire-flow rate plus a background water demand equivalent to the maximum-day demand other than fire-flow demand for the design fire-flow duration).

HSP Name	Location	Capacity (gpm)
1	Huey St.	500

Criteria #1	Total HSP Pumping Capacity	N/A	gpm
	HSP Pumping Capacity with Largest Unit Out of Service	N/A	gpm
	Fire Flow Rate	N/A	gpm
	Max Day Factor	N/A	
	Peak Hour Factor	N/A	
	Capacity Based on Meeting Peak Hour Demand (MDF)	N/A	gpm
	Capacity Based on Meeting Fire Flow @ Max Day Demand	N/A	gpm
Criteria #2	Total HSP Pumping Capacity	500	gpm
	HSP Pumping Capacity with Largest Unit Out of Service	-	gpm
	Fire Flow Demand (Replenishment Rate)	83	gpm
	Net Available Pumping Capacity	(83)	gpm
	Potential Rated Capacity (MDF)	(120,000)	gpd
Criteria #3a	Total HSP Pumping Capacity	500	gpm
	HSP Pumping Capacity with Largest Unit Out of Service	-	gpm
	Useful EST Storage Capacity (Total)	500,000	gallons
	Useful EST Storage Capacity (gpm for 4 hours)	2,083	gpm
	Combined Useful EST and HSP Capacity Available for Peak Hour Flow for 4 Hours	2,083	gpm
	Capacity Based on Meeting Peak Hour Flow for 4 Consecutive Hours (MDF)	1,500,000	gpd
Criteria #3b	Total HSP Pumping Capacity	500	gpm
	HSP Pumping Capacity with Largest Unit Out of Service	-	gpm
	Elevated Storage Available to WTP's Service Area	500,000	gallons
	Useful EST Storage Capacity Available for Max Day Demand for the Fire Flow Duration	4,167	gpm
	Combined Useful EST and HSP Capacity Available for MDF and Fire Flow Rate for Fire Flow Duration	4,167	gpm
	Capacity Based on Meeting Fire Flow Rate plus MDF for Fire Flow Duration (MDF)	6,000,000	gpd

NOTE: At each high-service or booster pumping station that is constructed or altered under a construction permit for which the Department receives a complete application on or after August 28, 2003, and that is connected to a community water system (CWS) serving, or designed to serve, 350 or more persons or 150 or more service connections, the supplier of water shall provide an installed or uninstalled standby pump of sufficient capacity to replace the largest pump. However, for CWSs that have multiple interconnected pumping stations subject to this requirement, the supplier of water may provide one uninstalled standby pump for each size of high-service or booster pump installed in the water system instead of providing a standby pump on site at each high-service or booster pumping station; and for water systems that have only one pumping station subject to this requirement and that are designed to serve 10,000 or fewer persons, as many as three water systems located in the same county, or within 50 miles of one another, may enter into a mutual aid agreement to share one appropriately sized, uninstalled standby pump instead of providing a standby pump on site at each water system's high-service or booster pumping station.

CR 501 WTP
Facility Type - High Service Pump w/ Ground Storage

SYSTEM PARAMETERS

Fire Flow Rate	1,000	gpm
Fire Flow Duration	2	hrs
Fire Flow Demand[1]	120,000	gallons
Fire Flow Replenishment Rate[2]	83	gpm
Average Day Demand from 2023-2024 MORs	1,507,271	gpd
Average Day Demand	1,047	gpm
Maximum Day Demand (Design Capacity)[3]	2,064,961	gpd
Max Day Demand from 2023-2024 MORs	1,931,000	gpd
Maximum Day Demand (Design Capacity)[3]	1,434	gpm
Max Day Factor (MDF/ADF)[4]	1.37	
Peak Hour Factor[4]	2.74	
Peak Hour Demand (Calculated from Peaking Factors)	4,129,923	
Peak Hour Demand (Calculated from Peaking Factors)	2,868	gpm
Is Elevated Storage Available?	no	"yes" or "no"
Total EST Storage Available to WTP's Service Area	0	gallons

NOTES:
[1] Fire-flow demand as defined by 62-555.520(4)(a)3c is fire-flow rate times duration.
[2] Fire replenishment rate is the fire-flow demand divided by 24 hours.
[3] Maxium day demands were taken from the 2017 MORs
[4] FDEP peaking factors 1.8 ADD/MDD, 3.6 ADD/PHF were used based on MORs

WELL CAPACITY

Criteria #1 — According to FDEP Rule 62-555.315 (3), the total well capacity for a water system using only ground water shall equal at least the system's design maximum day water demand (including design fire flow demand if fire protection is being provided).

Criteria #2 — In addition, for community systems serving 350 or more persons (or 150 or more service connections), the total well capacity with the largest producing well out of operation shall be equal to the design average daily flow (ADF) and preferably the design maximum daily flow (MDF).

Well Name	Location	Pumping Capacity (gpm)
#1 AAC0383	CR 501 WTP	1,100
Well No. 3	CR 501 WTP	1,100
#2 AAC0384 (Standby)	CR 501 WTP	600

		Present Day	
Criteria #1	Total Available Well Capacity	2,800	gpm
	Fire-flow Demand (replenishment rate)	83	gpm
	Net Available Total Well Capacity	2,717	gpm
	Available Max Day Demand	3,912,000	gpd
	Rated Capacity (MDF)	2,717	gpm
	Rated Capacity (MDF)	3,912,000	gpd
Criteria #2	Total Well Capacity	2,800	gpm
	Largest Well	1,100	gpm
	Well Capacity w/ Largest Well Out of Service	1,700	gpm
	Rated Capacity (ADF or MDF)	1,700	gpm
	Rated Capacity Assuming ADF is met with largest well out of service (MDF)	3,353,760	GPD
	Rated Capacity Assuming MDF is met with largest well out of service (MDF)	2,448,000	GPD

FINISHED WATER STORAGE CAPACITY

According to FDEP Rule 62-555.320 (19) - Finished-Drinking-Water Storage Capacity. This subsection addresses finished-water storage capacity necessary for operational equalization to meet peak water demand. (If fire protection is being provided, additional finished-water storage capacity shall be provided as necessary to meet the design fire-flow rate for the design fire-flow duration.) The finished-water storage capacity necessary to meet the peak water demand for a consecutive system may be provided by the consecutive system or by a wholesale system delivering water to the consecutive system.

(a) Except as noted in paragraph (b) below, the total useful finished-water storage capacity (excluding any storage capacity for fire protection) connected to a water system shall at least equal 25 percent of the system's maximum-day water demand, excluding any design fire-flow demand.
(b) A total useful finished-water storage capacity less than that specified in paragraph (a) above is acceptable if the supplier of water or construction permit applicant makes one of the following demonstrations:

Criteria #1

1. A demonstration consistent with Section 10.6.3 in Water Distribution Systems Handbook as incorporated into Rule 62-555.330, F.A.C., showing that the water system's total useful finished-water storage capacity (excluding any storage capacity for fire protection) is sufficient for operational equalization.
2. A demonstration showing that, in conjunction with the capacity of the water system's source, treatment, and finished-water pumping facilities, the water system's total useful finished-water storage capacity (excluding any storage capacity for fire protection) is sufficient to meet the water system's peak-hour water demand for at least four consecutive hours. For small water systems with hydropneumatic tanks that are installed under a construction permit for which the Department receives a complete application on or after August 28, 2003, the supplier of water or construction permit applicant also shall demonstrate that, in conjunction with the capacity of the water system's source, treatment, and finished-water pumping facilities, the water system's total useful finished-water storage capacity (i.e., the water system's total effective hydropneumatic tank volume) is sufficient to meet the water system's peak instantaneous water demand for at least 20 consecutive minutes.

Storage Tank Name	Location	Type of Storage	Capacity (gallons)
GST-1	CR 501 WTP	GST	500,000
GST-2	CR 501 WTP	GST	1,000,000

Criteria #1 (a)

	Present Day	
Total Finished Water Storage Avaliable	1,500,000	gallons
Additional Storage Required for Fire Flow Rate x Duration	120,000	gallons
Additional Storage Required for Vortex Prevention	150,394	
Total Useful Finished Water Storage Capacity	1,229,606	gallons
Rated Capacity (Based on 25% of MDF)	4,918,423	gpd

Criteria #1 (b)

Total Finished Water Storage Avaliable	1,500,000	gallons
Fire Flow Storage Required	120,000	gallons
Additional Storage Required for Vortex Prevention	75,197	
Useful Finished Water Storage Capacity	1,304,803	gallons
Firm Well Pump Capacity	600	gpm
Combined pump and useful storage capacity for 4 hours	1,448,803	gallons
Combined pump and useful storage capacity for 4 hours	6,037	gpm
Peak Hour Demand	2,868	gpm
Peak Hour Demand for 4 Hours	688,320	gallons
MDF Rated Capacity (Based on meeting PHD for 4 hours)	8,692,817.03	gpd

According to FDEP Rule 62-555.320 (15) (a), unless elevated finished drinking water storage is provided, the total capacity of all high-service pumping stations connected to a water system, or the capacity of booster pumping stations, shall be sufficient to meet at least the water system's, or booster station services area's, peak-hour water demand (and if fire protection is being provided, meet at least the water system's, or booster station service area's, design fire-flow rate plus a background water demand equivalent to the maximum-day demand other than fire-flow demand); and maintain a minimum system pressure of 20 pounds per square inch.

PUMPING CAPACITY

Criteria #1 — According to FDEP Rule 62-555.320 (15) (a), unless elevated finished drinking water storage is provided, the total capacity of all high-service pumping stations connected to a water system, or the capacity of booster pumping stations, shall be sufficient to meet at least the water system's, or booster station services area's, peak-hour water demand (and if fire protection is being provided, meet at least the water system's, or booster station service area's, design fire-flow rate plus a background water demand equivalent to the maximum-day demand other than fire-flow demand); and maintain a minimum system pressure of 20 pounds per square inch.

Criteria #2 — According to FDEP Rule 62-555.320 (15) (b), where elevated finished drinking water storage is provided, the total capacity of all high service pumping stations shall be sufficient to meet the maximum day water demand (including design fire flow demand) and to maintain a minimum system pressure of 20 pounds per square inch.

Criteria #3 — In addition, per FDEP Rule 62-555.320 (15) (b), the total capacity of the high-service pumping stations, or the capacity of the booster pumping station, *combined* with the useful elevated finished-water storage capacity shall be sufficient to meet the water system's, or the booster station service area's, peak-hour water demand for at least four consecutive hours (and if fire protection is being provided, shall be sufficient to meet the water system's, or the booster station service area's, design fire-flow rate plus a background water demand equivalent to the maximum-day demand other than fire-flow demand for the design fire-flow duration).

Pump Name	Location	Present Day	HSPS Upsize (2030)
HSP-1 (Jockey)	CR 501 WTP	400	1,200
HSP-2	CR 501 WTP	1,200	1,200
HSP-3	CR 501 WTP	1,200	1,200
HSP-4 (Fire Pump)	CR 501 WTP	3,000	1,200

		Present Day	HSPS Upsize (2030)	
Criteria #1	Total HSP Pumping Capacity	2,400	3,600	gpm
	Fire Flow Rate	1,000	1,000	gpm
	Max Day Factor	1.37	1.37	
	Peak Hour Factor	2.7	2.7	
	Capacity Based on Meeting Peak Hour Demand (MDF)	1,728,000	2,592,000	gpd
	Capacity Based on Meeting Fire Flow @ Max Day Demand (MDF)	2,016,000	3,744,000	gpd
Criteria #2	Total HSP Pumping Capacity	N/A	N/A	gpm
	HSP Pumping Capacity with Largest Unit Out of Service	N/A	N/A	gpm
	Fire Flow Demand (Replenishment Rate)	N/A	N/A	gpm
	Net Available Pumping Capacity	N/A	N/A	gpm
	Potentinal Rated Capacity (MDF)	N/A	N/A	gpd
Criteria #3a	Total HSP Pumping Capacity	N/A	N/A	gpm
	HSP Pumping Capacity with Largest Unit Out of Service	N/A	N/A	gpm
	Useful EST Storage Capacity (Total)	N/A	N/A	gallons
	Useful EST Storage Capacity (gpm for 4 hours)	N/A	N/A	gpm
	Combined Useful EST and HSP Capacity Available for Peak Hour Flow for 4 Hours	N/A	N/A	gpm
	Capacity Based on Meeting Peak Hour Flow for 4 Consecutive Hours (MDF)	N/A	N/A	gpd
Criteria #3b	Total HSP Pumping Capacity	N/A	N/A	gpm
	HSP Pumping Capacity with Largest Unit Out of Service	N/A	N/A	gpm
	Elevated Storage Available to WTP's Service Area	N/A	N/A	gallons
	Useful EST Storage Capacity Available for Max Day Demand for the Fire Flow Duration	N/A	N/A	gpm
	Combined Useful EST and HSP Capacity Available for MDF and Fire Flow Rate for Fire Flow Duration	N/A	N/A	gpm
	Capacity Based on Meeting Fire Flow Rate plus MDF for Fire Flow Duration (MDF)	N/A	N/A	gpd

NOTE: At each high-service or booster pumping station that is constructed or altered under a construction permit for which the Department receives a complete application on or after August 28, 2003, and that is connected to a community water system (CWS) serving, or designed to serve, 350 or more persons or 150 or more service connections, the supplier of water shall provide an installed or uninstalled standby pump of sufficient capacity to replace the largest pump. However, for CWSs that have multiple interconnected pumping stations subject to this requirement, the supplier of water may provide one uninstalled standby pump for each size of high-service or booster pump installed in the water system instead of providing a standby pump on site at each high-service or booster pumping station; and for water systems that have only one pumping station subject to this requirement and that are designed to serve 10,000 or fewer persons, as many as three water systems located in the same county, or within 50 miles of one another, may enter into a mutual aid agreement to share one appropriately sized, uninstalled standby pump instead of providing a standby pump on site at each water system's high-service or booster pumping station.

Fairways WTP Capacity Analysis
Facility Type - Well and Hydropneumatic Tank

SYSTEM PARAMETERS

Fire Flow Rate	1,000	gpm
Fire Flow Duration	2	hrs
Fire Flow Demand	120,000	gallons
Fire Flow Replenishment Rate	83.33	gpm
Average Day Demand (from 2023-2024 MORs)	130,881	gpd
Average Day Demand	91	gpm
Maximum Day Demand (Calculated)	179,307	gpd
Maximum Day Demand (from 2023-2024 MORs)	560,000	gpd
Maximum Day Demand	125	gpm
Max Day Factor (MDF/ADF)	1.37	
Peak Hour Factor	2.74	
Peak Hour Demand (PHF x ADF)	249	gpm
Peak Instantaneous Factor	7	
Peak Instantaneous Demand (PIF x ADF)	636	gpm
Tank Low Pressure (Well Pump On)	50	psi
Tank High Pressure (Well Pump Off)	65	psi
Number of Connections (total system)	unknown	connections
Population Served (total system)	unknown	capita
Is Elevated Storage Available?	no	"yes" or "no"
Total EST Storage Available to WTP's Service Area	0	gallons

NOTE:
Fire-flow demand as defined by 62-555.520(4)(a)3c is fire-flow rate times duration.
Fire replenishment rate is the fire-flow demand divided by 24 hours.

WELL CAPACITY

Criteria #1 According to FDEP Rule 62-555.315 (3), the total well capacity for a water system using only ground water shall equal at least the system's design maximum day water demand (including design fire flow demand if fire protection is being provided).

Criteria #2 In addition, for community systems serving 350 or more persons (or 150 or more service connections), the total well capacity with the largest producing well out of operation shall be equal to the design average daily flow (ADF) and preferably the design maximum daily flow (MDF).

Well Name	Pumping Capacity (gpm)
FW 1	700

Criteria #1

Total Available Well Capacity	700	gpm
Fire-flow Demand (EST replenishment rate)	83	gpm
Net Available Total Well Capacity	617	gpm
Available Max Day Demand	888,000	gpd
Rated Capacity (MDF)	617	gpm
Rated Capacity (MDF)	888,000	gpd

Criteria #2

Total Well Capacity	700	gpm
Largest Well	700	gpm
Well Capacity w/ Largest Well Out of Service	0	gpm
Rated Capacity (ADF or MDF)	0	gpm
Rated Capacity Assuming ADF is met with largest well out of service (MDF)	0	GPD
Rated Capacity Assuming MDF is met with largest well out of service (MDF)	0	GPD

FINISHED WATER STORAGE CAPACITY

Criteria #1

According to FDEP Rule 62-555.320 (19)(b)2, A demonstration showing that, in conjunction with the capacity of the water system's source, treatment, and finished-water pumping facilities, the water system's total useful finished-water storage capacity (excluding any storage capacity for fire protection) is sufficient to meet the water system's peak-hour water demand for at least four consecutive hours. For small water systems with hydropneumatic tanks that are installed under a construction permit for which the Department receives a complete application on or after August 28, 2003, the supplier of water or construction permit applicant also shall demonstrate that, in conjunction with the capacity of the water system's source, treatment, and finished-water pumping facilities, the water system's total useful finished-water storage capacity (i.e., the water system's total effective hydropneumatic tank volume) is sufficient to meet the water system's peak instantaneous water demand for at least 20 consecutive minutes.

Criteria #2

According to FDEP Rule 62-555.320 (20), hydropneumatic tanks shall be designed and constructed in accordance with Section 7.2 of the 10 States Standards.

Section 7.2 of the 10 States Standards requires the gross volume of a hydropneumatic tank to be 10 times the capacity of the largest pump, rated in gallons per minute. For example, a 250 gpm pump should have a 2,500 gallon pressure tank.

Hydro Tank Name	Type of Storage	Total Volume (gallons)	Useable Volume (gallons)
H1	Hydro Tank	10,000	1,882

Criteria #1

Well Pumping Capacity	700	gpm
Hydropneumatic Tank Useful Storage Volume	1,882	gallons
Useful Hydropneumatic Tank Storage Capacity (gpm for 4 hours)	8	gpm
Total Combined Capacity Available for Peak Hour Flow (4 hours) Excluding Fire Flow	(292)	gpm
Useful Hydropneumatic Tank Storage Capacity (gpm for 20 minutes)	627	gpm
Total Combined Capacity Available for Peak Instantaneous Flow (20 minutes)	1,327	gpm
Capacity Based on Meeting Peak Hour Flow for 4 Consecutive Hours (MDF)	(210,354)	gpd
Capacity Based on Meeting Peak Instantaneous Demand for 20 Minutes (MDF)	374,086	gpd

Criteria #2

Total Gross Hydropneumatic Tank Volume	10,000	gallons
Allowable Pumping Rate Based on Hydropneumatic Tank Gross Volume	1,000	gpm
Largest Well Pump	700	gpm
Controlling Pumping Rate	700	gpm
Capacity Based on Hydropneumatic Tank Gross Volume Limitations (MDF)	1,008,000	gpd

PUMPING CAPACITY

Criteria #1

According to FDEP Rule 62-555.320 (15) (a), unless elevated finished drinking water storage is provided, the total capacity of all high-service pumping stations connected to a water system, or the capacity of booster pumping stations, shall be sufficient to meet at least the water system's, or booster station services area's, peak-hour water demand (and if fire protection is being provided, meet at least the water system's, or booster station service area's, design fire-flow rate plus a background water demand equivalent to the maximum-day demand other than fire-flow demand); and maintain a minimum system pressure of 20 pounds per square inch.

Criteria #2

According to FDEP Rule 62-555.320 (15) (b), where elevated finished drinking water storage is provided, the total capacity of all high service pumping stations shall be sufficient to meet the maximum day water demand (including design fire flow demand) and to maintain a minimum system pressure of 20 pounds per square inch.

Criteria #3

According to FDEP Rule 62-555.320 (15) (a), unless elevated finished drinking water storage is provided, the total capacity of all high-service pumping stations connected to a water system, or the capacity of booster pumping stations, shall be sufficient to meet at least the water system's, or booster station services area's, peak-hour water demand (and if fire protection is being provided, meet at least the water system's, or booster station service area's, design fire-flow rate plus a background water demand equivalent to the maximum-day demand other than fire-flow demand); and maintain a minimum system pressure of 20 pounds per square inch.

HSP Name		Pumping Capacity (gpm)
FW 1		700

Criteria #1	Total HSP Pumping Capacity	700	gpm
	HSP Pumping Capacity with Largest Unit Out of Service	0	gpm
	Fire Flow Rate	1,000	gpm
	Max Day Factor	1.37	
	Peak Hour Factor	2.7	
	Capacity Based on Meeting Peak Hour Demand (MDF)	0	gpm
	Capacity Based on Meeting Fire Flow @ Max Day Demand	0	gpm
Criteria #2	Total HSP Pumping Capacity	N/A	gpm
	HSP Pumping Capacity with Largest Unit Out of Service	N/A	gpm
	Fire Flow Demand (Replenishment Rate)	N/A	gpm
	Net Available Pumping Capacity	N/A	gpm
	Potential Rated Capacity (MDF)	N/A	gpd
Criteria #3a	Total HSP Pumping Capacity	N/A	gpm
	HSP Pumping Capacity with Largest Unit Out of Service	N/A	gpm
	Elevated Storage Available to WTP's Service Area	N/A	gallons
	Useful EST Storage Capacity (gpm for 4 hours)	N/A	gpm
	Combined Useful EST and HSP Capacity Available for Peak Hour Flow for 4 Hours	N/A	gpm
	Capacity Based on Meeting Peak Hour Flow for 4 Consecutive Hours (MDF)	N/A	gpd
Criteria #3b	Total HSP Pumping Capacity	N/A	gpm
	HSP Pumping Capacity with Largest Unit Out of Service	N/A	gpm
	Elevated Storage Available to WTP's Service Area	N/A	gallons
	Useful EST Storage Capacity Available for Max Day Demand for the Fire Flow Duration	N/A	gpm
	Combined Useful EST and HSP Capacity Available for MDF and Fire Flow Rate for Fire Flow Duration	N/A	gpm
	Capacity Based on Meeting Fire Flow Rate plus MDF for Fire Flow Duration (MDF)	N/A	gpd

OXFORD WTP CAPACITY ANALYSIS
Facility Type - High Service Pump w/ Ground Storage

SYSTEM PARAMETERS

	Present Day (Phase 1)	Scenario 3 (Phase 2)	
Fire Flow Rate	1,000	1,000	gpm
Fire Flow Duration	2	2	hrs
Fire Flow Demand[1]	120,000	120,000	gallons
Fire Flow Replenishment Rate[2]	83	83	gpm
Average Day Demand	987,034	4,348,800	gpd
Average Day Demand	685	3,020	gpm
Maximum Day Demand[3]	1,860,000	5,078,880	gpd
Maximum Day Demand[3]	1,292	3,527	gpm
Max Day Factor (MDF/ADF)	1.4	1.4	
Peak Hour Factor	2.7	2.7	
Peak Hour Demand (Calculated from Peaking Factors)	2,704,473	9,555,840	gpd
Peak Hour Demand (Calculated from Peaking Factors)	1,878	6,636	gpm
Is Elevated Storage Available?	no	no	"yes" or "no"
Total EST Storage Available to WTP's Service Area	0	0	gallons

NOTES:
[1] Fire-flow demand as defined by 62-555.520(4)(a)3c is fire-flow rate times duration.
[2] Fire replenishment rate is the fire-flow demand divided by 24 hours.
[3] Maxium day demands for Present Day were taken from 2023-2024 MOR and from modelling results for 2030.

WELL CAPACITY

Criteria #1 According to FDEP Rule 62-555.315 (3), the total well capacity for a water system using only ground water shall equal at least the system's design maximum day water demand (including design fire flow demand if fire protection is being provided).

Criteria #2 In addition, for community systems serving 350 or more persons (or 150 or more service connections), the total well capacity with the largest producing well out of operation shall be equal to the design average daily flow (ADF) and preferably the design maximum daily flow (MDF).

Well Name	Pumping Capacity (gpm)
NW-101	2,400
NW-102	2,400

		Present Day (Phase 1)	Scenario 3 (Phase 2)	
Criteria #1	Total Available Well Capacity	4,800	4,800	gpm
	Fire-flow Demand (EST replenishment rate)	83	83	gpm
	Net Available Total Well Capacity	4,717	4,717	gpm
	Available Max Day Demand	6,792,000	6,792,000	gpd
	Rated Capacity (MDF)	4,717	4,717	gpm
	Rated Capacity (MDF)	6,792,000	6,792,000	gpd
Criteria #2	Total Well Capacity	4,800	4,800	gpm
	Largest Well	2,400	2,400	gpm
	Well Capacity w/ Largest Well Out of Service	2,400	2,400	gpm
	Rated Capacity (ADF or MDF)	2,400	2,400	gpm
	Rated Capacity Assuming ADF is met with largest well out of service (MDF)	4,734,720	4,734,720	GPD
	Rated Capacity Assuming MDF is met with largest well out of service (MDF)	3,456,000	3,456,000	GPD

FINISHED WATER STORAGE CAPACITY

According to FDEP Rule 62-555.320 (19) - Finished-Drinking-Water Storage Capacity. This subsection addresses finished-water storage capacity necessary for operational equalization to meet peak water demand. (If fire protection is being provided, additional finished-water storage capacity shall be provided as necessary to meet the design fire-flow rate for the design fire-flow duration.) The finished-water storage capacity necessary to meet the peak water demand for a consecutive system may be provided by the consecutive system or by a wholesale system delivering water to the consecutive system.

(a) Except as noted in paragraph (b) below, the total useful finished-water storage capacity (excluding any storage capacity for fire protection) connected to a water system shall at least equal 25 percent of the system's maximum-day water demand, excluding any design fire-flow demand.
(b) A total useful finished-water storage capacity less than that specified in paragraph (a) above is acceptable if the supplier of water or construction permit applicant makes one of the following demonstrations:

Criteria #1

1. A demonstration consistent with Section 10.6.3 in Water Distribution Systems Handbook as incorporated into Rule 62-555.330, F.A.C., showing that the water system's total useful finished-water storage capacity (excluding any storage capacity for fire protection) is sufficient for operational equalization.
2. A demonstration showing that, in conjunction with the capacity of the water system's source, treatment, and finished-water pumping facilities, the water system's total useful finished-water storage capacity (excluding any storage capacity for fire protection) is sufficient to meet the water system's peak-hour water demand for at least four consecutive hours. For small water systems with hydropneumatic tanks that are installed under a construction permit for which the Department receives a complete application on or after August 28, 2003, the supplier of water or construction permit applicant also shall demonstrate that, in conjunction with the capacity of the water system's source, treatment, and finished-water pumping facilities, the water system's total useful finished-water storage capacity (i.e., the water system's total effective hydropneumatic tank volume) is sufficient to meet the water system's peak instantaneous water demand for at least 20 consecutive minutes.

Storage Tank Name	Location	Type of Storage	Capacity (gallons)
GST-1	Oxford WTP	GST	1,000,000
Future GST-2	Oxford WTP	GST	1,000,000

		Present Day (Phase 1)	Scenario 3 (Phase 2)	
Criteria #1 (a)	Total Finished Water Storage Avaliable	1,000,000	2,000,000	gallons
	Additional Storage Required for Fire Flow Rate x Duration	120,000	120,000	gallons
	Additional Storage Required for Vortex Prevention	95,171	95,171	
	Total Useful Finished Water Storage Capacity	784,829	1,784,829	gallons
	Rated Capacity (Based on 25% of MDF)	3,139,314	7,139,314	gpd

Criteria #1 (b)	Total Finished Water Storage Avaliable	1,000,000	2,000,000	gallons
	Fire Flow Storage Required	120,000	120,000	gallons
	Additional Storage Required for Vortex Prevention	95,171	95,171	
	Useful Finished Water Storage Capacity	784,829	1,784,829	gallons
	Firm Pump Capacity	2,400	2,400	gpm
	Combined pump and useful storage capacity for 4 hours	1,360,829	2,360,829	gallons
	Combined pump and useful storage capacity for 4 hours	5,670	9,837	gpm
	Peak Hour Demand	1,878	6,636	gpm
	Peak Hour Demand for 4 Hours	450,746	1,592,640	gallons
	MDF Rated Capacity (Based on meeting PHD for 4 hours)	8,164,972	14,164,972	gpd

PUMPING CAPACITY

According to FDEP Rule 62-555.320 (15) (a), unless elevated finished drinking water storage is provided, the total capacity of all high-service pumping stations connected to a water system, or the capacity of booster pumping stations, shall be sufficient to meet at least the water system's, or booster station services area's, peak-hour water demand (and if fire protection is being provided, meet at least the water system's, or booster station service area's, design fire-flow rate plus a background water demand equivalent to the maximum-day demand other than fire-flow demand); and maintain a minimum system pressure of 20 pounds per square inch.

Criteria #1 — According to FDEP Rule 62-555.320 (15) (a), unless elevated finished drinking water storage is provided, the total capacity of all high-service pumping stations connected to a water system, or the capacity of booster pumping stations, shall be sufficient to meet at least the water system's, or booster station services area's, peak-hour water demand (and if fire protection is being provided, meet at least the water system's, or booster station service area's, design fire-flow rate plus a background water demand equivalent to the maximum-day demand other than fire-flow demand); and maintain a minimum system pressure of 20 pounds per square inch.

Criteria #2 — According to FDEP Rule 62-555.320 (15) (b), where elevated finished drinking water storage is provided, the total capacity of all high service pumping stations shall be sufficient to meet the maximum day water demand (including design fire flow demand) and to maintain a minimum system pressure of 20 pounds per square inch.

Criteria #3 — In addition, per FDEP Rule 62-555.320 (15) (b), the total capacity of the high-service pumping stations, or the capacity of the booster pumping station, *combined* with the useful elevated finished-water storage capacity shall be sufficient to meet the water system's, or the booster station service area's, peak-hour water demand for at least four consecutive hours (and if fire protection is being provided, shall be sufficient to meet the water system's, or the booster station service area's, design fire-flow rate plus a background water demand equivalent to the maximum-day demand other than fire-flow demand for the design fire-flow duration).

Pump Name	Location	Present Day (Phase 1)	Scenario 3 (Phase 2)
Jockey 1	Oxford WTP	500	-
Jockey 2	Oxford WTP	500	2,400
1	Oxford WTP	1,650	2,400
2	Oxford WTP	1,650	2,400
3	Oxford WTP	1,650	2,400
4	Oxford WTP	-	2,400

		Present Day (Phase 1)	Scenario 3 (Phase 2)	
Criteria #1	Total HSP Pumping Capacity	4,950	12,000	gpm
	HSP Pumping Capacity with Largest Unit Out of Service	3,300	9,600	gpm
	Fire Flow Rate	1,000	1,000	gpm
	Max Day Factor	1.37	1.37	
	Peak Hour Factor	2.7	2.7	
	Capacity Based on Meeting Peak Hour Demand (MDF)	2,376,000	6,912,000	gpm
	Capacity Based on Meeting Fire Flow @ Max Day Demand	3,312,000	12,384,000	gpm
Criteria #2	Total HSP Pumping Capacity	N/A	N/A	gpm
	HSP Pumping Capacity with Largest Unit Out of Service	N/A	N/A	gpm
	Fire Flow Demand (Replenishment Rate)	N/A	N/A	gpm
	Net Available Pumping Capacity	N/A	N/A	gpm
	Potentinal Rated Capacity (MDF)	N/A	N/A	gpd
Criteria #3a	Total HSP Pumping Capacity	N/A	N/A	gpm
	HSP Pumping Capacity with Largest Unit Out of Service	N/A	N/A	gpm
	Useful EST Storage Capacity (Total)	N/A	N/A	gallons
	Useful EST Storage Capacity (gpm for 4 hours)	N/A	N/A	gpm
	Combined Useful EST and HSP Capacity Available for Peak Hour Flow for 4 Hours	N/A	N/A	gpm
	Capacity Based on Meeting Peak Hour Flow for 4 Consecutive Hours (MDF)	N/A	N/A	gpd
Criteria #3b	Total HSP Pumping Capacity	N/A	N/A	gpm
	HSP Pumping Capacity with Largest Unit Out of Service	N/A	N/A	gpm
	Elevated Storage Available to WTP's Service Area	N/A	N/A	gallons
	Useful EST Storage Capacity Available for Max Day Demand for the Fire Flow Duration	N/A	N/A	gpm
	Combined Useful EST and HSP Capacity Available for MDF and Fire Flow Rate for Fire Flow Duration	N/A	N/A	gpm
	Capacity Based on Meeting Fire Flow Rate plus MDF for Fire Flow Duration (MDF)	N/A	N/A	gpd

Champagne Farms WTP Capacity Analysis
Facility Type - High Service Pump w/ Ground Storage

SYSTEM PARAMETERS

	Scenario 7A	Scenario 10A	Scenario 10B	
Fire Flow Rate	1,500	1,500	1,500	gpm
Fire Flow Duration	2	2	2	hrs
Fire Flow Demand[1]	180,000	180,000	180,000	gallons
Fire Flow Replenishment Rate[2]	125	125	125	gpm
Average Day Demand (Determined from model results)	1,378,080	5,603,170	5,734,080	gpd
Average Day Demand (Determined from model results)	957.00	3,891.09	3,982.00	gpm
Maximum Day Demand (Design Capacity)[3]	1,594,080	5,980,781	6,041,722	gpd
Maximum Day Demand (Design Capacity)[3]	1,107.00	4,153.32	4,195.64	gpm
Max Day Factor (MDF/ADF)[4]	1.37	1.37	1.37	
Peak Hour Factor[4]	2.74	2.74	2.74	
Peak Hour Demand (Calculated from Peaking Factors)	2,505,600	7,902,288	7,858,901	
Peak Hour Demand (Calculated from Peaking Factors)	1,740	5,488	5,458	gpm
Is Elevated Storage Available?	no	no	no	"yes" or "no"
Total EST Storage Available to WTP's Service Area	0	0	0	gallons

NOTES:

[1] Fire-flow demand as defined by 62-555.520(4)(a)3c is fire-flow rate times duration.

[2] Fire replenishment rate is the fire-flow demand divided by 24 hours.

3 Maxium day demands were taken from the 2020-2021 MOR Data and Demand Projections

[4] Peaking factor of 2.25 for MDF:ADF determined from MOR data from Oct 19-Nov 20. PHF:MDD factor of 2.0 from FDEP

WELL CAPACITY

Criteria #1 — According to FDEP Rule 62-555.315 (3), the total well capacity for a water system using only ground water shall equal at least the system's design maximum day water demand (including design fire flow demand if fire protection is being provided).

Criteria #2 — In addition, for community systems serving 350 or more persons (or 150 or more service connections), the total well capacity with the largest producing well out of operation shall be equal to the design average daily flow (ADF) and preferably the design maximum daily flow (MDF).

Well Name	Scenario 7A	Scenario 10A	Scenario 10B
Well 1	750	2,400	2400
Well 2	750	2,400	2400

		Scenario 7A	Scenario 10A	Scenario 10B	
Criteria #1	Total Available Well Capacity	1,500	4,800	4,800	gpm
	Fire-flow Demand (EST replenishment rate)	125	125	125	gpm
	Net Available Total Well Capacity	1,375	4,675	4,675	gpm
	Available Max Day Demand	1,980,000	6,732,000	6,732,000	gpd
	Rated Capacity (MDF)	1,375	4,675	4,675	gpm
	Rated Capacity (MDF)	1,980,000	6,732,000	6,732,000	gpd
Criteria #2	Total Well Capacity	1,500	4,800	4,800	gpm
	Largest Well	750	750	750	gpm
	Well Capacity w/ Largest Well Out of Service	750	4,050	4,050	gpm
	Rated Capacity (ADF or MDF)	750	4,050	4,050	gpm
	Rated Capacity Assuming ADF is met with largest well out of service (MDF)	1,479,600	7,989,840	7,989,840	GPD
	Rated Capacity Assuming MDF is met with largest well out of service (MDF)	1,080,000	5,832,000	5,832,000	GPD

FINISHED WATER STORAGE CAPACITY

According to FDEP Rule 62-555.320 (19) - Finished-Drinking-Water Storage Capacity. This subsection addresses finished-water storage capacity necessary for operational equalization to meet peak water demand. (If fire protection is being provided, additional finished-water storage capacity shall be provided as necessary to meet the design fire-flow rate for the design fire-flow duration.) The finished-water storage capacity necessary to meet the peak water demand for a consecutive system may be provided by the consecutive system or by a wholesale system delivering water to the consecutive system.

(a) Except as noted in paragraph (b) below, the total useful finished-water storage capacity (excluding any storage capacity for fire protection) connected to a water system shall at least equal 25 percent of the system's maximum-day water demand, excluding any design fire-flow demand.
(b) A total useful finished-water storage capacity less than that specified in paragraph (a) above is acceptable if the supplier of water or construction permit applicant makes one of the following demonstrations:

Criteria #1

1. A demonstration consistent with Section 10.6.3 in Water Distribution Systems Handbook as incorporated into Rule 62-555.330, F.A.C., showing that the water system's total useful finished-water storage capacity (excluding any storage capacity for fire protection) is sufficient for operational equalization.
2. A demonstration showing that, in conjunction with the capacity of the water system's source, treatment, and finished-water pumping facilities, the water system's total useful finished-water storage capacity (excluding any storage capacity for fire protection) is sufficient to meet the water system's peak-hour water demand for at least four consecutive hours. For small water systems with hydropneumatic tanks that are installed under a construction permit for which the Department receives a complete application on or after August 28, 2003, the supplier of water or construction permit applicant also shall demonstrate that, in conjunction with the capacity of the water system's source, treatment, and finished-water pumping facilities, the water system's total useful finished-water storage capacity (i.e., the water system's total effective hydropneumatic tank volume) is sufficient to meet the water system's peak instantaneous water demand for at least 20 consecutive minutes.

Storage Tank Name	Location	Type of Storage	Capacity (gallons)
GST-1	Champagne Farms WTP	GST	1,000,000
GST-2	Champagne Farms WTP	GST	1,000,000

		Scenario 7A	Scenario 10A	Scenario 10B	
Criteria #1 (a)	Total Finished Water Storage Avaliable	1,000,000	2,000,000	2,000,000	gallons
	Additional Storage Required for Fire Flow Rate x Duration	180,000	180,000	180,000	gallons
	Additional Storage Required for Vortex Prevention	142,170	142,170	142,170	
	Total Useful Finished Water Storage Capacity	677,830	1,677,830	1,677,830	gallons
	Rated Capacity (Based on 25% of MDF)	2,711,321	6,711,321	6,711,321	gpd
Criteria #1 (b)	Total Finished Water Storage Avaliable	1,000,000	2,000,000	2,000,000	gallons
	Fire Flow Storage Required	180,000	180,000	180,000	gallons
	Additional Storage Required for Vortex Prevention	142,170	142,170	142,170	
	Useful Finished Water Storage Capacity	677,830	1,677,830	1,677,830	gallons
	Firm Pump Capacity	750	4,050	4,050	gpm
	Combined pump and useful storage capacity for 4 hours	857,830	2,649,830	2,649,830	gallons
	Combined pump and useful storage capacity for 4 hours	3,574	11,041	11,041	gpm
	Peak Hour Demand	1,740	5,488	5,458	gpm
	Peak Hour Demand for 4 Hours	417,600	1,317,048	1,309,817	gallons
	MDF Rated Capacity (Based on meeting PHD for 4 hours)	5,146,982	15,898,982	15,898,982	gpd

PUMPING CAPACITY

Criteria #1

According to FDEP Rule 62-555.320 (15) (a), unless elevated finished drinking water storage is provided, the total capacity of all high-service pumping stations connected to a water system, or the capacity of booster pumping stations, shall be sufficient to meet at least the water system's, or booster station services area's, peak-hour water demand (and if fire protection is being provided, meet at least the water system's, or booster station service area's, design fire-flow rate plus a background water demand equivalent to the maximum-day demand other than fire-flow demand); and maintain a minimum system pressure of 20 pounds per square inch.

Criteria #2

According to FDEP Rule 62-555.320 (15) (b), where elevated finished drinking water storage is provided, the total capacity of all high service pumping stations shall be sufficient to meet the maximum day water demand (including design fire flow demand) and to maintain a minimum system pressure of 20 pounds per square inch.

Criteria #3

In addition, per FDEP Rule 62-555.320 (15) (b), the total capacity of the high-service pumping stations, or the capacity of the booster pumping station, *combined* with the useful elevated finished-water storage capacity shall be sufficient to meet the water system's, or the booster station service area's, peak-hour water demand for at least four consecutive hours (and if fire protection is being provided, shall be sufficient to meet the water system's, or the booster station service area's, design fire-flow rate plus a background water demand equivalent to the maximum-day demand other than fire-flow demand for the design fire-flow duration).

Pump Name	Location	Scenario 7A	Scenario 10A	Scenario 10B
HSP 1 (Jockey)	Champagne Farms WTP	500	1,600	1,600
HSP 1 (Jockey)	Champagne Farms WTP	1,750	1,600	1,600
HSP 3	Champagne Farms WTP	1,750	3,600	3,600
HSP 4	Champagne Farms WTP	1,750	3,600	3,600
HSP 5	Champagne Farms WTP	-	3,600	3,600
HSP 6 (Future)	Champagne Farms WTP	-	3,600	3,600

		Scenario 7A	Scenario 10A	Scenario 10B	
Criteria #1	Total HSP Pumping Capacity	5,250	14,400	14,400	gpm
	HSP Pumping Capacity with Largest Unit Out of Service	3,500	10,800	10,800	gpm
	Fire Flow Rate	1,500	1,500	1,500	gpm
	Max Day Factor	1.37	1.37	1.37	
	Peak Hour Factor	2.74	2.74	2.74	
	Capacity Based on Meeting Peak Hour Demand (MDF)	2,520,000	7,776,000	7,776,000	gpd
	Capacity Based on Meeting Fire Flow @ Max Day Demand	2,880,000	13,392,000	13,392,000	gpd
Criteria #2	Total HSP Pumping Capacity	N/A	N/A	N/A	gpm
	HSP Pumping Capacity with Largest Unit Out of Service	N/A	N/A	N/A	gpm
	Fire Flow Demand (Replenishment Rate)	N/A	N/A	N/A	gpm
	Net Available Pumping Capacity	N/A	N/A	N/A	gpm
	Potentinal Rated Capacity (MDF)	N/A	N/A	N/A	gpd
Criteria #3a	Total HSP Pumping Capacity	N/A	N/A	N/A	gpm
	HSP Pumping Capacity with Largest Unit Out of Service	N/A	N/A	N/A	gpm
	Useful EST Storage Capacity (Total)	N/A	N/A	N/A	gallons
	Useful EST Storage Capacity (gpm for 4 hours)	N/A	N/A	N/A	gpm
	Combined Useful EST and HSP Capacity Available for Peak Hour Flow for 4 Hours	N/A	N/A	N/A	gpm
	Capacity Based on Meeting Peak Hour Flow for 4 Consecutive Hours (MDF)	N/A	N/A	N/A	gpd
Criteria #3b	Total HSP Pumping Capacity	N/A	N/A	N/A	gpm
	HSP Pumping Capacity with Largest Unit Out of Service	N/A	N/A	N/A	gpm
	Elevated Storage Available to WTP's Service Area	N/A	N/A	N/A	gallons
	Useful EST Storage Capacity Available for Max Day Demand for the Fire Flow Duration	N/A	N/A	N/A	gpm
	Combined Useful EST and HSP Capacity Available for MDF and Fire Flow Rate for Fire Flow Duration	N/A	N/A	N/A	gpm
	Capacity Based on Meeting Fire Flow Rate plus MDF for Fire Flow Duration (MDF)	N/A	N/A	N/A	gpd

NOTE: At each high-service or booster pumping station that is constructed or altered under a construction permit for which the Department receives a complete application on or after August 28, 2003, and that is connected to a community water system (CWS) serving, or designed to serve, 350 or more persons or 150 or more service connections, the supplier of water shall provide an installed or uninstalled standby pump of sufficient capacity to replace the largest pump. However, for CWSs that have multiple interconnected pumping stations subject to this requirement, the supplier of water may provide one uninstalled standby pump for each size of high-service or booster pump installed in the water system instead of providing a standby pump on site at each high-service or booster pumping station; and for water systems that have only one pumping station subject to this requirement and that are designed to serve 10,000 or fewer persons, as many as three water systems located in the same county, or within 50 miles of one another, may enter into a mutual aid agreement to share one appropriately sized, uninstalled standby pump instead of providing a standby pump on site at each water system's high-service or booster pumping station.

Monarch WTP Capacity Analysis
Facility Type - High Service Pump w/ Ground Storage

SYSTEM PARAMETERS

	2040 Scenario	Build Out-CR 214 Repump Station	
Fire Flow Rate	1,500	1,500	gpm
Fire Flow Duration	2	2	hrs
Fire Flow Demand[1]	180,000	180,000	gallons
Fire Flow Replenishment Rate[2]	125	125	gpm
Average Day Demand (Determined from model results)	547,200	3,278,880	gpd
Average Day Demand (Determined from model results)	380.00	2,277.00	gpm
Maximum Day Demand (Design Capacity)[3]	648,000	4,753,195	gpd
Maximum Day Demand (Design Capacity)[3]	450.00	3,300.83	gpm
Max Day Factor (MDF/ADF)[4]	1.18	1.45	
Peak Hour Factor[4]	2.37	2.90	
Peak Hour Demand (Calculated from Peaking Factors)	1,458,720	11,309,083	
Peak Hour Demand (Calculated from Peaking Factors)	1,013	7,854	gpm
Is Elevated Storage Available?	no	no	"yes" or "no"
Total EST Storage Available to WTP's Service Area	0	0	gallons

NOTES:

[1] Fire-flow demand as defined by 62-555.520(4)(a)3c is fire-flow rate times duration.

[2] Fire replenishment rate is the fire-flow demand divided by 24 hours.

3 Maxium day demands were taken from the 2020-2021 MOR Data and Demand Projections

[4] Peaking factor of 2.25 for MDF:ADF determined from MOR data from Oct 19-Nov 20. PHF:MDD factor of 2.0 from FDEP

WELL CAPACITY

Criteria #1 According to FDEP Rule 62-555.315 (3), the total well capacity for a water system using only ground water shall equal at least the system's design maximum day water demand (including design fire flow demand if fire protection is being provided).

Criteria #2 In addition, for community systems serving 350 or more persons (or 150 or more service connections), the total well capacity with the largest producing well out of operation shall be equal to the design average daily flow (ADF) and preferably the design maximum daily flow (MDF).

Well Name	2040 Scenario	Build Out-CR 214 Repump Station	Build Out-CR209/CR229 EST
Well 1	750	2,400	2400
Well 2		2,400	2400

		2040 Scenario	Build Out-CR 214 Repump Station	
Criteria #1	Total Available Well Capacity	750	4,800	gpm
	Fire-flow Demand (EST replenishment rate)	125	125	gpm
	Net Available Total Well Capacity	625	4,675	gpm
	Available Max Day Demand	900,000	6,732,000	gpd
	Rated Capacity (MDF)	625	4,675	gpm
	Rated Capacity (MDF)	900,000	6,732,000	gpd
Criteria #2	Total Well Capacity	750	4,800	gpm
	Largest Well	750	750	gpm
	Well Capacity w/ Largest Well Out of Service	-	4,050	gpm
	Rated Capacity (ADF or MDF)	-	4,050	gpm
	Rated Capacity Assuming ADF is met with largest well out of service (MDF)	-	6,906,316	GPD
	Rated Capacity Assuming MDF is met with largest well out of service (MDF)	-	5,832,000	GPD

FINISHED WATER STORAGE CAPACITY

According to FDEP Rule 62-555.320 (19) - Finished-Drinking-Water Storage Capacity. This subsection addresses finished-water storage capacity necessary for operational equalization to meet peak water demand. (If fire protection is being provided, additional finished-water storage capacity shall be provided as necessary to meet the design fire-flow rate for the design fire-flow duration.) The finished-water storage capacity necessary to meet the peak water demand for a consecutive system may be provided by the consecutive system or by a wholesale system delivering water to the consecutive system.

(a) Except as noted in paragraph (b) below, the total useful finished-water storage capacity (excluding any storage capacity for fire protection) connected to a water system shall at least equal 25 percent of the system's maximum-day water demand, excluding any design fire-flow demand.
(b) A total useful finished-water storage capacity less than that specified in paragraph (a) above is acceptable if the supplier of water or construction permit applicant makes one of the following demonstrations:

Criteria #1

1. A demonstration consistent with Section 10.6.3 in Water Distribution Systems Handbook as incorporated into Rule 62-555.330, F.A.C., showing that the water system's total useful finished-water storage capacity (excluding any storage capacity for fire protection) is sufficient for operational equalization.
2. A demonstration showing that, in conjunction with the capacity of the water system's source, treatment, and finished-water pumping facilities, the water system's total useful finished-water storage capacity (excluding any storage capacity for fire protection) is sufficient to meet the water system's peak-hour water demand for at least four consecutive hours. For small water systems with hydropneumatic tanks that are installed under a construction permit for which the Department receives a complete application on or after August 28, 2003, the supplier of water or construction permit applicant also shall demonstrate that, in conjunction with the capacity of the water system's source, treatment, and finished-water pumping facilities, the water system's total useful finished-water storage capacity (i.e., the water system's total effective hydropneumatic tank volume) is sufficient to meet the water system's peak instantaneous water demand for at least 20 consecutive minutes.

Storage Tank Name	Location	Type of Storage	Capacity (gallons)
GST-1	BLCCDD WTP No.4	GST	750,000
GST-2	BLCCDD WTP No.4	GST	1,000,000

		2040 Scenario	Build Out-CR 214 Repump Station	
Criteria #1 (a)	Total Finished Water Storage Avaliable	750,000	2,000,000	gallons
	Additional Storage Required for Fire Flow Rate x Duration	180,000	180,000	gallons
	Additional Storage Required for Vortex Prevention	142,170	142,170	
	Total Useful Finished Water Storage Capacity	427,830	1,677,830	gallons
	Rated Capacity (Based on 25% of MDF)	1,711,321	6,711,321	gpd
Criteria #1 (b)	Total Finished Water Storage Avaliable	750,000	2,000,000	gallons
	Fire Flow Storage Required	180,000	180,000	gallons
	Additional Storage Required for Vortex Prevention	142,170	142,170	
	Useful Finished Water Storage Capacity	427,830	1,677,830	gallons
	Firm Pump Capacity	-	4,050	gpm
	Combined pump and useful storage capacity for 4 hours	427,830	2,649,830	gallons
	Combined pump and useful storage capacity for 4 hours	1,783	11,041	gpm
	Peak Hour Demand	1,013	7,854	gpm
	Peak Hour Demand for 4 Hours	243,120	1,884,847	gallons
	MDF Rated Capacity (Based on meeting PHD for 4 hours)	2,566,982	15,898,982	gpd

PUMPING CAPACITY

Criteria #1

According to FDEP Rule 62-555.320 (15) (a), unless elevated finished drinking water storage is provided, the total capacity of all high-service pumping stations connected to a water system, or the capacity of booster pumping stations, shall be sufficient to meet at least the water system's, or booster station services area's, peak-hour water demand (and if fire protection is being provided, meet at least the water system's, or booster station service area's, design fire-flow rate plus a background water demand equivalent to the maximum-day demand other than fire-flow demand); and maintain a minimum system pressure of 20 pounds per square inch.

Criteria #2

According to FDEP Rule 62-555.320 (15) (b), where elevated finished drinking water storage is provided, the total capacity of all high service pumping stations shall be sufficient to meet the maximum day water demand (including design fire flow demand) and to maintain a minimum system pressure of 20 pounds per square inch.

Criteria #3

In addition, per FDEP Rule 62-555.320 (15) (b), the total capacity of the high-service pumping stations, or the capacity of the booster pumping station, *combined* with the useful elevated finished-water storage capacity shall be sufficient to meet the water system's, or the booster station service area's, peak-hour water demand for at least four consecutive hours (and if fire protection is being provided, shall be sufficient to meet the water system's, or the booster station service area's, design fire-flow rate plus a background water demand equivalent to the maximum-day demand other than fire-flow demand for the design fire-flow duration).

Pump Name	Location	2040 Scenario	Build Out-CR 214 Repump Station
HSP 1 (Jockey)		500	1,200
HSP 2		1,100	1,200
HSP 3		1,100	3,600
HSP 4		1,100	3,600
HSP 5 (Future)			3,600
HSP 6 (Future)			3,600

		2040 Scenario	Build Out-CR 214 Repump Station	
Criteria #1	Total HSP Pumping Capacity	3,300	14,400	gpm
	HSP Pumping Capacity with Largest Unit Out of Service	2,200	10,800	gpm
	Fire Flow Rate	1,500	1,500	gpm
	Max Day Factor	1.18	1.45	
	Peak Hour Factor	2.37	2.90	
	Capacity Based on Meeting Peak Hour Demand (MDF)	1,584,000	7,774,069	gpd
	Capacity Based on Meeting Fire Flow @ Max Day Demand	1,008,000	13,392,000	gpd
Criteria #2	Total HSP Pumping Capacity	N/A	N/A	gpm
	HSP Pumping Capacity with Largest Unit Out of Service	N/A	N/A	gpm
	Fire Flow Demand (Replenishment Rate)	N/A	N/A	gpm
	Net Available Pumping Capacity	N/A	N/A	gpm
	Potentinal Rated Capacity (MDF)	N/A	N/A	gpd
Criteria #3a	Total HSP Pumping Capacity	N/A	N/A	gpm
	HSP Pumping Capacity with Largest Unit Out of Service	N/A	N/A	gpm
	Useful EST Storage Capacity (Total)	N/A	N/A	gallons
	Useful EST Storage Capacity (gpm for 4 hours)	N/A	N/A	gpm
	Combined Useful EST and HSP Capacity Available for Peak Hour Flow for 4 Hours	N/A	N/A	gpm
	Capacity Based on Meeting Peak Hour Flow for 4 Consecutive Hours (MDF)	N/A	N/A	gpd
Criteria #3b	Total HSP Pumping Capacity	N/A	N/A	gpm
	HSP Pumping Capacity with Largest Unit Out of Service	N/A	N/A	gpm
	Elevated Storage Available to WTP's Service Area	N/A	N/A	gallons
	Useful EST Storage Capacity Available for Max Day Demand for the Fire Flow Duration	N/A	N/A	gpm
	Combined Useful EST and HSP Capacity Available for MDF and Fire Flow Rate for Fire Flow Duration	N/A	N/A	gpm
	Capacity Based on Meeting Fire Flow Rate plus MDF for Fire Flow Duration (MDF)	N/A	N/A	gpd

NOTE: At each high-service or booster pumping station that is constructed or altered under a construction permit for which the Department receives a complete application on or after August 28, 2003, and that is connected to a community water system (CWS) serving, or designed to serve, 350 or more persons or 150 or more service connections, the supplier of water shall provide an installed or uninstalled standby pump of sufficient capacity to replace the largest pump. However, for CWSs that have multiple interconnected pumping stations subject to this requirement, the supplier of water may provide one uninstalled standby pump for each size of high-service or booster pump installed in the water system instead of providing a standby pump on site at each high-service or booster pumping station; and for water systems that have only one pumping station subject to this requirement and that are designed to serve 10,000 or fewer persons, as many as three water systems located in the same county, or within 50 miles of one another, may enter into a mutual aid agreement to share one appropriately sized, uninstalled standby pump instead of providing a standby pump on site at each water system's high-service or booster pumping station.

CCC WTP #2 CAPACITY ANALYSIS
Facility Type - Well and Hydropneumatic Tank

SYSTEM PARAMETERS

Fire Flow Rate	1,000	gpm
Fire Flow Duration	2	hrs
Fire Flow Demand	120,000	gallons
Fire Flow Replenishment Rate	83.33	gpm
Average Day Demand (From 2016 MOR Reports)	111,535	gpd
Average Day Demand	77	gpm
Maximum Day Demand	191,000	gpd
Maximum Day Demand	133	gpm
Max Day Factor (MDF/ADF)	1.37	
Peak Hour Factor	2.74	
Peak Hour Demand	305,606	gpd
Peak Hour Demand	212	gpm
Tank Low Pressure (Well Pump On)	40	psi
Tank High Pressure (Well Pump Off)	60	psi
Number of Connections (total system)	Unknown	connections
Population Served (total system)	Unknown	capita
Is Elevated Storage Available?	no	"yes" or "no"
Total EST Storage Available to WTP's Service Area	100,000	gallons

NOTE:
Fire-flow demand as defined by 62-555.520(4)(a)3c is fire-flow rate times duration.
Fire replenishment rate is the fire-flow demand divided by 24 hours.

WELL CAPACITY

Criteria #1 According to FDEP Rule 62-555.315 (3), the total well capacity for a water system using only ground water shall equal at least the system's design maximum day water demand (including design fire flow demand if fire protection is being provided).

Criteria #2 In addition, for community systems serving 350 or more persons (or 150 or more service connections), the total well capacity with the largest producing well out of operation shall be equal to the design average daily flow (ADF) and preferably the design maximum daily flow (MDF).

Well Name		Pumping Capacity (gpm)
Well #2		750

Criteria #1

Total Available Well Capacity	750	gpm
Fire-flow Demand	-	gpm
Net Available Total Well Capacity	750	gpm
Available Max Day Demand	1,080,000	gpd
Rated Capacity (MDF)	750	gpm
Rated Capacity (MDF)	1,080,000	gpd

Criteria #2

Total Well Capacity	750	gpm
Largest Well	750	gpm
Well Capacity w/ Largest Well Out of Service	0	gpm
Rated Capacity (ADF or MDF)	0	gpm
Rated Capacity Assuming ADF is met with largest well out of service (MDF)	0	GPD
Rated Capacity Assuming MDF is met with largest well out of service (MDF)	0	GPD

FINISHED WATER STORAGE CAPACITY

Criteria #1

According to FDEP Rule 62-555.320 (19)(b)2, A demonstration showing that, in conjunction with the capacity of the water system's source, treatment, and finished-water pumping facilities, the water system's total useful finished-water storage capacity (excluding any storage capacity for fire protection) is sufficient to meet the water system's peak-hour water demand for at least four consecutive hours. For small water systems with hydropneumatic tanks that are installed under a construction permit for which the Department receives a complete application on or after August 28, 2003, the supplier of water or construction permit applicant also shall demonstrate that, in conjunction with the capacity of the water system's source, treatment, and finished-water pumping facilities, the water system's total useful finished-water storage capacity (i.e., the water system's total effective hydropneumatic tank volume) is sufficient to meet the water system's peak instantaneous water demand for at least 20 consecutive minutes.

Criteria #2

According to FDEP Rule 62-555.320 (20), hydropneumatic tanks shall be designed and constructed in accordance with Section 7.2 of the 10 States Standards.

Section 7.2 of the 10 States Standards requires the gross volume of a hydropneumatic tank to be 10 times the capacity of the largest pump, rated in gallons per minute. For example, a 250 gpm pump should have a 2,500 gallon pressure tank.

Hydro Tank Name	Type of Storage	Total Volume (gallons)	Useable Volume (gallons)
H1	Hydro Tank	15,000	4,016

Criteria #1

Well Pumping Capacity	750	gpm
Hydropneumatic Tank Useful Storage Volume	4,016	gallons
Useful Hydropneumatic Tank Storage Capacity (gpm for 4 hours)	17	gpm
Total Combined Capacity Available for Peak Hour Flow (4 hours) Excluding Fire Flow	(233)	gpm
Useful Hydropneumatic Tank Storage Capacity (gpm for 20 minutes)	1,339	gpm
Total Combined Capacity Available for Peak Instantaneous Flow (20 minutes)	2,089	gpm
Capacity Based on Meeting Peak Hour Flow for 4 Consecutive Hours (MDF)	(167,952)	gpd
Capacity Based on Meeting Peak Instantaneous Demand for 20 Minutes (MDF)	1,503,855	gpd

Criteria #2

Total Gross Hydropneumatic Tank Volume	15,000	gallons
Allowable Pumping Rate Based on Hydropneumatic Tank Gross Volume	1,500	gpm
Largest Well Pump	750	gpm
Controlling Pumping Rate	750	gpm
Capacity Based on Hydropneumatic Tank Gross Volume Limitations (MDF)	1,080,000	gpd

PUMPING CAPACITY

Criteria #1

According to FDEP Rule 62-555.320 (15) (a), unless elevated finished drinking water storage is provided, the total capacity of all high-service pumping stations connected to a water system, or the capacity of booster pumping stations, shall be sufficient to meet at least the water system's, or booster station services area's, peak-hour water demand (and if fire protection is being provided, meet at least the water system's, or booster station service area's, design fire-flow rate plus a background water demand equivalent to the maximum-day demand other than fire-flow demand); and maintain a minimum system pressure of 20 pounds per square inch.

Criteria #2

According to FDEP Rule 62-555.320 (15) (b), where elevated finished drinking water storage is provided, the total capacity of all high service pumping stations shall be sufficient to meet the maximum day water demand (including design fire flow demand) and to maintain a minimum system pressure of 20 pounds per square inch.

Criteria #3

In addition, per FDEP Rule 62-555.320 (15) (b), the total capacity of the high-service pumping stations, or the capacity of the booster pumping station, *combined* with the useful elevated finished-water storage capacity shall be sufficient to meet the water system's, or the booster station service area's, peak-hour water demand for at least four consecutive hours (and if fire protection is being provided, shall be sufficient to meet the water system's, or the booster station service area's, design fire-flow rate plus a background water demand equivalent to the maximum-day demand other than fire-flow demand for the design fire-flow duration).

HSP Name		Pumping Capacity (gpm)		
Well Pump #1		750		

Criteria #1	Total HSP Pumping Capacity	750	gpm
	HSP Pumping Capacity with Largest Unit Out of Service	0	gpm
	Fire Flow Rate	1,000	gpm
	Max Day Factor	1.37	
	Peak Hour Factor	2.7	
	Capacity Based on Meeting Peak Hour Demand (MDF)	0	gpm
	Capacity Based on Meeting Fire Flow @ Max Day Demand	0	gpm
Criteria #2	Total HSP Pumping Capacity	N/A	gpm
	HSP Pumping Capacity with Largest Unit Out of Service	N/A	gpm
	Fire Flow Demand (Replenishment Rate)	N/A	gpm
	Net Available Pumping Capacity	N/A	gpm
	Potentinal Rated Capacity (MDF)	N/A	gpd
Criteria #3a	Total HSP Pumping Capacity	N/A	gpm
	HSP Pumping Capacity with Largest Unit Out of Service	N/A	gpm
	Elevated Storage Available to WTP's Service Area	N/A	gallons
	Useful EST Storage Capacity (gpm for 4 hours)	N/A	gpm
	Combined Useful EST and HSP Capacity Available for Peak Hour Flow for 4 Hours	N/A	gpm
	Capacity Based on Meeting Peak Hour Flow for 4 Consecutive Hours (MDF)	N/A	gpd
Criteria #3b	Total HSP Pumping Capacity	N/A	gpm
	HSP Pumping Capacity with Largest Unit Out of Service	N/A	gpm
	Elevated Storage Available to WTP's Service Area	N/A	gallons
	Useful EST Storage Capacity Available for Max Day Demand for the Fire Flow Duration	N/A	gpm
	Combined Useful EST and HSP Capacity Available for MDF and Fire Flow Rate for Fire Flow Duration	N/A	gpm
	Capacity Based on Meeting Fire Flow Rate plus MDF for Fire Flow Duration (MDF)	N/A	gpd

NOTE: At each high-service or booster pumping station that is constructed or altered under a construction permit for which the Department receives a complete application on or after August 28, 2003, and that is connected to a community water system (CWS) serving, or designed to serve, 350 or more persons or 150 or more service connections, the supplier of water shall provide an installed or uninstalled standby pump of sufficient capacity to replace the largest pump. However, for CWSs that have multiple interconnected pumping stations subject to this requirement, the supplier of water may provide one uninstalled standby pump for each size of high-service or booster pump installed in the water system instead of providing a standby pump on site at each high-service or booster pumping station; and for water systems that have only one pumping station subject to this requirement and that are designed to serve 10,000 or fewer persons, as many as three water systems located in the same county, or within 50 miles of one another, may enter into a mutual aid agreement to share one appropriately sized, uninstalled standby pump instead of providing a standby pump on site at each water system's high-service or booster pumping station.

CCC WTP #1 Capacity Analysis
Facility Type - EST w/ Well

SYSTEM PARAMETERS

Fire Flow Rate	1,000	gpm
Fire Flow Duration	2	hrs
Fire Flow Demand	120,000	gallons
Fire Flow Replenishment Rate	83.33	gpm
Average Day Demand (From MOR Reports)	25,500	gpd
Average Day Demand	18	gpm
Maximum Day Demand (From MOR Reports)	68,750	gpd
Maximum Day Demand	48	gpm
Max Day Factor (MDF/ADF)	1.37	
Peak HourFactor	2.74	
Peak Hour Demand	69,870	gpd
Peak Hour Demand	49	gpm
Number of Connections (total system)	Unknown	connections
Population Served (total system)	Unknown	capita
Is Elevated Storage Available?	yes	"yes" or "no"
Total EST Storage Available to WTP's Service Area	100,000	gallons

NOTE:
Fire-flow demand as defined by 62-555.520(4)(a)3c is fire-flow rate times duration.
Fire replenishment rate is the fire-flow demand divided by 24 hours.

WELL CAPACITY

Criteria #1

According to FDEP Rule 62-555.315 (3), the total well capacity for a water system using only ground water shall equal at least the system's design maximum day water demand (including design fire flow demand if fire protection is being provided).

Criteria #2

In addition, for community systems serving 350 or more persons (or 150 or more service connections), the total well capacity with the largest producing well out of operation shall be equal to the design average daily flow (ADF) and preferably the design maximum daily flow (MDF).

Well Name	Location	Pumping Capacity (gpm)
Well #1	WTP #1	750

Criteria #1

Total Available Well Capacity	750	gpm
Fire-flow Demand (EST replenishment rate)	83	gpm
Net Available Total Well Capacity	667	gpm
Available Max Day Demand	960,000	gpd
Rated Capacity (MDF)	667	gpm
Rated Capacity (MDF)	960,000	gpd

Criteria #2

Total Well Capacity	750	gpm
Largest Well	750	gpm
Well Capacity w/ Largest Well Out of Service	-	gpm
Rated Capacity (ADF or MDF)	-	gpm
Rated Capacity Assuming ADF is met with largest well out of service (MDF)	-	GPD
Rated Capacity Assuming MDF is met with largest well out of service (MDF)	-	GPD

FINISHED WATER STORAGE CAPACITY

According to FDEP Rule 62-555.320 (19) - Finished-Drinking-Water Storage Capacity. This subsection addresses finished-water storage capacity necessary for operational equalization to meet peak water demand. (If fire protection is being provided, additional finished-water storage capacity shall be provided as necessary to meet the design fire-flow rate for the design fire-flow duration.) The finished-water storage capacity necessary to meet the peak water demand for a consecutive system may be provided by the consecutive system or by a wholesale system delivering water to the consecutive system.

(a) Except as noted in paragraph (b) below, the total useful finished-water storage capacity (excluding any storage capacity for fire protection) connected to a water system shall at least equal 25 percent of the system's maximum-day water demand, excluding any design fire-flow demand.

(b) A total useful finished-water storage capacity less than that specified in paragraph (a) above is acceptable if the supplier of water or construction permit applicant makes one of the following demonstrations:

Criteria #1

1. A demonstration consistent with Section 10.6.3 in Water Distribution Systems Handbook as incorporated into Rule 62-555.330, F.A.C., showing that the water system's total useful finished-water storage capacity (excluding any storage capacity for fire protection) is sufficient for operational equalization.

2. A demonstration showing that, in conjunction with the capacity of the water system's source, treatment, and finished-water pumping facilities, the water system's total useful finished-water storage capacity (excluding any storage capacity for fire protection) is sufficient to meet the water system's peak-hour water demand for at least four consecutive hours. For small water systems with hydropneumatic tanks that are installed under a construction permit for which the Department receives a complete application on or after August 28, 2003, the supplier of water or construction permit applicant also shall demonstrate that, in conjunction with the capacity of the water system's source, treatment, and finished-water pumping facilities, the water system's total useful finished-water storage capacity (i.e., the water system's total effective hydropneumatic tank volume) is sufficient to meet the water system's peak instantaneous water demand for at least 20 consecutive minutes.

Storage Tank Name	Location	Type of Storage	Capacity (gallons)
E1	CCC	Elevated Storage	100,000

Criteria #1 (a)

Total Finished Water Storage Avaliable	100,000	gallons
Additional Storage Required for Fire Flow Rate x Duration	120,000	gallons
Total Useful Finished Water Storage Capacity	(20,000)	gallons
Rated Capacity (Based on 25% of MDF)	(80,000)	gpd

Criteria #1 (b)

Total Finished Water Storage Avaliable	100,000	gallons
Fire Flow Storage Required	120,000	gallons
Useful Finished Water Storage Capacity	(20,000)	gallons
Firm Pump Capacity	-	gpm
Combined pump and useful storage capacity for 4 hours	(20,000)	gallons
Combined pump and useful storage capacity for 4 hours	(83)	gpm
Peak Hour Demand	69,870	gpm
Peak Hour Demand for 4 Hours	16,768,800	gallons
MDF Rated Capacity (Based on meeting PHD for 4 hours)	(120,000)	gpd

PUMPING CAPACITY

Criteria #1

According to FDEP Rule 62-555.320 (15) (a), unless elevated finished drinking water storage is provided, the total capacity of all high-service pumping stations connected to a water system, or the capacity of booster pumping stations, shall be sufficient to meet at least the water system's, or booster station services area's, peak-hour water demand (and if fire protection is being provided, meet at least the water system's, or booster station service area's, design fire-flow rate plus a background water demand equivalent to the maximum-day demand other than fire-flow demand); and maintain a minimum system pressure of 20 pounds per square inch.

Criteria #2

According to FDEP Rule 62-555.320 (15) (b), where elevated finished drinking water storage is provided, the total capacity of all high service pumping stations shall be sufficient to meet the maximum day water demand (including design fire flow demand) and to maintain a minimum system pressure of 20 pounds per square inch.

Criteria #3

In addition, per FDEP Rule 62-555.320 (15) (b), the total capacity of the high-service pumping stations, or the capacity of the booster pumping station, *combined* with the useful elevated finished-water storage capacity shall be sufficient to meet the water system's, or the booster station service area's, peak-hour water demand for at least four consecutive hours (and if fire protection is being provided, shall be sufficient to meet the water system's, or the booster station service area's, design fire-flow rate plus a background water demand equivalent to the maximum-day demand other than fire-flow demand for the design fire-flow duration).

Criteria #4

Per 62-555.320 (15) (c) - At each high-service or booster pumping station that is constructed or altered under a construction permit for which the Department receives a complete application on or after August 28, 2003, and that is connected to a community water system (CWS) serving, or designed to serve, 350 or more persons or 150 or more service connections, the supplier of water shall provide an installed or uninstalled standby pump of sufficient capacity to replace the largest pump. However, for CWSs that have multiple interconnected pumping stations subject to this requirement, the supplier of water may provide one uninstalled standby pump for each size of high-service or booster pump installed in the water system instead of providing a standby pump on site at each high-service or booster pumping station; and for water systems that have only one pumping station subject to this requirement and that are designed to serve 10,000 or fewer persons, as many as three water systems located in the same county, or within 50 miles of one another, may enter into a mutual aid agreement to share one appropriately sized, uninstalled standby pump instead of providing a standby pump on site at each water system's high-service or booster pumping station.

HSP Name	Location	Capacity (gpm)
Well Pump #1		750

Criteria #1

Total HSP Pumping Capacity	N/A	gpm
HSP Pumping Capacity with Largest Unit Out of Service	N/A	gpm
Fire Flow Rate	N/A	gpm
Max Day Factor	N/A	
Peak Hour Factor	N/A	
Capacity Based on Meeting Peak Hour Demand (MDF)	N/A	gpm
Capacity Based on Meeting Fire Flow @ Max Day Demand	N/A	gpm

Criteria #2

Total HSP Pumping Capacity	750	gpm
HSP Pumping Capacity with Largest Unit Out of Service	-	gpm
Fire Flow Demand (Replenishment Rate)	83	gpm
Net Available Pumping Capacity	(83)	gpm
Potentinal Rated Capacity (MDF)	(120,000)	gpd

Criteria #3a

Total HSP Pumping Capacity	750	gpm
HSP Pumping Capacity with Largest Unit Out of Service	-	gpm
Useful EST Storage Capacity (Total)	100,000	gallons
Useful EST Storage Capacity (gpm for 4 hours)	417	gpm
Combined Useful EST and HSP Capacity Available for Peak Hour Flow for 4 Hours	417	gpm
Capacity Based on Meeting Peak Hour Flow for 4 Consecutive Hours (MDF)	300,000	gpd

Criteria #3b

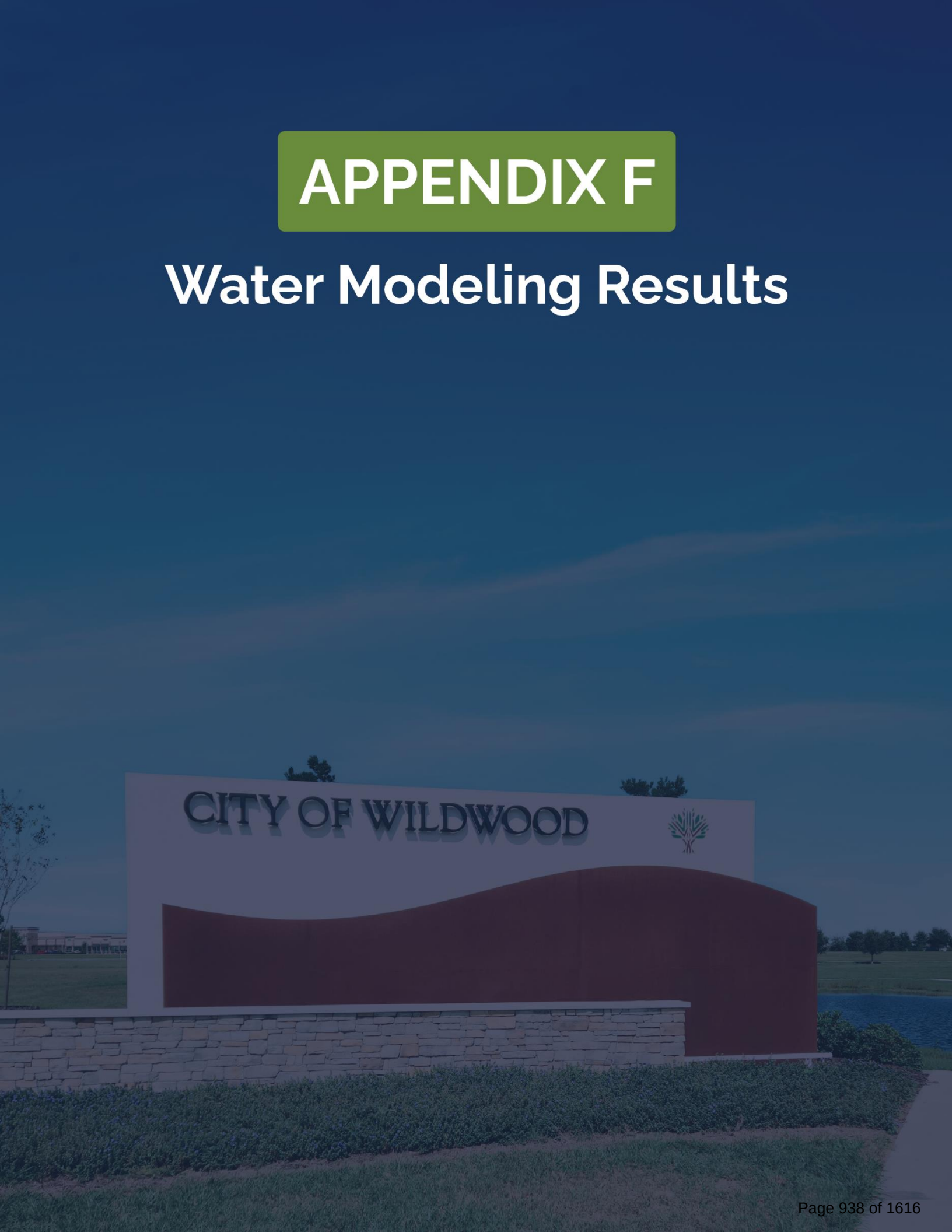
Total HSP Pumping Capacity	750	gpm
HSP Pumping Capacity with Largest Unit Out of Service	-	gpm
Elevated Storage Available to WTP's Service Area	100,000	gallons

Useful EST Storage Capacity Available for Max Day Demand for the Fire Flow Duration	833	gpm
Combined Useful EST and HSP Capacity Available for MDF and Fire Flow Rate for Fire Flow Duration	833	gpm
Capacity Based on Meeting Fire Flow Rate plus MDF for Fire Flow Duration (MDF)	1,200,000	gpd

NOTE: Per 62-555.320 (15) (c) - At each high-service or booster pumping station that is constructed or altered under a construction permit for which the Department receives a complete application on or after August 28, 2003, and that is connected to a community water system (CWS) serving, or designed to serve, 350 or more persons or 150 or more service connections, the supplier of water shall provide an installed or uninstalled standby pump of sufficient capacity to replace the largest pump. However, for CWSs that have multiple interconnected pumping stations subject to this requirement, the supplier of water may provide one uninstalled standby pump for each size of high-service or booster pump installed in the water system instead of providing a standby pump on site at each high-service or booster pumping station; and for water systems that have only one pumping station subject to this requirement and that are designed to serve 10,000 or fewer persons, as many as three water systems located in the same county, or within 50 miles of one another, may enter into a mutual aid agreement to share one appropriately sized, uninstalled standby pump instead of providing a standby pump on site at each water system's high-service or booster pumping station.

APPENDIX F

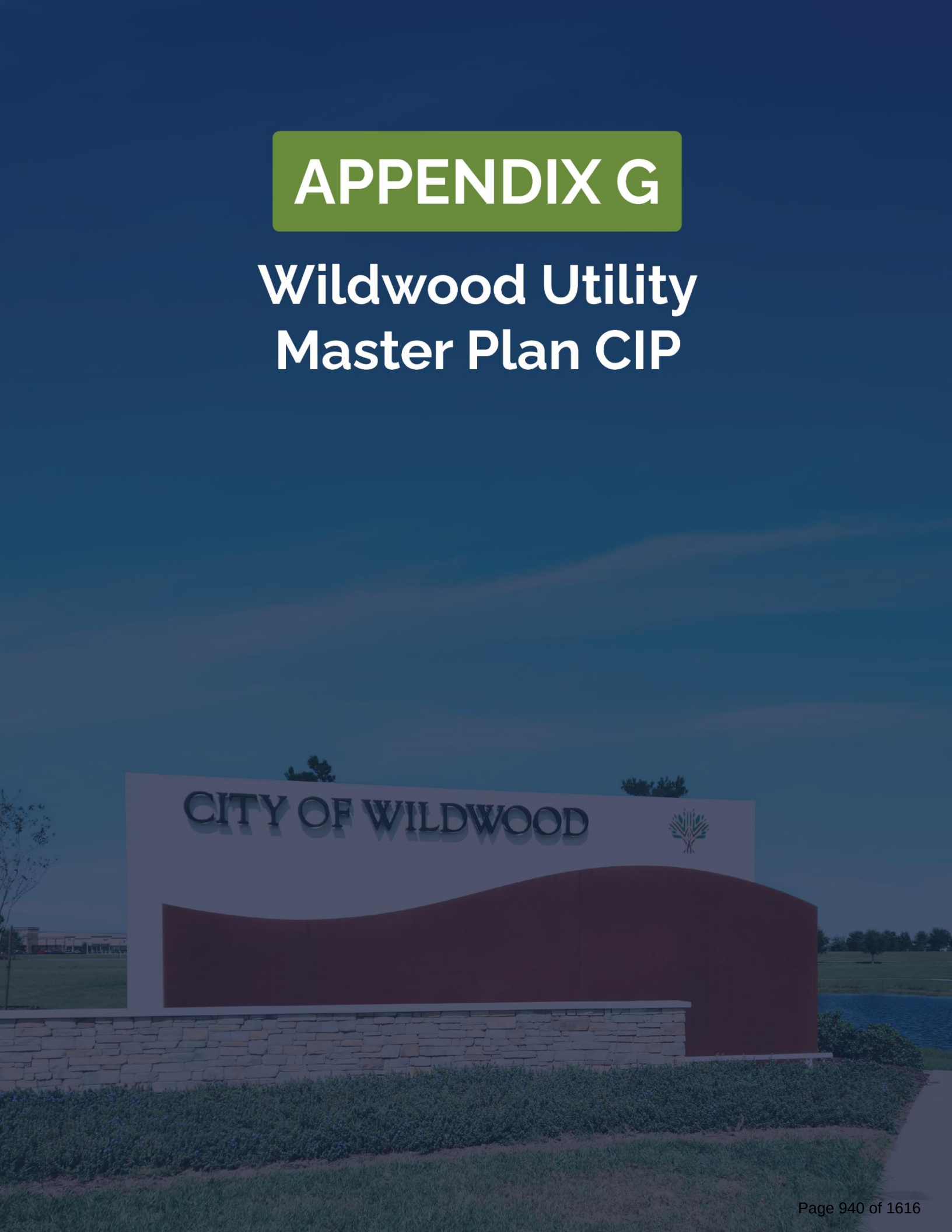
Water Modeling Results



Scenarios	WTP Flows													Pressures Results (psi)			Fire Flow Results			Notes
	FLOW (GPM)											Flow Summary								
	CCC #2	CCC #1	Ashley	Huey	CR 501	Fairways	Oxford	Monarch	Champagne	Huey Tower (out)	214 Repump Station (out)	CR209/CR222 EST (out)	Total Flow (gpm)	Total Flow (MGD)	Minimum System Pressure	Average System Pressure	Maximum System Pressure	Min. Fire Flow Available System (gpm)	# of Fire Flow less than 1500 gpm	# of Fire Flow less than 1000 gpm	
2024																				
Present Day - Average Daily Demand (ADD)	84.62	42.68	221.53	-	1,038.93	-	1,258.00			(86.60)			2559	3.69	48	64	78				In calibrating, hydraulic grade adjustments differed greatly to get the model to meet MOR data. Hydraulic grades of the plants were set to
Present Day - Max Day Demand (MDD)	112.97	62.55	321.94	-	1,241.23	-	1,532.30			235.04			3506	5.05	48	64	78	574.36	49	9	
Present Day - Peak Hour Demand (PHD)	231.16	138.97	500.00	-	1,793.31	441.43	2,506.52			1,400.60			7012	10.10	45	60	73				
2025																				
Average Daily Demand (ADD)	84.38	41.95	332.34	-	1,050.91	-	1,371.00			397.24			3278	4.72	48	64	77				
Max Day Demand (MDD)	112.18	60.89	464.61	-	1,281.12	60.64	1,669.83			842.29			4492	6.47	48	63	76	572.26	53	9	
Peak Hour Demand (PHD)	217.94	128.19	1,000.00	-	2,268.54	500.00	2,868.38			2,000.00			8983	12.94	28	52	71				
2030																				
Average Daily Demand (ADD)	88.20	44.68	349.24	-	1,077.32	-	3,020			145			4725	6.80	48	64	80				
Max Day Demand (MDD)	117.72	64.76	542.80	-	1,326.63	130.78	3,527			780			6489	9.34	47	63	79	568	52	9	
Peak Hour Demand (PHD)	230.15	136.14	1,000.00	-	2,522.92	500.00	6,636			2,000			13025	18.76	24	44	69				
2035																				
Average Daily Demand (ADD) - Pipe Upsize	102.79	54.87	351.73	-	1,173.37	-	3,728			202			5613	8.08	48	64	82				
Max Day Demand (MDD) - Pipe Upsize	137.92	78.07	572.09	-	1,455.81	109.53	4,451			885			7689	11.07	47	63	81	552	52	9	
Peak Hour Demand (PHD) - Pipe Upsize	269.61	160.79	1,000.00	-	2,777.29	500.00	8,615			2,000			15322	22.06	23	44	69				
2040 Champagne Plant																				
2040 Champagne Plant - ADD	108.66	59.21	-	-	1,163.97	-	3,676		957	16			5982	8.61	47	65	82				
2041 Champagne Plant - MDD	146.27	83.71	89.55	-	1,463.23	78.81	4,463		1,107	763			8195	11.80	47	63	81	544	48	8	
2042 Champagne Plant - PHD	287.45	172.51	1,000.00	-	2,703.17	500.00	7,987		1,740	2,000			16390	23.60	27	49	72				
2040 Monarch Plant																				
2040 Monarch Plant - ADD	108.67	59.20	292.18	-	1,177.44	-	3,750	380		214			5982	8.61	47	64	81				
2041 Monarch Plant - MDD	146.27	83.71	542.45	-	1,466.83	202.97	4,448	450		855			8195	11.80	47	62	79	544	48	8	
2042 Monarch Plant - PHD	287.45	172.51	1,000.00	-	2,781.98	500.00	8,635	1,013		2,000			16390	23.60	1	44	69				
2050 (BO) Monarch Plant																				
2050 (BO) Monarch Plant - ADD	0.25	-	1,000.00	-	1,231.34	479.27	3,049	2,277		717.71			8754.75	12.61	44	61	76				
2050 (BO) Monarch Plant - MDD	0.34	43.06	1000	0	1495.4	500	4475.15	3300.83		1176.59			11991.37	17.2675728	**43**	**59**	**74**	867	53	10	
2050 (BO) Monarch Plant - PHD	238.38	161.68	1000	0	2648.15	500	9600	7853.53		2000			24001.74	34.5625056	**24**	**44**	**69**				
2050 (BO) Champagne Plant & 214 Repump Station																				
2050 (BO) Champagne Plant & 214 Tower - ADD	0.25	0	0	0	1274.63	0	3058.29		3891.09	469.24	61.27		12645.87	18.2100528	**51**	**63**	**82**				
2050 (BO) Champagne Plant & 214 Tower - MDD	54.33	55.89	0	0	1625.7	227.11	3672.54		4153.32	1248.17	954.32		11991.38	17.2675872	**49**	**61**	**81**	779	59	10	
2050 (BO) Champagne Plant & 214 Tower - PHD	474.92	246.69	922.42	500	3118.72	500	8751.29		5487.7	2000	2000		24001.74	34.5625056	**20**	**41**	**73**				
2050 (BO) Champagne Plant & CR 209/CR 222 EST																				
2050 (BO) Champagne Plant & Girl Scout Tower - ADD	0.25	0	0	0	1279.21	0	2882.63		3982	545.11		65.03	8754.23	12.6060912	**50**	**63**	**83**				
2050 (BO) Champagne Plant & Girl Scout Tower - MDD	55.04	56.03	0	0	1626.67	247.83	3463.97		4195.64	1258.34		1087.87	11991.39	17.2676016	**49**	**61**	**83**	778	59	10	
2050 (BO) Champagne Plant & Girl Scout Tower - PHD	471.03	247.26	890.32	500	3112.15	500	8823.41		5457.57	2000		2000	24001.74	34.5625056	**21**	**41**	**83**				
2050 (BO) Champagne Plant & No Monarch Demand																				
2048 (BO) Champagne Plant & No Monarch Demand - ADD	0.25	0	0	0	1253.15	0	2937.36		3826.99	251.13			8268.88	11.9071872	**51**	**6**	**82**				
2049 (BO) Champagne Plant & No Monarch Demand - MDD	32.14	51.02	0	0	1590.14	220.46	4201.6		4138.08	1092.3			11325.74	16.3090656	**49**	**62**	**81**	803	54	9	
2050 (BO) Champagne Plant & No Monarch Demand - PHD	431.23	233.98	787.47	500	3013.37	500	9600		5549.3	2000			22615.35	32.566104	**235**	**44**	**73**				

APPENDIX G

Wildwood Utility Master Plan CIP



WATER DISTRIBUTION					
Project No.	Project	Amount	Time Frame	Capacity Increase	System Expansion
PWS Improvement No. 1	CR 121 Water Main Interconnect - 6,500 LF of 12-Inch WM	$ 1,580,000	2030	N	Y
PWS Improvement No. 2	CR 209 Water Main Phase 3 Extension - 9,000 LF of 20-Inch WM	$ 5,220,000	2030	N	Y
PWS Improvement No. 3	Oxford Oaks Interconnect - 1,200 LF of 12-Inch WM	$ 290,000	2030	N	Y
PWS Improvement No. 6	Oxford WTP Water Main Extension - 6,200 LF of 20-Inch WM	$ 3,810,000	2035	N	Y
PWS Improvement No. 8A	Champagne WTP Extension - 12,000 LF of 20-Inch WM, 6,300 LF of 16-Inch WM	$ 11,580,000	2040	N	Y
PWS Improvement No. 8B	Monarch Ranch WTP Extension - 5,300 LF of 20-Inch WM	$ 3,080,000	2040	N	Y
PWS Improvement No. 9	US 301 Water Main Upsize - Removal of 5,000 LF of 8-Inch WM and installation of 5,000 LF of 12-Inch WM	$ 1,200,000	Build Out	N	Y
PWS Improvement No. 11	Annual Watermain Replacement Program	$200,000/Year	Build Out	N	Y
PWS Improvement No. 12	Main Street/US 301 Water Main - Installation of 2,000 LF of 12-Inch WM	$ 870,000	N/A	N	Y

WATER TREATMENT, PUMPING, AND STORAGE					
Project No.	Project	Amount	Time Frame	Capacity Increase	System Expansion
PWS Improvement No. 4	Oxford WTP Phase 2 Expansion to 6.62 MGD MDD	$ 3,630,000	2030	Y	N
PWS Improvement No. 5	CR 501 Expansion - High Service Pump and Electrical Upgrades	$ 3,040,000	2030	Y	N
PWS Improvement No. 7A	Champagne WTP - Design, permitting, and construction of a new advanced WTP with permitted max day capacity of 6.71 MGD.	$ 126,490,000	2040	Y	N
PWS Improvement No. 7B	Monarch WTP - - Design, permitting, and construction of a new advanced WTP with permitted max day capacity of 6.71 MGD.	$ 126,490,000	2040	Y	N
PWS Improvement No. 10A	CR 214 Repump Station Rehabilitation - Recommissioning of the CR 214 Repump Station	$ 2,100,000	Build Out	Y	N
PWS Improvement No. 10B	CR 209/CR 222 EST - Construction of a 0.5 MG EST	$ 1,820,000	Build Out	Y	N

WASTEWATER COLLECTION					
Project No.	Project	Amount	Time Frame	Capacity Increase	System Expansion
WW Improvement No. 1	Peter Street Force Main Replacement	$ 1,230,000.00	2025	N	N
WW Improvement No. 2	Charlotte Lift Station Pump Replacement	$ 290,000.00	2025	N	N
WW Improvement No. 3A	Replace Pumps at Beaumont Lift Station	$ 290,000.00	2025	N	N
WW Improvement No. 3B	Replace Pump Impellers at Beaumont Lift Station	$ 12,000.00	2025	N	N
WW Improvement No. 3C	Install VFDs for the Pumps at Beaumont Lift Station	$ 90,000.00	2025	N	N
WW Improvement No. 4	Trailwinds and CR 209 Booster/Repump Station	$ 3,130,000.00	2025	N	N
WW Improvement No. 5	Upsize CR 229 Lift Station and Force Main	$ 3,650,000.00	2030	N	N
WW Improvement No. 6A	Repump Station for Trailwinds Forcemain on CR 134	$ 2,460,000.00	2030	N	N
WW Improvement No. 6B	Upsize American House and Triumph South 1 pumps	$ 580,000.00	2030	N	N
WW Improvement No. 6C	Reroute Triumph South 1 to Dublin Lift Station	$ 340,000.00	2030	N	N
WW Improvement No. 8	Upsize and reroute the Prison force main through Monarch Ranch	$ 1,420,000.00	2030	N	Y
WW Improvement No. 7A	Convert Oxford Pointe Lift Station into repump station	$ 370,000.00	2035	N	N
WW Improvement No. 7B	Upsize Steeplechase and Parkwood pumps	$ 580,000.00	2035	N	N
WW Improvement No. 10	Upsize Oxford Pointe Pumps	$ 290,000.00	2050	N	N
WASTEWATER TREATMENT					
Project No.	Project	Amount	Budget Year	Capacity Increase	System Expansion
WW Improvement No. 9	Additional WWTF in NW Wildwood	$ 203,000,000	2050	Y	N

REUSE WATER AND EFFLUENT DISPOSAL					
Project No.	Project	Amount	Budget Year	Capacity Increase	System Expansion
RCW Improvement No. 1	Construct: Complete Remaining Phases of the Millennium Park Reuse Extension	$ 1,510,000	2025	N	Y
RCW Improvement No. 2	Construct: R-12 Reuse Pump Station	$ 4,390,000	2025	N	N
RCW Improvement No. 2A	Construct: Phase 2 of R-12 Reuse Pump Station	$ 520,000	2025	Y	N
RCW Improvement No. 3	Design and Construct: Expand and Rerate the Rapid Infiltration Basin capacity from 1.06 MGD to 4.70 MGD	$ 4,650,000	2025	Y	N
RCW Improvement No. 4	Design and Construct: New Effluent Transfer Pump Station with a firm pumping capacity of 5.50 MGD and a 4.00 MG Prestressed Ground Storage Tank at the City's WWTF.	$ 7,300,000	2026	Y	N
RCW Improvement No. 5	Design and Construct: VWCA 8/10 Connection Point	$ 460,000	2030	Y	N
RCW Improvement No. 6	Design and Construct: VWCA 3/6 Connection Point	$ 460,000	2030	Y	N
RCW Improvement No. 7A	Design and Construct: Replace approximatly 24,000 LF of existing 16-inch effluent main with 24-inch PVC DR-18 effluent main.	$ 17,400,000	2035	Y	N
RCW Improvement No. 7B	Find an alternative effluent disposal site and design and construct the necessary improvements to meet the effluent disposal requirements for Phase II (8.00 MGD) of the City's WWTF Expansion.	N/A	2035	Y	N
	DENOTES THAT PROJECT IS COMPLETE OR IN PROGRESS				
	DENOTES THAT PROJECT IS DEVELOPER DRIVEN				

CITY OF WILDWOOD 2018 MASTER PLAN

ENGINEER'S OPINION OF PROBABLE COST

FOR

The City of Wildwood

PWS Improvement No.1: CR 121 Water Main Interconnect

ITEM #	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1	Install 6,500 LF of 12" PVC DR-18 Water Main and appurtenances.	LF	6,500	$ 165	$ 1,072,500
				SUBTOTAL	**$ 1,080,000**
				DESIGN AND PERMITTING (15%)	**$ 170,000**
				CONTINGENCY (30%)	**$ 330,000**
				TOTAL	**$ 1,580,000**

The Engineer has no control over the cost of labor, materials, equipment, or over the Contractor's methods of determining prices or over competitive bidding or market conditions. Opinions of probable costs provided herein are based on the information known to Engineer at this time and represent only the Engineer's judgment as a design professional familiar with the construction industry. The Engineer cannot and does not guarantee that proposals, bids, or actual construction costs will not vary from its opinions of probable costs.

CITY OF WILDWOOD 2018 MASTER PLAN

ENGINEER'S OPINION OF PROBABLE COST

FOR

The City of Wildwood

PWS Improvement No.2: CR 209 Phase 3 Water Main Extension

ITEM #	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1	Install 8,200 LF of 20" PVC C900 DR-18 Water Main and appurtenances.	LF	9,000	$ 400	$ 3,600,000
				SUBTOTAL	**$ 3,600,000**
				DESIGN AND PERMITTING (15%)	**$ 540,000**
				CONTINGENCY (30%)	**$ 1,080,000**
				TOTAL	**$ 5,220,000**

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CITY OF WILDWOOD 2018 MASTER PLAN

ENGINEER'S OPINION OF PROBABLE COST

FOR

The City of Wildwood

PWS Improvement No.3: Oxford Oaks Interconnect

ITEM #	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1	Install 1,200 LF of 12" PVC C900 DR-18 Water Main and appurtenances.	LF	1,200	$ 165.00	$ 198,000
				SUBTOTAL	**$ 200,000**
				DESIGN AND PERMITTING (15%)	**$ 30,000**
				CONTINGENCY (30%)	**$ 60,000**
				TOTAL	**$ 290,000**

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CITY OF WILDWOOD 2018 MASTER PLAN

ENGINEER'S OPINION OF PROBABLE COST

FOR

The City of Wildwood

PWS Improvement No.4: Oxford WTP Phase 2 Expansion to 6.62 MGD MDD

ITEM #	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1	1.00 MG Prestressed Ground Storage Tank	Gal	1,000,000	$ 1	$ 1,000,000
2	Packed Tower Aerator and Biological Odor Control Scrubber Package	EA	1	$ 800,000	$ 800,000
3	Transfer Pump	EA	1	$ 90,000	$ 90,000
4	High Service Pumps	EA	5	$ 120,000	$ 600,000
5	Yard Piping	LS	1	$ 200,000	$ 200,000
6	Electrical (20%)	LS	1	$ 538,000	$ 538,000
7	Instrumentation (10%)	LS	1	$ 269,000	$ 269,000
				SUBTOTAL	**$ 2,500,000**
				DESIGN AND PERMITTING (15%)	**$ 380,000**
				CONTINGENCY (30%)	**$ 750,000**
				TOTAL	**$ 3,630,000**

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CITY OF WILDWOOD 2018 MASTER PLAN

ENGINEER'S OPINION OF PROBABLE COST

FOR

The City of Wildwood

PWS Improvement No.5: CR 501 WTP Expansion

ITEM #	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1	High Service Pumps	EA	2	120,000	$ 240,000
2	Yard Piping	LS	1	$ 150,000	$ 150,000
3	Upsize of Existing Electrical Service and Upgrade to Class I Reliability	LS	1	$ 400,000	$ 400,000
4	Generator	EA	1	$ 125,000	$ 125,000
5	Misc. Electrical (20%)	LS	1	$ 780,000	$ 780,000
6	Instrumentation (10%)	LS	1	$ 390,000	$ 390,000
				SUBTOTAL	$ 2,090,000
				DESIGN AND PERMITTING (15%)	$ 320,000
				CONTINGENCY (30%)	$ 630,000
				TOTAL	$ 3,040,000

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CITY OF WILDWOOD 2018 MASTER PLAN

ENGINEER'S OPINION OF PROBABLE COST

FOR

The City of Wildwood

PWS Improvement No.6: Oxford WTP Water Main Extension

ITEM #	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1	Install 6,200 LF of 20" PVC C900 DR-18 water main and appurtenances.	LF	6,200	$ 400	$ 2,480,000
2	Removal and Disposal of Existing 12" PVC water main and appurtenances.	LF	2,800	$ 50	$ 140,000
				SUBTOTAL	**$ 2,620,000**
				DESIGN AND PERMITTING (15%)	**$ 400,000**
				CONTINGENCY (30%)	**$ 790,000**
				TOTAL	**$ 3,810,000**

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CITY OF WILDWOOD 2018 MASTER PLAN

ENGINEER'S OPINION OF PROBABLE COST

FOR

The City of Wildwood

PWS Optional Improvement No.7A: Champagne Farms WTP

ITEM #	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1	Construct the Champagne Farms WTP with a permitted max day capacity of 6.71 MGD. Champagne Farms WTP would consist of two LFA wells, each with a pumping capacity of 2,400 gpm, two-1.00 MG ground storage tanks, four 2.00 MG Nanofiltration (NF) treatment train, and a high service pump station with a firm pumping capacity of 10,800 gpm.	Gallons	6,710,000	$ 13	$ 87,230,000
				SUBTOTAL	**$ 87,230,000**
				DESIGN AND PERMITTING (15%)	**$ 13,090,000**
				CONTINGENCY (30%)	**$ 26,170,000**
				TOTAL	**$ 126,490,000**

The Engineer has no control over the cost of labor, materials, equipment, or over the Contractor's methods of determining prices or over competitive bidding or market conditions. Opinions of probable costs provided herein are based on the information known to Engineer at this time and represent only the Engineer's judgment as a design professional familiar with the construction industry. The Engineer cannot and does not guarantee that proposals, bids, or actual construction costs will not vary from its opinions of probable costs.

CITY OF WILDWOOD 2018 MASTER PLAN

ENGINEER'S OPINION OF PROBABLE COST

FOR

The City of Wildwood

PWS Optional Improvement No.8A: Champagne Farms WTP Watermain Extension

ITEM #	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1	Install 15,000 LF of 20" PVC C900 DR-18 Water Main and appurtenances.	LF	15,000	$ 400	$ 6,000,000
2	Install 6,300 LF of 16" PVC C900 DR-18 Water Main and appurtenances.	LF	7,900	$ 250	$ 1,975,000
				SUBTOTAL	**$ 7,980,000**
				DESIGN AND PERMITTING (15%)	**$ 1,200,000**
				CONTINGENCY (30%)	**$ 2,400,000**
				TOTAL	**$ 11,580,000**

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CITY OF WILDWOOD 2018 MASTER PLAN

ENGINEER'S OPINION OF PROBABLE COST

FOR

The City of Wildwood

PWS Optional Improvement No.7B: Monarch WTP

ITEM #	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1	Construct the Monarch Ranch WTP with a permitted max day capacity of 6.71 MGD. The Monarch Ranch WTP would consist of two LFA wells, each with a pumping capacity of 2,400 gpm, two-1.00 MG ground storage tanks, four 2.00 MG Nanofiltration (NF) treatment train, and a high service pump station with a firm pumping capacity of 10,800 gpm.	Gallons	6,710,000	$ 13	$ 87,230,000
				SUBTOTAL	**$ 87,230,000**
				DESIGN AND PERMITTING (15%)	**$ 13,090,000**
				CONTINGENCY (30%)	**$ 26,170,000**
				TOTAL	**$ 126,490,000**

The Engineer has no control over the cost of labor, materials, equipment, or over the Contractor's methods of determining prices or over competitive bidding or market conditions. Opinions of probable costs provided herein are based on the information known to Engineer at this time and represent only the Engineer's judgment as a design professional familiar with the construction industry. The Engineer cannot and does not guarantee that proposals, bids, or actual construction costs will not vary from its opinions of probable costs.

CITY OF WILDWOOD 2018 MASTER PLAN

ENGINEER'S OPINION OF PROBABLE COST

FOR

The City of Wildwood

PWS Optional Improvement No.8B: Monarch WTP Watermain Extension

ITEM #	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1	Install 2,500 LF of 20" PVC C900 DR-18 Water Main and appurtenances.	LF	2,500	$ 400	$ 1,000,000
2	Install 2,800 LF of 20" PVC C900 DR-18 Water Main and appurtenances.	LF	2,800	$ 400	$ 1,120,000
				SUBTOTAL	**$ 2,120,000**
				DESIGN AND PERMITTING (15%)	**$ 320,000**
				CONTINGENCY (30%)	**$ 640,000**
				TOTAL	**$ 3,080,000**

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CITY OF WILDWOOD 2018 MASTER PLAN

ENGINEER'S OPINION OF PROBABLE COST

FOR

The City of Wildwood

PWS Improvement No.9: US 301 WM Upsize

ITEM #	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1	Install 5,000 LF of 12" PVC DR-18 Water Main and appurtenances.	LF	5,000	$ 163	$ 815,000
1	Removal/Abandonment of Existing Water Main	LF	5,000	$ 20	$ 100,000
				SUBTOTAL	$ 820,000
				DESIGN AND PERMITTING (15%)	$ 130,000
				CONTINGENCY (30%)	$ 250,000
				TOTAL	$ 1,200,000

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CITY OF WILDWOOD 2018 MASTER PLAN

ENGINEER'S OPINION OF PROBABLE COST

FOR

The City of Wildwood

PWS Optional Improvement No.10A: CR 214 Repump Station Rehabilitation

ITEM #	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1	Rehabilitation of the CR 214 Repump Station. The rehabilitation of the CR 214 Repump Station is only required in Scenario 7A.	Gal	2,880,000	$ 1	$ 1,440,000
				SUBTOTAL	**$ 1,440,000**
				DESIGN AND PERMITTING (15%)	**$ 220,000**
				CONTINGENCY (30%)	**$ 440,000**
				TOTAL	**$ 2,100,000**

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CITY OF WILDWOOD 2018 MASTER PLAN

ENGINEER'S OPINION OF PROBABLE COST

FOR

The City of Wildwood

PWS Optional Improvement No.10B: CR 209/CR 222 EST

ITEM #	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1	Construction of a 500,000-gallon EST located at northeast corner of CR 222 and CR 209. The construction of a new 500,000-gallon EST is only required in Scenario 7A.	Gal	500,000	$ 3	$ 1,250,000
				SUBTOTAL	**$ 1,250,000**
				DESIGN AND PERMITTING (15%)	**$ 190,000**
				CONTINGENCY (30%)	**$ 380,000**
				TOTAL	**$ 1,820,000**

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CITY OF WILDWOOD 2018 MASTER PLAN

ENGINEER'S OPINION OF PROBABLE COST

FOR

The City of Wildwood

PWS Improvement No.12: Main Street/US 301 Water Main

ITEM #	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1	Install 2,000 LF of 12" PVC DR-18 Water Main and appurtenances.	LF	2,000	$ 300	$ 600,000
				SUBTOTAL	$ 600,000
				DESIGN AND PERMITTING (15%)	$ 90,000
				CONTINGENCY (30%)	$ 180,000
				TOTAL	$ 870,000

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CITY OF WILDWOOD 2018 MASTER PLAN

ENGINEER'S OPINION OF PROBABLE COST

FOR

The City of Wildwood

WW Improvement No.1: Upsize Peters Street Force Main

ITEM #	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1	Install 4,900 LF of 8" PVC DR-18 Force Main and appurtenances.	LF	4,900	$ 120.00	$ 588,000
2	Existing pipe removal and disposal	LF	4,900	$ 50.00	$ 245,000
				SUBTOTAL	**$ 840,000**
				DESIGN AND PERMITTING (15%)	**$ 130,000**
				CONTINGENCY (30%)	**$ 260,000**
				TOTAL	**$ 1,230,000**

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CITY OF WILDWOOD 2018 MASTER PLAN

ENGINEER'S OPINION OF PROBABLE COST

FOR

The City of Wildwood

WW Improvement No.2: Upsize Charlotte Pumps

ITEM #	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1	Charlotte Lift Station Pump Replacement	LS	1	$ 200,000	$ 200,000
				SUBTOTAL	**$ 200,000**
				DESIGN AND PERMITTING (15%)	**$ 30,000**
				CONTINGENCY (30%)	**$ 60,000**
				TOTAL	**$ 290,000**

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CITY OF WILDWOOD 2018 MASTER PLAN

ENGINEER'S OPINION OF PROBABLE COST

FOR

The City of Wildwood

WW Improvement No.3A: Downsize Pumps at Beaumont

ITEM #	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1	Replace Existing Pumps at Beaumont to reduce peak hour flow	LS	1	$ 200,000	$ 200,000
				SUBTOTAL	**$ 200,000**
				DESIGN AND PERMITTING (15%)	**$ 30,000**
				CONTINGENCY (30%)	**$ 60,000**
				TOTAL	**$ 290,000**

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CITY OF WILDWOOD 2018 MASTER PLAN

ENGINEER'S OPINION OF PROBABLE COST

FOR

The City of Wildwood

WW Improvement No.3B: Downsize Pumps at Beaumont

ITEM #	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1	Replace existing impellers in the pumps at Beaumont Lift Station to reduce peak hour flow	LS	1	$ 12,000	$ 12,000
				SUBTOTAL	**$ 12,000**

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CITY OF WILDWOOD 2018 MASTER PLAN

ENGINEER'S OPINION OF PROBABLE COST

FOR

The City of Wildwood

WW Improvement No.3B: Downsize Pumps at Beaumont

ITEM #	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1	Install VFDs for the Pumps at Beaumont Lift Station	LS	1	$ 60,000	$ 60,000
				SUBTOTAL	**$ 60,000**
				DESIGN AND PERMITTING (15%)	**$ 10,000**
				CONTINGENCY (30%)	**$ 20,000**
				TOTAL	**$ 90,000**

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CITY OF WILDWOOD 2018 MASTER PLAN

ENGINEER'S OPINION OF PROBABLE COST

FOR

The City of Wildwood

WW Improvement No.4: Repump Station at Trailwinds and CR209 Intersection

ITEM #	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1	Site Work	LS	1	$ 150,000.00	$ 150,000
2	Piping	LS	1	$ 250,000.00	$ 250,000
3	Pump Station	LS	1	$ 1,250,000.00	$ 1,250,000
4	Electrical (20%)	LS	1	$ 330,000.00	$ 330,000
5	Instrumentation (10%)	LS	1	$ 165,000.00	$ 165,000
				SUBTOTAL	**$ 2,150,000**
				DESIGN AND PERMITTING (15%)	**$ 330,000**
				CONTINGENCY (30%)	**$ 650,000**
				TOTAL	**$ 3,130,000**

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CITY OF WILDWOOD 2018 MASTER PLAN

ENGINEER'S OPINION OF PROBABLE COST

FOR

The City of Wildwood

WW Improvement No.5: Upsize CR229 LS and Force Main to 16"

ITEM #	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1	Rehab and Expand the CR 229 LS	LS	1	$ 250,000	$ 250,000
2	Install 12,300 LF of 16" PVC DR-18 Force Main and appurtenances.	LF	12,300	$ 183.00	$ 2,250,900
				SUBTOTAL	**$ 2,510,000**
				DESIGN AND PERMITTING (15%)	**$ 380,000**
				CONTINGENCY (30%)	**$ 760,000**
				TOTAL	**$ 3,650,000**

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CITY OF WILDWOOD 2018 MASTER PLAN

ENGINEER'S OPINION OF PROBABLE COST

FOR

The City of Wildwood

WW Improvement No.6A: Booster/Repump Station for Trailwinds Forcemain on CR 134

ITEM #	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1	Site Work	LS	1	$ 100,000.00	$ 100,000
2	Piping	LS	1	$ 100,000.00	$ 100,000
3	Pump Station	LS	1	$ 1,100,000.00	$ 1,100,000
4	Electrical (20%)	LS	1	$ 260,000.00	$ 260,000
5	Instrumentation (10%)	LS	1	$ 130,000.00	$ 130,000
				SUBTOTAL	**$ 1,690,000**
				DESIGN AND PERMITTING (15%)	**$ 260,000**
				CONTINGENCY (30%)	**$ 510,000**
				TOTAL	**$ 2,460,000**

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CITY OF WILDWOOD 2018 MASTER PLAN

ENGINEER'S OPINION OF PROBABLE COST

FOR

The City of Wildwood

WW Improvement No.6B: Upsize American House and Triumph South 1 Pumps

ITEM #	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1	Upsize American House Pumps and Control Panel (including misc required electrical improvements)	LS	1	$ 200,000	$ 200,000
2	Upsize Triumph South Pumps and Control Panel (including misc required electrical improvements)	LS	1	$ 200,000	$ 200,000
				SUBTOTAL	**$ 400,000**
				DESIGN AND PERMITTING (15%)	**$ 60,000**
				CONTINGENCY (30%)	**$ 120,000**
				TOTAL	**$ 580,000**

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CITY OF WILDWOOD 2018 MASTER PLAN

ENGINEER'S OPINION OF PROBABLE COST

FOR

The City of Wildwood

WW Improvement No.6C: Reroute Triumph South 1 to Dublin

ITEM #	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1	Install 3,000 LF of 4" PVC DR-18 Force Main and appurtenances.	LF	3,000	$ 74.30	$ 222,900
				SUBTOTAL	**$ 230,000**
				DESIGN AND PERMITTING (15%)	**$ 40,000**
				CONTINGENCY (30%)	**$ 70,000**
				TOTAL	**$ 340,000**

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CITY OF WILDWOOD 2018 MASTER PLAN

ENGINEER'S OPINION OF PROBABLE COST

FOR

The City of Wildwood

WW Improvement No.7A: Convert Oxford Pointe Lift Station to Repump Station

ITEM #	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1	Install approximately 1000 LF of 8" DR-18 PVC force main	LF	1,000	$ 150.00	$ 150,000
2	Tie into existing Force Main and fittings	LS	1	$ 100,000.00	$ 100,000
				SUBTOTAL	**$ 250,000**
				DESIGN AND PERMITTING (15%)	**$ 40,000**
				CONTINGENCY (30%)	**$ 80,000**
				TOTAL	**$ 370,000**

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CITY OF WILDWOOD 2018 MASTER PLAN

ENGINEER'S OPINION OF PROBABLE COST

FOR

The City of Wildwood

WW Improvement No.7B: Upsize Steeplechase and Parkwood Pumps

ITEM #	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1	Upsize Steeplechase Pumps and Control Panel (including misc required electrical improvements)	LS	1	$ 200,000	$ 200,000
2	Upsize Parkwood Pumps and Control Panel (including misc required electrical improvements)	LS	1	$ 200,000	$ 200,000
				SUBTOTAL	**$ 400,000**
				DESIGN AND PERMITTING (15%)	**$ 60,000**
				CONTINGENCY (30%)	**$ 120,000**
				TOTAL	**$ 580,000**

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CITY OF WILDWOOD 2018 MASTER PLAN

ENGINEER'S OPINION OF PROBABLE COST

FOR

The City of Wildwood

WW Improvement No.8: Reroute Prison flows through Monarch Ranch

ITEM #	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1	Install 4,200 LF of 20" PVC DR-18 Force Main and appurtenances.	LF	4,200	$ 230.00	$ 966,000
				SUBTOTAL	**$ 970,000**
				DESIGN AND PERMITTING (15%)	**$ 150,000**
				CONTINGENCY (30%)	**$ 300,000**
				TOTAL	**$ 1,420,000**

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CITY OF WILDWOOD 2018 MASTER PLAN

ENGINEER'S OPINION OF PROBABLE COST

FOR

The City of Wildwood

WW Improvement No.9: Additional WWTF in NW Wildwood

ITEM #	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1	Design and Construction of a new 4.00 MGD WWTF to initially serve the Northwest service area in Wildwood and meet the projected build-out flows (Estimated construction cost does not include property acquisition, effluent disposal or required collection system improvements).	Gallon	4,000,000	$ 35	$ 140,000,000
				SUBTOTAL	**$ 140,000,000**
				DESIGN AND PERMITTING (15%)	**$ 21,000,000**
				CONTINGENCY (30%)	**$ 42,000,000**
				TOTAL	**$ 203,000,000**

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CITY OF WILDWOOD 2018 MASTER PLAN

ENGINEER'S OPINION OF PROBABLE COST

FOR

The City of Wildwood

WW Improvement No.10: Upsize Oxford Pointe Pumps

ITEM #	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1	Upsize Oxford Pointe Pumps and Control Panel (including misc required electrical improvements)	LS	1	$ 200,000	$ 200,000
				SUBTOTAL	**$ 200,000**
				DESIGN AND PERMITTING (15%)	**$ 30,000**
				CONTINGENCY (30%)	**$ 60,000**
				TOTAL	**$ 290,000**

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CITY OF WILDWOOD 2018 MASTER PLAN

ENGINEER'S OPINION OF PROBABLE COST

FOR

The City of Wildwood

RW Improvement No.1: Construct Remaining Phases of the MP Reuse Extension

ITEM #	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1	Install approximately 7,000 LF of 16" DR-18 PVC Reuse Main	LF	7,000	$ 165.00	$ 1,155,000
				SUBTOTAL	**$ 1,160,000**
				CONTINGENCY (30%)	**$ 350,000**
				TOTAL	**$ 1,510,000**

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CITY OF WILDWOOD 2018 MASTER PLAN

ENGINEER'S OPINION OF PROBABLE COST

FOR

The City of Wildwood

RW Improvement No.2: Construct Phase 1 of the R-12 Pumps Station

ITEM #	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1	Construct Phase 1 of the R-12 Pumps Station	LS	1	$ 4,381,500.00	$ 4,381,500
				SUBTOTAL	**$ 4,390,000**
				TOTAL	**$ 4,390,000**

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CITY OF WILDWOOD 2018 MASTER PLAN

ENGINEER'S OPINION OF PROBABLE COST

FOR

The City of Wildwood

RW Improvement No.2A: Construct Phase 1 of the R-12 Pumps Station

ITEM #	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1	Construct Phase 2 of the R-12 Pumps Station	LS	1	$ 400,000.00	$ 400,000
				SUBTOTAL	**$ 400,000**
				CONTINGENCY (30%)	**$ 120,000**
				TOTAL	**$ 520,000**

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CITY OF WILDWOOD 2018 MASTER PLAN

ENGINEER'S OPINION OF PROBABLE COST

FOR

The City of Wildwood

RW Improvement No.4: New Effluent Pump Station and 4.00 MG GST

ITEM #	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1	4.00 MG Prestressed GST	GAL	4,000,000	$ 0.90	$ 3,600,000
2	5.50 MGD Efflunet Pump Station	LS	1	$ 1,100,000.00	$ 1,100,000
4	Electrical (20%)	LS	1	$ 220,000.00	$ 220,000
5	Instrumentation (10%)	LS	1	$ 110,000.00	$ 110,000
				SUBTOTAL	$ 5,030,000
				DESIGN AND PERMITTING (15%)	$ 760,000
				CONTINGENCY (30%)	$ 1,510,000
				TOTAL	$ 7,300,000

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CITY OF WILDWOOD 2018 MASTER PLAN

ENGINEER'S OPINION OF PROBABLE COST

FOR

The City of Wildwood

RW Improvement No.5: VWCA 8/10 Connection Point

ITEM #	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1	Install approximately 1,000 LF of 12" DR-18 PVC reuse main	LF	1,000	$ 160.00	$ 160,000
2	Control Valve Assembly	LS	1	$ 150,000.00	$ 150,000
				SUBTOTAL	**$ 310,000**
				DESIGN AND PERMITTING (15%)	**$ 50,000**
				CONTINGENCY (30%)	**$ 100,000**
				TOTAL	**$ 460,000**

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CITY OF WILDWOOD 2018 MASTER PLAN

ENGINEER'S OPINION OF PROBABLE COST

FOR

The City of Wildwood

RW Improvement No.6: VWCA 3/6 Connection Point

ITEM #	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1	Install approximately 1,000 LF of 12" DR-18 PVC reuse main	LF	1,000	$ 160.00	$ 160,000
2	Control Valve Assembly	LS	1	$ 150,000.00	$ 150,000
				SUBTOTAL	**$ 310,000**
				DESIGN AND PERMITTING (15%)	**$ 50,000**
				CONTINGENCY (30%)	**$ 100,000**
				TOTAL	**$ 460,000**

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CITY OF WILDWOOD 2018 MASTER PLAN

ENGINEER'S OPINION OF PROBABLE COST

FOR

The City of Wildwood

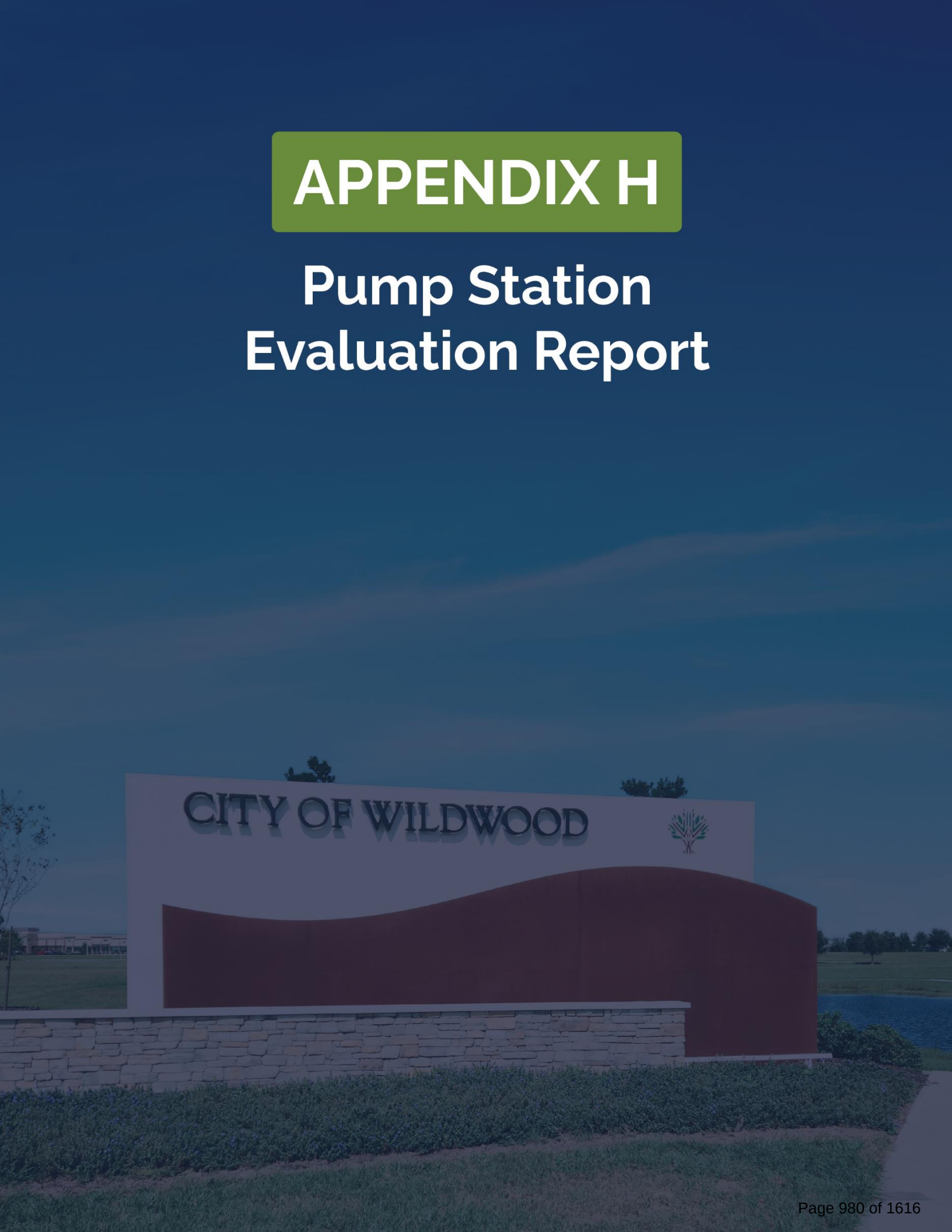
RW Improvement No.7A: 24-Inch Reuse Main

ITEM #	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1	Install 6,200 LF of 24" PVC C900 DR-18 reuse main and appurtenances.	LF	24,000	$ 450	$ 10,800,000
2	Removal and Disposal of Existing 16" PVC reuse main and appurtenances.	LF	24,000	$ 50	$ 1,200,000
				SUBTOTAL	**$ 12,000,000**
				DESIGN AND PERMITTING (15%)	**$ 1,800,000**
				CONTINGENCY (30%)	**$ 3,600,000**
				TOTAL	**$ 17,400,000**

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APPENDIX H

Pump Station Evaluation Report



Pump Station Evaluation Report

33 - American House

Prepared For:

City of Wildwood

Evaluation Date:

February 6, 2024

Report Date:

September 27, 2024

Version 1

Kimley»Horn

Version	Publish Date	Description
1	See Cover	Original/Version 1

Table 0.1 - Revision History

Version	Publish Date	Test Date	Description

Table 0.2 - Previous Evaluation History

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ATTACHMENTS

Attachment 1 ..... **Test Data Graphs**

Attachment 2 ..... **Supplementary Pump Information**

ABBREVIATIONS

Ø	Phase
AC	Alternating Current
ADD	Automated Draw Down
ADF	Average Daily Flow
ARR	Automated Rate of Rise
ATL	Across The Line
Avg	Average
BEP	Best Efficiency Point
CL	Center Line
Disch	Discharge
ETM	Elapsed Time Meter
FLA	Full Load Amps
FM	Force Main
Ft	Feet
FPS	Feet Per Second
FSFO	Full Speed Full Open
Gal	Gallons
GPM	Gallons Per Minute
HGL	Hydraulic Grade Line
HP	Horsepower
Hrs	Hours
H:M:S	Hours:Minutes:Seconds
Hz	Hertz
In	Inches
InvIn	Invert In
KWH	Kilowatt-Hours
L	Length
L1, L2, L3	Leg 1, 2 & 3 or Length 1, 2 & 3
MSL	Mean Sea Level
MTBF	Mean Time Between Failures
N	Neutral
P	Pump
PCL	Pump Center Line
PCP	Pump Control Panel
PF	Power Factor
PSI	Pounds Per Square Inch
PT	Point
RPM	Revolutions Per Minute
TDH	Total Dynamic Head
TVSS	Transient Voltage Surge Suppressor
V	Volts
VFD	Variable Frequency Drive
WTW	Wire To Water
WW	Wet Well
Yr	Year

1 INTRODUCTION

Kimley-Horn and Associates, Inc. evaluated the pump station through pump performance testing and a condition assessment. This report summarizes the data and results of that evaluation. The performance tests were conducted using the XAK-PACK pump performance monitoring device. The following pages provide summaries of the data collected and notes about the pumps' performance.

1.1 SITE INFORMATION

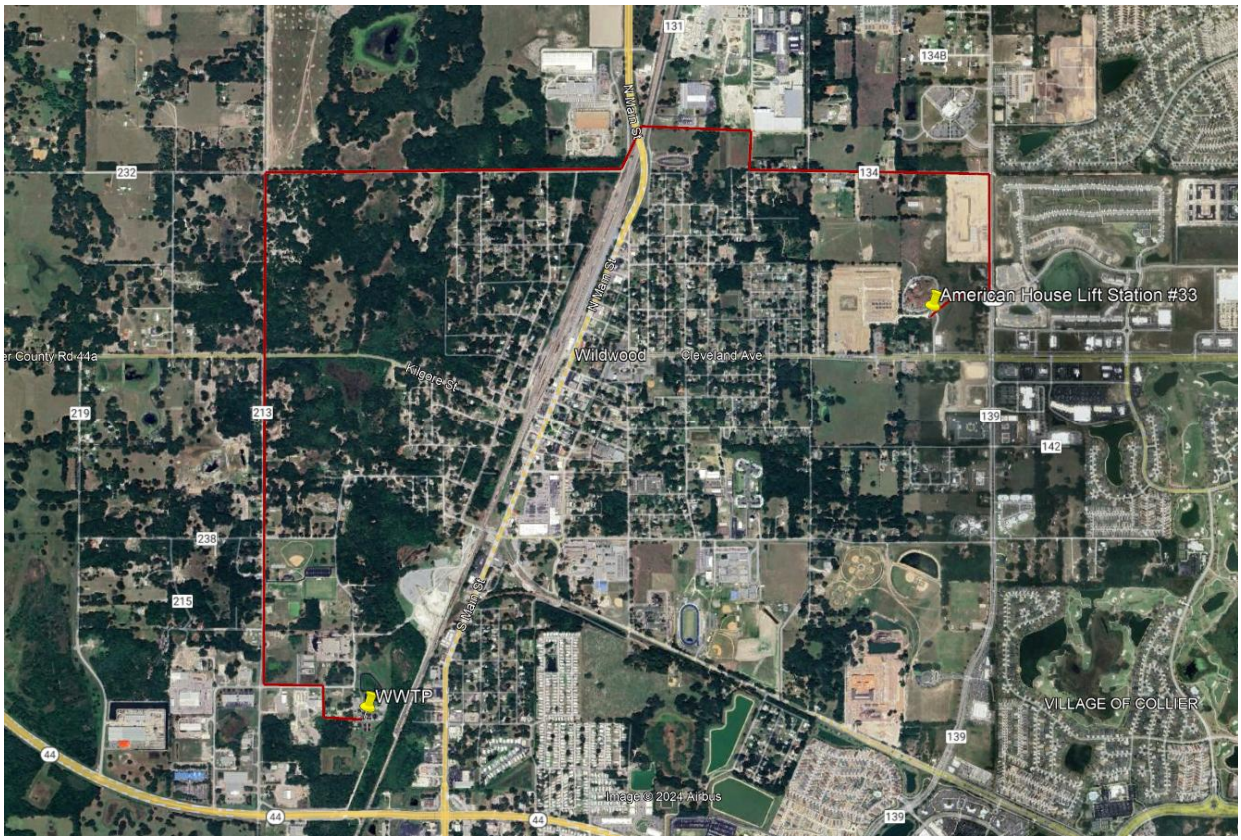
American House / Site #33			
Date of Evaluation	February 6, 2024		
Address	4775 Inspiration Drive Wildwood, FL 34785		
Coordinates	28°52'01.3"N 82°01'24.3"W		
Fluid Conveyed	Wastewater		
Station Style	Duplex Submersible		
Number of Pumps	2	Number of Pump Slots	2
Pump Type	Submersible		
Flow Meter Type	N/a		
Year of Construction	Unknown	Based on	☐Docs. ☐Estimation ☐Other
Basin/Zone	Unknown		
Firm Capacity (Design)	641 GPM / 0.92 MGD		
Firm Capacity (Test)	316 GPM / 0.46 MGD		
Discharge Description	6-inch discharge, manifolds with 12-inch, approximately 23,600 LF, unknown material, discharges to WWTP		
Electrical Service	120/208 Wye		
Site Generator	Caterpillar diesel with belly tank		
Bypass Ability	Bypass connection in valve vault		
Miscellaneous Features			

Site Notes:

1.2 SITE MAP

Force Main

Figure 1.1 - Site Location Map



2 PUMP PERFORMANCE TESTS

Pump performance tests were conducted on the pumps utilizing the measurement tools detailed below. **Table 2.1 - Measurement Methods** describes the measurements taken during the test and the measurement method. Some measurements were confirmed utilizing a secondary measurement method. See **Attachment 1** for graphs of the digitally recorded data. For each test, note the following:

1. Common accuracies for measurements of flow, pressure, voltage and current are ±1%.
2. Friction loss is calculated using the Hazen-Williams formula and the Bernoulli equation. Piping characteristics are based on best available data.

Parameter	Measurement Method	
	Primary	Secondary
Flow	Level Transducer (XAK-PACK)	N/A
Pressure	Pressure Transducer (XAK-PACK)	Liquid Filled Pressure Gauge
Wet Well Level	Level Transducer (XAK-PACK)	N/A
Volts	Voltage Probes (XAK-PACK)	Fluke 376FC
Amps	Current Transducers (XAK-PACK)	Fluke 376FC
Power Factor	Power Factor Monitor (XAK-PACK)	N/A

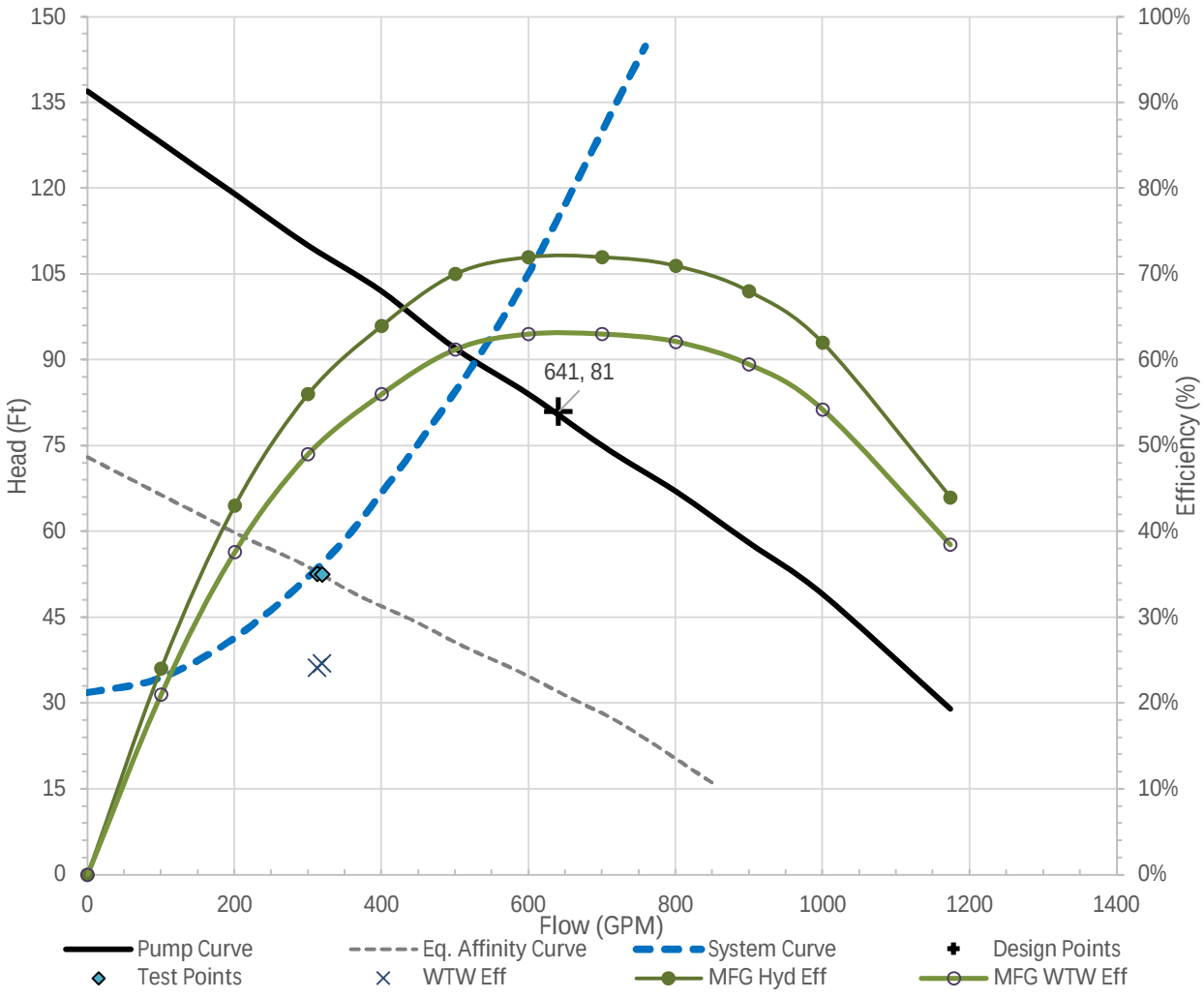
Table 2.1 - Measurement Methods

2.1 PUMP #1

Below is a summary of the pump characteristics and performance test results.

Parameter	Units	Value
Pump Manufacturer	-	Flygt
Pump Model	-	NP 3153 HT 3~ 462
Pump Style	-	Submersible
Pump Impeller Dia	Inches	10.87
Pump Rated Capacity	GPM	641
Pump Rated Head	Ft	81
Pump ETM	Hours	1489
Pump Flow @ BEP Design Curve	GPM	641
Pump Hyd Eff @ Design Pt	%	71.8%
Pump WTW Eff @ Operating Pt	%	50%
Pump NPSHr @ Operating Pt	Ft	13
Motor Synchronous Speed	RPM	1800
Motor Rated Speed	RPM	1755
Motor No. Phases	No	3
Motor Starters	-	ATL
Motor Rated Voltage	Volts	230
Motor Rated Horsepower	HP	20.0
Motor Service Factor	-	1.15
Motor FLA	Amps	52.0
Mfg. Motor Eff. @ Operating Pt	%	88%
Mfg. Starter Eff. @ Operating Pt	%	100%

Table 2.2 - Pump #1 Design Characteristics



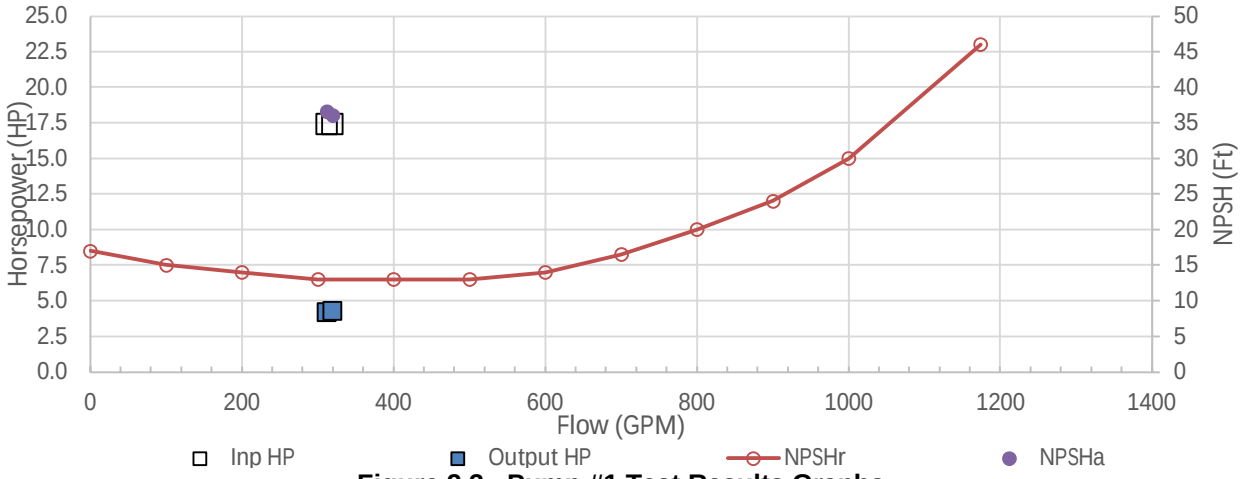


Figure 2.3 - Pump #1 Test Results Graphs

	Parameter	Units	Lower Limit	Test Value	Upper Limit	Comment
Measured	Average Output (FSFO)	GPM	-	316	-	
	Average TDH (FSFO)	Ft	-	52.6	-	
	Average WTW Efficiency (FSFO)	%	-	24%	-	
	Average Input HP (FSFO)	HP	-	17.4	-	
	Average Current Draw (FSFO)	Amps	-	41.2	-	
	Suction Velocity (FSFO)	FPS	2	-	7	
	Discharge Velocity (FSFO)	FPS	2	0.9	7	1
	BEP Comparison (FSFO)	%	80%	49%	115%	2
	Average Output (FSFO)	%	90%	49%	110%	3
	Affinity Law Eq. Curve	%	-5%	-27.0%	5%	4
	NPSHa	Ft	13	36.3	N/A	
	WTW Eff @ Operating Pt	%	-5%	-105%	5%	5
	Input Frequency	Hz	-5%	0%	5%	
	Input Voltage (L-L)	%	-10%	-2.0%	10%	
	Voltage Drop	%	-15%	-	N/A	
	Voltage Imbalance	%	-10%	0.9%	10%	
	Current Imbalance	%	-10%	2.5%	10%	
	Motor FLA	%	-50%	79.3%	105%	
	Motor Load	%	50%	86.9%	115%	
	Motor Slip Speed	%	1746	1800.0	1809	
	Vibration	In/Sec	0	0.0	-	
Observed	Surge	1-5	-	2	3	
	Vibration	1-5	-	2	3	
	Cavitation	1-5	-	1	3	
	Mechanical Noise	1-5	-	2	3	
	Leaks	1-5	-	1	3	
	Exterior Condition	1-5	-	2	3	
	Overall Score	1-5	-	2	3	

Table 2.4 - Pump #1 Test Summary

Pump #1 - Test Comments

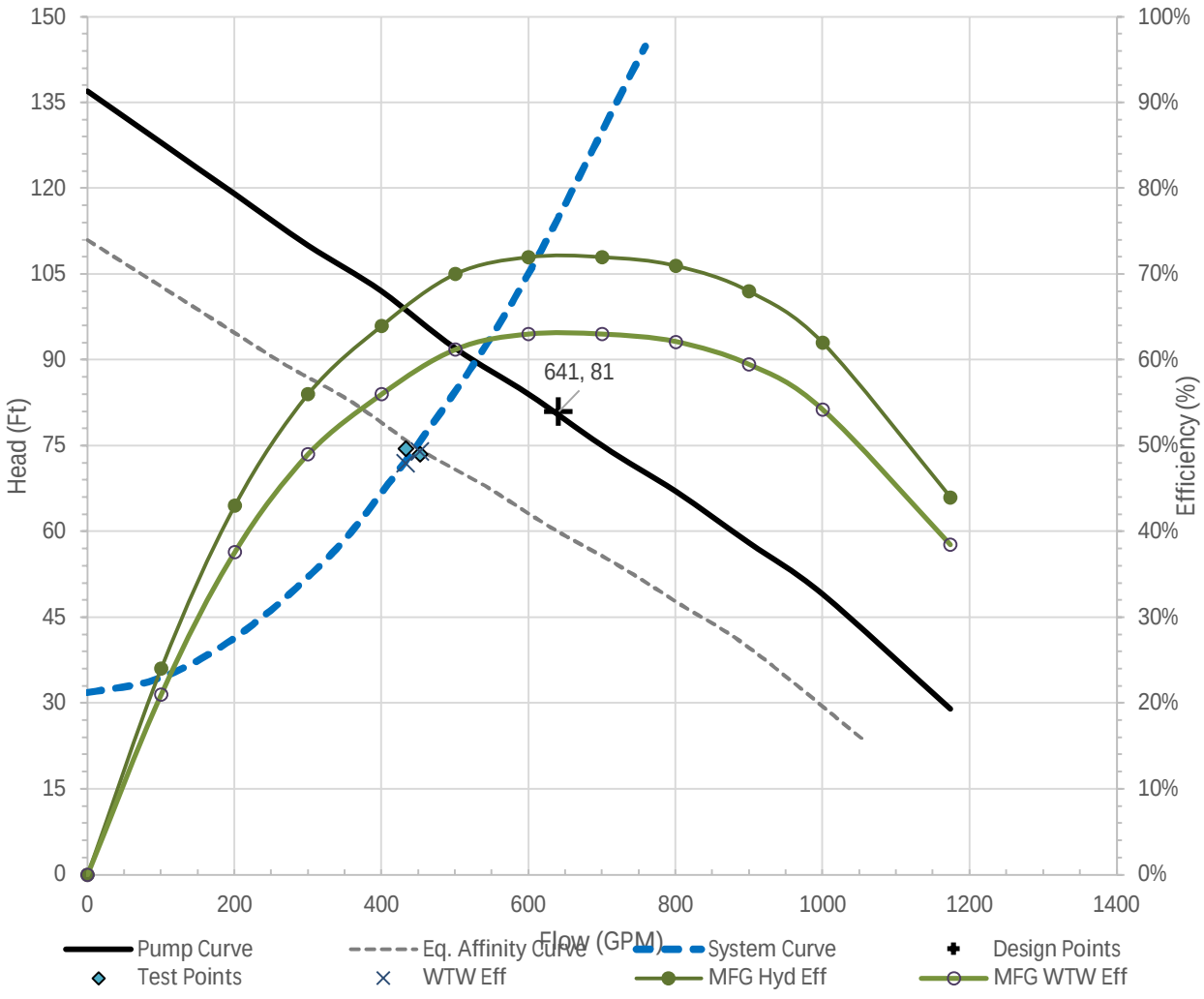
1) Discharge velocity is below the recommended lower limit. Low discharge velocities can lead to a buildup of debris within the piping.
2) The pump is operating at 49% BEP flow rate,
3) The pump output is 49% of the design flow rate.
4) The pump impeller appears to be either a different reduced diameter impeller or the impeller and/or volute are severely worn. Pump may be different than manufacturer provided.
5) WTW efficiency is significantly below the recommended lower limit.

2.2 PUMP #2

Below is a summary of the pump characteristics and performance test results.

Parameter	Units	Value
Pump Manufacturer	-	Flygt
Pump Model	-	NP 3153 HT 3~ 462
Pump Style	-	Submersible
Pump Impeller Dia	Inches	10.87
Pump Rated Capacity	GPM	641
Pump Rated Head	Ft	81
Pump ETM	Hours	1055
Pump Flow @ BEP Design Curve	GPM	641
Pump Hyd Eff @ Design Pt	%	71.8%
Pump WTW Eff @ Operating Pt	%	58%
Pump NPSHr @ Operating Pt	Ft	13
Motor Synchronous Speed	RPM	1800
Motor Rated Speed	RPM	1755
Motor No. Phases	No	3
Motor Starters	-	ATL
Motor Rated Voltage	Volts	230
Motor Rated Horsepower	HP	20.0
Motor Service Factor	-	1.15
Motor FLA	Amps	52.0
Mfg. Motor Eff. @ Operating Pt	%	88%
Mfg. Starter Eff. @ Operating Pt	%	100%

Table 2.5 - Pump #2 Design Characteristics



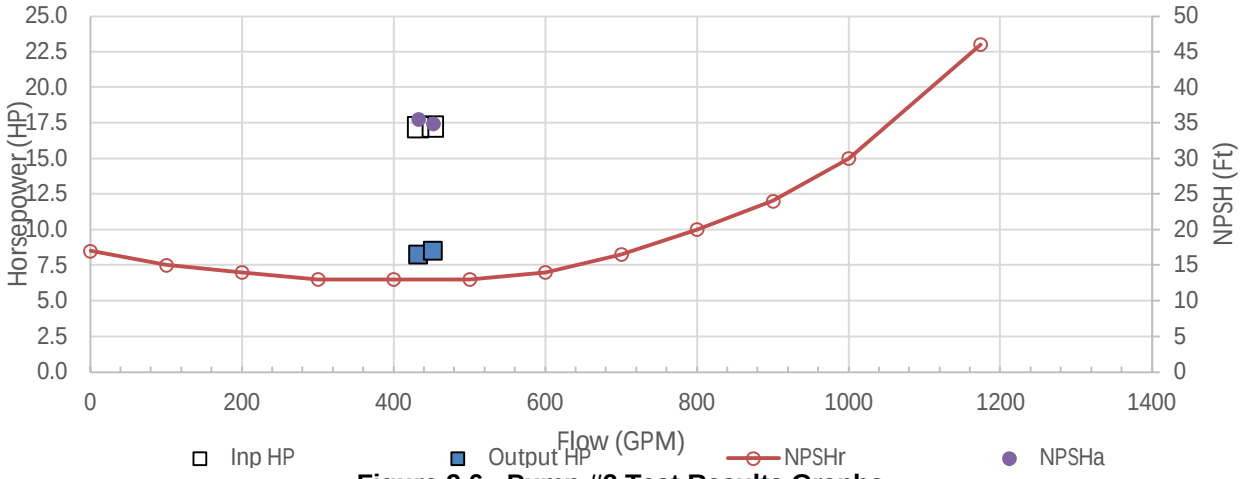


Figure 2.6 - Pump #2 Test Results Graphs

	Parameter	Units	Lower Limit	Test Value	Upper Limit	Comment
Measured	Average Output (FSFO)	GPM	-	443	-	
	Average TDH (FSFO)	Ft	-	74.1	-	
	Average WTW Efficiency (FSFO)	%	-	49%	-	
	Average Input HP (FSFO)	HP	-	17.2	-	
	Average Current Draw (FSFO)	Amps	-	40.8	-	
	Suction Velocity (FSFO)	FPS	2	-	7	
	Discharge Velocity (FSFO)	FPS	2	1.3	7	1
	BEP Comparison (FSFO)	%	80%	69%	115%	2
	Average Output (FSFO)	%	90%	69%	110%	3
	Affinity Law Eq. Curve	%	-5%	-10.0%	5%	4
	NPSHa	Ft	13	35.2	N/A	
	WTW Eff @ Operating Pt	%	-5%	-19%	5%	5
	Input Frequency	Hz	-5%	0%	5%	
	Input Voltage (L-L)	%	-10%	-2.0%	10%	
	Voltage Drop	%	-15%	-	N/A	
	Voltage Imbalance	%	-10%	0.9%	10%	
	Current Imbalance	%	-10%	4.7%	10%	
	Motor FLA	%	-50%	78.5%	105%	
	Motor Load	%	50%	86.0%	115%	
	Motor Slip Speed	%	1746	1755	1809	
	Vibration	In/Sec	0	0.0	-	
Observed	Surge	1-5	-	2	3	
	Vibration	1-5	-	2	3	
	Cavitation	1-5	-	1	3	
	Mechanical Noise	1-5	-	2	3	
	Leaks	1-5	-	1	3	
	Exterior Condition	1-5	-	2	3	
	Overall Score	1-5	-	2	3	

Table 2.7 - Pump #2 Test Summary

Pump #2 - Test Comments

1) Discharge velocity is below the recommended lower limit. Low discharge velocities can lead to a buildup of debris within the piping.
2) The pump is operating at 69% BEP flow rate,
3) The pump output is 69% of the design flow rate.
4) The pump impeller appears to be either a different reduced diameter impeller or the impeller and/or volute are severely worn. Pump may be different than manufacturer provided.
5) WTW efficiency is significantly below the recommended lower limit.

2.3 HYDRAULICS SUMMARY

The measured system curve is shifted up slightly from the design system curve. This discrepancy appears to likely be a result of a lower static head being used for design calculations as well as increased head loss in the system from years in service.

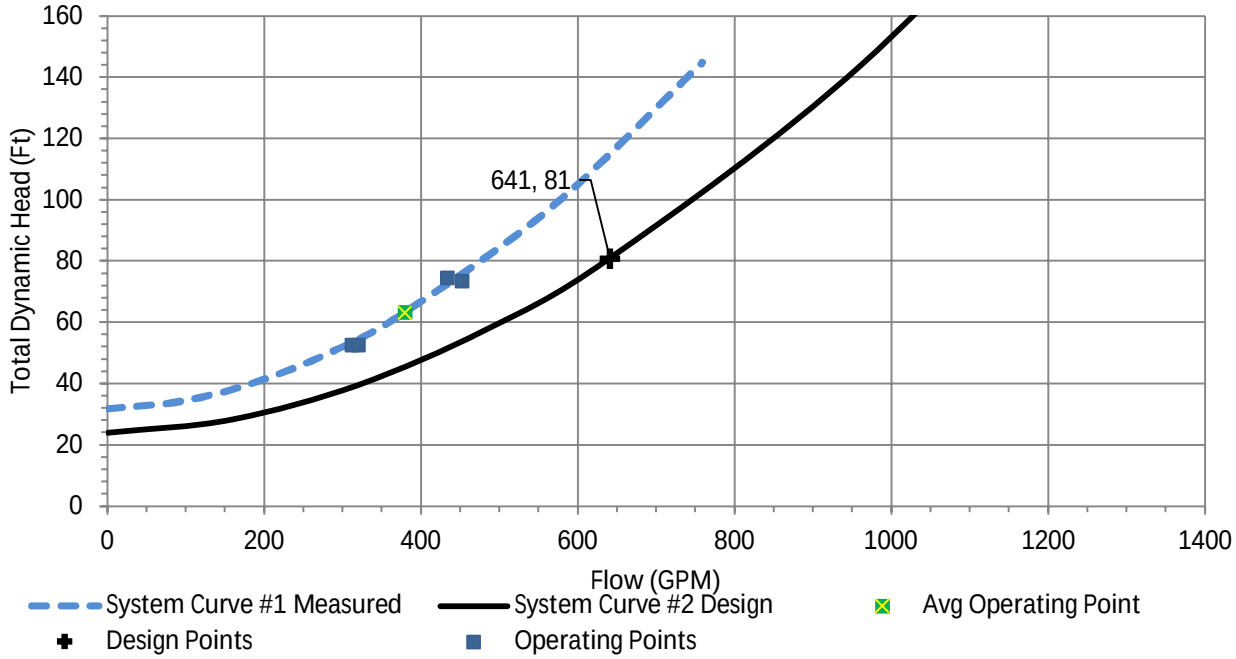


Figure 2.8 – System Hydraulic Information provides a graph of the system characteristics and a table describing the system curves. Length, Hazen-Williams (Hz-Wm), and diameter are approximated based on the best available information and fit to the data. System Curve Characteristics are intended to be for reference.

System Curve Characteristics					
Curve Name	**Curve Type**	**Length (Ft)**	**Hz-Wm**	**Diameter (In)**	**Calculated Based On**
System Curve #1	Measured	23,600	110	10.1	Test Data
System Curve #2	Design	23,600	110	10.9	Design Operating Condition

Figure 2.8 – System Hydraulic Information

2.4 PIPELINE PERFORMANCE INDICATORS

Figure 2.9 – Pipe Velocities displays the velocities in each known diameter of the pressurized conveyance system. The Average Test Output Velocity represents the velocity generated by the average pumping rate produced by testing. The Station Firm Capacity Velocity represents the velocity based on the station's firm capacity (output with the largest pump out of service). The color gradient represents ranges of acceptable to problematic velocities. Red areas of operation are problematic and green areas of operation are acceptable.

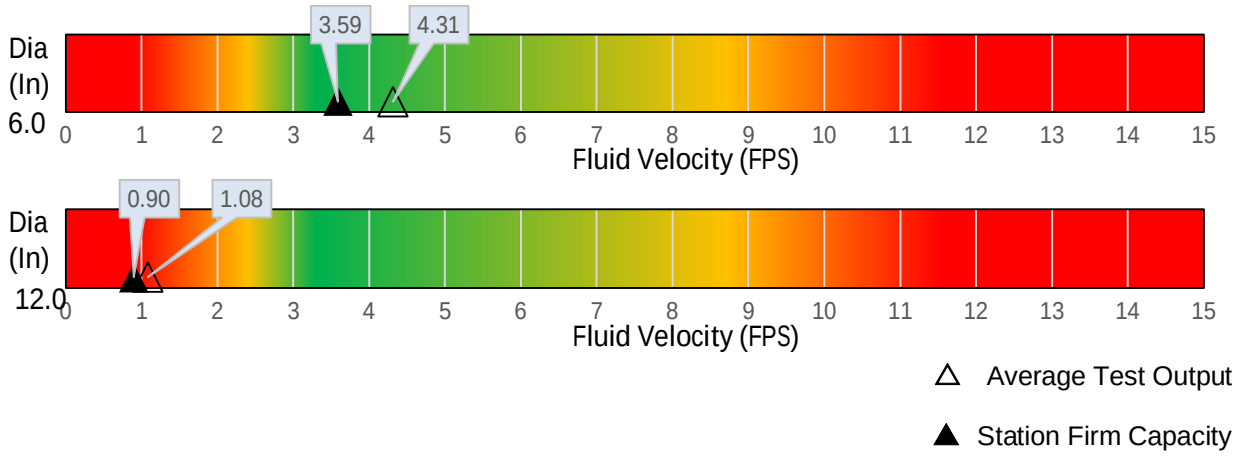


Figure 2.9 – Pipe Velocities

The maximum observed pressure at the station during the testing period is provided below in **Figure 2.10 - Maximum Observed Pressure**. System pressure capabilities vary depending upon pipe material type, pressure rating, elevation, age, condition, etc. This performance indicator is provided for reference only and is not a condition assessment of the pipeline. For systems with pressures above approximately 100 PSI, consider a more detailed analysis. See the **Attachment 1 - Graph B** for additional pressure data.

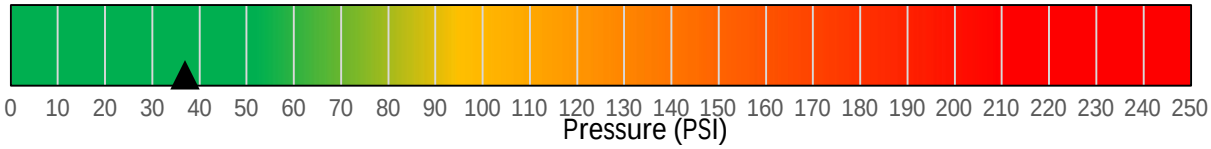


Figure 2.10 - Maximum Observed Pressure

2.5 SYSTEM PRESSURES

Figure 2.11 - Pressure Cycle shows a typical single-pump pressure cycle measured during testing. The pressure data captured for this test is limited to 2-second intervals which may not have captured the entire range of actual pressures. The complete log of pressure readings is provided in **Attachment 1 – Test Data Graphs**. For more accurate surge data, a surge monitoring device should be used to capture pressure at shorter time intervals over a longer period of time. **Table 2.12 - Further Surge-Related Actions** provides a list of recommended surge-related actions.

The pressure transducer used for measuring pressures has a range of 0 to 200 PSI. Pump startup produced an upsurge of approximately 37 PSI. Upon pump shut down, the observed minimum pressure was approximately 0 PSI and the maximum pressure was approximately 26 PSI creating a total observed pressure range of 37 PSI. It is likely that the minimum pressure produced on each pump shut down cycle was less than 0 PSI.

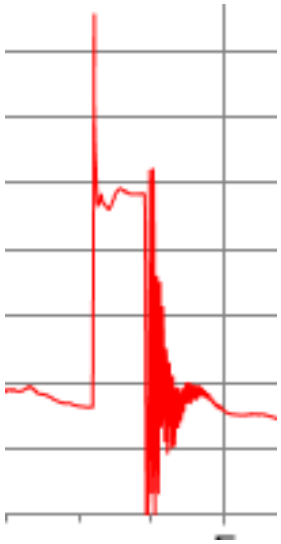


Figure 2.11 - Pressure Cycle

	Further Surge Related Actions:
	Perform extended period digital surge monitoring
	Perform calibrated surge modeling
	Revise operating scheme to reduce surge potential
	Evaluate piping system for pressure capacity and likelihood of failure
	Install physical surge mitigation strategies
✓	No further action

Table 2.12 - Further Surge-Related Actions

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3 RECOMMENDATIONS

The following recommendations are a result of the findings of this evaluation and should be considered for implementation. See **Section 2 Pump Performance Tests** for pump specific recommendations. In addition to the recommendations below, this site should/ be considered for the following overall planning and budgeting activities.

3.1 OVERALL RECOMMENDATIONS

Overall Site Rating	Score	Description
	1	No recommendations currently. Monitor station for worsening conditions, perform regular O&M, reassess condition in 2-5 years.
	2	Complete recommendations listed in Section 3.2, monitor station for worsening conditions, perform regular O&M, reassess condition in 1-3 years.
	3	Station requires improvements beyond replacement of individual components. Begin planning and budgeting for a major rehabilitation. Place under regular observation until rehabilitation is complete.
	4	Station does not appear to be brought into conformance with standards without replacement. Begin planning and budgeting for a station replacement. Place under regular observation until rehabilitation is complete.

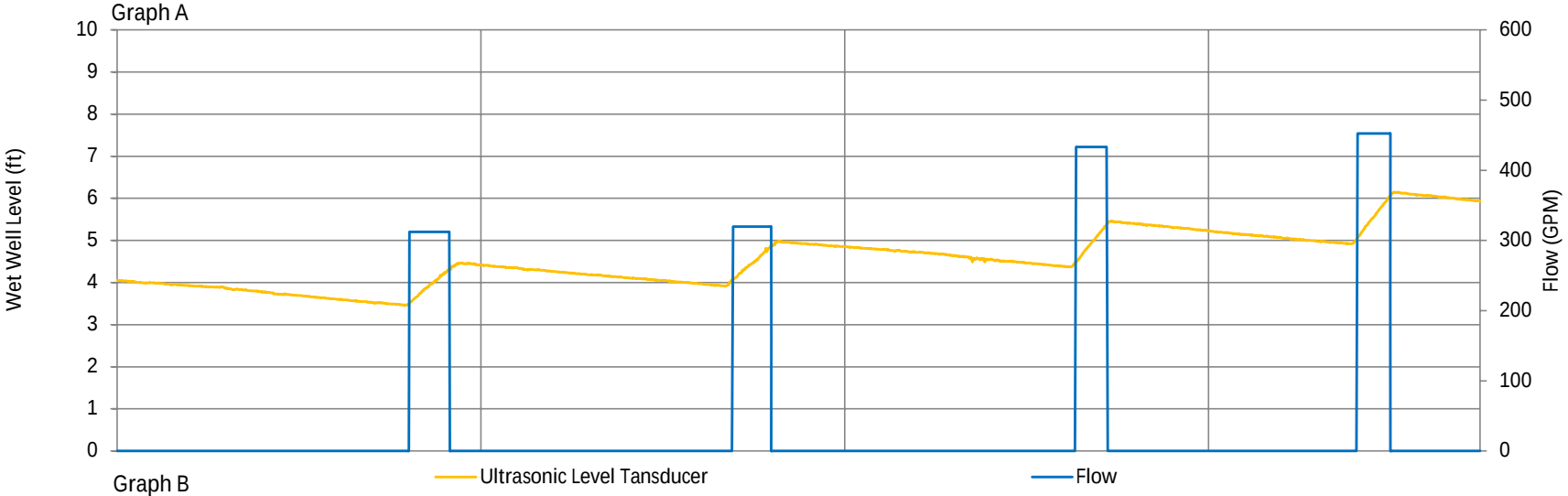
3.2 MISCELLANEOUS RECOMMENDATIONS

Pump Data – From measured testing data it appears a different impeller and/or pump is installed than the provided manufacturer information. Additionally, the measured voltage configuration does not match the indicated voltage configuration on the provided data. We recommend confirming the manufacturer data and updating checks as needed.

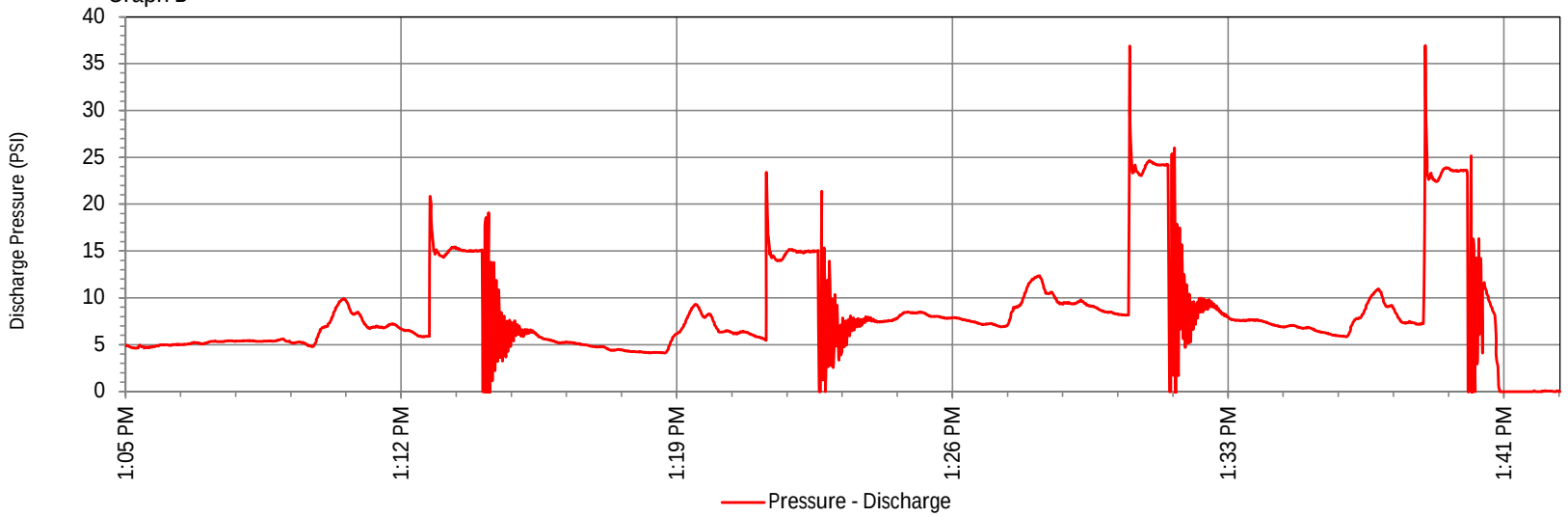
4 ATTACHMENTS

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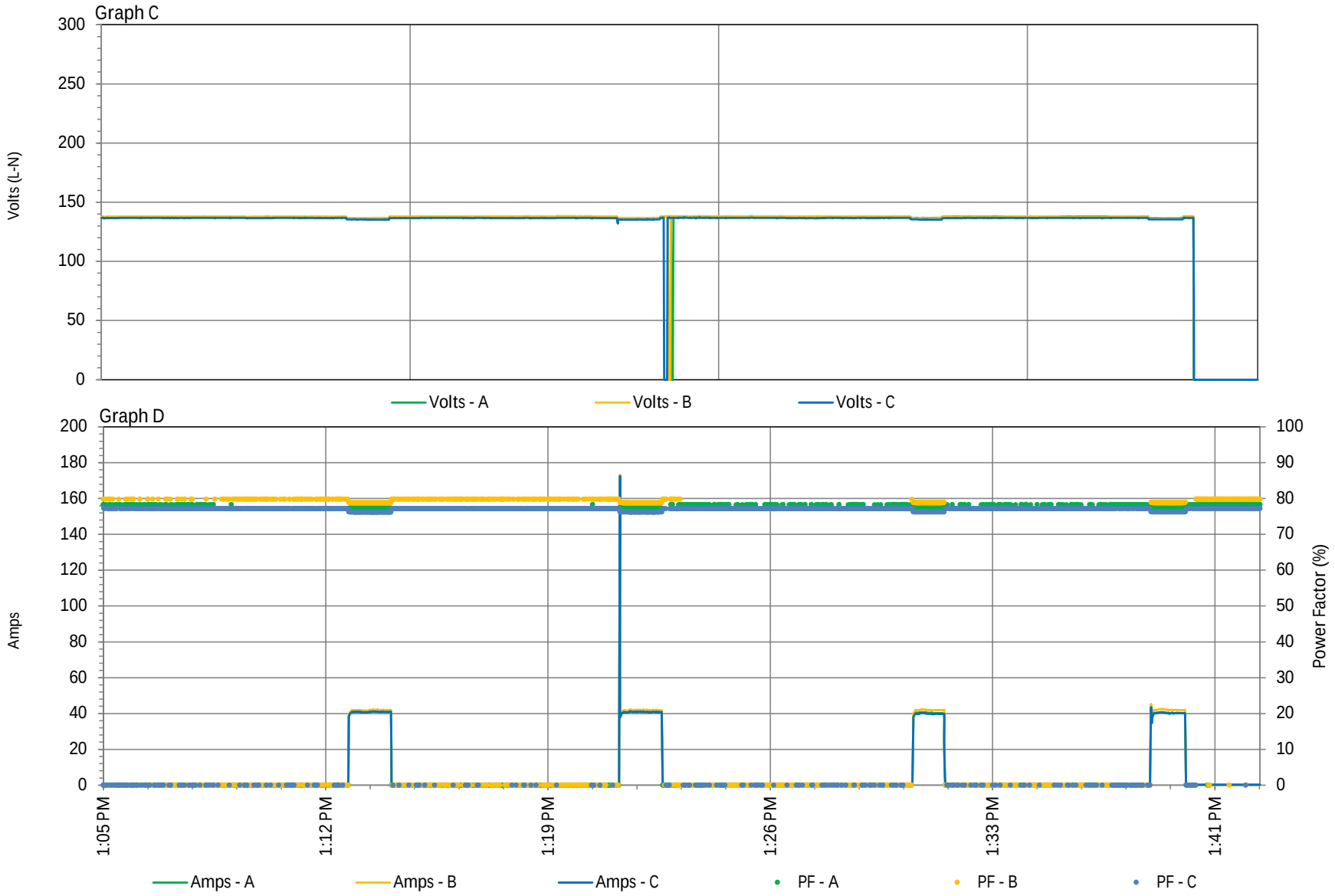
Graph A



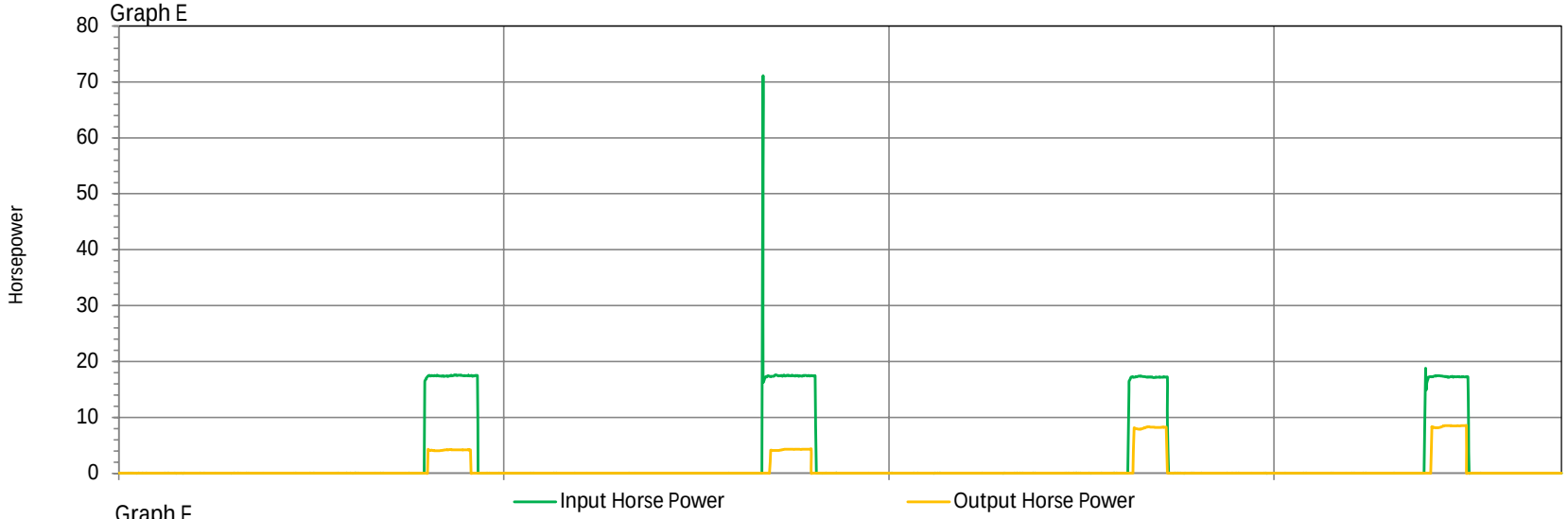
Graph B



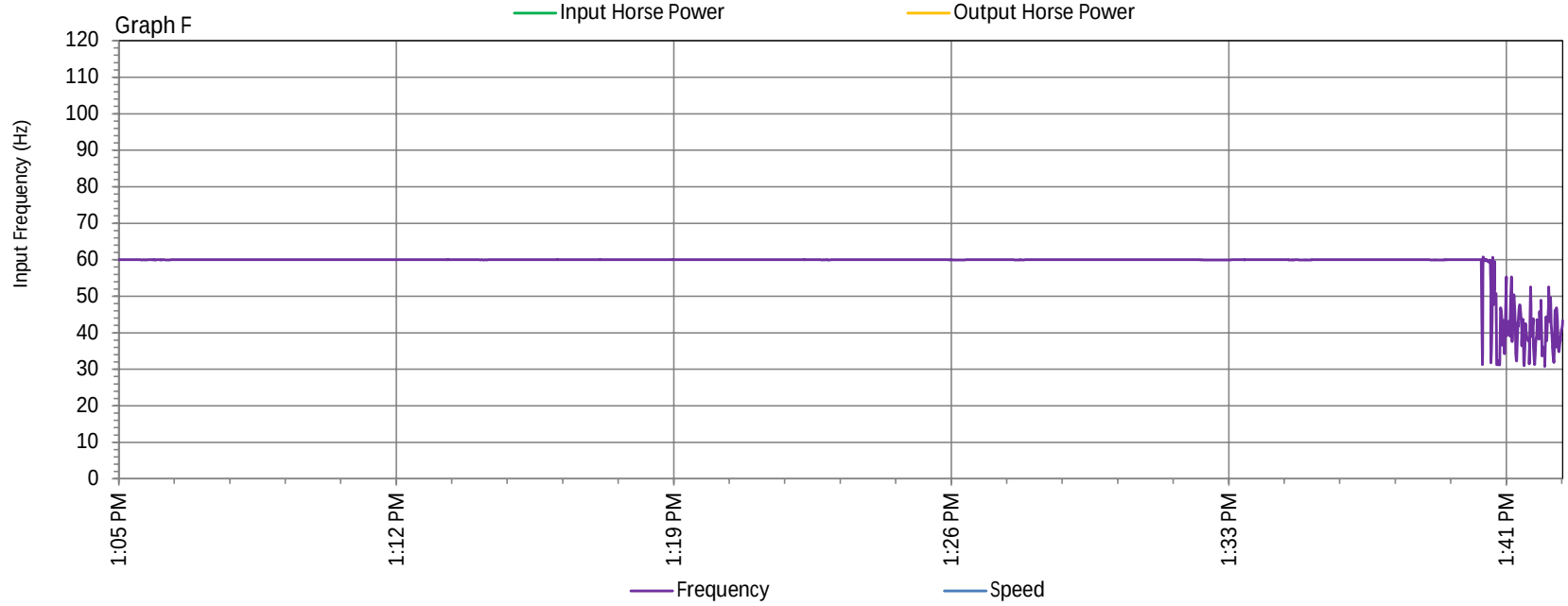
* Times shown are Eastern Standard Time


Graph C
Volts (L-N)
300
250
200
150
100
50
0
Volts - A
Volts - B
Volts - C
Graph D
Amps
200
180
160
140
120
100
80
60
40
20
0
Power Factor (%)
100
90
80
70
60
50
40
30
20
10
0
1:05 PM
1:12 PM
1:19 PM
1:26 PM
1:33 PM
1:41 PM
Amps - A
Amps - B
Amps - C
PF - A
PF - B
PF - C

Graph E



Graph F



NP 3153 HT 3~ 462

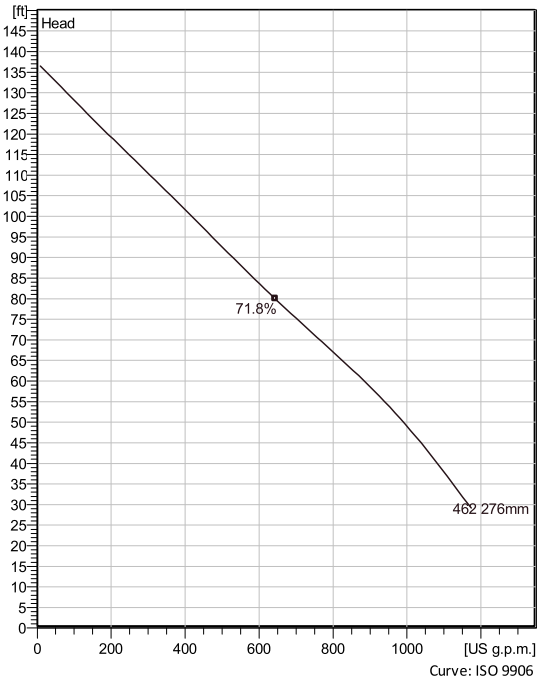
Patented self cleaning semi-open channel impeller, ideal for pumping in waste water applications. Modular based design with high adaptation grade.

FLYGT
a xylem brand

Technical specification



Curves according to: Water, pure Water, pure [100%],39.2 °F,62.42 lb/ft³,1.6891E-5 ft²/s



Curve: ISO 9906

Nominal (mean) data shown. Under- and over-performance from this data should be expected due to standard manufacturing tolerances.
Please consult your local Flygt representative for performance guarantees.

Configuration

Motor number
N3153.185 21-18-4AA-W 20hp

Installation type
P - Semi permanent, Wet

Impeller diameter
276 mm

Discharge diameter
4 inch

Pump information

Impeller diameter
276 mm

Discharge diameter
4 inch

Inlet diameter
150 mm

Maximum operating speed
1755 rpm

Number of blades
2

Max. fluid temperature
40 °C

Material

Impeller
Hard-Iron ™

Project	Xylect-21983549	**Created by**	Robert Simcox		
Block		**Created on**	3/12/2024	**Last update**	3/12/2024

NP 3153 HT 3~ 462

Technical specification

Motor - General

Motor number N3153.185 21-18-4AA-W 20hp	**Phases** 3~	**Rated speed** 1755 rpm	**Rated power** 20 hp
ATEX approved No	**Number of poles** 4	**Rated current** 52 A	**Stator variant** 5
Frequency 60 Hz	**Rated voltage** 230 V	**Insulation class** H	**Type of Duty** S1
Version code 185			

Motor - Technical

Power factor - 1/1 Load 0.83	**Motor efficiency - 1/1 Load** 87.5 %	**Total moment of inertia** 2.38 lb ft²	**Starts per hour max.** 30
Power factor - 3/4 Load 0.77	**Motor efficiency - 3/4 Load** 89.0 %	**Starting current, direct starting** 296 A	
Power factor - 1/2 Load 0.66	**Motor efficiency - 1/2 Load** 89.0 %	**Starting current, star-delta** 98.6 A	

Project	Xylect-21983549	**Created by**	Robert Simcox		
Block		**Created on**	3/12/2024	**Last update**	3/12/2024

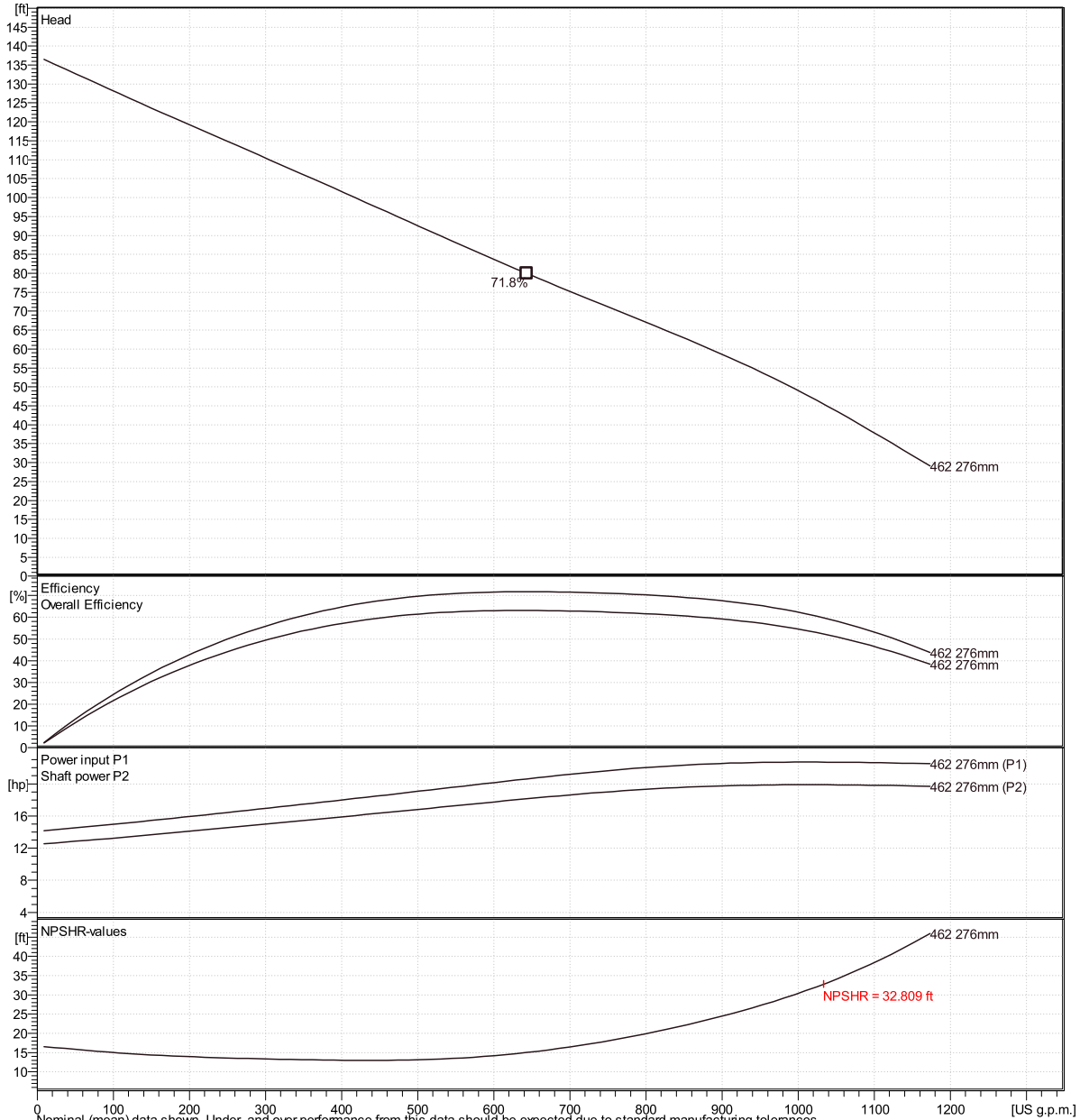
NP 3153 HT 3~ 462

Performance curve

Duty point

Flow	Head

Curves according to: Water, pure Water, pure [100%],39.2 °F,62.42 lb/ft³,1.6891E-5 ft²/s



Nominal (mean) data shown. Under- and over-performance from this data should be expected due to standard manufacturing tolerances.
Please consult your local Flygt representative for performance guarantees.

Curve: ISO 9906

Xylect-21983549		Robert Simcox			
	Created on	3/12/2024	**Last update**	3/12/2024	

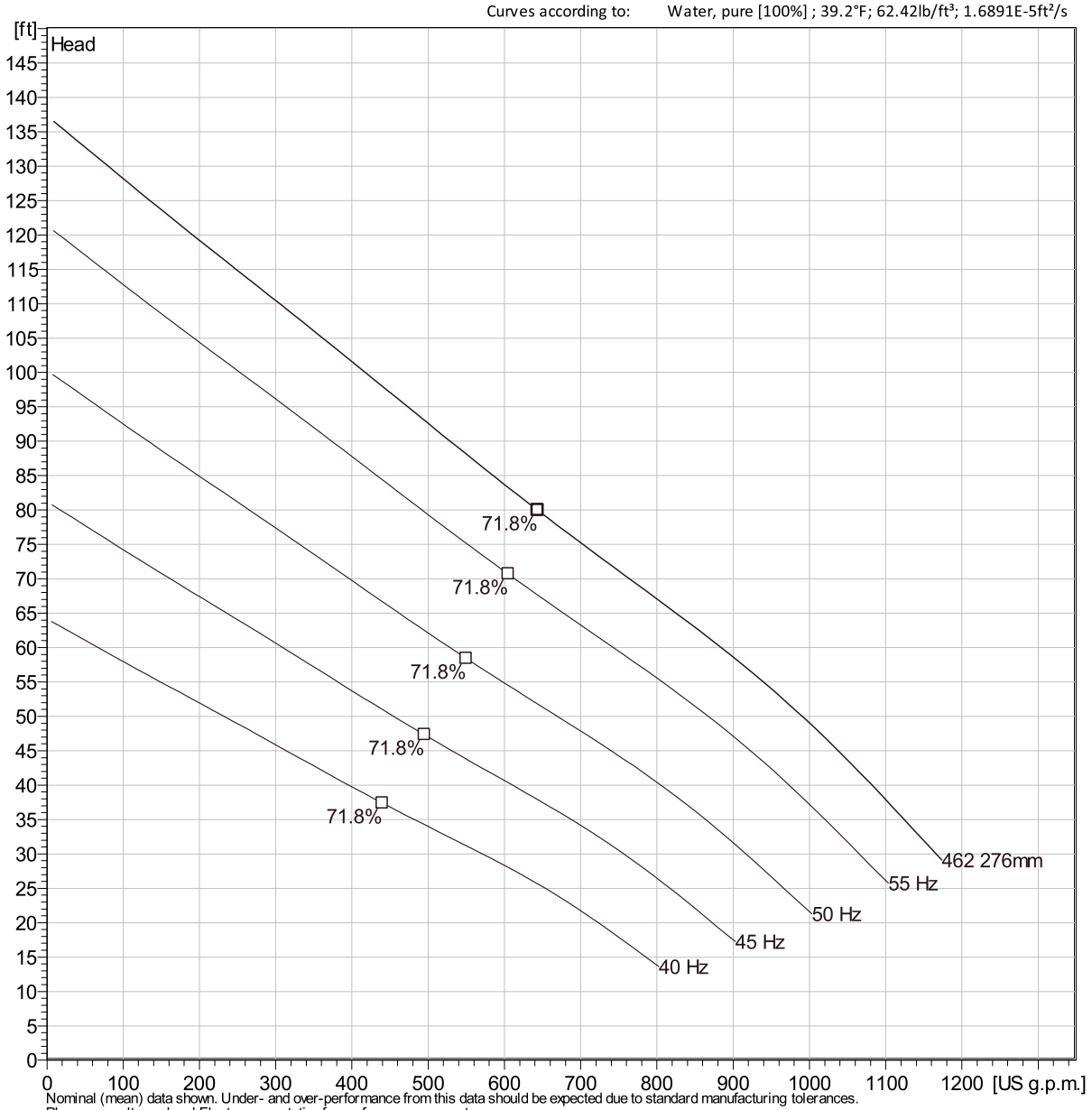
Program version	Data version	User group(s)
72.0 - 2/20/2024 (Build 175)	3/5/2024 10:29 A3P3	Xylem:USA - EXT, USA - INT

NP 3153 HT 3~ 462

Duty Analysis

FLYGT a xylem brand

Curves according to: Water, pure [100%] ; 39.2°F; 62.42lb/ft³; 1.6891E-5ft²/s



Nominal (mean) data shown. Under- and over-performance from this data should be expected due to standard manufacturing tolerances.
Please consult your local Flygt representative for performance guarantees.

Operating characteristics

Pumps / Systems	Flow	Head	Shaft power	Flow	Head	Shaft power	Hydr.eff.	Spec. Energy	NPSHre
	US g.p.m.	ft	hp	US g.p.m.	ft	hp		kWh/US MG	ft

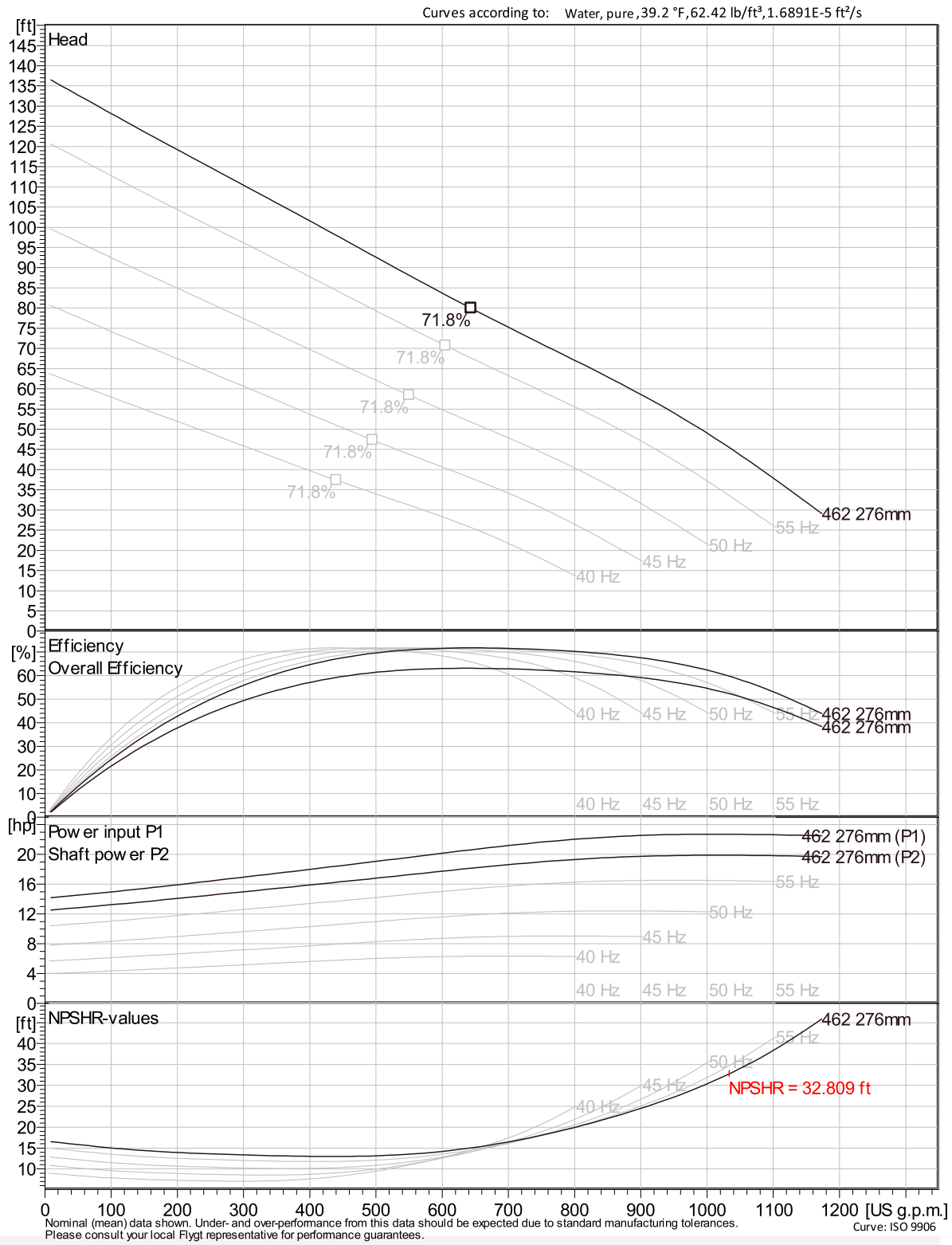
Project		**Created by**	Robert Simcox		
Block	Xylect-21983549	**Created on**	3/12/2024	**Last update**	3/12/2024

Program version	Data version	User group(s)
72.0 - 2/20/2024 (Build 175)	3/5/2024 10:29 A3P3	Xylem: USA - EXT, USA - INT

NP 3153 HT 3~ 462

VFD Curve

FLYGT
a xylem brand



Nominal (mean) data shown. Under- and over-performance from this data should be expected due to standard manufacturing tolerances.
Please consult your local Flygt representative for performance guarantees.

Curve: ISO 9906

Project	Xylect-21983549	**Created by**	Robert Simcox		
Block		**Created on**	3/12/2024	**Last update**	3/12/2024

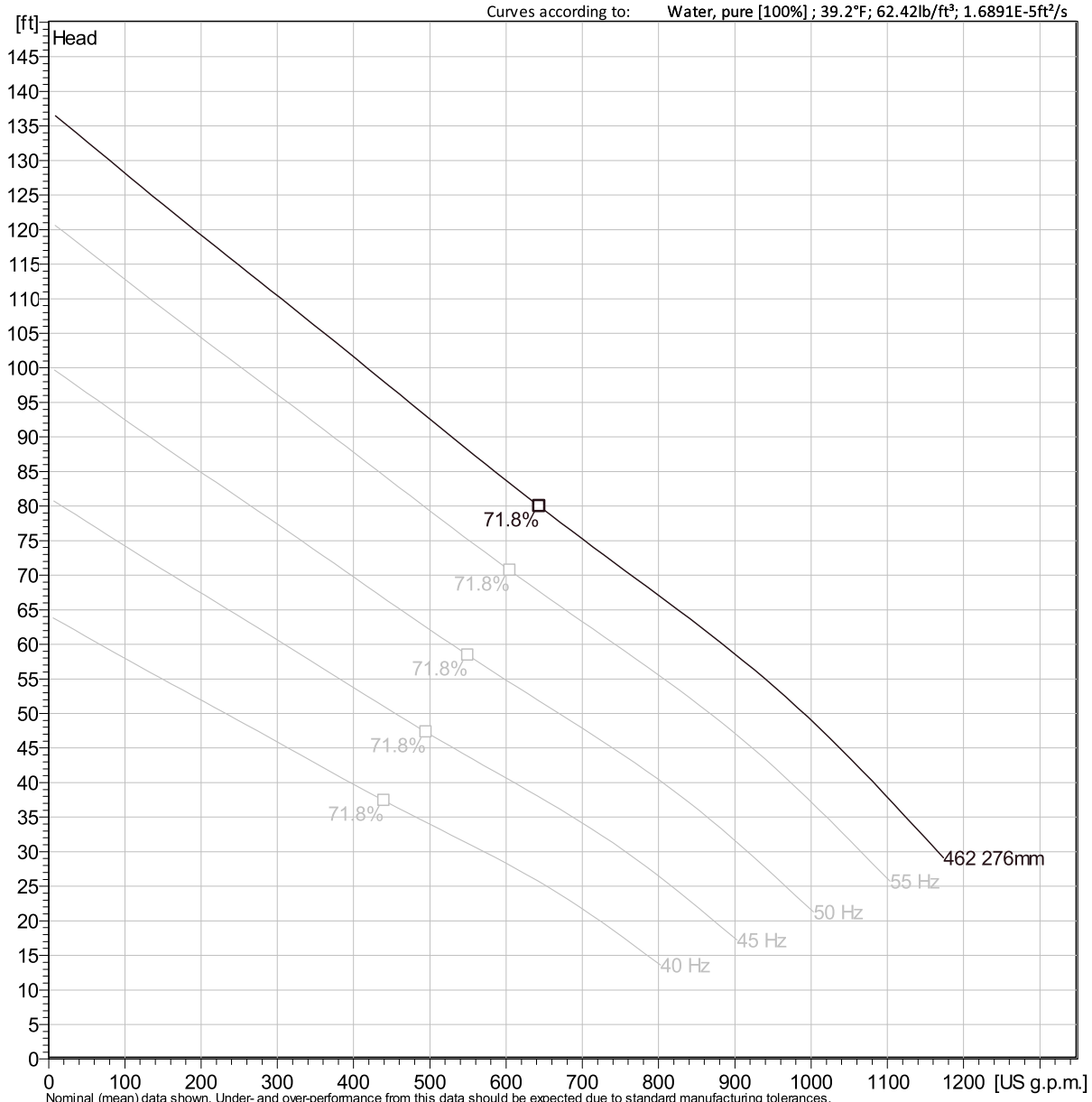
Program version	Data version	User group(s)
72.0 - 2/20/2024 (Build 175)	3/5/2024 10:29 A3P3	Xylem: USA - EXT, USA - INT

NP 3153 HT 3~ 462

VFD Analysis

FLYGT
a xylem brand

Curves according to: Water, pure [100%] ; 39.2°F; 62.42lb/ft³; 1.6891E-5ft²/s



Nominal (mean) data shown. Under- and over-performance from this data should be expected due to standard manufacturing tolerances.
Please consult your local Flygt representative for performance guarantees.

Operating Characteristics

Pumps / Systems	Frequency	Flow	Head	Shaft power	Flow	Head	Shaft power	Hydr.eff.	Specific energy	NPSHre
		US g.p.m.	ft	hp	US g.p.m.	ft	hp		kWh/US MG	ft

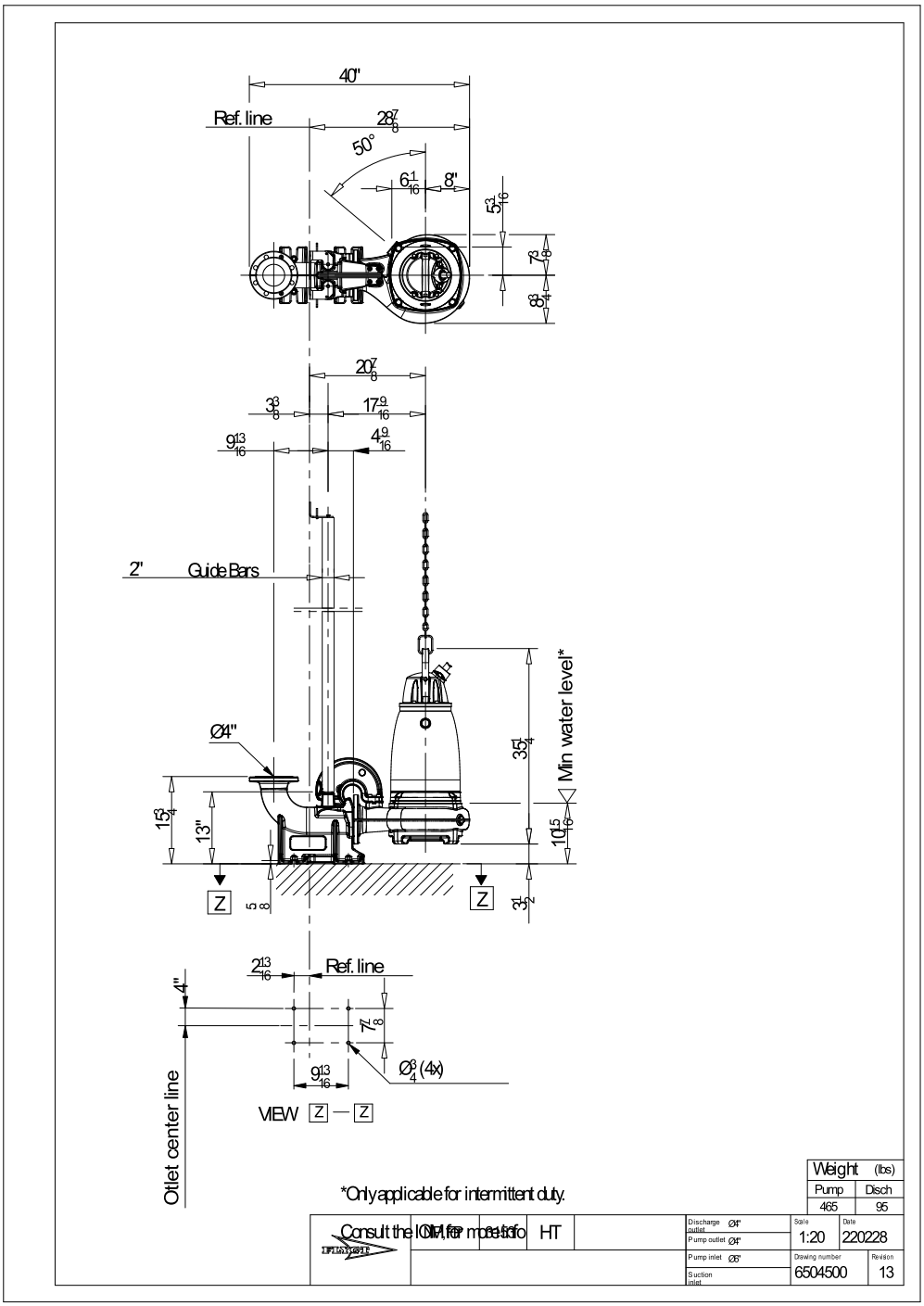
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Block		**Created on**	3/12/2024	**Last update**	3/12/2024

Program version	Data version	User group(s)
72.0 - 2/20/2024 (Build 175)	3/5/2024 10:29 A3P3	Xylem: USA - EXT, USA - INT

NP 3153 HT 3~ 462

Dimensional drawing

FLYGT
a xylem brand



Project	Xylect-21983549	**Created by**	Robert Simcox		
Block		**Created on**	3/12/2024	**Last update**	3/12/2024

Pump Station Evaluation Report

49 - Beaumont

Prepared For:

City of Wildwood

Evaluation Date:

2/6/2024

Report Date:

September 26, 2024

Version 1

Kimley»Horn

Version	Publish Date	Description
1	See Cover	Original/Version 1

Table 0.1 - Revision History

Version	Publish Date	Test Date	Description

Table 0.2 - Previous Evaluation History

This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn shall be without liability to Kimley-Horn.

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ATTACHMENTS

Attachment 1 ..... **Test Data Graphs**

Attachment 2 ..... **Supplementary Pump Information**

ABBREVIATIONS

Ø	Phase
AC	Alternating Current
ADD	Automated Draw Down
ADF	Average Daily Flow
ARR	Automated Rate of Rise
ATL	Across The Line
Avg	Average
BEP	Best Efficiency Point
CL	Center Line
Disch	Discharge
ETM	Elapsed Time Meter
FLA	Full Load Amps
FM	Force Main
Ft	Feet
FPS	Feet Per Second
FSFO	Full Speed Full Open
Gal	Gallons
GPM	Gallons Per Minute
HGL	Hydraulic Grade Line
HP	Horsepower
Hrs	Hours
H:M:S	Hours:Minutes:Seconds
Hz	Hertz
In	Inches
InvIn	Invert In
KWH	Kilowatt-Hours
L	Length
L1, L2, L3	Leg 1, 2 & 3 or Length 1, 2 & 3
MSL	Mean Sea Level
MTBF	Mean Time Between Failures
N	Neutral
P	Pump
PCL	Pump Center Line
PCP	Pump Control Panel
PF	Power Factor
PSI	Pounds Per Square Inch
PT	Point
RPM	Revolutions Per Minute
TDH	Total Dynamic Head
TVSS	Transient Voltage Surge Suppressor
V	Volts
VFD	Variable Frequency Drive
WTW	Wire To Water
WW	Wet Well
Yr	Year

1 INTRODUCTION

Kimley-Horn and Associates, Inc. evaluated the pump station through pump performance testing and a condition assessment. This report summarizes the data and results of that evaluation. The performance tests were conducted using the XAK-PACK pump performance monitoring device. The following pages provide summaries of the data collected and notes about the pumps' performance.

1.1 SITE INFORMATION

Beaumont / Site Number 49			
Date of Evaluation	2/6/2024		
Address	Spanish Hbr Dr, Wildwood, FL 34785		
Coordinates	28.868407, -82.018491		
Fluid Conveyed	Wastewater		
Station Style	Submersible		
Number of Pumps	2	Number of Pump Slots	2
Pump Type	Submersible		
Flow Meter Type	N/a		
Year of Construction	2019	Based on	☒Docs. ☐Estimation ☐Other
Basin/Zone	Unknown		
Firm Capacity (Design)	504 GPM / 0.73 MGD		
Firm Capacity (Test)	886 GPM / 1.28 MGD		
Discharge Description	6-inch upsizing to 16-inch, 23,140 LF unknown manifold FM discharging to a wastewater treatment plant		
Electrical Service	277/480 Wye		
Site Generator	Caterpillar diesel with belly tank		
Bypass Ability	Bypass riser on site		
Miscellaneous Features			

Site Notes:

1.2 SITE MAP



Figure 1.1 - Site Location Map

2 PUMP PERFORMANCE TESTS

Pump performance tests were conducted on the pumps utilizing the measurement tools detailed below. **Table 2.1 - Measurement Methods** describes the measurements taken during the test and the measurement method. Some measurements were confirmed utilizing a secondary measurement method. See **Attachment 1** for graphs of the digitally recorded data. For each test, note the following:

1. Common accuracies for measurements of flow, pressure, voltage and current are ±1%.
2. Friction loss is calculated using the Hazen-Williams formula and the Bernoulli equation. Piping characteristics are based on best available data.

Parameter	Measurement Method	
	Primary	Secondary
Flow	Level Transducer (XAK-PACK)	N/A
Pressure	Pressure Transducer (XAK-PACK)	Liquid Filled Pressure Gauge
Wet Well Level	Level Transducer (XAK-PACK)	N/A
Volts	Voltage Probes (XAK-PACK)	Fluke 376FC
Amps	Current Transducers (XAK-PACK)	Fluke 376FC
Power Factor	Power Factor Monitor (XAK-PACK)	N/A

Table 2.1 - Measurement Methods

2.1 PUMP #1

Below is a summary of the pump characteristics and performance test results.

Parameter	Units	Value
Pump Manufacturer	-	Flygt
Pump Model	-	NP 3203 HT 3~ 465
Pump Style	-	Submersible
Pump Impeller Dia	Inches	14.56
Pump Rated Capacity	GPM	504
Pump Rated Head	Ft	230
Pump ETM	Hours	476
Pump Flow @ BEP Design Curve	GPM	1100
Pump Hyd Eff @ Design Pt	%	53.0%
Pump WTW Eff @ Operating Pt	%	64%
Pump NPSHr @ Operating Pt	Ft	15
Motor Synchronous Speed	RPM	1800
Motor Rated Speed	RPM	1775
Motor No. Phases	No	3
Motor Starters	-	SS
Motor Rated Voltage	Volts	460
Motor Rated Horsepower	HP	70.0
Motor Service Factor	-	1.15
Motor FLA	Amps	79.0
Mfg. Motor Eff. @ Operating Pt	%	93%
Mfg. Starter Eff. @ Operating Pt	%	100%

Table 2.2 - Pump #1 Design Characteristics

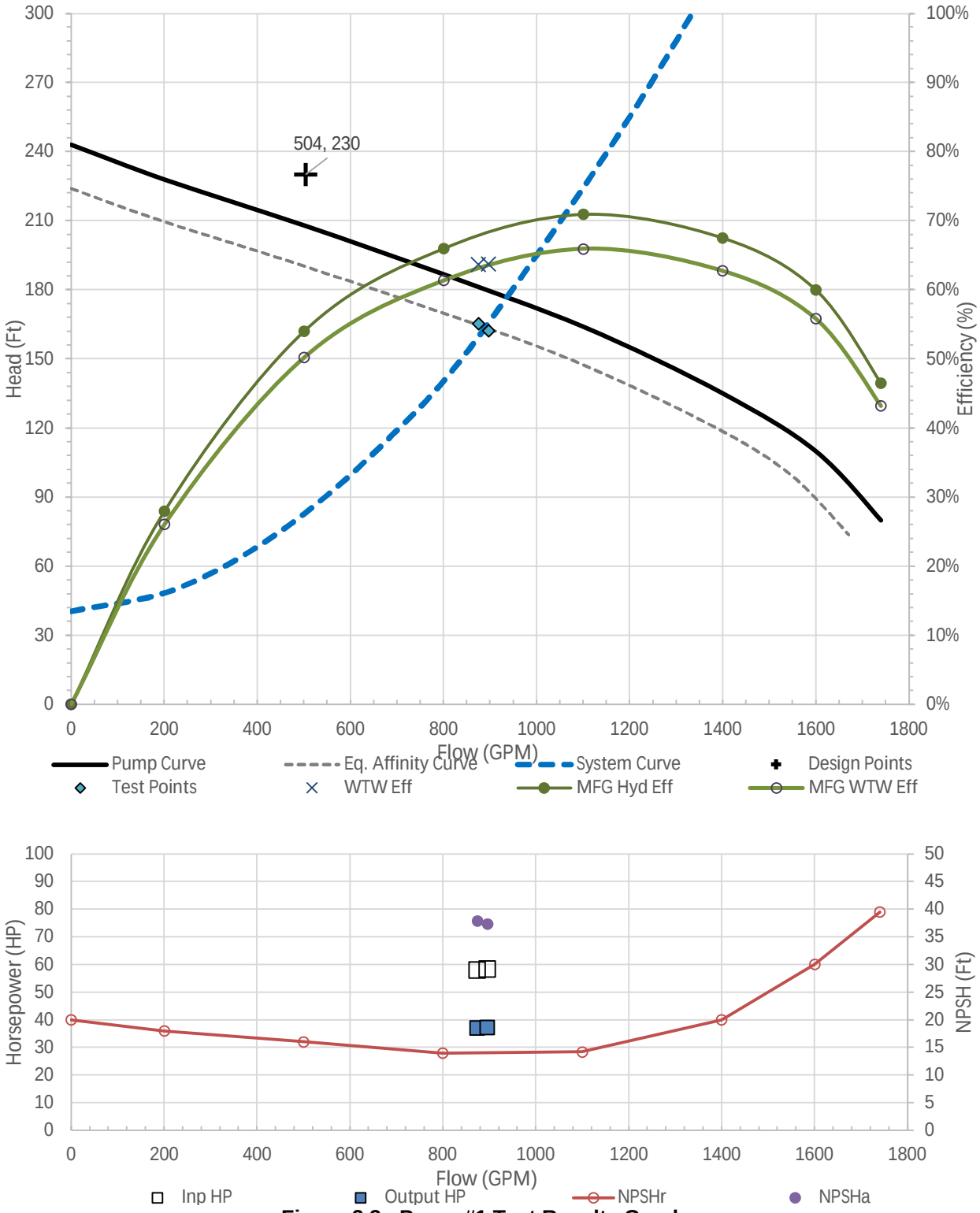


Figure 2.3 - Pump #1 Test Results Graphs

	Parameter	Units	Lower Limit	Test Value	Upper Limit	Comment
Measured	Average Output (FSFO)	GPM	-	886	-	
	Average TDH (FSFO)	Ft	-	163.8	-	
	Average WTW Efficiency (FSFO)	%	-	64%	-	
	Average Input HP (FSFO)	HP	-	58.1	-	
	Average Current Draw (FSFO)	Amps	-	66.1	-	
	Suction Velocity (FSFO)	FPS	2	-	7	
	Discharge Velocity (FSFO)	FPS	2	19.6	7	1
	BEP Comparison (FSFO)	%	80%	81%	115%	
	Average Output (FSFO)	%	90%	176%	110%	2
	Affinity Law Eq. Curve	%	-5%	-4.0%	5%	
	NPSHa	Ft	15	37.6	N/A	
	WTW Eff @ Operating Pt	%	-5%	0%	5%	
	Input Frequency	Hz	-5%	0%	5%	
	Input Voltage (L-L)	%	-10%	-6.3%	10%	
	Voltage Drop	%	-15%	2.5%	N/A	
	Voltage Imbalance	%	-10%	0.7%	10%	
	Current Imbalance	%	-10%	4.9%	10%	
	Motor FLA	%	-50%	83.7%	105%	
	Motor Load	%	50%	82.9%	115%	
	Motor Slip Speed	%	1770	1775.0	1805	
	Vibration	In/Sec	0	0.0	-	
Observed	Surge	1-5	-	2	3	
	Vibration	1-5	-	2	3	
	Cavitation	1-5	-	1	3	
	Mechanical Noise	1-5	-	2	3	
	Leaks	1-5	-	1	3	
	Exterior Condition	1-5	-	2	3	
	Overall Score	1-5	-	2	3	

Table 2.4 - Pump #1 Test Summary

Pump #1 - Test Comments

1. Discharge velocity in the onsite piping is above the recommended upper limit. Operation in this range results in high head loss, cavitation, and excessive wear inside piping and appurtenances.
2. The pump is outputting 176% of the design condition.

2.2 PUMP #2

Below is a summary of the pump characteristics and performance test results.

Parameter	Units	Value
Pump Manufacturer	-	Flygt
Pump Model	-	NP 3203 HT 3~ 465
Pump Style	-	Submersible
Pump Impeller Dia	Inches	14.56
Pump Rated Capacity	GPM	504
Pump Rated Head	Ft	230
Pump ETM	Hours	445
Pump Flow @ BEP Design Curve	GPM	1100
Pump Hyd Eff @ Design Pt	%	53.0%
Pump WTW Eff @ Operating Pt	%	65%
Pump NPSHr @ Operating Pt	Ft	15
Motor Synchronous Speed	RPM	1800
Motor Rated Speed	RPM	1775
Motor No. Phases	No	3
Motor Starters	-	SS
Motor Rated Voltage	Volts	460
Motor Rated Horsepower	HP	70.0
Motor Service Factor	-	1.15
Motor FLA	Amps	79.0
Mfg. Motor Eff. @ Operating Pt	%	93%
Mfg. Starter Eff. @ Operating Pt	%	100%

Table 2.5 - Pump #2 Design Characteristics

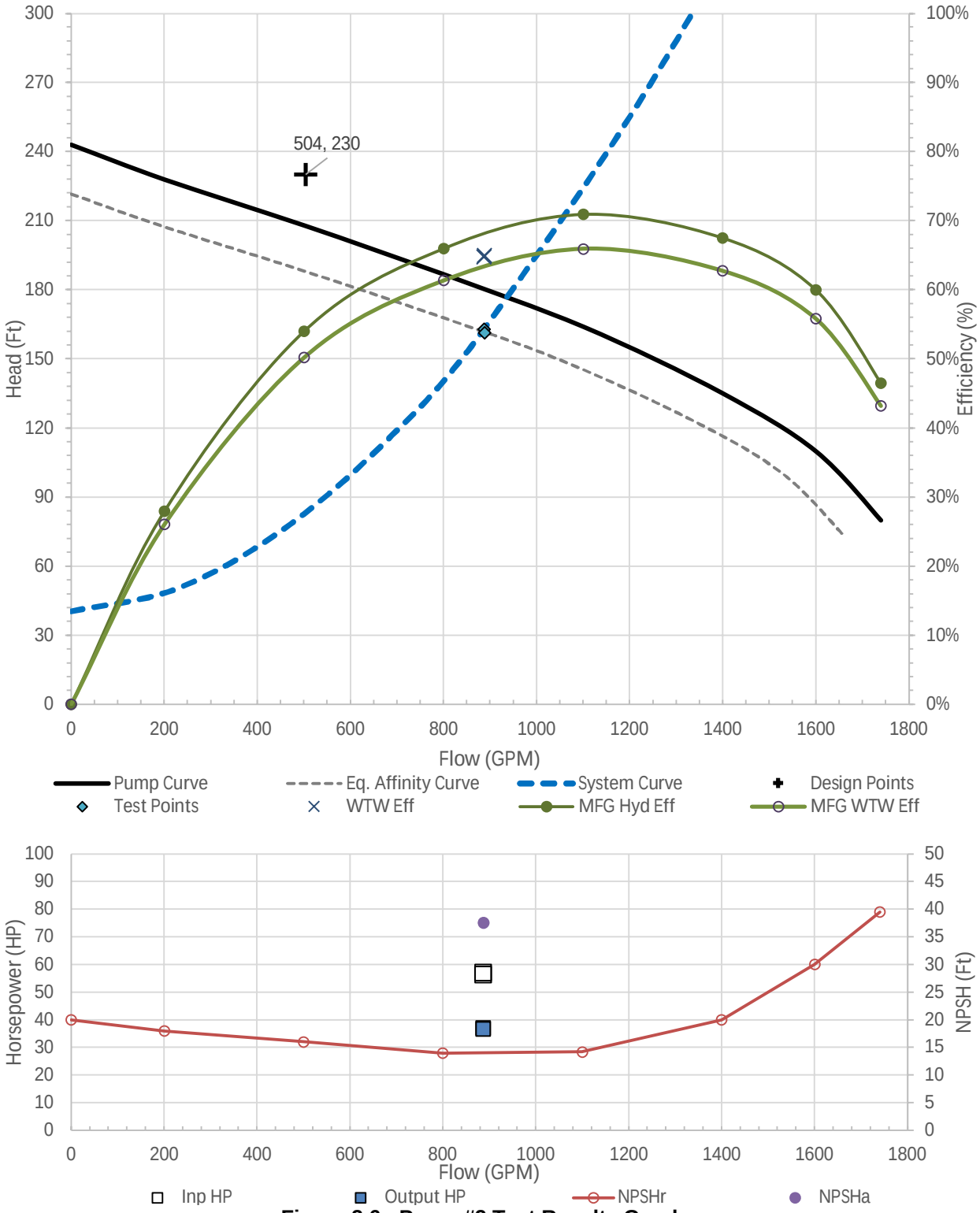


Figure 2.6 - Pump #2 Test Results Graphs

	Parameter	Units	Lower Limit	Test Value	Upper Limit	Comment
Measured	Average Output (FSFO)	GPM	-	887	-	
	Average TDH (FSFO)	Ft	-	162.1	-	
	Average WTW Efficiency (FSFO)	%	-	65%	-	
	Average Input HP (FSFO)	HP	-	56.6	-	
	Average Current Draw (FSFO)	Amps	-	64.9	-	
	Suction Velocity (FSFO)	FPS	2	-	7	
	Discharge Velocity (FSFO)	FPS	2	19.6	7	
	BEP Comparison (FSFO)	%	80%	81%	115%	
	Average Output (FSFO)	%	90%	176%	110%	
	Affinity Law Eq. Curve	%	-5%	-4.5%	5%	
	NPSHa	Ft	15	37.6	N/A	
	WTW Eff @ Operating Pt	%	-5%	0%	5%	
	Input Frequency	Hz	-5%	0%	5%	
	Input Voltage (L-L)	%	-10%	-6.0%	10%	
	Voltage Drop	%	-15%	2.3%	N/A	
	Voltage Imbalance	%	-10%	0.2%	10%	
	Current Imbalance	%	-10%	5.3%	10%	
	Motor FLA	%	-50%	82.2%	105%	
	Motor Load	%	50%	80.8%	115%	
	Motor Slip Speed	%	1770	1775.0	1805	
	Vibration	In/Sec	0	0.0	-	
Observed	Surge	1-5	-	2	3	
	Vibration	1-5	-	2	3	
	Cavitation	1-5	-	1	3	
	Mechanical Noise	1-5	-	2	3	
	Leaks	1-5	-	1	3	
	Exterior Condition	1-5	-	2	3	
	Overall Score	1-5	-	2	3	

Table 2.7 - Pump #2 Test Summary

Pump #2 - Test Comments

1. Discharge velocity in the onsite piping is above the recommended upper limit. Operation in this range results in high head loss, cavitation, and excessive wear inside piping and appurtenances.
2. The pump is outputting 176% of the design condition.

2.3 HYDRAULICS SUMMARY

The system is operating with less head loss than anticipated by the design engineer. This results in a higher pump output than the design point. The design point appears to have been calculated using an overly conservative friction loss coefficient. The measured system curve exhibits less head loss than the theoretical curve. This discrepancy is likely due to a portion of the force main not being fully pressurized during pump operation because the peak of the force main is approximately 20% to the end of the force main and the discharge is at a lower elevation than the peak.

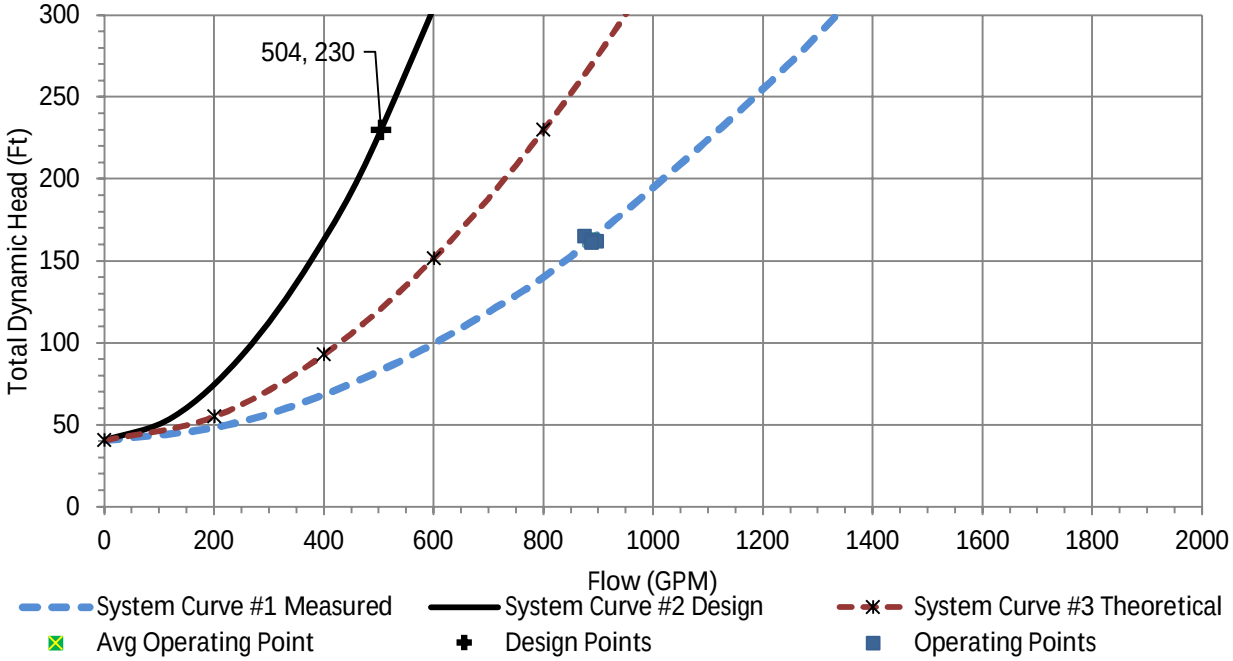


Figure 2.8 – System Hydraulic Information provides a graph of the system characteristics and a table describing the system curves. Length, Hazen-Williams (Hz-Wm), and diameter are approximated based on the best available information and fit to the data. System Curve Characteristics are intended to be for reference.

System Curve Characteristics					
Curve Name	**Curve Type**	**Length (Ft)**	**Hz-Wm**	**Diameter (In)**	**Calculated Based On**
System Curve #1	Measured	23140	110	10.5	Test Data
System Curve #2	Design	23140	110	7.7	Design Operating Condition
System Curve #3	Theoretical	23140	110	6, 8, 12, 16	Available GIS and Record Drawing Data

Figure 2.8 – System Hydraulic Information

2.4 PIPELINE PERFORMANCE INDICATORS

Figure 2.9 – Pipe Velocities displays the velocities in each known diameter of the pressurized conveyance system. The Average Test Output Velocity represents the velocity generated by the average pumping rate produced by testing. The Station Firm Capacity Velocity represents the velocity based on the station's firm capacity (output with the largest pump out of service). The color gradient represents ranges of acceptable to problematic velocities. Red areas of operation are problematic and green areas of operation are acceptable.

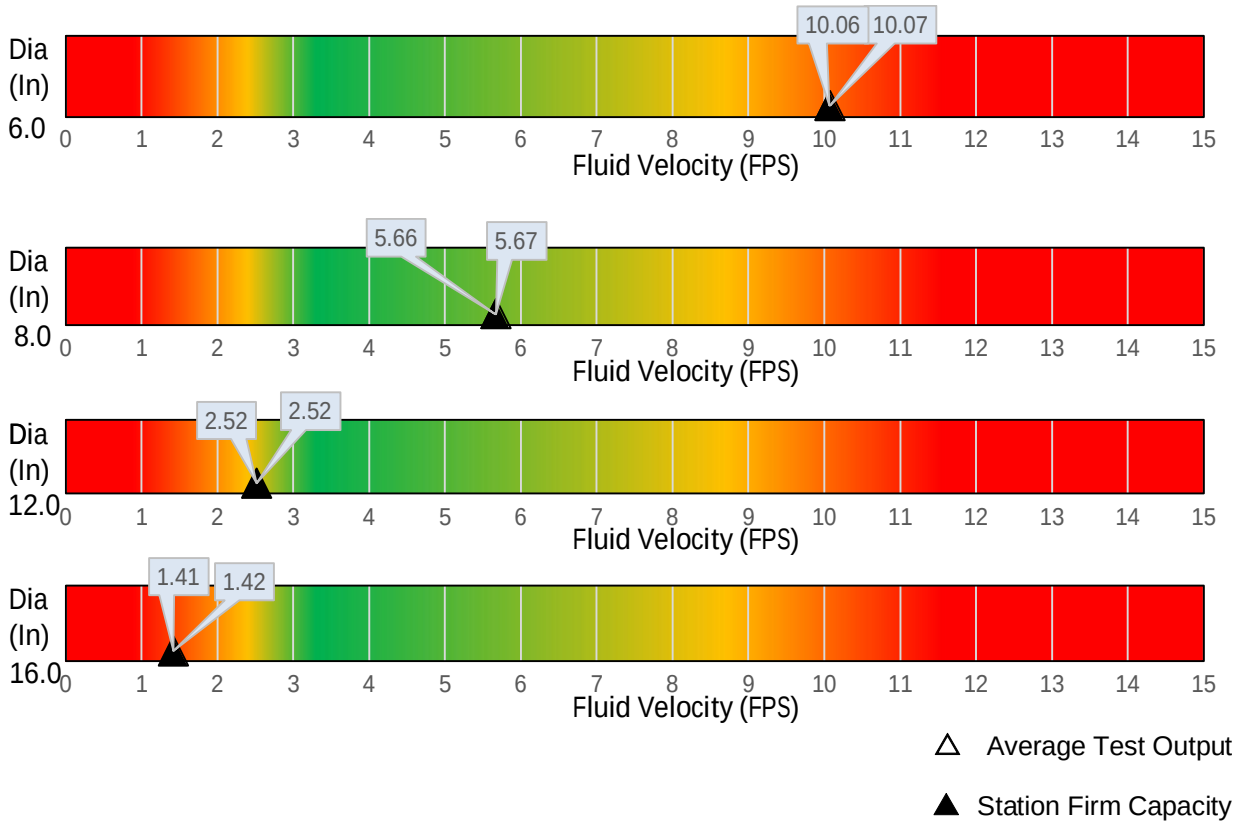


Figure 2.9 – Pipe Velocities

The maximum observed pressure at the station during the testing period is provided below in

Figure 2.10 - Maximum Observed Pressure. System pressure capabilities vary depending upon pipe material type, pressure rating, elevation, age, condition, etc. This performance indicator is provided for reference only and is not a condition assessment of the pipeline. For systems with pressures above approximately 100 PSI, consider a more detailed analysis. See the **Attachment 1 - Graph B** for additional pressure data.

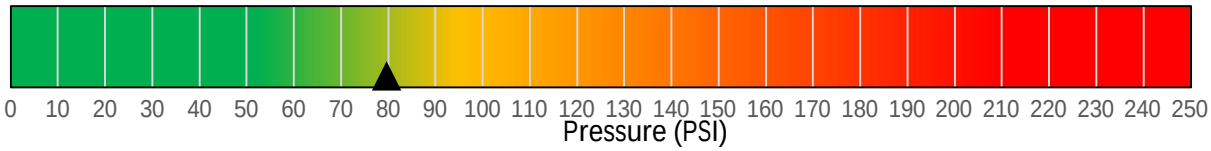


Figure 2.10 - Maximum Observed Pressure

2.5 SYSTEM PRESSURES

Figure 2.11 - Pressure Cycle shows a typical single-pump pressure cycle measured during testing. The pressure data captured for this test is limited to 2-second intervals which may not have captured the entire range of actual pressures. The complete log of pressure readings is provided in **Attachment 1 – Test Data Graphs**. For more accurate surge data, a surge monitoring device should be used to capture pressure at shorter time intervals over a longer period of time. **Table 2.12 - Further Surge-Related Actions** provides a list of recommended surge-related actions.

The pressure transducer used for measuring pressures has a range of 0 to 200 PSI. Pump startup produced an upsurge of approximately 80 PSI. Upon pump shut down, the observed minimum pressure was approximately 0 PSI and the maximum pressure was approximately 40 PSI creating a total observed pressure range of 80 PSI. It is likely that the minimum pressure produced on each pump shut down cycle was less than 0 PSI

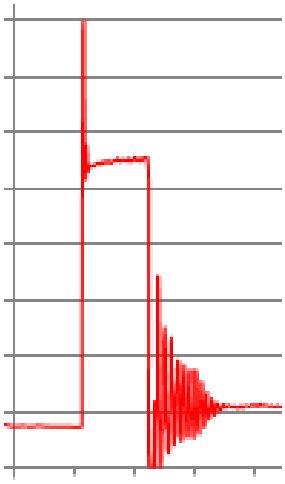


Figure 2.11 - Pressure Cycle

Further Surge Related Actions:	
	Perform extended period digital surge monitoring
	Perform calibrated surge modeling
	Revise operating scheme to reduce surge potential
	Evaluate piping system for pressure capacity and likelihood of failure
	Install physical surge mitigation strategies
✓	No further action

Table 2.12 - Further Surge-Related Actions

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3 RECOMMENDATIONS

The following recommendations are a result of the findings of this evaluation and should be considered for implementation. See **Section 2 Pump Performance Tests** for pump specific recommendations. In addition to the recommendations below, this site should/ be considered for the following overall planning and budgeting activities.

3.1 OVERALL RECOMMENDATIONS

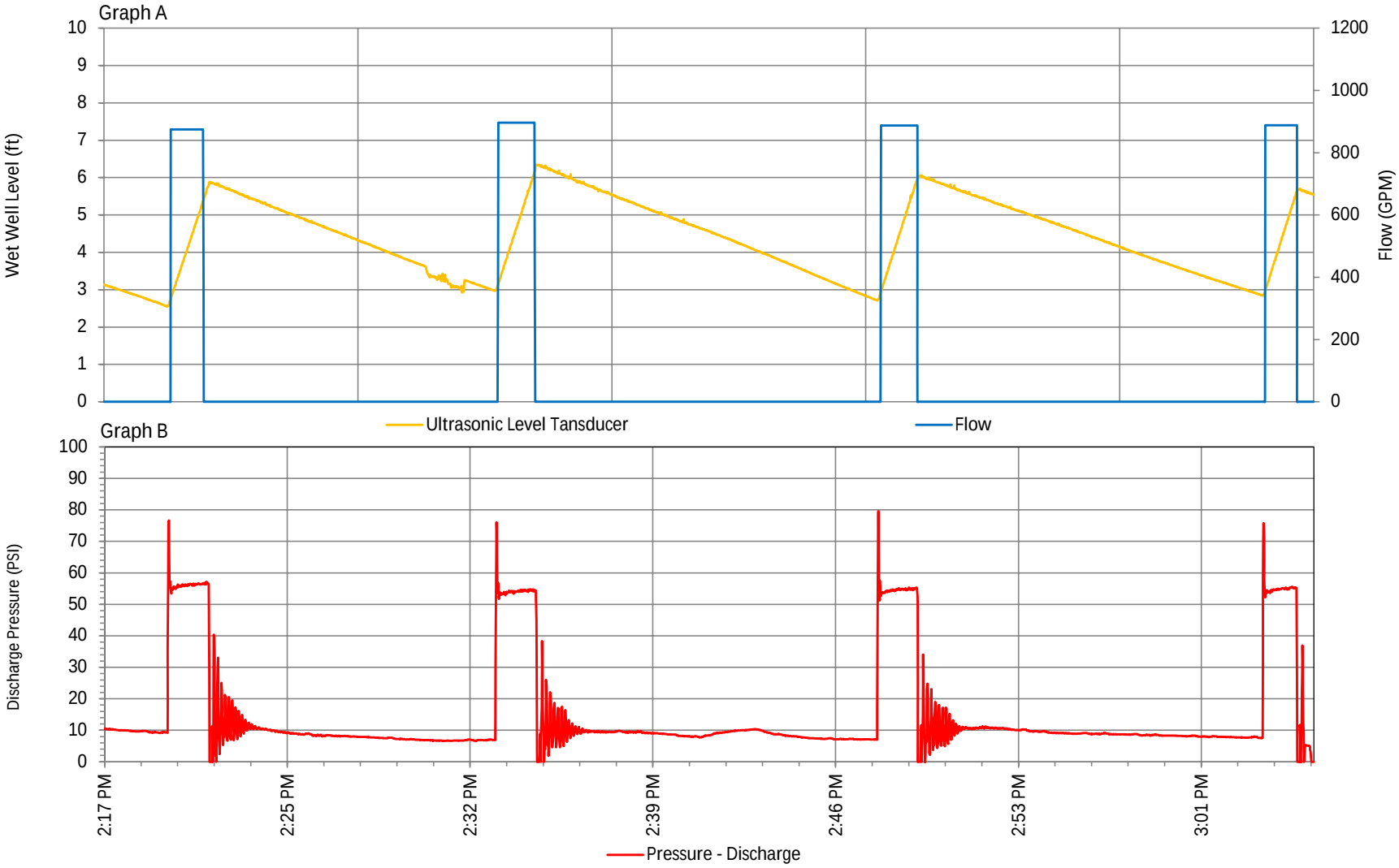
Overall Site Rating	Score	Description
	1	No recommendations currently. Monitor station for worsening conditions, perform regular O&M, reassess condition in 2-5 years.
	2	Complete recommendations listed in Section 3.2, monitor station for worsening conditions, perform regular O&M, reassess condition in 1-3 years.
	3	Station requires improvements beyond replacement of individual components. Begin planning and budgeting for a major rehabilitation. Place under regular observation until rehabilitation is complete.
	4	Station does not appear to be brought into conformance with standards without replacement. Begin planning and budgeting for a station replacement. Place under regular observation until rehabilitation is complete.

3.2 MISCELLANEOUS RECOMMENDATIONS

No recommendations for this site.

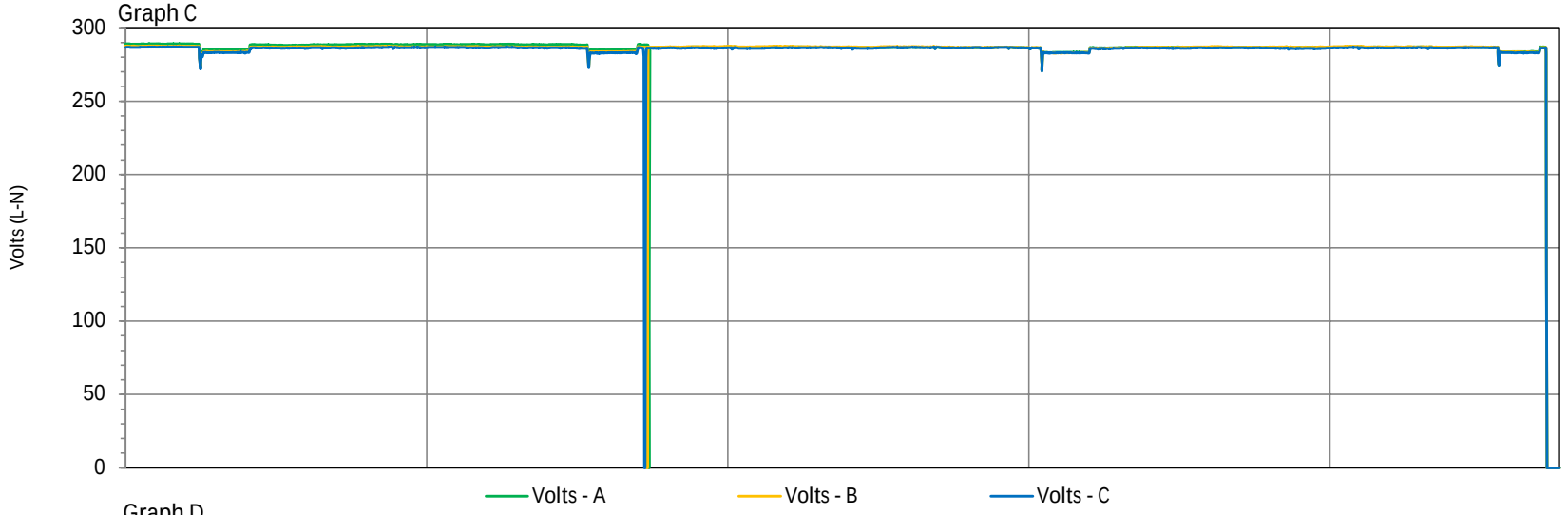
4 ATTACHMENTS

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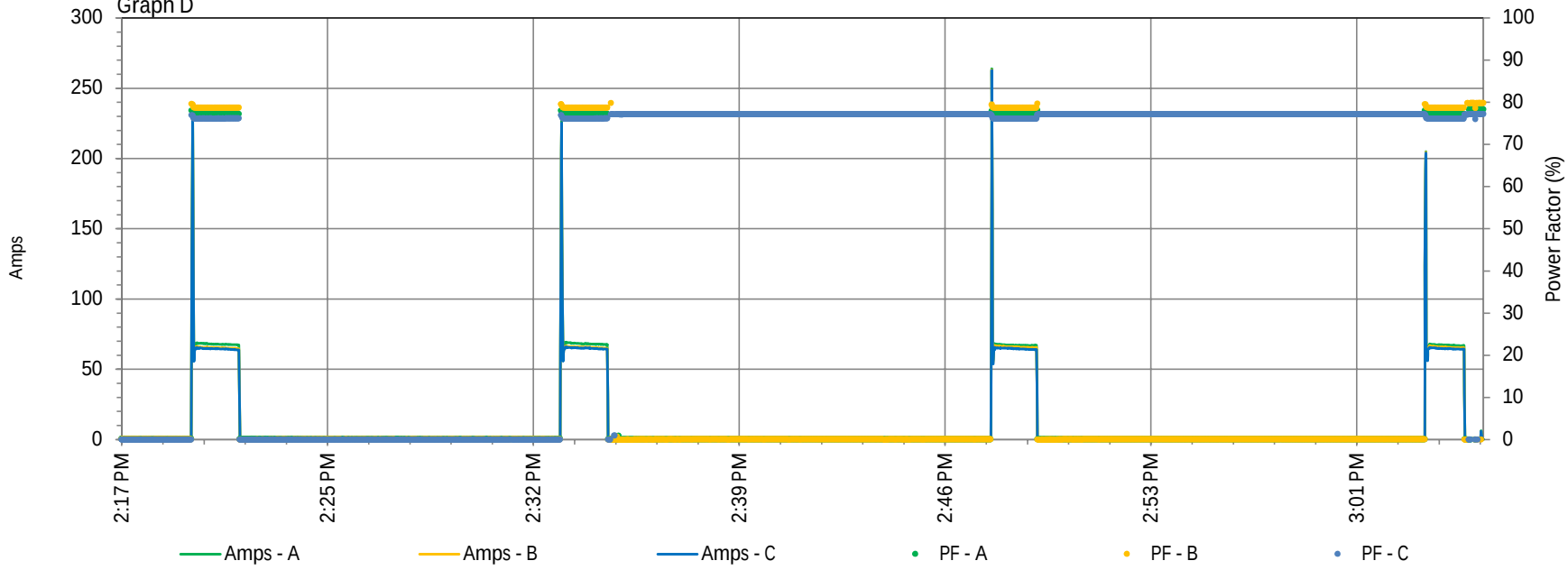


* Times shown are Eastern Standard Time

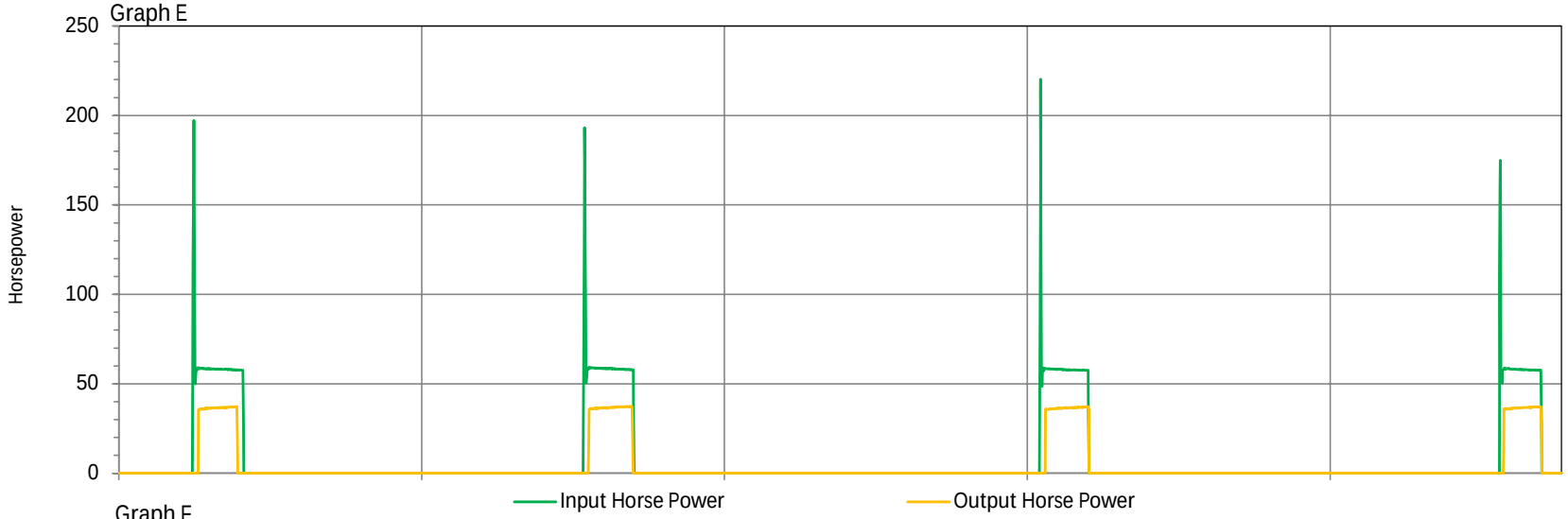
Graph C



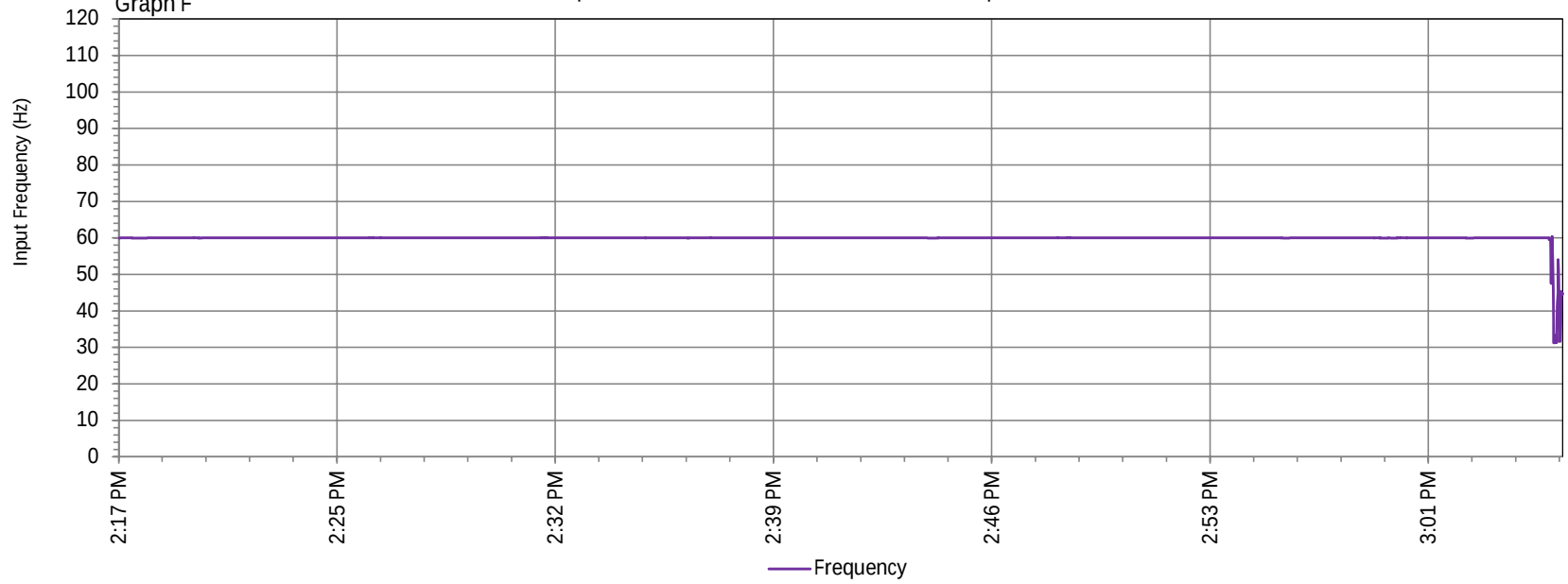
Graph D



Graph E



Graph F



FLYGT
a xylem brand

BILL OF MATERIALS

Pumps

Qty.	Model	Impeller	HP	Phase	Voltage	Duty Points	Motor Leads
2	4"NP3202	465/370mm	70	3	460	504GPM@203'TDH	50'

Specials: (2) 4"X4" Discharge Connections (1) Mix-Flush Valve

Accessories

1	Wetwell Hatch	Model: S1S	Size: 42"X60" Clear Opening w/ Safety Grate		Rating: 300
1	Valve Box Hatch	Model: S2S	Size: 60"X60" Clear Opening		Rating: 300
1	Hatch	Model: S1S	Size: 24"X24" Clear Opening		Rating: 300

2	316SS	3" Upper Guide Bar Brackets	
1	316SS	Cable Holder	
2	316SS	Grip-eye Cable	Length: 25'
8	316SS	Threaded rods w/adhesive anchoring	
4	316SS	3" Diameter Guide Rails	Length: 25'

Control Panel

1	Control Panel DUPLEX 70HP 3PH 460VOLT PER PER CITY OF WILDWOOD SPECIFICATIONS	Enclosure Material: 304SS NEMA Rating: 3R

1	Generator Receptacle	
4	ENM-10	Length: 40'

Specials:
(1) MULTITRODE LEVEL PROBE
(1) MJK 7100 FLOW METER
(2) SOFT STARTS
(1) ROSEMOUNT TRANSDUCER

NP 3202 HT 3~ 465

Performance curve

Pump

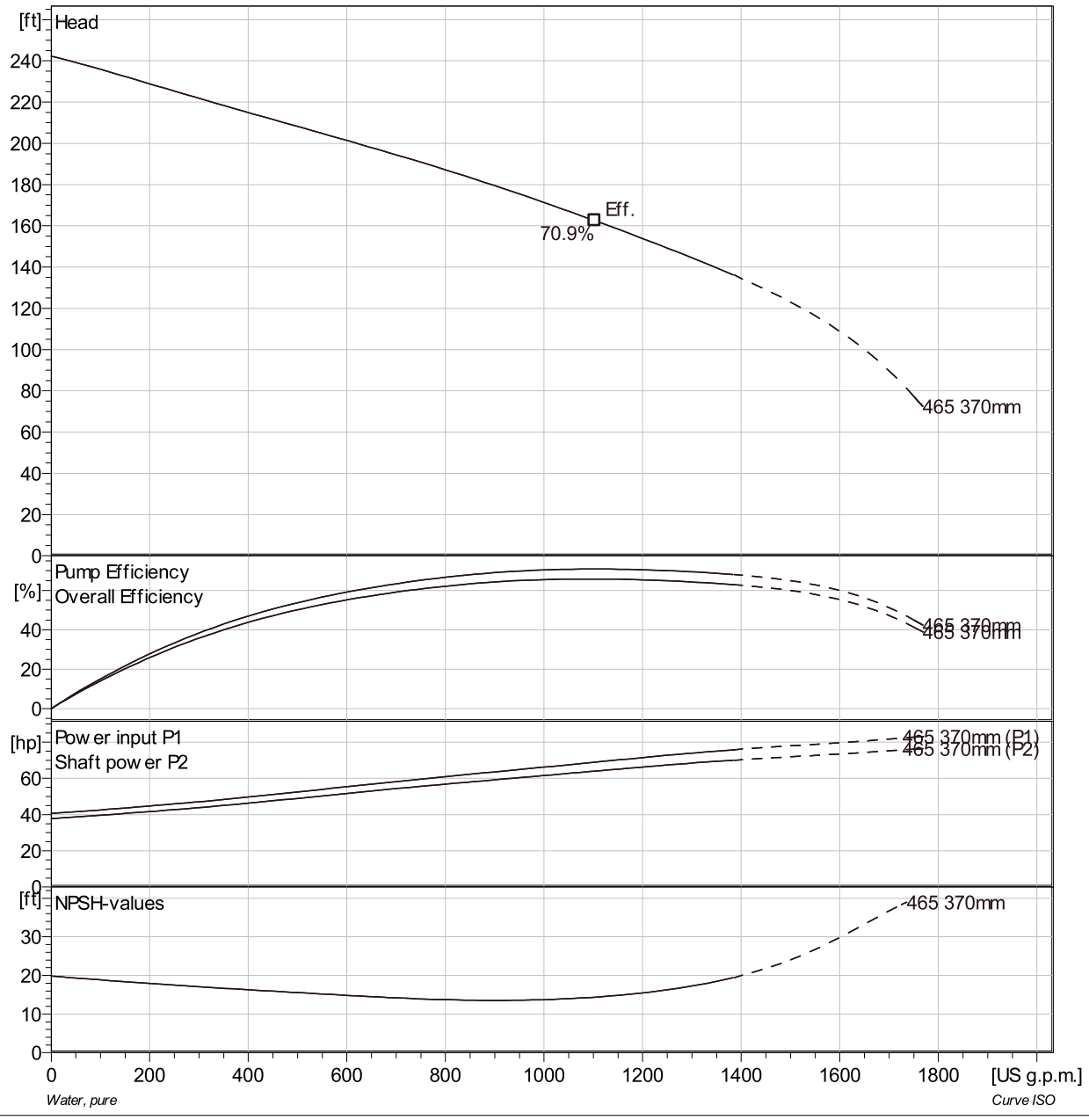
Discharge Flange Diameter	3 15/16 inch
Suction Flange Diameter	200 mm
Impeller diameter	14 9/16"
Number of blades	2

Motor

Motor #	N3202.185 30-29-4AA-W 70hp
Stator variant	1
Frequency	60 Hz
Rated voltage	460 V
Number of poles	4
Phases	3~
Rated power	70 hp
Rated current	79 A
Starting current	550 A
Rated speed	1775 rpm

Power factor	
1/1 Load	0.90
3/4 Load	0.87
1/2 Load	0.80

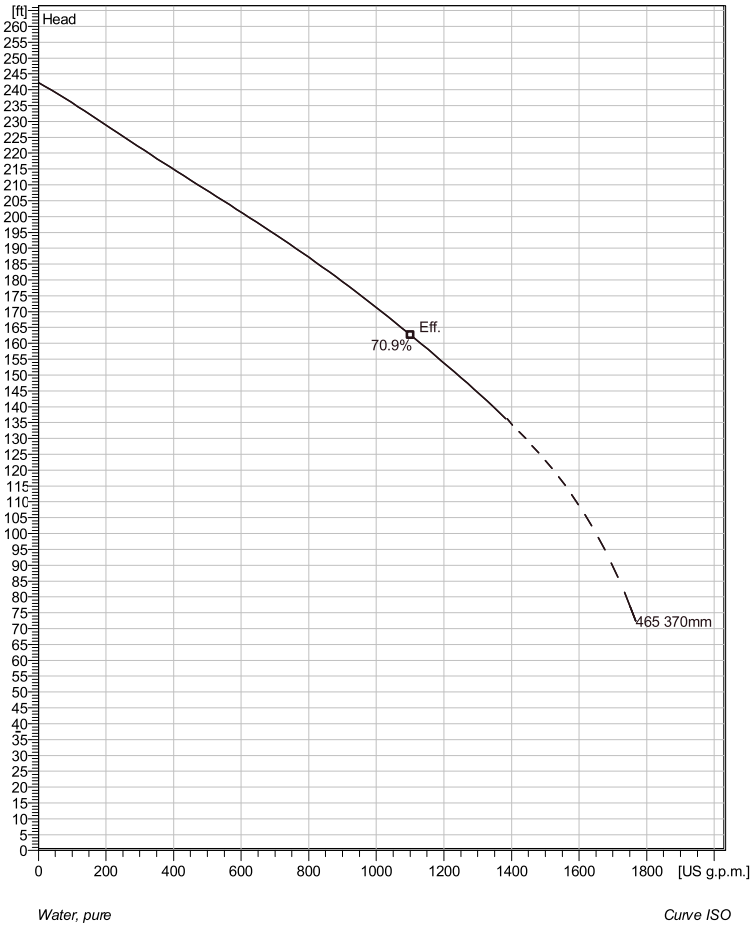
Motor efficiency	
1/1 Load	92.5 %
3/4 Load	93.0 %
1/2 Load	93.0 %



Project	Project ID	Created by	Created on	Last update
			1/28/2019	

NP 3202 HT 3~ 465

Technical specification

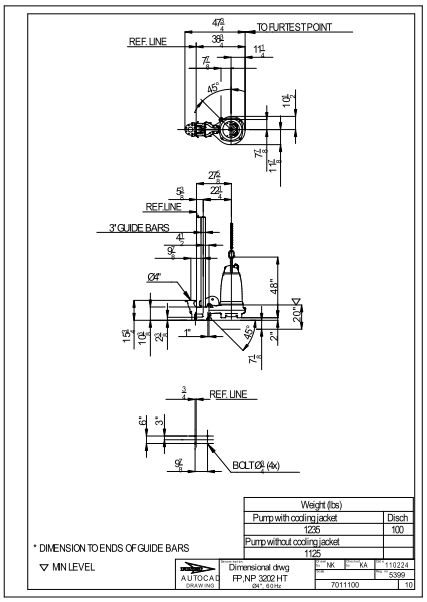


Water, pure *Curve ISO*



Note: Picture might not correspond to the current configuration.

Installation: P - Semi permanent, Wet



General

Patented self cleaning semi-open channel impeller, ideal for pumping in waste water applications. Possible to be upgraded with Guide-pin® for even better clogging resistance. Modular based design with high adaptation grade.

Impeller

Impeller material	Hard-Iron ™
Discharge Flange Diameter	3 15/16 inch
Suction Flange Diameter	7 7/8 inch
Impeller diameter	370 mm
Number of blades	2

Motor

Motor #	N3202.185 30-29-4AA-W 70hp Standard
Stator variant	1
Frequency	60 Hz
Rated voltage	460 V
Number of poles	4
Phases	3~
Rated power	70 hp
Rated current	79 A
Starting current	550 A
Rated speed	1775 rpm
Power factor	
1/1 Load	0.90
3/4 Load	0.87
1/2 Load	0.80
Motor efficiency	
1/1 Load	92.5 %
3/4 Load	93.0 %
1/2 Load	93.0 %

Configuration

Project	Project ID	Created by	Created on	Last update
			1/28/2019	

Pump Station Evaluation Report

7 - Charlotte Lift Station

Prepared For:

City of Wildwood

Evaluation Date:

02/06/2024

Report Date:

September 26, 2024

Version 1

Kimley»Horn

Version	Publish Date	Description
1	See Cover	Original/Version 1

Table 0.1 - Revision History

Version	Publish Date	Test Date	Description

Table 0.2 - Previous Evaluation History

This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn shall be without liability to Kimley-Horn.

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ATTACHMENTS

Attachment 1 ..... **Test Data Graphs**

Attachment 2 ..... **Supplementary Pump Information**

ABBREVIATIONS

Ø	Phase
AC	Alternating Current
ADD	Automated Draw Down
ADF	Average Daily Flow
ARR	Automated Rate of Rise
ATL	Across The Line
Avg	Average
BEP	Best Efficiency Point
CL	Center Line
Disch	Discharge
ETM	Elapsed Time Meter
FLA	Full Load Amps
FM	Force Main
Ft	Feet
FPS	Feet Per Second
FSFO	Full Speed Full Open
Gal	Gallons
GPM	Gallons Per Minute
HGL	Hydraulic Grade Line
HP	Horsepower
Hrs	Hours
H:M:S	Hours:Minutes:Seconds
Hz	Hertz
In	Inches
InvIn	Invert In
KWH	Kilowatt-Hours
L	Length
L1, L2, L3	Leg 1, 2 & 3 or Length 1, 2 & 3
MSL	Mean Sea Level
MTBF	Mean Time Between Failures
N	Neutral
P	Pump
PCL	Pump Center Line
PCP	Pump Control Panel
PF	Power Factor
PSI	Pounds Per Square Inch
PT	Point
RPM	Revolutions Per Minute
TDH	Total Dynamic Head
TVSS	Transient Voltage Surge Suppressor
V	Volts
VFD	Variable Frequency Drive
WTW	Wire To Water
WW	Wet Well
Yr	Year

1 INTRODUCTION

Kimley-Horn and Associates, Inc. evaluated the pump station through pump performance testing and a condition assessment. This report summarizes the data and results of that evaluation. The performance tests were conducted using the XAK-PACK pump performance monitoring device. The following pages provide summaries of the data collected and notes about the pumps' performance.

1.1 SITE INFORMATION

Site Name / Site Number	Site #		
Date of Evaluation	02/06/2024		
Address	4173 CR 124A		
Coordinates	28.89820014 -82.03410000		
Fluid Conveyed	Wastewater		
Station Style	Submersible		
Number of Pumps	2	Number of Pump Slots	2
Pump Type	Submersible		
Flow Meter Type	N/a		
Year of Construction	Unknown	Based on	☐Docs. ☐Estimation ☐Other
Basin/Zone	Unknown		
Firm Capacity (Design)	Unknown		
Firm Capacity (Test)	445 GPM / 0.64 MGD		
Discharge Description	12-inch, 10850 LF unknown FM discharging to a manhole		
Electrical Service	120/240 Delta		
Site Generator	Unknown		
Bypass Ability	Bypass inside of valve vault		
Miscellaneous Features			

Site Notes:

- The site is manifolded with one additional lift station.

1.2 SITE MAP

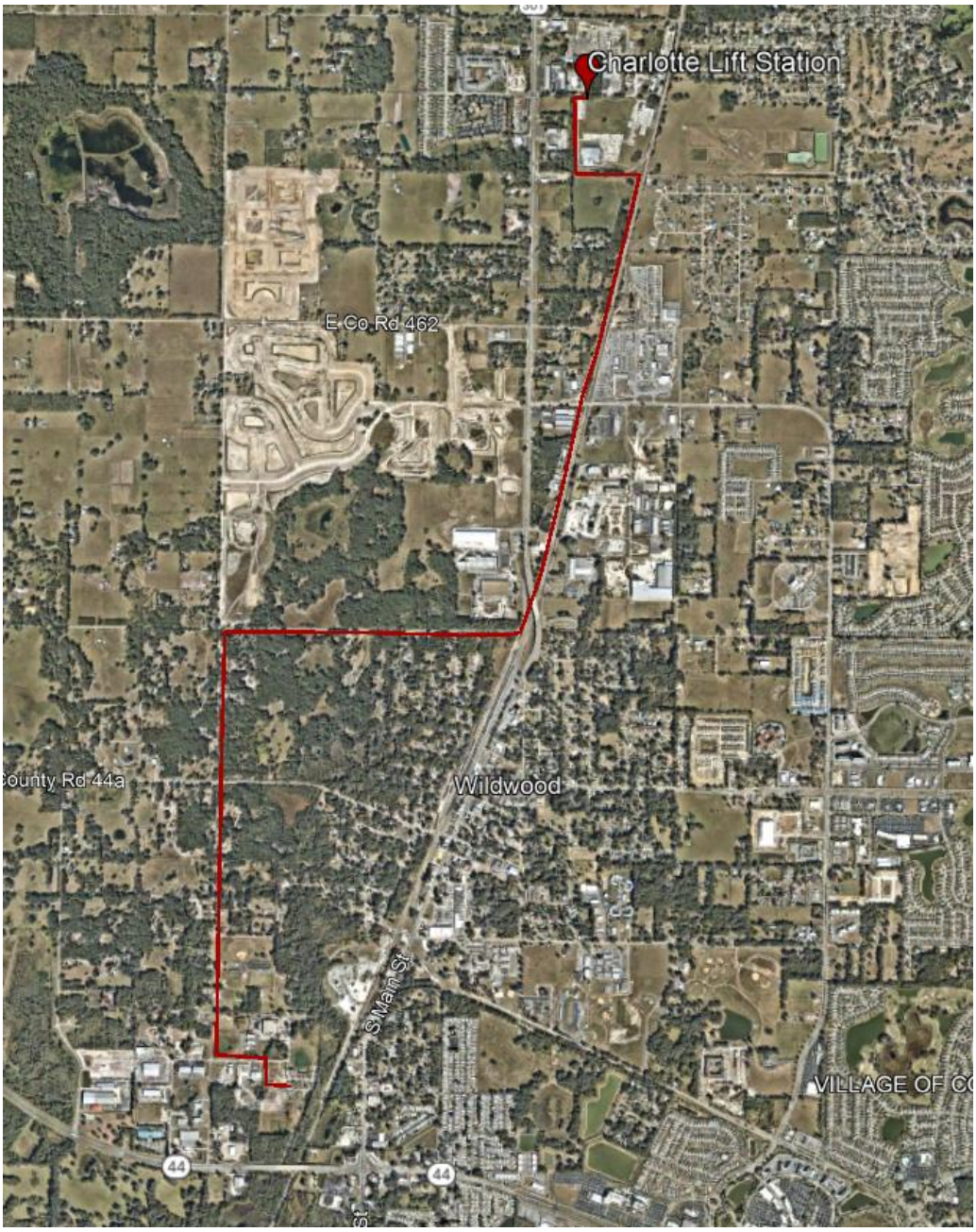


Figure 1.1 - Site Location Map

2 PUMP PERFORMANCE TESTS

Pump performance tests were conducted on the pumps utilizing the measurement tools detailed below. **Table 2.1 - Measurement Methods** describes the measurements taken during the test and the measurement method. Some measurements were confirmed utilizing a secondary measurement method. See **Attachment 1** for graphs of the digitally recorded data. For each test, note the following:

1. Common accuracies for measurements of flow, pressure, voltage and current are ±1%.
2. Friction loss is calculated using the Hazen-Williams formula and the Bernoulli equation. Piping characteristics are based on best available data.

Parameter	Measurement Method	
	Primary	Secondary
Flow	Level Transducer (XAK-PACK)	N/A
Pressure	Pressure Transducer (XAK-PACK)	Liquid Filled Pressure Gauge
Wet Well Level	Level Transducer (XAK-PACK)	N/A
Volts	Voltage Probes (XAK-PACK)	Fluke 376FC
Amps	Current Transducers (XAK-PACK)	Fluke 376FC
Power Factor	Power Factor Monitor (XAK-PACK)	N/A

Table 2.1 - Measurement Methods

2.1 PUMP #1

Below is a summary of the pump characteristics and performance test results.

Parameter	Units	Value
Pump Manufacturer	-	Flygt
Pump Model	-	CP 3152 HT 3~ 454
Pump Style	-	Submersible
Pump Impeller Dia	Inches	10.83
Pump Rated Capacity	GPM	-
Pump Rated Head	Ft	-
Pump ETM	Hours	2525
Pump Flow @ BEP Design Curve	GPM	770
Pump Hyd Eff @ Design Pt	%	-
Pump WTW Eff @ Operating Pt	%	52%
Pump NPSHr @ Operating Pt	Ft	12
Motor Synchronous Speed	RPM	1800
Motor Rated Speed	RPM	1750
Motor No. Phases	No	3
Motor Starters	-	ATL
Motor Rated Voltage	Volts	240
Motor Rated Horsepower	HP	20.0
Motor Service Factor	-	1.15
Motor FLA	Amps	51.0
Mfg. Motor Eff. @ Operating Pt	%	87%
Mfg. Starter Eff. @ Operating Pt	%	100%

Table 2.2 - Pump #1 Design Characteristics

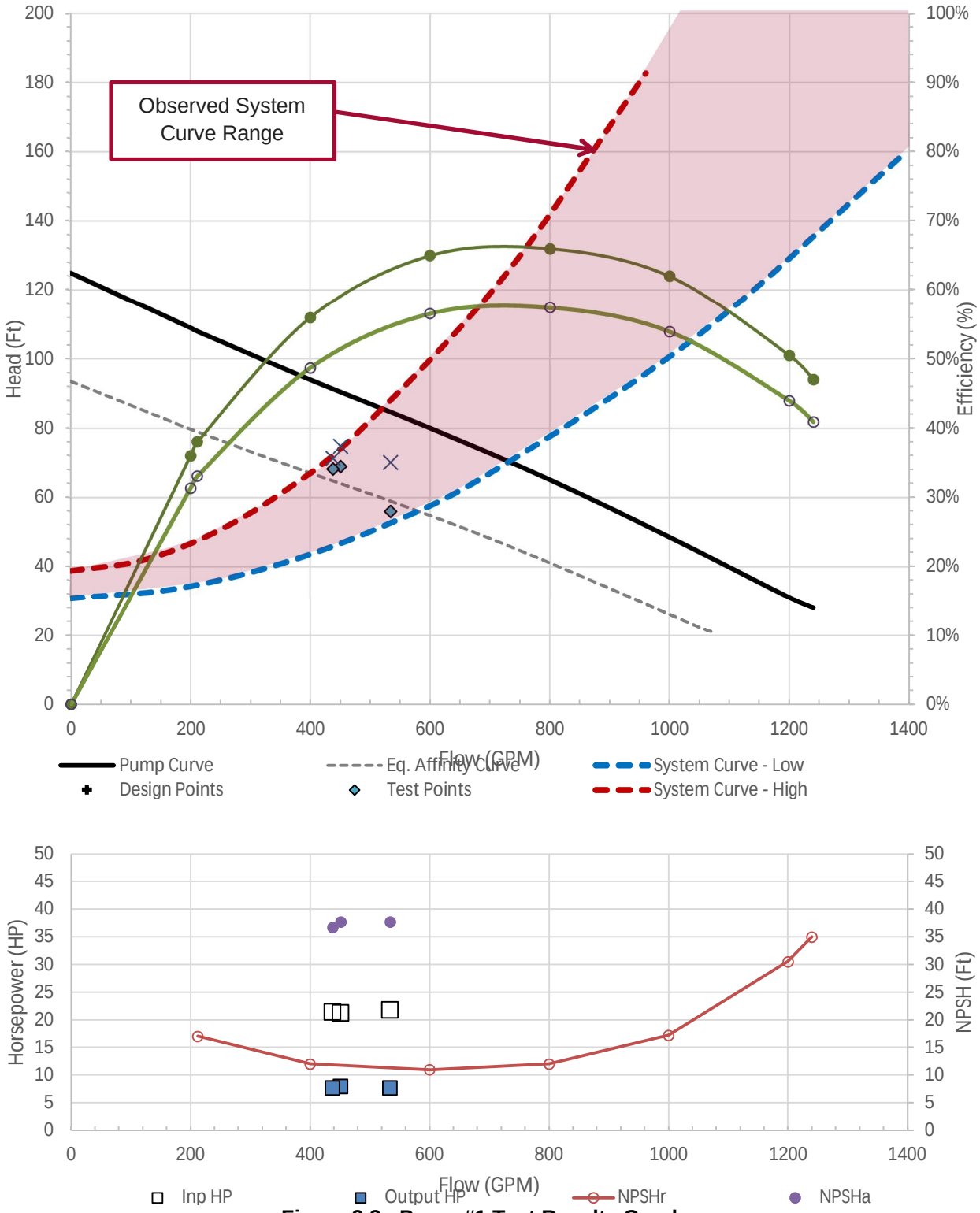


Figure 2.3 - Pump #1 Test Results Graphs

	Parameter	Units	Lower Limit	Test Value	Upper Limit	Comment
Measured	Average Output (FSFO)	GPM	-	445	-	
	Average TDH (FSFO)	Ft	-	68.5	-	
	Average WTW Efficiency (FSFO)	%	-	37%	-	
	Average Input HP (FSFO)	HP	-	21.3	-	
	Average Current Draw (FSFO)	Amps	-	48.6	-	
	Suction Velocity (FSFO)	FPS	2	-	7	
	Discharge Velocity (FSFO)	FPS	2	9.8	7	1
	BEP Comparison (FSFO)	%	80%	58%	115%	2
	Average Output (FSFO)	%	90%	-	110%	
	Affinity Law Eq. Curve	%	-5%	-13.5%	5%	3
	NPSHa	Ft	12	37.2	N/A	
	WTW Eff @ Operating Pt	%	-5%	-42%	5%	4
	Input Frequency	Hz	-5%	0%	5%	
	Input Voltage (L-L)	%	-10%	-1.5%	10%	
	Voltage Drop	%	-15%	-1.5%	N/A	
	Voltage Imbalance	%	-10%	2.3%	10%	
	Current Imbalance	%	-10%	4.8%	10%	
	Motor FLA	%	-50%	95.2%	105%	
	Motor Load	%	50%	106.4%	115%	
	Motor Slip Speed	%	1740	1750	1810	
	Vibration	In/Sec	0	-	-	
Observed	Surge	1-5	-	2	3	
	Vibration	1-5	-	2	3	
	Cavitation	1-5	-	2	3	
	Mechanical Noise	1-5	-	2	3	
	Leaks	1-5	-	1	3	
	Exterior Condition	1-5	-	3	3	
	Overall Score	1-5	-	2	3	

Table 2.4 - Pump #1 Test Summary

Pump #1 - Test Comments

1. Discharge velocity in the onsite piping is above the recommended upper limit. Operation in this range results in high head loss and increased wear inside piping and appurtenances.
2. The pump is operating at 58% of BEP flow.
3. The pump is operating at 86.5% equivalent affinity curve meaning significant impeller/volute wear has occurred. Or a different pump is installed from provided manufacturer data.
4. WTW efficiency is significantly below the recommended lower limit. This indicates significant pump and/or motor wear.
5. From the measured testing data pump 1 is showing significant signs of wear, operating on a reduced pump curve. We recommend pulling and evaluating the condition of the pump and repair/replace as necessary.

2.2 PUMP #2

Below is a summary of the pump characteristics and performance test results.

Parameter	Units	Value
Pump Manufacturer	-	Flygt
Pump Model	-	CP 3152 HT 3~ 454
Pump Style	-	Submersible
Pump Impeller Dia	Inches	10.83
Pump Rated Capacity	GPM	-
Pump Rated Head	Ft	-
Pump ETM	Hours	1930
Pump Flow @ BEP Design Curve	GPM	770
Pump Hyd Eff @ Design Pt	%	-
Pump WTW Eff @ Operating Pt	%	57%
Pump NPSHr @ Operating Pt	Ft	15
Motor Synchronous Speed	RPM	1800
Motor Rated Speed	RPM	1750
Motor No. Phases	No	3
Motor Starters	-	ATL
Motor Rated Voltage	Volts	240
Motor Rated Horsepower	HP	20.0
Motor Service Factor	-	1.15
Motor FLA	Amps	51.0
Mfg. Motor Eff. @ Operating Pt	%	87%
Mfg. Starter Eff. @ Operating Pt	%	100%

Table 2.5 - Pump #2 Design Characteristics

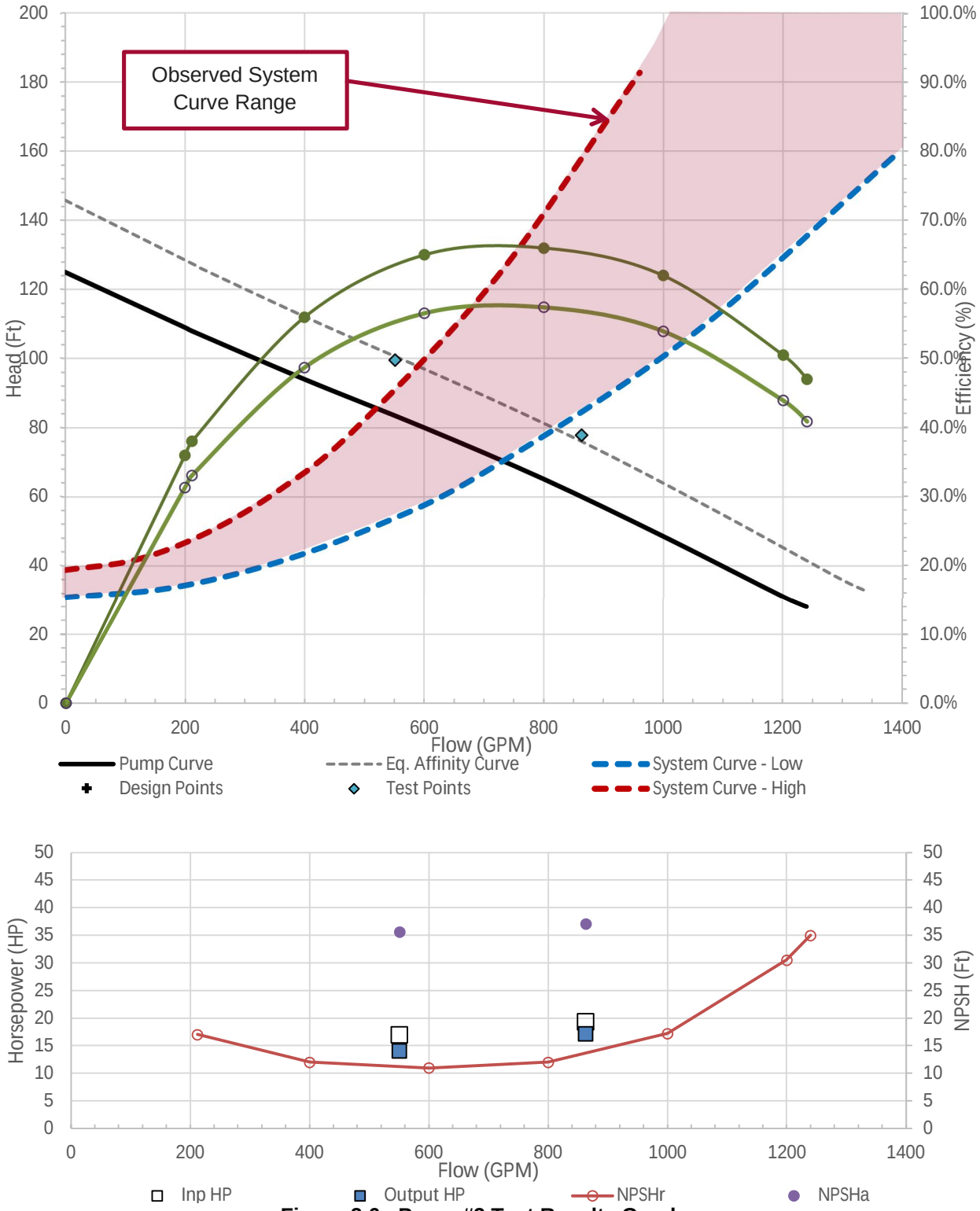


Figure 2.6 - Pump #2 Test Results Graphs

	Parameter	Units	Lower Limit	Test Value	Upper Limit	Comment
Measured	Average Output (FSFO)	GPM	-	551	-	
	Average TDH (FSFO)	Ft	-	99.6	-	
	Average WTW Efficiency (FSFO)	%	-	-	-	
	Average Input HP (FSFO)	HP	-	16.9	-	
	Average Current Draw (FSFO)	Amps	-	39.6	-	
	Suction Velocity (FSFO)	FPS	2	-	7	
	Discharge Velocity (FSFO)	FPS	2	12.2	7	1
	BEP Comparison (FSFO)	%	80%	72%	115%	2
	Average Output (FSFO)	%	90%	-	110%	
	Affinity Law Eq. Curve	%	-5%	8.0%	5%	3
	NPSHa	Ft	15	35.6	N/A	
	WTW Eff @ Operating Pt	%	-5%	-	5%	
	Input Frequency	Hz	-5%	0%	5%	
	Input Voltage (L-L)	%	-10%	1.1%	10%	
	Voltage Drop	%	-15%	-5.0%	N/A	
	Voltage Imbalance	%	-10%	7.2%	10%	
	Current Imbalance	%	-10%	6.5%	10%	
	Motor FLA	%	-50%	77.7%	105%	
	Motor Load	%	50%	84.6%	115%	
	Motor Slip Speed	%	1740	1750.0	1810	
	Vibration	In/Sec	0	-	-	
Observed	Surge	1-5	-	2	3	
	Vibration	1-5	-	2	3	
	Cavitation	1-5	-	2	3	
	Mechanical Noise	1-5	-	2	3	
	Leaks	1-5	-	1	3	
	Exterior Condition	1-5	-	3	3	
	Overall Score	1-5	-	2	3	

Table 2.7 - Pump #2 Test Summary

Pump #2 - Test Comments

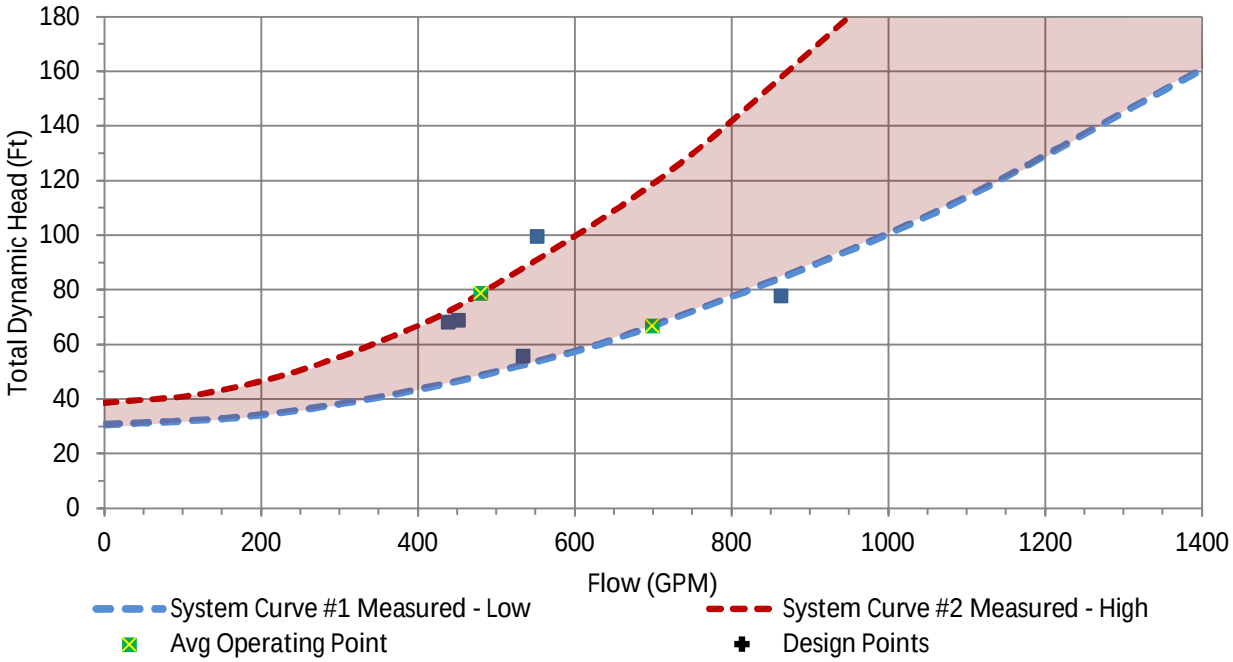
1. Discharge velocity in the onsite piping is above the recommended upper limit. Operation in this range results in high head loss and increased wear inside piping and appurtenances.
2. The pump is operating at 72% of BEP flow.
3. The pump is operating at 108% equivalent affinity curve. Pump operation indicates a different impeller than the provided manufacturing information. Determine the installed diameter and obtain an updated pump curve.
4. From the measured testing data pump 2 differs from the provided manufacturing data. We recommend confirming the associated pump curve and data. Update records as necessary.

2.3 HYDRAULICS SUMMARY

There is an approximately 2-minute period between the start of each pumping cycle when the force main fills and reaches full pressure. At the end of each cycle the force main drains; this can be seen in the pressure graphs in **Attachment 1**. Because of this filling and drain the site operates in a system curve range where the pump is moving back on its curve the longer it runs. The observed system curve range is shown in the shaded region. Observed maximum and minimum system curves are shown in Figure 2.8 and form the upper and lower bounds of the system curve range.

Additionally, this site is manifolded with another pump station. This manifold condition also contributes to the system curve range and operating points will change depending on when the manifold station is pumping.

Figure 2.8 – System Hydraulic Information provides a graph of the system characteristics and a table describing the system curves. Length, Hazen-Williams (Hz-Wm), and diameter are approximated based on the best available information and fit to the data. System Curve Characteristics are intended to be for reference.



System Curve Characteristics					
Curve Name	**Curve Type**	**Length (Ft)**	**Hz-Wm**	**Diameter (In)**	**Calculated Based On**
System Curve #1	Measured - Low	10850	150	6.2	Test Data
System Curve #2	Measured - High	10850	150	5.3	Test Data

Figure 2.8 – System Hydraulic Information

2.4 PIPELINE PERFORMANCE INDICATORS

Figure 2.9 – Pipe Velocities displays the velocities in each known diameter of the pressurized conveyance system. The Average Test Output Velocity represents the velocity generated by the average pumping rate produced by testing. The Station Firm Capacity Velocity represents the velocity based on the station's firm capacity (output with the largest pump out of service). The color gradient represents ranges of acceptable to problematic velocities. Red areas of operation are problematic and green areas of operation are acceptable.

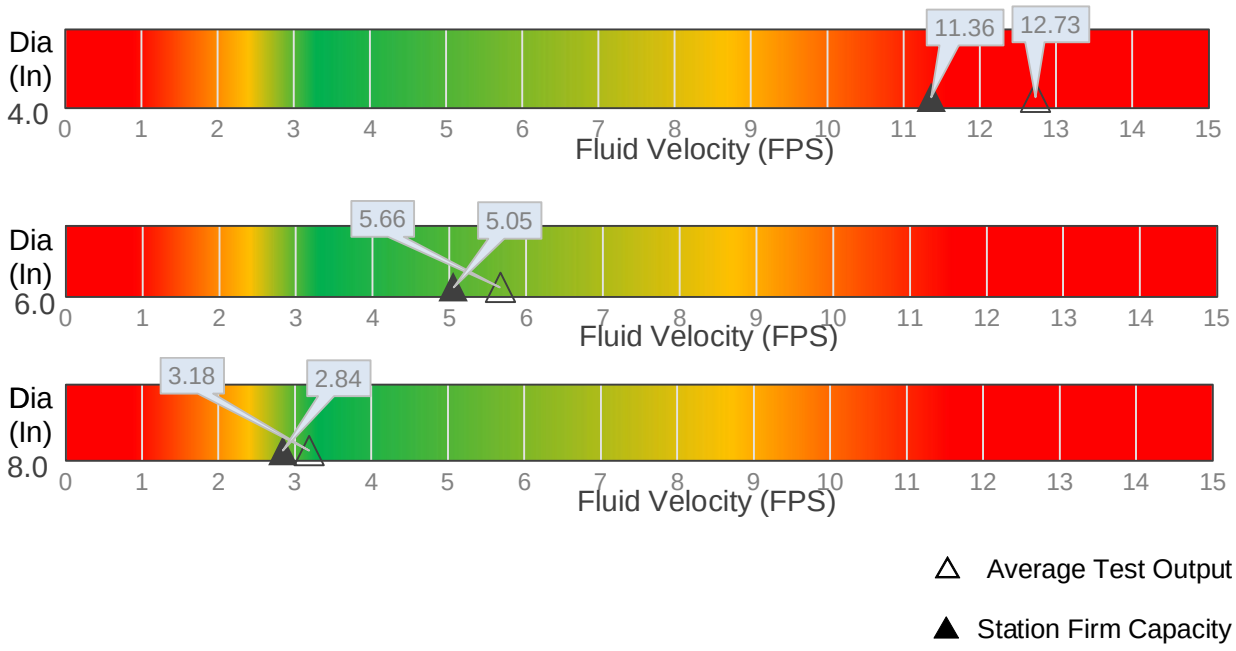


Figure 2.9 – Pipe Velocities

The maximum observed pressure at the station during the testing period is provided below in **Figure 2.10 - Maximum Observed Pressure**. System pressure capabilities vary depending upon pipe material type, pressure rating, elevation, age, condition, etc. This performance indicator is provided for reference only and is not a condition assessment of the pipeline. For systems with pressures above approximately 100 PSI, consider a more detailed analysis. See the **Attachment 1 - Graph B** for additional pressure data.

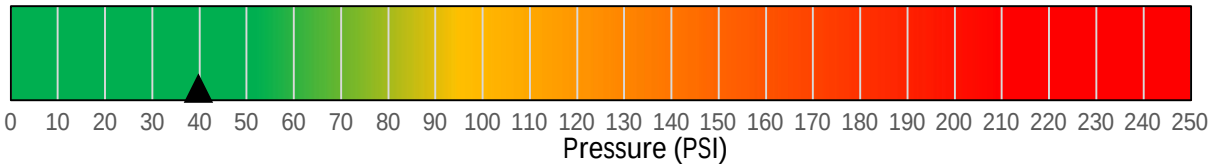


Figure 2.10 - Maximum Observed Pressure

2.5 SYSTEM PRESSURES

Figure 2.11 - Pressure Cycle shows a typical single-pump pressure cycle measured during testing. The pressure data captured for this test is limited to 2-second intervals which may not have captured the entire range of actual pressures. The complete log of pressure readings is provided in **Attachment 1 – Test Data Graphs**. For more accurate surge data, a surge monitoring device should be used to capture pressure at shorter time intervals over a longer period of time. **Table 2.12 - Further Surge-Related Actions** provides a list of recommended surge-related actions.

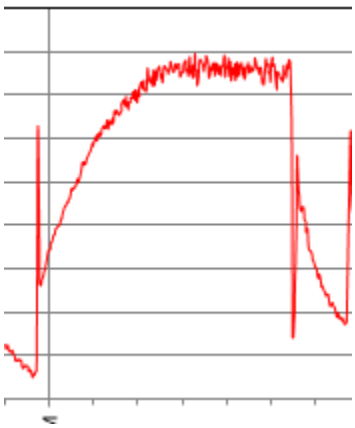


Figure 2.11 - Pressure Cycle

The pressure transducer used for measuring pressures has a range of 0 to 200 PSI. Pump startup produced an upsurge of approximately 32 PSI. Upon pump shutdown, the observed minimum pressure was approximately 3 PSI and the maximum pressure was approximately 27 PSI creating a total observed pressure range of 29 PSI.

Further Surge Related Actions:	
	Perform extended period digital surge monitoring
	Perform calibrated surge modeling
	Revise operating scheme to reduce surge potential
	Evaluate piping system for pressure capacity and likelihood of failure
	Install physical surge mitigation strategies
✓	No further action

Table 2.12 - Further Surge-Related Actions

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3 RECOMMENDATIONS

The following recommendations are a result of the findings of this evaluation and should be considered for implementation. See **Section 2 Pump Performance Tests** for pump specific recommendations. In addition to the recommendations below, this site should/ be considered for the following overall planning and budgeting activities.

3.1 OVERALL RECOMMENDATIONS

Overall Site Rating	Score	Description
	1	No recommendations currently. Monitor station for worsening conditions, perform regular O&M, reassess condition in 2-5 years.
	2	Complete recommendations listed in Section 3.2, monitor station for worsening conditions, perform regular O&M, reassess condition in 1-3 years.
	3	Station requires improvements beyond replacement of individual components. Begin planning and budgeting for a major rehabilitation. Place under regular observation until rehabilitation is complete.
	4	Station does not appear to be brought into conformance with standards without replacement. Begin planning and budgeting for a station replacement. Place under regular observation until rehabilitation is complete.

3.2 MISCELLANEOUS RECOMMENDATIONS

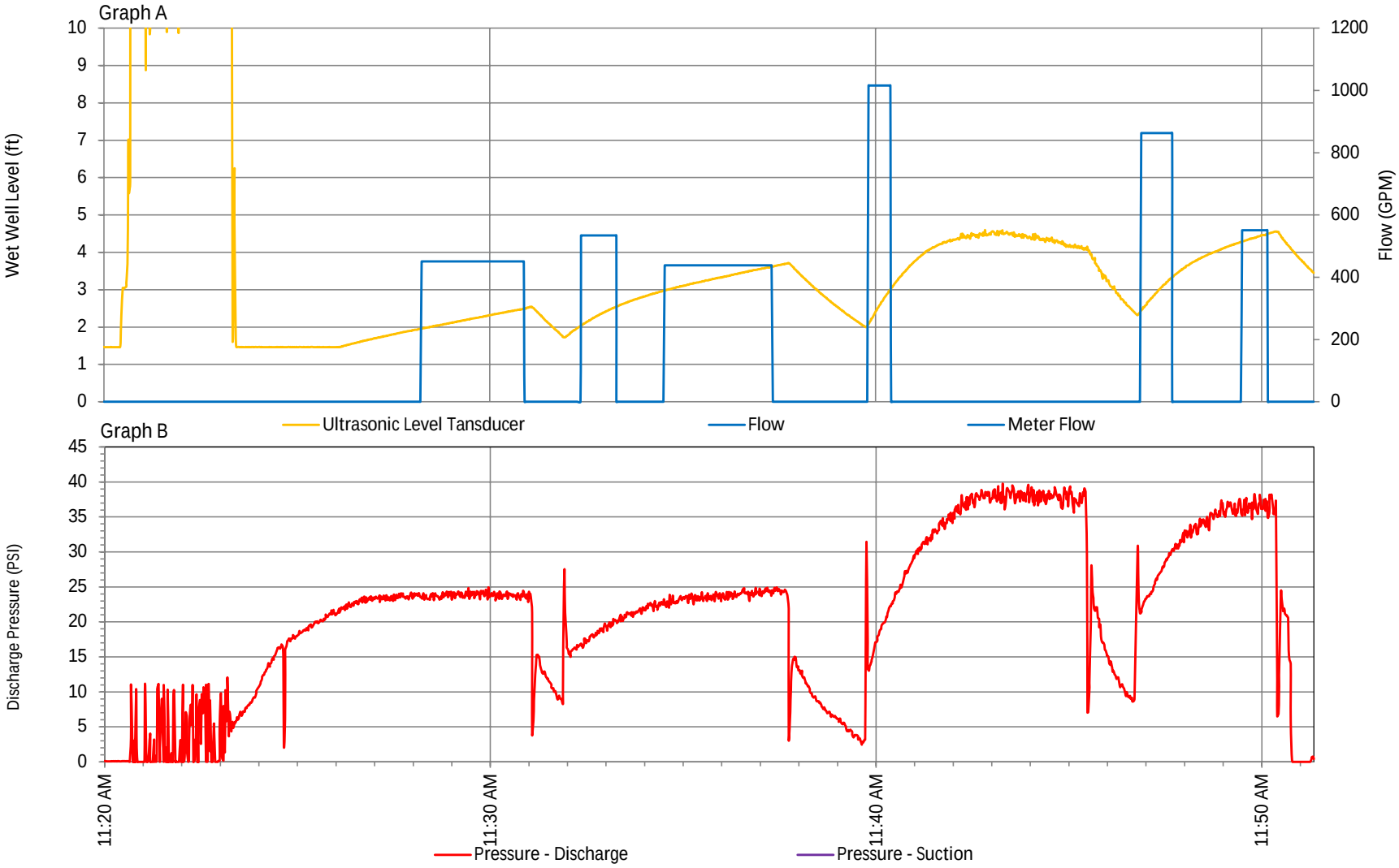
Pump 1 – From the measured testing data pump 1 is showing significant signs of wear, operating on a reduced pump curve. We recommend pulling and evaluating the condition of the pump and repair/replace as necessary.

Pump 2 – From the measured testing data pump 2 differs from the provided manufacturing data. We recommend confirming the associated pump curve and data. Update records as necessary.

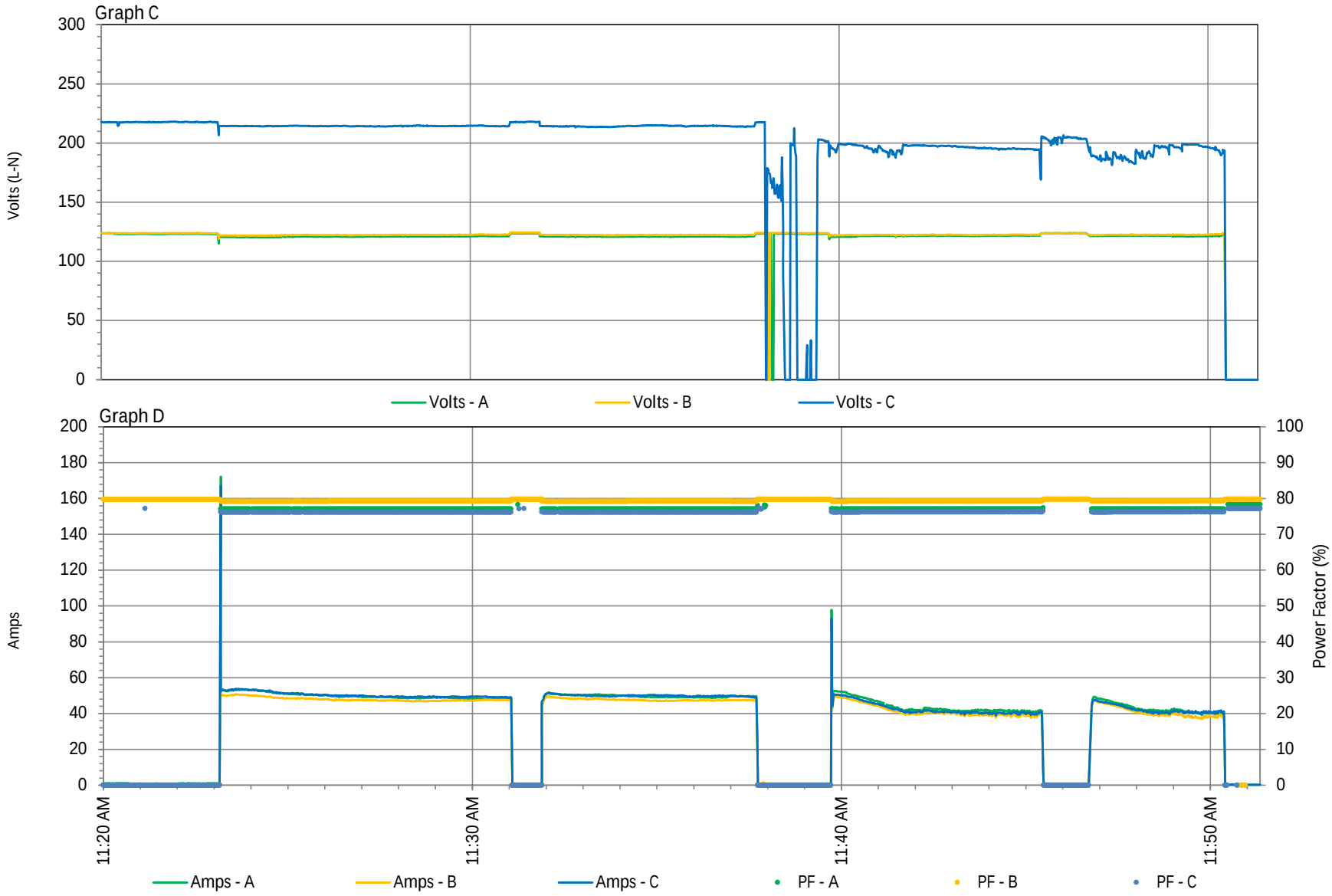
GIS – The provided GIS data indicates a 4” force main is installed. Measured testing data more closely matches that of a 6” force main. We recommend confirming GIS records and updating them as necessary.

4 ATTACHMENTS

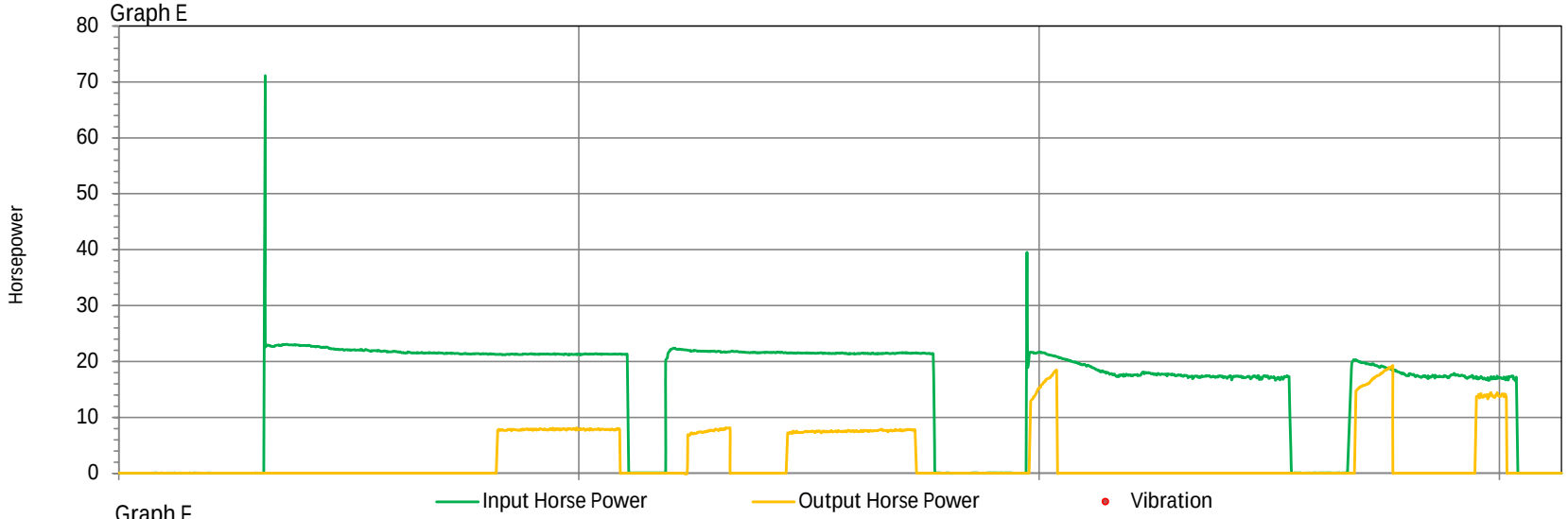
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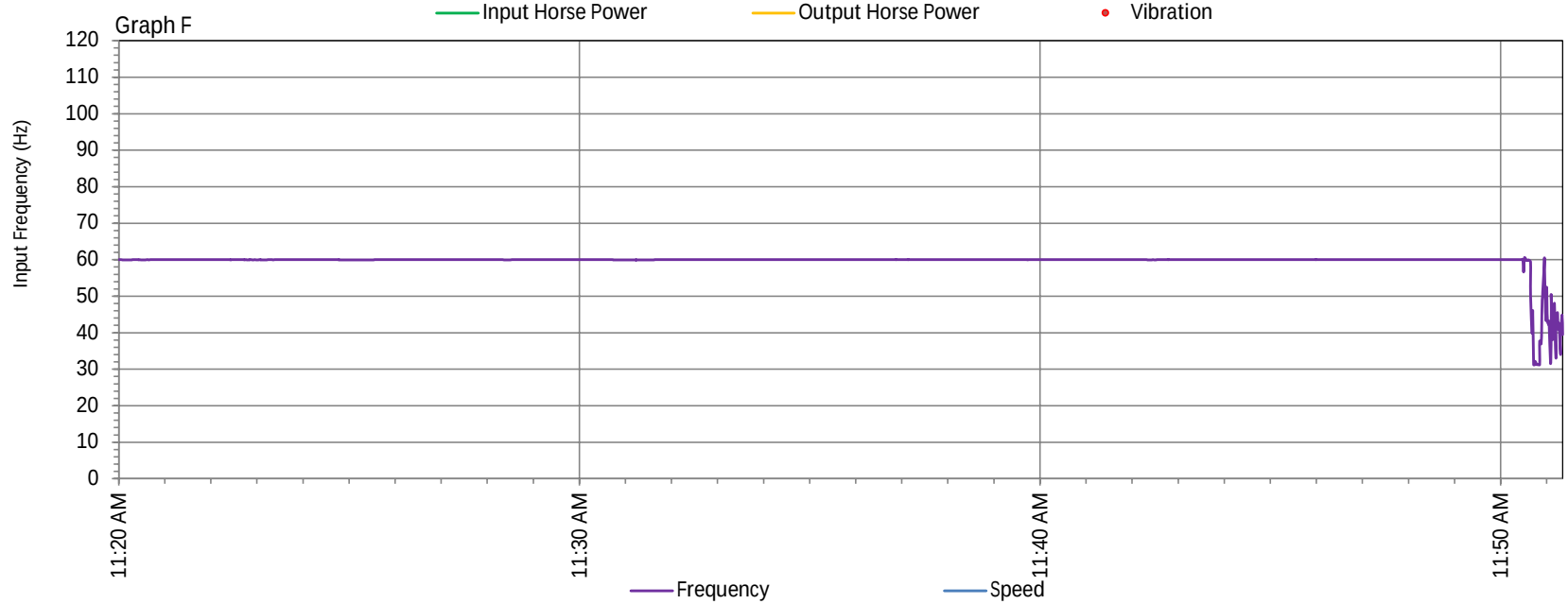
* Times shown are Eastern Standard Time


Graph C
Volts (L-N)
300
250
200
150
100
50
0
Volts - A
Volts - B
Volts - C
Graph D
Amps
200
180
160
140
120
100
80
60
40
20
0
100
90
80
70
60
50
40
30
20
10
0
Power Factor (%)
11:20 AM
11:30 AM
11:40 AM
11:50 AM
Amps - A
Amps - B
Amps - C
PF - A
PF - B
PF - C

Graph E



Graph F

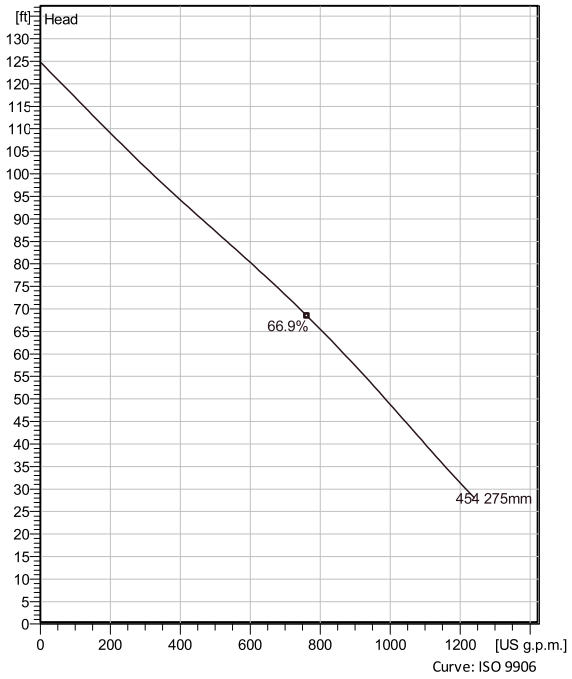


CP 3152 HT 3~ 454

FLYGT
a xylem brand

Technical specification

Curves according to: Water, pure Water, pure [100%], 39.2 °F, 62.43 lb/ft³, 1.6889E-5 ft²/s



Curve: ISO 9906

Nominal (mean) data shown. Under- and over-performance from this data should be expected due to standard manufacturing tolerances.
Please consult your local Flygt representative for performance guarantees.

Configuration

Motor number
C3152.181 25-15-4AA-W 20hp

Installation type
P - Semi permanent, Wet

Impeller diameter
275 mm

Discharge diameter
4 inch

Pump information

Impeller diameter
275 mm

Discharge diameter
4 inch

Inlet diameter
100 mm

Maximum operating speed
1750 rpm

Number of blades
1

Throughlet diameter
3 inch

Max. fluid temperature
40 °C

Material

Impeller
Grey cast iron

Project	Xylect-21982608	**Created by**	Robert Simcox		
Block		**Created on**	3/12/2024	**Last update**	3/12/2024

CP 3152 HT 3~ 454

Technical specification

Motor - General

Motor number C3152.181 25-15-4AA-W 20hp	**Phases** 3~	**Rated speed** 1750 rpm	**Rated power** 20 hp
ATEX approved No	**Number of poles** 4	**Rated current** 51 A	**Stator variant** 12
Frequency 60 Hz	**Rated voltage** 230 V	**Insulation class** H	**Type of Duty** S1
Version code 181			

Motor - Technical

Power factor - 1/1 Load 0.84	**Motor efficiency - 1/1 Load** 87.0 %	**Total moment of inertia** 5.67 lb ft²	**Starts per hour max.** 30
Power factor - 3/4 Load 0.79	**Motor efficiency - 3/4 Load** 87.0 %	**Starting current, direct starting** 285 A	
Power factor - 1/2 Load 0.69	**Motor efficiency - 1/2 Load** 86.0 %	**Starting current, star-delta** 95 A	

Project	Xylect-21982608	**Created by**	Robert Simcox		
Block		**Created on**	3/12/2024	**Last update**	3/12/2024

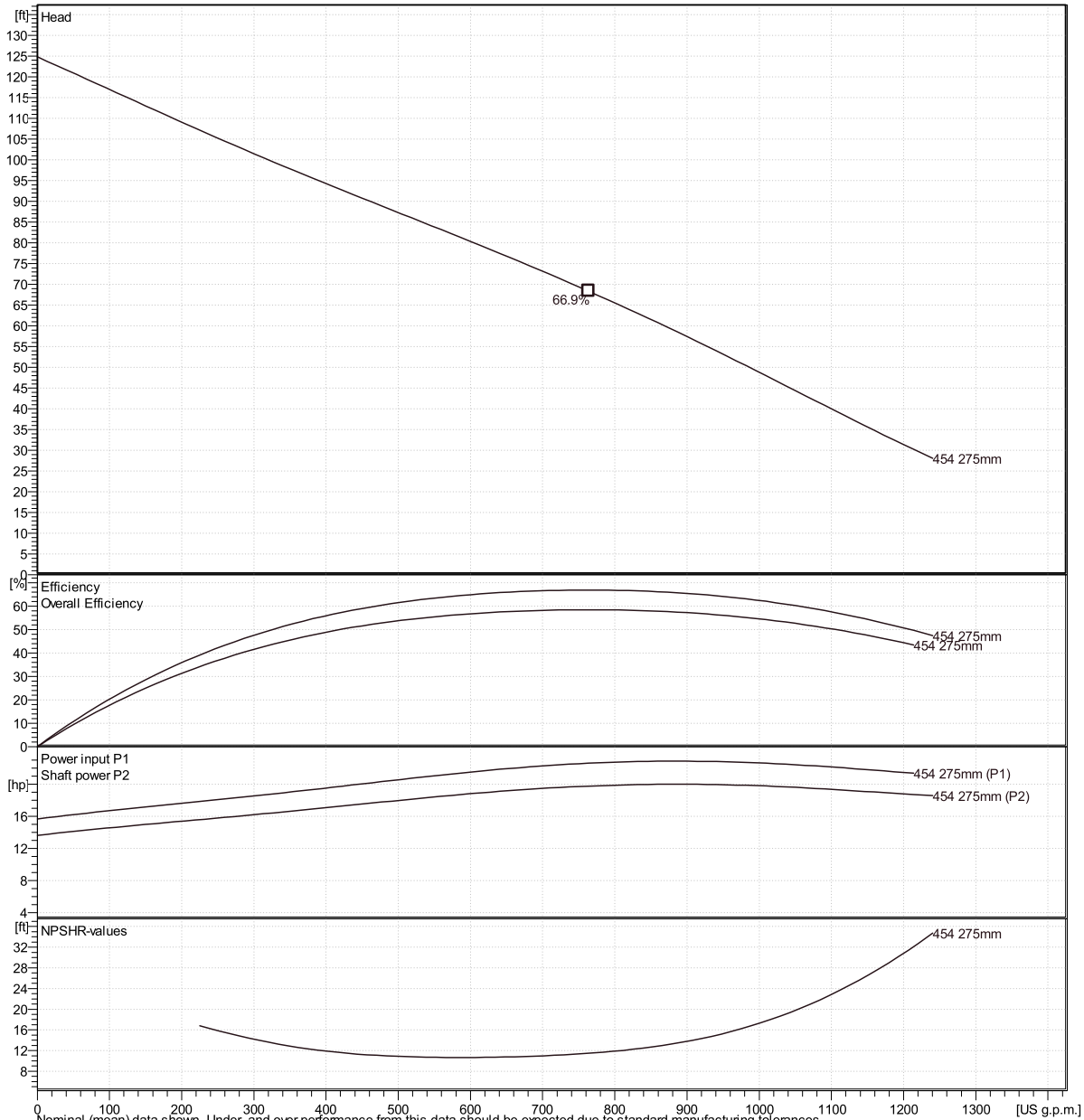
CP 3152 HT 3~ 454

Performance curve

Duty point

Flow	Head

Curves according to: Water, pure Water, pure [100%],39.2 °F,62.43 lb/ft³,1.6889E-5 ft²/s



Nominal (mean) data shown. Under- and over-performance from this data should be expected due to standard manufacturing tolerances.
Please consult your local Flygt representative for performance guarantees.

Curve: ISO 9906

Xylect-21982608		Robert Simcox		
	Created on	3/12/2024	**Last update**	3/12/2024

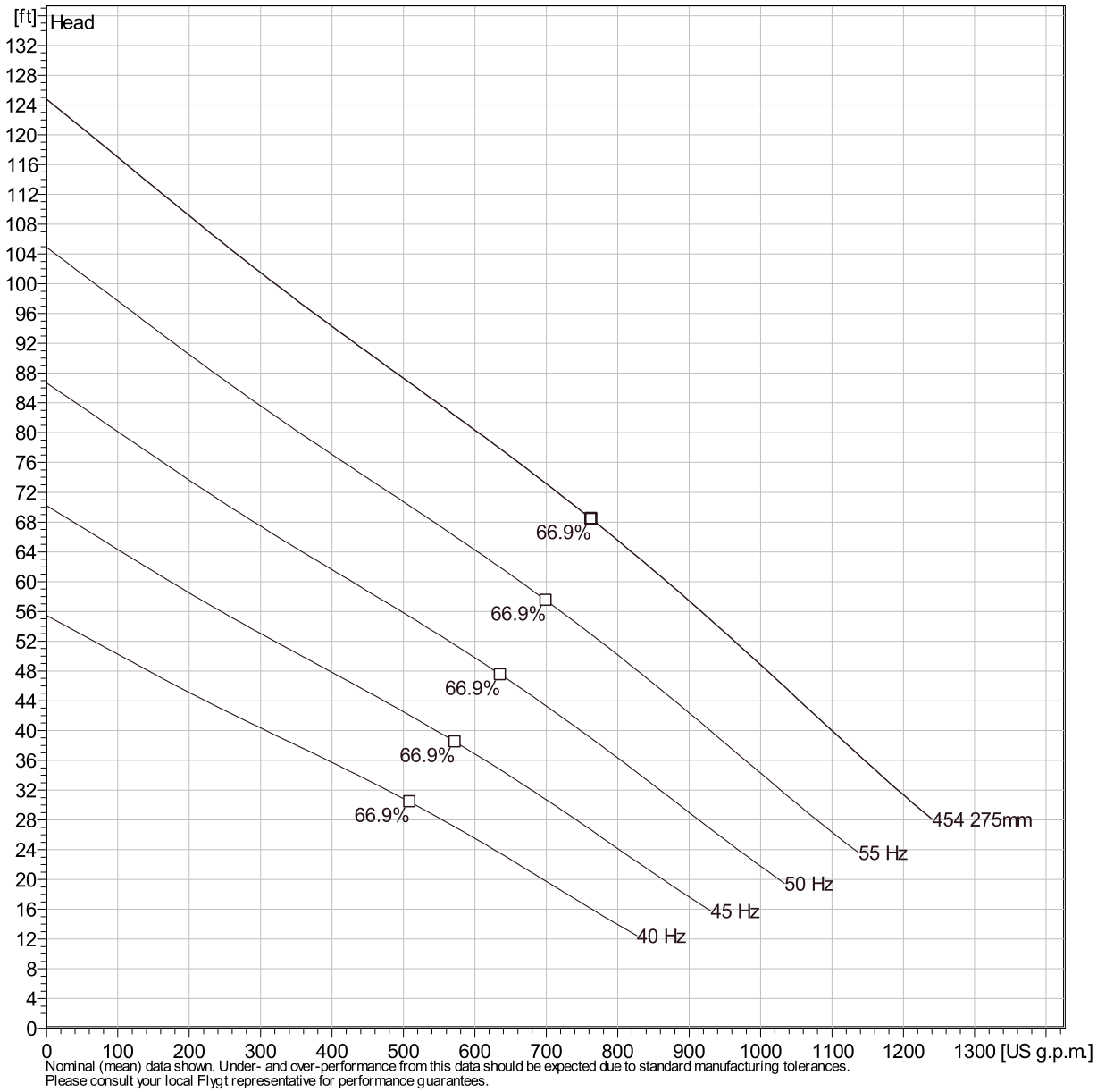
Program version	Data version	User group(s)
72.0 - 2/20/2024 (Build 175)	3/5/2024 10:29 A3P3	Xylem: USA - EXT, USA - INT

CP 3152 HT 3~ 454

Duty Analysis

FLYGT
a xylem brand

Curves according to: Water, pure [100%] ; 39.2°F; 62.43lb/ft³; 1.6889E-5ft²/s



Nominal (mean) data shown. Under- and over-performance from this data should be expected due to standard manufacturing tolerances.
Please consult your local Flygt representative for performance guarantees.

Operating characteristics

Pumps / Systems	Flow	Head	Shaft power	Flow	Head	Shaft power	Hydr.eff.	Spec. Energy	NPSHre
	US g.p.m.	ft	hp	US g.p.m.	ft	hp		kWh/US MG	ft

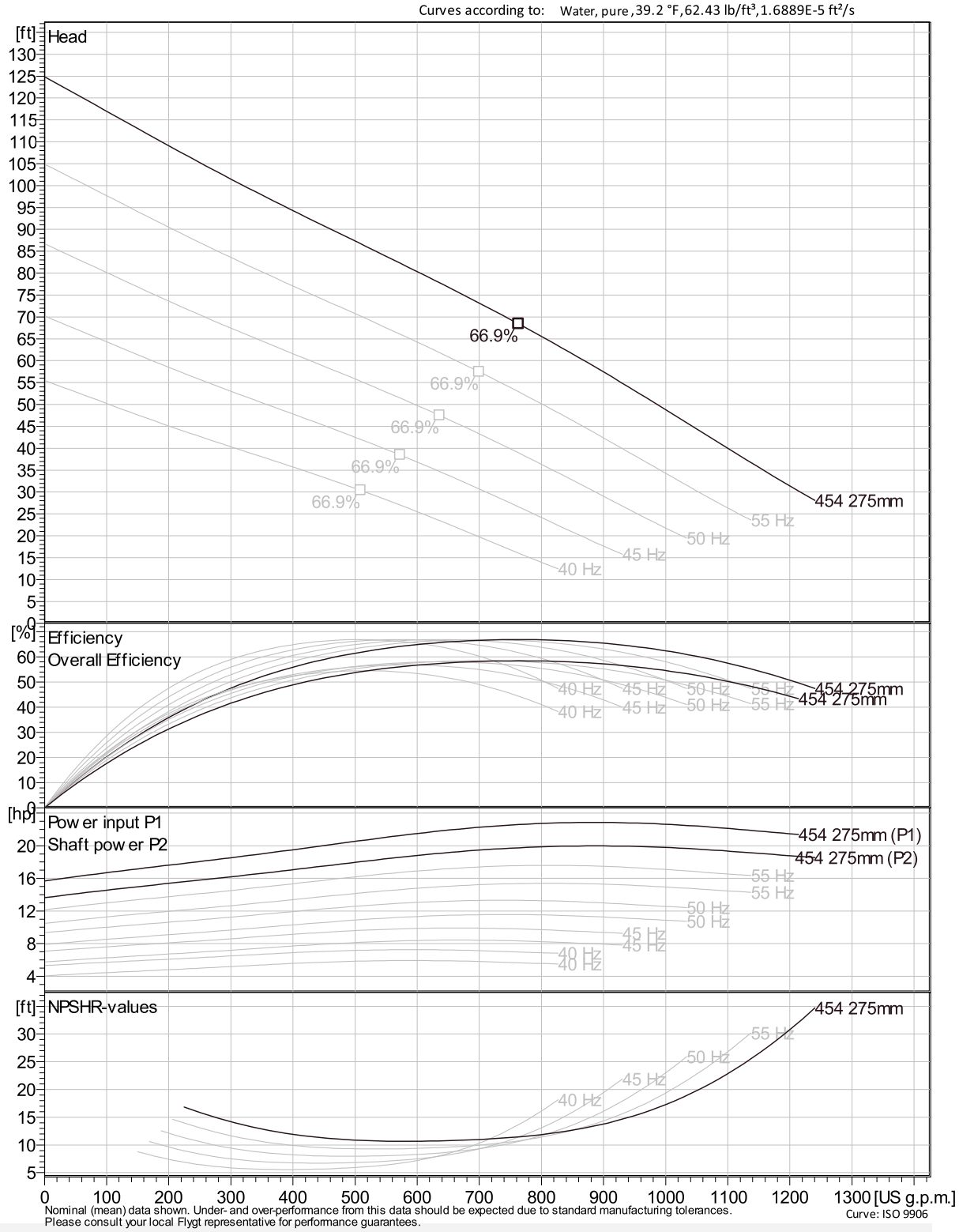
Project		**Created by**	Robert Simcox		
Block	Xylect-21982608	**Created on**	3/12/2024	**Last update**	3/12/2024

CP 3152 HT 3~ 454

VFD Curve

FLYGT
a xylem brand

Curves according to: Water, pure ,39.2 °F,62.43 lb/ft³,1.6889E-5 ft²/s



Nominal (mean) data shown. Under- and over-performance from this data should be expected due to standard manufacturing tolerances.
Please consult your local Flygt representative for performance guarantees.

Curve: ISO 9906

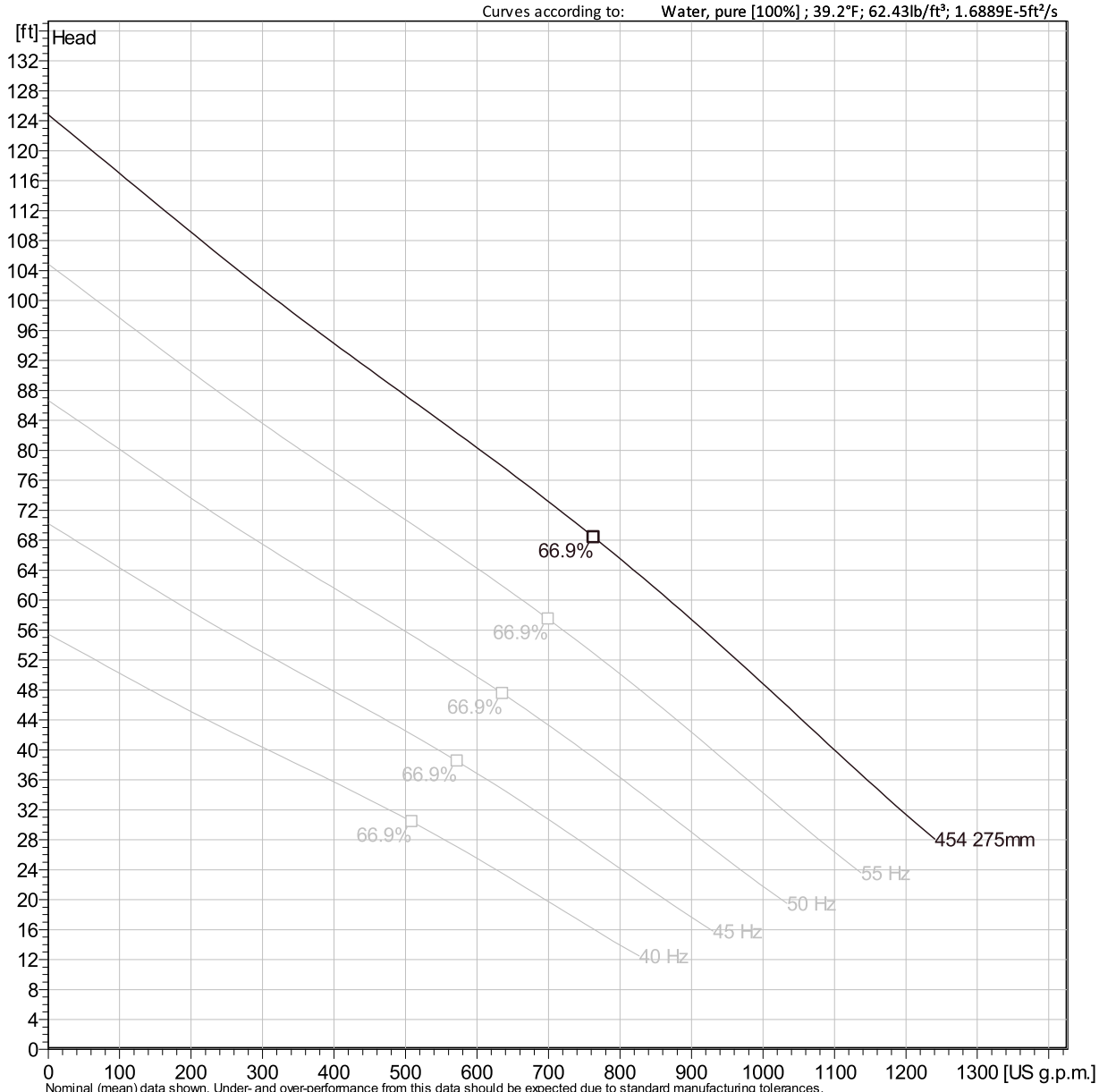
Project	Xylect-21982608	**Created by**	Robert Simcox		
Block		**Created on**	3/12/2024	**Last update**	3/12/2024

Program version	Data version	User group(s)
72.0 - 2/20/2024 (Build 175)	3/5/2024 10:29 A3P3	Xylem:USA - EXT, USA - INT

CP 3152 HT 3~ 454

VFD Analysis

Curves according to: Water, pure [100%] ; 39.2°F; 62.43lb/ft³; 1.6889E-5ft²/s



Nominal (mean) data shown. Under- and over-performance from this data should be expected due to standard manufacturing tolerances.
Please consult your local Flygt representative for performance guarantees.

Operating Characteristics

Pumps / Systems	Frequency	Flow	Head	Shaft power	Flow	Head	Shaft power	Hydr.eff.	Specific energy	NPSHre
		US g.p.m.	ft	hp	US g.p.m.	ft	hp		kWh/US MG	ft

Project	Xylect-21982608	**Created by**	Robert Simcox		
Block		**Created on**	3/12/2024	**Last update**	3/12/2024

Program version
72.0 - 2/20/2024 (Build 175)

Data version
3/5/2024 10:29 A3P3

User group(s)
Xylem: USA - EXT, USA - INT

CP 3152 HT 3~ 454

Dimensional drawing

Project	Xylect-21982608	**Created by**	Robert Simcox		
Block		**Created on**	3/12/2024	**Last update**	3/12/2024

Pump Station Evaluation Report

14 - CR 229

Prepared For:

City of Wildwood

Evaluation Date:

February 8, 2024

Report Date:

September 27, 2024

Version 1

Kimley»Horn

Version	Publish Date	Description
1	See Cover	Original/Version 1

Table 0.1 - Revision History

Version	Publish Date	Test Date	Description

Table 0.2 - Previous Evaluation History

This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn shall be without liability to Kimley-Horn.

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ATTACHMENTS

Attachment 1 ..... **Test Data Graphs**

Attachment 2 ..... **Supplementary Pump Information**

ABBREVIATIONS

Ø	Phase
AC	Alternating Current
ADD	Automated Draw Down
ADF	Average Daily Flow
ARR	Automated Rate of Rise
ATL	Across The Line
Avg	Average
BEP	Best Efficiency Point
CL	Center Line
Disch	Discharge
ETM	Elapsed Time Meter
FLA	Full Load Amps
FM	Force Main
Ft	Feet
FPS	Feet Per Second
FSFO	Full Speed Full Open
Gal	Gallons
GPM	Gallons Per Minute
HGL	Hydraulic Grade Line
HP	Horsepower
Hrs	Hours
H:M:S	Hours:Minutes:Seconds
Hz	Hertz
In	Inches
InvIn	Invert In
KWH	Kilowatt-Hours
L	Length
L1, L2, L3	Leg 1, 2 & 3 or Length 1, 2 & 3
MSL	Mean Sea Level
MTBF	Mean Time Between Failures
N	Neutral
P	Pump
PCL	Pump Center Line
PCP	Pump Control Panel
PF	Power Factor
PSI	Pounds Per Square Inch
PT	Point
RPM	Revolutions Per Minute
TDH	Total Dynamic Head
TVSS	Transient Voltage Surge Suppressor
V	Volts
VFD	Variable Frequency Drive
WTW	Wire To Water
WW	Wet Well
Yr	Year

1 INTRODUCTION

Kimley-Horn and Associates, Inc. evaluated the pump station through pump performance testing and a condition assessment. This report summarizes the data and results of that evaluation. The performance tests were conducted using the XAK-PACK pump performance monitoring device. The following pages provide summaries of the data collected and notes about the pumps' performance.

1.1 SITE INFORMATION

CR 229 / Site #14			
Date of Evaluation	February 8, 2024		
Address	Intersection of CR 229 and SR 44		
Coordinates	28°52'19.5"N, 82°05'11.8"W		
Fluid Conveyed	Wastewater		
Station Style	Duplex Submersible		
Number of Pumps	2	Number of Pump Slots	2
Pump Type	Submersible		
Flow Meter Type	N/A		
Year of Construction	Unknown	Based on	☐Docs. ☐Estimation ☐Other
Basin/Zone	Unknown		
Firm Capacity (Design)	583 GPM / 0.84 MGD		
Firm Capacity (Test)	555 GPM / 0.80 MGD		
Discharge Description	8-inch discharge, manifolds with 12-inch FM, approximately 11,900 LF unknown FM, discharging to CR 219 lift station		
Electrical Service	120/240 Delta		
Site Generator	Caterpillar diesel with belly tank		
Bypass Ability	Bypass connection in valve vault		
Miscellaneous Features			

Site Notes:

1.2 SITE MAP

Force Main

Figure 1.1 - Site Location Map



2 PUMP PERFORMANCE TESTS

Pump performance tests were conducted on the pumps utilizing the measurement tools detailed below. **Table 2.1 - Measurement Methods** describes the measurements taken during the test and the measurement method. Some measurements were confirmed utilizing a secondary measurement method. See **Attachment 1** for graphs of the digitally recorded data. For each test, note the following:

1. Common accuracies for measurements of flow, pressure, voltage and current are ±1%.
2. Friction loss is calculated using the Hazen-Williams formula and the Bernoulli equation. Piping characteristics are based on best available data.

Parameter	Measurement Method	
	Primary	Secondary
Flow	Level Transducer (XAK-PACK)	N/A
Pressure	Pressure Transducer (XAK-PACK)	Liquid Filled Pressure Gauge
Wet Well Level	Level Transducer (XAK-PACK)	N/A
Volts	Voltage Probes (XAK-PACK)	Fluke 376FC
Amps	Current Transducers (XAK-PACK)	Fluke 376FC
Power Factor	Power Factor Monitor (XAK-PACK)	N/A

Table 2.1 - Measurement Methods

2.1 PUMP #1

Below is a summary of the pump characteristics and performance test results.

Parameter	Units	Value
Pump Manufacturer	-	Flygt
Pump Model	-	NP 3153 HT 3~ 464
Pump Style	-	Submersible
Pump Impeller Dia	Inches	10
Pump Rated Capacity	GPM	583
Pump Rated Head	Ft	65
Pump ETM	Hours	1,363
Pump Flow @ BEP Design Curve	GPM	583
Pump Hyd Eff @ Design Pt	%	70
Pump WTW Eff @ Operating Pt	%	61
Pump NPSHr @ Operating Pt	Ft	14
Motor Synchronous Speed	RPM	1800
Motor Rated Speed	RPM	1755
Motor No. Phases	No	3
Motor Starters	-	ATL
Motor Rated Voltage	Volts	230
Motor Rated Horsepower	HP	20
Motor Service Factor	-	1.15
Motor FLA	Amps	52
Mfg. Motor Eff. @ Operating Pt	%	87.5
Mfg. Starter Eff. @ Operating Pt	%	100

Table 2.2 - Pump #1 Design Characteristics

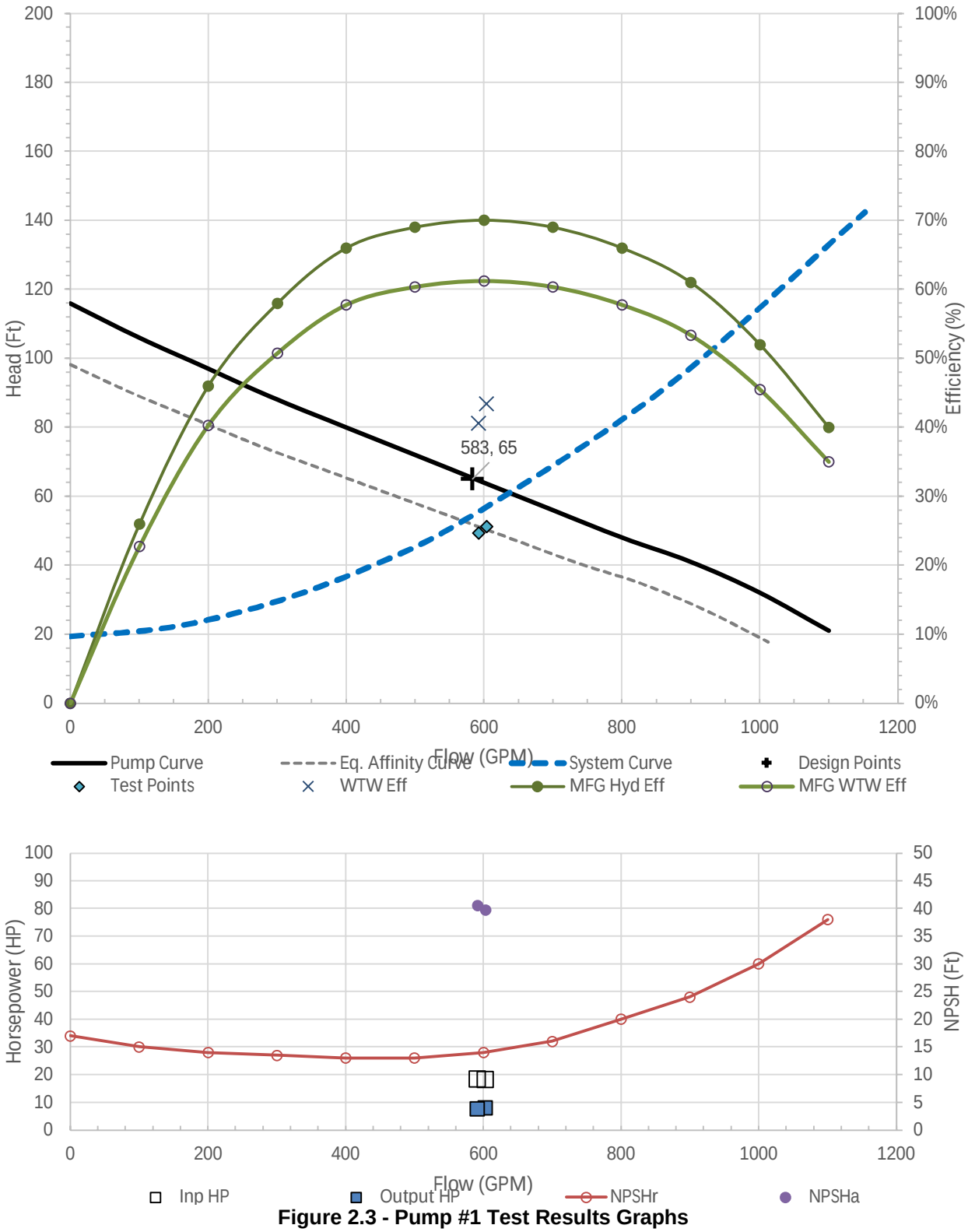


Figure 2.3 - Pump #1 Test Results Graphs

	Parameter	Units	Lower Limit	Test Value	Upper Limit	Comment
Measured	Average Output (FSFO)	GPM	-	598	-	
	Average TDH (FSFO)	Ft	-	50.3	-	
	Average WTW Efficiency (FSFO)	%	-	42%	-	
	Average Input HP (FSFO)	HP	-	18.3	-	
	Average Current Draw (FSFO)	Amps	-	41.9	-	
	Suction Velocity (FSFO)	FPS	2	-	7	
	Discharge Velocity (FSFO)	FPS	2	13.2	7	1
	BEP Comparison (FSFO)	%	80%	103%	115%	
	Average Output (FSFO)	%	90%	103%	110%	
	Affinity Law Eq. Curve	%	-5%	-8.0%	5%	2
	NPSHa	Ft	14	40.1	N/A	
	WTW Eff @ Operating Pt	%	-5%	-45%	5%	3
	Input Frequency	Hz	-5%	0%	5%	
	Input Voltage (L-L)	%	-10%	-5.5%	10%	
	Voltage Drop	%	-15%	2%	N/A	
	Voltage Imbalance	%	-10%	2.7%	10%	
	Current Imbalance	%	-10%	15.4%	10%	4
	Motor FLA	%	-50%	80.5%	105%	
	Motor Load	%	50%	91.3%	115%	
	Motor Slip Speed	%	1746	1755	1809	
	Vibration	In/Sec	0	0.0	-	
Observed	Surge	1-5	-	2	3	
	Vibration	1-5	-	2	3	
	Cavitation	1-5	-	1	3	
	Mechanical Noise	1-5	-	2	3	
	Leaks	1-5	-	1	3	
	Exterior Condition	1-5	-	3	3	
	Overall Score	1-5	-	3	3	

Table 2.4 - Pump #1 Test Summary

Pump #1 - Test Comments

1. Discharge velocity is above the recommended upper limit. Operation in this range results in high head loss and increased wear inside piping and appurtenances.
2. The pump is operating at 92% equivalent affinity curve meaning significant impeller/volute wear has occurred.
3. WTW efficiency is significantly below the recommended lower limit. This indicates significant pump and/or motor wear.
4. The current imbalance is above the recommended upper limit. Motor MTBF is reduced when operating in this range. Monitor for increasing imbalance and consider refurbishing or replacing the motor. Consider further evaluation to include regular 3-phase amperage checks, mega-ohm tests, and pump output checks.

2.2 PUMP #2

Below is a summary of the pump characteristics and performance test results.

Parameter	Units	Value
Pump Manufacturer	-	Flygt
Pump Model	-	NP 3153 HT 3~ 464
Pump Style	-	Submersible
Pump Impeller Dia	Inches	10
Pump Rated Capacity	GPM	583
Pump Rated Head	Ft	65
Pump ETM	Hours	1,363
Pump Flow @ BEP Design Curve	GPM	583
Pump Hyd Eff @ Design Pt	%	70
Pump WTW Eff @ Operating Pt	%	62
Pump NPSHr @ Operating Pt	Ft	13
Motor Synchronous Speed	RPM	1800
Motor Rated Speed	RPM	1755
Motor No. Phases	No	3
Motor Starters	-	ATL
Motor Rated Voltage	Volts	230
Motor Rated Horsepower	HP	20
Motor Service Factor	-	1.15
Motor FLA	Amps	52
Mfg. Motor Eff. @ Operating Pt	%	87.5
Mfg. Starter Eff. @ Operating Pt	%	100

Table 2.5 - Pump #2 Design Characteristics

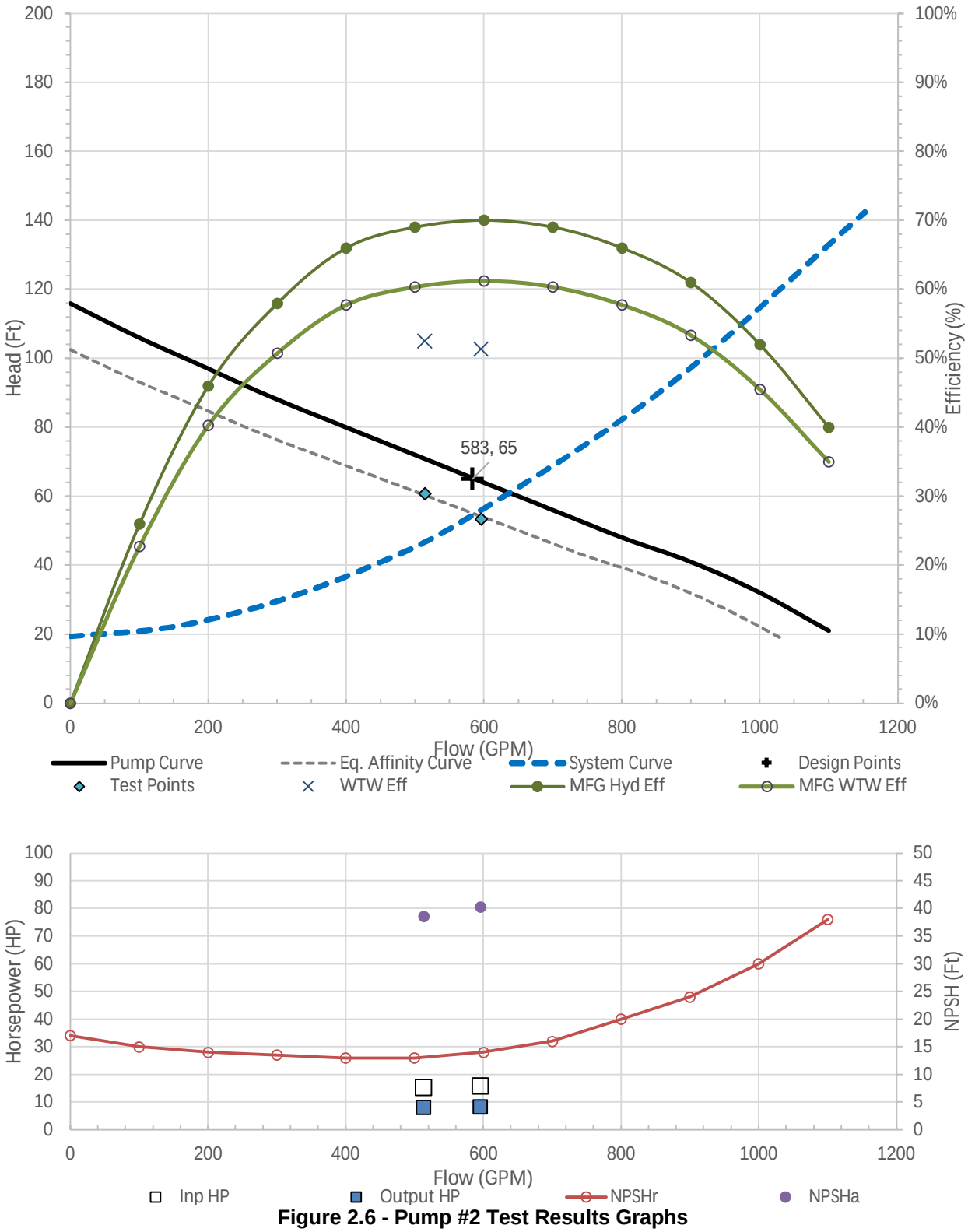


Figure 2.6 - Pump #2 Test Results Graphs

	Parameter	Units	Lower Limit	Test Value	Upper Limit	Comment
Measured	Average Output (FSFO)	GPM	-	555	-	
	Average TDH (FSFO)	Ft	-	57.1	-	
	Average WTW Efficiency (FSFO)	%	-	52%	-	
	Average Input HP (FSFO)	HP	-	15.5	-	
	Average Current Draw (FSFO)	Amps	-	35.6	-	
	Suction Velocity (FSFO)	FPS	2	-	7	
	Discharge Velocity (FSFO)	FPS	2	12.3	7	1
	BEP Comparison (FSFO)	%	80%	95%	115%	
	Average Output (FSFO)	%	90%	95%	110%	
	Affinity Law Eq. Curve	%	-5%	-6.0%	5%	2
	NPSHa	Ft	13	39.4	N/A	
	WTW Eff @ Operating Pt	%	-5%	-19%	5%	3
	Input Frequency	Hz	-5%	0%	5%	
	Input Voltage (L-L)	%	-10%	-5.1%	10%	
	Voltage Drop	%	-15%	2%	N/A	
	Voltage Imbalance	%	-10%	2.7%	10%	
	Current Imbalance	%	-10%	17.3%	10%	4
	Motor FLA	%	-50%	68.5%	105%	
	Motor Load	%	50%	77.5%	115%	
	Motor Slip Speed	%	1746	1755	1809	
	Vibration	In/Sec	0	0.0	-	
Observed	Surge	1-5	-	2	3	
	Vibration	1-5	-	2	3	
	Cavitation	1-5	-	1	3	
	Mechanical Noise	1-5	-	2	3	
	Leaks	1-5	-	1	3	
	Exterior Condition	1-5	-	3	3	
	Overall Score	1-5	-	3	3	

Table 2.7 - Pump #2 Test Summary

Pump #2 - Test Comments

1. Discharge velocity is above the recommended upper limit. Operation in this range results in high head loss and increased wear inside piping and appurtenances.
2. The pump is operating at 94% equivalent affinity curve meaning significant impeller/volute wear has occurred.
3. WTW efficiency is significantly below the recommended lower limit. This indicates significant pump and/or motor wear.
4. The current imbalance is above the recommended upper limit. Motor MTBF is reduced when operating in this range. Monitor for increasing imbalance and consider refurbishing or replacing the motor. Consider further evaluation to include regular 3-phase amperage checks, mega-ohm tests, and pump output checks.

2.3 HYDRAULICS SUMMARY

The observed system curve closely matched the design system curve. This indicates that the system is operating as anticipated based on the original design.

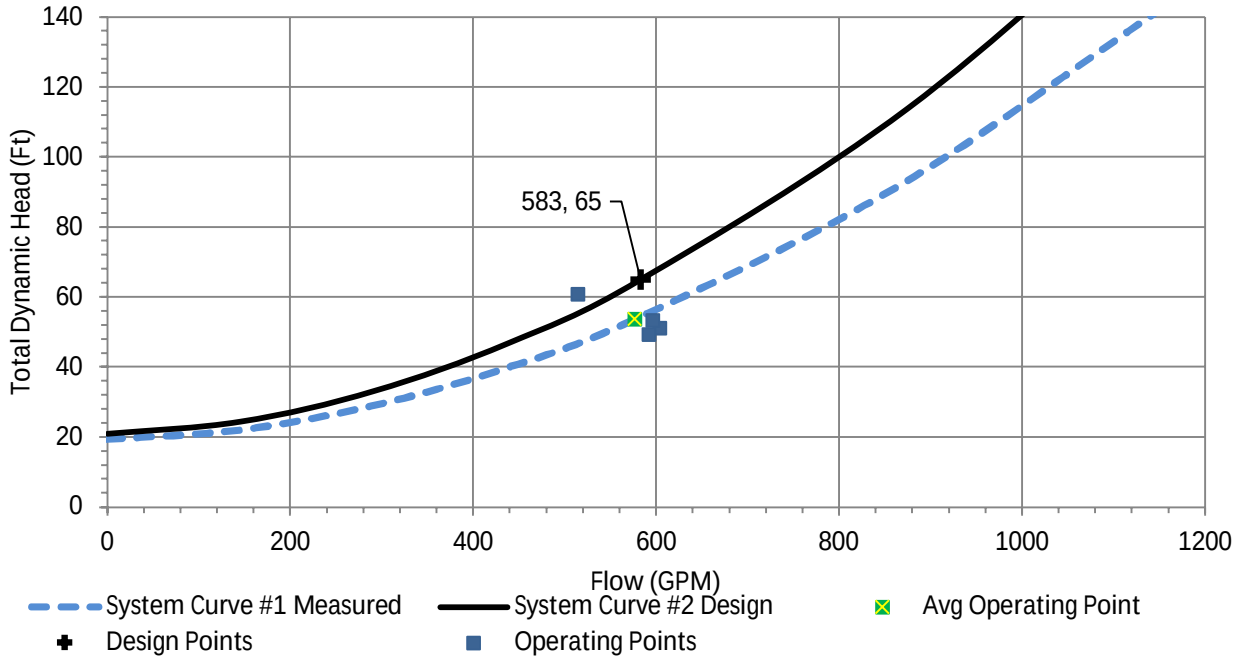


Figure 2.8 – System Hydraulic Information provides a graph of the system characteristics and a table describing the system curves. Length, Hazen-Williams (Hz-Wm), and diameter are approximated based on the best available information and fit to the data. System Curve Characteristics are intended to be for reference.

System Curve Characteristics					
Curve Name	**Curve Type**	**Length (Ft)**	**Hz-Wm**	**Diameter (In)**	**Calculated Based On**
System Curve #1	Measured	11,900	115	9.9	Test Data
System Curve #2	Design	11,900	115	9.5	Design Operating Condition

Figure 2.8 – System Hydraulic Information

2.4 PIPELINE PERFORMANCE INDICATORS

Figure 2.9 – Pipe Velocities displays the velocities in each known diameter of the pressurized conveyance system. The Average Test Output Velocity represents the velocity generated by the average pumping rate produced by testing. The Station Firm Capacity Velocity represents the velocity based on the station's firm capacity (output with the largest pump out of service). The color gradient represents ranges of acceptable to problematic velocities. Red areas of operation are problematic and green areas of operation are acceptable.

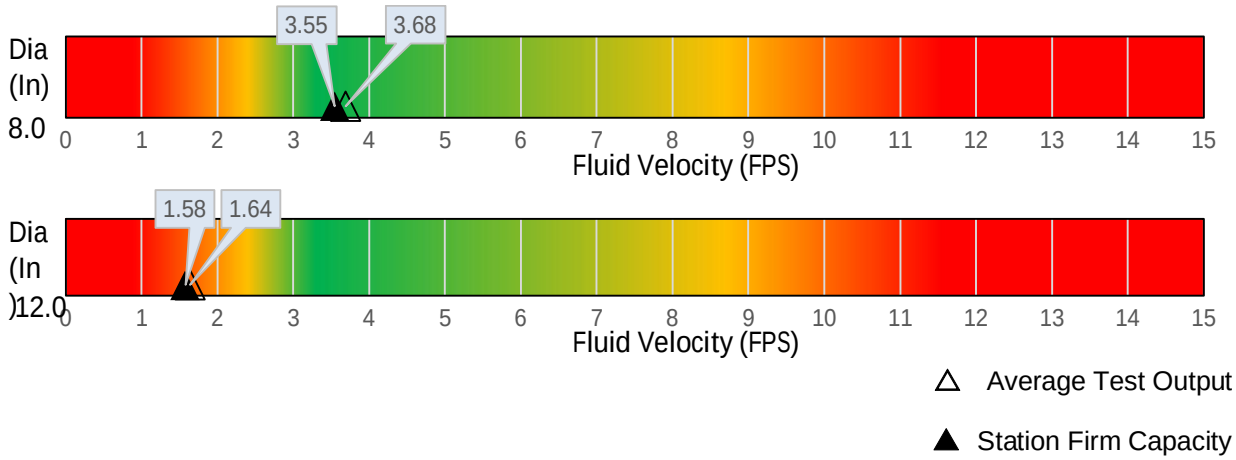


Figure 2.9 – Pipe Velocities

The maximum observed pressure at the station during the testing period is provided below in **Figure 2.10 – Maximum Observed Pressure**. System pressure capabilities vary depending upon pipe material type, pressure rating, elevation, age, condition, etc. This performance indicator is provided for reference only and is not a condition assessment of the pipeline. For systems with pressures above approximately 100 PSI, consider a more detailed analysis. See the **Attachment 1 - Graph B** for additional pressure data.

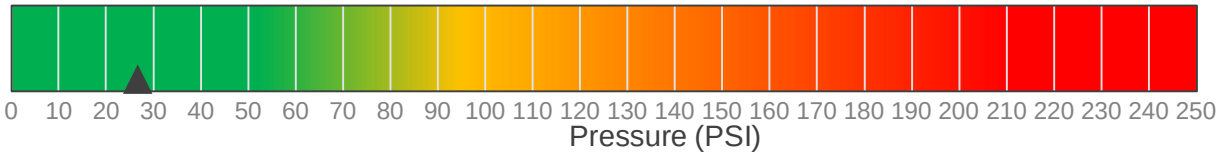


Figure 2.10 - Maximum Observed Pressure

2.5 SYSTEM PRESSURES

Figure 2.11 - Pressure Cycle shows a typical single-pump pressure cycle measured during testing. The pressure data captured for this test is limited to 2-second intervals which may not have captured the entire range of actual pressures. The complete log of pressure readings is provided in **Attachment 1 – Test Data Graphs**. For more accurate surge data, a surge monitoring device should be used to capture pressure at shorter time intervals over a longer period of time. **Table 2.12 - Further Surge-Related Actions** provides a list of recommended surge-related actions.

The pressure transducer used for measuring pressures has a range of 0 to 200 PSI. Pump startup produced an upsurge of approximately 26.6 PSI. Upon pump shut down, the observed minimum pressure was approximately 0 PSI and the maximum pressure was approximately 16 PSI creating a total observed pressure range of 26.6 PSI. It is likely that the minimum pressure produced on each pump shut down cycle was less than 0 PSI.

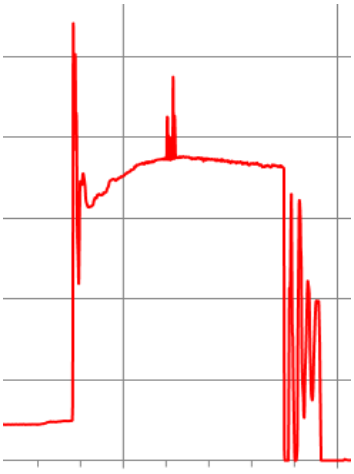


Figure 2.11 - Pressure Cycle

	Further Surge Related Actions:
	Perform extended period digital surge monitoring
	Perform calibrated surge modeling
	Revise operating scheme to reduce surge potential
	Evaluate piping system for pressure capacity and likelihood of failure
	Install physical surge mitigation strategies
✓	No further action

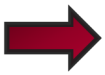
Table 2.12 - Further Surge-Related Actions

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3 RECOMMENDATIONS

The following recommendations are a result of the findings of this evaluation and should be considered for implementation. See **Section 2 Pump Performance Tests** for pump specific recommendations. In addition to the recommendations below, this site should/ be considered for the following overall planning and budgeting activities.

3.1 OVERALL RECOMMENDATIONS

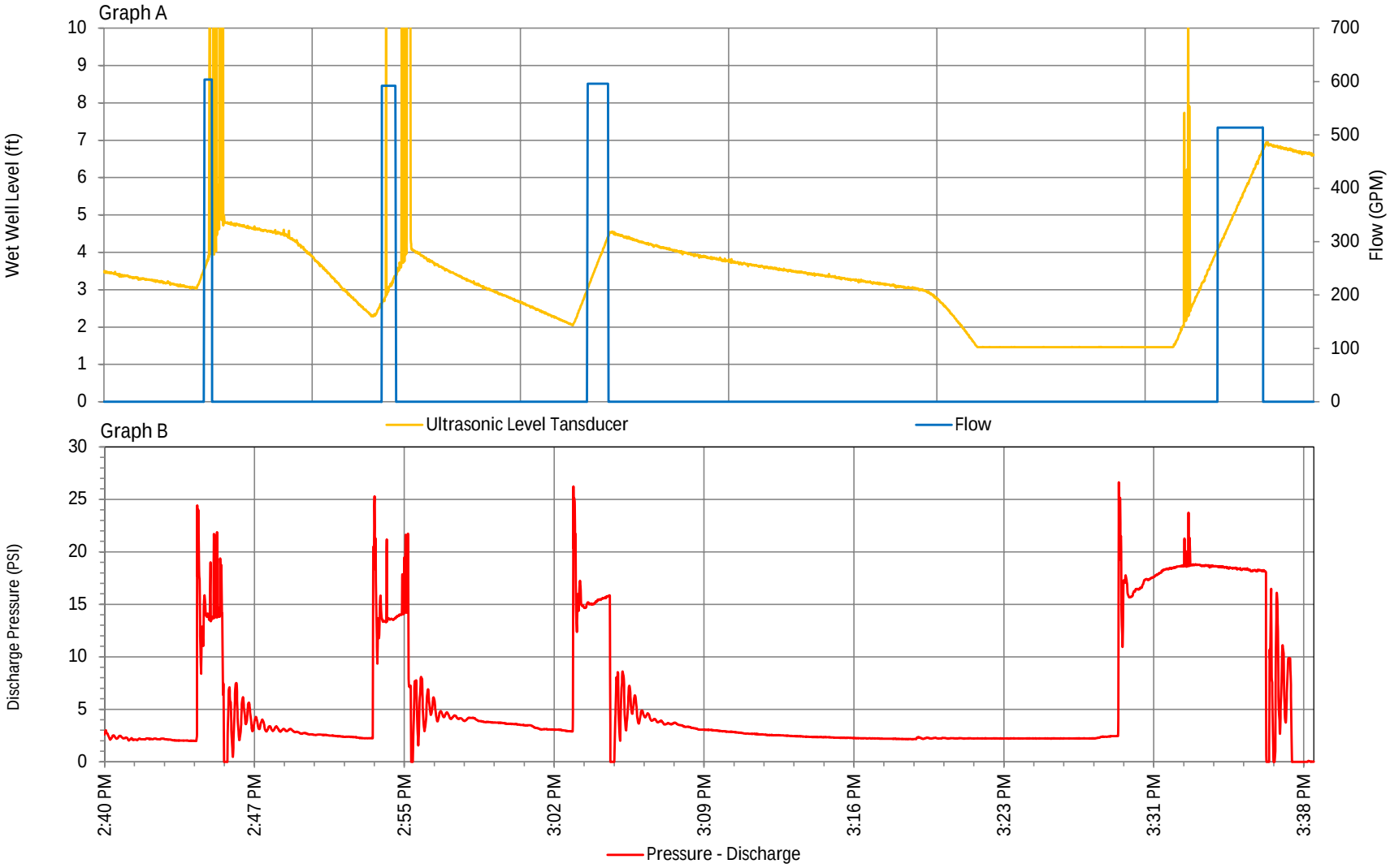
Overall Site Rating	Score	Description
	1	No recommendations currently. Monitor station for worsening conditions, perform regular O&M, reassess condition in 2-5 years.
	2	Complete recommendations listed in Section 3.2, monitor station for worsening conditions, perform regular O&M, reassess condition in 1-3 years.
	3	Station requires improvements beyond replacement of individual components. Begin planning and budgeting for a major rehabilitation. Place under regular observation until rehabilitation is complete.
	4	Station does not appear to be brought into conformance with standards without replacement. Begin planning and budgeting for a station replacement. Place under regular observation until rehabilitation is complete.

3.2 MISCELLANEOUS RECOMMENDATIONS

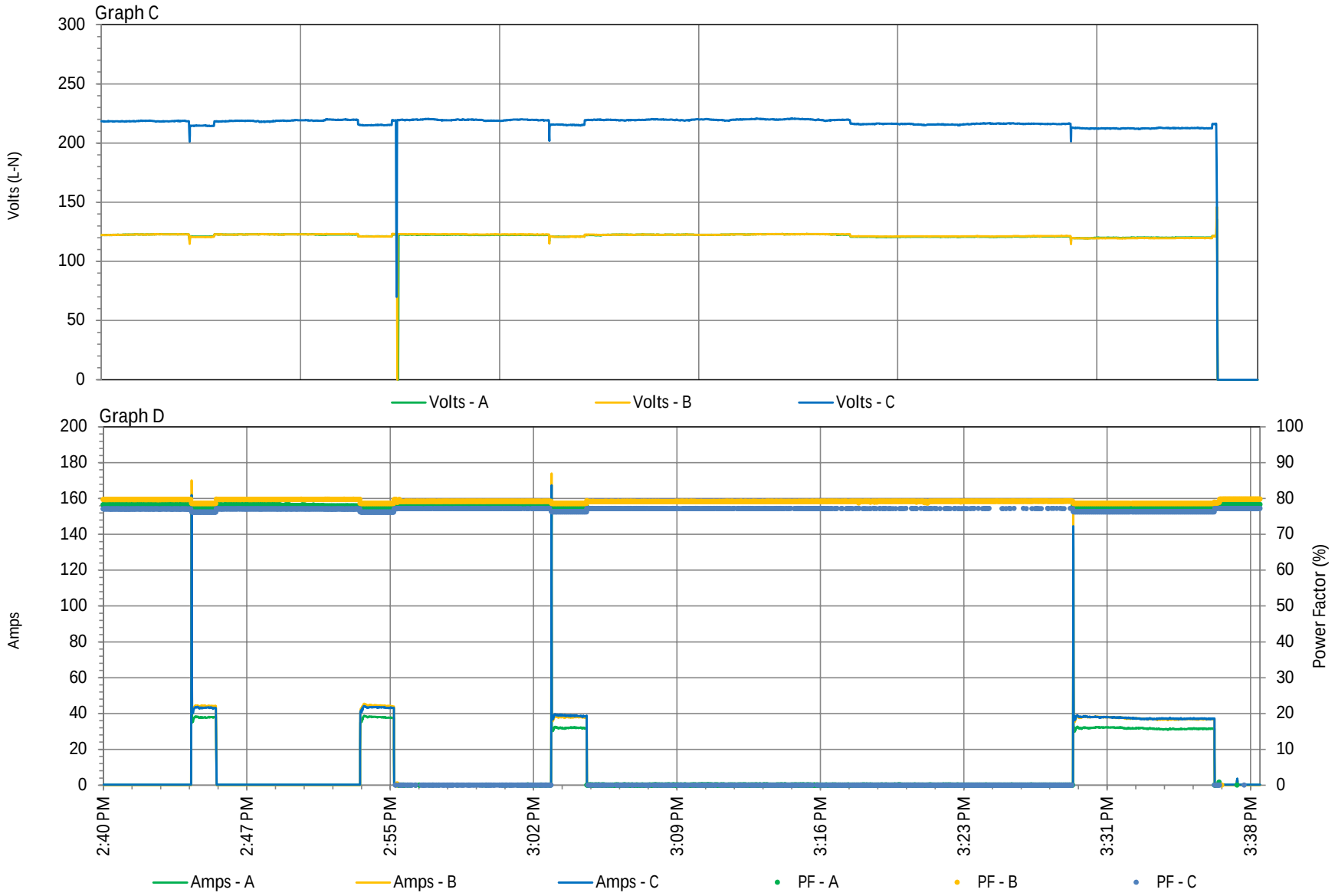
No recommendations for this site at this time.

4 ATTACHMENTS

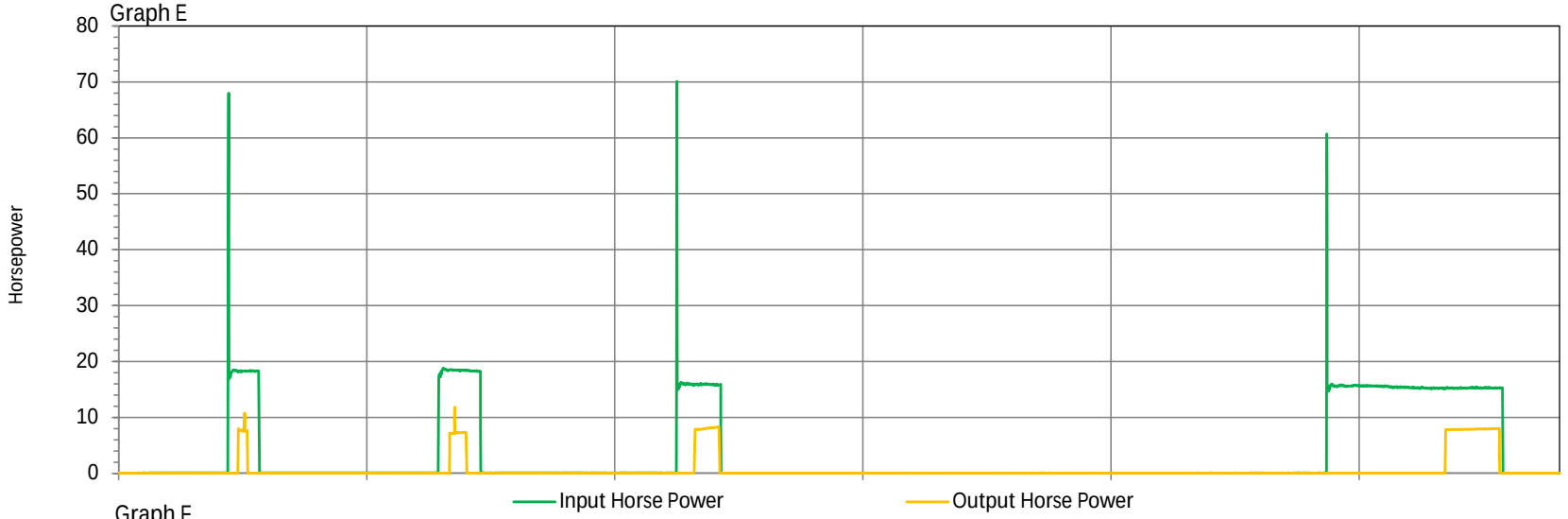
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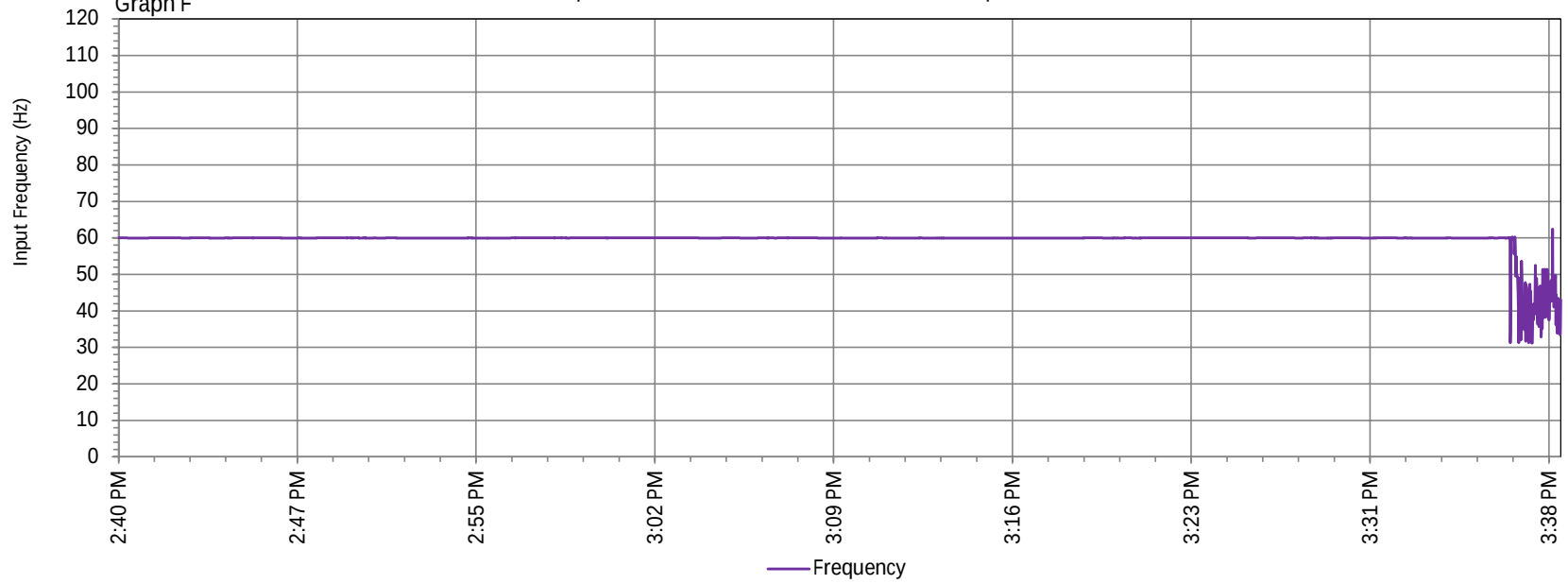
* Times shown are Eastern Standard Time


Graph C
Volts (L-N)
300
250
200
150
100
50
0
Volts - A
Volts - B
Volts - C
Graph D
Amps
200
180
160
140
120
100
80
60
40
20
0
Power Factor (%)
100
90
80
70
60
50
40
30
20
10
0
2:40 PM
2:47 PM
2:55 PM
3:02 PM
3:09 PM
3:16 PM
3:23 PM
3:31 PM
3:38 PM
Amps - A
Amps - B
Amps - C
PF - A
PF - B
PF - C

Graph E



Graph F



NP 3153 HT 3~ 464

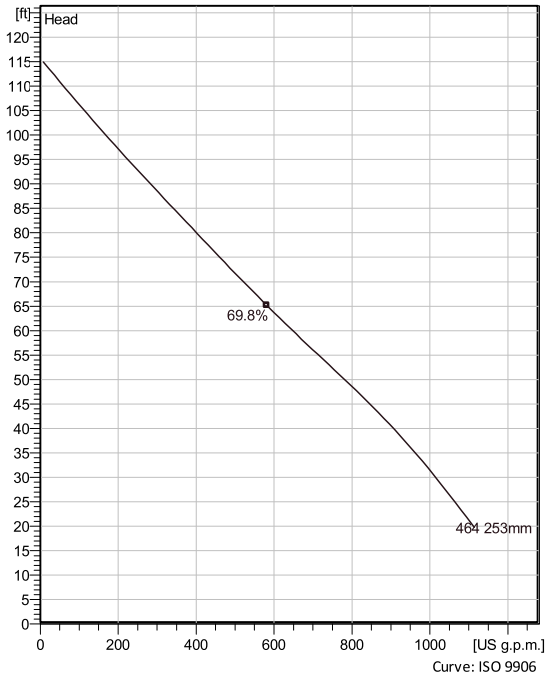
Patented self cleaning semi-open channel impeller, ideal for pumping in waste water applications. Modular based design with high adaptation grade.

FLYGT
a xylem brand

Technical specification



Curves according to: Water, pure Water, pure [100%], 39.2 °F, 62.42 lb/ft³, 1.6891E-5 ft²/s



Curve: ISO 9906

Nominal (mean) data shown. Under- and over-performance from this data should be expected due to standard manufacturing tolerances.
Please consult your local Flygt representative for performance guarantees.

Configuration

Motor number
N3153.185 21-18-4AA-W 20hp

Installation type
P - Semi permanent, Wet

Impeller diameter
253 mm

Discharge diameter
4 inch

Pump information

Impeller diameter
253 mm

Discharge diameter
4 inch

Inlet diameter
150 mm

Maximum operating speed
1755 rpm

Number of blades
2

Max. fluid temperature
40 °C

Material

Impeller
Hard-Iron ™

Project	Xylect-21982834	**Created by**	Robert Simcox		
Block		**Created on**	3/12/2024	**Last update**	3/12/2024

NP 3153 HT 3~ 464

Technical specification

Motor - General

Motor number N3153.185 21-18-4AA-W 20hp	**Phases** 3~	**Rated speed** 1755 rpm	**Rated power** 20 hp
ATEX approved No	**Number of poles** 4	**Rated current** 52 A	**Stator variant** 5
Frequency 60 Hz	**Rated voltage** 230 V	**Insulation class** H	**Type of Duty** S1
Version code 185			

Motor - Technical

Power factor - 1/1 Load 0.83	**Motor efficiency - 1/1 Load** 87.5 %	**Total moment of inertia** 2.27 lb ft²	**Starts per hour max.** 30
Power factor - 3/4 Load 0.77	**Motor efficiency - 3/4 Load** 89.0 %	**Starting current, direct starting** 296 A	
Power factor - 1/2 Load 0.66	**Motor efficiency - 1/2 Load** 89.0 %	**Starting current, star-delta** 98.6 A	

Project	Xylect-21982834	**Created by**	Robert Simcox		
Block		**Created on**	3/12/2024	**Last update**	3/12/2024

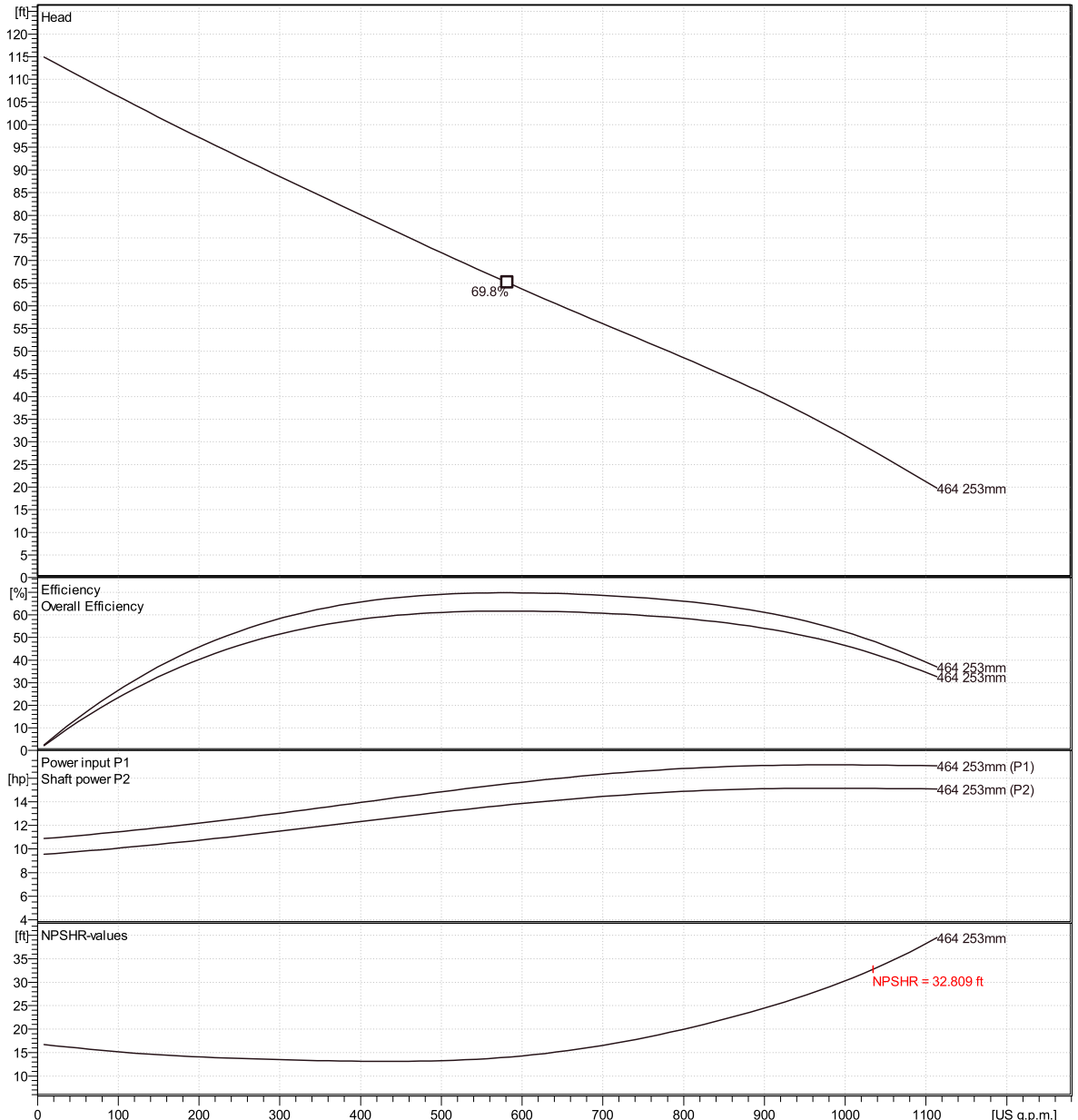
NP 3153 HT 3~ 464

Performance curve

Duty point

Flow	Head

Curves according to: Water, pure Water, pure [100%],39.2 °F,62.42 lb/ft³,1.6891E-5 ft²/s



Nominal (mean) data shown. Under- and over-performance from this data should be expected due to standard manufacturing tolerances.
Please consult your local Flygt representative for performance guarantees.

Curve: ISO 9906

Xylect-21982834		Robert Simcox			
	Created on	3/12/2024	**Last update**	3/12/2024	

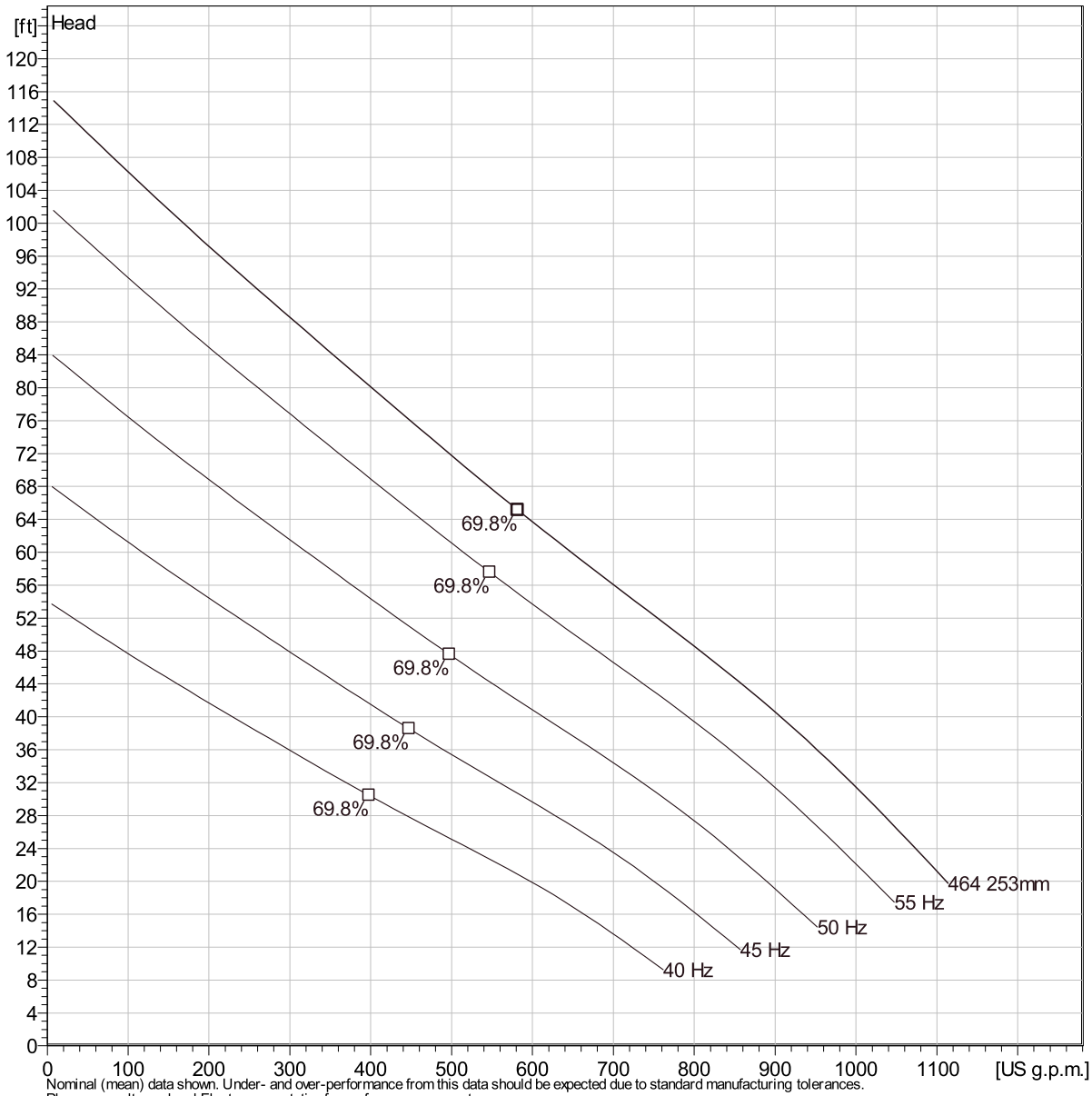
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72.0 - 2/20/2024 (Build 175)	3/5/2024 10:29 A3P3	Xylem:USA - EXT, USA - INT

NP 3153 HT 3~ 464

Duty Analysis

FLYGT a xylem brand

Curves according to: Water, pure [100%] ; 39.2°F; 62.42lb/ft³; 1.6891E-5ft²/s



Nominal (mean) data shown. Under- and over-performance from this data should be expected due to standard manufacturing tolerances.
Please consult your local Flygt representative for performance guarantees.

Operating characteristics

Pumps / Systems	Flow	Head	Shaft power	Flow	Head	Shaft power	Hydr.eff.	Spec. Energy	NPSHre
	US g.p.m.	ft	hp	US g.p.m.	ft	hp		kWh/US MG	ft

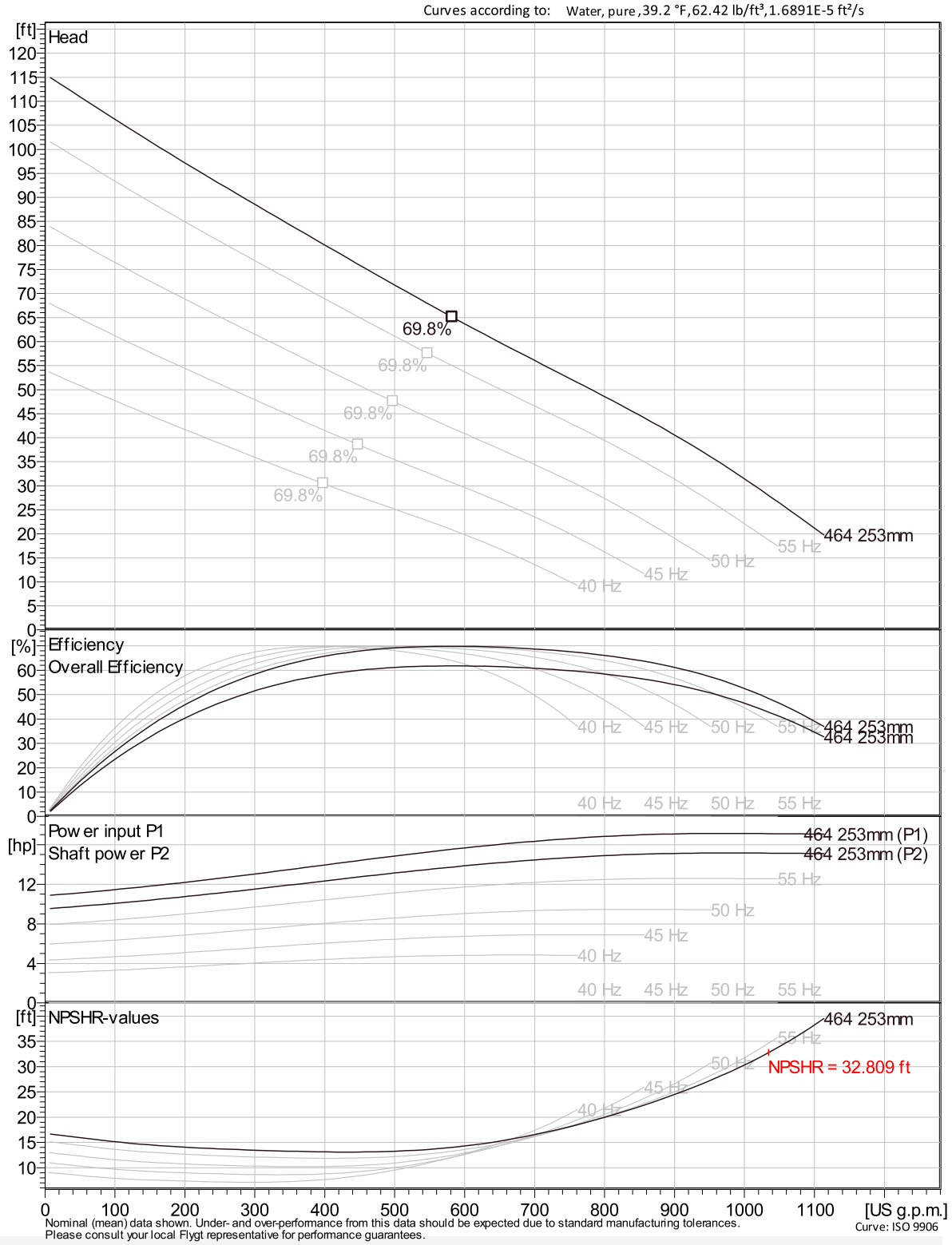
Project		**Created by**	Robert Simcox		
Block	Xylect-21982834	**Created on**	3/12/2024	**Last update**	3/12/2024

NP 3153 HT 3~ 464

VFD Curve

FLYGT
a xylem brand

Curves according to: Water, pure ,39.2 °F,62.42 lb/ft³,1.6891E-5 ft²/s



Nominal (mean) data shown. Under- and over-performance from this data should be expected due to standard manufacturing tolerances.
Please consult your local Flygt representative for performance guarantees.

Curve: ISO 9906

Project	Xylect-21982834	**Created by**	Robert Simcox		
Block		**Created on**	3/12/2024	**Last update**	3/12/2024

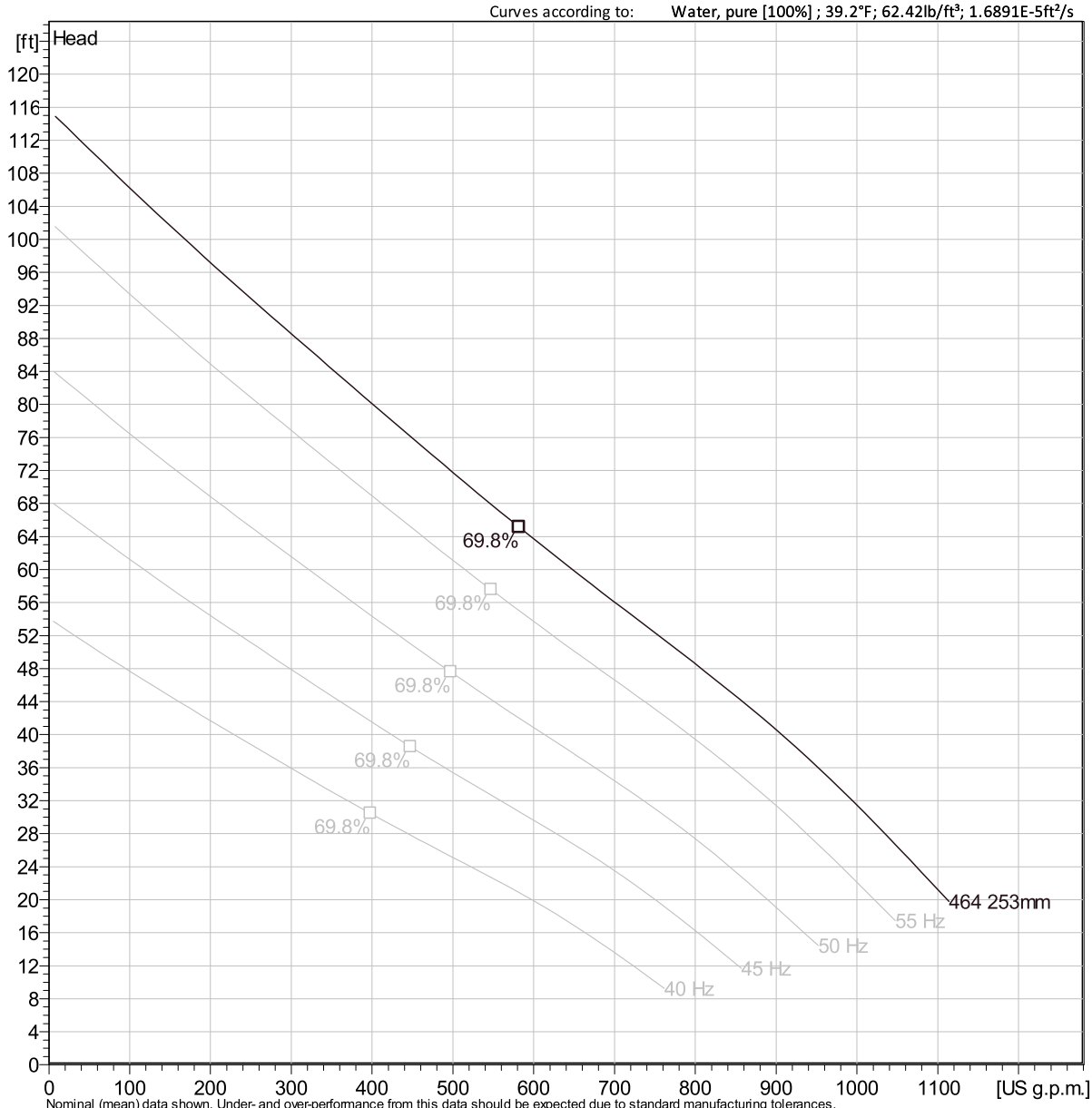
Program version	Data version	User group(s)
72.0 - 2/20/2024 (Build 175)	3/5/2024 10:29 A3P3	Xylem:USA - EXT, USA - INT

NP 3153 HT 3~ 464

VFD Analysis

FLYGT
a xylem brand

Curves according to: Water, pure [100%] ; 39.2°F; 62.42lb/ft³; 1.6891E-5ft²/s



Nominal (mean) data shown. Under- and over-performance from this data should be expected due to standard manufacturing tolerances.
Please consult your local Flygt representative for performance guarantees.

Operating Characteristics

Pumps / Systems	Frequency	Flow	Head	Shaft power	Flow	Head	Shaft power	Hydr.eff.	Specific energy	NPSHre
		US g.p.m.	ft	hp	US g.p.m.	ft	hp		kWh/US MG	ft

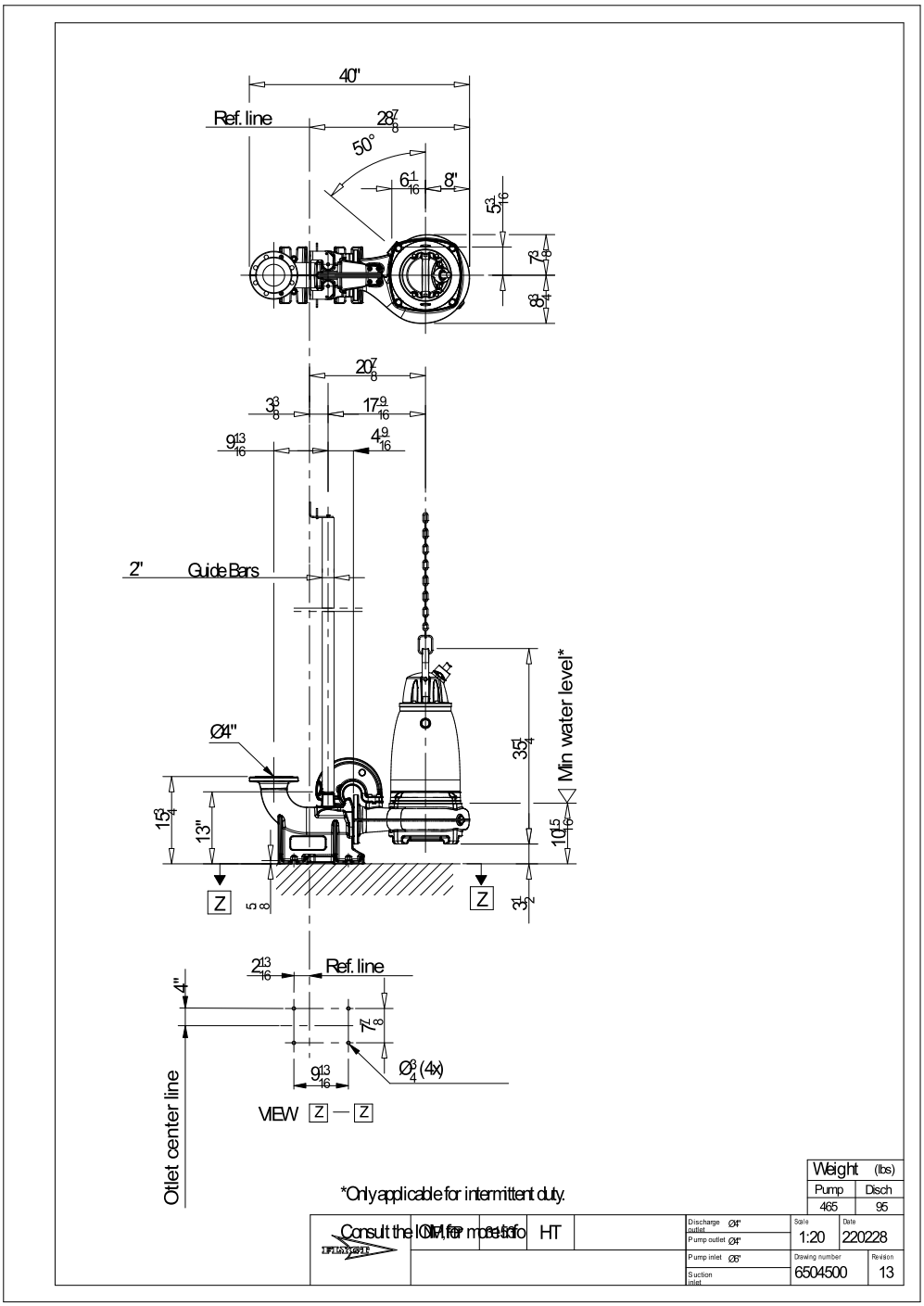
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Block		**Created on**	3/12/2024	**Last update**	3/12/2024

Program version	Data version	User group(s)
72.0 - 2/20/2024 (Build 175)	3/5/2024 10:29 A3P3	Xylem: USA - EXT, USA - INT

NP 3153 HT 3~ 464

Dimensional drawing

FLYGT
a xylem brand



Project	Xylect-21982834	**Created by**	Robert Simcox		
Block		**Created on**	3/12/2024	**Last update**	3/12/2024

Pump Station Evaluation Report

36 - CR209

Prepared For:

City of Wildwood

Evaluation Date:

February 5, 2024

Report Date:

September 27, 2024

Version 1

Kimley»Horn

Version	Publish Date	Description
1	See Cover	Original/Version 1

Table 0.1 - Revision History

Version	Publish Date	Test Date	Description

Table 0.2 - Previous Evaluation History

This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn shall be without liability to Kimley-Horn.

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ATTACHMENTS

Attachment 1 ..... **Test Data Graphs**

Attachment 2 ..... **Supplementary Pump Information**

ABBREVIATIONS

Ø	Phase
AC	Alternating Current
ADD	Automated Draw Down
ADF	Average Daily Flow
ARR	Automated Rate of Rise
ATL	Across The Line
Avg	Average
BEP	Best Efficiency Point
CL	Center Line
Disch	Discharge
ETM	Elapsed Time Meter
FLA	Full Load Amps
FM	Force Main
Ft	Feet
FPS	Feet Per Second
FSFO	Full Speed Full Open
Gal	Gallons
GPM	Gallons Per Minute
HGL	Hydraulic Grade Line
HP	Horsepower
Hrs	Hours
H:M:S	Hours:Minutes:Seconds
Hz	Hertz
In	Inches
InvIn	Invert In
KWH	Kilowatt-Hours
L	Length
L1, L2, L3	Leg 1, 2 & 3 or Length 1, 2 & 3
MSL	Mean Sea Level
MTBF	Mean Time Between Failures
N	Neutral
P	Pump
PCL	Pump Center Line
PCP	Pump Control Panel
PF	Power Factor
PSI	Pounds Per Square Inch
PT	Point
RPM	Revolutions Per Minute
TDH	Total Dynamic Head
TVSS	Transient Voltage Surge Suppressor
V	Volts
VFD	Variable Frequency Drive
WTW	Wire To Water
WW	Wet Well
Yr	Year

1 INTRODUCTION

Kimley-Horn and Associates, Inc. evaluated the pump station through pump performance testing and a condition assessment. This report summarizes the data and results of that evaluation. The performance tests were conducted using the XAK-PACK pump performance monitoring device. The following pages provide summaries of the data collected and notes about the pumps' performance.

1.1 SITE INFORMATION

CR209 / Site #36			
Date of Evaluation	February 5, 2024		
Address	11035 Co Rd 209, Oxford, FL 34484		
Coordinates	28°55'02.6"N, 82°03'12.5"W		
Fluid Conveyed	Wastewater		
Station Style	Triplex Submersible		
Number of Pumps	3	Number of Pump Slots	3
Pump Type	Submersible		
Flow Meter Type	N/a		
Year of Construction	2016	Based on	☒Docs. ☐Estimation ☐Other
Basin/Zone	Unknown		
Firm Capacity (Design)	1,240 GPM / 1.79 MGD		
Firm Capacity (Test)	1,773 GPM / 2.55 MGD		
Discharge Description	12-inch discharge, manifolds with 16-inch, approximately 25,628 LF unknown material, discharging to WWTP		
Electrical Service	277/480 Wye		
Site Generator	Standby Genset diesel with belly tank		
Bypass Ability	Bypass assembly in valve vault		
Miscellaneous Features			

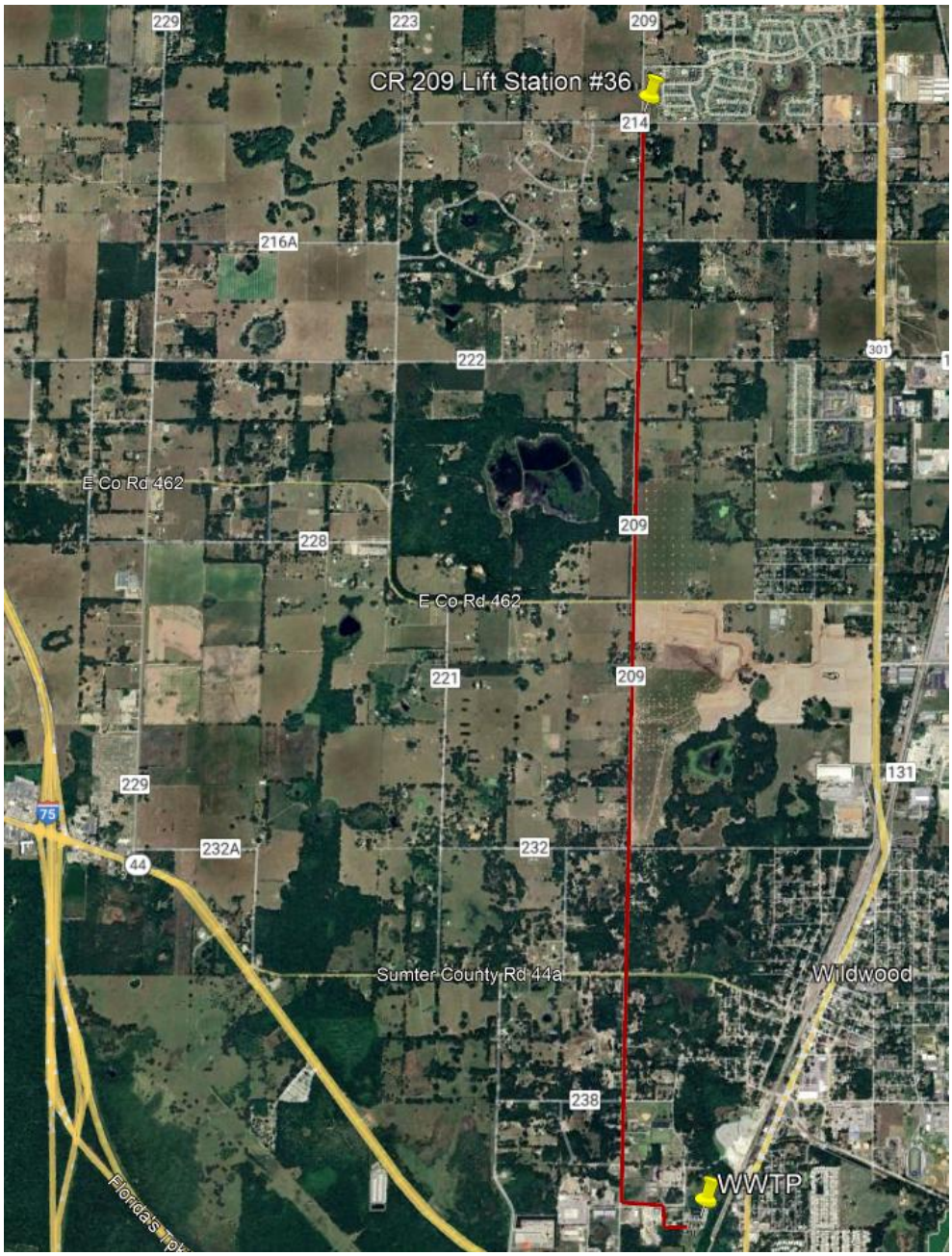
Site Notes:

Pump 2 was out of service during time of testing. Performance checks could not be made on Pump 2.

1.2 SITE MAP

Force Main

Figure 1.1 - Site Location Map



2 PUMP PERFORMANCE TESTS

Pump performance tests were conducted on the pumps utilizing the measurement tools detailed below. **Table 2.1 - Measurement Methods** describes the measurements taken during the test and the measurement method. Some measurements were confirmed utilizing a secondary measurement method. See **Attachment 1** for graphs of the digitally recorded data. For each test, note the following:

1. Common accuracies for measurements of flow, pressure, voltage and current are ±1%.
2. Friction loss is calculated using the Hazen-Williams formula and the Bernoulli equation. Piping characteristics are based on best available data.

Parameter	Measurement Method	
	Primary	Secondary
Flow	Level Transducer (XAK-PACK)	N/A
Pressure	Pressure Transducer (XAK-PACK)	Liquid Filled Pressure Gauge
Wet Well Level	Level Transducer (XAK-PACK)	N/A
Volts	Voltage Probes (XAK-PACK)	Fluke 376FC
Amps	Current Transducers (XAK-PACK)	Fluke 376FC
Power Factor	Power Factor Monitor (XAK-PACK)	N/A

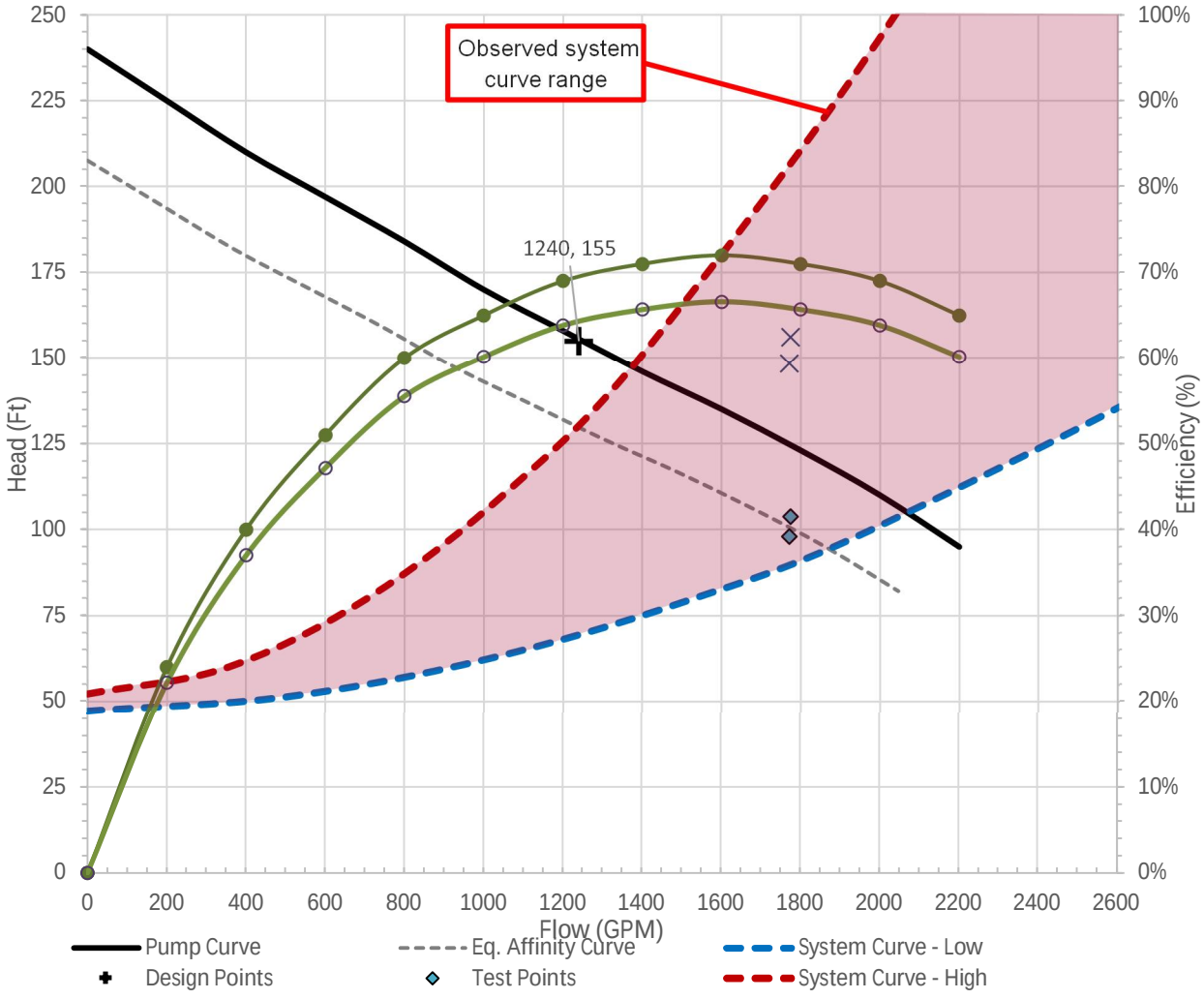
Table 2.1 - Measurement Methods

2.1 PUMP #1

Below is a summary of the pump characteristics and performance test results.

Parameter	Units	Value
Pump Manufacturer	-	Flygt
Pump Model	-	NP 3301 HT 3~ 464
Pump Style	-	Submersible
Pump Impeller Dia	Inches	14.6
Pump Rated Capacity	GPM	1240
Pump Rated Head	Ft	155
Pump ETM	Hours	4395
Pump Flow @ BEP Design Curve	GPM	1660
Pump Hyd Eff @ Design Pt	%	70.0%
Pump WTW Eff @ Operating Pt	%	64%
Pump NPSHr @ Operating Pt	Ft	17
Motor Synchronous Speed	RPM	1800
Motor Rated Speed	RPM	1775
Motor No. Phases	No	3
Motor Starters	-	SS
Motor Rated Voltage	Volts	460
Motor Rated Horsepower	HP	85.0
Motor Service Factor	-	1.15
Motor FLA	Amps	101.0
Mfg. Motor Eff. @ Operating Pt	%	93%
Mfg. Starter Eff. @ Operating Pt	%	100%

Table 2.2 - Pump #1 Design Characteristics



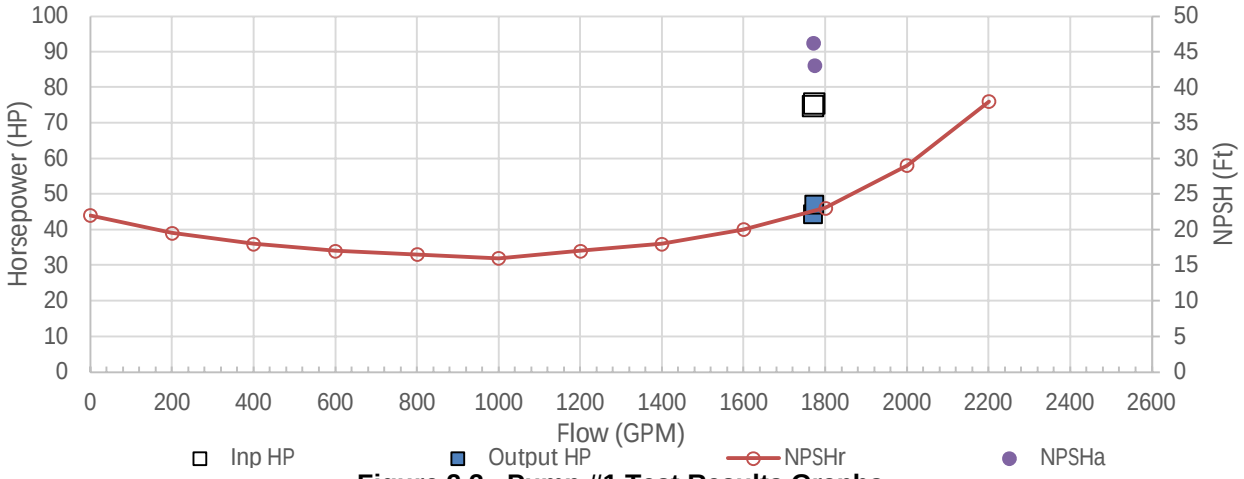


Figure 2.3 - Pump #1 Test Results Graphs

	Parameter	Units	Lower Limit	Test Value	Upper Limit	Comment
Measured	Average Output (FSFO)	GPM	-	1773	-	
	Average TDH (FSFO)	Ft	-	100.9	-	
	Average WTW Efficiency (FSFO)	%	-	61%	-	
	Average Input HP (FSFO)	HP	-	74.9	-	
	Average Current Draw (FSFO)	Amps	-	91.5	-	
	Suction Velocity (FSFO)	FPS	2	-	7	
	Discharge Velocity (FSFO)	FPS	2	9.9	7	1
	BEP Comparison (FSFO)	%	80%	107%	115%	
	Average Output (FSFO)	%	90%	143%	110%	2
	Affinity Law Eq. Curve	%	-5%	-7.0%	5%	3
	NPSHa	Ft	17	44.6	N/A	
	WTW Eff @ Operating Pt	%	-5%	-5%	5%	
	Input Frequency	Hz	-5%	0%	5%	
	Input Voltage (L-L)	%	-10%	-5.8%	10%	
	Voltage Drop	%	-15%	2.3%	N/A	
	Voltage Imbalance	%	-10%	0.6%	10%	
	Current Imbalance	%	-10%	6.7%	10%	
	Motor FLA	%	-50%	90.6%	105%	
	Motor Load	%	50%	88.1%	115%	
	Motor Slip Speed	%	1770	1775.0	1805	
	Vibration	In/Sec	0	0.0	-	
Observed	Surge	1-5	-	3	3	
	Vibration	1-5	-	1	3	
	Cavitation	1-5	-	1	3	
	Mechanical Noise	1-5	-	2	3	
	Leaks	1-5	-	1	3	
	Exterior Condition	1-5	-	2	3	
	Overall Score	1-5	-	2	3	

Table 2.4 - Pump #1 Test Summary

Pump #1 - Test Comments

1) Discharge velocity is above the recommended upper limit. Operation in this range results in high head loss and increased wear inside piping and appurtenances.
2) The pump output is 143% of the design flow rate.
3) The pump is operating at 93% equivalent affinity curve meaning significant impeller/volute wear has occurred. Consider replacing worn components such as the impeller, the volute, and the wear rings.
4) Results may be influenced by the force main transitioning to gravity pipe flow.

2.2 PUMP #2

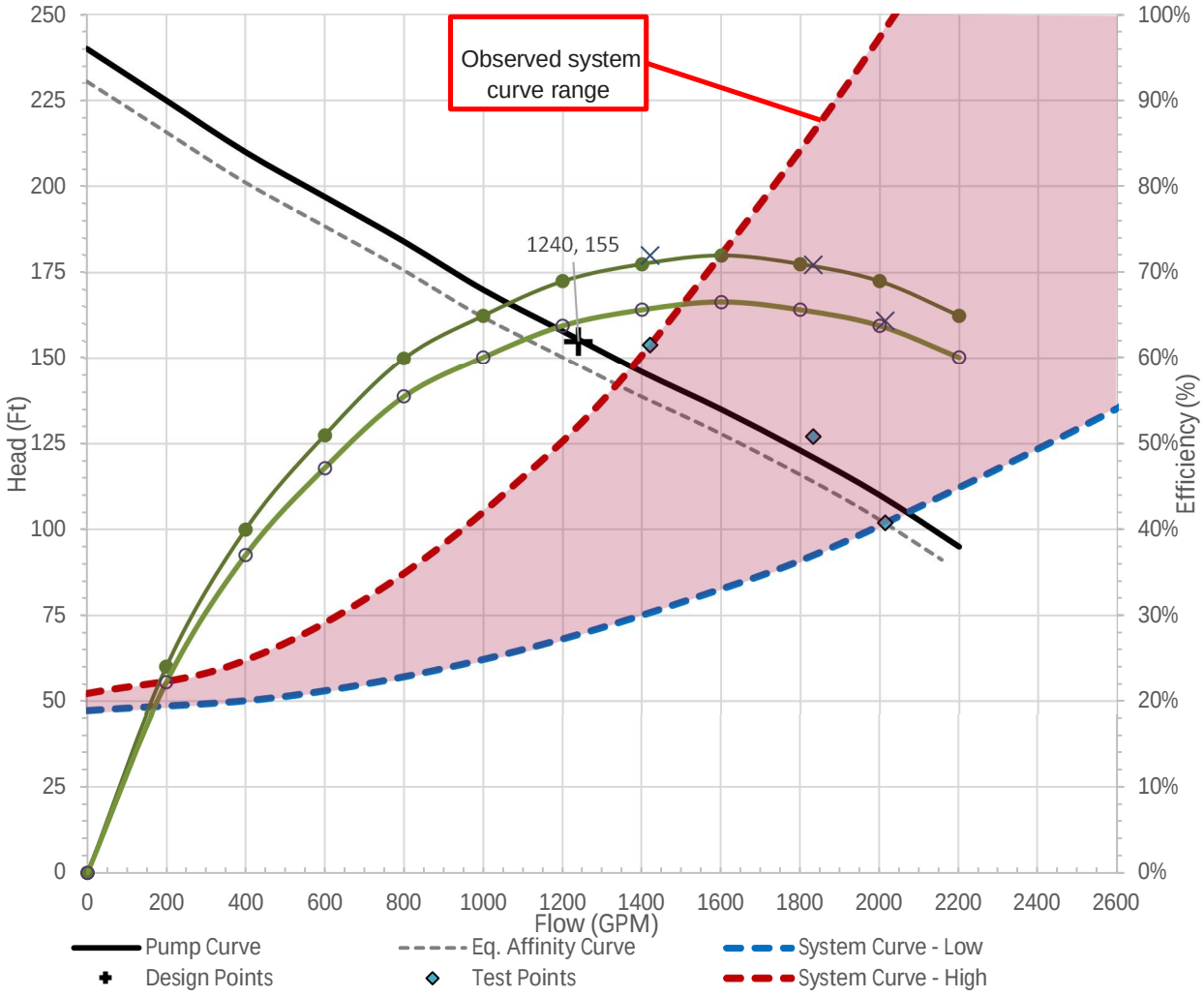
Pump # 2 was out of service during time of testing. Performance checks for pump 2 were unable to be performed.

2.3 PUMP #3

Below is a summary of the pump characteristics and performance test results.

Parameter	Units	Value
Pump Manufacturer	-	Flygt
Pump Model	-	NP 3301 HT 3~ 464
Pump Style	-	Submersible
Pump Impeller Dia	Inches	14.6
Pump Rated Capacity	GPM	1240
Pump Rated Head	Ft	155
Pump ETM	Hours	4395
Pump Flow @ BEP Design Curve	GPM	1660
Pump Hyd Eff @ Design Pt	%	70.0%
Pump WTW Eff @ Operating Pt	%	65%
Pump NPSHr @ Operating Pt	Ft	18
Motor Synchronous Speed	RPM	1800
Motor Rated Speed	RPM	1775
Motor No. Phases	No	3
Motor Starters	-	SS
Motor Rated Voltage	Volts	460
Motor Rated Horsepower	HP	85.0
Motor Service Factor	-	1.15
Motor FLA	Amps	101.0
Mfg. Motor Eff. @ Operating Pt	%	93%
Mfg. Starter Eff. @ Operating Pt	%	100%

Table 2.5 - Pump #3 Design Characteristics



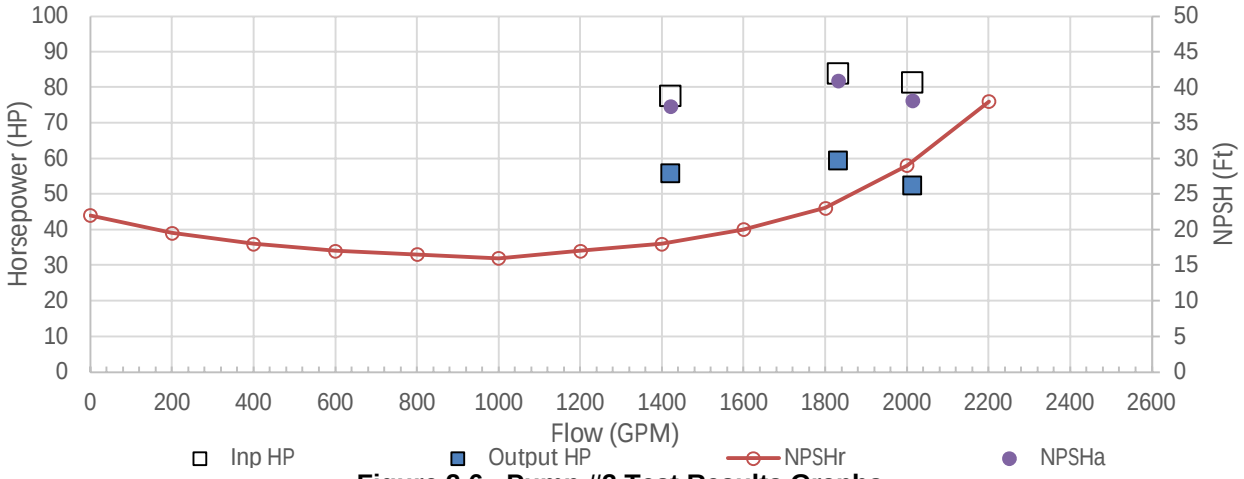


Figure 2.6 - Pump #3 Test Results Graphs

	Parameter	Units	Lower Limit	Test Value	Upper Limit	Comment
Measured	Average Output (FSFO)	GPM	-	1923	-	
	Average TDH (FSFO)	Ft	-	114.5	-	
	Average WTW Efficiency (FSFO)	%	-	68%	-	
	Average Input HP (FSFO)	HP	-	82.5	-	
	Average Current Draw (FSFO)	Amps	-	94.4	-	
	Suction Velocity (FSFO)	FPS	2	-	7	
	Discharge Velocity (FSFO)	FPS	2	10.8	7	1
	BEP Comparison (FSFO)	%	80%	116%	115%	2
	Average Output (FSFO)	%	90%	155%	110%	3
	Affinity Law Eq. Curve	%	-5%	-2.0%	5%	
	NPSHa	Ft	18	39.5	N/A	
	WTW Eff @ Operating Pt	%	-5%	4%	5%	
	Input Frequency	Hz	-5%	0%	5%	
	Input Voltage (L-L)	%	-10%	-5.8%	10%	
	Voltage Drop	%	-15%	2.3%	N/A	
	Voltage Imbalance	%	-10%	0.9%	10%	
	Current Imbalance	%	-10%	3.4%	10%	
	Motor FLA	%	-50%	93.4%	105%	
	Motor Load	%	50%	97.0%	115%	
	Motor Slip Speed	%	1770	1775.0	1805	
	Vibration	In/Sec	0	0.0	-	
Observed	Surge	1-5	-	3	3	
	Vibration	1-5	-	1	3	
	Cavitation	1-5	-	1	3	
	Mechanical Noise	1-5	-	2	3	
	Leaks	1-5	-	1	3	
	Exterior Condition	1-5	-	2	3	
	Overall Score	1-5	-	2	3	

Table 2.7 - Pump #3 Test Summary

Pump #3 - Test Comments

1) Discharge velocity is above the recommended upper limit. Operation in this range results in high head loss and increased wear inside piping and appurtenances.
2) The pump is operating at 116% of the BEP flow rate.
3) The pump output is 155% of the design flow rate.
4) Results may be influenced by the force main transitioning to gravity pipe flow.

2.4 HYDRAULICS SUMMARY

There is an approximately 4.5-minute period between the start of each pumping cycle when the force main fills and reaches full pressure. At the end of each cycle the force main drains; this can be seen in the pressure graphs in **Attachment 1**. This is due to the peak of the force main being approximately 2800 LF from the pump station and the discharge is at a lower elevation than the peak. Because of this filling and draining the site operates in a system curve range where the pump is moving back on its curve the longer it runs. The observed system curve range is shown in the shaded region. Observed maximum and minimum system curves are shown in Figure 2.8 and form the upper and lower bounds of the system curve range. Additionally, the manifold condition of the force main contributes to the system curve range as well.

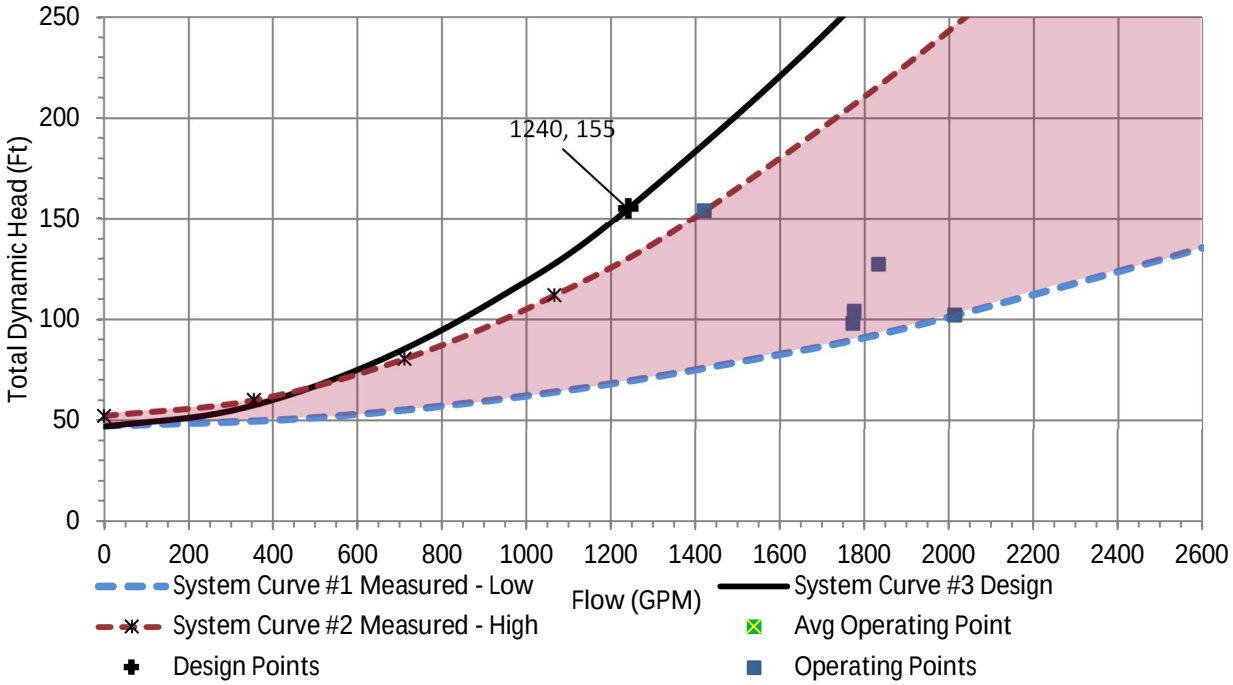


Figure 2.8 – System Hydraulic Information provides a graph of the system characteristics and a table describing the system curves. Length, Hazen-Williams (Hz-Wm), and diameter are approximated based on the best available information and fit to the data. System Curve Characteristics are intended to be for reference.

System Curve Characteristics					
Curve Name	**Curve Type**	**Length (Ft)**	**Hz-Wm**	**Diameter (In)**	**Calculated Based On**
System Curve #1	Measured	2800	105	11.2	Test Data
System Curve #2	Design	25628	110	12.5	Design Operating Condition
System Curve #3	Theoretical	25628	105	13.6	Available GIS and Record Drawing Data

Figure 2.8 – System Hydraulic Information

2.5 PIPELINE PERFORMANCE INDICATORS

Figure 2.9 – Pipe Velocities displays the velocities in each known diameter of the pressurized conveyance system. The Average Test Output Velocity represents the velocity generated by the average pumping rate produced by testing. The Station Firm Capacity Velocity represents the velocity based on the station's firm capacity (output with the largest pump out of service). The color gradient represents ranges of acceptable to problematic velocities. Red areas of operation are problematic and green areas of operation are acceptable.

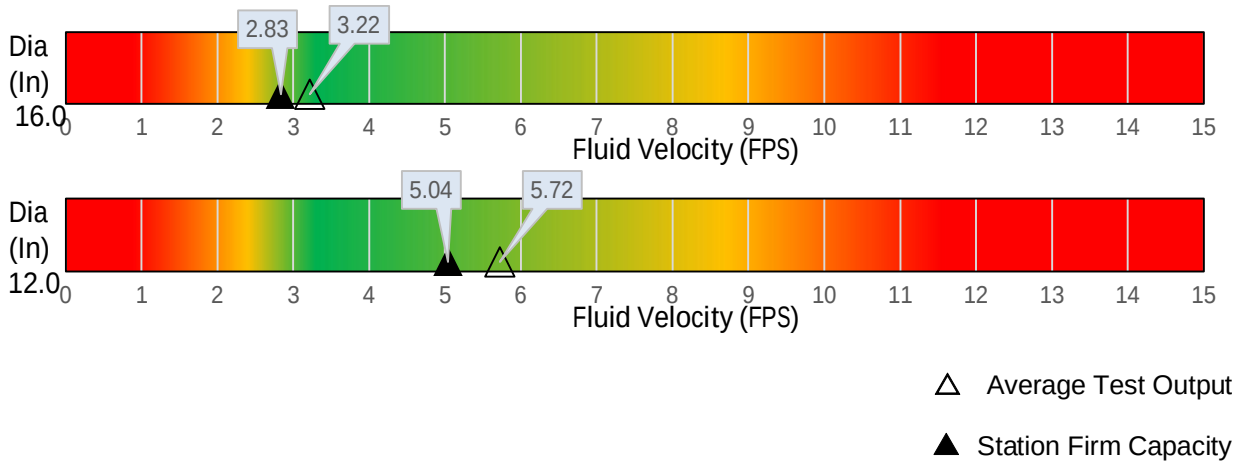


Figure 2.9 – Pipe Velocities

The maximum observed pressure at the station during the testing period is provided below in **Figure 2.10 - Maximum** Observed Pressure. System pressure capabilities vary depending upon pipe material type, pressure rating, elevation, age, condition, etc. This performance indicator is provided for reference only and is not a condition assessment of the pipeline. For systems with pressures above approximately 100 PSI, consider a more detailed analysis. See the **Attachment 1 - Graph B** for additional pressure data.

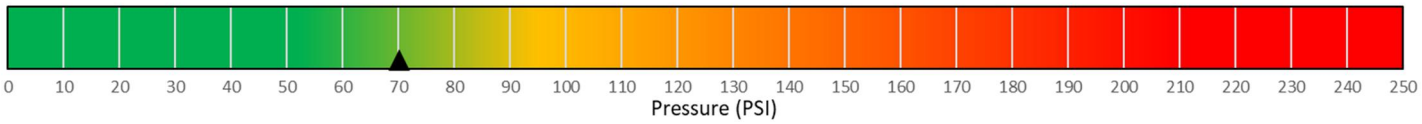


Figure 2.10 - Maximum Observed Pressure

2.6 SYSTEM PRESSURES

Figure 2.11 - Pressure Cycle shows a typical single-pump pressure cycle measured during testing. The pressure data captured for this test is limited to 2-second intervals which may not have captured the entire range of actual pressures. The complete log of pressure readings is provided in **Attachment 1 – Test Data Graphs**. For more accurate surge data, a surge monitoring device should be used to capture pressure at shorter time intervals over a longer period of time. **Table 2.12 - Further Surge-Related Actions** provides a list of recommended surge-related actions.

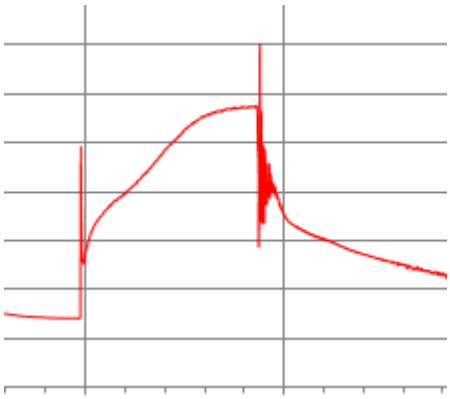


Figure 2.11 - Pressure Cycle

The pressure transducer used for measuring pressures has a range of 0 to 200 PSI. Pump startup produced an upsurge of approximately 50 PSI. Upon pump shut down, the observed minimum pressure was approximately 0 PSI and the maximum pressure was approximately 70 PSI creating a total observed pressure range of 70 PSI. It is likely that the minimum pressure produced on each pump shut down cycle was less than 0 PSI.

Further Surge Related Actions:	
	Perform extended period digital surge monitoring
	Perform calibrated surge modeling
	Revise operating scheme to reduce surge potential
	Evaluate piping system for pressure capacity and likelihood of failure
	Install physical surge mitigation strategies
✓	No further action

Table 2.12 - Further Surge-Related Actions

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3 RECOMMENDATIONS

The following recommendations are a result of the findings of this evaluation and should be considered for implementation. See **Section 2 Pump Performance Tests** for pump specific recommendations. In addition to the recommendations below, this site should/ be considered for the following overall planning and budgeting activities.

3.1 OVERALL RECOMMENDATIONS

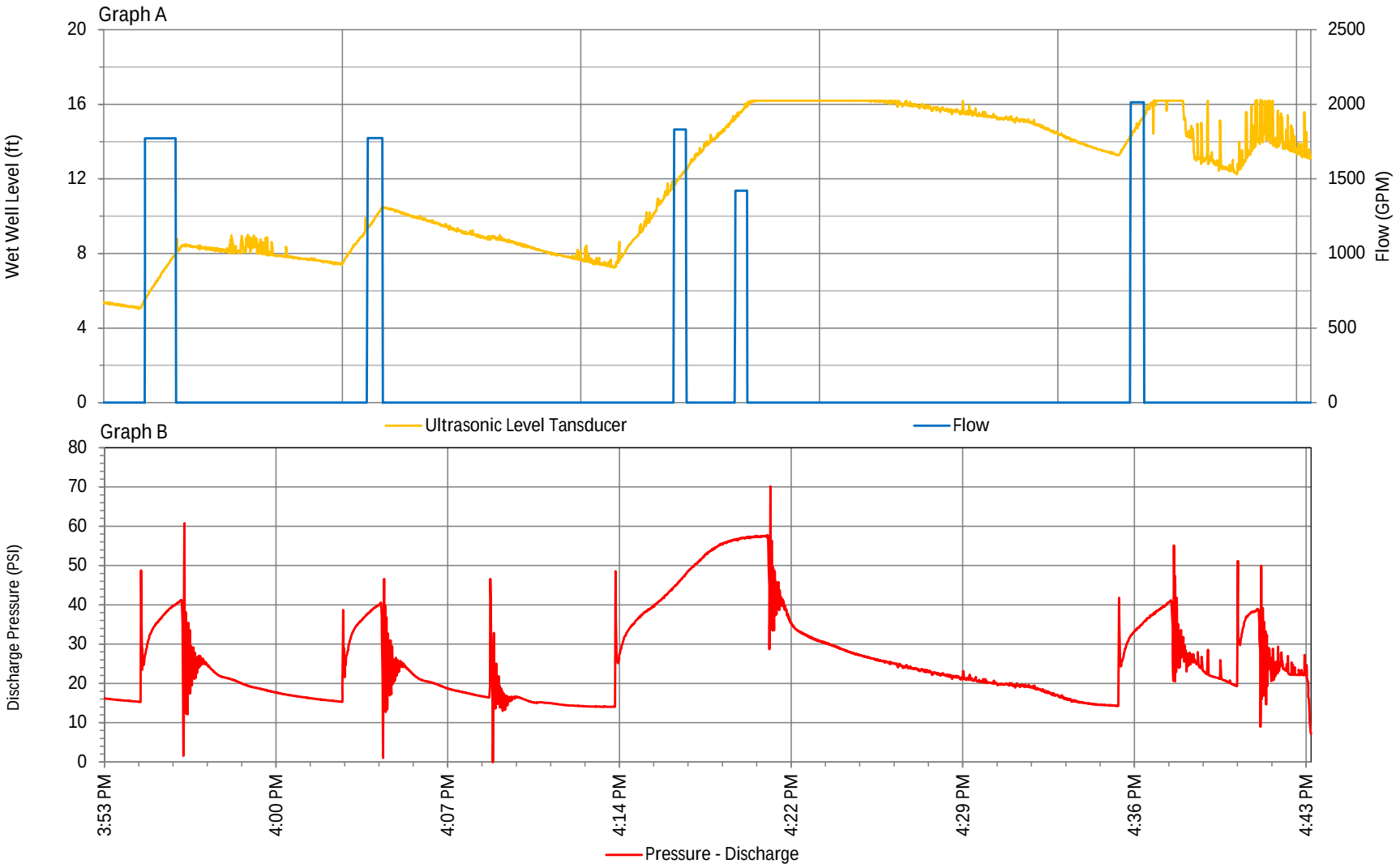
Overall Site Rating	Score	Description
	1	No recommendations currently. Monitor station for worsening conditions, perform regular O&M, reassess condition in 2-5 years.
	2	Complete recommendations listed in Section 3.2, monitor station for worsening conditions, perform regular O&M, reassess condition in 1-3 years.
	3	Station requires improvements beyond replacement of individual components. Begin planning and budgeting for a major rehabilitation. Place under regular observation until rehabilitation is complete.
	4	Station does not appear to be brought into conformance with standards without replacement. Begin planning and budgeting for a station replacement. Place under regular observation until rehabilitation is complete.

3.2 MISCELLANEOUS RECOMMENDATIONS

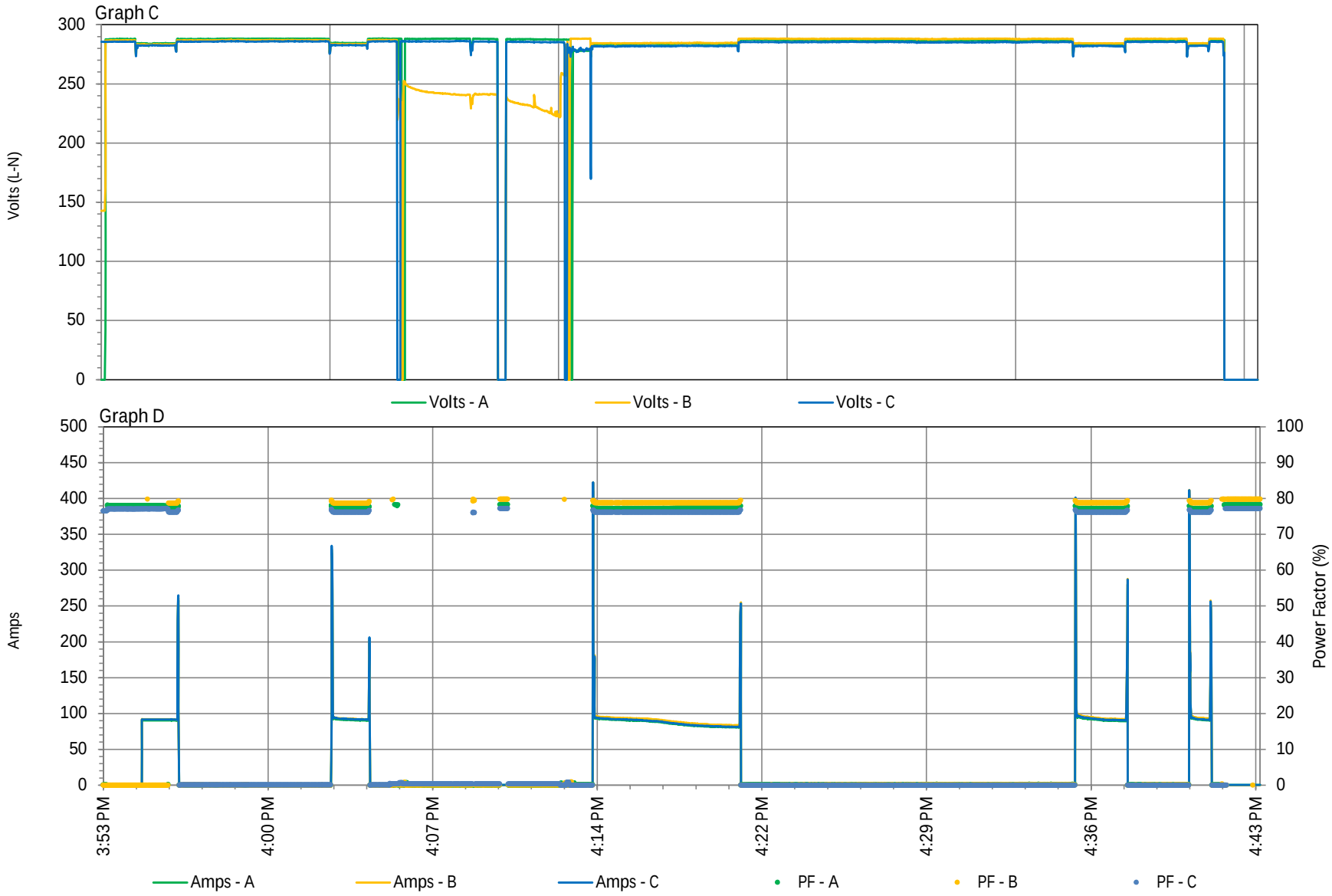
Pump 2 – Pump 2 was out of service at the time of testing. We recommend Pump 2 is repaired and placed back in service.

4 ATTACHMENTS

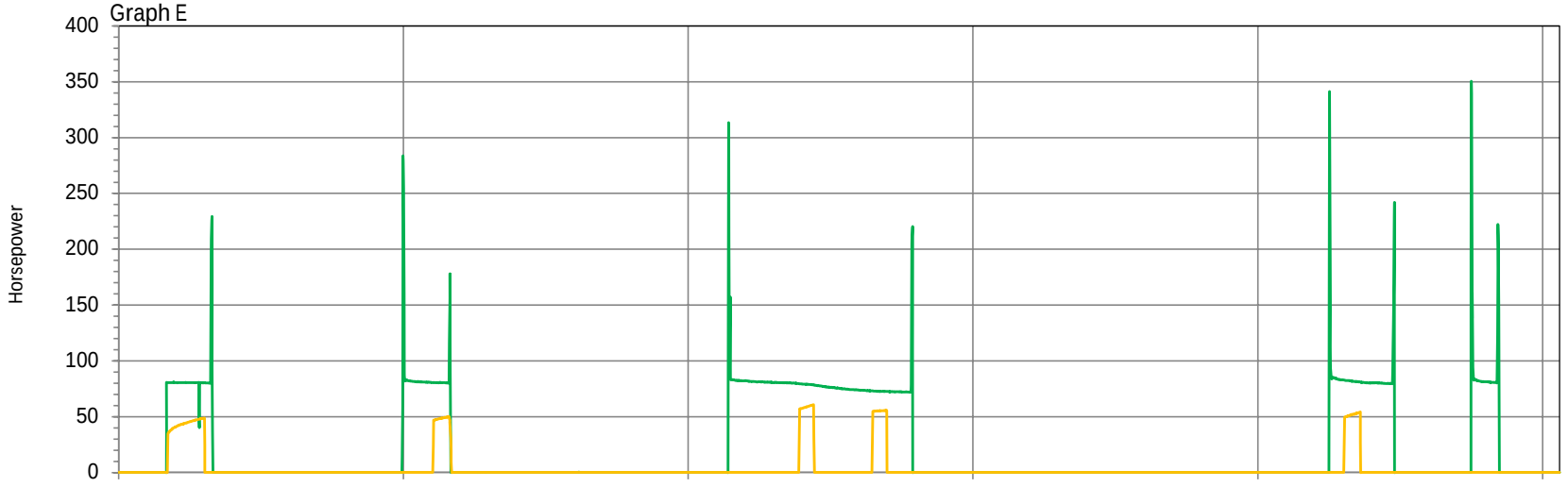
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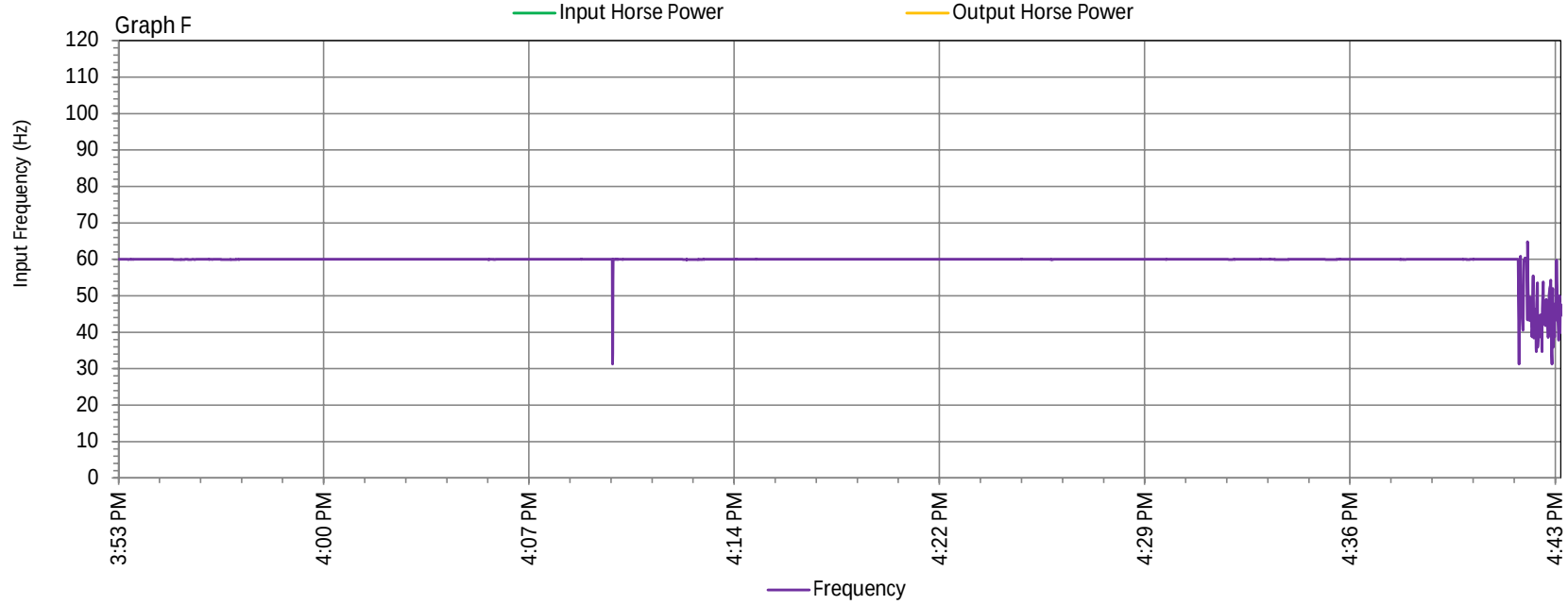
* Times shown are Eastern Standard Time


Graph C
Volts (L-N)
300
250
200
150
100
50
0
Volts - A
Volts - B
Volts - C
Graph D
Amps
500
450
400
350
300
250
200
150
100
50
0
Power Factor (%)
100
90
80
70
60
50
40
30
20
10
0
3:53 PM
4:00 PM
4:07 PM
4:14 PM
4:22 PM
4:29 PM
4:36 PM
4:43 PM
Amps - A
Amps - B
Amps - C
PF - A
PF - B
PF - C

Graph E



Graph F



XYLEM WATER SOLUTIONS U.S.A., INC.

Pump Station Start Up Report

Pump Station Evaluation Report
Attachment 2 - Manufacturers Data

File Name: CR 209FM Restart: Yes ○ No ○

Job Paid: Yes ○ No ○ Amount to P-U:

Contact: COMMERCIAL INDUSTRIAL CORP. Date: 08/25/17 Time: 9:30

Design Conditions: GPM 1244 TDH 156 Equipment Manufacturer: FLYGT

Model: 6"NP3301 1775RPM HP 85 Impeller 464 Voltage 460 Phase 3

Serial Number: 185-1580009; 185-1670009

Serial Number: 185-1680004

Control Manufacturer: ECS Model / Serial Number: 211524

Overload Heaters: Electric Alternator Tested: Yes L/A Connected: Yes GRD Connected: Yes

Danger Label Posted: Yes Wire & Terminal Connections Tight: Yes Conduit Sealed: Yes Panel Interior Dry: Yes

Type Controller: Float Logic Multitrode Other: Probe Floats Set By: Others

Controller Set Points: LL OFF LEAD LAG LAG LAG HL

Floats, Probes, Transducer-Away From Turbulent Flow: Yes ① No ① Inflow Discard Over Pump(s): Yes ① No ○

Guide Rails Plumb and Secured: Yes ③ No ③ Debris in Station: Yes ③ No ⊗ Debris Removed in Your Presence: Yes ○ No ○

Is Pump VFD Operated: Yes ○ No ⊗ Minimum HZ: 15 sec Maximum HZ: 15 sec Accel Time: Decel Time:

If Pump(s) Are VFD Operated, Have They Been Operated For 3 Minutes At Full Speed To Evacuate Air In Cooling Jacket: Yes ① No ①

On VFD Operation are The Power Cable and Sensor Cable in The Same Conduit: Yes ⑨ No ○

WARNING: All resistance and meg-ohm readings should be taken with the pump cables disconnected from the starter and control circuits.

Megger Check: #1 Inf Red Inf Black Inf White #2 Inf Red Inf Black Inf White

#3 Red Black White #4 Red Black White

Pump Sensor Readings: Thermal Sensor #1 1.2 Ω #2 1.2 Ω #3 1.2 Ω #4 Ω

Leakage Sensor #1 Ω #2 Ω #3 Ω #4 Ω

Line Voltage Check: L1 - L2 494 V L2 - L3 494 V L1 - L3 497 V

Generator Start: Yes ○ No ○ L1 - GRD 285 V L2 - GRD 286 V L3 - GRD 284 V

Control Circuit: Primary 120 V Secondary: 24 V

Amperage at Load Connection:

#1	L1: 95 AMPS	L2: 100 AMPS	L3: 99 AMPS
#1	L1: 96 AMPS	L2: 98 AMPS	L3: 96 AMPS
#1	L1: 95 AMPS	L2: 99 AMPS	L3: 98 AMPS
#1	L1: AMPS	L2: AMPS	L3: AMPS

Pump(s) Properly Seated: #1 Yes ⊗ No ○ #2 Yes ⊗ No ○ #3 Yes ⊗ No ○ #4 Yes ○ No ○

Check Valves Operate Properly: #1 Yes ⊗ No ○ #2 Yes ⊗ No ○ #3 Yes ⊗ No ○ #4 Yes ○ No ○

O&M Manuals Delivered: Yes ⊗ No ○ Received by:

Tools Delivered: Yes ○ No ⊗ Spare Parts Delivered: Yes ○ No ⊗ Received By:

Access Covers By: Halliday Products Station Operator/Owner: City of Wildwood

Performance Test: #1 GPM 2184 TDH 106.4 #2 GPM 2325 TDH 100.5

#3 GPM 2395 TDH 98 #4 GPM TDH

Performance Data:

Shut Off Head Reading: #1 _____ #2 _____

Static Head: #1 18.6 #2 19.5 #3 19 #4 _____

Gauge PSI During Test: #1 38 #2 35 #3 34 #4 x

Friction Loss During Test: #1 _____ #2 _____ #3 _____ #4 x

Total Head: #1 106.4 #2 100.5 #3 98 #4 _____

Guage Location During Test: Before Valves - Yes ○ No ○ After Valves - Yes ⊗ No ○ On Valves - Yes ○ No ○

Gauge Installed on Which Valve: Check Valves - Yes ○ No ⊗ Plug Valves - Yes ○ No ○

Wet Well Diameter: 12'

Draw Down Test, (1) Minute: #1 31 Inches #2 32 Inches #3 34 Inches #4 _____ Inches

Present:
Contractor: Commercial Industrial Corp Name: _____
Engineer Firm: Kimley Horn Name: Trey Clayton
Owner/Operator: City of Wildwood Name: Mike Weaver
Other: _____ Name: _____

Restart Reason: _____

Comments: Pumps performed to Spec. Panel was exciting

Inf

Start-up By: Scott Cannan Official Start Date: 8-25-17

FLYGT
a xylem brand

Engineering Submittal #1

Job: CR 209 FM & LS IMPROVEMENTS - CR 209 LS

To: COMMERCIAL INDUSTRIAL CORP
Date: SEPTEMBER 16, 2016

☑ Work cannot proceed until one set of approved shop drawings is returned to this office.
☐ Submittal is for record only and we are proceeding with production.

Pumps

Qty.	Model	Impeller	HP	Phase	Voltage	Duty Points	Motor Leads
3	6"NP3301	464/370mm	85	3	460	1244GPM@156'TDH	65'

Specials: (3) 6"X6" Discharge Connections
(3) FLS
(3) Certified Test

Accessories

1	Wetwell Hatch	Model: S1R	Size: 24"X24" Clear Opening w/ HASP	Rating: 300
3	316SS	3" Upper Guide Bar Brackets		
2	316SS	Cable Holder		
3	316SS	Grip-eye Cable		Length: 25'
12	316SS	Threaded rods w/ adhesive anchoring		
6	316SS	3" Diameter Guide Rails		Length: 25'

Control Panel

1	Control Panel PANEL MODIFICATIONS PER SPECIFICATIONS	Enclosure Material: 316SS NEMA Rating: 3R

COMMENTS:VERIFY THAT PUMPS ARE TO INCLUDE MIX FLUSHING VALVE

Kimley-Horn and Associates, Inc.

☐ NO EXCEPTIONS TAKEN
☐ CORRECTIONS NOTED
☐ REJECTED
☒ VERIFY AND MAKE CORRECTIONS
☐ RESUBMIT

Our limited review is only for compliance with the design concept and information given in the Contract Documents. Contractor is solely responsible for dimensions, quantities, performance, safety, coordination with other work, and all other requirements of the Contract Documents. Review does not authorize changes to contract unless stated specifically in separate letter or change order.

Reviewed by: JEC Date: 10/17/2016

NP 3301 HT 3~ 464

Performance curve

Pump

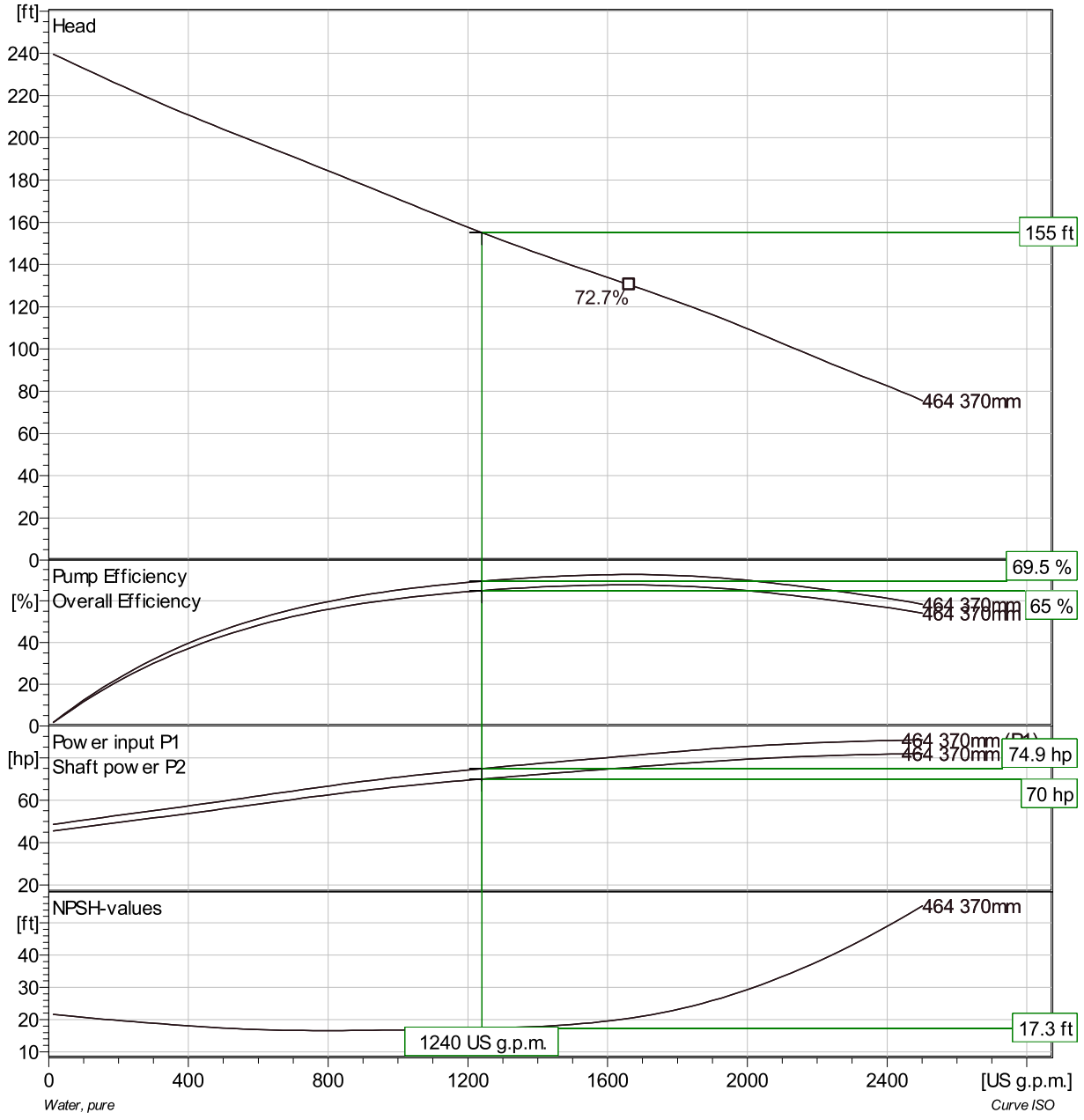
Discharge Flange Diameter	5 7/8 inch
Suction Flange Diameter	150 mm
Impeller diameter	14 9/16"
Number of blades	2

Motor

Motor #	N3301.185 35-25-4AA-W 85hp
Stator variant	1
Frequency	60 Hz
Rated voltage	460 V
Number of poles	4
Phases	3~
Rated power	85 hp
Rated current	101 A
Starting current	490 A
Rated speed	1775 rpm

Power factor	
1/1 Load	0.85
3/4 Load	0.82
1/2 Load	0.74

Motor efficiency	
1/1 Load	92.5 %
3/4 Load	93.5 %
1/2 Load	93.5 %

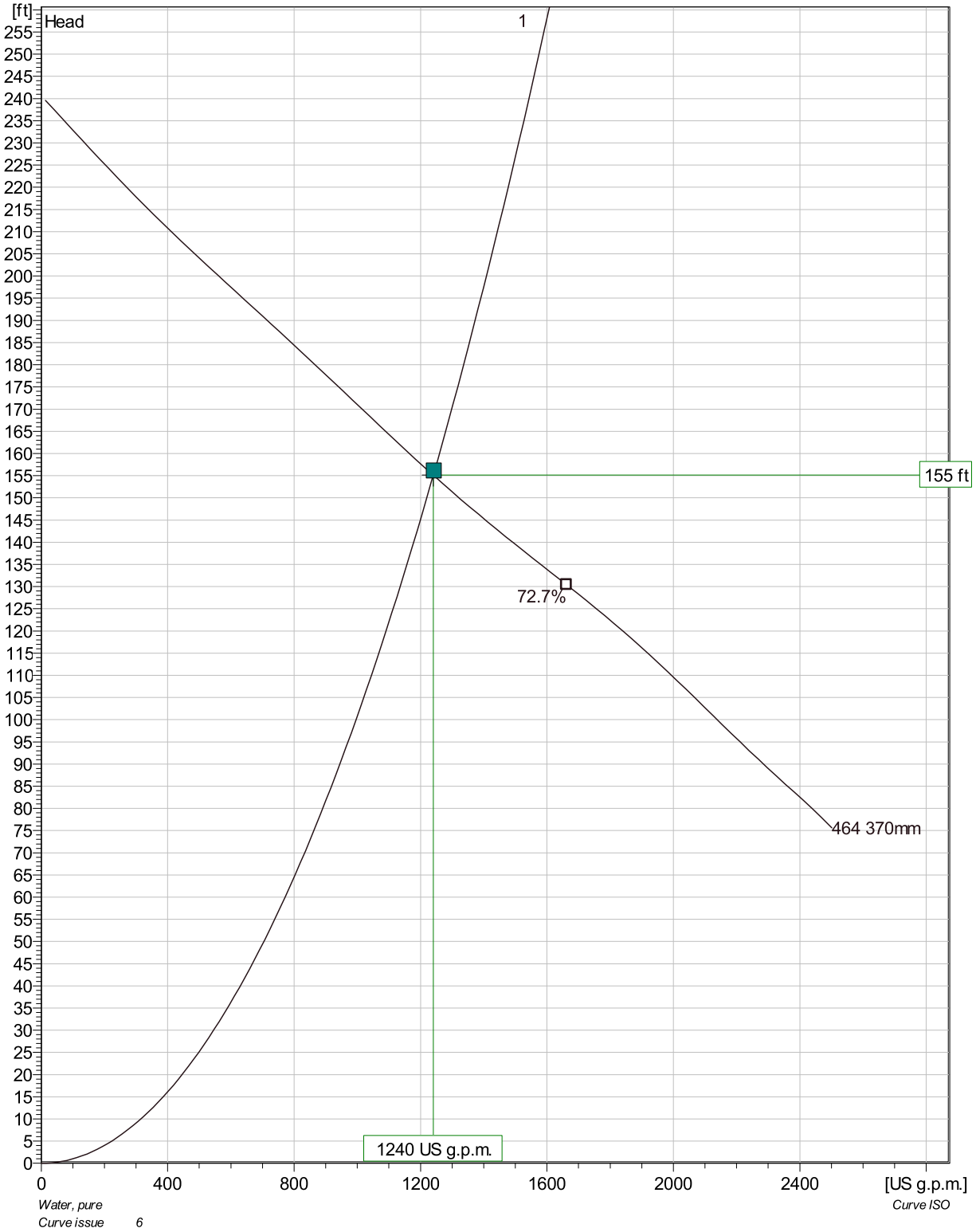


Duty point		Guarantee	
Flow	**Head**	**ISO:1999**	**Grade**
1240 US g.p.m.	156 ft	No	

Project	Project ID	Created by	Created on	Last update
			8/24/2017	

NP 3301 HT 3~ 464

Duty Analysis

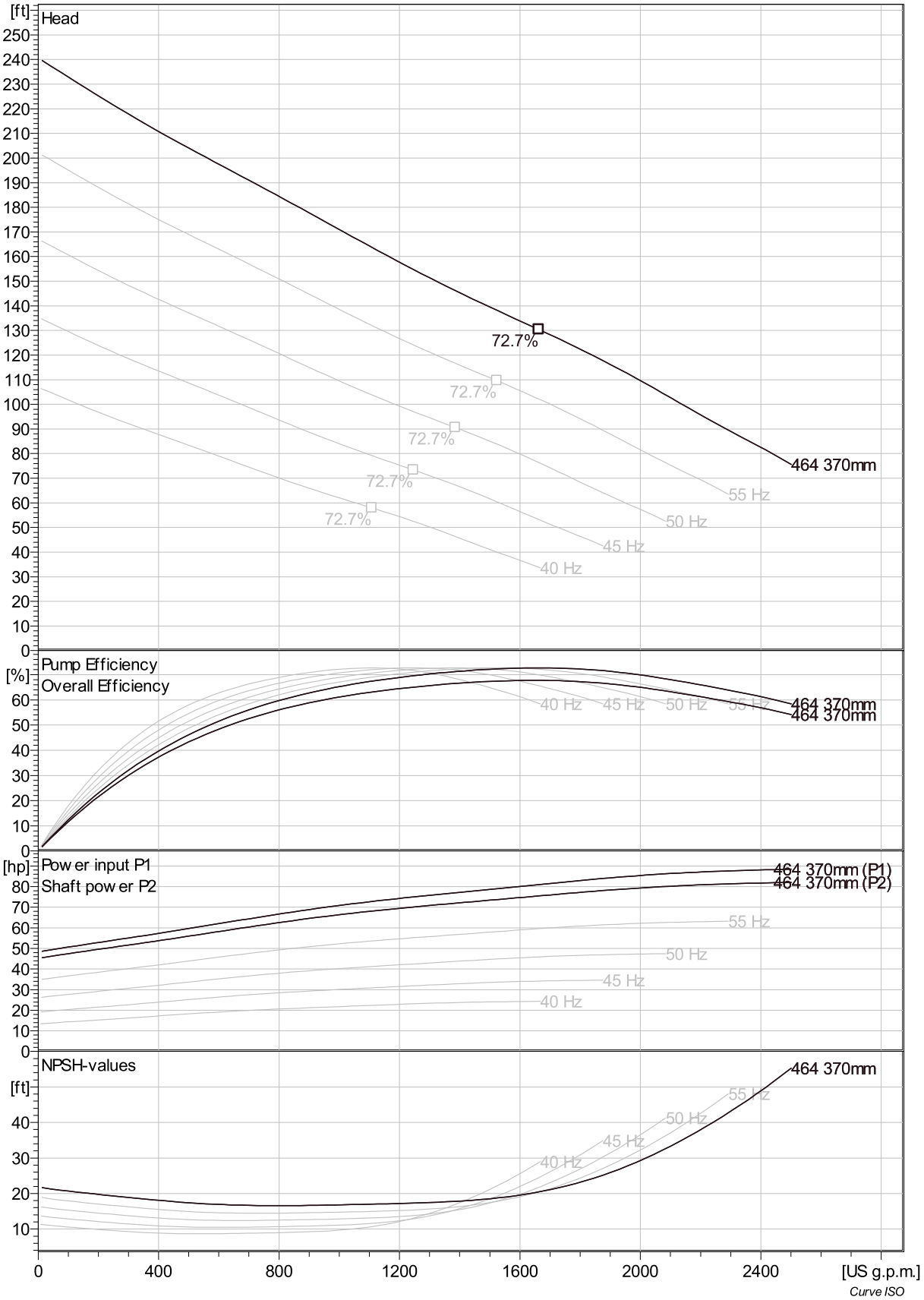


	Individual pump			Total					
Pumps running /System	Flow	Head	Shaft power	Flow	Head	Shaft power	Pump eff.	Specific energy	NPSHre
1	1240 US g.p.m.	155 ft	70 hp	1240 US g.p.m.	155 ft	70 hp	69.5 %	750 kWh/US MG	17.3 ft

Project	Project ID	Created by	Created on	Last update
			8/24/2017	

NP 3301 HT 3~ 464

VFD Curve



Project	Project ID	Created by	Created on	Last update
			8/24/2017	

Pump Station Evaluation Report

39 - Grand Oaks Manor

Prepared For:

City of Wildwood

Evaluation Date:

February 6, 2024

Report Date:

September 27, 2024

Version 1

Kimley»Horn

Version	Publish Date	Description
1	See Cover	Original/Version 1

Table 0.1 - Revision History

Version	Publish Date	Test Date	Description

Table 0.2 - Previous Evaluation History

This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn shall be without liability to Kimley-Horn.

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ATTACHMENTS

Attachment 1 ..... **Test Data Graphs**

Attachment 2 ..... **Supplementary Pump Information**

ABBREVIATIONS

Ø	Phase
AC	Alternating Current
ADD	Automated Draw Down
ADF	Average Daily Flow
ARR	Automated Rate of Rise
ATL	Across The Line
Avg	Average
BEP	Best Efficiency Point
CL	Center Line
Disch	Discharge
ETM	Elapsed Time Meter
FLA	Full Load Amps
FM	Force Main
Ft	Feet
FPS	Feet Per Second
FSFO	Full Speed Full Open
Gal	Gallons
GPM	Gallons Per Minute
HGL	Hydraulic Grade Line
HP	Horsepower
Hrs	Hours
H:M:S	Hours:Minutes:Seconds
Hz	Hertz
In	Inches
InvIn	Invert In
KWH	Kilowatt-Hours
L	Length
L1, L2, L3	Leg 1, 2 & 3 or Length 1, 2 & 3
MSL	Mean Sea Level
MTBF	Mean Time Between Failures
N	Neutral
P	Pump
PCL	Pump Center Line
PCP	Pump Control Panel
PF	Power Factor
PSI	Pounds Per Square Inch
PT	Point
RPM	Revolutions Per Minute
TDH	Total Dynamic Head
TVSS	Transient Voltage Surge Suppressor
V	Volts
VFD	Variable Frequency Drive
WTW	Wire To Water
WW	Wet Well
Yr	Year

1 INTRODUCTION

Kimley-Horn and Associates, Inc. evaluated the pump station through pump performance testing and a condition assessment. This report summarizes the data and results of that evaluation. The performance tests were conducted using the XAK-PACK pump performance monitoring device. The following pages provide summaries of the data collected and notes about the pumps' performance.

1.1 SITE INFORMATION

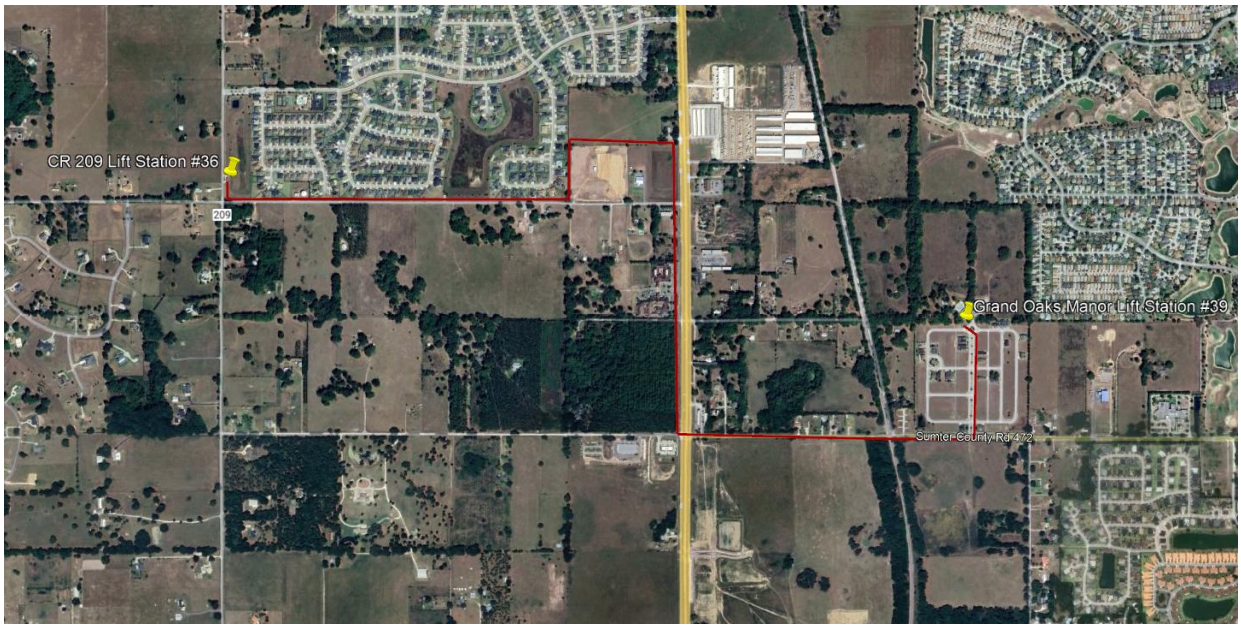
Grand Oaks Manor / Site #39			
Date of Evaluation	February 6, 2024		
Address	4570 Tall Timber Dr, Oxford, FL 34484		
Coordinates	28°54'45.4"N, 82°01'37.5"W		
Fluid Conveyed	Wastewater		
Station Style	Duplex Submersible		
Number of Pumps	2	Number of Pump Slots	2
Pump Type	Submersible		
Flow Meter Type	N/a		
Year of Construction	Unknown	Based on	☐Docs. ☐Estimation ☐Other
Basin/Zone	Unknown		
Firm Capacity (Design)	583 GPM / 0.84 MGD		
Firm Capacity (Test)	298 GPM / 0.43 MGD		
Discharge Description	6-inch discharge, manifolds with 8-inch, approximately 14,200 LF, discharging to CR209 lift station		
Electrical Service	277/480 Wye		
Site Generator	Caterpillar diesel with belly tank		
Bypass Ability	Bypass assembly in valve vault		
Miscellaneous Features			

Site Notes:

1.2 SITE MAP

Force Main

Figure 1.1 - Site Location Map



2 PUMP PERFORMANCE TESTS

Pump performance tests were conducted on the pumps utilizing the measurement tools detailed below. **Table 2.1 - Measurement Methods** describes the measurements taken during the test and the measurement method. Some measurements were confirmed utilizing a secondary measurement method. See **Attachment 1** for graphs of the digitally recorded data. For each test, note the following:

1. Common accuracies for measurements of flow, pressure, voltage and current are ±1%.
2. Friction loss is calculated using the Hazen-Williams formula and the Bernoulli equation. Piping characteristics are based on best available data.

Parameter	Measurement Method	
	Primary	Secondary
Flow	Level Transducer (XAK-PACK)	N/A
Pressure	Pressure Transducer (XAK-PACK)	Liquid Filled Pressure Gauge
Wet Well Level	Level Transducer (XAK-PACK)	N/A
Volts	Voltage Probes (XAK-PACK)	Fluke 376FC
Amps	Current Transducers (XAK-PACK)	Fluke 376FC
Power Factor	Power Factor Monitor (XAK-PACK)	N/A

Table 2.1 - Measurement Methods

2.1 PUMP #1

Below is a summary of the pump characteristics and performance test results.

Parameter	Units	Value
Pump Manufacturer	-	Flygt
Pump Model	-	NP 3153 HT 3~ 464
Pump Style	-	Submersible
Pump Impeller Dia	Inches	10
Pump Rated Capacity	GPM	583
Pump Rated Head	Ft	65
Pump ETM	Hours	
Pump Flow @ BEP Design Curve	GPM	583
Pump Hyd Eff @ Design Pt	%	69.8
Pump WTW Eff @ Operating Pt	%	54
Pump NPSHr @ Operating Pt	Ft	13
Motor Synchronous Speed	RPM	1800
Motor Rated Speed	RPM	1755
Motor No. Phases	No	3
Motor Starters	-	ATL
Motor Rated Voltage	Volts	460
Motor Rated Horsepower	HP	20
Motor Service Factor	-	1.15
Motor FLA	Amps	52
Mfg. Motor Eff. @ Operating Pt	%	87.5
Mfg. Starter Eff. @ Operating Pt	%	100

Table 2.2 - Pump #1 Design Characteristics

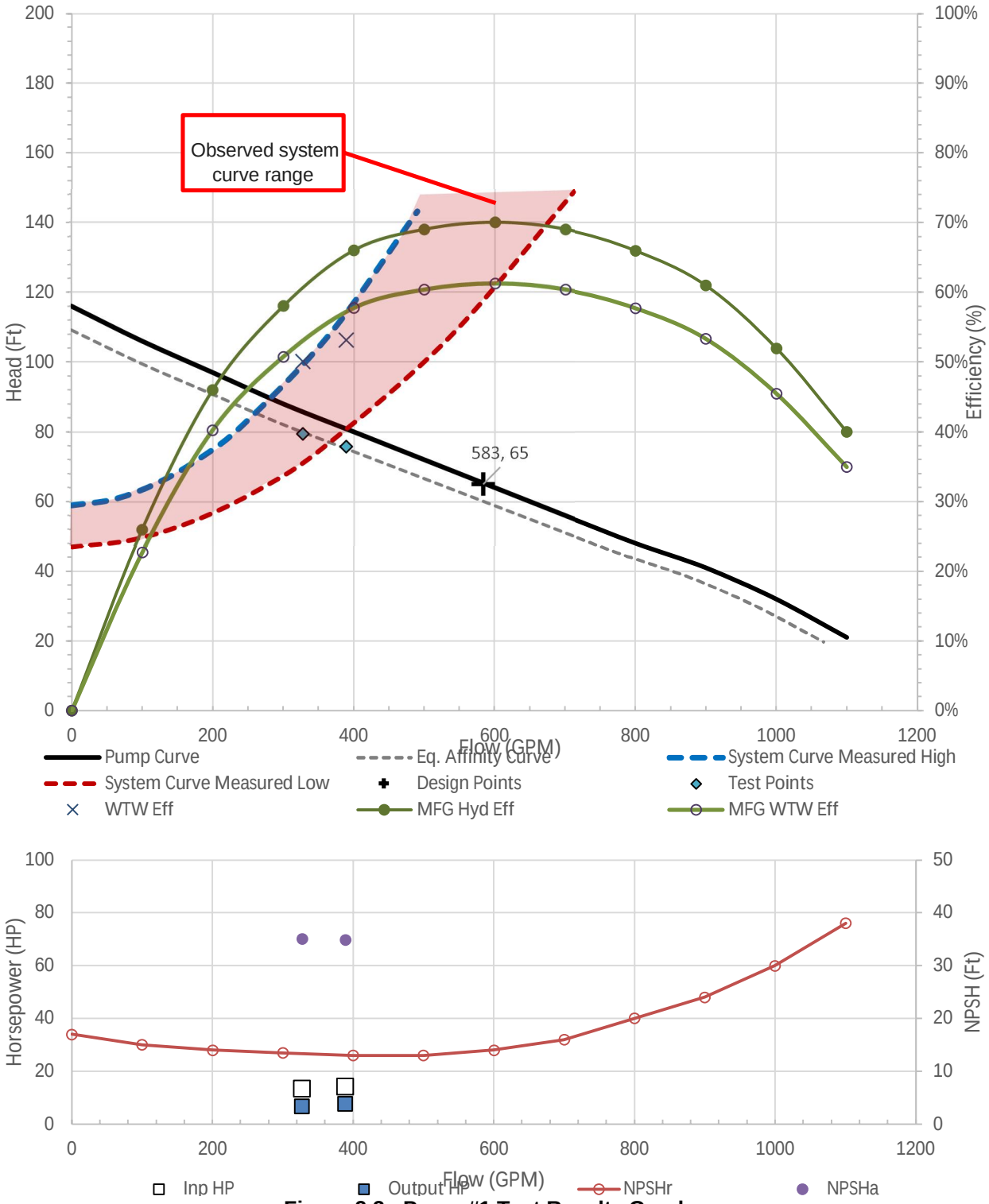


Figure 2.3 - Pump #1 Test Results Graphs

	Parameter	Units	Lower Limit	Test Value	Upper Limit	Comment
Measured	Average Output (FSFO)	GPM	-	359	-	
	Average TDH (FSFO)	Ft	-	77.6	-	
	Average WTW Efficiency (FSFO)	%	-	52%	-	
	Average Input HP (FSFO)	HP	-	13.7	-	
	Average Current Draw (FSFO)	Amps	-	15.5	-	
	Suction Velocity (FSFO)	FPS	2	-	7	
	Discharge Velocity (FSFO)	FPS	2	3.6	7	
	BEP Comparison (FSFO)	%	80%	62%	115%	1
	Average Output (FSFO)	%	90%	62%	110%	2
	Affinity Law Eq. Curve	%	-5%	-3.0%	5%	
	NPSHa	Ft	13	34.9	N/A	
	WTW Eff @ Operating Pt	%	-5%	-5%	5%	
	Input Frequency	Hz	-5%	0%	5%	
	Input Voltage (L-L)	%	-10%	-6.8%	10%	
	Voltage Drop	%	-15%	3.0%	N/A	
	Voltage Imbalance	%	-10%	0.6%	10%	
	Current Imbalance	%	-10%	7.6%	10%	
	Motor FLA	%	-50%	29.9%	105%	3
	Motor Load	%	50%	68.6%	115%	
	Motor Slip Speed	%	1746	1755.0	1809	
	Vibration	In/Sec	0	0.0	-	
Observed	Surge	1-5	-	2	3	
	Vibration	1-5	-	2	3	
	Cavitation	1-5	-	1	3	
	Mechanical Noise	1-5	-	2	3	
	Leaks	1-5	-	1	3	
	Exterior Condition	1-5	-	2	3	
	Overall Score	1-5	-	2	3	

Table 2.4 - Pump #1 Test Summary

Pump #1 - Test Comments

1) The pump is operating at 62% of BEP flow rate.
2) The pump output is 62% of the design flow rate.
3) There is inconsistencies in the provided manufacturers motor data and information measured onsite. Confirm records are accurate and update as necessary.

2.2 PUMP #2

Below is a summary of the pump characteristics and performance test results.

Parameter	Units	Value
Pump Manufacturer	-	Flygt
Pump Model	-	NP 3153 HT 3~ 464
Pump Style	-	Submersible
Pump Impeller Dia	Inches	10
Pump Rated Capacity	GPM	583
Pump Rated Head	Ft	65
Pump ETM	Hours	
Pump Flow @ BEP Design Curve	GPM	583
Pump Hyd Eff @ Design Pt	%	69.8
Pump WTW Eff @ Operating Pt	%	51
Pump NPSHr @ Operating Pt	Ft	14
Motor Synchronous Speed	RPM	1800
Motor Rated Speed	RPM	1755
Motor No. Phases	No	3
Motor Starters	-	ATL
Motor Rated Voltage	Volts	460
Motor Rated Horsepower	HP	20
Motor Service Factor	-	1.15
Motor FLA	Amps	52
Mfg. Motor Eff. @ Operating Pt	%	87.5
Mfg. Starter Eff. @ Operating Pt	%	100

Table 2.5 - Pump #2 Design Characteristics

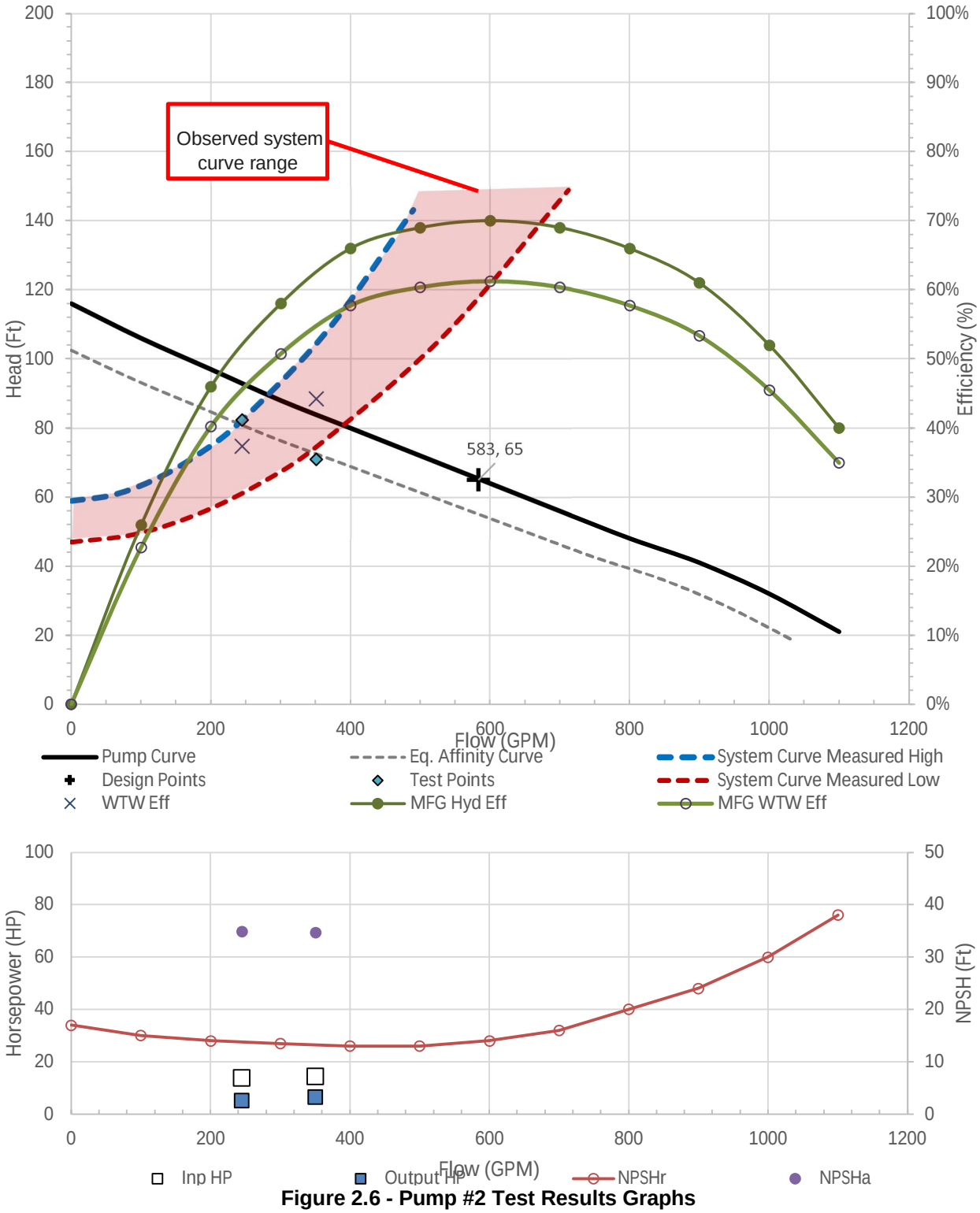


Figure 2.6 - Pump #2 Test Results Graphs

	Parameter	Units	Lower Limit	Test Value	Upper Limit	Comment
Measured	Average Output (FSFO)	GPM	-	298	-	
	Average TDH (FSFO)	Ft	-	76.6	-	
	Average WTW Efficiency (FSFO)	%	-	41%	-	
	Average Input HP (FSFO)	HP	-	14.1	-	
	Average Current Draw (FSFO)	Amps	-	16.0	-	
	Suction Velocity (FSFO)	FPS	2	-	7	
	Discharge Velocity (FSFO)	FPS	2	3.0	7	
	BEP Comparison (FSFO)	%	80%	51%	115%	1
	Average Output (FSFO)	%	90%	51%	110%	2
	Affinity Law Eq. Curve	%	-5%	-6.0%	5%	3
	NPSHa	Ft	14	34.8	N/A	
	WTW Eff @ Operating Pt	%	-5%	-25%	5%	
	Input Frequency	Hz	-5%	0%	5%	
	Input Voltage (L-L)	%	-10%	-6.3%	10%	
	Voltage Drop	%	-15%	3.0%	N/A	
	Voltage Imbalance	%	-10%	0.5%	10%	
	Current Imbalance	%	-10%	2.4%	10%	
	Motor FLA	%	-50%	30.8%	105%	4
	Motor Load	%	50%	70.3%	115%	
	Motor Slip Speed	%	1746	1755.0	1809	
	Vibration	In/Sec	0	0.0	-	
Observed	Surge	1-5	-	2	3	
	Vibration	1-5	-	2	3	
	Cavitation	1-5	-	1	3	
	Mechanical Noise	1-5	-	2	3	
	Leaks	1-5	-	1	3	
	Exterior Condition	1-5	-	2	3	
	Overall Score	1-5	-	2	3	

Table 2.7 - Pump #2 Test Summary

Pump #2 - Test Comments

1) The pump is operating at 51% of BEP flow rate.
2) The pump output is 51% of the design flow rate.
3) The pump is operating at a 94% equivalent affinity law curve.
4) There is inconsistencies in the provided manufacturers motor data and information measured onsite. Confirm records are accurate and update as necessary.

2.3 HYDRAULICS SUMMARY

The hydraulics of this system corresponds to what we would expect based on our theoretical calculations. However, the design point for this pump station is farther to the right indicating the original design had less conservative assumptions about the system head loss.

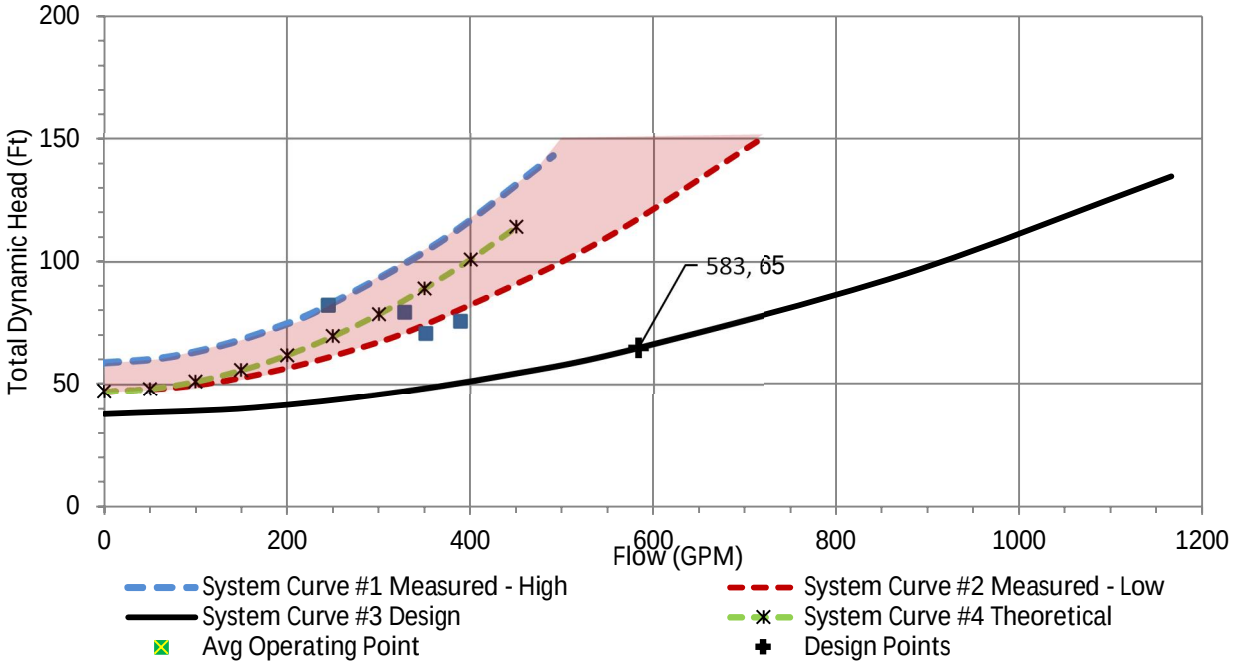


Figure 2.8 – System Hydraulic Information provides a graph of the system characteristics and a table describing the system curves. Length, Hazen-Williams (Hz-Wm), and diameter are approximated based on the best available information and fit to the data. System Curve Characteristics are intended to be for reference.

System Curve Characteristics					
Curve Name	**Curve Type**	**Length (Ft)**	**Hz-Wm**	**Diameter (In)**	**Calculated Based On**
System Curve #1	Measured	14200	115	8.0	Test Data
System Curve #2	Design	14200	115	8.9	Test Data
System Curve #3	Theoretical	14200	115	10.9	Design Operating Condition
System Curve # 4	Theoretical	14200	115	8.4	Available GIS and Record Drawing Data

Figure 2.8 – System Hydraulic Information

2.4 PIPELINE PERFORMANCE INDICATORS

Figure 2.9 – Pipe Velocities displays the velocities in each known diameter of the pressurized conveyance system. The Average Test Output Velocity represents the velocity generated by the average pumping rate produced by testing. The Station Firm Capacity Velocity represents the velocity based on the station's firm capacity (output with the largest pump out of service). The color gradient represents ranges of acceptable to problematic velocities. Red areas of operation are problematic and green areas of operation are acceptable.

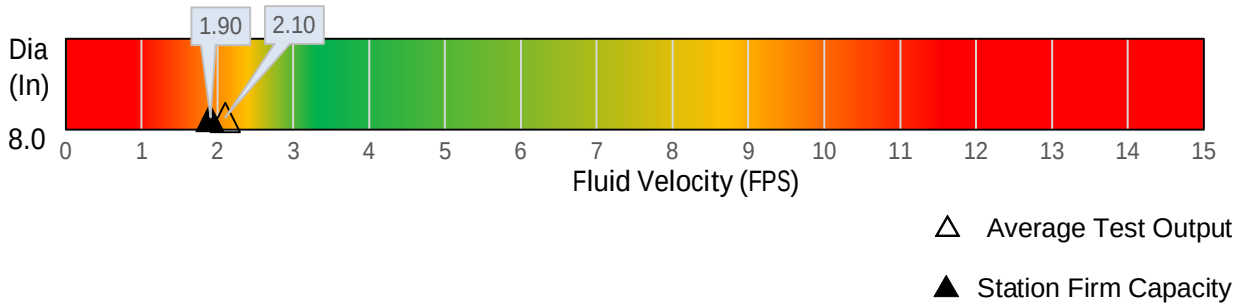


Figure 2.9 – Pipe Velocities

The maximum observed pressure at the station during the testing period is provided below in **Figure 2.10 – Maximum Observed Pressure**. System pressure capabilities vary depending upon pipe material type, pressure rating, elevation, age, condition, etc. This performance indicator is provided for reference only and is not a condition assessment of the pipeline. For systems with pressures above approximately 100 PSI, consider a more detailed analysis. See the **Attachment 1 - Graph B** for additional pressure data.

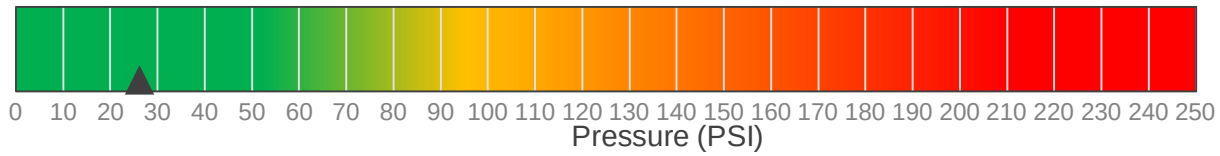


Figure 2.10 - Maximum Observed Pressure

2.5 SYSTEM PRESSURES

Figure 2.11 - Pressure Cycle shows a typical single-pump pressure cycle measured during testing. The pressure data captured for this test is limited to 2-second intervals which may not have captured the entire range of actual pressures. The complete log of pressure readings is provided in **Attachment 1 – Test Data Graphs**. For more accurate surge data, a surge monitoring device should be used to capture pressure at shorter time intervals over a longer period of time. **Table 2.12 - Further Surge-Related Actions** provides a list of recommended surge- related actions.

The pressure transducer used for measuring pressures has a range of 0 to 200 PSI. Pump startup produced an upsurge of approximately 25 PSI. Upon pump shut down, the observed minimum pressure was approximately 1 PSI and the maximum pressure was approximately 25 PSI creating a total observed pressure range of 24 PSI.

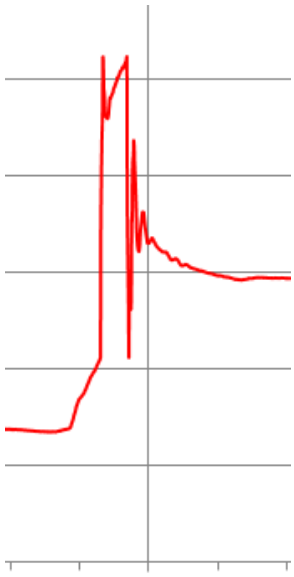


Figure 2.11 - Pressure Cycle

	Further Surge Related Actions:
	Perform extended period digital surge monitoring
	Perform calibrated surge modeling
	Revise operating scheme to reduce surge potential
	Evaluate piping system for pressure capacity and likelihood of failure
	Install physical surge mitigation strategies
✓	No further action

Table 2.12 - Further Surge-Related Actions

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3 RECOMMENDATIONS

The following recommendations are a result of the findings of this evaluation and should be considered for implementation. See **Section 2 Pump Performance Tests** for pump specific recommendations. In addition to the recommendations below, this site should/ be considered for the following overall planning and budgeting activities.

3.1 OVERALL RECOMMENDATIONS

Overall Site Rating	Score	Description
	1	No recommendations currently. Monitor station for worsening conditions, perform regular O&M, reassess condition in 2-5 years.
	2	Complete recommendations listed in Section 3.2, monitor station for worsening conditions, perform regular O&M, reassess condition in 1-3 years.
	3	Station requires improvements beyond replacement of individual components. Begin planning and budgeting for a major rehabilitation. Place under regular observation until rehabilitation is complete.
	4	Station does not appear to be brought into conformance with standards without replacement. Begin planning and budgeting for a station replacement. Place under regular observation until rehabilitation is complete.

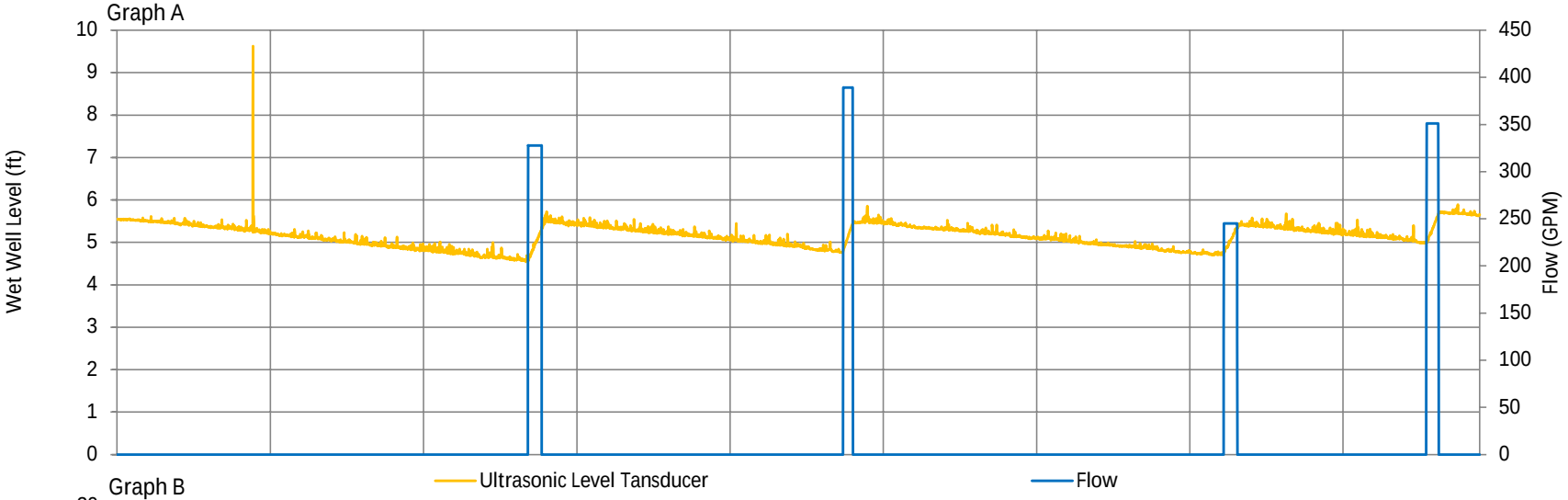
3.2 MISCELLANEOUS RECOMMENDATIONS

Manufacturers Data – There were discrepancies between the provided manufacturers motor data and data measured onsite. Confirm accurate manufactures data and update as necessary.

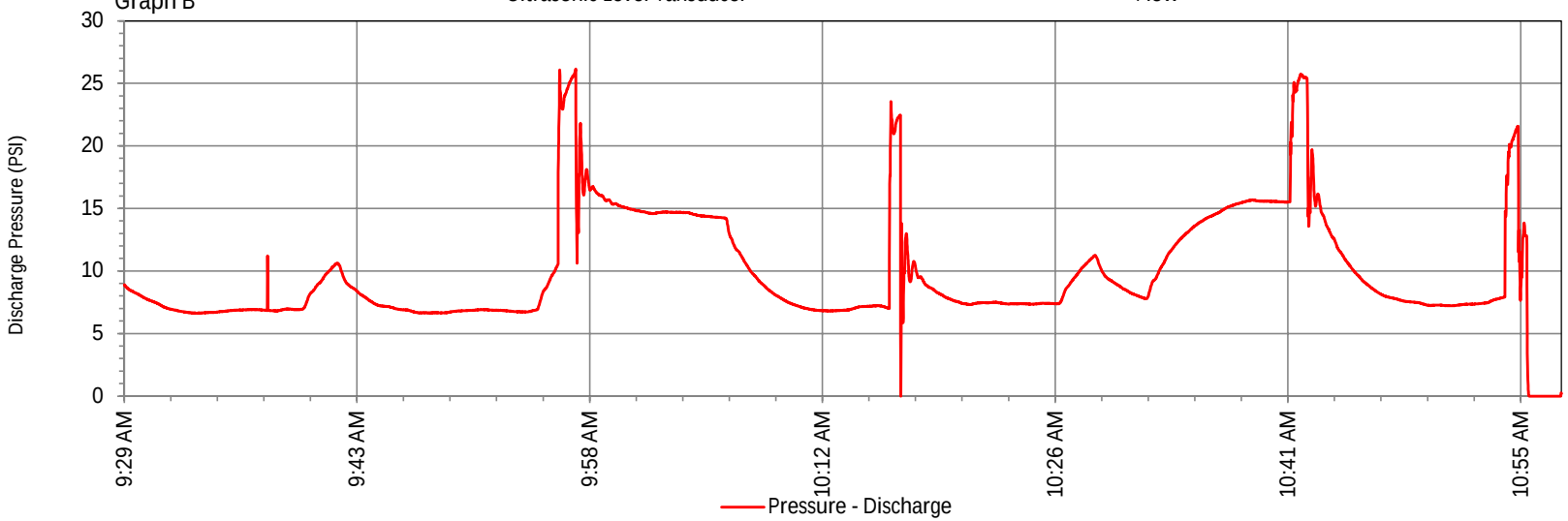
4 ATTACHMENTS

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Graph A

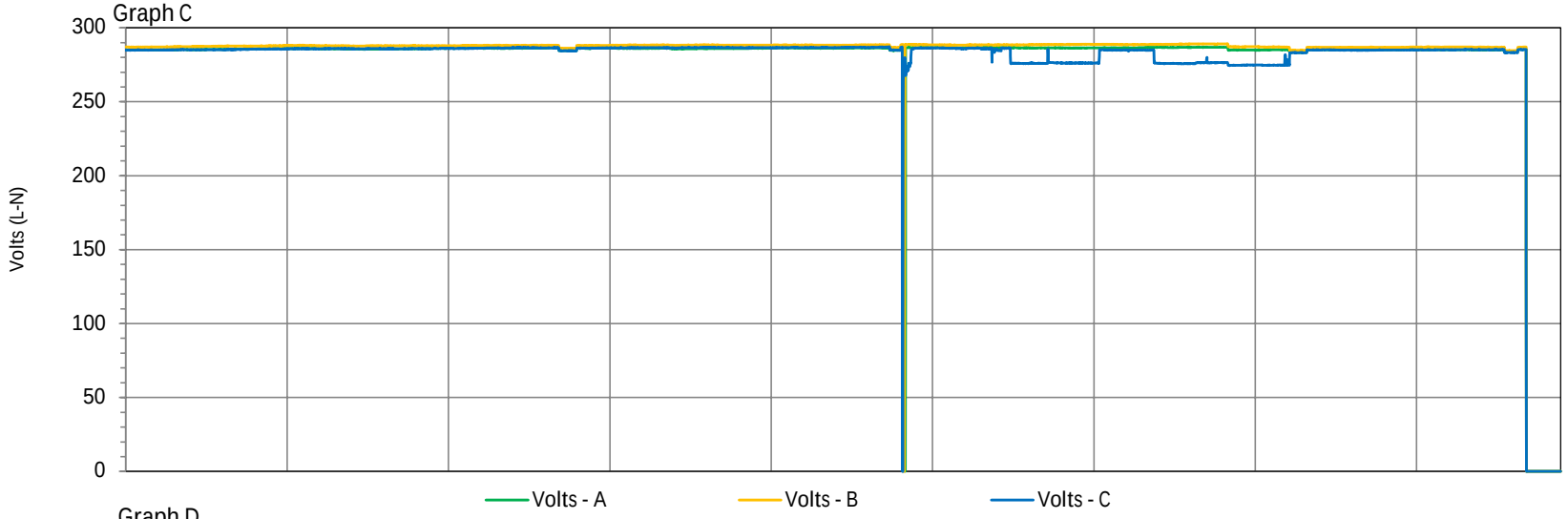


Graph B

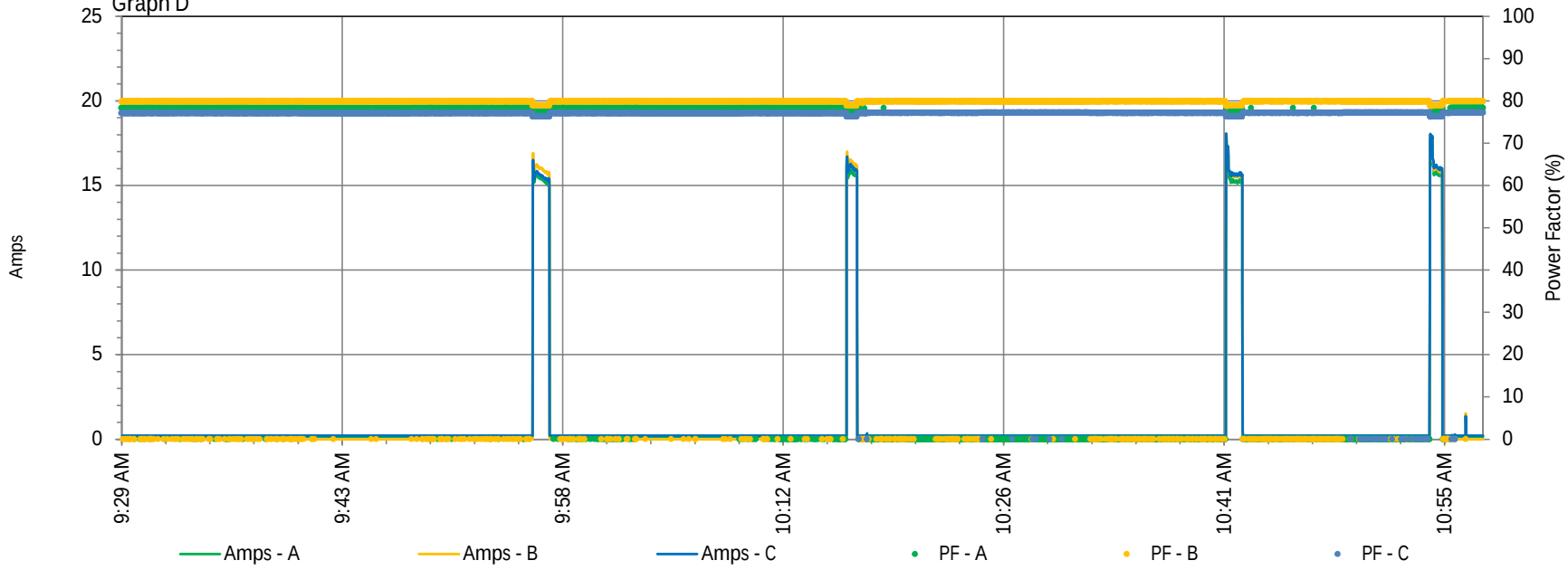


* Times shown are Eastern Standard Time

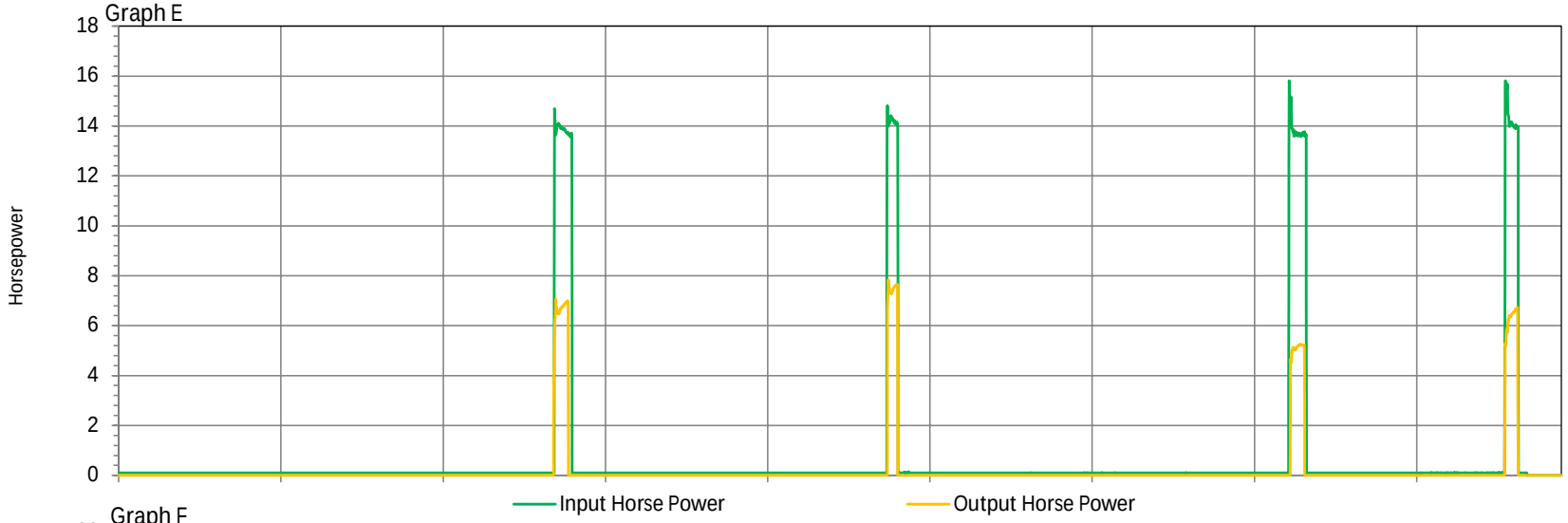
Graph C



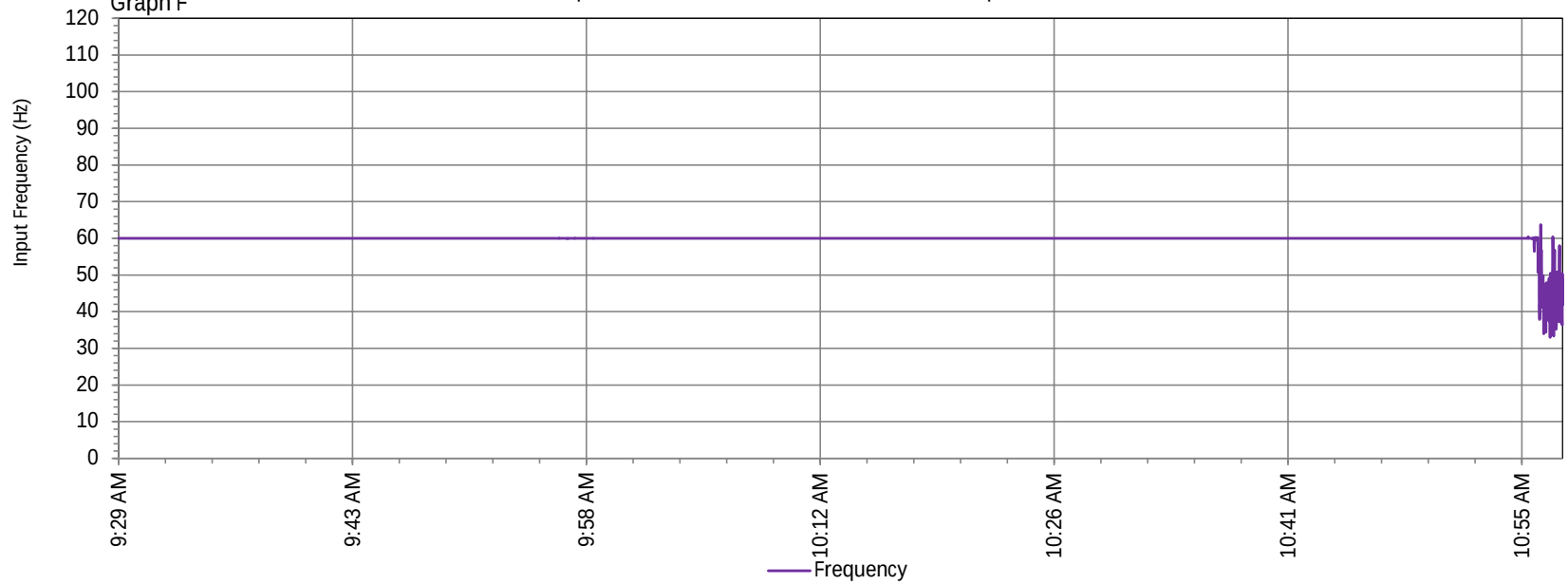
Graph D



Graph E



Graph F



NP 3153 HT 3~ 464

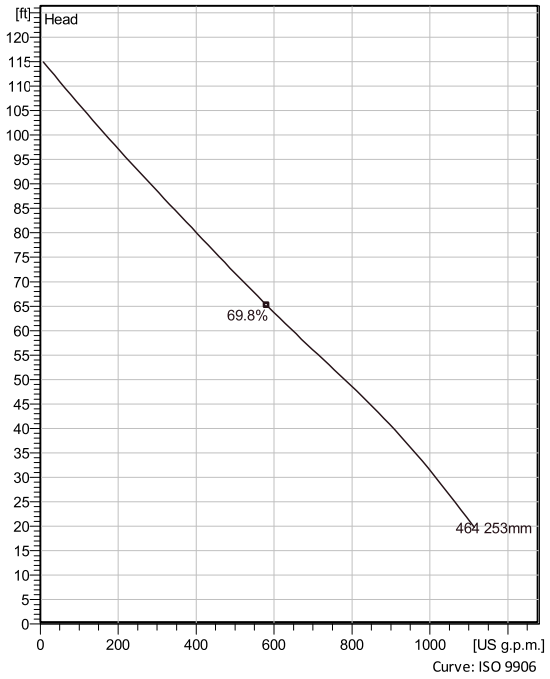
Patented self cleaning semi-open channel impeller, ideal for pumping in waste water applications. Modular based design with high adaptation grade.

FLYGT
a xylem brand

Technical specification



Curves according to: Water, pure Water, pure [100%],39.2 °F,62.42 lb/ft³,1.6891E-5 ft²/s



Curve: ISO 9906

Nominal (mean) data shown. Under- and over-performance from this data should be expected due to standard manufacturing tolerances.
Please consult your local Flygt representative for performance guarantees.

Configuration

Motor number
N3153.185 21-18-4AA-W 20hp

Installation type
P - Semi permanent, Wet

Impeller diameter
253 mm

Discharge diameter
4 inch

Pump information

Impeller diameter
253 mm

Discharge diameter
4 inch

Inlet diameter
150 mm

Maximum operating speed
1755 rpm

Number of blades
2

Max. fluid temperature
40 °C

Material

Impeller
Hard-Iron ™

Project	Xylect-21983888	**Created by**	Robert Simcox		
Block		**Created on**	3/12/2024	**Last update**	3/12/2024

NP 3153 HT 3~ 464

Technical specification

Motor - General

Motor number N3153.185 21-18-4AA-W 20hp	**Phases** 3~	**Rated speed** 1755 rpm	**Rated power** 20 hp
ATEX approved No	**Number of poles** 4	**Rated current** 52 A	**Stator variant** 5
Frequency 60 Hz	**Rated voltage** 230 V	**Insulation class** H	**Type of Duty** S1
Version code 185			

Motor - Technical

Power factor - 1/1 Load 0.83	**Motor efficiency - 1/1 Load** 87.5 %	**Total moment of inertia** 2.27 lb ft²	**Starts per hour max.** 30
Power factor - 3/4 Load 0.77	**Motor efficiency - 3/4 Load** 89.0 %	**Starting current, direct starting** 296 A	
Power factor - 1/2 Load 0.66	**Motor efficiency - 1/2 Load** 89.0 %	**Starting current, star-delta** 98.6 A	

Project	Xylect-21983888	**Created by**	Robert Simcox		
Block		**Created on**	3/12/2024	**Last update**	3/12/2024

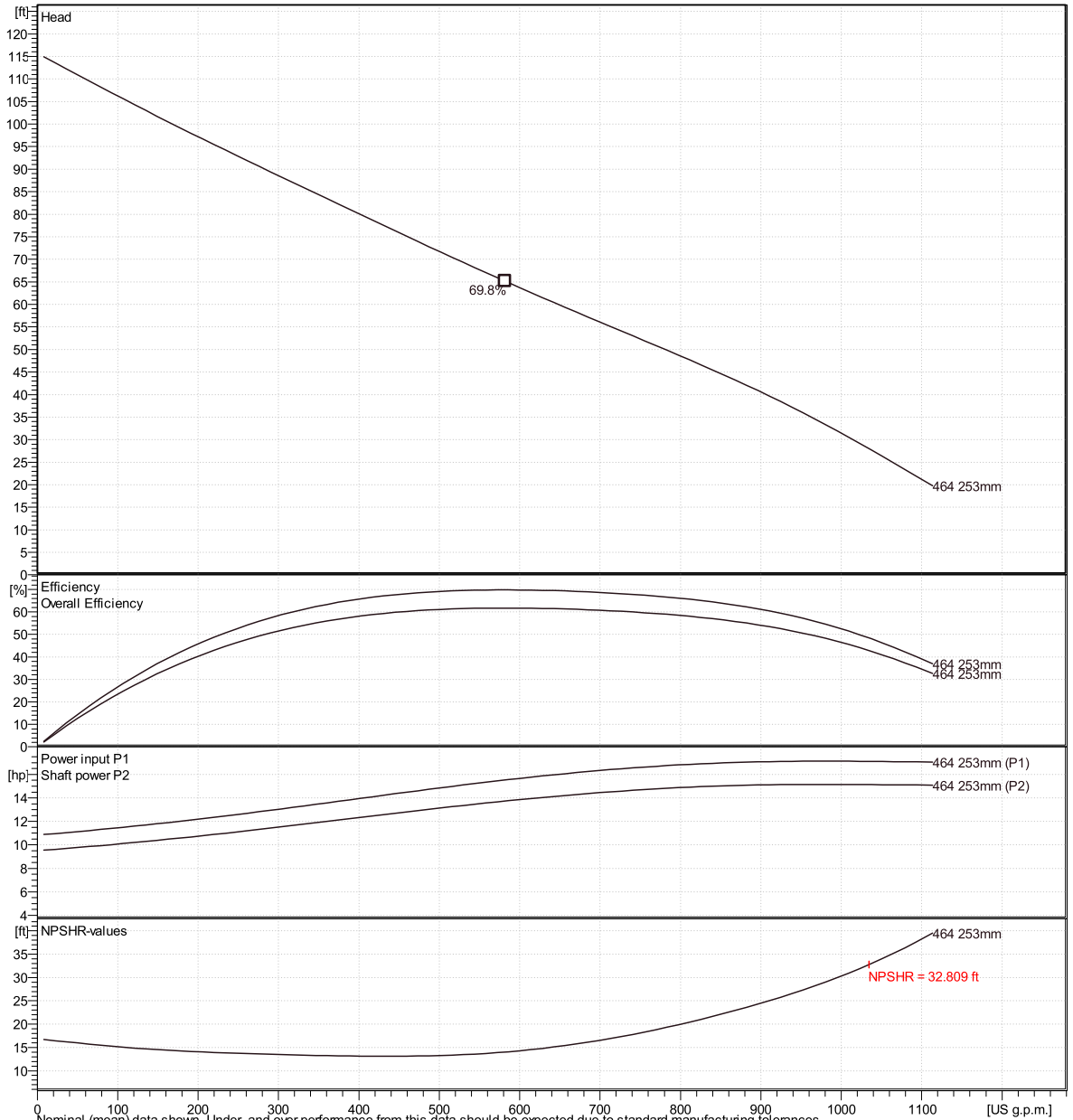
NP 3153 HT 3~ 464

Performance curve

Duty point

Flow	Head

Curves according to: Water, pure Water, pure [100%],39.2 °F,62.42 lb/ft³,1.6891E-5 ft²/s



Nominal (mean) data shown. Under- and over-performance from this data should be expected due to standard manufacturing tolerances.
Please consult your local Flygt representative for performance guarantees.

Curve: ISO 9906

Xylect-21983888		Robert Simcox			
	Created on	3/12/2024	**Last update**	3/12/2024	

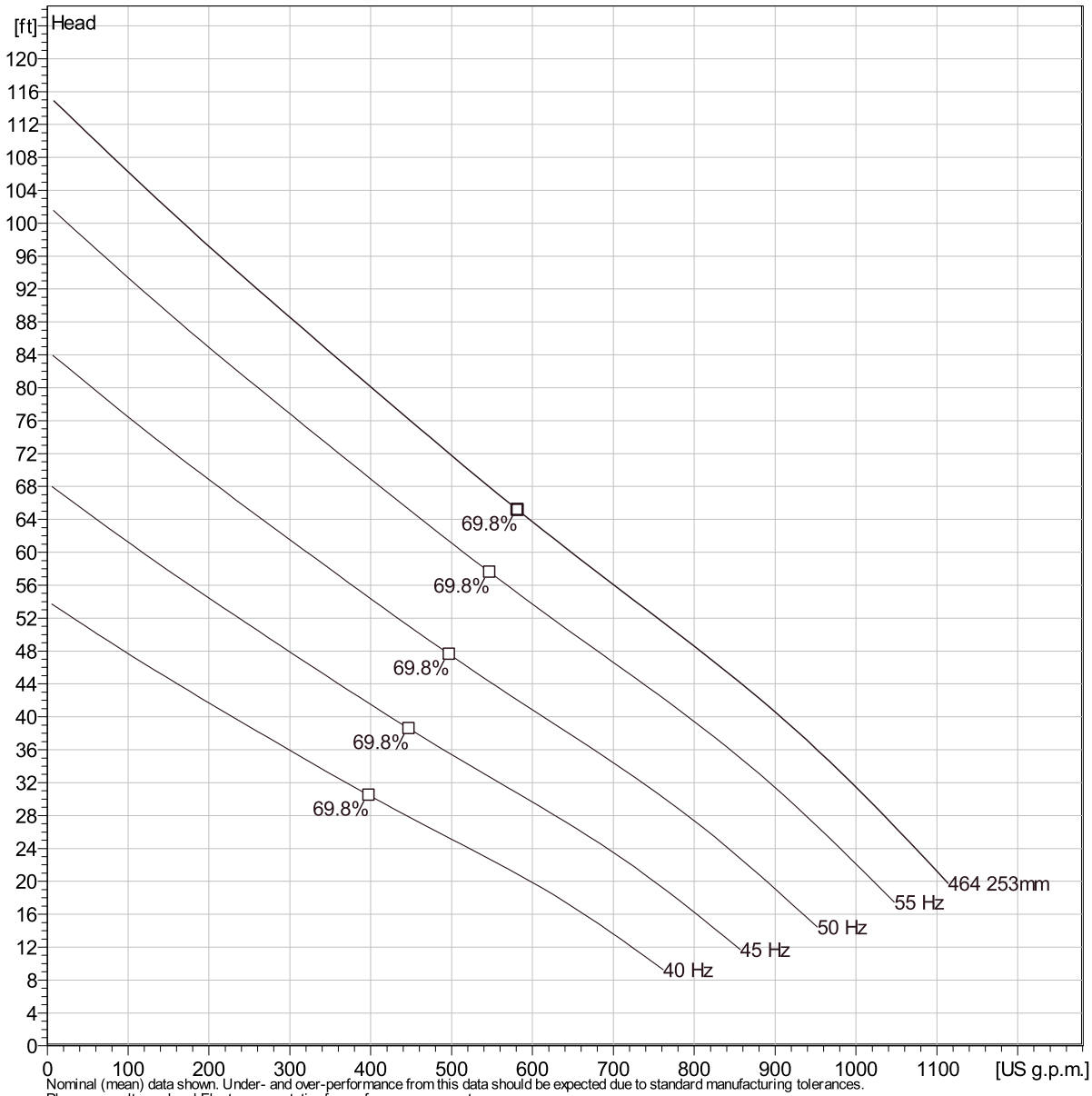
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72.0 - 2/20/2024 (Build 175)	3/5/2024 10:29 A3P3	Xylem:USA - EXT, USA - INT

NP 3153 HT 3~ 464

Duty Analysis

FLYGT
a xylem brand

Curves according to: Water, pure [100%] ; 39.2°F; 62.42lb/ft³; 1.6891E-5ft²/s



Nominal (mean) data shown. Under- and over-performance from this data should be expected due to standard manufacturing tolerances.
Please consult your local Flygt representative for performance guarantees.

Operating characteristics

Pumps / Systems	Flow	Head	Shaft power	Flow	Head	Shaft power	Hydr.eff.	Spec. Energy	NPSHre
	US g.p.m.	ft	hp	US g.p.m.	ft	hp		kWh/US MG	ft

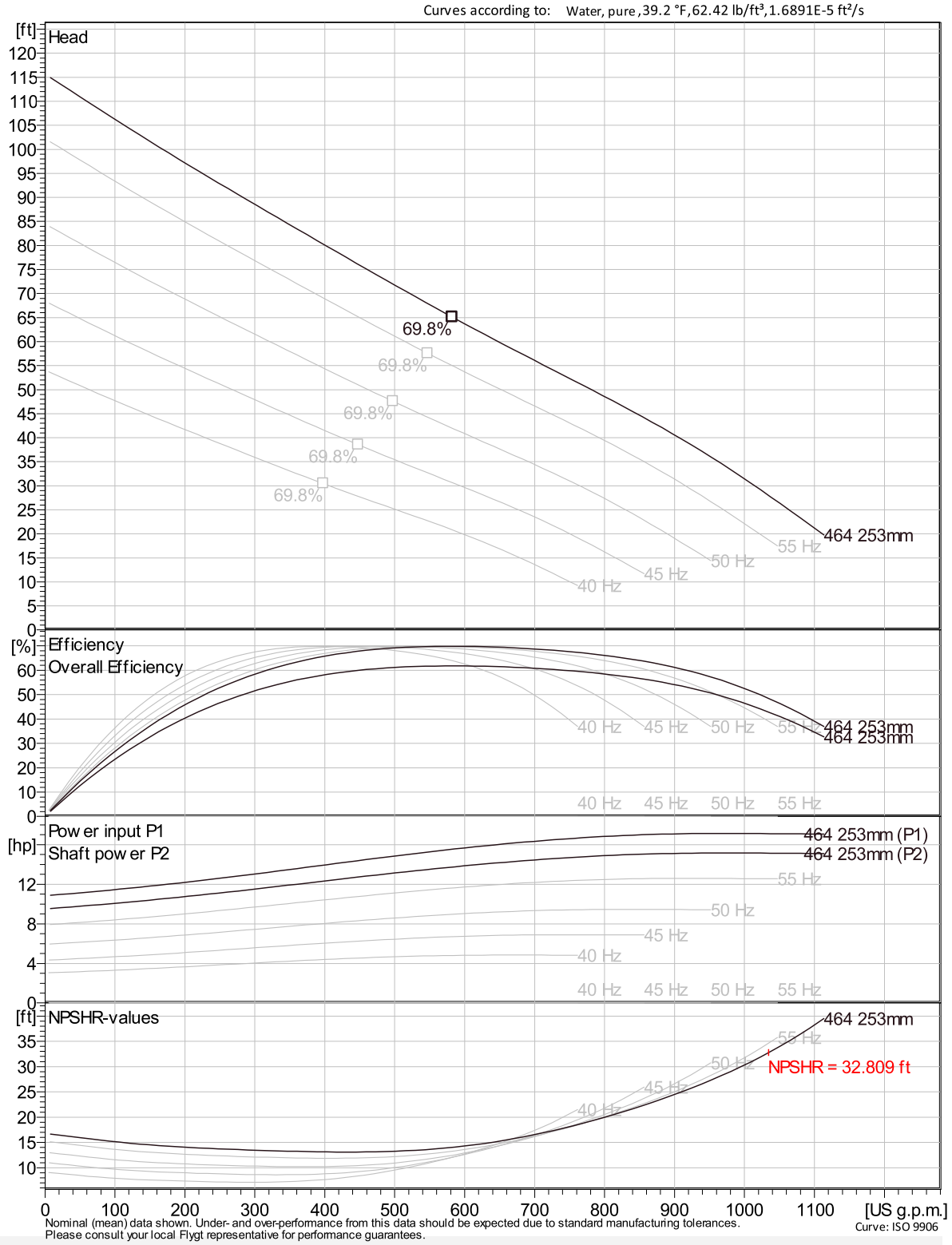
Project		**Created by**	Robert Simcox		
Block	Xylect-21983888	**Created on**	3/12/2024	**Last update**	3/12/2024

NP 3153 HT 3~ 464

VFD Curve

FLYGT
a xylem brand

Curves according to: Water, pure ,39.2 °F,62.42 lb/ft³,1.6891E-5 ft²/s



Nominal (mean) data shown. Under- and over-performance from this data should be expected due to standard manufacturing tolerances.
Please consult your local Flygt representative for performance guarantees.

Curve: ISO 9906

Project	Xylect-21983888	**Created by**	Robert Simcox		
Block		**Created on**	3/12/2024	**Last update**	3/12/2024

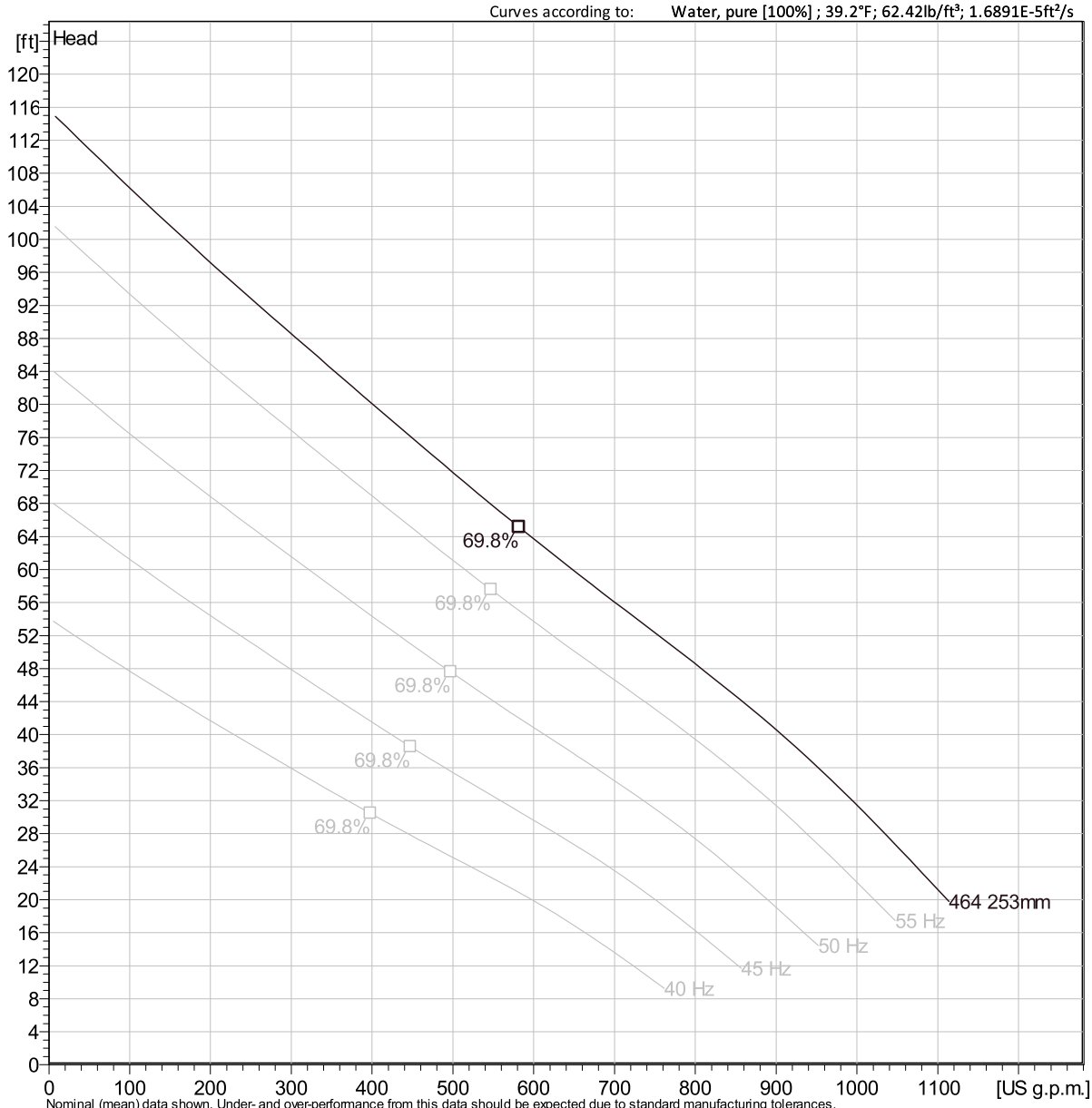
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NP 3153 HT 3~ 464

VFD Analysis

FLYGT
a xylem brand

Curves according to: Water, pure [100%] ; 39.2°F; 62.42lb/ft³; 1.6891E-5ft²/s



Nominal (mean) data shown. Under- and over-performance from this data should be expected due to standard manufacturing tolerances.
Please consult your local Flygt representative for performance guarantees.

Operating Characteristics

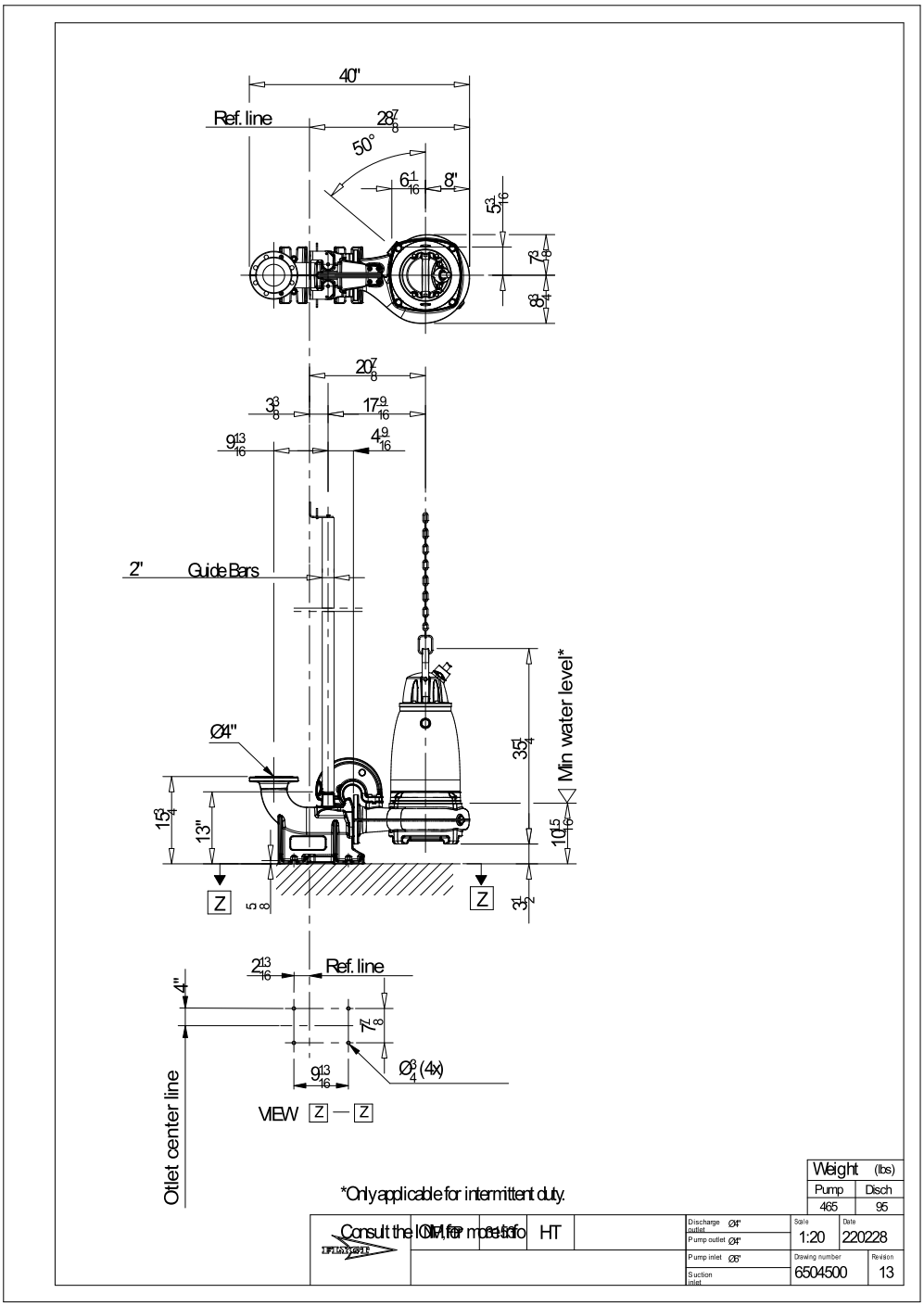
Pumps / Systems	Frequency	Flow	Head	Shaft power	Flow	Head	Shaft power	Hydr.eff.	Specific energy	NPSHre
		US g.p.m.	ft	hp	US g.p.m.	ft	hp		kWh/US MG	ft

Project	Xylect-21983888	**Created by**	Robert Simcox		
Block		**Created on**	3/12/2024	**Last update**	3/12/2024

Program version	Data version	User group(s)
72.0 - 2/20/2024 (Build 175)	3/5/2024 10:29 A3P3	Xylem: USA - EXT, USA - INT

NP 3153 HT 3~ 464

Dimensional drawing



Project	Xylect-21983888	**Created by**	Robert Simcox		
Block		**Created on**	3/12/2024	**Last update**	3/12/2024

Pump Station Evaluation Report

12 - Industrial

Prepared For:

City of Wildwood

Evaluation Date:

February 26, 2024

Report Date:

September 26, 2024

Version 1

Kimley»Horn

Version	Publish Date	Description
1	See Cover	Original/Version 1

Table 0.1 - Revision History

Version	Publish Date	Test Date	Description

Table 0.2 - Previous Evaluation History

This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn shall be without liability to Kimley-Horn.

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ATTACHMENTS

Attachment 1 ..... **Test Data Graphs**

Attachment 2 ..... **Supplementary Pump Information**

ABBREVIATIONS

Ø	Phase
AC	Alternating Current
ADD	Automated Draw Down
ADF	Average Daily Flow
ARR	Automated Rate of Rise
ATL	Across The Line
Avg	Average
BEP	Best Efficiency Point
CL	Center Line
Disch	Discharge
ETM	Elapsed Time Meter
FLA	Full Load Amps
FM	Force Main
Ft	Feet
FPS	Feet Per Second
FSFO	Full Speed Full Open
Gal	Gallons
GPM	Gallons Per Minute
HGL	Hydraulic Grade Line
HP	Horsepower
Hrs	Hours
H:M:S	Hours:Minutes:Seconds
Hz	Hertz
In	Inches
InvIn	Invert In
KWH	Kilowatt-Hours
L	Length
L1, L2, L3	Leg 1, 2 & 3 or Length 1, 2 & 3
MSL	Mean Sea Level
MTBF	Mean Time Between Failures
N	Neutral
P	Pump
PCL	Pump Center Line
PCP	Pump Control Panel
PF	Power Factor
PSI	Pounds Per Square Inch
PT	Point
RPM	Revolutions Per Minute
TDH	Total Dynamic Head
TVSS	Transient Voltage Surge Suppressor
V	Volts
VFD	Variable Frequency Drive
WTW	Wire To Water
WW	Wet Well
Yr	Year

1 INTRODUCTION

Kimley-Horn and Associates, Inc. evaluated the pump station through pump performance testing and a condition assessment. This report summarizes the data and results of that evaluation. The performance tests were conducted using the XAK-PACK pump performance monitoring device. The following pages provide summaries of the data collected and notes about the pumps' performance.

1.1 SITE INFORMATION

Industrial / Site #12			
Date of Evaluation	February 26, 2024		
Address	802 Industrial Dr, Wildwood, FL 34785		
Coordinates	28°51'03.1"N, 82°03'20.8"W		
Fluid Conveyed	Wastewater		
Station Style	Duplex Submersible		
Number of Pumps	2	Number of Pump Slots	2
Pump Type	Submersible		
Flow Meter Type	N/a		
Year of Construction	Unknown	Based on	☐Docs. ☐Estimation ☐Other
Basin/Zone	Unknown		
0.49Firm Capacity (Design)	339 GPM / 0.49 MGD		
Firm Capacity (Test)	90 GPM / 0.13 MGD		
Discharge Description	4-inch discharge, manifolds with 16-inch, approximately 2,175 LF unknown material, discharging to WWTP		
Electrical Service	120/240 Delta		
Site Generator	No onsite generator		
Bypass Ability	No bypass assembly		
Miscellaneous Features			

Site Notes:

1.2 SITE MAP

Force Main

Figure 1.1 - Site Location Map



2 PUMP PERFORMANCE TESTS

Pump performance tests were conducted on the pumps utilizing the measurement tools detailed below. **Table 2.1 - Measurement Methods** describes the measurements taken during the test and the measurement method. Some measurements were confirmed utilizing a secondary measurement method. See **Attachment 1** for graphs of the digitally recorded data. For each test, note the following:

1. Common accuracies for measurements of flow, pressure, voltage and current are ±1%.
2. Friction loss is calculated using the Hazen-Williams formula and the Bernoulli equation. Piping characteristics are based on best available data.

Parameter	Measurement Method	
	Primary	Secondary
Flow	Level Transducer (XAK-PACK)	N/A
Pressure	Pressure Transducer (XAK-PACK)	Liquid Filled Pressure Gauge
Wet Well Level	Level Transducer (XAK-PACK)	N/A
Volts	Voltage Probes (XAK-PACK)	Fluke 376FC
Amps	Current Transducers (XAK-PACK)	Fluke 376FC
Power Factor	Power Factor Monitor (XAK-PACK)	N/A

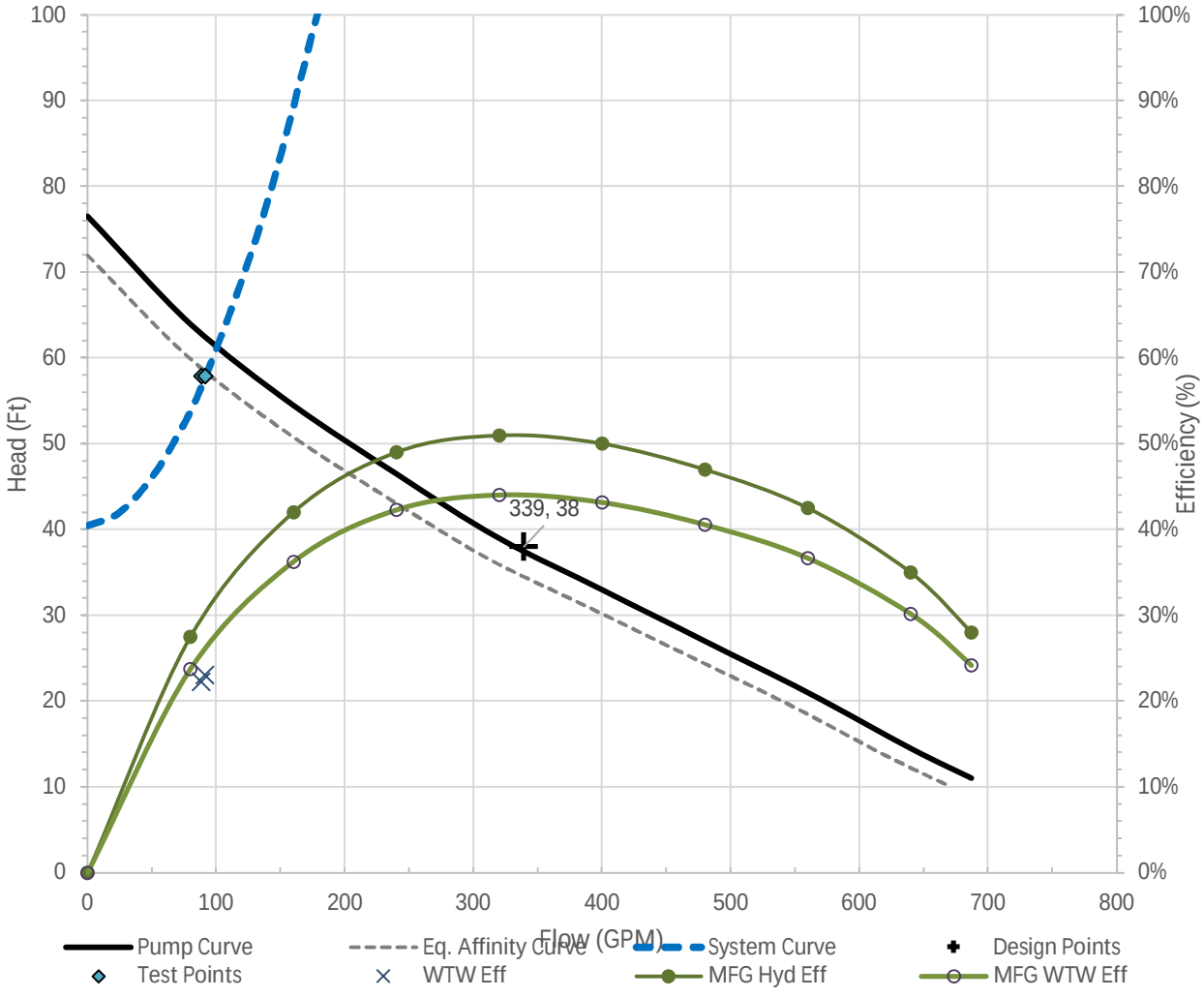
Table 2.1 - Measurement Methods

2.1 PUMP #1

Below is a summary of the pump characteristics and performance test results.

Parameter	Units	Value
Pump Manufacturer	-	Flygt
Pump Model	-	CP 3127 HT 3~ 485
Pump Style	-	Submersible
Pump Impeller Dia	Inches	7.87
Pump Rated Capacity	GPM	339
Pump Rated Head	Ft	38
Pump ETM	Hours	25
Pump Flow @ BEP Design Curve	GPM	339
Pump Hyd Eff @ Design Pt	%	50.7%
Pump WTW Eff @ Operating Pt	%	24%
Pump NPSHr @ Operating Pt	Ft	25
Motor Synchronous Speed	RPM	1800
Motor Rated Speed	RPM	1750
Motor No. Phases	No	3
Motor Starters	-	ATL
Motor Rated Voltage	Volts	230
Motor Rated Horsepower	HP	7.5
Motor Service Factor	-	1.15
Motor FLA	Amps	19.0
Mfg. Motor Eff. @ Operating Pt	%	86%
Mfg. Starter Eff. @ Operating Pt	%	100%

Table 2.2 - Pump #1 Design Characteristics



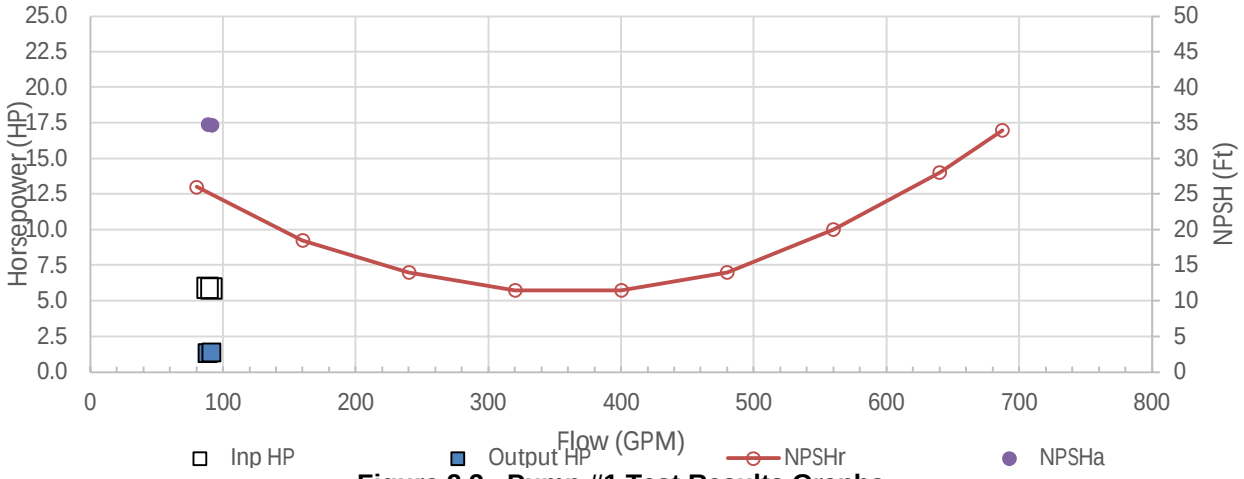


Figure 2.3 - Pump #1 Test Results Graphs

	Parameter	Units	Lower Limit	Test Value	Upper Limit	Comment
Measured	Average Output (FSFO)	GPM	-	90	-	
	Average TDH (FSFO)	Ft	-	57.9	-	
	Average WTW Efficiency (FSFO)	%	-	23%	-	
	Average Input HP (FSFO)	HP	-	5.9	-	
	Average Current Draw (FSFO)	Amps	-	13.2	-	
	Suction Velocity (FSFO)	FPS	2	-	7	
	Discharge Velocity (FSFO)	FPS	2	2.0	7	
	BEP Comparison (FSFO)	%	80%	27%	115%	1
	Average Output (FSFO)	%	90%	27%	110%	2
	Affinity Law Eq. Curve	%	-5%	-3.0%	5%	
	NPSHa	Ft	25	34.7	N/A	
	WTW Eff @ Operating Pt	%	-5%	-4%	5%	
	Input Frequency	Hz	-5%	0%	5%	
	Input Voltage (L-L)	%	-10%	-7.4%	10%	
	Voltage Drop	%	-15%	4.0%	N/A	
	Voltage Imbalance	%	-10%	1.7%	10%	
	Current Imbalance	%	-10%	6.9%	10%	
	Motor FLA	%	-50%	69.4%	105%	
	Motor Load	%	50%	78.2%	115%	
	Motor Slip Speed	%	1740	1750	1810	
	Vibration	In/Sec	0	0.0	-	
Observed	Surge	1-5	-	2	3	
	Vibration	1-5	-	1	3	
	Cavitation	1-5	-	1	3	
	Mechanical Noise	1-5	-	2	3	
	Leaks	1-5	-	1	3	
	Exterior Condition	1-5	-	2	3	
	Overall Score	1-5	-	2	3	

Table 2.4 - Pump #1 Test Summary

Pump #1 - Test Comments

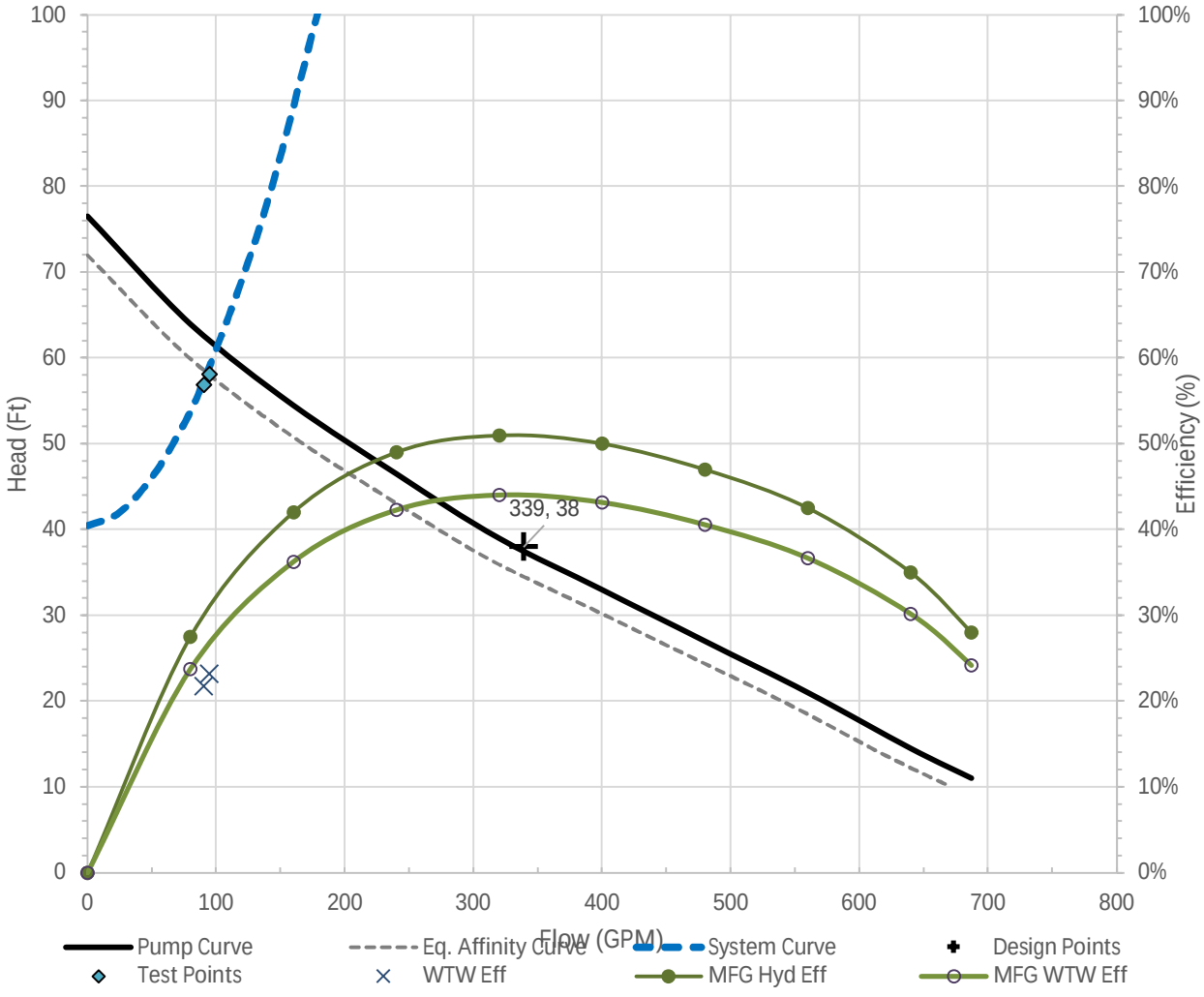
1. The pump is operating at 27% BEP flow rate.
2. The pump output is 27% of the design flow rate.

2.2 PUMP #2

Below is a summary of the pump characteristics and performance test results.

Parameter	Units	Value
Pump Manufacturer	-	Flygt
Pump Model	-	CP 3127 HT 3~ 485
Pump Style	-	Submersible
Pump Impeller Dia	Inches	7.87
Pump Rated Capacity	GPM	339
Pump Rated Head	Ft	38
Pump ETM	Hours	26
Pump Flow @ BEP Design Curve	GPM	339
Pump Hyd Eff @ Design Pt	%	50.7%
Pump WTW Eff @ Operating Pt	%	26%
Pump NPSHr @ Operating Pt	Ft	25
Motor Synchronous Speed	RPM	1800
Motor Rated Speed	RPM	1750
Motor No. Phases	No	3
Motor Starters	-	ATL
Motor Rated Voltage	Volts	230
Motor Rated Horsepower	HP	7.5
Motor Service Factor	-	1.15
Motor FLA	Amps	19.0
Mfg. Motor Eff. @ Operating Pt	%	86%
Mfg. Starter Eff. @ Operating Pt	%	100%

Table 2.5 - Pump #2 Design Characteristics



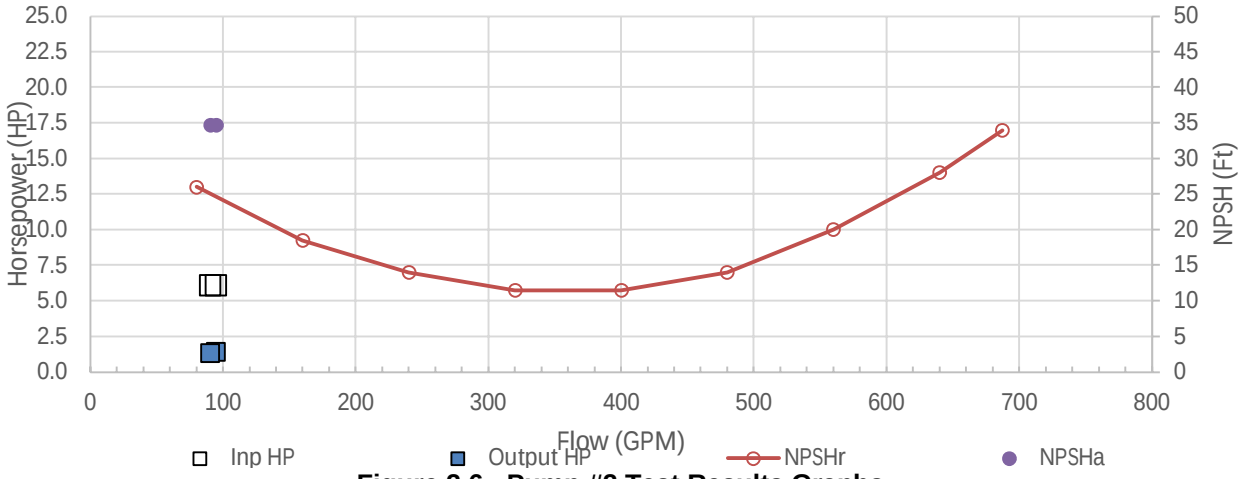


Figure 2.6 - Pump #2 Test Results Graphs

	Parameter	Units	Lower Limit	Test Value	Upper Limit	Comment
Measured	Average Output (FSFO)	GPM	-	93	-	
	Average TDH (FSFO)	Ft	-	57.5	-	
	Average WTW Efficiency (FSFO)	%	-	22%	-	
	Average Input HP (FSFO)	HP	-	6.0	-	
	Average Current Draw (FSFO)	Amps	-	13.6	-	
	Suction Velocity (FSFO)	FPS	2	-	7	
	Discharge Velocity (FSFO)	FPS	2	2.0	7	
	BEP Comparison (FSFO)	%	80%	27%	115%	1
	Average Output (FSFO)	%	90%	27%	110%	2
	Affinity Law Eq. Curve	%	-5%	-3.0%	5%	
	NPSHa	Ft	25	34.7	N/A	
	WTW Eff @ Operating Pt	%	-5%	-16%	5%	3
	Input Frequency	Hz	-5%	0%	5%	
	Input Voltage (L-L)	%	-10%	-7.4%	10%	
	Voltage Drop	%	-15%	4%	N/A	
	Voltage Imbalance	%	-10%	1.8%	10%	
	Current Imbalance	%	-10%	7.5%	10%	
	Motor FLA	%	-50%	71.6%	105%	
	Motor Load	%	50%	80.7%	115%	
	Motor Slip Speed	%	1740	1750	1810	
	Vibration	In/Sec	0	0.0	-	
Observed	Surge	1-5	-	2	3	
	Vibration	1-5	-	1	3	
	Cavitation	1-5	-	1	3	
	Mechanical Noise	1-5	-	2	3	
	Leaks	1-5	-	1	3	
	Exterior Condition	1-5	-	2	3	
	Overall Score	1-5	-	2	3	

Table 2.7 - Pump #2 Test Summary

Pump #2 - Test Comments

1. The pump is operating at 27% BEP flow rate.

2. The pump output is 27% of the design flow rate.

3. WTW efficiency is significantly below the recommended lower limit. This indicates significant pump and/or motor wear.

2.3 HYDRAULICS SUMMARY

The hydraulics of this system corresponds to what we would expect based on our theoretical calculations. However, the design point for this pump station is farther to the right. The design point appears to have been calculated using a lower static head value, additionally a larger force main diameter also appears to have been used for the calculations.

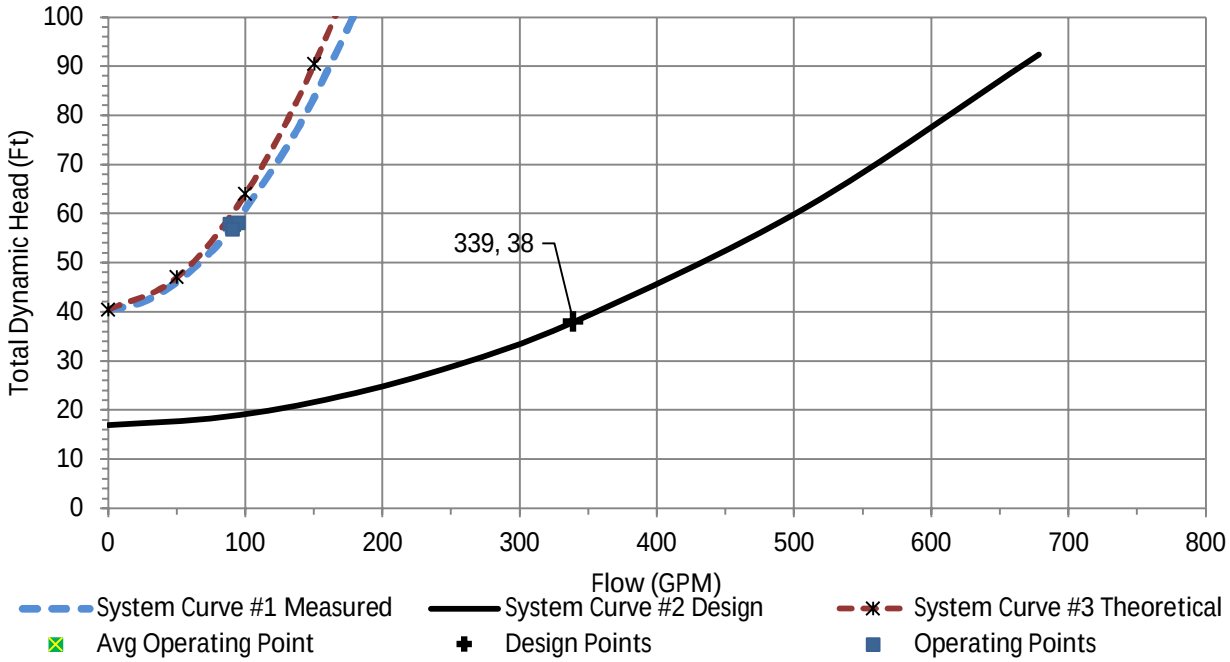


Figure 2.8 – System Hydraulic Information provides a graph of the system characteristics and a table describing the system curves. Length, Hazen-Williams (Hz-Wm), and diameter are approximated based on the best available information and fit to the data. System Curve Characteristics are intended to be for reference.

System Curve Characteristics					
Curve Name	**Curve Type**	**Length (Ft)**	**Hz-Wm**	**Diameter (In)**	**Calculated Based On**
System Curve #1	Measured	2175	115	4.0	Test Data
System Curve #2	Design	2175	115	6.3	Design Operating Condition
System Curve #3	Theoretical	2175	115	4.0	Available GIS Data

Figure 2.8 – System Hydraulic Information

Figure 2.9 – Pipe Velocities displays the velocities in each known diameter of the pressurized conveyance system. The Average Test Output Velocity represents the velocity generated by the average pumping rate produced by testing. The Station Firm Capacity Velocity represents the velocity based on the station's firm capacity (output with the largest pump out of service). The color gradient represents ranges of acceptable to problematic velocities. Red areas of operation are problematic and green areas of operation are acceptable.

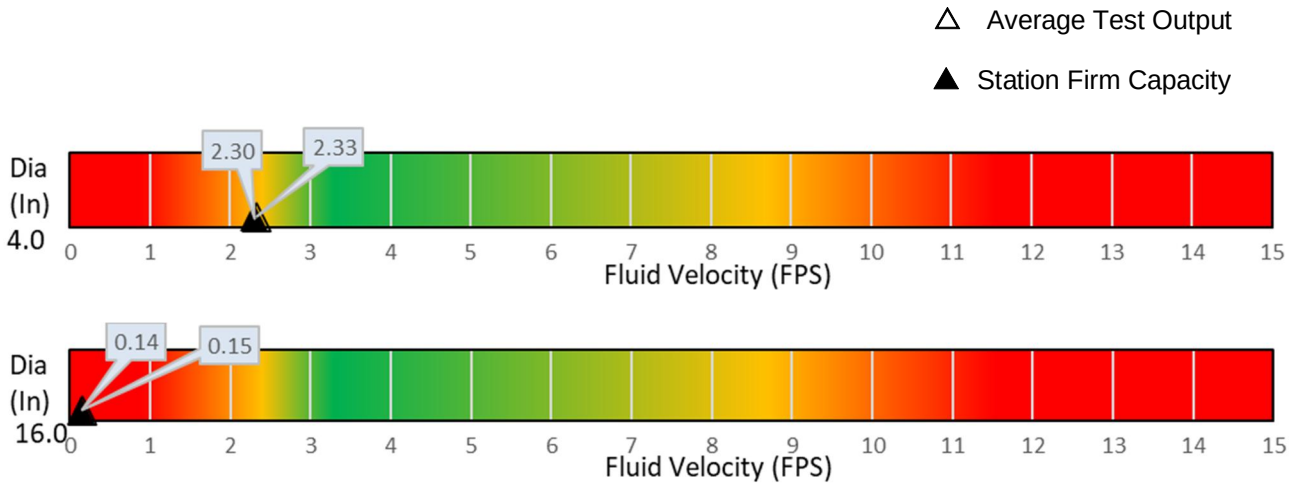


Figure 2.9 – Pipe Velocities

The maximum observed pressure at the station during the testing period is provided below in **Figure 2.10 - Maximum Observed Pressure**. System pressure capabilities vary depending upon pipe material type, pressure rating, elevation, age, condition, etc. This performance indicator is provided for reference only and is not a condition assessment of the pipeline. For systems with pressures above approximately 100 PSI, consider a more detailed analysis. See the **Attachment 1 - Graph B** for additional pressure data.

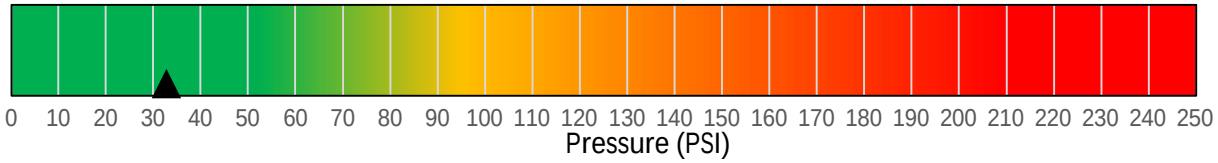


Figure 2.10 - Maximum Observed Pressure

2.4 SYSTEM PRESSURES

Figure 2.11 - Pressure Cycle shows a typical single-pump pressure cycle measured during testing. The pressure data captured for this test is limited to 2-second intervals which may not have captured the entire range of actual pressures. The complete log of pressure readings is provided in **Attachment 1 – Test Data Graphs**. For more accurate surge data, a surge monitoring device should be used to capture pressure at shorter time intervals over a longer period of time. **Table 2.12 - Further Surge-Related Actions** provides a list of recommended surge-related actions.

The pressure transducer used for measuring pressures has a range of 0 to 200 PSI. Pump startup produced an upsurge of approximately 26 PSI. Upon pump shut down, the observed minimum pressure was approximately 0 PSI and the maximum pressure was approximately 33 PSI creating a total observed pressure range of 33 PSI. It is likely that the minimum pressure produced on each pump shut down cycle was less than 0 PSI.

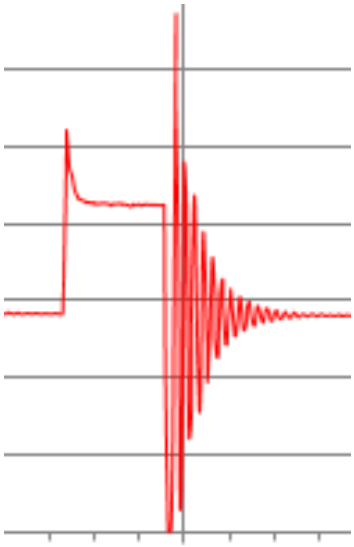


Figure 2.11 - Pressure Cycle

Further Surge Related Actions:	
	Perform extended period digital surge monitoring
	Perform calibrated surge modeling
	Revise operating scheme to reduce surge potential
	Evaluate piping system for pressure capacity and likelihood of failure
	Install physical surge mitigation strategies
✓	No further action

Table 2.12 - Further Surge-Related Actions

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3 RECOMMENDATIONS

The following recommendations are a result of the findings of this evaluation and should be considered for implementation. See **Section 2 Pump Performance Tests** for pump specific recommendations. In addition to the recommendations below, this site should/ be considered for the following overall planning and budgeting activities.

3.1 OVERALL RECOMMENDATIONS

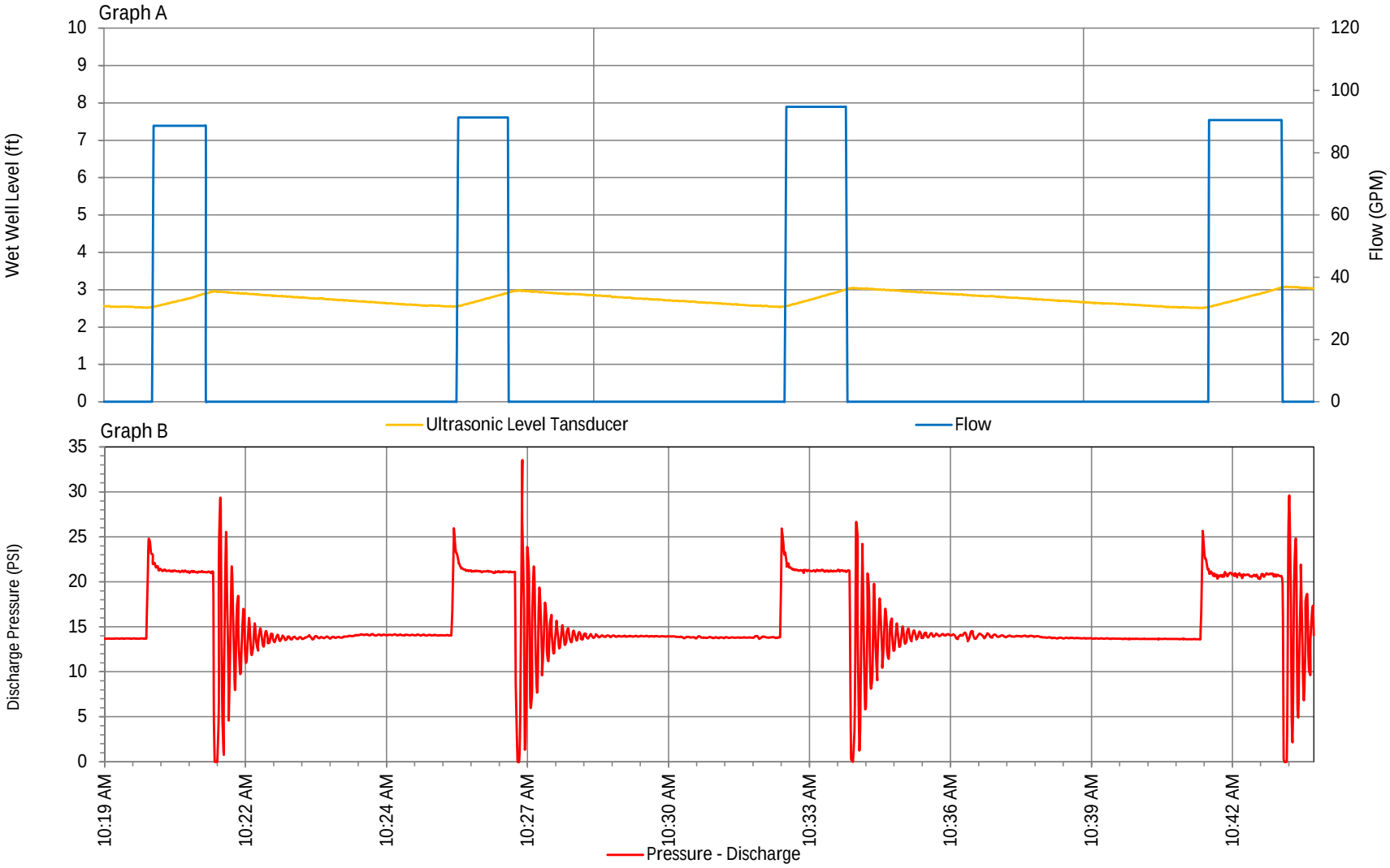
Overall Site Rating	Score	Description
	1	No recommendations currently. Monitor station for worsening conditions, perform regular O&M, reassess condition in 2-5 years.
	2	Complete recommendations listed in Section 3.2, monitor station for worsening conditions, perform regular O&M, reassess condition in 1-3 years.
	3	Station requires improvements beyond replacement of individual components. Begin planning and budgeting for a major rehabilitation. Place under regular observation until rehabilitation is complete.
	4	Station does not appear to be brought into conformance with standards without replacement. Begin planning and budgeting for a station replacement. Place under regular observation until rehabilitation is complete.

3.2 MISCELLANEOUS RECOMMENDATIONS

1. Pumps – Both pumps are operating to the far left of their pump curve. Pump MTBF is significantly reduced when operating in this region. In future pump replacement consider a new pump selection that falls in a better operational area of the pump curve.

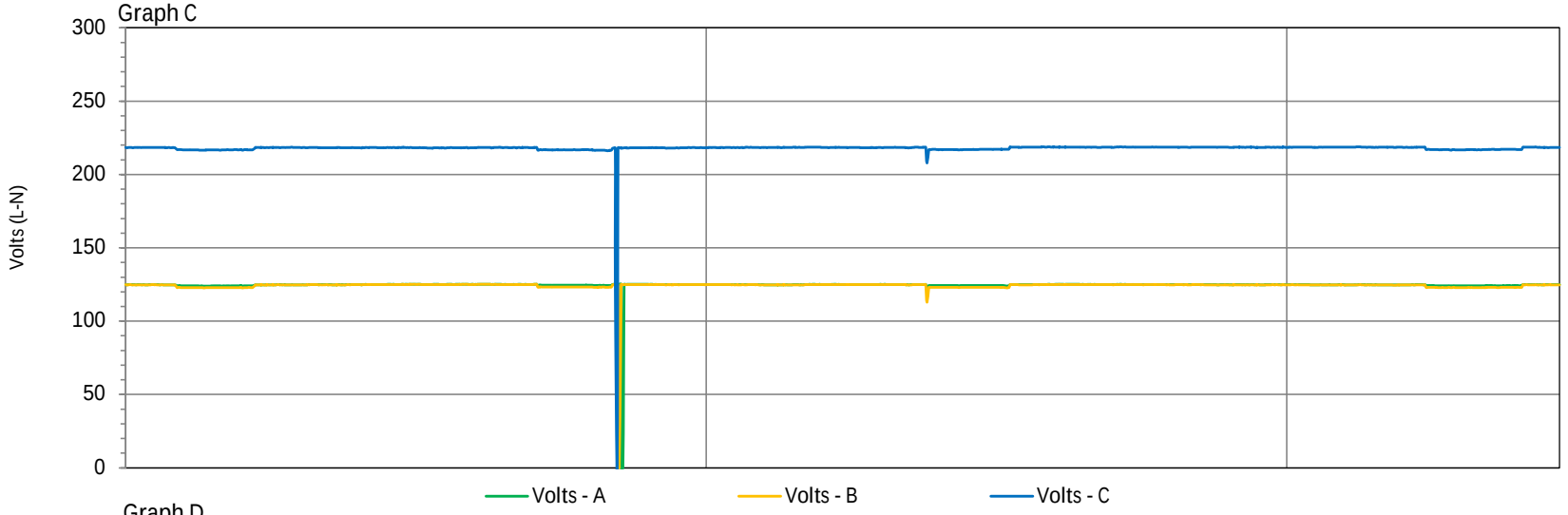
4 ATTACHMENTS

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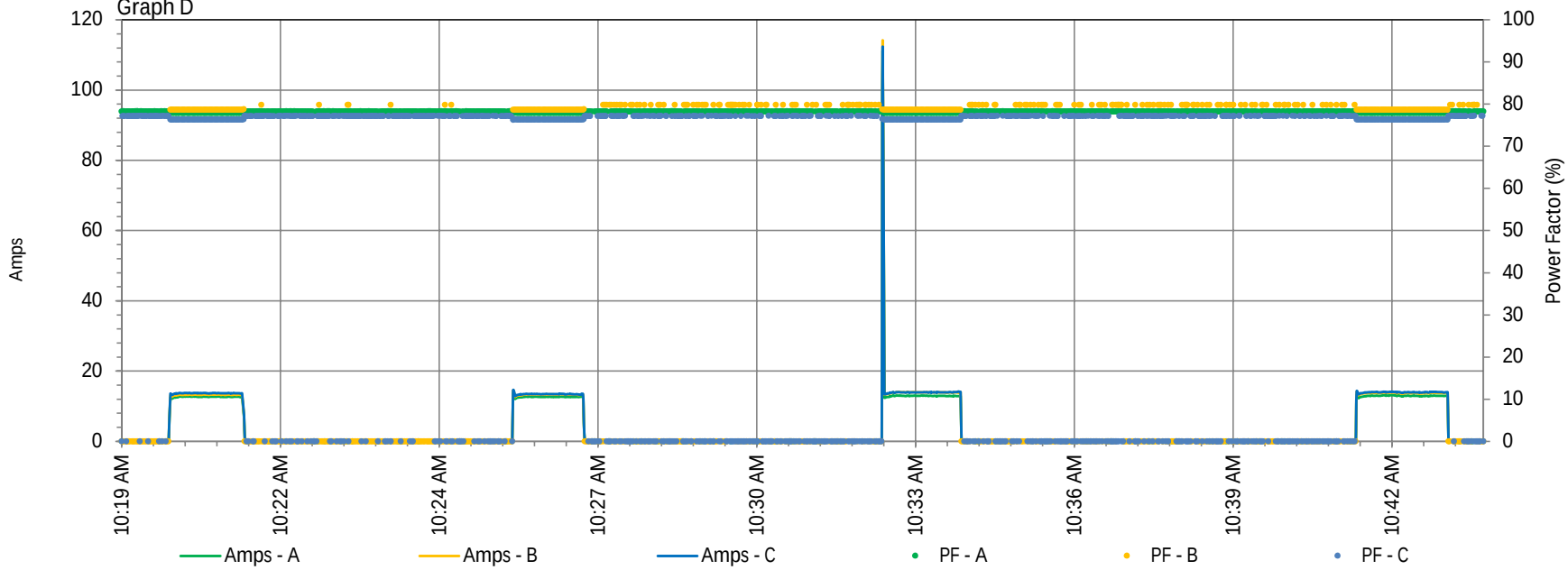


* Times shown are Eastern Standard Time

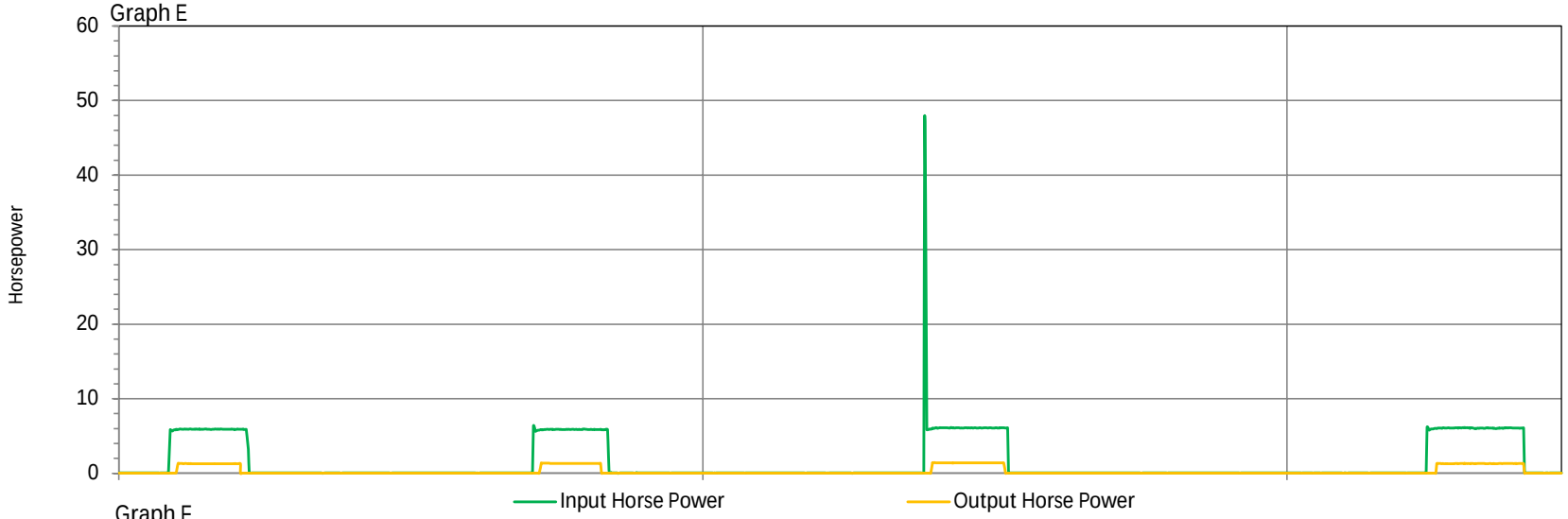
Graph C



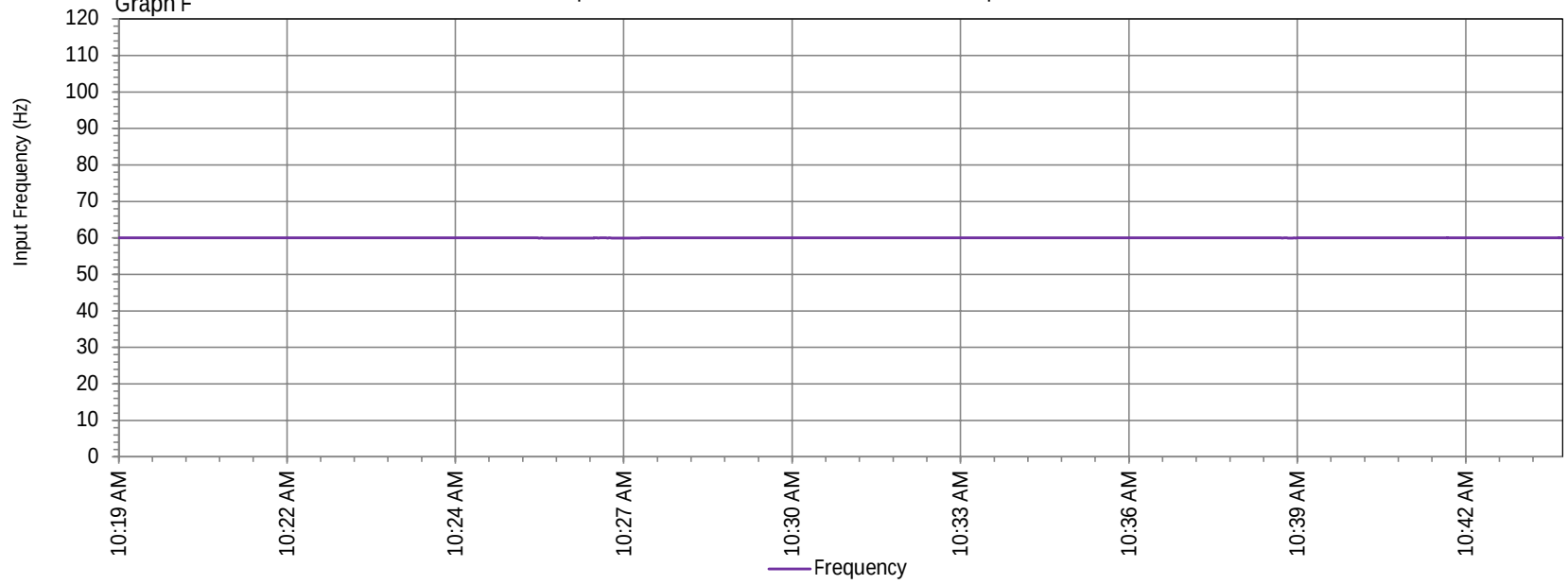
Graph D



Graph E



Graph F

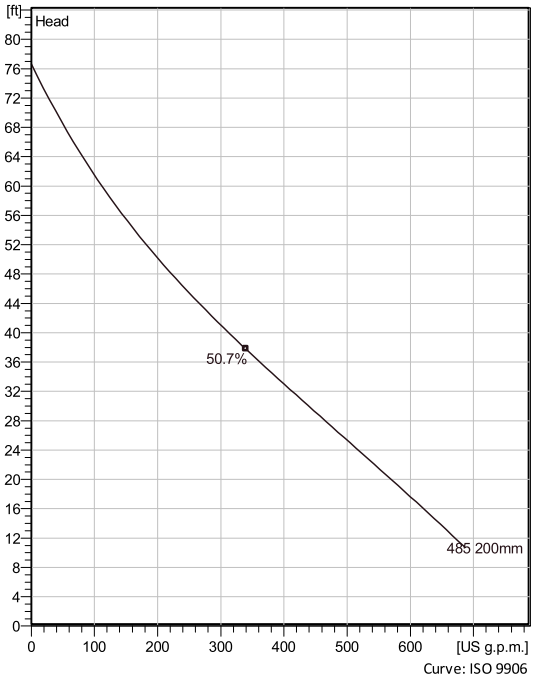


CP 3127 HT 3~ 485

FLYGT
a xylem brand

Technical specification

Curves according to: Water, pure Water, pure [100%], 39.2 °F, 62.43 lb/ft³, 1.6889E-5 ft²/s



Curve: ISO 9906

Nominal (mean) data shown. Under- and over-performance from this data should be expected due to standard manufacturing tolerances.
Please consult your local Flygt representative for performance guarantees.

Configuration

Motor number
C3127.182 21-10-4AL-W 7.5hp

Installation type
P - Semi permanent, Wet

Impeller diameter
200 mm

Discharge diameter
4 inch

Pump information

Impeller diameter
200 mm

Discharge diameter
4 inch

Inlet diameter
100 mm

Maximum operating speed
1750 rpm

Number of blades
1

Throughlet diameter
3 inch

Max. fluid temperature
40 °C

Material

Impeller
Grey cast iron

Stator housing material
Grey cast iron

Project	Xylect-21982745	**Created by**	Robert Simcox		
Block		**Created on**	3/12/2024	**Last update**	3/12/2024

CP 3127 HT 3~ 485

Technical specification

Motor - General

Motor number C3127.182 21-10-4AL-W 7.5hp	**Phases** 3~	**Rated speed** 1750 rpm	**Rated power** 7.5 hp
ATEX approved No	**Number of poles** 4	**Rated current** 19 A	**Stator variant** 12
Frequency 60 Hz	**Rated voltage** 230 V	**Insulation class** H	**Type of Duty** S1
Version code 182			

Motor - Technical

Power factor - 1/1 Load 0.85	**Motor efficiency - 1/1 Load** 86.3 %	**Total moment of inertia** 2.16 lb ft²	**Starts per hour max.** 30
Power factor - 3/4 Load 0.81	**Motor efficiency - 3/4 Load** 87.6 %	**Starting current, direct starting** 115 A	
Power factor - 1/2 Load 0.72	**Motor efficiency - 1/2 Load** 87.4 %	**Starting current, star-delta** 38.3 A	

Project	Xylect-21982745	**Created by**	Robert Simcox		
Block		**Created on**	3/12/2024	**Last update**	3/12/2024

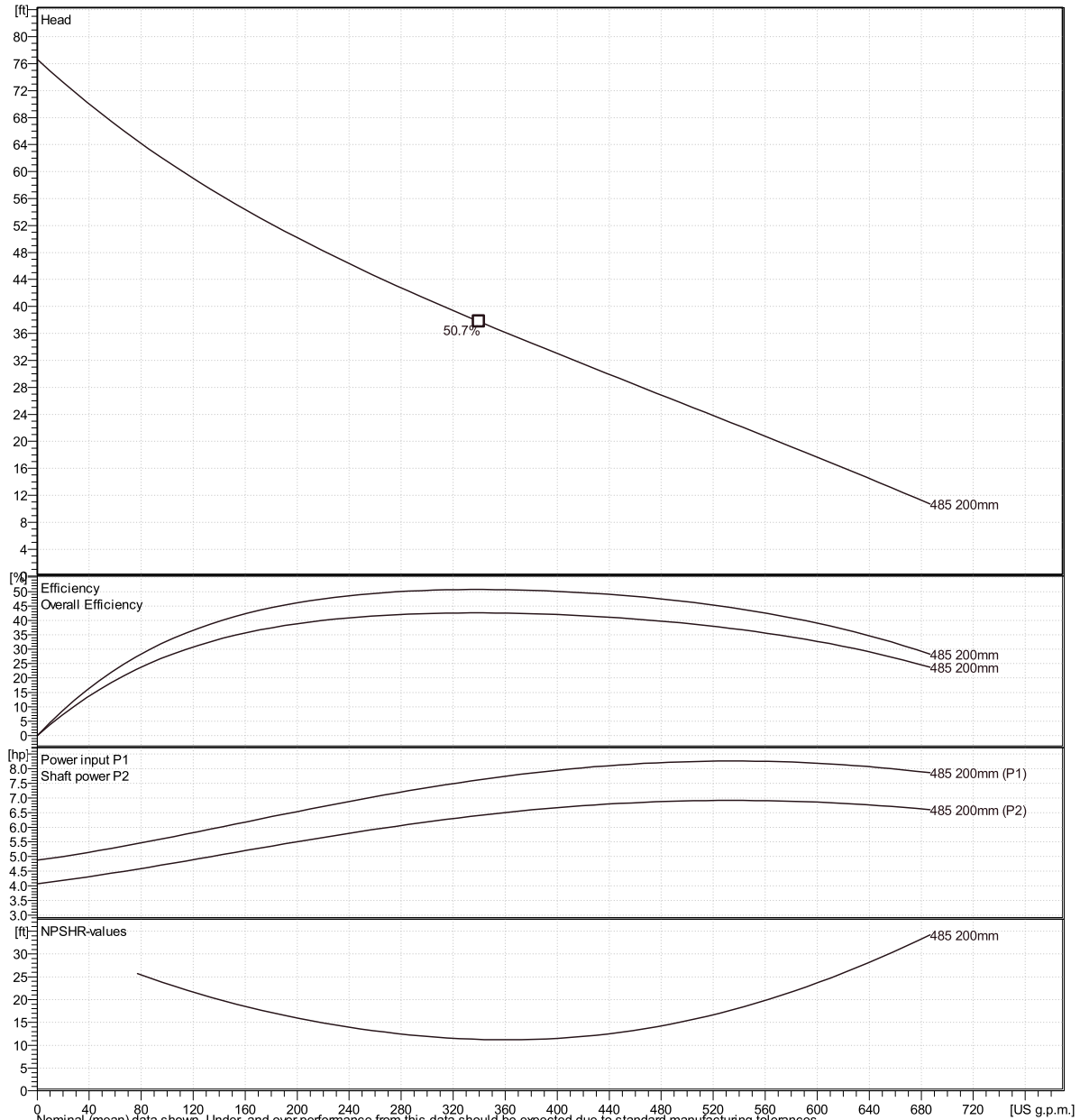
CP 3127 HT 3~ 485

Performance curve

Duty point

Flow	Head

Curves according to: Water, pure Water, pure [100%],39.2 °F,62.43 lb/ft³,1.6889E-5 ft²/s



Nominal (mean) data shown. Under- and over-performance from this data should be expected due to standard manufacturing tolerances.
Please consult your local Flygt representative for performance guarantees.

Curve: ISO 9906

Xylect-21982745		Robert Simcox	
Created on	3/12/2024	**Last update**	3/12/2024

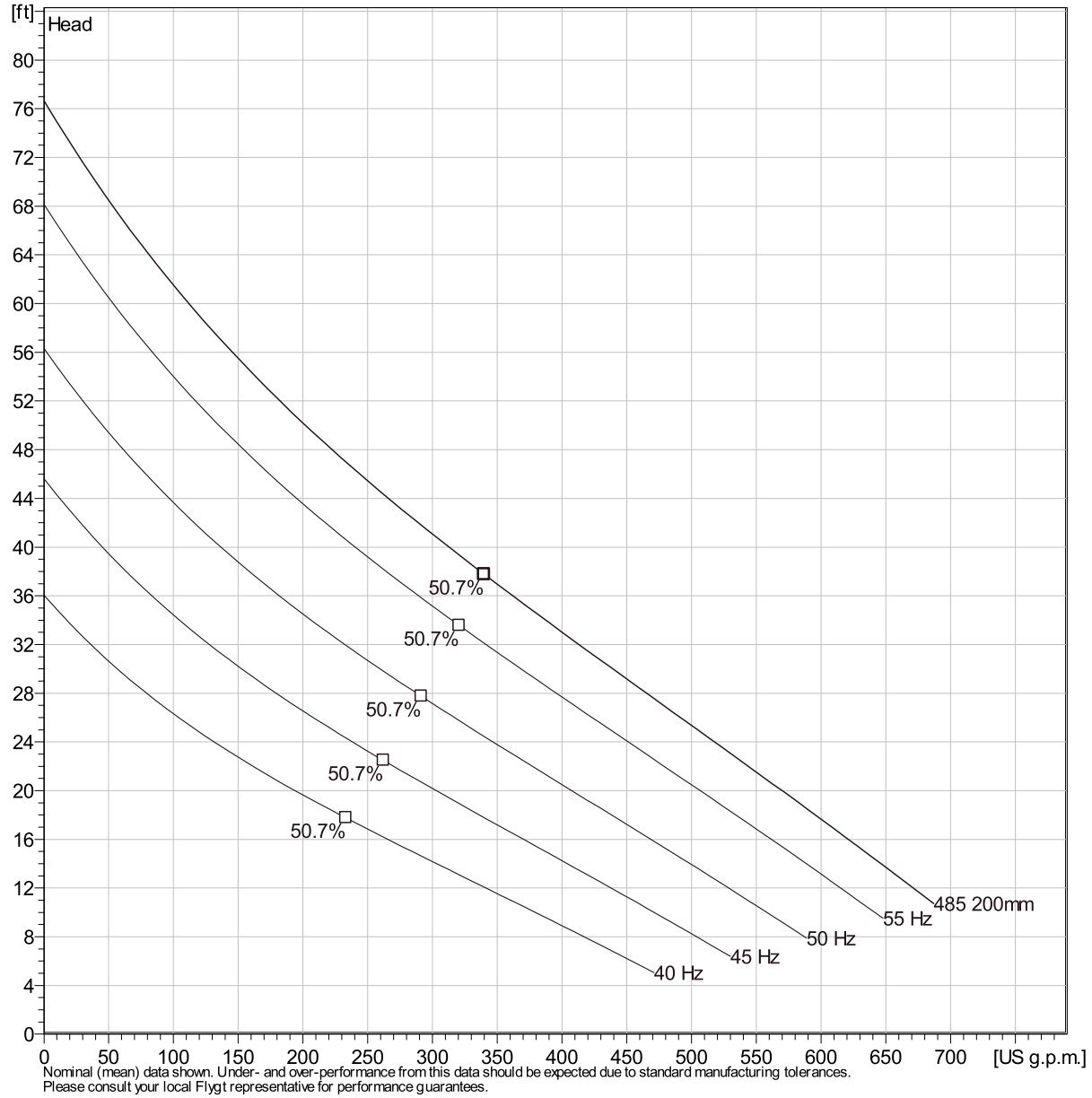
Program version	Data version	User group(s)
72.0 - 2/20/2024 (Build 175)	3/5/2024 10:29 A3P3	Xylem:USA - EXT, USA - INT

CP 3127 HT 3~ 485

Duty Analysis

FLYGT a xylem brand

Curves according to: Water, pure [100%] ; 39.2°F; 62.43lb/ft³; 1.6889E-5ft²/s



Nominal (mean) data shown. Under- and over-performance from this data should be expected due to standard manufacturing tolerances.
Please consult your local Flygt representative for performance guarantees.

Operating characteristics

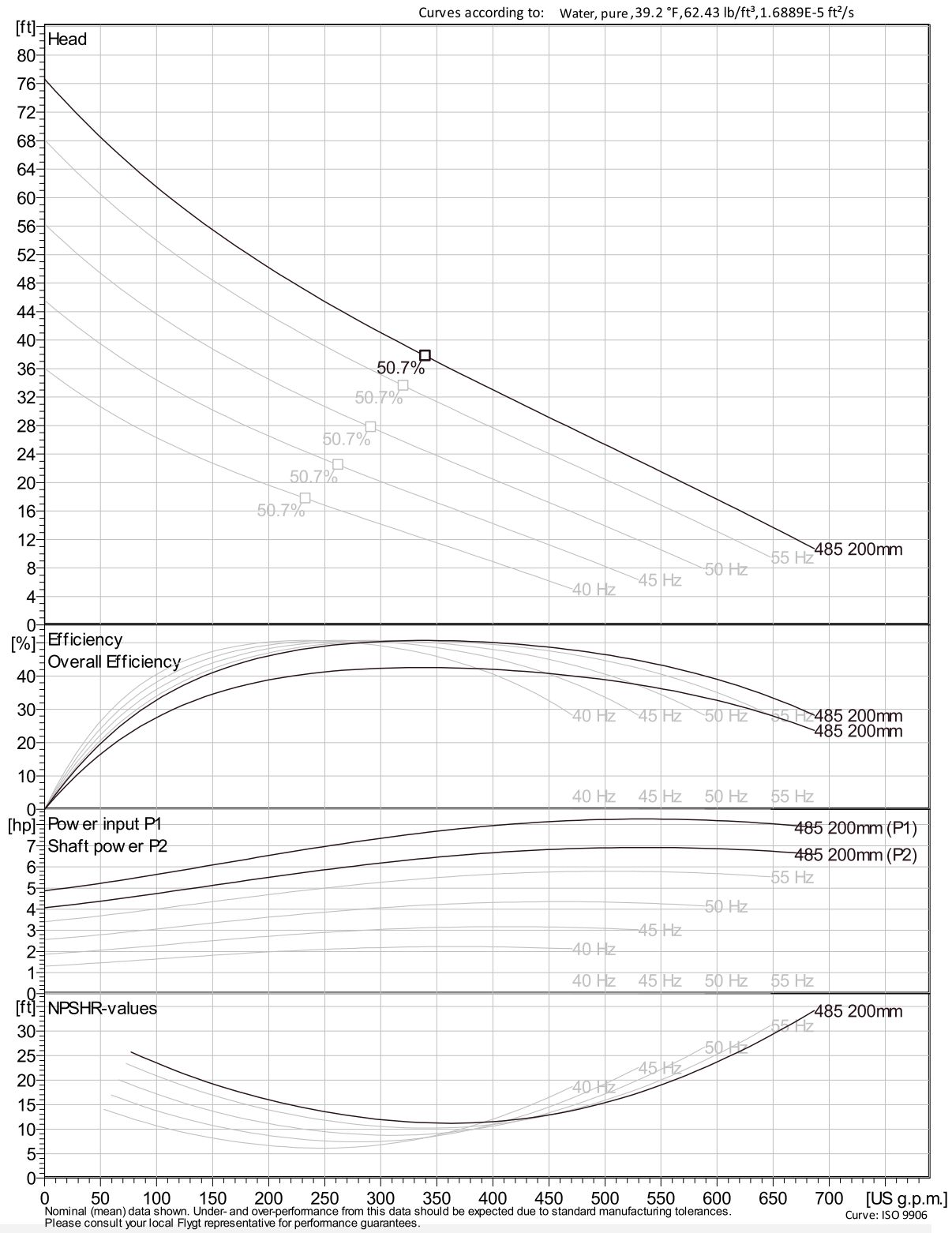
Pumps / Systems	Flow	Head	Shaft power	Flow	Head	Shaft power	Hydr.eff.	Spec. Energy	NPSHre
	US g.p.m.	ft	hp	US g.p.m.	ft	hp		kWh/US MG	ft

Project		**Created by**	Robert Simcox		
Block	Xylect-21982745	**Created on**	3/12/2024	**Last update**	3/12/2024

CP 3127 HT 3~ 485

VFD Curve

FLYGT
a xylem brand



Nominal (mean) data shown. Under- and over-performance from this data should be expected due to standard manufacturing tolerances.
Please consult your local Flygt representative for performance guarantees.

Curve: ISO 9906

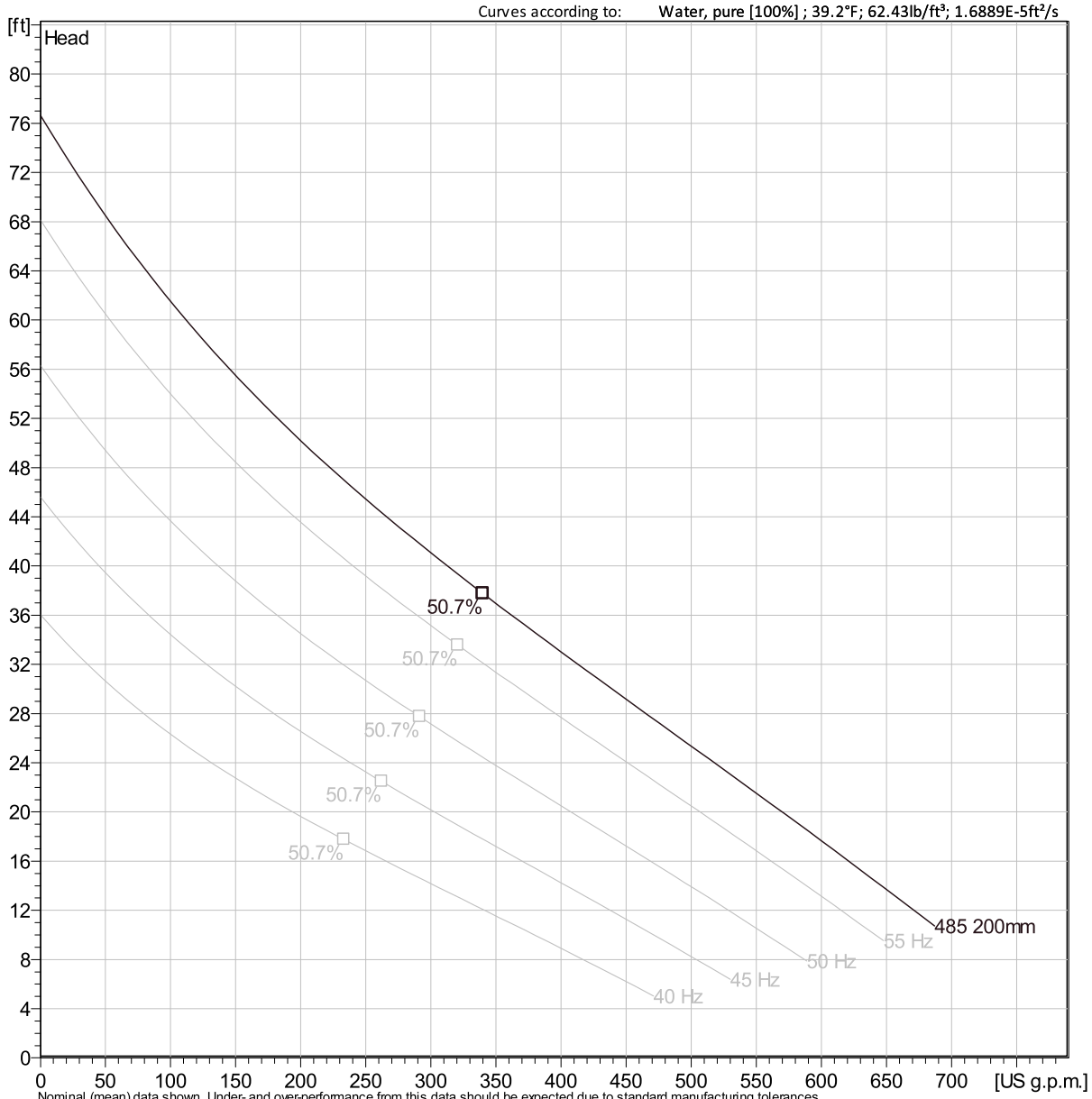
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Block		**Created on**	3/12/2024	**Last update**	3/12/2024

Program version	Data version	User group(s)
72.0 - 2/20/2024 (Build 175)	3/5/2024 10:29 A3P3	Xylem: USA - EXT, USA - INT

CP 3127 HT 3~ 485

VFD Analysis

Curves according to: Water, pure [100%] ; 39.2°F; 62.43lb/ft³; 1.6889E-5ft²/s



Nominal (mean) data shown. Under- and over-performance from this data should be expected due to standard manufacturing tolerances.
Please consult your local Flygt representative for performance guarantees.

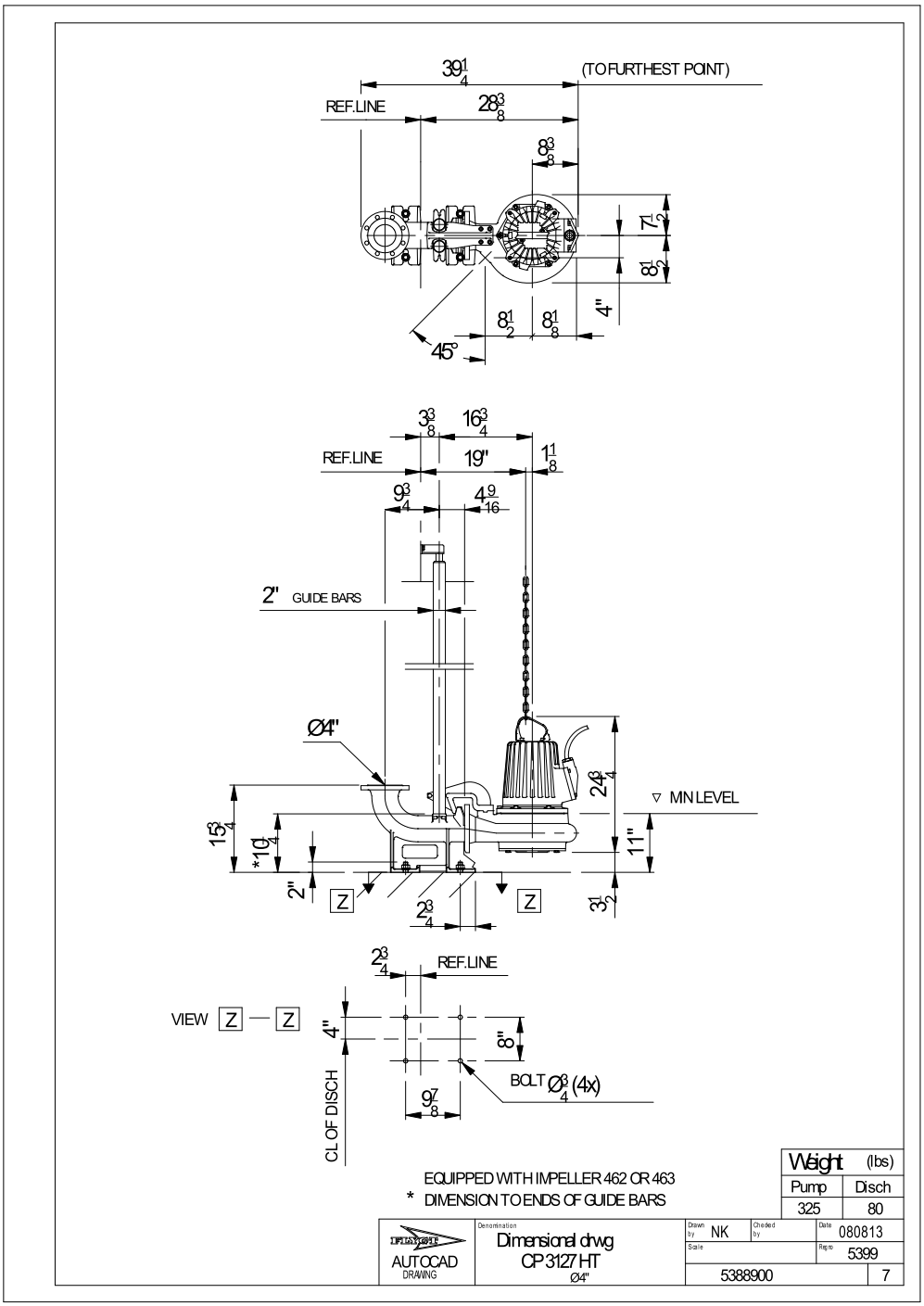
Operating Characteristics

Pumps / Systems	Frequency	Flow	Head	Shaft power	Flow	Head	Shaft power	Hydr.eff.	Specific energy	NPSHre
		US g.p.m.	ft	hp	US g.p.m.	ft	hp		kWh/US MG	ft

Project	Xylect-21982745	**Created by**	Robert Simcox		
Block		**Created on**	3/12/2024	**Last update**	3/12/2024

CP 3127 HT 3~ 485

Dimensional drawing



Project	Xylect-21982745	**Created by**	Robert Simcox		
Block		**Created on**	3/12/2024	**Last update**	3/12/2024

Pump Station Evaluation Report

10 - Kentucky

Prepared For:

City of Wildwood

Evaluation Date:

2/7/2024

Report Date:

September 26, 2024

Version 1

Kimley»Horn

Version	Publish Date	Description
1	See Cover	Original/Version 1

Table 0.1 - Revision History

Version	Publish Date	Test Date	Description

Table 0.2 - Previous Evaluation History

This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn shall be without liability to Kimley-Horn.

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ATTACHMENTS

Attachment 1 ..... **Test Data Graphs**

Attachment 2 ..... **Supplementary Pump Information**

ABBREVIATIONS

Ø	Phase
AC	Alternating Current
ADD	Automated Draw Down
ADF	Average Daily Flow
ARR	Automated Rate of Rise
ATL	Across The Line
Avg	Average
BEP	Best Efficiency Point
CL	Center Line
Disch	Discharge
ETM	Elapsed Time Meter
FLA	Full Load Amps
FM	Force Main
Ft	Feet
FPS	Feet Per Second
FSFO	Full Speed Full Open
Gal	Gallons
GPM	Gallons Per Minute
HGL	Hydraulic Grade Line
HP	Horsepower
Hrs	Hours
H:M:S	Hours:Minutes:Seconds
Hz	Hertz
In	Inches
InvIn	Invert In
KWH	Kilowatt-Hours
L	Length
L1, L2, L3	Leg 1, 2 & 3 or Length 1, 2 & 3
MSL	Mean Sea Level
MTBF	Mean Time Between Failures
N	Neutral
P	Pump
PCL	Pump Center Line
PCP	Pump Control Panel
PF	Power Factor
PSI	Pounds Per Square Inch
PT	Point
RPM	Revolutions Per Minute
TDH	Total Dynamic Head
TVSS	Transient Voltage Surge Suppressor
V	Volts
VFD	Variable Frequency Drive
WTW	Wire To Water
WW	Wet Well
Yr	Year

1 INTRODUCTION

Kimley-Horn and Associates, Inc. evaluated the pump station through pump performance testing and a condition assessment. This report summarizes the data and results of that evaluation. The performance tests were conducted using the XAK-PACK pump performance monitoring device. The following pages provide summaries of the data collected and notes about the pumps' performance.

1.1 SITE INFORMATION

Kentucky / Site Number 10			
Date of Evaluation	2/7/2024		
Address	199 W Kentucky Ave, Wildwood, FL 34785		
Coordinates	28.850896, -82.046581		
Fluid Conveyed	Wastewater		
Station Style	Submersible		
Number of Pumps	2	Number of Pump Slots	2
Pump Type	Submersible		
Flow Meter Type	N/a		
Year of Construction	Unknown	Based on	☐Docs. ☐Estimation ☐Other
Basin/Zone	Unknown		
Firm Capacity (Design)	Unknown		
Firm Capacity (Test)	163 GPM / 0.23 MGD		
Discharge Description	16-inch, 945 LF unknown Manifold FM discharging to a wastewater treatment plant		
Electrical Service	120/240 Delta		
Site Generator	No Generator on-site		
Bypass Ability	Bypass assembly in valve vault		
Miscellaneous Features			

Site Notes:

1.2 SITE MAP



Force Main

Figure 1.1 - Site Location Map

2 PUMP PERFORMANCE TESTS

Pump performance tests were conducted on the pumps utilizing the measurement tools detailed below. **Table 2.1 - Measurement Methods** describes the measurements taken during the test and the measurement method. Some measurements were confirmed utilizing a secondary measurement method. See **Attachment 1** for graphs of the digitally recorded data. For each test, note the following:

1. Common accuracies for measurements of flow, pressure, voltage and current are ±1%.
2. Friction loss is calculated using the Hazen-Williams formula and the Bernoulli equation. Piping characteristics are based on best available data.

Parameter	Measurement Method	
	Primary	Secondary
Flow	Level Transducer (XAK-PACK)	N/A
Pressure	Pressure Transducer (XAK-PACK)	Liquid Filled Pressure Gauge
Wet Well Level	Level Transducer (XAK-PACK)	N/A
Volts	Voltage Probes (XAK-PACK)	Fluke 376FC
Amps	Current Transducers (XAK-PACK)	Fluke 376FC
Power Factor	Power Factor Monitor (XAK-PACK)	N/A

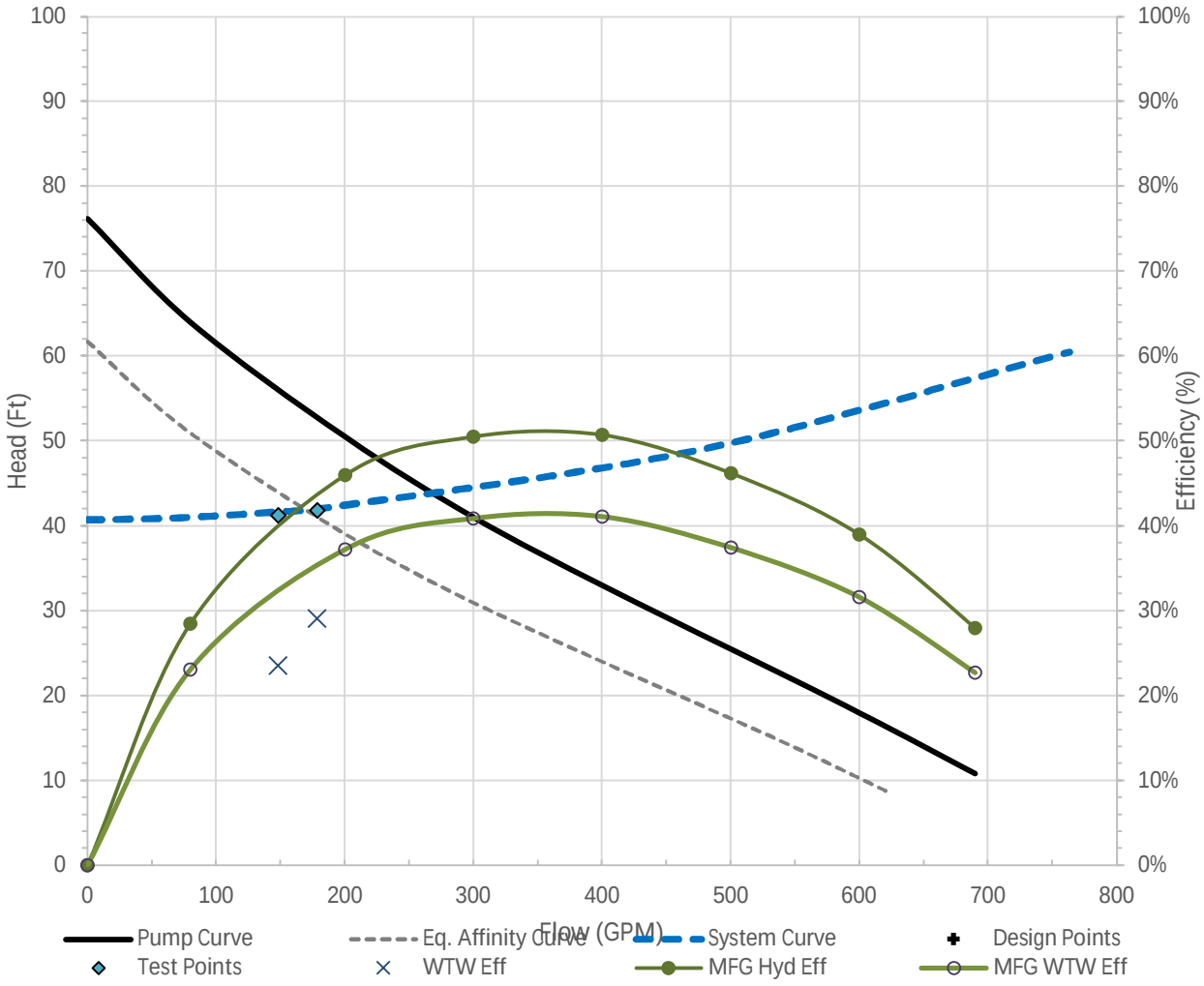
Table 2.1 - Measurement Methods

2.1 PUMP #1

Below is a summary of the pump characteristics and performance test results.

Parameter	Units	Value
Pump Manufacturer	-	Flygt
Pump Model	-	CP 3127 HT 3~ 485
Pump Style	-	Submersible
Pump Impeller Dia	Inches	7.87
Pump Rated Capacity	GPM	-
Pump Rated Head	Ft	-
Pump ETM	Hours	734
Pump Flow @ BEP Design Curve	GPM	335
Pump Hyd Eff @ Design Pt	%	-
Pump WTW Eff @ Operating Pt	%	34%
Pump NPSHr @ Operating Pt	Ft	17
Motor Synchronous Speed	RPM	1800
Motor Rated Speed	RPM	1750
Motor No. Phases	No	3
Motor Starters	-	ATL
Motor Rated Voltage	Volts	230
Motor Rated Horsepower	HP	7.5
Motor Service Factor	-	1.15
Motor FLA	Amps	19.0
Mfg. Motor Eff. @ Operating Pt	%	81%
Mfg. Starter Eff. @ Operating Pt	%	100%

Table 2.2 - Pump #1 Design Characteristics



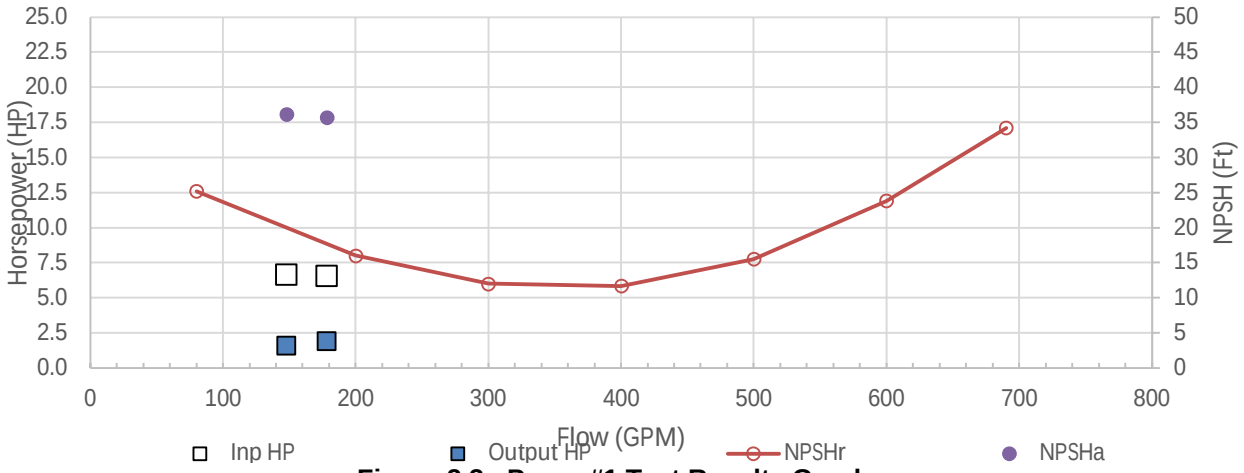


Figure 2.3 - Pump #1 Test Results Graphs

	Parameter	Units	Lower Limit	Test Value	Upper Limit	Comment
Measured	Average Output (FSFO)	GPM	-	163	-	
	Average TDH (FSFO)	Ft	-	41.5	-	
	Average WTW Efficiency (FSFO)	%	-	26%	-	
	Average Input HP (FSFO)	HP	-	6.6	-	
	Average Current Draw (FSFO)	Amps	-	14.9	-	
	Suction Velocity (FSFO)	FPS	2	-	7	
	Discharge Velocity (FSFO)	FPS	2	3.6	7	
	BEP Comparison (FSFO)	%	80%	49%	115%	1
	Average Output (FSFO)	%	90%	-	110%	
	Affinity Law Eq. Curve	%	-5%	-10.0%	5%	2
	NPSHa	Ft	17	35.9	N/A	
	WTW Eff @ Operating Pt	%	-5%	-29%	5%	3
	Input Frequency	Hz	-5%	0%	5%	
	Input Voltage (L-L)	%	-10%	-6.4%	10%	
	Voltage Drop	%	-15%	2.6%	N/A	
	Voltage Imbalance	%	-10%	1.6%	10%	
	Current Imbalance	%	-10%	8.4%	10%	
	Motor FLA	%	-50%	78.7%	105%	
	Motor Load	%	50%	87.8%	115%	
	Motor Slip Speed	%	1740	1750.0	1810	
	Vibration	In/Sec	0	0.0	-	
Observed	Surge	1-5	-	2	3	
	Vibration	1-5	-	1	3	
	Cavitation	1-5	-	1	3	
	Mechanical Noise	1-5	-	2	3	
	Leaks	1-5	-	1	3	
	Exterior Condition	1-5	-	2	3	
	Overall Score	1-5	-	2	3	

Table 2.4 - Pump #1 Test Summary

Pump #1 - Test Comments

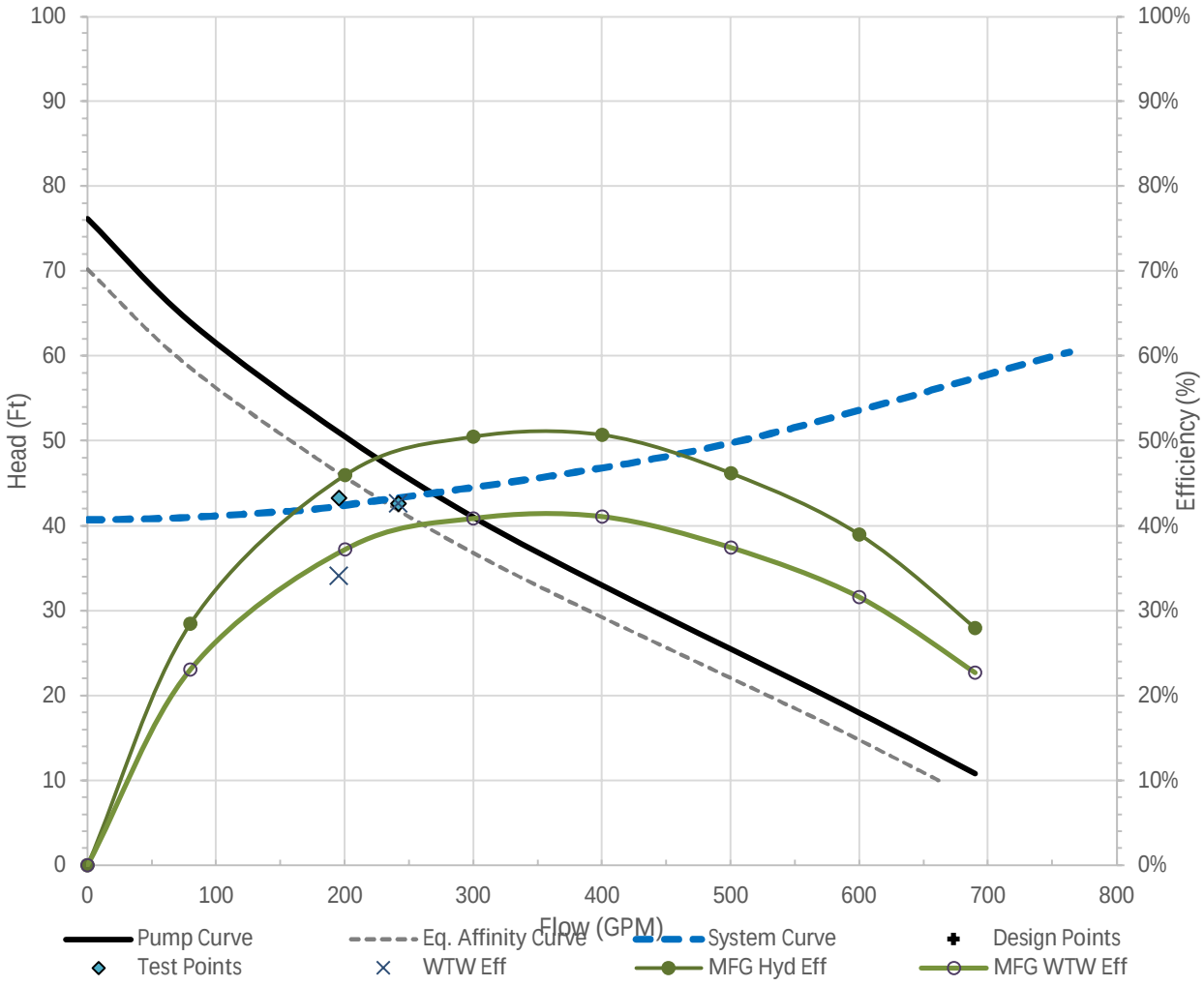
1. The pump is operating at 49% BEP flow.
2. The pump is operating at a 90% equivalent affinity curve meaning significant impeller/volute wear has occurred.
3. WTW efficiency is significantly below the recommended lower limit. This indicates significant pump and/or motor wear.

2.2 PUMP #2

Below is a summary of the pump characteristics and performance test results.

Parameter	Units	Value
Pump Manufacturer	-	Flygt
Pump Model	-	CP 3127 HT 3~ 485
Pump Style	-	Submersible
Pump Impeller Dia	Inches	7.87
Pump Rated Capacity	GPM	-
Pump Rated Head	Ft	-
Pump ETM	Hours	734
Pump Flow @ BEP Design Curve	GPM	335
Pump Hyd Eff @ Design Pt	%	-
Pump WTW Eff @ Operating Pt	%	38%
Pump NPSHr @ Operating Pt	Ft	15
Motor Synchronous Speed	RPM	1800
Motor Rated Speed	RPM	1750
Motor No. Phases	No	3
Motor Starters	-	ATL
Motor Rated Voltage	Volts	230
Motor Rated Horsepower	HP	7.5
Motor Service Factor	-	1.15
Motor FLA	Amps	19.0
Mfg. Motor Eff. @ Operating Pt	%	81%
Mfg. Starter Eff. @ Operating Pt	%	100%

Table 2.5 - Pump #2 Design Characteristics



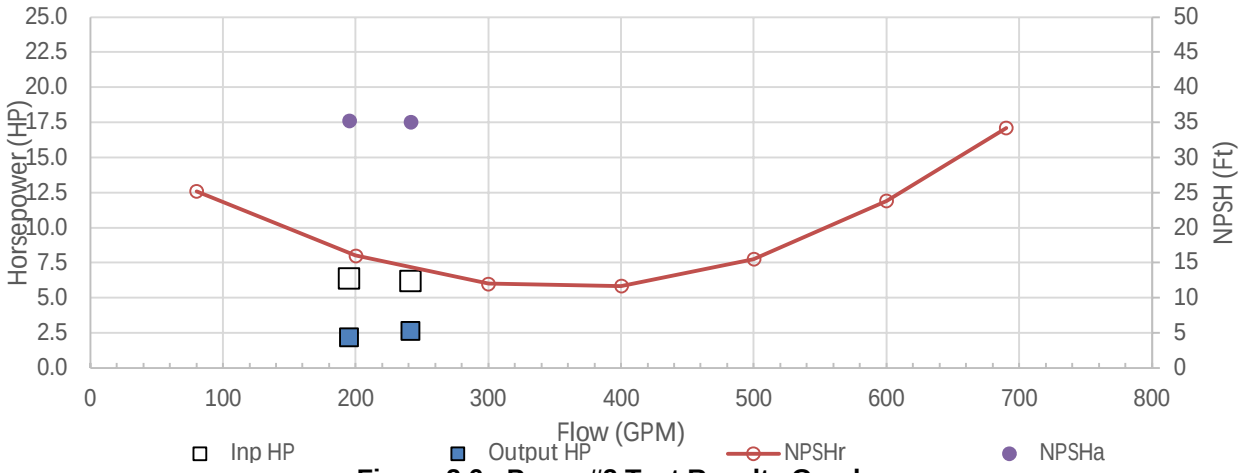


Figure 2.6 - Pump #2 Test Results Graphs

	Parameter	Units	Lower Limit	Test Value	Upper Limit	Comment
Measured	Average Output (FSFO)	GPM	-	218	-	
	Average TDH (FSFO)	Ft	-	43.0	-	
	Average WTW Efficiency (FSFO)	%	-	38%	-	
	Average Input HP (FSFO)	HP	-	6.2	-	
	Average Current Draw (FSFO)	Amps	-	14.2	-	
	Suction Velocity (FSFO)	FPS	2	-	7	
	Discharge Velocity (FSFO)	FPS	2	4.8	7	
	BEP Comparison (FSFO)	%	80%	65%	115%	1
	Average Output (FSFO)	%	90%	-	110%	
	Affinity Law Eq. Curve	%	-5%	-4.0%	5%	
	NPSHa	Ft	15	35.2	N/A	
	WTW Eff @ Operating Pt	%	-5%	1%	5%	
	Input Frequency	Hz	-5%	0%	5%	
	Input Voltage (L-L)	%	-10%	-6.2%	10%	
	Voltage Drop	%	-15%	2.5%	N/A	
	Voltage Imbalance	%	-10%	1.9%	10%	
	Current Imbalance	%	-10%	10.3%	10%	2
	Motor FLA	%	-50%	74.8%	105%	
	Motor Load	%	50%	83.3%	115%	
	Motor Slip Speed	%	1740	1750.0	1810	
	Vibration	In/Sec	0	0.0	-	
Observed	Surge	1-5	-	2	3	
	Vibration	1-5	-	1	3	
	Cavitation	1-5	-	1	3	
	Mechanical Noise	1-5	-	2	3	
	Leaks	1-5	-	1	3	
	Exterior Condition	1-5	-	2	3	
	Overall Score	1-5	-	2	3	

Table 2.7 - Pump #2 Test Summary

Pump #2 - Test Comments

1. The pump is operating at 65% BEP flow.
2. Current imbalance is above the recommended upper limit. Motor MTBF is reduced when operating in this range. Monitor for increasing imbalance and consider refurbishing or replacing the motor. Consider further evaluation to include regular 3-phase amperage checks, mega-ohm tests, and pump output checks.

2.3 HYDRAULICS SUMMARY

The measured system curve is shifted up significantly from the design curve. This indicates the system has increased head loss. This increase in head loss may be a result of a reduced C factor or a reduced inside diameter of the force main from years in service.

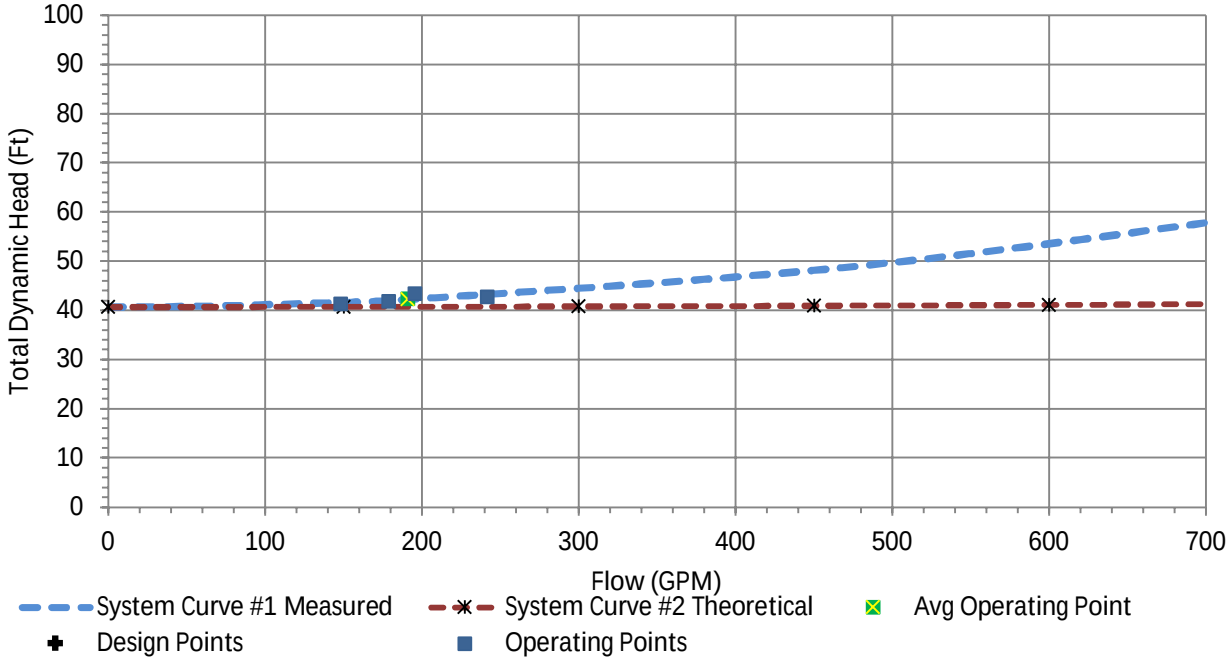


Figure 2.8 – System Hydraulic Information provides a graph of the system characteristics and a table describing the system curves. Length, Hazen-Williams (Hz-Wm), and diameter are approximated based on the best available information and fit to the data. System Curve Characteristics are intended to be for reference.

System Curve Characteristics					
Curve Name	**Curve Type**	**Length (Ft)**	**Hz-Wm**	**Diameter (In)**	**Calculated Based On**
System Curve #1	Measured				Test Data
System Curve #2	Theoretical				Available GIS Data

Figure 2.8 – System Hydraulic Information

2.4 PIPELINE PERFORMANCE INDICATORS

Figure 2.9 – Pipe Velocities displays the velocities in each known diameter of the pressurized conveyance system. The Average Test Output Velocity represents the velocity generated by the average pumping rate produced by testing. The Station Firm Capacity Velocity represents the velocity based on the station's firm capacity (output with the largest pump out of service). The color gradient represents ranges of acceptable to problematic velocities. Red areas of operation are problematic and green areas of operation are acceptable.

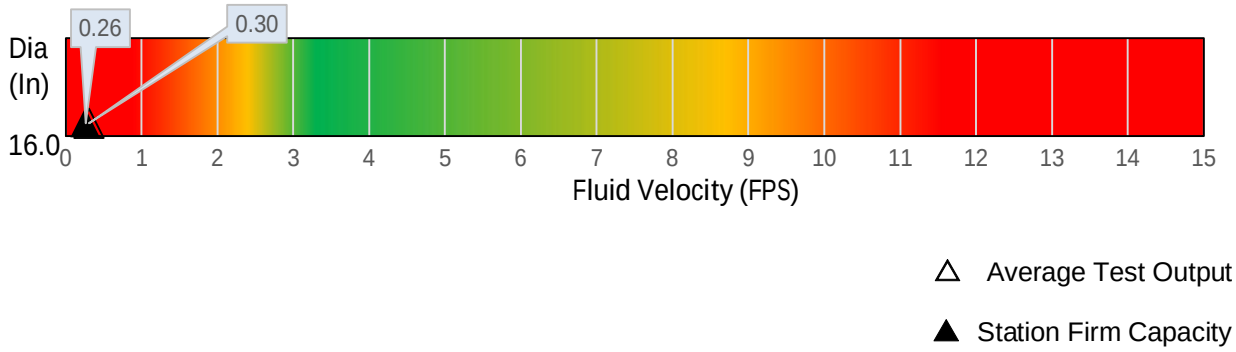


Figure 2.9 – Pipe Velocities

The maximum observed pressure at the station during the testing period is provided below in **Figure 2.10 - Maximum Observed Pressure**. System pressure capabilities vary depending upon pipe material type, pressure rating, elevation, age, condition, etc. This performance indicator is provided for reference only and is not a condition assessment of the pipeline. For systems with pressures above approximately 100 PSI, consider a more detailed analysis. See the **Attachment 1 - Graph B** for additional pressure data.

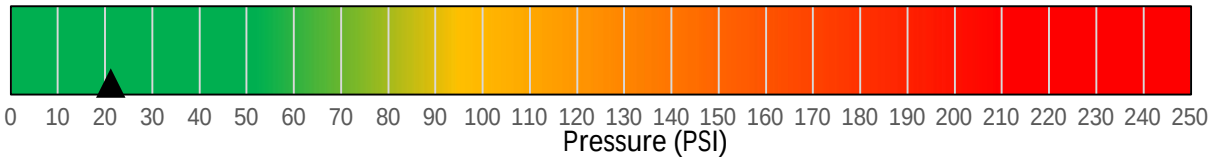


Figure 2.10 - Maximum Observed Pressure

2.5 SYSTEM PRESSURES

Figure 2.11 - Pressure Cycle shows a typical single-pump pressure cycle measured during testing. The pressure data captured for this test is limited to 2-second intervals which may not have captured the entire range of actual pressures. The complete log of pressure readings is provided in **Attachment 1 – Test Data Graphs**. For more accurate surge data, a surge monitoring device should be used to capture pressure at shorter time intervals over a longer period of time. **Table 2.12 - Further Surge-Related Actions** provides a list of recommended surge-related actions.

The pressure transducer used for measuring pressures has a range of 0 to 200 PSI. Pump startup produced an upsurge of approximately 21 PSI. Upon pump shut down, the observed minimum pressure was approximately 0 PSI and the maximum pressure was approximately 13 PSI creating a total observed pressure range of 21 PSI. It is likely that the minimum pressure produced on each pump shut down cycle was less than 0 PSI.

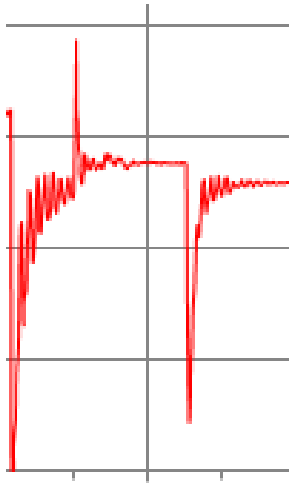


Figure 2.11 - Pressure Cycle

Further Surge Related Actions:	
	Perform extended period digital surge monitoring
	Perform calibrated surge modeling
	Revise operating scheme to reduce surge potential
	Evaluate piping system for pressure capacity and likelihood of failure
	Install physical surge mitigation strategies
✓	No further action

Table 2.12 - Further Surge-Related Actions

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3 RECOMMENDATIONS

The following recommendations are a result of the findings of this evaluation and should be considered for implementation. See **Section 2 Pump Performance Tests** for pump specific recommendations. In addition to the recommendations below, this site should/ be considered for the following overall planning and budgeting activities.

3.1 OVERALL RECOMMENDATIONS

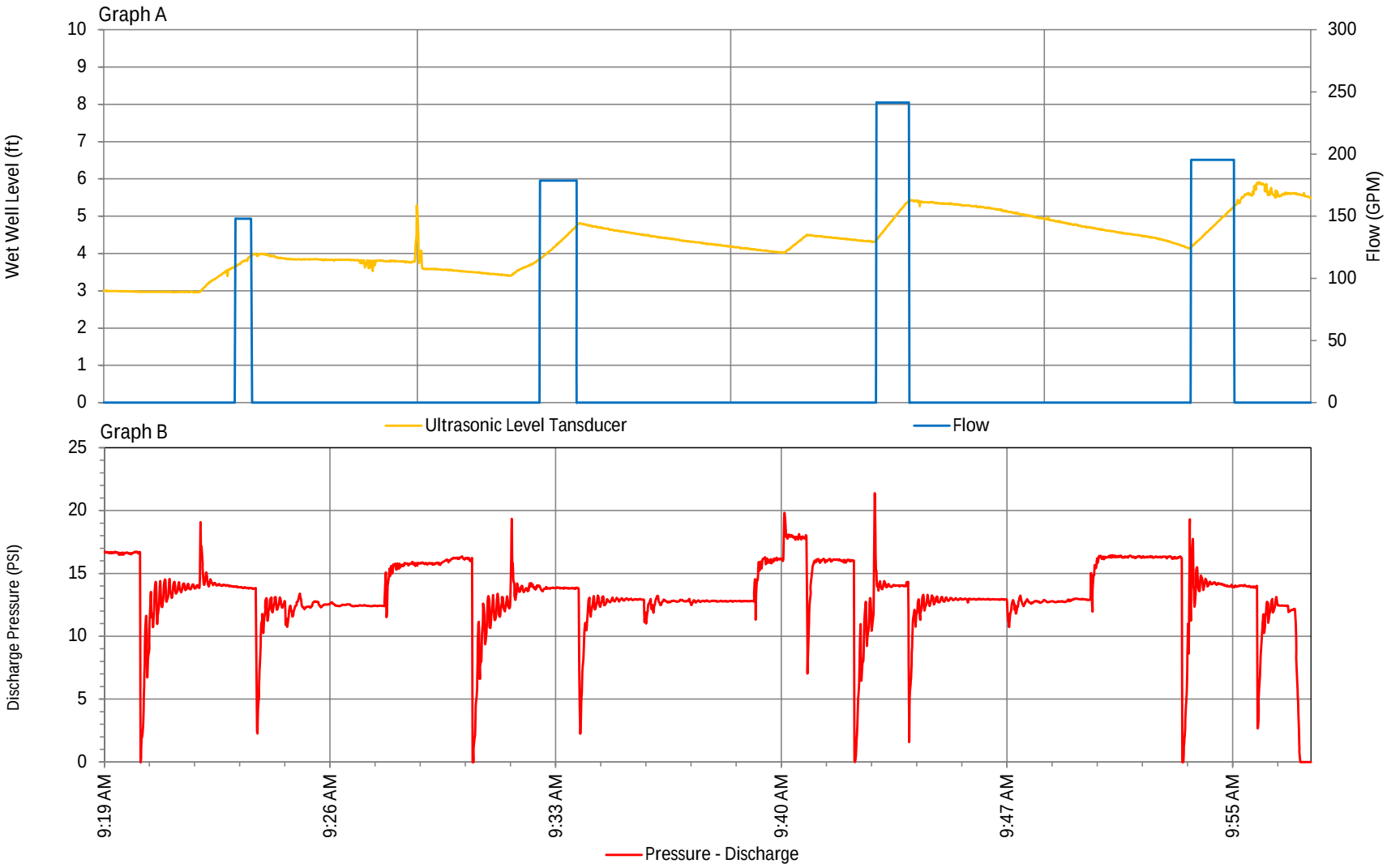
Overall Site Rating	Score	Description
	1	No recommendations currently. Monitor station for worsening conditions, perform regular O&M, reassess condition in 2-5 years.
	2	Complete recommendations listed in Section 3.2, monitor station for worsening conditions, perform regular O&M, reassess condition in 1-3 years.
	3	Station requires improvements beyond replacement of individual components. Begin planning and budgeting for a major rehabilitation. Place under regular observation until rehabilitation is complete.
	4	Station does not appear to be brought into conformance with standards without replacement. Begin planning and budgeting for a station replacement. Place under regular observation until rehabilitation is complete.

3.2 MISCELLANEOUS RECOMMENDATIONS

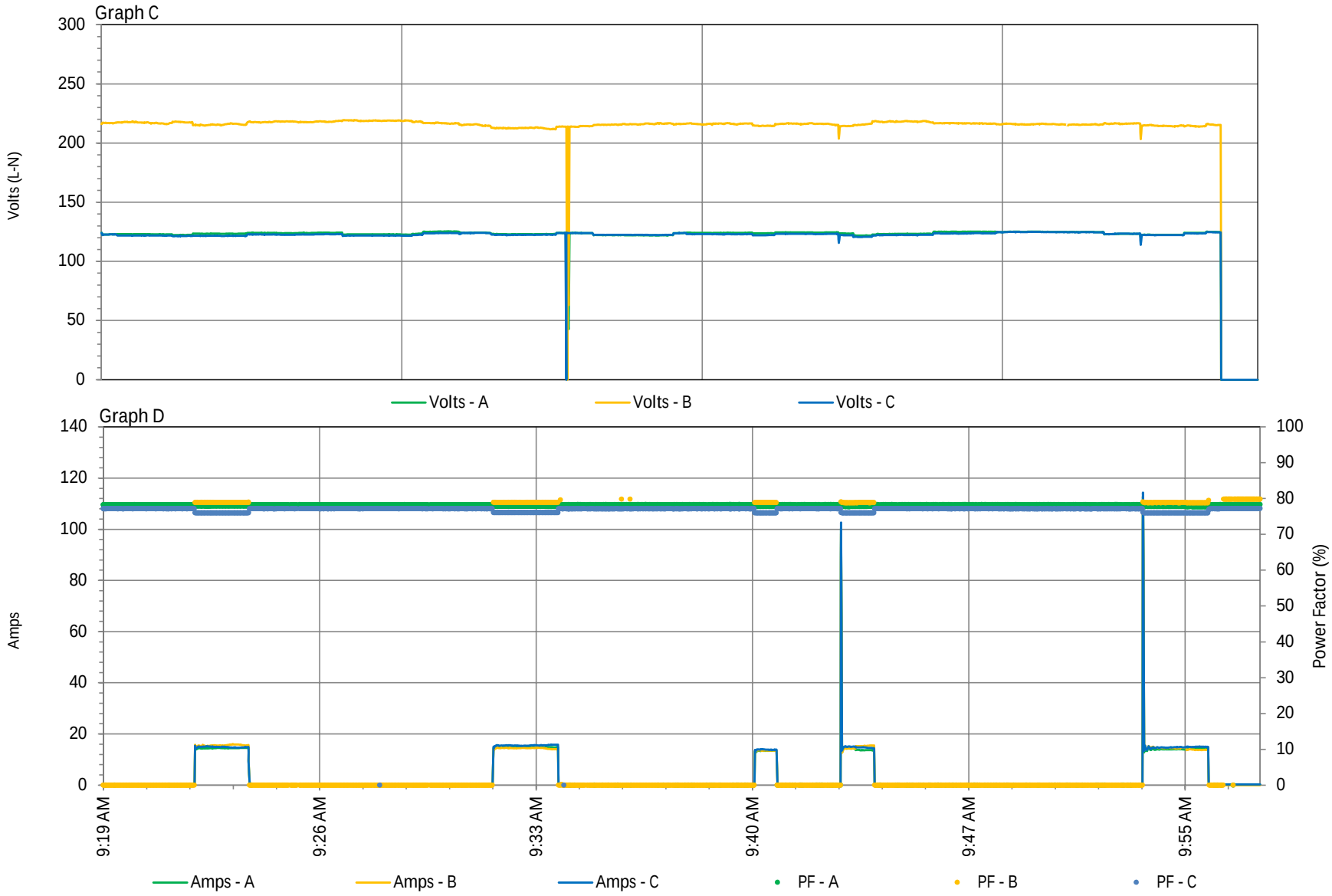
Pumps – Both pumps are operating on reduced pump curves with pump 1 showing significant signs of wear. We recommend replacing worn components such as the impeller, the volute, and the wear rings.

4 ATTACHMENTS

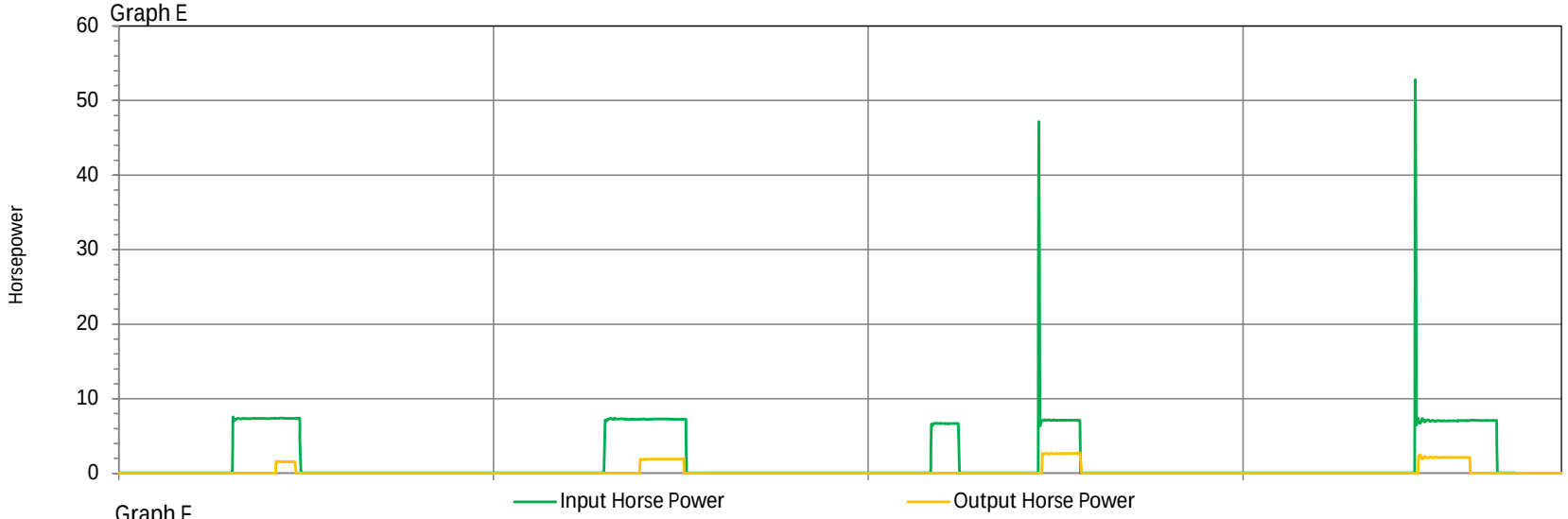
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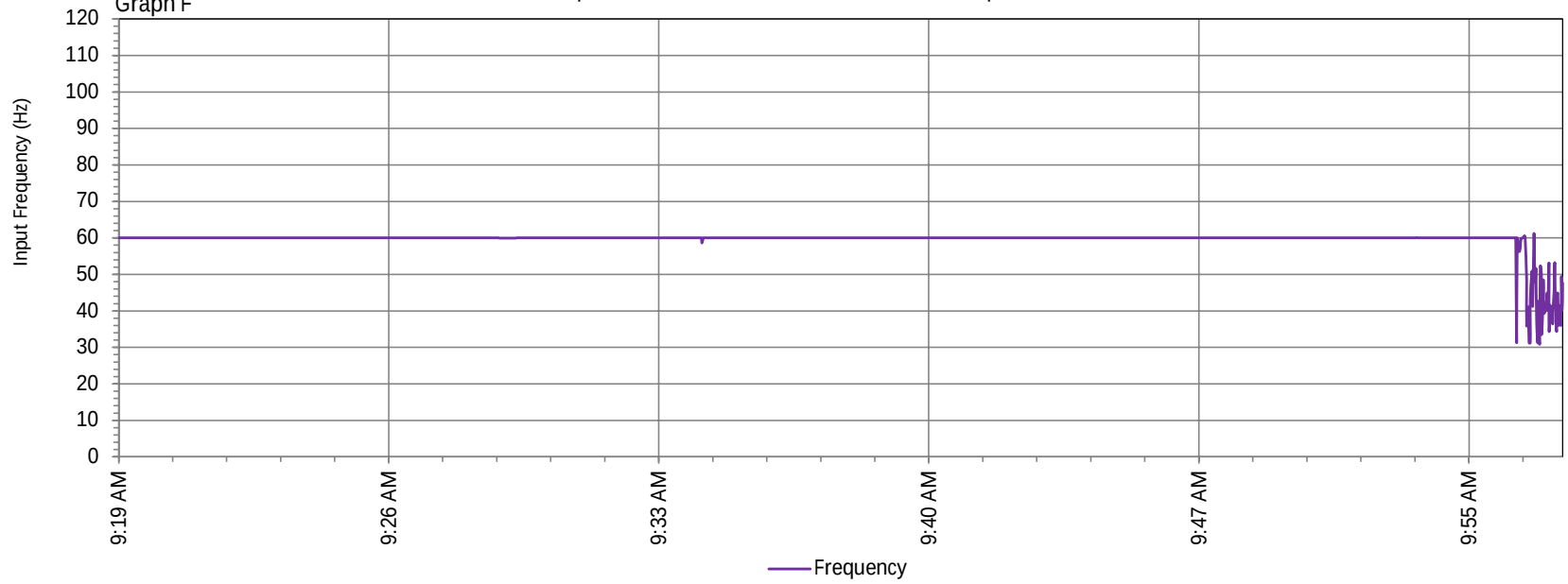
* Times shown are Eastern Standard Time


Graph C
Volts (L-N)
300
250
200
150
100
50
0
Volts - A
Volts - B
Volts - C
Graph D
Amps
140
120
100
80
60
40
20
0
Power Factor (%)
100
90
80
70
60
50
40
30
20
10
0
9:19 AM
9:26 AM
9:33 AM
9:40 AM
9:47 AM
9:55 AM
Amps - A
Amps - B
Amps - C
PF - A
PF - B
PF - C

Graph E



Graph F

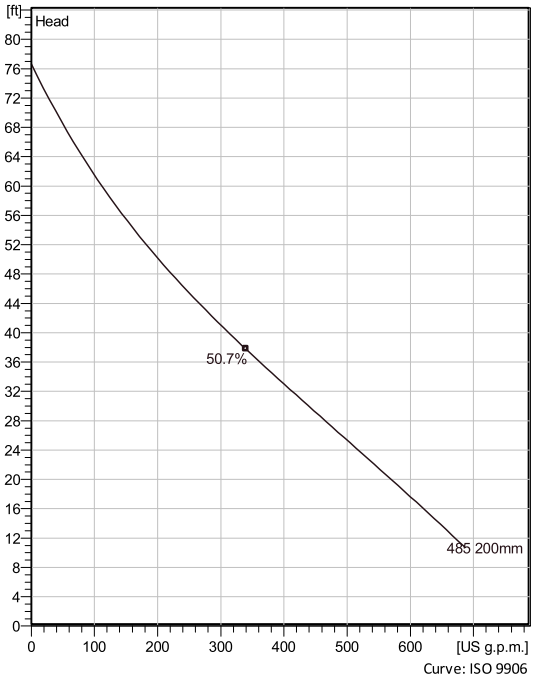


CP 3127 HT 3~ 485

FLYGT
a xylem brand

Technical specification

Curves according to: Water, pure Water, pure [100%], 39.2 °F, 62.43 lb/ft³, 1.6889E-5 ft²/s



Curve: ISO 9906

Nominal (mean) data shown. Under- and over-performance from this data should be expected due to standard manufacturing tolerances.
Please consult your local Flygt representative for performance guarantees.

Configuration

Motor number
C3127.182 21-10-4AL-W 7.5hp

Installation type
P - Semi permanent, Wet

Impeller diameter
200 mm

Discharge diameter
4 inch

Pump information

Impeller diameter
200 mm

Discharge diameter
4 inch

Inlet diameter
100 mm

Maximum operating speed
1750 rpm

Number of blades
1

Throughlet diameter
3 inch

Max. fluid temperature
40 °C

Material

Impeller
Grey cast iron

Stator housing material
Grey cast iron

Project	Xylect-21982745	**Created by**	Robert Simcox		
Block		**Created on**	3/12/2024	**Last update**	3/12/2024

CP 3127 HT 3~ 485

Technical specification

Motor - General

Motor number C3127.182 21-10-4AL-W 7.5hp	**Phases** 3~	**Rated speed** 1750 rpm	**Rated power** 7.5 hp
ATEX approved No	**Number of poles** 4	**Rated current** 19 A	**Stator variant** 12
Frequency 60 Hz	**Rated voltage** 230 V	**Insulation class** H	**Type of Duty** S1
Version code 182			

Motor - Technical

Power factor - 1/1 Load 0.85	**Motor efficiency - 1/1 Load** 86.3 %	**Total moment of inertia** 2.16 lb ft²	**Starts per hour max.** 30
Power factor - 3/4 Load 0.81	**Motor efficiency - 3/4 Load** 87.6 %	**Starting current, direct starting** 115 A	
Power factor - 1/2 Load 0.72	**Motor efficiency - 1/2 Load** 87.4 %	**Starting current, star-delta** 38.3 A	

Project	Xylect-21982745	**Created by**	Robert Simcox		
Block		**Created on**	3/12/2024	**Last update**	3/12/2024

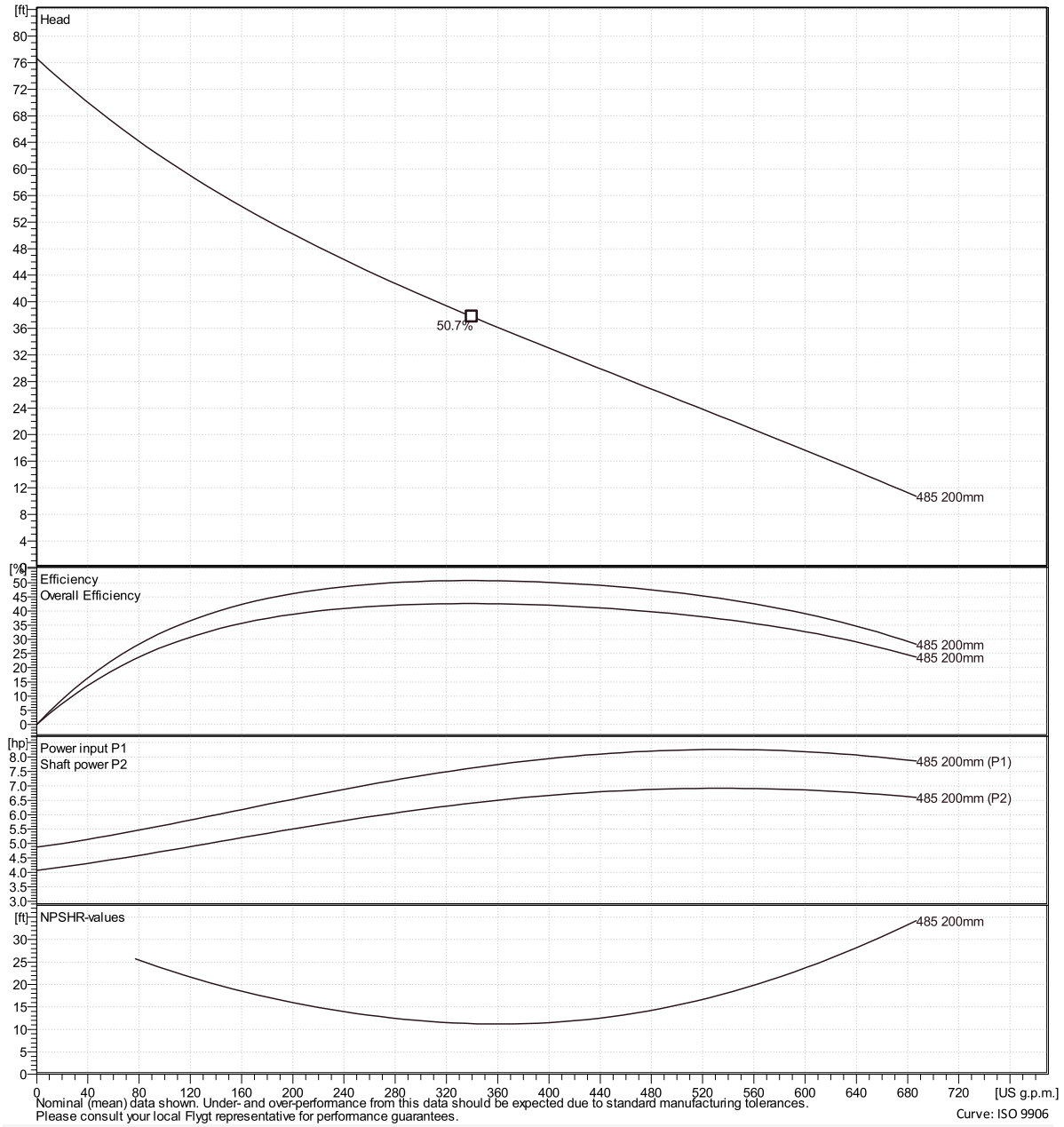
CP 3127 HT 3~ 485

Performance curve

Duty point

Flow	Head

Curves according to: Water, pure Water, pure [100%],39.2 °F,62.43 lb/ft³,1.6889E-5 ft²/s



Nominal (mean) data shown. Under- and over-performance from this data should be expected due to standard manufacturing tolerances.
Please consult your local Flygt representative for performance guarantees.

Curve: ISO 9906

Xylect-21982745		Robert Simcox	
Created on	3/12/2024	**Last update**	3/12/2024

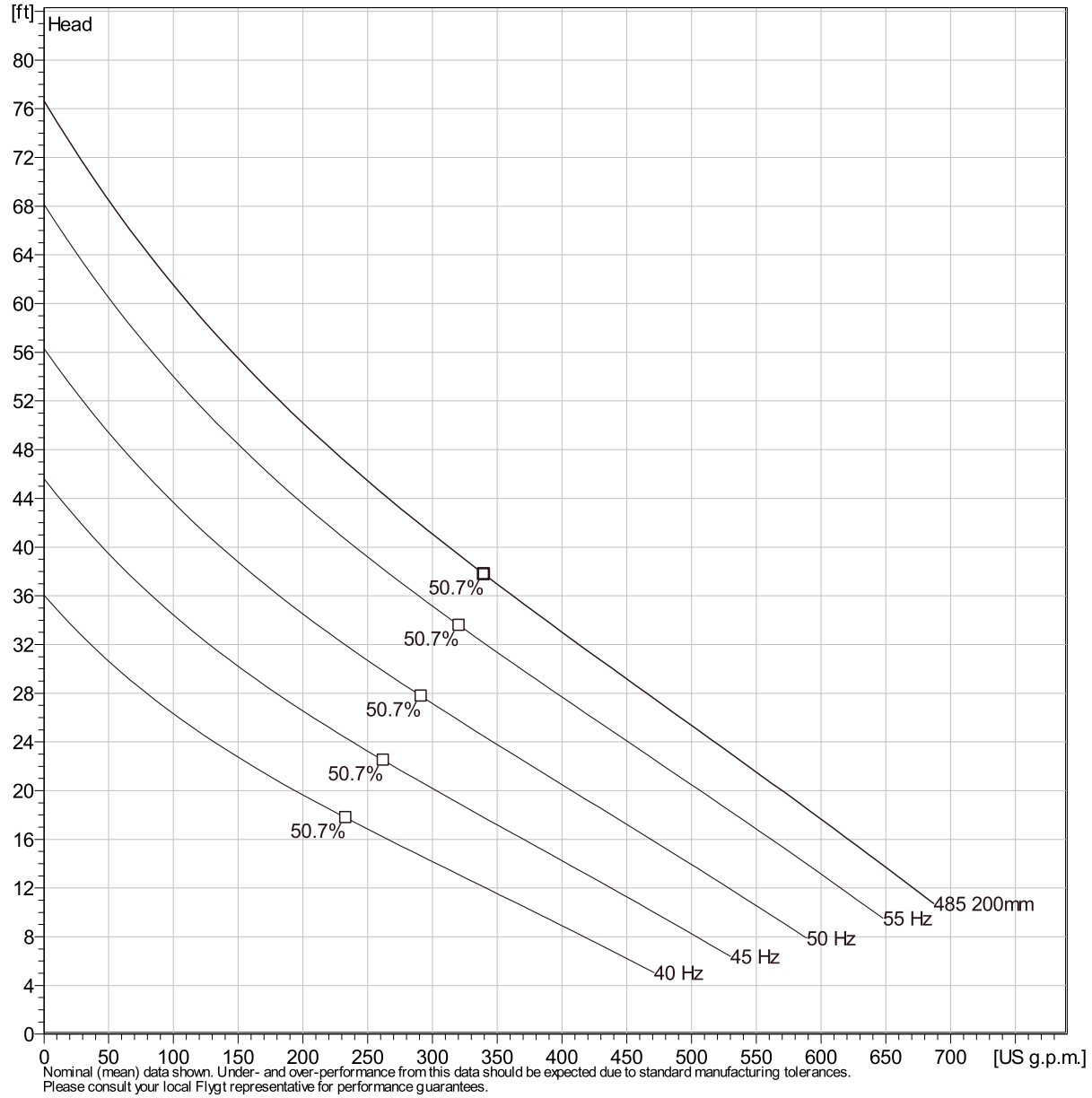
Program version	Data version	User group(s)
72.0 - 2/20/2024 (Build 175)	3/5/2024 10:29 A3P3	Xylem: USA - EXT, USA - INT

CP 3127 HT 3~ 485

Duty Analysis

FLYGT a xylem brand

Curves according to: Water, pure [100%] ; 39.2°F; 62.43lb/ft³; 1.6889E-5ft²/s



Nominal (mean) data shown. Under- and over-performance from this data should be expected due to standard manufacturing tolerances.
Please consult your local Flygt representative for performance guarantees.

Operating characteristics

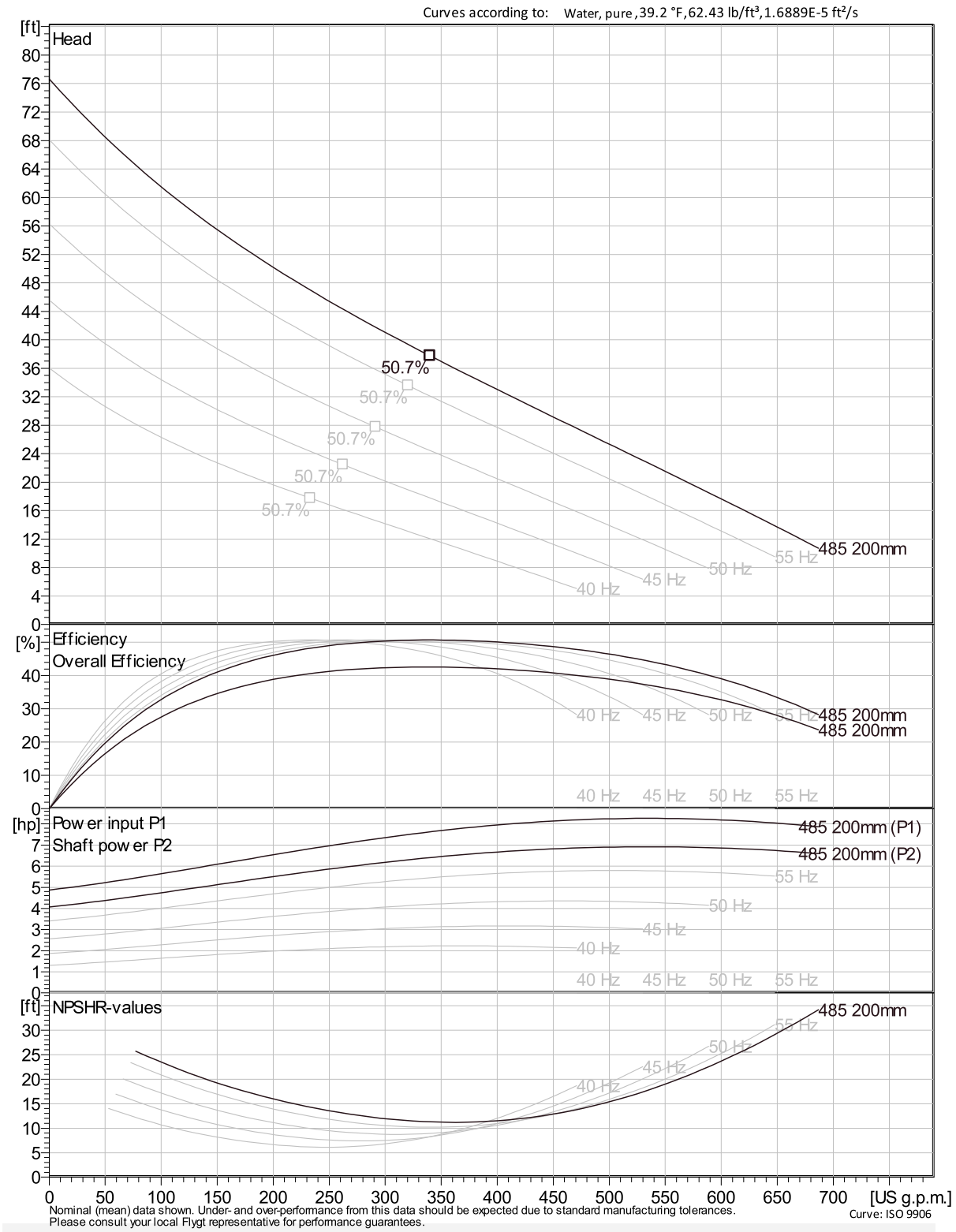
Pumps / Systems	Flow	Head	Shaft power	Flow	Head	Shaft power	Hydr.eff.	Spec. Energy	NPSHre
	US g.p.m.	ft	hp	US g.p.m.	ft	hp		kWh/US MG	ft

Project		**Created by**	Robert Simcox		
Block	Xylect-21982745	**Created on**	3/12/2024	**Last update**	3/12/2024

CP 3127 HT 3~ 485

VFD Curve

FLYGT
a xylem brand



Nominal (mean) data shown. Under- and over-performance from this data should be expected due to standard manufacturing tolerances.
Please consult your local Flygt representative for performance guarantees.

Curve: ISO 9906

Project	Xylect-21982745	**Created by**	Robert Simcox		
Block		**Created on**	3/12/2024	**Last update**	3/12/2024

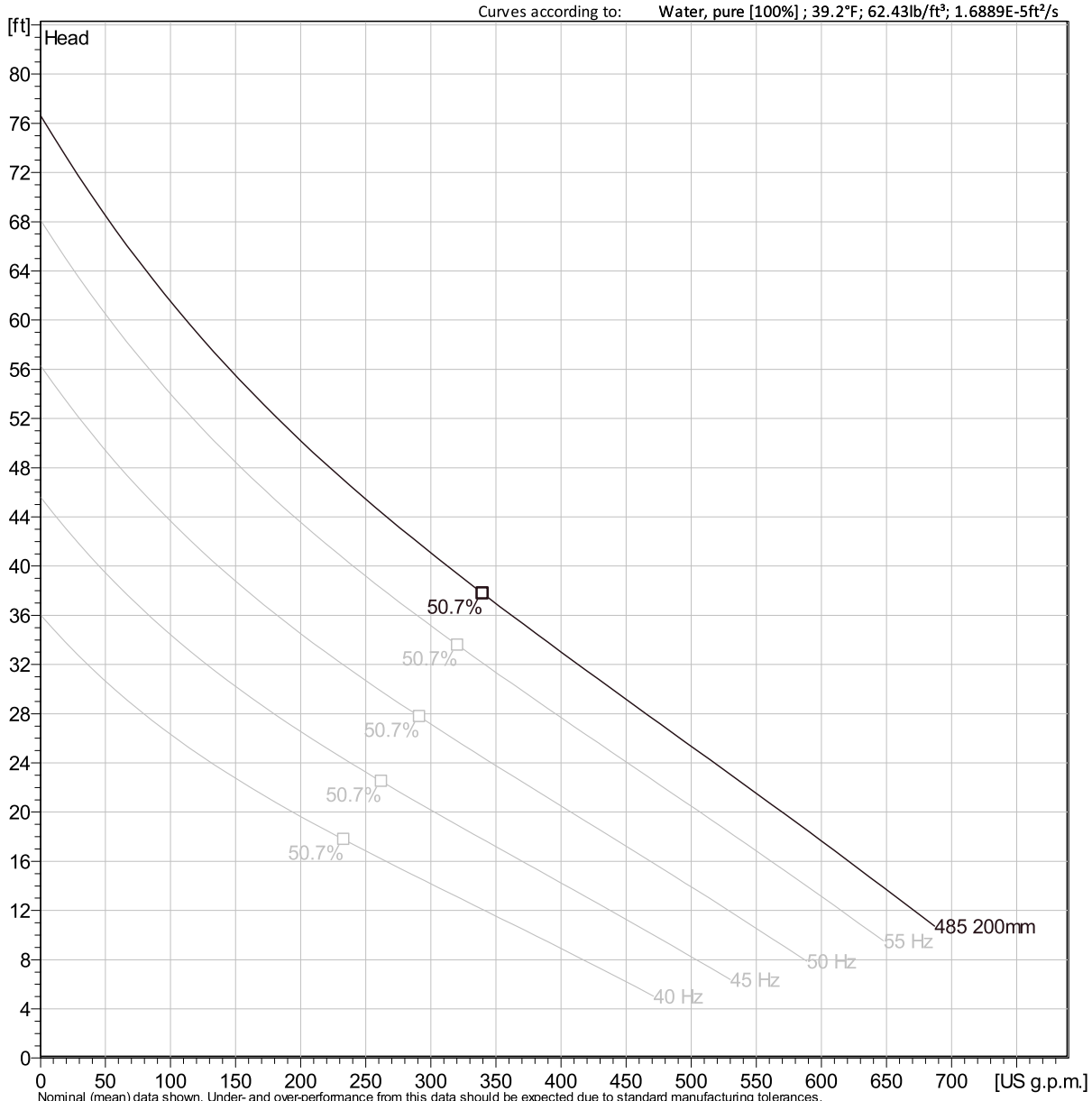
Program version	Data version	User group(s)
72.0 - 2/20/2024 (Build 175)	3/5/2024 10:29 A3P3	Xylem: USA - EXT, USA - INT

CP 3127 HT 3~ 485

VFD Analysis

FLYGT
a xylem brand

Curves according to: Water, pure [100%] ; 39.2°F; 62.43lb/ft³; 1.6889E-5ft²/s



Nominal (mean) data shown. Under- and over-performance from this data should be expected due to standard manufacturing tolerances.
Please consult your local Flygt representative for performance guarantees.

Operating Characteristics

Pumps / Systems	Frequency	Flow	Head	Shaft power	Flow	Head	Shaft power	Hydr.eff.	Specific energy	NPSHre
		US g.p.m.	ft	hp	US g.p.m.	ft	hp		kWh/US MG	ft

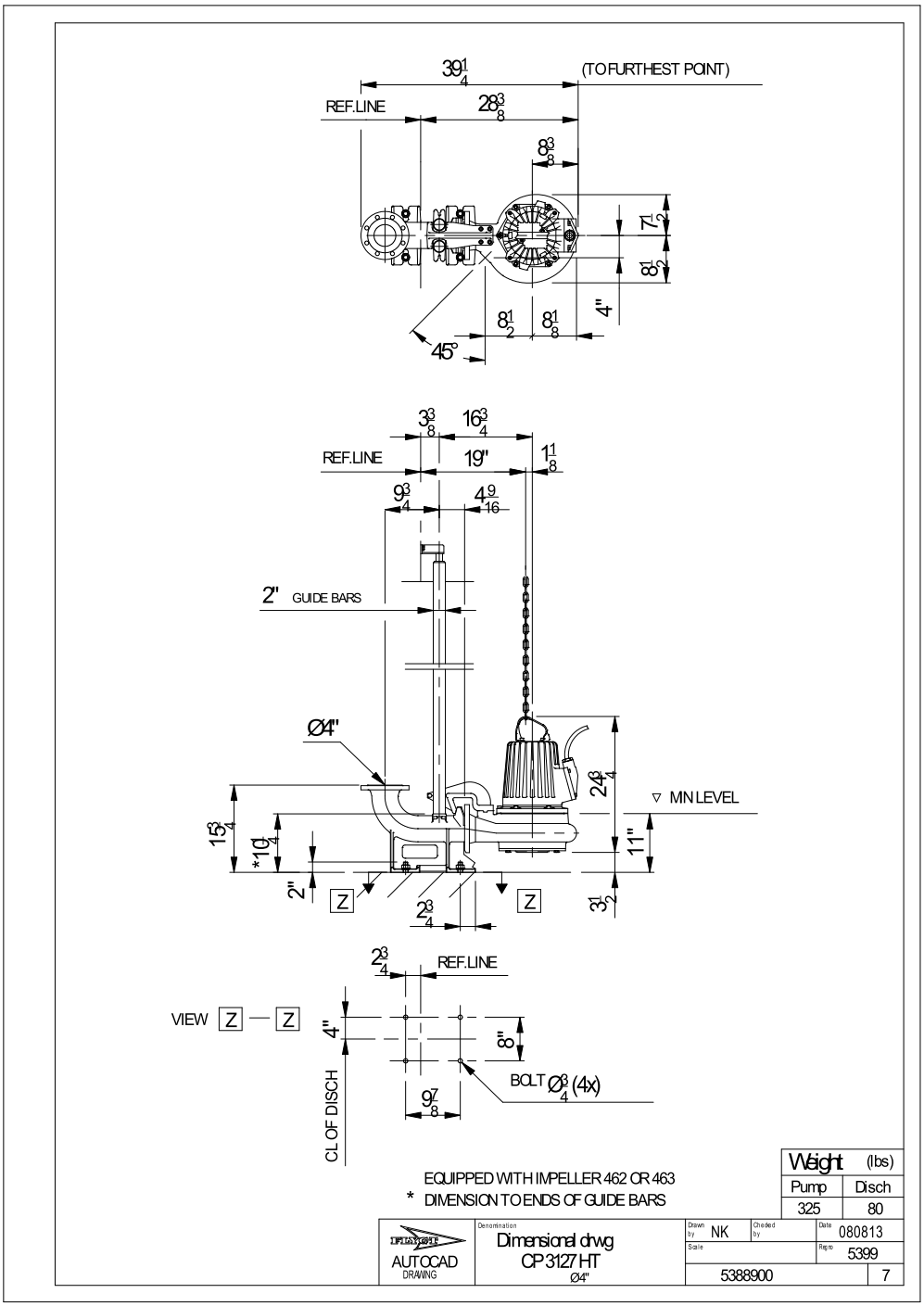
Project	Xylect-21982745	**Created by**	Robert Simcox		
Block		**Created on**	3/12/2024	**Last update**	3/12/2024

Program version	Data version	User group(s)
72.0 - 2/20/2024 (Build 175)	3/5/2024 10:29 A3P3	Xylem: USA - EXT, USA - INT

CP 3127 HT 3~ 485

Dimensional drawing

FLYGT
a xylem brand



Project	Xylect-21982745	**Created by**	Robert Simcox		
Block		**Created on**	3/12/2024	**Last update**	3/12/2024

Pump Station Evaluation Report

35 - Lakeside Landing

Prepared For:

City of Wildwood

Evaluation Date:

February 5, 2024

Report Date:

September 26, 2024

Version 1

Kimley»Horn

Version	Publish Date	Description
1	See Cover	Original/Version 1

Table 0.1 - Revision History

Version	Publish Date	Test Date	Description

Table 0.2 - Previous Evaluation History

This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn shall be without liability to Kimley-Horn.

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ATTACHMENTS

Attachment 1 ..... **Test Data Graphs**

Attachment 2 ..... **Supplementary Pump Information**

ABBREVIATIONS

Ø	Phase
AC	Alternating Current
ADD	Automated Draw Down
ADF	Average Daily Flow
ARR	Automated Rate of Rise
ATL	Across The Line
Avg	Average
BEP	Best Efficiency Point
CL	Center Line
Disch	Discharge
ETM	Elapsed Time Meter
FLA	Full Load Amps
FM	Force Main
Ft	Feet
FPS	Feet Per Second
FSFO	Full Speed Full Open
Gal	Gallons
GPM	Gallons Per Minute
HGL	Hydraulic Grade Line
HP	Horsepower
Hrs	Hours
H:M:S	Hours:Minutes:Seconds
Hz	Hertz
In	Inches
InvIn	Invert In
KWH	Kilowatt-Hours
L	Length
L1, L2, L3	Leg 1, 2 & 3 or Length 1, 2 & 3
MSL	Mean Sea Level
MTBF	Mean Time Between Failures
N	Neutral
P	Pump
PCL	Pump Center Line
PCP	Pump Control Panel
PF	Power Factor
PSI	Pounds Per Square Inch
PT	Point
RPM	Revolutions Per Minute
TDH	Total Dynamic Head
TVSS	Transient Voltage Surge Suppressor
V	Volts
VFD	Variable Frequency Drive
WTW	Wire To Water
WW	Wet Well
Yr	Year

1 INTRODUCTION

Kimley-Horn and Associates, Inc. evaluated the pump station through pump performance testing and a condition assessment. This report summarizes the data and results of that evaluation. The performance tests were conducted using the XAK-PACK pump performance monitoring device. The following pages provide summaries of the data collected and notes about the pumps' performance.

1.1 SITE INFORMATION

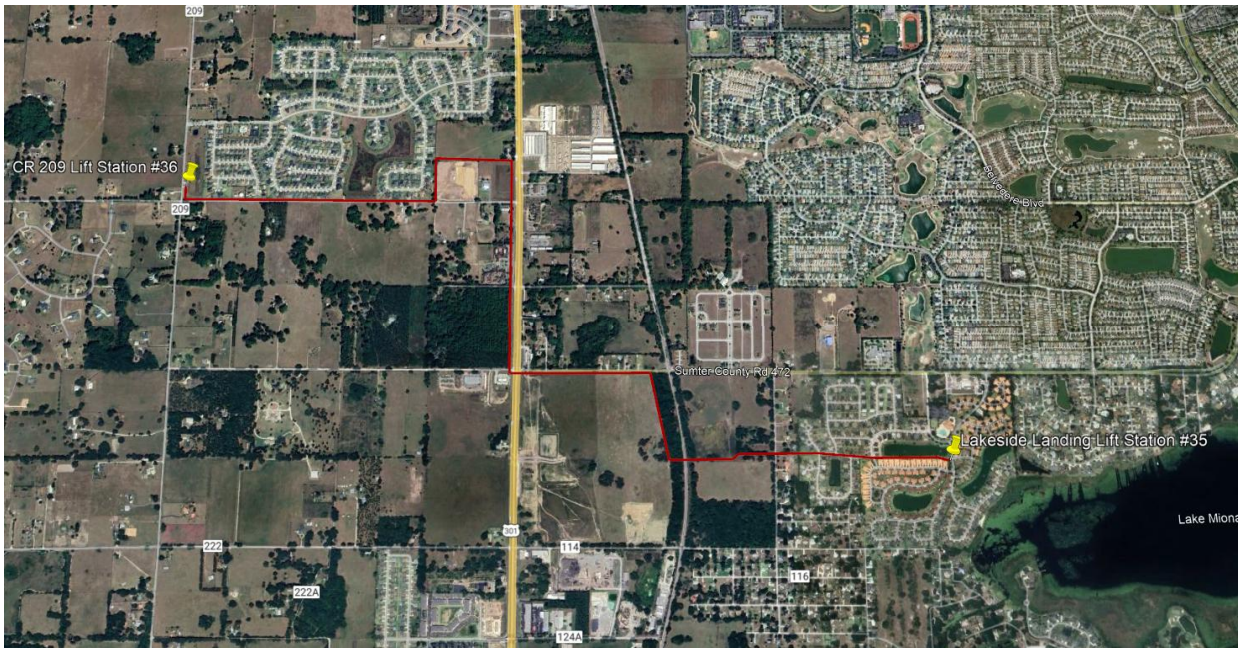
Lakeside Landing / Site #35			
Date of Evaluation	February 5, 2024		
Address	10401 Regatta Blvd, Oxford, FL 34484		
Coordinates	28°54'19.5"N 82°00'59.1"W		
Fluid Conveyed	Wastewater		
Station Style	Duplex Submersible		
Number of Pumps	2	Number of Pump Slots	2
Pump Type	Submersible		
Flow Meter Type	N/a		
Year of Construction	Unknown	Based on	☐Docs. ☐Estimation ☐Other
Basin/Zone	Unknown		
Firm Capacity (Design)	246 GPM / 0.35 MGD		
Firm Capacity (Test)	258 GPM / 0.37 MGD		
Discharge Description	8-inch discharge, manifolds with 12-inch, approximately 17,300 LF, discharging to CR209 Lift Station		
Electrical Service	120/240 Delta		
Site Generator	No onsite generator		
Bypass Ability	Bypass assembly in valve vault		
Miscellaneous Features			

Site Notes:

1.2 SITE MAP

Force Main

Figure 1.1 - Site Location Map



2 PUMP PERFORMANCE TESTS

Pump performance tests were conducted on the pumps utilizing the measurement tools detailed below. **Table 2.1 - Measurement Methods** describes the measurements taken during the test and the measurement method. Some measurements were confirmed utilizing a secondary measurement method. See **Attachment 1** for graphs of the digitally recorded data. For each test, note the following:

1. Common accuracies for measurements of flow, pressure, voltage and current are ±1%.
2. Friction loss is calculated using the Hazen-Williams formula and the Bernoulli equation. Piping characteristics are based on best available data.

Parameter	Measurement Method	
	Primary	Secondary
Flow	Level Transducer (XAK-PACK)	N/A
Pressure	Pressure Transducer (XAK-PACK)	Liquid Filled Pressure Gauge
Wet Well Level	Level Transducer (XAK-PACK)	N/A
Volts	Voltage Probes (XAK-PACK)	Fluke 376FC
Amps	Current Transducers (XAK-PACK)	Fluke 376FC
Power Factor	Power Factor Monitor (XAK-PACK)	N/A

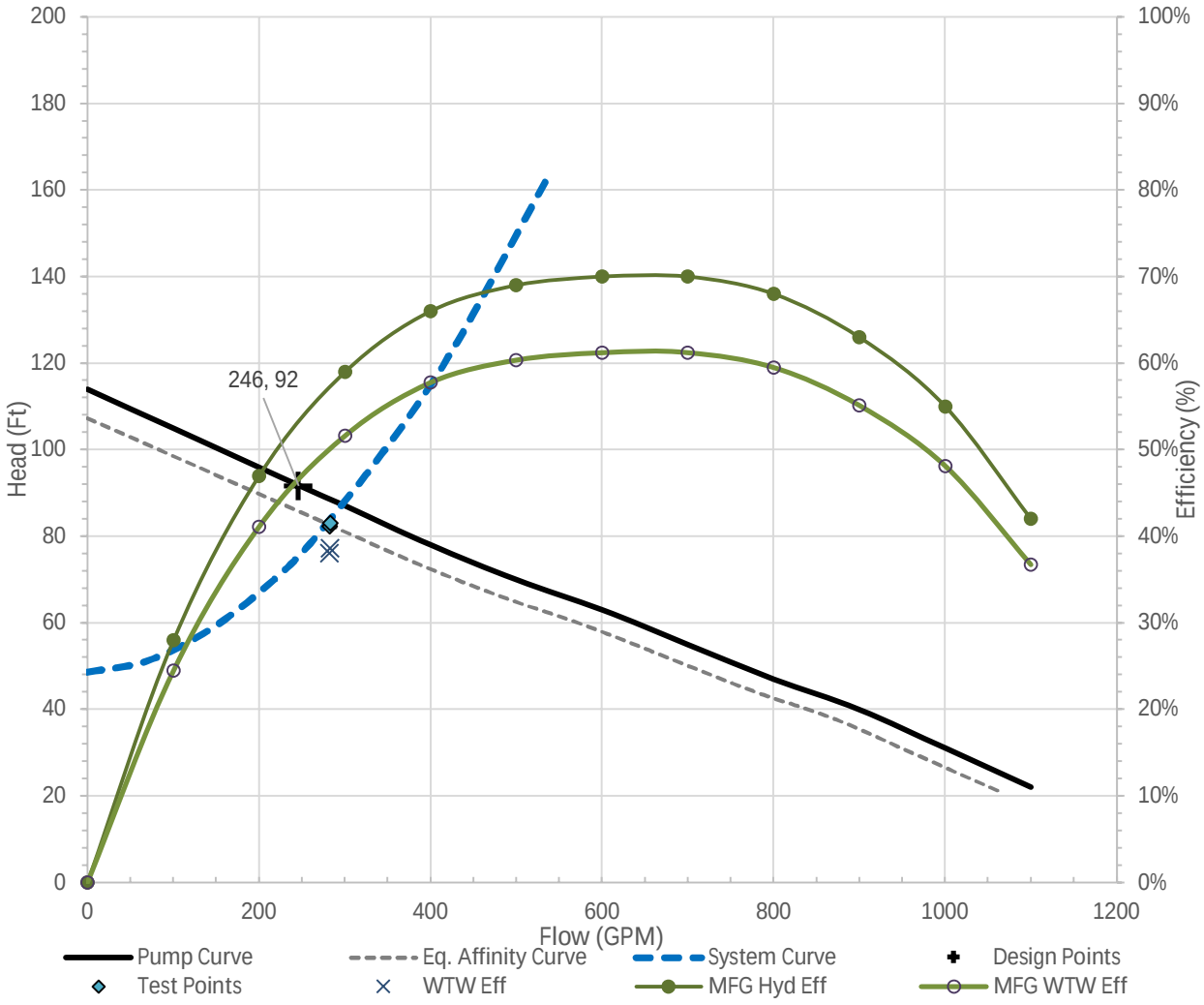
Table 2.1 - Measurement Methods

2.1 PUMP #1

Below is a summary of the pump characteristics and performance test results.

Parameter	Units	Value
Pump Manufacturer	-	Flygt
Pump Model	-	NP 3153 HT 3~ 464
Pump Style	-	Submersible
Pump Impeller Dia	Inches	3.9
Pump Rated Capacity	GPM	246
Pump Rated Head	Ft	92
Pump ETM	Hours	N/A
Pump Flow @ BEP Design Curve	GPM	588
Pump Hyd Eff @ Design Pt	%	70
Pump WTW Eff @ Operating Pt	%	50
Pump NPSHr @ Operating Pt	Ft	14
Motor Synchronous Speed	RPM	1800
Motor Rated Speed	RPM	1755
Motor No. Phases	No	3
Motor Starters	-	ATL
Motor Rated Voltage	Volts	230
Motor Rated Horsepower	HP	20
Motor Service Factor	-	1.15
Motor FLA	Amps	52
Mfg. Motor Eff. @ Operating Pt	%	87.5
Mfg. Starter Eff. @ Operating Pt	%	100

Table 2.2 - Pump #1 Design Characteristics



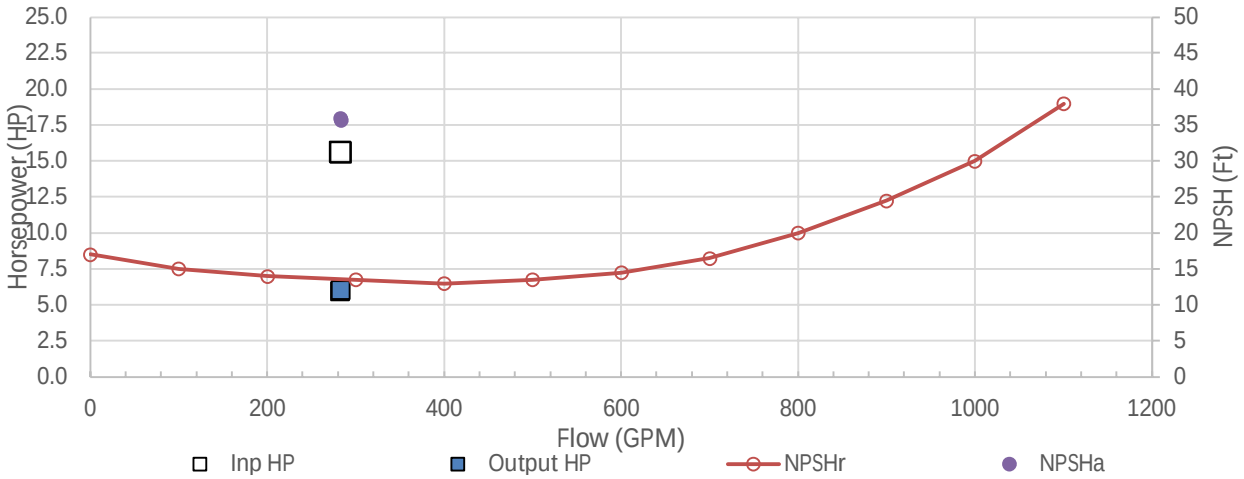


Figure 2.3 - Pump #1 Test Results Graphs

	Parameter	Units	Lower Limit	Test Value	Upper Limit	Comment
Measured	Average Output (FSFO)	GPM	-	283	-	
	Average TDH (FSFO)	Ft	-	82.7	-	
	Average WTW Efficiency (FSFO)	%	-	38%	-	
	Average Input HP (FSFO)	HP	-	15.6	-	
	Average Current Draw (FSFO)	Amps	-	35.8	-	
	Suction Velocity (FSFO)	FPS	2	-	7	
	Discharge Velocity (FSFO)	FPS	2	2.8	7	
	BEP Comparison (FSFO)	%	80%	48%	115%	1
	Average Output (FSFO)	%	90%	115%	110%	2
	Affinity Law Eq. Curve	%	-5%	-3.0%	5%	
	NPSHa	Ft	14	35.8	N/A	
	WTW Eff @ Operating Pt	%	-5%	-31%	5%	3
	Input Frequency	Hz	-5%	0%	5%	
	Input Voltage (L-L)	%	-10%	-4.9%	10%	
	Voltage Drop	%	-15%	1.0%	N/A	
	Voltage Imbalance	%	-10%	0.9%	10%	
	Current Imbalance	%	-10%	5.5%	10%	
	Motor FLA	%	-50%	68.9%	105%	
	Motor Load	%	50%	77.9%	115%	
	Motor Slip Speed	%	1746	1755.0	1809	
	Vibration	In/Sec	0	0.0	-	
Observed	Surge	1-5	-	2	3	
	Vibration	1-5	-	2	3	
	Cavitation	1-5	-	1	3	
	Mechanical Noise	1-5	-	2	3	
	Leaks	1-5	-	1	3	
	Exterior Condition	1-5	-	2	3	
	Overall Score	1-5	-	2	3	

Table 2.4 - Pump #1 Test Summary

Pump #1 - Test Comments

1) The pump is operating at 48% of BEP flow rate.
2) The pump output is 115% of the design flow rate.
3) WTW efficiency is significantly below the recommended lower limit. This indicates significant pump and/or motor wear.

2.2 PUMP #2

Below is a summary of the pump characteristics and performance test results.

Parameter	Units	Value
Pump Manufacturer	-	Flygt
Pump Model	-	NP 3153 HT 3~ 464
Pump Style	-	Submersible
Pump Impeller Dia	Inches	3.9
Pump Rated Capacity	GPM	246
Pump Rated Head	Ft	92
Pump ETM	Hours	N/A
Pump Flow @ BEP Design Curve	GPM	588
Pump Hyd Eff @ Design Pt	%	70
Pump WTW Eff @ Operating Pt	%	46
Pump NPSHr @ Operating Pt	Ft	14
Motor Synchronous Speed	RPM	1800
Motor Rated Speed	RPM	1755
Motor No. Phases	No	3
Motor Starters	-	ATL
Motor Rated Voltage	Volts	230
Motor Rated Horsepower	HP	20
Motor Service Factor	-	1.15
Motor FLA	Amps	52
Mfg. Motor Eff. @ Operating Pt	%	87.5
Mfg. Starter Eff. @ Operating Pt	%	100

Table 2.5 - Pump #2 Design Characteristics

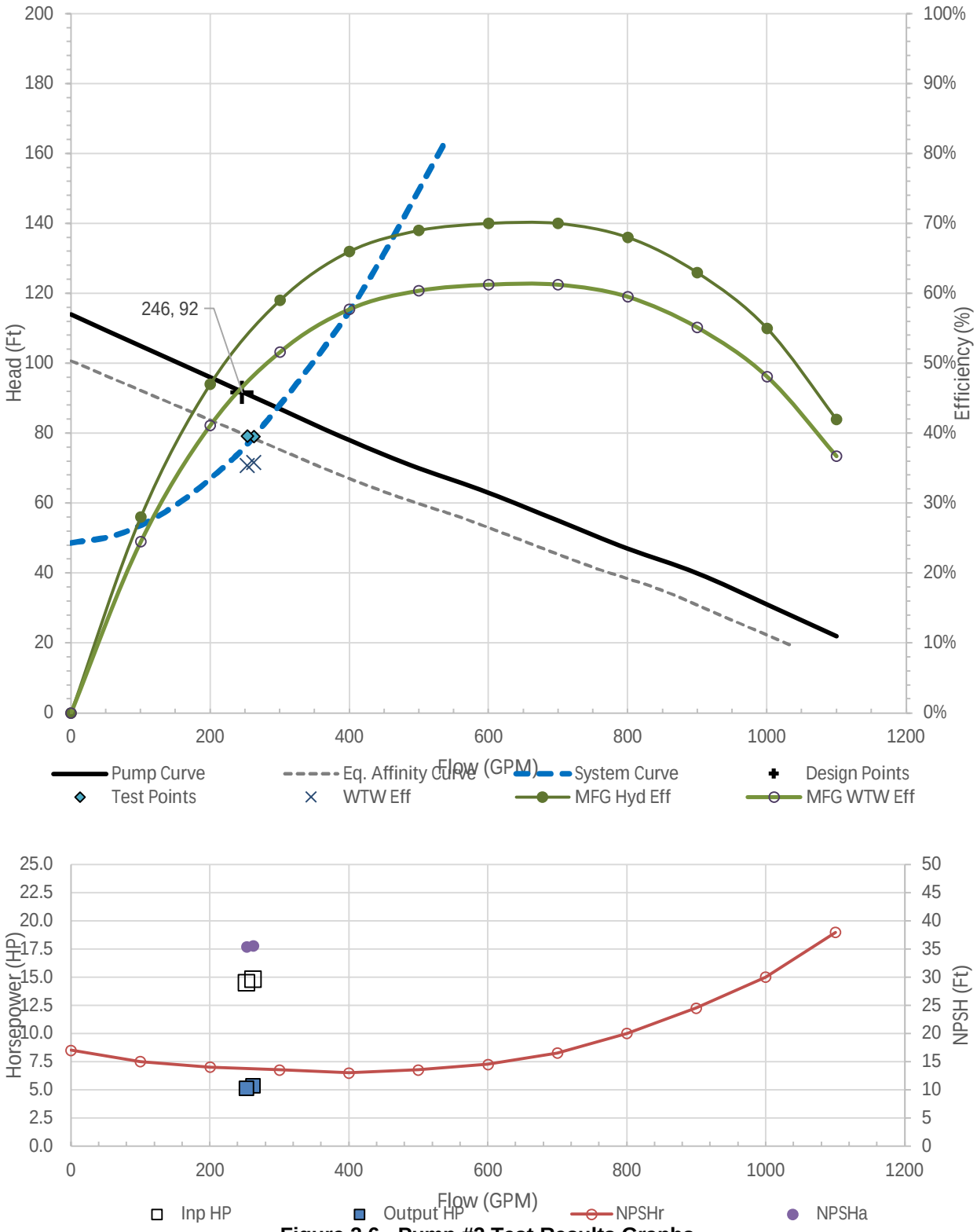


Figure 2.6 - Pump #2 Test Results Graphs

	Parameter	Units	Lower Limit	Test Value	Upper Limit	Comment
Measured	Average Output (FSFO)	GPM	-	258	-	
	Average TDH (FSFO)	Ft	-	79.1	-	
	Average WTW Efficiency (FSFO)	%	-	36%	-	
	Average Input HP (FSFO)	HP	-	14.6	-	
	Average Current Draw (FSFO)	Amps	-	35.0	-	
	Suction Velocity (FSFO)	FPS	2	-	7	
	Discharge Velocity (FSFO)	FPS	2	2.6	7	
	BEP Comparison (FSFO)	%	80%	44%	115%	1
	Average Output (FSFO)	%	90%	105%	110%	
	Affinity Law Eq. Curve	%	-5%	-6.0%	5%	2
	NPSHa	Ft	14	35.4	N/A	
	WTW Eff @ Operating Pt	%	-5%	-29%	5%	3
	Input Frequency	Hz	-5%	0%	5%	
	Input Voltage (L-L)	%	-10%	-1.0%	10%	
	Voltage Drop	%	-15%	1.0%	N/A	
	Voltage Imbalance	%	-10%	11.2%	10%	4
	Current Imbalance	%	-10%	7.3%	10%	
	Motor FLA	%	-50%	67.2%	105%	
	Motor Load	%	50%	73.1%	115%	
	Motor Slip Speed	%	1746	1755.0	1809	
	Vibration	In/Sec	0	0.0	-	
Observed	Surge	1-5	-	2	3	
	Vibration	1-5	-	2	3	
	Cavitation	1-5	-	1	3	
	Mechanical Noise	1-5	-	2	3	
	Leaks	1-5	-	1	3	
	Exterior Condition	1-5	-	2	3	
	Overall Score	1-5	-	2	3	

Table 2.7 - Pump #2 Test Summary

Pump #2 - Test Comments

1) The pump is operating at 44% of BEP flow rate.
2) The pump is operating at 94% equivalent affinity curve meaning significant impeller/volute wear has occurred.
3) WTW efficiency is significantly below the recommended lower limit. This indicates significant pump and/or motor wear.
4) Voltage imbalance is above the recommended upper limit. Voltage imbalance can lead to imbalanced loading in motor windings. Review electrical system loads for potential causes and consult the electrical provider.

2.3 HYDRAULICS SUMMARY

The system is operating with less head loss than anticipated by the design engineer. This results in a higher pump output than the design point. The design point appears to have been calculated using an overly conservative friction loss coefficient and/or reduced inside diameter of the force main.

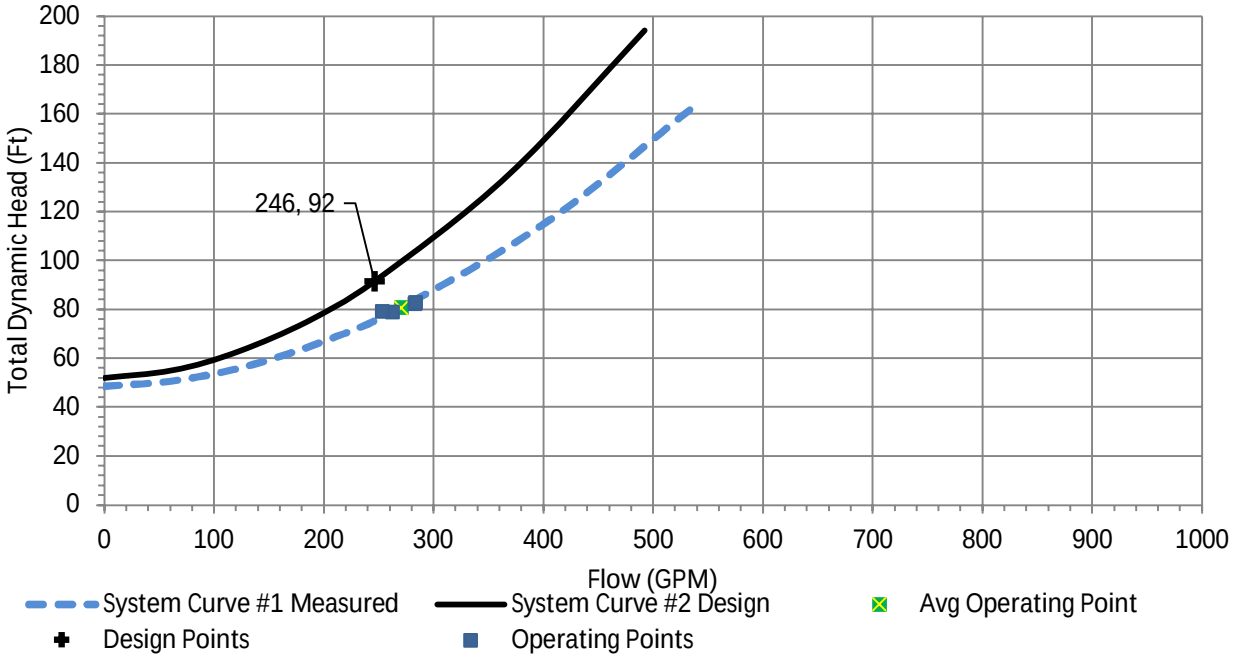


Figure 2.8 – System Hydraulic Information provides a graph of the system characteristics and a table describing the system curves. Length, Hazen-Williams (Hz-Wm), and diameter are approximated based on the best available information and fit to the data. System Curve Characteristics are intended to be for reference.

System Curve Characteristics					
Curve Name	**Curve Type**	**Length (Ft)**	**Hz-Wm**	**Diameter (In)**	**Calculated Based On**
System Curve #1	Measured	17,300	115	8.1	Test Data
System Curve #2	Design	17,300	115	7.5	Design Operating Condition

Figure 2.8 – System Hydraulic Information

2.4 PIPELINE PERFORMANCE INDICATORS

Figure 2.9 – Pipe Velocities displays the velocities in each known diameter of the pressurized conveyance system. The Average Test Output Velocity represents the velocity generated by the average pumping rate produced by testing. The Station Firm Capacity Velocity represents the velocity based on the station's firm capacity (output with the largest pump out of service). The color gradient represents ranges of acceptable to problematic velocities. Red areas of operation are problematic and green areas of operation are acceptable.

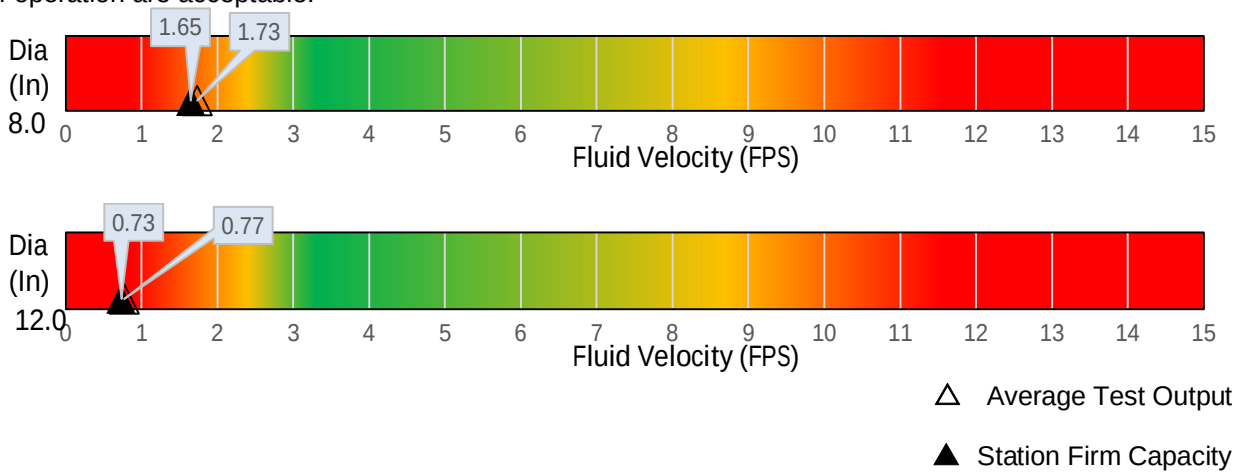


Figure 2.9 – Pipe Velocities

The maximum observed pressure at the station during the testing period is provided below in

Figure 2.10 - Maximum Observed Pressure. System pressure capabilities vary depending upon pipe material type, pressure rating, elevation, age, condition, etc. This performance indicator is provided for reference only and is not a condition assessment of the pipeline. For systems with pressures above approximately 100 PSI, consider a more detailed analysis. See the **Attachment 1 - Graph B** for additional pressure data.

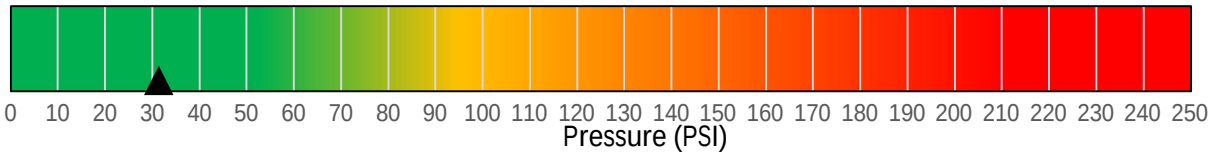


Figure 2.10 - Maximum Observed Pressure

2.5 SYSTEM PRESSURES

Figure 2.11 - Pressure Cycle shows a typical single-pump pressure cycle measured during testing. The pressure data captured for this test is limited to 2-second intervals which may not have captured the entire range of actual pressures. The complete log of pressure readings is provided in **Attachment 1 – Test Data Graphs**. For more accurate surge data, a surge monitoring device should be used to capture pressure at shorter time intervals over a longer period of time. **Table 2.12 - Further Surge-Related Actions** provides a list of recommended surge-related actions.

The pressure transducer used for measuring pressures has a range of 0 to 200 PSI. Pump startup produced an upsurge of approximately 32 PSI. Upon pump shut down, the observed minimum pressure was approximately 2 PSI and the maximum pressure was approximately 30 PSI creating a total observed pressure range of 30 PSI.

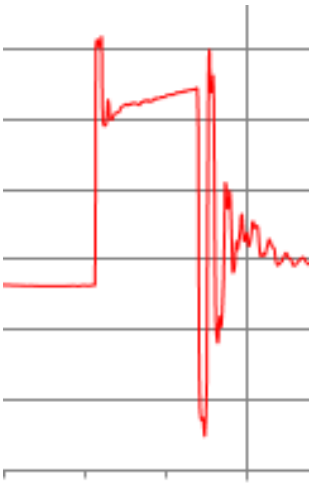


Figure 2.11 - Pressure Cycle

	Further Surge Related Actions:
	Perform extended period digital surge monitoring
	Perform calibrated surge modeling
	Revise operating scheme to reduce surge potential
	Evaluate piping system for pressure capacity and likelihood of failure
	Install physical surge mitigation strategies
✓	No further action

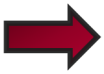
Table 2.12 - Further Surge-Related Actions

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3 RECOMMENDATIONS

The following recommendations are a result of the findings of this evaluation and should be considered for implementation. See **Section 2 Pump Performance Tests** for pump specific recommendations. In addition to the recommendations below, this site should/ be considered for the following overall planning and budgeting activities.

3.1 OVERALL RECOMMENDATIONS

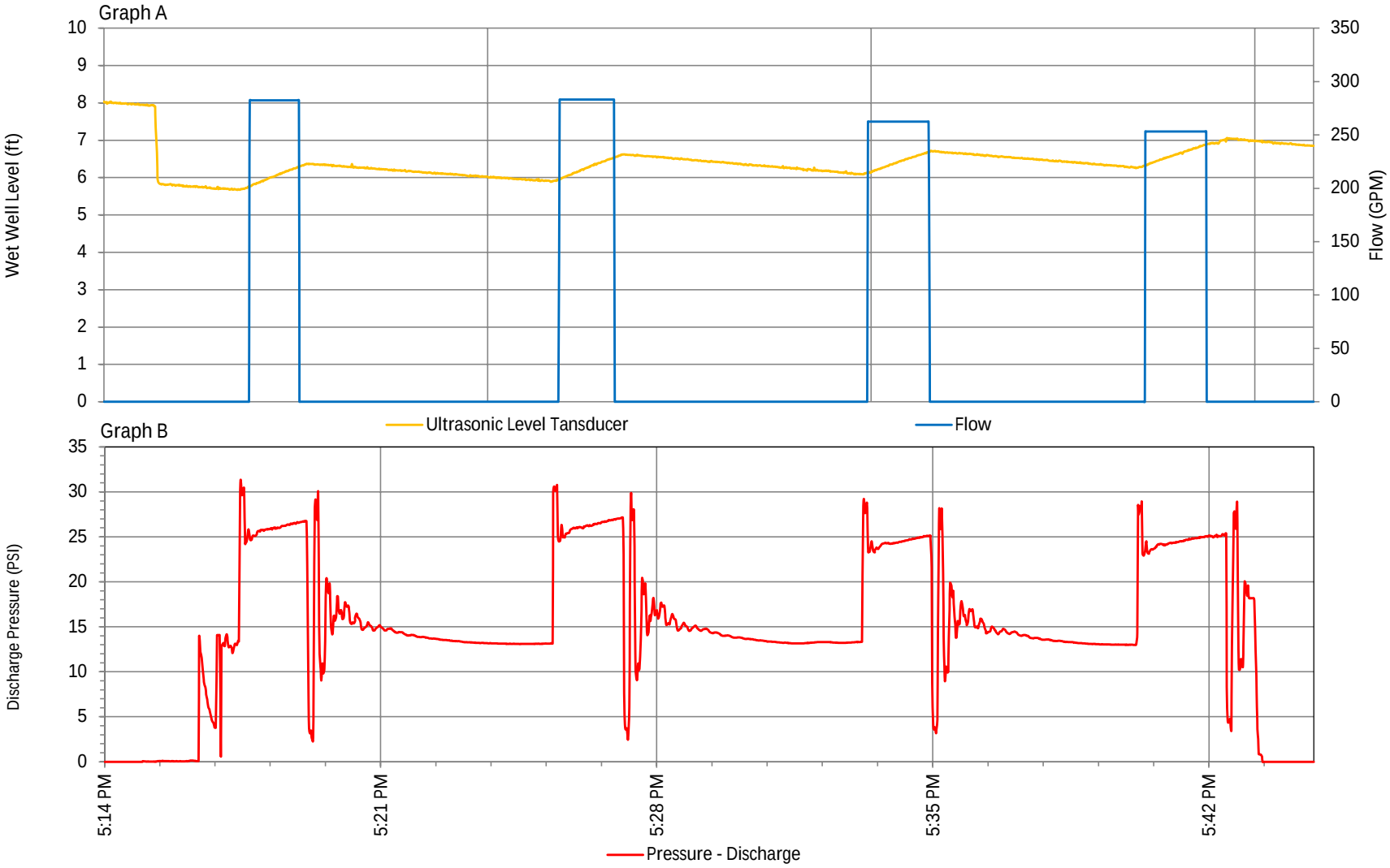
Overall Site Rating	Score	Description
	1	No recommendations currently. Monitor station for worsening conditions, perform regular O&M, reassess condition in 2-5 years.
	2	Complete recommendations listed in Section 3.2, monitor station for worsening conditions, perform regular O&M, reassess condition in 1-3 years.
	3	Station requires improvements beyond replacement of individual components. Begin planning and budgeting for a major rehabilitation. Place under regular observation until rehabilitation is complete.
	4	Station does not appear to be brought into conformance with standards without replacement. Begin planning and budgeting for a station replacement. Place under regular observation until rehabilitation is complete.

3.2 MISCELLANEOUS RECOMMENDATIONS

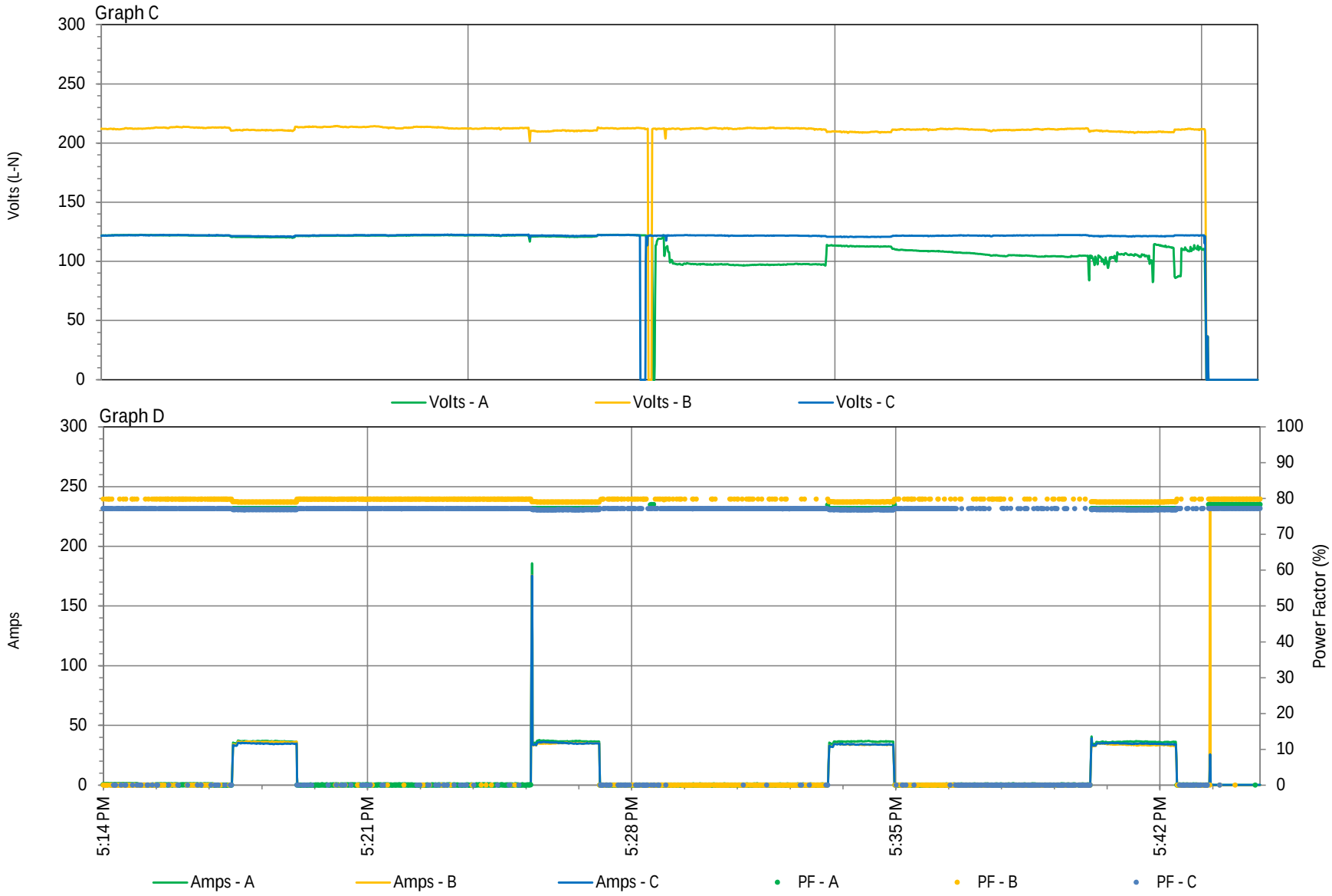
No site recommendations at this time.

4 ATTACHMENTS

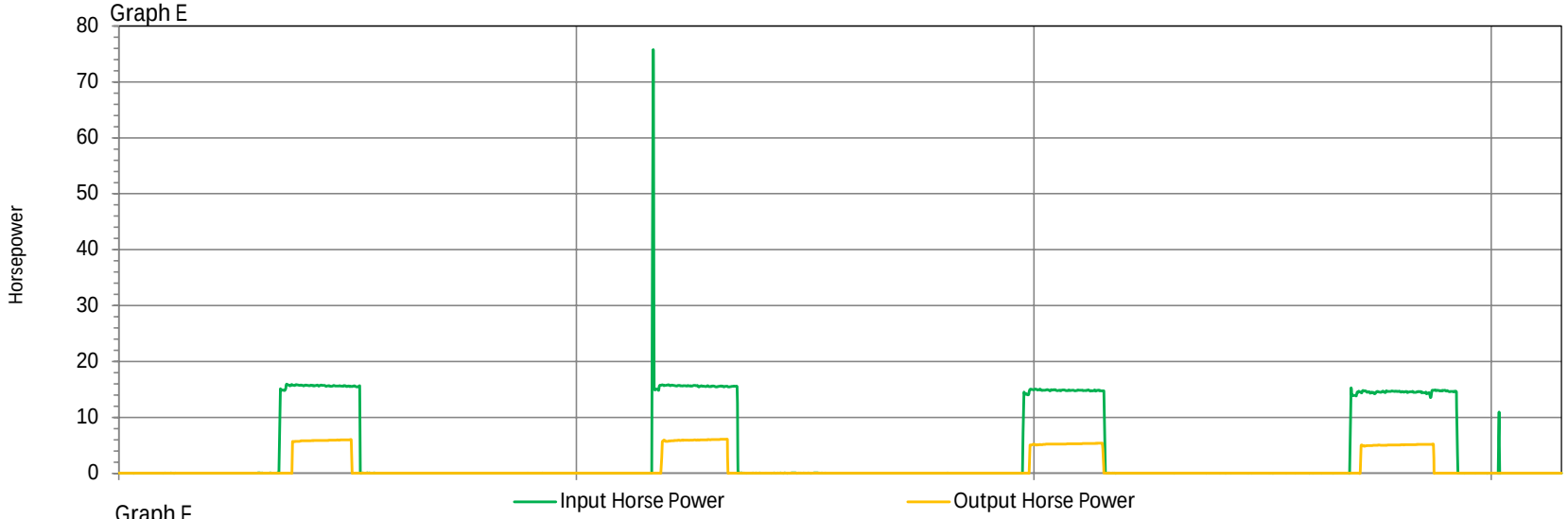
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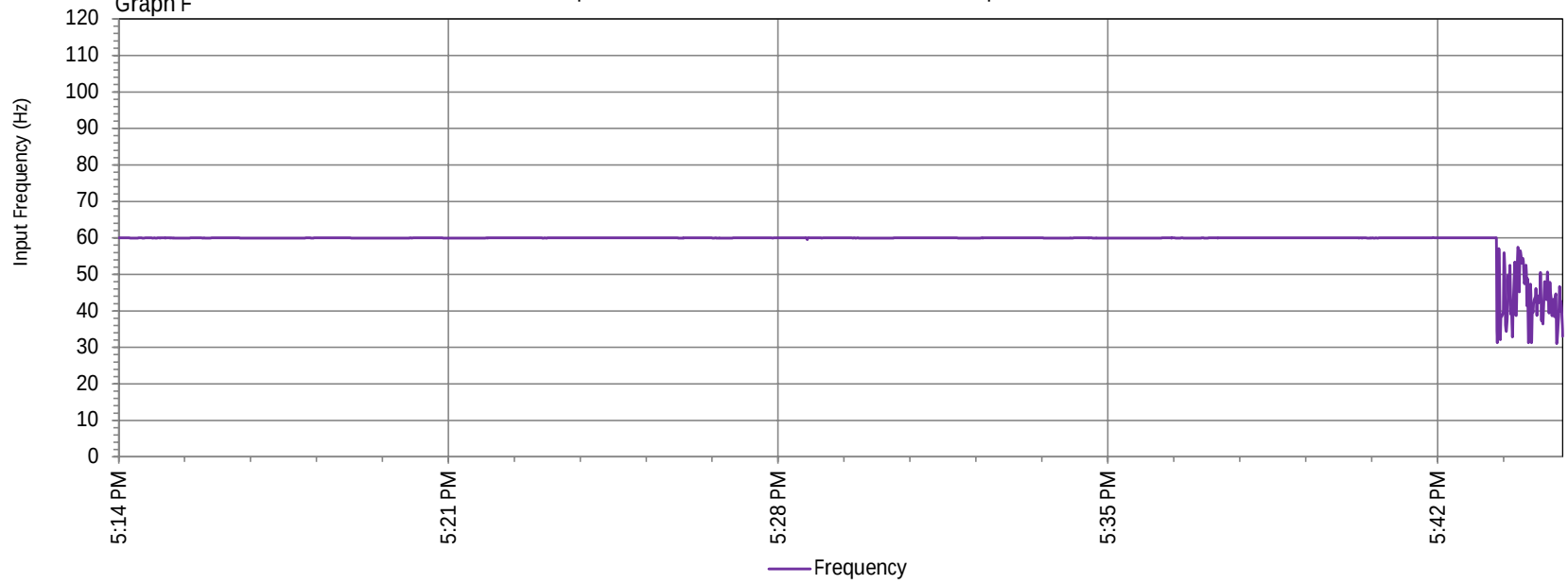
* Times shown are Eastern Standard Time


Graph C
Volts (L-N)
300
250
200
150
100
50
0
Volts - A
Volts - B
Volts - C
Graph D
Amps
Power Factor (%)
100
90
80
70
60
50
40
30
20
10
0
5:14 PM
5:21 PM
5:28 PM
5:35 PM
5:42 PM
Amps - A
Amps - B
Amps - C
PF - A
PF - B
PF - C

Graph E



Graph F



XYLEM WATER SOLUTIONS U.S.A., INC.

Pump Station Start Up Rep

Pump Station Evaluation Report
Attachment 2 - Manufacturers Data

File Name: CR 209FM Restart: Yes ○ No ○

Job Paid: Yes ○ No ○ Amount to P-U: _____

Contact: COMMERCIAL INDUSTRIAL CORP. Date: 08/25/17 Time: 9:30

Design Conditions: GPM 1244 TDH 156 Equipment Manufacturer: FLYGT

Model: 6"NP3301 1775RPM HP 85 Impeller 464 Voltage 460 Phase 3

Serial Number: 185-1580009; 185-1670009

Serial Number: 185-1680004

Control Manufacturer: ECS Model / Serial Number: 211524

Overload Heaters: Electric Alternator Tested: Yes L/A Connected: Yes GRD Connected: Yes

Danger Label Posted: Yes Wire & Terminal Connections Tight: Yes Conduit Sealed: Yes Panel Interior Dry: Yes

Type Controller: Float Logic Multitrode Other: Probe Floats Set By: Others

Controller Set Points: LL _____ OFF _____ LEAD _____ LAG _____ LAG LAG _____ HL _____

Floats, Probes, Transducer-Away From Turbulent Flow: Yes ① No ① Inflow Discard Over Pump(s): Yes ① No ○

Guide Rails Plumb and Secured: Yes ③ No ③ Debris in Station: Yes ③ No ⊗ Debris Removed in Your Presence: Yes ○ No ○

Is Pump VFD Operated: Yes ○ No ⊗ Minimum HZ: 15 sec Maximum HZ: 15 sec Accel Time: _____ Decel Time: _____

If Pump(s) Are VFD Operated, Have They Been Operated For 3 Minutes At Full Speed To Evacuate Air In Cooling Jacket: Yes ① No ①

On VFD Operation are The Power Cable and Sensor Cable in The Same Conduit: Yes ⑨ No ○

WARNING: All resistance and meg-ohm readings should be taken with the pump cables disconnected from the starter and control circuits.

Megger Check: #1 Inf Red Inf Black Inf White #2 Inf Red Inf Black Inf White

#3 _____ Red _____ Black _____ White #4 _____ Red _____ Black _____ White

Pump Sensor Readings: Thermal Sensor #1 1.2 Ω #2 1.2 Ω #3 1.2 Ω #4 _____ Ω

Leakage Sensor #1 _____ Ω #2 _____ Ω #3 _____ Ω #4 _____ Ω

Line Voltage Check: L1 - L2 494 V L2 - L3 494 V L1 - L3 497 V

Generator Start: Yes ○ No ○ L1 - GRD 285 V L2 - GRD 286 V L3 - GRD 284 V

Control Circuit: Primary 120 V Secondary: 24 V

Amperage at Load Connection:

#1	L1: 95 AMPS	L2: 100 AMPS	L3: 99 AMPS
#1	L1: 96 AMPS	L2: 98 AMPS	L3: 96 AMPS
#1	L1: 95 AMPS	L2: 99 AMPS	L3: 98 AMPS
#1	L1: _____ AMPS	L2: _____ AMPS	L3: _____ AMPS

Pump(s) Properly Seated: #1 Yes ⊗ No ○ #2 Yes ⊗ No ○ #3 Yes ⊗ No ○ #4 Yes ○ No ○

Check Valves Operate Properly: #1 Yes ⊗ No ○ #2 Yes ⊗ No ○ #3 Yes ⊗ No ○ #4 Yes ○ No ○

O&M Manuals Delivered: Yes ⊗ No ○ Received by: _____

Tools Delivered: Yes ○ No ⊗ Spare Parts Delivered: Yes ○ No ⊗ Received By: _____

Access Covers By: Halliday Products Station Operator/Owner: City of Wildwood

Performance Test: #1 GPM 2184 TDH 106.4 #2 GPM 2325 TDH 100.5

#3 GPM 2395 TDH 98 #4 GPM _____ TDH _____

Performance Data:

Shut Off Head Reading:	#1	#2		
Static Head:	#1 18.6	#2 19.5	#3 19	#4
Gauge PSI During Test:	#1 38	#2 35	#3 34	#4 x
Friction Loss During Test:	#1	#2	#3	#4 x
Total Head:	#1 106.4	#2 100.5	#3 98	#4

Guage Location During Test: Before Valves - Yes ○ No ○ After Valves - Yes ⊗ No ○ On Valves - Yes ○ No ○

Gauge Installed on Which Valve: Check Valves - Yes ○ No ⊗ Plug Valves - Yes ○ No ○

Wet Well Diameter: 12'

Draw Down Test, (1) Minute: #1 31 Inches #2 32 Inches #3 34 Inches #4 Inches

Present:
Contractor: Commercial Industrial Corp Name:
Engineer Firm: Kimley Horn Name: Trey Clayton
Owner/Operator: City of Wildwood Name: Mike Weaver
Other: Name:

Restart Reason:

Comments: Pumps performed to Spec. Panel was exciting

Inf

Start-up By: Scott Cannan Official Start Date: 8-25-17

FLYGT
a xylem brand

Engineering Submittal #1

Job: CR 209 FM & LS IMPROVEMENTS - LAKESIDE LANDING LS

To: COMMERCIAL INDUSTRIAL CORP
Date: SEPTEMBER 16, 2016

☑ Work cannot proceed until one set of approved shop drawings is returned to this office.
☐ Submittal is for record only and we are proceeding with production.

Pumps

Qty.	Model	Impeller	HP	Phase	Voltage	Duty Points	Motor Leads
2	4"NP3153	464/253mm	20	3	230	245GPM@91'TDH	50'

Specials: (2) 4"X4" Discharge Connections
(2) FLS
(2) Certified Test
(2) Mix-Flush Valve

Accessories

2	316SS	2" Upper Guide Bar Brackets	
1	316SS	Cable Holder	
2	316SS	Grip-eye Cable	Length: 25'
8	316SS	Threaded rods w/ adhesive anchoring	
4	316SS	2" Diameter Guide Rails	Length: 25'

Control Panel

1 Control Panel DUPLEX 20HP 3PH 460V PANEL PER CITY OF WILDWOOD SPECIFICATIONS

Enclosure Material: 316SS
NEMA Rating: 3R

Specials: (1) MULTITRODE LEVEL PROBE
(2) MINICAS W/SOCKETS
(4) LEVEL CONTROL RELAYS MTR-3

Kimley-Horn and Associates, Inc.

☒ NO EXCEPTIONS TAKEN
☐ CORRECTIONS NOTED
☐ REJECTED
☐ VERIFY AND MAKE CORRECTIONS
☐ RESUBMIT

Our limited review is only for compliance with the design concept and information given in the Contract Documents. Contractor is solely responsible for dimensions, quantities, performance, safety, coordination with other work, and all other requirements of the Contract Documents. Review does not authorize changes to contract unless stated specifically in separate letter or change order.

Reviewed by: MMT Date: 10/17/2016

NP 3153 HT 3~ 464

Performance curve

Pump

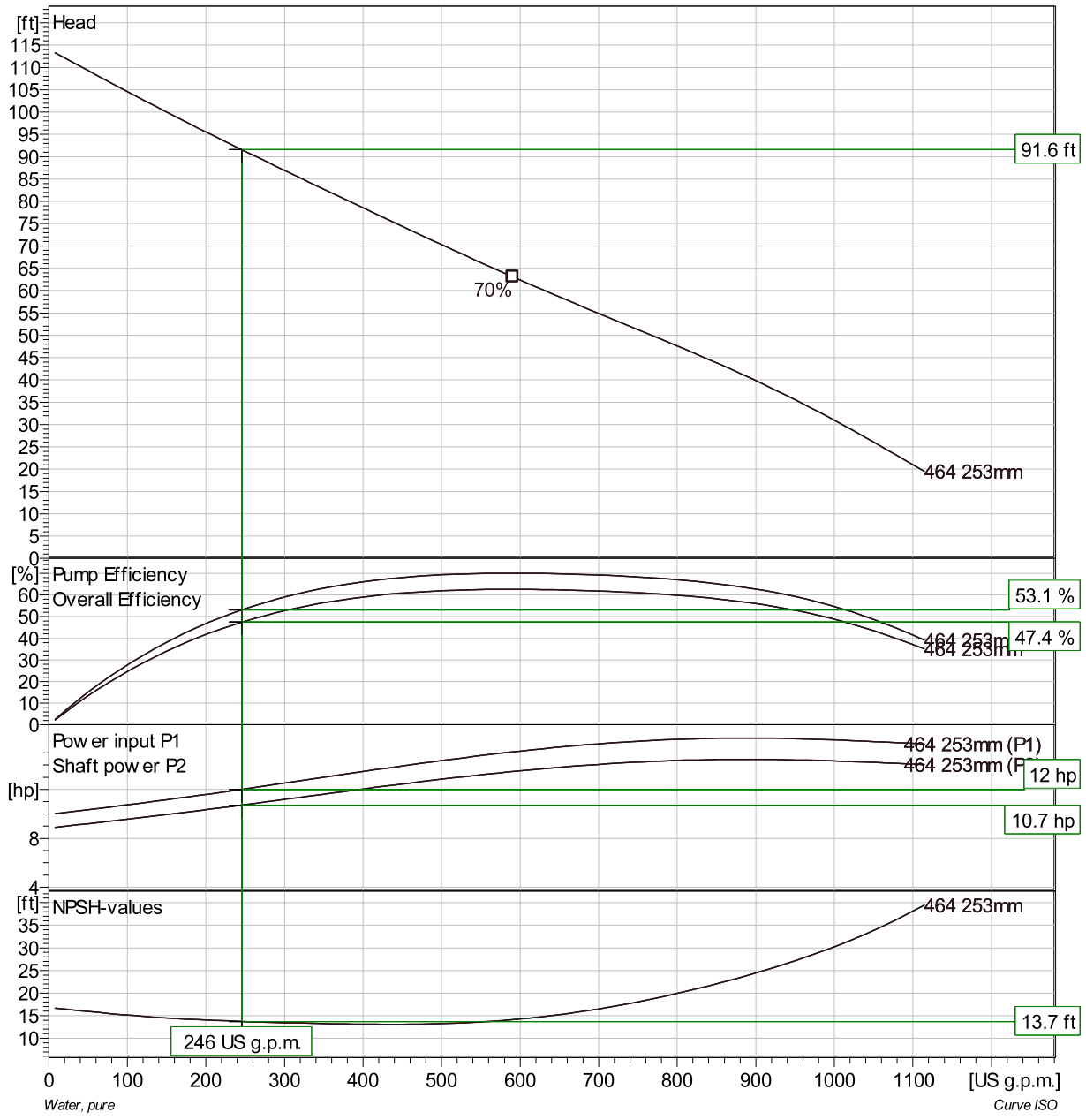
Discharge Flange Diameter	3 15/16 inch
Suction Flange Diameter	100 mm
Impeller diameter	$9^{15}/_{16}$"
Number of blades	2

Motor

Motor #	N3153.185 21-18-4AA-W 20hp
Stator variant	5
Frequency	60 Hz
Rated voltage	230 V
Number of poles	4
Phases	3~
Rated power	20 hp
Rated current	52 A
Starting current	296 A
Rated speed	1755 rpm

Power factor	
1/1 Load	0.83
3/4 Load	0.77
1/2 Load	0.66

Motor efficiency	
1/1 Load	87.5 %
3/4 Load	89.0 %
1/2 Load	89.0 %

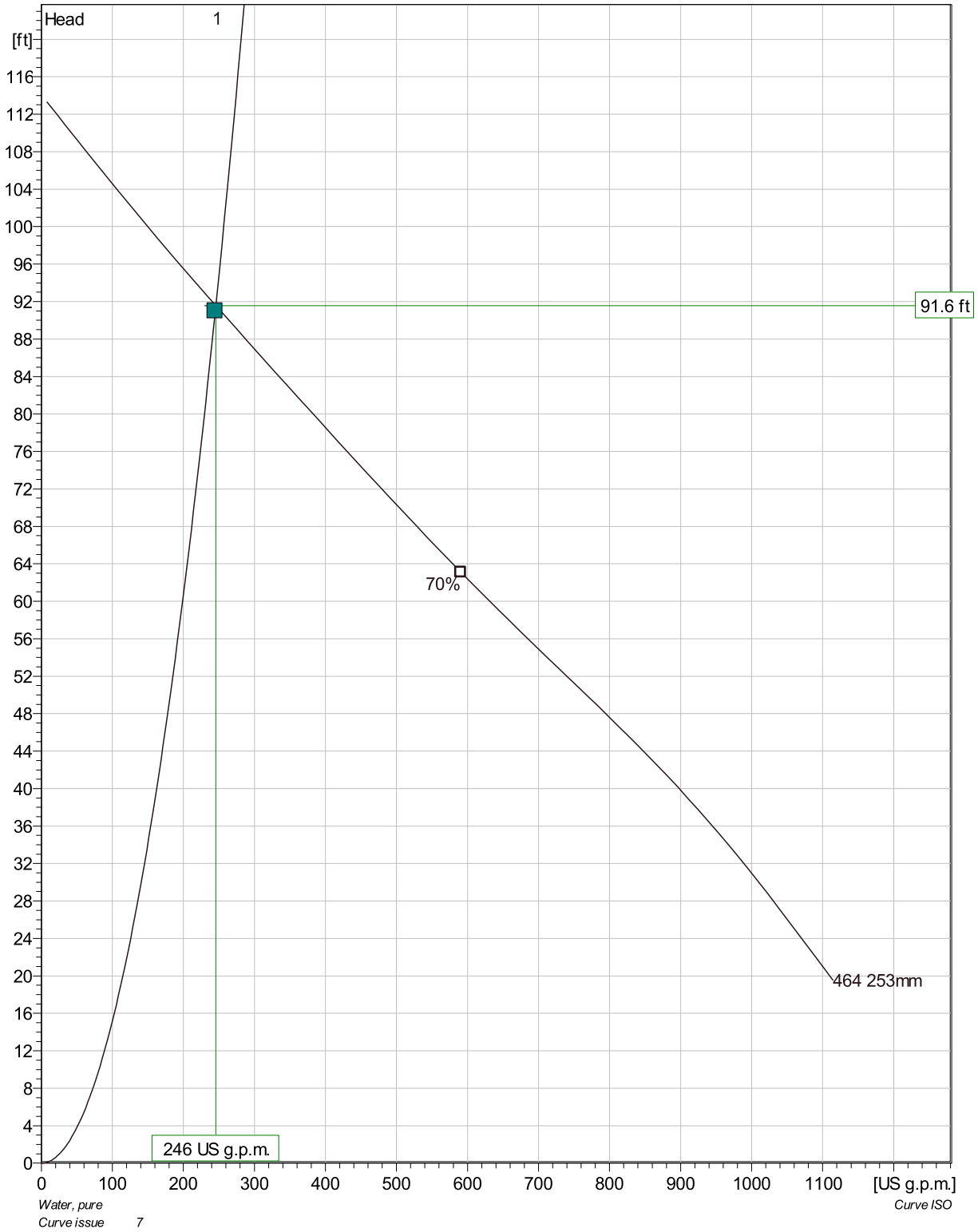


Duty point		Guarantee	
Flow	**Head**	**ISO:1999**	**Grade**
245 US g.p.m.	91 ft	No	

Project	Project ID	Created by	Created on	Last update
			8/24/2017	

NP 3153 HT 3~ 464

Duty Analysis

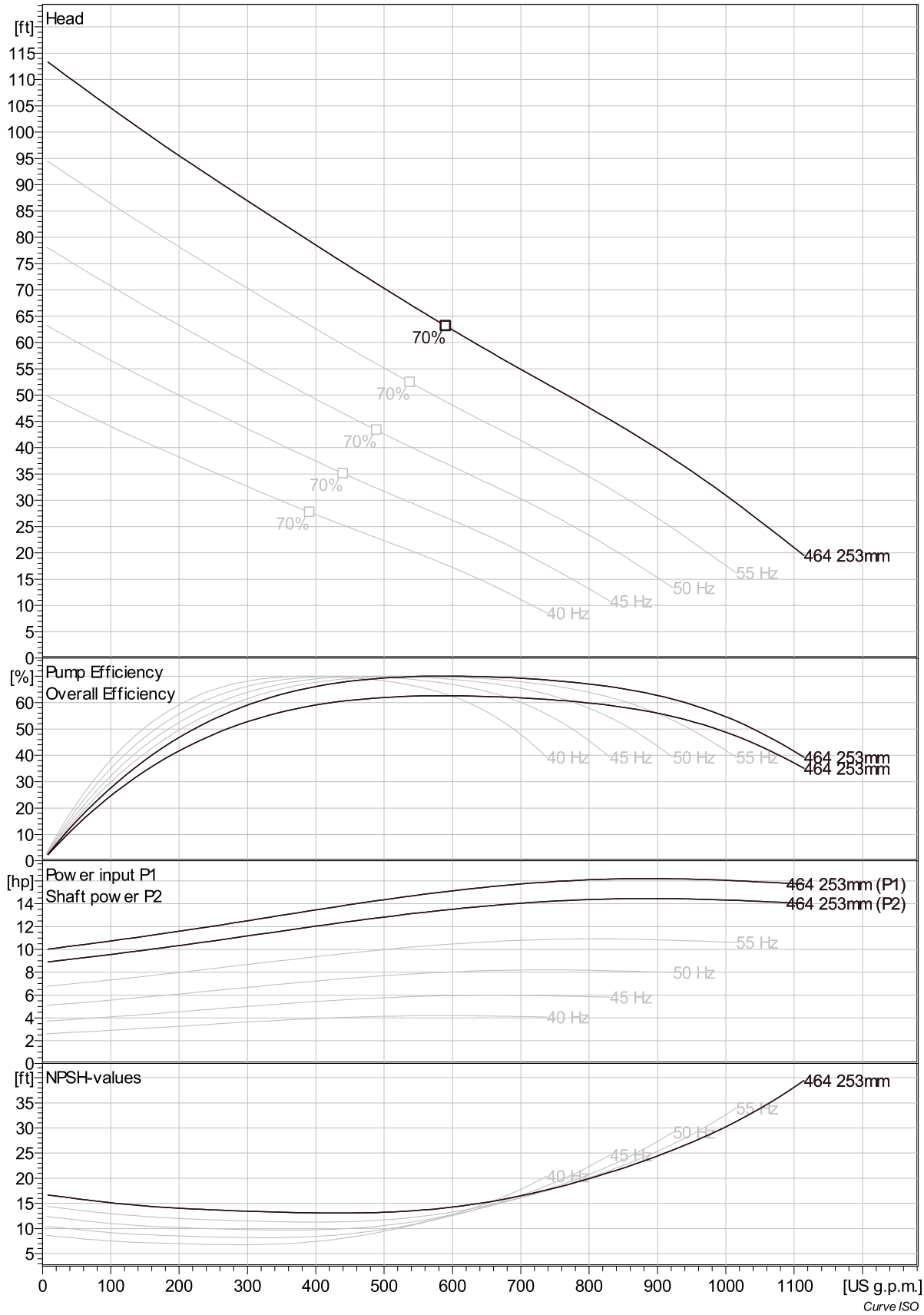


Pumps running /System	Individual pump			Total					
	Flow	Head	Shaft power	Flow	Head	Shaft power	Pump eff.	Specific energy	NPSHre
1	246 US g.p.m.	91.6 ft	10.7 hp	246 US g.p.m.	91.6 ft	10.7 hp	53.1 %	607 kWh/US MG	13.7 ft

Project	Project ID	Created by	Created on	Last update
			8/24/2017	

NP 3153 HT 3~ 464

VFD Curve



Project	Project ID	Created by	Created on	Last update
			8/24/2017	

Pump Station Evaluation Report

5 - Main Street North

Prepared For:

City of Wildwood

Evaluation Date:

2/7/2024

Report Date:

September 26, 2024

Version 1

Kimley»Horn

Version	Publish Date	Description
1	See Cover	Original/Version 1

Table 0.1 - Revision History

Version	Publish Date	Test Date	Description

Table 0.2 - Previous Evaluation History

This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn shall be without liability to Kimley-Horn.

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ATTACHMENTS

Attachment 1 ..... **Test Data Graphs**

Attachment 2 ..... **Supplementary Pump Information**

ABBREVIATIONS

Ø	Phase
AC	Alternating Current
ADD	Automated Draw Down
ADF	Average Daily Flow
ARR	Automated Rate of Rise
ATL	Across The Line
Avg	Average
BEP	Best Efficiency Point
CL	Center Line
Disch	Discharge
ETM	Elapsed Time Meter
FLA	Full Load Amps
FM	Force Main
Ft	Feet
FPS	Feet Per Second
FSFO	Full Speed Full Open
Gal	Gallons
GPM	Gallons Per Minute
HGL	Hydraulic Grade Line
HP	Horsepower
Hrs	Hours
H:M:S	Hours:Minutes:Seconds
Hz	Hertz
In	Inches
InvIn	Invert In
KWH	Kilowatt-Hours
L	Length
L1, L2, L3	Leg 1, 2 & 3 or Length 1, 2 & 3
MSL	Mean Sea Level
MTBF	Mean Time Between Failures
N	Neutral
P	Pump
PCL	Pump Center Line
PCP	Pump Control Panel
PF	Power Factor
PSI	Pounds Per Square Inch
PT	Point
RPM	Revolutions Per Minute
TDH	Total Dynamic Head
TVSS	Transient Voltage Surge Suppressor
V	Volts
VFD	Variable Frequency Drive
WTW	Wire To Water
WW	Wet Well
Yr	Year

1 INTRODUCTION

Kimley-Horn and Associates, Inc. evaluated the pump station through pump performance testing and a condition assessment. This report summarizes the data and results of that evaluation. The performance tests were conducted using the XAK-PACK pump performance monitoring device. The following pages provide summaries of the data collected and notes about the pumps' performance.

1.1 SITE INFORMATION

Main Street North / Site Number 5			
Date of Evaluation	2/7/2024		
Address	201 W Kentucky Ave, Wildwood, FL 34785		
Coordinates	28.85514014 -82.04467000		
Fluid Conveyed	Wastewater		
Station Style	Submersible		
Number of Pumps	2	Number of Pump Slots	2
Pump Type	Submersible		
Flow Meter Type	N/a		
Year of Construction	Unknown	Based on	☐Docs. ☐Estimation ☐Other
Basin/Zone	Unknown		
Firm Capacity (Design)	Unknown		
Firm Capacity (Test)	591 GPM / 0.85 MGD		
Discharge Description	8-inch, 1765 LF unknown FM tying to a manifold 16-inch, 834.36 LF of unknown FM discharging at the WWTP		
Electrical Service	120/240 Delta		
Site Generator	Caterpillar, diesel with belly tank		
Bypass Ability	Bypass assembly inside of valve vault		
Miscellaneous Features			

Site Notes:

Pump 2 was non-operational at the time of testing.

1.2 SITE MAP



Figure 1.1 - Site Location Map

2 PUMP PERFORMANCE TESTS

Pump performance tests were conducted on the pumps utilizing the measurement tools detailed below. **Table 2.1 - Measurement Methods** describes the measurements taken during the test and the measurement method. Some measurements were confirmed utilizing a secondary measurement method. See **Attachment 1** for graphs of the digitally recorded data. For each test, note the following:

1. Common accuracies for measurements of flow, pressure, voltage and current are ±1%.
2. Friction loss is calculated using the Hazen-Williams formula and the Bernoulli equation. Piping characteristics are based on best available data.

Parameter	Measurement Method	
	Primary	Secondary
Flow	Level Transducer (XAK-PACK)	N/A
Pressure	Pressure Transducer (XAK-PACK)	Liquid Filled Pressure Gauge
Wet Well Level	Level Transducer (XAK-PACK)	N/A
Volts	Voltage Probes (XAK-PACK)	Fluke 376FC
Amps	Current Transducers (XAK-PACK)	Fluke 376FC
Power Factor	Power Factor Monitor (XAK-PACK)	N/A

Table 2.1 - Measurement Methods

2.1 PUMP #1

Below is a summary of the pump characteristics and performance test results.

Parameter	Units	Value
Pump Manufacturer	-	Flygt
Pump Model	-	CP 3152 HT 3~ 454
Pump Style	-	Submersible
Pump Impeller Dia	Inches	10.83
Pump Rated Capacity	GPM	-
Pump Rated Head	Ft	-
Pump ETM	Hours	86
Pump Flow @ BEP Design Curve	GPM	750
Pump Hyd Eff @ Design Pt	%	-
Pump WTW Eff @ Operating Pt	%	51%
Pump NPSHr @ Operating Pt	Ft	11
Motor Synchronous Speed	RPM	1800
Motor Rated Speed	RPM	1750
Motor No. Phases	No	3
Motor Starters	-	ATL
Motor Rated Voltage	Volts	230
Motor Rated Horsepower	HP	20.0
Motor Service Factor	-	1.15
Motor FLA	Amps	51.0
Mfg. Motor Eff. @ Operating Pt	%	80%
Mfg. Starter Eff. @ Operating Pt	%	100%

Table 2.2 - Pump #1 Design Characteristics

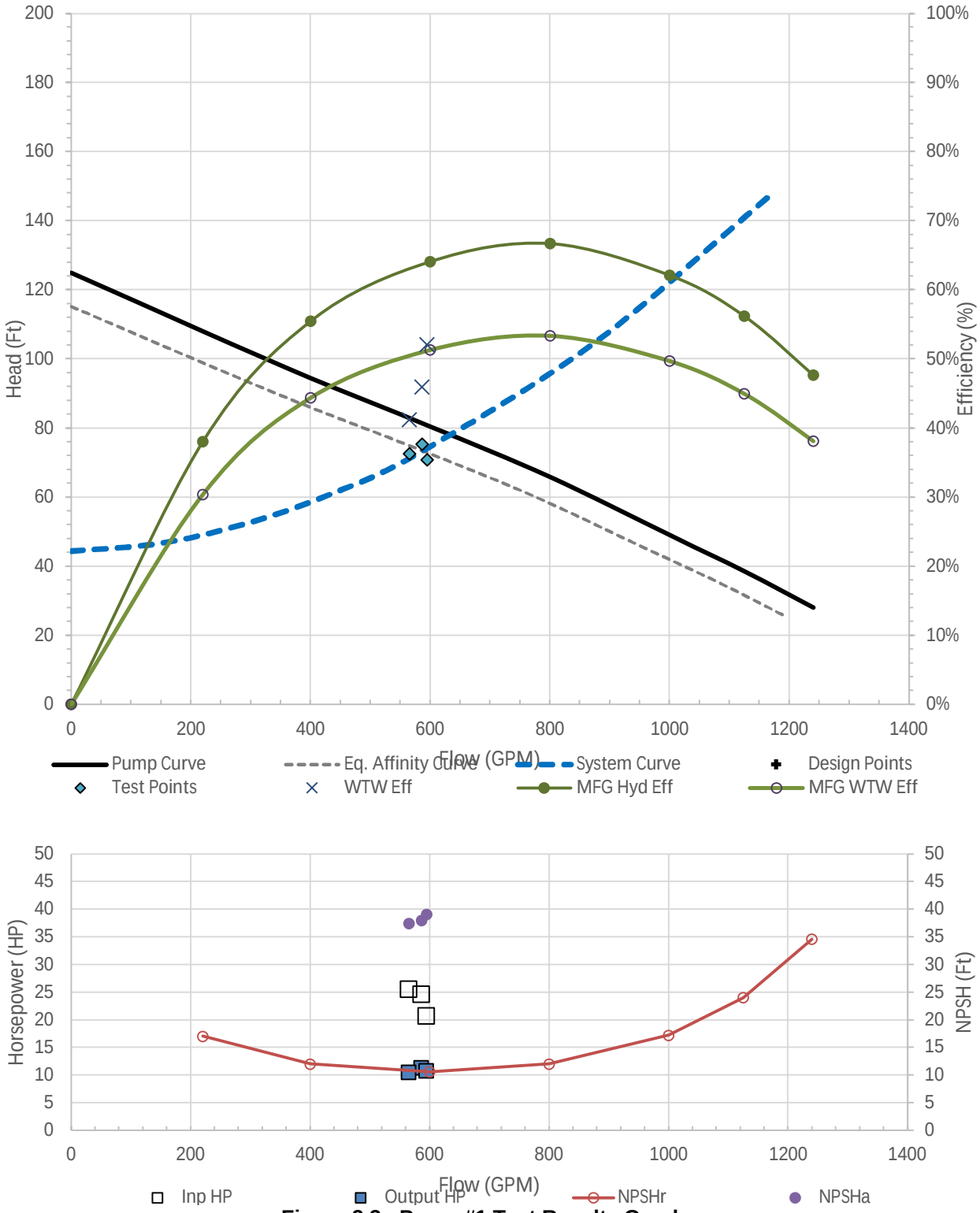


Figure 2.3 - Pump #1 Test Results Graphs

	Parameter	Units	Lower Limit	Test Value	Upper Limit	Comment
Measured	Average Output (FSFO)	GPM	-	591	-	
	Average TDH (FSFO)	Ft	-	73.1	-	
	Average WTW Efficiency (FSFO)	%	-	49%	-	
	Average Input HP (FSFO)	HP	-	22.6	-	
	Average Current Draw (FSFO)	Amps	-	51.5	-	
	Suction Velocity (FSFO)	FPS	2	-	7	
	Discharge Velocity (FSFO)	FPS	2	5.9	7	
	BEP Comparison (FSFO)	%	80%	79%	115%	1
	Average Output (FSFO)	%	90%	-	110%	
	Affinity Law Eq. Curve	%	-5%	-4.0%	5%	
	NPSHa	Ft	11	38.5	N/A	
	WTW Eff @ Operating Pt	%	-5%	-4%	5%	
	Input Frequency	Hz	-5%	0%	5%	
	Input Voltage (L-L)	%	-10%	-5.9%	10%	
	Voltage Drop	%	-15%	2.0%	N/A	
	Voltage Imbalance	%	-10%	0.5%	10%	
	Current Imbalance	%	-10%	5.5%	10%	
	Motor FLA	%	-50%	101.0%	105%	
	Motor Load	%	50%	112.9%	115%	
	Motor Slip Speed	%	1740	1750.0	1810	
	Vibration	In/Sec	0	0.0	-	
Observed	Surge	1-5	-	3	3	
	Vibration	1-5	-	2	3	
	Cavitation	1-5	-	1	3	
	Mechanical Noise	1-5	-	1	3	
	Leaks	1-5	-	1	3	
	Exterior Condition	1-5	-	2	3	
	Overall Score	1-5	-	2	3	

Table 2.4 - Pump #1 Test Summary

Pump #1 - Test Comments

1. The pump is operating at 79% of BEP flow.

2.2 PUMP #2

Pump 2 was non-operational at the time of testing.

2.3 HYDRAULICS SUMMARY

The measured system curve is shifted up slightly from the design curve. This indicates the system has some increased head loss. This increase in head loss may be a result of a reduced C factor or a reduced inside diameter of the force main from years in service.

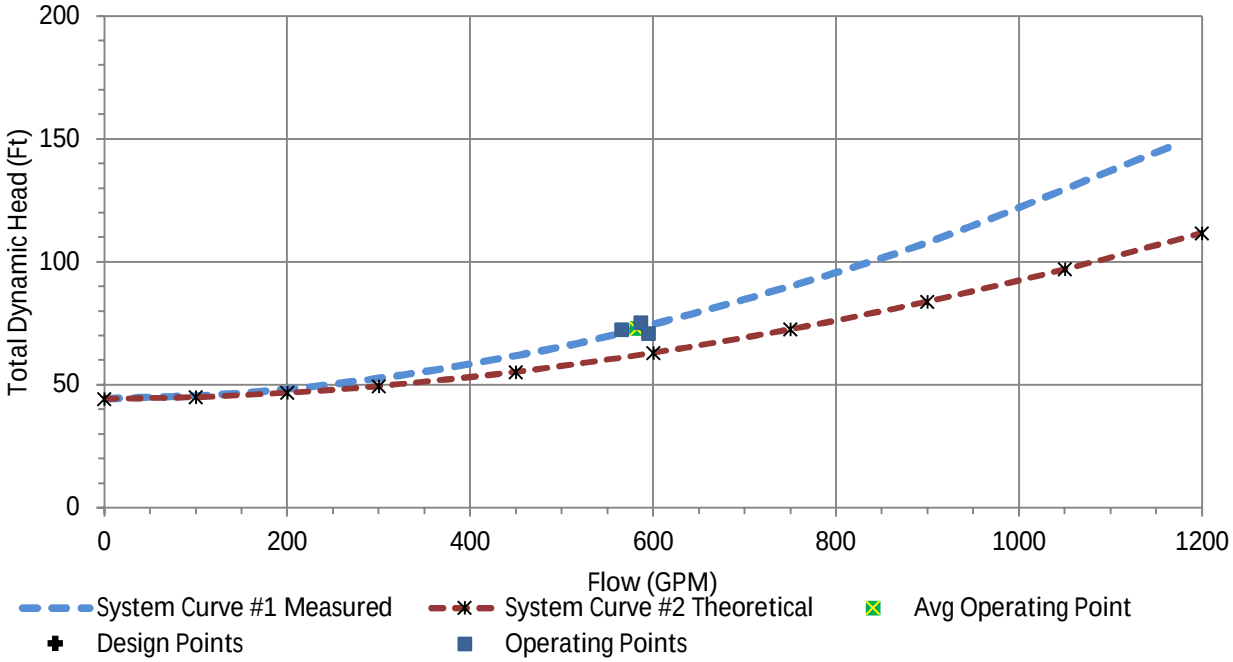


Figure 2.8 – System Hydraulic Information provides a graph of the system characteristics and a table describing the system curves. Length, Hazen-Williams (Hz-Wm), and diameter are approximated based on the best available information and fit to the data. System Curve Characteristics are intended to be for reference.

System Curve Characteristics					
Curve Name	**Curve Type**	**Length (Ft)**	**Hz-Wm**	**Diameter (In)**	**Calculated Based On**
System Curve #1	Measured	2599	115	7.6	Test Data
System Curve #2	Theoretical	2599	110	8 and 16	Available GIS and Record Drawing Data

Figure 2.8 – System Hydraulic Information

2.4 PIPELINE PERFORMANCE INDICATORS

Figure 2.9 – Pipe Velocities displays the velocities in each known diameter of the pressurized conveyance system. The Average Test Output Velocity represents the velocity generated by the average pumping rate produced by testing. The Station Firm Capacity Velocity represents the velocity based on the station's firm capacity (output with the largest pump out of service). The color gradient represents ranges of acceptable to problematic velocities. Red areas of operation are problematic and green areas of operation are acceptable.

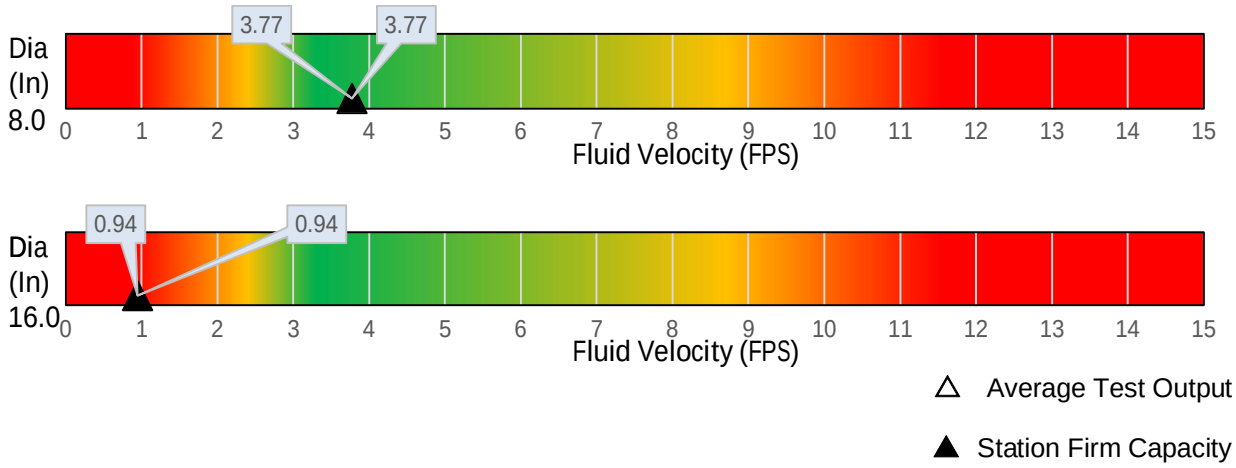


Figure 2.9 – Pipe Velocities

The maximum observed pressure at the station during the testing period is provided below in **Figure 2.10 - Maximum Observed Pressure**. System pressure capabilities vary depending upon pipe material type, pressure rating, elevation, age, condition, etc. This performance indicator is provided for reference only and is not a condition assessment of the pipeline. For systems with pressures above approximately 100 PSI, consider a more detailed analysis. See the **Attachment 1 - Graph B** for additional pressure data.

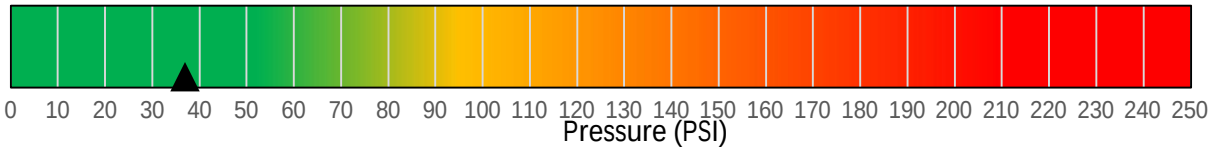


Figure 2.10 - Maximum Observed Pressure

2.5 SYSTEM PRESSURES

Figure 2.11 - Pressure Cycle shows a typical single-pump pressure cycle measured during testing. The pressure data captured for this test is limited to 2-second intervals which may not have captured the entire range of actual pressures. The complete log of pressure readings is provided in **Attachment 1 – Test Data Graphs**. For more accurate surge data, a surge monitoring device should be used to capture pressure at shorter time intervals over a longer period of time. **Table 2.12 - Further Surge-Related Actions** provides a list of recommended surge-related actions.

The pressure transducer used for measuring pressures has a range of 0 to 200 PSI. Pump startup produced an upsurge of approximately 37 PSI. Upon pump shut down, the observed minimum pressure was approximately 0 PSI and the maximum pressure was approximately 36.5 PSI creating a total observed pressure range of 37 PSI. It is likely that the minimum pressure produced on each pump shut down cycle was less than 0 PSI.

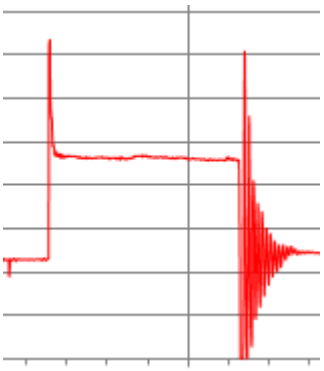


Figure 2.11 - Pressure Cycle

Further Surge Related Actions:	
	Perform extended period digital surge monitoring
	Perform calibrated surge modeling
	Revise operating scheme to reduce surge potential
	Evaluate piping system for pressure capacity and likelihood of failure
	Install physical surge mitigation strategies
✓	No further action

Table 2.12 - Further Surge-Related Actions

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3 RECOMMENDATIONS

The following recommendations are a result of the findings of this evaluation and should be considered for implementation. See **Section 2 Pump Performance Tests** for pump specific recommendations. In addition to the recommendations below, this site should/ be considered for the following overall planning and budgeting activities.

3.1 OVERALL RECOMMENDATIONS

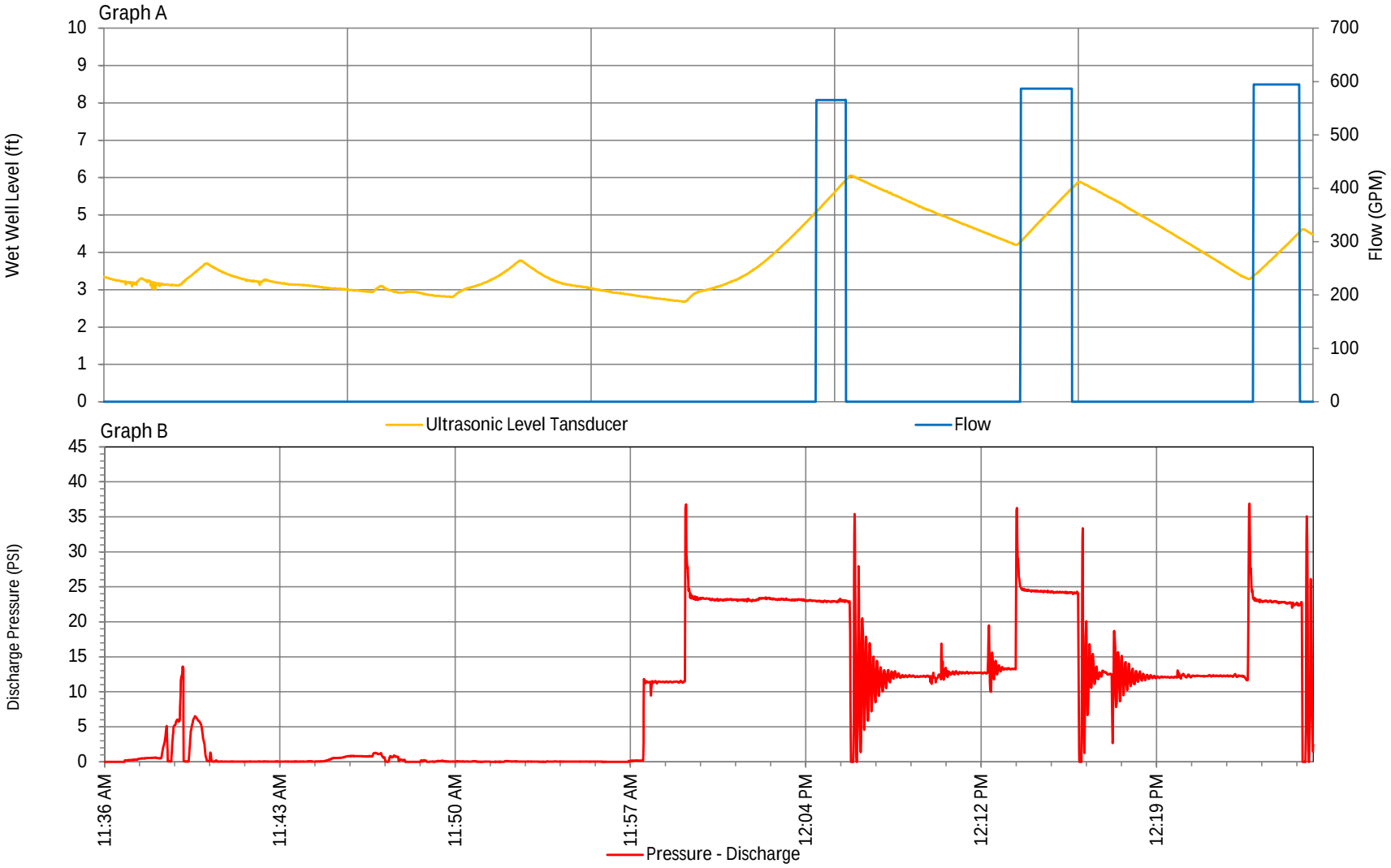
Overall Site Rating	Score	Description
	1	No recommendations currently. Monitor station for worsening conditions, perform regular O&M, reassess condition in 2-5 years.
	2	Complete recommendations listed in Section 3.2, monitor station for worsening conditions, perform regular O&M, reassess condition in 1-3 years.
	3	Station requires improvements beyond replacement of individual components. Begin planning and budgeting for a major rehabilitation. Place under regular observation until rehabilitation is complete.
	4	Station does not appear to be brought into conformance with standards without replacement. Begin planning and budgeting for a station replacement. Place under regular observation until rehabilitation is complete.

3.2 MISCELLANEOUS RECOMMENDATIONS

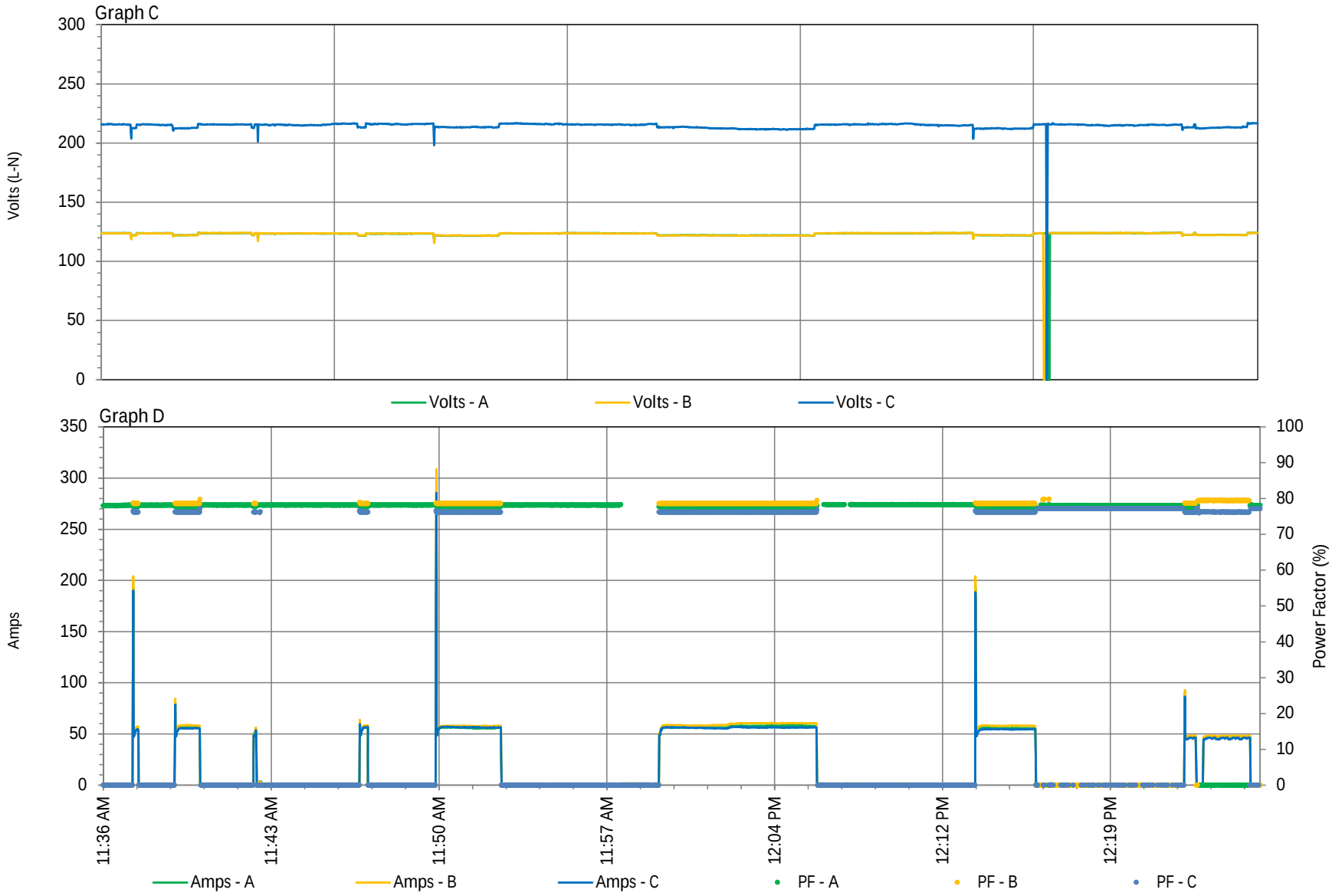
Pump 2 – During the time of testing pump two was out of service. We recommend making necessary repairs to pump 2 to bring it back into service.

4 ATTACHMENTS

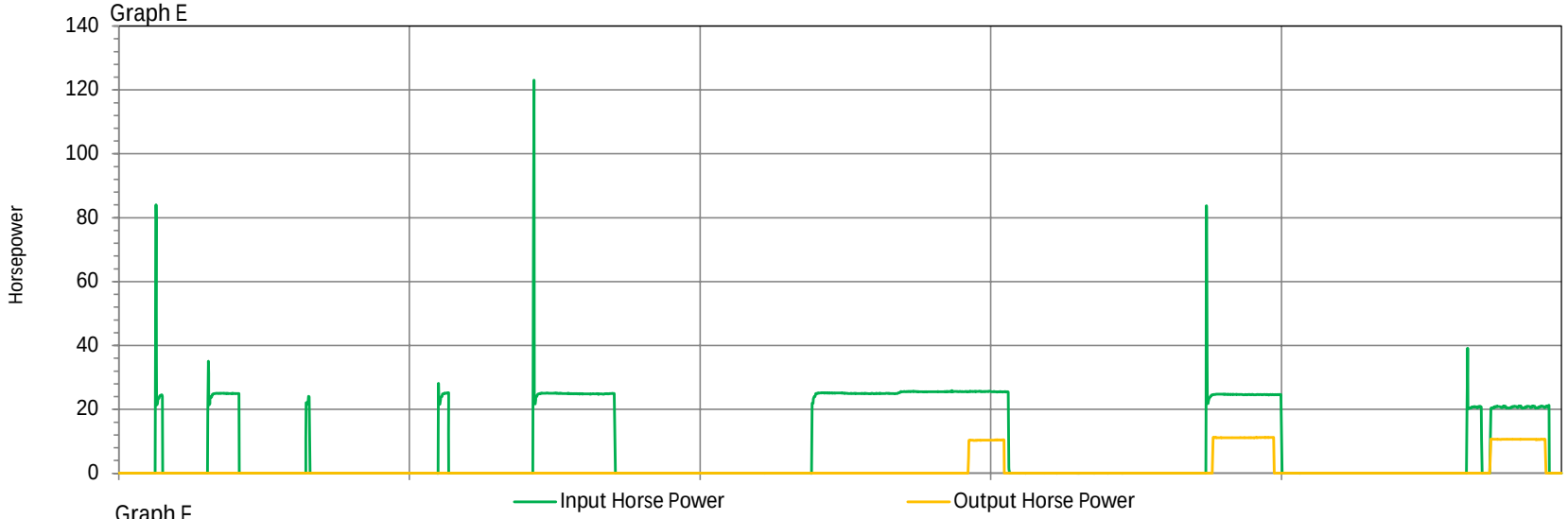
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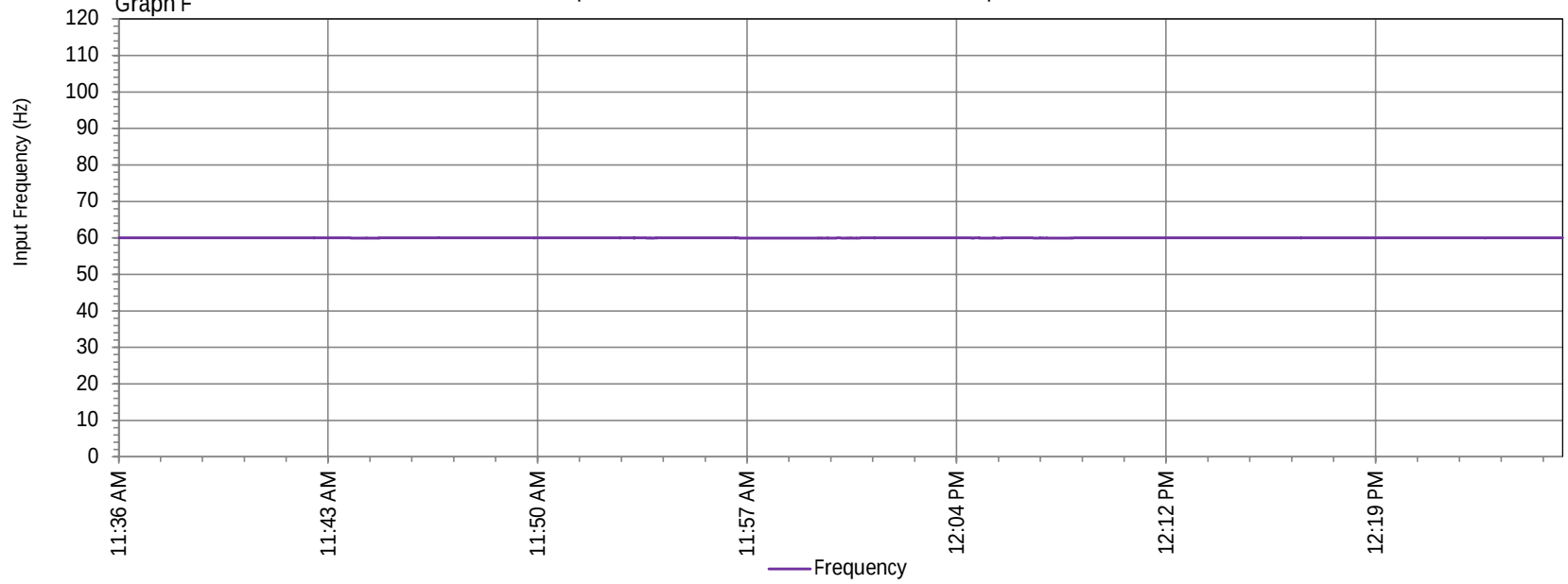
* Times shown are Eastern Standard Time


Graph C
Volts (L-N)
300
250
200
150
100
50
0
Volts - A
Volts - B
Volts - C
Graph D
Amps
350
300
250
200
150
100
50
0
Power Factor (%)
100
90
80
70
60
50
40
30
20
10
0
11:36 AM
11:43 AM
11:50 AM
11:57 AM
12:04 PM
12:12 PM
12:19 PM
Amps - A
Amps - B
Amps - C
PF - A
PF - B
PF - C

Graph E



Graph F

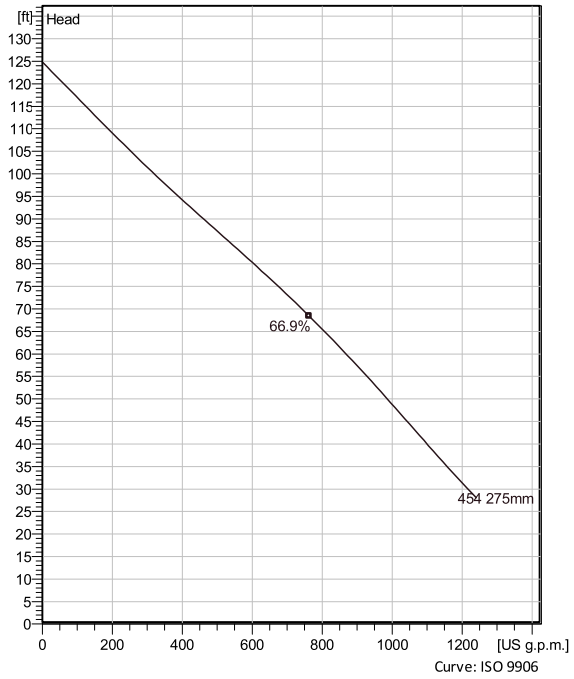


CP 3152 HT 3~ 454

FLYGT
a xylem brand

Technical specification

Curves according to: Water, pure Water, pure [100%], 39.2 °F, 62.43 lb/ft³, 1.6889E-5 ft²/s



Curve: ISO 9906

Nominal (mean) data shown. Under- and over-performance from this data should be expected due to standard manufacturing tolerances.
Please consult your local Flygt representative for performance guarantees.

Configuration

Motor number
C3152.181 25-15-4AA-W 20hp

Installation type
P - Semi permanent, Wet

Impeller diameter
275 mm

Discharge diameter
4 inch

Pump information

Impeller diameter
275 mm

Discharge diameter
4 inch

Inlet diameter
100 mm

Maximum operating speed
1750 rpm

Number of blades
1

Throughlet diameter
3 inch

Max. fluid temperature
40 °C

Material

Impeller
Grey cast iron

Project	Xylect-22016252	**Created by**	Robert Simcox		
Block		**Created on**	3/18/2024	**Last update**	3/18/2024

CP 3152 HT 3~ 454

Technical specification

Motor - General

Motor number C3152.181 25-15-4AA-W 20hp	**Phases** 3~	**Rated speed** 1750 rpm	**Rated power** 20 hp
ATEX approved No	**Number of poles** 4	**Rated current** 51 A	**Stator variant** 12
Frequency 60 Hz	**Rated voltage** 230 V	**Insulation class** H	**Type of Duty** S1
Version code 181			

Motor - Technical

Power factor - 1/1 Load 0.84	**Motor efficiency - 1/1 Load** 87.0 %	**Total moment of inertia** 5.67 lb ft²	**Starts per hour max.** 30
Power factor - 3/4 Load 0.79	**Motor efficiency - 3/4 Load** 87.0 %	**Starting current, direct starting** 285 A	
Power factor - 1/2 Load 0.69	**Motor efficiency - 1/2 Load** 86.0 %	**Starting current, star-delta** 95 A	

Project	Xylect-22016252	**Created by**	Robert Simcox		
Block		**Created on**	3/18/2024	**Last update**	3/18/2024

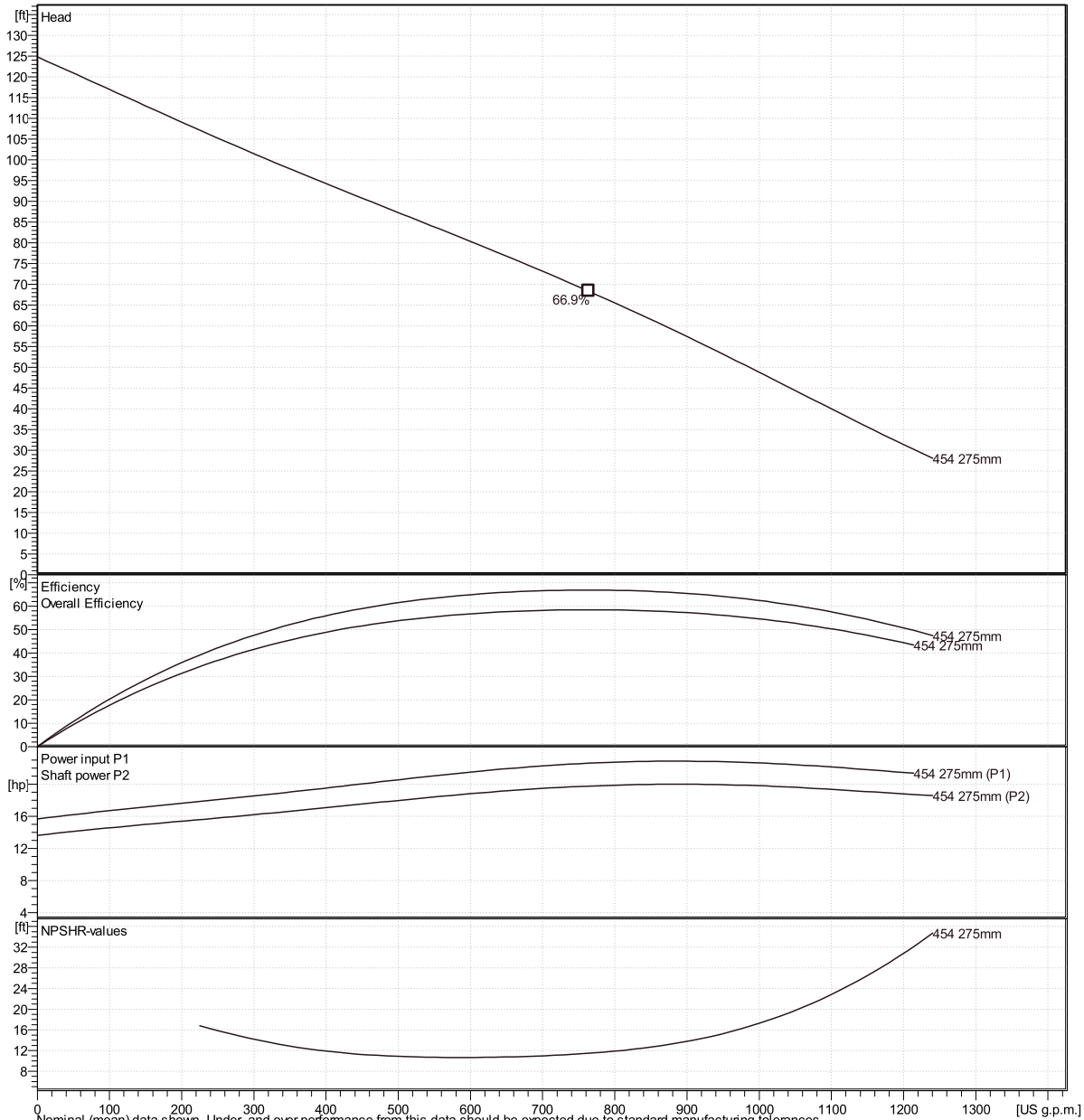
CP 3152 HT 3~ 454

Performance curve

Duty point

Flow	Head

Curves according to: Water, pure Water, pure [100%],39.2 °F,62.43 lb/ft³,1.6889E-5 ft²/s



Nominal (mean) data shown. Under- and over-performance from this data should be expected due to standard manufacturing tolerances.
Please consult your local Flygt representative for performance guarantees.

Curve: ISO 9906

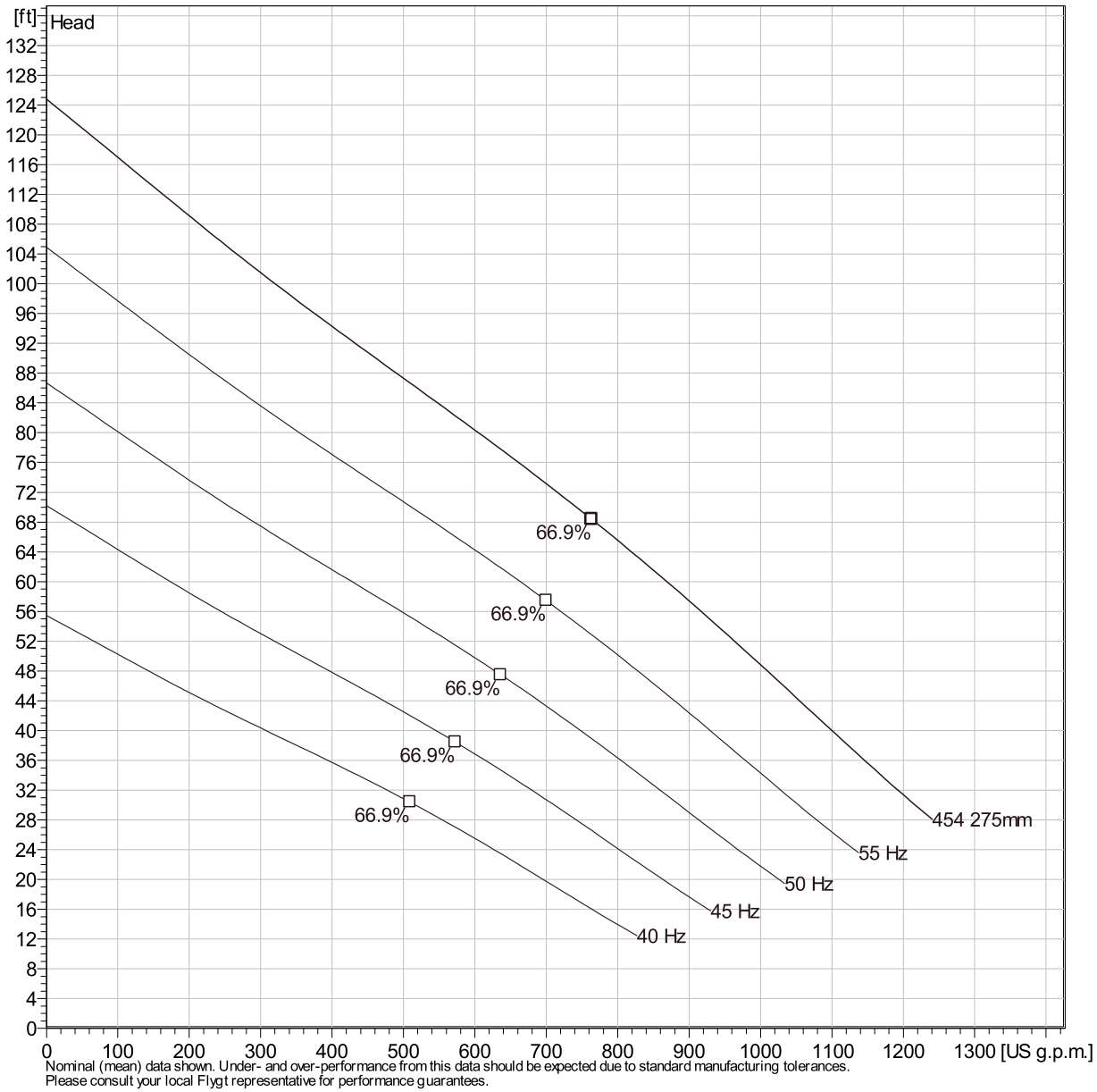
Xylect-22016252		Robert Simcox		
	Created on	3/18/2024	**Last update**	3/18/2024

Program version	Data version	User group(s)
72.0 - 2/20/2024 (Build 175)	3/5/2024 10:29 A3P3	Xylem:USA - EXT, USA - INT

CP 3152 HT 3~ 454

Duty Analysis

Curves according to: Water, pure [100%] ; 39.2°F; 62.43lb/ft³; 1.6889E-5ft²/s



Nominal (mean) data shown. Under- and over-performance from this data should be expected due to standard manufacturing tolerances.
Please consult your local Flygt representative for performance guarantees.

Operating characteristics

Pumps / Systems	Flow	Head	Shaft power	Flow	Head	Shaft power	Hydr.eff.	Spec. Energy	NPSHre
	US g.p.m.	ft	hp	US g.p.m.	ft	hp		kWh/US MG	ft

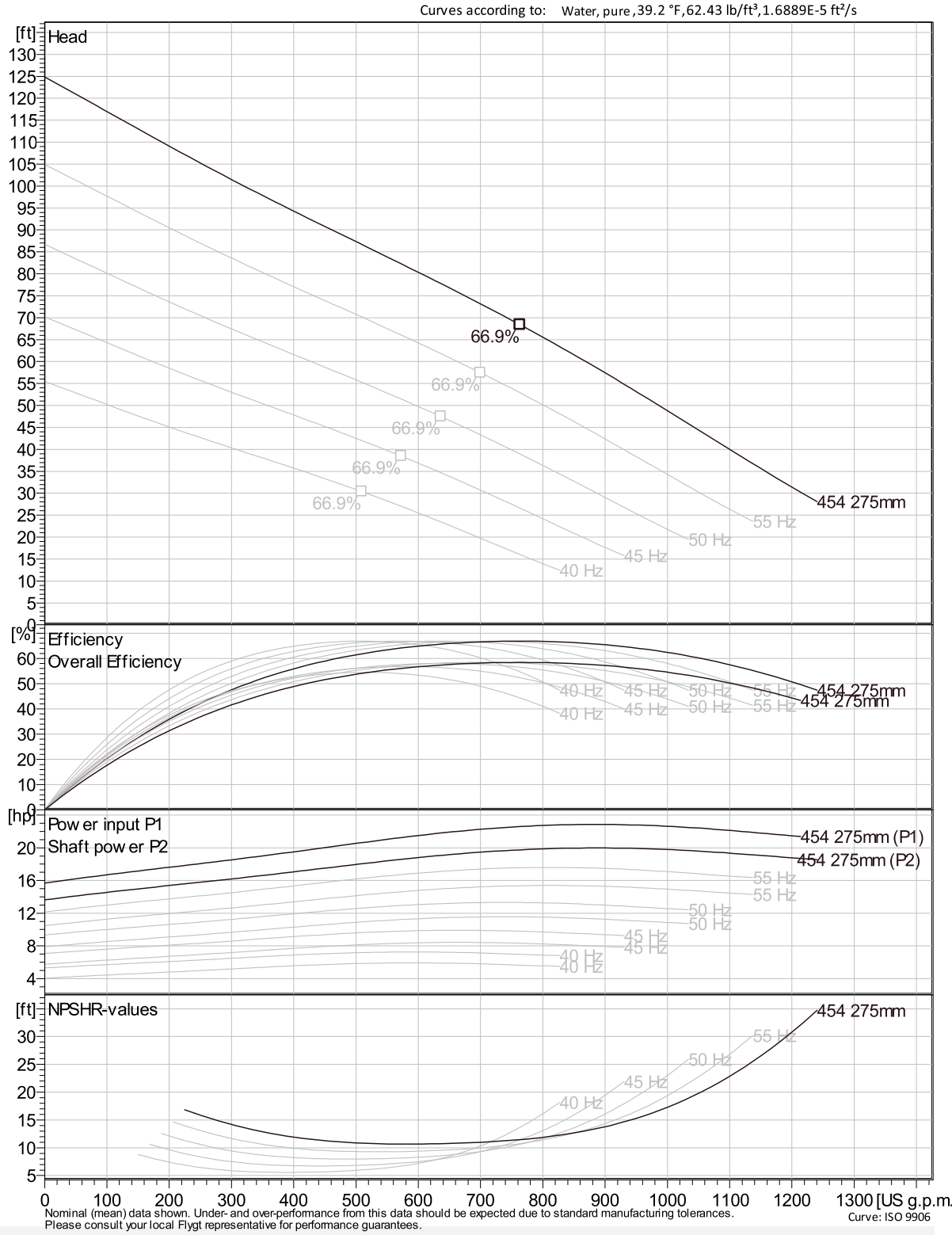
Project		**Created by**	Robert Simcox		
Block	Xylect-22016252	**Created on**	3/18/2024	**Last update**	3/18/2024

CP 3152 HT 3~ 454

VFD Curve

FLYGT
a xylem brand

Curves according to: Water, pure ,39.2 °F,62.43 lb/ft³,1.6889E-5 ft²/s



Nominal (mean) data shown. Under- and over-performance from this data should be expected due to standard manufacturing tolerances.
Please consult your local Flygt representative for performance guarantees.

Curve: ISO 9906

Project	Xylect-22016252	**Created by**	Robert Simcox		
Block		**Created on**	3/18/2024	**Last update**	3/18/2024

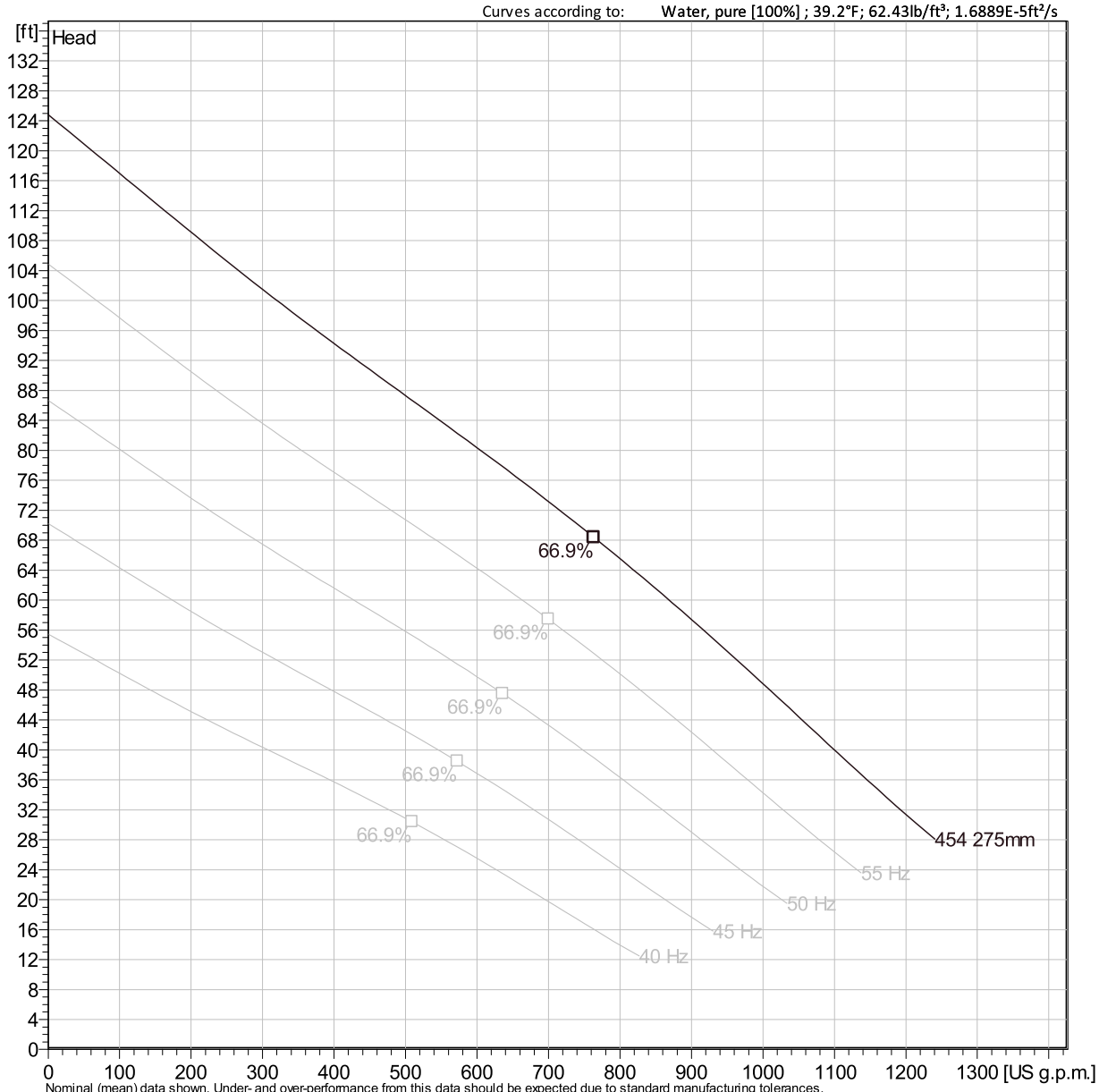
Program version	Data version	User group(s)
72.0 - 2/20/2024 (Build 175)	3/5/2024 10:29 A3P3	Xylem:USA - EXT, USA - INT

CP 3152 HT 3~ 454

VFD Analysis

FLYGT
a xylem brand

Curves according to: Water, pure [100%] ; 39.2°F; 62.43lb/ft³; 1.6889E-5ft²/s



Nominal (mean) data shown. Under- and over-performance from this data should be expected due to standard manufacturing tolerances.
Please consult your local Flygt representative for performance guarantees.

Operating Characteristics

Pumps / Systems	Frequency	Flow	Head	Shaft power	Flow	Head	Shaft power	Hydr.eff.	Specific energy	NPSHre
		US g.p.m.	ft	hp	US g.p.m.	ft	hp		kWh/US MG	ft

Project	Xylect-22016252	**Created by**	Robert Simcox		
Block		**Created on**	3/18/2024	**Last update**	3/18/2024

Program version
72.0 - 2/20/2024 (Build 175)

Data version
3/5/2024 10:29 A3P3

User group(s)
Xylem: USA - EXT, USA - INT

CP 3152 HT 3~ 454

Dimensional drawing

Project	Xylect-22016252	**Created by**	Robert Simcox		
Block		**Created on**	3/18/2024	**Last update**	3/18/2024

Pump Station Evaluation Report

9 - Main St South

Prepared For:

City of Wildwood

Evaluation Date:

2/7/2024

Report Date:

September 26, 2024

Version 1

Kimley»Horn

Version	Publish Date	Description
1	See Cover	Original/Version 1

Table 0.1 - Revision History

Version	Publish Date	Test Date	Description

Table 0.2 - Previous Evaluation History

This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn shall be without liability to Kimley-Horn.

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ATTACHMENTS

Attachment 1 ..... **Test Data Graphs**

Attachment 2 ..... **Supplementary Pump Information**

ABBREVIATIONS

Ø	Phase
AC	Alternating Current
ADD	Automated Draw Down
ADF	Average Daily Flow
ARR	Automated Rate of Rise
ATL	Across The Line
Avg	Average
BEP	Best Efficiency Point
CL	Center Line
Disch	Discharge
ETM	Elapsed Time Meter
FLA	Full Load Amps
FM	Force Main
Ft	Feet
FPS	Feet Per Second
FSFO	Full Speed Full Open
Gal	Gallons
GPM	Gallons Per Minute
HGL	Hydraulic Grade Line
HP	Horsepower
Hrs	Hours
H:M:S	Hours:Minutes:Seconds
Hz	Hertz
In	Inches
InvIn	Invert In
KWH	Kilowatt-Hours
L	Length
L1, L2, L3	Leg 1, 2 & 3 or Length 1, 2 & 3
MSL	Mean Sea Level
MTBF	Mean Time Between Failures
N	Neutral
P	Pump
PCL	Pump Center Line
PCP	Pump Control Panel
PF	Power Factor
PSI	Pounds Per Square Inch
PT	Point
RPM	Revolutions Per Minute
TDH	Total Dynamic Head
TVSS	Transient Voltage Surge Suppressor
V	Volts
VFD	Variable Frequency Drive
WTW	Wire To Water
WW	Wet Well
Yr	Year

1 INTRODUCTION

Kimley-Horn and Associates, Inc. evaluated the pump station through pump performance testing and a condition assessment. This report summarizes the data and results of that evaluation. The performance tests were conducted using the XAK-PACK pump performance monitoring device. The following pages provide summaries of the data collected and notes about the pumps' performance.

1.1 SITE INFORMATION

Site Name / Site Number Site #			
Date of Evaluation	2/7/2024		
Address	US-301, Wildwood, FL 34785		
Coordinates	28.84364014 -82.04579000		
Fluid Conveyed	Wastewater		
Station Style	Submersible		
Number of Pumps	2	Number of Pump Slots	2
Pump Type	Submersible		
Flow Meter Type	N/a		
Year of Construction	Unknown	Based on	☐Docs. ☐Estimation ☐Other
Basin/Zone	Unknown		
Firm Capacity (Design)	Unknown		
Firm Capacity (Test)	362 GPM / 0.52 MGD		
Discharge Description	6-inch, 50 LF unknown FM tying into a 16” 4,575 LF manifold FM discharging to the wastewater treatment plant		
Electrical Service	120/240 Delta		
Site Generator	Caterpillar diesel with belly tank		
Bypass Ability	No bypass assembly on-site		
Miscellaneous Features			

Site Notes:

Pressure data was unavailable during testing of this site.

1.2 SITE MAP

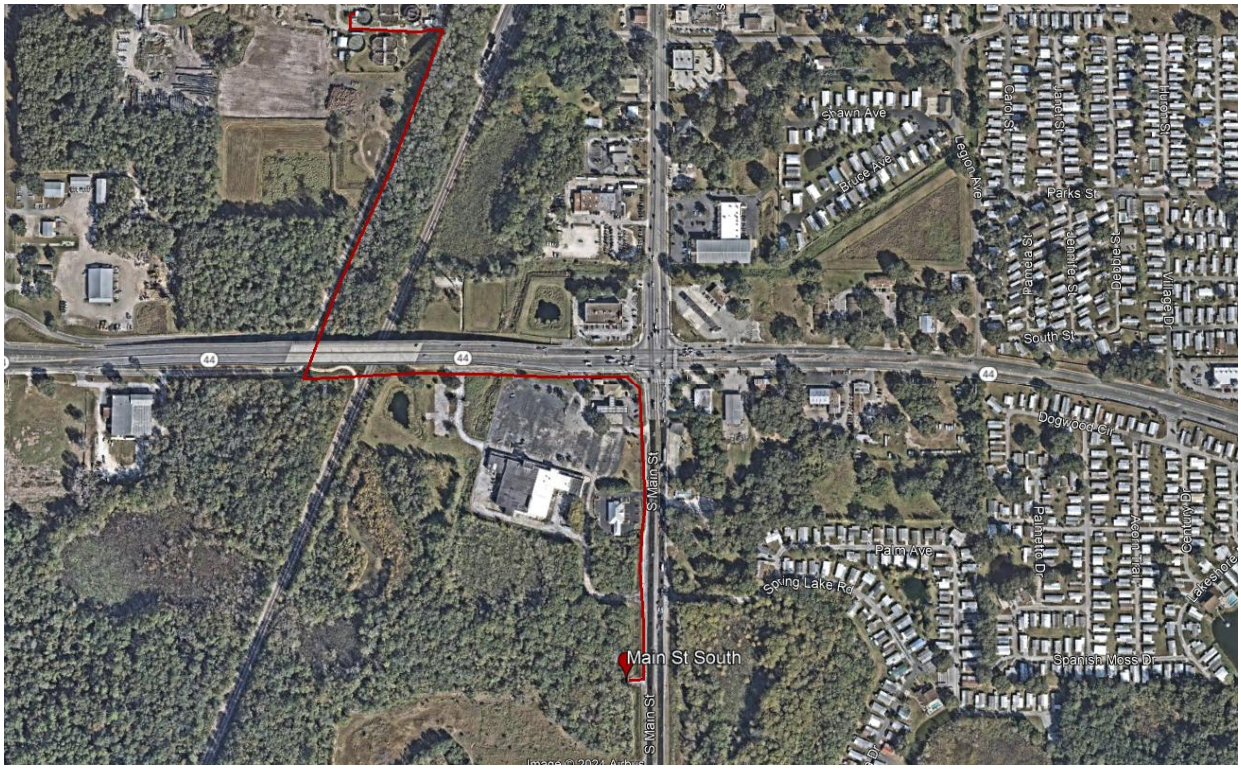


Figure 1.1 - Site Location Map

2 PUMP PERFORMANCE TESTS

Pump performance tests were conducted on the pumps utilizing the measurement tools detailed below. **Table 2.1 - Measurement Methods** describes the measurements taken during the test and the measurement method. Some measurements were confirmed utilizing a secondary measurement method. See **Attachment 1** for graphs of the digitally recorded data. For each test, note the following:

1. Common accuracies for measurements of flow, pressure, voltage and current are ±1%.
2. Friction loss is calculated using the Hazen-Williams formula and the Bernoulli equation. Piping characteristics are based on best available data.

Parameter	Measurement Method	
	Primary	Secondary
Flow	Level Transducer (XAK-PACK)	N/A
Pressure	Pressure Transducer (XAK-PACK)	Liquid Filled Pressure Gauge
Wet Well Level	Level Transducer (XAK-PACK)	N/A
Volts	Voltage Probes (XAK-PACK)	Fluke 376FC
Amps	Current Transducers (XAK-PACK)	Fluke 376FC
Power Factor	Power Factor Monitor (XAK-PACK)	N/A

Table 2.1 - Measurement Methods

2.1 PUMP #1

Below is a summary of the pump characteristics and performance test results.

Parameter	Units	Value
Pump Manufacturer	-	Flygt
Pump Model	-	CP 3152 HT 3~ 454
Pump Style	-	Submersible
Pump Impeller Dia	Inches	10.83
Pump Rated Capacity	GPM	-
Pump Rated Head	Ft	-
Pump ETM	Hours	2666
Pump Flow @ BEP Design Curve	GPM	760
Pump Hyd Eff @ Design Pt	%	-
Pump WTW Eff @ Operating Pt	%	44%
Pump NPSHr @ Operating Pt	Ft	13
Motor Synchronous Speed	RPM	1800
Motor Rated Speed	RPM	1750
Motor No. Phases	No	3
Motor Starters	-	ATL
Motor Rated Voltage	Volts	230
Motor Rated Horsepower	HP	10.0
Motor Service Factor	-	1.15
Motor FLA	Amps	51.0
Mfg. Motor Eff. @ Operating Pt	%	79%
Mfg. Starter Eff. @ Operating Pt	%	100%

Table 2.2 - Pump #1 Design Characteristics

NOTE: Pressure data was unavailable for this site during testing. Operating point TDH and system curve are shown only as theoretical based off operation on the provided manufacturers curve. Pressure measurements and TDH calculation should be field verified.

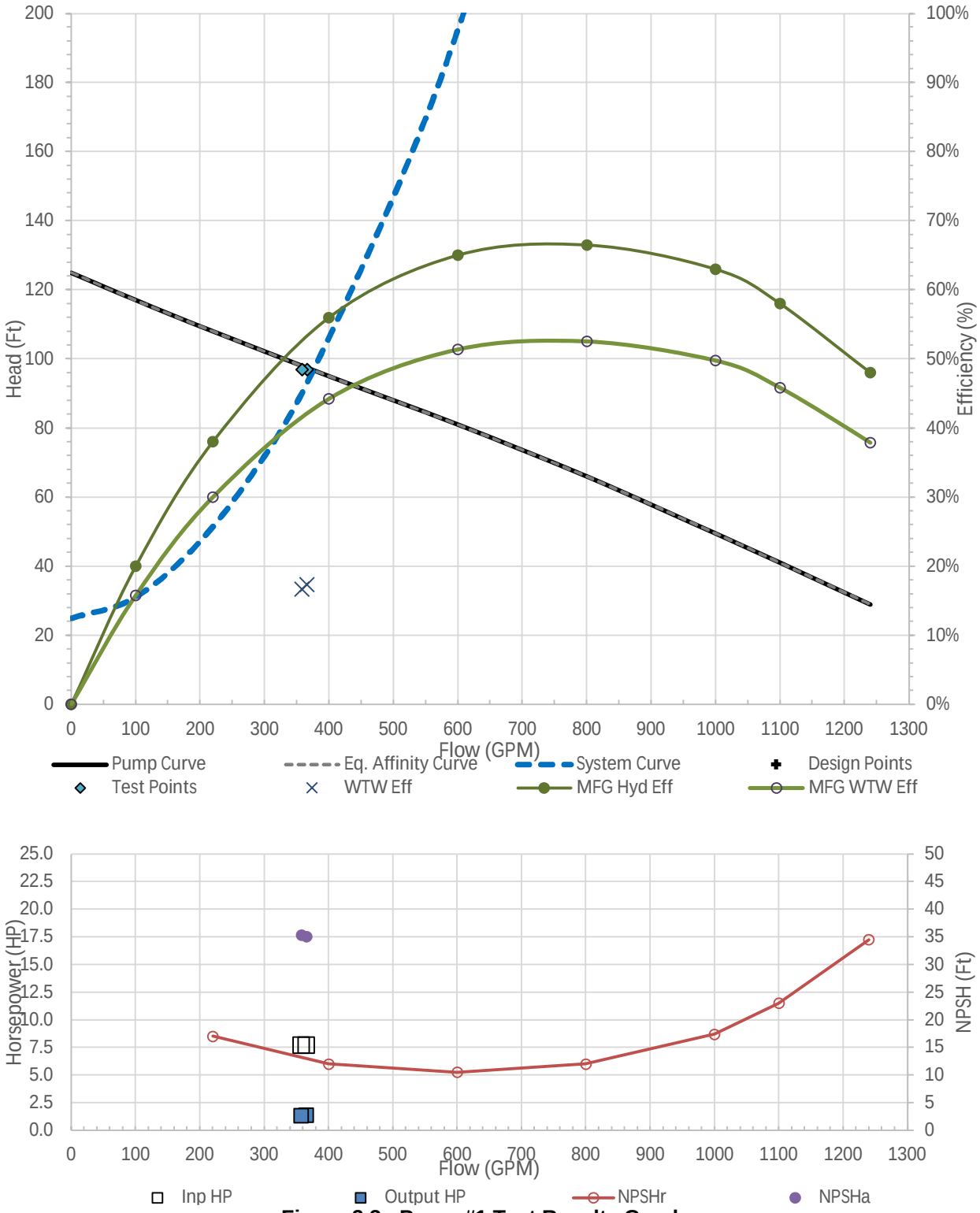


Figure 2.3 - Pump #1 Test Results Graphs

	Parameter	Units	Lower Limit	Test Value	Upper Limit	Comment
Measured	Average Output (FSFO)	GPM	-	362	-	
	Average TDH (FSFO)	Ft	-	-	-	
	Average WTW Efficiency (FSFO)	%	-	-	-	
	Average Input HP (FSFO)	HP	-	7.7	-	
	Average Current Draw (FSFO)	Amps	-	17.8	-	
	Suction Velocity (FSFO)	FPS	2	-	7	
	Discharge Velocity (FSFO)	FPS	2	3.6	7	
	BEP Comparison (FSFO)	%	80%	48%	115%	1
	Average Output (FSFO)	%	90%	-	110%	
	Affinity Law Eq. Curve	%	-5%	0.0%	5%	
	NPSHa	Ft	13	35.2	N/A	
	WTW Eff @ Operating Pt	%	-5%	-	5%	
	Input Frequency	Hz	-5%	0%	5%	
	Input Voltage (L-L)	%	-10%	-4.6%	10%	
	Voltage Drop	%	-15%	0.7%	N/A	
	Voltage Imbalance	%	-10%	0.3%	10%	
	Current Imbalance	%	-10%	34.4%	10%	2
	Motor FLA	%	50%	34.9%	105%	3
	Motor Load	%	50%	76.9%	115%	
	Motor Slip Speed	%	1740	1750	1810	
	Vibration	In/Sec	0	0.0	-	
Observed	Surge	1-5	-	1	3	
	Vibration	1-5	-	2	3	
	Cavitation	1-5	-	1	3	
	Mechanical Noise	1-5	-	2	3	
	Leaks	1-5	-	1	3	
	Exterior Condition	1-5	-	2	3	
	Overall Score	1-5	-	2	3	

Table 2.4 - Pump #1 Test Summary

Pump #1 - Test Comments

1. Pump is operating at 48% of BEP.
2. Current imbalance is above the recommended upper limit. Motor MTBF is reduced when operating in this range. Monitor for increasing imbalance and consider refurbishing or replacing the motor. Consider further evaluation to include regular 3-phase amperage checks, mega-ohm tests, and pump output checks.
3. Motor FLA is below the recommended limit.

2.2 PUMP #2

Below is a summary of the pump characteristics and performance test results.

Parameter	Units	Value
Pump Manufacturer	-	Flygt
Pump Model	-	CP 3152 HT 3~ 454
Pump Style	-	Submersible
Pump Impeller Dia	Inches	10.83
Pump Rated Capacity	GPM	-
Pump Rated Head	Ft	-
Pump ETM	Hours	2336
Pump Flow @ BEP Design Curve	GPM	760
Pump Hyd Eff @ Design Pt	%	-
Pump WTW Eff @ Operating Pt	%	46%
Pump NPSHr @ Operating Pt	Ft	12
Motor Synchronous Speed	RPM	1800
Motor Rated Speed	RPM	1750
Motor No. Phases	No	3
Motor Starters	-	ATL
Motor Rated Voltage	Volts	230
Motor Rated Horsepower	HP	10.0
Motor Service Factor	-	1.15
Motor FLA	Amps	51.0
Mfg. Motor Eff. @ Operating Pt	%	79%
Mfg. Starter Eff. @ Operating Pt	%	100%

Table 2.5 - Pump #2 Design Characteristics

NOTE: Pressure data was unavailable for this site during testing. Operating point TDH and system curve are shown only as theoretical based off operation on the provided manufacturers curve. Pressure measurements and TDH calculation should be field verified.

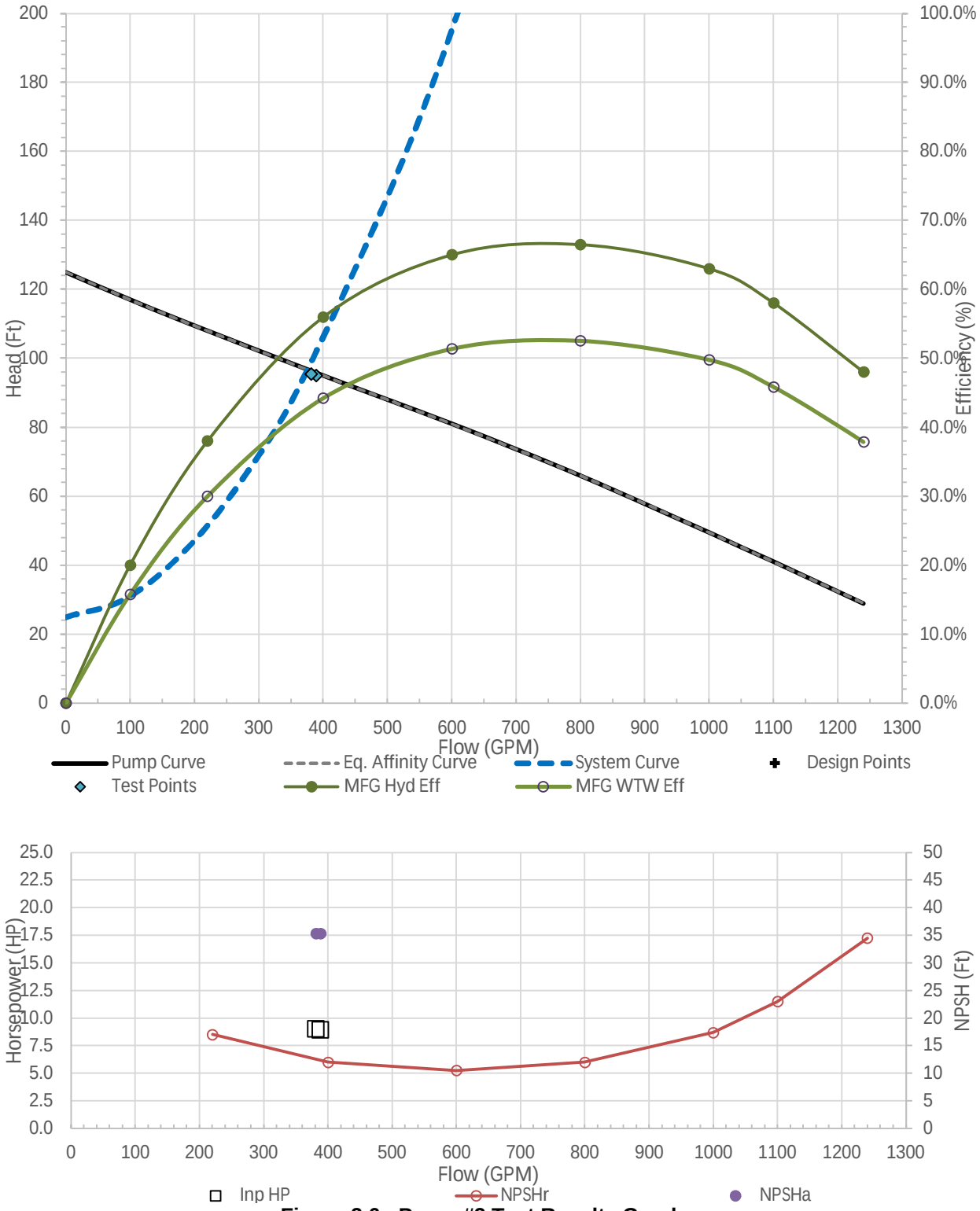


Figure 2.6 - Pump #2 Test Results Graphs

	Parameter	Units	Lower Limit	Test Value	Upper Limit	Comment
Measured	Average Output (FSFO)	GPM	-	385	-	
	Average TDH (FSFO)	Ft	-	-	-	
	Average WTW Efficiency (FSFO)	%	-	-	-	
	Average Input HP (FSFO)	HP	-	9.0	-	
	Average Current Draw (FSFO)	Amps	-	20.6	-	
	Suction Velocity (FSFO)	FPS	2	-	7	
	Discharge Velocity (FSFO)	FPS	2	3.8	7	
	BEP Comparison (FSFO)	%	80%	51%	115%	1
	Average Output (FSFO)	%	90%	-	110%	
	Affinity Law Eq. Curve	%	-5%	0.0%	5%	
	NPSHa	Ft	12	35.3	N/A	
	WTW Eff @ Operating Pt	%	-5%	-	5%	
	Input Frequency	Hz	-5%	0%	5%	
	Input Voltage (L-L)	%	-10%	-5.4%	10%	
	Voltage Drop	%	-15%	1.5%	N/A	
	Voltage Imbalance	%	-10%	0.4%	10%	
	Current Imbalance	%	-10%	6.3%	10%	
	Motor FLA	%	50%	40.3%	105%	2
	Motor Load	%	50%	89.6%	115%	
	Motor Slip Speed	%	1740	1750.0	1810	
	Vibration	In/Sec	0	0.0	-	
Observed	Surge	1-5	-	1	3	
	Vibration	1-5	-	2	3	
	Cavitation	1-5	-	1	3	
	Mechanical Noise	1-5	-	2	3	
	Leaks	1-5	-	1	3	
	Exterior Condition	1-5	-	2	3	
	Overall Score	1-5	-	2	3	

Table 2.7 - Pump #2 Test Summary

Pump #2 - Test Comments

1. Pump is operating at 51% BEP.
2. Motor FLA is below the recommended limit.

2.3 HYDRAULICS SUMMARY

Both system curves shown below are theoretical calculations. System Curve One is built from the assumed operating points based on the measured pump flow rates and the corresponding TDH of the provided manufacturer curve. No pressure data was available during the time of testing. System curve Two was determined from available GIS data.

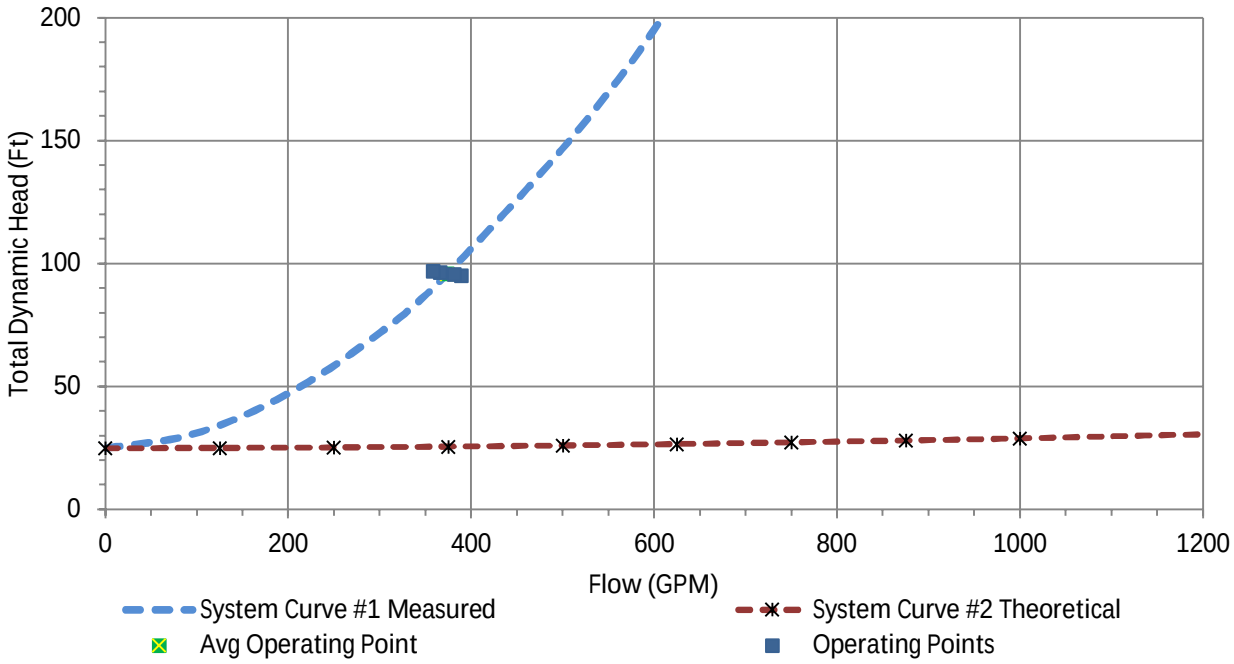


Figure 2.8 – System Hydraulic Information provides a graph of the system characteristics and a table describing the system curves. Length, Hazen-Williams (Hz-Wm), and diameter are approximated based on the best available information and fit to the data. System Curve Characteristics are intended to be for reference.

System Curve Characteristics					
Curve Name	**Curve Type**	**Length (Ft)**	**Hz-Wm**	**Diameter (In)**	**Calculated Based On**
System Curve #1	Measured - Theoretical	4625	115	6.0	Test Data
System Curve #2	Theoretical	4625	120	16.0	Available GIS and Record Drawing Data

Figure 2.8 – System Hydraulic Information

2.4 PIPELINE PERFORMANCE INDICATORS

Figure 2.9 – Pipe Velocities displays the velocities in each known diameter of the pressurized conveyance system. The Average Test Output Velocity represents the velocity generated by the average pumping rate produced by testing. The Station Firm Capacity Velocity represents the velocity based on the station's firm capacity (output with the largest pump out of service). The color gradient represents ranges of acceptable to problematic velocities. Red areas of operation are problematic and green areas of operation are acceptable.

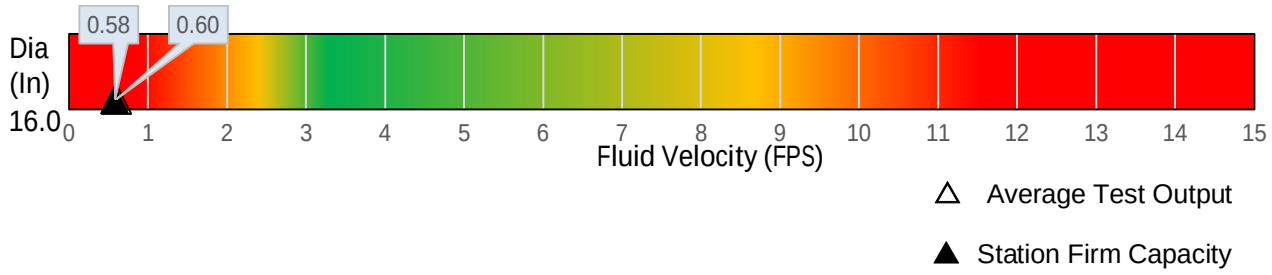


Figure 2.9 – Pipe Velocities

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3 RECOMMENDATIONS

The following recommendations are a result of the findings of this evaluation and should be considered for implementation. See **Section 2 Pump Performance Tests** for pump specific recommendations. In addition to the recommendations below, this site should/ be considered for the following overall planning and budgeting activities.

3.1 OVERALL RECOMMENDATIONS

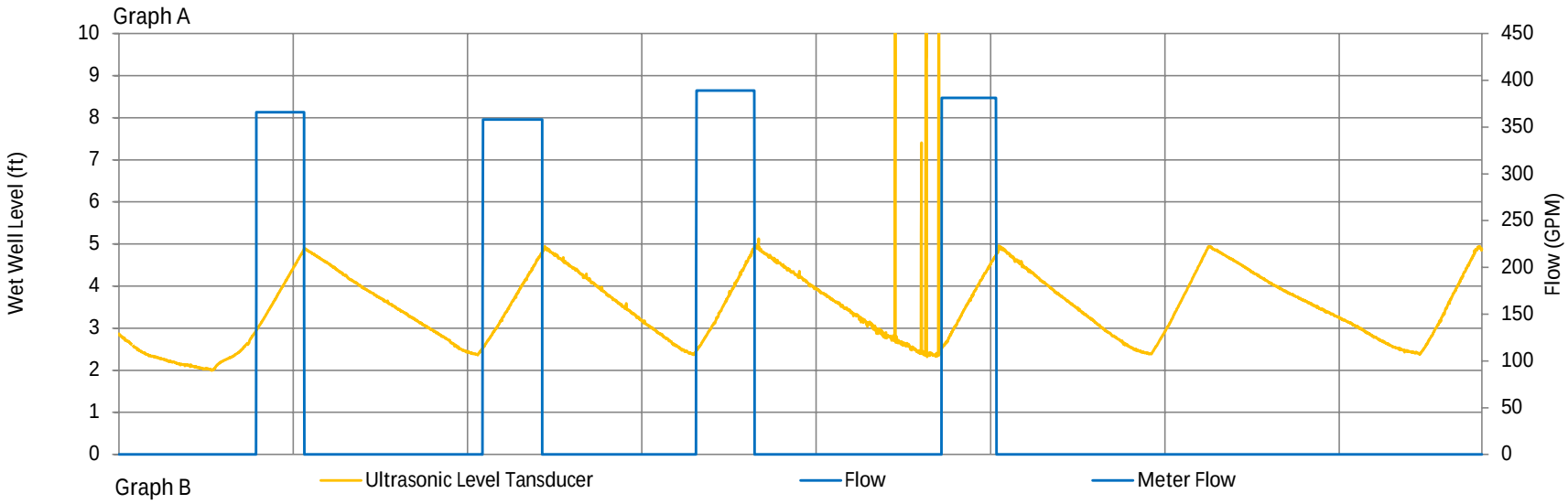
Overall Site Rating	Score	Description
	1	No recommendations currently. Monitor station for worsening conditions, perform regular O&M, reassess condition in 2-5 years.
	2	Complete recommendations listed in Section 3.2, monitor station for worsening conditions, perform regular O&M, reassess condition in 1-3 years.
	3	Station requires improvements beyond replacement of individual components. Begin planning and budgeting for a major rehabilitation. Place under regular observation until rehabilitation is complete.
	4	Station does not appear to be brought into conformance with standards without replacement. Begin planning and budgeting for a station replacement. Place under regular observation until rehabilitation is complete.

3.2 MISCELLANEOUS RECOMMENDATIONS

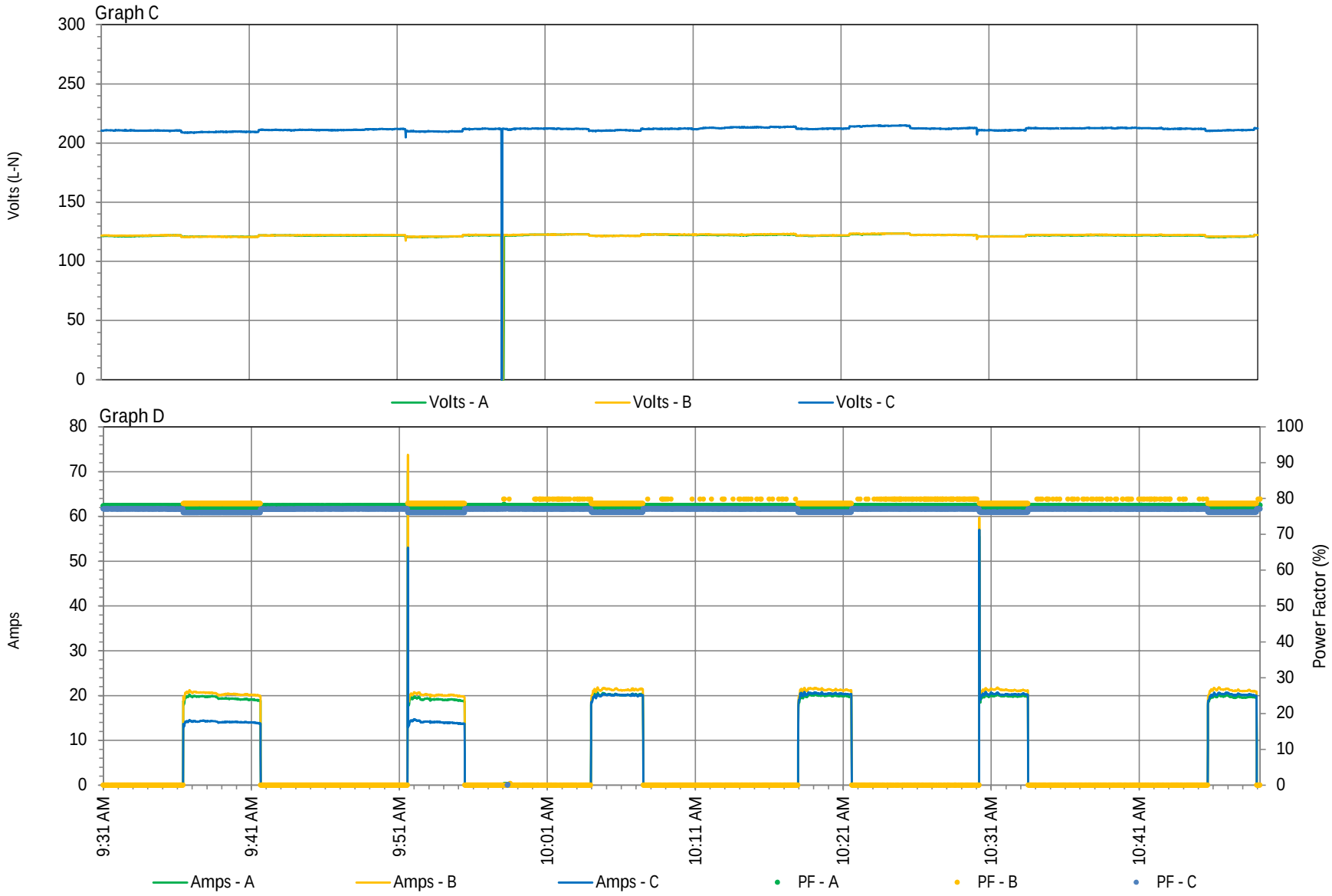
Pressure – Pressure Data was unavailable for this site during testing. As a result, many performance checks were unable to be completed. We recommend attaching a pressure gauge and rechecking against measured data to confirm pump performance.

4 ATTACHMENTS

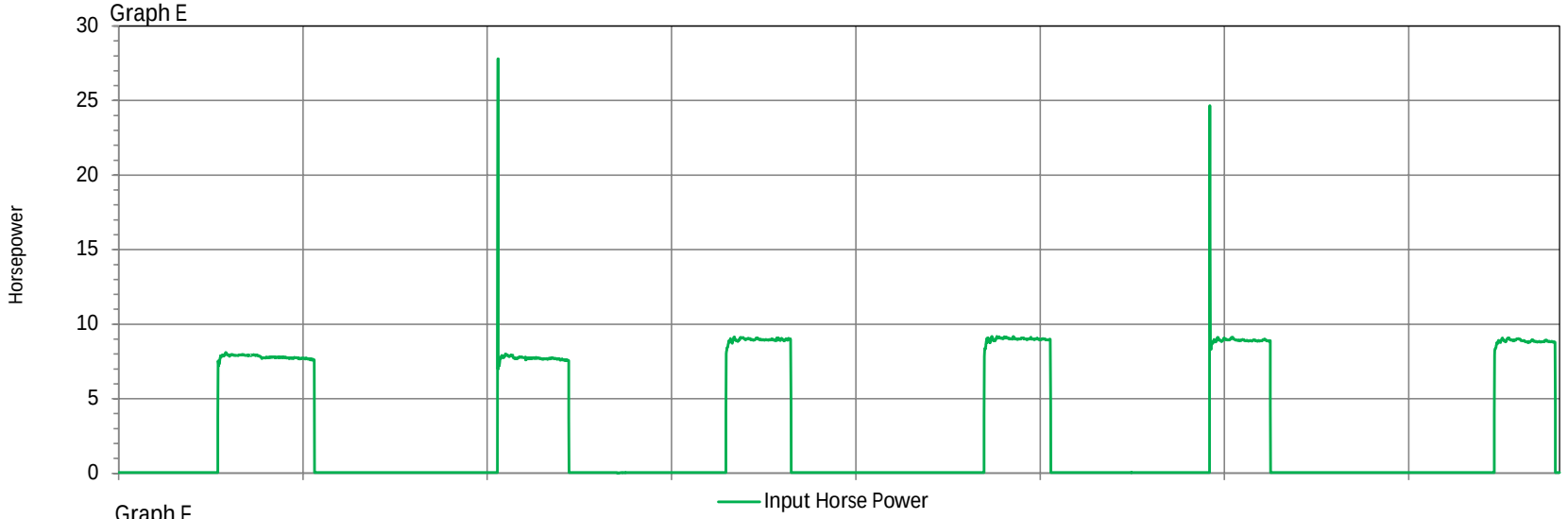
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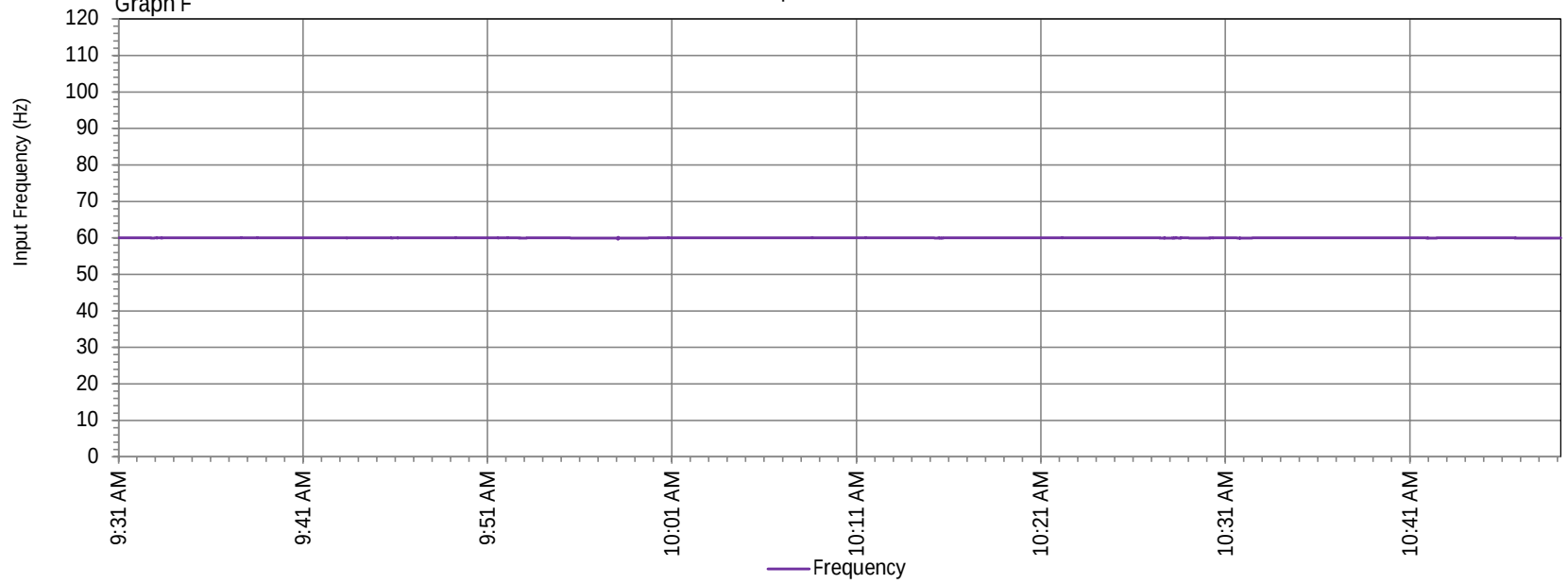
* Times shown are Eastern Standard Time


Graph C
Volts (L-N)
300
250
200
150
100
50
0
Volts - A
Volts - B
Volts - C
Graph D
Amps
Power Factor (%)
80
70
60
50
40
30
20
10
0
100
90
80
70
60
50
40
30
20
10
0
9:31 AM
9:41 AM
9:51 AM
10:01 AM
10:11 AM
10:21 AM
10:31 AM
10:41 AM
Amps - A
Amps - B
Amps - C
PF - A
PF - B
PF - C

Graph E



Graph F

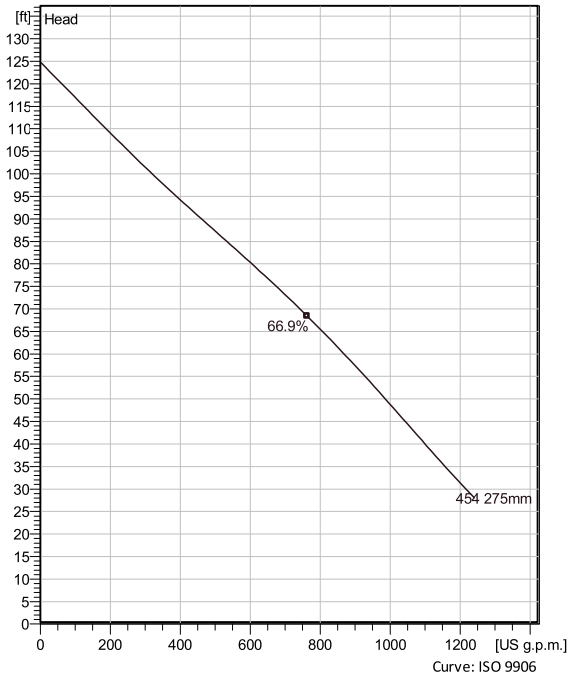


CP 3152 HT 3~ 454

FLYGT
a xylem brand

Technical specification

Curves according to: Water, pure Water, pure [100%],39.2 °F,62.43 lb/ft³,1.6889E-5 ft²/s



Curve: ISO 9906

Nominal (mean) data shown. Under- and over-performance from this data should be expected due to standard manufacturing tolerances.
Please consult your local Flygt representative for performance guarantees.

Configuration

Motor number
C3152.181 25-15-4AA-W 20hp

Installation type
P - Semi permanent, Wet

Impeller diameter
275 mm

Discharge diameter
4 inch

Pump information

Impeller diameter
275 mm

Discharge diameter
4 inch

Inlet diameter
100 mm

Maximum operating speed
1750 rpm

Number of blades
1

Throughlet diameter
3 inch

Max. fluid temperature
40 °C

Material

Impeller
Grey cast iron

Project	Xylect-22016252	**Created by**	Robert Simcox		
Block		**Created on**	3/18/2024	**Last update**	3/18/2024

CP 3152 HT 3~ 454

Technical specification

Motor - General

Motor number C3152.181 25-15-4AA-W 20hp	**Phases** 3~	**Rated speed** 1750 rpm	**Rated power** 20 hp
ATEX approved No	**Number of poles** 4	**Rated current** 51 A	**Stator variant** 12
Frequency 60 Hz	**Rated voltage** 230 V	**Insulation class** H	**Type of Duty** S1
Version code 181			

Motor - Technical

Power factor - 1/1 Load 0.84	**Motor efficiency - 1/1 Load** 87.0 %	**Total moment of inertia** 5.67 lb ft²	**Starts per hour max.** 30
Power factor - 3/4 Load 0.79	**Motor efficiency - 3/4 Load** 87.0 %	**Starting current, direct starting** 285 A	
Power factor - 1/2 Load 0.69	**Motor efficiency - 1/2 Load** 86.0 %	**Starting current, star-delta** 95 A	

Project	Xylect-22016252	**Created by**	Robert Simcox		
Block		**Created on**	3/18/2024	**Last update**	3/18/2024

CP 3152 HT 3~ 454

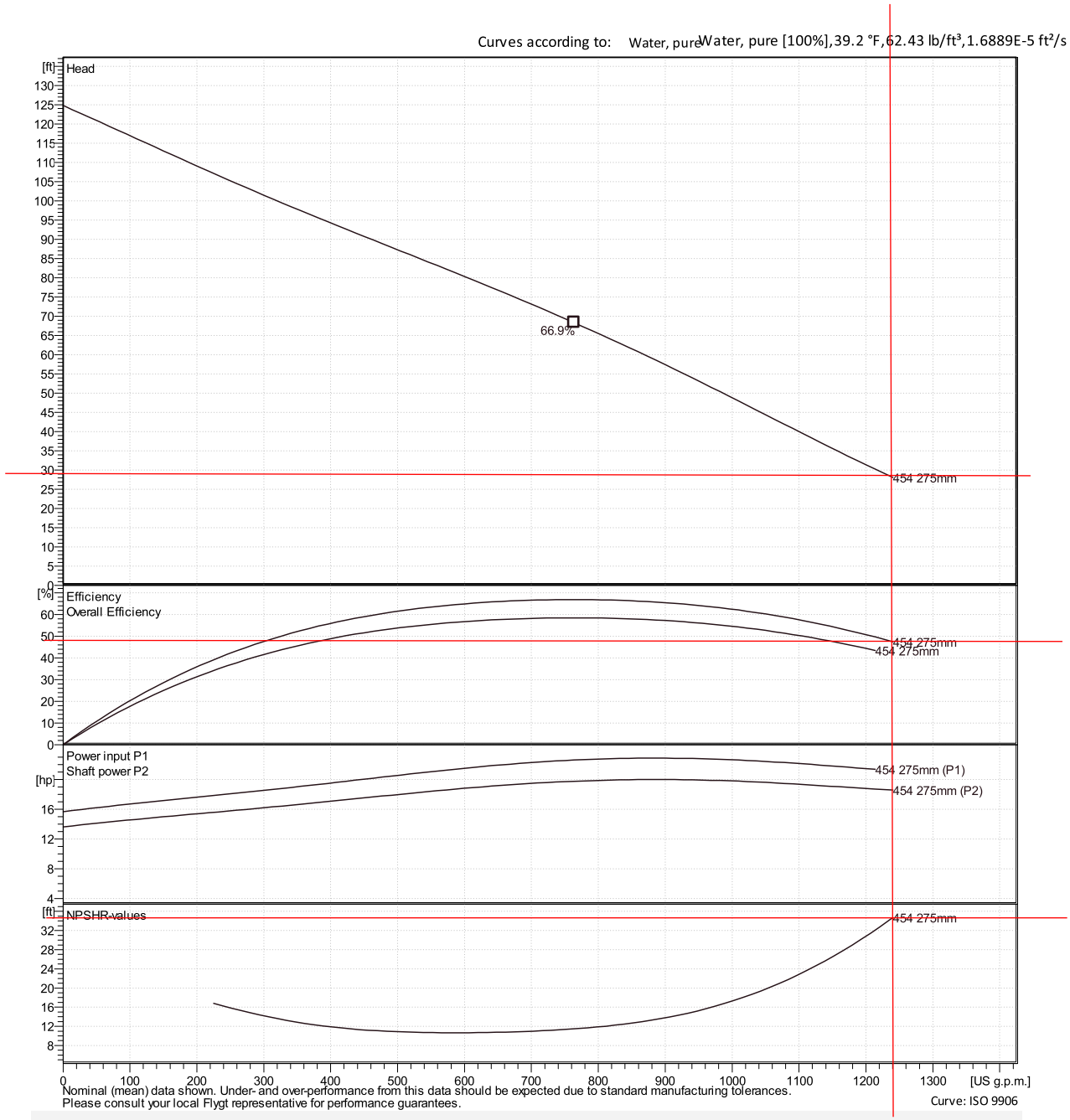
Performance curve

FLYGT
a xylem brand

Duty point

Flow	Head

Curves according to: Water, pure Water, pure [100%],39.2 °F,62.43 lb/ft³,1.6889E-5 ft²/s



Nominal (mean) data shown. Under- and over-performance from this data should be expected due to standard manufacturing tolerances.
Please consult your local Flygt representative for performance guarantees.

Curve: ISO 9906

Xylect-22016252		Robert Simcox	
Created on	3/18/2024	**Last update**	3/18/2024

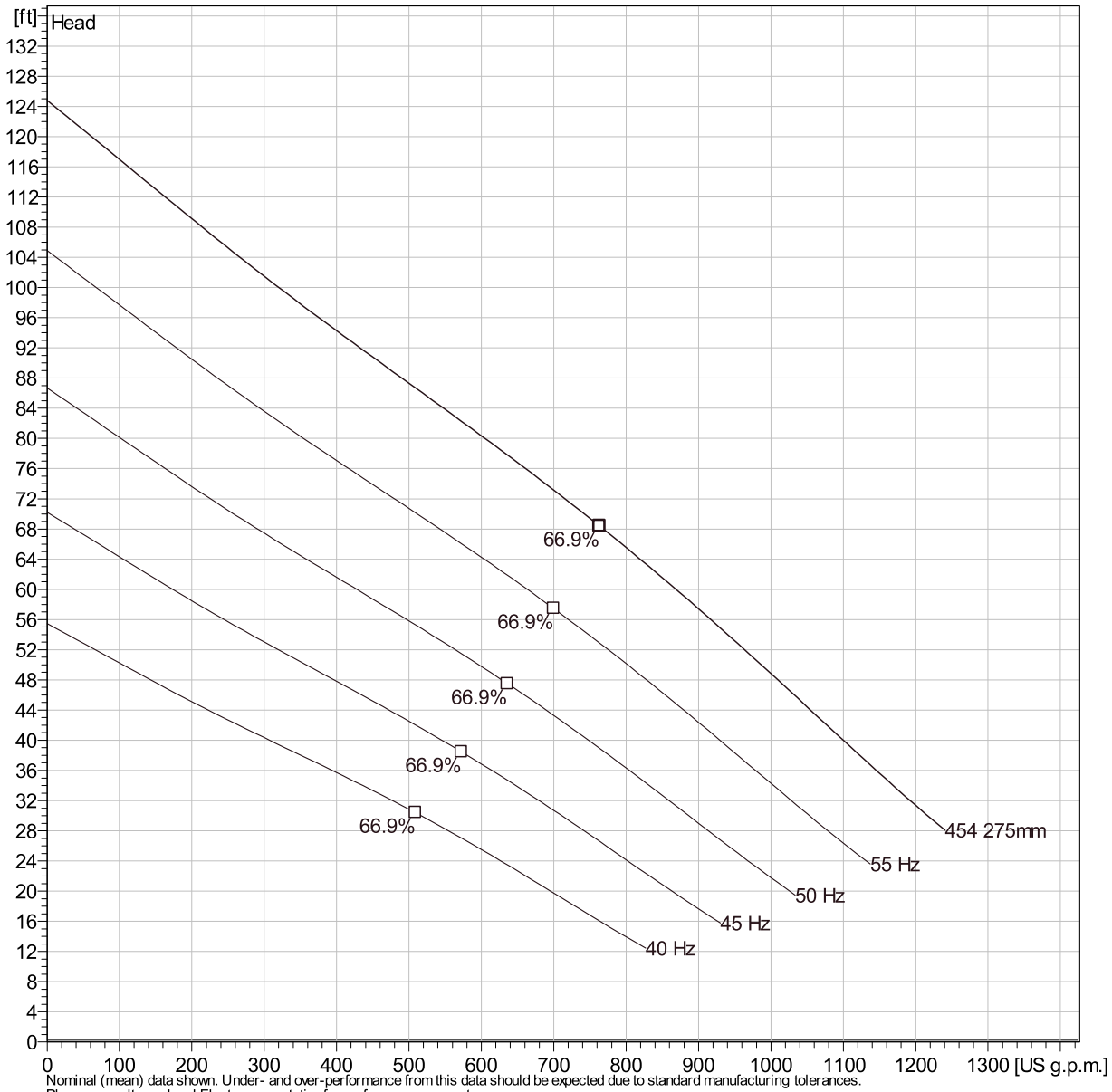
Program version	Data version	User group(s)
72.0 - 2/20/2024 (Build 175)	3/5/2024 10:29 A3P3	Xylem:USA - EXT, USA - INT

CP 3152 HT 3~ 454

Duty Analysis

FLYGT
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Curves according to: Water, pure [100%] ; 39.2°F; 62.43lb/ft³; 1.6889E-5ft²/s



Nominal (mean) data shown. Under- and over-performance from this data should be expected due to standard manufacturing tolerances.
Please consult your local Flygt representative for performance guarantees.

Operating characteristics

Pumps / Systems	Flow	Head	Shaft power	Flow	Head	Shaft power	Hydr.eff.	Spec. Energy	NPSHre
	US g.p.m.	ft	hp	US g.p.m.	ft	hp		kWh/US MG	ft

Project		**Created by**	Robert Simcox		
Block	Xylect-22016252	**Created on**	3/18/2024	**Last update**	3/18/2024

Program version
72.0 - 2/20/2024 (Build 175)

Data version
3/5/2024 10:29 A3P3

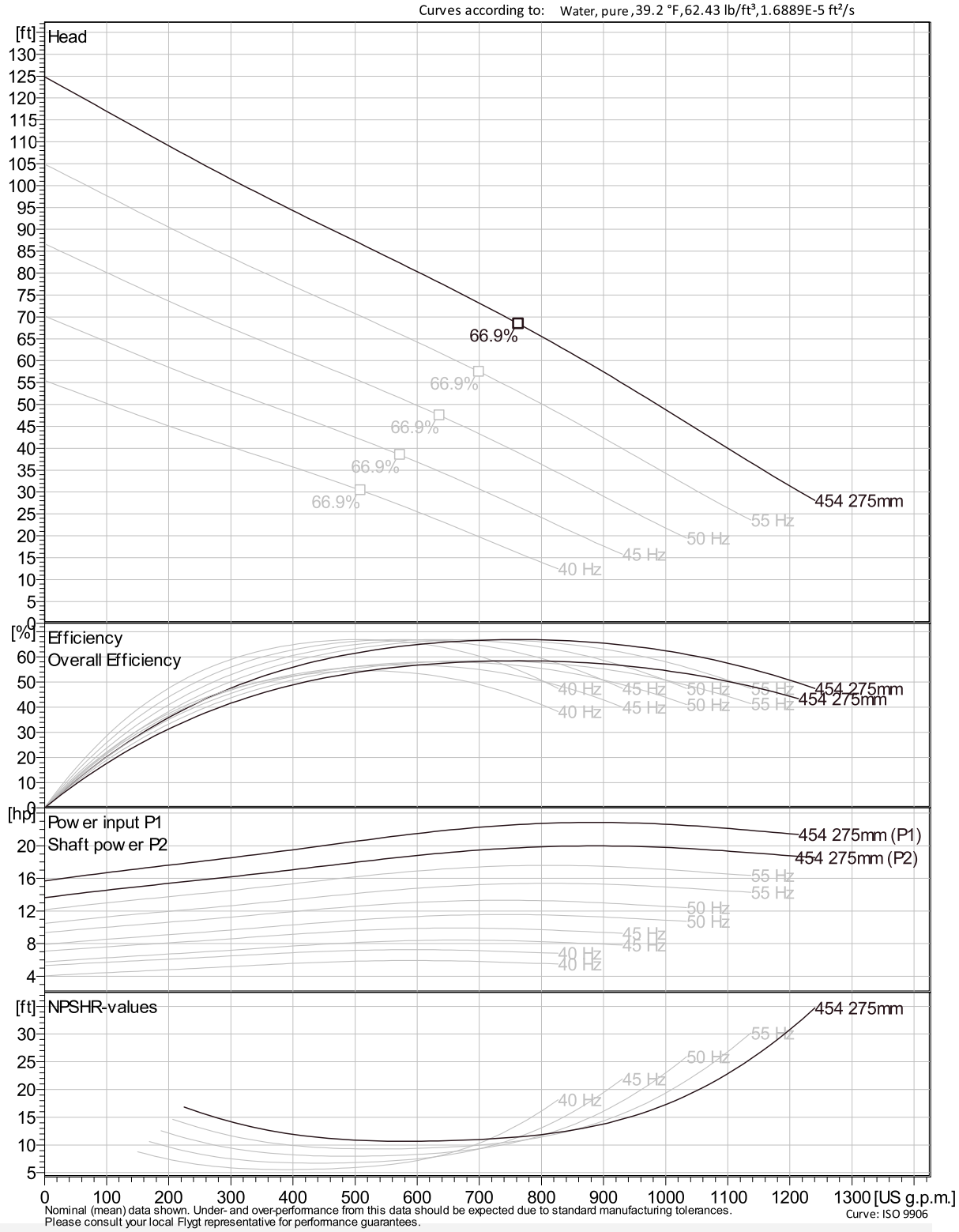
User group(s)
Xylem: USA - EXT, USA - INT

CP 3152 HT 3~ 454

VFD Curve

FLYGT
a xylem brand

Curves according to: Water, pure ,39.2 °F,62.43 lb/ft³,1.6889E-5 ft²/s



Nominal (mean) data shown. Under- and over-performance from this data should be expected due to standard manufacturing tolerances.
Please consult your local Flygt representative for performance guarantees.

Curve: ISO 9906

Project	Xylect-22016252	**Created by**	Robert Simcox		
Block		**Created on**	3/18/2024	**Last update**	3/18/2024

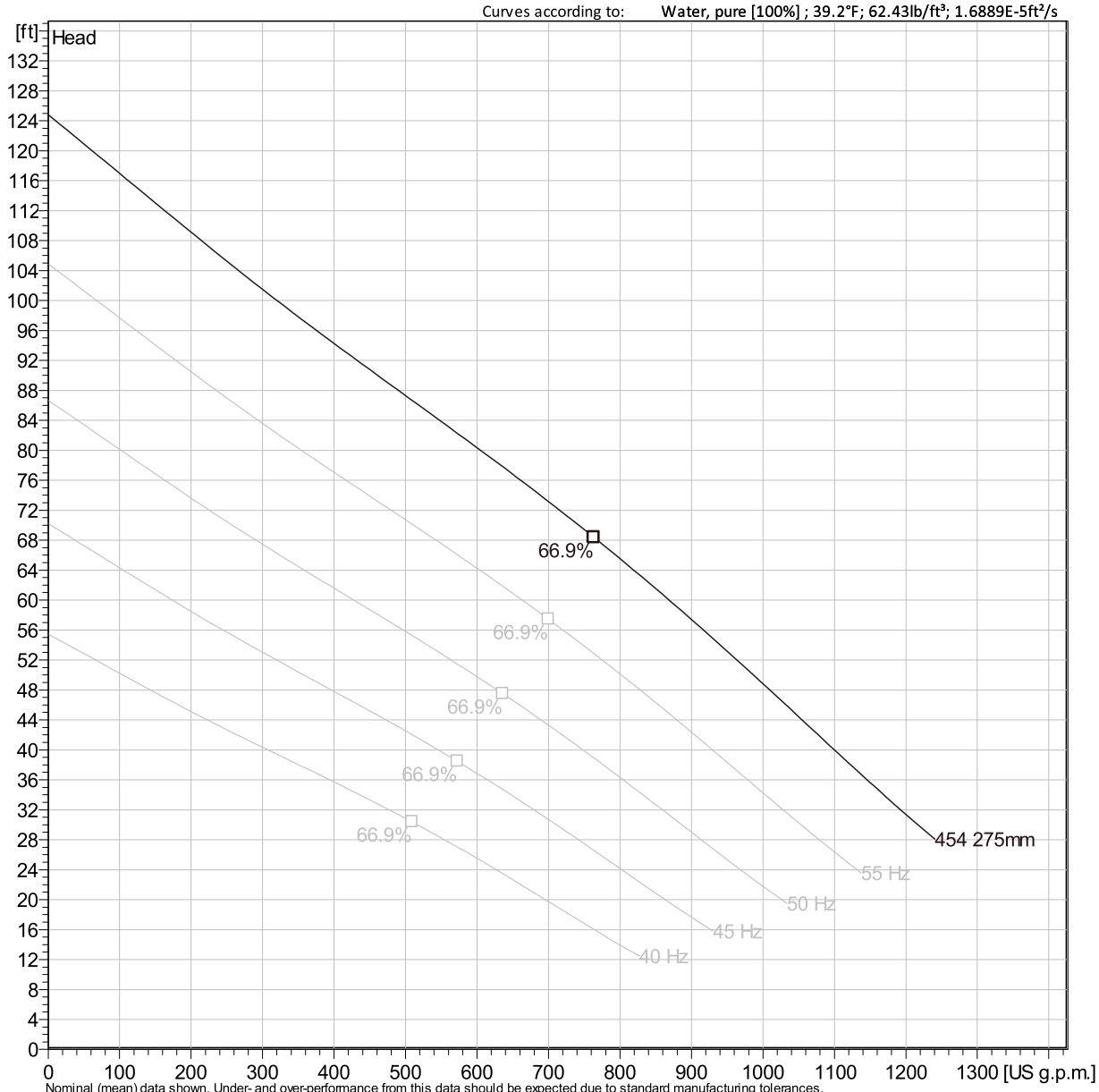
Program version	Data version	User group(s)
72.0 - 2/20/2024 (Build 175)	3/5/2024 10:29 A3P3	Xylem:USA - EXT, USA - INT

CP 3152 HT 3~ 454

VFD Analysis

FLYGT
a xylem brand

Curves according to: Water, pure [100%] ; 39.2°F; 62.43lb/ft³; 1.6889E-5ft²/s



Nominal (mean) data shown. Under- and over-performance from this data should be expected due to standard manufacturing tolerances.
Please consult your local Flygt representative for performance guarantees.

Operating Characteristics

Pumps / Systems	Frequency	Flow	Head	Shaft power	Flow	Head	Shaft power	Hydr.eff.	Specific energy	NPSHre
		US g.p.m.	ft	hp	US g.p.m.	ft	hp		kWh/US MG	ft

Project	Xylect-22016252	**Created by**	Robert Simcox		
Block		**Created on**	3/18/2024	**Last update**	3/18/2024

Program version
72.0 - 2/20/2024 (Build 175)

Data version
3/5/2024 10:29 A3P3

User group(s)
Xylem: USA - EXT, USA - INT

CP 3152 HT 3~ 454

Dimensional drawing

Project	Xylect-22016252	**Created by**	Robert Simcox		
Block		**Created on**	3/18/2024	**Last update**	3/18/2024

Pump Station Evaluation Report

51 - Oxford Pointe

Prepared For:

City of Wildwood

Evaluation Date:

2/5/2024

Report Date:

September 26, 2024

Version 1

Kimley»Horn

Version	Publish Date	Description
1	See Cover	Original/Version 1

Table 0.1 - Revision History

Version	Publish Date	Test Date	Description

Table 0.2 - Previous Evaluation History

This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn shall be without liability to Kimley-Horn.

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ATTACHMENTS

Attachment 1 ..... **Test Data Graphs**

Attachment 2 ..... **Supplementary Pump Information**

ABBREVIATIONS

Ø	Phase
AC	Alternating Current
ADD	Automated Draw Down
ADF	Average Daily Flow
ARR	Automated Rate of Rise
ATL	Across The Line
Avg	Average
BEP	Best Efficiency Point
CL	Center Line
Disch	Discharge
ETM	Elapsed Time Meter
FLA	Full Load Amps
FM	Force Main
Ft	Feet
FPS	Feet Per Second
FSFO	Full Speed Full Open
Gal	Gallons
GPM	Gallons Per Minute
HGL	Hydraulic Grade Line
HP	Horsepower
Hrs	Hours
H:M:S	Hours:Minutes:Seconds
Hz	Hertz
In	Inches
InvIn	Invert In
KWH	Kilowatt-Hours
L	Length
L1, L2, L3	Leg 1, 2 & 3 or Length 1, 2 & 3
MSL	Mean Sea Level
MTBF	Mean Time Between Failures
N	Neutral
P	Pump
PCL	Pump Center Line
PCP	Pump Control Panel
PF	Power Factor
PSI	Pounds Per Square Inch
PT	Point
RPM	Revolutions Per Minute
TDH	Total Dynamic Head
TVSS	Transient Voltage Surge Suppressor
V	Volts
VFD	Variable Frequency Drive
WTW	Wire To Water
WW	Wet Well
Yr	Year

1 INTRODUCTION

Kimley-Horn and Associates, Inc. evaluated the pump station through pump performance testing and a condition assessment. This report summarizes the data and results of that evaluation. The performance tests were conducted using the XAK-PACK pump performance monitoring device. The following pages provide summaries of the data collected and notes about the pumps' performance.

1.1 SITE INFORMATION

Oxford Pointe / Site Number 51			
Date of Evaluation	2/5/2024		
Address	3787 Co Rd 466, Oxford, FL 34484		
Coordinates	28.927322, -82.040587		
Fluid Conveyed	Wastewater		
Station Style	Submersible		
Number of Pumps	2	Number of Pump Slots	2
Pump Type	Submersible		
Flow Meter Type	N/a		
Year of Construction	Unknown	Based on	☐Docs. ☐Estimation ☐Other
Basin/Zone	Unknown		
Firm Capacity (Design)	Unknown		
Firm Capacity (Test)	242 GPM / 0.35 MGD		
Discharge Description	1250 LF of 6” FM manifolding into approximately 5500 LF of 8” FM which then upsizes to approximately 3800 LF of 12” FM discharging to CR 209 Lift Station		
Electrical Service	120/208 Wye		
Site Generator	No generator on site		
Bypass Ability	Bypass riser on site		
Miscellaneous Features			

Site Notes:

A pump curve was not available for this site, because of this several performance checks could not be made.

1.2 SITE MAP



Figure 1.1 - Site Location Map

2 PUMP PERFORMANCE TESTS

Pump performance tests were conducted on the pumps utilizing the measurement tools detailed below. **Table 2.1 - Measurement Methods** describes the measurements taken during the test and the measurement method. Some measurements were confirmed utilizing a secondary measurement method. See **Attachment 1** for graphs of the digitally recorded data. For each test, note the following:

1. Common accuracies for measurements of flow, pressure, voltage and current are ±1%.
2. Friction loss is calculated using the Hazen-Williams formula and the Bernoulli equation. Piping characteristics are based on best available data.

Parameter	Measurement Method	
	Primary	Secondary
Flow	Level Transducer (XAK-PACK)	N/A
Pressure	Pressure Transducer (XAK-PACK)	Liquid Filled Pressure Gauge
Wet Well Level	Level Transducer (XAK-PACK)	N/A
Volts	Voltage Probes (XAK-PACK)	Fluke 376FC
Amps	Current Transducers (XAK-PACK)	Fluke 376FC
Power Factor	Power Factor Monitor (XAK-PACK)	N/A

Table 2.1 - Measurement Methods

2.1 PUMP #1

Below is a summary of the pump characteristics and performance test results.

Parameter	Units	Value
Pump Manufacturer	-	-
Pump Model	-	-
Pump Style	-	Submersible
Pump Impeller Dia	Inches	-
Pump Rated Capacity	GPM	-
Pump Rated Head	Ft	-
Pump ETM	Hours	354
Pump Flow @ BEP Design Curve	GPM	-
Pump Hyd Eff @ Design Pt	%	-
Pump WTW Eff @ Operating Pt	%	-
Pump NPSHr @ Operating Pt	Ft	-
Motor Synchronous Speed	RPM	-
Motor Rated Speed	RPM	-
Motor No. Phases	No	3
Motor Starters	-	ATL
Motor Rated Voltage	Volts	200
Motor Rated Horsepower	HP	11.0
Motor Service Factor	-	-
Motor FLA	Amps	-
Mfg. Motor Eff. @ Operating Pt	%	100%
Mfg. Starter Eff. @ Operating Pt	%	-

Table 2.2 - Pump #1 Design Characteristics

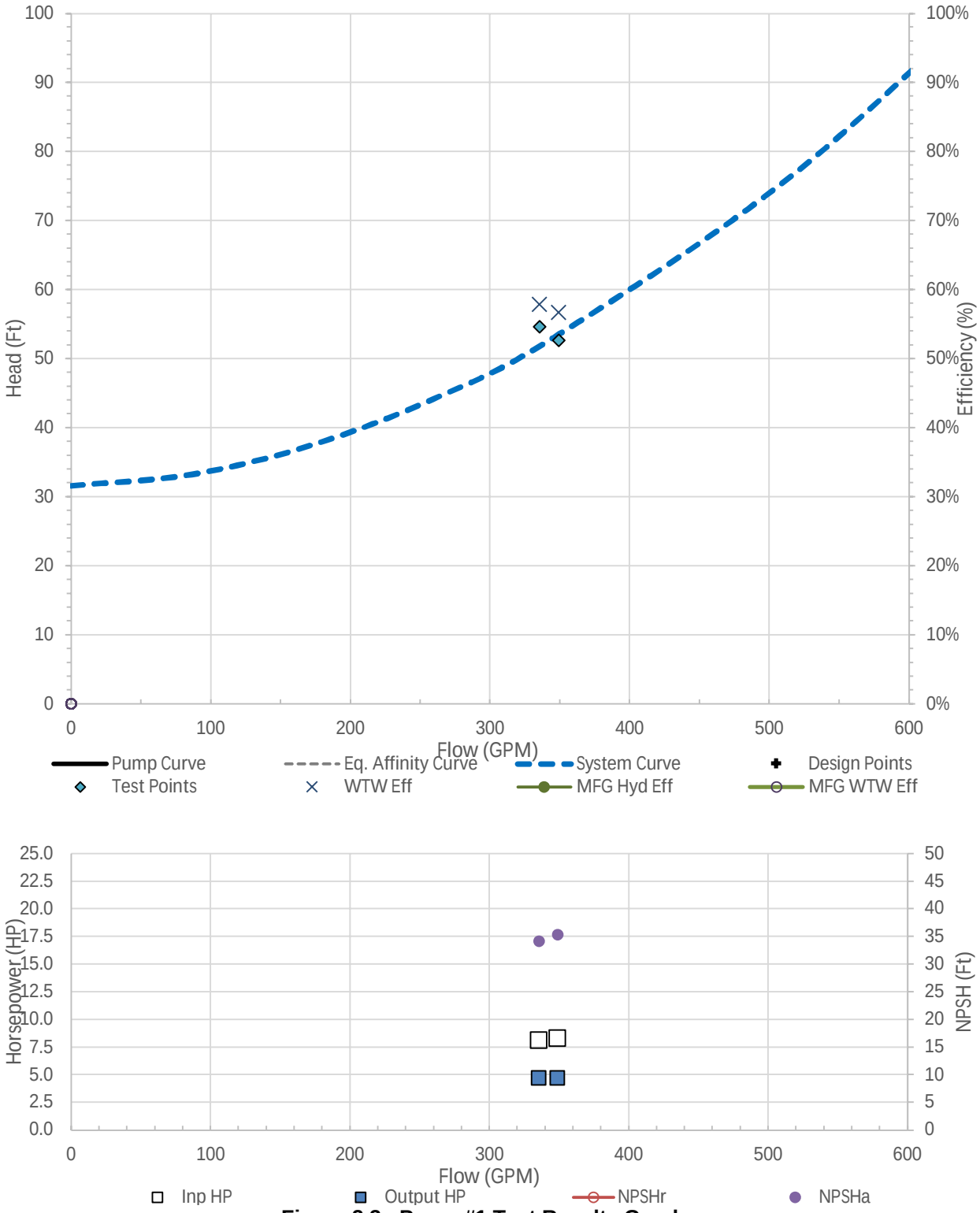


Figure 2.3 - Pump #1 Test Results Graphs

	Parameter	Units	Lower Limit	Test Value	Upper Limit	Comment
Measured	Average Output (FSFO)	GPM	-	342	-	
	Average TDH (FSFO)	Ft	-	53.7	-	
	Average WTW Efficiency (FSFO)	%	-	57%	-	
	Average Input HP (FSFO)	HP	-	8.2	-	
	Average Current Draw (FSFO)	Amps	-	21.8	-	
	Suction Velocity (FSFO)	FPS	2	-	7	
	Discharge Velocity (FSFO)	FPS	2	3.4	7	
	BEP Comparison (FSFO)	%	80%	-	115%	
	Average Output (FSFO)	%	90%	-	110%	
	Affinity Law Eq. Curve	%	-5%	0%	5%	
	NPSHa	Ft	-	34.7	N/A	
	WTW Eff @ Operating Pt	%	-5%	-	5%	
	Input Frequency	Hz	-5%	0%	5%	
	Input Voltage (L-L)	%	-10%	-4.7%	10%	
	Voltage Drop	%	-15%	2.4%	N/A	
	Voltage Imbalance	%	-10%	2.5%	10%	
	Current Imbalance	%	-10%	7.8%	10%	
	Motor FLA	%	-50%	-	105%	
	Motor Load	%	50%	74.3%	-	
	Motor Slip Speed	%	-	-	-	
	Vibration	In/Sec	0	0.0	-	
Observed	Surge	1-5	-	1	3	
	Vibration	1-5	-	2	3	
	Cavitation	1-5	-	1	3	
	Mechanical Noise	1-5	-	1	3	
	Leaks	1-5	-	1	3	
	Exterior Condition	1-5	-	2	3	
	Overall Score	1-5	-	2	3	

Table 2.4 - Pump #1 Test Summary

Pump #1 - Test Comments

Note: Available manufacturer data was limited for this site. Many parameter checks could not be made.

2.2 PUMP #2

Below is a summary of the pump characteristics and performance test results.

Parameter	Units	Value
Pump Manufacturer	-	-
Pump Model	-	-
Pump Style	-	Submersible
Pump Impeller Dia	Inches	-
Pump Rated Capacity	GPM	-
Pump Rated Head	Ft	-
Pump ETM	Hours	220
Pump Flow @ BEP Design Curve	GPM	-
Pump Hyd Eff @ Design Pt	%	-
Pump WTW Eff @ Operating Pt	%	-
Pump NPSHr @ Operating Pt	Ft	-
Motor Synchronous Speed	RPM	-
Motor Rated Speed	RPM	-
Motor No. Phases	No	3
Motor Starters	-	ATL
Motor Rated Voltage	Volts	200
Motor Rated Horsepower	HP	11.0
Motor Service Factor	-	-
Motor FLA	Amps	-
Mfg. Motor Eff. @ Operating Pt	%	100%
Mfg. Starter Eff. @ Operating Pt	%	-

Table 2.5 - Pump #2 Design Characteristics

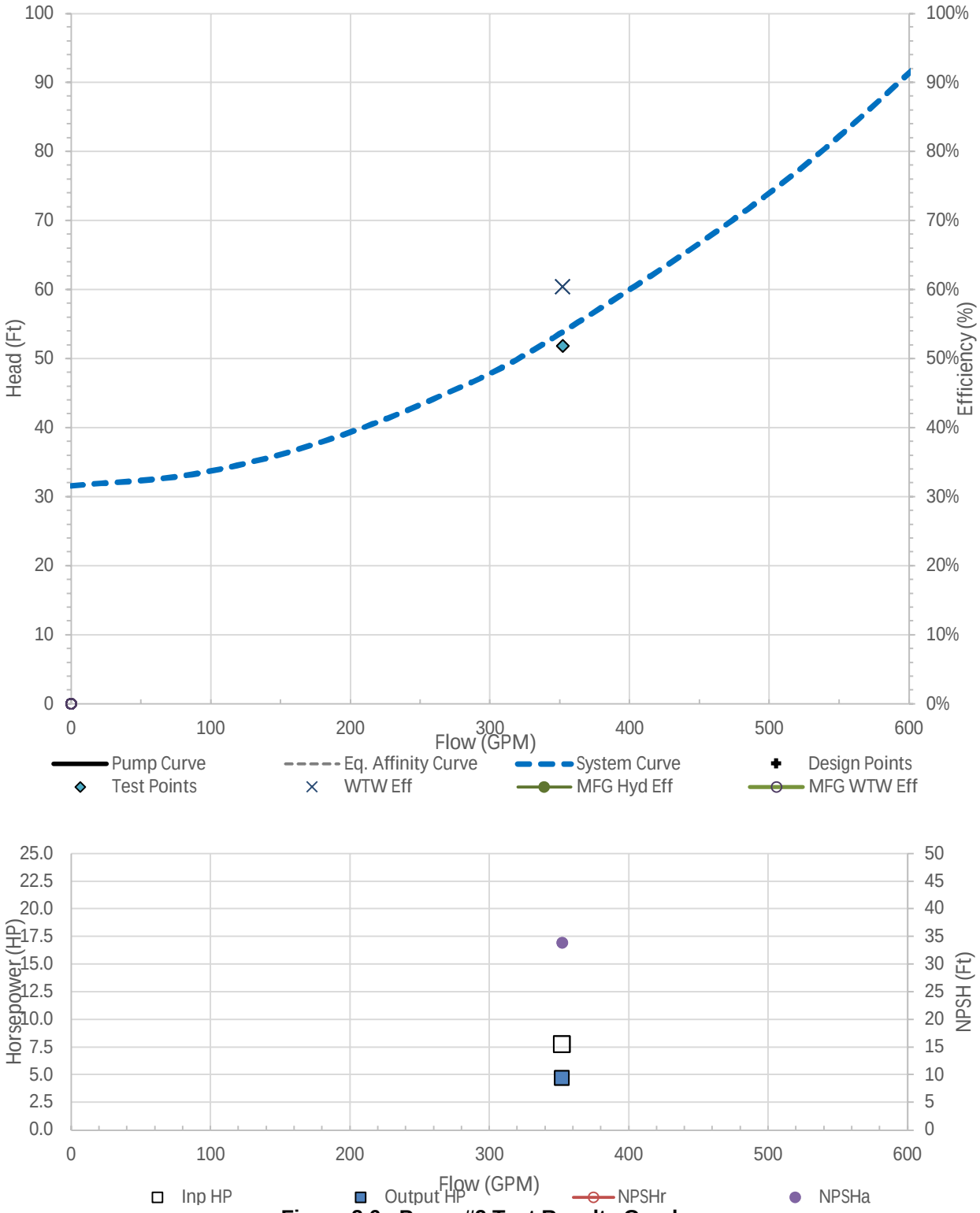


Figure 2.6 - Pump #2 Test Results Graphs

	Parameter	Units	Lower Limit	Test Value	Upper Limit	Comment
Measured	Average Output (FSFO)	GPM	-	352	-	
	Average TDH (FSFO)	Ft	-	51.9	-	
	Average WTW Efficiency (FSFO)	%	-	60%	-	
	Average Input HP (FSFO)	HP	-	7.7	-	
	Average Current Draw (FSFO)	Amps	-	20.6	-	
	Suction Velocity (FSFO)	FPS	2	-	7	
	Discharge Velocity (FSFO)	FPS	2	3.5	7	
	BEP Comparison (FSFO)	%	80%	-	115%	
	Average Output (FSFO)	%	90%	-	110%	
	Affinity Law Eq. Curve	%	-5%	0.0%	5%	
	NPSHa	Ft	-	33.9	N/A	
	WTW Eff @ Operating Pt	%	-5%	-	5%	
	Input Frequency	Hz	-5%	0%	5%	
	Input Voltage (L-L)	%	-10%	-4.4%	10%	
	Voltage Drop	%	-15%	2.0%	N/A	
	Voltage Imbalance	%	-10%	1.9%	10%	
	Current Imbalance	%	-10%	12.5%	10%	
	Motor FLA	%	-50%	-	105%	
	Motor Load	%	50%	70.1%	-	
	Motor Slip Speed	%	-	-	-	
	Vibration	In/Sec	0	0.0	-	
Observed	Surge	1-5	-	1	3	
	Vibration	1-5	-	2	3	
	Cavitation	1-5	-	1	3	
	Mechanical Noise	1-5	-	1	3	
	Leaks	1-5	-	1	3	
	Exterior Condition	1-5	-	2	3	
	Overall Score	1-5	-	2	3	

Table 2.7 - Pump #2 Test Summary

Pump #2 - Test Comments

Note: Available manufacturer data was limited for this site. Many parameter checks could not be made.

2.3 HYDRAULICS SUMMARY

The system is operating with less head loss than anticipated from theoretical calculations. The measured system curve exhibits less head loss than the theoretical curve. This discrepancy is likely due to a portion of the force main not being fully pressurized during pump operation because the peak of the force main is approximately 25% to the end of the force main and the discharge is at a lower elevation than the peak

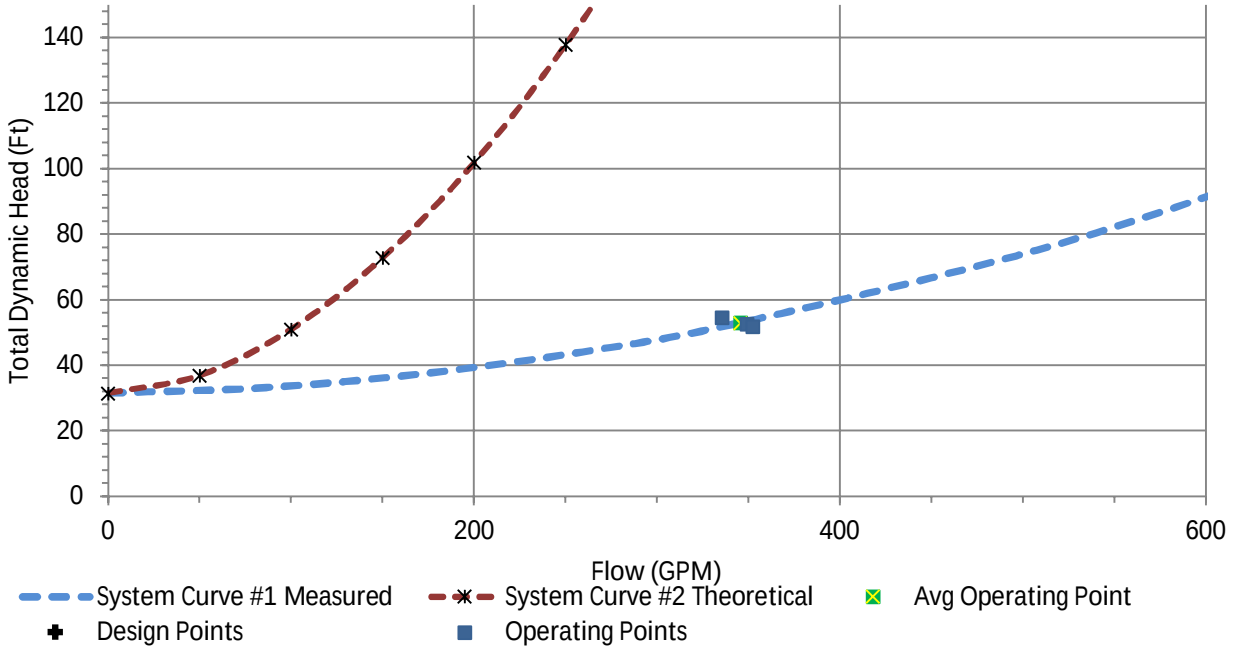


Figure 2.8 – System Hydraulic Information provides a graph of the system characteristics and a table describing the system curves. Length, Hazen-Williams (Hz-Wm), and diameter are approximated based on the best available information and fit to the data. System Curve Characteristics are intended to be for reference.

System Curve Characteristics					
Curve Name	**Curve Type**	**Length (Ft)**	**Hz-Wm**	**Diameter (In)**	**Calculated Based On**
System Curve #1	Measured	10550	110	8.9	Test Data
System Curve #3	Theoretical	10550	110	4, 8	Available GIS Data

Figure 2.8 – System Hydraulic Information

2.4 PIPELINE PERFORMANCE INDICATORS

Figure 2.9 – Pipe Velocities displays the velocities in each known diameter of the pressurized conveyance system. The Average Test Output Velocity represents the velocity generated by the average pumping rate produced by testing. The Station Firm Capacity Velocity represents the velocity based on the station's firm capacity (output with the largest pump out of service). The color gradient represents ranges of acceptable to problematic velocities. Red areas of operation are problematic and green areas of operation are acceptable.

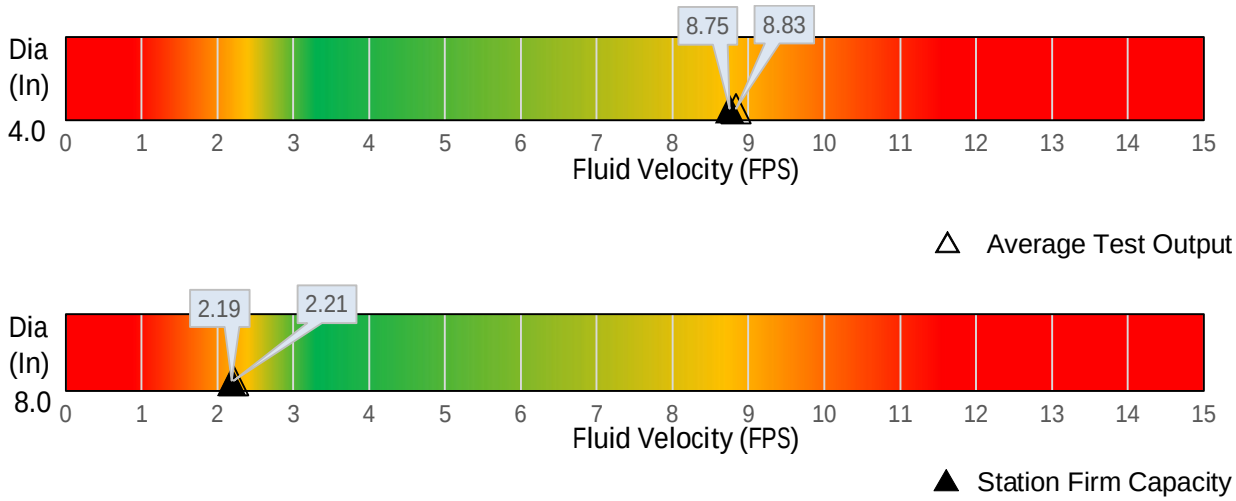


Figure 2.9 – Pipe Velocities

The maximum observed pressure at the station during the testing period is provided below in **Figure 2.10 - Maximum Observed Pressure**. System pressure capabilities vary depending upon pipe material type, pressure rating, elevation, age, condition, etc. This performance indicator is provided for reference only and is not a condition assessment of the pipeline. For systems with pressures above approximately 100 PSI, consider a more detailed analysis. See the **Attachment 1 - Graph B** for additional pressure data.

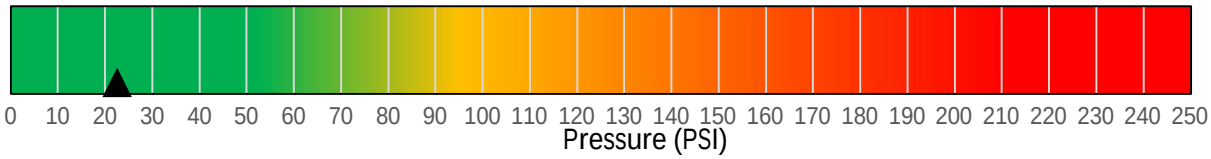


Figure 2.10 - Maximum Observed Pressure

2.5 SYSTEM PRESSURES

Figure 2.11 - Pressure Cycle shows a typical single-pump pressure cycle measured during testing. The pressure data captured for this test is limited to 2-second intervals which may not have captured the entire range of actual pressures. The complete log of pressure readings is provided in **Attachment 1 – Test Data Graphs**. For more accurate surge data, a surge monitoring device should be used to capture pressure at shorter time intervals over a longer period of time. **Table 2.12 - Further Surge-Related Actions** provides a list of recommended surge-related actions.

The pressure transducer used for measuring pressures has a range of 0 to 200 PSI. Pump startup produced an upsurge of approximately 23 PSI. Upon pump shut down, the observed minimum pressure was approximately 0 PSI and the maximum pressure was approximately 22 PSI creating a total observed pressure range of 23 PSI. It is likely that the minimum pressure produced on each pump shut down cycle was less than 0 PSI.

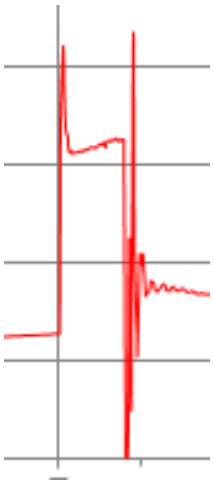


Figure 2.11 - Pressure Cycle

Further Surge Related Actions:	
	Perform extended period digital surge monitoring
	Perform calibrated surge modeling
	Revise operating scheme to reduce surge potential
	Evaluate piping system for pressure capacity and likelihood of failure
	Install physical surge mitigation strategies
✓	No further action

Table 2.12 - Further Surge-Related Actions

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3 RECOMMENDATIONS

The following recommendations are a result of the findings of this evaluation and should be considered for implementation. See **Section 2 Pump Performance Tests** for pump specific recommendations. In addition to the recommendations below, this site should/ be considered for the following overall planning and budgeting activities.

3.1 OVERALL RECOMMENDATIONS

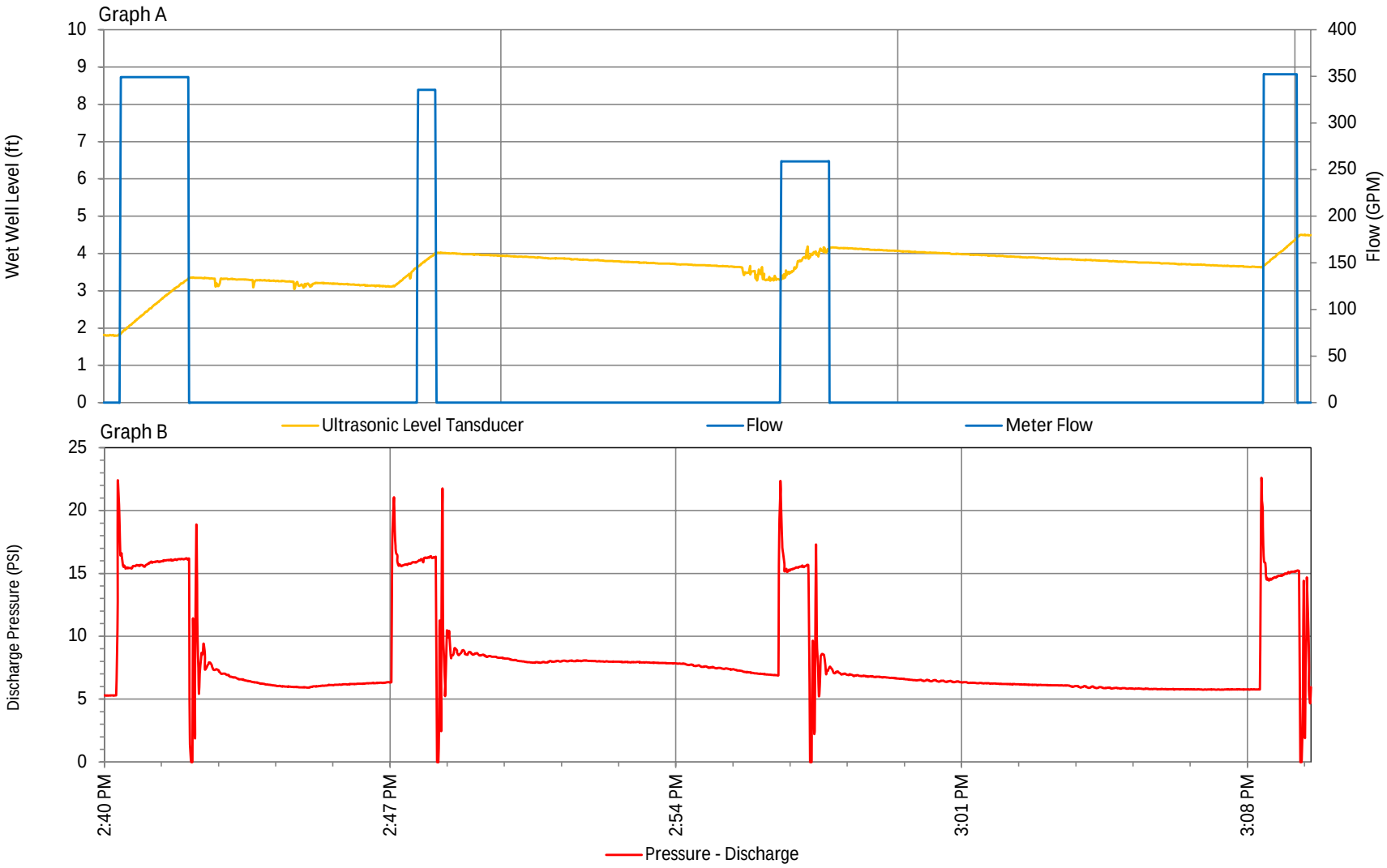
Overall Site Rating	Score	Description
	1	No recommendations currently. Monitor station for worsening conditions, perform regular O&M, reassess condition in 2-5 years.
	2	Complete recommendations listed in Section 3.2, monitor station for worsening conditions, perform regular O&M, reassess condition in 1-3 years.
	3	Station requires improvements beyond replacement of individual components. Begin planning and budgeting for a major rehabilitation. Place under regular observation until rehabilitation is complete.
	4	Station does not appear to be brought into conformance with standards without replacement. Begin planning and budgeting for a station replacement. Place under regular observation until rehabilitation is complete.

3.2 MISCELLANEOUS RECOMMENDATIONS

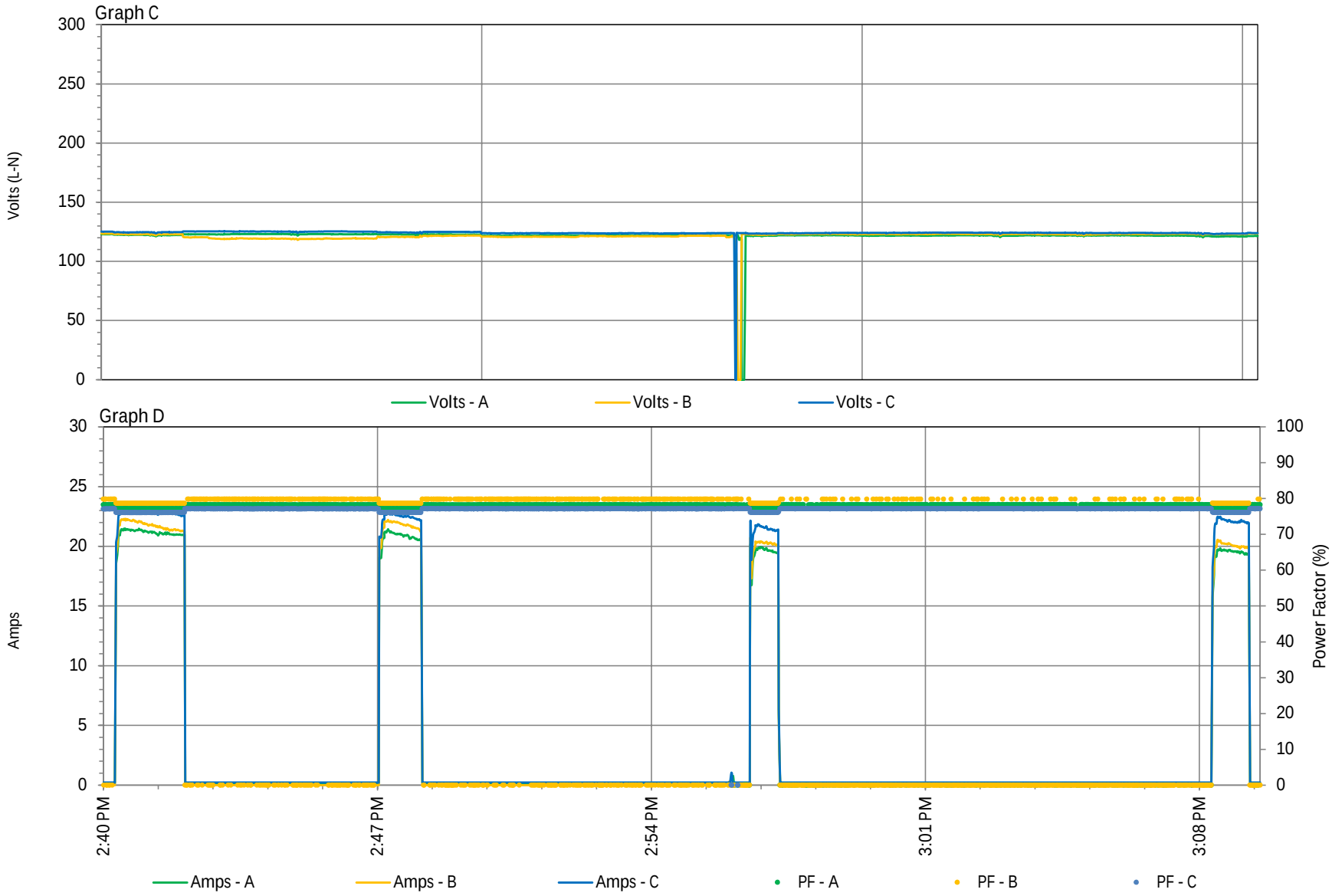
Missing Pump Information – Pump information was limited for this site and as a result several performance checks could not be made. We recommend obtaining the missing pump information.

4 ATTACHMENTS

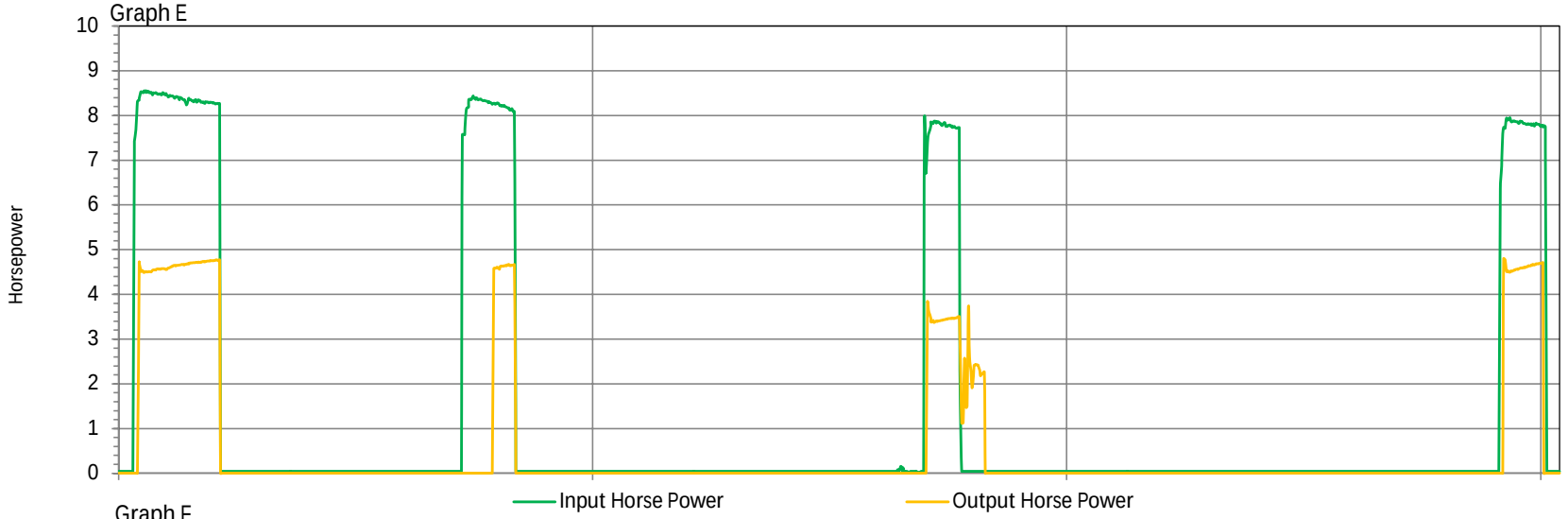
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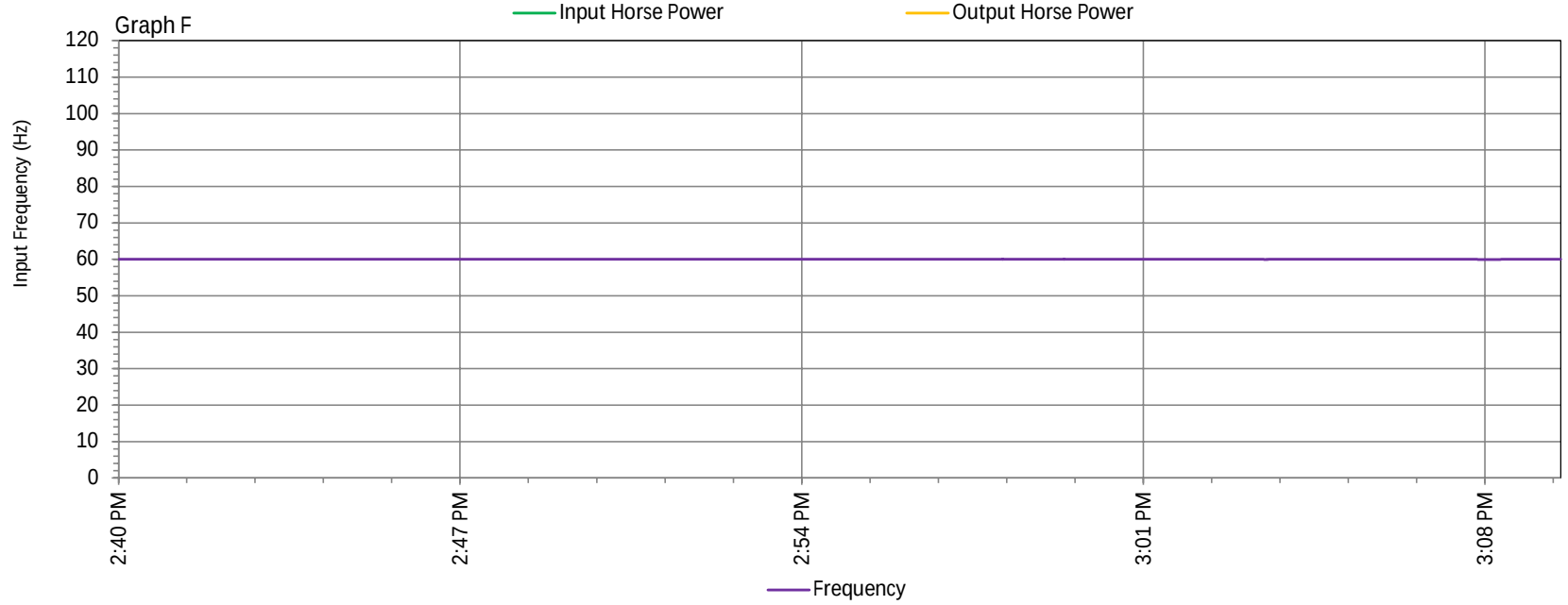
* Times shown are Eastern Standard Time


Graph C
Volts (L-N)
300
250
200
150
100
50
0
Volts - A
Volts - B
Volts - C
Graph D
Amps
30
25
20
15
10
5
0
100
90
80
70
60
50
40
30
20
10
0
Power Factor (%)
2:40 PM
2:47 PM
2:54 PM
3:01 PM
3:08 PM
Amps - A
Amps - B
Amps - C
PF - A
PF - B
PF - C

Graph E



Graph F



Pump Station Evaluation Report

37 - Parkwood Lift Station

Prepared For:

City of Wildwood

Evaluation Date:

February 25, 2024

Report Date:

September 26, 2024

Version 1

Kimley»Horn

Version	Publish Date	Description
1	See Cover	Original/Version 1

Table 0.1 - Revision History

Version	Publish Date	Test Date	Description

Table 0.2 - Previous Evaluation History

This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn shall be without liability to Kimley-Horn.

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ATTACHMENTS

Attachment 1 ..... **Test Data Graphs**

Attachment 2 ..... **Supplementary Pump Information**

ABBREVIATIONS

Ø	Phase
AC	Alternating Current
ADD	Automated Draw Down
ADF	Average Daily Flow
ARR	Automated Rate of Rise
ATL	Across The Line
Avg	Average
BEP	Best Efficiency Point
CL	Center Line
Disch	Discharge
ETM	Elapsed Time Meter
FLA	Full Load Amps
FM	Force Main
Ft	Feet
FPS	Feet Per Second
FSFO	Full Speed Full Open
Gal	Gallons
GPM	Gallons Per Minute
HGL	Hydraulic Grade Line
HP	Horsepower
Hrs	Hours
H:M:S	Hours:Minutes:Seconds
Hz	Hertz
In	Inches
InvIn	Invert In
KWH	Kilowatt-Hours
L	Length
L1, L2, L3	Leg 1, 2 & 3 or Length 1, 2 & 3
MSL	Mean Sea Level
MTBF	Mean Time Between Failures
N	Neutral
P	Pump
PCL	Pump Center Line
PCP	Pump Control Panel
PF	Power Factor
PSI	Pounds Per Square Inch
PT	Point
RPM	Revolutions Per Minute
TDH	Total Dynamic Head
TVSS	Transient Voltage Surge Suppressor
V	Volts
VFD	Variable Frequency Drive
WTW	Wire To Water
WW	Wet Well
Yr	Year

1 INTRODUCTION

Kimley-Horn and Associates, Inc. evaluated the pump station through pump performance testing and a condition assessment. This report summarizes the data and results of that evaluation. The performance tests were conducted using the XAK-PACK pump performance monitoring device. The following pages provide summaries of the data collected and notes about the pumps' performance.

1.1 SITE INFORMATION

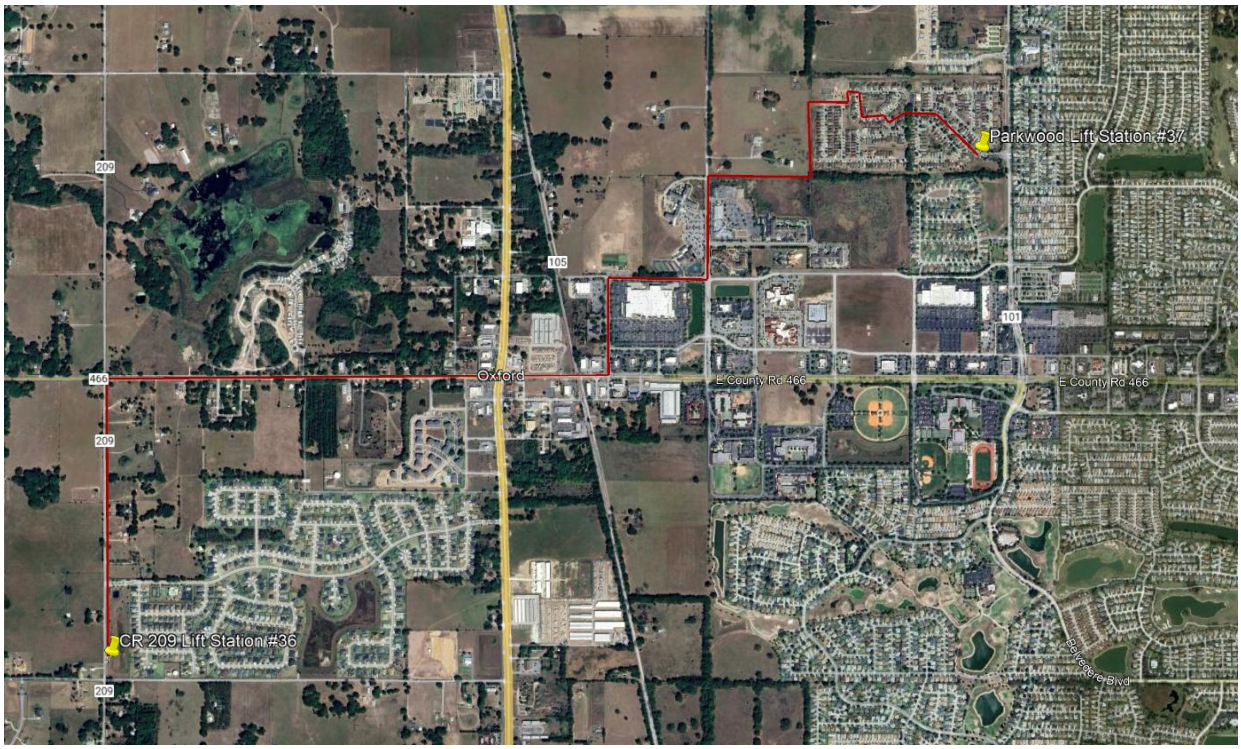
Parkwood Lift Station / Site #37			
Date of Evaluation	February 25, 2024		
Address	5210 NE 123rd Trail, Oxford, Fl 34484		
Coordinates	28° 56' 7.224" N, 82° 1' 3.324" W		
Fluid Conveyed	Wastewater		
Station Style	Submersible Duplex		
Number of Pumps	2	Number of Pump Slots	2
Pump Type	Submersible		
Flow Meter Type	N/A		
Year of Construction	Unknown	Based on	☐Docs. ☐Estimation ☐Other
Basin/Zone	Unknown		
Firm Capacity (Design)	910 GPM / 1.31 MGD		
Firm Capacity (Test)	173 GPM / 0.25 MGD		
Discharge Description	8-inch discharge force main, manifolds with 12", approximately 19,600 LF,unknown material, discharging to CR 209 Lift Station #36		
Electrical Service	277/480 Wye		
Site Generator	Caterpillar diesel with belly tank		
Bypass Ability	Bypass assembly on site		
Miscellaneous Features			

Site Notes:

1.2 SITE MAP

Force Main

Figure 1.1 - Site Location Map



2 PUMP PERFORMANCE TESTS

Pump performance tests were conducted on the pumps utilizing the measurement tools detailed below. **Table 2.1 - Measurement Methods** describes the measurements taken during the test and the measurement method. Some measurements were confirmed utilizing a secondary measurement method. See **Attachment 1** for graphs of the digitally recorded data. For each test, note the following:

1. Common accuracies for measurements of flow, pressure, voltage and current are ±1%.
2. Friction loss is calculated using the Hazen-Williams formula and the Bernoulli equation. Piping characteristics are based on best available data.

Parameter	Measurement Method	
	Primary	Secondary
Flow	Level Transducer (XAK-PACK)	N/A
Pressure	Pressure Transducer (XAK-PACK)	Liquid Filled Pressure Gauge
Wet Well Level	Level Transducer (XAK-PACK)	N/A
Volts	Voltage Probes (XAK-PACK)	Fluke 376FC
Amps	Current Transducers (XAK-PACK)	Fluke 376FC
Power Factor	Power Factor Monitor (XAK-PACK)	N/A

Table 2.1 - Measurement Methods

ABBREVIATIONS

Ø	Phase
AC	Alternating Current
ADD	Automated Draw Down
ADF	Average Daily Flow
ARR	Automated Rate of Rise
ATL	Across The Line
Avg	Average
BEP	Best Efficiency Point
CL	Center Line
Disch	Discharge
ETM	Elapsed Time Meter
FLA	Full Load Amps
FM	Force Main
Ft	Feet
FPS	Feet Per Second
FSFO	Full Speed Full Open
Gal	Gallons
GPM	Gallons Per Minute
HGL	Hydraulic Grade Line
HP	Horsepower
Hrs	Hours
H:M:S	Hours:Minutes:Seconds
Hz	Hertz
In	Inches
InvIn	Invert In
KWH	Kilowatt-Hours
L	Length
L1, L2, L3	Leg 1, 2 & 3 or Length 1, 2 & 3
MSL	Mean Sea Level
MTBF	Mean Time Between Failures
N	Neutral
P	Pump
PCL	Pump Center Line
PCP	Pump Control Panel
PF	Power Factor
PSI	Pounds Per Square Inch
PT	Point
RPM	Revolutions Per Minute
TDH	Total Dynamic Head
TVSS	Transient Voltage Surge Suppressor
V	Volts
VFD	Variable Frequency Drive
WTW	Wire To Water
WW	Wet Well
Yr	Year

1 INTRODUCTION

Kimley-Horn and Associates, Inc. evaluated the pump station through pump performance testing and a condition assessment. This report summarizes the data and results of that evaluation. The performance tests were conducted using the XAK-PACK pump performance monitoring device. The following pages provide summaries of the data collected and notes about the pumps' performance.

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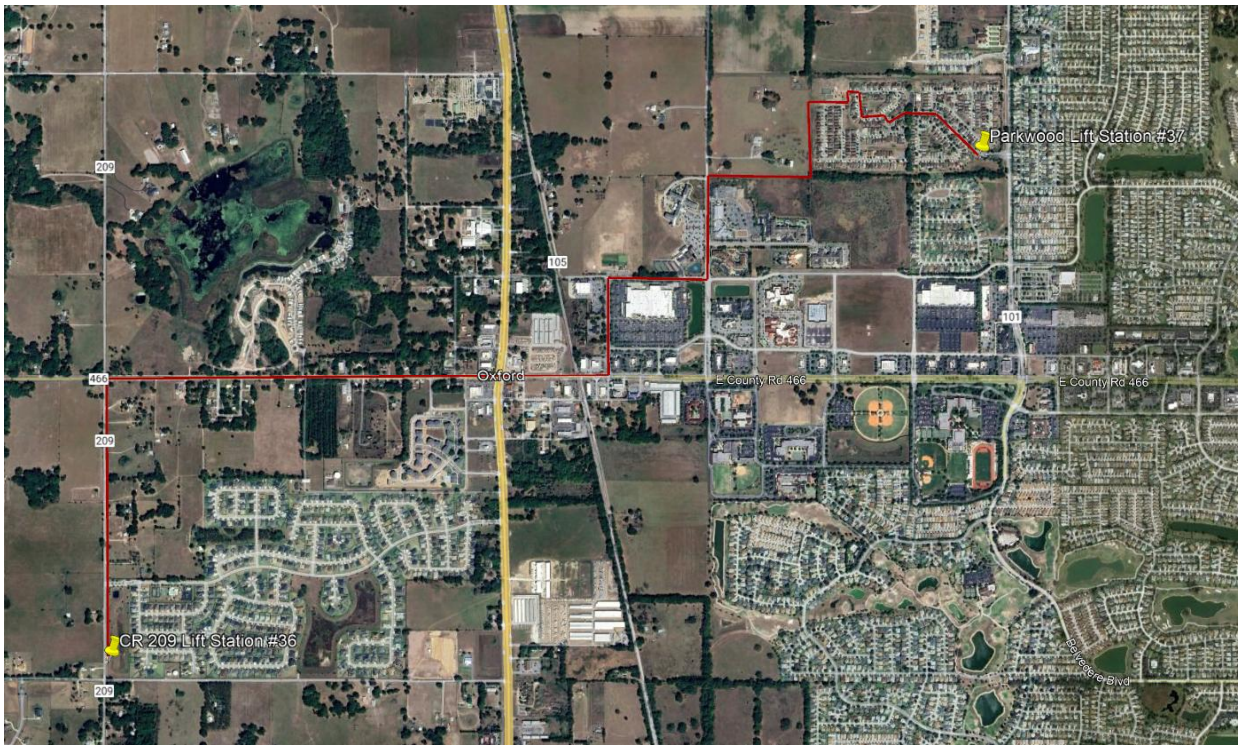
Parkwood Lift Station / Site #37			
Date of Evaluation	February 25, 2024		
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Coordinates	28° 56' 7.224" N, 82° 1' 3.324" W		
Fluid Conveyed	Wastewater		
Station Style	Submersible Duplex		
Number of Pumps	2	Number of Pump Slots	2
Pump Type	Submersible		
Flow Meter Type	N/A		
Year of Construction	Unknown	Based on	☐Docs. ☐Estimation ☐Other
Basin/Zone	Unknown		
Firm Capacity (Design)	910 GPM / 1.31 MGD		
Firm Capacity (Test)	173 GPM / 0.25 MGD		
Discharge Description	8-inch discharge force main, manifolds with 12", approximately 19,600 LF,unknown material, discharging to CR 209 Lift Station #36		
Electrical Service	277/480 Wye		
Site Generator	Caterpillar diesel with belly tank		
Bypass Ability	Bypass assembly on site		
Miscellaneous Features			

Site Notes:

1.2 SITE MAP

Force Main

Figure 1.1 - Site Location Map



2 PUMP PERFORMANCE TESTS

Pump performance tests were conducted on the pumps utilizing the measurement tools detailed below. **Table 2.1 - Measurement Methods** describes the measurements taken during the test and the measurement method. Some measurements were confirmed utilizing a secondary measurement method. See **Attachment 1** for graphs of the digitally recorded data. For each test, note the following:

1. Common accuracies for measurements of flow, pressure, voltage and current are ±1%.
2. Friction loss is calculated using the Hazen-Williams formula and the Bernoulli equation. Piping characteristics are based on best available data.

Parameter	Measurement Method	
	Primary	Secondary
Flow	Level Transducer (XAK-PACK)	N/A
Pressure	Pressure Transducer (XAK-PACK)	Liquid Filled Pressure Gauge
Wet Well Level	Level Transducer (XAK-PACK)	N/A
Volts	Voltage Probes (XAK-PACK)	Fluke 376FC
Amps	Current Transducers (XAK-PACK)	Fluke 376FC
Power Factor	Power Factor Monitor (XAK-PACK)	N/A

Table 2.1 - Measurement Methods

2.1 PUMP #1

Below is a summary of the pump characteristics and performance test results.

Parameter	Units	Value
Pump Manufacturer	-	Flygt
Pump Model	-	NP 3171 HT 3~ 454
Pump Style	-	Submersible
Pump Impeller Dia	Inches	10.63
Pump Rated Capacity	GPM	1,561
Pump Rated Head	Ft	139
Pump ETM	Hours	1,444
Pump Flow @ BEP Design Curve	GPM	910
Pump Hyd Eff @ Design Pt	%	75.8
Pump WTW Eff @ Operating Pt	%	45
Pump NPSHr @ Operating Pt	Ft	20
Motor Synchronous Speed	RPM	1800
Motor Rated Speed	RPM	1760
Motor No. Phases	No	3
Motor Starters	-	ATL
Motor Rated Voltage	Volts	460
Motor Rated Horsepower	HP	30
Motor Service Factor	-	1.15
Motor FLA	Amps	75
Mfg. Motor Eff. @ Operating Pt	%	90
Mfg. Starter Eff. @ Operating Pt	%	100

Table 2.2 - Pump #1 Design Characteristics

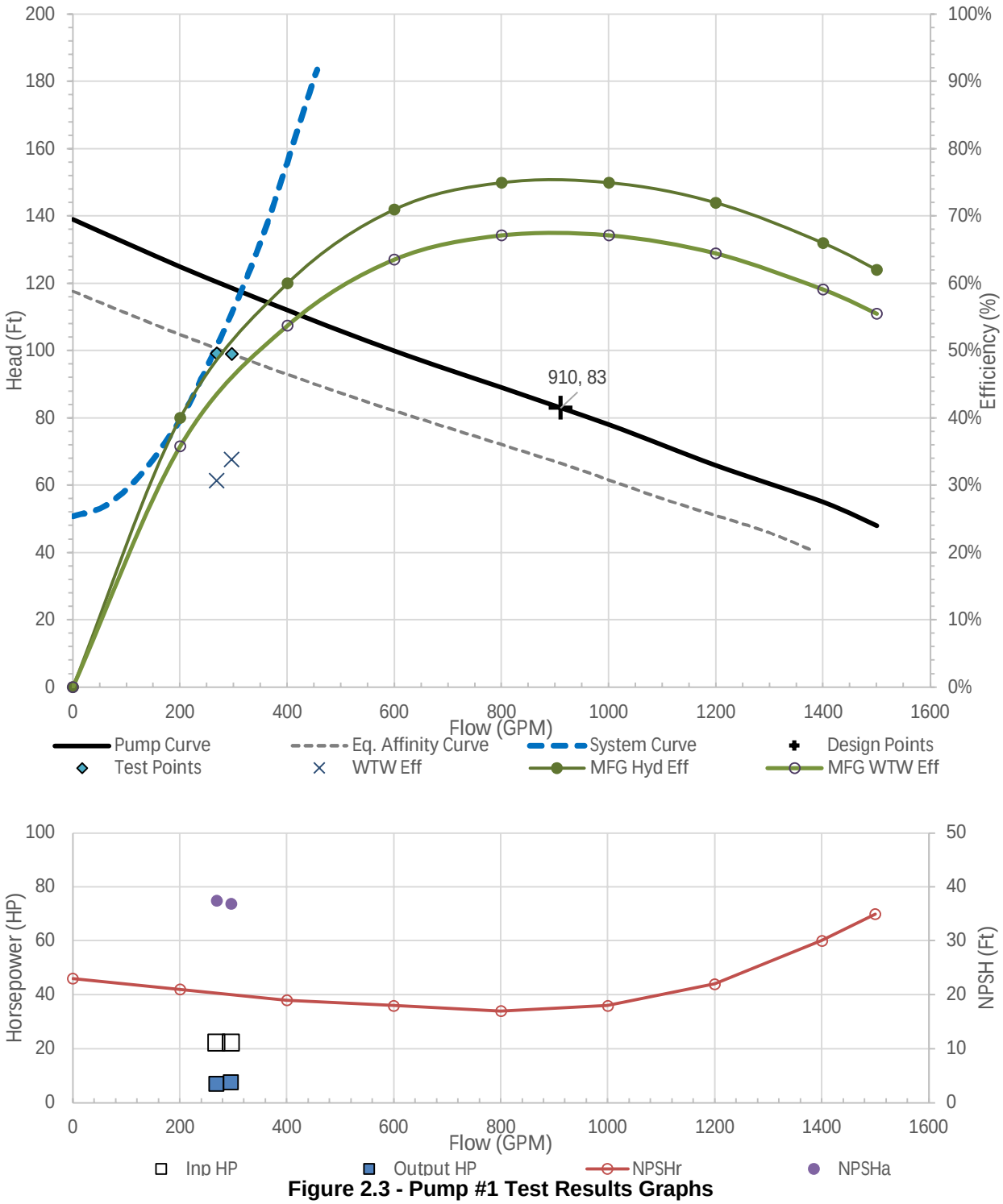


Figure 2.3 - Pump #1 Test Results Graphs

	Parameter	Units	Lower Limit	Test Value	Upper Limit	Comment
Measured	Average Output (FSFO)	GPM	-	282	-	
	Average TDH (FSFO)	Ft	-	99.1	-	
	Average WTW Efficiency (FSFO)	%	-	32%	-	
	Average Input HP (FSFO)	HP	-	22.1	-	
	Average Current Draw (FSFO)	Amps	-	25.1	-	
	Suction Velocity (FSFO)	FPS	2	-	7	
	Discharge Velocity (FSFO)	FPS	2	1.6	7	1
	BEP Comparison (FSFO)	%	80%	31%	115%	2
	Average Output (FSFO)	%	90%	31%	110%	2
	Affinity Law Eq. Curve	%	-5%	-8.0%	5%	2
	NPSHa	Ft	20	37.2	N/A	
	WTW Eff @ Operating Pt	%	-5%	-39%	5%	2
	Input Frequency	Hz	-5%	0%	5%	
	Input Voltage (L-L)	%	-10%	-6.8%	10%	
	Voltage Drop	%	-15%	2.0%	N/A	
	Voltage Imbalance	%	-10%	0.7%	10%	
	Current Imbalance	%	-10%	4.0%	10%	
	Motor FLA	%	-50%	33.4%	105%	2
	Motor Load	%	50%	73.8%	115%	
	Motor Slip Speed	%	1752	1760.0	1808	
	Vibration	In/Sec	0	0.0	-	
Observed	Surge	1-5	-	2	3	
	Vibration	1-5	-	2	3	
	Cavitation	1-5	-	1	3	
	Mechanical Noise	1-5	-	2	3	
	Leaks	1-5	-	1	3	
	Exterior Condition	1-5	-	2	3	
	Overall Score	1-5	-	2	3	

Table 2.4 - Pump #1 Test Summary

Pump #1 - Test Comments

1. Discharge velocity is below the recommended lower limit. Low discharge velocities can lead to a buildup of debris within the piping.

2. There are several discrepancies between the provided manufacturers data and data collected during onsite testing. We recommend confirmed accurate manufacturer data and remaking performance comparisons. Pump may be different then manufacturer provided.

2.2 PUMP #2

Below is a summary of the pump characteristics and performance test results.

Parameter	Units	Value
Pump Manufacturer	-	Flygt
Pump Model	-	NP 3171 HT 3~ 454
Pump Style	-	Submersible
Pump Impeller Dia	Inches	10.63
Pump Rated Capacity	GPM	1,561
Pump Rated Head	Ft	139
Pump ETM	Hours	1,444
Pump Flow @ BEP Design Curve	GPM	910
Pump Hyd Eff @ Design Pt	%	75.8
Pump WTW Eff @ Operating Pt	%	32
Pump NPSHr @ Operating Pt	Ft	21
Motor Synchronous Speed	RPM	1800
Motor Rated Speed	RPM	1760
Motor No. Phases	No	3
Motor Starters	-	ATL
Motor Rated Voltage	Volts	460
Motor Rated Horsepower	HP	30
Motor Service Factor	-	1.15
Motor FLA	Amps	75
Mfg. Motor Eff. @ Operating Pt	%	90
Mfg. Starter Eff. @ Operating Pt	%	100

Table 2.5 - Pump #2 Design Characteristics

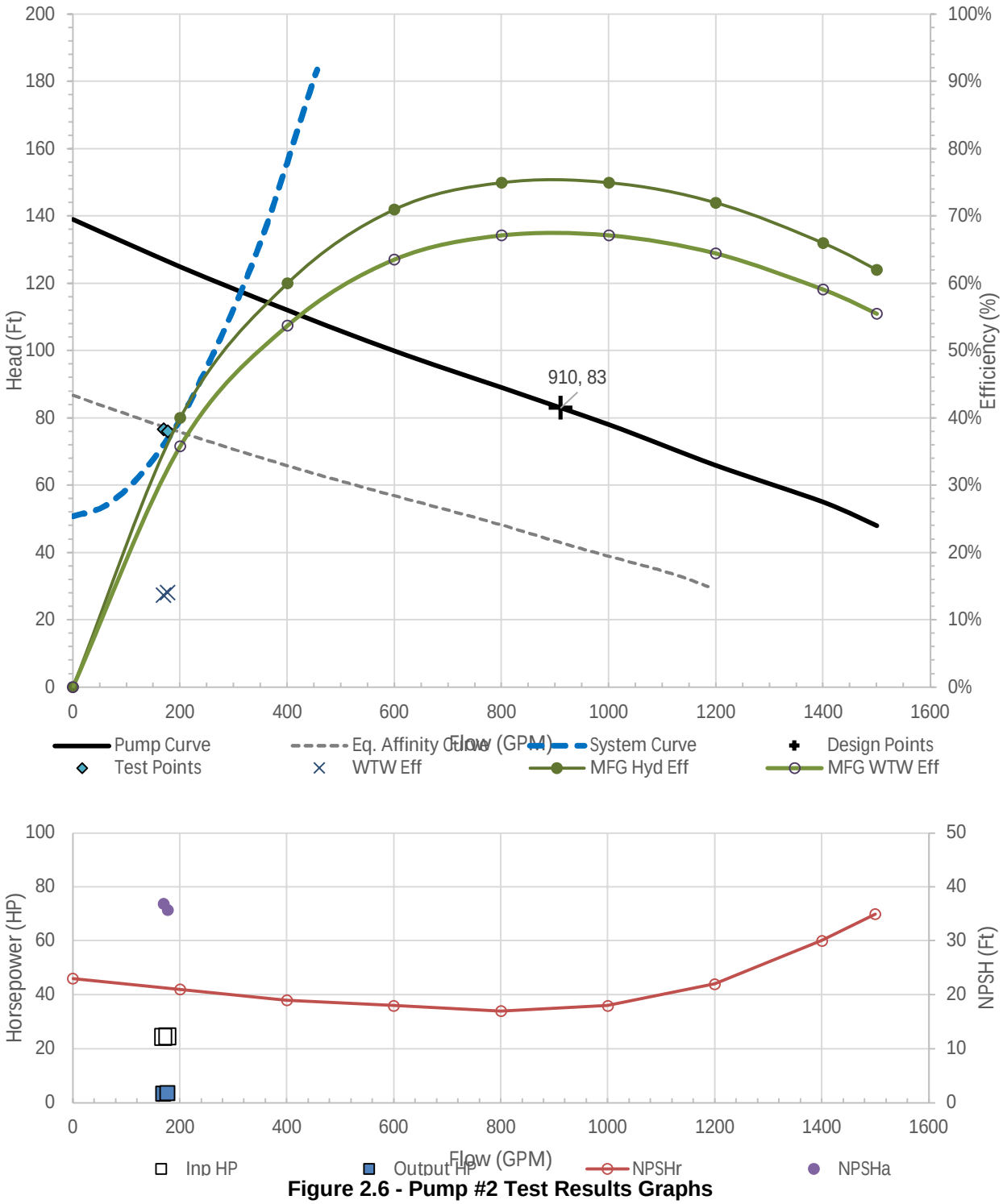


Figure 2.6 - Pump #2 Test Results Graphs

	Parameter	Units	Lower Limit	Test Value	Upper Limit	Comment
Measured	Average Output (FSFO)	GPM	-	173	-	
	Average TDH (FSFO)	Ft	-	76.4	-	
	Average WTW Efficiency (FSFO)	%	-	14%	-	
	Average Input HP (FSFO)	HP	-	24.4	-	
	Average Current Draw (FSFO)	Amps	-	27.7	-	
	Suction Velocity (FSFO)	FPS	2	-	7	
	Discharge Velocity (FSFO)	FPS	2	1.0	7	1
	BEP Comparison (FSFO)	%	80%	19%	115%	2
	Average Output (FSFO)	%	90%	19%	110%	2
	Affinity Law Eq. Curve	%	-5%	-21.0%	5%	2
	NPSHa	Ft	21	36.3	N/A	
	WTW Eff @ Operating Pt	%	-5%	-131%	5%	2
	Input Frequency	Hz	-5%	0%	5%	
	Input Voltage (L-L)	%	-10%	-6.6%	10%	
	Voltage Drop	%	-15%	2.0%	N/A	
	Voltage Imbalance	%	-10%	0.6%	10%	
	Current Imbalance	%	-10%	3.5%	10%	
	Motor FLA	%	-50%	36.9%	105%	2
	Motor Load	%	50%	81.3%	115%	
	Motor Slip Speed	%	1752	1760.0	1808	
	Vibration	In/Sec	0	0.0	-	
Observed	Surge	1-5	-	2	3	
	Vibration	1-5	-	2	3	
	Cavitation	1-5	-	1	3	
	Mechanical Noise	1-5	-	2	3	
	Leaks	1-5	-	1	3	
	Exterior Condition	1-5	-	2	3	
	Overall Score	1-5	-	2	3	

Table 2.7 - Pump #2 Test Summary

Pump #2 - Test Comments

1. Discharge velocity is below the recommended lower limit. Low discharge velocities can lead to a buildup of debris within the piping.

2. There are several discrepancies between the provided manufacturers data and data collected during onsite testing. We recommend confirmed accurate manufacturer data and remaking performance comparisons. Pump may be different then pump manufacturer provided.

2.3 HYDRAULICS SUMMARY

The hydraulics of this system corresponds to what we would expect based on our theoretical calculations. However, the design point for this pump station is farther to the right indicating the original design had less conservative assumptions about the system head loss.

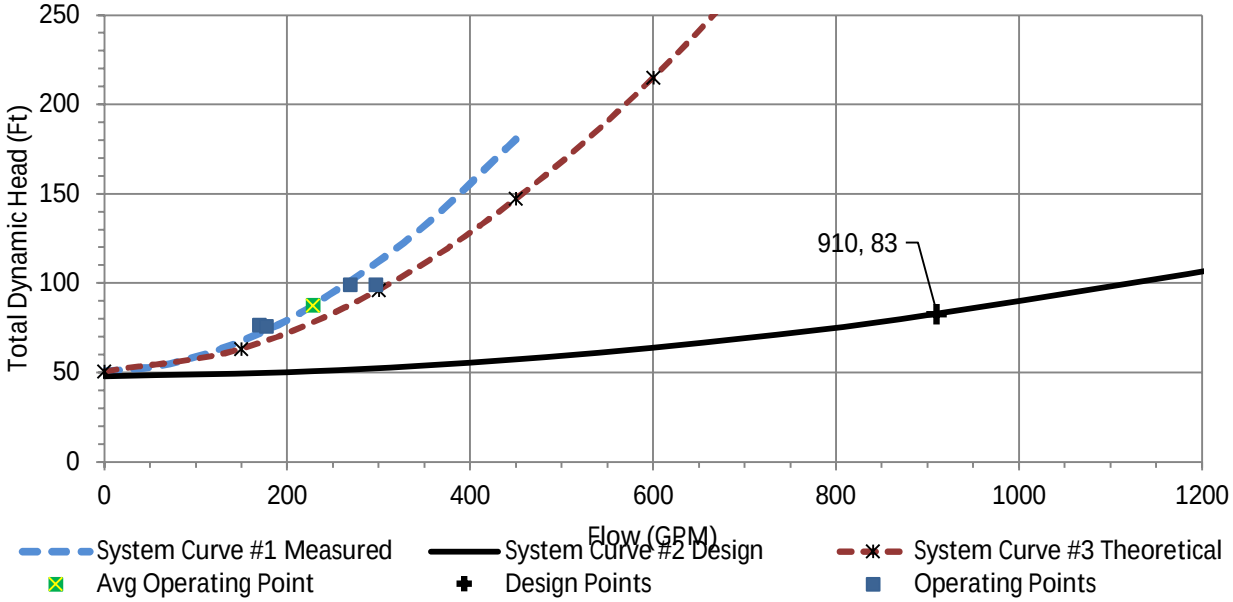


Figure 2.8 – System Hydraulic Information provides a graph of the system characteristics and a table describing the system curves. Length, Hazen-Williams (Hz-Wm), and diameter are approximated based on the best available information and fit to the data. System Curve Characteristics are intended to be for reference.

System Curve Characteristics					
Curve Name	**Curve Type**	**Length (Ft)**	**Hz-Wm**	**Diameter (In)**	**Calculated Based On**
System Curve #1	Measured	19600	115	7.6	Test Data
System Curve #2	Design	19600	115	13.0	Design Operating Condition
System Curve #3	Theoretical	19600	115	8.4	Available GIS and Record Drawing Data

Figure 2.8 – System Hydraulic Information

2.4 PIPELINE PERFORMANCE INDICATORS

Figure 2.9 – Pipe Velocities displays the velocities in each known diameter of the pressurized conveyance system. The Average Test Output Velocity represents the velocity generated by the average pumping rate produced by testing. The Station Firm Capacity Velocity represents the velocity based on the station's firm capacity (output with the largest pump out of service). The color gradient represents ranges of acceptable to problematic velocities. Red areas of operation are problematic and green areas of operation are acceptable.

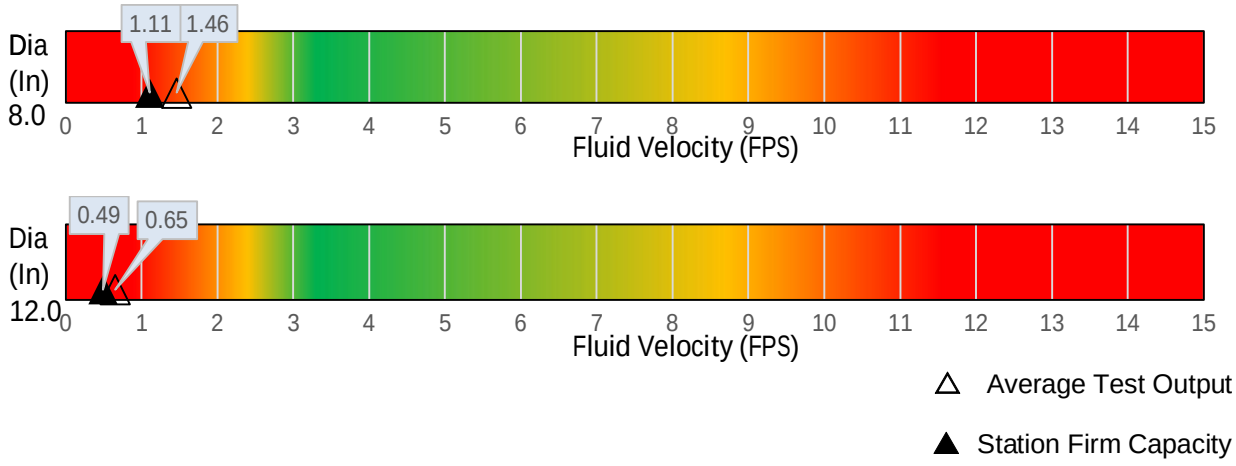


Figure 2.9 – Pipe Velocities

The maximum observed pressure at the station during the testing period is provided below in **Figure 2.10 – Maximum** Observed Pressure. System pressure capabilities vary depending upon pipe material type, pressure rating, elevation, age, condition, etc. This performance indicator is provided for reference only and is not a condition assessment of the pipeline. For systems with pressures above approximately 100 PSI, consider a more detailed analysis. See the **Attachment 1 - Graph B** for additional pressure data.



Figure 2.10 - Maximum Observed Pressure

2.5 SYSTEM PRESSURES

Figure 2.11 - Pressure Cycle shows a typical single-pump pressure cycle measured during testing. The pressure data captured for this test is limited to 2-second intervals which may not have captured the entire range of actual pressures. The complete log of pressure readings is provided in **Attachment 1 – Test Data Graphs**. For more accurate surge data, a surge monitoring device should be used to capture pressure at shorter time intervals over a longer period of time. **Table 2.12 - Further Surge-Related Actions** provides a list of recommended surge-related actions.

The pressure transducer used for measuring pressures has a range of 0 to 200 PSI. Pump startup produced an upsurge of approximately 40 PSI. Upon pump shut down, the observed minimum pressure was approximately 2 PSI and the maximum pressure was approximately 50 PSI creating a total observed pressure range of 48 PSI.

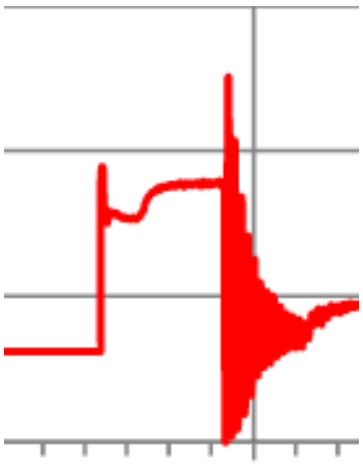


Figure 2.11 - Pressure Cycle

	Further Surge Related Actions:
	Perform extended period digital surge monitoring
	Perform calibrated surge modeling
	Revise operating scheme to reduce surge potential
	Evaluate piping system for pressure capacity and likelihood of failure
	Install physical surge mitigation strategies
✓	No further action

Table 2.12 - Further Surge-Related Actions

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3 RECOMMENDATIONS

The following recommendations are a result of the findings of this evaluation and should be considered for implementation. See **Section 2 Pump Performance Tests** for pump specific recommendations. In addition to the recommendations below, this site should/ be considered for the following overall planning and budgeting activities.

3.1 OVERALL RECOMMENDATIONS

Overall Site Rating	Score	Description
	1	No recommendations currently. Monitor station for worsening conditions, perform regular O&M, reassess condition in 2-5 years.
	2	Complete recommendations listed in Section 3.2, monitor station for worsening conditions, perform regular O&M, reassess condition in 1-3 years.
	3	Station requires improvements beyond replacement of individual components. Begin planning and budgeting for a major rehabilitation. Place under regular observation until rehabilitation is complete.
	4	Station does not appear to be brought into conformance with standards without replacement. Begin planning and budgeting for a station replacement. Place under regular observation until rehabilitation is complete.

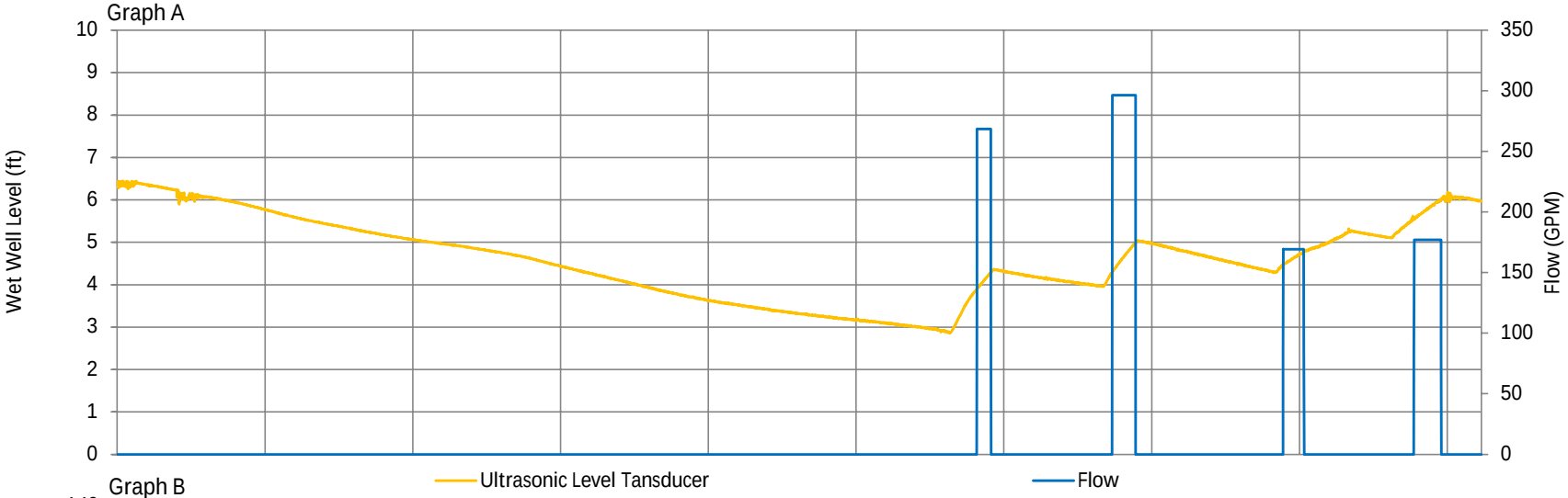
3.2 MISCELLANEOUS RECOMMENDATIONS

Manufacturers Data – The manufacturers data for this site had discrepancies from the measured data during site testing. We recommend confirming manufacturers data is accurate and remaking performance checks as needed.

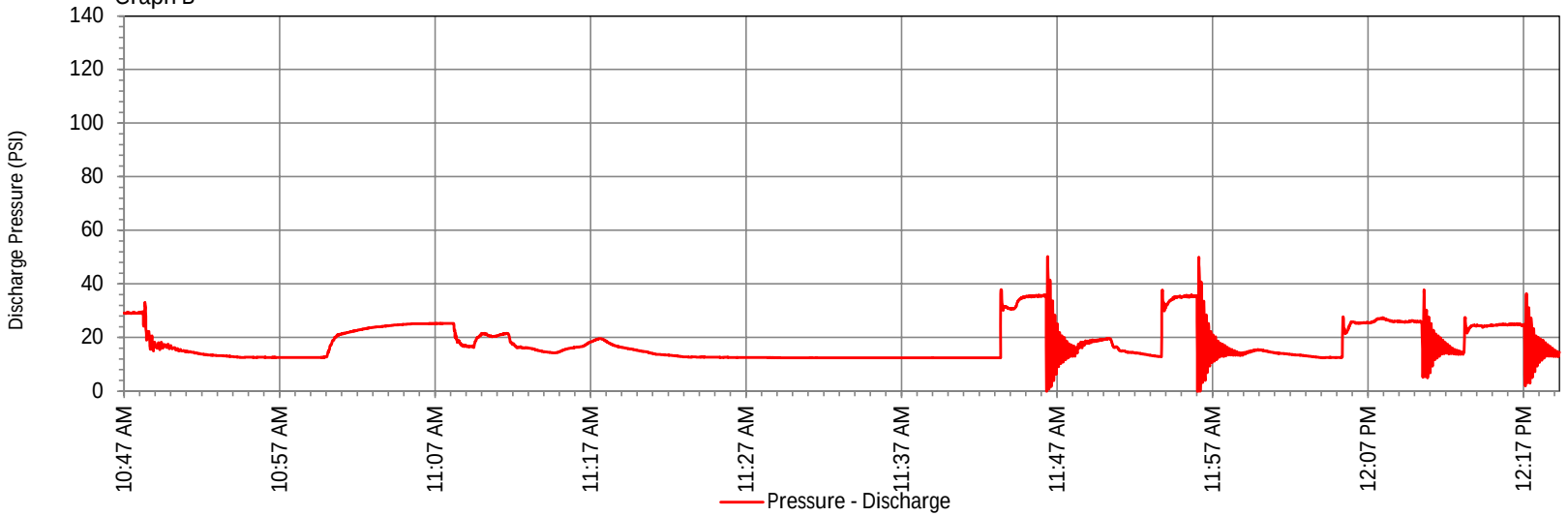
4 ATTACHMENTS

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Graph A

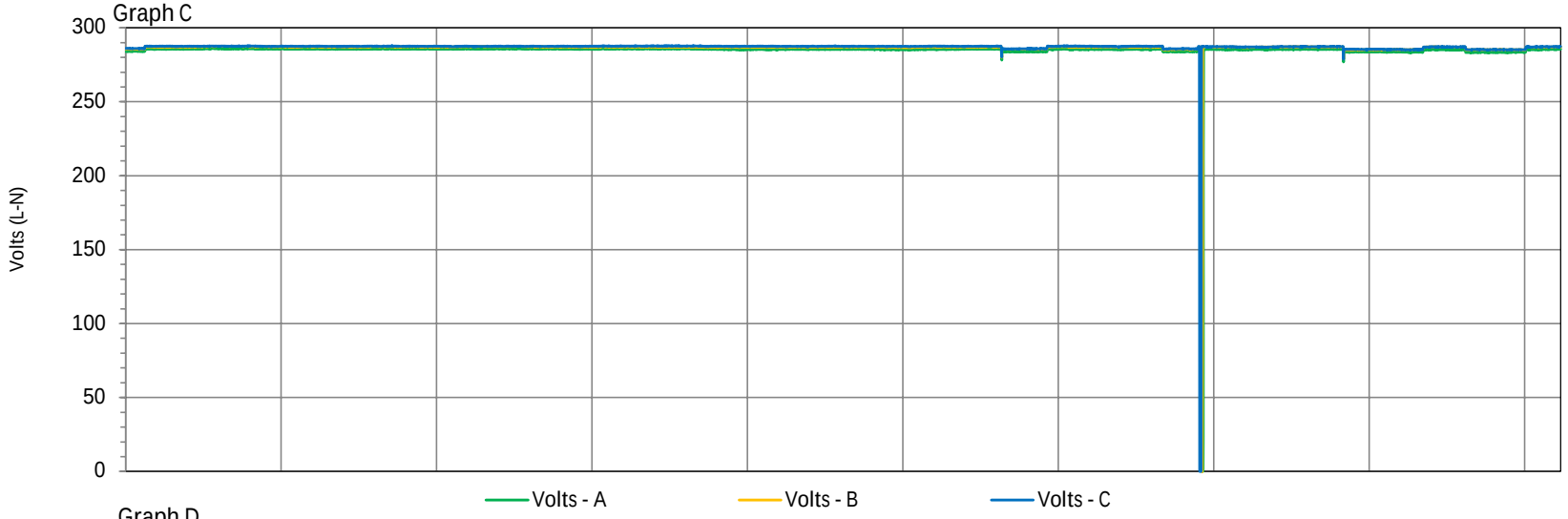


Graph B

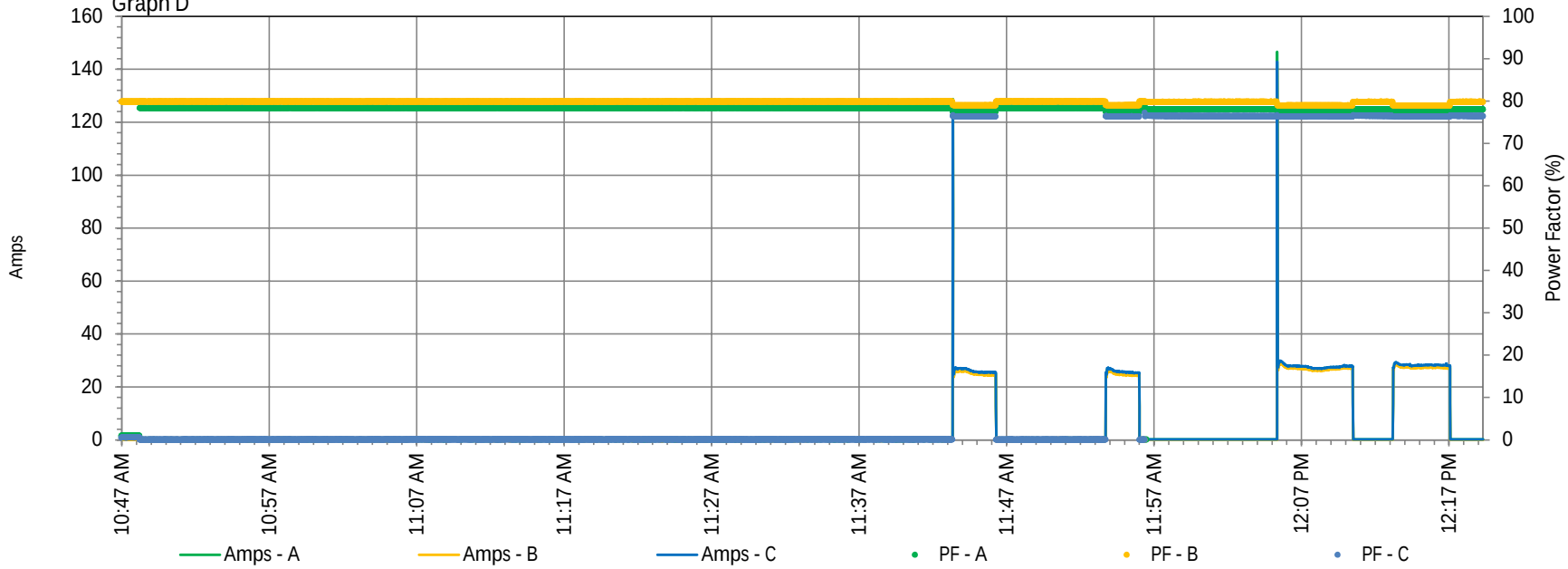


* Times shown are Eastern Standard Time

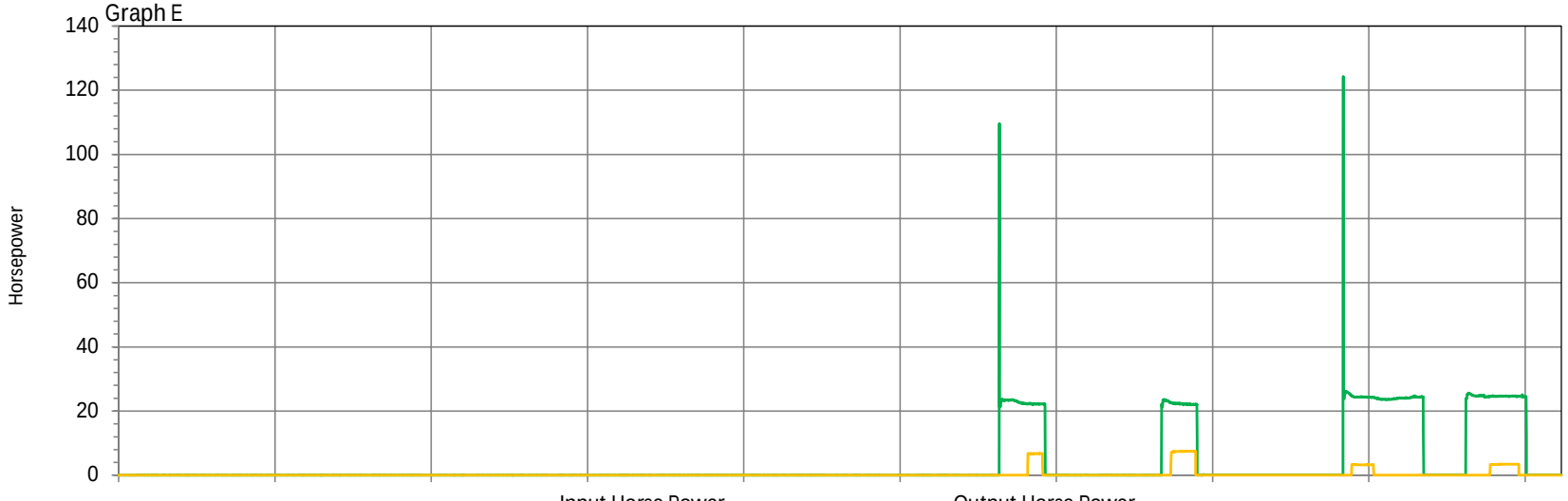
Graph C



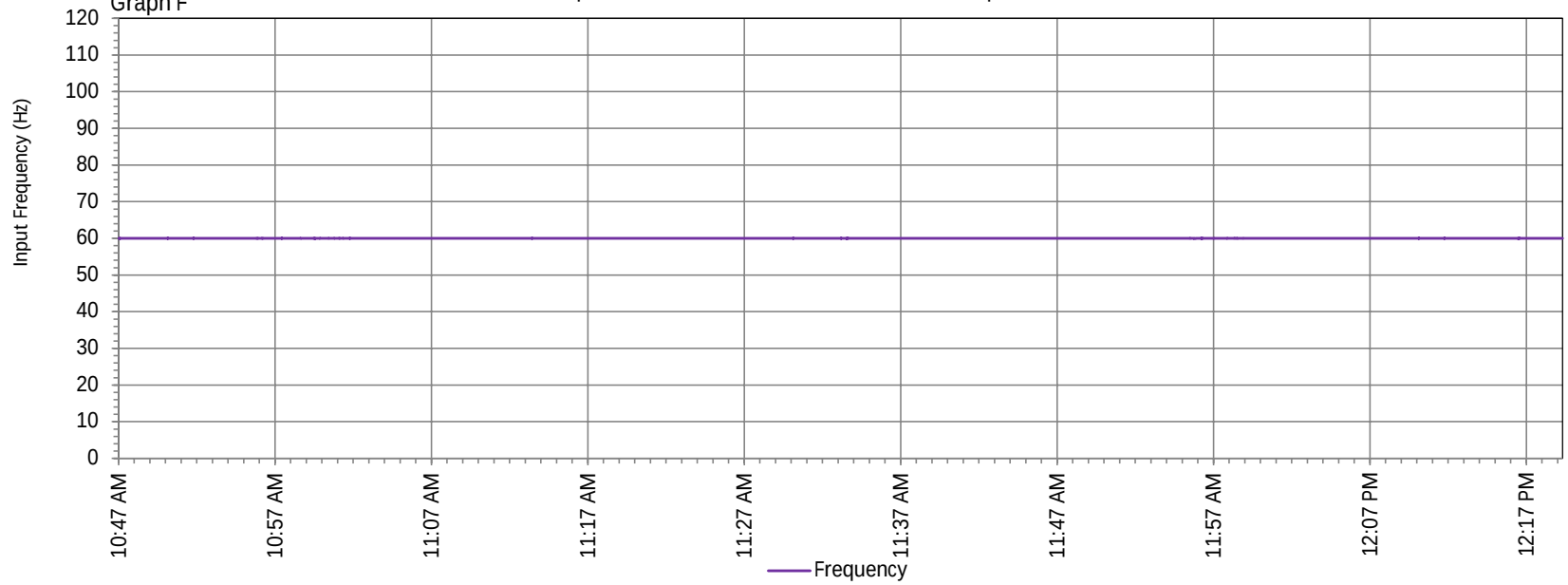
Graph D



Graph E



Graph F



NP 3171 HT 3~ 454

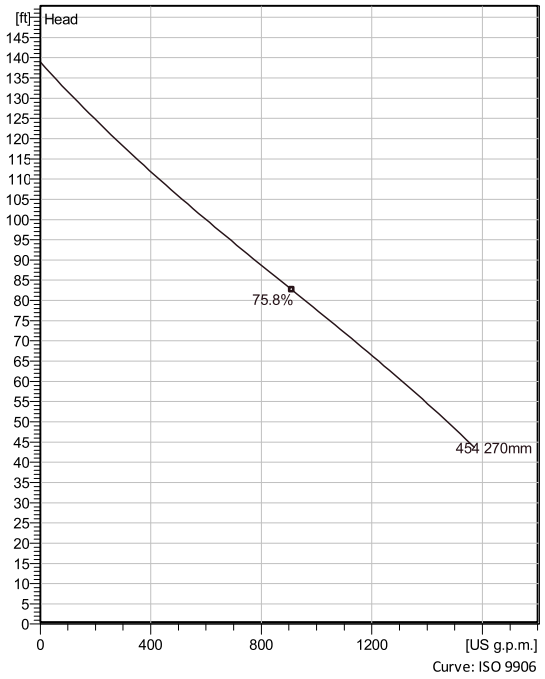
Patented self cleaning semi-open channel impeller, ideal for pumping in waste water applications. Modular based design with high adaptation grade.

FLYGT
a xylem brand

Technical specification



Curves according to: Water, pure Water, pure [100%], 39.2 °F, 62.42 lb/ft³, 1.6891E-5 ft²/s



Curve: ISO 9906

Nominal (mean) data shown. Under- and over-performance from this data should be expected due to standard manufacturing tolerances.
Please consult your local Flygt representative for performance guarantees.

Configuration

Motor number
N3171.185 25-17-4AA-W 30hp

Installation type
P - Semi permanent, Wet

Impeller diameter
270 mm

Discharge diameter
4 inch

Pump information

Impeller diameter
270 mm

Discharge diameter
4 inch

Inlet diameter
150 mm

Maximum operating speed
1760 rpm

Number of blades
2

Max. fluid temperature
40 °C

Material

Impeller
Hard-Iron ™

Project	Xylect-21983856	**Created by**	Robert Simcox		
Block		**Created on**	3/12/2024	**Last update**	3/12/2024

NP 3171 HT 3~ 454

Technical specification

Motor - General

Motor number N3171.185 25-17-4AA-W 30hp	**Phases** 3~	**Rated speed** 1760 rpm	**Rated power** 30 hp
ATEX approved No	**Number of poles** 4	**Rated current** 75 A	**Stator variant** 7
Frequency 60 Hz	**Rated voltage** 230 V	**Insulation class** H	**Type of Duty** S1
Version code 185			

Motor - Technical

Power factor - 1/1 Load 0.83	**Motor efficiency - 1/1 Load** 89.5 %	**Total moment of inertia** 3.82 lb ft²	**Starts per hour max.** 30
Power factor - 3/4 Load 0.78	**Motor efficiency - 3/4 Load** 90.5 %	**Starting current, direct starting** 515 A	
Power factor - 1/2 Load 0.66	**Motor efficiency - 1/2 Load** 90.0 %	**Starting current, star-delta** 172 A	

Project	Xylect-21983856	**Created by**	Robert Simcox		
Block		**Created on**	3/12/2024	**Last update**	3/12/2024

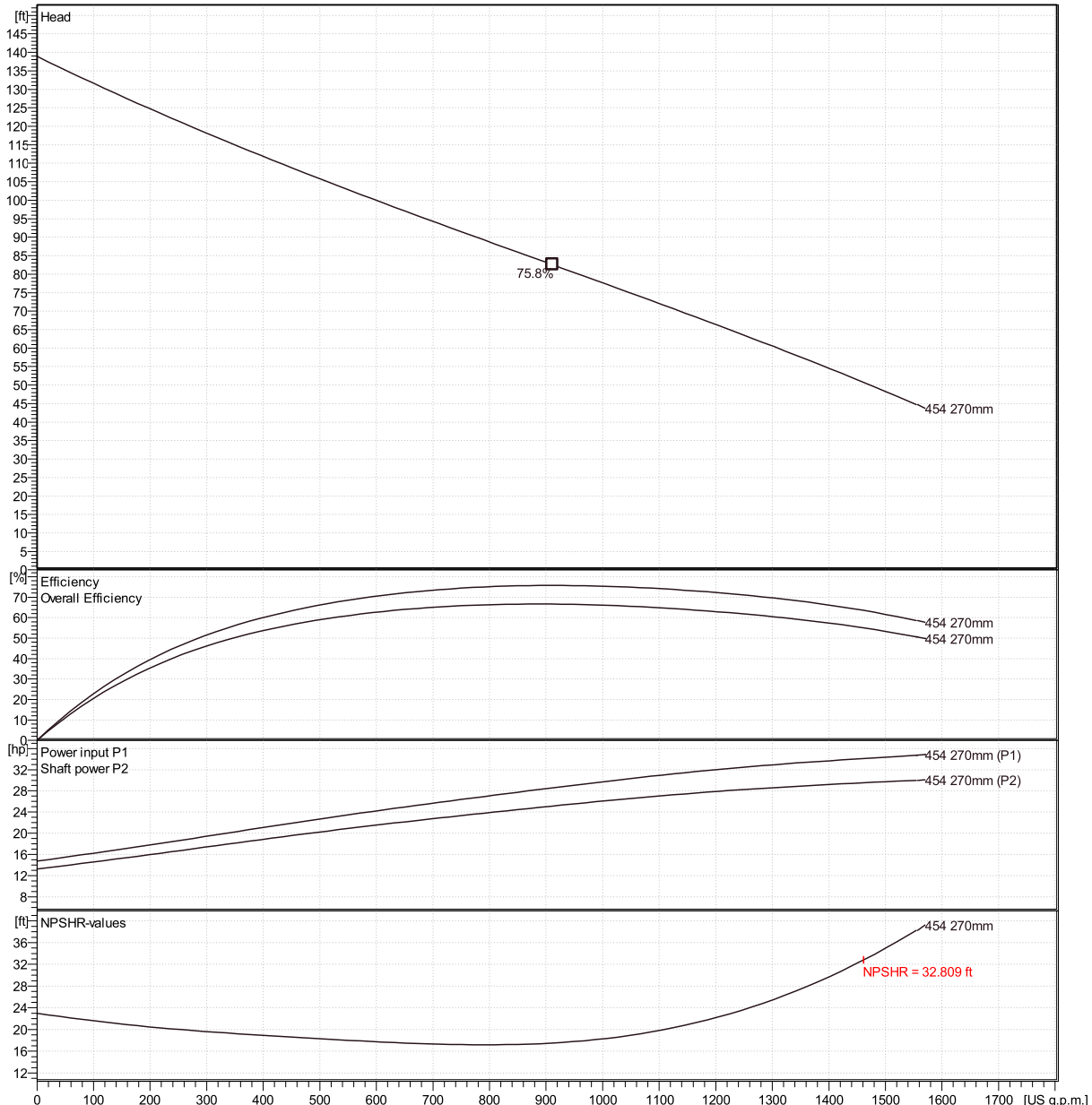
NP 3171 HT 3~ 454

Performance curve

Duty point

Flow	Head

Curves according to: Water, pure Water, pure [100%],39.2 °F,62.42 lb/ft³,1.6891E-5 ft²/s



Nominal (mean) data shown. Under- and over-performance from this data should be expected due to standard manufacturing tolerances.
Please consult your local Flygt representative for performance guarantees.

Curve: ISO 9906

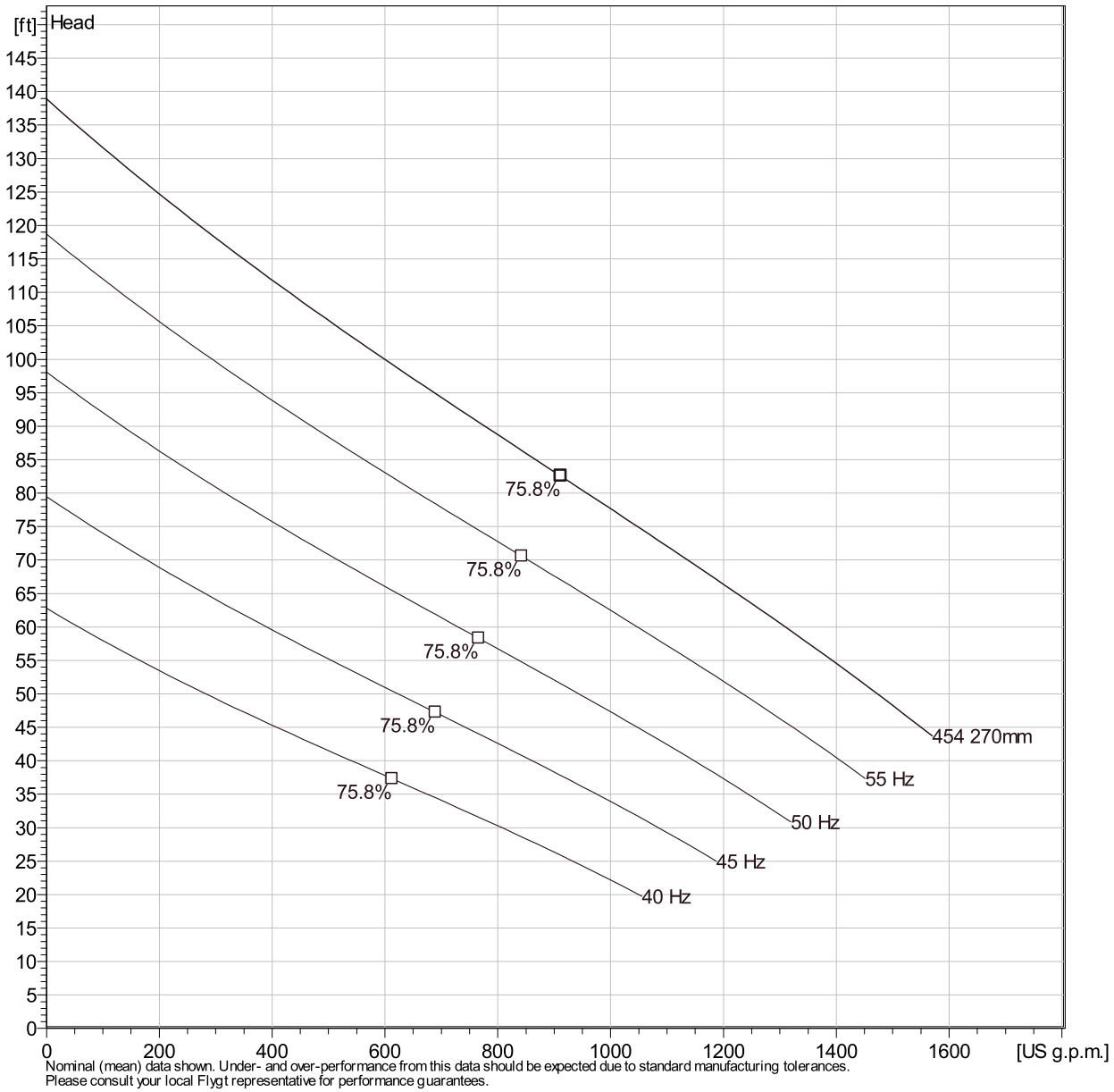
Xylect-21983856			Robert Simcox		
		Created on	3/12/2024	**Last update**	3/12/2024

NP 3171 HT 3~ 454

Duty Analysis

FLYGT
a xylem brand

Curves according to: Water, pure [100%] ; 39.2°F; 62.42lb/ft³; 1.6891E-5ft²/s



Nominal (mean) data shown. Under- and over-performance from this data should be expected due to standard manufacturing tolerances.
Please consult your local Flygt representative for performance guarantees.

Operating characteristics

Pumps / Systems	Flow	Head	Shaft power	Flow	Head	Shaft power	Hydr.eff.	Spec. Energy	NPSHre
	US g.p.m.	ft	hp	US g.p.m.	ft	hp		kWh/US MG	ft

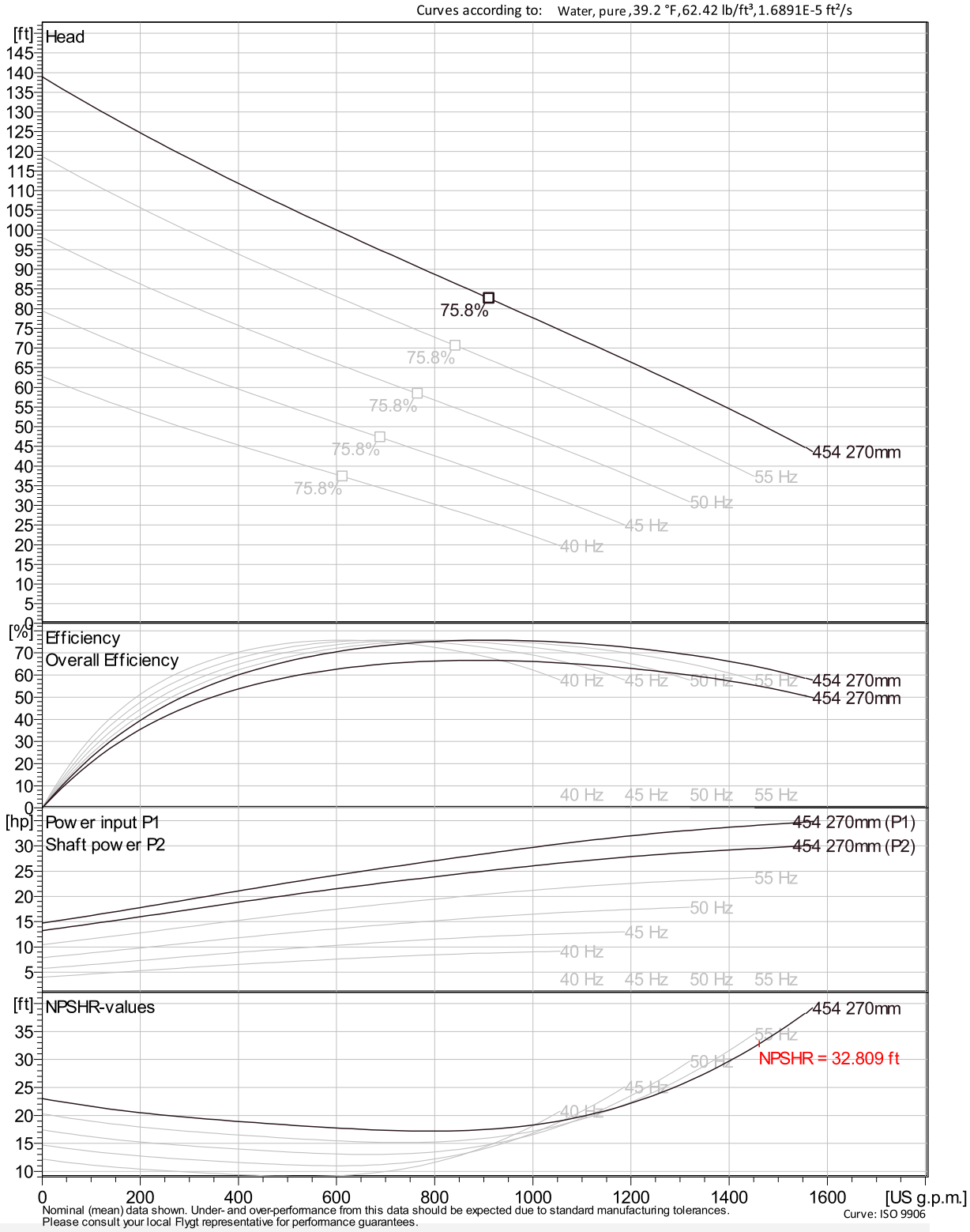
Project		**Created by**	Robert Simcox		
Block	Xylect-21983856	**Created on**	3/12/2024	**Last update**	3/12/2024

NP 3171 HT 3~ 454

VFD Curve

FLYGT a xylem brand

Curves according to: Water, pure ,39.2 °F,62.42 lb/ft³,1.6891E-5 ft²/s



Nominal (mean) data shown. Under- and over-performance from this data should be expected due to standard manufacturing tolerances.
Please consult your local Flygt representative for performance guarantees.

Curve: ISO 9906

Project	Xylect-21983856	**Created by**	Robert Simcox		
Block		**Created on**	3/12/2024	**Last update**	3/12/2024

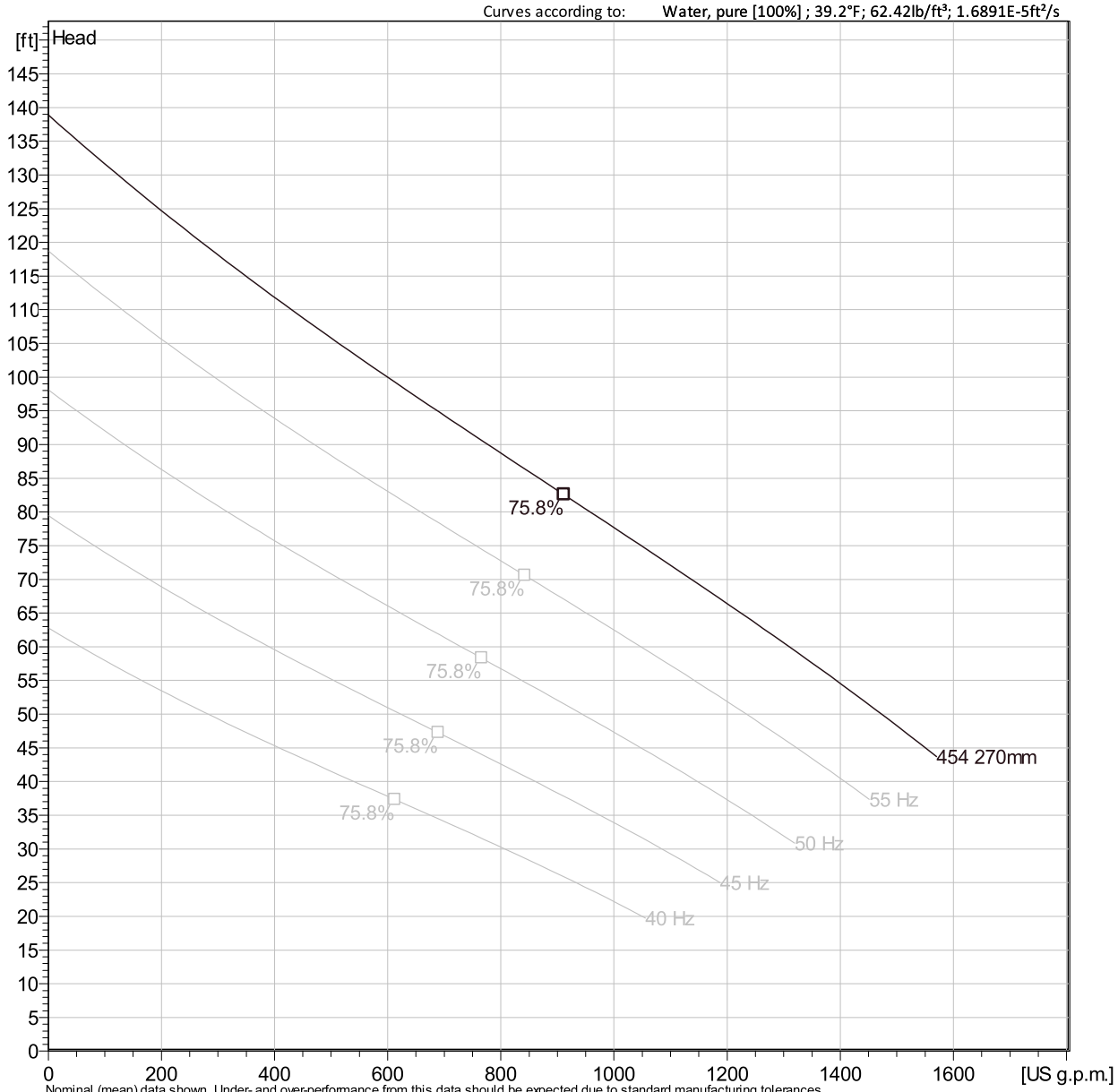
Program version	Data version	User group(s)
72.0 - 2/20/2024 (Build 175)	3/5/2024 10:29 A3P3	Xylem:USA - EXT, USA - INT

NP 3171 HT 3~ 454

VFD Analysis

FLYGT
a xylem brand

Curves according to: Water, pure [100%] ; 39.2°F; 62.42lb/ft³; 1.6891E-5ft²/s



Nominal (mean) data shown. Under- and over-performance from this data should be expected due to standard manufacturing tolerances.
Please consult your local Flygt representative for performance guarantees.

Operating Characteristics

Pumps / Systems	Frequency	Flow	Head	Shaft power	Flow	Head	Shaft power	Hydr.eff.	Specific energy	NPSHre
		US g.p.m.	ft	hp	US g.p.m.	ft	hp		kWh/US MG	ft

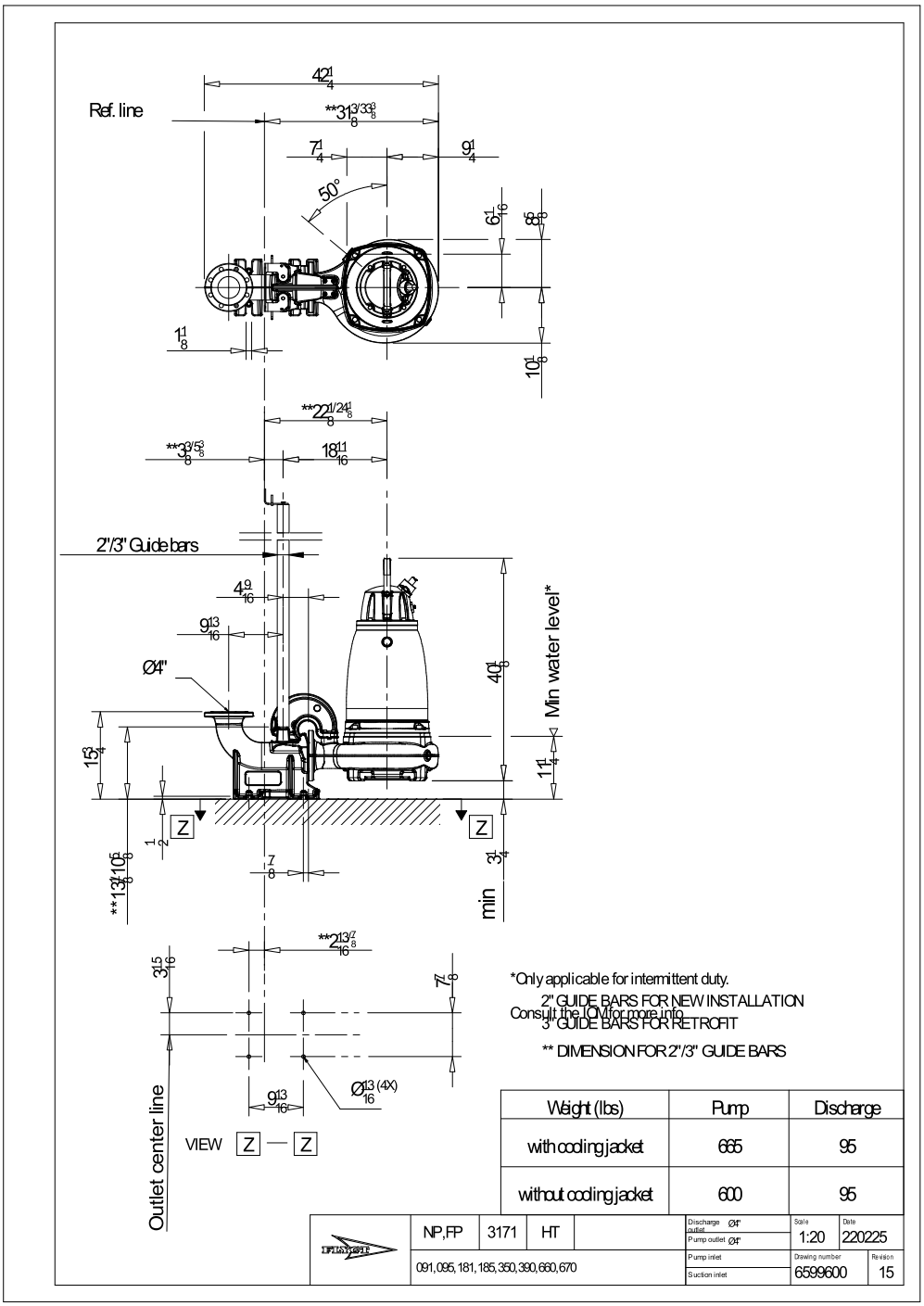
Project	Xylect-21983856	**Created by**	Robert Simcox		
Block		**Created on**	3/12/2024	**Last update**	3/12/2024

Program version	Data version	User group(s)
72.0 - 2/20/2024 (Build 175)	3/5/2024 10:29 A3P3	Xylem: USA - EXT, USA - INT

NP 3171 HT 3~ 454

Dimensional drawing

FLYGT
a xylem brand



Weight (lbs)	Pump	Discharge
with cooling jacket	665	95
without cooling jacket	600	95

NP,FP	3171	HT	Discharge Ø4" / Pump outlet Ø4"	Scale 1:20	Date 220225
091,095,181,185,360,390,660,670			Pump inlet / Suction inlet	Drawing number 6599600	Revision 15

Project	Xylect-21983856	**Created by**	Robert Simcox
Block		**Created on**	3/12/2024 **Last update** 3/12/2024

Pump Station Evaluation Report

6 - Peter Street

Prepared For:

City of Wildwood

Evaluation Date:

2/7/2024

Report Date:

September 27, 2024

Version 1

Kimley»Horn

Version	Publish Date	Description
1	See Cover	Original/Version 1

Table 0.1 - Revision History

Version	Publish Date	Test Date	Description

Table 0.2 - Previous Evaluation History

This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn shall be without liability to Kimley-Horn.

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ATTACHMENTS

Attachment 1 ..... **Test Data Graphs**

Attachment 2 ..... **Supplementary Pump Information**

ABBREVIATIONS

Ø	Phase
AC	Alternating Current
ADD	Automated Draw Down
ADF	Average Daily Flow
ARR	Automated Rate of Rise
ATL	Across The Line
Avg	Average
BEP	Best Efficiency Point
CL	Center Line
Disch	Discharge
ETM	Elapsed Time Meter
FLA	Full Load Amps
FM	Force Main
Ft	Feet
FPS	Feet Per Second
FSFO	Full Speed Full Open
Gal	Gallons
GPM	Gallons Per Minute
HGL	Hydraulic Grade Line
HP	Horsepower
Hrs	Hours
H:M:S	Hours:Minutes:Seconds
Hz	Hertz
In	Inches
InvIn	Invert In
KWH	Kilowatt-Hours
L	Length
L1, L2, L3	Leg 1, 2 & 3 or Length 1, 2 & 3
MSL	Mean Sea Level
MTBF	Mean Time Between Failures
N	Neutral
P	Pump
PCL	Pump Center Line
PCP	Pump Control Panel
PF	Power Factor
PSI	Pounds Per Square Inch
PT	Point
RPM	Revolutions Per Minute
TDH	Total Dynamic Head
TVSS	Transient Voltage Surge Suppressor
V	Volts
VFD	Variable Frequency Drive
WTW	Wire To Water
WW	Wet Well
Yr	Year

1 INTRODUCTION

Kimley-Horn and Associates, Inc. evaluated the pump station through pump performance testing and a condition assessment. This report summarizes the data and results of that evaluation. The performance tests were conducted using the XAK-PACK pump performance monitoring device. The following pages provide summaries of the data collected and notes about the pumps' performance.

1.1 SITE INFORMATION

Site Name / Site Number Site #			
Date of Evaluation	2/7/2024		
Address	750 Peters Street, Wildwood, FL 34785		
Coordinates	28.86185014 -82.04612000		
Fluid Conveyed	Wastewater		
Station Style	Submersible		
Number of Pumps	2	Number of Pump Slots	2
Pump Type	Submersible		
Flow Meter Type	N/a		
Year of Construction	Unknown	Based on	☐Docs. ☐Estimation ☐Other
Basin/Zone	Unknown		
Firm Capacity (Design)	Unknown		
Firm Capacity (Test)	201 GPM / 0.289 MGD		
Discharge Description	8-inch, 5140 LF of unknown FM diameter manifolding into 30” FM at WWTF		
Electrical Service	120/240 Delta		
Site Generator	Caterpillar, diesel with belly tank		
Bypass Ability	Bypass riser assembly on site		
Miscellaneous Features			

Site Notes:

1.2 SITE MAP



Figure 1.1 - Site Location Map

2 PUMP PERFORMANCE TESTS

Pump performance tests were conducted on the pumps utilizing the measurement tools detailed below. **Table 2.1 - Measurement Methods** describes the measurements taken during the test and the measurement method. Some measurements were confirmed utilizing a secondary measurement method. See **Attachment 1** for graphs of the digitally recorded data. For each test, note the following:

1. Common accuracies for measurements of flow, pressure, voltage and current are ±1%.
2. Friction loss is calculated using the Hazen-Williams formula and the Bernoulli equation. Piping characteristics are based on best available data.

Parameter	Measurement Method	
	Primary	Secondary
Flow	Level Transducer (XAK-PACK)	N/A
Pressure	Pressure Transducer (XAK-PACK)	Liquid Filled Pressure Gauge
Wet Well Level	Level Transducer (XAK-PACK)	N/A
Volts	Voltage Probes (XAK-PACK)	Fluke 376FC
Amps	Current Transducers (XAK-PACK)	Fluke 376FC
Power Factor	Power Factor Monitor (XAK-PACK)	N/A

Table 2.1 - Measurement Methods

2.1 PUMP #1

Below is a summary of the pump characteristics and performance test results.

Parameter	Units	Value
Pump Manufacturer	-	Flygt
Pump Model	-	NP 3127 SH 3~
Pump Style	-	Submersible
Pump Impeller Dia	Inches	5.75
Pump Rated Capacity	GPM	-
Pump Rated Head	Ft	-
Pump ETM	Hours	69
Pump Flow @ BEP Design Curve	GPM	322
Pump Hyd Eff @ Design Pt	%	-
Pump WTW Eff @ Operating Pt	%	45
Pump NPSHr @ Operating Pt	Ft	18.5
Motor Synchronous Speed	RPM	3600
Motor Rated Speed	RPM	3495
Motor No. Phases	No	3
Motor Starters	-	ATL
Motor Rated Voltage	Volts	230
Motor Rated Horsepower	HP	10.0
Motor Service Factor	-	1.15
Motor FLA	Amps	26.0
Mfg. Motor Eff. @ Operating Pt	%	87%
Mfg. Starter Eff. @ Operating Pt	%	100%

Table 2.2 - Pump #1 Design Characteristics

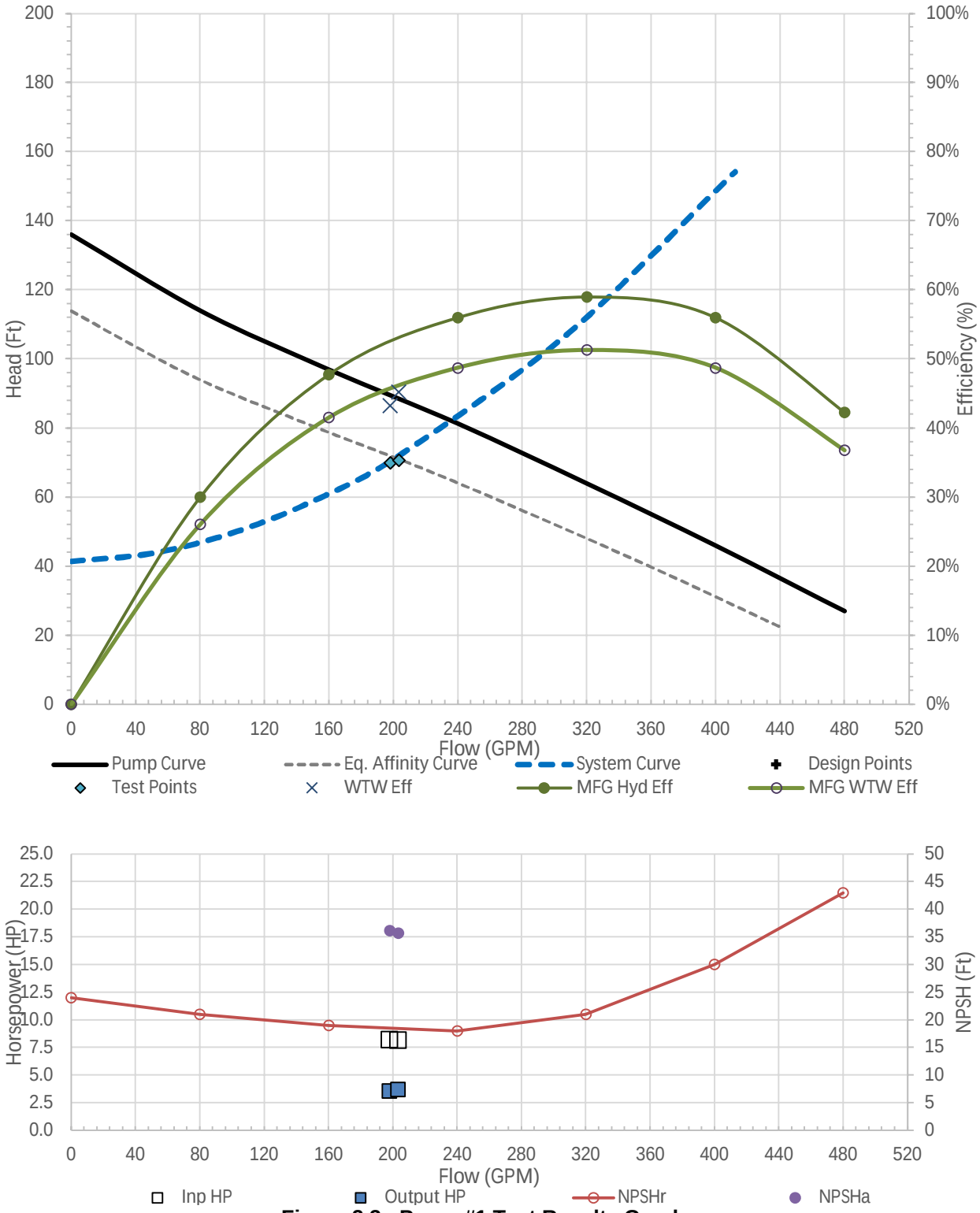


Figure 2.3 - Pump #1 Test Results Graphs

	Parameter	Units	Lower Limit	Test Value	Upper Limit	Comment
Measured	Average Output (FSFO)	GPM	-	201	-	
	Average TDH (FSFO)	Ft	-	70.3	-	
	Average WTW Efficiency (FSFO)	%	-	44%	-	
	Average Input HP (FSFO)	HP	-	8.1	-	
	Average Current Draw (FSFO)	Amps	-	18.5	-	
	Suction Velocity (FSFO)	FPS	2	-	7	
	Discharge Velocity (FSFO)	FPS	2	4.4	7	
	BEP Comparison (FSFO)	%	80%	62%	115%	1
	Average Output (FSFO)	%	90%	-	110%	
	Affinity Law Eq. Curve	%	-5%	-8.5%	5%	2
	NPSHa	Ft	19	35.9	N/A	
	WTW Eff @ Operating Pt	%	-5%	-2%	5%	
	Input Frequency	Hz	-5%	0%	5%	
	Input Voltage (L-L)	%	-10%	-6.8%	10%	
	Voltage Drop	%	-15%	2.8%	N/A	
	Voltage Imbalance	%	-10%	0.3%	10%	
	Current Imbalance	%	-10%	4.9%	10%	
	Motor FLA	%	-50%	71.0%	105%	
	Motor Load	%	50%	81.4%	115%	
	Motor Slip Speed	%	3474	3495	3621	
	Vibration	In/Sec	0	-	-	
Observed	Surge	1-5	-	1	3	
	Vibration	1-5	-	1	3	
	Cavitation	1-5	-	1	3	
	Mechanical Noise	1-5	-	2	3	
	Leaks	1-5	-	1	3	
	Exterior Condition	1-5	-	2	3	
	Overall Score	1-5	-	2	3	

Table 2.4 - Pump #1 Test Summary

Pump #1 - Test Comments

1. The pump is operating at 62% of the BEP flow rate.
2. The pump is operating at 91.5% equivalent affinity curve. This could indicate that significant impeller/volute wear has occurred. Based on low runtime meter this could also be a result of a different, reduced-diameter impeller being installed.

2.2 PUMP #2

Below is a summary of the pump characteristics and performance test results.

Parameter	Units	Value
Pump Manufacturer	-	Flygt
Pump Model	-	NP 3127 SH 3~
Pump Style	-	Submersible
Pump Impeller Dia	Inches	5.75
Pump Rated Capacity	GPM	-
Pump Rated Head	Ft	-
Pump ETM	Hours	69
Pump Flow @ BEP Design Curve	GPM	322
Pump Hyd Eff @ Design Pt	%	-
Pump WTW Eff @ Operating Pt	%	46%
Pump NPSHr @ Operating Pt	Ft	18
Motor Synchronous Speed	RPM	3600
Motor Rated Speed	RPM	3495
Motor No. Phases	No	3
Motor Starters	-	ATL
Motor Rated Voltage	Volts	230
Motor Rated Horsepower	HP	10.0
Motor Service Factor	-	1.15
Motor FLA	Amps	26.0
Mfg. Motor Eff. @ Operating Pt	%	87%
Mfg. Starter Eff. @ Operating Pt	%	100%

Table 2.5 - Pump #2 Design Characteristics

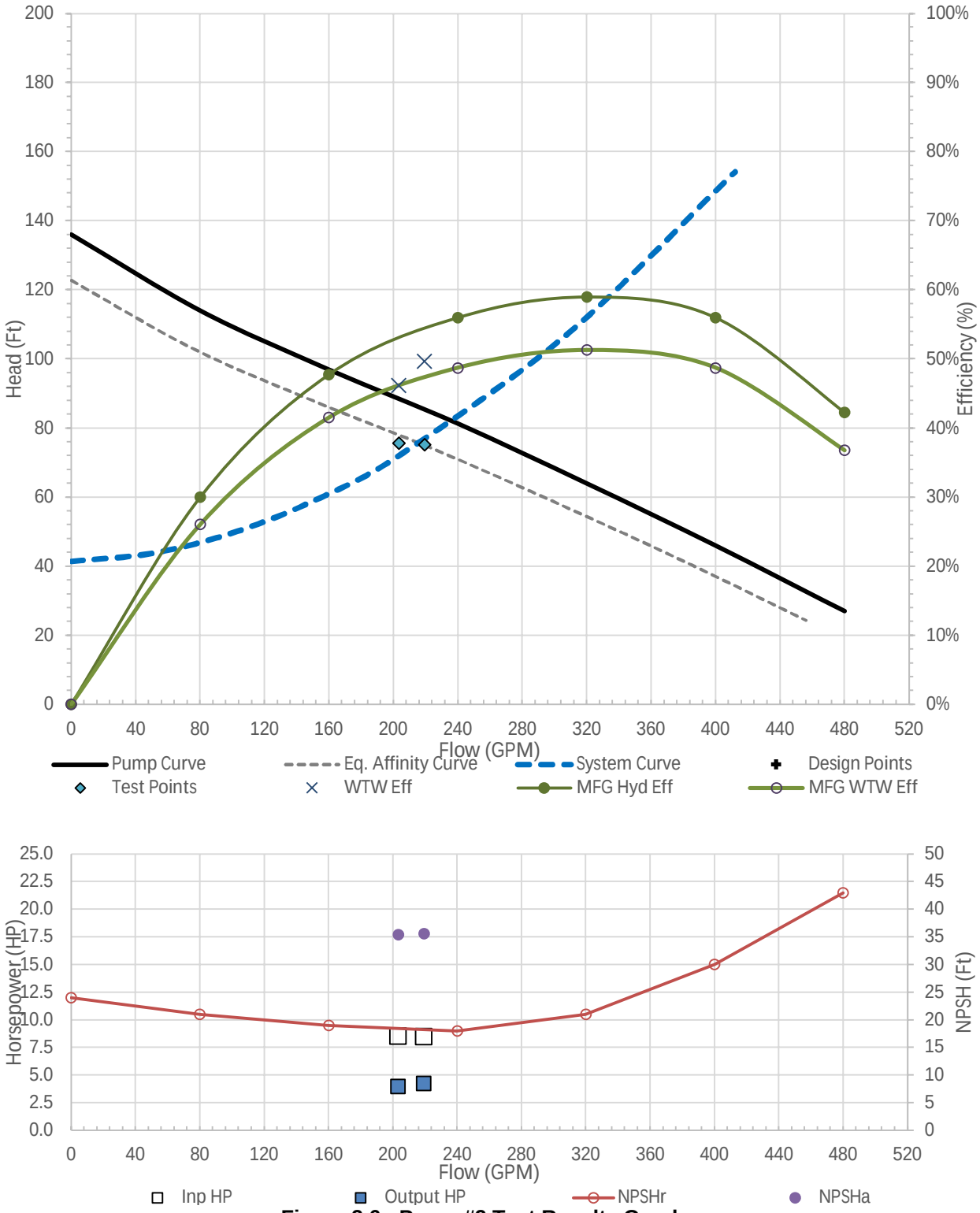


Figure 2.6 - Pump #2 Test Results Graphs

	Parameter	Units	Lower Limit	Test Value	Upper Limit	Comment
Measured	Average Output (FSFO)	GPM	-	211	-	
	Average TDH (FSFO)	Ft	-	75.4	-	
	Average WTW Efficiency (FSFO)	%	-	48%	-	
	Average Input HP (FSFO)	HP	-	8.5	-	
	Average Current Draw (FSFO)	Amps	-	19.2	-	
	Suction Velocity (FSFO)	FPS	2	-	7	
	Discharge Velocity (FSFO)	FPS	2	4.7	7	
	BEP Comparison (FSFO)	%	80%	66%	115%	1
	Average Output (FSFO)	%	90%	-	110%	
	Affinity Law Eq. Curve	%	-5%	-5.0%	5%	2
	NPSHa	Ft	18	35.5	N/A	
	WTW Eff @ Operating Pt	%	-5%	4%	5%	
	Input Frequency	Hz	-5%	0%	5%	
	Input Voltage (L-L)	%	-10%	-6.7%	10%	
	Voltage Drop	%	-15%	2.8%	N/A	
	Voltage Imbalance	%	-10%	0.5%	10%	
	Current Imbalance	%	-10%	3.5%	10%	
	Motor FLA	%	-50%	74.0%	105%	
	Motor Load	%	50%	84.9%	115%	
	Motor Slip Speed	%	3474	3495.0	3621	
	Vibration	In/Sec	0	-	-	
Observed	Surge	1-5	-	1	3	
	Vibration	1-5	-	1	3	
	Cavitation	1-5	-	1	3	
	Mechanical Noise	1-5	-	2	3	
	Leaks	1-5	-	1	3	
	Exterior Condition	1-5	-	2	3	
	Overall Score	1-5	-	2	3	

Table 2.7 - Pump #2 Test Summary

Pump #2 - Test Comments

1. The pump is operating at 66% of the BEP flow rate.
2. The pump is operating at 95% equivalent affinity curve. This could indicate that significant impeller/volute wear has occurred. Based on low runtime meter this could also be a result of a different, reduced-diameter impeller being installed.

2.3 HYDRAULICS SUMMARY

The measured system curve is shifted up significantly from the theoretical curve. This indicates the system has increased head loss from the expected curve.

This increased head loss could be a result of inaccurate GIS records and/or a result of a reduced C factor or reduced inside diameter of the force main from years of service.

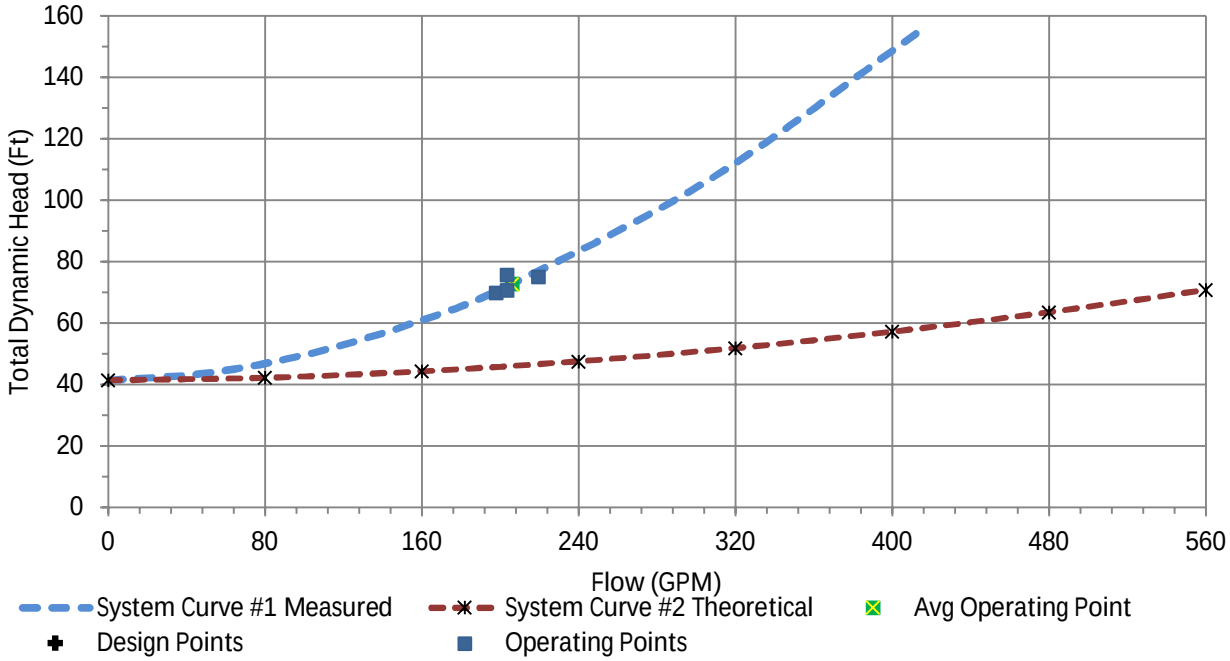


Figure 2.8 – System Hydraulic Information provides a graph of the system characteristics and a table describing the system curves. Length, Hazen-Williams (Hz-Wm), and diameter are approximated based on the best available information and fit to the data. System Curve Characteristics are intended to be for reference.

System Curve Characteristics					
Curve Name	**Curve Type**	**Length (Ft)**	**Hz-Wm**	**Diameter (In)**	**Calculated Based On**
System Curve #1	Measured	5140	150	5.2	Test Data
System Curve #2	Theoretical	5140	150	8.0	Provided GIS Data

Figure 2.8 – System Hydraulic Information

2.4 PIPELINE PERFORMANCE INDICATORS

Figure 2.9 – Pipe Velocities displays the velocities in each known diameter of the pressurized conveyance system. The Average Test Output Velocity represents the velocity generated by the average pumping rate produced by testing. The Station Firm Capacity Velocity represents the velocity based on the station's firm capacity (output with the largest pump out of service). The color gradient represents ranges of acceptable to problematic velocities. Red areas of operation are problematic and green areas of operation are acceptable.

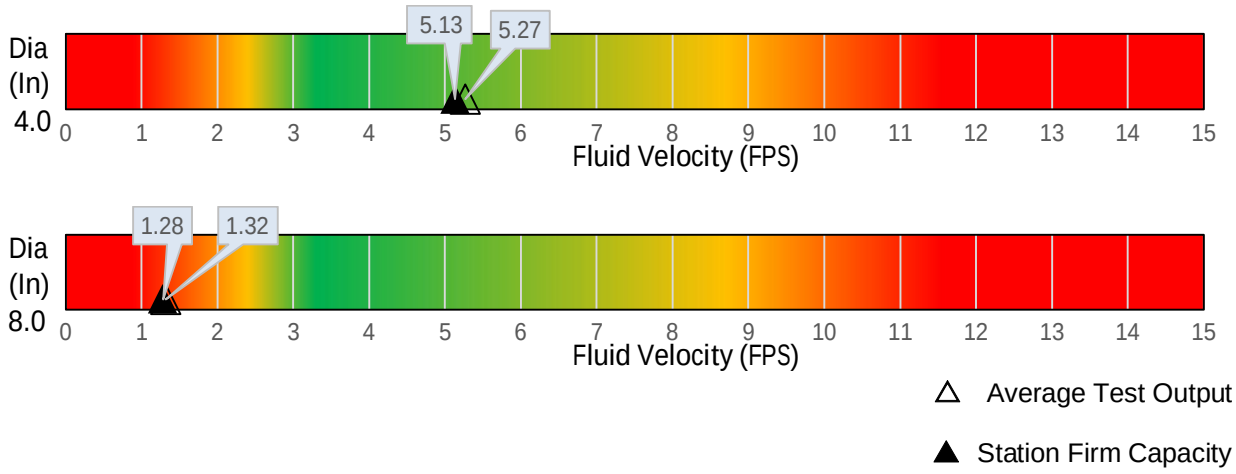


Figure 2.9 – Pipe Velocities

The maximum observed pressure at the station during the testing period is provided below in **Figure 2.10 - Maximum Observed Pressure**. System pressure capabilities vary depending upon pipe material type, pressure rating, elevation, age, condition, etc. This performance indicator is provided for reference only and is not a condition assessment of the pipeline. For systems with pressures above approximately 100 PSI, consider a more detailed analysis. See the **Attachment 1 - Graph B** for additional pressure data.

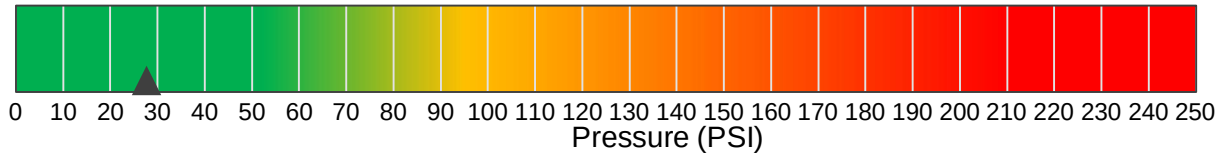


Figure 2.10 - Maximum Observed Pressure

2.5 SYSTEM PRESSURES

Figure 2.11 - Pressure Cycle shows a typical single-pump pressure cycle measured during testing. The pressure data captured for this test is limited to 2-second intervals which may not have captured the entire range of actual pressures. The complete log of pressure readings is provided in **Attachment 1 – Test Data Graphs**. For more accurate surge data, a surge monitoring device should be used to capture pressure at shorter time intervals over a longer period of time. **Table 2.12 - Further Surge-Related Actions** provides a list of recommended surge-related actions.

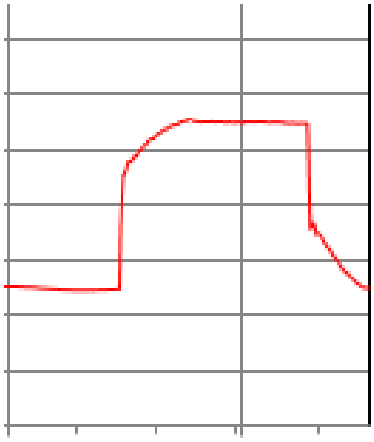


Figure 2.11 - Pressure Cycle

The pressure transducer used for measuring pressures has a range of 0 to 200 PSI. Pump startup produced an upsurge of approximately 20 PSI. Upon pump shut down, the observed minimum pressure was approximately 11 PSI and the maximum pressure was approximately 17 PSI creating a total observed pressure range of 9 PSI.

Further Surge Related Actions:	
	Perform extended period digital surge monitoring
	Perform calibrated surge modeling
	Revise operating scheme to reduce surge potential
	Evaluate piping system for pressure capacity and likelihood of failure
	Install physical surge mitigation strategies
✓	No further action

Table 2.12 - Further Surge-Related Actions

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3 RECOMMENDATIONS

The following recommendations are a result of the findings of this evaluation and should be considered for implementation. See **Section 2 Pump Performance Tests** for pump specific recommendations. In addition to the recommendations below, this site should/ be considered for the following overall planning and budgeting activities.

3.1 OVERALL RECOMMENDATIONS

Overall Site Rating	Score	Description
	1	No recommendations currently. Monitor station for worsening conditions, perform regular O&M, reassess condition in 2-5 years.
	2	Complete recommendations listed in Section 3.2, monitor station for worsening conditions, perform regular O&M, reassess condition in 1-3 years.
	3	Station requires improvements beyond replacement of individual components. Begin planning and budgeting for a major rehabilitation. Place under regular observation until rehabilitation is complete.
	4	Station does not appear to be brought into conformance with standards without replacement. Begin planning and budgeting for a station replacement. Place under regular observation until rehabilitation is complete.

3.2 MISCELLANEOUS RECOMMENDATIONS

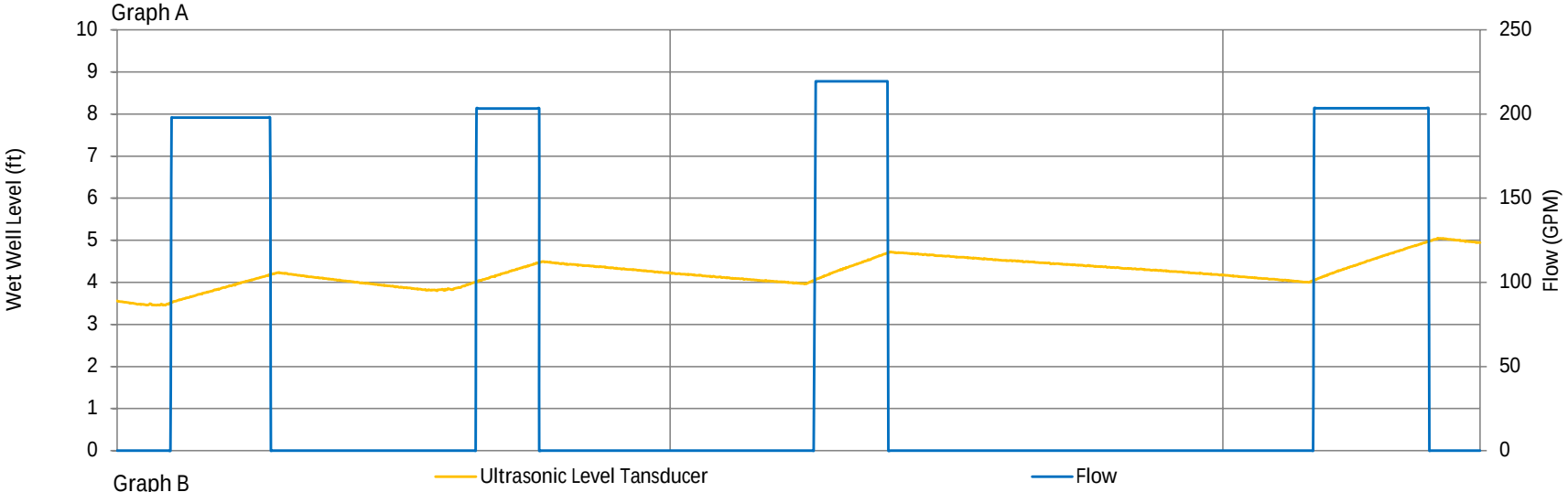
Pumps – Both pumps are operating at a reduced impeller. This is typically a sign of impeller wear from years in service. However, both pumps have low runtimes on the on-site runtime meters. We recommend confirming accurate pump data as well as checking on impeller health.

GIS – From measured testing data the provided GIS information could be inaccurate. We recommend confirming the force main size and updating the GIS records as necessary.

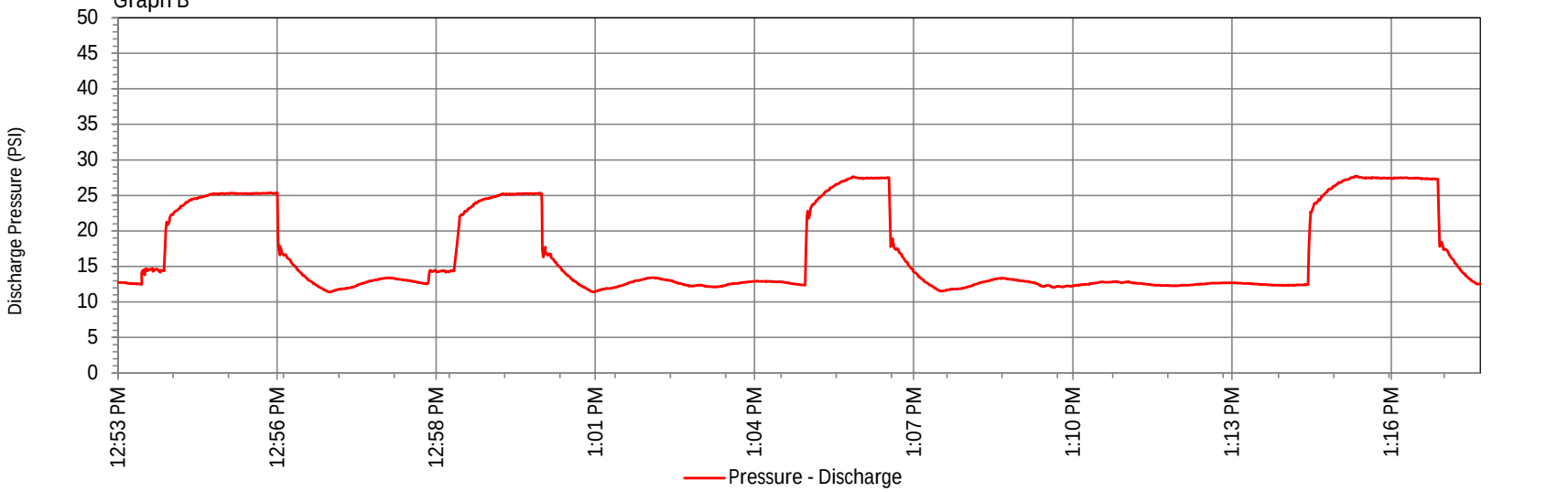
4 ATTACHMENTS

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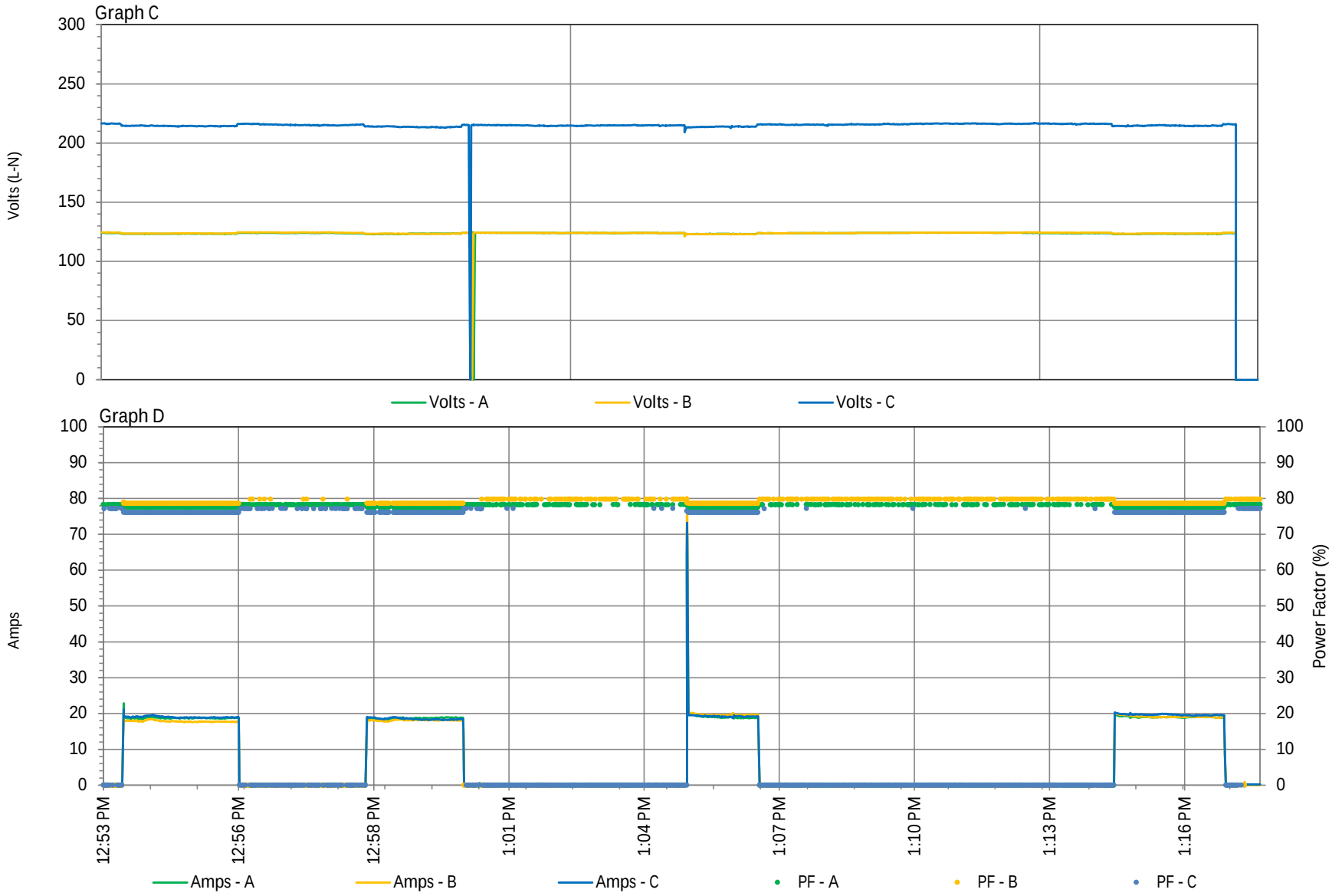
Graph A



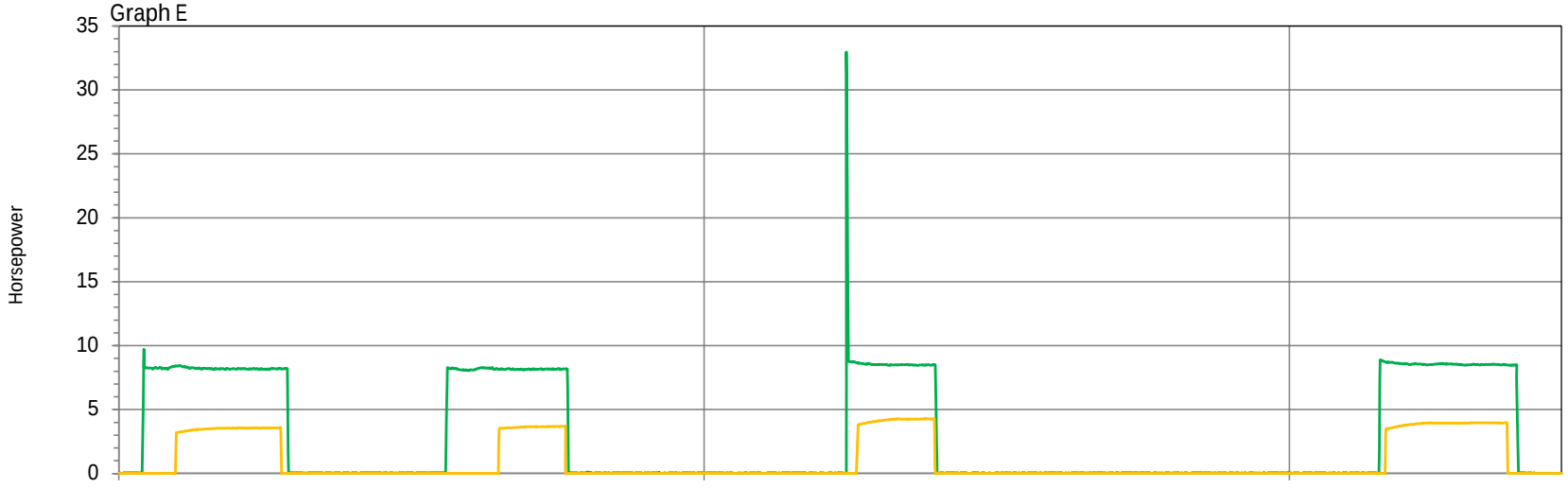
Graph B



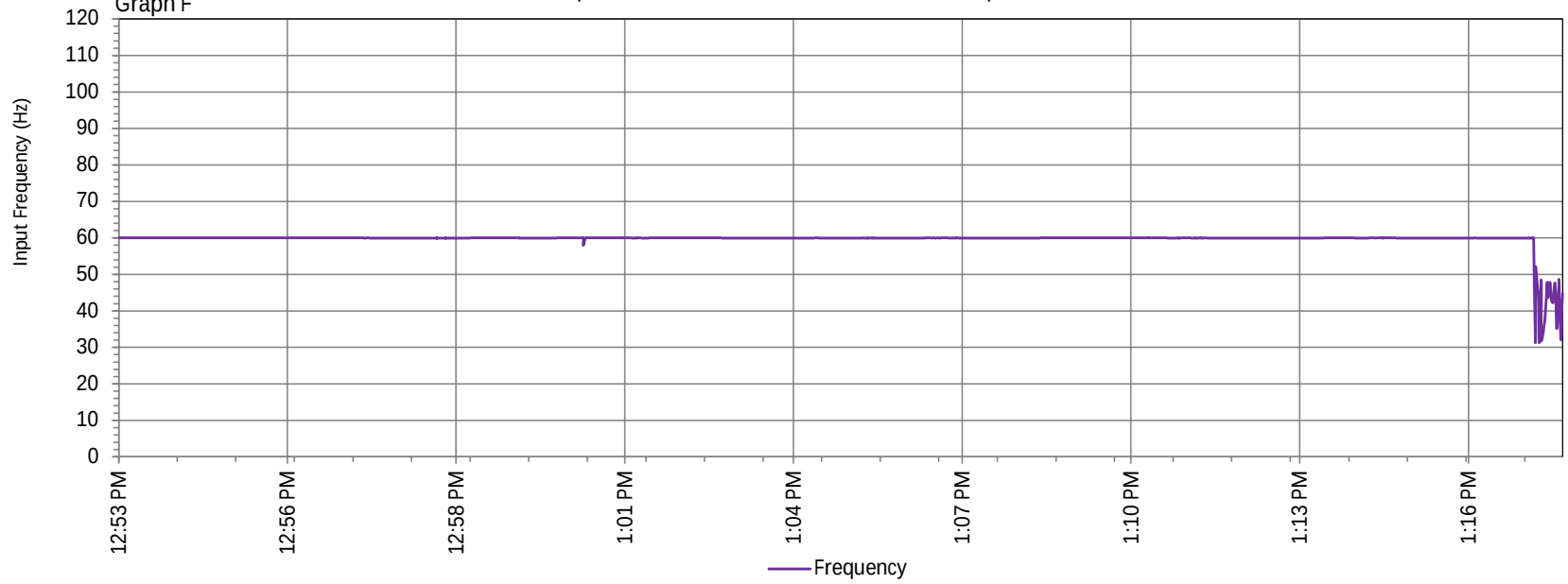
* Times shown are Eastern Standard Time


Graph C
Volts (L-N)
300
250
200
150
100
50
0
Volts - A
Volts - B
Volts - C
Graph D
Amps
Power Factor (%)
100
90
80
70
60
50
40
30
20
10
0
12:53 PM
12:56 PM
12:58 PM
1:01 PM
1:04 PM
1:07 PM
1:10 PM
1:13 PM
1:16 PM
Amps - A
Amps - B
Amps - C
PF - A
PF - B
PF - C

Graph E



Graph F



NP 3127 SH 3~ Adaptive 249

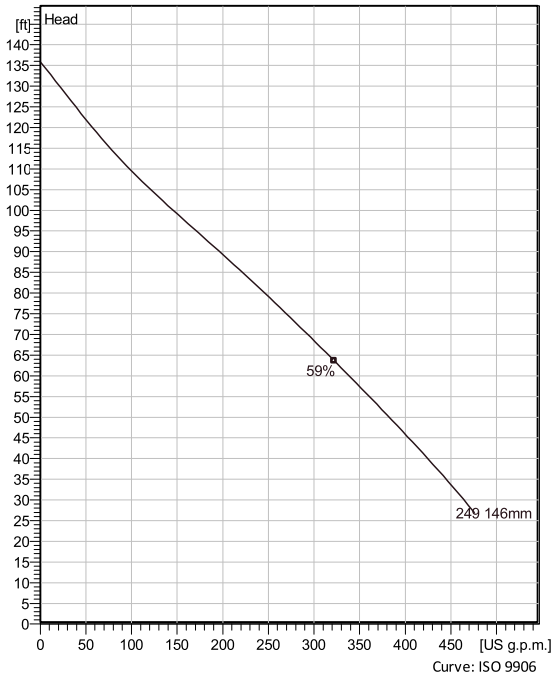
Patented self cleaning semi-open channel impeller, ideal for pumping in waste water applications. Modular based design with high adaptation grade.

FLYGT
a xylem brand

Technical specification



Curves according to: Water, pure Water, pure [100%], 39.2 °F, 62.42 lb/ft³, 1.6891E-5 ft²/s



Curve: ISO 9906

Nominal (mean) data shown. Under- and over-performance from this data should be expected due to standard manufacturing tolerances.
Please consult your local Flygt representative for performance guarantees.

Configuration

Motor number
N3127.060 21-11-2AL-W 11hp

Installation type
P - Semi permanent, Wet

Impeller diameter
146 mm

Discharge diameter
3 inch

Pump information

Impeller diameter
146 mm

Discharge diameter
3 inch

Inlet diameter
80 mm

Maximum operating speed
3495 rpm

Number of blades
2

Max. fluid temperature
40 °C

Material

Impeller
Hard-Iron ™

Stator housing material
Grey cast iron

Project	Xylect-21982559	**Created by**	Robert Simcox		
Block		**Created on**	3/12/2024	**Last update**	3/12/2024

NP 3127 SH 3~ Adaptive 249

Technical specification

Motor - General

Motor number N3127.060 21-11-2AL-W 11hp	**Phases** 3~	**Rated speed** 3495 rpm	**Rated power** 11 hp
ATEX approved No	**Number of poles** 2	**Rated current** 26 A	**Stator variant** 12
Frequency 60 Hz	**Rated voltage** 230 V	**Insulation class** H	**Type of Duty** S1
Version code 060			

Motor - Technical

Power factor - 1/1 Load 0.90	**Motor efficiency - 1/1 Load** 87.5 %	**Total moment of inertia** 0.434 lb ft²	**Starts per hour max.** 30
Power factor - 3/4 Load 0.88	**Motor efficiency - 3/4 Load** 88.2 %	**Starting current, direct starting** 221 A	
Power factor - 1/2 Load 0.82	**Motor efficiency - 1/2 Load** 87.4 %	**Starting current, star-delta** 73.7 A	

Project	Xylect-21982559	**Created by**	Robert Simcox		
Block		**Created on**	3/12/2024	**Last update**	3/12/2024

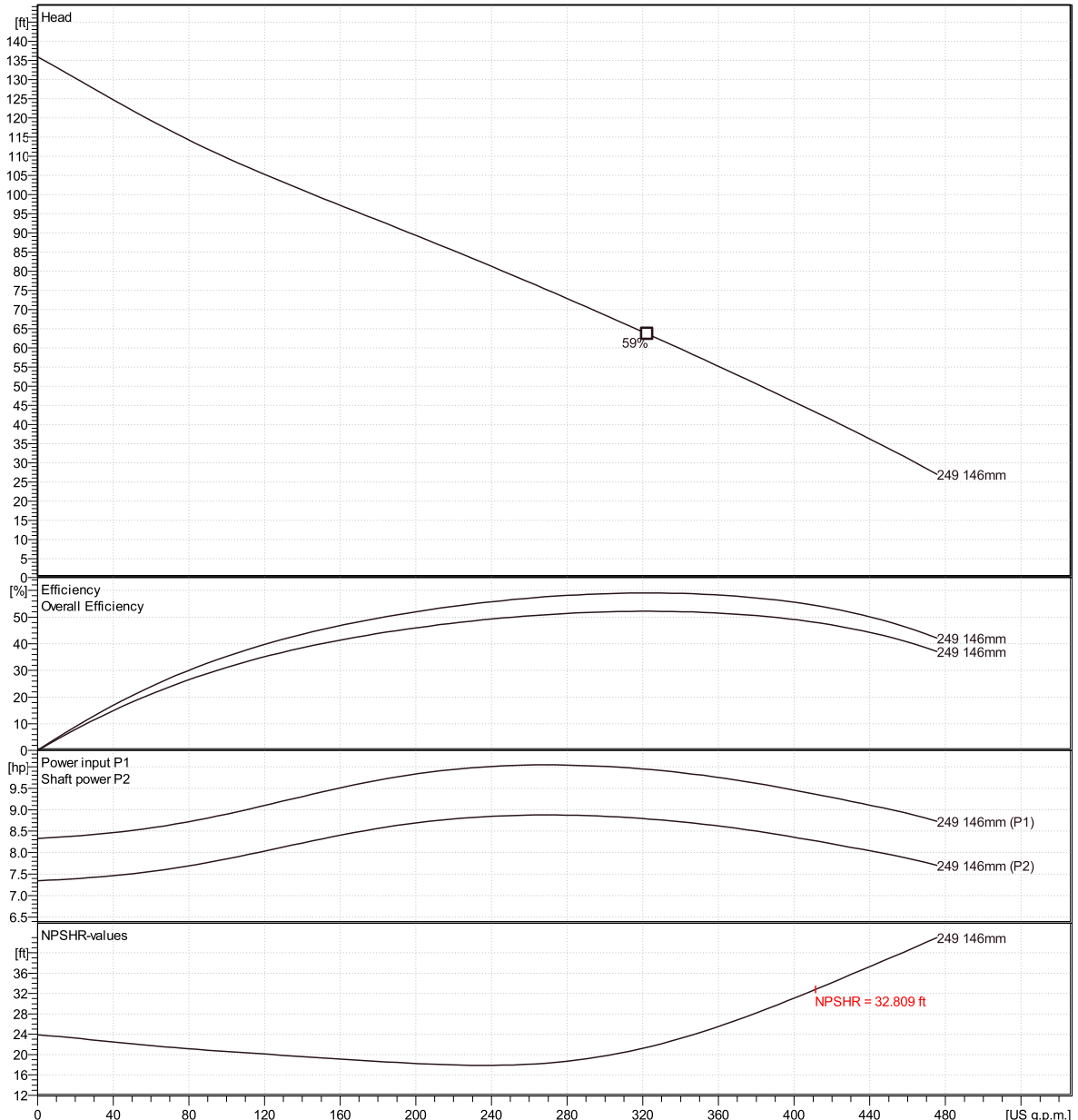
NP 3127 SH 3~ Adaptive 249

Performance curve

Duty point

Flow	Head

Curves according to: Water, pure Water, pure [100%],39.2 °F,62.42 lb/ft³,1.6891E-5 ft²/s



Nominal (mean) data shown. Under- and over-performance from this data should be expected due to standard manufacturing tolerances.
Please consult your local Flygt representative for performance guarantees.

Curve: ISO 9906

Xylect-21982559		Robert Simcox			
	Created on	3/12/2024	**Last update**	3/12/2024	

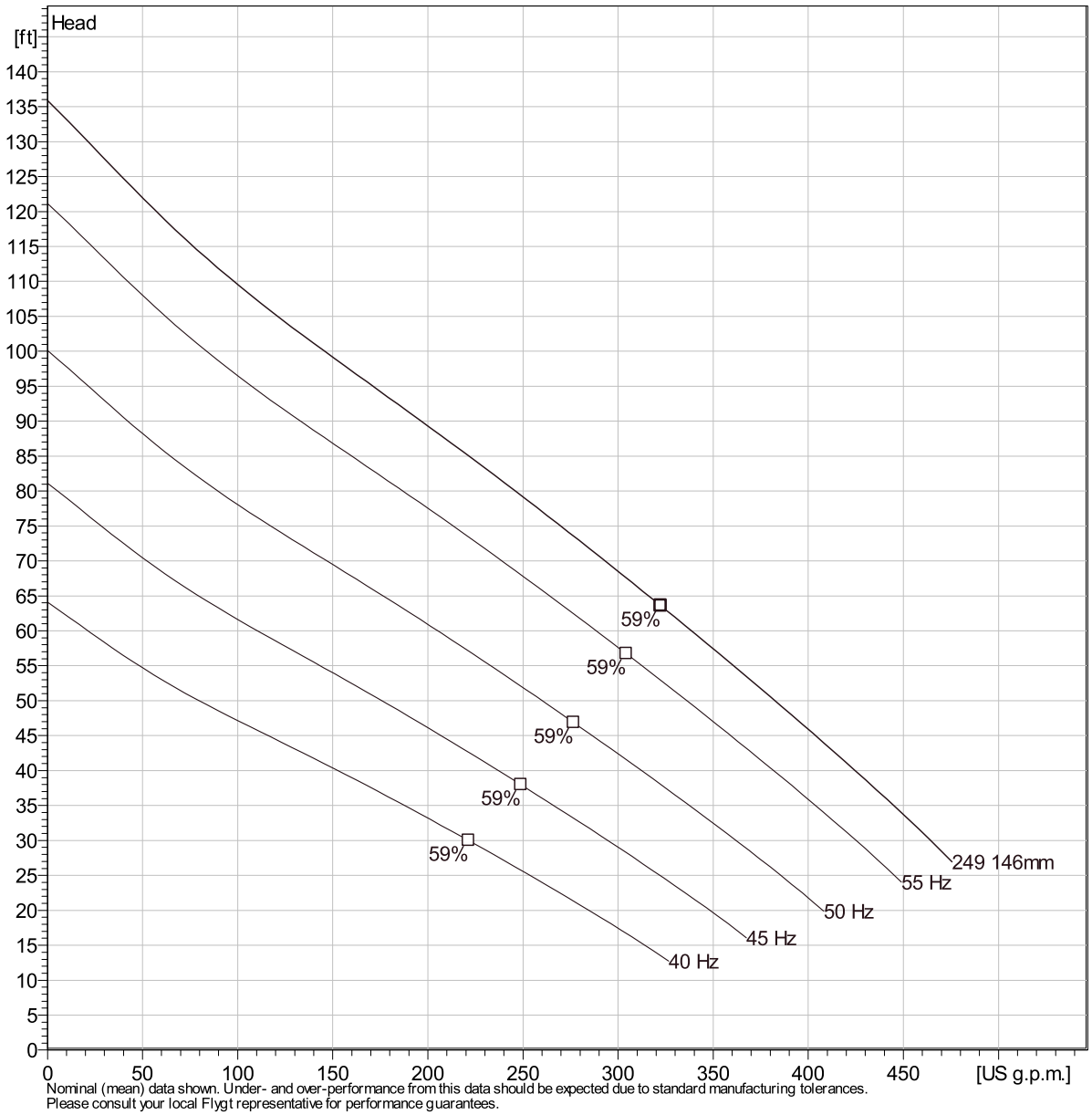
Program version	Data version	User group(s)
72.0 - 2/20/2024 (Build 175)	3/5/2024 10:29 A3P3	Xylem: USA - EXT, USA - INT

NP 3127 SH 3~ Adaptive 249

Duty Analysis

FLYGT a xylem brand

Curves according to: Water, pure [100%] ; 39.2°F; 62.42lb/ft³; 1.6891E-5ft²/s



Nominal (mean) data shown. Under- and over-performance from this data should be expected due to standard manufacturing tolerances.
Please consult your local Flygt representative for performance guarantees.

Operating characteristics

Pumps / Systems	Flow	Head	Shaft power	Flow	Head	Shaft power	Hydr.eff.	Spec. Energy	NPSHre
	US g.p.m.	ft	hp	US g.p.m.	ft	hp		kWh/US MG	ft

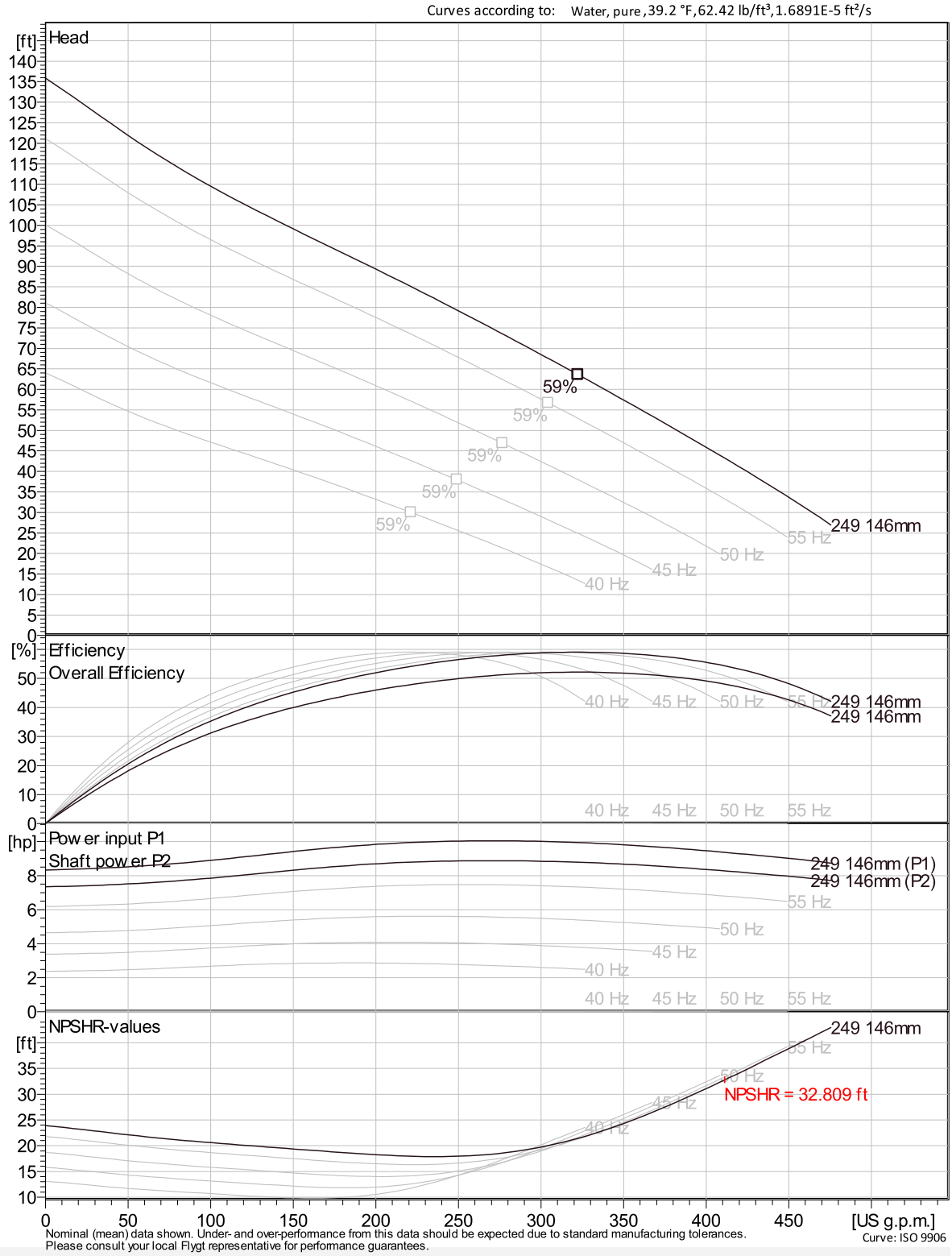
Project		**Created by**	Robert Simcox		
Block	Xylect-21982559	**Created on**	3/12/2024	**Last update**	3/12/2024

NP 3127 SH 3~ Adaptive 249

VFD Curve

FLYGT
a xylem brand

Curves according to: Water, pure ,39.2 °F,62.42 lb/ft³,1.6891E-5 ft²/s



Nominal (mean) data shown. Under- and over-performance from this data should be expected due to standard manufacturing tolerances.
Please consult your local Flygt representative for performance guarantees.

Curve: ISO 9906

Project	Xylect-21982559	**Created by**	Robert Simcox		
Block		**Created on**	3/12/2024	**Last update**	3/12/2024

Program version
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Data version
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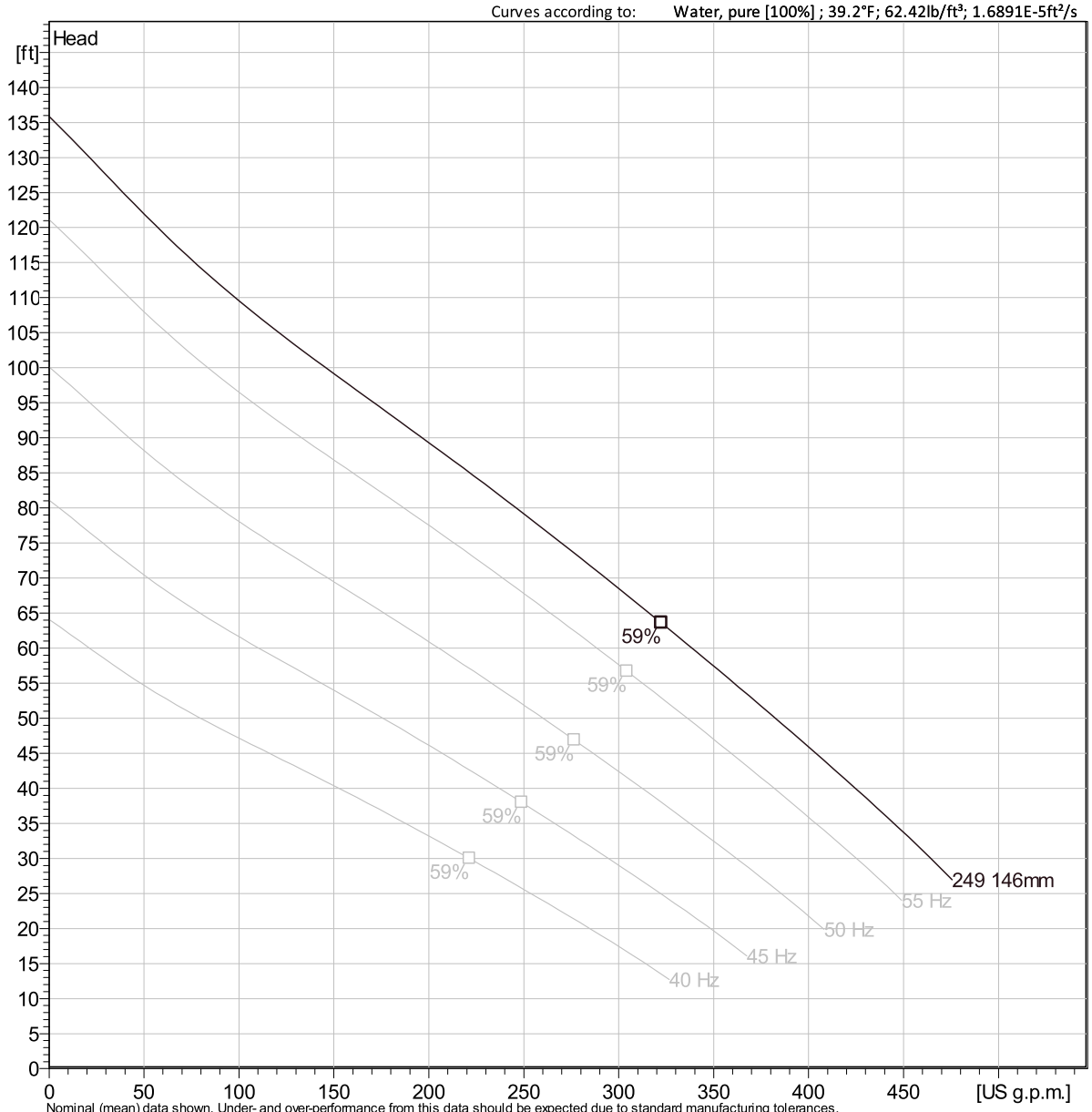
User group(s)
Xylem: USA - EXT, USA - INT

NP 3127 SH 3~ Adaptive 249

VFD Analysis

FLYGT
a xylem brand

Curves according to: Water, pure [100%] ; 39.2°F; 62.42lb/ft³; 1.6891E-5ft²/s



Nominal (mean) data shown. Under- and over-performance from this data should be expected due to standard manufacturing tolerances.
Please consult your local Flygt representative for performance guarantees.

Operating Characteristics

Pumps / Systems	Frequency	Flow	Head	Shaft power	Flow	Head	Shaft power	Hydr.eff.	Specific energy	NPSHre
		US g.p.m.	ft	hp	US g.p.m.	ft	hp		kWh/US MG	ft

Project	Xylect-21982559	**Created by**	Robert Simcox		
Block		**Created on**	3/12/2024	**Last update**	3/12/2024

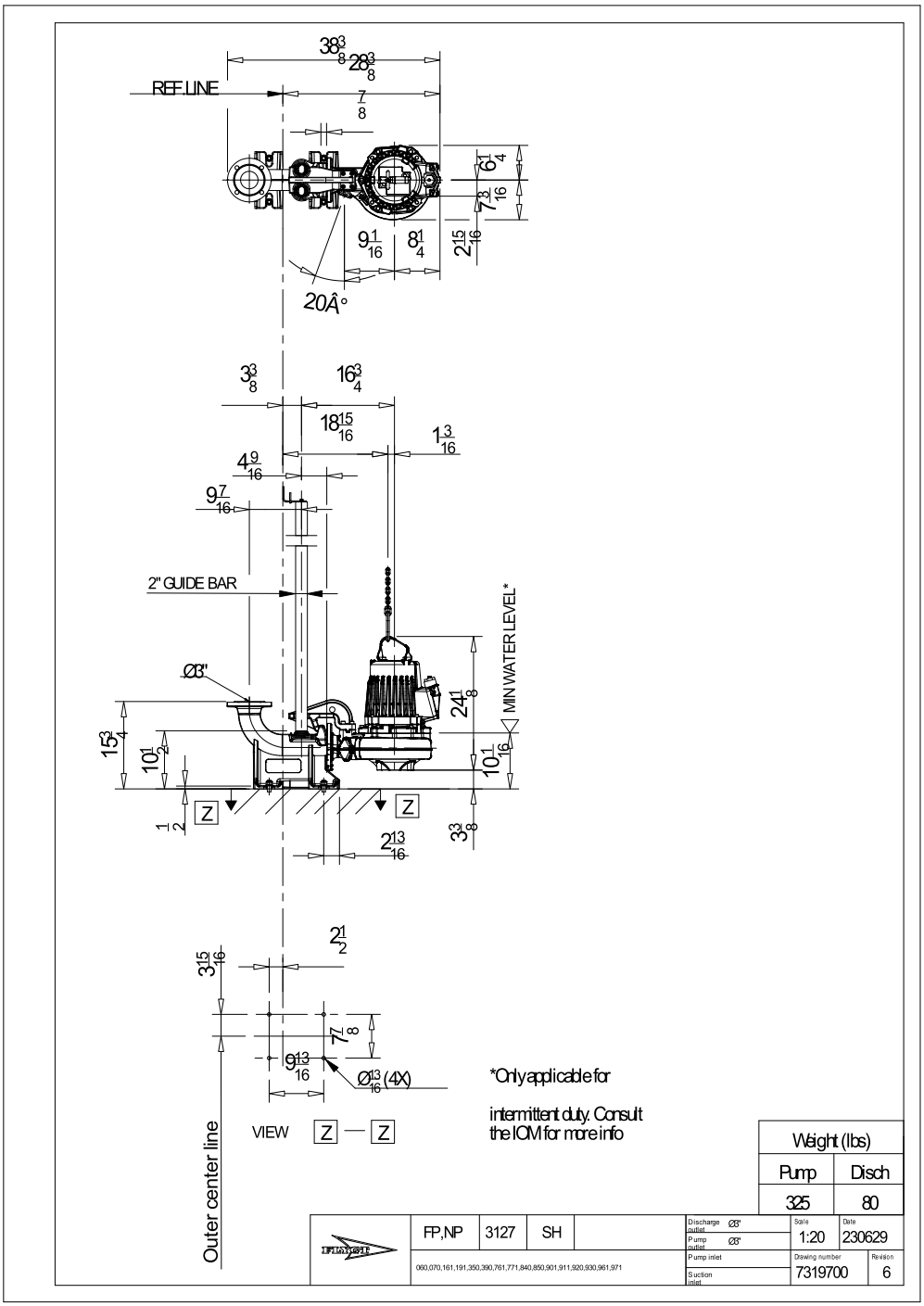
Program version
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Data version
3/5/2024 10:29 A3P3

User group(s)
Xylem: USA - EXT, USA - INT

NP 3127 SH 3~ Adaptive 249

Dimensional drawing



Project	Xylect-21982559	**Created by**	Robert Simcox
Block		**Created on**	3/12/2024 **Last update** 3/12/2024

Pump Station Evaluation Report

34 - Steeplechase

Prepared For:

City of Wildwood

Evaluation Date:

February 5, 2024

Report Date:

September 27, 2024

Version 1

Kimley»Horn

Version	Publish Date	Description
1	See Cover	Original/Version 1

Table 0.1 - Revision History

Version	Publish Date	Test Date	Description

Table 0.2 - Previous Evaluation History

This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn shall be without liability to Kimley-Horn.

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ATTACHMENTS

Attachment 1 ..... **Test Data Graphs**

Attachment 2 ..... **Supplementary Pump Information**

ABBREVIATIONS

Ø	Phase
AC	Alternating Current
ADD	Automated Draw Down
ADF	Average Daily Flow
ARR	Automated Rate of Rise
ATL	Across The Line
Avg	Average
BEP	Best Efficiency Point
CL	Center Line
Disch	Discharge
ETM	Elapsed Time Meter
FLA	Full Load Amps
FM	Force Main
Ft	Feet
FPS	Feet Per Second
FSFO	Full Speed Full Open
Gal	Gallons
GPM	Gallons Per Minute
HGL	Hydraulic Grade Line
HP	Horsepower
Hrs	Hours
H:M:S	Hours:Minutes:Seconds
Hz	Hertz
In	Inches
InvIn	Invert In
KWH	Kilowatt-Hours
L	Length
L1, L2, L3	Leg 1, 2 & 3 or Length 1, 2 & 3
MSL	Mean Sea Level
MTBF	Mean Time Between Failures
N	Neutral
P	Pump
PCL	Pump Center Line
PCP	Pump Control Panel
PF	Power Factor
PSI	Pounds Per Square Inch
PT	Point
RPM	Revolutions Per Minute
TDH	Total Dynamic Head
TVSS	Transient Voltage Surge Suppressor
V	Volts
VFD	Variable Frequency Drive
WTW	Wire To Water
WW	Wet Well
Yr	Year

1 INTRODUCTION

Kimley-Horn and Associates, Inc. evaluated the pump station through pump performance testing and a condition assessment. This report summarizes the data and results of that evaluation. The performance tests were conducted using the XAK-PACK pump performance monitoring device. The following pages provide summaries of the data collected and notes about the pumps' performance.

1.1 SITE INFORMATION

Steeplechase / Site # 34			
Date of Evaluation	February 5, 2024		
Address	12029 Co Rd 103, Oxford, FL 34484		
Coordinates	28°55'55.2"N, 82°01'37.9"W		
Fluid Conveyed	Wastewater		
Station Style	Duplex Submersible		
Number of Pumps	2	Number of Pump Slots	2
Pump Type	Submersible		
Flow Meter Type	N/A		
Year of Construction	Unknown	Based on	☐Docs. ☐Estimation ☐Other
Basin/Zone	Unknown		
Firm Capacity (Design)	279 GPM / 0.40 MGD		
Firm Capacity (Test)	185 GPM / 0.26 MGD		
Discharge Description	6-inch discharge, manifolds with 12-inch, approximately 13,800 LF unknown material, FM discharging to CR 209 Lift Station #36		
Electrical Service	120/240 Delta		
Site Generator	Caterpillar diesel with belly tank		
Bypass Ability	Bypass assembly in valve vault		
Miscellaneous Features			

Site Notes: Site is manifolded with several other pump stations.

1.2 SITE MAP

Force Main

Figure 1.1 - Site Location Map



2 PUMP PERFORMANCE TESTS

Pump performance tests were conducted on the pumps utilizing the measurement tools detailed below. **Table 2.1 - Measurement Methods** describes the measurements taken during the test and the measurement method. Some measurements were confirmed utilizing a secondary measurement method. See **Attachment 1** for graphs of the digitally recorded data. For each test, note the following:

1. Common accuracies for measurements of flow, pressure, voltage and current are ±1%.
2. Friction loss is calculated using the Hazen-Williams formula and the Bernoulli equation. Piping characteristics are based on best available data.

Parameter	Measurement Method	
	Primary	Secondary
Flow	Level Transducer (XAK-PACK)	N/A
Pressure	Pressure Transducer (XAK-PACK)	Liquid Filled Pressure Gauge
Wet Well Level	Level Transducer (XAK-PACK)	N/A
Volts	Voltage Probes (XAK-PACK)	Fluke 376FC
Amps	Current Transducers (XAK-PACK)	Fluke 376FC
Power Factor	Power Factor Monitor (XAK-PACK)	N/A

Table 2.1 - Measurement Methods

2.1 PUMP #1

Below is a summary of the pump characteristics and performance test results.

Parameter	Units	Value
Pump Manufacturer	-	Flygt
Pump Model	-	NP 3102 SH 3~ Adaptive 256
Pump Style	-	Submersible
Pump Impeller Dia	Inches	5.3
Pump Rated Capacity	GPM	279
Pump Rated Head	Ft	55
Pump ETM	Hours	N/A
Pump Flow @ BEP Design Curve	GPM	279
Pump Hyd Eff @ Design Pt	%	60.4
Pump WTW Eff @ Operating Pt	%	48
Pump NPSHr @ Operating Pt	Ft	11
Motor Synchronous Speed	RPM	3600
Motor Rated Speed	RPM	3445
Motor No. Phases	No	3
Motor Starters	-	ATL
Motor Rated Voltage	Volts	230
Motor Rated Horsepower	HP	6.5
Motor Service Factor	-	1.15
Motor FLA	Amps	16
Mfg. Motor Eff. @ Operating Pt	%	79
Mfg. Starter Eff. @ Operating Pt	%	100%

Table 2.2 - Pump #1 Design Characteristics

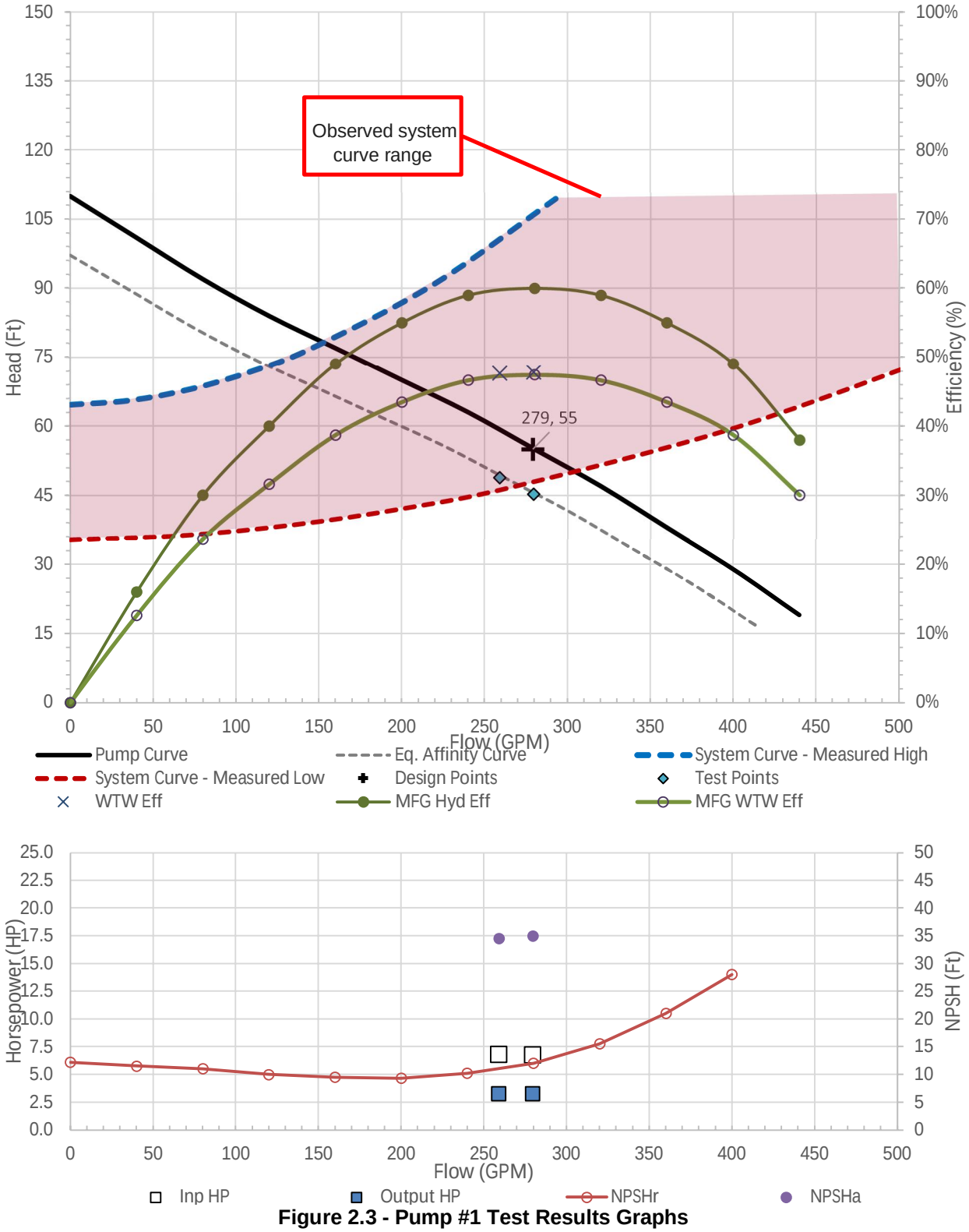


Figure 2.3 - Pump #1 Test Results Graphs

	Parameter	Units	Lower Limit	Test Value	Upper Limit	Comment
Measured	Average Output (FSFO)	GPM	-	269	-	
	Average TDH (FSFO)	Ft	-	47.1	-	
	Average WTW Efficiency (FSFO)	%	-	48%	-	
	Average Input HP (FSFO)	HP	-	6.8	-	
	Average Current Draw (FSFO)	Amps	-	15.3	-	
	Suction Velocity (FSFO)	FPS	2	-	7	
	Discharge Velocity (FSFO)	FPS	2	2.7	7	
	BEP Comparison (FSFO)	%	80%	97%	115%	
	Average Output (FSFO)	%	90%	97%	110%	
	Affinity Law Eq. Curve	%	-5%	-6.0%	5%	1
	NPSHa	Ft	11	34.7	N/A	
	WTW Eff @ Operating Pt	%	-5%	-1%	5%	
	Input Frequency	Hz	-5%	0%	5%	
	Input Voltage (L-L)	%	-10%	-7.1%	10%	
	Voltage Drop	%	-15%	3.0%	N/A	
	Voltage Imbalance	%	-10%	0.5%	10%	
	Current Imbalance	%	-10%	9.1%	10%	
	Motor FLA	%	-50%	95.6%	105%	
	Motor Load	%	50%	104.1%	115%	
	Motor Slip Speed	%	3414	3445.0	3631	
	Vibration	In/Sec	0	0.0	-	
Observed	Surge	1-5	-	2	3	
	Vibration	1-5	-	2	3	
	Cavitation	1-5	-	1	3	
	Mechanical Noise	1-5	-	2	3	
	Leaks	1-5	-	1	3	
	Exterior Condition	1-5	-	2	3	
	Overall Score	1-5	-	2	3	

Table 2.4 - Pump #1 Test Summary

Pump #1 - Test Comments

1) The pump is operating at 94% equivalent affinity curve meaning significant impeller/volute wear has occurred.
2) The pump experiences a large system curve range due to being manifolded with several other pump stations. This causes an impact to observed results.

2.2 PUMP #2

Below is a summary of the pump characteristics and performance test results.

Parameter	Units	Value
Pump Manufacturer	-	Flygt
Pump Model	-	NP 3102 SH 3~ Adaptive 256
Pump Style	-	Submersible
Pump Impeller Dia	Inches	5.3
Pump Rated Capacity	GPM	279
Pump Rated Head	Ft	55
Pump ETM	Hours	N/A
Pump Flow @ BEP Design Curve	GPM	279
Pump Hyd Eff @ Design Pt	%	60.4
Pump WTW Eff @ Operating Pt	%	44
Pump NPSHr @ Operating Pt	Ft	10
Motor Synchronous Speed	RPM	3600
Motor Rated Speed	RPM	3445
Motor No. Phases	No	3
Motor Starters	-	ATL
Motor Rated Voltage	Volts	230
Motor Rated Horsepower	HP	6.5
Motor Service Factor	-	1.15
Motor FLA	Amps	16
Mfg. Motor Eff. @ Operating Pt	%	79
Mfg. Starter Eff. @ Operating Pt	%	100%

Table 2.5 - Pump #2 Design Characteristics

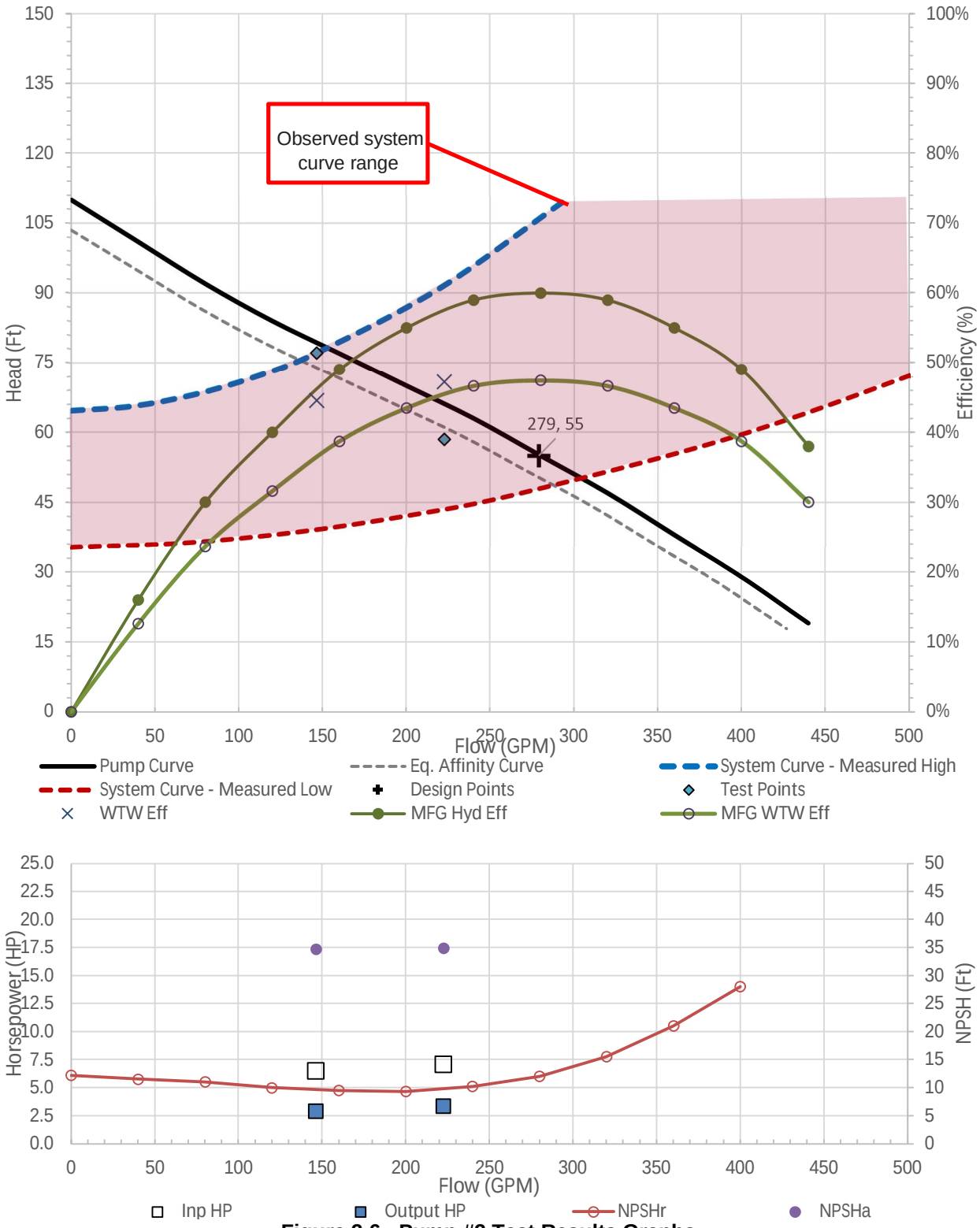


Figure 2.6 - Pump #2 Test Results Graphs

	Parameter	Units	Lower Limit	Test Value	Upper Limit	Comment
Measured	Average Output (FSFO)	GPM	-	185	-	
	Average TDH (FSFO)	Ft	-	67.8	-	
	Average WTW Efficiency (FSFO)	%	-	46%	-	
	Average Input HP (FSFO)	HP	-	6.7	-	
	Average Current Draw (FSFO)	Amps	-	15.3	-	
	Suction Velocity (FSFO)	FPS	2	-	7	
	Discharge Velocity (FSFO)	FPS	2	1.8	7	1
	BEP Comparison (FSFO)	%	80%	66%	115%	2
	Average Output (FSFO)	%	90%	66%	110%	3
	Affinity Law Eq. Curve	%	-5%	-3.0%	5%	
	NPSHa	Ft	10	34.8	N/A	
	WTW Eff @ Operating Pt	%	-5%	4%	5%	
	Input Frequency	Hz	-5%	0%	5%	
	Input Voltage (L-L)	%	-10%	-7.0%	10%	
	Voltage Drop	%	-15%	3.0%	N/A	
	Voltage Imbalance	%	-10%	0.6%	10%	
	Current Imbalance	%	-10%	8.4%	10%	
	Motor FLA	%	-50%	95.4%	105%	
	Motor Load	%	50%	103.8%	115%	
	Motor Slip Speed	%	3414	3445.0	3631	
	Vibration	In/Sec	0	0.0	-	
Observed	Surge	1-5	-	2	3	
	Vibration	1-5	-	2	3	
	Cavitation	1-5	-	1	3	
	Mechanical Noise	1-5	-	2	3	
	Leaks	1-5	-	1	3	
	Exterior Condition	1-5	-	2	3	
	Overall Score	1-5	-	2	3	

Table 2.7 - Pump #2 Test Summary

Pump #2 - Test Comments

1) Discharge velocity is below the recommended lower limit. Low discharge velocities can lead to a buildup of debris within the piping.
2) The pump is operating at 66% BEP flow rate.
3) The pump output is 66% of the design flow rate.
4) The pump experiences a large system curve range due to being manifolded with several other pump stations. This causes an impact to observed results.

2.3 HYDRAULICS SUMMARY

The site experiences a wide system curve range due to influence from manifolded pump stations. The measured system curve matches the measured lower system curve.

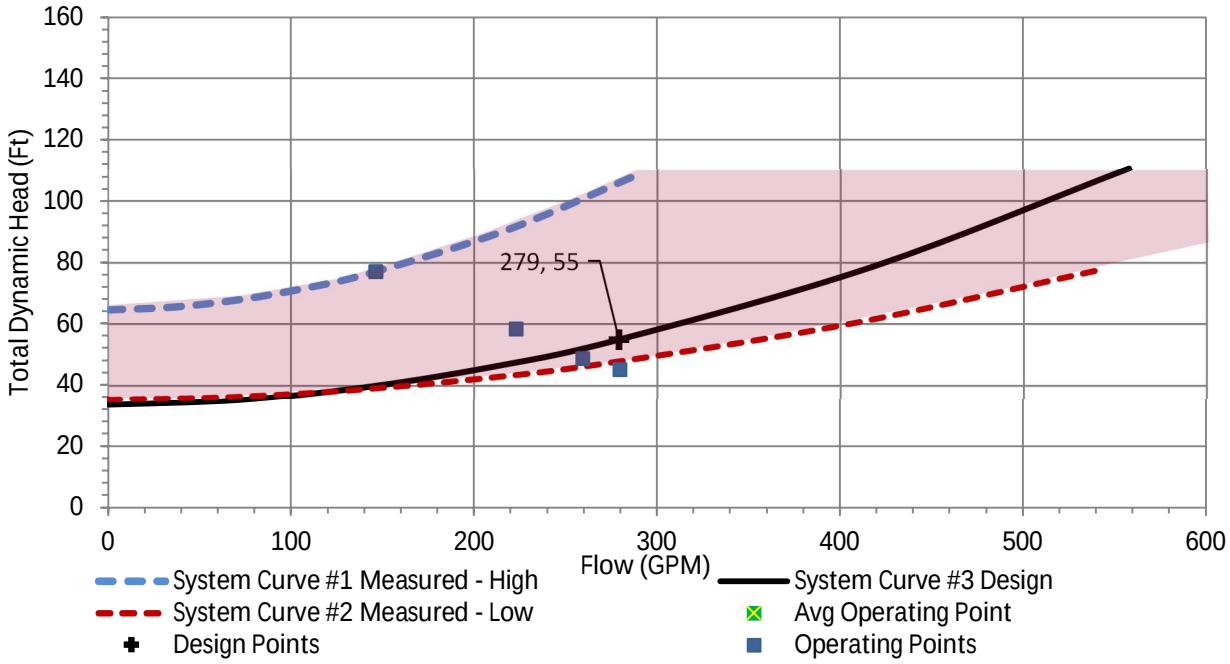


Figure 2.8 – System Hydraulic Information provides a graph of the system characteristics and a table describing the system curves. Length, Hazen-Williams (Hz-Wm), and diameter are approximated based on the best available information and fit to the data. System Curve Characteristics are intended to be for reference.

System Curve Characteristics					
Curve Name	**Curve Type**	**Length (Ft)**	**Hz-Wm**	**Diameter (In)**	**Calculated Based On**
System Curve #1	Measured	13,800	115	7.5	Test Data
System Curve #2	Measured	13,800	115	9.6	Test Data
System Curve #3	Design	13,800	115	8.5	Design Operating Condition

Figure 2.8 – System Hydraulic Information

2.4 PIPELINE PERFORMANCE INDICATORS

Figure 2.9 – Pipe Velocities displays the velocities in each known diameter of the pressurized conveyance system. The Average Test Output Velocity represents the velocity generated by the average pumping rate produced by testing. The Station Firm Capacity Velocity represents the velocity based on the station's firm capacity (output with the largest pump out of service). The color gradient represents ranges of acceptable to problematic velocities. Red areas of operation are problematic and green areas of operation are acceptable.

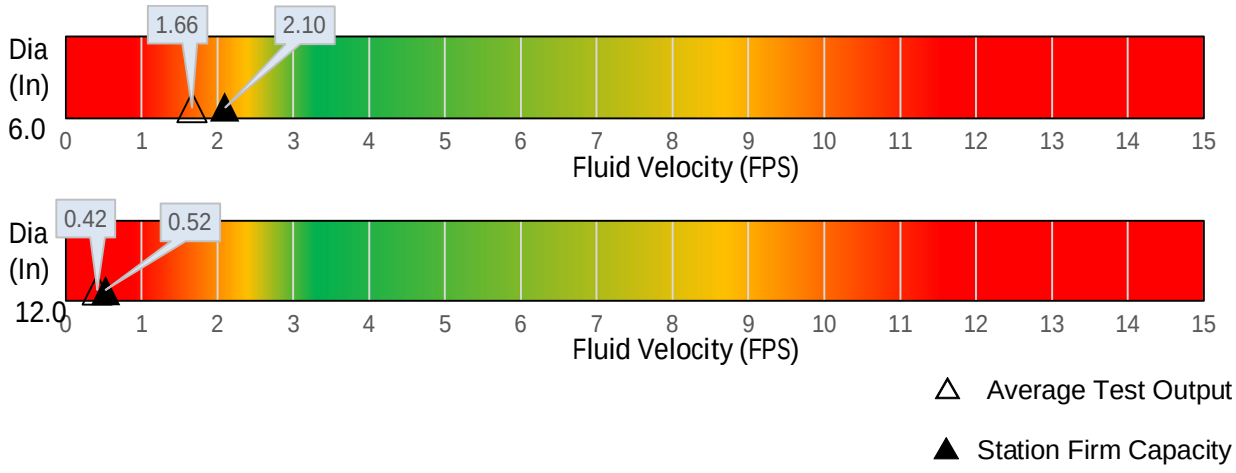


Figure 2.9 – Pipe Velocities

The maximum observed pressure at the station during the testing period is provided below in **Figure 2.10 – Maximum Observed Pressure**. System pressure capabilities vary depending upon pipe material type, pressure rating, elevation, age, condition, etc. This performance indicator is provided for reference only and is not a condition assessment of the pipeline. For systems with pressures above approximately 100 PSI, consider a more detailed analysis. See the **Attachment 1 - Graph B** for additional pressure data.

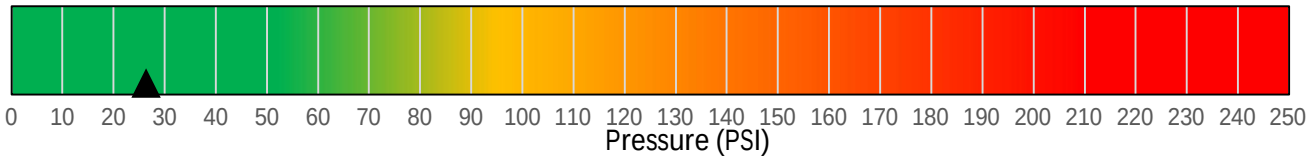


Figure 2.10 - Maximum Observed Pressure

2.5 SYSTEM PRESSURES

Figure 2.11 - Pressure Cycle shows a typical single-pump pressure cycle measured during testing. The pressure data captured for this test is limited to 2-second intervals which may not have captured the entire range of actual pressures. The complete log of pressure readings is provided in **Attachment 1 – Test Data Graphs**. For more accurate surge data, a surge monitoring device should be used to capture pressure at shorter time intervals over a longer period of time. **Table 2.12 - Further Surge-Related Actions** provides a list of recommended surge-related actions.

The pressure transducer used for measuring pressures has a range of 0 to 200 PSI. Pump startup produced an upsurge of approximately 25 PSI. Upon pump shut down, the observed minimum pressure was approximately 0 PSI and the maximum pressure was approximately 26 PSI creating a total observed pressure range of 26 PSI. It is likely that the minimum pressure produced on each pump shut down cycle was less than 0 PSI.

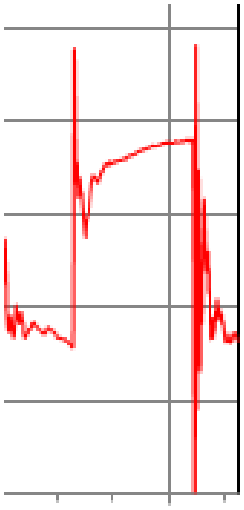


Figure 2.11 - Pressure Cycle

	Further Surge Related Actions:
	Perform extended period digital surge monitoring
	Perform calibrated surge modeling
	Revise operating scheme to reduce surge potential
	Evaluate piping system for pressure capacity and likelihood of failure
	Install physical surge mitigation strategies
✓	No further action

Table 2.12 - Further Surge-Related Actions

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3 RECOMMENDATIONS

The following recommendations are a result of the findings of this evaluation and should be considered for implementation. See **Section 2 Pump Performance Tests** for pump specific recommendations. In addition to the recommendations below, this site should/ be considered for the following overall planning and budgeting activities.

3.1 OVERALL RECOMMENDATIONS

Overall Site Rating	Score	Description
	1	No recommendations currently. Monitor station for worsening conditions, perform regular O&M, reassess condition in 2-5 years.
	2	Complete recommendations listed in Section 3.2, monitor station for worsening conditions, perform regular O&M, reassess condition in 1-3 years.
	3	Station requires improvements beyond replacement of individual components. Begin planning and budgeting for a major rehabilitation. Place under regular observation until rehabilitation is complete.
	4	Station does not appear to be brought into conformance with standards without replacement. Begin planning and budgeting for a station replacement. Place under regular observation until rehabilitation is complete.

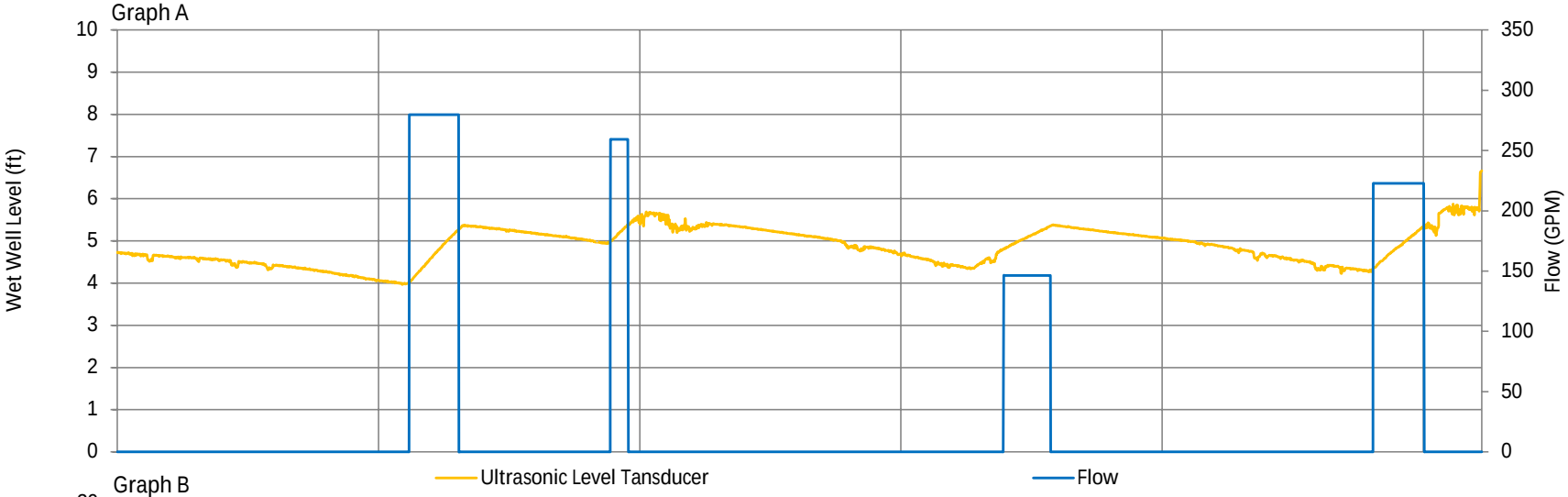
3.2 MISCELLANEOUS RECOMMENDATIONS

No recommendations for the site at this time.

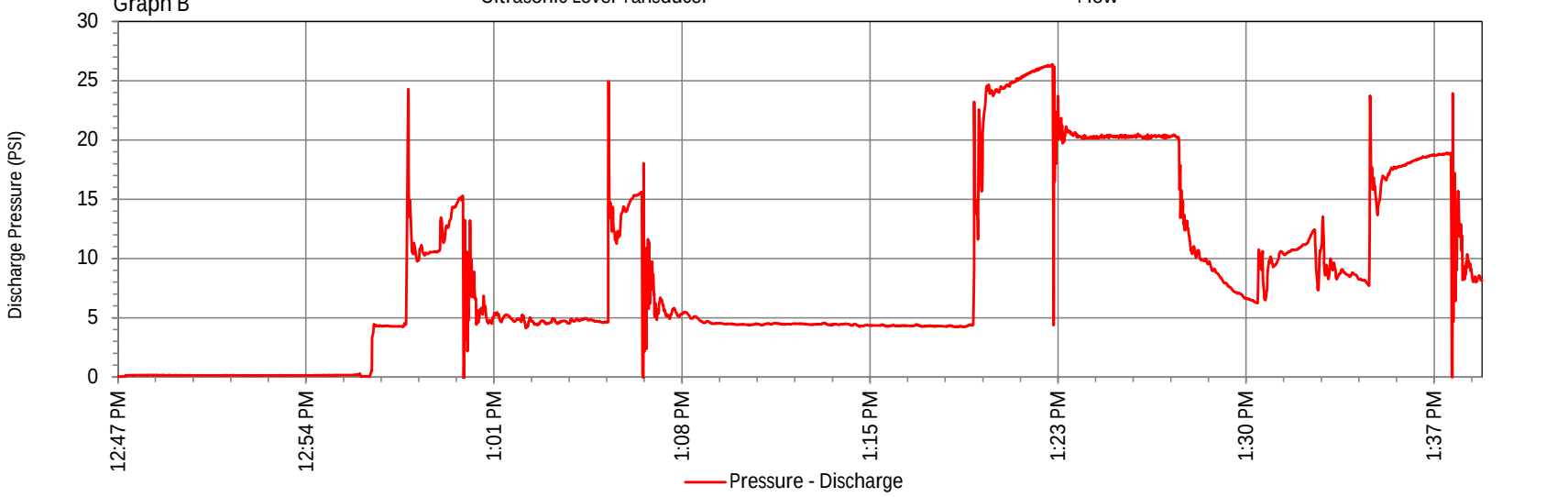
4 ATTACHMENTS

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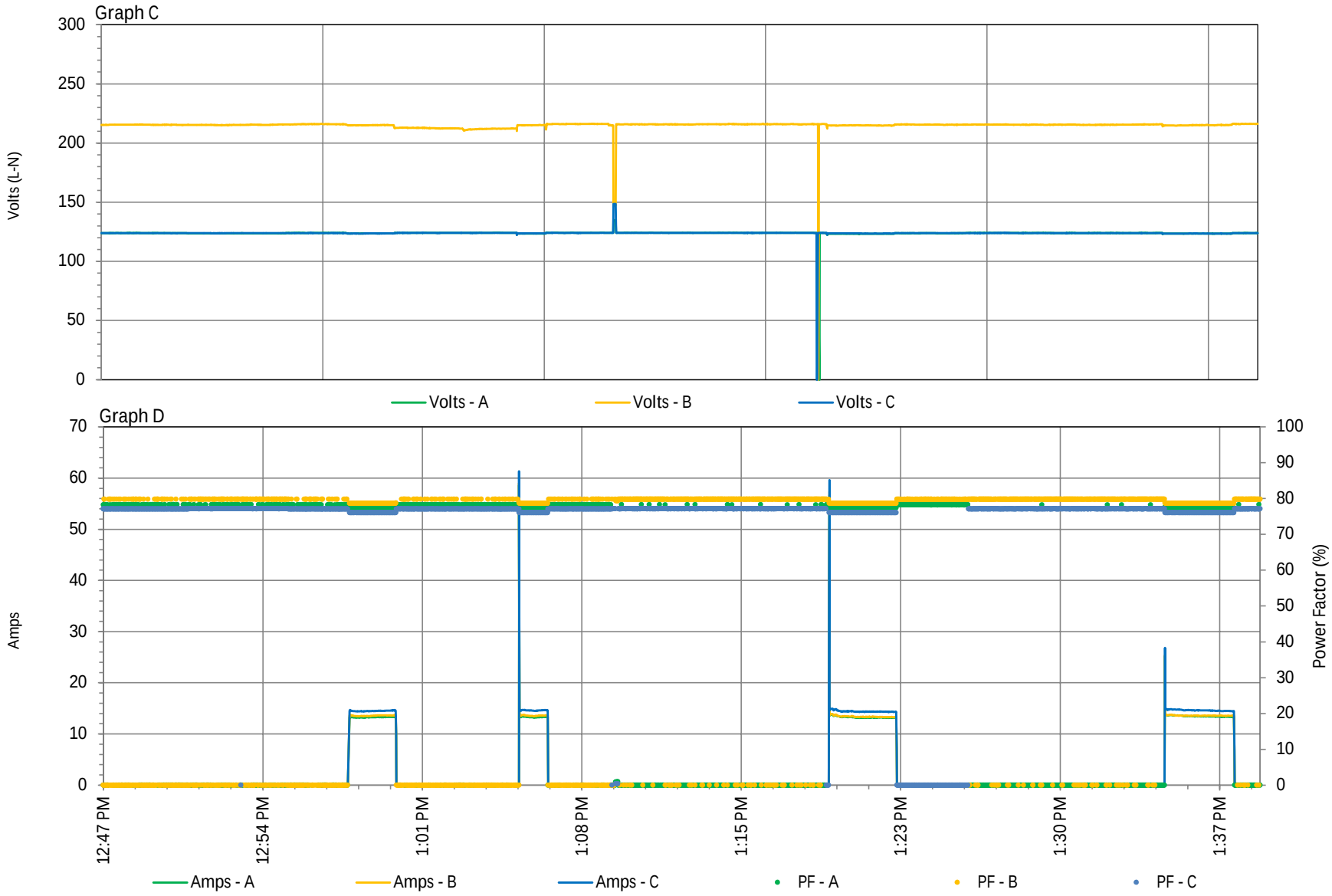
Graph A



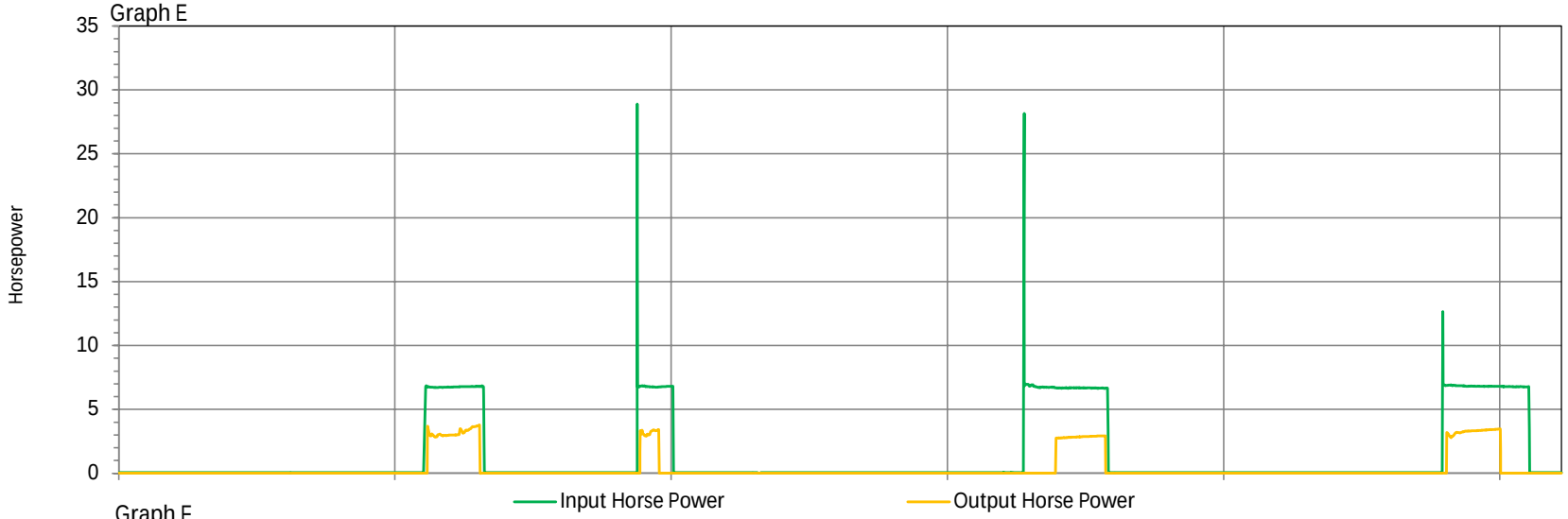
Graph B



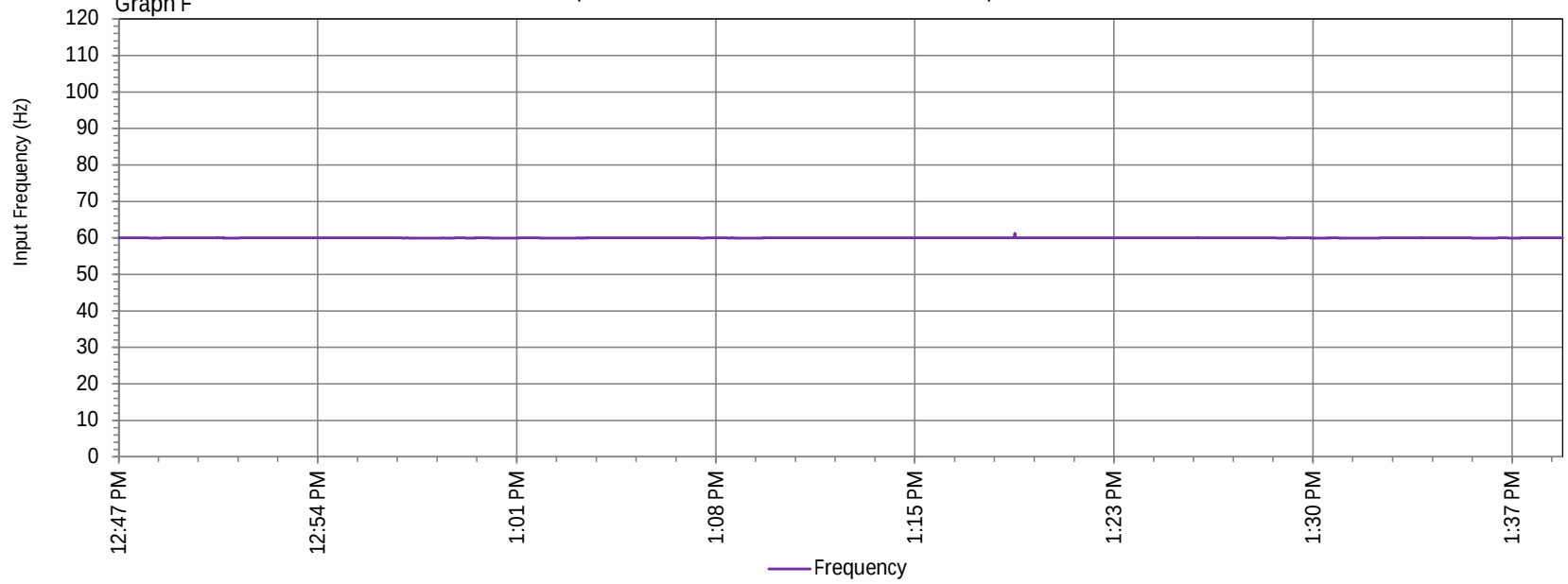
* Times shown are Eastern Standard Time


Graph C
Volts (L-N)
300
250
200
150
100
50
0
Volts - A
Volts - B
Volts - C
Graph D
Amps
70
60
50
40
30
20
10
0
100
90
80
70
60
50
40
30
20
10
0
Power Factor (%)
12:47 PM
12:54 PM
1:01 PM
1:08 PM
1:15 PM
1:23 PM
1:30 PM
1:37 PM
Amps - A
Amps - B
Amps - C
PF - A
PF - B
PF - C

Graph E



Graph F



NP 3102 SH 3~ Adaptive 256

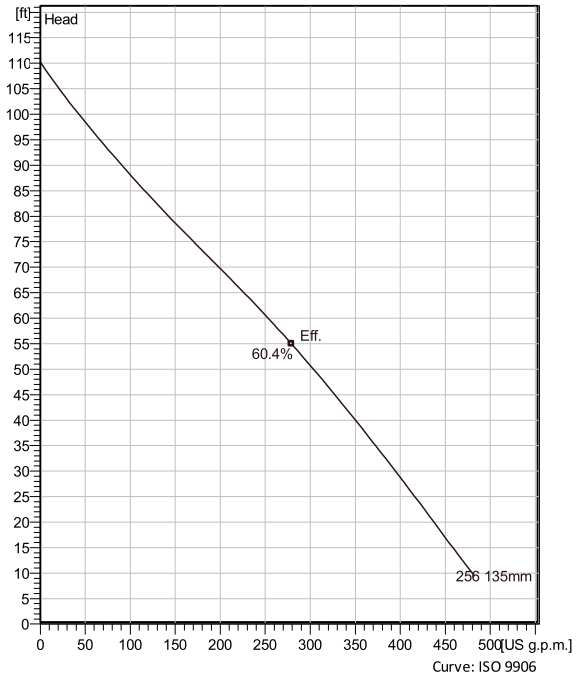
Patented self cleaning semi-open channel impeller, ideal for pumping in waste water applications. Modular based design with high adaptation grade.

FLYGT
a xylem brand

Technical specification



Curves according to: Water, pure Water, pure [100%],39.2 °F,62.42 lb/ft³,1.6891E-5 ft²/s



Curve: ISO 9906

Nominal (mean) data shown. Under- and over-performance from this data should be expected due to standard manufacturing tolerances.
Please consult your local Flygt representative for performance guarantees.

Configuration

Motor number
N3102.060 18-10-2AL-W 6.5hp

Installation type
P - Semi permanent, Wet

Impeller diameter
135 mm

Discharge diameter
3 inch

Pump information

Impeller diameter
135 mm

Discharge diameter
3 inch

Inlet diameter
100 mm

Maximum operating speed
3445 rpm

Number of blades
2

Max. fluid temperature
40 °C

Material

Impeller
Hard-Iron ™

Stator housing material
Grey cast iron

Project	Xylect-21983583	**Created by**	Robert Simcox		
Block		**Created on**	3/12/2024	**Last update**	3/12/2024

NP 3102 SH 3~ Adaptive 256

Technical specification

Motor - General

Motor number N3102.060 18-10-2AL-W 6.5hp	**Phases** 3~	**Rated speed** 3445 rpm	**Rated power** 6.5 hp
ATEX approved No	**Number of poles** 2	**Rated current** 16 A	**Stator variant** 12
Frequency 60 Hz	**Rated voltage** 230 V	**Insulation class** H	**Type of Duty** S1
Version code 060			

Motor - Technical

Power factor - 1/1 Load 0.94	**Motor efficiency - 1/1 Load** 79.0 %	**Total moment of inertia** 0.349 lb ft²	**Starts per hour max.** 30
Power factor - 3/4 Load 0.94	**Motor efficiency - 3/4 Load** 80.5 %	**Starting current, direct starting** 112 A	
Power factor - 1/2 Load 0.91	**Motor efficiency - 1/2 Load** 79.5 %	**Starting current, star-delta** 37.3 A	

Project	Xylect-21983583	**Created by**	Robert Simcox		
Block		**Created on**	3/12/2024	**Last update**	3/12/2024

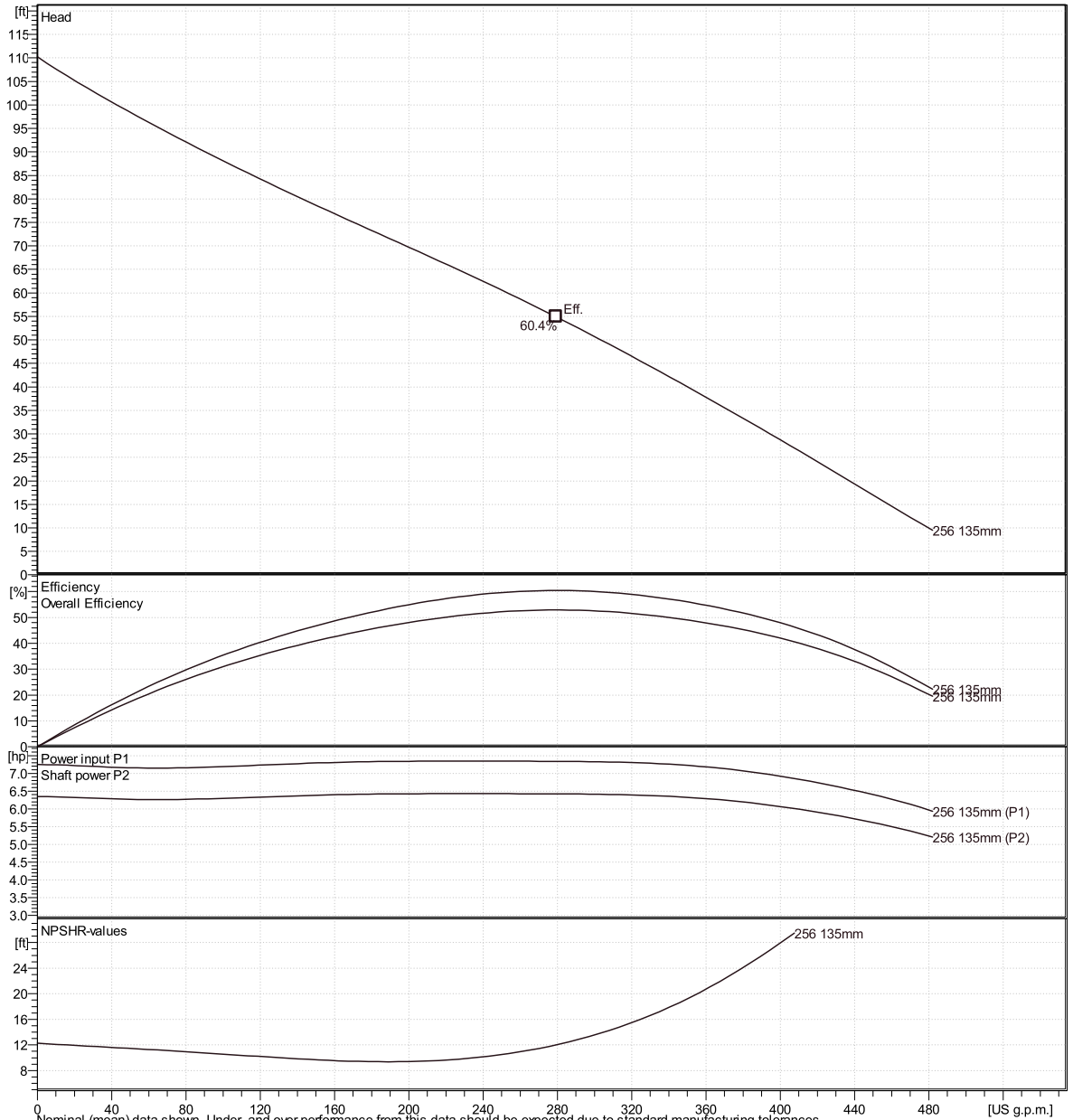
NP 3102 SH 3~ Adaptive 256

Performance curve

Duty point

Flow	Head

Curves according to: Water, pure Water, pure [100%],39.2 °F,62.42 lb/ft³,1.6891E-5 ft²/s



Nominal (mean) data shown. Under- and over-performance from this data should be expected due to standard manufacturing tolerances.
Please consult your local Flygt representative for performance guarantees.

Curve: ISO 9906

Xylect-21983583		Robert Simcox			
	Created on	3/12/2024	**Last update**	3/12/2024	

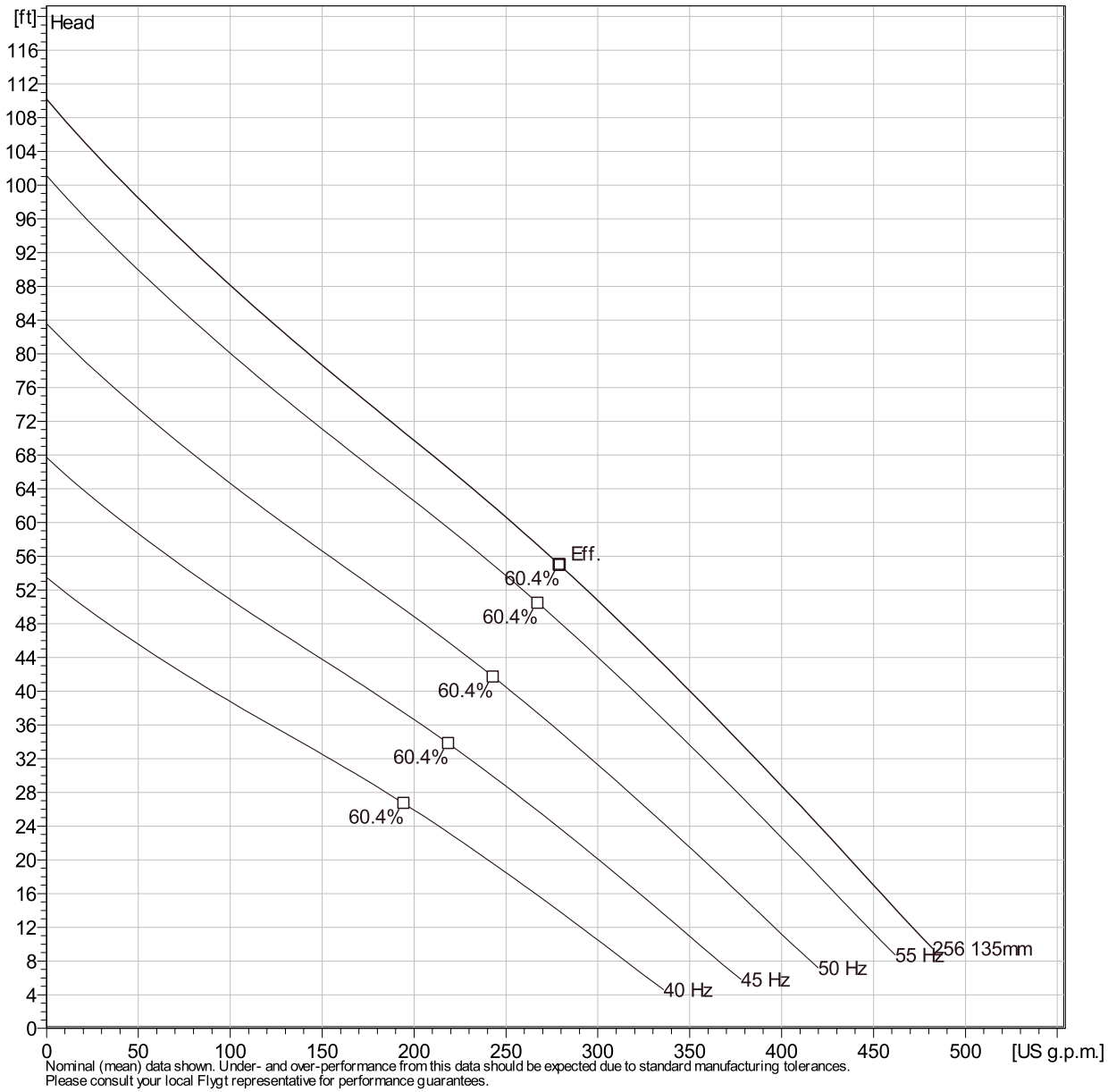
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72.0 - 2/20/2024 (Build 175)	3/5/2024 10:29 A3P3	Xylem: USA - EXT, USA - INT

NP 3102 SH 3~ Adaptive 256

Duty Analysis

FLYGT a xylem brand

Curves according to: Water, pure [100%] ; 39.2°F; 62.42lb/ft³; 1.6891E-5ft²/s



Nominal (mean) data shown. Under- and over-performance from this data should be expected due to standard manufacturing tolerances.
Please consult your local Flygt representative for performance guarantees.

Operating characteristics

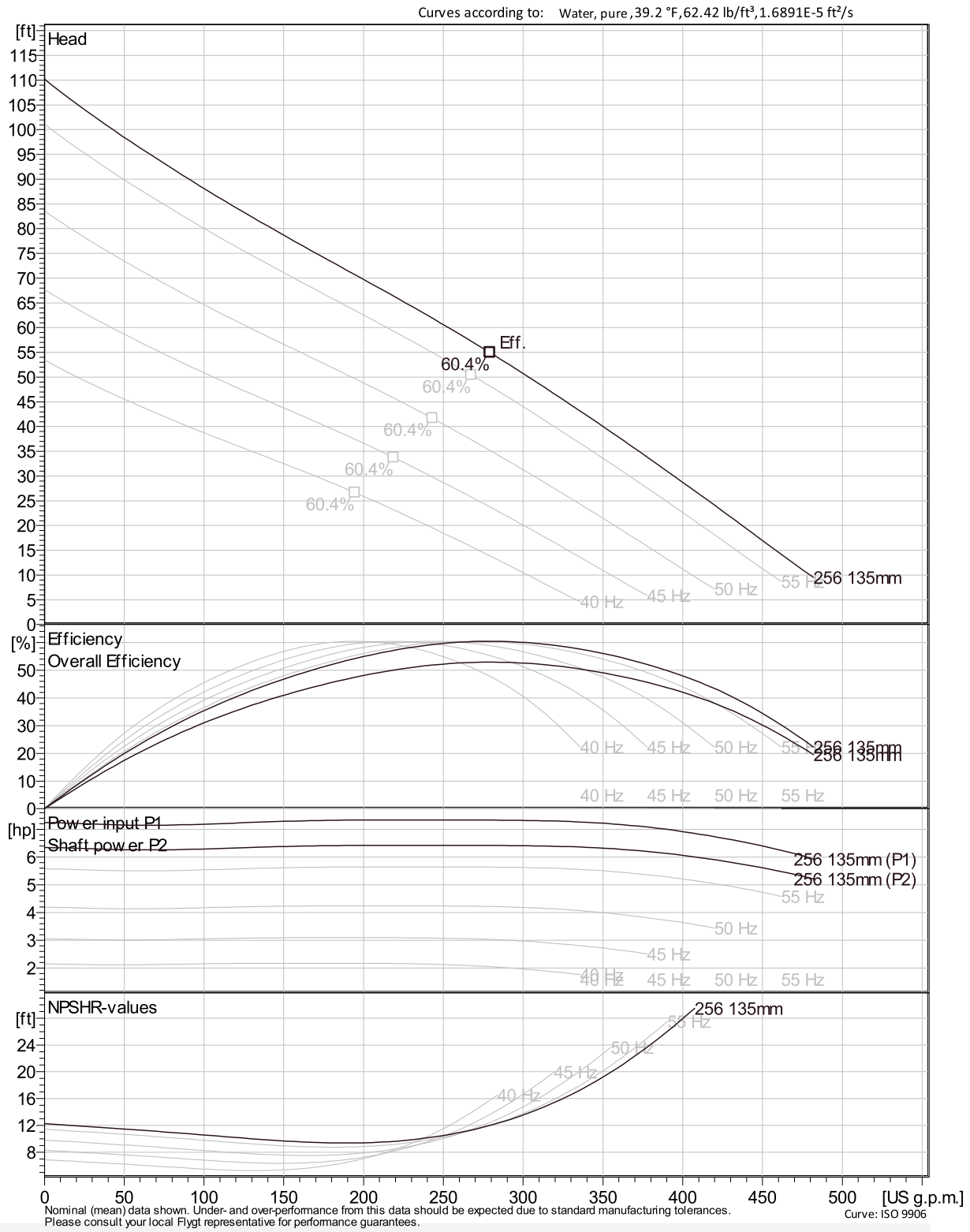
Pumps / Systems	Flow	Head	Shaft power	Flow	Head	Shaft power	Hydr.eff.	Spec. Energy	NPSHre
	US g.p.m.	ft	hp	US g.p.m.	ft	hp		kWh/US MG	ft

Project		**Created by**	Robert Simcox		
Block	Xylect-21983583	**Created on**	3/12/2024	**Last update**	3/12/2024

NP 3102 SH 3~ Adaptive 256

VFD Curve

FLYGT
a xylem brand



Nominal (mean) data shown. Under- and over-performance from this data should be expected due to standard manufacturing tolerances.
Please consult your local Flygt representative for performance guarantees.

Curve: ISO 9906

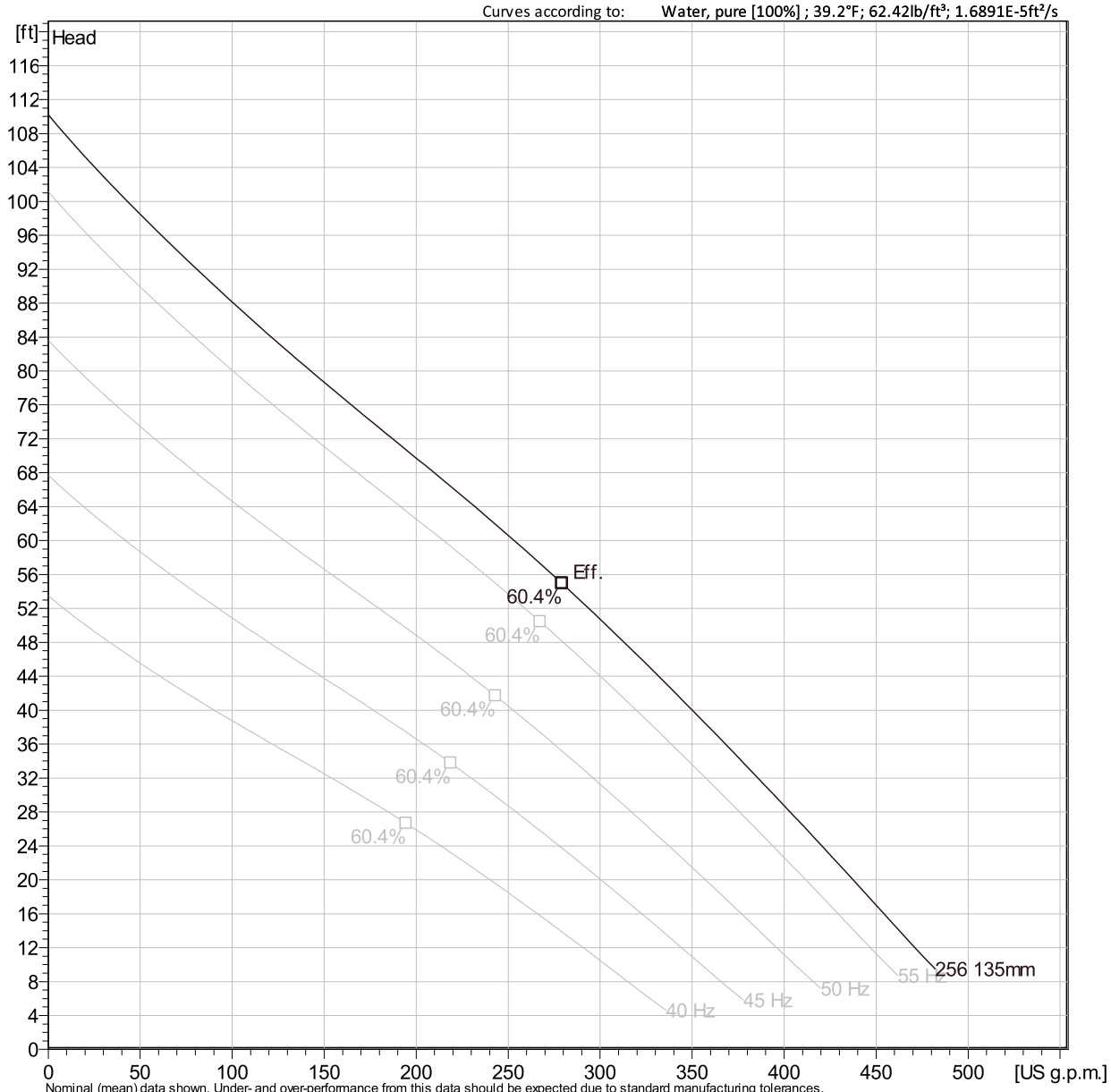
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Block		**Created on**	3/12/2024	**Last update**	3/12/2024

Program version	Data version	User group(s)
72.0 - 2/20/2024 (Build 175)	3/5/2024 10:29 A3P3	Xylem:USA - EXT, USA - INT

NP 3102 SH 3~ Adaptive 256

VFD Analysis

Curves according to: Water, pure [100%] ; 39.2°F; 62.42lb/ft³; 1.6891E-5ft²/s



Nominal (mean) data shown. Under- and over-performance from this data should be expected due to standard manufacturing tolerances.
Please consult your local Flygt representative for performance guarantees.

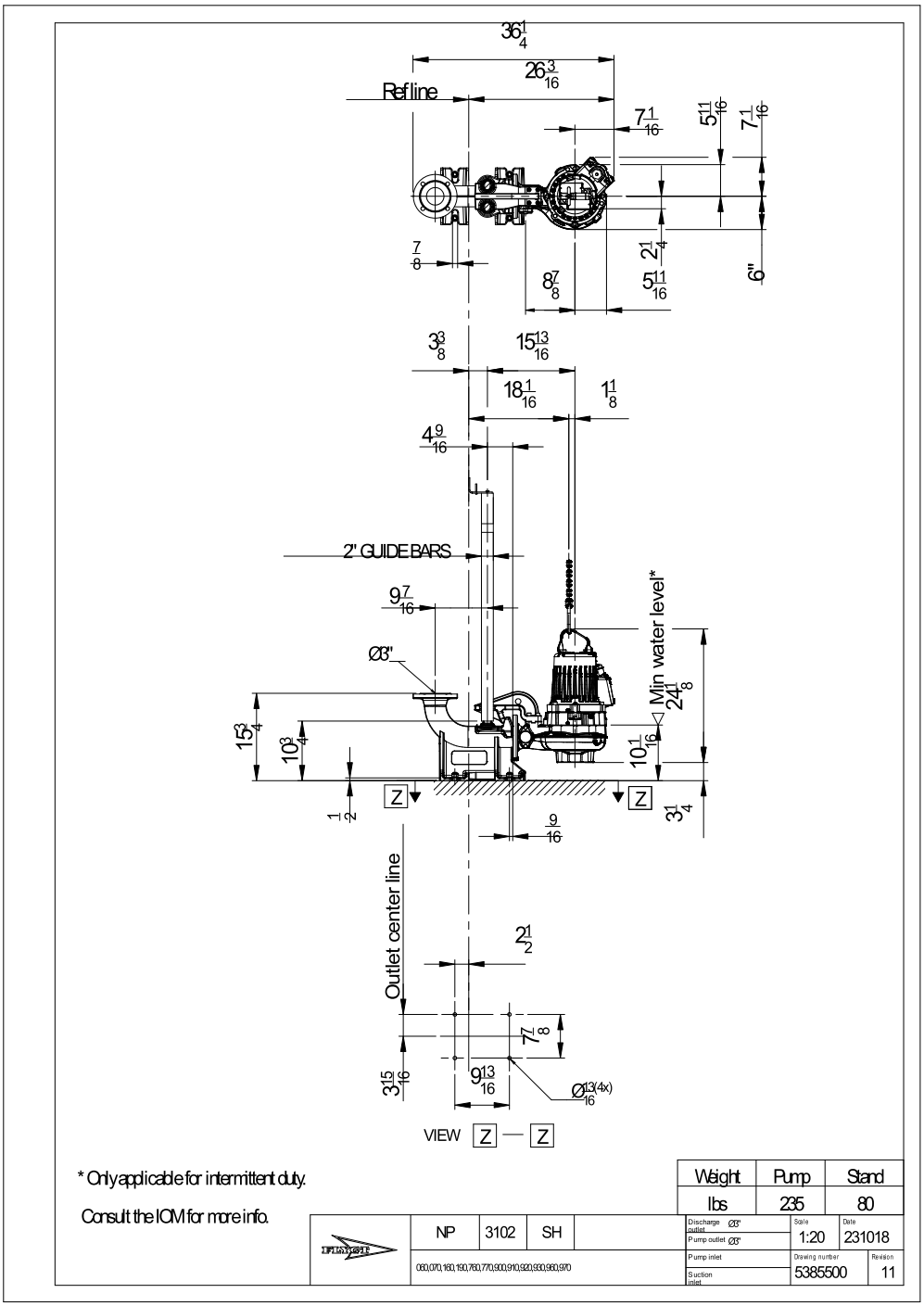
Operating Characteristics

Pumps / Systems	Frequency	Flow	Head	Shaft power	Flow	Head	Shaft power	Hydr.eff.	Specific energy	NPSHre
		US g.p.m.	ft	hp	US g.p.m.	ft	hp		kWh/US MG	ft

Project	Xylect-21983583	**Created by**	Robert Simcox		
Block		**Created on**	3/12/2024	**Last update**	3/12/2024

NP 3102 SH 3~ Adaptive 256

Dimensional drawing



Project	Xylect-21983583	**Created by**	Robert Simcox
Block		**Created on**	3/12/2024 **Last update** 3/12/2024

Pump Station Evaluation Report

30 - Trailwinds

Prepared For:

City of Wildwood

Evaluation Date:

2/6/2024

Report Date:

September 27, 2024

Version 1

Kimley»Horn

Version	Publish Date	Description
1	See Cover	Original/Version 1

Table 0.1 - Revision History

Version	Publish Date	Test Date	Description

Table 0.2 - Previous Evaluation History

This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn shall be without liability to Kimley-Horn.

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ATTACHMENTS

Attachment 1 ..... **Test Data Graphs**

Attachment 2 ..... **Supplementary Pump Information**

ABBREVIATIONS

Ø	Phase
AC	Alternating Current
ADD	Automated Draw Down
ADF	Average Daily Flow
ARR	Automated Rate of Rise
ATL	Across The Line
Avg	Average
BEP	Best Efficiency Point
CL	Center Line
Disch	Discharge
ETM	Elapsed Time Meter
FLA	Full Load Amps
FM	Force Main
Ft	Feet
FPS	Feet Per Second
FSFO	Full Speed Full Open
Gal	Gallons
GPM	Gallons Per Minute
HGL	Hydraulic Grade Line
HP	Horsepower
Hrs	Hours
H:M:S	Hours:Minutes:Seconds
Hz	Hertz
In	Inches
InvIn	Invert In
KWH	Kilowatt-Hours
L	Length
L1, L2, L3	Leg 1, 2 & 3 or Length 1, 2 & 3
MSL	Mean Sea Level
MTBF	Mean Time Between Failures
N	Neutral
P	Pump
PCL	Pump Center Line
PCP	Pump Control Panel
PF	Power Factor
PSI	Pounds Per Square Inch
PT	Point
RPM	Revolutions Per Minute
TDH	Total Dynamic Head
TVSS	Transient Voltage Surge Suppressor
V	Volts
VFD	Variable Frequency Drive
WTW	Wire To Water
WW	Wet Well
Yr	Year

1 INTRODUCTION

Kimley-Horn and Associates, Inc. evaluated the pump station through pump performance testing and a condition assessment. This report summarizes the data and results of that evaluation. The performance tests were conducted using the XAK-PACK pump performance monitoring device. The following pages provide summaries of the data collected and notes about the pumps' performance.

1.1 SITE INFORMATION

Trailwinds / Site Number 30			
Date of Evaluation	2/6/2024		
Address	6131 Seven Mile Dr, Wildwood, FL 34785		
Coordinates	28.866769, -82.002122		
Fluid Conveyed	Wastewater		
Station Style	Submersible		
Number of Pumps	2	Number of Pump Slots	2
Pump Type	Submersible		
Flow Meter Type	Magmeter		
Year of Construction	2017	Based on	☒Docs. ☐Estimation ☐Other
Basin/Zone	Unknown		
Firm Capacity (Design)	528 GPM / 0.76 MGD		
Firm Capacity (Test)	442 GPM / 0.64 MGD		
Discharge Description	8-inch upsizing to 12-inch and 16-inch, 29,309 LF unknown manifold FM discharging to a wastewater treatment plant		
Electrical Service	277/480 Wye		
Site Generator	Diesel with belly tank		
Bypass Ability	No bypass assembly on site		
Miscellaneous Features			

Site Notes:

1.2 SITE MAP

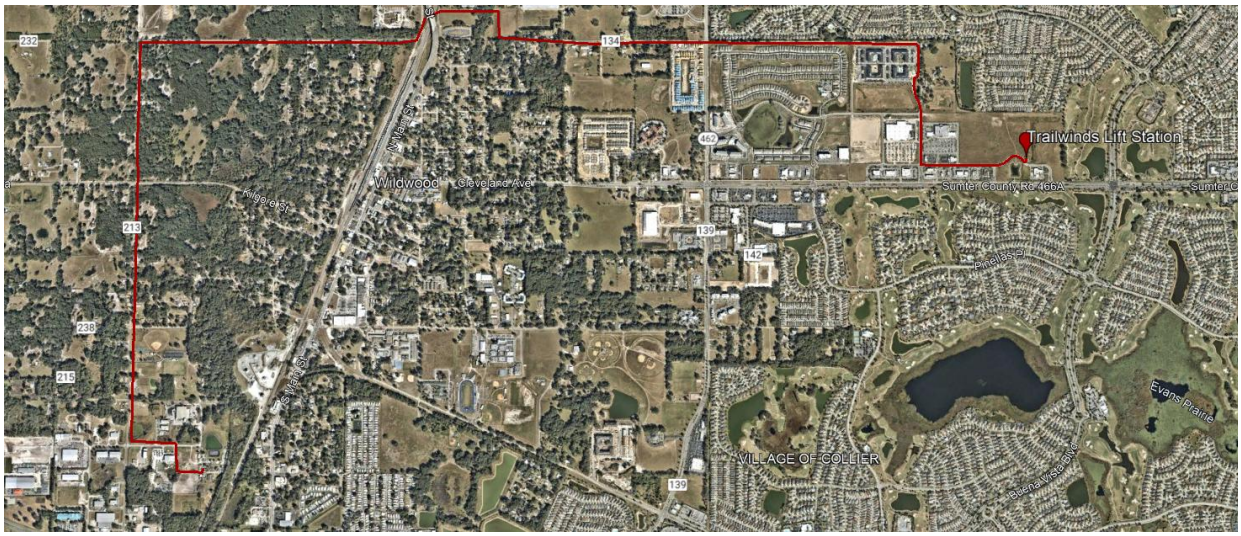


Figure 1.1 - Site Location Map

2 PUMP PERFORMANCE TESTS

Pump performance tests were conducted on the pumps utilizing the measurement tools detailed below. **Table 2.1 - Measurement Methods** describes the measurements taken during the test and the measurement method. Some measurements were confirmed utilizing a secondary measurement method. See **Attachment 1** for graphs of the digitally recorded data. For each test, note the following:

1. Common accuracies for measurements of flow, pressure, voltage and current are ±1%.
2. Friction loss is calculated using the Hazen-Williams formula and the Bernoulli equation. Piping characteristics are based on best available data.

Parameter	Measurement Method	
	Primary	Secondary
Flow	Level Transducer (XAK-PACK)	N/A
Pressure	Pressure Transducer (XAK-PACK)	Liquid Filled Pressure Gauge
Wet Well Level	Level Transducer (XAK-PACK)	N/A
Volts	Voltage Probes (XAK-PACK)	Fluke 376FC
Amps	Current Transducers (XAK-PACK)	Fluke 376FC
Power Factor	Power Factor Monitor (XAK-PACK)	N/A

Table 2.1 - Measurement Methods

2.1 PUMP #1

Below is a summary of the pump characteristics and performance test results.

Parameter	Units	Value
Pump Manufacturer	-	Flygt
Pump Model	-	4" NP3171
Pump Style	-	Submersible
Pump Impeller Dia	Inches	10.83
Pump Rated Capacity	GPM	528
Pump Rated Head	Ft	152
Pump ETM	Hours	994
Pump Flow @ BEP Design Curve	GPM	560
Pump Hyd Eff @ Design Pt	%	62.4%
Pump WTW Eff @ Operating Pt	%	56%
Pump NPSHr @ Operating Pt	Ft	27
Motor Synchronous Speed	RPM	3600
Motor Rated Speed	RPM	3530
Motor No. Phases	No	3
Motor Starters	-	ATL
Motor Rated Voltage	Volts	460
Motor Rated Horsepower	HP	35.0
Motor Service Factor	-	1.20
Motor FLA	Amps	40.0
Mfg. Motor Eff. @ Operating Pt	%	91%
Mfg. Starter Eff. @ Operating Pt	%	100%

Table 2.2 - Pump #1 Design Characteristics

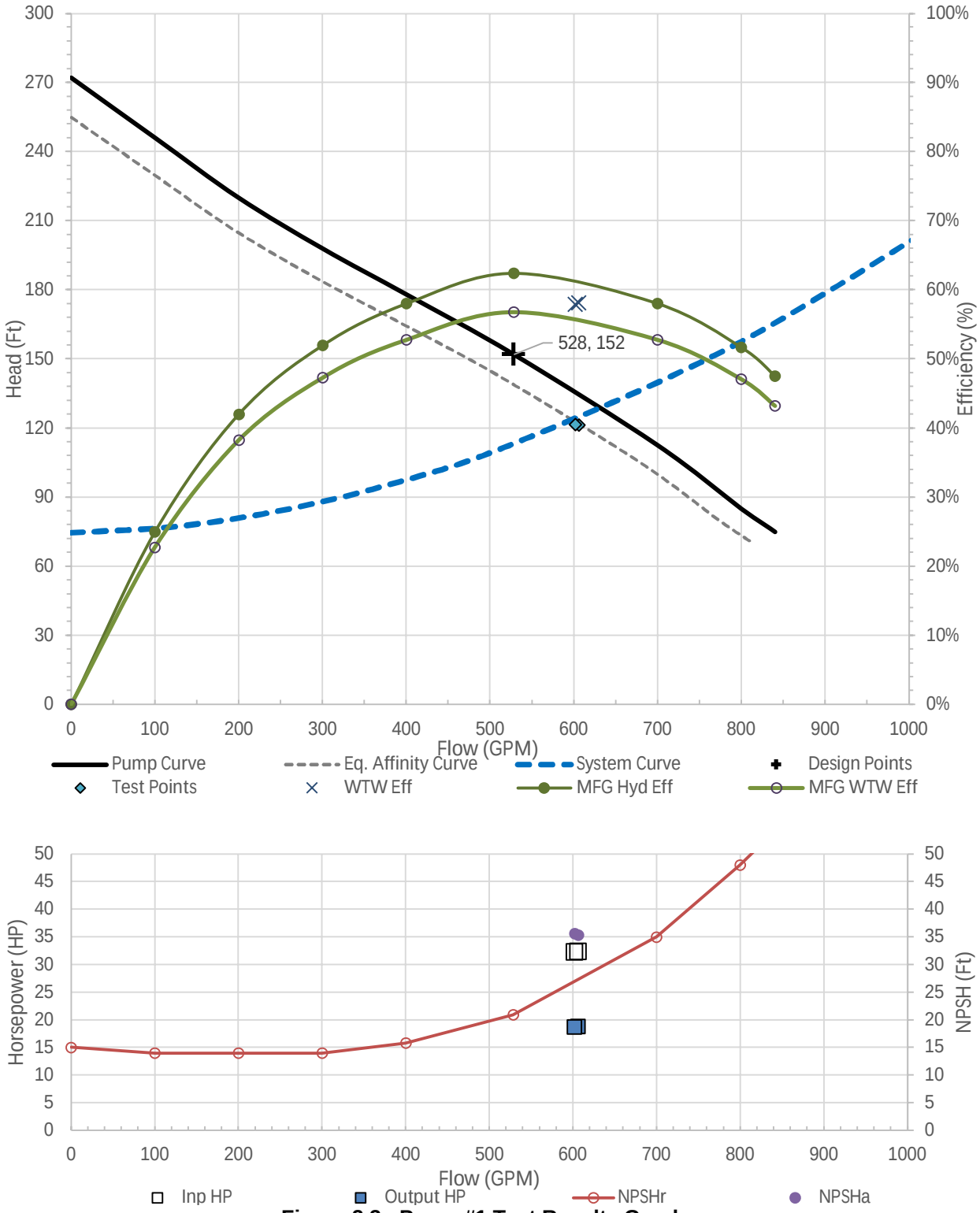


Figure 2.3 - Pump #1 Test Results Graphs

	Parameter	Units	Lower Limit	Test Value	Upper Limit	Comment
Measured	Average Output (FSFO)	GPM	-	604	-	
	Average TDH (FSFO)	Ft	-	121.4	-	
	Average WTW Efficiency (FSFO)	%	-	58%	-	
	Average Input HP (FSFO)	HP	-	32.3	-	
	Average Current Draw (FSFO)	Amps	-	36.7	-	
	Suction Velocity (FSFO)	FPS	2	-	7	
	Discharge Velocity (FSFO)	FPS	2	6.0	7	
	BEP Comparison (FSFO)	%	80%	108%	115%	
	Average Output (FSFO)	%	90%	114%	110%	1
	Affinity Law Eq. Curve	%	-5%	-3.2%	5%	
	NPSHa	Ft	27	35.5	N/A	
	WTW Eff @ Operating Pt	%	-5%	4%	5%	
	Input Frequency	Hz	-5%	0%	5%	
	Input Voltage (L-L)	%	-10%	-6.5%	10%	
	Voltage Drop	%	-15%	2.2%	N/A	
	Voltage Imbalance	%	-10%	0.7%	10%	
	Current Imbalance	%	-10%	4.9%	10%	
	Motor FLA	%	-50%	91.8%	105%	
	Motor Load	%	50%	92.2%	120%	
	Motor Slip Speed	%	3516	3530.0	3614	
	Vibration	In/Sec	0	0.0	-	
Observed	Surge	1-5	-	2	3	
	Vibration	1-5	-	2	3	
	Cavitation	1-5	-	1	3	
	Mechanical Noise	1-5	-	2	3	
	Leaks	1-5	-	1	3	
	Exterior Condition	1-5	-	2	3	
	Overall Score	1-5	-	2	3	

Table 2.4 - Pump #1 Test Summary

Pump #1 - Test Comments

1. The pump output is 114% of the design flow rate.

2.2 PUMP #2

Below is a summary of the pump characteristics and performance test results.

Parameter	Units	Value
Pump Manufacturer	-	Flygt
Pump Model	-	4" NP3171
Pump Style	-	Submersible
Pump Impeller Dia	Inches	10.83
Pump Rated Capacity	GPM	528
Pump Rated Head	Ft	152
Pump ETM	Hours	586
Pump Flow @ BEP Design Curve	GPM	560
Pump Hyd Eff @ Design Pt	%	62.4%
Pump WTW Eff @ Operating Pt	%	52%
Pump NPSHr @ Operating Pt	Ft	17
Motor Synchronous Speed	RPM	3600
Motor Rated Speed	RPM	3530
Motor No. Phases	No	3
Motor Starters	-	ATL
Motor Rated Voltage	Volts	460
Motor Rated Horsepower	HP	35.0
Motor Service Factor	-	1.20
Motor FLA	Amps	40.0
Mfg. Motor Eff. @ Operating Pt	%	91%
Mfg. Starter Eff. @ Operating Pt	%	100%

Table 2.5 - Pump #2 Design Characteristics

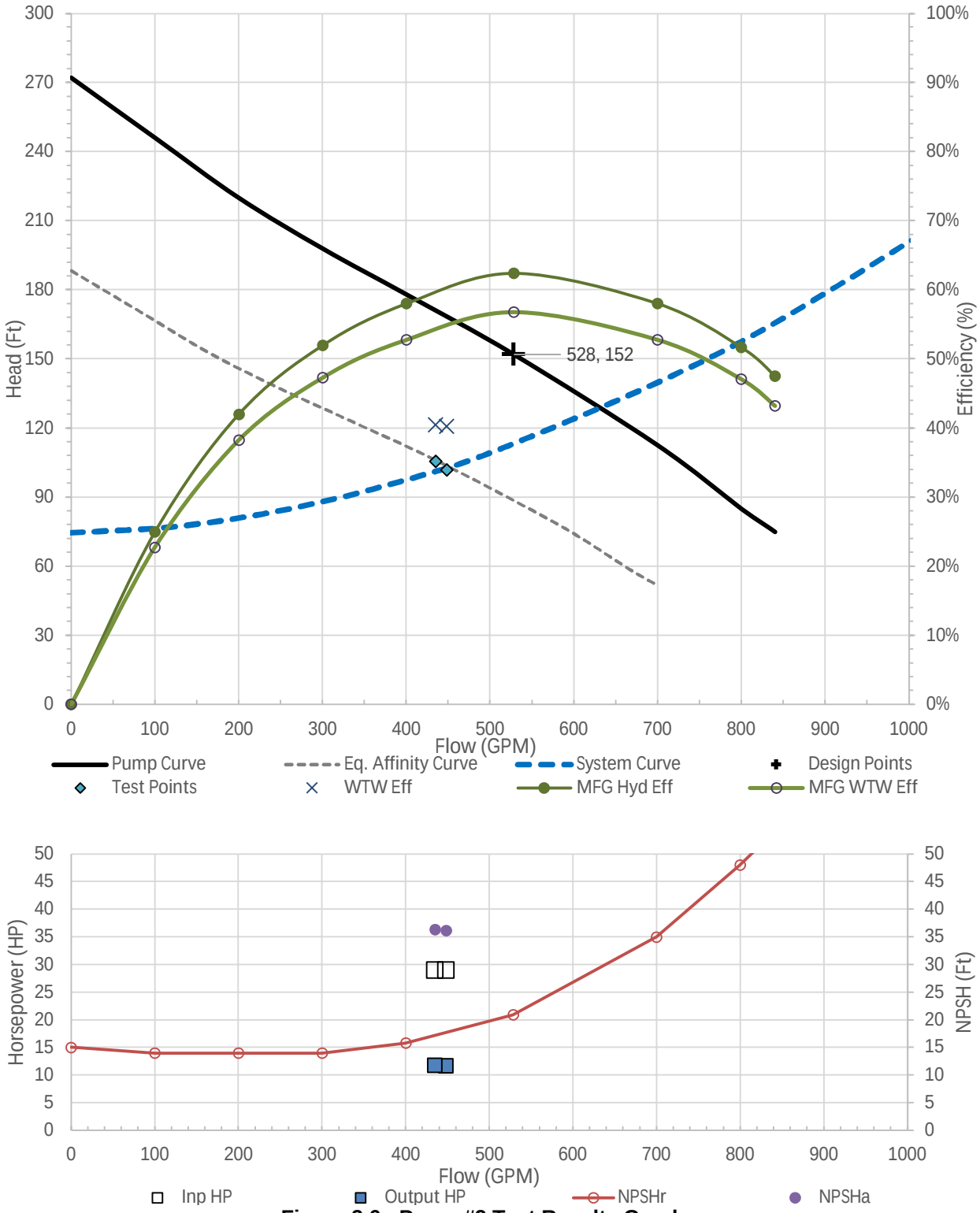


Figure 2.6 - Pump #2 Test Results Graphs

	Parameter	Units	Lower Limit	Test Value	Upper Limit	Comment
Measured	Average Output (FSFO)	GPM	-	442	-	
	Average TDH (FSFO)	Ft	-	103.6	-	
	Average WTW Efficiency (FSFO)	%	-	40%	-	
	Average Input HP (FSFO)	HP	-	28.9	-	
	Average Current Draw (FSFO)	Amps	-	33.0	-	
	Suction Velocity (FSFO)	FPS	2	-	7	
	Discharge Velocity (FSFO)	FPS	2	4.4	7	
	BEP Comparison (FSFO)	%	80%	79%	115%	1
	Average Output (FSFO)	%	90%	84%	110%	
	Affinity Law Eq. Curve	%	-5%	-16.8%	5%	2
	NPSHa	Ft	17	36.2	N/A	
	WTW Eff @ Operating Pt	%	-5%	-29%	5%	3
	Input Frequency	Hz	-5%	0%	5%	
	Input Voltage (L-L)	%	-10%	-6.4%	10%	
	Voltage Drop	%	-15%	2.2%	N/A	
	Voltage Imbalance	%	-10%	0.8%	10%	
	Current Imbalance	%	-10%	5.3%	10%	
	Motor FLA	%	-50%	82.4%	105%	
	Motor Load	%	50%	82.6%	120%	
	Motor Slip Speed	%	3516	3530.0	3614	
	Vibration	In/Sec	0	0.0	-	
Observed	Surge	1-5	-	2	3	
	Vibration	1-5	-	2	3	
	Cavitation	1-5	-	1	3	
	Mechanical Noise	1-5	-	2	3	
	Leaks	1-5	-	1	3	
	Exterior Condition	1-5	-	2	3	
	Overall Score	1-5	-	2	3	

Table 2.7 - Pump #2 Test Summary

Pump #2 - Test Comments

1. The pump is operating at 79% of BEP flow.
2. The pump is operating at 83.2% equivalent affinity curve meaning significant impeller/volute wear has occurred. Pump may be different than pump in provided manufacturer data.
3. WTW efficiency is significantly below the recommended lower limit. This indicates significant pump and/or motor wear.

2.3 HYDRAULICS SUMMARY

The design system curve and the theoretical system curve closely match. The measured system curve is shifted below these two system curves.

The system is operating with less head loss than anticipated by the design engineer and the theoretical calculations. This results in a higher pump output. This discrepancy is likely due to a portion of the force main not being fully pressurized during pump operation because the peak of the force main is approximately 20% to the end of the force main and the discharge is at a lower elevation than the peak.

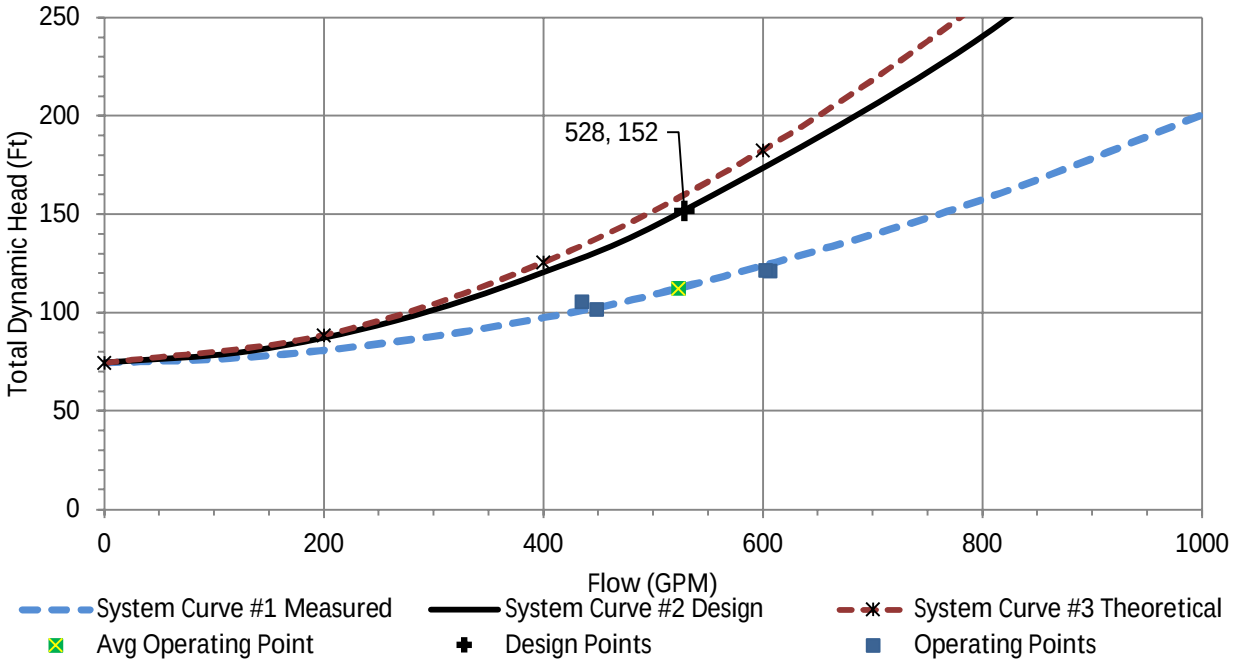


Figure 2.8 – System Hydraulic Information provides a graph of the system characteristics and a table describing the system curves. Length, Hazen-Williams (Hz-Wm), and diameter are approximated based on the best available information and fit to the data. System Curve Characteristics are intended to be for reference.

System Curve Characteristics					
Curve Name	**Curve Type**	**Length (Ft)**	**Hz-Wm**	**Diameter (In)**	**Calculated Based On**
System Curve #1	Measured	29309	110	11.5	Test Data
System Curve #2	Design	29309	110	9.9	Design Operating Condition
System Curve #3	Theoretical	29309	110	8, 12, 16	Available GIS and Record Drawing Data

Figure 2.8 – System Hydraulic Information

2.4 PIPELINE PERFORMANCE INDICATORS

Figure 2.9 – Pipe Velocities displays the velocities in each known diameter of the pressurized conveyance system. The Average Test Output Velocity represents the velocity generated by the average pumping rate produced by testing. The Station Firm Capacity Velocity represents the velocity based on the station's firm capacity (output with the largest pump out of service). The color gradient represents ranges of acceptable to problematic velocities. Red areas of operation are problematic and green areas of operation are acceptable.

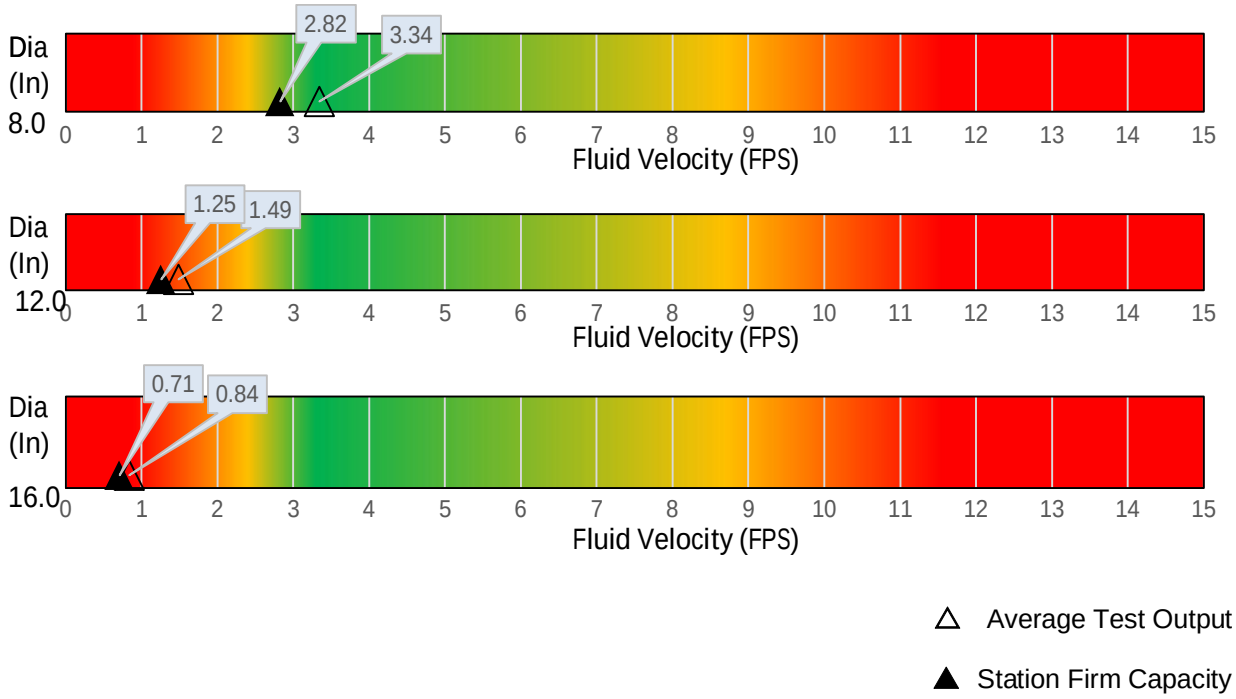


Figure 2.9 – Pipe Velocities

The maximum observed pressure at the station during the testing period is provided below in **Figure 2.10 - Maximum Observed Pressure**. System pressure capabilities vary depending upon pipe material type, pressure rating, elevation, age, condition, etc. This performance indicator is provided for reference only and is not a condition assessment of the pipeline. For systems with pressures above approximately 100 PSI, consider a more detailed analysis. See the **Attachment 1 - Graph B** for additional pressure data.

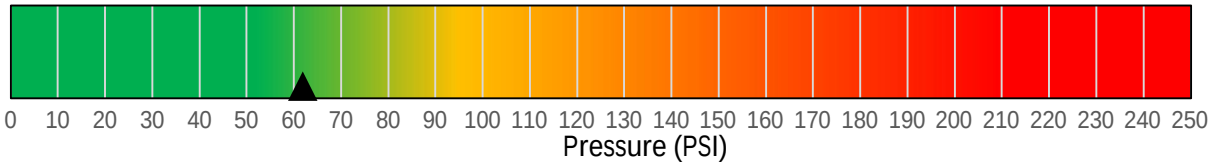


Figure 2.10 - Maximum Observed Pressure

2.5 SYSTEM PRESSURES

Figure 2.11 - Pressure Cycle shows a typical single-pump pressure cycle measured during testing. The pressure data captured for this test is limited to 2-second intervals which may not have captured the entire range of actual pressures. The complete log of pressure readings is provided in **Attachment 1 – Test Data Graphs**. For more accurate surge data, a surge monitoring device should be used to capture pressure at shorter time intervals over a longer period of time. **Table 2.12 - Further Surge-Related Actions** provides a list of recommended surge-related actions.

The pressure transducer used for measuring pressures has a range of 0 to 200 PSI. Pump startup produced an upsurge of approximately 62 PSI. Upon pump shut down, the observed minimum pressure was approximately 0 PSI and the maximum pressure was approximately 43 PSI creating a total observed pressure range of 62 PSI. It is likely that the minimum pressure produced on each pump shut down cycle was less than 0 PSI.

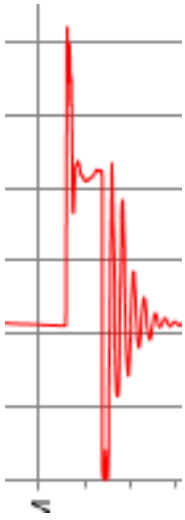


Figure 2.11 - Pressure Cycle

	Further Surge Related Actions:
	Perform extended period digital surge monitoring
	Perform calibrated surge modeling
	Revise operating scheme to reduce surge potential
	Evaluate piping system for pressure capacity and likelihood of failure
	Install physical surge mitigation strategies
✓	No further action

Table 2.12 - Further Surge-Related Actions

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3 RECOMMENDATIONS

The following recommendations are a result of the findings of this evaluation and should be considered for implementation. See **Section 2 Pump Performance Tests** for pump specific recommendations. In addition to the recommendations below, this site should/ be considered for the following overall planning and budgeting activities.

3.1 OVERALL RECOMMENDATIONS

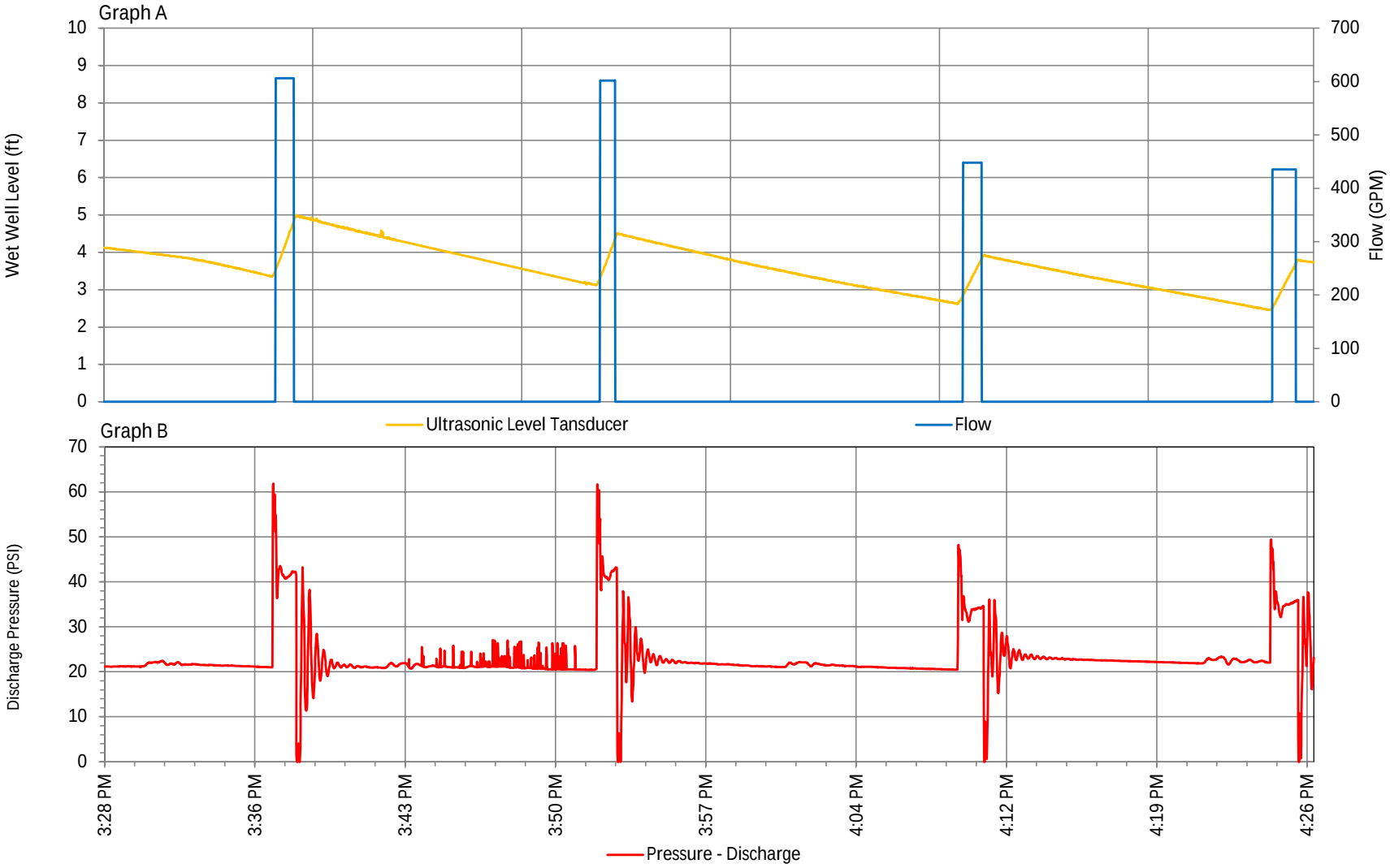
Overall Site Rating	Score	Description
	1	No recommendations currently. Monitor station for worsening conditions, perform regular O&M, reassess condition in 2-5 years.
	2	Complete recommendations listed in Section 3.2, monitor station for worsening conditions, perform regular O&M, reassess condition in 1-3 years.
	3	Station requires improvements beyond replacement of individual components. Begin planning and budgeting for a major rehabilitation. Place under regular observation until rehabilitation is complete.
	4	Station does not appear to be brought into conformance with standards without replacement. Begin planning and budgeting for a station replacement. Place under regular observation until rehabilitation is complete.

3.2 MISCELLANEOUS RECOMMENDATIONS

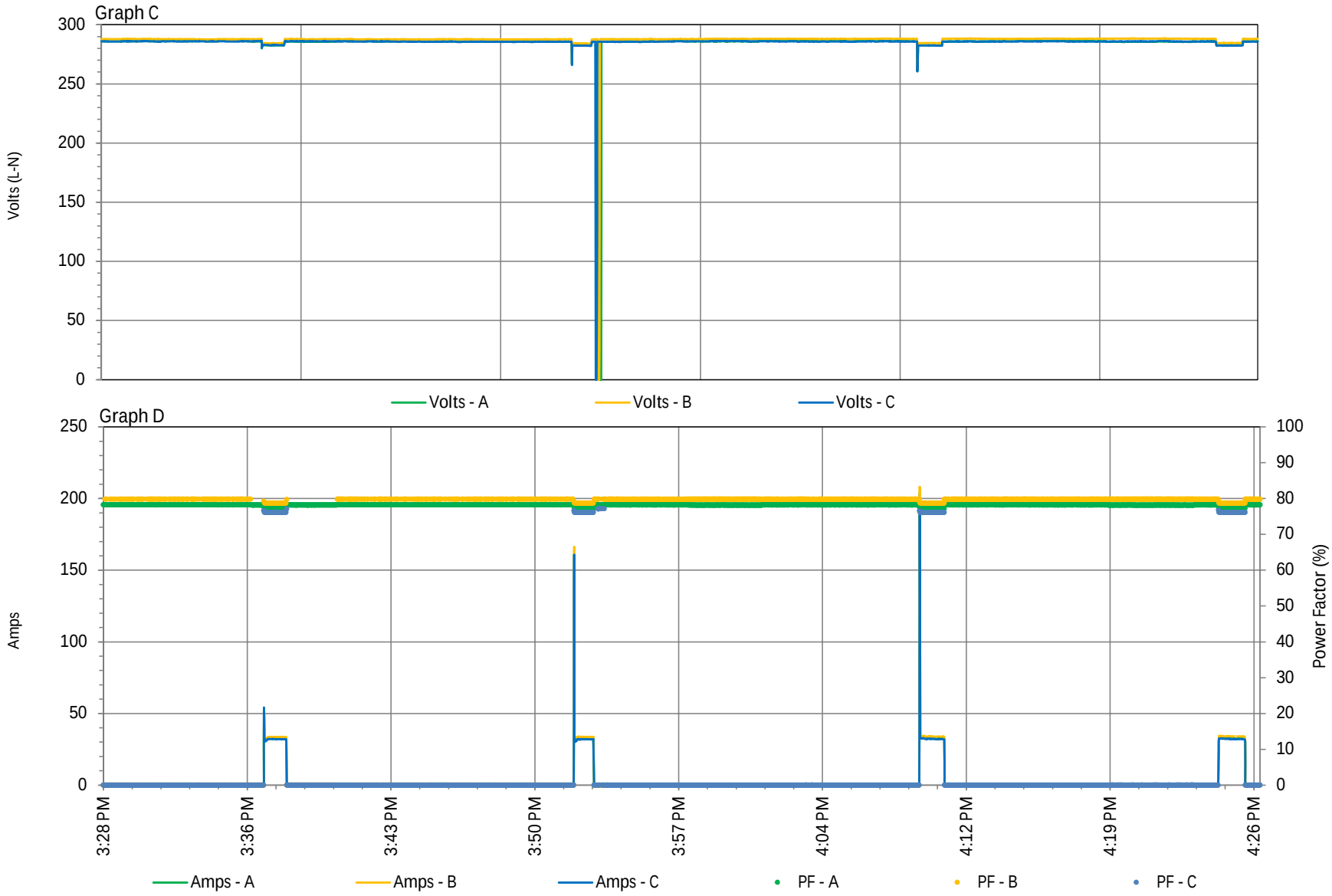
Pump 2 – Pump two is operating on a significantly reduced pump curve meaning significant impeller/volute wear has occurred. Consider replacing worn components such as the impeller, the volute, and the wear rings.

4 ATTACHMENTS

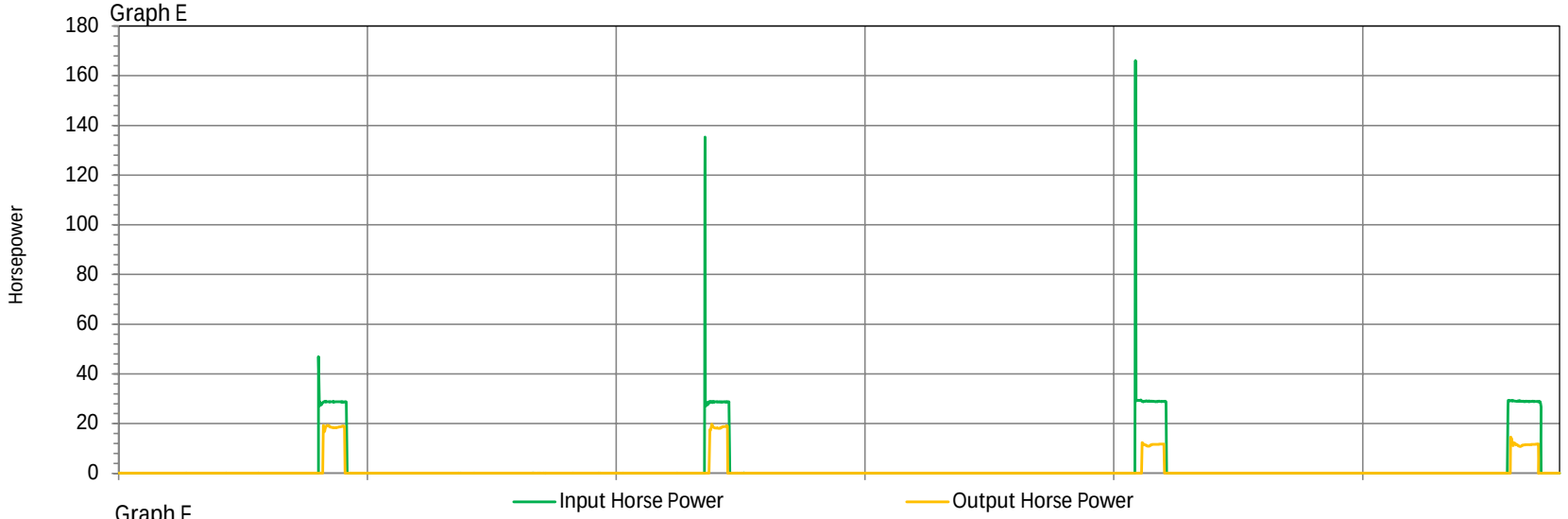
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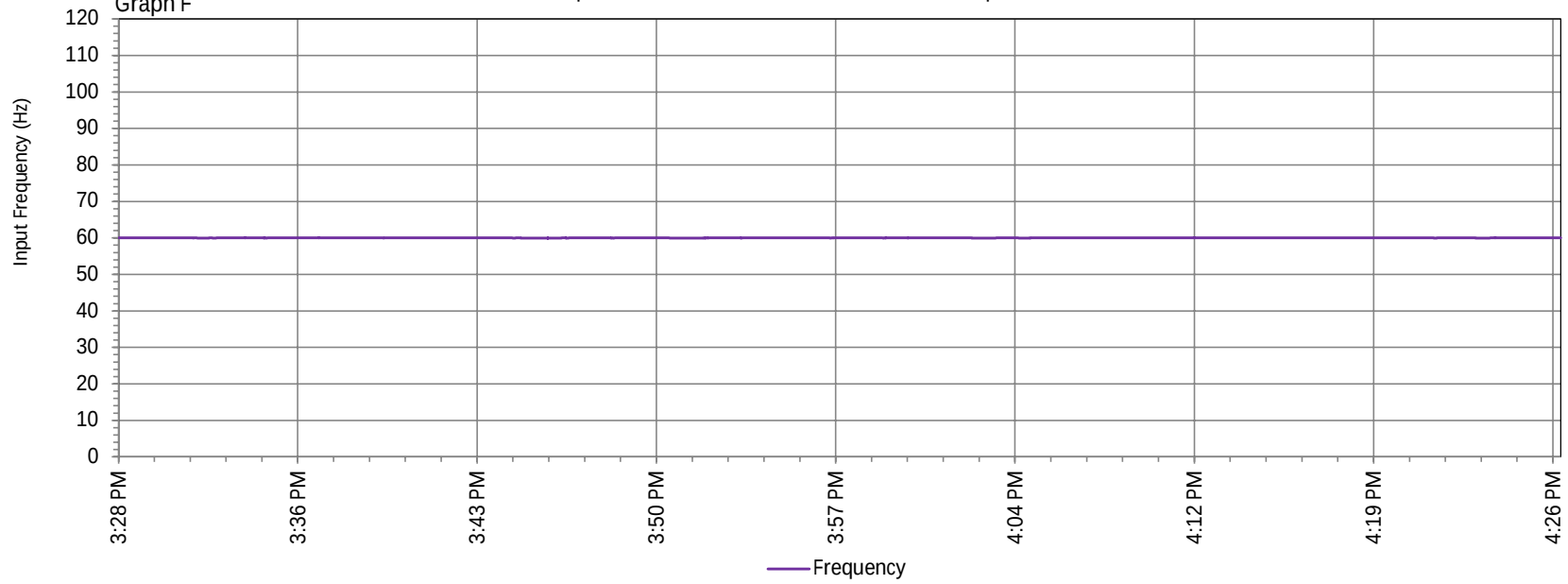
* Times shown are Eastern Standard Time


Graph C
Volts (L-N)
300
250
200
150
100
50
0
Volts - A
Volts - B
Volts - C
Graph D
Amps
250
200
150
100
50
0
Power Factor (%)
100
90
80
70
60
50
40
30
20
10
0
3:28 PM
3:36 PM
3:43 PM
3:50 PM
3:57 PM
4:04 PM
4:12 PM
4:19 PM
4:26 PM
Amps - A
Amps - B
Amps - C
PF - A
PF - B
PF - C

Graph E



Graph F



XYLEM WATER SOLUTIONS
Pump Station Start Up Re

File Name: CR 209FM Restart: Yes ○ No ○

Job Paid: Yes ○ No ○ Amount to P-U: _____

Contact: COMMERCIAL INDUSTRIAL CORP. Date: 08/25/17 Time: 9:30

Design Conditions: GPM 1244 TDH 156 Equipment Manufacturer: FLYGT

Model: 6"NP3301 1775RPM HP 85 Impeller 464 Voltage 460 Phase 3

Serial Number: 185-1580009; 185-1670009

Serial Number: 185-1680004

Control Manufacturer: ECS Model / Serial Number: 211524

Overload Heaters: Electric Alternator Tested: Yes L/A Connected: Yes GRD Connected: Yes

Danger Label Posted: Yes Wire & Terminal Connections Tight: Yes Conduit Sealed: Yes Panel Interior Dry: Yes

Type Controller: Float Logic Multitrode Other: Probe Floats Set By: Others

Controller Set Points: LL _____ OFF _____ LEAD _____ LAG _____ LAG LAG _____ HL _____

Floats, Probes, Transducer-Away From Turbulent Flow: Yes ① No ① Inflow Discard Over Pump(s): Yes ① No ○

Guide Rails Plumb and Secured: Yes ③ No ③ Debris in Station: Yes ③ No ⊗ Debris Removed in Your Presence: Yes ○ No ○

Is Pump VFD Operated: Yes ○ No ⊗ Minimum HZ: 15 sec Maximum HZ: 15 sec Accel Time: _____ Decel Time: _____

If Pump(s) Are VFD Operated, Have They Been Operated For 3 Minutes At Full Speed To Evacuate Air In Cooling Jacket: Yes ① No ①

On VFD Operation are The Power Cable and Sensor Cable in The Same Conduit: Yes ⑨ No ○

WARNING: All resistance and meg-ohm readings should be taken with the pump cables disconnected from the starter and control circuits.

Megger Check: #1 Inf Red Inf Black Inf White #2 Inf Red Inf Black Inf White

#3 _____ Red _____ Black _____ White #4 _____ Red _____ Black _____ White

Pump Sensor Readings: Thermal Sensor #1 1.2 Ω #2 1.2 Ω #3 1.2 Ω #4 _____ Ω

Leakage Sensor #1 _____ Ω #2 _____ Ω #3 _____ Ω #4 _____ Ω

Line Voltage Check: L1 - L2 494 V L2 - L3 494 V L1 - L3 497 V

Generator Start: Yes ○ No ○ L1 - GRD 285 V L2 - GRD 286 V L3 - GRD 284 V

Control Circuit: Primary 120 V Secondary: 24 V

Amperage at Load Connection:

#1	L1: 95 AMPS	L2: 100 AMPS	L3: 99 AMPS
#1	L1: 96 AMPS	L2: 98 AMPS	L3: 96 AMPS
#1	L1: 95 AMPS	L2: 99 AMPS	L3: 98 AMPS
#1	L1: _____ AMPS	L2: _____ AMPS	L3: _____ AMPS

Pump(s) Properly Seated: #1 Yes ⊗ No ○ #2 Yes ⊗ No ○ #3 Yes ⊗ No ○ #4 Yes ○ No ○

Check Valves Operate Properly: #1 Yes ⊗ No ○ #2 Yes ⊗ No ○ #3 Yes ⊗ No ○ #4 Yes ○ No ○

O&M Manuals Delivered: Yes ⊗ No ○ Received by: _____

Tools Delivered: Yes ○ No ⊗ Spare Parts Delivered: Yes ○ No ⊗ Received By: _____

Access Covers By: Halliday Products Station Operator/Owner: City of Wildwood

Performance Test: #1 GPM 2184 TDH 106.4 #2 GPM 2325 TDH 100.5

#3 GPM 2395 TDH 98 #4 GPM _____ TDH _____

Performance Data:

Shut Off Head Reading: #1 _____ #2 _____ #3 _____ #4 _____

Static Head: #1 18.6 #2 19.5 #3 19 #4 _____

Gauge PSI During Test: #1 38 #2 35 #3 34 #4 x

Friction Loss During Test: #1 _____ #2 _____ #3 _____ #4 x

Total Head: #1 106.4 #2 100.5 #3 98 #4 _____

Guage Location During Test: Before Valves - Yes ○ No ○ After Valves - Yes ⊗ No ○ On Valves - Yes ○ No ○

Gauge Installed on Which Valve: Check Valves - Yes ○ No ⊗ Plug Valves - Yes ○ No ○

Wet Well Diameter: 12'

Draw Down Test, (1) Minute: #1 31 Inches #2 32 Inches #3 34 Inches #4 _____ Inches

Present: Contractor: Commercial Industrial Corp Name: _____

Engineer Firm: Kimley Horn Name: Trey Clayton

Owner/Operator: City of Wildwood Name: Mike Weaver

Other: _____ Name: _____

Pump Station Evaluation Report
Attachment 2 - Manufacturers Data

Restart Reason: _____

Comments: Pumps performed to Spec. Panel was exciting

Inf

Start-up By: Scott Cannan Official Start Date: 8-25-17

FLYGT
a xylem brand

BILL OF MATERIALS

Pumps

Qty.	Model	Impeller	HP	Phase	Voltage	Motor Leads	Duty Points
2	4"NP3171	275/195mm	35	3	460	50'	528GPM@152'TDH

Specials: (2) 4"X4" Discharge Connections
(1) Mix-Flush Valve

Accessories

1	Wetwell Hatch	Model: W1S	Size: 36X66 Clear Opening w/safety grate		Rating: 300
	Meter Box				
1	~~Wetwell Hatch~~	Model: W1S	Size: 48"X48" Clear ~~Opening~~		Rating: 300
			60"X 60"		
1	Valve Box Hatch	Model: W2S	Size: ~~72"X72"~~ Clear Opening		Rating: 300

2	316SS	2" Upper Guide Bar Brackets		
1	316SS	Cable Holder		
2	316SS	Lifting Device	Length: 25'	
8	316SS	Anchor + wedge		
4	316SS	2" Diameter Guide Rails	Length: 25'	

Control Panel

1	Control Panel DUPLEX 35HP 3PH 460VOLT PER CITY OF WILDWOOD SPECIFICATIONS	Enclosure Material: 316SS NEMA Rating: 3R	
1	Generator Receptacle		
4	ENM-10		Length: 40'

Specials: (4) MTR RELAYS
(1) PROBE SENSOR
(1) ROSEMONT PRESSURE TRANSMITTER
(1) 8" MJK 7200 FLOW METER

NP 3171 SH 3~ 275

Performance curve

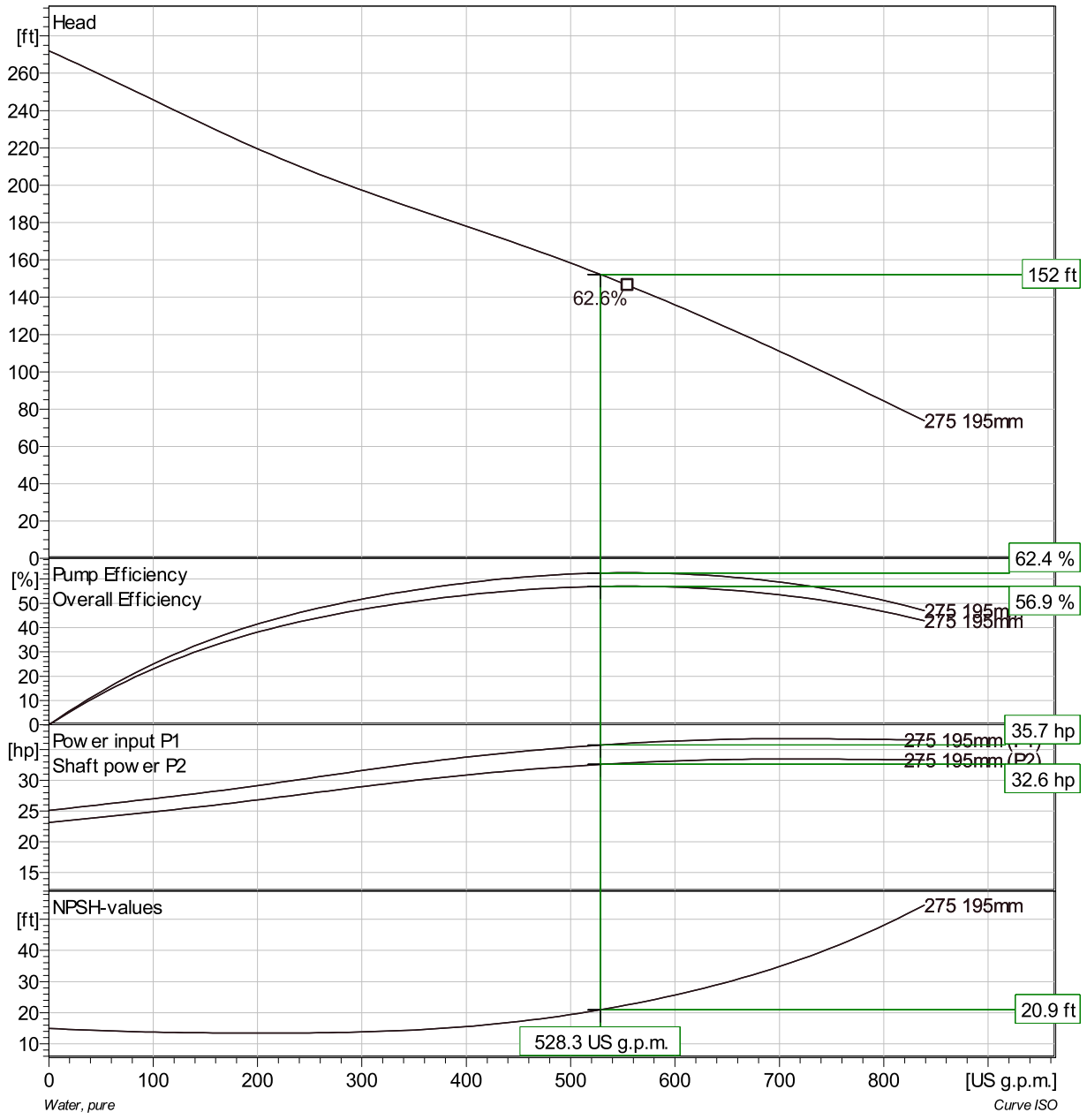
Pump

Discharge Flange Diameter	3 15/16 inch
Inlet diameter	100 mm
Impeller diameter	$7^{11}/_{16}$"
Number of blades	2

Motor

Motor #	N3171.185 25-18-2AA-W 35hp
Approval	Standard
Stator variant	9
Frequency	60 Hz
Rated voltage	460 V
Number of poles	2
Phases	3~
Rated power	35 hp
Rated current	40 A
Starting current	292 A
Rated speed	3530 rpm

Power factor	
1/1 Load	0.91
3/4 Load	0.89
1/2 Load	0.82
Motor efficiency	
1/1 Load	91.0 %
3/4 Load	91.5 %
1/2 Load	92.0 %

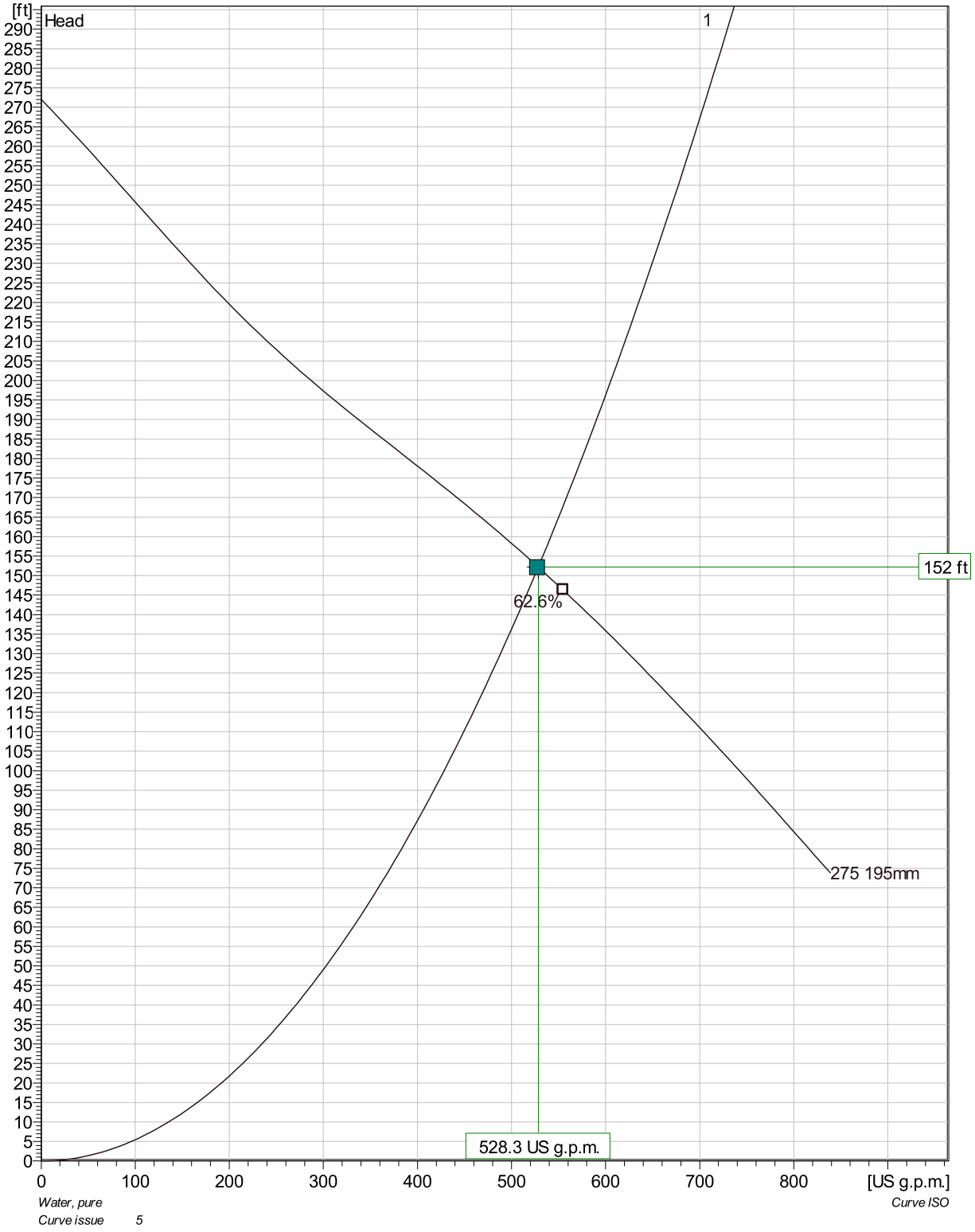


Duty point		Guarantee
Flow	Head	ISO_9906_Grade_3Grade
528 US g.p.m.	152 ft	No

Project	Project ID	Created by	Created on	Last update
			2017-03-15	

NP 3171 SH 3~ 275

Duty Analysis

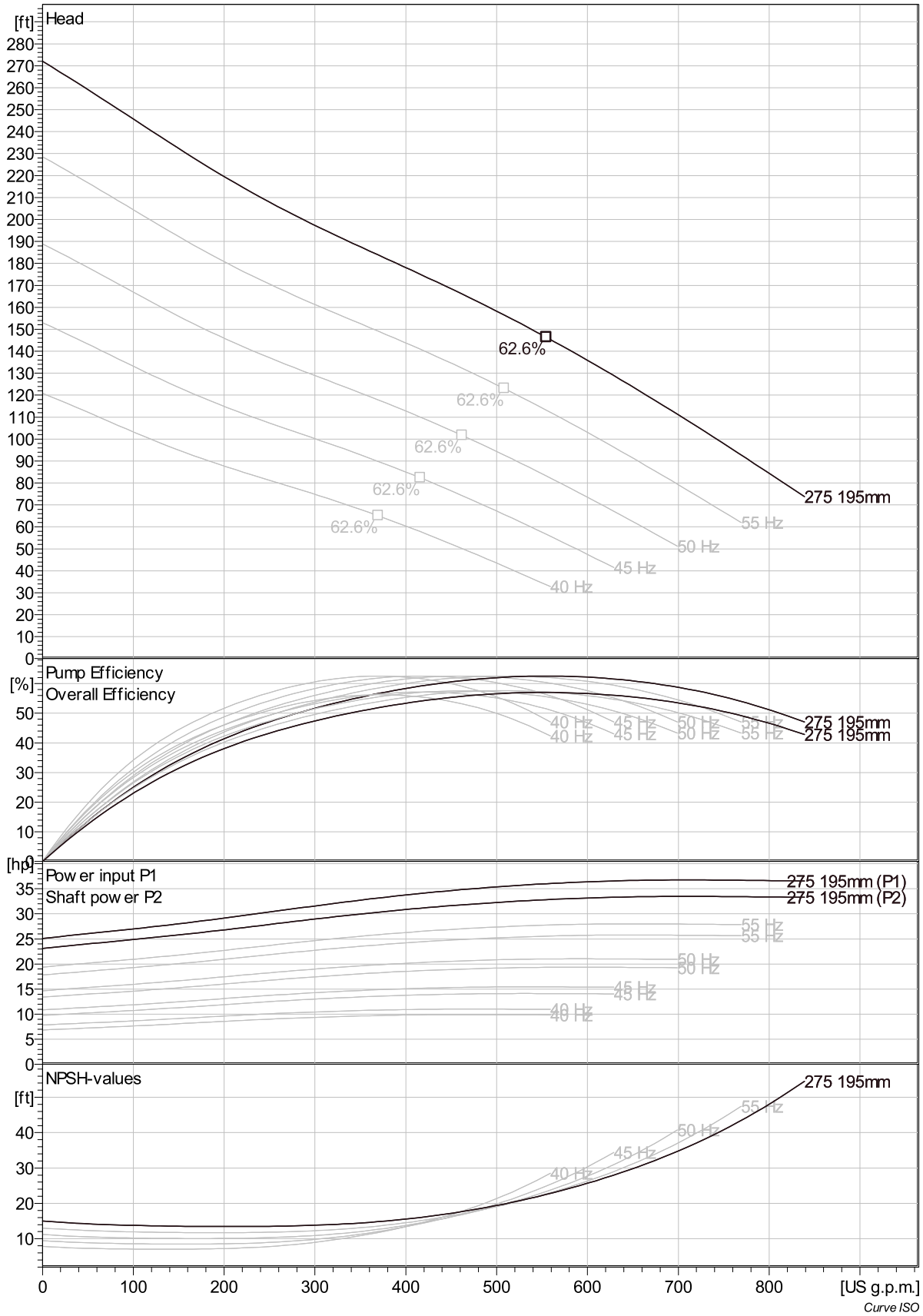


Pumps running /System	Individual pump			Total					
	Flow	Head	Shaft power	Flow	Head	Shaft power	Pump eff.	Specific energy	NPSHre
1	528 US g.p.m.	152 ft	32.6 hp	528 US g.p.m.	152 ft	32.6 hp	62.4 %	840 kWh/US MG	20.9 ft

Project	Project ID	Created by	Created on	Last update
			2017-03-15	

NP 3171 SH 3~ 275

VFD Curve



Project	Project ID	Created by	Created on	Last update
			2017-03-15	

Pump Station Evaluation Report

Site #48 - Triumph South

Prepared For:

City of Wildwood

Evaluation Date:

February 6, 2024

Report Date:

September 27, 2024

Version 1

Kimley»Horn

Version	Publish Date	Description
1	See Cover	Original/Version 1

Table 0.1 - Revision History

Version	Publish Date	Test Date	Description

Table 0.2 - Previous Evaluation History

This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn shall be without liability to Kimley-Horn.

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ATTACHMENTS

Attachment 1 ..... **Test Data Graphs**

Attachment 2 ..... **Supplementary Pump Information**

ABBREVIATIONS

Ø	Phase
AC	Alternating Current
ADD	Automated Draw Down
ADF	Average Daily Flow
ARR	Automated Rate of Rise
ATL	Across The Line
Avg	Average
BEP	Best Efficiency Point
CL	Center Line
Disch	Discharge
ETM	Elapsed Time Meter
FLA	Full Load Amps
FM	Force Main
Ft	Feet
FPS	Feet Per Second
FSFO	Full Speed Full Open
Gal	Gallons
GPM	Gallons Per Minute
HGL	Hydraulic Grade Line
HP	Horsepower
Hrs	Hours
H:M:S	Hours:Minutes:Seconds
Hz	Hertz
In	Inches
InvIn	Invert In
KWH	Kilowatt-Hours
L	Length
L1, L2, L3	Leg 1, 2 & 3 or Length 1, 2 & 3
MSL	Mean Sea Level
MTBF	Mean Time Between Failures
N	Neutral
P	Pump
PCL	Pump Center Line
PCP	Pump Control Panel
PF	Power Factor
PSI	Pounds Per Square Inch
PT	Point
RPM	Revolutions Per Minute
TDH	Total Dynamic Head
TVSS	Transient Voltage Surge Suppressor
V	Volts
VFD	Variable Frequency Drive
WTW	Wire To Water
WW	Wet Well
Yr	Year

1 INTRODUCTION

Kimley-Horn and Associates, Inc. evaluated the pump station through pump performance testing and a condition assessment. This report summarizes the data and results of that evaluation. The performance tests were conducted using the XAK-PACK pump performance monitoring device. The following pages provide summaries of the data collected and notes about the pumps' performance.

1.1 SITE INFORMATION

Triumph South / Site #48			
Date of Evaluation	February 6, 2024		
Address	8653 Triumph Cir, Wildwood, FL 34785		
Coordinates	28°52'48.2"N, 82°01'36.1"W		
Fluid Conveyed	Wastewater		
Station Style	Duplex Submersible		
Number of Pumps	2	Number of Pump Slots	2
Pump Type	Submersible		
Flow Meter Type	N/a		
Year of Construction	Unknown	Based on	☐Docs. ☐Estimation ☐Other
Basin/Zone	Unknown		
Firm Capacity (Design)	644 GPM / 0.93 MGD		
Firm Capacity (Test)	216 GPM / 0.31 MGD		
Discharge Description	4-inch discharge, manifolds with 12-inch, approximately 25,300 LF, unknown material, discharges to WWTP		
Electrical Service	120/420 Delta		
Site Generator	Caterpillar diesel with belly tank		
Bypass Ability	Bypass connection on site		
Miscellaneous Features			

Site Notes:

1.2 SITE MAP

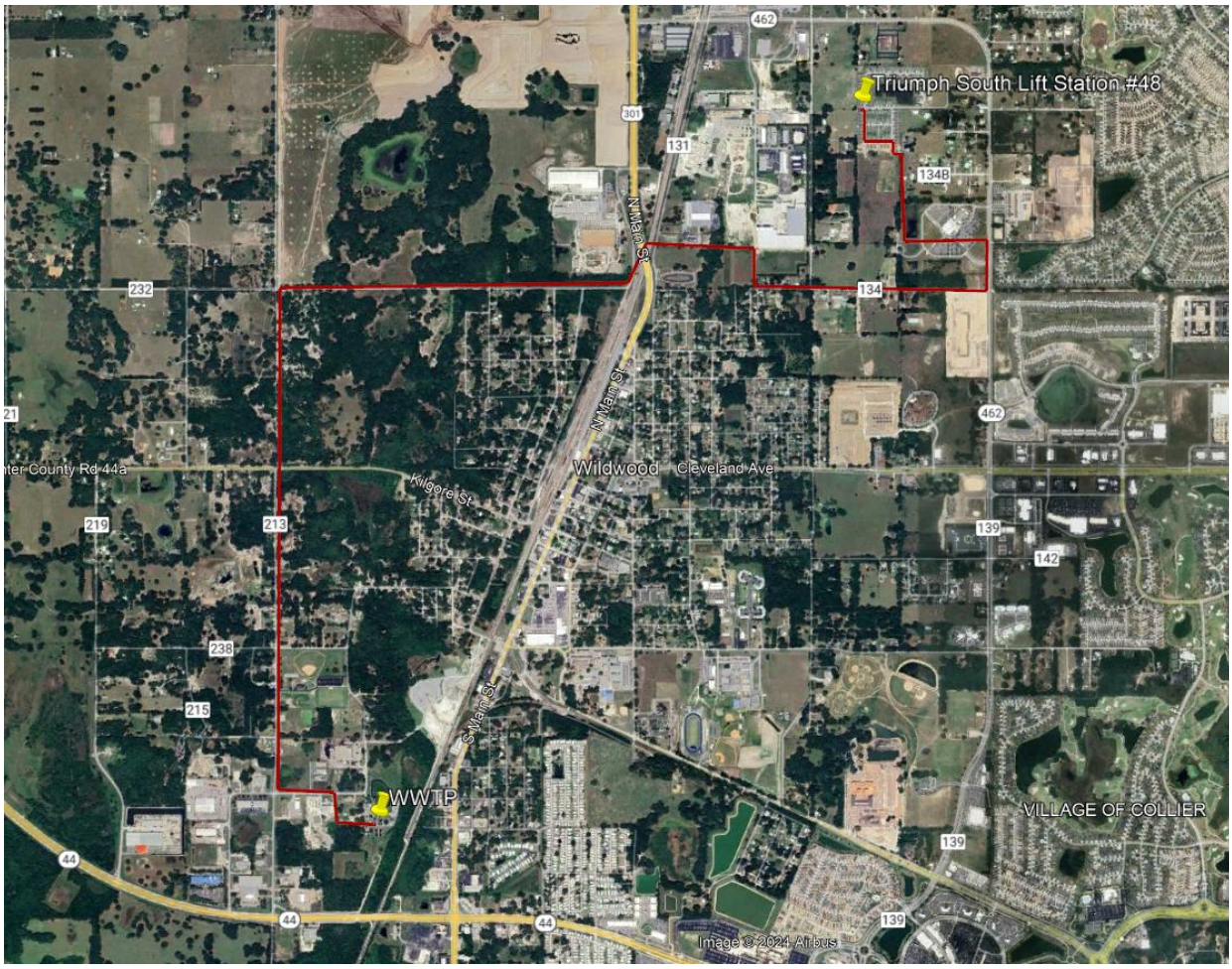


Figure 1.1 - Site Location Map

2 PUMP PERFORMANCE TESTS

Pump performance tests were conducted on the pumps utilizing the measurement tools detailed below. Error! Reference source not found. describes the measurements taken during the test and the measurement method. Some measurements were confirmed utilizing a secondary measurement method. See **Attachment 1** for graphs of the digitally recorded data. For each test, note the following:

1. Common accuracies for measurements of flow, pressure, voltage and current are ±1%.
2. Friction loss is calculated using the Hazen-Williams formula and the Bernoulli equation. Piping characteristics are based on best available data.

Parameter	Measurement Method	
	Primary	Secondary
Flow	Level Transducer (XAK-PACK)	N/A
Pressure	Pressure Transducer (XAK-PACK)	Liquid Filled Pressure Gauge
Wet Well Level	Level Transducer (XAK-PACK)	N/A
Volts	Voltage Probes (XAK-PACK)	Fluke 376FC
Amps	Current Transducers (XAK-PACK)	Fluke 376FC
Power Factor	Power Factor Monitor (XAK-PACK)	N/A

Table 2.1 - Measurement Methods

2.1 PUMP #1

Below is a summary of the pump characteristics and performance test results.

Parameter	Units	Value
Pump Manufacturer	-	Flygt
Pump Model	-	NP 3127 SH 3~ Adaptive 249
Pump Style	-	Submersible
Pump Impeller Dia	Inches	5.75
Pump Rated Capacity	GPM	322
Pump Rated Head	Ft	64
Pump ETM	Hours	721
Pump Flow @ BEP Design Curve	GPM	322
Pump Hyd Eff @ Design Pt	%	59.0%
Pump WTW Eff @ Operating Pt	%	32%
Pump NPSHr @ Operating Pt	Ft	21
Motor Synchronous Speed	RPM	3600
Motor Rated Speed	RPM	3495
Motor No. Phases	No	3
Motor Starters	-	ATL
Motor Rated Voltage	Volts	230
Motor Rated Horsepower	HP	11.0
Motor Service Factor	-	1.15
Motor FLA	Amps	26.0
Mfg. Motor Eff. @ Operating Pt	%	88%
Mfg. Starter Eff. @ Operating Pt	%	100%

Table 2.2 - Pump #1 Design Characteristics

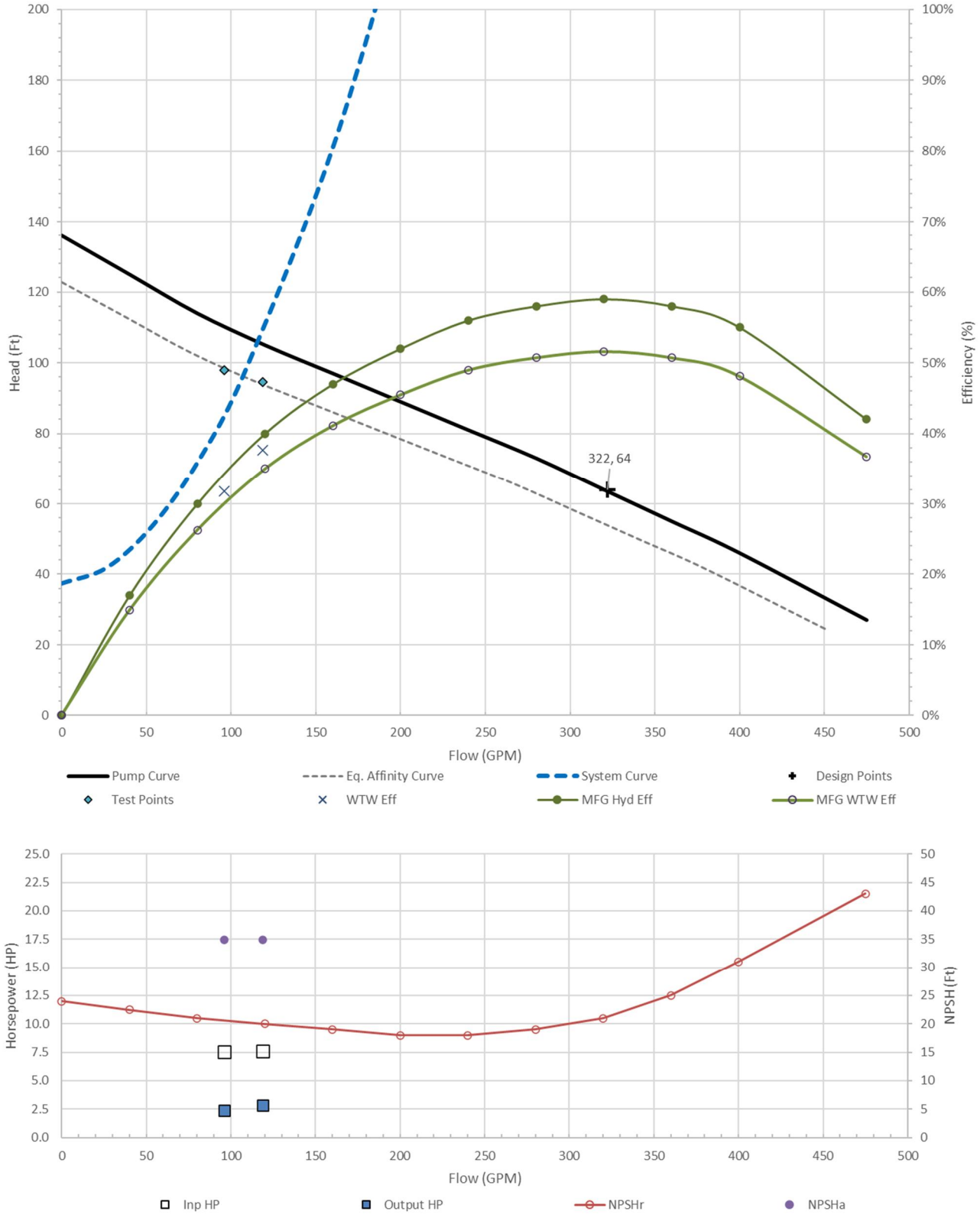


Figure 2.2 - Pump #1 Test Results Graphs

	Parameter	Units	Lower Limit	Test Value	Upper Limit	Comment
Measured	Average Output (FSFO)	GPM	-	107	-	
	Average TDH (FSFO)	Ft	-	96.1	-	
	Average WTW Efficiency (FSFO)	%	-	31%	-	
	Average Input HP (FSFO)	HP	-	8.3	-	
	Average Current Draw (FSFO)	Amps	-	17.2	-	
	Suction Velocity (FSFO)	FPS	2	-	7	
	Discharge Velocity (FSFO)	FPS	2	2.4	7	
	BEP Comparison (FSFO)	%	80%	33%	115%	1
	Average Output (FSFO)	%	90%	33%	110%	2
	Affinity Law Eq. Curve	%	-5%	-5.0%	5%	
	NPSHa	Ft	21	34.9	N/A	
	WTW Eff @ Operating Pt	%	-5%	-2%	5%	
	Input Frequency	Hz	-5%	0%	5%	
	Input Voltage (L-L)	%	-10%	-17.4%	10%	
	Voltage Drop	%	-15%		N/A	
	Voltage Imbalance	%	-10%	104.2%	10%	
	Current Imbalance	%	-10%	10.7%	10%	3
	Motor FLA	%	-50%	66.2%	105%	
	Motor Load	%	50%	75.9%	115%	
	Motor Slip Speed	%	3474	3495.0	3621	
	Vibration	In/Sec	0	0.0	-	
Observed	Surge	1-5	-	2	3	
	Vibration	1-5	-	1	3	
	Cavitation	1-5	-	1	3	
	Mechanical Noise	1-5	-	2	3	
	Leaks	1-5	-	1	3	
	Exterior Condition	1-5	-	2	3	
	Overall Score	1-5	-	2	3	

Table 2.3 - Pump #1 Test Summary

Pump #1 - Test Comments

1) The pump is operating at 33 % BEP flow rate.
2) The pump output is 33% of the design flow rate.
3) Current imbalance is above the recommended upper limit. Motor MTBF is reduced when operating in this range. Monitor for increasing imbalance and consider refurbishing or replacing the motor. Consider further evaluation to include regular 3-phase amperage checks, mega-ohm tests, and pump output checks.

2.2 PUMP #2

Below is a summary of the pump characteristics and performance test results.

Parameter	Units	Value
Pump Manufacturer	-	Flygt
Pump Model	-	NP 3127 SH 3~ Adaptive 249
Pump Style	-	Submersible
Pump Impeller Dia	Inches	5.75
Pump Rated Capacity	GPM	322
Pump Rated Head	Ft	64
Pump ETM	Hours	721
Pump Flow @ BEP Design Curve	GPM	322
Pump Hyd Eff @ Design Pt	%	59.0%
Pump WTW Eff @ Operating Pt	%	34%
Pump NPSHr @ Operating Pt	Ft	20
Motor Synchronous Speed	RPM	3600
Motor Rated Speed	RPM	3495
Motor No. Phases	No	3
Motor Starters	-	ATL
Motor Rated Voltage	Volts	230
Motor Rated Horsepower	HP	11.0
Motor Service Factor	-	1.15
Motor FLA	Amps	26.0
Mfg. Motor Eff. @ Operating Pt	%	88%
Mfg. Starter Eff. @ Operating Pt	%	100%

Table 2.5 - Pump #2 Design Characteristics

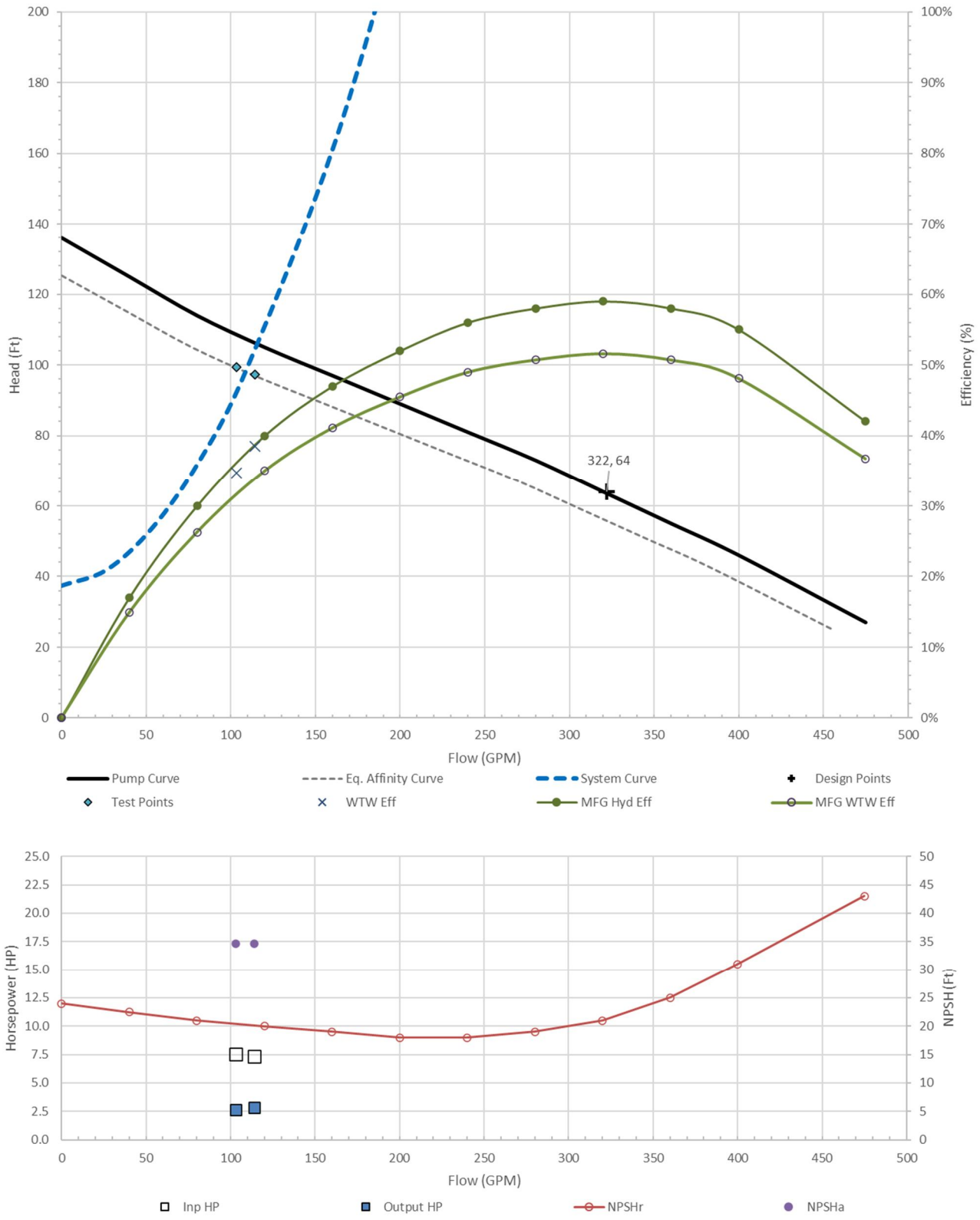


Figure 2.4 - Pump #2 Test Results Graphs

	Parameter	Units	Lower Limit	Test Value	Upper Limit	Comment
Measured	Average Output (FSFO)	GPM	-	109	-	
	Average TDH (FSFO)	Ft	-	98.3	-	
	Average WTW Efficiency (FSFO)	%	-	33%	-	
	Average Input HP (FSFO)	HP	-	8.2	-	
	Average Current Draw (FSFO)	Amps	-	16.9	-	
	Suction Velocity (FSFO)	FPS	2	-	7	
	Discharge Velocity (FSFO)	FPS	2	2.4	7	
	BEP Comparison (FSFO)	%	80%	34%	115%	1
	Average Output (FSFO)	%	90%	34%	110%	2
	Affinity Law Eq. Curve	%	-5%	-4.0%	5%	
	NPSHa	Ft	20	34.7	N/A	
	WTW Eff @ Operating Pt	%	-5%	-2%	5%	
	Input Frequency	Hz	-5%	0%	5%	
	Input Voltage (L-L)	%	-10%	-17.3%	10%	
	Voltage Drop	%	-15%	3.0%	N/A	
	Voltage Imbalance	%	-10%	104.3%	10%	
	Current Imbalance	%	-10%	12.7%	10%	3
	Motor FLA	%	-50%	65.1%	105%	
	Motor Load	%	50%	74.6%	115%	
	Motor Slip Speed	%	3474	3495.0	3621	
	Vibration	In/Sec	0	0.0	-	
Observed	Surge	1-5	-	2	3	
	Vibration	1-5	-	1	3	
	Cavitation	1-5	-	1	3	
	Mechanical Noise	1-5	-	2	3	
	Leaks	1-5	-	1	3	
	Exterior Condition	1-5	-	2	3	
	Overall Score	1-5	-	2	3	

Table 2.6 – Pump #2 Test Summary

Pump #2 - Test Comments

1) The pump is operating at 34% BEP flow rate.
2) The pump output is 34% of the design flow rate.
3) Current imbalance is above the recommended upper limit. Motor MTBF is reduced when operating in this range. Monitor for increasing imbalance and consider refurbishing or replacing the motor. Consider further evaluation to include regular 3-phase amperage checks, mega-ohm tests, and pump output checks.

2.3 HYDRAULICS SUMMARY

The measured system curve is shifted up significantly from the design head loss curve. This indicates the system has an increased head loss. This increase in head loss may be a result of a reduced C factor or a reduced inside diameter of the force main from years in service. The measured system curve is also operating at a significantly higher static head then design head loss curve. This is likely due to the manifold condition of the system raising the static head.

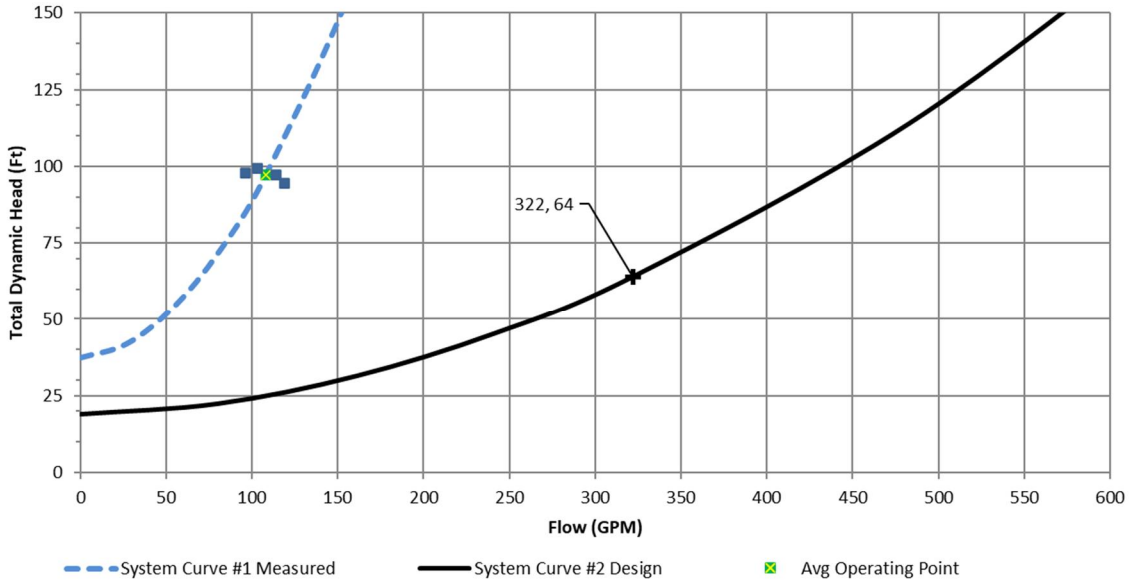


Figure 2.6 – System Hydraulic Information

Table 2.7 – System Hydraulic Information provides a graph of the system characteristics and a table describing the system curves. Length, Hazen-Williams (Hz-Wm), and diameter are approximated based on the best available information and fit to the data. System Curve Characteristics are intended to be for reference.

System Curve Characteristics					
Curve Name	**Curve Type**	**Length (Ft)**	**Hz-Wm**	**Diameter (In)**	**Calculated Based On**
System Curve #1	Measured	25300	115	5.5	Test Data
System Curve #2	Design	25300	115	8.8	Design Operating Condition

Table 2.7 – System Hydraulic Information

2.4 PIPELINE PERFORMANCE INDICATORS

Figure 2.9 – Pipe Velocities displays the velocities in each known diameter of the pressurized conveyance system. The Average Test Output Velocity represents the velocity generated by the average pumping rate produced by testing. The Station Firm Capacity Velocity represents the velocity based on the station's firm capacity (output with the largest pump out of service). The color gradient represents ranges of acceptable to problematic velocities. Red areas of operation are problematic and green areas of operation are acceptable.

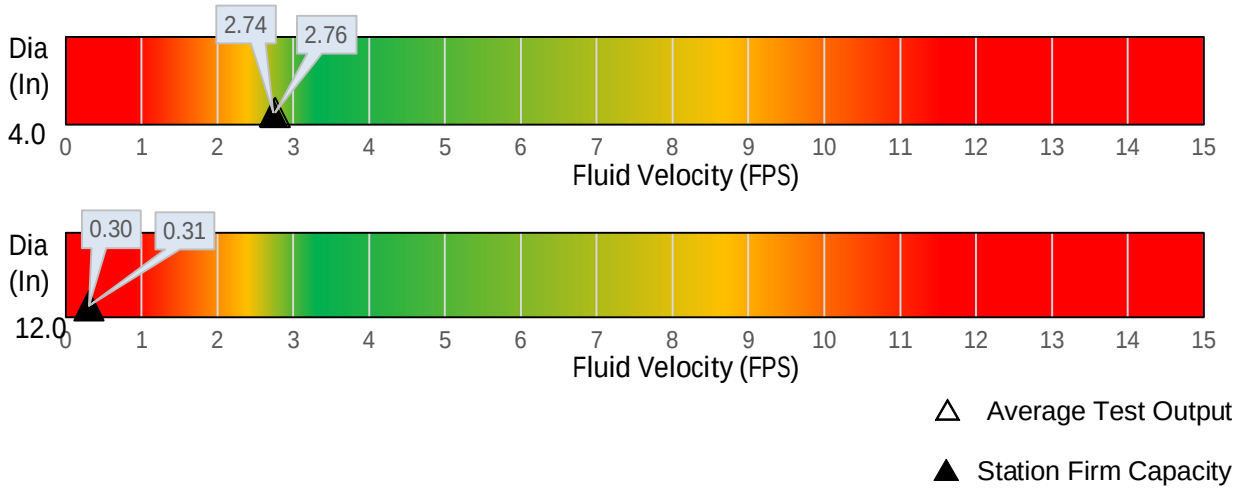


Figure 2.9 – Pipe Velocities

The maximum observed pressure at the station during the testing period is provided below in **Figure 2.10 – Maximum Observed Pressure.** System pressure capabilities vary depending upon pipe material type, pressure rating, elevation, age, condition, etc. This performance indicator is provided for reference only and is not a condition assessment of the pipeline. For systems with pressures above approximately 100 PSI, consider a more detailed analysis. See the **Attachment 1 - Graph B** for additional pressure data.

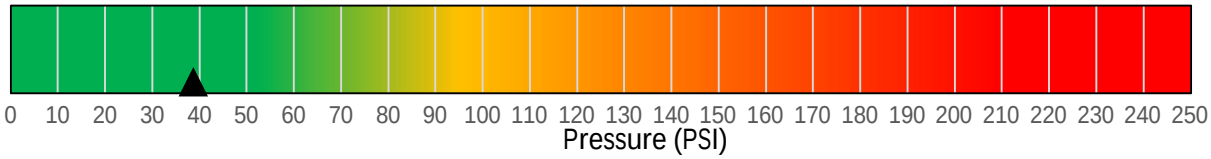


Figure 2.10 - Maximum Observed Pressure

2.5 SYSTEM PRESSURES

Figure 2.11 - Pressure Cycle shows a typical single-pump pressure cycle measured during testing. The pressure data captured for this test is limited to 2-second intervals which may not have captured the entire range of actual pressures. The complete log of pressure readings is provided in **Attachment 1 – Test Data Graphs**. For more accurate surge data, a surge monitoring device should be used to capture pressure at shorter time intervals over a longer period of time. **Table 2.8 - Further Surge-Related Actions** provides a list of recommended surge-related actions.

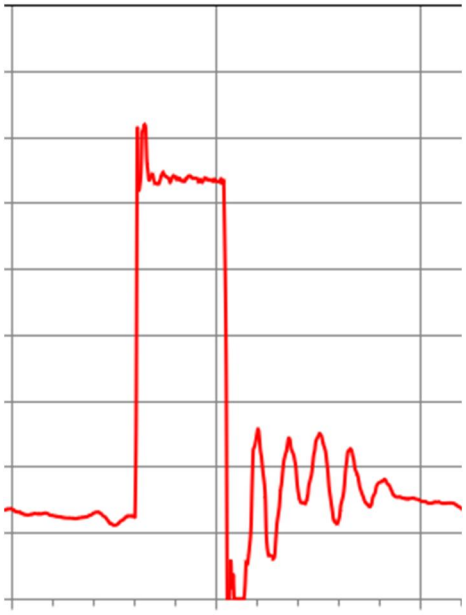


Figure 2.11 - Pressure Cycle

The pressure transducer used for measuring pressures has a range of 0 to 200 PSI. Pump startup produced an upsurge of approximately 38.5 PSI. Upon pump shut down, the observed minimum pressure was approximately 0 PSI and the maximum pressure was approximately 20 PSI creating a total observed pressure range of 38.5 PSI. It is likely that the minimum pressure produced on each pump shut down cycle was less than 0 PSI. Pressure variations greater than 100 PSI are concerning for this type of system due to potential damage to the piping system.

Further Surge Related Actions:	
	Perform extended period digital surge monitoring
	Perform calibrated surge modeling
	Revise operating scheme to reduce surge potential
	Evaluate piping system for pressure capacity and likelihood of failure
	Install physical surge mitigation strategies
✓	No further action

Table 2.8 - Further Surge-Related Actions

3 RECOMMENDATIONS

The following recommendations are a result of the findings of this evaluation and should be considered for implementation. See **Section 2 Pump Performance Tests** for pump specific recommendations. In addition to the recommendations below, this site should/ be considered for the following overall planning and budgeting activities.

3.1 OVERALL RECOMMENDATIONS

Overall Site Rating	Score	Description
	1	No recommendations currently. Monitor station for worsening conditions, perform regular O&M, reassess condition in 2-5 years.
	2	Complete recommendations listed in Section 3.2, monitor station for worsening conditions, perform regular O&M, reassess condition in 1-3 years.
	3	Station requires improvements beyond replacement of individual components. Begin planning and budgeting for a major rehabilitation. Place under regular observation until rehabilitation is complete.
	4	Station does not appear to be brought into conformance with standards without replacement. Begin planning and budgeting for a station replacement. Place under regular observation until rehabilitation is complete.

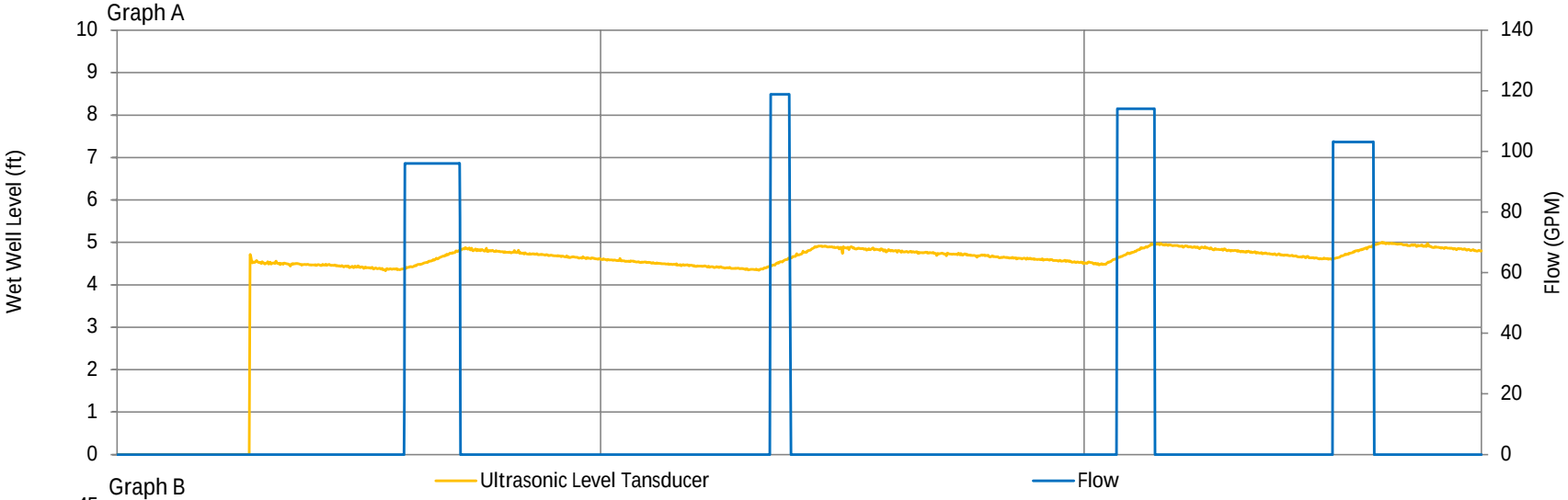
3.2 MISCELLANEOUS RECOMMENDATIONS

Pumps – Both pumps are operating to the far left of their pump curve. In future pump replacement we recommend a different pump selection that operates closer to BEP on the pump curve.

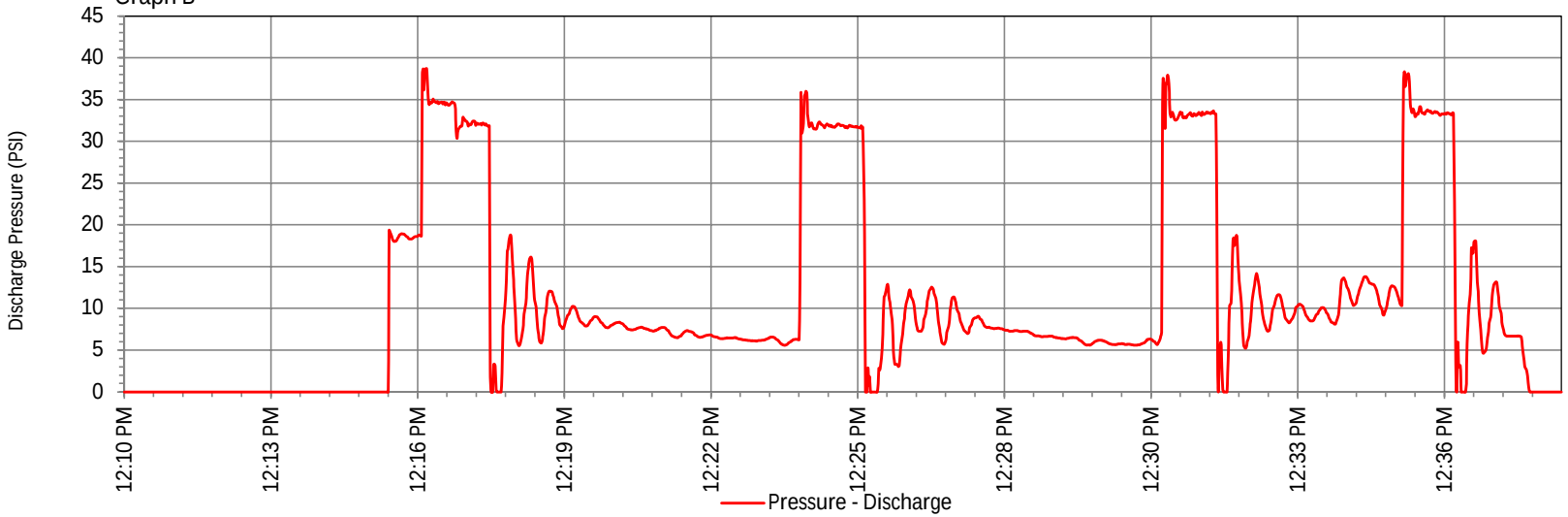
4 ATTACHMENTS

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Graph A

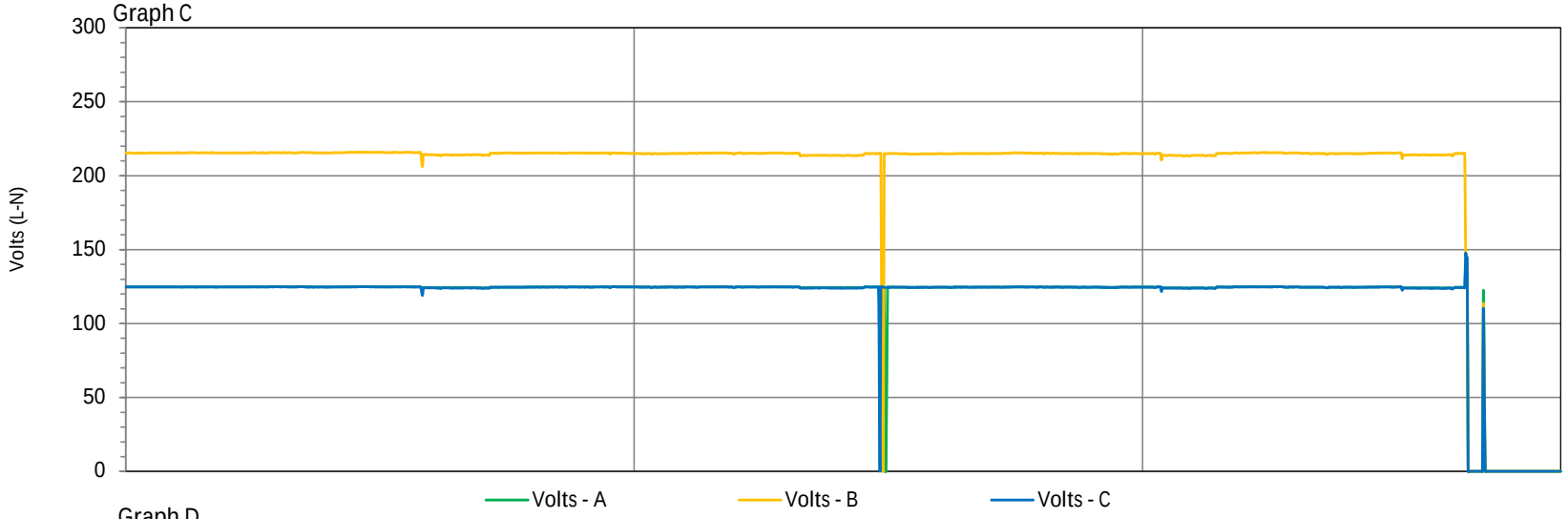


Graph B

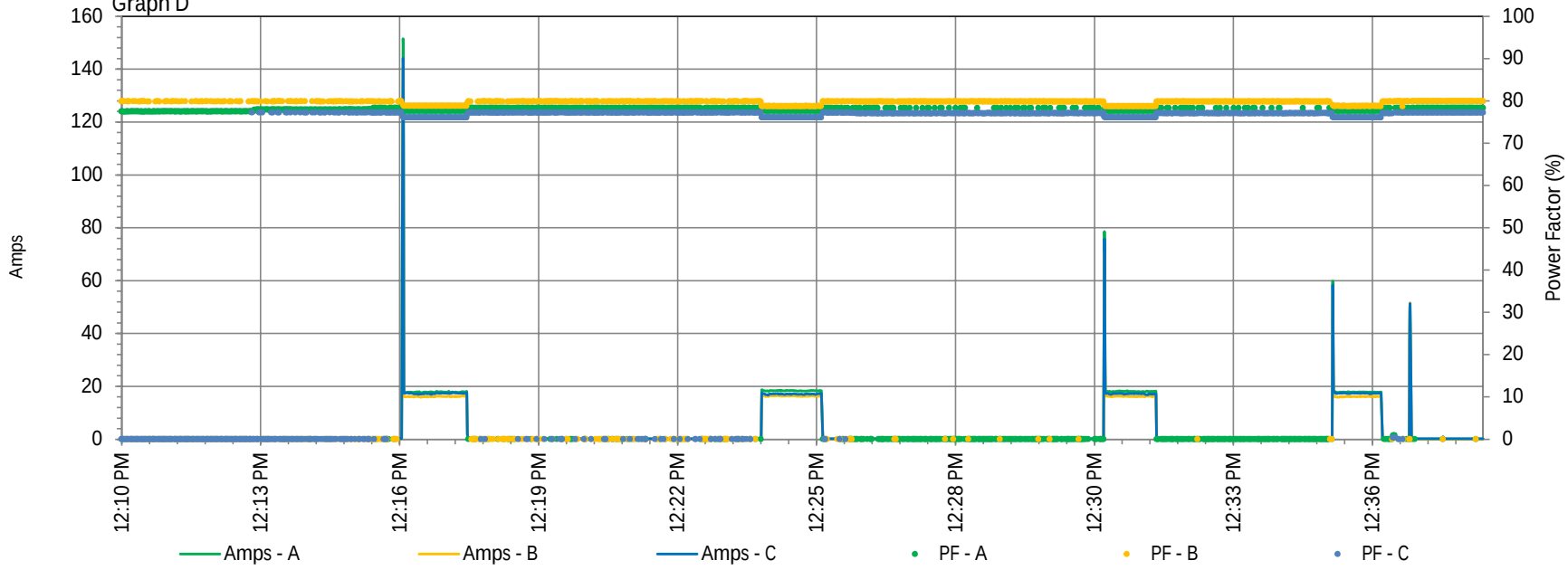


* Times shown are Eastern Standard Time

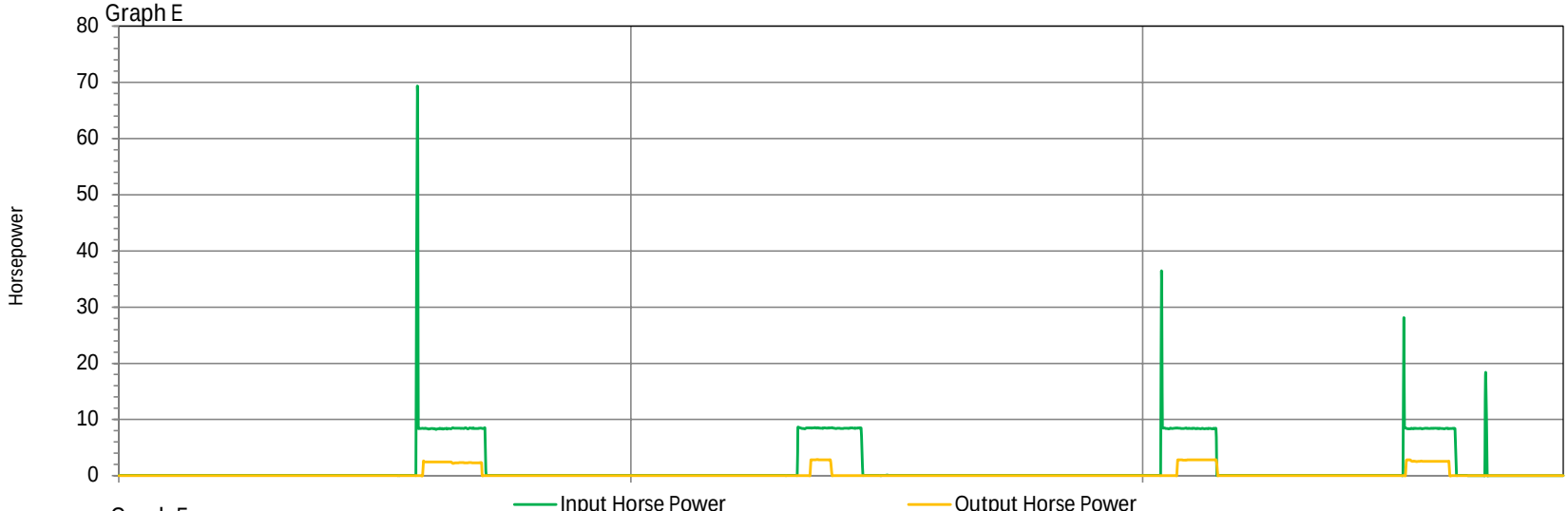
Graph C



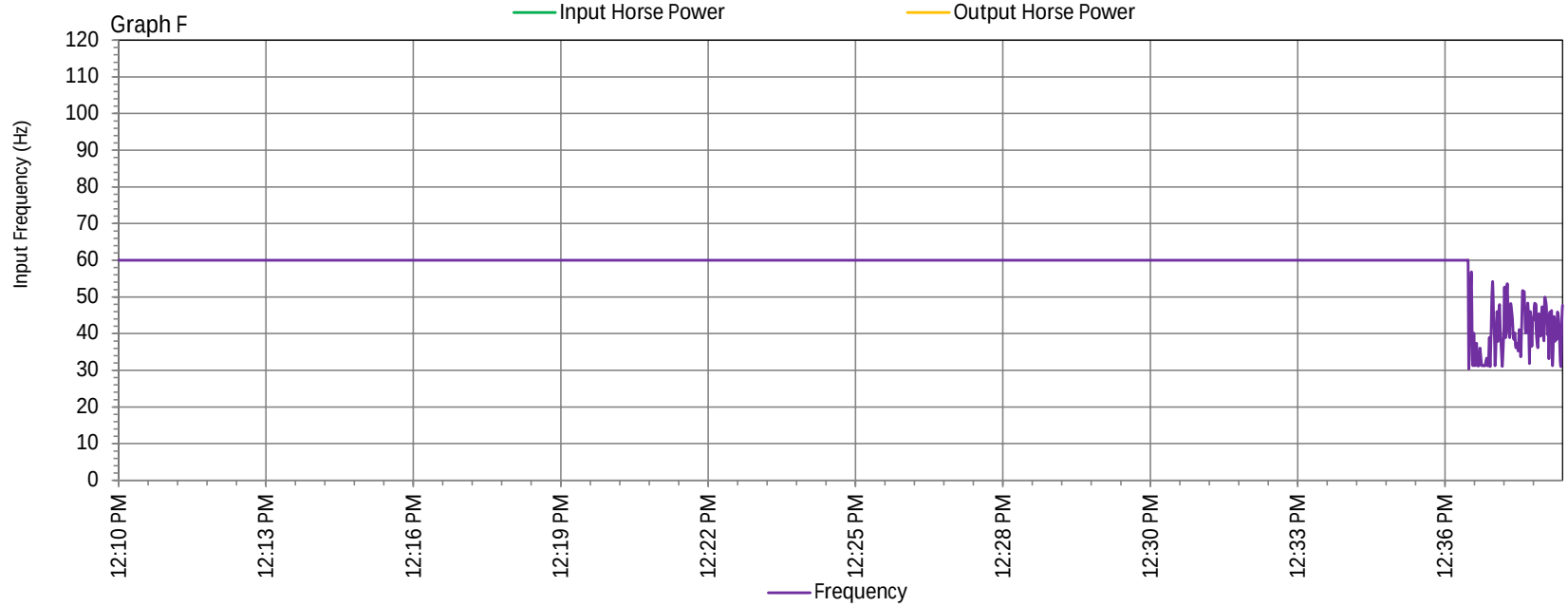
Graph D



Graph E



Graph F



NP 3127 SH 3~ Adaptive 249

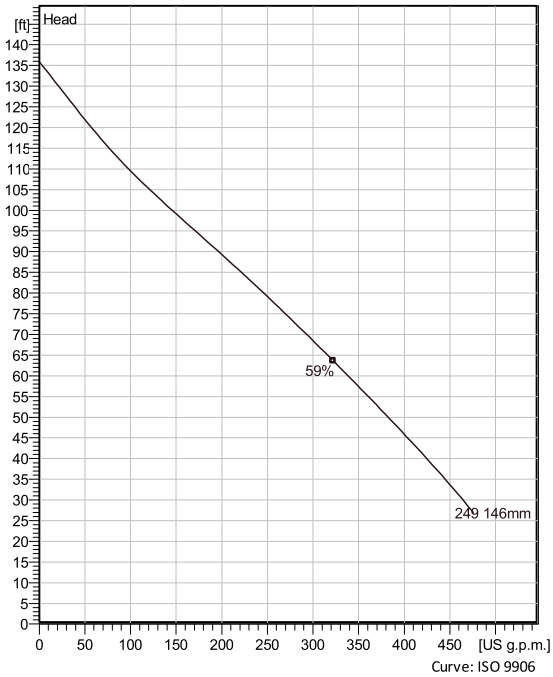
Patented self cleaning semi-open channel impeller, ideal for pumping in waste water applications. Modular based design with high adaptation grade.

FLYGT
a xylem brand

Technical specification



Curves according to: Water, pure Water, pure [100%], 39.2 °F, 62.42 lb/ft³, 1.6891E-5 ft²/s



Curve: ISO 9906

Nominal (mean) data shown. Under- and over-performance from this data should be expected due to standard manufacturing tolerances.
Please consult your local Flygt representative for performance guarantees.

Configuration

Motor number
N3127.060 21-11-2AL-W 11hp

Installation type
P - Semi permanent, Wet

Impeller diameter
146 mm

Discharge diameter
3 inch

Pump information

Impeller diameter
146 mm

Discharge diameter
3 inch

Inlet diameter
80 mm

Maximum operating speed
3495 rpm

Number of blades
2

Max. fluid temperature
40 °C

Material

Impeller
Hard-Iron ™

Stator housing material
Grey cast iron

Project	Xylect-21984330	**Created by**	Robert Simcox		
Block		**Created on**	3/12/2024	**Last update**	3/12/2024

NP 3127 SH 3~ Adaptive 249

Technical specification

Motor - General

Motor number N3127.060 21-11-2AL-W 11hp	**Phases** 3~	**Rated speed** 3495 rpm	**Rated power** 11 hp
ATEX approved No	**Number of poles** 2	**Rated current** 26 A	**Stator variant** 12
Frequency 60 Hz	**Rated voltage** 230 V	**Insulation class** H	**Type of Duty** S1
Version code 060			

Motor - Technical

Power factor - 1/1 Load 0.90	**Motor efficiency - 1/1 Load** 87.5 %	**Total moment of inertia** 0.434 lb ft²	**Starts per hour max.** 30
Power factor - 3/4 Load 0.88	**Motor efficiency - 3/4 Load** 88.2 %	**Starting current, direct starting** 221 A	
Power factor - 1/2 Load 0.82	**Motor efficiency - 1/2 Load** 87.4 %	**Starting current, star-delta** 73.7 A	

Project	Xylect-21984330	**Created by**	Robert Simcox		
Block		**Created on**	3/12/2024	**Last update**	3/12/2024

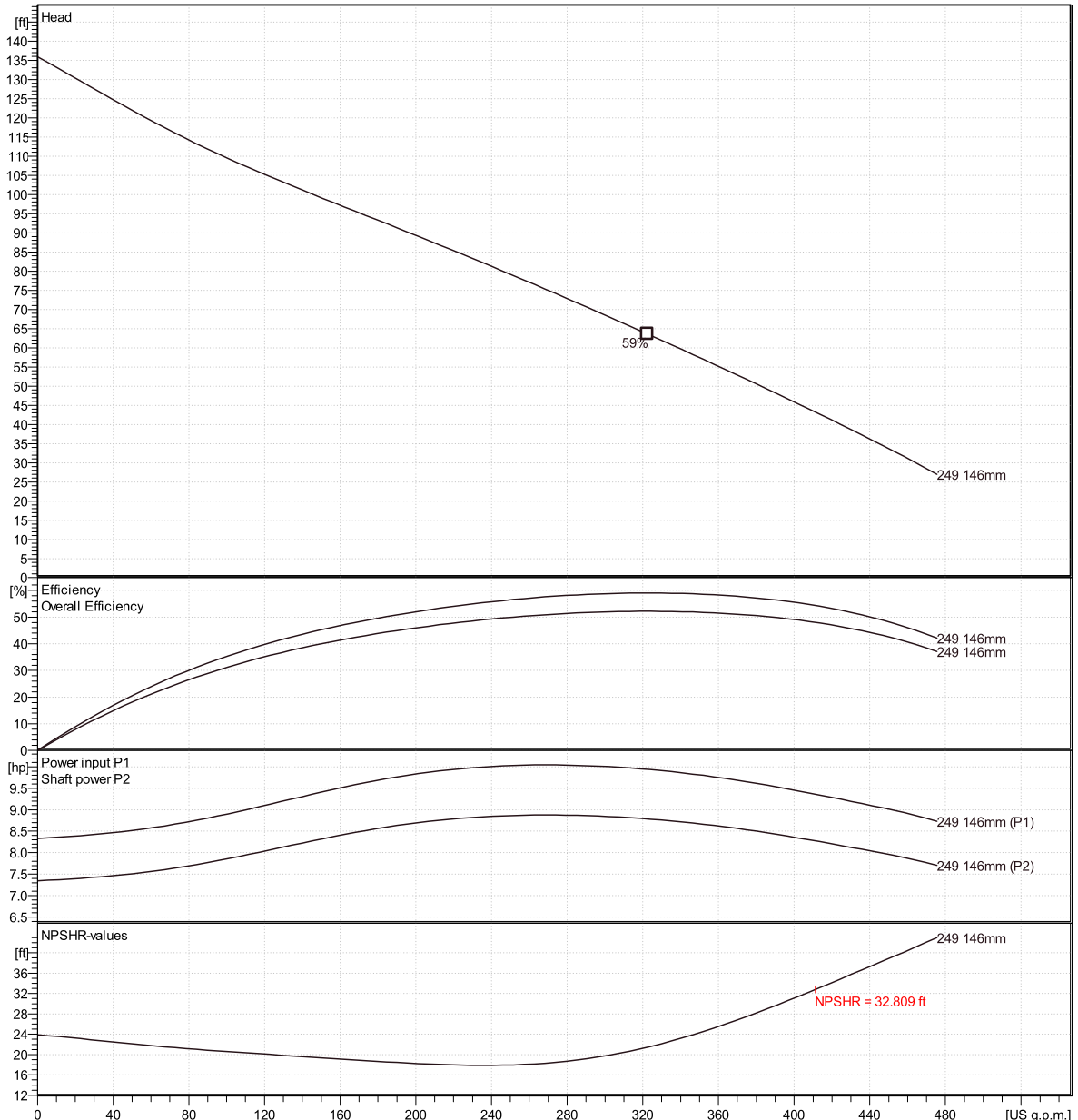
NP 3127 SH 3~ Adaptive 249

Performance curve

Duty point

Flow	Head

Curves according to: Water, pure Water, pure [100%],39.2 °F,62.42 lb/ft³,1.6891E-5 ft²/s



Nominal (mean) data shown. Under- and over-performance from this data should be expected due to standard manufacturing tolerances.
Please consult your local Flygt representative for performance guarantees.

Curve: ISO 9906

Xylect-21984330		Robert Simcox			
	Created on	3/12/2024	**Last update**	3/12/2024	

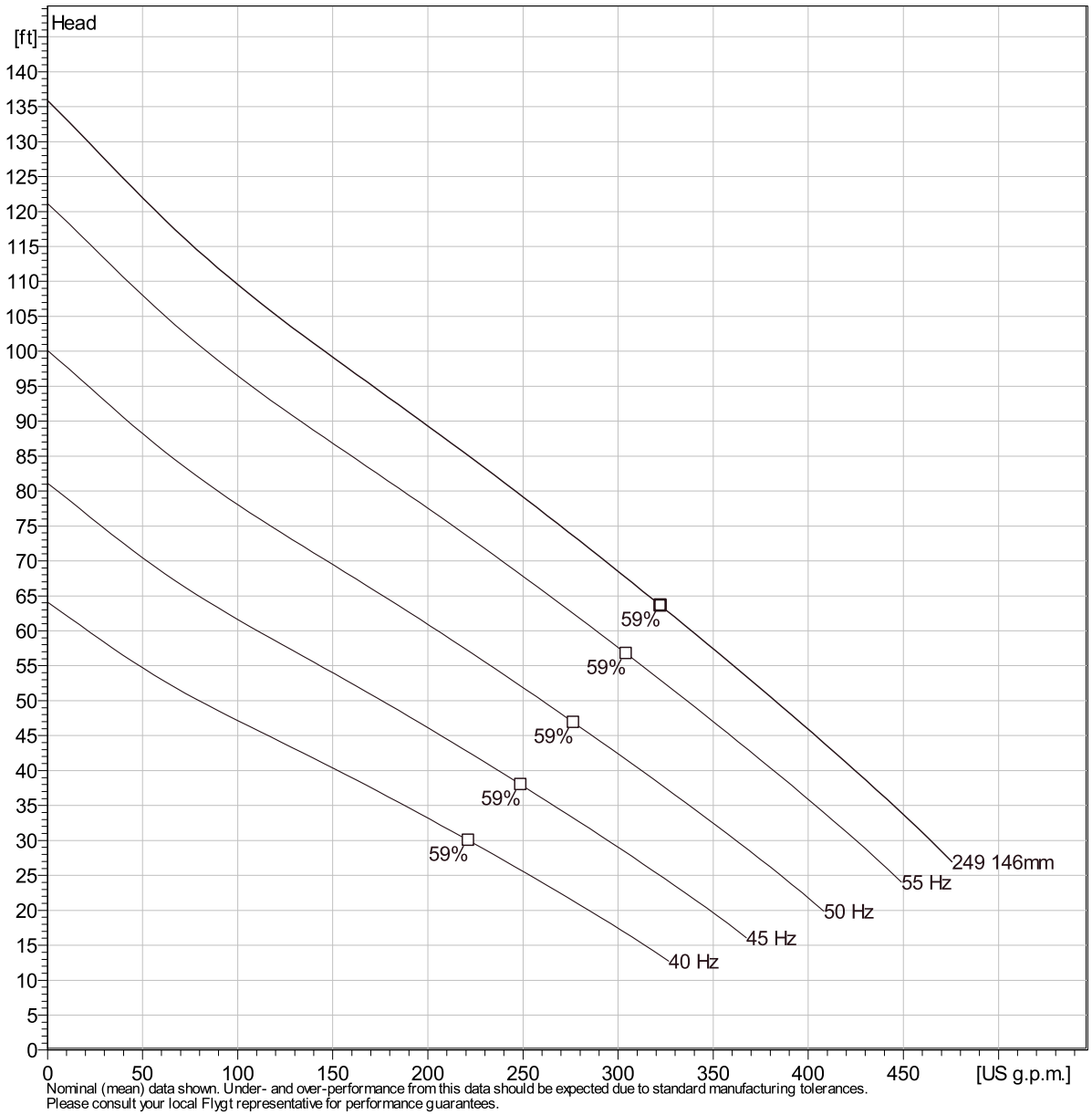
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72.0 - 2/20/2024 (Build 175)	3/5/2024 10:29 A3P3	Xylem:USA - EXT, USA - INT

NP 3127 SH 3~ Adaptive 249

Duty Analysis

FLYGT a xylem brand

Curves according to: Water, pure [100%] ; 39.2°F; 62.42lb/ft³; 1.6891E-5ft²/s



Nominal (mean) data shown. Under- and over-performance from this data should be expected due to standard manufacturing tolerances.
Please consult your local Flygt representative for performance guarantees.

Operating characteristics

Pumps / Systems	Flow	Head	Shaft power	Flow	Head	Shaft power	Hydr.eff.	Spec. Energy	NPSHre
	US g.p.m.	ft	hp	US g.p.m.	ft	hp		kWh/US MG	ft

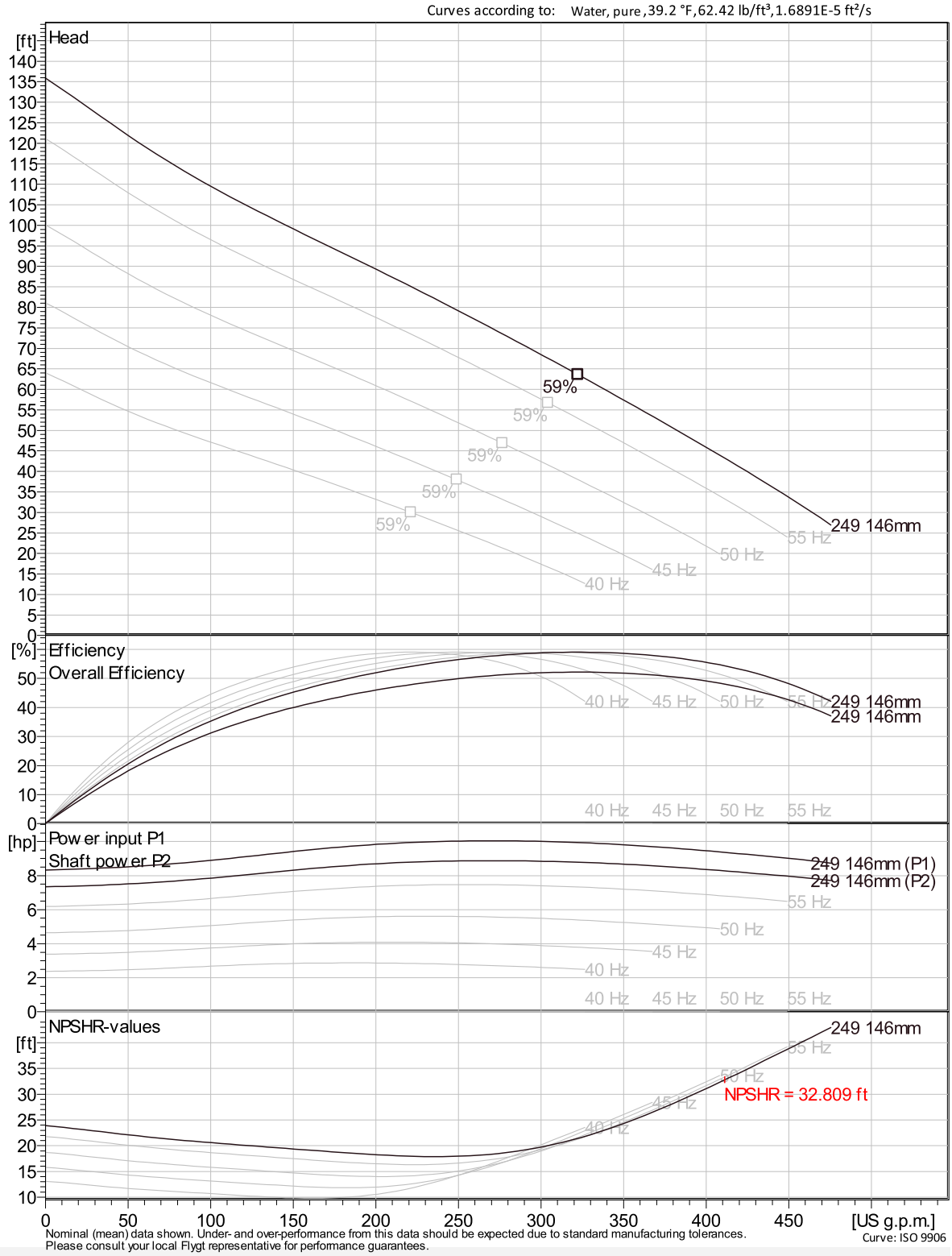
Project		**Created by**	Robert Simcox		
Block	Xylect-21984330	**Created on**	3/12/2024	**Last update**	3/12/2024

NP 3127 SH 3~ Adaptive 249

VFD Curve

FLYGT a xylem brand

Curves according to: Water, pure ,39.2 °F,62.42 lb/ft³,1.6891E-5 ft²/s



Nominal (mean) data shown. Under- and over-performance from this data should be expected due to standard manufacturing tolerances.
Please consult your local Flygt representative for performance guarantees.

Curve: ISO 9906

Project	Xylect-21984330	**Created by**	Robert Simcox		
Block		**Created on**	3/12/2024	**Last update**	3/12/2024

Program version
72.0 - 2/20/2024 (Build 175)

Data version
3/5/2024 10:29 A3P3

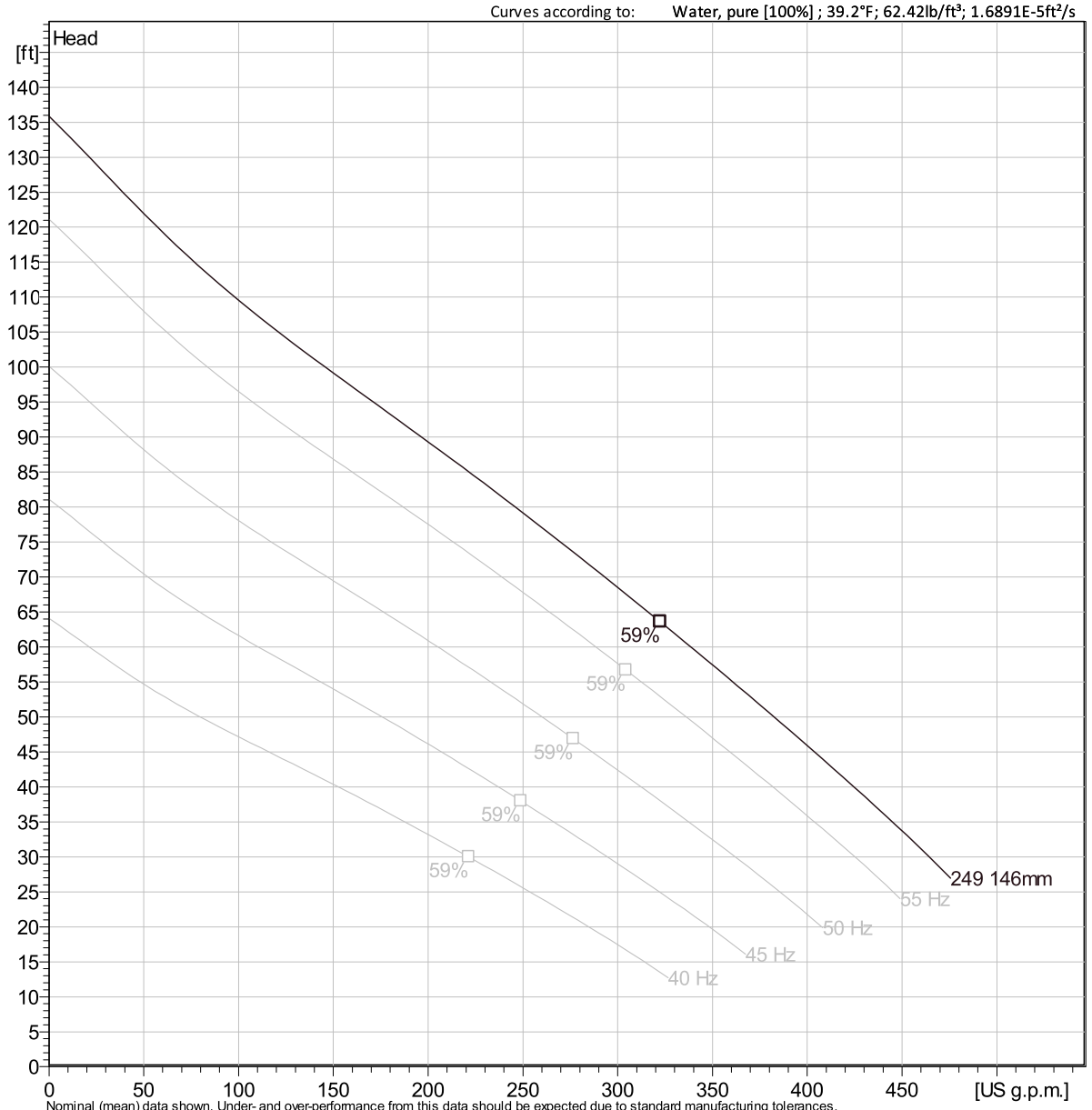
User group(s)
Xylem: USA - EXT, USA - INT

NP 3127 SH 3~ Adaptive 249

VFD Analysis

FLYGT
a xylem brand

Curves according to: Water, pure [100%] ; 39.2°F; 62.42lb/ft³; 1.6891E-5ft²/s



Nominal (mean) data shown. Under- and over-performance from this data should be expected due to standard manufacturing tolerances.
Please consult your local Flygt representative for performance guarantees.

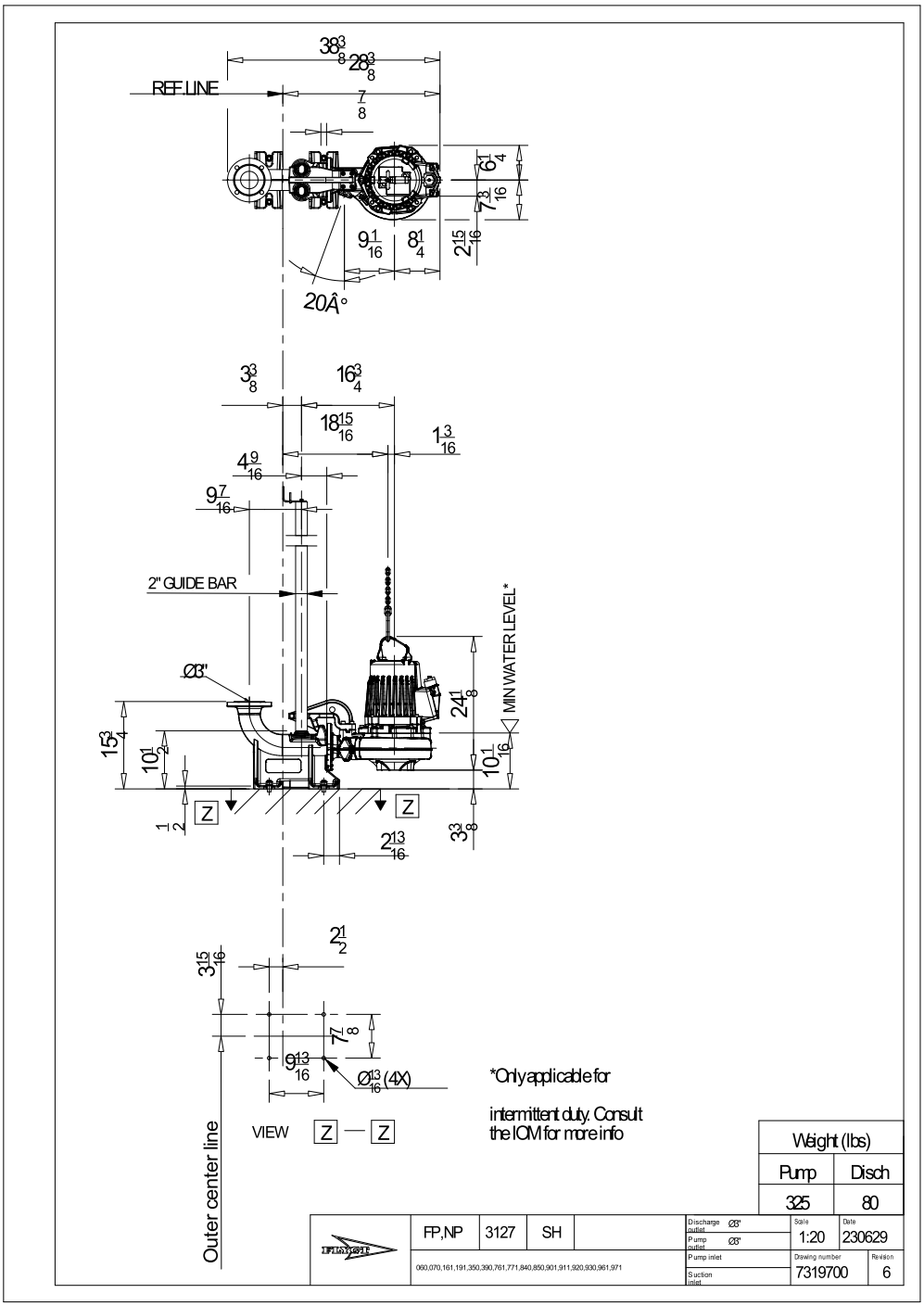
Operating Characteristics

Pumps / Systems	Frequency	Flow	Head	Shaft power	Flow	Head	Shaft power	Hydr.eff.	Specific energy	NPSHre
		US g.p.m.	ft	hp	US g.p.m.	ft	hp		kWh/US MG	ft

Project	Xylect-21984330	**Created by**	Robert Simcox		
Block		**Created on**	3/12/2024	**Last update**	3/12/2024

NP 3127 SH 3~ Adaptive 249

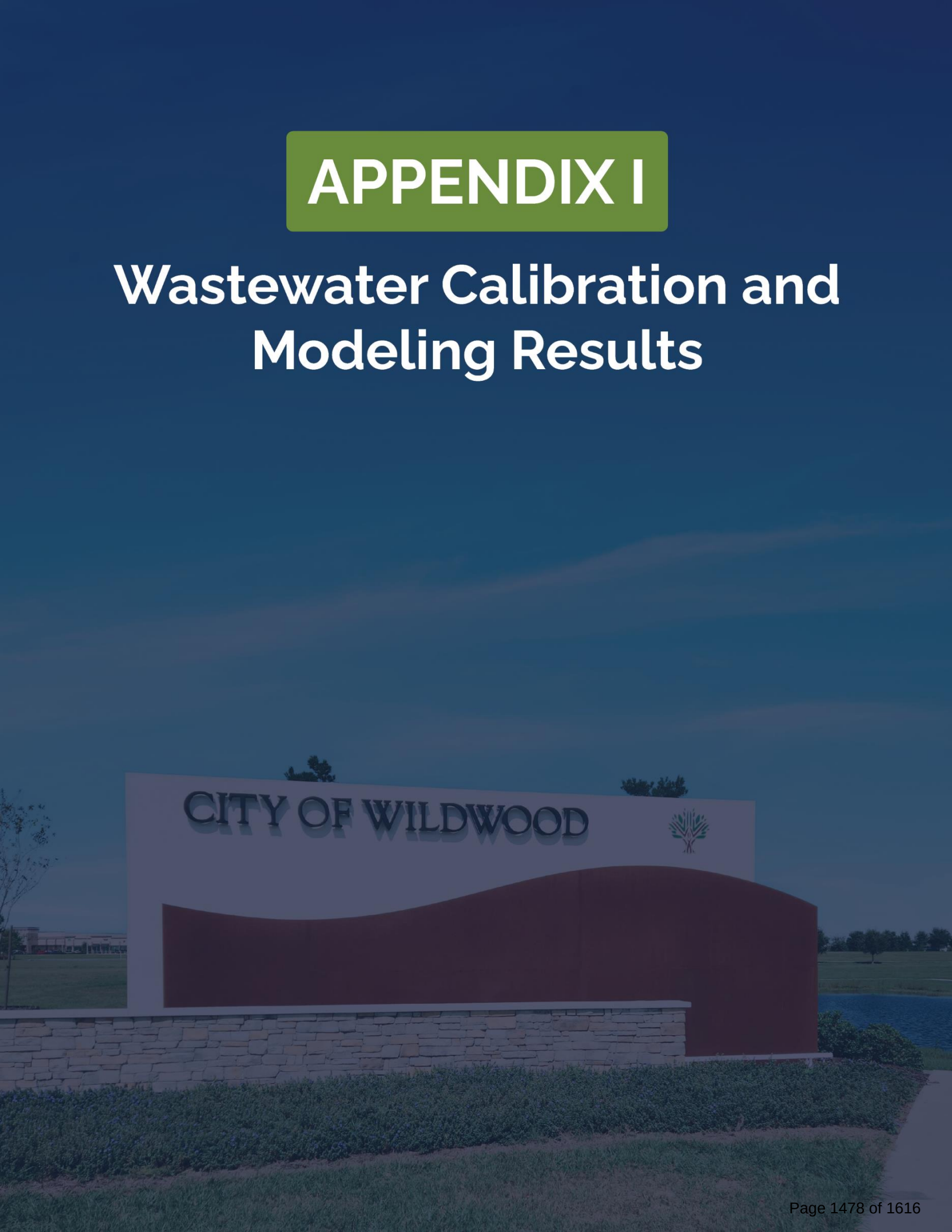
Dimensional drawing



Project	Xylect-21984330	**Created by**	Robert Simcox
Block		**Created on**	3/12/2024 **Last update** 3/12/2024

APPENDIX I

Wastewater Calibration and Modeling Results



Wildwood Lift Station Hydraulic Modeling Calibration Spreadsheet

Lift Station Number	Lift Station Name	Pump 1 - Average Pumping Rate (gpm)	Pump 1 - Average Head (ft)	Pump 2 - Average Pumping Rate (gpm)	Pump 2 - Average Head (ft)	Pump 1 Model Results (gpm)	Flow % Difference	Pump 2 Model Results (gpm)	Flow % Difference	Pump 1 Head Results (ft)	Calibrated Head % Difference	Pump 2 Head Results (ft)	Calibrated Head % Difference	Calibration Notes
1	CR 468	1174.4	93.3	1130.5	97.9	1156.7	-2%	1156.7	2%	92.2	-1%	92.2	-6%	
5	Main St N	591.0	73.1	n/a	n/a	610.7	3%	0.0	-	70.4	-4%	0.0	-	Second pump out of service at time of testing. Assumed identical operating points.
6	Peters Street	201.0	70.3	211.0	75.4	204.8	2%	218.8	4%	70.3	0%	74.5	-1%	
7	Charlotte	445.0	68.5	551.0	99.6	410.8	-8%	552.7	0%	68.1	-1%	100.0	0%	
9	Main St S	362.0	n/a	385.0	n/a	353.4	-2%	395.5	3%	55.0	-		-	Pump head conditions not listed in report. Calibrated head values were base on pump curve data.
10	Kentucky	163.0	41.5	218.0	43.0	177.6	9%	230.5	6%	41.2	-1%	42.0	-2%	
11	Prison	1446.8	118.0	1803.6	129.5	1464.6	-10%	1464.6	-10%	135.9	15%	135.9	10%	Prison lift station was calibrated based off of runtimes and previous data, and based off of the pump's average capacity.
12	Industrial	90.0	57.9	93.0	57.5	96.7	7%	99.7	7%	56.2	-3%	57.2	-1%	
14	CR 229 DD	598.0	50.3	555.0	57.1	559.1	-7%	572.0	3%	53.5	6%	55.8	-2%	
30	Trailwinds	604.0	121.4	442.0	103.6	595.3	-1%	460.7	4%	120.1	-1%	98.2	-5%	
33	American House	316.0	52.6	443.0	74.1	325.8	3%	482.0	9%	47.6	-10%	69.3	-6%	
34	Steeplechase	269.0	47.1	185.0	67.8	272.0	1%	222.1	20%	51.0	8%	45.6	-33%	Steeplechase lift statoion was calibrated based on pump 1 data, as pump 2 is likely a different pump.
35	Lakeside Landing	283.0	82.7	258.0	79.1	273.7	-3%	244.5	-5%	84.8	3%	80.9	2%	
36	CR 209	1773.0	100.9	2008.0	108.1	1629.4	-8%	1629.4	-19%	132.6	31%	132.6	23%	CR 209 lift station was calibrated using runtime data as well as the test reports.
37	Vill of Parkwood	282.0	99.1	173.0	76.4	279.2	-1%	159.5	-8%	93.8	-5%	73.6	-4%	
39	Grand Oaks Manor	359.0	77.6	298.0	76.6	344.2	-4%	316.8	6%	78.8	2%	75.3	-2%	
48	Triumph South	107.0	96.1	109.0	98.3	105.5	-1%	107.4	-1%	96.8	1%	98.7	0%	
49	Beaumont	886.0	163.8	887.0	162.1	827.8	-7%	821.4	-7%	167.0	2%	165.4	2%	
51	Oxford Pointe	342.0	53.7	352.0	51.9	371.0	8%	361.0	3%	54.2	1%	54.5	5%	

Scenario 1	Result	LS 1	LS 5	LS 6	LS 7	LS 8	LS 9	LS 10	LS 11	LS 12	LS 14	LS 18	LS 30	LS 33	LS 34	LS 35	LS 36	LS 37	LS 39	LS 48	LS 49	LS 51
Base 2024 EPS (Estimated Flows Based on Sewershed ERCs)	High Head Flow (gpm)	442.5	634.74	146.86	210.78	105.07	377.22	268.7	1167.43	102.48	549.39	343.96	404.14	266.96	185.45	486	1452.82	360.36	357.82	64.75	636.79	415.13
	High Head TDH (ft)	138.22	76.48	101.27	108.77	116.71	57.36	44.19	159.19	60.82	68.09	194.53	175.36	114.78	69.02	76.81	144.01	107.11	77.74	118.08	202.37	56.94
	Low Head Flow (gpm)	1086.56	659.97	240.31	484.12	566.92	547.39	282.36	1481.95	107.05	560.03	467.87	688.05	572.88	418.25	494.84	1585.14	510.13	517.63	123.03	864.12	599.5
	Low Head TDH (ft)	85.08	74.52	80.32	87.87	81.74	42.36	42.97	144.56	60.31	67.2	154.2	111.86	87.15	20.43	76.24	135.44	98.16	70.49	104.58	181.07	45.22
	Pump 2 ON?	No	No	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
	Maximum Velocity (fps)	2.45	4.22	6.82	5.32	3.63	6.04	1.83	3.34	2.74	3.59	5.16	4.77	6.32	4.63	3.17	4.75	3.26	5.73	3.14	9.49	6.62
	Peak Hour Flow from Sewershed	44.62891	305.3703	497.3548	321.2379	338.9262	249.764	42.07699	1129.095	80.69398	230.7443	367.1752	150.076	89.78155	131.7872	207.5002	1216.448	325.1395	39.36305	125.6144	365.2585	45.08789
	Peak Hour Flow from Runtimes	127.07	302.33	189.23	744.51	-	305.63	64.75	-	37.94	253.68	-	87.39	66.04	91.19	203.84	458.06	196.39	12.72	56.19	335.24	59.65
	Percent of Peak Hour Flow Pumped	992%	208%	30%	66%	193%	151%	639%	103%	127%	238%	171%	269%	297%	141%	234%	119%	111%	909%	52%	174%	921%

Scenario 2	Result	LS 1	LS 5	LS 6	LS 7	LS 8	LS 9	LS 10	LS 11	LS 12	LS 14	LS 18	LS 30	LS 33	LS 34	LS 35	LS 36	LS 37	LS 39	LS 48	LS 49	LS 51
Base 2024 EPS with Improvements (Estimated Flows Based on Sewershed ERCs)	High Head Flow (gpm)	442.19	633.81	431.36	341.72	104.56	375.94	268.37	1139.07	102.39	549.39	367.88	538.63	301.63	185.45	486	1577.55	360.36	357.82	64.75	366	415.13
	High Head TDH (ft)	138.24	76.55	37.61	98.8	116.75	57.48	44.22	160.53	60.83	68.09	175.98	145.15	111.73	69.02	76.81	135.93	107.11	77.74	118.08	125.47	56.94
	Low Head Flow (gpm)	1086.8	659.18	434.58	563.13	568.71	547.66	284.43	1480.87	106.71	560.03	505.74	750.08	660.06	418.25	494.84	1733.59	510.13	517.63	123.03	366	599.5
	Low Head TDH (ft)	85.06	74.58	36.89	81.77	81.6	42.33	42.79	144.61	60.34	67.2	146.02	98.1	79.02	20.43	76.24	125.83	98.16	70.49	104.58	31.62	45.22
	Pump 2 ON?	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
	Maximum Velocity (fps)	2.45	4.22	2.77	6.19	3.63	6.04	1.83	3.34	2.74	3.59	5.16	5.4	7.27	4.63	3.17	5.17	3.26	5.73	3.14	4.02	6.62
	Peak Hour Flow from Sewershed	44.62891	305.3703	497.3548	321.2379	338.9262	249.764	42.07699	1129.095	80.69398	230.7443	367.1752	150.076	89.78155	131.7872	207.5002	1216.448	325.1395	39.36305	125.6144	365.2585	45.08789
	Peak Hour Flow from Runtimes	127.07	302.33	189.23	744.51	-	305.63	64.75	-	37.94	253.68	-	87.39	66.04	91.19	203.84	458.06	196.39	12.72	56.19	335.24	59.65
	Percent of Peak Hour Flow Pumped	991%	208%	87%	106%	31%	151%	638%	101%	127%	238%	100%	359%	336%	141%	234%	130%	111%	909%	52%	100%	921%

Scenario 3	Result	LS 1	LS 5	LS 6	LS 7	LS 8	LS 9	LS 10	LS 11	LS 12	LS 14	LS 18	LS 30	LS 33	LS 34	LS 35	LS 36	LS 37	LS 39	LS 48	LS 49	LS 51
Base 2025 EPS (Estimated Flows Based on Sewershed ERCs)	High Head Flow (gpm)	379.11	748.42	146.86	225.69	841.19	557.82	335.1	1264.67	251.98	549.07	300.27	431.56	0.48	146.62	276.99	1527.49	286.11	363.87	12.52	607.95	370.25
	High Head TDH (ft)	142.33	67.62	101.27	107.64	201.37	41.43	38.4	154.62	45.84	68.12	190.88	169.18	136.35	77.04	90.45	139.17	111.93	83.04	131.01	201.09	59.84
	Low Head Flow (gpm)	1199.73	819.37	240.31	563.52	1080.2	787.22	509.08	1626.86	257.73	553.61	505.71	749.82	660.16	419.92	496.5	1733.55	508.92	516.58	388.91	927.82	599.19
	Low Head TDH (ft)	74.04	62.06	80.32	81.74	155.47	20.74	24.44	137.93	45.32	67.74	146.02	98.16	79.01	20.08	76.14	125.83	98.22	70.58	46.91	175.93	45.24
	Pump 2 ON?	No	No	Yes	Yes	No	No	No	No	No	No	No	No	Yes	No	No	No	No	No	Yes	No	No
	Maximum Velocity (fps)	2.7	5.23	6.82	6.19	6.9	8.67	7.01	3.65	6.59	3.59	5.55	5.2	7.73	4.63	3.17	5.18	3.26	5.73	2.49	10.19	6.62
	Peak Hour Flow from Sewershed	46.79994	479.4819	618.411	388.0183	358.3579	419.7693	50.52279	1337.495	98.72114	276.2327	523.871	467.3689	470.435	302.7061	229.4916	1493.276	361.5496	47.77771	169.5514	578.1492	116.2181
	Peak Hour Flow from Runtimes	127.07	302.33	189.23	744.51	-	305.63	64.75	-	37.94	253.68	-	87.39	66.04	91.19	203.84	458.06	196.39	12.72	56.19	335.24	59.65
	Percent of Peak Hour Flow Pumped	810%	156%	24%	58%	235%	133%	663%	95%	255%	199%	57%	92%	0%	48%	121%	102%	79%	762%	7%	105%	319%

Scenario 4	Result	LS 1	LS 5	LS 6	LS 7	LS 8	LS 9	LS 10	LS 11	LS 12	LS 14	LS 18	LS 30	LS 33	LS 34	LS 35	LS 36	LS 37	LS 39	LS 48	LS 49	LS 51
Base 2025 EPS Imps 1-3 (Estimated Flows Based on Sewershed ERCs)	High Head Flow (gpm)	379.3	746.88	431.87	500	845.36	552.87	334.35	1264.67	251.06	549.07	310.33	447.71	33.16	145.03	275.86	1858.01	288.26	363.24	9.08	366	370.3
	High Head TDH (ft)	142.32	67.74	37.5	155.81	200.57	41.87	38.47	154.62	45.93	68.12	188.65	165.55	134.1	77.37	90.53	117.78	111.78	83.09	131.94	160.89	59.84
	Low Head Flow (gpm)	1200.15	819.09	434.87	500	1080.21	786.97	511.47	1626.86	257.48	553.65	505.74	750.42	660.33	419.54	496.69	1874.97	509.51	517.63	141.41	366	600.59
	Low Head TDH (ft)	74	62.09	36.83	66.65	155.46	20.76	24.26	137.93	45.34	67.73	146.02	98.02	79	20.16	76.12	116.68	98.19	70.49	100.42	41.58	45.15
	Pump 2 ON?	No	No	No	No	No	No	No	No	No	No	No	No	Yes	No	No	No	No	No	Yes	No	No
	Maximum Velocity (fps)	2.7	5.23	2.79	5.49	6.9	8.67	7.01	3.65	6.59	3.59	5.72	5.4	7.7	4.62	3.17	5.6	3.26	5.73	3.81	4.02	6.62
	Peak Hour Flow from Sewershed	46.79994	479.4819	618.411	388.0183	358.3579	419.7693	50.52279	1337.495	98.72114	276.2327	523.871	467.3689	470.435	302.7061	229.4916	1493.276	361.5496	47.77771	169.5514	578.1492	116.2181
	Peak Hour Flow from Runtimes	127.07	302.33	189.23	744.51	-	305.63	64.75	-	37.94	253.68	-	87.39	66.04	91.19	203.84	458.06	196.39	12.72	56.19	335.24	59.65
	Percent of Peak Hour Flow Pumped	810%	156%	70%	129%	236%	132%	662%	95%	254%	199%	59%	96%	7%	48%	120%	124%	80%	760%	5%	63%	319%

Scenario 5	Result	LS 1	LS 5	LS 6	LS 7	LS 8	LS 9	LS 10	LS 11	LS 12	LS 14	LS 18	LS 30	LS 33	LS 34	LS 35	LS 36	LS 37	LS 39	LS 48	LS 49	LS 51
Base 2025 EPS Imp 1-4 (Estimated Flows Based on Sewershed ERCs)	High Head Flow (gpm)	379.01	810.56	430.99	417.61	846.9	556.68	312.1	1264.67	251.35	549.07	346.34	526.24	199.42	148.03	277.76	1858.23	291.04	363.76	55.7	366	193.61
	High Head TDH (ft)	142.33	62.75	37.69	92.99	200.28	41.53	40.37	154.62	45.9	68.12	180.71	147.93	120.61	76.75	90.4	117.77	111.6	83.05	120.24	136.39	71.57
	Low Head Flow (gpm)	1200.62	819.35	434.59	596.11	1080.19	787.06	511.04	1626.86	257.86	553.85	520.73	779.71	698.61	419.11	495.41	1872.68	510.28	518.33	147.98	366	598.77
	Low Head TDH (ft)	73.95	62.07	36.89	79.22	155.47	20.75	24.29	137.93	45.31	67.72	142.79	91.54	75.4	20.25	76.21	116.83	98.15	70.43	98.94	31.74	45.27
	Pump 2 ON?	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
	Maximum Velocity (fps)	2.7	5.23	2.77	4.66	6.9	8.67	7.49	3.65	6.59	3.59	5.72	5.2	7.7	4.63	3.17	5.6	3.26	5.73	3.78	4.02	6.62
	Peak Hour Flow from Sewershed	46.79994	479.4819	618.411	388.0183	358.3579	419.7693	50.52279	1337.495	98.72114	276.2327	523.871	467.3689	470.435	302.7061	229.4916	1493.276	361.5496	47.77771	169.5514	578.1492	116.2181
	Peak Hour Flow from Runtimes	127.07	302.33	189.23	744.51	-	305.63	64.75	-	37.94	253.68	-	87.39	66.04	91.19	203.84	458.06	196.39	12.72	56.19	335.24	59.65
	Percent of Peak Hour Flow Pumped	810%	169%	70%	108%	236%	133%	618%	95%	255%	199%	66%	113%	42%	49%	121%	124%	80%	761%	33%	63%	167%

	Result	LS 1	LS 5	LS 6	LS 7	LS 8	LS 9	LS 10	LS 11	LS 12	LS 14	LS 18	LS 30	LS 33	LS 34	LS 35	LS 36	LS 37	LS 39	LS 48	LS 49	LS 51
Base 2030 EPS (Estimated Flows Based on Sewershed ERCs)	High Head Flow (gpm)	548.71	749.92	431.22	115.2	859.89	531.16	340.28	1226.7	248.86	515.49	177.08	379.25	15.46	103.21	165.79	771.26	225.51	315.4	5.26	539.49	273.73
	High Head TDH (ft)	130.8	67.5	37.64	115.97	197.79	43.8	37.97	156.4	46.13	70.94	218.52	180.98	135.38	85.96	98.06	188.26	116.13	87.07	132.99	206.22	66.18
	Low Head Flow (gpm)	1198.76	819.16	434.85	559.57	1078.97	784.56	511.42	1606.33	257.47	546.45	503.66	745.7	654	407.67	456.05	1707.99	492.48	493.28	337.71	922.1	580.73
	Low Head TDH (ft)	74.14	62.08	36.83	82.05	155.7	20.98	24.26	138.37	45.35	68.34	146.47	99.07	79.59	22.65	78.72	127.49	99.17	72.46	57.71	176.39	46.4
	Pump 2 ON?	No	No	No	Yes	No	No	No	No	No	No	Yes	No	Yes	No	No	No	No	No	Yes	No	No
	Maximum Velocity (fps)	2.69	5.23	2.78	6.15	6.89	8.65	7.01	3.61	6.59	3.53	5.53	5.17	8.31	4.5	3	5.26	3.18	5.45	8.62	10.14	6.41
	Peak Hour Flow from Sewershed	47.9	505.7	665.8	409.3	367.7	439.6	53.8	1368.5	107.3	484.3	123.6053	501.2	555.6	334.2	238.9	1596.5	394.6	81.1	230.6	591.8	119.0
	Peak Hour Flow from Runtimes	127.07	302.33	189.23	744.51		305.63	64.75	-	37.94	253.68	-	87.39	66.04	91.19	203.84	458.06	196.39	12.72	56.19	335.24	59.65
	Percent of Peak Hour Flow Pumped	1147%	148%	65%	28%	1433%	121%	632%	90%	232%	106%	32%	76%	3%	31%	69%	48%	57%	389%	2%	91%	230%

Scenario 6	Result	LS 1	LS 5	LS 6	LS 7	LS 8	LS 9	LS 10	LS 11	LS 12	LS 14	LS 18	LS 30	LS 33	LS 34	LS 35	LS 36	LS 37	LS 39	LS 48	LS 49	LS 51
Base 2030 EPS Imp 1-4 (Estimated Flows Based on Sewershed ERCs)	High Head Flow (gpm)	562.23	749.69	431.12	382.34	858.42	525.45	340.44	1226.34	249.01	515.42	215.64	511.57	166.53	116.47	127.75	1647.82	301.87	313.05	27.3	366	311.35
	High Head TDH (ft)	129.81	67.52	37.67	95.69	198.07	44.31	37.95	156.42	46.12	70.95	209.78	151.21	123.39	83.24	100.76	131.38	110.88	87.26	127.2	141.02	63.69
	Low Head Flow (gpm)	570.13	819.16	434.86	594.39	1079.55	783.09	511.86	1609.07	257.86	547.33	519.08	778.52	691.6	407.54	459.21	1853.57	572.86	493.04	146.52	366	575.74
	Low Head TDH (ft)	129.22	62.08	36.83	79.36	155.59	21.11	24.23	138.74	45.31	68.26	143.14	91.8	76.06	22.68	78.52	118.07	94.63	72.48	99.27	32.25	46.72
	Pump 2 ON?	No	No	No	No	No	No	No	No	No	No	Yes	No	No	No	No	No	No	No	Yes	No	No
	Maximum Velocity (fps)	2.69	5.23	2.78	6.53	6.89	8.65	7.01	3.61	6.59	3.53	6.51	5.39	7.68	4.5	3	5.55	3.68	5.49	4.11	4.02	6.42
	Peak Hour Flow from Sewershed	47.9	505.7	665.8	409.3	367.7	439.6	53.8	1368.5	107.3	484.3	123.6053	501.2	555.6	334.2	238.9	1596.5	394.6	81.1	230.6	591.8	119.0
	Peak Hour Flow from Runtimes	127.07	302.33	189.23	744.51	-	305.63	64.75	-	37.94	253.68	-	87.39	66.04	91.19	203.84	458.06	196.39	12.72	56.19	335.24	59.65
	Percent of Peak Hour Flow Pumped	1175%	148%	65%	93%	1431%	120%	632%	90%	232%	106%	174%	102%	30%	35%	53%	103%	76%	386%	12%	62%	262%

Scenario 7	Result	LS 1	LS 5	LS 6	LS 7	LS 8	LS 9	LS 10	LS 11	LS 12	LS 14	LS 18	LS 30	LS 33	LS 34	LS 35	LS 36	LS 37	LS 39	LS 48	LS 49	LS 51
Base 2030 EPS Imp 1-6A (Estimated Flows Based on Sewershed ERCs)	High Head Flow (gpm)	562.23	749.69	430.8	311.63	858.42	525.45	340.44	1226.34	249.01	1059.02	414.51	690.47	455.68	116.47	127.75	1644.53	301.87	313.05	114.74	366	311.35
	High Head TDH (ft)	129.81	67.52	37.74	101.1	198.07	44.31	37.95	156.42	46.12	25.38	165.79	111.32	97.92	83.24	100.76	131.59	110.88	87.26	106.46	81.53	63.69
	Low Head Flow (gpm)	570.13	819.16	434.81	593.8	1079.55	783.09	511.86	1609.07	257.86	1096.65	495.53	761.03	658.73	407.54	459.21	1852.34	572.86	493.04	146.99	366	575.74
	Low Head TDH (ft)	129.22	62.08	36.84	79.4	155.59	21.11	24.23	138.74	45.31	22.24	148.22	95.68	79.15	22.68	78.52	118.15	94.63	72.48	99.16	52.62	46.72
	Pump 2 ON?	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
	Maximum Velocity (fps)	2.69	5.23	2.78	6.53	6.89	8.65	7.01	3.61	6.59	1.9	5.44	5.28	7.26	4.5	3	5.55	3.68	5.49	3.77	4.02	6.42
	Peak Hour Flow from Sewershed	47.9	505.7	665.8	409.3	367.7	439.6	53.8	1368.5	107.3	484.3	123.6053	501.2	555.6	334.2	238.9	1596.5	394.6	81.1	230.6	591.8	119.0
	Peak Hour Flow from Runtimes	127.07	302.33	189.23	744.51	-	305.63	64.75	-	37.94	253.68	-	87.39	66.04	91.19	203.84	458.06	196.39	12.72	56.19	335.24	59.65
	Percent of Peak Hour Flow Pumped	1175%	148%	65%	76%	233%	120%	632%	90%	232%	219%	335%	138%	82%	35%	53%	103%	76%	386%	50%	62%	262%

Scenario 8	Result	LS 1	LS 5	LS 6	LS 7	LS 8	LS 9	LS 10	LS 11	LS 12	LS 14	LS 18	LS 30	LS 33	LS 34	LS 35	LS 36	LS 37	LS 39	LS 48	LS 49	LS 51
Base 2030 EPS Imp 1-6B (Estimated Flows Based on Sewershed ERCs)	High Head Flow (gpm)	562.23	749.69	430.8	382.56	858.42	525.45	340.44	1226.34	249.01	1059.02	195.71	477.09	300	116.47	127.75	1644.53	301.87	313.05	150	366	311.35
	High Head TDH (ft)	129.81	67.52	37.74	95.68	198.07	44.31	37.95	156.42	46.12	25.38	214.29	158.94	147.76	83.24	100.76	131.59	110.88	87.26	236.2	151.52	63.69
	Low Head Flow (gpm)	570.13	819.16	434.81	592.91	1079.55	783.09	511.86	1609.07	257.86	1096.65	519.23	777.12	300	407.54	459.21	1852.34	572.86	493.04	150	366	575.74
	Low Head TDH (ft)	129.22	62.08	36.84	79.47	155.59	21.11	24.23	138.74	45.31	22.24	143.11	92.11	12.22	22.68	78.52	118.15	94.63	72.48	103.63	32.26	46.72
	Pump 2 ON?	No	No	No	No	No	No	No	No	No	No	Yes	No	No	No	No	No	No	No	No	No	No
	Maximum Velocity (fps)	2.69	5.23	2.78	6.53	6.89	8.65	7.01	3.61	6.59	1.9	5.44	5.4	7.26	4.5	3	5.55	3.68	5.49	3.77	4.02	6.42
	Peak Hour Flow from Sewershed	47.9	505.7	665.8	409.3	367.7	439.6	53.8	1368.5	107.3	484.3	123.6053	501.2	555.6	334.2	238.9	1596.5	394.6	81.1	230.6	591.8	119.0
	Peak Hour Flow from Runtimes	127.07	302.33	189.23	744.51	-	305.63	64.75	-	37.94	253.68	-	87.39	66.04	91.19	203.84	458.06	196.39	12.72	56.19	335.24	59.65
	Percent of Peak Hour Flow Pumped	1175%	148%	65%	93%	233%	120%	632%	90%	232%	219%	158%	95%	54%	35%	53%	103%	76%	386%	65%	62%	262%

Scenario 9	Result	LS 1	LS 5	LS 6	LS 7	LS 8	LS 9	LS 10	LS 11	LS 12	LS 14	LS 18	LS 30	LS 33	LS 34	LS 35	LS 36	LS 37	LS 39	LS 48	LS 49	LS 51
Base 2030 EPS Imp 1-6C (Estimated Flows Based on Sewershed ERCs)	High Head Flow (gpm)	562.23	749.69	430.8	386.85	858.42	525.45	340.44	1226.34	249.01	1059.02	213.98	519.2	158.85	116.47	127.75	1644.53	301.87	313.05	212.44	366	311.35
	High Head TDH (ft)	129.81	67.52	37.74	95.35	198.07	44.31	37.95	156.42	46.12	25.38	210.16	149.5	124.04	83.24	100.76	131.59	110.88	87.26	84.67	138.91	63.69
	Low Head Flow (gpm)	570.13	819.16	434.81	592.91	1079.55	783.09	511.86	1609.07	257.86	1096.65	519.23	779.07	696.55	407.54	459.21	1852.34	572.86	493.04	214.48	366	575.74
	Low Head TDH (ft)	129.22	62.08	36.84	79.47	155.59	21.11	24.23	138.74	45.31	22.24	143.11	91.68	75.59	22.68	78.52	118.15	94.63	72.48	84.22	31.93	46.72
	Pump 2 ON?	No	No	No	No	No	No	No	No	No	No	Yes	No	No	No	No	No	No	No	No	No	No
	Maximum Velocity (fps)	2.69	5.23	2.78	6.53	6.89	8.65	7.01	3.61	6.59	1.9	5.44	5.4	7.69	4.5	3	5.55	3.68	5.49	5.82	4.02	6.42
	Peak Hour Flow from Sewershed	47.9	505.7	665.8	409.3	367.7	439.6	53.8	1368.5	107.3	484.3	123.6053	501.2	555.6	334.2	238.9	1596.5	394.6	81.1	230.6	591.8	119.0
	Peak Hour Flow from Runtimes	127.07	302.33	189.23	744.51	-	305.63	64.75	-	37.94	253.68	-	87.39	66.04	91.19	203.84	458.06	196.39	12.72	56.19	335.24	59.65
	Percent of Peak Hour Flow Pumped	1175%	148%	65%	95%	233%	120%	632%	90%	232%	219%	173%	104%	29%	35%	53%	103%	76%	386%	92%	62%	262%

	Result	LS 1	LS 5	LS 6	LS 7	LS 8	LS 9	LS 10	LS 11	LS 12	LS 14	LS 18	LS 30	LS 33	LS 34	LS 35	LS 36	LS 37	LS 39	LS 48	LS 49	LS 51
Base 2035 EPS (Estimated Flows Based on Sewershed ERCs)	High Head Flow (gpm)	370.59	745.73	321.36	77.92	843.75	516.2	332.7	1044.72	249.31	511.22	177.48	361.31	0.51	89.66	79	762.55	244.56	260.19	1.96	518.18	306.48
	High Head TDH (ft)	142.86	67.83	62.19	118.74	200.88	45.13	38.61	165	46.09	71.3	218.43	185.04	136.35	88.73	104.33	188.83	114.78	91.7	133.95	207.8	64.01
	Low Head Flow (gpm)	407.43	819.12	437.55	558.81	1078.91	784.87	509.77	1607.88	257.8	548.3	503	745.86	635.42	402.25	451.27	1697.89	493.4	488.3	384.22	922.27	541.06
	Low Head TDH (ft)	140.52	62.08	36.23	82.11	155.72	20.95	24.39	138.8	45.32	68.18	146.61	99.03	79.64	23.79	79.03	128.14	99.12	72.86	47.89	176.38	48.9
	Pump 2 ON?	No	No	Yes	Yes	No	No	No	No	No	No	Yes	No	Yes	Yes	No	Yes	No	No	Yes	No	No
	Maximum Velocity (fps)	2.69	5.23	4.15	6.14	6.89	8.65	3.27	3.61	6.59	3.52	5.53	5.17	8.4	3.74	2.97	5.25	3.18	5.47	2.49	10.13	6.44
	Peak Hour Flow from Sewershed	48.9	541.7	731.3	437.1	377.9	454.5	58.4	1401.5	120.1	511.8	786.1755	549.7	563.9	340.6	255.8	1647.3	409.5	82.5	243.4	608.1	122.6
	Peak Hour Flow from Runtimes	127.07	302.33	189.23	744.51	-	305.63	64.75	-	37.94	253.68	-	87.39	66.04	91.19	203.84	458.06	196.39	12.72	56.19	335.24	59.65
	Percent of Peak Hour Flow Pumped	757%	138%	44%	18%	1360%	114%	569%	75%	208%	100%	30%	66%	0%	34%	31%	46%	60%	315%	1%	85%	250%

Scenario 10	Result	LS 1	LS 5	LS 6	LS 7	LS 8	LS 9	LS 10	LS 11	LS 12	LS 14	LS 18	LS 30	LS 33	LS 34	LS 35	LS 36	LS 37	LS 39	LS 48	LS 49	LS 51
Base 2035 EPS Imps 1-6A (Estimated Flows Based on Sewershed ERCs)	High Head Flow (gpm)	547.66	748.19	431.47	282.24	855.33	541.04	334.45	1215.13	244.7	1065.36	427.91	714.2	465.25	89.66	148.51	1615.05	197.72	301.43	41.76	366	273.52
	High Head TDH (ft)	130.87	67.64	37.59	103.35	201.83	42.92	38.46	156.94	46.51	24.85	162.87	106.05	97.05	88.73	99.28	133.5	118.15	88.23	123.62	71.42	66.19
	Low Head Flow (gpm)	570.22	819.2	447.69	590.12	1078.69	784.18	510.48	1610.29	257.83	1096.19	512.72	791.06	703.11	402.25	453.07	1855.24	487.83	486.32	136.97	366	536.8
	Low Head TDH (ft)	129.22	62.08	33.97	79.69	155.76	21.01	24.33	138.69	45.31	22.28	144.51	89.03	74.98	23.79	78.91	117.96	99.44	73.02	101.42	41.13	49.17
	Pump 2 ON?	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	No	No	No	No	No	No	No
	Maximum Velocity (fps)	2.69	5.23	2.86	6.53	6.89	8.65	3.27	3.61	6.59	1.95	6.57	5.49	7.75	3.74	2.98	5.54	3.18	5.44	3.71	4.39	6.44
	Peak Hour Flow from Sewershed	48.9	541.7	731.3	437.1	377.9	454.5	58.4	1401.5	120.1	511.8	786.1755	549.7	563.9	340.6	255.8	1647.3	409.5	82.5	243.4	608.1	122.6
	Peak Hour Flow from Runtimes	127.07	302.33	189.23	744.51	-	305.63	64.75	-	37.94	253.68	-	87.39	66.04	91.19	203.84	458.06	196.39	12.72	56.19	335.24	59.65
	Percent of Peak Hour Flow Pumped	1119%	138%	59%	65%	226%	119%	572%	87%	204%	208%	54%	130%	83%	26%	58%	98%	48%	365%	17%	60%	223%

Scenario 11	Result	LS 1	LS 5	LS 6	LS 7	LS 8	LS 9	LS 10	LS 11	LS 12	LS 14	LS 18	LS 30	LS 33	LS 34	LS 35	LS 36	LS 37	LS 39	LS 48	LS 49	LS 51
Base 2035 EPS Imps 1-7A (Estimated Flows Based on Sewershed ERCs)	High Head Flow (gpm)	547.66	748.19	431.47	282.24	855.33	541.04	334.45	1215.13	244.7	1065.36	427.91	714.2	465.25	195.39	148.51	1623.62	346.69	301.43	41.76	366	772.42
	High Head TDH (ft)	130.87	67.64	37.59	103.35	201.83	42.92	38.46	156.94	46.51	24.85	162.87	106.05	97.05	66.96	99.28	132.95	107.97	88.23	123.62	71.42	34.48
	Low Head Flow (gpm)	570.22	819.2	447.69	590.12	1078.69	784.18	510.48	1610.29	257.83	1096.19	512.72	791.06	703.11	349.01	453.07	1848.83	465.83	486.32	136.97	366	795.98
	Low Head TDH (ft)	129.22	62.08	33.97	79.69	155.76	21.01	24.33	138.69	45.31	22.28	144.51	89.03	74.98	34.95	78.91	118.38	100.72	73.02	101.42	41.13	33.03
	Pump 2 ON?	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
	Maximum Velocity (fps)	2.69	5.23	2.86	6.53	6.89	8.65	3.27	3.61	6.59	1.95	6.57	5.49	7.75	3.89	2.98	5.54	3	5.44	3.71	4.39	6.44
	Peak Hour Flow from Sewershed	48.9	541.7	731.3	437.1	377.9	454.5	58.4	1401.5	120.1	511.8	786.1755	549.7	563.9	340.6	255.8	1647.3	409.5	82.5	243.4	608.1	122.6
	Peak Hour Flow from Runtimes	127.07	302.33	189.23	744.51	-	305.63	64.75	-	37.94	253.68	-	87.39	66.04	91.19	203.84	458.06	196.39	12.72	56.19	335.24	59.65
	Percent of Peak Hour Flow Pumped	1119%	138%	59%	65%	226%	119%	572%	87%	204%	208%	54%	130%	83%	57%	58%	99%	85%	365%	17%	60%	630%

Scenario 12	Result	LS 1	LS 5	LS 6	LS 7	LS 8	LS 9	LS 10	LS 11	LS 12	LS 14	LS 18	LS 30	LS 33	LS 34	LS 35	LS 36	LS 37	LS 39	LS 48	LS 49	LS 51
Base 2035 EPS Imps 1-7B (Estimated Flows Based on Sewershed ERCs)	High Head Flow (gpm)	547.66	748.19	431.47	282.24	855.33	541.04	334.45	1215.13	244.7	1065.36	427.91	714.2	465.25	340	148.51	1623.62	350	301.43	41.76	366	248.26
	High Head TDH (ft)	130.87	67.64	37.59	103.35	201.83	42.92	38.46	156.94	46.51	24.85	162.87	106.05	97.05	147.8	99.28	132.95	186.24	88.23	123.62	71.42	67.88
	Low Head Flow (gpm)	570.22	819.2	447.69	590.12	1078.69	784.18	510.48	1610.29	257.83	1096.19	512.72	791.06	703.11	340	453.07	1848.83	350	486.32	136.97	366	541.27
	Low Head TDH (ft)	129.22	62.08	33.97	79.69	155.76	21.01	24.33	138.69	45.31	22.28	144.51	89.03	74.98	9.34	78.91	118.38	49.81	73.02	101.42	41.13	48.89
	Pump 2 ON?	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
	Maximum Velocity (fps)	2.69	5.23	2.86	6.53	6.89	8.65	3.27	3.61	6.59	1.95	6.57	5.49	7.75	3.89	2.98	5.54	3.18	5.44	3.71	4.39	6.44
	Peak Hour Flow from Sewershed	48.9	541.7	731.3	437.1	377.9	454.5	58.4	1401.5	120.1	511.8	786.1755	549.7	563.9	340.6	255.8	1647.3	409.5	82.5	243.4	608.1	122.6
	Peak Hour Flow from Runtimes	127.07	302.33	189.23	744.51	-	305.63	64.75	-	37.94	253.68	-	87.39	66.04	91.19	203.84	458.06	196.39	12.72	56.19	335.24	59.65
	Percent of Peak Hour Flow Pumped	1119%	138%	59%	65%	226%	119%	572%	87%	204%	208%	54%	130%	83%	100%	58%	99%	85%	365%	17%	60%	202%

	Result	LS 1	LS 5	LS 6	LS 7	LS 8	LS 9	LS 10	LS 11	LS 12	LS 14	LS 18	LS 30	LS 33	LS 34	LS 35	LS 36	LS 37	LS 39	LS 48	LS 49	LS 51
Base 2040 EPS (Estimated Flows Based on Sewershed ERCs)	High Head Flow (gpm)	569.62	748.3	320.91	77.92	857.27	524.34	269.41	1216.26	252.49	509.09	177.48	399.16	54.21	89.66	70.24	807.49	213.89	249.9	4.33	366	254.89
	High Head TDH (ft)	129.26	67.63	62.29	118.74	198.29	44.41	44.12	156.89	45.8	71.48	218.43	176.49	132.51	88.73	104.99	185.9	116.97	92.57	133.26	71.42	67.44
	Low Head Flow (gpm)	1192.62	818.66	438.15	558.81	1078.89	782.08	508.85	1604.25	257.05	546.37	503	744.25	653.8	402.25	448.01	1688.56	494.2	479.73	384.15	366	572.98
	Low Head TDH (ft)	74.75	62.12	36.1	82.11	155.72	21.21	24.46	138.96	45.38	68.35	146.61	99.39	79.61	23.79	79.24	128.74	99.07	73.56	47.91	41.13	46.89
	Pump 2 ON?	No	No	Yes	Yes	No	No	No	No	No	No	Yes	No	Yes	Yes	No	Yes	No	No	Yes	No	No
	Maximum Velocity (fps)	2.69	5.23	4.15	6.14	6.89	8.64	3.27	3.61	6.59	3.52	5.53	5.17	7.21	3.74	2.97	5.29	3.18	5.45	2.46	4.39	6.43
	Peak Hour Flow from Sewershed	50.0234	590.3787	820.3234	474.4728	389.2106	473.6329	64.49086	1436.85	136.4276	548.2624	836.0597	618.6343	575.1035	348.5156	270.8266	1702.615	427.9119	84.12718	257.0611	628.1123	127.4657
	Peak Hour Flow from Runtimes	127.07	302.33	189.23	744.51	-	305.63	64.75	-	37.94	253.68	-	87.39	66.04	91.19	203.84	458.06	196.39	12.72	56.19	335.24	59.65
	Percent of Peak Hour Flow Pumped	1139%	127%	39%	16%	220%	111%	418%	85%	185%	93%	21%	65%	9%	26%	26%	47%	50%	297%	2%	58%	200%

Scenario 13	Result	LS 1	LS 5	LS 6	LS 7	LS 8	LS 9	LS 10	LS 11	LS 12	LS 14	LS 18	LS 30	LS 33	LS 34	LS 35	LS 36	LS 37	LS 39	LS 48	LS 49	LS 51
Base 2040 EPS Imps 1-7A (Estimated Flows Based on Sewershed ERCs)	High Head Flow (gpm)	330.11	748.3	500	500	827.73	376.36	265.56	1228.86	247.11	1059.4	419.15	700.56	470.76	195.86	133.55	1696.83	349.01	266.97	41.49	366	279.37
	High Head TDH (ft)	145.33	67.63	44.75	22.02	203.94	57.44	44.47	166.31	46.29	25.35	164.78	109.08	96.54	66.87	100.35	128.21	107.83	91.13	123.68	71.42	65.81
	Low Head Flow (gpm)	1199.13	818.66	500	500	1079.08	900.7	511.94	1604.85	233.39	1095.72	510.19	792.51	702.89	349.2	464.62	1849.32	464.95	489.79	414.05	366	584.17
	Low Head TDH (ft)	74.1	62.12	42.85	13.83	155.68	21.85	24.22	138.94	43	22.31	145.06	88.71	75	34.91	78.17	118.34	100.77	72.74	41.64	41.13	46.19
	Pump 2 ON?	No	No	No	No	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
	Maximum Velocity (fps)	2.69	5.23	3.19	7.67	6.89	10.22	3.27	3.61	6.59	3.52	5.71	5.39	7.75	4.48	2.97	5.52	3.18	5.39	2.64	4.39	6.43
	Peak Hour Flow from Sewershed	50.0234	590.3787	820.3234	474.4728	389.2106	473.6329	64.49086	1436.85	136.4276	548.2624	836.0597	618.6343	575.1035	348.5156	270.8266	1702.615	427.9119	84.12718	257.0611	628.1123	127.4657
	Peak Hour Flow from Runtimes	127.07	302.33	189.23	744.51	-	305.63	64.75	-	37.94	253.68	-	87.39	66.04	91.19	203.84	458.06	196.39	12.72	56.19	335.24	59.65
	Percent of Peak Hour Flow Pumped	660%	127%	61%	105%	213%	79%	412%	86%	181%	193%	50%	113%	82%	56%	49%	100%	82%	317%	16%	58%	219%

Scenario 14	Result	LS 1	LS 5	LS 6	LS 7	LS 8	LS 9	LS 10	LS 11	LS 12	LS 14	LS 18	LS 30	LS 33	LS 34	LS 35	LS 36	LS 37	LS 39	LS 48	LS 49	LS 51
Base 2040 EPS Imps 1-8 (Estimated Flows Based on Sewershed ERCs)	High Head Flow (gpm)	330.11	748.3	500	500	885.85	775.42	265.56	1308.95	247.11	1059.4	419.15	700.56	470.76	195.86	133.55	1696.83	349.01	266.97	41.49	366	279.37
	High Head TDH (ft)	145.33	67.63	44.75	169.36	192.83	21.81	44.47	152.56	46.29	25.35	164.78	109.08	96.54	66.87	100.35	128.21	107.83	91.13	123.68	71.42	65.81
	Low Head Flow (gpm)	1199.13	818.66	500	500	1079.08	787.01	511.94	1641.58	233.39	1095.72	510.19	792.51	702.89	349.2	464.62	1849.32	464.95	489.79	414.05	366	584.17
	Low Head TDH (ft)	74.1	62.12	42.85	56.77	155.68	20.76	24.22	137.26	43	22.31	145.06	88.71	75	34.91	78.17	118.34	100.77	72.74	41.64	41.13	46.19
	Pump 2 ON?	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
	Maximum Velocity (fps)	2.69	5.23	3.19	5.49	6.89	1.37	3.27	3.69	6.59	3.52	5.71	5.39	7.75	4.48	2.97	5.52	3.18	5.39	2.64	4.39	6.43
	Peak Hour Flow from Sewershed	50.0234	590.3787	820.3234	474.4728	389.2106	473.6329	64.49086	1436.85	136.4276	548.2624	836.0597	618.6343	575.1035	348.5156	270.8266	1702.615	427.9119	84.12718	257.0611	628.1123	127.4657
	Peak Hour Flow from Runtimes	127.07	302.33	189.23	744.51	-	305.63	64.75	-	37.94	253.68	-	87.39	66.04	91.19	203.84	458.06	196.39	12.72	56.19	335.24	59.65
	Percent of Peak Hour Flow Pumped	660%	127%	61%	105%	228%	164%	412%	91%	181%	193%	50%	113%	82%	56%	49%	100%	82%	317%	16%	58%	219%

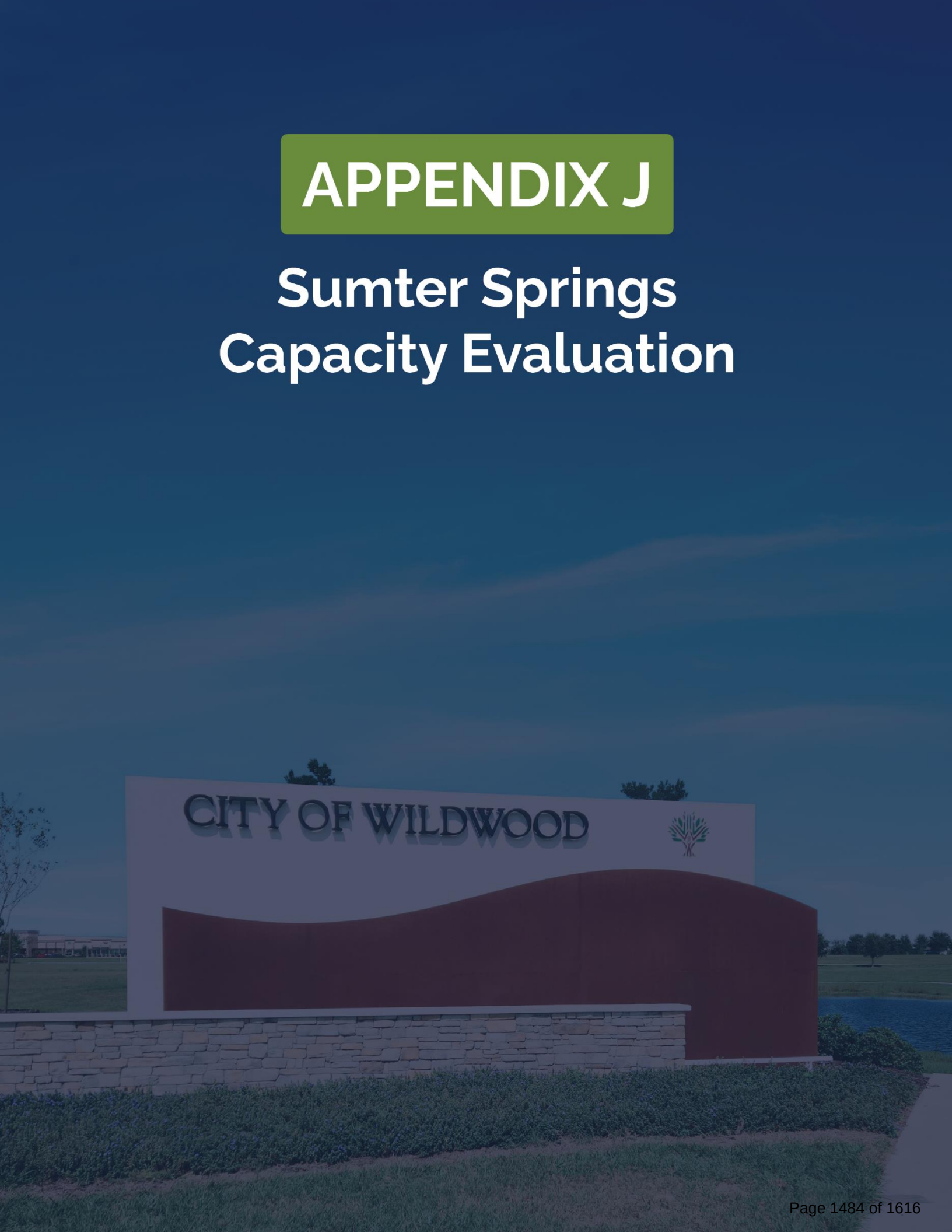
	Result	LS 1	LS 5	LS 6	LS 7	LS 8	LS 9	LS 10	LS 11	LS 12	LS 14	LS 18	LS 30	LS 33	LS 34	LS 35	LS 36	LS 37	LS 39	LS 48	LS 49	LS 51
Base 2050 EPS (Estimated Flows Based on Sewershed ERCs)	High Head Flow (gpm)	285.18	743.81	153.41	6.04	810.06	376.36	328	998.9	246.98	204.14	168.51	328.28	1.77	27.13	7.87	456.56	95.63	129.79	0.17	475.68	69.58
	High Head TDH (ft)	147.92	67.98	99.8	123.98	207.31	57.44	39.01	167.19	46.3	97.2	220.47	192.53	136.28	101.38	110.03	208.78	126.47	102.94	134.52	210.91	80.3
	Low Head Flow (gpm)	890.36	817.52	261.07	549.91	1075.44	1156.2	508.46	1597.69	257.34	521.28	501.37	740.15	647.81	387.21	453.81	1664.47	483.79	483.17	139.01	916.82	560.84
	Low Head TDH (ft)	103.14	62.21	75.67	82.79	156.39	21.85	24.49	139.26	45.36	70.45	146.96	100.3	80.17	26.94	78.87	130.3	99.67	73.28	100.96	176.82	47.65
	Pump 2 ON?	No	No	Yes	Yes	No	Yes	No	No	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Yes
	Maximum Velocity (fps)	2.67	5.23	8.07	6.69	6.87	12.56	3.27	3.59	6.58	3.89	5.51	5.14	7.16	4.37	2.93	5.51	3.09	7.48	3.79	10.07	6.23
	Peak Hour Flow from Sewershed	52.2948	812.7383	1337.667	963.6981	420.9893	899.1047	172.0928	1606.421	420.7635	1494.546	918.4246	580.8961	604.2345	496.3996	301.4647	2380.516	475.0709	422.5787	287.8941	638.9782	382.3354
	Peak Hour Flow from Runtimes	127.07	302.33	189.23	744.51	-	305.63	64.75	-	37.94	253.68	-	87.39	66.04	91.19	203.84	458.06	196.39	12.72	56.19	335.24	59.65
	Percent of Peak Hour Flow Pumped	545%	92%	11%	1%	192%	42%	191%	62%	59%	14%	18%	57%	0%	5%	3%	19%	20%	31%	0%	74%	18%

Scenario 15	Result	LS 1	LS 5	LS 6	LS 7	LS 8	LS 9	LS 10	LS 11	LS 12	LS 14	LS 18	LS 30	LS 33	LS 34	LS 35	LS 36	LS 37	LS 39	LS 48	LS 49	LS 51
Base 2050 EPS Imps 1-8 Imps (Estimated Flows Based on Sewershed ERCs)	High Head Flow (gpm)	285.18	748.31	800	500	843.77	772.94	328	1048.08	246.98	983.66	446.43	711.33	478.81	17.69	11.62	648.62	75.8	129.79	53.6	366	389.65
	High Head TDH (ft)	147.92	67.63	87.6	159.64	200.87	22.04	39.01	164.84	46.3	31.69	158.85	106.69	95.81	103.26	109.69	196.25	128.33	102.94	120.75	73.64	58.58
	Low Head Flow (gpm)	890.36	817.52	800	500	1075.44	789.87	508.46	1637.19	257.34	1074.03	536.96	792.21	702.56	387.19	453.81	1820.62	466.1	483.17	156.24	366	759.21
	Low Head TDH (ft)	103.14	62.21	86.16	57.91	156.39	20.5	24.49	137.46	45.36	24.13	139.3	88.78	75.03	26.95	78.87	120.2	100.7	73.28	97.09	41.22	30.73
	Pump 2 ON?	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	No	No	Yes
	Maximum Velocity (fps)	2.67	5.23	5.11	5.49	6.87	1.37	3.27	3.59	6.58	2.01	5.93	5.49	7.75	4.37	2.93	6.67	3.09	7.48	4.02	4.02	5.69
	Peak Hour Flow from Sewershed	52.2948	812.7383	1337.667	963.6981	420.9893	899.1047	172.0928	1606.421	420.7635	1494.546	918.4246	580.8961	604.2345	496.3996	301.4647	2380.516	475.0709	422.5787	287.8941	638.9782	382.3354
	Peak Hour Flow from Runtimes	127.07	302.33	189.23	744.51	-	305.63	64.75	-	37.94	253.68	-	87.39	66.04	91.19	203.84	458.06	196.39	12.72	56.19	335.24	59.65
	Percent of Peak Hour Flow Pumped	545%	92%	60%	52%	200%	86%	191%	65%	59%	66%	49%	122%	79%	4%	4%	27%	16%	31%	19%	57%	102%

Scenario 16	Result	LS 1	LS 5	LS 6	LS 7	LS 8	LS 9	LS 10	LS 11	LS 12	LS 14	LS 18	LS 30	LS 33	LS 34	LS 35	LS 36	LS 37	LS 39	LS 48	LS 49	LS 51
Base 2050 EPS Imps 1-10 Imps (Estimated Flows Based on Sewershed ERCs)	High Head Flow (gpm)	931.77	748.31	800	500	843.77	772.94	328	1048.08	246.98	983.66	446.43	711.33	478.81	184.76	65.99	2877.74	322.57	229.77	53.6	366	1200
	High Head TDH (ft)	99.45	67.63	87.6	159.64	200.87	22.04	39.01	164.84	46.3	31.69	158.85	106.69	95.81	69.17	105.31	51.94	109.52	94.28	120.75	73.64	136.01
	Low Head Flow (gpm)	1205.8	817.52	800	500	1075.44	789.87	508.46	1637.19	257.34	1074.03	536.96	792.21	702.56	354.06	444.54	2943.19	472.26	477.58	156.24	366	1200
	Low Head TDH (ft)	73.43	62.21	86.16	57.91	156.39	20.5	24.49	137.46	45.36	24.13	139.3	88.78	75.03	33.89	79.46	47.72	100.34	73.73	97.09	41.22	117.15
	Pump 2 ON?	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
	Maximum Velocity (fps)	2.67	5.23	5.11	5.49	6.87	1.37	3.27	3.59	6.58	2.01	5.93	5.49	7.75	3.95	2.93	8.8	3.09	5.39	4.02	4.02	5.69
	Peak Hour Flow from Sewershed	52.2948	812.7383	1337.667	963.6981	420.9893	899.1047	172.0928	1606.421	420.7635	1494.546	918.4246	580.8961	604.2345	496.3996	301.4647	2380.516	475.0709	422.5787	287.8941	638.9782	382.3354
	Peak Hour Flow from Runtimes	127.07	302.33	189.23	744.51	-	305.63	64.75	-	37.94	253.68	-	87.39	66.04	91.19	203.84	458.06	196.39	12.72	56.19	335.24	59.65
	Percent of Peak Hour Flow Pumped	1782%	92%	60%	52%	200%	86%	191%	65%	59%	66%	49%	122%	79%	37%	22%	121%	68%	54%	19%	57%	314%

APPENDIX J

Sumter Springs Capacity Evaluation



Kimley»Horn

MEMORANDUM

To: Mr. Jason McHugh, City of Wildwood

From: James E. Clayton, P.E.; Kimley-Horn and Associates, Inc.

Date: April 14, 2023

RE: ***Sumter Springs Capacity Evaluation***
Kimley-Horn Project Number 142173000-261

BACKGROUND

Sumter Springs (the Project) is a proposed mixed-use development consisting of commercial, residential, and assisted living facilities located adjacent to the Thousand Trails Three Flags RV Park on the southwest side of SR-44. The proposed development is located within the City of Wildwood's (City) utility service area. The Project is proposing to construct two lift stations and connect to the City's 10-inch sanitary force main along SR-44 at two separate locations to provide sanitary sewer service for the proposed development. The City requested that Kimley-Horn evaluate the capacity of the existing 10-inch force main and provide recommendations for infrastructure improvements if required. The following memo is intended to summarize the capacity analysis and subsequent recommendations.

EXISTING SYSTEM

The Project proposes to connect to the City's existing 10-inch force main, which conveys all flows of the City's west SR-44 sewershed along SR-44 from I-75 east to the CR 219 lift station. The CR 219 lift station pumps all flows from the sewershed to the City's wastewater treatment facility. A map of the existing area, including the proposed development, is shown in **Figure 1** in the attachments.

LIFT STATIONS

There are three lift stations that could be impacted by the Sumter Springs development: CR 229 LS (#14) Three Flags LS (#2), and CR 219 LS (#27). The current operating conditions of the CR 229 LS were determined utilizing drawdown results and run-time data. The results of these tests are summarized below in **Table 1**. The Three Flags LS is currently bypassed but was originally designed to re-pump the flows from the CR 229 LS to the CR 219 LS through the existing 10-inch force main. Improvements to the CR 219 LS are currently under design to meet build-out flows for the west SR-44 sewershed; therefore, it is not included in the following evaluation.

Table 1: CR 229 Lift Statin Drawdown and Existing Flows

Pump	Drawdown GPM	Number of Starts	Runtime per Start	Total Runtime (min)	Total Flow (Gal)	Average Daily Flow (gpm)	Peak Hour Flow (gpm)
Pump #1	721.00	16	4.38	70.08	50,528	35.09	140.36
Pump #2	803.00	18	4.61	82.98	66,633	46.27	185.09
				Total Flows	***117,161.00***	***81.36***	***325.45***

FLOW PROJECTIONS

Flow Projections for Sumter Springs were estimated utilizing the development master plan dated December 18, 2021. The initial phase consists of 220 single family residential units. Future buildout includes a total of 623 single family residential units in addition to a mixture of multi-family, commercial, and assisted living facility sites. The City's standard level of service (LOS) of 250 gallons per day (gpd) per equivalent residential unit (ERU) was utilized to estimate average daily flows. Peaking factors were calculated using

the Fair and Geyer (1954) equation to determine peak flows. Phase 1 projected flows are summarized below in **Table 2.** Build-Out projected flows are summarized below in **Table 3**.

Table 2: Sumter Springs Phase 1 Flow Projections

Development Type	Acres	FAR	Usable Acres	ERUs	Peaking Factor*	Average Daily Flow (gpd)	Average Daily Flow (gpm)	Peak Hour Flow (gpm)
Single Family	-	-	-	220.0	3.98	55,000	38.19	152.07

Table 3: Sumter Springs Build-Out Flow Projections

Development Type	Acres	FAR	Usable Acres	ERUs	Peaking Factor*	Average Daily Flow (gpd)	Average Daily Flow (gpm)	Peak Hour Flow (gpm)
Single Family	-	-	-	623.0	3.71	155,750	108.16	401.01
Multi-Family	28.0	1.00	28.0	349.9	3.87	87,465	60.74	235.09
Commercial	16.7	0.50	8.4	174.6	4.00	43,647	30.31	121.24
Assisted Living Facility	6.2	-	-	55.0	4.00	13,750	9.55	38.19
Future Development Subtotal						**300,612.12**	**208.76**	**796.53**

**To determine peak flows, where applicable, peaking factors were calculated using the Fair and Geyer equation (1954). A peaking factor of 4.0 was assumed for commercial and industrial developments.*

MODEL DEVELOPMENT AND RESULTS

Kimley-Horn utilized the City's existing sanitary sewer hydraulic model to model the existing west SR-44 collection system. The City's existing sanitary sewer model was developed in Bentley SewerGEMS. The system was evaluated by examining the operating conditions of the lift stations and existing force mains. Lift stations were evaluated based on their firm capacity (largest pump out of service) ability to meet the existing and future peak hour flows. The existing force main system was evaluated based on the wastewater system hydraulic standards described below:

- Minimum force main design velocity: 2 fps
- Maximum force main design velocity: 8 fps
- Maximum force main design pressure: 80 psig

SCENARIO ANALYSIS

Scenario 1: Existing SR-44 System with Phase 1 Sumter Springs Flows:

Scenario 1 evaluated the existing SR-44 sanitary sewer collection system in its existing configuration with the proposed Phase 1 sanitary sewer flows from Sumter Springs. The results are summarized below in **Table 4**.

Table 4: Scenario 1 Modeling Results

Force Main Operating Conditions						CR 229 LS Operating Point	
Future ERUs	Sumter Springs Flow (gpm)	Total Flow* (gpm)	Force Main Size	Velocity	Pressure (psig)	Flow (gpm)	TDH (ft.)
220	155	735	10	3.63	20.4	579.58	66.08

**Total Flows include the flows from the Sumter Springs development and the flows pumped from the CR 229 LS.*

Based on the evaluation criteria established above, the existing SR-44 sanitary sewer system has adequate capacity to support Phase 1 of the Sumter Springs development. The velocity in the force main is well within the design constraints and there are minimal impacts on the operation of the CR 229 LS.

Scenario 2: Existing SR-44 System with Sumter Springs Build-Out Flows:

Scenario 2 evaluated the existing SR-44 sanitary sewer collection system in its existing configuration with the proposed build-out flows from Sumter Springs. The results are summarized below in **Table 5**.

Table 5: Scenario 2 Modeling Results

Force Main Operating Conditions						CR 229 LS Operating Point	
Future ERUs	Sumter Springs Flow (gpm)	Total Flow* (gpm)	Force Main Size	Velocity	Pressure (psig)	Flow (gpm)	TDH (ft.)
1200	800	1,106	10	4.52	33.3	305.81	88.33

**Total Flows include the flows from the Sumter Springs development and the flows pumped from the CR 229 LS.*

Based on these results, the existing SR-44 sanitary sewer system does not have the capacity to support the build-out flows of the Sumter Springs development. Although the velocity in the 10-inch force main is within the acceptable range, the CR 229 LS is unable to meet the current peak hour firm capacity. Improvements are required to increase the capacity within the system.

Scenario 3A: Sumter Springs Build-Out Flows with Required Improvements (Existing Configuration):

Scenario 3A evaluated the operating conditions of the existing system at various flow rates, modeling various numbers of ERUs contributing to the existing sanitary sewer system to determine when infrastructure improvements would need to be implemented. The purpose of this scenario was to understand the timeframe for when improvements would be required to meet the Project flows. Flows beyond the build-out of Sumter Springs were developed to highlight impacts of additional development in the sewershed area.

The system was also evaluated with varying force main sizes by upsizing the 10-inch force main to 16-inch from the Sumter Springs connection point to the CR 219 LS. The operating conditions of the CR 229 LS and the force mains were evaluated, and the results are summarized in **Table 6** below.

Table 6: Scenario 3A Modeling Results

Force Main Operating Conditions						CR 229 LS Operating Point	
Future ERUs	Additional Flow (gpm)	Total Flow*	Force Main Size	Velocity	Pressure (psig)	Flow (gpm)	TDH (ft.)
500	350	843	10	4.08	24.6	492.86	73.04
1,200	800	1,106	10	4.52	33.3	305.81	88.33
1,500	1,050	1,152	10	5.34	38.7	102.43	105.7
2,000	1,400	1,400	10	6.35	52.2	0	114
500	350	1,181	16	2.03	7.3	831.12	46.23
1,200	800	1,576	16	2.72	10.3	776.25	50.52
1,500	1,050	1,790	16	3.08	12.2	740.42	53.34
2,000	1,400	2,056	16	3.79	16.4	646.05	60.79

**Total Flows include the flows from the Sumter Springs development and the flows pumped from the CR 229 LS.*

Based on the above results, the existing 10-inch force main from the proposed manifolding location of Sumter Springs to the CR 219 LS is limited in capacity after the addition of 500 ERUs due to negative impacts on the operating conditions of the CR 229 LS. This section of force main should be increased from a 10-inch to 16-inch force main to provide sufficient capacity to support the build-out of Sumter Springs and additional future development and to allow CR 229 LS to meet its design firm pumping capacity. These improvements are shown in **Figure 2** in the attachments.

Scenario 3B: Sumter Springs Build-Out Flows with Required Improvements (Three Flags LS Online):

Scenario 3B evaluated the operating conditions of the system utilizing the Three Flags LS. This configuration assumed that flows from Sumter Springs outfall directly into the Three Flags LS. Flows from Sumter Springs and flows from the CR 229 LS would be repumped by the Three Flags LS. This scenario was modeled at the same flow conditions and force main sizes as Scenario 3A with the purpose of determining when improvements would need to be implemented based on the number of future ERUs. The future operating conditions of the Three Flags LS were evaluated in addition to the force main and the CR 229 LS. The results are summarized below in **Table 7**. **Figure 3** in the attachments shows the improvements.

Table 7: Scenario 3B Modeling Results

Force Main Conditions						CR 229 LS Operating Point		Three Flags LS Operating Point		
Future ERUs	Additional Flow (gpm)	Total Flow*	Force Main Size	Velocity	Pressure (psig)	Flow (gpm)	TDH (ft.)	Flow (gpm)	TDH (ft.)	HP
500	350	1,235	10	5.04	28.8	884.54	66.08	1,235	72.1	41.7
1,000	800	1,685	10	6.88	50.0	884.54	66.08	1,685	121.7	95.9
1,500	1,050	1,935	10	7.9	64.1	884.54	66.08	1,935	154.9	140.2
2,000	1,400	2,285	10	9.33	86.6	884.54	66.08	2,285	207.7	222.0
5,00	350	1,235	16	2.13	5.2	884.54	66.08	1,235	17.4	10.1
1,000	800	1,685	16	2.90	7.7	884.54	66.08	1,685	24.1	19.1
1,500	1,050	1,935	16	3.33	9.5	884.54	66.08	1,935	28.6	26.0
2,000	1,400	2,285	16	3.94	12.2	884.54	66.08	2,285	35.8	38.3

**Total Flows include the flows from the Sumter Springs development and flows pumped from the CR 229 LS.*

The results of this alternative scenario demonstrate that if the Three Flags LS is utilized to repump flows from Sumter Springs and the CR 229 LS then improvements to the system are not required until development reaches 1,000 ERUs. To provide capacity beyond 1,000 ERUs, the Three Flags LS would have to be rehabilitated and upsized and the force main segment from the Three Flags LS to the CR 219 LS will need to be upsized from 10-inch to 16-inch.

RECOMMENDED IMPROVEMENTS

Scenario 1 and Scenario 2 demonstrated that the current collection and transmission system only has capacity for approximately 500 ERU's without any system improvements; Therefore, the existing system does not have the capacity for the projected build-out flows for Sumter Springs and additional future development. Improvements are necessary to meet future flows. There are two recommended improvement alternatives outlined below:

IMPROVEMENT ALTERNATIVE A (WITHOUT THREE FLAGS)

This recommended improvement option would be to increase the force main from the proposed Sumter Springs manifold location to the CR 219 LS from 10-inch to 16-inch. This improvement would allow the CR 229 LS to meet its firm design pumping capacity and provide sufficient capacity for the Sumter Springs development and other future development along SR-44 after the development of 500 ERUs.

IMPROVEMENT ALTERNATIVE B (WITH THREE FLAGS)

This recommended improvement option is to rehabilitate the Three Flags LS and utilize the lift station as the outfall location for the Sumter Springs development. Using the Three Flags LS provides an additional 500 ERUs of capacity for a total remaining capacity of 1,000 ERUs available in the existing 10-inch force main. Once development reaches 1,000 ERUs then the force main from Three Flags LS would need to be increased from a 10-inch to 16-inch to provide sufficient capacity for future development.

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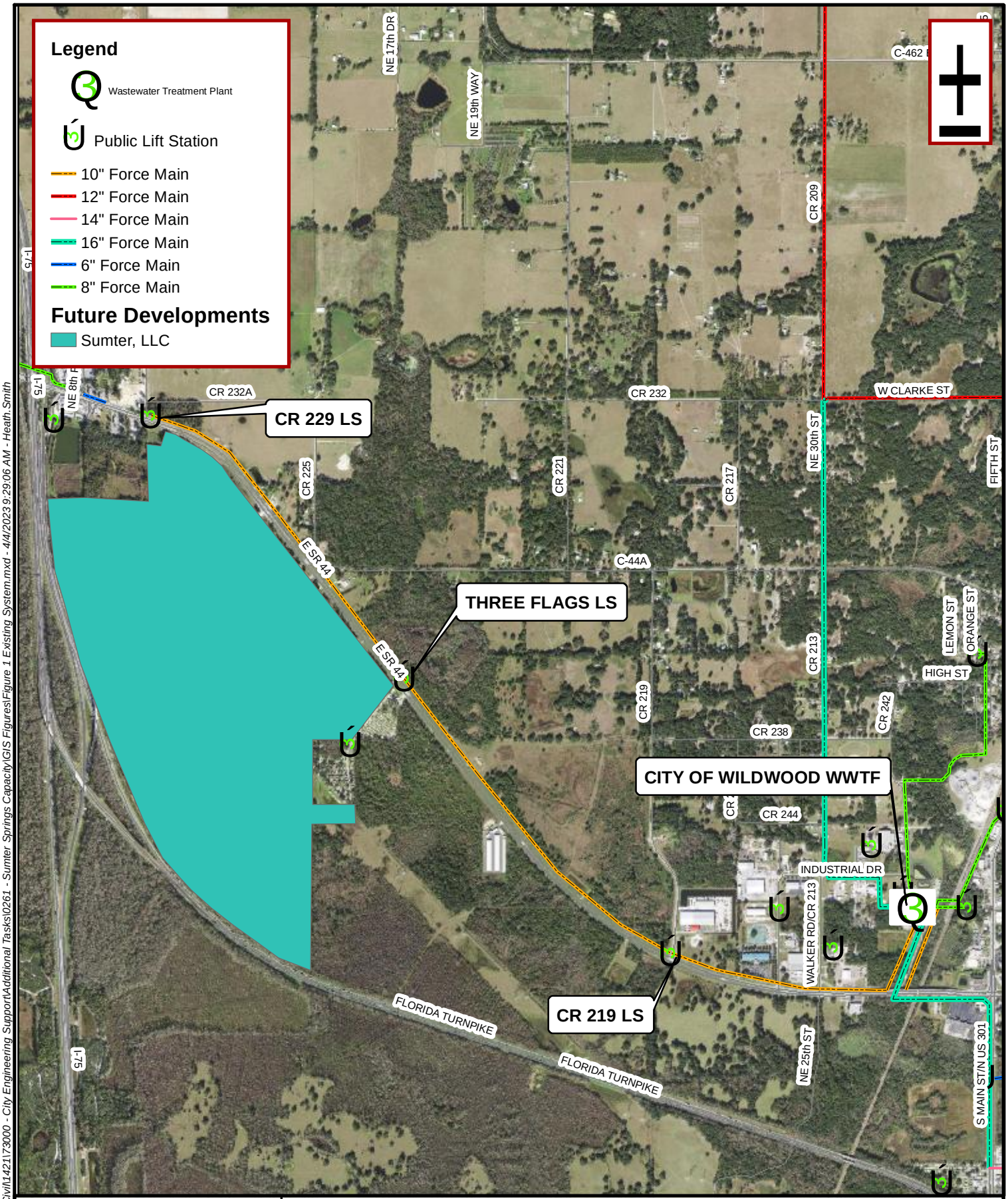
Attachments: Figure 1: Existing West SR 44 Collection System and Sumter Springs Development
Figure 2: Scenario 3A – Bypass Three Flags LS
Figure 3: Scenario 3B – Rehab Three Flags LS

CC: Mark Odell, City of Wildwood
Melanie Peavy, City of Wildwood
Jason Martin, City of Wildwood
File

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ATTACHMENTS

Figures



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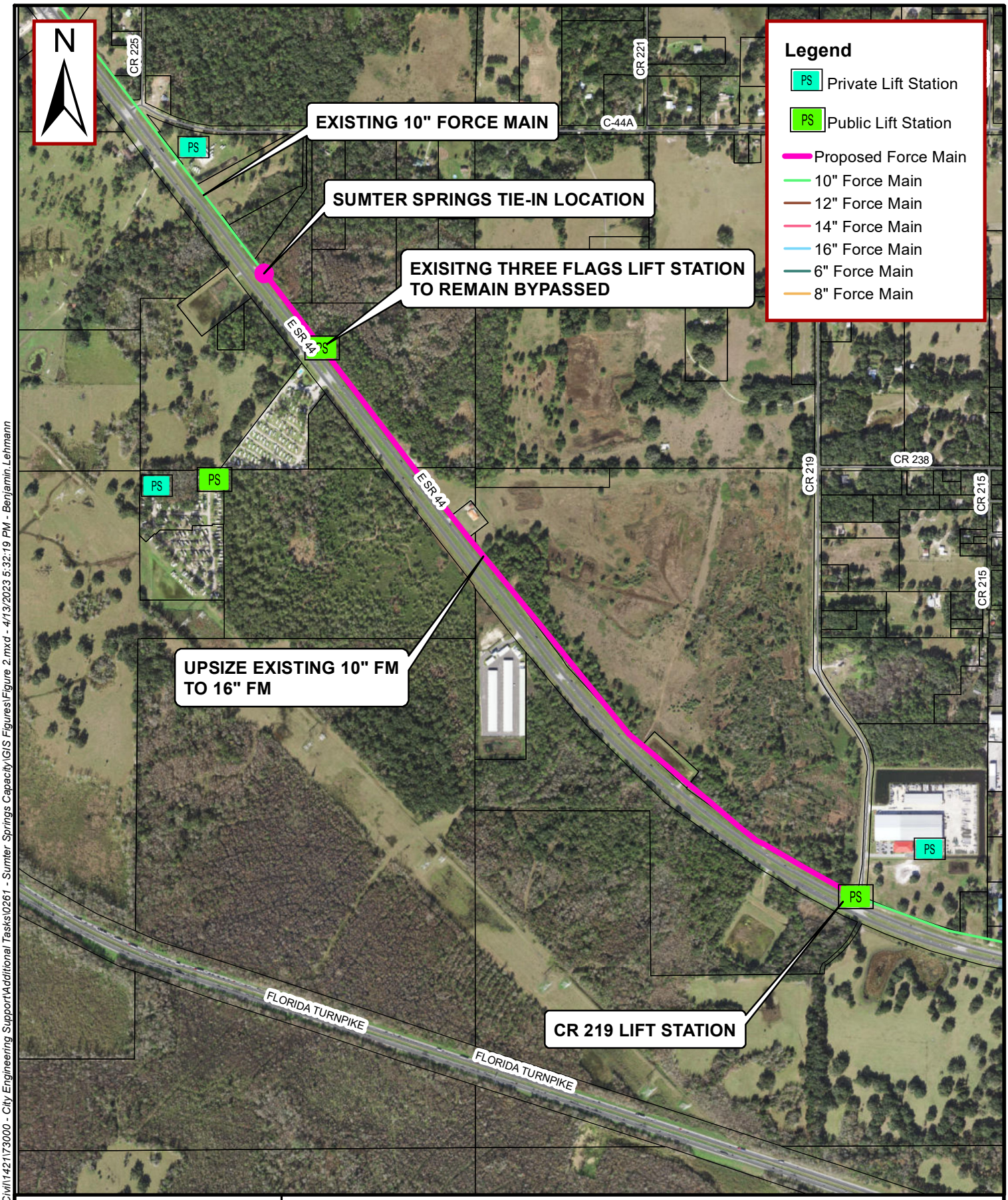
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EXISTING WEST SR-44 COLLECTION SYSTEM

SUMTER SPRINGS CAPACITY EVALUATION
CITY OF WILDWOOD

Project No: n/a	Scale: 1:2000	APRIL 2023	FIGURE 1



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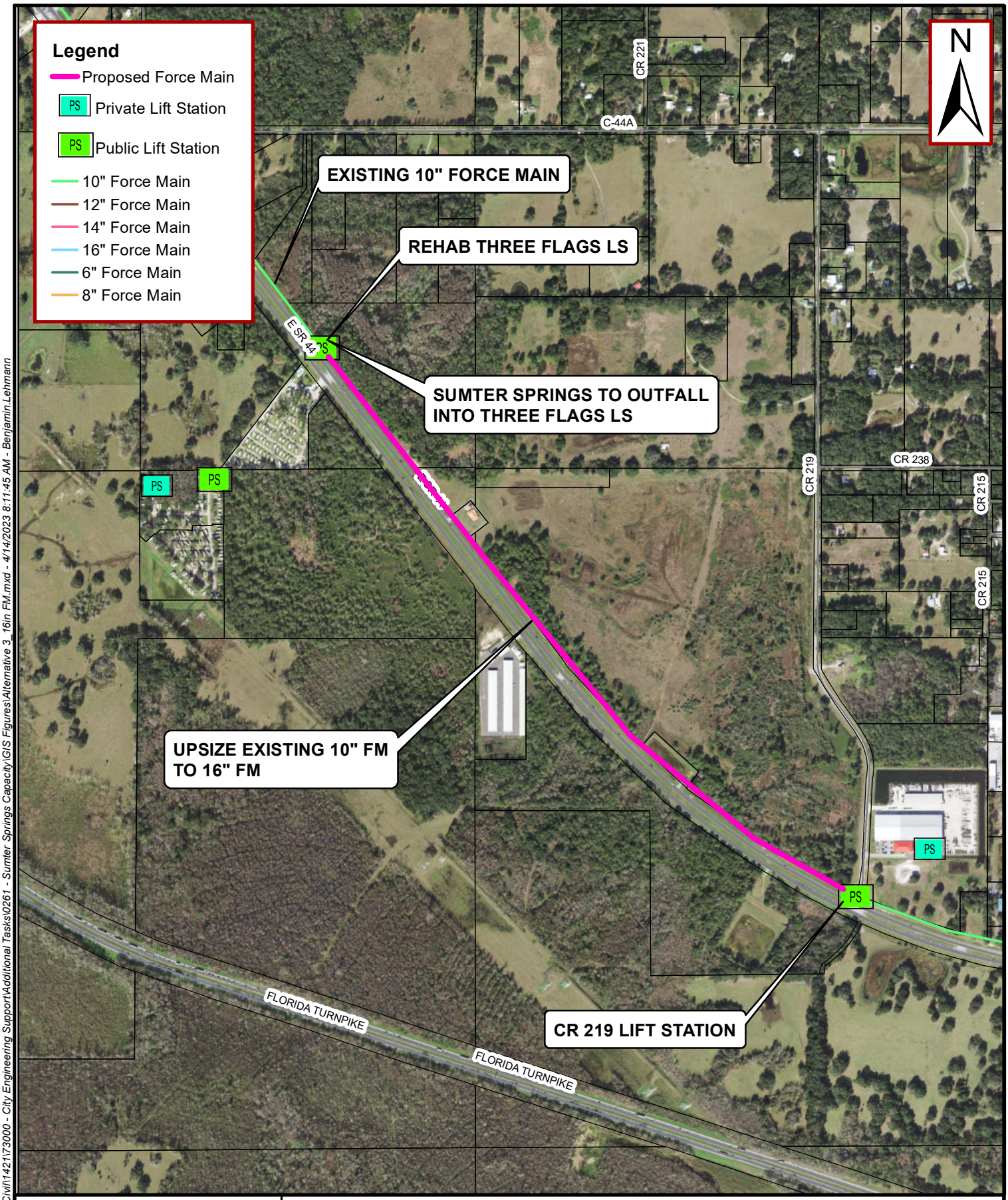
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SCENARIO 3A: BYPASS THREE FLAGS LS

CITY OF WILDWOOD
WILDWOOD, FLORIDA

Project No: n/a	Scale: 1:1000	APRIL 2023	FIGURE 2



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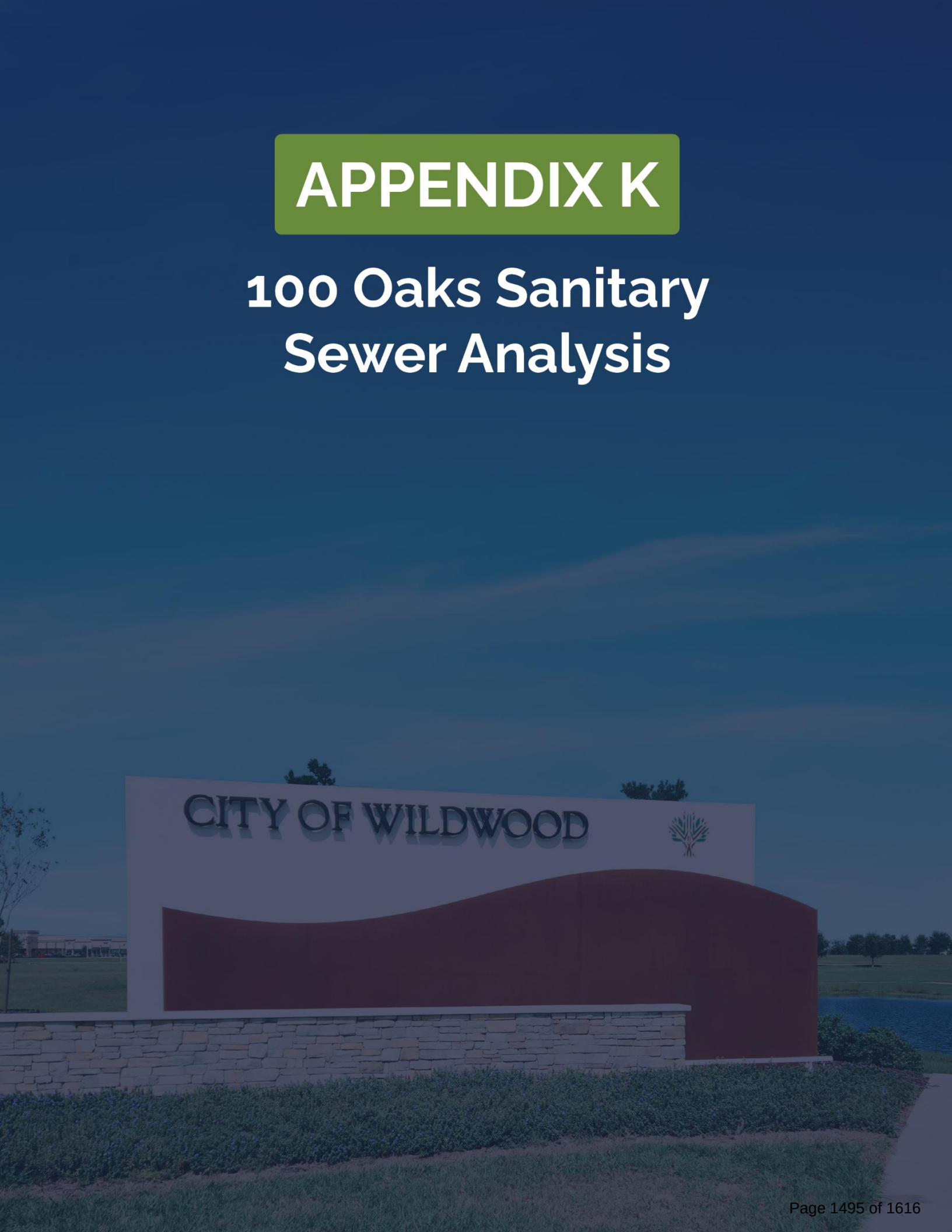
SCENARIO 3B: REHAB THREE FLAGS LS

CITY OF WILDWOOD
WILDWOOD, FLORIDA

Project No: n/a	Scale: 1:1000	APRIL 2023	FIGURE 3

APPENDIX K

100 Oaks Sanitary Sewer Analysis



Kimley»Horn

MEMORANDUM

To: Jason McHugh; City Manager, City of Wildwood

From: James E. Clayton, III, P.E., Kimley-Horn and Associates, Inc.

Date: January 26, 2023

RE: ***100 Oaks Sanitary Sewer Analysis***
Kimley-Horn Project Number 142173000 - 255

BACKGROUND

The City of Wildwood (City) is anticipating considerable commercial, mixed use, and industrial development along the US Hwy 301 corridor south of SR 44, which is encompassed in the City's south sanitary sewer collection system. One of these developments is the 100 Oaks residential development. The 100 Oaks is a planned 447-unit residential development along US 301 south of SR 44. The City requested Kimley-Horn to conduct a capacity evaluation of the south sanitary sewer collection system and to review the sizing and future capacity of the proposed force main to serve the 100 Oaks development. This memorandum presents a summary of evaluation findings and resulting improvement recommendations.

EXISTING COLLECTION SYSTEM

The City's existing south sanitary sewer collection system consists of gravity mains, lift stations, and force mains that convey flows to the City's Wastewater Treatment Facility (WWTF). The south collection system conveys all of the flows from the intersection of US 301 and SR 44 south to Warm Springs Avenue, including the Coleman Federal Prison and flows from the Turnpike. All of the flows combine into a 16-inch force main on US 301 and outfall directly into the WWTF. The existing collection system and the proposed future developments are in the Attachments.

The south collection system consists of the two following stations of interest: Main Street South (#9) and Coleman Federal Prison (#11). The most recent drawdown data and run times for both lift stations are summarized below in **Table 1** and **Table 2**.

Table 1: Main St South Lift Station Drawdown Results

Pump	Drawdown GPM	Number of Starts	Runtime per Start	Total Runtime (min)	Total Flow (Gal)
Pump #1	250.00	8	8.25	66	16,500.00
Pump #2	304.00	8	11	88	26,752.00
				Average Daily Flow	**43,252.00**

Table 2: Coleman Federal Prison Lift Station Drawdown Results					
Pump	**Drawdown GPM**	**Number of Starts**	**Runtime per Start**	**Total Runtime (min)**	**Total Flow (Gal)**
Pump #1	1,469.00	34	8.04	273.36	401,566.00
Pump #2	1,554.00	35	8.04	281.4	437,296.00
				Average Daily Flow	**838,862.00**

A summary of the total flows for the collection system are summarized below in **Table 3**. All of these flows currently are directed through a 16-inch force main and pump directly to the City's WWTF.

Table 3: Existing Collection System Flows				
Existing Lift Station	**Average Daily Flow (gpd)**	**Average Daily Flow (gpm)**	**Peaking Factor***	**Peak Hour Flow (gpm)**
Existing Main Street South Flows	43,252.00	30.04	4.03	121.11
Existing Coleman Federal Prison Flows	838,862.00	582.54	3.08	1,796.72
Total	**882,114.00**	**612.58**		**1,917.83**
**To determine peak flows, where applicable, peaking factors were calculated using the Fair and Geyer equation (1954).*				

FLOW PROJECTIONS

To evaluate the size of the proposed 100 Oaks force main as well as the capacity of the existing collection system, future flow projections for the US 301 sewershed were estimated.

Future flows for the City's south sanitary sewer collection system will come from the following sources:

- Known Future Developments
- Infill
- City of Coleman

The 100 Oaks project is currently the only known future development within the south sanitary sewer collection system sewershed. Estimated flows for 100 Oaks were obtained from the developer. A summary of these estimated flows is shown below in **Table 4**. Additionally, the City has entered into an interlocal agreement to receive sanitary sewer flows from the City of Colman if the City of Coleman were to ever install a sanitary sewer collection system. Flows were estimated utilizing MOR data from the City of Coleman. A total number of equivalent residential units (ERUs) were estimated from the average flows over the last year. The City's standard level of service was then applied to the estimated ERUs to estimate the average daily flow. These estimated flows are also summarized below in **Table 4**.

Table 4: Existing Collection System Flows						
Development	**ERUs**	**Population**	**Peaking Factor***	**Average Daily Flow (gpd)**	**Average Daily Flow (gpm)**	**Peak Hour Flow (gpm)**
100 Oaks	447.0	983.4	3.50	111,750	77.60	271.61
City of Coleman	151.0	332.2	4.06	37,750	26.22	106.41
Known Development Subtotal				**149,500**	**103.83**	**378.03**

**To determine peak flows, where applicable, peaking factors were calculated using the Fair and Geyer equation (1954). A peaking factor of 3.5 was used for the 100 oaks development per the developer's calculations.*

Future flows for the South collection system would also come from unknown developments that are captured as "infill" driven by potential future development. Infill is defined as unoccupied parcels that were within the sanitary sewershed encompassed in the US 301 corridor. To estimate these future sanitary loadings for the corridor, the Sumter County 2035 Future Land Use Map (FLUM) was utilized. The FLUM includes a mix of designations with varying densities and is in the Attachments. The sanitary flow estimates were based on maximizing these allowable densities. These estimated loadings are shown below in **Table 5**. **Table 6,** on the following page, summarizes the estimated build out flows, including 100 Oaks and the City of Coleman.

Table 5: Estimated Infill Flows for US 301 Sewershed									
Development Type	**Total Acres**	**FAR**	**Usable Acres**	**Density**	**ERUs**	**Peaking Factor***	**Average Daily Flow (gpd)**	**Average Daily Flow (gpm)**	**Peak Hour Flow (gpm)**
Commercial	147.0	0.5	73.5	0.12 gpd/ SF	-	3.50	384,199	266.8	933.8
Industrial	523.0	0.5	261.5	0.2 gpd/ 1000SF	-	3.50	2,278	1.6	5.54
Central Mixed Use	54.0	1.0	54.0	15 du/acre	810.0	3.95	202,500	140.6	554.9
Low Density Residential	50.0	0.3	90.0	4 du/acre	360.0	4.11	90,000	62.5	256.7
Medium Density Residential	33.0	0.3	9.9	9 du/acre	89.1	4.29	22,275	15.5	66.4
Estimated Infill Totals							**701,252**	**487.0**	**1,817.3**

**To determine peak flows, where applicable, peaking factors were calculated using the Fair and Geyer equation (1954). A peaking factor of 3.5 was assumed for commercial and industrial developments.*

Table 6: Estimated Buildout Flows for US 301						
Development	**ERUs**	**Population**	**Peaking Factor***	**Average Daily Flow (gpd)**	**Average Daily Flow (gpm)**	**Peak Hour Flow (gpm)**
100 Oaks	447.0	983.4	3.50	111,750	77.60	271.61
City of Coleman	151.0	332.2	4.06	37,750	26.22	106.41
US 301 Future Flows	-	-	-	701,252.39	486.98	1,817
US 301 Corridor Total Flows					**590.80**	**2,195.30**
**To determine peak flows, where applicable, peaking factors were calculated using the Fair and Geyer equation (1954).*						

MODEL DEVELOPMENT AND RESULTS

Kimley-Horn utilized SewerGEMS to model the existing south collection system in the City. To evaluate the ability of the collection system to serve future developments, multiple scenarios were developed to determine the lift station and force main sizing required to serve the developments discussed above. Two specific scenarios were developed and modelled for the evaluation.

EVALUATION CRITERIA

The system was evaluated by examining the operating conditions of the appropriate lift stations, existing force mains, and proposed force mains. Lift stations were evaluated based on pump flow, total dynamic head (TDH), and pump horsepower. Force mains were evaluated based on maximum velocity and maximum operating pressure. It is standard for force mains to operate with a velocity between 2-7 ft/s, while maintaining a maximum operating pressure equal to or less than 80 pounds per square in gauge (psig).

SCENARIO 1: 100 OAKS

Scenario 1 evaluated the operation of the south collection system with the addition of the 100 Oaks development and modeled a 12” force main along US 301 to serve the proposed development. The model was run assuming the Main Street LS and Prison LS are online and the proposed 12" force main manifolds with the existing 16" force main on Clay Drain Road. This scenario did not include any future flows beyond the 100 Oaks development. The model evaluated the operating conditions of all force mains within the South collection system. The operating points of the Main Street South and Prison Lift Stations were also evaluated against their design conditions. The results of the evaluations are summarized in **Table 7** and **Table 8** following on the next page.

Table 7: Scenario 1 Force Main Conditions		
Force Main	**Max Velocity (ft/sec)**	**Max Operating Pressure (psig)**
Proposed 12" US 301 FM	1.07	17.8
14" Prison FM to 16" FM	3.28	56.5
14" Turnpike FM	3.28	44.5
16" US 301 FM - Main Street South	3.45	18.1
16" Prison FM	2.57	51.8
16" FM to Plant	3.45	10.7
18" FM to Plant	2.66	11

Table 8: Scenario 1 Lift Station Conditions				
Existing Lift Station	**Operating Point from Model**		**Design Operating Point**	
	Flow (gpm)	**Max TDH (ft.)**	**Flow (gpm)**	**Max TDH (ft.)**
Prison Lift Station	1,573.56	140.36	1,864	127.4
Main Street South LS	158.37	51.34	333	36.5

The results of this model scenario demonstrate that the 100 oaks development will not have a significant downstream impact with the installation of a 12” force main. Operating pressures and velocities are well below the threshold that would indicate a need for infrastructure improvements. However, in this scenario, the 100 Oaks development is the only sewershed contributing to the proposed 12” force main along US 301. The flows from the development do not meet the 2 ft/s required for cleansing velocity. Provisions would be necessary for force main maintenance prior to infill flows that would exceed cleansing velocity. Options include upsizing the 100 Oaks lift station pumps, installing pig ports, or installing a hydrant near the pump out connection. Additionally, the model scenario results in the Main Street South LS underperforming compared to the design point, but still exceeding the peak hour factor (PHF) demands established in **Table 3** above. Therefore, no modifications or upgrades would be necessary to the lift station in conjunction with the 100 Oaks development.

SCENARIO 2: BUILD OUT

Scenario 2 evaluated the operation of the South Collection system with the US 301 corridor at build-out. Build-out flows included the City of Coleman, 100 Oaks, and future commercial, industrial, and residential developments. It was assumed that all flows would be conveyed through the proposed 12” force main along US 301. Similar to ***Scenario 1***, the 12” force main is assumed to manifold with the existing 16” force main on Clay Drain Rd. The model evaluated the operating conditions of all force mains within the South collection system. The operating points of the Main Street South LS and Prison LS were also evaluated against their design conditions. The results of the evaluations are summarized in **Table 9** and **Table 10** below.

Table 9: Scenario 2 Force Main Conditions		
Force Main	**Max Velocity (ft/sec)**	**Max Operating Pressure (psig)**
Proposed 12" US 301 FM	6.24	77.3
14" Prison FM to 16" FM	2.91	60.1
14" Turnpike FM	2.91	51.2
16" US 301 FM - Main Street South	5.88	32.6
16" Prison FM	2.28	57.4
16" FM to Plant	6.11	10.9
18" FM to Plant	4.53	11.7

Table 10: Scenario 2 Lift Station Conditions				
Existing Lift Station	**Operating Point from Model**		**Design Operating Point**	
	Flow (gpm)	**Max TDH (ft.)**	**Flow (gpm)**	**Max TDH (ft.)**
Prison Lift Station	1,394.28	148.6	1,864	127.4
Main Street South LS	0	73.1	333	36.5

The results of model ***Scenario 2*** demonstrate that the proposed 12" force main is adequately sized to support build out demands along the US 301 corridor. The velocities and pressures within the proposed force main and the downstream system do not exceed the thresholds of 7 ft/s and 80 psi. However, the build out demands will cause the pumps at the Main Street South LS to dead head. This downstream effect can be alleviated by improvements or modifications to the south collection system. Two alternatives to allow the Main Street South LS to remain operational are outlined below.

- **Alternative 1: Upgrade Pumps at Main Street South Lift Station**

  Alternative 1 is to increase the capacity of the pumps at the Main Street South lift station to pump against the increased head from the South collection system. These upgrades could consist of changing impellers or installing new pumps. Further analysis would be required to determine the extent of the required upgrades.

- **Alternative 2: Bypass Main Street South Force Main**

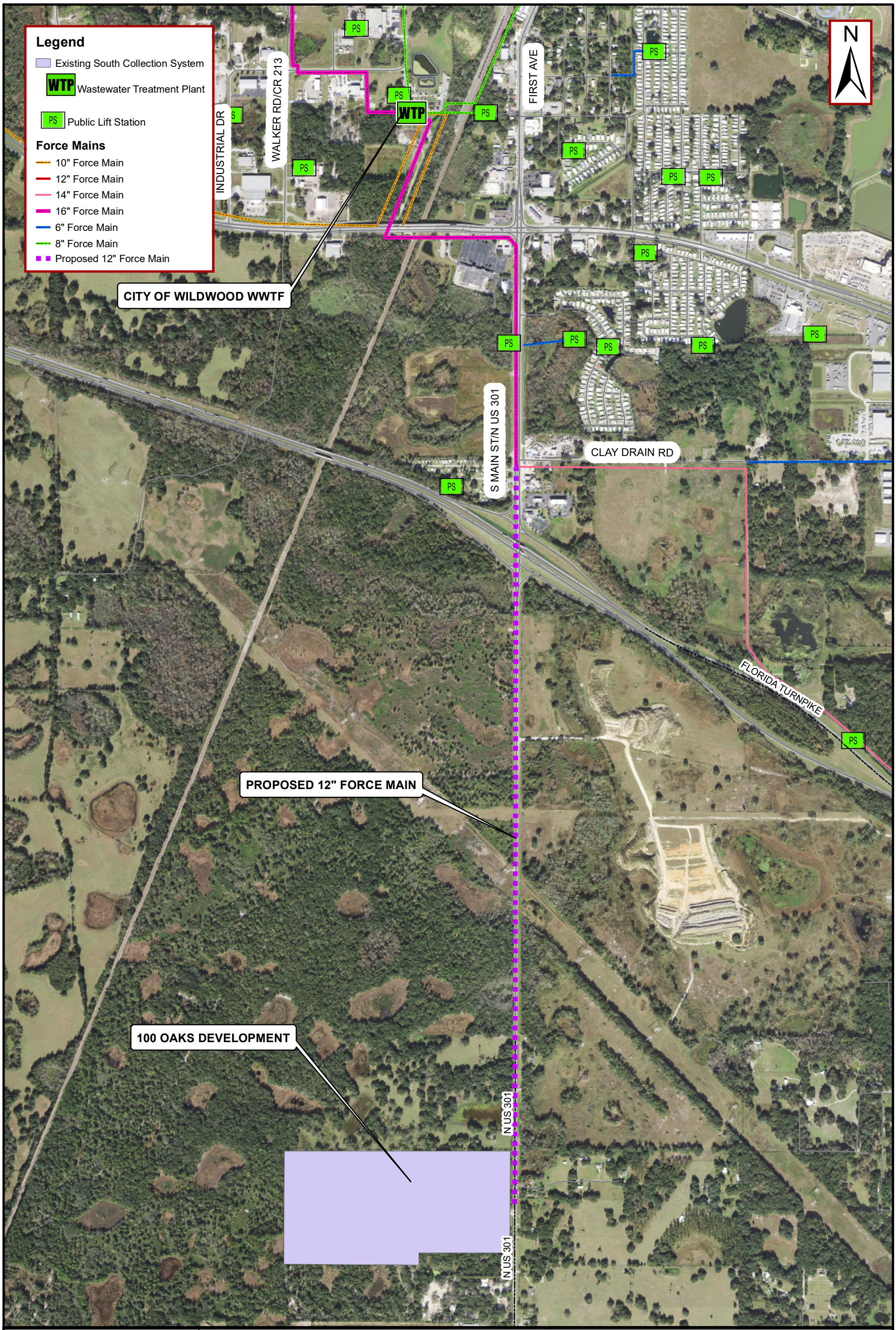
  The second alternative would be to construct a new force main to by-pass the Main Street South lift station and connect to the proposed force main from the CR 219 lift station. This force main would convey the Prison and 100 Oaks flows directly to the City's WWTF. This force main could be sized to include capacity for the US 301 collection system and other future developments, including Monarch Ranch.

JEC/PHS/sab

Attachments: Existing South Collection System
US 301 Corridor Future Land Use Map

CC: File

K:\OCA_Civil\1421\73000 - City Engineering Support\Additional Tasks\0255-US 301 Collection System Evaluation\MEMOww221108JEC_draft.docx



K:\OCA_GIS\0255-US 301 Collection System Evaluation\mxd\100 Oaks Service Map.mxd - 1/26/2023 12:05:23 PM - Benjamin.Lehmann

Kimley»Horn

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Phone: 352 438 3000
www.kimley-horn.com Registry No. 35106

EXISTING SOUTH COLLECTION SYSTEM

US 301 COLLECTION SYSTEM EVALUATION

Project No: 142173142	1" = 1000'	JANUARY 2023	FIGURE 1

US 301 CORRIDOR

FLORIDA TURNPIKE to WARM SPRINGS AVE

AUGUST 2022

COM	0.5 FAR
IND	0.5 FAR
CMU	2.0 FAR inside CRA, 15 du/ac
LDR	4 du/ac, 0.3 FAR
MDR	9 du/ac, 0.3 FAR

City of Wildwood

CITY OF WILDWOOD
100 North Main Street
Wildwood, FL 34785
Phone: (352) 330-1330
www.wildwood-fl.gov

WILDWOOD FLORIDA EST. 1877

Feet 0 280 560

CITY COMMISSION OF THE CITY OF WILDWOOD

EXECUTIVE SUMMARY

SUBJECT: **Adding Policy 8.33 Employee Notary Public Services to the City of Wildwood Personnel Rules and Regulations**

REQUESTED ACTION: Staff recommends approval.

CONTRACT: Vendor/Entity:

Effective Date: Termination Date:

Managing Division/Department:

BUDGET IMPACT:

HISTORY/FACTS/ISSUES:

City employees commissioned as notary publics provide notary services for City-related business as needed or as part of their official job responsibilities. To protect City employees and establish clear guidelines for administering notary services for City-related matters or the public, it was recommended that a formal policy be adopted. This policy will be incorporated into the City of Wildwood Personnel Rules and Regulations and adhered to accordingly.

RESOLUTION NO. R2025-2

A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF WILDWOOD, FLORIDA ADDING POLICY 8.33 "EMPLOYEE NOTARY PUBLIC SERVICES" TO THE CITY OF WILDWOOD PERSONNEL RULES AND REGULATIONS; PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, the City of Wildwood has determined there is a need to revise the Personnel Rules and Regulations to establish guidelines for employees to provide notary services to the public.

NOW THEREFORE, BE IT RESOLVED, by the City Commission of the City of Wildwood, Florida:

SECTION 1: The City Commission hereby adopts Policy 8.33 Employee Notary Public Services to the City of Wildwood Personnel Rules and Regulations, attached herein as "Exhibit A" to this Resolution, to establish a uniform basis for determining when the City of Wildwood employees can administer notary services.

SECTION 2: The Resolution shall take effect immediately upon its final adoption by the City Commission of the City of Wildwood, Florida.

PASSED AND RESOLVED this ____ day of _____, 2025, by the City Commission of the City of Wildwood, Florida.

CITY COMMISSION
CITY OF WILDWOOD, FLORIDA

_____
Ed Wolf, Mayor

ATTEST: _____
Jessica Barnes, City Clerk

EXHIBIT A

Policy 8.33: Employee Notary Public Services **Page:** 1 of 2

A. SUBJECT. Employee Notary Services

B. PURPOSE. To establish a uniform basis for determining when the City of Wildwood employees can administer notary services.

C. POLICY. The policy of the City of Wildwood is to provide notary services to the public under specific guidelines.

D. PROCEDURE.

1. Notary Public Services

a. A notary public is a state public officer appointed and commissioned by the Governor of Florida, whose function is to administer oaths, take acknowledgments of deeds and other instruments, attest to or certify photocopies of certain documents, and perform other duties specified by Chapter 117, Florida Statutes.

b. Notary public who are employees of the City of Wildwood may offer notary public services in accordance with Chapter 117, Florida Statues and the following guidelines:

i. Notary services are provided for items related to City business only.

ii. Notary services are provided free of charge at City Hall between the hours of 8 a.m. and 5 p.m.

iii. Documents to be notarized must be signed in-person before the Notary. Online notarization services are not provided.

iv. The Notary has the right to refuse to perform any notarization.

v. Individuals seeking notary services must present valid photo identification (i.e., driver's license, state-issued ID card, or a passport).

vi. Notary services are not available for:

- Any financial documents
- Codicils
- Deeds
- Depositions
- Living trusts
- Living wills

- Power of attorney
- Wills

c. Notaries shall keep a journal of all Notary Public Services performed.

Effective Date: January 13, 2025

Last Revised: January 13, 2025

CITY COMMISSION OF THE CITY OF WILDWOOD

EXECUTIVE SUMMARY

SUBJECT: **Interlocal Agreement Establishing Municipal Rotation on the Lake Sumter MPO Governing Board**

REQUESTED ACTION: Staff recommends approval.

CONTRACT: Vendor/Entity:

Effective Date: January 13, 2025 Termination Date: December 31, 2029

Managing Division/Department:

BUDGET IMPACT: None.

HISTORY/FACTS/ISSUES:

The Lake Sumter Metropolitan Planning Organization (LSMPO) is an agency created by federal law to oversee and plan regional transportation improvements. The LSMPO Governing Board consists of 29 members from various entities within Lake and Sumter counties, but only 16 are voting members. The cities in Sumter County are currently "at large" voting members meaning that only one vote is allowed between the collective cities.

The attached Interlocal Agreement between the cities of Bushnell, Center Hill, Coleman, Webster, and Wildwood establishes a yearly rotation between the five cities to be the "at large" voting member for the cities. The City of Wildwood will be the voting member for 2025.

The attached resolution formally adopts the Interlocal Agreement between the cities of Bushnell, Center Hill, Coleman, Webster, and Wildwood.

RESOLUTION NO. R2025-3

A RESOLUTION OF THE CITY OF WILDWOOD, FLORIDA AUTHORIZING THE MAYOR TO EXECUTE THE INTERLOCAL AGREEMENT BETWEEN THE CITIES OF BUSHNELL, CENTER HILL, COLEMAN, WEBSTER, AND WILDWOOD TO ESTABLISH A ROTATION FOR MUNICIPAL REPRESENTATION FOR THE LAKE SUMTER METROPOLITAN PLANNING ORGANIZATION GOVERNING BOARD; PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, the Mayor is authorized to sign and execute contracts and agreements pursuant to the City Charter; and,

WHEREAS, the City is a member of the Lake-Sumter Metropolitan Planning Organization Governing Board; and,

WHEREAS, the City wishes to participate in the Interlocal Agreement being considered by the cities of Bushnell, Center Hill, Coleman, and Webster to better coordinate transportation issues that impact Sumter County.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COMMISSION OF THE CITY OF WILDWOOD, FLORIDA, THAT:

Section 1. The City Commission wishes to approve the Interlocal Agreement establishing a rotation for municipal representation for the Lake-Sumter Metropolitan Planning Organization Governing Board contained herein as "Exhibit A" to this Resolution.

Section 2. The Mayor is hereby authorized to execute the Interlocal Agreement.

Section 3. EFFECTIVE DATE. This Resolution shall take effect immediately upon its passage.

DONE AND RESOLVED this _____ day of _____, 20____, by the City Commission of the City of Wildwood, Florida.

CITY COMMISSION
CITY OF WILDWOOD, FLORIDA

_____
Ed Wolf, Mayor

ATTEST: _____
Jessica Barnes, City Clerk

EXHIBIT A

INTERLOCAL AGREEMENT
BETWEEN THE CITY OF BUSHNELL, THE CITY OF CENTER HILL, THE CITY OF COLEMAN, THE CITY OF WEBSTER, AND THE CITY OF WILDWOOD ESTABLISHING A ROTATION FOR MUNICIPAL REPRESENTATION FOR THE LAKE SUMTER METROPOLITAN PLANNING ORGANIZATION GOVERNING BOARD

This Interlocal Agreement (the "Agreement") is entered into between the City of Bushnell ("Bushnell"), the City of Coleman ("Coleman"), the City of Center Hill ("Center Hill"), the City of Webster ("Webster"), and the City of Wildwood ("Wildwood"), herein referred collectively as the "Sumter County Cities".

WHEREAS, the above mentioned cities possess Municipal Home Rule Powers pursuant to Article VIII, Section 2(b), Florida Constitution and Section 166.021, Florida Statutes; and

WHEREAS, the Florida Interlocal Cooperation Act of 1969, Section 163.01, Florida Statutes, encourages and empowers local government to cooperate with one another on matters of mutual interest and advantage, and provides for Interlocal Agreements between local governments; and

WHEREAS, the Sumter County Cities acknowledge that increased coordination in road system planning, construction, and maintenance are for the betterment of their citizens; and

WHEREAS, the Sumter County Cities are members of the Lake-Sumter Metropolitan Planning Organization ("LSMPO") and its Governing Board; and

WHEREAS, the LSMPO Governing Board consists of 29 members from various entities across Lake and Sumter counties, but only 16 members are classified as "voting members;" and

WHEREAS, the Sumter County Cities are At-Large voting members meaning that only one (1) vote is allowed between the collective cities; and

WHEREAS, Bushnell, Center Hill, Coleman, Webster, and Wildwood after due consideration and deliberation, have determined this Agreement is in the best interest of the public to rotate the voting responsibility of the Sumter County Cities on a yearly basis.

NOW, THEREFORE, in consideration of the mutual covenants set forth in this Agreement, Bushnell, Center Hill, Coleman, Webster, and Wildwood, as follows:

1. Incorporation of Preamble. The Preamble above is true and correct and incorporated into this Agreement.

2. Term of Agreement. The effective date shall be the date of final adoption by Bushnell, Center Hill, Coleman, Webster, or Wildwood, whichever is later. The initial term of the Agreement shall be five (5) years from the effective date of the Agreement.

3. LSMPO Governing Board At-Large Voting Member Rotation. The Sumter County Cities agree to the following rotation (if a city chooses not to participate, the rotation will advance to the next city in the rotation schedule):

Term	Voting Representative
January 1, 2025- December 31, 2025	Wildwood
January 1, 2026- December 31, 2026	Bushnell
January 1, 2027- December 31, 2027	Center Hill
January 1, 2028- December 31, 2028	Coleman
January 1, 2029- December 31, 2029	Webster

4. Participation in LSMPO Governing Board Meetings. Nothing in this Agreement shall prevent the cities from participating at the LSMPO Governing Board meetings.

5. Termination of Agreement. Any City may terminate this Agreement at any time upon delivery of a notice of termination to the other parties at least 180 days prior to the proposed date of termination.

6. Dispute Resolution. Bushnell, Center Hill, Coleman, Webster, or Wildwood agree to resolve any dispute related to the interpretation or performance of this Agreement in the manner described in this section. Either Party may initiate the dispute resolution process by providing written notice to the other Party. Initiation of the dispute resolution process shall operate as a stay of the action which is the subject of the dispute.

7. Noticing. All notices, consents, approvals, waivers, and elections that any Party requests or gives under this Agreement will be in writing and shall be given only by hand delivery for which a receipt is obtained, or certified mail, prepaid with confirmation of delivery requested. Notices will be delivered or mailed to the addresses set forth below or as either Party may otherwise designate in writing.

If to Bushnell:
City of Bushnell
Attn: City Manager
117 E. Joe P. Strickland Jr. Avenue
Bushnell, FL 33513

If to Center Hill:
City of Center Hill
Attn: City Clerk
P.O. Box 649

Center Hill, FL 33514

If to Coleman: City of Coleman
Attn: Mayor
P. O. Box 456
Coleman, FL 33521-0456

If to Webster: City of Webster
Attn: City Manager
85 E Central Ave.
Webster, FL 33597

If to Wildwood: City of Wildwood
Attn: City Manager
100 N. Main Street
Wildwood, FL 34785

8. Entire Understanding. Except as otherwise set forth herein, this Agreement embodies and constitutes the entire understanding of the Parties with respect to the subject matters addressed herein, and all prior agreements, understandings, representations and statements, oral or written, are superseded by this Agreement.

9. Severability. Any term or provision of this Agreement that is invalid or unenforceable in any situation in any jurisdiction shall not affect the validity or enforceability of the remaining terms and provision hereof or the validity or enforceability of the offending term or provision in any other situation or in any other jurisdiction.

Signature Pages (Follow)

EXECUTED and AGREED to as of the Effective Date hereof.

CITY OF BUSHNELL

ATTEST

By:_____
City Clerk

CITY OF BUSHNELL, FLORIDA

By:_____
Mayor

Date:_____

Approved as to Form and Legality:

By:_____
City Attorney

EXECUTED and AGREED to as of the Effective Date hereof.

CITY OF CENTER HILL

ATTEST

By:_____
City Clerk

CITY OF CENTER HILL, FLORIDA

By:_____
Mayor

Date:_____

Approved as to Form and Legality:

By:_____
City Attorney

EXECUTED and AGREED to as of the Effective Date hereof.

CITY OF COLEMAN

ATTEST

By:_____
City Clerk

CITY OF COLEMAN, FLORIDA

By:_____
Mayor

Date:_____

Approved as to Form and Legality:

By:_____
City Attorney

EXECUTED and AGREED to as of the Effective Date hereof.

CITY OF WEBSTER

ATTEST

By:_____
City Clerk

CITY OF WEBSTER, FLORIDA

By:_____
Mayor

Date:_____

Approved as to Form and Legality:

By:_____
City Attorney

CITY OF WILDWOOD

ATTEST

By:_____
City Clerk

CITY OF WILDWOOD, FLORIDA

By:_____
Mayor

Date:_____

Approved as to Form and Legality:

By:_____
City Attorney

CITY COMMISSION OF THE CITY OF WILDWOOD

EXECUTIVE SUMMARY

SUBJECT: **Appointment to the Lake Sumter Metropolitan Planning Organization Governing Board**

REQUESTED ACTION: Staff recommends the Commission appoint Commissioner Elliott to the Lake Sumter MPO Governing Board.

CONTRACT: Vendor/Entity:

Effective Date: Termination Date:

Managing Division/Department:

BUDGET IMPACT:

HISTORY/FACTS/ISSUES:

The attached resolution, as required by the Lake-Sumter MPO, formally appoints Commissioner Elliott as the City of Wildwood's representative on the Lake-Sumter Metropolitan Planning Organization Governing Board and Commissioner Marcos Flores as the secondary representative.

RESOLUTION NO. R2025-4

A RESOLUTION OF THE CITY OF WILDWOOD, FLORIDA APPOINTING COMMISSIONER JOE ELLIOTT AND COMMISSIONER MARCOS FLORES TO REPRESENT THE CITY OF WILDWOOD ON THE LAKE-SUMTER METROPOLITAN PLANNING ORGANIZATION GOVERNING BOARD; PROVIDING FOR 12-MONTH TERMS; AND PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, the City Commission has authorized the Mayor to execute the Interlocal Agreement with the cities of Bushnell, Center Hill, Coleman, and Webster establishing a rotation for municipal representation on the Lake-Sumter Metropolitan Planning Organization Governing Board; and,

WHEREAS, the City Commission wishes to appoint City Commissioners to the represent the City of Wildwood on the Lake-Sumter Metropolitan Planning Organization Governing Board.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COMMISSION OF THE CITY OF WILDWOOD, FLORIDA, THAT:

Section 1. The City Commission hereby appoints Commissioner Joe Elliott to act as the City of Wildwood's representative on the Lake-Sumter Metropolitan Planning Organization Governing Board.

Section 2. The City Commission hereby appoints Commissioner Marcos Flores to act as the City of Wildwood's secondary representative on the Lake-Sumter Metropolitan Planning Organization Governing Board to act in the absence of Commissioner Elliott.

Section 3. TERM. Commissioner Elliott and Commissioner Flores shall each serve a 12-month term starting upon this Resolution's Effective Date.

Section 4. EFFECTIVE DATE. This Resolution shall take effect immediately upon its passage.

DONE AND RESOLVED this _____ day of _____, 20____, by the City Commission of the City of Wildwood, Florida.

CITY COMMISSION
CITY OF WILDWOOD, FLORIDA

_____
Ed Wolf, Mayor

ATTEST: _____
Jessica Barnes, City Clerk

CITY COMMISSION OF THE CITY OF WILDWOOD

EXECUTIVE SUMMARY

SUBJECT: **Continental Wastewater Treatment Plant Decommissioning and SR 44 Force Main Pay App No. 10 in the Amount of $84,841.80**

REQUESTED ACTION: Staff Recommend Approval

CONTRACT: Vendor/Entity: DB Civil Construction LLC

Effective Date: 12/16/2024 Termination Date:

Managing Division/Department: Utility Department / Wastewater Division

BUDGET IMPACT: This is a budgeted project in the 24/25 fiscal year budget. Funds are available in account 401-535-60-6770 (SR 44 FM / CCC Decommissioning).

HISTORY/FACTS/ISSUES:

On June 26, 2023, the City awarded the Continental WWTF Decommissioning and SR 44 Force Main project to DB Civil Construction LLC. Attached is Pay Application No. 10 for this project in the amount of $84,841.80. The project engineer, Kimley-Horn and Associates, and City staff have reviewed the pay application, confirmed its accuracy, and recommend approval to pay DB Civil Construction LLC the amount of $84,841.80.

CONTRACTOR APPLICATION FOR PAYMENT

CONTRACTOR:
DB Civil Construction LLC
4475 US 1 South, Suite 502
St. Augustine, FL 32086
(386) 256-7460

PROJECT:
Continental Country Club WWTF

APPLICATION NO: **10**
DBCC PROJECT NO: **2309**
APPLICATION DATE: **12/13/24**
PERIOD FROM: **10/01/24**
PERIOD TO: **12/13/24**

Distribution to:
[X] OWNER
[ ] CONTRACTOR
[X] ENGINEER
[ ] OTHER

ENGINEER:
Kimley-Horn and Associates, Inc.
1700 SE 17th Street, Suite 200
Ocala, Florida 34471

OWNER:
City of Wildwood, Florida
100 N. Main Street
Wildwood, FL 34785

CONTRACTOR'S APPLICATION FOR PAYMENT

Application is made for payment, as shown below, in connection with the Contract Continuation and Stored Materials Sheets which are attached.

1. ORIGINAL CONTRACT SUM	$	3,434,899.00
2. NET CHANGE BY CHANGE ORDERS	$	(492,913.68)
3. CONTRACT SUM TO DATE (Line 1 + 2)	$	2,941,985.32
4. TOTAL COMPLETED & STORED TO DATE	$	2,941,985.32
(Page 2, Revised Total Completed to Date + Page 3, Total for Reimbursment)		
5. RETAINAGE:		
5 % of Completed Work & Stored Material (5% x Line 4)	$	147,099.27
6. TOTAL EARNED LESS RETAINAGE (Line 4 Less Line 5 Total)	$	2,794,886.05
7. LESS PREVIOUS CERTIFICATES FOR PAYMENT (Line 6 from previous G702)	$	2,710,044.25
8. CURRENT PAYMENT DUE (Line 6 less Line 7)	**$**	**84,841.80**
9. BALANCE TO FINISH, INCLUDING RETAINAGE (Line 3 less Line 6)	$	147,099.27

CONTRACTOR'S Certification:

The undersigned CONTRACTOR certifies that (1) all previous progress payments received from OWNER an account of Work done under the Contract referred to above have been applied to discharge in full all obligations of CONTRACTOR incurred in connection with Work covered by prior Applications for Payment numbered 1 through **10** inclusive; and (2) title to all materials and equipment incorporated in said work or otherwise listed in or covered by this Application for Payment will pass to OWNER at time of payment free and clear of all liens, claims, security interests and encumbrances (except such as covered by Bond acceptable to OWNER).

Contractor Affidavit - all previous progress payments received by Contractor have been applied to discharge Contractor's legitimate obligations associated with prior Applications for Payment.

CONTRACTOR: DB CIVIL CONSTRUCTION LLC

By: John Robbins , Sr Proj. Manager Date: 12/13/2024

ENGINEER'S APPROVAL FOR PAYMENT

By: _____ Date: _____

Kimley»Horn

- [x] NO EXCEPTIONS TAKEN
- [ ] CORRECTIONS NOTED
- [ ] REJECTED
- [ ] VERIFY & MAKE CORRECTIONS
- [ ] RESUBMIT
- [ ] FOR INFORMATION ONLY

Our limited review is only for conformance with the design concept of the project and general compliance with the information given in our Plans and Specifications. Contractor is responsible for: dimensions to be confirmed and correlated at the job site, information that pertains to the fabrication processes or to techniques of construction, quantities, safety, coordination with other work, and for conformance to the requirements of the plans and specifications. Review does not authorize changes to contract unless stated specifically in separate letter or change order.

Reviewed By: HEATH.SMITH Date: 12/13/24

9 **Pay Application #** **10** **Project Name:** **Continental Country Club WWTF** **PERIOD ENDING** **12/16/2024**

No.	PAY ITEMS	QTY	UNIT	UNIT PRICE	AMOUNT	PREVIOUS APPLICATION		THIS APPLICATION		TOTAL TO DATE		% COMP
						QTY COMPLETED	AMOUNT COMPLETED	QTY COMPLETED	AMOUNT COMPLETED	QTY COMPLETED	AMOUNT COMPLETED	
	GENERAL											
1	MOBILIZATION	1	LS	$ 233,000.00	$ 233,000.00	1.00	$ 233,000.00		$ -	1.00	$ 233,000.00	100.0%
2	MAINTENANCE OF TRAFFIC	1	LS	$ 20,000.00	$ 20,000.00	1.00	$ 20,000.00		$ -	1.00	$ 20,000.00	100.0%
3	ENVIRONMENTAL PROTECTION	1	LS	$ 25,000.00	$ 25,000.00	0.95	$ 23,750.00	0.05	$ 1,250.00	1.00	$ 25,000.00	100.0%
4	SURVEY LAYOUT AND RECORD DRAWINGS	1	LS	$ 45,000.00	$ 45,000.00	0.90	$ 40,500.00	0.10	$ 4,500.00	1.00	$ 45,000.00	100.0%
5	PROFESSIONAL SITE VIDEO	1	LS	$ 1,939.00	$ 1,939.00	1.00	$ 1,939.00		$ -	1.00	$ 1,939.00	100.0%
6	RESTORATION, COMPLETE	1	LS	$ 80,000.00	$ 80,000.00	0.98	$ 78,400.00	0.02	$ 1,600.00	1.00	$ 80,000.00	100.0%
7	DEWATERING	1	LS	$ 40,000.00	$ 40,000.00	1.00	$ 40,000.00		$ -	1.00	$ 40,000.00	100.0%
	CCC LIFT STATION											
8	LIFT STATION SITE WORK	1	LS	$ 100,000.00	$ 100,000.00	0.98	$ 98,000.00	0.02	$ 2,000.00	1.00	$ 100,000.00	100.0%
9	CCC LIFT STATION	1	LS	$ 540,000.00	$ 540,000.00	0.98	$ 529,200.00	0.02	$ 10,800.00	1.00	$ 540,000.00	100.0%
10	CAST IN PLACE SCREENING STRUCT\	1	LS	$ 65,000.00	$ 65,000.00	0.98	$ 63,700.00	0.02	$ 1,300.00	1.00	$ 65,000.00	100.0%
11	CCC PARKSON FLOW THROUGH SCREEN	1	EA	$ 330,000.00	$ 330,000.00	0.98	$ 323,400.00	0.02	$ 6,600.00	1.00	$ 330,000.00	100.0%
12	LIFT STATION ELECT/ INSTRUMENTATION	1	LS	$ 260,000.00	$ 260,000.00	0.98	$ 254,800.00	0.02	$ 5,200.00	1.00	$ 260,000.00	100.0%
13	8" SDR-26 PVC GRAVITY MAIN	74	LF	$ 240.00	$ 17,760.00	74.00	$ 17,760.00		$ -	74.00	$ 17,760.00	100.0%
14	ELECTRICAL SERVICE ALLOWANCE	1	AL	$ 10,000.00	$ 10,000.00	0.50	$ 5,000.00	0.50	$ 5,000.00	1.00	$ 10,000.00	100.0%
	FORCE MAIN											
15	8" DR 18 C900 PVC FORCE MAIN (INCLUDING FITTINGS AND RESTRAINTS, COMPLETE)	12,350	LF	$ 62.00	$ 765,700.00	12,350	$ 765,700.00		$ -	12,350	$ 765,700.00	100.0%
16	8" GATE VALVE	23	EA	$ 3,500.00	$ 80,500.00	21.00	$ 73,500.00	2.00	$ 7,000.00	23.00	$ 80,500.00	100.0%
17	ABOVE GROUND AIR RELEASE VALVE	18	EA	$ 6,000.00	$ 108,000.00	18.00	$ 108,000.00		$ -	18.00	$ 108,000.00	100.0%
18	8" RESTRAINED PLUG	1	EA	$ 800.00	$ 800.00	1.00	$ 800.00		$ -	1.00	$ 800.00	100.0%
19	8" DR 18 C900 FUSIBLE PVC DIRECTIONAL DRILL (INCLUDING FITTINGS AND RESTRAINTS, COMPLETE)	6,400	LF	$ 98.00	$ 627,200.00	6,400.00	$ 627,200.00		$ -	6,400.00	$ 627,200.00	100.0%
20	REMOVE TIE IN TO EXISTING 8" FM	1	EA	$ 4,400.00	$ 4,400.00	1.00	$ 4,400.00		$ -	1.00	$ 4,400.00	100.0%
21	OPEN CUT ROADWAY RESTORATION ASPH PAVT, 2"	57	SY	$ 160.00	$ 9,120.00	57.00	$ 9,120.00		$ -	57.00	$ 9,120.00	100.0%
22	OVERLAY ASPH CONC, 1" AVERAGE DEPTH, TRAFFIC C (MARKINGS PER PLANS AND SPECIFICATIONS, COMPLETE)	4	TON	$ 1,200.00	$ 4,800.00	4.00	$ 4,800.00		$ -	4.00	$ 4,800.00	100.0%
23	TRANSITION TAPER	283	SY	$ 50.00	$ 14,150.00	283.00	$ 14,150.00		$ -	283.00	$ 14,150.00	100.0%
24	DRIVEWAY RESTORATION (ASPHALT)	48	SY	$ 110.00	$ 5,280.00	48.00	$ 5,280.00		$ -	48.00	$ 5,280.00	100.0%
25	DRIVEWAY RESTORATION (CONCRETE)	140	SY	$ 90.00	$ 12,600.00	140.00	$ 12,600.00		$ -	140.00	$ 12,600.00	100.0%
26	DRIVEWAY RESTORATION (OTHER)	62	SY	$ 40.00	$ 2,480.00	62.00	$ 2,480.00		$ -	62.00	$ 2,480.00	100.0%
27	SIDEWALK RESTORATION	38	SY	$ 90.00	$ 3,420.00	38.00	$ 3,420.00		$ -	38.00	$ 3,420.00	100.0%
28	PAYMENT AND PERFORMANCE BONDE	1	LS	$ 28,750.00	$ 28,750.00	1	$ 28,750.00		$ -	1	$ 28,750.00	100.0%
	SUMMARY OF CONTRACT ITEMS				**$ 3,434,899.00**		**$ 3,389,649.00**		**$ 45,250.00**		**$ 3,434,899.00**	100.0%
	CHANGE ORDER											
CO1 a	Lift Station Wet Well revision performed by C&R Technical	1	LS	$ 39,010.45	$ 39,010.45	1	$ 39,010.45		$ -	1	$ 39,010.45	100.0%
CO2	Owner Purchased Materials	1	LS	$ (575,981.29)	$ (575,981.29)	1.000	$ (575,981.29)		$ -	1.000	$ (575,981.29)	100.0%
				$ -	$ -	0	$ -		$ -	-	$ -	
CO4	Qty Adjustments	1	LS	$ 44,057.16	$ 44,057.16	0	$ -	1	$ 44,057.16	1	$ 44,057.16	100.0%
				$ -	$ -	0	$ -		$ -	-	$ -	
	SUMMARY OF CO				**$ (492,913.68)**		**$ (536,970.84)**		**$ 44,057.16**		**$ (492,913.68)**	
	SUMMARY OF ALL CHANGE ORDERS				**$ (492,913.68)**		**$ (536,970.84)**		**$ 44,057.16**		**$ (492,913.68)**	
	REVISED CONTRACT TOTAL				**$ 2,941,985.32**		**$ 2,852,678.16**		**$ 89,307.16**		**$ 2,941,985.32**	100.0%

Pay Application # **10**
Project Name: **Continental Country Club WWTF**
Period Ending: **12/16/2024**

STORED MATERIALS

DESCRIPTION	AMOUNTS				UNIT	UNIT PRICE	QUANTITIES			
	ON HAND LAST PERIOD	RECV'D THIS PERIOD	INSTALLED THIS PERIOD	BALANCE THIS PERIOD			ON HAND LAST PERIOD	RECV'D THIS PERIOD	INSTALLED THIS PERIOD	BALANCE THIS PERIOD
HAYES PIPE SUPPLY, INC.	$ -	$ -	$ -	$ -						-
INV# 1029100	$ -	$ -	$ -	$ -						-
	$ -	$ -	$ -	$ -						-
	$ -	$ -	$ -	$ -						-
HAYES PIPE SUPPLY, INC.	$ -	$ -	$ -	$ -						-
INV# 1030	$ -	$ -	$ -	$ -						-
	$ -	$ -	$ -	$ -						-
HAYES PIPE SUPPLY, INC.	$ 67,841.70	$ -	$ (67,841.70)	$ -						-
INV# 1058078	$ -	$ -	$ -	$ -						-
	$ -	$ -	$ -	$ -						-
HAYES PIPE SUPPLY, INC.	$ -	$ -	$ -	$ -						-
INV# 1060014	$ -	$ -	$ -	$ -						-
	$ -	$ -	$ -	$ -						-
HAYES PIPE SUPPLY, INC.	$ 33,021.00	$ -	$ (33,021.00)	$ -						-
INV# 1069063	$ -	$ -	$ -	$ -						-
	$ -	$ -	$ -	$ -						-
HAYES PIPE SUPPLY, INC.	$ 12,361.00	$ -	$ (12,361.00)	$ -						-
INV# 1069064	$ -	$ -	$ -	$ -						-
	$ -	$ -	$ -	$ -						-
	$ -	$ -	$ -	$ -						-
	$ -	$ -	$ -	$ -						-
	$ -	$ -	$ -	$ -						-
	$ -	$ -	$ -	$ -						-
SUBTOTAL	**$ 113,223.70**	**$ -**	**$ (113,223.70)**	**$ -**						
SALES TAX 6%	**$ 6,793.42**	**$ -**	**$ (6,793.42)**	**$ -**						
TOTAL	**$ 120,017.12**	**$ -**	**$ (120,017.12)**	**$ -**						
TOTAL FOR REIMBURSEMENT THIS PERIOD				**$ -**						

CITY COMMISSION OF THE CITY OF WILDWOOD

EXECUTIVE SUMMARY

SUBJECT: **Work Authorization No. 6 for Kimley-Horn for the Design, Permitting, and Bid Administration of the Continental Well No. 1 Project in the Amount of $62,500.00**

REQUESTED ACTION: Staff Recommends Approval

CONTRACT: Vendor/Entity: Kimley Horn

Effective Date: 12/16/2024 Termination Date:

Managing Division/Department: Utility Department / Water Division

BUDGET IMPACT: This is a budgeted item in the 24/25 fiscal year budget. Funds for this project can be found in account 401-533-60-6300 (Capital Improvement - Other).

HISTORY/FACTS/ISSUES:

The existing Well No. 1 casing at Continental Country Club has collapsed, and staff wish to decommission the WTP while maintaining the level of service. Staff recommends utilizing the emergency interconnect at the Well No. 1 site and use it as the main source of potable water to feed the tower. This request is to have Kimley-Horn perform the needed design, permitting, and bid administration for the project. Staff recommend approval of work authorization no. 6 for Kimley-Horn in the amount of $62,500.00.

Kimley»Horn

WORK AUTHORIZATION NUMBER 6

Describing a specific agreement between Kimley-Horn and Associates, Inc. ("Kimley-Horn"), and the City of Wildwood ("the Client" or "the City") in accordance with the terms of the Master Agreement for Continuing Professional Services for RFQ 2023-07 dated May 7, 2023, which is incorporated herein by reference.

Identification of Project:

Project: Continental County Club (CCC) WTP No. 1 Decommissioning

Client: City of Wildwood

Project Manager: Trey Clayton, P.E.

General Category of Services:

The City owns and operates the City of Wildwood's Public Water System 6600331 (PWS). The PWS consists of seven water treatment plants including the Continental County Club (CCC) Water Treatment Plant (WTP) No. 1 and No. 2. The CCC WTP No. 1 and No. 2 supply water to the CCC distribution system. The City also has an emergency interconnect between the City system and the CCC system consisting of a pressure reducing valve, which allows flow to CCC during times of high demand or low pressure. The CCC WTP No.1 consists of a single Upper Floridan Aquifer (UFA) and an elevated storage tank (EST). The existing well casing has collapsed, and the City wishes to decommission the WTP while keeping the EST in service. To maintain the level of service for the CCC distribution system, the City also wishes to remove the existing pressure reducing valve (PRV) and install a flow control valve and a supervisor control and data acquisition (SCADA) system to remote control and monitor the flow and pressure from the City interconnect to the CCC distribution system. It is assumed that the project will generally consist of the following activities:

- Utilization of the previous project plans and survey prepared for the Continental County Club by Kimley-Horn
- It is assumed that this project will require a Specific Permit to Construct PWS Components (Form 62-555.900(1)) along with a rerating of the City's PWS.
- The City's existing water use permit (WUP) will require a minor modification to remove the existing CCC WTP No.1 Well from the permit and transfer the permitted withdrawal capacity to the City's other wells.

With the above project understanding we have prepared the below scope of services:

Specific Scope of Basic Services:

<u>Task 1 – Design and Permitting</u>

A. Kimley-Horn will prepare for and attend a project kick-off meeting with the City Staff to discuss the project goals, objectives, and project schedule.

B. Kimley-Horn will prepare a preliminary design report and rerating report as required by the Florida Department of Environmental Protection (FDEP) for the rerating of the City's PWS.

C. Kimley-Horn will prepare and submit a Specific Permit to Construct PWS Components (Form 62-555.900(1)) to construct the proposed improvements and rerate the City's PWS.

D. Kimley-Horn will prepare project plans and specifications for the civil, mechanical, and electrical improvements for the proposed flow control valve, flow meter, SCADA system, and decommissioning of the existing CCC WTP No. 1. Kimley-Horn will submit 60%, 90%, and final plans, specifications, and an opinion of probable cost for City review.

E. Kimley-Horn will prepare and submit a minor modification to the City's existing WUP.

Task 2 – Bid Administration

A. Kimley-Horn will prepare bid packages consisting of plans and specifications in EJCDC format.

B. Kimley-Horn will prepare and advertise the Bid Notification.

C. Kimley-Horn will conduct a pre-bid meeting with prospective bidders.

D. Kimley-Horn will be responsible for distributing bid packages and maintaining a log of the issued bid packages.

E. Kimley-Horn will respond to Requests for Information (RFIs) and prepare bid addendums as necessary during the bid process.

F. Kimley-Horn will review the bid responses and tabulate the results. Kimley-Horn will provide the City with a written bid tabulation record and a selection recommendation.

Additional Services if required:

Services requested that are not specifically included will be provided under a new and separate IPO agreement or can be performed on an hourly basis upon written authorization.

Schedule:

Kimley-Horn will begin services upon receipt of an executed IPO. The above services will be provided as expeditiously as practicable to meet a mutually agreed upon schedule.

Method of Compensation:

Kimley-Horn will complete the above scope of services for a lump sum fee of $62,500 inclusive of expenses.

ACCEPTED:

THE CITY OF WILDWOOD, FLORIDA	KIMLEY-HORN AND ASSOCIATES, INC.
BY:_____	BY: Gene Losito Gene Losito, P.E.
TITLE:_____	TITLE: Vice President
DATE:_____	DATE: November 19, 2024

G:\New Business\Public Sector\City of Wildwood\2024\JEC\CCC WTP No.1 Decommissioning\WA 17_CCC WTP No.1 Decommissioning.docx

CITY COMMISSION OF THE CITY OF WILDWOOD

EXECUTIVE SUMMARY

SUBJECT: **Emergency Backup Generator Rental for the Wastewater Treatment Facility for the Amount of $107,730.00**

REQUESTED ACTION: Staff Recommends Approval

CONTRACT: Vendor/Entity: Ring Power Corporation

Effective Date: 12/17/2024 Termination Date:

Managing Division/Department: Utility Department / Wastewater Division

BUDGET IMPACT: Funds for this rental can be found in account 402-536-70-7353 Wastewater Treatment Plant Project.

HISTORY/FACTS/ISSUES:

During Hurricane Helene, the wastewater treatment plant's backup generator suffered a failure. The plant was without power for several hours. The parts needed to repair the outdated generator are no longer made and have become obsolete. Staff contacted Ring Power and were supplied a rental unit the next day. Staff have since purchased a new generator that is currently being installed by the City's construction manager at risk, Garny Construction, for the wastewater treatment facility. Attached are the invoices for the rental unit for the months of October through December totaling $107,730.00. Staff recommends approval to pay Ring Power $107,730.00 for the rental generator.

Ring Power Corporation
10421 Fern Hill Drive
Riverview, FL 33578
(813) 671-3700

Sign up for On-line Invoice Access:
www.ringpower.com/web-invoice

RING POWER CORPORATION, 500 WORLD COMMERCE PKWY, ST AUGUSTINE, FL 32092, (904) 737-7730

INVOICE

SOLD TO
CITY OF WILDWOOD
100 N MAIN ST
WILDWOOD FL 34785-4047

SHIP TO
1000KW
1290 INDUSTRIAL DR #4703
WILDWOOD FL 34785
SUMTER - 60
SUMTER - 60

INVOICE NUMBER	INVOICE DATE	SHIP VIA	DATE SHIPPED	CUSTOMER'S P.O.#	ACCOUNT NUMBER	PAGE
10RE00172789	11-06-24	CUSTOMER PICKUP	10-16-24	TBD	051730	1

QUANTITY	I.D.# & SERIAL #	DESCRIPTION	AMOUNT
		CUSTOMER CONTACT: JASON MARTIN	
		THIS INVOICE IS NET DUE UPON RECEIPT	
		EQUIPMENT RENTAL FROM 09/27/24 THRU 10/24/24	
1.0	KNM00285	ID NO: KNM00285 SERIAL NO: 0KNM00285	34020.00
	0KNM00285	XQ1000 POWER MODULE - 1000KW	
		SHIFT: TRIPLE	
		HRS OUT: 4276.0	
		EQUIPMENT RENTAL FROM 09/27/24 THRU 10/24/24	
1.0	285021	ID NO: 285021 SERIAL NO: 3H3C302S2AT285021	
	3H3C302S2AT285	- TRAILER	
		SHIFT: SINGLE	
		EQUIPMENT RENTAL FROM 09/27/24 THRU 10/24/24	
36.0	4/0 50'	ID NO: 4/0 50' SERIAL NO: 4/0 50'	6480.00
	4/0 50'	50' 4/0 CABLE GEN - CABLE	
		EQUIPMENT RENTAL FROM 09/27/24 THRU 10/24/24	
18.0	TAIL CLF	ID NO: TAIL CLF SERIAL NO: TAIL CLF	540.00
	TAIL CLF	CAMLOK FEMALE TAIL EYELET GEN - TAIL	
		EQUIPMENT RENTAL FROM 09/27/24 THRU 10/24/24	
18.0	TAIL CLMB	ID NO: TAIL CLMB SERIAL NO: TAIL CLMB	540.00
	TAIL CLMB	CAMLOK MALE TAIL BARE ENDS GEN - TAIL	
		EQUIPMENT RENTAL FROM 09/27/24 THRU 10/24/24	
1.0	SHORE PW	ID NO: SHORE PW SERIAL NO: SHORE PW	
	SHORE PW	SHORE POWER CORD - CABLE	

A SERVICE CHARGE OF 1 ½ % PER MONTH WILL BE CHARGED ON PAST DUE ACCOUNTS.

Title to the equipment listed hereon shall not pass to the purchaser until the purchase price (including all taxes) has been paid, but such title remain vested in the seller until all sums due or to become due from the purchaser to the seller thereon, whether evidenced by note, book account, judgment, or otherwise, shall have been fully paid, at which time ownership shall pass to the purchaser. Purchaser shall assume all liability of damage or destruction to same. At any time after any payment thereon becomes overdue seller may avail himself of any legal remedy including the right to repossess the equipment without notice.

Remit to:
Ring Power Corporation
PO Box 935004
Atlanta, GA 31193-5004

PAY THIS AMOUNT

TERMS ARE CASH UNLESS CREDIT IS APPROVED. With CREDIT APPROVAL terms are as follows: Parts and Service invoices are due net 30 days from the date of the invoice. Rental/Lease invoices are due upon receipt. Sales invoices are due net 10 days from the date of invoice. Past due balances shall be assessed a service charge or interest at the highest rate allowed by law until payment is made. The past due balance represents all charges remaining unpaid on the closing date of the month following invoice date. In the event of default in the payment of any amount due, the purchaser agrees to pay finance charges and the cost of collection. Acceptance by customer of the parts, service or equipment listed above is the customer's agreement to be bound by the credit and collection terms set forth above, the terms of the Application for Credit and if applicable the terms of the Guaranty of Payment.

Filename=EMI7600010 - Formtype=MIPS

SALES

Ring Power Corporation
10421 Fern Hill Drive
Riverview, FL 33578
(813) 671-3700

Sign up for On-line Invoice Access:
www.ringpower.com/web-invoice

RING POWER CORPORATION, 500 WORLD COMMERCE PKWY, ST AUGUSTINE, FL 32092, (904) 737-7730

INVOICE

SOLD TO
CITY OF WILDWOOD
100 N MAIN ST
WILDWOOD FL 34785-4047

SHIP TO
1000KW
1290 INDUSTRIAL DR #4703
WILDWOOD FL 34785
SUMTER - 60
SUMTER - 60

INVOICE NUMBER	INVOICE DATE	SHIP VIA	DATE SHIPPED	CUSTOMER'S P.O.#	ACCOUNT NUMBER	PAGE
10RE00172789	11-06-24	CUSTOMER PICKUP	10-16-24	TBD	051730	2

QUANTITY	I.D.# & SERIAL #	DESCRIPTION	AMOUNT

EQUIPMENT RENTAL FROM 09/27/24 THRU 10/24/24

1.0 AUTO S&S ID NO: AUTO S&S SERIAL NO: AUTO S&S
AUTO S&S AUTO START & STOP CORD - CABLE

..... THANK YOU FOR YOUR BUSINESS!.....
S/M 676 - K5093202

A SERVICE CHARGE OF 1 ½ % PER MONTH WILL BE CHARGED ON PAST DUE ACCOUNTS.

Title to the equipment listed hereon shall not pass to the purchaser until the purchase price (including all taxes) has been paid, but such title remain vested in the seller until all sums due or to become due from the purchaser to the seller thereon, whether evidenced by note, book account, judgment, or otherwise, shall have been fully paid, at which time ownership shall pass to the purchaser. Purchaser shall assume all liability of damage or destruction to same. At any time after any payment thereon becomes overdue seller may avail himself of any legal remedy including the right to repossess the equipment without notice.

Remit to:
Ring Power Corporation
PO Box 935004
Atlanta, GA 31193-5004

PAY THIS AMOUNT
41580.00

TERMS ARE CASH UNLESS CREDIT IS APPROVED. With CREDIT APPROVAL terms are as follows: Parts and Service invoices are due net 30 days from the date of the invoice. Rental/Lease invoices are due upon receipt. Sales invoices are due net 10 days from the date of invoice. Past due balances shall be assessed a service charge or interest at the highest rate allowed by law until payment is made. The past due balance represents all charges remaining unpaid on the closing date of the month following invoice date. In the event of default in the payment of any amount due, the purchaser agrees to pay finance charges and the cost of collection. Acceptance by customer of the parts, service or equipment listed above is the customer's agreement to be bound by the credit and collection terms set forth above, the terms of the Application for Credit and if applicable the terms of the Guaranty of Payment.

Filename=EMI7600010 - Formtype=MIPS

SALES

Ring Power Corporation
10421 Fern Hill Drive
Riverview, FL 33578
(813) 671-3700

Sign up for On-line Invoice Access:
www.ringpower.com/web-invoice

RING POWER CORPORATION, 500 WORLD COMMERCE PKWY, ST AUGUSTINE, FL 32092, (904) 737-7730

INVOICE

SOLD TO
CITY OF WILDWOOD
100 N MAIN ST
WILDWOOD FL 34785-4047

SHIP TO
1000KW
1290 INDUSTRIAL DR #4703
WILDWOOD FL 34785
SUMTER - 60
SUMTER - 60

INVOICE NUMBER	INVOICE DATE	SHIP VIA	DATE SHIPPED	CUSTOMER'S P.O.#	ACCOUNT NUMBER	PAGE
10RE00185091	11-12-24	CUSTOMER PICKUP	10-16-24	TBD	051730	1

QUANTITY	I.D.# & SERIAL #	DESCRIPTION	AMOUNT
		CUSTOMER CONTACT: JASON MARTIN	
		THIS INVOICE IS NET DUE UPON RECEIPT	
		EQUIPMENT RENTAL FROM 10/25/24 THRU 11/21/24	
1.0	KNM00285	ID NO: KNM00285 SERIAL NO: 0KNM00285	34020.00
	0KNM00285	XQ1000 POWER MODULE - 1000KW	
		SHIFT: TRIPLE	
		HRS OUT: 4276.0	
		EQUIPMENT RENTAL FROM 10/25/24 THRU 11/21/24	
1.0	285021	ID NO: 285021 SERIAL NO: 3H3C302S2AT285021	
	3H3C302S2AT285	- TRAILER	
		EQUIPMENT RENTAL FROM 10/25/24 THRU 11/21/24	
36.0	4/0 50'	ID NO: 4/0 50' SERIAL NO: 4/0 50'	6480.00
	4/0 50'	50' 4/0 CABLE GEN - CABLE	
		EQUIPMENT RENTAL FROM 10/25/24 THRU 11/21/24	
18.0	TAIL CLF	ID NO: TAIL CLF SERIAL NO: TAIL CLF	540.00
	TAIL CLF	CAMLOK FEMALE TAIL EYELET GEN - TAIL	
		EQUIPMENT RENTAL FROM 10/25/24 THRU 11/21/24	
18.0	TAIL CLMB	ID NO: TAIL CLMB SERIAL NO: TAIL CLMB	540.00
	TAIL CLMB	CAMLOK MALE TAIL BARE ENDS GEN - TAIL	
		EQUIPMENT RENTAL FROM 10/25/24 THRU 11/21/24	
1.0	SHORE PW	ID NO: SHORE PW SERIAL NO: SHORE PW	
	SHORE PW	SHORE POWER CORD - CABLE	
		EQUIPMENT RENTAL FROM 10/25/24 THRU 11/21/24	

A SERVICE CHARGE OF 1 ½ % PER MONTH WILL BE CHARGED ON PAST DUE ACCOUNTS.

Title to the equipment listed hereon shall not pass to the purchaser until the purchase price (including all taxes) has been paid, but such title remain vested in the seller until all sums due or to become due from the purchaser to the seller thereon, whether evidenced by note, book account, judgment, or otherwise, shall have been fully paid, at which time ownership shall pass to the purchaser. Purchaser shall assume all liability of damage or destruction to same. At any time after any payment thereon becomes overdue seller may avail himself of any legal remedy including the right to repossess the equipment without notice.

Remit to:
Ring Power Corporation
PO Box 935004
Atlanta, GA 31193-5004

PAY THIS AMOUNT

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Filename=EMI7600010 - Formtype=MIPS

Ring Power Corporation
10421 Fern Hill Drive
Riverview, FL 33578
(813) 671-3700

Sign up for On-line Invoice Access:
www.ringpower.com/web-invoice

RING POWER CORPORATION, 500 WORLD COMMERCE PKWY, ST AUGUSTINE, FL 32092, (904) 737-7730

INVOICE

SOLD TO
CITY OF WILDWOOD
100 N MAIN ST
WILDWOOD FL 34785-4047

SHIP TO
1000KW
1290 INDUSTRIAL DR #4703
WILDWOOD FL 34785
SUMTER - 60
SUMTER - 60

INVOICE NUMBER	INVOICE DATE	SHIP VIA	DATE SHIPPED	CUSTOMER'S P.O.#	ACCOUNT NUMBER	PAGE
10RE00185091	11-12-24	CUSTOMER PICKUP	10-16-24	TBD	051730	2

QUANTITY	I.D.# & SERIAL #	DESCRIPTION	AMOUNT

1.0 AUTO S&S ID NO: AUTO S&S SERIAL NO: AUTO S&S
AUTO S&S AUTO START & STOP CORD - CABLE

..... THANK YOU FOR YOUR BUSINESS!.....
S/M 676 - K5093203

A SERVICE CHARGE OF 1 ½ % PER MONTH WILL BE CHARGED ON PAST DUE ACCOUNTS.

Title to the equipment listed hereon shall not pass to the purchaser until the purchase price (including all taxes) has been paid, but such title remain vested in the seller until all sums due or to become due from the purchaser to the seller thereon, whether evidenced by note, book account, judgment, or otherwise, shall have been fully paid, at which time ownership shall pass to the purchaser. Purchaser shall assume all liability of damage or destruction to same. At any time after any payment thereon becomes overdue seller may avail himself of any legal remedy including the right to repossess the equipment without notice.

Remit to:
Ring Power Corporation
PO Box 935004
Atlanta, GA 31193-5004

PAY THIS AMOUNT
41580.00

TERMS ARE CASH UNLESS CREDIT IS APPROVED. With CREDIT APPROVAL terms are as follows: Parts and Service invoices are due net 30 days from the date of the invoice. Rental/Lease invoices are due upon receipt. Sales invoices are due net 10 days from the date of invoice. Past due balances shall be assessed a service charge or interest at the highest rate allowed by law until payment is made. The past due balance represents all charges remaining unpaid on the closing date of the month following invoice date. In the event of default in the payment of any amount due, the purchaser agrees to pay finance charges and the cost of collection. Acceptance by customer of the parts, service or equipment listed above is the customer's agreement to be bound by the credit and collection terms set forth above, the terms of the Application for Credit and if applicable the terms of the Guaranty of Payment.

Filename=EMI7600010 - Formtype=MIPS

SALES

Ring Power CAT

Power Systems Division

10421 FERN HILL DRIVE, RIVERVIEW, FL 33578
TAMPA PSD 813 671 3700

Rental Invoice

Invoice 10RE00266754

Invoice Amount: **$24,570.00**
Invoice Date: **12/11/2024**
Date Out: **09/28/2024 Sat**
Billed From: **11/22/2024 Fri**
Billed Thru: **12/19/2024 Thu**
Reference #: **K50932-04**
Jobsite: **WWTP HURRICANE**
Contact: **JASON MARTIN**
Phone: **352-643-0943**

Customer: **051730**

Bill to: **CITY OF WILDWOOD**
100 N MAIN ST
WILDWOOD FL 34785-4047

1000KW
1290 INDUSTRIAL DR #4703
WILDWOOD FL 34785
SUMTER - 60
SUMTER - 60

Tax Exempt: **FL CONSUMER EXE**
Order By: **JASON MARTIN**

Sales Rep: **ROGER HARDY - PSD RENTAL**
PO #: **JASON MARTIN**

QTY	DESCRIPTION	TOTALS
	CUSTOMER CONTACT: JASON MARTIN THIS INVOICE IS NET DUE UPON RECEIPT	
	ID NO: KNM00285 SERIAL NO: 0KNM00285 XQ1000 POWER MODULE - 1000KW SHIFT: SINGLE PIN: *CATPMC32EKNM00285*	17,010.00
	HRS OUT: 4276.0	
	ID NO: 285021 SERIAL NO: 3H3C302S2AT285021 - TRAILER SHIFT: SINGLE	
	ID NO: 4/0 50' SERIAL NO: 4/0 50' 50' 4/0 CABLE GEN - CABLE	6,480.00
	ID NO: TAIL CLF SERIAL NO: TAIL CLF CAMLOK FEMALE TAIL EYELET GEN - TAIL	540.00
	ID NO: TAIL CLMB SERIAL NO: TAIL CLMB CAMLOK MALE TAIL BARE ENDS GEN - TAIL	540.00
	ID NO: SHORE PW SERIAL NO: SHORE PW SHORE POWER CORD - CABLE	
	ID NO: AUTO S&S SERIAL NO: AUTO S&S AUTO START & STOP CORD - CABLE	
	..... THANK YOU FOR YOUR BUSINESS!..... S/M 676 - K5093204	

Ring Power CAT

Power Systems Division

10421 FERN HILL DRIVE, RIVERVIEW, FL 33578
TAMPA PSD 813 671 3700

Rental Invoice

Invoice 10RE00266754

Invoice Amount: **$24,570.00**
Invoice Date: **12/11/2024**
Date Out: **09/28/2024 Sat**
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Jobsite: **WWTP HURRICANE**
Contact: **JASON MARTIN**
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Customer: **051730**

Bill to: **CITY OF WILDWOOD**
100 N MAIN ST
WILDWOOD FL 34785-4047

1000KW
1290 INDUSTRIAL DR #4703
WILDWOOD FL 34785
SUMTER - 60
SUMTER - 60

Tax Exempt: **FL CONSUMER EXE**
Order By: **JASON MARTIN**

Sales Rep: **ROGER HARDY - PSD RENTAL**
PO #: **JASON MARTIN**

QTY	DESCRIPTION	TOTALS
	TRANSPORT NOT INCLUDED. TRANSPORT WILL BE COST +20%	
	INSTALL NOT INCLUDED	
	** 900 GALLONS OF FUEL CREDITED FROM 3RD INVOICE, RENTAL TOTAL. ($3,150.00)**	

Please Remit Payment To:

PO Box 935004
Atlanta, GA
31193-5004

Invoice Total **24,570.00**

Title to the equipment listed hereon shall not pass to the purchaser until the purchase price (including all taxes) has been paid, but such title remain vested in the seller until all sums due or to become due from the purchaser to the seller thereon, whether evidenced by note, book account, judgment, or otherwise, shall have been fully paid, at which time ownership shall pass to the purchaser. Purchaser shall assume all liability of damage or destruction to same. At any time after any payment thereon becomes overdue seller may avail himself of any legal remedy including the right to repossess the equipment without notice and purchaser agrees to pay legal fees.

CITY COMMISSION OF THE CITY OF WILDWOOD

EXECUTIVE SUMMARY

SUBJECT: **20hp Replacement Pump for Lift Station No. 27 (CR219) for the Amount of $30,284.20**

REQUESTED ACTION: Staff Recommends Approval

CONTRACT: Vendor/Entity: Xylem Water Solutions

Effective Date: 12/17/2024 Termination Date:

Managing Division/Department: Utility Department / Wastewater Division

BUDGET IMPACT: Funds for this purchase can be found in account 401-535-30-4600 (Repair and Maintenance).

HISTORY/FACTS/ISSUES:

The existing 20 horsepower pump/motor at Lift Station #27 (CR 219) has had a failure and needs to be replaced. The replacement cost for this pump is $30,284.20. Staff sent in the broken pump for repair. This purchase is to replace the broken pump, and the repaired pump will be put on the shelf to be used as a spare. Staff recommend purchasing the replacement pump from Xylem / Flygt, the sole source provider for Flygt pumps, for the amount of $30,284.20. See attached quote and sole source letter.

Xylem Water Solutions USA, Inc.
Flygt Products

455 Harvest Time Drive
Sanford, FL 32771
Tel (407) 880-2900
Fax (407) 880-2962

December 20, 2024

CITY OF WILDWOOD
100 N MAIN ST
WILDWOOD FL 34785-4047

Quote # 2024-APO-1415 Alternate 1, Version 2
Project Name: Pumps 2024
Job Name: Wildwood

A Flygt Preventive Maintenance Contract is available for this order. Please contact your Xylem Service Center for more information.

3153.185/463

Qty	Part Number	Description	Unit Price	Extended Price
1	3171.185-0145	Flygt Model NP-3171.185 6" volute Submersible pump equipped with a 230 Volt / 3 phase / 60 Hz 25 HP 1750 RPM motor, 436 impeller, 1 x 50 Ft. length of SUBCAB 4G25+S(2x0,5) submersible cable, FLS leakage detector, volute is prepared for Flush Valve ***DISABLE FLS***	$ 28,671.20	$ 28,671.20
		3153.185/463 Price		**$ 28,671.20**
		Total Price		**$ 28,671.20**
		Freight Charge		**$ 1,613.00**
		Total Price		**$ 30,284.20**

Terms & Conditions

This order is subject to the Standard Terms and Conditions of Sale – Xylem Americas effective on the date the order is accepted which terms are available at http://www.xyleminc.com/en-us/Pages/terms-conditions-of-sale.aspx and incorporated herein by reference and made a part of the agreement between the parties.

As of October 14, 2024, all orders must meet a minimum dollar value of $1,200. Xylem reserves the right to refuse to process any order that does not meet the minimum order value requirement. Xylem will support order adjustments to meet the minimum order value threshold.

Purchase Orders: Please make purchase orders out to: Xylem Water Solutions USA, Inc.

Freight Terms: 3 DAP - Delivered At Place 08 - Jobsite (per IncoTerms 2020)
See Freight Payment (Delivery Terms) below.

Taxes: State, local and other applicable taxes are not included in this quotation.

Back Charges: Buyer shall not make purchases nor shall Buyer incur any labor that would result in a back charge to Seller without prior written consent of an authorized employee of Seller.

Shortages: Xylem will not be responsible for apparent shipment shortages or damages incurred in shipment that are not reported within two weeks from delivery to the jobsite. Damages should be noted on the receiving slip and the truck driver advised of the damages. Please contact our office as soon as possible to report damages or shortages so that replacement items can be shipped and the appropriate claims made.

Terms of Delivery: PP/Add Order Position

Terms of Payment: 100% N30 after invoice date.
Xylem's payment shall not be dependent upon Purchaser being paid by any third party unless Owner denies payment due to reasons solely attributable to items related to the equipment being provided by FLYGT.

Time of Delivery: Approx.12-14 working weeks from receipt of order. Allow additional time for holiday closures.

Validity: This Quote is valid for ninety (90) days.

Schedule: Please consult your local Flygt Branch Office to get fabrication and delivery lead times.

COVID 19: Delivery lead-times may be impacted by the current COVID-19 virus pandemic relative to transportation logistics.

Please feel free to call if you have any questions or if you require assistance.

Sincerely,

TeJay Brown
Sales Representative

Lydia Brocklehurst
Entry Customer Service Representative

lydia.brocklehurst@xylem.com

Customer Acceptance

This order is subject to the Standard Terms and Conditions of Sale – Xylem Americas effective on the date the order is accepted which terms are available at http://www.xyleminc.com/en-us/Pages/terms-conditions-of-sale.aspx and incorporated herein by reference and made a part of the agreement between the parties.

A signed copy of this Quote is acceptable as a binding contract.

Purchase Orders: Please make purchase orders out to: Xylem Water Solutions USA, Inc.

Quote #:	2024-APO-1415 Alternate 1, Version 2
Customer Name:	CITY OF WILDWOOD
Job Name:	Wildwood
Total Amount: (excluding freight)	$ 28,671.20

Signature: _____ Name:_____
(PLEASE PRINT)

Company/Utility:_____ PO:_____

Address:_____ Date:_____

_____ Phone:_____

_____ Email:_____

_____ Fax:_____

FLYGT

a xylem brand



Introducing the Xylem Preventative Maintenance Agreement

Don't forget to protect your new assets

Thank you for considering Xylem for your pumping equipment needs. We appreciate the significance of your purchase decision and want to ensure you get the most out of your investment. The most cost-effective way to do this is to sign-up for a preventative maintenance agreement (PMA) that we tailor to your specific requirements and budget. A Xylem PMA offers a proven method to extend your equipment life, prevent expensive repairs and minimize unplanned failures. It's also ensures you remain in compliance with environmental, health and other government regulations – critical to maximizing operation uptime.

Our Flygt Gold PMA Includes:

- One scheduled preventative maintenance service visit with multi-point inspection, 12 months after purchase and discounted access to Xylem's rental fleet
- An additional 12-month warranty when purchased with your new or replacement Flygt pump(s)
- The option to renew annually or on a multi-year basis following the first service visit
- Priority service on repairs and field service calls

** Flat-Rate Pricing is available for new and replacement Flygt models 3069, 3085, 3102, 3127, 3153, 3171, 3202, 3301 & 3315 starting at $500 per pump.*

Multi-year PMA packages are available as well.
Contact your Xylem Sales Representative today for more information.

Visit our PMA site for more info

xylem

Let's Solve Water

XYLEM Water Solutions USA, Inc.
2152 Sprint Blvd. Apopka Florida 32703
Phone: 407-880-2900 • Fax: 407-880-2962

August 5th 2021
City of Wildwood

Subject: Flygt Products – Sales & Service

Please be advised the Xylem Water Solutions USA, Inc. the only authorized vendor for Flygt Products and is the only authorized service repair and warranty organization in the State of Florida; (East of the Apalachicola River). Their staff is properly trained to provide you the best service available.

Thank you for your interest in Flygt Products. Do not hesitate to call me if you have any questions regarding distribution or any other matter.

Very truly yours,

Dave Moffitt

CITY COMMISSION OF THE CITY OF WILDWOOD

EXECUTIVE SUMMARY

SUBJECT: **Clarifier Gear Box Replacement by Garney Construction for the Amount of $55,765.00**

REQUESTED ACTION: Staff Recommends Approval

CONTRACT: Vendor/Entity: Garney Construction

Effective Date: 1/03/2025 Termination Date:

Managing Division/Department: Utility Department / Wastewater Division

BUDGET IMPACT: Funds for this project are available in account 402-536-70-7353 (Wastewater Treatment Plant Project).

HISTORY/FACTS/ISSUES:

The west clarifier gear box at the wastewater treatment facility had a failure and needed to be replaced. The Commission approved the purchase of the gear box and Staff contacted our construction manager at risk for the wastewater treatment facility, Garney Construction, to install the equipment. The work was completed according to the contract approved by the City Commission which allows Garney to complete ancillary improvements at the plant, as needed. Attached is the invoice from Garney for the amount of $55,765.00.

370 East Crown Point Road, Winter Garden, FL 34787
Phone: 407.877.5903
Fax: 407.877.5912
www.garney.com

December 4, 2024

Jeremy Hockenbury
Wildwood
743 Huey Street
Wildwood, FL 34785

Re: Gear Box Replacement on Existing Clarifier

Garney was asked to install a new gearbox purchased by Wildwood on an existing clarifier at the Wildwood WRF.

Work includes labor, material, subcontract work and equipment required for the following:

- Install of new gearbox on existing clarifier mechanism.
- Remove, modify and reinstall bridge and platform.
- Modify existing mechanism as needed to place back into service.
- Disconnect and reconnect electrical.
- Oil for new gearbox.
- Gearbox was purchased and supplied by Wildwood.

The cost of this work is $55,765. Backup for this cost is included on the following pages.

If you have any questions or need further information, do not hesitate to contact Tom Manning at 407-466-4185.

Sincerely,
Garney Construction

Tom Manning
Senior Project Manager

GARNEY CONSTRUCTION CHANGE REQUEST
GARNEY PROJECT #0669

CONTRACT TITLE: Wildwood WRF BNR Improvements

Change Request No. 001

DESCRIPTION: New Gearbox on Existing Clarifier

PRIME CONTRACTOR'S WORK				Revisions/Comments
1. DIRECT MATERIALS		$3,684		
2. SALES TAX ON MATERIALS	7.00%	$258		
3. SUBTOTAL - PRIME MATERIALS			$3,942	
4. DIRECT LABOR		$31,438		
5. SUBTOTAL - PRIME LABOR			$31,438	
6. EQUIPMENT		$9,085		
7. SALES TAX ON EQUIPMENT	7.00%	$636		
9. SUBTOTAL - PRIME EQUIPMENT (ADD LINES 6, 7)			$9,721	
10. SUBTOTAL (ADD LINES 3, 5 & 9)			$45,100	

Prime Remarks:

SUBCONTRACTOR'S WORK				Revisions/Comments
11. SUBTOTAL			$6,060	

Sub's Remarks:

SUMMARY				Revisions/Comments
12. PRIME CONTRACTOR'S WORK (FROM LINE 10)			$ 45,100	
13. SUBCONTRACTOR'S WORK (FROM LINE 11)			$ 6,060	
14. FEE ON CONTRACTOR'S WORK -- % OF LINE 12	9.00%	$ 4,059		
15. FEE ON SUBCONTRACTOR WORK -- % OF LINE 13	9.00%	$ 545		
16. SUBTOTAL (ADD LINES 12 - 15)			$ 55,765	
17. BONDS AND INSURANCE	0.00%		$ -	
18. TOTAL COST (ADD LINES 16, 17)			**$ 55,765**	

QUALIFICATIONS:

1.

PRIME CONTRACTOR'S NAME: **GARNEY COMPANIES, INC.**

THE SCOPE OF THIS PROPOSAL IS ONLY AS LISTED HEREIN. ANY ADDITIONAL WORK REQUIRED, SHALL BE SUBJECT TO ADDITIONAL PRICING.

SIGNATURE & TITLE OF PREPARER: Tom Manning, Project Manager

DATE: 12/4/24

CONTRACT TITLE: Wildwood WRF BNR Improvements
GARNEY PROJECT #0669

BREAKDOWN OF DIRECT COSTS

Change Request No. 001

ITEM	ITEMS OF WORK	QTY	UNIT	MATERIAL		LABOR		EQUIPMENT		SUB-
No.				Unit Cost	Total Cost	Unit Cost	Total cost	Unit Cost	Total cost	CONTRACT
1										
	Materials									
	Welding Supplies - Airgas	1	LS	$ 106.88	$ 106.88					
	Welding Supplies - Airgas	1	LS	$ 224.27	$ 224.27					
	Steel and Diamond Plate for Walkway - T3	1	LS	$ 1,472.32	$ 1,472.32					
	Oil - Grainger	1	LS	$ 1,061.42	$ 1,061.42					
	Small Tools - Ace	1	LS	$ 135.51	$ 135.51					
	Misc Bolt / Hardware	1	LS	$ 98.59	$ 98.59					
	Steel	1	LS	$ 210.00	$ 210.00					
	Additional Welding Supplies	1	LS	$ 252.47	$ 252.47					
	Labor									
	Modify Clarifier	447	MH			$ 70.33	$ 31,437.51			
	Equipment									
	Forklift - Synergy	1	LS					$ 2,650.50	$ 2,650.50	
	Pump - United Rentals	1	LS					$ 1,515.58	$ 1,515.58	
	Toilets - United Rentals	1	LS					$ 256.22	$ 256.22	
	Crane - Beyel 11/11/24	1	LS					$ 1,752.00	$ 1,752.00	
	Crane - Beyel 11/11 to 11/17 and 11/18 to 11/20	1	LS					$ 2,910.40	$ 2,910.40	
	Fuel for Equipment	35	Gal	$ 3.50	$ 122.50					
	Subcontract									
	Electrical - Northlake Estimate	1	LS							$ 6,060.32
	TOTALS				$ 3,683.96		$ 31,437.51		$ 9,084.70	$ 6,060.32

T3 Custom Fabrication, Inc.

PO Box 1687
Sorrento, FL 32776
(352) 742-2060

BILL TO
Garney Construction
1700 Swift St.
North Kansas City, MO 64116

INVOICE	4033
DATE	11/27/2024
TERMS	Net 30

DESCRIPTION	AMOUNT
(2) 3/16" X 48" X 96" aluminum tread plate	605.00T
(1) L3X3X1/4 304SS angle	374.00T
(1) 1/4" X 5" 304SS flat bar	184.00T
(1) 1/4" X 6" 304SS flat bar	213.00T
Wildwood WRF 0669P003	
1% County Surtax	13.76

Thank you for your business!

SUBTOTAL	1,389.76
TAX	82.56
TOTAL	1,472.32
BALANCE DUE	**$1,472.32**

GRAINGER

2300 E. 18TH ST.
KANSAS CITY, MO 64127-2543
www.grainger.com

ORIGINAL INVOICE

GRAINGER ACCOUNT NUMBER	827956061
INVOICE NUMBER	9327071826
INVOICE DATE	11/25/2024
DUE DATE	12/25/2024
AMOUNT DUE	$1,061.42

SHIP TO
ATTN: DUSTIN STEWARD
GARNEY CONSTRUCTION
6345 East C 470
Sumterville FL 33585

PO NUMBER:	11410-160-M
PO RELEASE:	11410-160-M
PROJECT/JOB:	0669 - WILDWOOD
REQUISITIONER:	0669 CLARIFIER OIL
CALLER:	COREY CRISTICK
CUSTOMER PHONE:	5613244422
ORDER NUMBER:	1533483834
INCO TERMS:	FOB DESTINATION

BILL TO
GARNEY CONSTRUCTION
GARNEY COMPANIES INC
1700 SWIFT AVE STE 200
NORTH KANSAS CITY MO 64116-3834

Pay invoices online at:
www.grainger.com/invoicing

THANK YOU! **FEI NUMBER 36-1150280**
FOR QUESTIONS ABOUT THIS INVOICE OR ACCOUNT CALL *1-800-472-4643*

PO LINE #	ITEM #	DESCRIPTION	QUANTITY	UNIT PRICE	TOTAL
1	49VR97	GEAR OIL,SHC 634 ,PAIL ,5 GAL MANUFACTURER # 110849	2	412.68	825.36
2	4ZF30	GEAR OIL,SHC 634 ,BOTTLE ,1 QT MANUFACTURER # 123018	6	27.77	166.62
		Delivery #6652650939 Date Shipped:11/25/2024 Carrier: FDX GROUND No:of Pkgs:3 Wt: 87.400 Trk #:430214996934 430215004707 430215004718 SHIPPED FROM: DC JACKSONVILLE 945 8001 FORSHEE DRIVE,JACKSONVILLE,FL 32219-5338			

INVOICE SUB TOTAL	991.98
TAX	69.44

THIS PURCHASE IS GOVERNED EXCLUSIVELY BY GRAINGER'S TERMS OF SALE, INCLUDING: (I) DISPUTE RESOLUTION REMEDIES, AND (II) CERTAIN WARRANTY AND DAMAGES LIMITATIONS AND DISCLAIMERS IN EFFECT AT THE TIME OF THE ORDER, WHICH ARE INCORPORATED BY REFERENCE HEREIN. GRAINGER'S TERMS OF SALE ARE AVAILABLE AT WWW.GRAINGER.COM PRODUCT RETURN INSTRUCTIONS ARE AVAILABLE AT WWW.GRAINGER.COM/RETURNS

These items are sold for domestic consumption. If exported, purchaser assumes full responsibility for export controls. Diversion contrary to US law prohibited.

PAY THIS INVOICE - PAYMENT TERMS Net 30 days after inv IN U.S. DOLLARS.

AMOUNT DUE ***$1,061.42***

PLEASE DETACH THIS PORTION AND RETURN WITH YOUR PAYMENT

BILL TO:

GARNEY CONSTRUCTION
GARNEY COMPANIES INC
1700 SWIFT AVE STE 200
NORTH KANSAS CITY MO 64116-3834
UNITED STATES OF AMERICA

REMIT TO:
GRAINGER
DEPT. 827956061
P.O. BOX 419267
KANSAS CITY, MO 64141-6267

827956061932707182610001061421000694410000000100000024122542

X	ACCOUNT NUMBER	DATE	INVOICE NUMBER	**AMOUNT DUE**
	827956061	11/25/2024	9327071826	**$1,061.42**

FOR COMMENTS OR CHANGE OF ADDRESS, ENTER INFORMATION ON REVERSE SIDE

synergy EQUIPMENT

4103 NW 44TH AVE
OCALA, FL 34482
TEL: 352-325-2574

Remit To:
MAIL CODE 5640
P.O. BOX 71200
CHARLOTTE, NC 28272-1200

Customer: 1025
GARNEY CONSTRUCTION
1700 SWIFT STREET
****EMAIL INVOICES ONLY***
KANSAS CITY, MO 64116

Job Site:
WILDWOOD WWTP
1290 INDUSTRIAL DR
WILDWOOD, FL 34785

MONTHLY BILL

Invoice #... 1049799-0001
Invoice date 11/21/24
Date out.... 10/30/24 7:00 AM
Billed thru. 11/29/24
Job Loc..... 1290 INDUSTRIAL DR, WILDWOOD
Job No..... 01242427453
P.O. #..... 0669
Ordered By.. DUSTIN STEWARD
Terms..... Net 30 Days
Sales Rep: OCALA
Written by..

Qty	Equipment #	Day	Week	Month	
1	RCH FORKLIFT-8-9000 LB-42-45'	400.00	1015.00	2150.00	2150.00
	305657 Make: GENIE Model: GTH-844 Ser #: GTH08E-12600				
	HR OUT1 2104.00 HR IN1 TOTAL: 2104.00				
	DELIVERY CHARGE				175.00
	PICKUP CHARGE				175.00

Sub-total: 2500.00
Tax: 150.50
Total: 2650.50

BILLED FOR 30 DAYS 10/30/24 THRU 11/29/24 07:00 AM

The above Equipment has been received in good repair and operating condition.
**Customer acknowledges that this transaction is governed by Synergy's terms and conditions which are set forth, in part, on the reverse side of this Agreement, and in full at www.synergyequip.com, which terms and conditions are incorporated by reference herein, and customer agrees that said terms and conditions shall be applicable to the exclusion of any other terms and conditions.

Signature: _____ **Date:** _____

Printed Name: _____

KEY DEPOSIT $5.00
Initial: _____

IF EQUIPMENT DOES NOT WORK PROPERLY NOTIFY OFFICE AT ONCE.

Terms: Net due 30 days. 1.5% service charge per month after 30 days.

DUSTIN 541-797-9423

SYINV1

United Rentals

BRANCH D41
100 WEBER AVE
LEESBURG FL 34748-8711
352-728-2300
352-728-2448 FAX

RENTAL RETURN INVOICE

240383958-001

Job Site

WILDWOOD WWTP
1290 INDUSTRIAL DR
WILDWOOD FL 34785

Office: 407-877-5903

GARNEY CONSTRUCTION FL
1700 SWIFT AVE STE 200
NORTH KANSAS CITY MO 64116-3834

Customer #	3095377
Invoice Date	11/22/24
Rental Out	10/22/24 09:00 AM
Rental In	11/20/24 10:02 AM
UR Job Loc	1290 INDUSTRIAL DR,
UR Job #	305
Customer Job ID:	
P.O. #	0669
Requested By	TOM MANNING
Reserved By	DARYLE ACREE
Salesperson	MATTHEW ANDERSON

Invoice Amount: $1,515.58

Terms: Due Upon Receipt
Payment options: Contact our credit office 704-916-4835
REMIT TO: UNITED RENTALS (NORTH AMERICA),INC.
PO BOX 840514
DALLAS TX 75284-0514

RENTAL ITEMS:

Qty	Equipment	Description	Minimum	Day	Week	Month	Amount
2	535/2020	HOSE 3X20 PVC SUCTION - CAMLOCK	14.00	14.00	37.00	84.00	168.00
2	535/6620	HOSE 3X50 LAYFLAT DISCHARGE - CAMLOCK	10.00	10.00	30.00	60.00	120.00
1	11418055	PUMP 3" TRASH Make: HONDA Model: WT30XK4A Serial: 1120943	146.00	152.00	420.00	651.00	651.00

Rental Subtotal: 939.00

SALES/MISCELLANEOUS ITEMS:

Qty	Item	Price	Unit of Measure	Extended Amt.
1	DELIVERY CHARGE	185.000	EACH	185.00
1	PICKUP CHARGE	185.000	EACH	185.00

Sales/Misc Subtotal: 370.00

Agreement Subtotal: 1,309.00
Rental Protection: 140.85
Tax: 65.73
Total: 1,515.58

COMMENTS/NOTES:

CONTACT: DUSTIN Steward
CELL#: 541-797-9423
DLV/PKU LOC SELECTED BY MAP PIN OPTION

Effective February 1, 2024 and where permitted by law, United Rentals may impose a surcharge of 2.0% for credit card payments on charge accounts. This surcharge is not greater than our merchant discount rate for credit card transactions and is subject to sales tax.

NOTICE: This invoice is subject to the terms and conditions of the Rental and Service Agreement, which are available at https://www.unitedrentals.com/legal/rental-service-terms-US and which are incorporated herein by reference. A COPY OF THE RENTAL AND SERVICE AGREEMENT TERMS ARE AVAILABLE IN PAPER FORM UPON REQUEST.

United Rentals
DBA Reliable Onsite Services
BRANCH 26D
4559 OLD WINTER GARDEN RD
ORLANDO FL 32811-1735
407-670-1723

4 WEEK BILLING INVOICE

240487163-001

Job Site

WILDWOOD WWTP
1290 INDUSTRIAL DR
WILDWOOD FL 34785

Office: 407-877-5903

GARNEY CONSTRUCTION FL
1700 SWIFT AVE STE 200
NORTH KANSAS CITY MO 64116-3834

Customer #	: 3095377
Invoice Date	: 11/24/24
Date Out	: 10/24/24 05:00 PM
Billed Through	: 11/23/24 00:00
UR Job Loc	: 1290 INDUSTRIAL DR,
UR Job #	: 305
Customer Job ID:	
P.O. #	: 0669
Requested By	: ALEX MILLIREN
Reserved By	: KEILA BURGOS
Salesperson	: CRAIG LIEBER

Invoice Amount: $256.22

Terms: Due Upon Receipt
Payment options: Contact our credit office 704-916-4835
REMIT TO: UNITED RENTALS (NORTH AMERICA),INC.
PO BOX 840514
DALLAS TX 75284-0514

RENTAL ITEMS:

Qty	Equipment	Description	Minimum	Day	Week	Month	Amount
1	600/2410	STANDARD PORTABLE RESTROOM	26.00	26.00	26.00	26.00	26.00
1	075/2070	SERVICE - RESTROOM 1X WEEKLY	120.00	120.00	120.00	120.00	120.00

Rental Subtotal: 146.00

SALES/MISCELLANEOUS ITEMS:

Qty	Item	Price	Unit of Measure	Extended Amt.
1	DELIVERY CHARGE	50.000	EACH	50.00
1	PICKUP CHARGE	50.000	EACH	50.00

Sales/Misc Subtotal: 100.00

Agreement Subtotal: 246.00
Tax: 10.22
Total: 256.22

COMMENTS/NOTES:

CONTACT: DUSTIN Steward
CELL#: 541-797-9423
1 REG 1X WEEK SERVICES
NO PRORATING
CALL FOR PICK UP
OFF ROUTE SERVICES ADD'L CHARGES

Billing period: 30 Days From 10/24/24 05:00 PM Thru 11/23/24 05:00 PM

TO SCHEDULE EQUIPMENT FOR PICKUP, CALL 800-UR-RENTS (800-877-3687)
WE ARE AVAILABLE 24/7 TO SUPPLY YOU WITH A CONFIRMATION #
IN ORDER TO CLOSE THIS CONTRACT

Effective February 1, 2024 and where permitted by law, United Rentals may impose a surcharge of 2.0% for credit card payments on charge accounts. This surcharge is not greater than our merchant discount rate for credit card transactions and is subject to sales tax.

NOTICE: This invoice is subject to the terms and conditions of the Rental and Service Agreement, which are available at https://www.unitedrentals.com/legal/rental-service-terms-US and which are incorporated herein by reference. A COPY OF THE RENTAL AND SERVICE AGREEMENT TERMS ARE AVAILABLE IN PAPER FORM UPON REQUEST.

Beyel Brothers Inc.
Post Office Box 236246
Cocoa, FL 32923-6246
(321) 632-2000 Ph.
(321) 631-0371 Fax

Invoice 337597

Invoice Date: Thursday, November 21, 2024
Customer: GAR011
Job No : OCR-OR-29621
Salesperson: JAMES OWENS
Ordered By: Dustin Steward

GARNEY CONSTRUCTION
1700 SWIFT STREET
KANSAS CITY, MO 64116
USA

Job Site :
Wildwood Waste Treatment Plant
1290 Industrial Dr
Wildwood, FL

Terms: NET30

Customer P.O. No:
Work Performed : Provide 30 ton RT crane for bare rent. Deliver Tuesday 7am to jobsite. Customer sized crane. UNIT 1235

Date	Description	Unit No	Qty	Unit Meas	Rate	Extension
11/11/2024	Permits DOT required permit in & out		2.00	Each	$50.00	$100.00
	Move In Charges freight in & assembly - all assist equipment to be provided by the customer for assembly		1.00	Each	$750.00	$750.00
11/21/2024	Move Out Charges dismantle & freight out - all assist equipment to be provided by the customer for dismantle		1.00	Each	$750.00	$750.00
	Surcharge - Freight Only 9.5% invoiced on move in, move out & permits		1.00	Each	$152.00	$152.00

Total Invoice: $1,752.00

A 3% convenience fee will be added to all credit card payments.

Beyel Brothers Inc.
Post Office Box 236246
Cocoa, FL 32923-6246
(321) 632-2000 Ph.
(321) 631-0371 Fax

Invoice 337598

Invoice Date: Thursday, November 21, 2024
Customer: GAR011
Job No : OCR-OR-29621
Salesperson: JAMES OWENS
Ordered By: Dustin Steward

GARNEY CONSTRUCTION
1700 SWIFT STREET
KANSAS CITY, MO 64116
USA

Job Site :
Wildwood Waste Treatment Plant
1290 Industrial Dr
Wildwood, FL

Terms: NET30

Customer P.O. No:
Work Performed : Provide 30 ton RT crane for bare rent. Deliver Tuesday 7am to jobsite. Customer sized crane. UNIT 1235

Date	Description	Unit No	Qty Unit Meas	Rate		Extension
11/11/2024 to 11/17/2024	30 Ton Hydraulic Rough Terrain Crane (08BW)	1235	1.00 Weeks	$1,640.00	T	$1,640.00
	Mat Rental 48" Round Plastic (03OW/08BW)		1.00 Weeks	$60.00	T	$60.00
11/18/2024 to 11/20/2024	30 Ton Hydraulic Rough Terrain Crane (08BW)	1235	3.00 Days	$328.00	T	$984.00
	Mat Rental 48" Round Plastic (03OW/08BW)		3.00 Days	$12.00	T	$36.00

	Subtotal:	$2,720.00
T=Taxable Taxable Amount: $2,720.00	FL Sales Tax-Sumter County:	$190.40
	Total Invoice:	**$2,910.40**

A 3% convenience fee will be added to all credit card payments.

NORTH LAKE ELECTRIC Inc.
Leesburg, Fl

300-1 Richey Road
Leesburg, FL 34748
(352) 435-7297

Invoice

Date	Invoice #
12/2/2024	911

Bill To
2408 Wildwood Clarifier

P.O. No.	Terms	Due Date	Account #	Project
		12/2/2024		

Description	Qty	Rate	Amount
Wildwood WRF Clarifier Demo old clarifier, conduit, wire and connection of new clarifier	6,060.32	1.00	6,060.32

Thank you for your business

Total	$6,060.32
Payments/Credits	$0.00
Balance Due	$6,060.32

AMENDMENT NO. 1
TO PRECONSTRUCTION AGREEMENT
CONSTRUCTION MANAGER AT RISK
WATER RECLAMATION FACILITY PROJECT

This Amendment is made and entered into upon execution by both parties, by and between, the **City of Wildwood,** a political subdivision of the State of Florida, hereinafter referred to as the "City," and **Garney Companies Inc.**, a Missouri corporation authorized to do business in the State of Florida, hereinafter referred to as the **"Construction Manager"** or **"CM."**

WITNESSETH

WHEREAS, the City and the Construction Manager entered into a Construction Manager at Risk Preconstruction Phase Services Agreement (the "Agreement"), dated January 22, 2024, for the City of Wildwood Water Reclamation Facility and Biological Nutrient Removal Facility (the "Project"); and,

WHEREAS, the Agreement authorized Preconstruction Phase Services; and,

WHEREAS, the parties now wish to amend the Agreement to provide for Construction Phase Services to complete the construction of the Project; and,

WHEREAS, the parties acknowledge the need to amend this Agreement as Guaranteed Maximum Prices (GMPs) are developed and agreed upon for future phases of the Project; and,

WHEREAS, the City may request additional construction manager services by Garney pursuant to the terms of this Agreement that are not included within with a GMP.

NOW, THEREFORE, the City and the CM, in consideration of the mutual covenants contained herein, do agree to amend the Agreement as follows:

1. The Agreement shall be amended to include GMPs once established and agreed upon by the parties for each phase of construction or additional construction manager services or combination thereof.

2. The Work shall be completed in accordance with the following exhibits:

   a. **Exhibit A-1 Construction Phase Services;**

   b. **Exhibit B-1 GMP Summary;**

   c. **Exhibit C-1 Project Schedule**;

   d. **Exhibit D-1 List of Construction Documents**; and

   e. **Exhibit G-1 FDEP Supplementary Conditions.**

Exhibits Attached: Each exhibit attached hereto shall be and incorporated herein.

Exhibits Not Attached: Any exhibits not attached hereto on the date of execution of this Amendment will be deemed to be and shall become a part of this Amendment as if executed on the date hereof upon either: (1) each of the parties initialing and dating such exhibit, upon their respective acceptance of its terms and conditions and/or form or (2) inclusion of the same at the time of an amendment to include GMPs.

3. The total of the Cost of the Work, the General Conditions, Insurance, Performance and Payment Bonds, the CM's Contingency, the CM Fee, and the Owner's Contingency are together guaranteed by the CM not to exceed the GMP.

4. The Project Schedule as used in this Amendment shall mean the timeline prepared by the CM and approved by the City for accomplishing the construction of the Project. The Project Schedule defined herein includes all major sequences of the construction work, material supplies, long-lead procurement, Design Consultant's approval of shop drawings, schedules for Change Orders, if any, and performance testing requirements.

5. The Construction Documents, as used in this Amendment, shall mean **Exhibit D-1, List of Construction Documents**, as well as revisions to the Construction Documents as provided for herein.

6. The CM's Key Personnel, as used in this Amendment, shall mean those individuals identified in **Exhibit E-1, Key Personnel**, attached hereto and incorporated herein.

7. **Section II, Definitions**, shall be amended as follows:

H. Interim Field Change Agreement (IFCA) is amended as set forth in Section I, Additional Definitions, of Exhibit A-1.

K. Project: The design and construction of Wildwood Water Reclamation Facility and Biological Nutrient Removal facility, as well as any additional construction manager services related to Wildwood's wastewater system infrastructure as negotiated by the CM and the City through an Agreement Amendment.

8. **Exhibit D, Insurance Requirements,** of the Preconstruction Agreement is amended as set forth in the attached Exhibit D.

9. Except as modified herein, all other terms, covenants, and conditions of the Agreement shall remain in full force and effect.

IN WITNESS WHEREOF, the parties have executed this Amendment as of the last date written below.

GARNEY COMPANIES, INC.
A MISSOURI CORPORATION

Signed By: _____

Print Name: Eric C. Wagner

Date: 8/20/2024

Title: Director

CITY COMMISSION
CITY OF WILWOOD, FLORIDA

By: _____
ED WOLF, MAYOR

Date: 8/26/24

ATTEST:

By: _____
JESSICA BARNES, CITY CLERK

Approved as to form and correctness:

By: _____
CITY ATTORNEY

EXHIBIT A-1
CONSTRUCTION PHASE SERVICES

This Exhibit contains a list of Agreement provisions applicable to the Construction Phase and shall supplement the other provisions of the Agreement which shall remain in effect during the Project. This list is not exclusive and is subject to modification as mutually agreed.

I. ADDITIONAL DEFINITIONS

A. *CM's Contingency*: Shall mean a sum of money included in the GMP to cover costs and expenses of the CM incurred as a result of unforeseen or unanticipated events or circumstances that would normally be expected to be encountered in the construction of the Project. CM contingency shall be used at CM's discretion to cover CM risk and scope gaps. The City shall own all unused Contingency costs unless a shared contingency is agreed upon in an Amended Agreement.

B. *Interim Field Change Agreement (IFCA)*: A written order issued by the Administrative Agent which requires minor changes in the Work but does not change the Guaranteed Maximum Price or the Contract Times.

C. *Owner's Contingency*: Shall mean a sum of money included in the GMP which may be expended for the Project only with the prior written authorization of the Administrative Agent. Owner's contingency shall be used at the City's discretion for additional Project work.

D. *Milestone*: A principal event or Work item, specified in the Construction Documents relating to an intermediate completion date or time prior to Substantial Completion of all the Work.

E. *Notice to Proceed*: A written notice given by the City to the CM fixing the date on which the Project Schedule will commence to run and on which date the Contractor shall start to perform the Work under the Agreement. The Notice to Proceed will fix the dates of milestones, where applicable, Substantial Completion, and Final Completion of the Agreement, based on the stipulated Project Schedule.

F. *Shop Drawings*: All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for the CM and submitted by the CM to illustrate some portion of the Work.

G. *Underground Facilities*: All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other facilities or attachments, and encasements containing such facilities, including those that convey electricity, gases, steam, liquid petroleum products, telephone, or other communications, cable television, water, wastewater, reuse water, storm water, other liquids or chemicals, or traffic or other control systems.

H. *Site*: The location identified in the Construction Documents where the work

is to be performed along with such additional lands as may be identified by the City for purposes such as staging areas or material storage. Additional locations/lands may also be identified where additional construction manager services are included within an Agreement Amendment.

II. LICENSES

The CM shall be licensed at all times during the term of this Agreement to do business as a Certified Contractor with the State of Florida.

III. NOTICE TO PROCEED

The services to be rendered by the CM shall commence upon the CM's receipt of the written Notice to Proceed from the Administrative Agent. Within five (5) calendar days after issuance of the Notice to Proceed, the CM shall deliver to the Administrative Agent a detailed Project Schedule. This Project Schedule shall also include the calendar dates for the delivery or completion of all documents, reports, or other data, as required by this Agreement.

IV. CONCEALED OR UNKNOWN CONDITIONS

If the CM encounters conditions at the Site which are (1) subsurface or otherwise concealed physical conditions which differ materially from those indicated in the Construction Documents or (2) unanticipated physical conditions of an unusual nature, that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Construction Documents, the CM shall promptly provide notice to the Administrative Agent and Design Consultant before conditions are disturbed and in no event later than five (5) days after first observance of the conditions.

V. CM'S AND OWNER'S CONTINGENCY

A. It is understood that the CM's Contingency line item is within the GMP. The CM may transfer amounts among the CM's Contingency and line items, only as authorized by an Interim Field Change Agreement (IFCA) as defined in Section XXXIII, which will not be unreasonably withheld, as pricing becomes more certain, and to cover cost overruns. If the scope of the CM Contingency expenditure is defined as a Cost of the Work in the Agreement, the IFCA shall be authorized. Each monthly report and application for payment shall contain a CM's Contingency report including any item that the CM has requested to charge to the CM's Contingency.

    1. General Conditions Staffing is a fixed line item within the GMP. The CM's Contingency shall not be utilized for increasing General Conditions staffing.

B. It is understood that the Owner's Contingency line item is within the GMP and may be transferred into line items at the City's sole discretion and

approval, subject to the CM's rights and responsibilities defined herein. Each monthly report and application for payment shall contain an Owner's Contingency report including any item that the City has authorized to change into the work.

VI. CM STAFF

The CM shall maintain an adequate and competent construction management staff and may associate with other qualified firms for the purpose of rendering services hereunder, without additional cost to the City and upon prior approval by the Administrative Agent.

VII. LINES OF AUTHORITY

A. The CM shall establish and maintain lines of authority for its personnel and shall provide this information to the Administrative Agent and all other affected parties, the Trade Contractors, and the Design Consultant, to provide general direction of the work and progress of the Project and Trade Contractors.

B. The CM shall provide the Administrative Agent and all Trade Contractors with bid package definitions for the construction of the Project, containing beginning and finishing dates, their respective responsibilities for performance and the relationships of their work with respect to Trade Contractors and suppliers. The CM shall also continue to provide current scheduling information and provide direction and coordination regarding Milestones, beginning and finishing dates, responsibilities for performance, and the relationships of the CM's work to the work of its Trade Contractors and suppliers to enable them to perform their respective tasks so that the construction progresses smoothly and efficiently in conformance with the overall Project Schedule.

VIII. PROJECT SCHEDULE

A. The CM shall submit an updated Project Schedule with each month's pay application. Project Schedule updates do not become incorporated into this Agreement until approved in writing by the Administrative Agent. The CM, at its discretion, or as requested by the Administrative Agent, may submit Project Schedule updates for consideration more frequently than monthly. Additionally, upon identifying an event or occurrence with the potential to impact the Project Schedule as described herein, the CM shall prepare an updated Project Schedule reflecting the possible impact(s) and shall submit the updated Project Schedule to the Administrative Agent for consideration within ten (10) days of the identification of said event or occurrence.

B. The Project Schedule shall include all major sequences of the construction work, material supplies, long lead procurement, the Design Consultant's approval of shop drawings, change orders in progress, schedules for change

orders, and performance testing requirements. The CM shall hold job-site meetings at least bi-weekly with the Project Team and once each week with the Trade Contractors and the Design Consultant as needed, or more frequently as required by work progress, to review progress, discuss problems and their solutions, and coordinate future work with all Trade Contractors.

C. Upon acceptance and written approval by the Administrative Agent of an updated Project Schedule, all prior approved Project Schedules shall be deemed superseded and shall not provide a basis for any claims of delay made against the CM.

IX. PROJECT MANAGEMENT INFORMATION SYSTEM

A. Notwithstanding anything contained herein, it is expressly understood that the CM shall establish and maintain, for the duration of the Project, project controls systems, including without limitation, estimating, scheduling, purchasing, cost reporting, and project engineering systems.

B. Documents and files produced by computer systems and databases used by the CM during the performance of this Agreement shall be in a format acceptable to the City and compatible with existing City systems. Current City standards for PC software are available from the Administrative Agent.

C. Commencing promptly after approval of this Amendment by the City, and the issuance of the Notice to Proceed by the Administrative Agent, the CM shall implement and shall utilize throughout the life of this Agreement a project management information system which shall hereinafter be referred to as PMIS. Notwithstanding the foregoing, the Administrative Agent may modify and/or reduce the CM's PMIS reporting requirements specified below.

1. The reports, documents and data to be provided shall represent an assessment of the current status of the Project and of the work remaining to be accomplished and shall provide a basis for identifying variances and problems and for making management decisions. An executive summary report will be furnished to the Administrative Agent along with the monthly pay request. A copy of the executive summary report will be furnished to the Design Consultant at the same time.

2. If requested by the Administrative Agent, the CM shall conduct a workshop for participants designated by the Administrative Agent as required to provide instruction related to the use and role of the PMIS.

3. The PMIS shall, at a minimum, include the following:

    i. Monthly Narrative Reporting

    ii. Weekly Schedule Control

iii. Cost Control and Estimating

iv. Project Accounting

v. Accounting and Payment

vi. Action Reports

vii. Critical Issues - Look Ahead

D. Narrative Reporting

1. The CM shall prepare written reports as described hereunder.

2. No other PMIS Narrative Reports shall be required, however, additional types of reports may be requested and required by the Administrative Agent. All reports shall be in 8 ½" x 11" format.

3. The Monthly Narrative Report shall include the following reports:

i. Monthly Summary - generally provides an overview of current issues and pending decisions, future developments and expected achievements and any problems or delays including code violations found by the permitting authority.

ii. Monthly Cost Narrative - describes the current construction cost estimate status of the Project. Specific attention to amendment and Change Order status (which will also include amount, reason for change, and responsibility), claim status or potential claims will be addressed in detail.

iii. Monthly Scheduling Narrative - summarizes the status of the overall Project Schedule. This report shall include an analysis of the various components of the Project Schedule, a description of the critical path and other analyses as necessary to compare planned performance with actual performance. The report shall be submitted in a format acceptable to the Administrative Agent.

iv. Monthly Accounting Narrative - describes the current cost and payment status of the entire Project. This report shall relate current encumbrances and expenditures to the budget allocations.

v. Monthly Construction Progress Report - summarizes the work of the various Trade Contractors during Construction Phase Services. This report shall include information from the weekly job-site meetings as applicable such as General Conditions, long-lead supplies, current deliveries, safety and labor relations programs, permits, construction problems, and

recommendations and plans for the succeeding month.

4. The reports outlined above shall be bound and submitted monthly, in a form acceptable to the City, along with applicable electronic reports during Construction Phase Services and shall be current through the end of the preceding month.

X. CM'S KEY PERSONNEL

A. The CM shall ensure that those key personnel identified in **Exhibit E-1, Key Personnel**, shall remain assigned to the Project in their designated roles for the duration of the Project. Changes to the personnel identified in **Exhibit E-1** may be made subject to the written approval of the Administrative Agent.

B. The CM shall ensure that all key personnel, support personnel, and other agents are fully qualified and capable of performing their assigned tasks. At the direction of the Administrative Agent, the City shall have the right to require the CM to remove personnel assigned at any level for the performance of work.

C. The timely performance and completion of the required services are vitally important to the interest of the City. The CM shall assign a Project Manager acceptable to the Administrative Agent, together with such other personnel as are necessary to assure faithful prosecution and timely delivery of services pursuant to the requirements of this Agreement.

XI. SOLICITATION OF BIDS (POST-GMP)

CM will obtain bids from all Trade Contractors necessary to successfully prosecute the Work. In the event that changes to the Project or other unforeseen circumstances require additional bids to be obtained, CM shall adhere to the following processes:

A. The CM shall prepare invitations for bids (or Requests for Proposal, when applicable) for the Project or any portions or phases thereof, unless otherwise directed by the Administrative Agent.

B. As part of such preparation, the CM shall review the specifications and drawings prepared by the Design Consultant. CM shall promptly bring to the attention of the Administrative Agent, in written form, any ambiguities, discrepancies, conflicts or lack of clarity of language, use of overly restrictive requirements, and any other defects in the specifications or in the drawings known (or which should be known) by the CM. The CM shall, prior to the release of the bid packages, receive confirmation from the Design Consultant that the plans and specifications are fully coordinated and shall so certify to the Administrative Agent.

C. For each separate bid package and/or phase of the work, the CM may

conduct a pre-bid conference with prospective bidders, the Design Consultant, and the Administrative Agent. In the event questions are raised that require an interpretation of the bidding documents or otherwise indicate a need for clarification or correction of the invitation, the CM shall transmit these to the Design Consultant and upon receiving clarification or correction in writing shall prepare an addendum to the bidding document and issue the same to all of the prospective bidders.

D. The CM shall keep costs as low as possible through the aggressive use of competitive bidding procedures for all work. The CM will direct a well-coordinated procedure for all bid packages and, unless otherwise directed by the Administrative Agent, will obtain a minimum of three verbal quotations which accurately reflect current market pricing for all packages with an estimated value over $5,000 and under $25,000, and a minimum of three (3) written quotations which accurately reflect current market pricing for those packages with an estimated value over $25,000 and under $100,000. For procurements estimated to exceed $100,000, CM shall, unless otherwise directed by the Administrative Agent, advertise in a newspaper of general circulation published in the City, not later than twenty – one (21) business days preceding the advertised bid due date for the specified procurement, as well as advertise in electronic media customarily used in the industry, unless otherwise directed by the Administrative Agent.

E. CM will assist the Design Consultant to ensure that completed bid documents used in conjunction with contract formats establish binding obligations for full performance through lump sum and unit pricing bidding within the framework of the GMP.

XII. GENERAL CONDITIONS

A. General Conditions Items shall be deemed to mean the provision of facilities or performance of work by the CM for items that do not lend themselves readily to inclusion in the permanent work of the Trade Contracts. General Conditions Items may include, but are not limited to, the following:

1. Temporary Facilities
Temporary offices/field offices
Sheds
Toilets, rental toilets
Storage
Protection
First aid and facilities
Signage, project sign
2. Temporary Utilities
Temporary light & power, including utility hook-up/disconnect fees

EXHIBIT A-1
CONSTRUCTION PHASE SERVICES

Utilities costs during construction (sanitary, sewer, electrical) including on-site trailers
Utility hook-up/disconnect Fees
Temporary heat
Temporary plumbing
Temporary electrical
3. Hoist Facilities
Material hoists
Personnel hoists
Temporary elevators
Scissor Lifts
Special construction for hoist
Specify Safety and protection for Hoist
4. Protection and Safety
Safety labor
Safety materials
Fire extinguishers
Site fencing, barricades, and safety signage
Protect finish work
Traffic control
Flagmen
Protect existing elements
5. Cleaning
Cleaning labor
Cleaning materials and equipment
Front-end loader/forklift
Trash chute and/or dumpsters
Rubbish removal
Final cleaning
Site cleaning
6. Field Office
Laborers (related to CM's work)
Carpenters (related to CM's work)
Layout crews
Computer systems, printers, faxes, etc.
Office equipment & furniture and supplies
Drawing reproduction (including bid document and specification reproduction for bidding)
Vehicles
7. Miscellaneous/General Expenses
Existing conditions surveys

Preconstruction Damage Surveys
Office supplies
Postage, shipping, and deliveries
Express Mail/messenger services
Expediting
Scheduling
Travel and expenses
Photography and video
Surveying
Jobsite signs
Job radios and chargers
Misc. tools and equipment
Printing, scanning, copying, postage, paper, and drawing reproduction
Blueprint/photostat
Phone chargers
Weather protection
Pumping
Pest control
Ceremonies
Alcohol and drug testing
Progress photos
8. Contract closeout
Warranties administration
Punch list activities and administration
All other items necessary to properly close out the work
9. Taxes and Other
Sales and use tax for general condition items

XIII. CM FEES AND DIRECT COSTS OF THE PROJECT

A. The price for staffing will be included in the General Conditions. The staffing shall be listed as a separate line item in the GMP and that line item is included within the line item for the General Conditions Items. Costs for staffing include salaries and wages paid for labor in the direct employ of the CM under this Agreement, payroll taxes, and payroll insurance. The CM shall not be permitted to utilize or transfer CM's or Owner's Contingency funds for the payment of any staffing costs without written approval of the Administrative Agent.

B. The Cost of the Work consists of all the costs necessarily incurred by the CM in the proper performance of the Work. Such costs shall be at rates not higher than the standard paid at the place of the Project except with prior consent of the Administrative Agent. Cost of the Work includes but is not

limited to, the items below, all of which are included in the GMP (unless otherwise determined by the Administrative Agent, as stated above).

Cost of the Work Items:

1. Payments made or obligated to be made for the costs of all materials, supplies, and equipment incorporated in the Project, including the cost of transportation and storage thereof.
2. Payments due to Trade Contractors from the CM or payments made or obligated to be made by the CM to Trade Contractors for the work performed pursuant to Trade Contracts under this Agreement.
3. Payments made or obligated to be made for the transportation and maintenance of all materials, equipment, and supplies except those provided for in the General Conditions.
4. Rental charges for all necessary machinery and equipment used at the site of the Project, whether rented from the CM or others, including installation, repairs and replacements, dismantling, removal, costs of lubrication, transportation, and delivery costs thereof, which are used in the support of a Trade Contractor's or the CM's own forces in the performance of the work, said rental charges to be consistent with prevailing rates in the area for similar items.
5. The charges of premiums for all insurance and bonds that the CM is required to procure by this Agreement and any required increases in said insurance and bond costs except those provided for in the General Conditions.
6. Sales, use, gross receipts, or similar taxes imposed by any governmental authority and for which the CM is liable.
7. Costs for clean-up, trash, waste, and debris control and removal from the site.
8. Costs of all reproduction used for information purposes required by the City to directly benefit the Project.
9. Costs for security systems for the Project, as required and approved by the Administrative Agent.
10. Costs for efficient logistical control of the site, including horizontal and vertical transportation of materials and personnel. Also, costs for adequate storage and parking space, excepting those provided for in the General Conditions.
11. Costs for temporary facilities, including temporary power and sanitary facilities.

12. Costs for updating as-built documentation/Record Drawings.

13. Costs incurred in repairing or correcting damaged or nonconforming Work executed by Trade Contractors, but only to the extent that the cost of repair or correction is not recoverable by CM from applicable insurance or responsible Trade Contactors within a commercially reasonable period of time.

XIV. ACCOUNTING RECORDS

The CM shall keep full and detailed accounting records and exercise such controls as may be necessary for proper financial management under this Agreement. The Administrative Agent shall be afforded full access to the CM's records, books, correspondence, instructions, drawings, receipts, Trade Contracts, subcontracts, purchase orders, vouchers, memoranda and other data relating to the Project on an "open book" basis, and the CM shall preserve these for a period of ten (10) fiscal years after final payment, or for such longer period as may be required by law. Trade Contractors and subcontractors shall have the same obligations to maintain books and records and to permit audits. If any inspection of the CM's or any Trade Contractor's or subcontractor's books and records or other documents reveals an overcharge, the CM shall pay to the City, or the City, at its election, may take a credit against future payments due to the CM, an amount equal to the overage. If, after the final accounting of the Project, the net total of all overcharges and undercharges is greater than $50,000 in the aggregate, the CM shall also pay all auditing expenses incurred by the City in determining the existence and amount of the overage, not to exceed $25,000.

XV. BONDS

A. CM shall provide the following performance bond and labor and material payment bond or other performance security: 100% Payment and Performance Bonds.

B. The CM shall furnish a performance bond and a payment bond each in an amount at least equal to the total price of all construction contracts, as security for the faithful performance and payment of all of the CM's construction obligations under the Agreement. These bonds shall remain in effect until the date when final payment on the construction contracts becomes due, except as provided otherwise by Laws or Regulations, or by specific provisions of the Agreement.

C. All bonds shall be in compliance with, and in the form prescribed by, Section 255.05, Florida Statutes. The bonds shall be executed by such sureties as are named in "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (as amended and supplemented) by the Financial Management Service, Surety Bond Branch, U.S. Department of the

Treasury. A bond signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual's authority to bind the surety. The evidence of authority shall show that it is effective on the date the agent or attorney-in-fact signed the accompanying bond.

D. The CM shall obtain the required bonds from surety companies that are duly licensed or authorized in Florida to issue bonds in the required amounts.

E. If the surety on a bond furnished is declared bankrupt or becomes insolvent, or its right to do business in Florida is terminated, or the surety ceases to meet the requirements above, then the CM or Trade Contractor shall promptly notify the City and shall, within 30 days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the bond and surety requirements above.

F. Upon request, the City shall provide a copy of the payment bond to any Trade Contractor or other person or entity claiming to have furnished labor or materials used in the performance of the construction work.

G. In accordance with the provisions of Section 255.05, Florida Statutes, the CM shall provide to the City, a Public Construction Bond, providing for the full performance provisions and full labor and material payment provisions, each in an amount not less than the Guaranteed Maximum Price for all individual Projects over Two Hundred Thousand Dollars ($200,000). All bonds shall identify the City of Wildwood, Sumter County, Florida as owner and shall identify the specific project for which the bond is submitted. All bonds shall be signed or countersigned by a Florida licensed resident agent per Section 624.425, Florida Statutes. The agent signing the bond must hold a current Power of Attorney from the surety company issuing the bond. A copy of such Power of Attorney must be attached to the bond and shall contain no restrictions preventing payment and should specify the city and state where the agent is located. Electronic execution of the bonds is acceptable.

H. To be acceptable to the City as Surety for the Public Construction Bond a Surety Company shall comply with the following:

1. The Surety Company shall have a currently valid Certificate of Authority, issued by the State of Florida, Department of Insurance, authorizing it to write surety bonds in the State of Florida.

2. The Surety Company shall have currently valid Certificate of Authority issued by the United States Department of Treasury under Sections 9304 to 9308 of Title 31 of the United States Code.

3. The Surety Company shall be in full compliance with the provisions of the Florida Insurance Code.

4. The Surety Company shall have at least twice the minimum surplus and capital required by the Florida Insurance Code at the time the invitation to bid is issued.

5. If the Agreement Award Amount exceeds $500,000.00, the Surety Company shall also comply with the following:

    i. The Surety Company shall have at least the following minimum ratings in the latest issue of Best's Key Rating Guide:

CONTRACT AMOUNT			POLICY HOLDER'S RATING	REQUIRED FINANCIAL RATING
$500,000	to	1,000,000	A	CLASS I
1,000,000	to	2,000,000	A	CLASS II
2,000,000	to	5,000,000	A	CLASS III
5,000,000	to	10,000,000	A	CLASS IV
10,000,000	to	25,000,000	A	CLASS V
25,000,000	to	50,000,000	A	CLASS VI
50,000,000	to	100,000,000	A	CLASS VII

6. The Surety Company shall not expose itself to any loss on any one risk in an amount exceeding ten (10) percent of its surplus to policyholders, provided:

    i. Any risk or portion of any risk being reinsured shall be deducted in determining the limitation of the risk as prescribed in this section. These minimum requirements shall apply to the reinsuring carrier providing authorization or approval by the State of Florida Department of Insurance to do business in this state.

    ii. In the case of the surety insurance company, in addition to the deduction for reinsurance, the amount assumed by any co-surety, the value of any security, deposited, pledged, or held subject to the consent of the surety and for the protection of the surety shall be deducted.

XVI. QUALITY CONTROL/QUALITY ASSURANCE

A. The CM shall develop and maintain a written quality control/quality assurance program, acceptable to the Administrative Agent to ensure that the quality specified in the Construction Documents is reflected in the actual construction of the Project. The CM shall supervise the work of all Trade Contractors providing instructions to each when their work does not conform to the requirements of the plans and specifications, and it shall continue to exert its influence and control over each Trade Contractor to ensure that corrections are made in a timely manner so as to not affect the efficient progress of the work. Should disagreement occur between the CM and Design Consultant over the acceptability of work and conformance with

the requirements of the specifications and plans, the Administrative Agent shall be the final judge of performance and acceptability.

B. The CM shall receive copies of all claims or reports issued by the Design Consultant or its sub-consultants relative to the performance or acceptability of work.

C. The CM shall be responsible and accountable for the quality control of the work.

XVII. TRADE CONTRACTOR INTERFACING

The CM shall:

A. Enter into contracts with the Trade Contractors, subject to approval by the Administrative Agent.

B. Be the single point of contact between the Administrative Agent and Trade Contractors for the Project.

C. Negotiate all Change Orders, requests for proposed Change Orders, and requests for proposal with all affected Trade Contractors.

D. Review the costs of those proposals and advise the Administrative Agent of their validity and reasonableness, acting in the City's best interest, prior to requesting approval of each Change Order. Subject to the terms of Section XXXIII herein, before any work is begun on any Change Order, a written authorization from the Administrative Agent must be issued. When health and safety are threatened, the CM shall act immediately to remove the threat to health and safety.

E. Carefully review and check all shop drawings and forward the same to the Design Consultant for review and action. The Design Consultant will transmit shop drawings back to the CM within fourteen (14) calendar days, unless otherwise directed by the Administrative Agent, and the CM shall issue the shop drawings to the affected Trade Contractor for fabrication or revision.

F. Maintain a control system to promote expeditious handling of shop drawings.

G. Request the Design Consultant to make interpretations of the drawings or specifications requested of it by the Trade Contractors and maintain a control system to promote timely response.

H. Advise the Administrative Agent and the Design Consultant when timely response is required or has not been provided on any of the above, so as not to impact the Project Schedule. The Administrative Agent will effect a timely response from the Design Consultant in written form when necessary.

XVIII. PERMITTING

A. The CM shall secure all necessary permits not otherwise required to be secured and obtained by the Design Consultant and shall ensure that all Trade Contractor permits are obtained in a timely manner from the governmental authority having jurisdiction and including all necessary utility connection permits, the cost of which will be paid by the City. Any impact fees, permit fees and any costs associated with either shall be paid by the City.

B. The CM shall obtain all applicable building permits related to site development and utilization.

XIX. AUDIO-VISUAL PRE-CONSTRUCTION RECORD

Prior to commencing the Work, the CM shall have a continuous color audio-visual record in digital video format taken at and around the Project Site, and along the length of the proposed Work, to serve as a record of pre-construction conditions. No construction shall begin prior to review and acceptance of the digital videos covering the Work area(s) by the City. The City shall have the authority to reject all or any portion of the audio-visual recordings and order that it be redone at no additional charge. The CM shall promptly reschedule the re-recording of unacceptable coverage after being notified. The City will designate those areas, if any, to be omitted from or added to the audio-visual coverage. The audio-visual recordings shall not be made more than thirty days prior to construction start. All audio-visual recordings and written records related to the recordings shall become property of the City. Submittals of pre- and post-construction digital video recordings will be as specified in the Construction Documents.

XX. WORK HOURS

A. Regular working hours are defined as up to ten (10) hours per day, Monday through Friday, beginning no earlier than 7:00 A.M. and ending no later than 7:00 P.M., excluding Saturdays, Sundays, and Holidays.

B. Requests for approval by the City to work other than regular working hours must be submitted to the City at least 48 hours prior to any proposed weekend work or scheduled extended workweek hours.

C. Unforeseen but necessary unscheduled work outside of allowed work hours on weekdays will be permitted provided that two hours' notice is provided to the City. Maintenance and cleanup may be performed during hours other than regular working hours.

XXI. EROSION CONTROL

Where certain thresholds are met relative to the amount of area disturbed by the Work, a National Pollutant Discharge Elimination System (NPDES) permit will be required and will be obtained by the Design Consultant. The

Construction Manager will obtain and follow the permit in accordance with the Construction Documents.

XXII. PROTECTION AND RESTORATION OF PUBLIC AND PRIVATE PROPERTY

A. The CM shall take all necessary precautions to prevent damage to public and private property. If any direct or indirect damage is done to public or private property by or on account of any act, omission, neglect, negligence, or misconduct in the execution of the Work on the part of the CM, or its subcontractors or agents, such property shall be restored by the CM, at the CM's expense, to its original or better condition to that existing before the damage was done, or the CM shall make good the damage in another manner acceptable to the City.

B. Should any claim be made by any adjacent property owner or occupant because of any act, omission, neglect, negligence, or misconduct in the execution of the Work on the part of the CM, or its subcontractors or agents, the CM shall promptly settle with such third party by negotiation or otherwise resolve the claim.

C. Along the location of the Work, all sidewalks, streets, driveways, mailboxes, walks, lawns, landscaped areas, bushes, trees, shrubbery, irrigation systems and other above and below ground physical features shall be protected by the CM from damage due to the Work, and where disturbed or damaged, promptly restored to their original or better condition by use of similar or comparable materials. Fences, walls, and other features removed by the CM shall be replaced as soon as conditions permit. All grassed areas which have been damaged by the CM shall be re-graded, and sodded or seeded and mulched as directed by the City.

D. Trees close to the Work shall be boxed or otherwise protected against injury. The CM shall trim all branches and roots that are liable to damage because of the CM's operations, but in no case shall any tree be cut or removed without prior notification of the City. All injuries to bark, trunk, limbs and roots of trees shall be repaired by dressing, cutting, and painting according to approved methods, using only approved tools and materials. The CM shall abide by the City's Tree Protection Ordinance.

E. The protection, removal, replacement, and restoration of existing physical features along the line of Work shall be a part of the Work under the Agreement. Final Completion will not be provided, and final payment will not be made until all public and private property has been restored to the satisfaction of the City.

F. In case of failure on the part of the CM to promptly restore damaged property, or make good such damage or injury, the City may, after providing seven days written notice to the CM, proceed to repair, rebuild or otherwise restore such property and the cost thereof will be deducted from

any monies due or which may become due the CM under the Agreement.

XXIII. PROTECTION OF HISTORIC AND ARCHEOLOGICAL RESOURCES

A. If historic or archeological resources are encountered during the CM's operations, the CM shall notify the City immediately, stop work in the area until directed to restart, and proceed as directed below.

B. According to Florida Statutes Chapter 872, it is unlawful to disturb, vandalize, or damage a human burial.

C. In such cases, the CM shall move to another area of the Work until the issue is resolved.

XIV. INSPECTION AND EXAMINATION OF THE WORK

A. The City and authorized designees shall have free access to the Work of the CM at any time for purposes of inspection and testing and shall be reasonably assisted by the CM in conducting such inspections and testing of the Work performed and the nature of same. Such assistance of the Contractor shall, if necessary, include the uncovering, testing, or removal of portions of finished Work. If a portion of the Work has been covered that the Design Consultant has not specifically requested to examine prior to it being covered, the Design Consultant may request to see such work and it shall be uncovered by the Contractor. If such work is in accordance with the Construction Documents, the cost of uncovering and replacement shall, by appropriate Change Order, be at the City's expense. If such work is not in accordance with the Construction Documents, such cost of correction shall be at the Contractor's expense unless the condition was caused by the City.

B. The City will not supervise, direct, control, or have authority over or be responsible for the CM's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of the CM to comply with laws and regulations applicable to the performance of the Work.

C. All materials and equipment shall be subject to inspection, examination, and testing by the City at any time during manufacture, and at places where manufacturing of the materials and equipment is taking place. The City may reject defective materials and equipment during manufacture or before or after they have been incorporated into the Work. If the CM fails to replace defective Work or rejected materials and equipment, the City may replace such materials and equipment or correct such defective Work and charge the cost thereof to the CM.

D. No final inspection, acceptance of Work, materials or equipment or final or interim acceptance of same by the City or certification of the Design

Consultant shall relieve the obligation of the CM to the City to do the Work in a good, workmanlike manner, and to furnish proper, specified equipment and materials, and to perform properly all terms and any obligations of the Agreement.

XXV. RIGHT TO REJECT DEFECTIVE WORK

A. The City has the authority to reject Work which is defective, or will not produce a completed Work that conforms to the Construction Documents or that will prejudice the integrity of the design concept of the completed Work as a functioning whole as indicated by the Construction Documents. The City also has the authority to require special inspection or testing of the Work, whether or not the Work is fabricated, installed, or completed.

B. Prompt notice of all defective Work of which the City has actual knowledge will be given to the CM.

XXVI. PROJECT SIGNAGE

A. General: The CM shall furnish and install project signage as follows:

1. Project Signs: One 60" x 36" sign with content provided by the City.
2. Construction Notice Signs: Minimum 2ft x 3ft signs, as required for public safety, temporary wayfinding, and information purposes. These signs may be relocated from time to time as dictated by the phasing of the work.
3. Limits of Construction Fencing: Banner-type fabric screens, with content approved by the Administrative Agent, designed to cover construction fencing and screen construction activities from public view.

B. Sign Locations:

1. Project Signs shall be placed at the locations designated by the City.
2. All signs shall comply with applicable FDOT and City land development regulations.
3. Signs shall be placed in a position that will not obstruct pedestrian or vehicular traffic.
4. Signs shall be placed at a location that will not create a hazard.

C. Project Sign Construction:

1. The project sign(s) shall be constructed of wood or other substantial material (for example: plywood sheet with 4" x 4" supports and 2" x 4" cross braces).
2. The sign face dimensions shall allow four feet of clearance provided from the bottom of the sign face to the ground.

3. Upon completion of the Project, the CM shall remove and dispose of the sign(s) and support and restore the site to the satisfaction of the City.

D. All project signage described herein or required by the Construction Documents shall be included in the GMP.

XXVII. GENERAL RESPONSIBILITIES

The CM shall have general responsibility for the functions set forth below, and unless specifically provided otherwise, the costs for performing these tasks shall be included in the GMP:

A. A Daily Construction Diary shall be maintained at the site during Construction Phase services and available to the City and the Design Consultant. A complete Daily Construction Diary shall be submitted to the City at the conclusion of the Project.

B. Maintain a roster of companies on the Project with names and telephone numbers of key personnel and provide a method of identifying workmen on site.

C. Establish procedures to ensure compliance with federal and state immigration laws (if any) applicable to employment of non-US citizens, including, but not limited to, compliance with the provisions of section 448.095, Florida Statutes, "Employment Eligibility" as amended from time to time.

D. Establish and enforce job rules governing dress, parking, clean-up, use of facilities and worker discipline.

E. Provide reasonable labor relations management for a harmonious, productive Project.

F. Provide a general safety program for the Project to meet OSHA requirements, including any corresponding safety and health requirements established by state and local authorities.

G. Monitor compliance for Trade Contractors without relieving them of responsibilities to perform work in accordance with the CM's Safety and Health Process Manual. The CM will administer this program and govern involvement CMs employees, subcontractors, suppliers, vendors and deliveries with accordance with program. Delegation of duties will be at CMs discretion.

H. Provide for engineering layout of the entire Project to ensure dimensional and elevation controls. Such engineering layout will be done from control axis and established benchmarks by a professional surveyor approved by the Administrative Agent.

I. Provide for first aid services for the Project to the extent appropriate.

J. Arrange for temporary fire protection during construction.

K. Provide on-site office that supports the efforts of the CM and the Project administrative activities of the Administrative Agent.

L. Timely communicate the Project construction schedule with neighboring affected parties, including information regarding traffic impacts and construction noise.

M. Maintain, stay current with, and review all environmental studies, reports, and documents relating to the Site, issued by any governmental agency and/or its consultants and any Project Team member.

N. Administrative Services - The CM shall provide job-site administrative functions during construction to ensure proper documentation, including but not limited to the following activities, and unless specifically provided otherwise, the costs for performing these tasks shall be included in the GMP:

1. Job Meetings - Regularly held progress and coordination meetings.

2. Material and Equipment Expediting - Provide staff to closely monitor material and equipment deliveries, critically important checking and follow-up procedures on supplier commitments of all Trade Contractors.

3. Payments to Trade Contractors - Develop and implement a procedure for review, processing, and payment of applications by Trade Contractors for progress and final payments.

4. Document Interpretation - Refer to the Design Consultant all questions for interpretation of the documents prepared by the Design Consultant.

5. Prior to Final Completion - All required guarantees, affidavits, releases, bonds and waivers, operation manuals, record drawings, and maintenance books shall be transmitted to the Administrative Agent via the Design Consultant.

6. Final Completion of each Phase - Monitor the Trade Contractors' performance on the completion of the Project and provide notice to the Project Team that the work is ready for final inspection after the completion of the punch list.

7. Startup - Prior to Substantial Completion of each Phase, conduct with the City's personnel a direct checkout of utilities, operation of systems and equipment for readiness, and assist in their initial start-up and testing by the Trade Contractors.

O. Record Drawings - The CM shall monitor the progress of its Trade Contractors on marked-up field prints at the completion of each phase of the Project, which shall be sent to the Design Consultant for review prior to preparation of the final as- built record drawings on AutoCAD files by the

Design Consultant. Field mark-up of said as-built drawings shall be a direct cost item as part of the GMP. Updating record drawings will be a condition precedent to the monthly payments of the CM and the Trade Contractors. The Administrative Agent and the Design Consultant will monitor the status of the updated drawings. The CM will write this requirement for record drawings into the Trade Contracts.

P. Physical Testing – The City, in consultation with the Design Consultant, shall contract with an independent qualified third party to perform physical testing (vertical construction components and subsurface items), according to industry standards applicable to the Project. The CM shall schedule and coordinate all appropriate testing.

Q. Administrative Records - The CM will maintain on a current basis, files and records including, but not limited to those set forth below, and, unless specifically provided otherwise, the costs for performing these tasks are included in the GMP:

1. Contracts or purchase orders
2. Shop drawing submittal/approval logs
3. Equipment purchase/delivery logs
4. Construction drawings and specifications with addenda
5. Warranties and guarantees
6. Correspondences
7. Other material project related information

R. Cost accounting - The CM will maintain on a current basis files and records to include, but not be limited to, those items set forth below. Such files and records will be maintained at the jobsite. The Project records shall be available at reasonable times or on an as-needed basis to the Administrative Agent and the Design Consultant for reference or review.

1. Trade contracts
2. Labor costs, if applicable
3. Material costs
4. Equipment costs
5. Cost proposal requests
6. Force account records
7. Payment request records (and invoices)
8. Cost estimates

9. Bulletin quotations

10. Insurance certificates and bonds

11. Contract changes

12. Purchase orders

13. Material purchase delivery logs

14. Bid/Award information

15. Bid analysis and negotiations

16. CM contingency Report

S. The CM shall provide consultation and project management to facilitate occupancy and provide transitional services to get the work, as completed by the Trade Contractors, in such conditions as will satisfy operational requirements.

T. The CM shall require the Trade Contractors to provide operational training on equipment to be used in the Project.

U. The CM shall conduct the preliminary punch list inspection and supervise the Trade Contractors in the completion of all punch list work prior to notifying the Design Consultant to perform its punch list work.

V. The CM shall catalog operational and maintenance requirements of the equipment to be operated by the City's operations and maintenance personnel and convey these to the Administrative Agent in such a manner as to promote their usability.

W. At all times, the CM shall provide the Design Consultant and the Administrative Agent easy and safe access to the Project construction Site(s) wherever it is in preparation and progress so Design Consultant and Administrative Agent may perform their functions. CM shall confine operations at the site to areas permitted by law, ordinances, permits, and the Construction Documents and not unreasonably encumber the Site with any materials or equipment. CM shall conform at all times to the City's requirements for protection of plant, materials, equipment, and noise levels. CM shall keep driveways and entrances serving the Sites clear and available to the City and emergency vehicles at all times and will not use these areas for parking or storage of materials.

XXVIII. WARRANTY

A. The CM shall secure required guarantees and warranties and assemble and deliver them to the Administrative Agent in a manner that will facilitate their maximum enforcement and ensure their meaningful implementation.

B. Where any work is performed by Trade Contractors under contract with the CM, the CM and the Trade Contractors respectively shall warrant that all materials furnished under the contract will be of good quality and new unless otherwise required or permitted by the Construction Documents, that the Work will be free from defects not inherent in the quality required or permitted, and that the Work will conform to the requirements of the Construction Documents. Work not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective.

C. The CM further agrees to have all Work found by the City to be defective in material or workmanship and not in conformance with the Construction Documents corrected by the appropriate Trade Contractor for a period of one (1) year from the date of Final Completion of the Project or for such longer periods of time as may be set forth with respect to specific warranties contained in the trade sections of the specifications. The CM shall collect and deliver to the Administrative Agent any written warranties given by others as required by the Construction Documents. Also, the CM shall conduct, jointly with the Administrative Agent and the Design Consultant, a warranty inspection between nine (9) and eleven (11) months after the date of Final Completion of the Project and corrective action shall promptly be accomplished by the CM. The management of all warranty work shall be included in the GMP.

D. Where warranty items are complete and final within one phase, warranty periods will begin at final completion of that phase.

XXIX. ADMINISTRATIVE RESPONSIBILITIES OF CITY

A. The Administrative Agent shall conduct periodic reviews of the work of the CM necessary for the completion of the CM's services during the Project.

B. City Commission approval will be required for Change Orders and Pay Applications to the extent set forth in Section XXXIII of this Exhibit. For all other changes, the Administrative Agent and the CM shall agree in writing to the change.

XXX. TRADE CONTRACTS

A. The CM shall request and receive proposals from Trade Contractors and suppliers and will award those contracts after the Administrative Agent and the CM have reviewed each proposal, unless otherwise directed by the Administrative Agent.

B. All Trade Contracts and supply contracts will be between the CM and the Trade Contractors and suppliers. The form of the Trade Contracts, including the general conditions, shall be reasonably satisfactory to the City and comply with applicable law. Approval of a Trade Contract shall not be

unreasonably withheld by the Administrative Agent.

C. The CM shall include in all contracts with Trade Contractors and lower-tier subcontractors (lower-tier subcontractors being defined as sub- or sub-subcontractors, sub- or sub-sub-consultants, or professionals hired by a Trade Contractor employed by the CM, for work on the Project) the following provisions:

   1. "The Trade Contractor [or lower-tier subcontractor] shall indemnify and hold harmless the City, its officers and employees from liabilities, damages, losses, and costs, including but not limited to reasonable attorney's fees to the extent caused by the negligence, recklessness, or intentional wrongful misconduct of the Trade Contractor [or lower-tier subcontractor] and persons employed or utilized by the Trade Contractor [or lower-tier subcontractor] in the performance of this Agreement."

D. By an appropriate written Trade Contract, the CM shall require each Trade Contractor to be bound to the CM by the terms of this Agreement, to the extent of the work to be performed by the Trade Contractor, and to assume toward the CM all the obligations and responsibilities which the CM by this Agreement assumes toward the City. Said Trade Contracts shall preserve and protect the rights of the City with respect to the work to be performed by the Trade Contractor so that the contracting thereof will not prejudice such rights. The CM shall require each Trade Contractor to enter into similar contracts with its trade subcontractors.

E. Nothing contained in this Agreement or any or all of CM's contracts with its Trade Contractors or lower-tier subcontractors shall create any contractual obligations on behalf of the City and any third party. However, the Parties understand and agree that the City is the intended third-party beneficiary of all of CM's Trade Contracts and subcontracts. CM shall require that all of its contracts with its Trade Contractors or lower-tier subcontractors expressly provide for the City to be intended third-party beneficiaries of such contracts so as to enable City to maintain a cause of action directly against such Trade Contractors or lower-tier subcontractors as necessary for any negligence, recklessness, or intentional wrongful misconduct related to this Project. CM shall provide evidence of such contractual provisions to City upon request, and CM agrees not to modify such provisions.

F. It shall be the responsibility of the CM to have the appropriate Trade Contractor remove and replace any work or materials found to be defective, without additional cost to the City. If the Design Consultant, the City or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection, or approval not otherwise included hereunder, the Design Consultant will, upon written

authorization from the Administrative Agent, instruct the CM to make arrangements for such additional testing, inspection or approval by an entity acceptable to the City, and the CM shall give timely notice to the Design Consultant of when and where tests and inspections are to be made so that the Design Consultant may be present for such procedures. Such costs shall be at the CM's expense where work or materials are found to be defective or not in compliance with the Construction Documents and/or requirements of authorities having jurisdiction.

XXXI. SUBSTANTIAL COMPLETION AND OCCUPANCY

A. Substantial Completion is the point in the progress of the Work, when the Project or designated portion thereof is sufficiently complete in accordance with the Agreement so that the City is able to fully occupy and fully utilize the Project for its intended use with all required certificates of occupancy obtained.

1. The City and the CM acknowledge that the Project will be constructed in phases, where each "phase" is a generally isolated scope that together constitutes all of the Work. Unless otherwise authorized by the Administrative Agent, the CM shall provide for Substantial Completion at each phase.

B. The Substantial Completion date for each project phase shall be as set forth in **Exhibit C-1**. The CM shall notify the Design Consultant when the Project or phase is ready for Substantial Completion inspection of each project phase. The Design Consultant and the Administrative Agent shall inspect the Project jointly to ascertain if the Project is substantially complete. If the entire Project or Project Phase is determined to be substantially complete by the Design Consultant and the Administrative Agent, the CM shall prepare a Certificate of Substantial Completion to be executed by the Administrative Agent. At the time of the Substantial Completion inspection for the Project, the CM shall provide to the Administrative Agent a listing of Project deficiencies that must be remedied in order to attain Final Completion. The Administrative Agent shall promptly review said listing and provide comments as to the completeness of the listing. Concurrently, the CM shall take action to remedy the deficiencies noted in this listing and as amended by the comments of the Administrative Agent. The CM shall have thirty (30) calendar days from the date of issuance of the Certificate of Substantial Completion of the Project within which to remedy the deficiencies and obtain Final Completion (or Final Acceptance for intermediate phases). At the end of the thirty (30) day period, the Administrative Agent shall conduct a final inspection of the Project or Project phase and ascertain if the deficiencies have been remedied and that the Project or Project Phase has achieved Final Completion or Final Acceptance as applicable.

C. The services to be provided under this Agreement shall be in accordance with the Project Schedule.

D. CM shall obtain all required certificates of occupancy prior to Substantial Completion and in a timely manner in accordance with the Project Schedule.

E. The City reserves the right to occupy and to place and install equipment in completed areas of the Site, before Substantial Completion and before Final Completion, provided such occupancy does not unreasonably interfere with completion of the Work. Such placement of equipment and partial occupancy shall not constitute acceptance of incomplete portions of the Work, nor shall it relieve the CM of its responsibility for completion of the Work in accordance with the Agreement.

XXXII. LIQUIDATED DAMAGES

A. At the time this Agreement is executed, the Project milestones in **Exhibit C-1,** shall become active. CM agrees to complete the Work in accordance with said milestones. CM acknowledges that failure to substantially complete the Work will result in substantial damages to the City.

B. It is specifically agreed by and between CM and the City that the City will be entitled to liquidated damages in an amount equal to $500 per day (weekend and holidays included). Liquidated Damages will be assessed for each day and shall continue until actual substantial completion of the Project is achieved. The Parties specifically agree that the liquidated damages provided for herein do not constitute a penalty and are the sole remedy for CM caused delay.

C. Nothing contained herein shall be construed to prevent the City or CM from seeking and recovering damages sustained by either or both of them as a result of a breach of any term or provision of this Agreement. The Parties shall, in addition to any other legal or other relief available to them, be entitled to obtain specific performance or other equitable relief against the threatened breach of such provisions or the continuation of any such breach, without the necessity of proving actual damages and without the necessity of posting bond or other security.

XXXIII. CHANGES IN THE PROJECT

A. CM acknowledges and expressly agrees that the City, upon the direction of the Administrative Agent, may, without notice to the CM's surety company, if any, make changes in the Work, including additions, deletions or modifications to the Work or the Project schedule thereof. City and CM acknowledge and agree that the volume and/or extent of changes in the Work ordered is expected to be substantial and that CM may make claims for additional compensation when and only if changes

in the Work will increase Direct Costs, and not solely on processing the number or extent of such changes, but subject in all instances to the provisions and limitations contained in this Agreement.

1. Except in an emergency endangering life or property, no changes in the Work shall be performed by the CM unless a properly executed IFCA or Agreement Amendment is received by the CM.

B. Change Orders

1. The Administrative Agent may approve a change to the Project. Such changes to the Project may consist of changes within the general scope of this Agreement consisting of additions, deletions, delays not attributable to the CM or other revisions that do not result in an increase to the GMP.

2. The CM shall not be entitled to a price adjustment due to the costs for review of any documents necessitated by a change to the Project or to the GMP, regardless of the reason for the change, including but not limited to amendments to this Agreement.

3. For changes initiated by the City, the CM will receive a directive for change, will make recommendations to the Administrative Agent regarding the requested change, and shall provide a price within fourteen (14) calendar days or sooner if practicable, to the City for the items delineated in the request for change. Should the Administrative Agent so direct the CM to proceed in the preparation of a Change Order, the CM shall do so utilizing documents prepared by the Design Consultant.

4. A Change Order is a written order to the CM approved at the direction of the Administrative Agent approved by the City Commission, signed by the City and CM, issued after the execution of this Agreement, authorizing a change in the Project requirements, Construction Documents and/or the GMP, the CM's fee and/or Project Schedule. Each adjustment in the GMP resulting from a change shall clearly separate the adjustment associated with the change.

5. A Change Order shall be determined in one or more of the following ways:

    i. By mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation by the Design Consultant and the Administrative Agent.

    ii. By unit prices stated in the Agreement or subsequently agreed upon.

    iii. If a lump sum or unit price cannot be agreed upon, the CM,

provided it receives a written order approved and signed by the City, shall promptly proceed with the work involved. The cost of such change shall then be determined on the basis of the actual cost and savings of those performing the work attributed to the change. The CM shall keep and present, in such form as the Administrative Agent may prescribe, an itemized accounting together with appropriate data supporting the increase in the cost of the Project.

iv. The amount of a decrease in the GMP to be allowed for any deletion or change that results in a net decrease in cost will be the amount of the actual net decrease.

6. Interim Field Change Agreement (IFCA)/Agreement Amendment

   i. A Change Order will either be: (i) an IFCA or (ii) an Agreement Amendment, depending on whether the GMP stipulated in the Agreement will be exceeded or not.

   ii. An IFCA will be issued for changes within the general scope of the Work that will not exceed the GMP. Whenever an IFCA is issued, the CM shall be entitled to General Conditions costs associated with the Change Order. In no event shall the General Conditions costs exceed ten percent (10%).

   iii. An Agreement Amendment will be entered into for changes in the Scope of Work or any change that will increase the GMP. The City, with the CM's input, will determine the extent of adjustment to Scope of Work, GMP and Project Schedule and will prepare the Agreement Amendment. The CM shall be entitled to General Conditions Costs associated with the Change Order. In no event shall the General Conditions Costs exceed ten percent (10%) in an Agreement Amendment.

   iv. The Change Order will include a detailed description of the Work to be performed, and any adjustments in the GMP or Project Schedule or both, which are agreed to by the parties. The Change Order may also include supporting data detailing the costs, including, but not limited to General Conditions Costs, associated with the change in the Work.

   v. Once an IFCA or Agreement Amendment is signed by the City and the CM, the CM shall promptly proceed with the Work.

7. All Change Orders will clearly indicate their impact, if any, on the date of Substantial Completion of the Project, as indicated in the Project Schedule. If the Change Order is not anticipated to impact the date of Substantial Completion, the Change Order shall so state.

XXXIV. DESIGN CONSULTANT-INITIATED CHANGES

Without superseding the CM's rights, the Design Consultant will have the authority to recommend minor changes in the Project not involving an adjustment in the GMP or an extension of the Substantial Completion date and not inconsistent with the intent of the Construction Documents. Documentation of changes shall be determined by the Project Team and displayed weekly in the Project Management Information System (PMIS). Such minor changes shall be affected by written order approved by the Administrative Agent and the CM prior to the commencement of work. If CM disagrees with the assessment as a minor change, it shall pursue its rights as otherwise provided in this Agreement.

XXXV. PAYMENTS TO CM

A. Schedule of Values - Prior to the first Application Payment, the CM shall submit for review and acceptance by the Administrative Agent and the Design Consultant, a Schedule of Values that includes quantities and prices for all lump sum bid items, which when added together equal the lump sum contract price for each such item bid and subdivides the lump sum items into component parts in sufficient detail to serve as the basis for the review and approval of progress payments during performance of the Work. The Schedule of Values shall be coordinated with the Construction Schedule and be broken down into sufficient detail to allow for the analysis of monthly pay applications.

B. Progress Payments – Shall be made as set forth in the Agreement.

C. Retainage - Retainage shall be withheld on the entire GMP from each monthly payment request, in an amount of 5% of the request. The City has no obligation to further reduce the retainage but may do so, provided, however, that the Work has proceeded to the satisfaction of the City. All remaining retainage shall be requested in the final payment after Final Completion of the Work by the City.

XXXVI. TIMES FOR PAYMENT

A. The City will pay or cause to be paid to the CM that portion of the GMP, properly allocable to services, labor, materials, and equipment already incorporated or to be incorporated in the work that has been satisfactorily performed in accordance with the requirements of the Construction Documents.

B. The CM shall process each Trade Contractor payment within seven (7) working days upon receipt of payment from the City out of the amount paid to the CM for the Trade Contractor's work, the amount to which said Trade Contractor is entitled, reflecting the percentage retained, if any, from payments to the CM for such Trade Contractor's work.

C. The CM's and the Trade Contractor's notices, claims and lien waivers are to be submitted with the current month's application for payment, and no additional payments will be made by the City without lien waivers for the preceding month's application for payment unless the surety consents to payment as provided by law.

D. The City shall not have any obligations to pay or to see to the payment of any monies to any Trade Contractors except as may otherwise be required by law.

E. No certificates for a progress payment, nor any progress payment, shall constitute an acceptance of any work not in accordance with the Construction Documents. Such payments shall not constitute acceptance that the work was performed in accordance with the Agreement requirements.

F. Payments Withheld:

1. The City may decline to accept requests for payment to such extent as may be necessary, in its opinion, to protect the City from loss because of:

    i. Work not performed strictly in accordance with the Agreement requirements, including defective work not remedied after notice and an opportunity to cure,

    ii. Failure of the CM to make payments properly to Trade Contractors or for labor, materials, or equipment in accordance with subcontracts.

    iii. Property damage to the City or third party, due to act or omission of the CM not otherwise covered by CM's insurance.

    iv. Reasonable evidence that the work will not be completed within the Project schedule; or

    v. Persistent failure to carry out the Work in accordance with the Construction Documents.

2. When the above conditions are remedied, payment shall be made for amounts withheld because of them, with appropriate withholding for any losses incurred.

G. Payments for Materials and Equipment - Payments will be made for materials and equipment not yet incorporated in the Work but delivered and suitably stored at the site or another location subject to prior approval and acceptance by the Administrative Agent on each occasion. The CM shall cause material stored off-site to be stored in a bonded warehouse or other facility approved by the City with the consent of the surety and provide such

documentation as may be required by the Administrative Agent to prove unconditional ownership of such material, including but not limited to, bills of sale and fully executed Uniform Commercial Code forms. Payments shall not be made for deposit or pre-payment for materials and equipment not yet delivered or stored as described above unless approved in advance by the City and with the consent of the surety.

H. Final Payment - Upon acceptance of Final Completion of the Project by the Administrative Agent, CM shall submit a final invoice for payment of the outstanding balance of the amount earned by the CM under the GMP. Upon acceptance of the final invoice by City, the City shall pay the invoice amount as set forth above. Final Completion shall not be approved unless the CM has completed all punch-list items, furnished to the Administrative Agent all warranty documents, operating manuals, as-builts, and attic stock and otherwise complied in all respects with the Construction Documents Project Close-Out requirements.

I. Debts Paid - Before issuance of final payment for the Project, the Administrative Agent shall require satisfactory evidence, including but not limited to releases of all liens, that all of CM's payrolls, materials bills and other indebtedness connected with the Project have been paid or otherwise satisfied, unless the surety consents to final payment. The Administrative Agent shall have the right to verify such payments at any time. The City reserves the right to audit all records from the participants in the Project without limitation. All financial and project records for the Project shall be maintained for a period of ten (10) years after issuance of final payment for the Project or such longer time as required by law.

J. Payment as Waiver - The acceptance of final payment for the Project shall constitute a waiver of all claims for compensation and fees by the CM except those previously made in writing and unsettled.

K. Discounts - All discounts, rebates, and refunds shall accrue to the City and the Project to the extent the cost of the Project item is paid directly by the City. All trade discounts, rebates and refunds, and all returns from the sale of surplus materials and equipment shall be credited to the City and the Project. The CM shall make reasonable efforts to notify the Administrative Agent of the availability of cash discounts or other discounts, rebates and refunds.

L. Costs in Excess of CM's Estimates - If bids or proposals for the Project are received that exceed the CM's cumulative estimated budget of the Project, the CM shall nevertheless complete the Project in accordance with the Construction Documents and shall not be entitled to any increase in the GMP.

XXXVII. SAFETY AND PROTECTION

EXHIBIT A-1
CONSTRUCTION PHASE SERVICES

A. Safety Precautions and Programs - The CM shall ensure that each of the Trade Contractors implements safety programs for the safety of persons and property and for compliance with all federal, state, and local statutes, rules, regulations, and orders applicable to the conduct of the Work.

B. Safety of Persons and Property

1. Until acceptance of Final Completion of the Project by the City, the CM shall have the charge and care and shall take precautions against injury or damage to any part thereof by the action of the elements or from any other cause whether from the execution or from the non-execution of the Work.

2. The CM shall enforce all reasonable precautions for safety and shall provide all reasonable protection thereof to prevent damage, injury, or loss to:

   i. All employees or Trade Contractors on the Project and all other persons who may be affected.

   ii. All the work and all materials and equipment to be incorporated therein, whether in storage on or off the site, under the care, custody or control of the CM or any Trade Contractor.

   iii. Other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

3. The CM shall cause to be erected and shall maintain, as required by existing conditions and progress of the work, all reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations and notifying the Administrative Agent and users of adjacent utilities.

4. The CM shall provide all pedestrian and vehicular barriers, gates and boundaries to effectively segregate construction operations from portions of the site not under construction and shall provide on-site flagmen to direct safe conduct when and where construction vehicles or activities temporarily interact with the public.

5. The CM shall be responsible for and shall promptly remedy all damage or loss to any property caused in whole or in part by the CM, any Trade Contractor or anyone directly or indirectly employed by any of them or by anyone for whose acts any of them may be liable.

6. The CM shall designate a responsible member of its organization, as approved by the Administrative Agent, whose duty shall be the prevention of accidents on the site.

7. The CM shall not knowingly load or permit any part of the Work to be loaded so as to endanger the structural integrity of the Work.

C. Emergencies

1. In any emergency affecting the safety of persons or property, the CM shall act in its discretion to prevent threatened damage, injury or loss. Any additional compensation or extension of time claimed by the CM on account of emergency work shall be determined as provided herein for changes in the work.

XXXVIII. DRAWINGS AND SPECIFICATIONS

A. Generally, the Specifications describe work that cannot be readily indicated on the Drawings and indicate types, qualities, and locations for the installation of the various materials and equipment required for the Work. It is not intended that the Specifications will mention every item of Work which can be adequately shown on the Drawings nor is it intended that the Drawings show all items of Work described or required by the Specifications even if they are of such nature that they could have been shown thereon. All materials or labor for Work which is shown on the Specifications and Drawings or is reasonably inferable there from as being part of the Work shall be provided by CM and included in the GMP whether or not such material or labor are expressly covered in the Drawings and Specifications.

B. By execution of the Agreement, CM represents and covenants that:

1. CM has visited the Site, become familiar with local and all special conditions under which the Work is to be performed and based on information provided by the City and public utilities and other available information, understands what is required to enable CM to coordinate the Work with the efforts of the City and public utilities performing work in the vicinity of the Site; and

2. CM has checked with all public utilities having facilities at or near the Site, and understands based on information provided by the public utilities what is required to not interrupt utility services to other buildings in the vicinity of the Site; and

3. Without assuming the obligations of the Design Consultant, CM has carefully examined the Drawings and Specifications prepared to date, and will carefully examine modifications of, and additions to, the Drawings and Specifications throughout the Project. Any change to the GMP must follow the procedures set forth in Section XXXIII of this Exhibit, subject to the provisions of and limitations contained elsewhere in this Agreement. Other than as provided in Section XXXIII of this Exhibit, but subject in all instances to the provisions of and limitations

contained in this Agreement, CM shall not be entitled to extra or additional compensation for the performance of Work to deliver the Project as contemplated by the Construction Documents.

C. Any difference noted between the requirements of the Drawings and the Specifications or any differences noted within the Drawings themselves or within the Specifications themselves, shall be referred to the Design Consultant by the CM. The Design Consultant/City shall determine which provisions shall apply.

D. The CM shall be responsible for the removal of man-made obstructions, utilities and natural underground obstructions to the extent identified in the Construction Documents, or to reasonably be expected considering the nature of the Site and their historical and current use.

E. CM shall be responsible for all structural excavation to the extent required for the installation of grade beams, slab on grade, stone, subbase, and the like. If any material additional excavation is required due to the existence of unsuitable soil conditions as determined by the Design Consultant, and such soil conditions could not have been identified by the CM, then CM, with the approval of the Administrative Agent, may be entitled to claim an adjustment to the Project Schedule and/or GMP, subject in all instances to the provisions of and limitations in Section XXXIII herein and elsewhere in this Agreement. CM may claim such adjustment only if the CM has used commercially reasonable efforts to mitigate or take other appropriate actions to address the conditions and avoid any additional delay or cost.

XXXIX. TEMPORARY FACILITIES

A. CM will provide a suitable and reasonable office trailer for the purpose of managing the Project which shall be referred to as the Project office trailer. The Project office trailer shall include all necessary items for proper Project administration to successfully manage the Project. The Project office trailer shall be subdivided into two spaces, an office area for the superintendent and a meeting space with a table and chairs to accommodate eight (8) persons. CM shall maintain the Project office trailer, including janitorial services, and pay for all necessary services for heating and/or air conditioning.

B. The Project office trailer shall have a high-speed internet connection for use by supervisory personnel as well as the Design Consultant (if needed).

C. Project office trailer shall be provided with proper tie-downs to meet current code requirements.

XL. DELAY AND FORCE MAJEURE

A. Extension of Time

EXHIBIT A-1
CONSTRUCTION PHASE SERVICES

1. The CM shall diligently expedite the Work and achieve Substantial Completion for each phase of the work within the Project Schedule together with completion of portions of the Work designated in the Project Schedule as Milestone items not later than the dates established for such Milestone items.

2. In the event unreasonable delays occur on the part of the City or regulatory agencies as to the approval of any plans, permits, reports or other documents submitted by the CM which delay the Project Schedule completion date, the Administrative Agent shall not unreasonably withhold the granting of an extension of the Project Schedule time limitation equal to the aforementioned delay.

3. The Project Schedule shall be extended for such time as the City shall determine if CM is delayed in the Work's critical path as defined in the most recent approved Project Schedule if CM is unable to mitigate despite its best efforts, at any time in the progress of the Work for any of the following reasons, to the extent that such delays are not caused by CM:

    i. delays caused by any "Force Majeure Event," as such term is defined below; or

    ii. delays caused by the City or Design Consultant, which have been adequately documented by the CM; or

    iii. delays caused by the failure of the City to issue approvals or make material decisions as may be required under the CM within ten (10) days, after written request from CM accompanied by all documents and other information necessary for making the decision; or

    iv. delays caused by Scope Changes; or

    v. delays authorized by the City pending a decision concerning a disputed item and which, in the City's reasonable discretion, shall justify a delay in the performance of the Work; or

    vi. by any other cause which City may in its sole discretion determine justifies delay; or

    vii. delays caused by man-made obstructions, utilities natural underground obstructions, or unsuitable soil, which are not identified from the Construction Documents and could not reasonably have been known to the CM, or

    viii. delays caused by the exercise of the City's right to suspend the work.

4. If the CM should be delayed at any time in the progress of the Work by any negligent act or omission by the City or its employees, by any contractor employed by the City, by changes ordered in the Project, by fire, unusual delay in transportation, unavoidable casualties, by delay authorized by the City pending arbitration, or by any cause which the City determines justifies the delay, then the time of completion may be reasonably extended by the City.

    i. No extension of time shall be made unless the CM notifies the City in writing within ten (10) calendar days of the event or incident causing the delay, and as otherwise provided herein. The CM shall demonstrate in its notice the impact on the critical path of the Project Schedule to justify the extension of time. Reasonable extensions of time, as determined by the City, will be granted to the CM for time lost due to rainfall to the extent such rainfall exceeds the average for the City of Wildwood for the applicable period, based on US Weather Bureau statistics for the preceding 10 (ten) years. Delays to the critical path due to lightning events or the day(s) following a rainfall event will not be excluded for consideration from a time extension analysis. All such impacts shall be properly identified on the CMs daily reports.

5. The CM will rebuild, repair, restore, and make good all injuries or damages to any portion of the Work by any of the above causes before acceptance of Final Completion, and bear the expense thereof except for damage to the Work due to causes beyond the control of and without the fault or negligence of the CM, including but not restricted to acts of God such as earthquake, tidal wave, tornado, hurricane, or other cataclysmic phenomenon of nature, or acts of the public enemy or of governmental authorities. In case of suspension of work for any cause, the CM is responsible for the Project, will take precautions to prevent damage to the Project, provide for normal drainage, and will erect necessary temporary structures, signs, or other facilities. During such suspension of work, the CM shall properly and continuously maintain in an acceptable growing condition all living material in newly established plantings, seedlings, and sodding furnished under this Agreement, and shall take adequate measures to protect new tree growth and other important vegetative growth against injury. CM shall be entitled to request compensation for additional work resulting from the provisions of this Section.

6. The term "Force Majeure Event" shall have the meaning set forth in the Agreement. The CM shall resume activities related to the Project as soon as possible after the conclusion of the Force Majeure Event.

7. Any delay claimed under this Section shall be reduced by the portion of an additional delay caused by any act or omission of CM, its Trade Contractors or lower-tier subcontractors, or anyone for whom the CM is responsible. Any delay under this Section shall only be for the period of time that the delay continues. CM shall promptly give written notice of such delay to the City and Design Consultant. Said written notice shall set forth the claimed reason of the delay so as to sufficiently inform the City and the Design Consultant regarding the cause of the same.

8. CM shall notify the Administrative Agent promptly of any event or occurrence that may require a modification to the Project Schedule or any component or segment thereof.

9. Nothing herein shall be construed as explicitly prohibiting the CM from requesting a change in contract price in accordance with the provisions of XXXIII.

XLI. SUBSTITUTIONS

A. When more than one particular manufacturer's products or processes are specified for an item of Work, any one thereof is acceptable and the choice is left to the CM, unless otherwise directed by the Administrative Agent. When a singular service, process, product, material, equipment, or method of construction is required by the Construction Documents, the one specified shall be used. However, if in the judgment of the CM one of the conditions enumerated below exists with respect to any item specified, the CM may offer for the Administrative Agent's consideration a substitute product or process that completely fulfills the requirements of the Construction Documents. Substitutions will only be considered if the CM submits a written request to the Design Consultant and only under the following circumstances:

1. When the specified product(s) or process(s) is/are discontinued or otherwise not available from the manufacturer or supplier;

2. When, in the judgment of CM, the specified product(s) or process(s) will not produce the desired results;

3. When such substitution, in the opinion of the Design Consultant or the Administrative Agent, is otherwise in the best interest of City.

B. Design Consultant will make recommendations to the Administrative Agent regarding Substitutions offered by CM. Substitutions that are accepted are the responsibility of the CM and shall be affected through the issuance of a Change Order. A recommendation by Design Consultant or approval by the Administrative Agent shall not make City responsible for any Substitution.

C. Procedure for Substitutions - Requests for Substitutions of products or processes shall be in writing and will be accompanied by evidence that the proposed Substitution: (1) is equal in quality and serviceability to the specified item; (2) will not entail changes in details and construction of related work; (3) will be acceptable in consideration of the required design and artistic effect; and (4) will not involve additional costs to City, unless the Substitution is for a specified product or process which is discontinued or is otherwise unavailable from the manufacturer and is approved in writing by the Administrative Agent. The increase or decrease in the Cost of the Work resulting from such proposed Substitution shall be described in an accompanying request for a Change Order. CM will furnish with its request such drawings, specifications, samples, performance data and other information as may be required to assist Design Consultant in making its recommendation. Submission by CM of a request for a Substitution shall constitute a representation by CM that it has a good faith belief that the proposed Substitution meets the foregoing requirements. Construction Manager shall provide written cost benefit analysis as requested by the Administrative Agent.

D. In the event that a Substitution is approved, the Cost of Work relating to such item shall be increased or decreased and adjusted by Change Order as specified herein.

E. In the event of a deductive Change Order, the GMP shall be reduced correspondingly.

XLII. TESTING

A. Testing

1. The City, in consultation with the Design Consultant, will engage the services of an independent testing agency to verify compliance with required physical characteristics or to monitor the CM's Quality Control Program (as described herein). The testing agency shall verify CM's compliance with the Construction Documents and applicable legal and regulatory requirements and record its observations and submit reports. CM shall, at no cost or expense to the City:

   i. Notify Administrative Agent and Design Consultant at least one (1) day before installing Work to be tested for work identified at the preconstruction conferences.

   ii. Furnish incidental labor and facilities at the site necessary to facilitate City's testing.

   iii. Furnish samples and access to all materials and component parts of the Work as required for testing.

iv. Furnish storage facilities for the material test samples.

v. Furnish full and ample means of assistance for monitoring CM's testing and CM's quality control program.

vi. In all other ways cooperate and facilitate the coordination and expeditious completion of the tests undertaken at City's direction.

B. Project Schedule shall include sufficient durations to allow testing activities and review of testing agency reports.

C. CM shall not be relieved of CM's obligations to perform or cause performance of the Work in accordance with the Construction Documents by reason of any errors or omissions contained in any tests performed by or for City, notwithstanding that such tests and the results thereof may have been delivered to CM and that CM may have relied upon the correctness of such tests. The fact that City has provided to CM any such tests or the results thereof, shall not relieve CM of the obligation to provide all testing necessary to assure CM that the Work performed by CM is in compliance in all respects with the requirements of the Construction Documents and applicable legal and regulatory requirements. CM shall coordinate the activities of all entities conducting tests and shall cooperate fully with such agencies to facilitate all tests and inspections.

D. In the event that CM or Trade Contractor performs any tests or engages any testing agency, other than at the direction of the City, any costs incurred shall be the sole responsibility of the CM and copies of all written reports or summaries of any oral reports shall be submitted promptly to City and Design Consultant.

XLIII. SUPPLEMENTARY CONDITIONS

A. In the event unreasonable delays occur on the part of the City or regulatory agencies as to the approval of any plans, permits, reports or other documents submitting by the CM which delays the Project Schedule completion date, the Administrative Agent shall not unreasonably withhold the granting of any extension of the Project Schedule time limitation equal to the aforementioned delay.

B. In the event the Project Schedule completion date is delayed due to the City or its agents beyond the date stated in **Exhibit C-1**, the CM shall continue its efforts hereunder in full force and effect until otherwise directed by the Administrative Agent, or until twelve (12) additional months have elapsed, whichever is less, and the City and CM may negotiate a fair and equitable compensation for the CM's continued service hereunder, and amend this Agreement accordingly.

C. In executing this Agreement, City and CM each individually represents that it has the necessary financial resources to fulfill its obligations under this Agreement, and each has the necessary corporate approvals to execute this Agreement, and perform the services described herein.

D. CM agrees to comply with the provisions of Section 448.095, Fla. Stat. (2023), "Employment Eligibility," as amended from time to time. This includes, but is not limited to, utilization of the E-Verify System to verify the work authorization status of all newly hired employees, and requiring all subcontractors to provide an affidavit to CM attesting that the subcontractor does not employ, contract with, or subcontract with, an unauthorized alien. Design-Builder agrees to maintain a copy of such affidavit for the duration of this Agreement. A knowing violation of Section 448.095 will result in the termination of this Agreement as provided in Section 448.095, Fla. Stat. (2023), as amended; and CM will not be awarded a public contract for at least one (1) year after the date on which the Agreement was terminated. CM will also be liable for any additional costs to City incurred as a result of the termination of this Agreement in accordance with this section.

E. **PURSUANT TO SECTION 558.0035, FLORIDA STATUTES, AN INDIVIDUAL EMPLOYEE OR AGENT MAY NOT BE HELD INDIVIDUALLY LIABLE FOR NEGLIGENCE.**

F. In no event shall either party be liable to the other for any consequential, incidental, punitive, or indirect damages including, but not limited to loss of income or loss of profits.

XLIV. CONSEQUENTIAL DAMAGES

A. The City waives claims against the CM, and the CM waives claims against the Owner, for the following damages, to the extent caused by the CM or City's breach of this Agreement and regardless of whether any of these damages would be classified as consequential, special, direct, indirect, incidental, or otherwise:

1. City's expenses of relocating and operating out of temporary facilities during repair
2. City's increased transportation costs from shipping products to and from alternative locations during repair
3. Loss of financing
4. Loss of goodwill
5. Loss of reputation
6. Loss of contracts because of delayed opening

7. Consequential damages, including, but not limited to, punitive and/or exemplary damages, loss of bonding capacity, loss of bidding opportunities, loss of credit standing, cost of financing, interest paid, loss of other work or insolvency

B. Exceptions. This waiver does not apply to claims under the following:

1. Any indemnity clauses in the Agreement to the extent that City or CM to the extent that such indemnity would be overridden by the application of this waiver.

2. Damages resulting from misuse of Work Product to the extent that they involve consequential damages and CM has no adequate remedy due misuse of Work Product by Owner, subject to any statutory and constitutional sovereign immunity protections. Work Product is understood to be the work contracted between the Owner and CM as defined in a GMP.

C. The damages waiver set forth in Section XLIV.A. above is not intended to affect the payment of liquidated damages, if any, set forth in Section XXXII of the Agreement, which both parties recognize has been established, in part, to reimburse City for some damages that might otherwise be deemed to be consequential.

EXHIBIT B-1
GMP EXAMPLE

EXHIBIT B-1
GMP EXAMPLE

EXHIBIT B-1 GMP SUMMARY

Wildwood WRF BNR Improvements GMP		
PHASE 1 WORK		
	Phase Work Direct Cost	
	Phase Work Direct Cost	
	Phase Work Direct Cost	
	Subtotal Direct Cost (A)	
ALLOWANCES & CONTINGENCIES		
	Construction Manager Contingency	
	Owner Contingency	
	Escalation Allowance	
	90% Design Phase Allowance	
	Hazardous Material Survey Allowance	
	Builders Risk Insurance Deductable Allowance	
	Subtotal Contingencies (B)	
Indirect Cost		
	CMAR General Conditions	
TBD%	CMAR Insurance	TBD% x (A+B)
TBD%	Payment & Performance Bond	TBD% x (A+B)
TBD%	Builders Risk	TBD% x (A+B)
	Subtotal Indirect Cost (C)	
CMAR Fee		
9.00%	CMAR Fee (A+B+C) x 9% **(D)**	
GMP TOTAL (A+B+C+D)		

Descriptions for Allowances & Contingency as included in GMP Summary:

- Permit Fee Allowance: $0 – Permit fees shall be paid for by the City.
- Testing and Inspection Fee Allowance: $0 – Testing & Inspection costs shall be by the City in consultation with the Design Consultant.
- CM Contingency: $XXX – Contingency to be used at CM's discretion to cover CM risk and scope gaps. The City shall own all unused Contingency costs unless a shared contingency is agreed upon in an Amended Agreement.
- Owner's Contingency: $XXX – Contingency to be used at the City's discretion for additional Project work.
- Escalation Allowance: $XXX – Allowance used to cover unforeseen vendor and subcontract escalation cost.
- 90% Design Phase Allowance: $XXX – Estimated funds needed to address items that are not known, resolved, or clearly detailed in the 90% design specifications or drawings.
- Hazardous Material Survey Allowance: $XXX – Hazardous Material Survey Allowance is for survey of the existing plant.
- Builder's Risk Insurance Deductible Allowance: $250,000 – See Exhibit F, Line Item 136 for description.

CITY COMMISSION OF THE CITY OF WILDWOOD

EXECUTIVE SUMMARY

SUBJECT: **Work Authorization No. 18 in the Amount of $25,500 for Kimley-Horn to Assist the City in Updating Chapter 19 of the Code of Ordinances**

REQUESTED ACTION: Staff recommends approval.

CONTRACT: Vendor/Entity: Kimley Horn

Effective Date: Termination Date:

Managing Division/Department:

BUDGET IMPACT: Funding is available in 401-535-30-3100 Professional Services.

HISTORY/FACTS/ISSUES:

Chapter 19 of the City's Code of Ordinances needs to be updated for regulations pertaining to the Industrial Wastewater (IW) User and the Fats, Oils, and Grease (FOG) programs, among other regulations. Staff have sought the assistance of Kimley-Horn to redesign the IW and FOG ordinance. The scope of services also includes a refresh to the City's Total Suspended Solids (TSS) and Chemical Oxygen Demand (COD) surcharges. Work Authorization No. 18, for $25,500, provides for these services.

Kimley»Horn

WORK AUTHORIZATION NUMBER 18

Describing a specific agreement between Kimley-Horn and Associates, Inc. ("Kimley-Horn"), and the City of Wildwood ("the Client" or "the City") in accordance with the terms of the Master Agreement for Continuing Professional Services for RFQ 2023-07 dated May 8, 2023, which is incorporated herein by reference.

Identification of Project:

Project: Industrial User Ordinance Update

Client: City of Wildwood

Project Manager: Trey Clayton, P.E.

General Category of Services:

The City desires to amend the Wildwood Code of Ordinances (Code) as it pertains to the Industrial Wastewater (IW) and Fats, Oils, & Grease (FOG) programs. Currently, the IW and the FOG are authorized by Ordinance 2013-05. Facilities that require FOG pretreatment are regulated as Industrial Users. The Code amendment seeks to separate the IW and FOG programs under separate ordinances so that FOG customers are not regulated as IW users. In addition, the City desires to update available enforcement measures to support compliance with their IW and FOG programs. Finally, the City desires to update its IW surcharges for chemical oxygen demand (COD) and total suspended solids (TSS) based on current costs.

With the above project understanding we have prepared the below scope of services:

Specific Scope of Basic Services:

Task 1 – Project Management/Data Collection

A. Kimley-Horn will prepare for and attend a kickoff meeting with City staff. Following the meeting Kimley-Horn will prepare meeting minutes to be distributed to the project team. Kimley-Horn will prepare one round of revisions for the meeting minutes.

B. Following the project kick-off meeting, Kimley-Horn will submit a data request to the City.

C. Kimley-Horn will review the City's existing ordinances and comparable ordinances from other local municipalities.

D. Kimley-Horn will review the Florida Administrative Code (FAC) and Florida Department of Environmental Protection (FDEP) regulations related to IW and FOG programs.

E. Kimley-Horn will review data provided by the City. The data is anticipated to include flows, loading, IW sampling, and financial information necessary to estimate the treatment costs for the City to be utilized by the City's rate consultant to develop IW rate recommendations.

F. Kimley-Horn will attend a meeting with City staff to review comparable ordinances and approaches taken by nearby municipalities with respect to IW and FOG customers. The City will provide guidance on specific enforcement measures anticipated to be acceptable to the City Commission.

Task 2 – Industrial User Ordinance Update

A. Kimley-Horn will prepare a draft standalone ordinance for the City's IW program. The ordinance is anticipated to be substantially similar to the relevant language in the City's current ordinance.

B. The City will distribute the draft IW ordinance as necessary for review by other stakeholders. The City will provide comments to Kimley-Horn for revision. This task includes up to two revisions based on comments received from the City.

C. Kimley-Horn will prepare a final version of the IW ordinance to the City for adoption.

Task 3 – FOG Ordinance

A. Kimley-Horn will prepare a draft standalone ordinance for the City's FOG program. The ordinance is anticipated to be substantially similar to the relevant language in the City's current ordinance.

B. The City will distribute the draft FOG ordinance as necessary for review by other stakeholders. The City will provide comments to Kimley-Horn for revision. This task includes up to two revisions based on comments received from the City.

C. Kimley-Horn will prepare a final version of the FOG ordinance to the City for adoption.

Task 4 – Rate Recommendation for Industrial Wastewater Surcharges

A. Kimley-Horn will utilize data provided by the City to determine the treatment efficiency for COD and TSS by the City's wastewater treatment plant.

B. Kimley-Horn will determine the City's current average cost (dollars per pound) for COD and TSS. It is assumed that incremental loading results in a linear increase in cost for both constituents. It is assumed that increases in COD and TSS are independent and additive for the purposes of developing surcharges.

C. Kimley-Horn will coordinate with the City's utility rate consultant to develop recommended rates for COD and TSS surcharges for IW customers.

Task 5 – Adoption

A. Kimley-Horn will attend one City Council meeting to support City staff with presenting the IW and FOG ordinances and the IW surcharges to Council for adoption.

Schedule:

Kimley-Horn will begin services upon receipt of an executed IPO. The above services will be provided as expeditiously as practicable to meet a mutually agreed upon schedule.

Method of Compensation:

Kimley-Horn will complete the above scope of services for a lump sum fee of $25,500 inclusive of expenses.

ACCEPTED:

THE CITY OF WILDWOOD, FLORIDA	KIMLEY-HORN AND ASSOCIATES, INC.
BY:_____	BY: Gene Losito Gene Losito, P.E.
TITLE:_____	TITLE: Vice President
DATE:_____	DATE: December 16, 2024

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CITY COMMISSION OF THE CITY OF WILDWOOD

EXECUTIVE SUMMARY

SUBJECT: **Huey Street Improvements Project Payment Application #6 in the Amount of $175,631.33**

REQUESTED ACTION: Staff recommends approval

CONTRACT: Vendor/Entity:

Effective Date: Termination Date:

Managing Division/Department:

BUDGET IMPACT: Funding for the project has been allocated to account 301-541-60-6308.

HISTORY/FACTS/ISSUES:

The Huey Street Improvements Project was approved by the Commission and awarded to Art Walker Construction Inc. on May 20, 2024. Art Walker is requesting Payment Application #6 in the amount of $175,631.33 for site work performed from November 1 through November 30, 2024. The project is approximately 75% completed. Kimley-Horn staff reviewed the pay app and recommended approval.

Contractor's Application for Payment No. 6

	Application Period: 11/1/24-11/30/24	Application Date: 11/30/2024
To (Owner): City of Wildwood	From (Contractor): Art Walker Construction, Inc.	Via (Engineer): Kimley Horn
Project: Huey Street Improvements	Contract:	
Owner's Contract No.:	Contractor's Project No.: 12734	Engineer's Project No.:

Application For Payment

Change Order Summary

Approved Change Orders		
Number	Additions	Deductions
1	$38,179.65	
2		-$31,683.01
3	$5,395.90	
4	$21,500.00	
5	$16,047.50	
TOTALS	$81,123.05	-$31,683.01
NET CHANGE BY CHANGE ORDERS	$49,440.04	

1.	ORIGINAL CONTRACT PRICE	$ $2,412,015.51
2.	Net change by Change Orders	$ $49,440.04
3.	Current Contract Price (Line 1 ± 2)	$ $2,461,455.55
4.	TOTAL COMPLETED AND STORED TO DATE (Column F on Progress Estimate)	$ $1,849,008.13
5.	RETAINAGE:	
	a. 5% X $1,849,008.13 Work Completed	$ $92,450.41
	b. X Stored Material	$
	c. Total Retainage (Line 5a + Line 5b)	$ $92,450.41
6.	AMOUNT ELIGIBLE TO DATE (Line 4 - Line 5c)	$ $1,756,557.72
7.	LESS PREVIOUS PAYMENTS (Line 6 from prior Application)	$ $1,580,926.39
8.	AMOUNT DUE THIS APPLICATION	$ $175,631.33
9.	BALANCE TO FINISH, PLUS RETAINAGE (Column G on Progress Estimate + Line 5 above)	$ $704,897.83

Contractor's Certification

The undersigned Contractor certifies that to the best of its knowledge: (1) all previous progress payments received from Owner on account of Work done under the Contract have been applied on account to discharge Contractor's legitimate obligations incurred in connection with Work covered by prior Applications for Payment; (2) title of all Work, materials and equipment incorporated in said Work or otherwise listed in or covered by this Application for Payment will pass to Owner at time of payment free and clear of all Liens, security interests and encumbrances (except such as are covered by a Bond acceptable to Owner indemnifying Owner against any such Liens, security interest or encumbrances); and (3) all Work covered by this Application for Payment is in accordance with the Contract Documents and is not defective.

By: Art Walker | Date: 11/30/2024

Payment of: $ 175,631.33
(Line 8 or other - attach explanation of the other amount)

is recommended by: Mario Petrola, P.E. (Kimley Horn) 12/11/2024 (Date)

Payment of: $
(Line 8 or other - attach explanation of the other amount)

is approved by: City of Wildwood (Date)

Approved by: Funding Agency (if applicable) (Date)

Endorsed by the Construction Specifications Institute.

REV 10/13

Kimley»Horn

- [x] NO EXCEPTIONS TAKEN
- [ ] CORRECTIONS NOTED
- [ ] REJECTED
- [ ] VERIFY & MAKE CORRECTIONS
- [ ] RESUBMIT
- [ ] FOR INFORMATION ONLY

Our limited review is only for conformance with the design concept of the project and general compliance with the information given in our Plans and Specifications. Contractor is responsible for: dimensions to be confirmed and correlated at the job site, information that pertains to the fabrication processes or to techniques of construction, quantities, safety, coordination with other work, and for conformance to the requirements of the plans and specifications. Review does not authorize changes to contract unless stated specifically in separate letter or change order.

Reviewed By: MARIO PETROLA, P.E. Date: 12/11/24

Progress Estimate - Unit-Price Work

Contractor's Application

For (Contract):	Huey Street Improvements	Application No.:	6
Application Period:	November 1, 2024 through November 30, 2024	Application Date:	11/30/2024

A					B	C				D	E	F	G	H
Item						Estimated Quantity Installed Previous Period		Estimated Quantity Installed This Period						
Bid Item No.	Description	Bid Item Quantity	Bid Item Unit	Unit Price	Bid Item Value ($)	Quantity	Amount	Quantity	Amount	Value of Work Installed to Date	Materials Presently Stored (not in C)	Total Completed and Stored to Date (D + E)	% (F / B)	Balance to Finish (B - F)
1	Mobilization	1.00	LS	$ 156,159.20	$ 156,159.20	0.70	$ 109,311.44	0.15	$ 23,423.88	$132,735.32		$132,735.32	85.0%	$23,423.88
2	Maintenance of Traffic	1.00	LS	$ 113,996.02	$ 113,996.02	0.70	$ 79,797.21	0.15	$ 17,099.40	$96,896.62		$96,896.62	85.0%	$17,099.40
3	Performance Bond	1.00	LS	$ 19,720.00	$ 19,720.00	1.00	$ 19,720.00		$ -	$19,720.00		$19,720.00	100.0%	
4	Full Depth Reclamation (pulverization) (11.5" avg depth)	10575.00	SY	$ 23.20	$ 245,340.00	10575.00	$ 245,340.00		$ -	$245,340.00		$245,340.00	100.0%	
5	Portland Cement	71.10	TN	$ 261.00	$ 18,557.10	71.10	$ 18,557.10		$ -	$18,557.10		$18,557.10	100.0%	
6	Asphalt Emulsion (ccs-1h)	13858.00	GA	$ 3.20	$ 44,345.60	13858.00	$ 44,345.60		$ -	$44,345.60		$44,345.60	100.0%	
7	As-Built Plans and Construction Layout Survey	1.00	LS	$ 34,336.00	$ 34,336.00	0.75	$ 25,752.00		$ -	$25,752.00		$25,752.00	75.0%	$8,584.00
8	Pollution Prevention and Control	1.00	LS	$ 9,280.00	$ 9,280.00	0.70	$ 6,496.00	0.15	$ 1,392.00	$7,888.00		$7,888.00	85.0%	$1,392.00
9	100% Gopher Tortoise Survey	1.00	LS	$ 2,900.00	$ 2,900.00	1.00	$ 2,900.00		$ -	$2,900.00		$2,900.00	100.0%	
10	Gopher Tortoise Relocations and Associated Permitting (if required)	3.00	EA	$ 9,280.00	$ 27,840.00		$ -		$ -					$27,840.00
11	Sediment Barrier (standard)	8340.00	LF	$ 2.30	$ 19,182.00	8000.00	$ 18,400.00	340.00	$ 782.00	$19,182.00		$19,182.00	100.0%	
12	Inlet Protection System	16.00	EA	$ 145.00	$ 2,320.00	16.00	$ 2,320.00		$ -	$2,320.00		$2,320.00	100.0%	
13	Clearing and Grubbing	5.55	AC	$ 4,872.00	$ 27,039.60	5.55	$ 27,039.60		$ -	$27,039.60		$27,039.60	100.0%	
14	Excavation, Regular	10087.00	CY	$ 27.30	$ 275,375.10	6052.00	$ 165,219.60	3026.00	$ 82,609.80	$247,829.40		$247,829.40	90.0%	$27,545.70
15	Embankment, Regular	188.00	CY	$ 12.35	$ 2,321.80		$ -		$ -					$2,321.80
16	Optional Base, Base Group 04	230.00	SY	$ 94.55	$ 21,746.50		$ -		$ -					$21,746.50
17	Optional Base, Base Group 09	650.00	SY	$ 83.55	$ 54,307.50		$ -		$ -					$54,307.50
18	Milling Existing Asphalt Pavement, 3" Avg Depth	1120.00	SY	$ 9.75	$ 10,920.00		$ -		$ -					$10,920.00
19	Superpave Asphaltic Concrete, Traffic C, PG76-33, (SP 9.5) (1")	692.85	TN	$ 208.60	$ 144,527.92		$ -		$ -					$144,527.92
20	Superpave Asphaltic Concrete, Traffic C, PG76-22 (SP 12.5) (1.5")	953.60	TN	$ 189.50	$ 180,707.39	953.60	$ 180,707.20		$ -	$180,707.20		$180,707.20	100.0%	$0.19
21	Superpave Asphaltic Concrete, Traffic C, PG76-22 (SP 12.5) (2")	114.23	TN	$ 207.85	$ 23,741.94		$ -		$ -					$23,741.94
22	Inlets (DT BOT) Type C <10'	11.00	EA	$ 9,230.00	$ 101,530.00	10.00	$ 92,300.00		$ -	$92,300.00		$92,300.00	90.9%	$9,230.00
23	Manholes (P-7) (<10')	2.00	EA	$ 10,470.00	$ 20,940.00	1.00	$ 10,470.00		$ -	$10,470.00		$10,470.00	50.0%	$10,470.00
24	Replace Grate	1.00	EA	$ 3,105.00	$ 3,105.00		$ -		$ -					$3,105.00
25	Pipe Culvert, Round, 12" RCP	87.00	LF	$ 99.00	$ 8,613.00	87.00	$ 8,613.00		$ -	$8,613.00		$8,613.00	100.0%	
26	Pipe Culvert, Round, 12" RCP	121.00	LF	$ 99.00	$ 11,979.00	121.00	$ 11,979.00		$ -	$11,979.00		$11,979.00	100.0%	
27	Pipe Culvert, Round, 18" RCP	902.00	LF	$ 117.50	$ 105,985.00	902.00	$ 105,985.00		$ -	$105,985.00		$105,985.00	100.0%	
28	Pipe Culvert, Round, 24" RCP	802.00	LF	$ 137.25	$ 110,074.50	802.00	$ 110,074.50		$ -	$110,074.50		$110,074.50	100.0%	
29	Mitered End Section (optional round) (12")	3.00	EA	$ 2,245.00	$ 6,735.00	3.00	$ 6,735.00		$ -	$6,735.00		$6,735.00	100.0%	
30	Mitered End Section (optional round) (18")	2.00	EA	$ 2,770.00	$ 5,540.00	1.00	$ 2,770.00		$ -	$2,770.00		$2,770.00	50.0%	$2,770.00
31	Concrete Sidewalk and Driveways, 4" Thick	250.00	SY	$ 110.75	$ 27,687.50	84.00	$ 9,303.00		$ -	$9,303.00		$9,303.00	33.6%	$18,384.50
32	Concrete Sidewalk and Driveways, 6" Thick	55.00	SY	$ 191.50	$ 10,532.50		$ -		$ -					$10,532.50
33	Detectable Warnings	100.00	SF	$ 40.60	$ 4,060.00		$ -		$ -					$4,060.00
34	Riprap, Rubble, F&I, 10'x10' Pad Around Pond Outfall Structure	1.00	LS	$ 3,700.00	$ 3,700.00		$ -		$ -					$3,700.00
35	Fencing, Type B, Standard (5.1'-6.0')	837.00	LF	$ 36.00	$ 30,132.00		$ -		$ -					$30,132.00
36	Fence Gate, Type B, Single, 12.1-18.0' Opening	1.00	EA	$ 2,900.00	$ 2,900.00		$ -		$ -					$2,900.00
37	Performance Turf, Sod	8890.00	SY	$ 4.75	$ 42,227.50	335.00	$ 1,591.25		$ -	$1,591.25		$1,591.25	3.8%	$40,636.25
38	Single Post Sign, F&I Ground Mount, up to 12 SF	10.00	AS	$ 585.00	$ 5,850.00		$ -		$ -					$5,850.00
39	Single Post Sign, Relocate	5.00	AS	$ 175.00	$ 875.00		$ -		$ -					$875.00
40	Sign Panel, Furnish & Install Ground Mount, up to 12 SF	6.00	EA	$ 235.00	$ 1,410.00		$ -		$ -					$1,410.00
41	Raised Pavement Marker, Type B (Y/Y)	96.00	EA	$ 5.80	$ 556.80		$ -		$ -					$556.80
42	Painted Pavement Markings - Final Surface	1.00	LS	$ 52,200.00	$ 52,200.00		$ -		$ -					$52,200.00
43	Thermoplastic, Standard, White, Solid, 12" for Crosswalks and Roundabout	672.00	LF	$ 5.80	$ 3,897.60		$ -		$ -					$3,897.60
44	Thermoplastic, Standard, White, Solid, 24" for Stop Line	120.00	LF	$ 11.60	$ 1,392.00		$ -		$ -					$1,392.00
45	Thermoplastic, Standard, White, Message or Symbol	4.00	EA	$ 290.00	$ 1,160.00		$ -		$ -					$1,160.00
46	Thermoplastic, Preformed, White, Solid, 24" for Crosswalk	224.00	LF	$ 17.40	$ 3,897.60		$ -		$ -					$3,897.60
47	Thermoplastic, Standard-Other Surfaces, White, Solid, 6"	1.330	GM	$ 7,656.00	$ 10,182.48		$ -		$ -					$10,182.48
48	Thermoplastic, Standard-Other Surfaces, Yellow, Solid 6"	1.342	GM	$ 7,656.00	$ 10,274.35		$ -		$ -					$10,274.35

Item						Estimated Quantity Installed Previous Period		Estimated Quantity Installed This Period						
Bid Item No.	Description	Bid Item Quantity	Bid Item Unit	Unit Price	Bid Item Value ($)	Quantity	Amount	Quantity	Amount	Value of Work Installed to Date	Materials Presently Stored (not in C)	Total Completed and Stored to Date (D + E)	% (F / B)	Balance to Finish (B - F)
49	Abandon Existing Water Main in Place (including excavatable fill)/Removal of Asbestos Cement Water Main	1.00	LS	$ 67,570.00	$ 67,570.00	0.50	$ 33,785.00	0.25	$ 16,892.50	$50,677.50		$50,677.50	75.0%	$16,892.50
50	8" C-900 DR-18 PVC Water Main (includes fittings, restraints, appurtenances, etc.)	2550.00	LF	$ 70.70	$ 180,285.00	2550.00	$ 180,285.00		$ -	$180,285.00		$180,285.00	100.0%	
51	Single Water Service Connection	7.00	EA	$ 3,455.00	$ 24,185.00	7.00	$ 24,185.00		$ -	$24,185.00		$24,185.00	100.0%	
52	Fire Hydrant Assembly	3.00	EA	$ 9,105.00	$ 27,315.00	3.00	$ 27,315.00		$ -	$27,315.00		$27,315.00	100.0%	
53	Reconnect to Existing Hydrant	1.00	EA	$ 2,815.00	$ 2,815.00		$ -		$ -					$2,815.00
54	Adjust Manhole to Finished Ground	1.00	EA	$ 1,740.00	$ 1,740.00		$ -		$ -					$1,740.00
55	Composite Waterproof Manhole Ring and Cover with Inflow Protection	2.00	EA	$ 270.00	$ 540.00		$ -							$540.00
56	Adjust Cleanout to Finished Ground	1.00	EA	$ 290.00	$ 290.00		$ -		$ -					$290.00
57	8"X8" Tapping Sleeve and Valve	1.00	EA	$ 7,665.00	$ 7,665.00	1.00	$ 7,665.00		$ -	$7,665.00		$7,665.00	100.0%	
58	8" Gate Valve	8.00	EA	$ 2,770.00	$ 22,160.00	8.00	$ 22,160.00		$ -	$22,160.00		$22,160.00	100.0%	
59	8" Restrained Plug	2.00	EA	$ 330.00	$ 660.00	2.00	$ 660.00		$ -	$660.00		$660.00	100.0%	
60	8" Cap	2.00	EA	$ 360.00	$ 720.00	2.00	$ 720.00		$ -	$720.00		$720.00	100.0%	
61	Air Release Valve	2.00	EA	$ 4,490.00	$ 8,980.00	2.00	$ 8,980.00		$ -	$8,980.00		$8,980.00	100.0%	
62	8" Linestop	1.00	EA	$ 15,200.00	$ 15,200.00	1.00	$ 15,200.00		$ -	$15,200.00		$15,200.00	100.0%	
63	8" Cap with 2" Threaded Plug	1.00	EA	$ 455.00	$ 455.00	1.00	$ 455.00		$ -	$455.00		$455.00	100.0%	
64	Cut and Connect to Existing Water Main (including all required fittings, sleeves, temporary linestop and jumper connections)	3.00	EA	$ 6,240.00	$ 18,720.00	3.00	$ 18,720.00		$ -	$18,720.00		$18,720.00	100.0%	
65	Bacteriological Testing	1.00	LS	$ 4,700.00	$ 4,700.00	1.00	$ 4,700.00		$ -	$4,700.00		$4,700.00	100.0%	
66	Material Testing	1.00	LS	$ 5,915.00	$ 5,915.00	1.00	$ 5,915.00		$ -	$5,915.00		$5,915.00	100.0%	
	Change Order No. 1													
31	Concrete Sidewalk and Driveways 4" Thick	-84.00	SY	$ 110.75	$ (9,303.00)	-84.00	$ (9,303.00)		$ -	-$9,303.00		-$9,303.00	100.0%	
37	Performance Turf Sod	-335.00	SY	$ 4.75	$ (1,591.25)	-335.00	$ (1,591.25)		$ -	-$1,591.25		-$1,591.25	100.0%	
50	8" C-900 DR-18 PVC Water Main (includes fittings, restraints, appurtenances, etc.)	-1073.00	LF	$ 70.70	$ (75,861.10)	-1073.00	$ (75,861.10)		$ -	-$75,861.10		-$75,861.10	100.0%	
58	8" Gate Valve	3.00	EA	$ 2,770.00	$ 8,310.00	3.00	$ 8,310.00		$ -	$8,310.00		$8,310.00	100.0%	
61	Air Release Valve	2.00	EA	$ 4,490.00	$ 8,980.00	2.00	$ 8,980.00		$ -	$8,980.00		$8,980.00	100.0%	
62	8" Linestop	-1.00	EA	$ 15,200.00	$ (15,200.00)	-1.00	$ (15,200.00)		$ -	-$15,200.00		-$15,200.00	100.0%	
CO 1	8" C-900 DR-18 PVC HDD	747.00	LF	$ 135.00	$ 100,845.00	747.00	$ 100,845.00		$ -	$100,845.00		$100,845.00	100.0%	
CO 1	18" Drainage RCP Removal	400.00	LF	$ 55.00	$ 22,000.00	400.00	$ 22,000.00		$ -	$22,000.00		$22,000.00	100.0%	
	Change Order No. 2													
11	Sediment Barrier (standard)	-90.00	LF	$ 2.30	$ (207.00)		$ -	-90.00	$ (207.00)	-$207.00		-$207.00	100.0%	
12	Inlet Protection System	-2.00	EA	$ 145.00	$ (290.00)	-2.00	$ (290.00)		$ -	-$290.00		-$290.00	100.0%	
14	Excavation, Regular	-187.00	CY	$ 27.30	$ (5,105.10)		$ -		$ -					-$5,105.10
15	Embankment, Regular	-24.00	CY	$ 12.35	$ (296.40)		$ -		$ -					-$296.40
25	Pipe Culvert, Round, 12" RCP	-87.00	LF	$ 99.00	$ (8,613.00)	-87.00	$ (8,613.00)		$ -	-$8,613.00		-$8,613.00	100.0%	
26	Pipe Culvert, Round, 12" RCP	-121.00	LF	$ 99.00	$ (11,979.00)	-121.00	$ (11,979.00)		$ -	-$11,979.00		-$11,979.00	100.0%	
27	Pipe Culvert, Round, 18" RCP	795.00	LF	$ 117.50	$ 93,412.50	636.00	$ 74,730.00	159.00	$ 18,682.50	$93,412.50		$93,412.50	100.0%	
28	Pipe Culvert, Round, 24" RCP	-802.00	LF	$ 137.25	$ (110,074.50)	-802.00	$ (110,074.50)		$ -	-$110,074.50		-$110,074.50	100.0%	
29	Mitered End Section (optional round) (12")	-3.00	EA	$ 2,245.00	$ (6,735.00)	-3.00	$ (6,735.00)		$ -	-$6,735.00		-$6,735.00	100.0%	
	Pipe Culvert, Elliptical, 15" ERCP	122.00	LF	$ 110.00	$ 13,420.00	122.00	$ 13,420.00		$ -	$13,420.00		$13,420.00	100.0%	
	Mitered End Section (optional elliptical) (15")	2.00	LF	$ 2,400.00	$ 4,800.00	0.50	$ 1,200.00		$ -	$1,200.00		$1,200.00	25.0%	$3,600.00
	Bid Quantity Reconciliation (items 19-21)	1.00	LS	$ (15.51)	$ (15.51)		$ -		$ -					-$15.51
	Change Order No. 3													
CO3	8" C-900 DR-18 PVC HDD	63.00	LF	$ 135.00	$ 8,505.00	63.00	$ 8,505.00		$ -	$8,505.00		$8,505.00	100.0%	
50	8" C-900 DR-18 Water Main (includes fittings, restraints, appurtenances, etc.)	-63.00	LF	$ 70.70	$ (4,454.10)	-63.00	$ (4,454.10)		$ -	-$4,454.10		-$4,454.10	100.0%	
58	8" Gate Valve	1.00	EA	$ 2,770.00	$ 2,770.00	1.00	$ 2,770.00		$ -	$2,770.00		$2,770.00	100.0%	
57	8"X8" Tapping Sleeve and Valve	-1.00	LS	$ 7,665.00	$ (7,665.00)	-1.00	$ (7,665.00)		$ -	-$7,665.00		-$7,665.00	100.0%	
64	Cut and Connect to Existing Water Main (includes all required fittings, sleeves, temporary linestop and jumper connections)	1.00	LS	$ 6,240.00	$ 6,240.00	1.00	$ 6,240.00		$ -	$6,240.00		$6,240.00	100.0%	
	Change Order No. 4													
CO4	Inlets (DT BOT) Type D, <10'	1.00	EA	$ 11,350.00	$ 11,350.00		$ -	1.00	$ 11,350.00	$11,350.00		$11,350.00	100.0%	
CO4	Dual Water Service Connection	1.00	EA	$ 6,530.00	$ 6,530.00	1.00	$ 6,530.00		$ -	$6,530.00		$6,530.00	100.0%	
38	Single Post Sign, F&I Ground Mount, up to 12 SF (S4-2P)	2.00	EA	$ 585.00	$ 1,170.00		$ -		$ -					$1,170.00
38	Single Post Sign, F&I Ground Mount, up to 12 SF (R1-6C) - Credit for Installation Only	-5.00	EA	$ 50.00	$ (250.00)		$ -		$ -					-$250.00
CO4	Structure Modification/Invert Adjustments (MH-H01, H02 & H-01)	3.00	EA	$ 300.00	$ 900.00	3.00	$ 900.00		$ -	$900.00		$900.00	100.0%	
CO4	Structure Modification/Grate El Adjustment (H-08)	1.00	EA	$ 1,800.00	$ 1,800.00	1.00	$ 1,800.00		$ -	$1,800.00		$1,800.00	100.0%	
	Change Order No. 5													
27	Pipe Culvert, Round, 18" RCP	-41.00	LF	$ 62.50	$ (2,562.50)	-41.00	$ (2,562.50)		$ -	-$2,562.50		-$2,562.50	100.0%	

CO5	Pipe Culvert, Elliptical, 15" ERCP	41.00	LF	$ 110.00	$ 4,510.00	41.00	$ 4,510.00		$ -	$4,510.00		$4,510.00	100.0%	
CO5	Shipping/Transport	1.00	LS	$ 1,250.00	$ 1,250.00	1.00	$ 1,250.00		$ -	$1,250.00		$1,250.00	100.0%	
Co5	Type F Conflict Inlet	1.00	EA	$ 12,850.00	$ 12,850.00		$ -	1.00	$ 12,850.00	$12,850.00		$12,850.00	100.0%	
	Totals				**$2,461,455.55**		**$1,664,133.05**		**$184,875.08**	**$1,849,008.13**		**$1,849,008.13**	75.1%	**$612,447.42**

CITY COMMISSION OF THE CITY OF WILDWOOD

EXECUTIVE SUMMARY

SUBJECT: **Employment Contract for Police Officer Recruit: Elliott Vanslyke**

REQUESTED ACTION: Staff recommends approval.

CONTRACT: Vendor/Entity:

Effective Date: Termination Date:

Managing Division/Department:

BUDGET IMPACT:

HISTORY/FACTS/ISSUES:

The agreement is concerning a Law Enforcement Academy Reimbursement and Subsequent Employment Agreement for Elliott Vanslyke. This individual will be attending the Law Enforcement Academy in January 2025. Once he completes the Academy and successfully passes the Law Enforcement Certification exam, he will be promoted from Officer Recruit to Patrol Officer.

The cost of sending the individual to the academy is $5,000. Funding for the scholarship will be a $5,000 donation from Steve Munz through the Anthony Johnson Scholarship Fund.

LAW ENFORCEMENT ACADEMY REIMBURSEMENT AND SUBSEQUENT EMPLOYMENT AGREEMENT

THIS AGREEMENT CONCERNING Law Enforcement Academy Reimbursement and Subsequent Employment ("Agreement") is entered into effect this **13th day of January, 2025** (even though it may be executed on other dates) by and between:

- City of Wildwood, a Florida municipal corporation ("City") and
- **Elliott Vanslyke** ("Employee"), whose address is **7621 Lacharite Court, Middleton, FL 34762**

Recitals

A. WHEREAS, Employee desired to become employed as a sworn officer for the City; and

B. WHEREAS, City is committed to providing the highest qualified sworn police officers possible to serve the needs of the City's citizens; and,

C. WHEREAS, the services to be rendered by the Employee under this Agreement requires special training, skill and education and this Agreement is entered into for the purpose of obtaining, training and employing Employee for such services to the City; and

D. WHEREAS, this Agreement is entered into, in part, pursuant to Florida Status, §943.16; and

E. WHEREAS, City will pay or reimburse Employee the full cost of tuition and other course expenses to attend an approved basic recruit training program; and

F. WHEREAS, City will reimburse Employee the full cost of the Florida State Officer Certification Examination ("SOCE") one (1) time only; and

G. WHEREAS, Payment or reimbursement by the City of Employee's cost of tuition, other course expenses, and the full cost of the SOCE is considered a Loan Agreement for the purposes of this Agreement.

NOW THEREFORE, in consideration of the matters set forth above (which are incorporated herein by reference), the exchange of the mutual promises set forth herein, and other good and valuable consideration, the parties hereto agree as follows:

1. **Employment.** City hereby employs Employee as a probationary employee with the City of Wildwood Police Department as set forth herein on this **13th day of January, 2025** ("Employment Date").

2. **Probationary status**. Employee shall be employed on a probationary status with the term of probation to last from the Employee's initial employment date until one (1) year after Employee is sworn in as a sworn law enforcement officer. The initial employment date shall be the Employment Date set forth above in paragraph 1. The probationary period includes the time the Employee is enrolled in the Florida Law Enforcement Academy (the "Academy"), as well as, the time the Employee is engaged in the Wildwood Police Department's Field Training Officer training program. During this probationary period Employee shall be an "at will" employee who may be terminated from employment for any reason at any time not otherwise prohibited by State or Federal law. Upon completion of the probationary period set forth herein, Employee's status shall be that of any other sworn police officer employed by the City consistent with the Employee's rank and time of service, except as otherwise provided for in this Agreement. It is anticipated by the City that the Employee will successfully complete the Academy during the initial term. Following graduation Employee will successfully sit for and pass the Florida SOCE and complete, to the City's satisfaction, the Wildwood Police Department's Field Training Officer training program on schedule. If for any reason Employee fails or falls behind the schedule for completion of these requirements, the City may, at its option, immediately terminate this Agreement.

3. **Salary and Benefits During the Probationary Employment.**

   A. **Salary**: So long as the Employee remains in good standing with the Wildwood Police Department, he or she will be paid in regular bi-weekly intervals as a regular Wildwood Police Department employee. Employee's salary while a student at the Academy at the College of Central Florida will be $33,873.84. Employee's salary after successfully passing the SOCE and starting the Wildwood Police Department's Field Training Officer training program will be $56,870.00.

   B. **Benefits**. Employee shall be entitled to all benefits regular City employees are entitled to during the probationary period. Insurance benefits will commence the first day of the month after 30 days following date of hire.

4. **Basic Recruit Training**. Employee shall attend and complete the Basic Recruiting Training Program at the College of Central Florida for the term starting on **January 21, 2025.**

5. **Other Course Expenses**. For purposes of the Agreement "other course expenses" includes books, uniforms, ammunition, testing cards, and miscellaneous educational expenses approved by the Chief of Police.

6. **State Officer Certification Examination**. Upon completion of the Academy at the College of Central Florida, Employee shall register for and take the next scheduled SOCE.

7. **Employee Obligation.**

A. Prior to employment, Employee must meet the minimum eligibility standards for a sworn police officer pursuant to the Criminal Justice Standards and Training Commission.

B. Prior to employment, Employee must meet the minimum eligibility standards for acceptance into the Academy at the College of Central Florida.

C. The City will directly purchase tuition and other course materials on behalf of the Employee.

D. Employee shall be required to take the SOCE within five (5) days of graduation from the Academy. If Employee does not pass the SOCE on the first try, Employee will be allowed one (1) additional opportunity (at employee's expense) to take and pass the SOCE. However, Employee must retake the SOCE within five (5) days of their first attempt of taking the SOCE. Both examinations must be completed no later than ten (10) days after Employee graduates from the Academy.

E. Employee must maintain an 80% average score or better on course work while attending the Academy.

F. Employee must maintain 100% attendance in the Academy.

G. Employee must successfully complete the Wildwood Police Department's Field Training Officer training program within twenty-six (26) weeks of graduation from the Academy.

H. Employee must remain continuously employed by the Wildwood Police Department for three (3) years from the date that Employee successfully completes the Wildwood Police Department's Field Training Officer training program.

I. Employee shall devote Employee's full time, attention, energies and best efforts to the Wildwood Police Department.

J. Employee shall perform all duties assigned to Employee to the best of Employee's ability and in a manner satisfactory to the Wildwood Police Department.

K. Employee shall abide by and carry out the policies of the Wildwood Police Department as promulgated from time to time.

8. **Loan Agreement**. Employee agrees that payment by the City of Employee's tuition to the College of Central Florida, other course expenses, and/or full cost of the SOCE are a loan between City and Employee creating a loan agreement ("Loan Agreement"). This Loan Agreement shall remain in effect between City and Employee up to and until Employee fulfills the Term of Employment Obligation set forth in paragraph 10 of this Agreement, at which time City shall forgive said loans. Only upon fulfillment of Employee's obligations under paragraph 10 of this Agreement will the City forgive such loans.

9. **City Obligations.**

   A. As applicable, City will pay either the full cost or the remaining balance of Employee's tuition and other course expenses while attending the Academy at the College of Central Florida if Employee is already enrolled at the time of this Agreement.

   B. City will pay Employee the salary and benefits set forth in paragraph 3 above during Employee's probationary period and thereafter pay Employee pursuant to the City of Wildwood's pay policies.

   C. City will reimburse Employee or pay directly the full cost of the SOCE) one (1) time only. Thereafter, the Employee shall be responsible to pay the cost of the additional SOCE required under paragraph 7D of this Agreement, if necessary.

10. **Terms of Employment Obligations**. Employee shall remain employed with the City of Wildwood Police Department on a continuous full-time basis for three (3) years from the time Employee successfully completes the Wildwood Police Department's Field Training Officer training program. Two (2) years are for the costs of tuition pursuant to Florida Statute §943.16 and one (1) year is for the salary paid by City to Employee while attending the Academy and subsequent training with the Wildwood Police Department's Field Training Officer training program.

11. **Failure to Comply**. If employee fails to comply with this Agreement, including the required employment as a sworn police officer during the three (3) years of service owed herein then:

   A. City may terminate Employee's employment; and

   B. Employee will, upon such termination or failure to comply with this Agreement:

1. Reimburse City for the actual cost for all tuition and other course expense paid by City to, or on behalf of, Employee. The City may make deductions from Employee's wages to recoup these payments pursuant to the Loan Agreement set forth in Paragraph 8 herein;

2. Reimburse City for 35% of Employee's salary while employed while a student at the Academy. The City may make deductions from Employee's wages to recoup the 35% of Employee's salary, but such deductions shall not reduce the Employee's wages below federal or state minimum wage requirements for all hours worked.

12. **Attorneys' Fees.** If any civil action, arbitration or other legal proceeding is brought for the enforcement of this Agreement, or because of an alleged dispute, breach, default or misrepresentation in connection with any provision of this Agreement, the successful or prevailing party shall be entitled to recover reasonable attorneys' fees, court costs and all expenses even if not taxable as court costs (including, without limitation, all such fees, taxes, costs and expenses incident to arbitration, appellate, and post-judgement proceedings), incurred in that civil action, arbitration or legal proceeding, in addition to any other relief to which such party or parties may be entitled. Attorneys' fees shall include, without limitation, paralegal fees, administrative costs, and all other charges billed by the attorney to the prevailing party.

13. **Jury Waiver.** In any civil action, counterclaim, or proceeding, whether at law or in equity, which arises out of, concerns, or relates to this agreement, any and all transactions contemplated hereunder, the performance hereof, or the relationship created hereby, whether sounding in contract, tort, strict liability or otherwise, trial shall be to a court of competent jurisdiction and not to a jury. Each party hereby irrevocably waives any right it may have to a trial by jury. Neither party has made or relied upon any oral representation to or by any other party regarding the enforceability of this provision. Each party has read and understands the effect of this jury waiver provision.

14. **Waiver.** The failure or delay of any party at any time to require performance by another party or any provision of this Agreement, even if known, shall not affect the right of such party to require performance of that provision or to exercise any right, power or remedy hereunder. Any waiver by any party of any breach of any provision, a waiver of the provision itself, or a waiver of any right, power or remedy under this Agreement. No notice to or demand on any party in any circumstance shall, of itself, entitle such party of any other or further notice or demand in similar or other circumstances.

15. **Authorization to Release Student information.** Employee agrees to execute and have properly witnessed or notarized the College of Central Florida Student Authorization for Access to Educational Records form attached hereto as Exhibit "A", authorizing the College of Central Florida to release to the City the following information from Employee's educational record: GPA, Transcripts/Test Scores, Petitions, Application, Correspondence, Financial Aid Records, Grade for any and all semesters Employee is or was in attendance, Transcripts from other schools, Attendance, Withdrawal forms, and Disciplinary records. In executing the attached Authorization to Release Student Information, Employee authorizes the release of the specified records to the City at any time the City requests the same while Employee is actively enrolled at the College of Central Florida.

16. **Governing Law.** This Agreement is and shall be deemed to be a contract entered into and made pursuant to the laws of the State of Florida and shall in all respects be governed, construed, applied and enforced in accordance with the law of the State of Florida.

17. **Jurisdiction and Venue.** The parties acknowledge that a majority of the negotiations, anticipated performance and execution of this Agreement occurred or shall occur in Sumter County, Florida. Any civil action or legal proceeding arising out of or relating to this Agreement shall be brought only in the courts of record of the State of Florida in Sumter County. Each party consents to the exclusive jurisdiction of such court in any such civil action or legal proceeding in such court or the right to bring an action or proceeding in any other court. Service of any court paper may be affected on such party by mail, as provided in this Agreement, or in such other manner as may be provided under applicable laws, rules of procedures or local rules.

18. **Rights of Third Parties.** Nothing in this Agreement, whether express or implied, is intended to confer any rights or remedies under or by reason of this Agreement on any persons other than the parties hereto and their respective legal representatives, successors and permitted assigns.

19. **Amendment.** No amendment to this Agreement shall be effective except those agreed to in writing and signed by all parties to this Agreement.

20. **Assignment.** This Agreement is not assignable by Employee

21. **Severability of Illegal Provisions.** Wherever possible, each provision of this Agreement shall be interpreted in such a manner as to be effective and valid under the applicable law. Should any portion of this Agreement be declared invalid for any reason, such declaration shall have no effect upon the remaining portions of this Agreement.

22. **Entire Agreement.** This Agreement, including exhibits (if any) constitutes the entire Agreement between the parties hereto with respect to the subject matter hereof. There are no other representations, warranties, promises, agreements, or understandings, oral, written or implied, among the Parties, except to the extent reference is made thereto in this Agreement. No course of prior dealings between the parties and no usage of trade shall be relevant or admissible to supplement, explain, or vary any of the terms of this Agreement. Acceptance of, or acquiescence in, a course of performance rendered under this or any prior agreement shall not be relevant or admissible to determine the meaning of this Agreement even though the accepting or acquiescing party has knowledge of the nature of the performance and opportunity to make objection. No representations, understandings, or agreements have been made or relied upon in making of this Agreement other than those specifically set forth herein.

IN WITNESS WHEREOF, the parties have executed this Agreement on the date set forth above.

City of Wildwood, a Florida municipal corporation

Jason McHugh, City Manager _____ Date _____

Employee

Printed Name: **Elliott Vanslyke** _____ Date 12/03/24

APPROVED AS TO FORM AND LEGALITY:

Ashley Hunt, Esq.
City Attorney

Date

ACKNOWLEDGEMENT

Pursuant to Florida Statute §943.16 I acknowledge that the City of Wildwood gave written notification to me of the 2-year employment commitment under the statute and the 3-year total employment commitment under this Agreement during the employment screening process for payment of the costs of tuition for my attendance at a basic police officer recruit training program.

Employee

12/03/24
Date