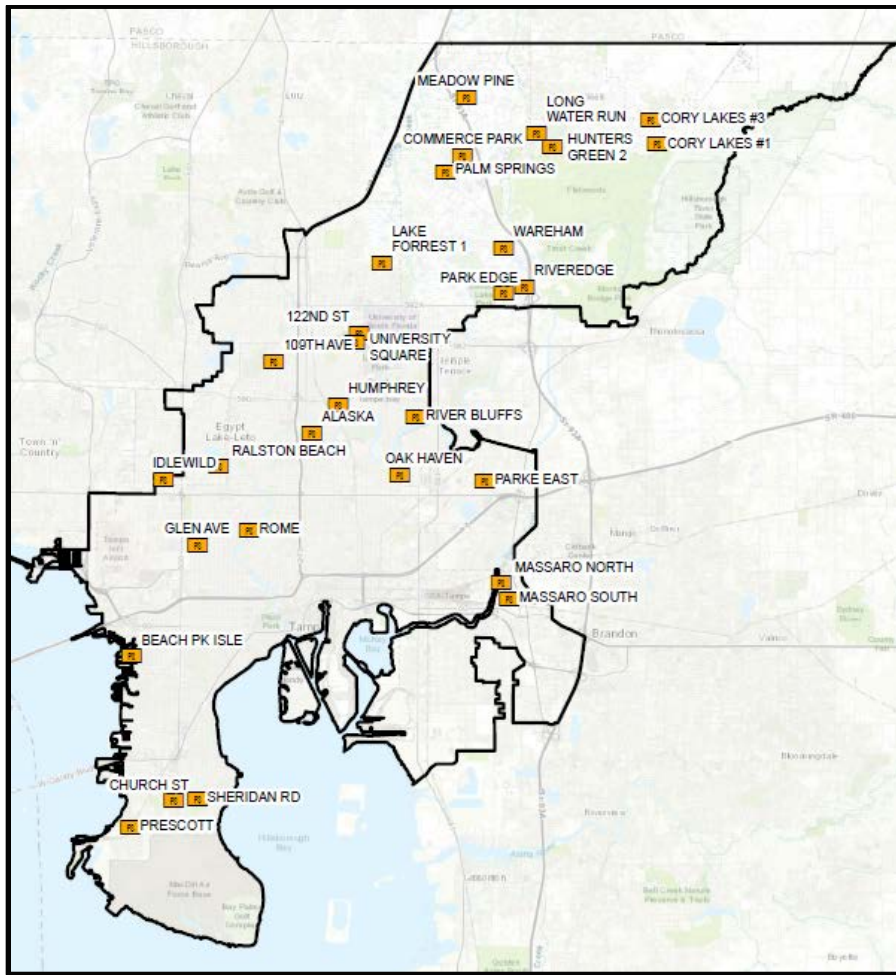




RFQ: 20-C-00016 DESIGN-BUILD SERVICES FOR WASTEWATER PUMPING STATION REHABILITATIONS



PREPARED BY:

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CONTRACT ADMINISTRATION DEPARTMENT

CITY OF TAMPA
December 2019

DESIGN CRITERIA PACKAGE

1. Purpose

The City of Tampa has prepared the Design Criteria Package for RFQ: 20-C-00016 Design-Build Services related to Wastewater Pumping Station Rehabilitations. This project involves the rehabilitation of 24 wastewater pumping stations located throughout the City's wastewater collection system. Additional pumping stations may be added to the project depending on changes in priorities and available funding. The rehabilitation projects will be completed over multiple years with the intent that all projects be completed within 6 years. A list of the pumping stations included in the project, general scope of work, and a preliminary completion sequence is provided below. The Design-Build Firm will be assigned rehabilitation projects based on the completion sequence; however this sequence may be modified based on changes in priorities and available funding. It is the City's intent that the rehabilitations included in the project be accomplished through a design-build approach and be completed through the development and execution of multiple Guaranteed Maximum Price (GMP) proposals. The City may, at its option, directly purchase certain products for use on this contract.

1.1 The scope shall include, but not be limited to the following:

- Design services that will include:
 - Assessment and identification of equipment replacement needs to restore, update, maintain, and improve continued operation of the pumping stations included in the project
 - Development of an alternatives analysis of potential improvements that will be used to evaluate and finalize required improvements for each pumping station
- Comprehensive design services of selected improvements
- Site planning
- Regulatory permitting
- Preconstruction Services with Development of Guaranteed Maximum Price for Construction
- Construction of selected improvements
- Start-up and testing
- Operation and Maintenance manuals
- Training in the operation of the selected improvements
- Scheduling of all logistics
- Construction Management and Oversight
- Public Relation activities to maintain a positive responsive to the project from affected neighborhoods
- Estimated Project Cost: \$19,000,000

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- 1.2 This document provides the criteria for the design and rehabilitation of the pumping stations included in the project. The intent is to list the minimum design-build criteria necessary for achieving the rehabilitations.
- 1.3 This package is not a specification or prescriptive checklist and is not intended to replace the professional judgment by a competent licensed professional engineer after coordination with the end-user and stakeholders of the City of Tampa.
- 1.4 Additionally, nothing in this document should preclude consideration and use of emerging technologies and commercially available products if they can be proven to result in a successful and satisfactory design for the pumping station rehabilitations.

2. Design Criteria

- 2.1 The design is based on providing facilities that will meet the needs of the Wastewater Department to effectively and efficiently operate the pumping stations identified in the project. These needs are based on mission and operation requirements. The design should consider existing conditions and the current and future needs of the department. It is imperative that the final designer and preparer of construction documents fully understand the operational requirements, permitting, site logistics and all related requirements to design each station accordingly.
- 2.2 A list of the pumping stations included in the project is provided below in Table 1. A list of additional pumping stations that may be added to the project due to changes in priorities or available funding is provided in Table 2. The lists provide information on each station including: date pumping station was placed into service, date of previous rehabilitations, design flow capacity of the station, number and size of pumps, type of station, station power, and other related information. The equipment and station components at most of these stations are original and have reached the end of their useful life.
- 2.3 Design-build services shall include, but not be limited to, demolition, replacement of all pumps, motors, pump discharge valves, deteriorated piping, electrical and control components, SCADA equipment, concrete restoration and application of protective coatings, installation of safety equipment, driveway replacements, fencing, landscaping, and other equipment needed to restore station reliability and provide improved operations. Building modifications and other improvements may also be needed to accommodate and provide suitable environment for selected equipment.
- 2.4 Pump selection and pumping strategy shall provide station capacity to meet peak wet weather flows, estimated future flows, current average daily flows, and the minimum flow requirements. The pump selection and operating strategy shall be designed so that backup pumping capacity is provided to meet maximum wet weather flow rates in the event that one of the primary pumps fails. The pumping equipment shall be designed to handle and properly convey wastewater

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containing considerable volume of solids and rags and shall be designed not to develop problems associated with the accumulation of rags.

- 2.5 Architectural updates and landscaping improvements may be needed at some locations to improve the appearance and acceptance of the station from the adjacent properties.
- 2.6 Wastewater flow must be maintained throughout all phases of the construction. Some of the pumping stations included in the project are located in residential areas that are in close proximity to adjacent homes and where there has been complaints associated with noise related to other construction projects and the use of a bypass pumping systems. Specialized design, construction approaches and sequencing shall be developed and utilized to eliminate and minimize these issues. If the construction sequencing requires bypass pumping, the bypass pumping system must include a reliable and redundant back-up pumping system and measures must be implemented to minimize odors and associated noise. Bypass pumping systems shall be designed to handle the same peak wet weather flow as the proposed pumping station. In the event the primary conveyance system fails, there must be an adequately sized, redundant back-up system capable of delivering the design peak wet weather flow. Bypass pumping systems shall be designed with variable speed control such that the pumped bypass flows match the influent flows. Bypass systems relying on electrical power must have sufficiently sized back-up generators or equivalent diesel pumping equipment in case of a power outage.
- 2.7 The rehabilitated pumping stations will contain substantial electrical gear. The Design-Build services shall include an arc flash assessment for all selected electrical equipment and implementation of the safety measures needed to protect personnel from the potential Arc Flash Risks.
- 2.8 The Design-Build Firm shall prepare and submit detailed construction plans and specifications at 60%, 90% and 100% phases. All drawings shall be produced in 3D (i.e. AutoCAD Civil 3D or Rivet as compatible for rendering) and shall be accurately georeferenced. Drawings shall meet the current Wastewater Department Drafting Standards.
- 2.9 The Design-Build Firm will provide GMP estimates at 90% and final construction plan phases. The 90% GMP estimates will be used to determine small and minority business subcontracting opportunities.

Table 1 - Pumping Station Rehabilitations Included in the Project

Map Exhibit No.	Pumping Station Name	Approximate Address	LAT	LONG	Pump Station Type	Wet Well Shape	Number of Pumps	Force Main Size (inches)	Install Date	Rehab Date	Station Voltage	Pump HP	Design Flow (gpm)
2	Parke East	6304 Orient Road	28.00148	-82.37330	Submersible	Round	Duplex	8	1986	NA	480 V	47	550
3	Massaro North (#2)	1900 Massaro Boulevard	27.96224	-82.36599	Submersible	Round	Duplex	4	1999	NA	240 V	8	180
4	Idlewild	6001.5 N Olive Street	28.00172	-82.51367	Submersible	Round	Duplex	6	1959	2006	240 V	10	210
5	Prescott	4806 Prescott Street	27.86717	-82.52743	Wet/Dry	Irregular	Duplex	8	1963	2001	480 V	75	2100
6	109th Avenue	10902 Marjory Avenue	28.04762	-82.46581	Wet/Dry	Irregular	Duplex	12	1963	NA	240 V	30	1200
7	Rome	4005 N Rome Avenue	27.98188	-82.47617	Wet/Dry	Irregular	Duplex	10	1964	NA	240 V	20	1100
8	Riveredge	14180 Riveredge Drive	28.07652	-82.35619	Submersible	Round	Duplex	12	1988	NA	480 V	88	1450
9	Ralston Beach	6716 Ralston Beach Circle	28.00720	-82.48981	Submersible	(1) Round and (1) Eq. Tank	Duplex	6	1961	1987	240 V	12.7	500
10	122nd Avenue	2715 E 122nd Avenue	28.05860	-82.42838	Submersible	Round	Duplex	6	1958	1987	480 V	25	540
11	Park Edge	8481 Parkedge Drive	28.07391	-82.36535	Submersible	Round	Duplex	8	1988	NA	480 V	12.7	522
12	Lake Forest #1	14745 Morningside Drive	28.08558	-82.41864	Submersible	Round	Duplex	6	1978	NA	240 V	20	350
13	Church Street	3901 Elmwood Terrace	27.87705	-82.50858	Submersible	Round	Duplex	6	1977	NA	240 V	5	210
14	Sheridan Road	6303 Sheridan Road	27.87813	-82.49822	Submersible	Round	Duplex	10	1982	2009	480 V	35	1770
15	Meadow Pine	19151 Meadow Pine Drive	28.15021	-82.38197	Submersible	Round	Duplex	6	2001	NA	240 V	4.6	240
16	Humphrey	1816 E Humphrey Street	28.03050	-82.43751	Submersible	Square	Duplex	6	1964	2008	240 V	3	225
17	Oak Haven	4210 E Hanna Avenue	28.00349	-82.41054	Submersible	Round	Duplex	4	1996	NA	480 V	5	125
18	Hunters Green #2	9110 Hunters Green Drive	28.13103	-82.34415	Submersible	Round	Duplex	4	1988	NA	240 V	4.5	169
19	Longwater Run	18103 Longwater Run Drive	28.13619	-82.35117	Submersible	Round	Duplex	4	1988	NA	240 V	2.4	96
20	Palm Springs	5001 Palm Springs Boulevard	28.12124	-82.39105	Submersible	Round	Duplex	6	2000	NA	480 V	4.7	209
21	Cory Lakes #3	10836 Cory Lakes Drive	28.14151	-82.30120	Submersible	Round	Duplex	4	2002	NA	240 V	4.7	220
22	Cory Lakes #1	10420 Cory Lakes Drive	28.13193	-82.29853	Submersible	Round	Duplex	6	1992	NA	240 V	5	230
23	Commerce Park	17350 Commerce Boulevard	28.12738	-82.38338	Submersible	Round	Duplex	12	2001	NA	480 V	20	1300
24	Wareham	7201 Wareham Drive	28.09173	-82.36546	Submersible	Round	Duplex	6	1987	NA	240 V	11	275
25	Beach Park Isle	4901 Bayway Drive	27.93307	-82.52717	Submersible	Square	Duplex	4	1968	1985	240 V	3	180

Table 2 - Pumping Station Rehabilitations that may be added to the project

Map Exhibit No.	Pumping Station Name	Approximate Address	LAT	LONG	Pump Station Type	Wet Well Shape	Number of Pumps	Force main Size (inches)	Install Date	Rehab Date	Station Voltage	Pump HP	Design Flow (gpm)
26	University Square Mall	2502.5 Fowler Avenue	28.05483	-82.43046	Submersible	Round	Duplex	6	1974	2002	240 V	20	400
27	River Bluffs	1809 N. River Dune Street	28.02611	-82.40351	Submersible	Round	Duplex	4	1995	NA	240 V	10	120
28	Glen Avenue	4104 N Glenn Avenue	27.97639	-82.49861	Submersible	Round	Duplex	6	1984	NA	240 V	5	285
29	Alaska	1017.5 River Cove Street	28.01981	-82.44885	Submersible	Round	Duplex	6	1956	2000	240 V	5	450
30	Massaro South (#1)	1802 Massaro Boulevard	27.95599	-82.36262	Submersible	Round	Duplex	6	1997	2013	480 V	20	320

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Design Criteria Package

3 Site Development Criteria

A map showing the locations of the stations included in the project is provided in Exhibit 1. Individual maps for each station are provided in Exhibits 2 through 30. The sizes of the sites and layout of the pumping station vary for each location. The majority of the sites are located in residential areas. All components and required improvements of the rehabilitated station shall be contained within the limits of the existing site.

4 Facilities Development Criteria

4.1 Provide a property survey including all existing site utilities, in the work area.

4.2 Conduct preliminary design services that will include the following:

- Evaluate and determine station flow capacity requirements needed to meet current average, low, peak daily flows, estimated future flows, and peak wet weather flows.
- Determine the rehabilitation needs for each pumping station by assessing the existing pumping station's equipment including all pumps, motors, valves, electrical and control components, and other equipment and identifying replacement/rehabilitation needs to restore station reliability, update equipment and systems, and provide improved operation.
- Development of an alternatives analysis containing alternatives for pump selection and operation strategy, control equipment, methods and equipment to improve operating efficiency, equipment selection, layout, construction sequencing, methods and strategies to maintain continuous wastewater service during all phases of construction, and methods to minimize disruption to the adjacent properties during construction.
- Preparation of associated cost estimates for the various alternatives

The City will evaluate the various alternatives and will make a final selection of the required improvements that will be used for the final design.

4.3 Create final plans and specifications for the selected pumping station improvements that will include: Finalized Auto CAD and pdf drawings, technical specification and pricing proposals developed to a GMP document with all associated exhibits (scope, pricing, qualifications). Present final design; site plan, site preparation, build schedule, equipment purchases and

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placement, utility agreements, building permits and all required approvals from regulatory agencies and local authorities.

5 Environmental Criteria/Permitting

The Design-Build Firm will be responsible for all required environmental testing and permitting needed to complete the project. The scope of these requirements will be determined by the Design-Build Firm based on the selected improvements and construction requirements. At a minimum it is anticipated the following tasks shall be completed:

- Preparation of a FDEP Application for Constructing a Domestic Wastewater Collection/Transmission System

6 Project Sequence

The pumping station rehabilitation projects will be completed over multiple years with the intent that all projects be completed within 6 years. Listed below is the preliminary sequence for completing the rehabilitations. The Design-Build team will initially be assigned rehabilitations based on this completion sequence; however, this sequence may be modified based on changes in priorities, available funding, and construction phasing that may be identified to reduce construction cost.

Year 1		
PS No.	Pumping Station Name	Task
148	Parke East	Design/GMP
620	Massaro North (#2)	Design/GMP
158	Idlewild	Design/GMP
192	Prescott	Design/GMP
183	109th Avenue	Design/GMP

Year 2		
Bldg No.	Pumping Station Name	Task
199	Rome	Design/GMP
285	Riveredge	Design/GMP
194	Ralston Beach	Design/GMP
184	122nd Avenue	Design/GMP
295	Park Edge	Design/GMP
165	Lake Forest #1	Design/GMP
148	Parke East	Begin Construction
620	Massaro North (#2)	Begin Construction
158	Idlewild	Begin Construction
192	Prescott	Begin Construction
183	109th Avenue	Begin Construction

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Year 3		
PS No.	Pumping Station Name	Task
244	Church Street	Design/GMP
250	Sheridan Road	Design/GMP
625	Meadow Pine	Design/GMP
156	Humphrey	Design/GMP
601	Oak Haven	Design/GMP
290	Hunter's Green #2	Design/GMP
199	Rome	Begin Construction
285	Riveredge	Begin Construction
194	Ralston Beach	Begin Construction
184	122nd Avenue	Begin Construction
295	Park Edge	Begin Construction
165	Lake Forest #1	Begin Construction

Year 4		
PS No.	Pumping Station Name	Task
289	Longwater Run	Design/GMP
622	Palm Springs	Design/GMP
627	Cory Lakes #3	Design/GMP
136	Cory Lakes #1	Design/GMP
624	Commerce Park	Design/GMP
279	Wareham	Design/GMP
109	Beach Park Isle	Design/GMP
244	Church Street	Begin Construction
250	Sheridan Road	Begin Construction
625	Meadow Pine	Begin Construction
156	Humphrey	Begin Construction
601	Oak Haven	Begin Construction
290	Hunter's Green #2	Begin Construction

Year 5		
PS No.	Pumping Station Name	Task
289	Longwater Run	Begin Construction
622	Palm Springs	Begin Construction
627	Cory Lakes #3	Begin Construction
136	Cory Lakes #1	Begin Construction
624	Commerce Park	Begin Construction
279	Wareham	Begin Construction
109	Beach Park Isle	Begin Construction

7 Project Management and Oversight

The Design-Build Firm will be responsible for project management activities and oversight of the pumping station rehabilitations with consistent coordination with the City during the design and construction portions. The Firm utilized for the project shall have the suitable personnel and equipment, resources, financial stability and experience to accomplish the Project requirements and objectives.

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Design Criteria Package

8 Start-up/Operations/Training

- 8.1 The Design-Build Firm shall provide start-up of the rehabilitated pumping stations. The Design-Build firm will be completely responsible for the operation and maintenance of the pumping station during the construction phase. The City will not take over operation and maintenance of the pumping station until the project is substantially complete as determined by the City.
- 8.2 The Design-Build Firm shall provide detailed operation and maintenance (O&M) manuals to the City for review and approval. Upon approval, an electronic copy and a specific number of hard copies of the O&M manuals will be required. The actual quantity and specific format of the O&M manuals will be clearly defined during the design phase of the project. Specific equipment information will also need to be compiled through the City's Asset Tracking form and conveyed to the City so that the equipment's asset data can be entered in the City's Maintenance Management System.
- 8.3 The Design-Build Firm shall provide AutoCAD as-builts drawings accurately depicting the as-built conditions of the pumping station. Hard copies of the as-built drawings will also be required as will be determined during the design phase.
- 8.4 The Design-Build Firm shall provide all training on the various pumping station equipment necessary for the proper maintenance and operation of the pumping station. The specific training requirements and equipment requiring training will be provided during the final design phase of the project.

9 Public Relations

The majority of the pumping stations for the project are located in a residential areas and some stations are very close to adjacent homes. Contact with the home owners, neighborhood associations, and retail/commercial business is necessary through the design and construction of the projects. Inquiries and questions about design and construction will be handled by the Design-Build Firm, after coordination of the responses with the City of Tampa.

The Design-Build Firm will be responsible for maintaining a proactive, robust and transparent community outreach program to keep the neighborhoods and property owners adjacent to the various projects continuously informed of the project status, project information, and construction scheduling and impacts. The Design-Build Firm shall immediately react, respond, address any concerns during construction. At a minimum the selected team shall:

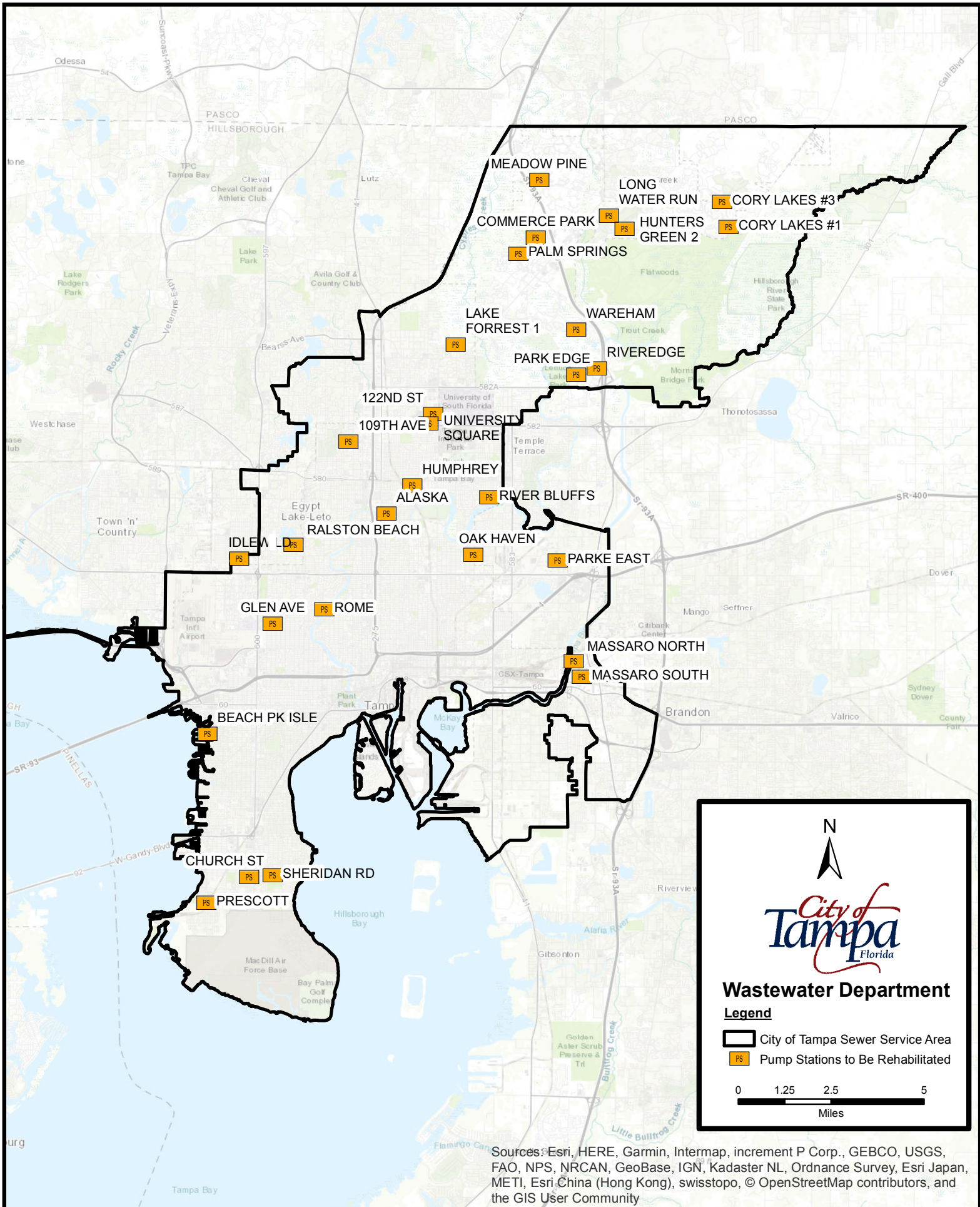
- Provide a manned 24/7 phone number and e-mail to address concerns regarding the project.

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- Maintain a phone/e-mail response log
- Employ social media and traditional communications
- Conduct public meetings and provide mailers to inform residents and property owners of the projects and construction schedules
- Designate an “Ombudsperson”

10 Workforce Development

A description of a Workforce Development Program should include any ongoing or developing programs such as apprenticeship, mentoring or on-the-job training. The Program description should include any efforts toward fostering a strong and talented workforce in Tampa, promoting an increase of school attendance and graduation rates, defining pathways through higher education, technical certification programs and career readiness. It should also mention any workforce incentives, championing local businesses and removing barriers to access. The Program description should also include contracting and subcontracting trades, and engineering, architectural, geotechnical and public engagement opportunities.



Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, © OpenStreetMap contributors, and the GIS User Community

Exhibit No. 1- Pump Stations to be Rehabilitated

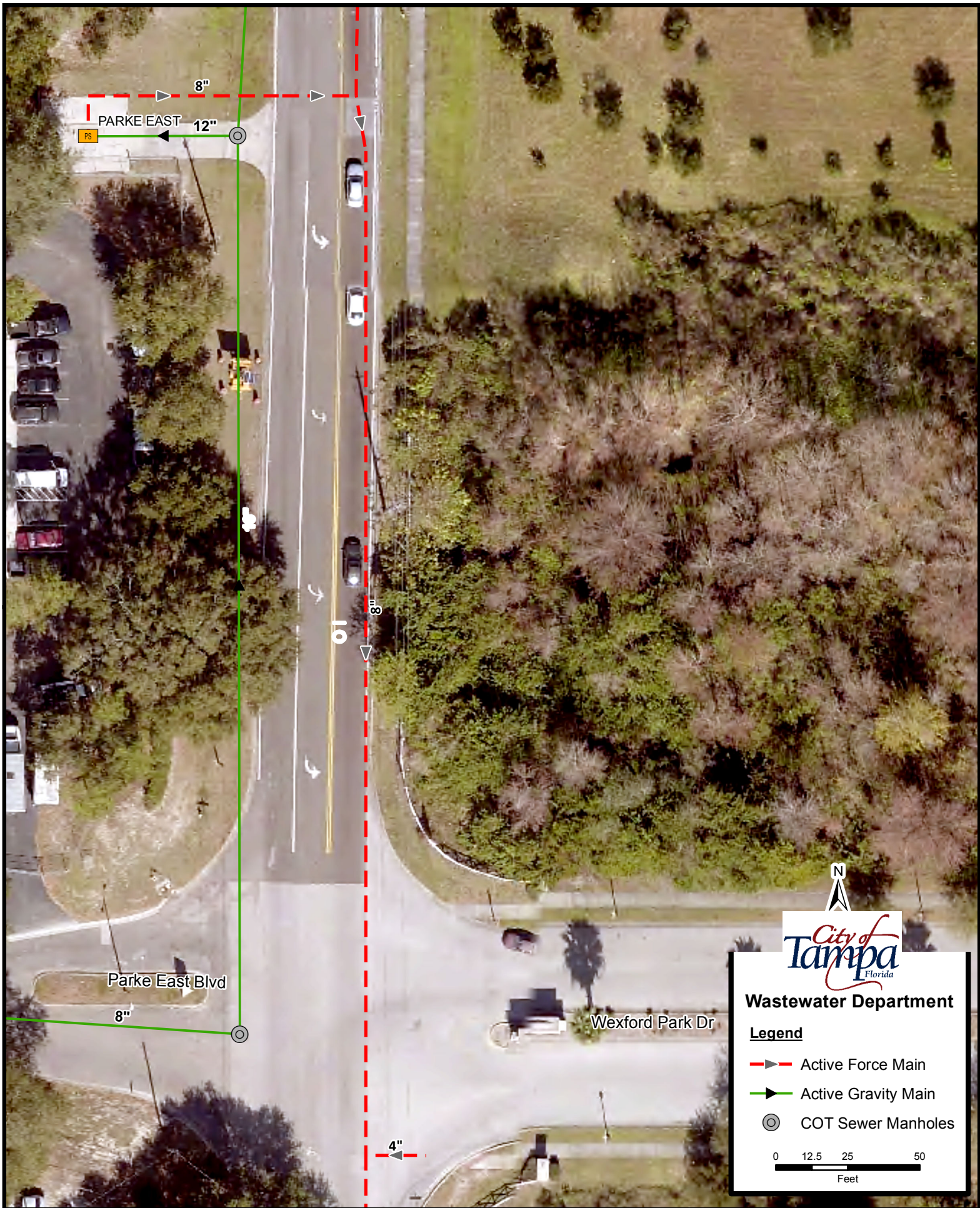
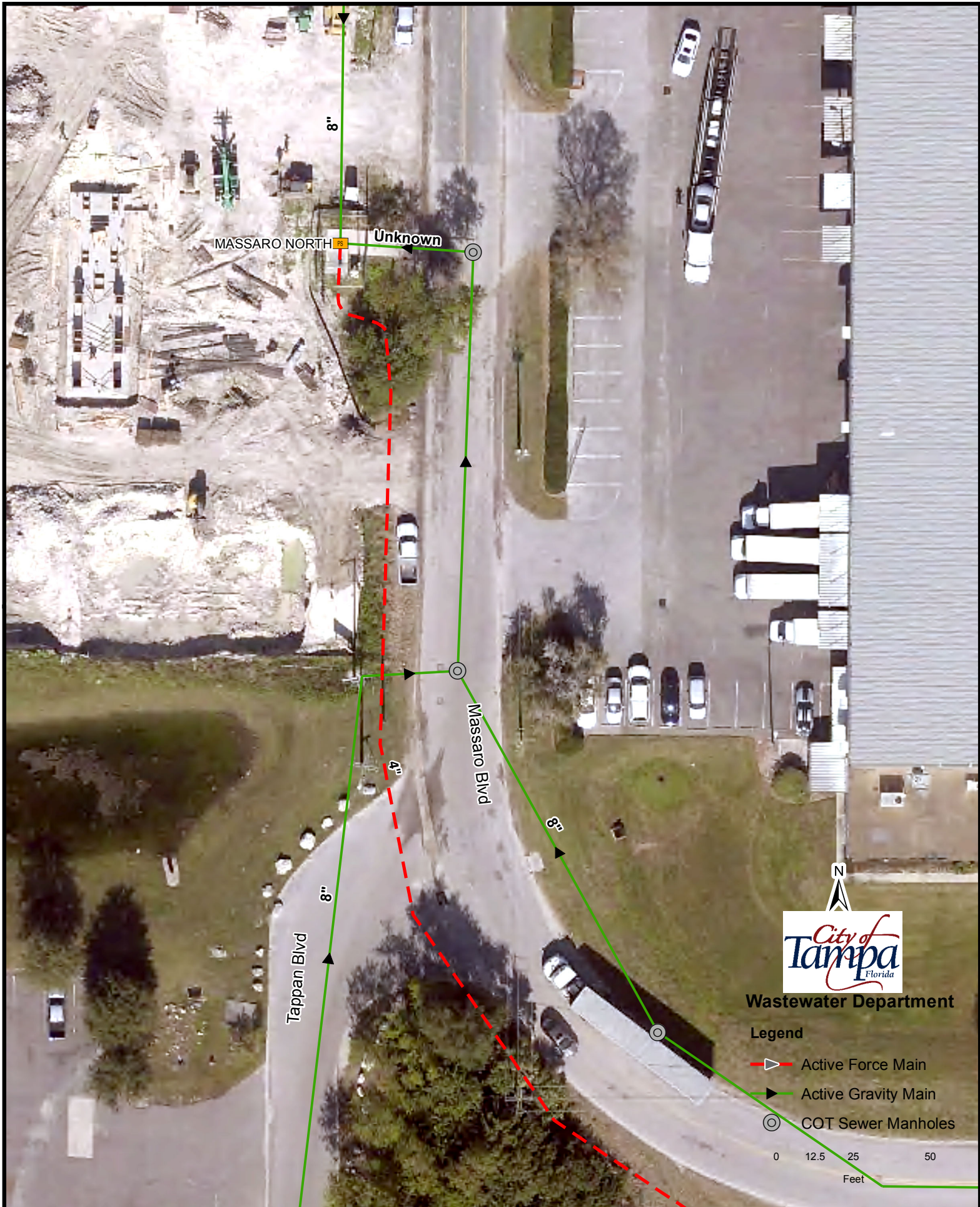


Exhibit No. 2 - Parke East Pumping Station



Wastewater Department

Legend

- ▶ Active Force Main
- ▶ Active Gravity Main
- ⊙ COT Sewer Manholes






Exhibit No. 3 - Massaro North Pumping Station




City of Tampa
 Florida
Sewer Department

Legend

-  COT Sewer Manholes
-  Active Force Main
-  Active Gravity Main

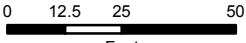
0 12.5 25 50

 Feet

Exhibit No. 4 - Idlewild Pumping Station

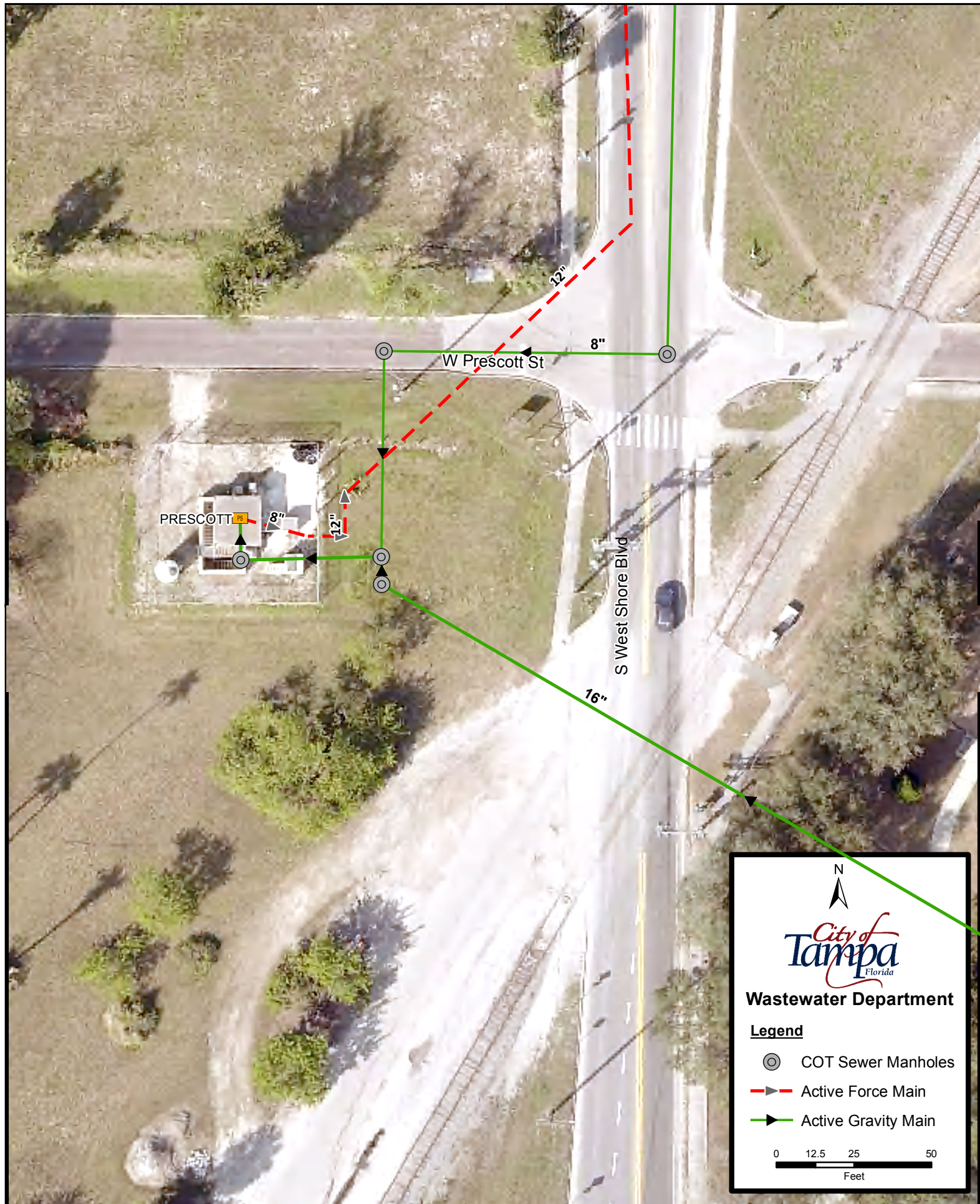


Exhibit No. 5 - Prescott Pumping Station




City of Tampa
 Florida

Wastewater Department

Legend

-  COT Sewer Manholes
-  Active Force Main
-  Active Gravity Main

0 12.5 25 50
 Feet

Exhibit No. 6 - 109th Avenue Pumping Station



Exhibit No. 7 - Rome Pumping Station



Exhibit No. 8 - Riveredge Pumping Station



Exhibit No. 9 - Ralston Beach Pumping Station



Exhibit No. 10 - 122nd Avenue Pumping Station

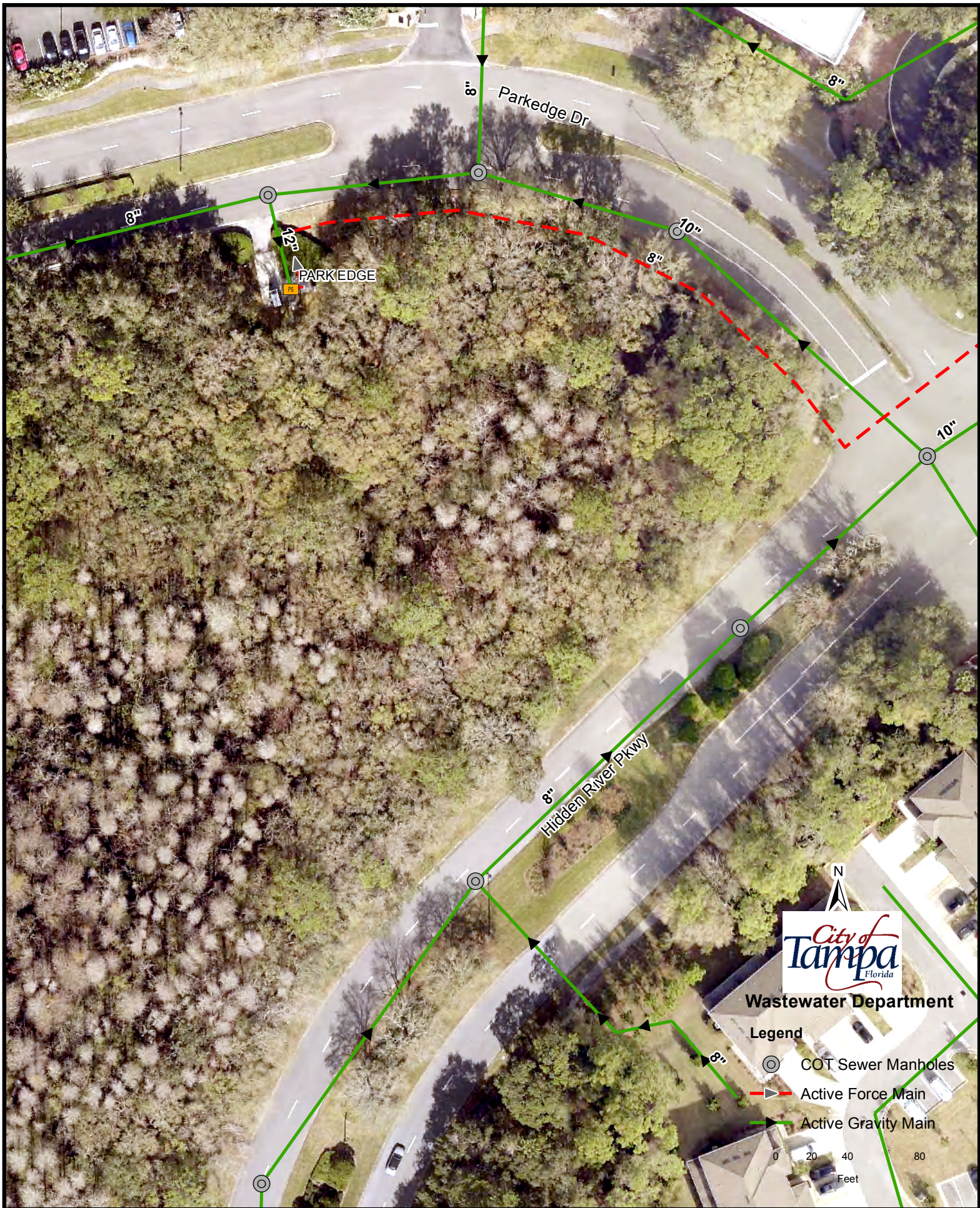


Exhibit No. 11 - Park Edge Pumping Station



Exhibit No. 12 - Lake Forest No.1 Pumping Station



Exhibit No. 13 - Church Street Pumping Station




City of Tampa
 Florida

Wastewater Department

Legend

-  COT Sewer Manholes
-  Active Force Main
-  Active Gravity Main

0 12.5 25 50
 Feet

Exhibit No. 14 - Sheridan Road Pumping Station

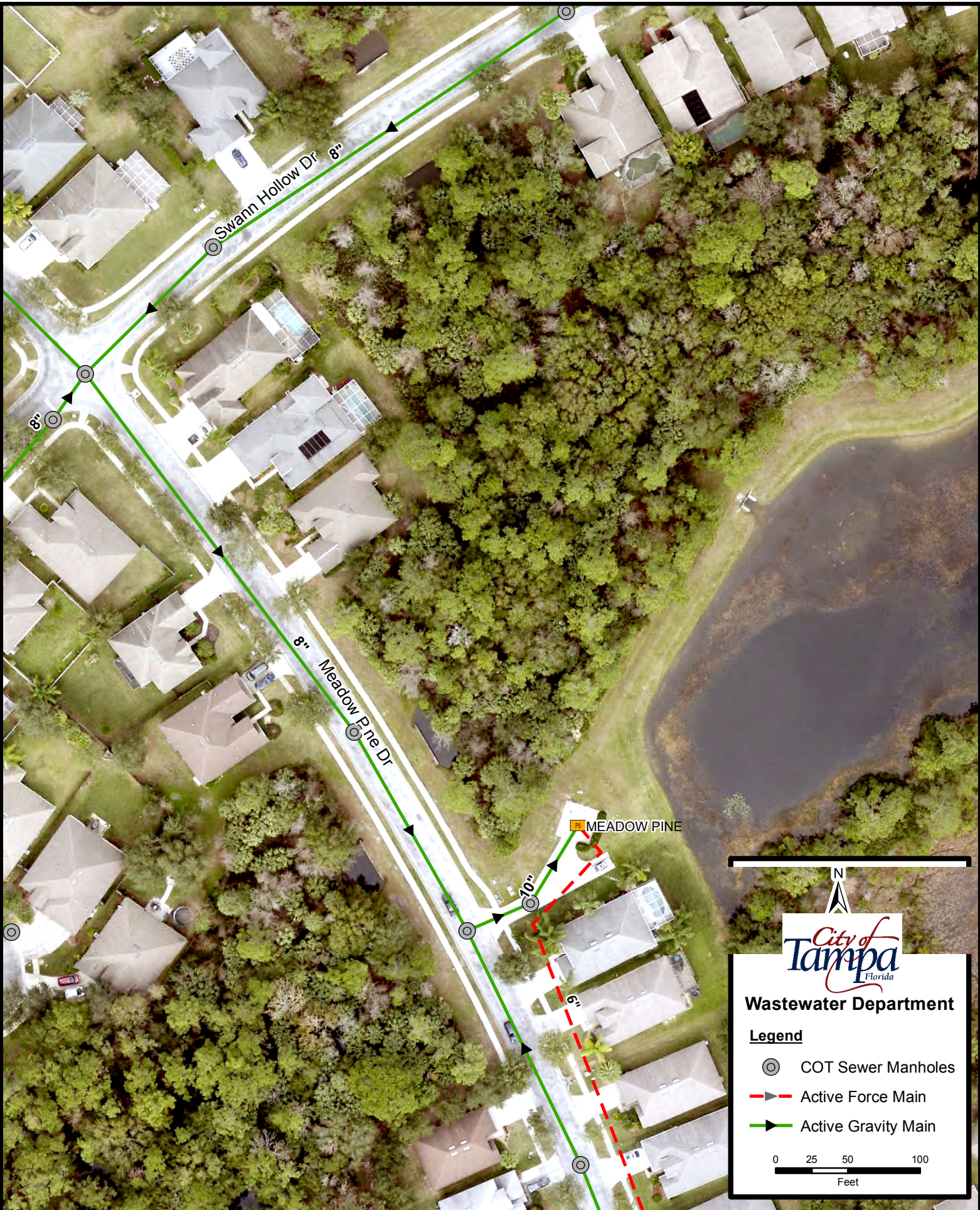
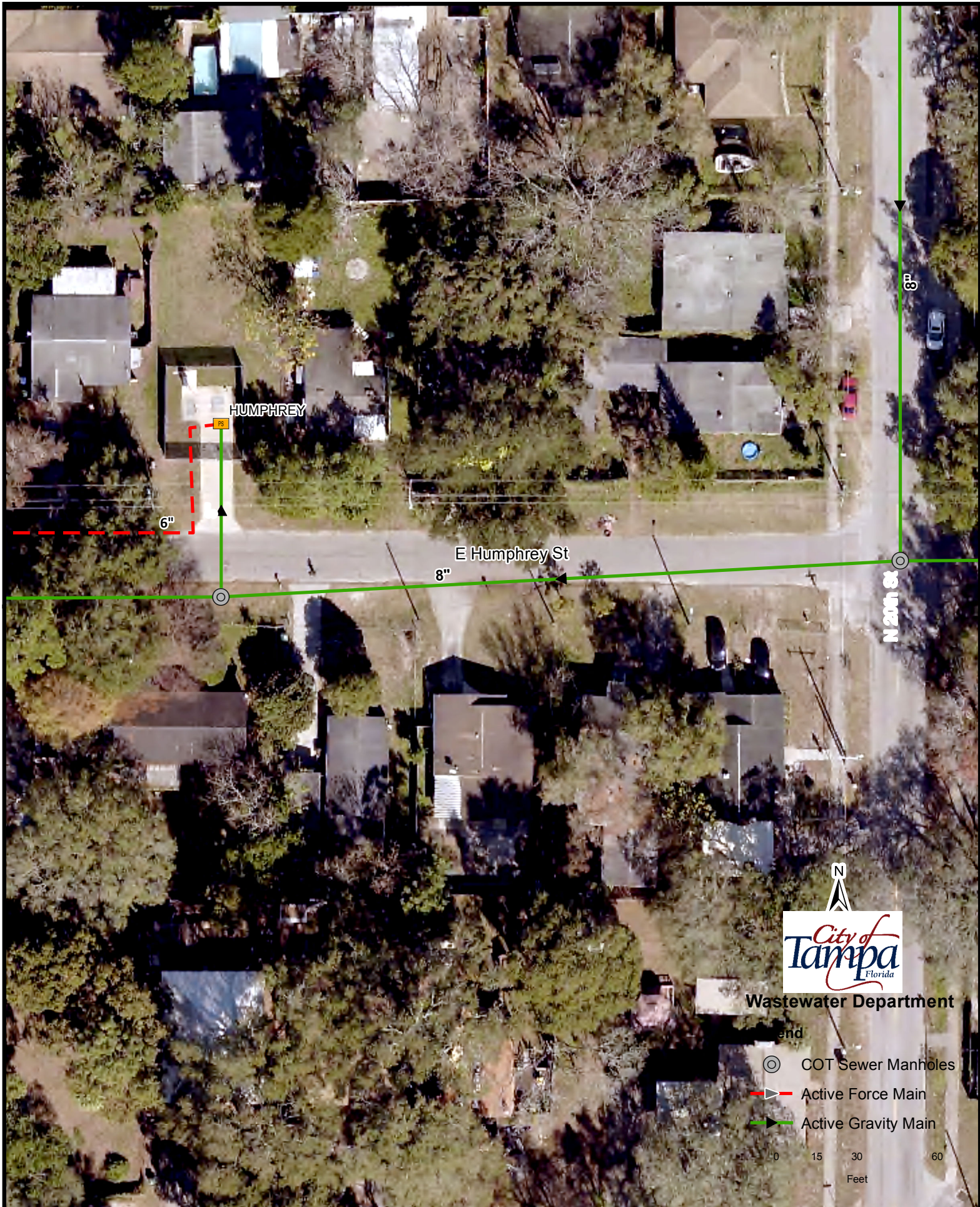


Exhibit No. 15 - Meadow Pine Pumping Station



Wastewater Department

- ⊙ COT Sewer Manholes
 - ➔ Active Force Main
 - ➔ Active Gravity Main
- 0 15 30 60
Feet

Exhibit No. 16 - Humphrey Pumping Station



Exhibit No. 17 - Oak Haven Pumping Station



Exhibit No. 18 - Hunters Green No. 2 Pumping Station






Exhibit No. 19 - Long Water Run Pumping Station



Wastewater Department

Legend

-  COT Sewer Manholes
-  Active Force Main
-  Active Gravity Main

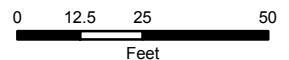


Exhibit No. 20 - Palm Springs Pumping Station



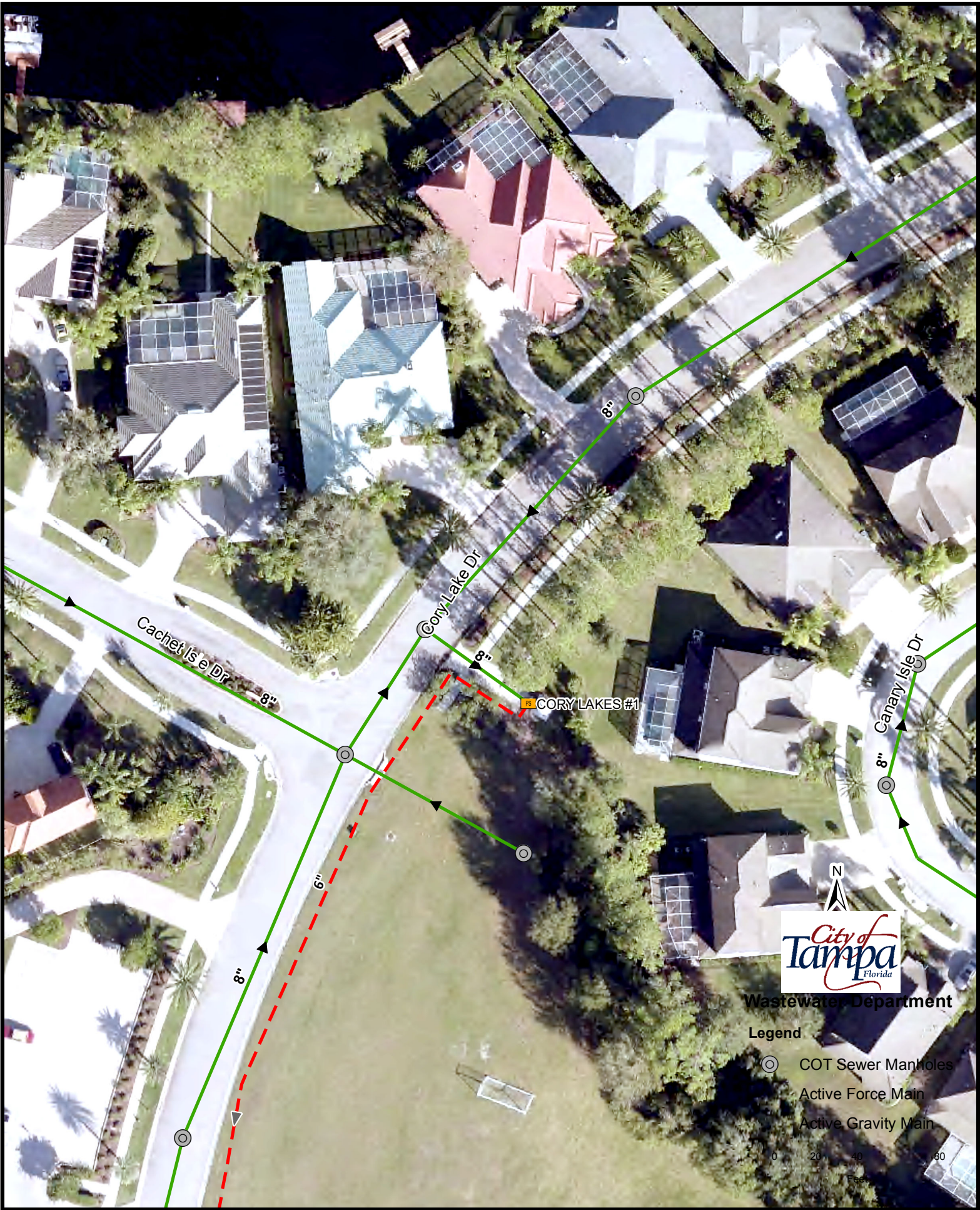
Wastewater Department

Legend

-  COT Sewer Manholes
-  Active Force Main
-  Active Gravity Main



Exhibit No. 21 - Cory Lakes No. 3 Pumping Station



Wastewater Department

Legend

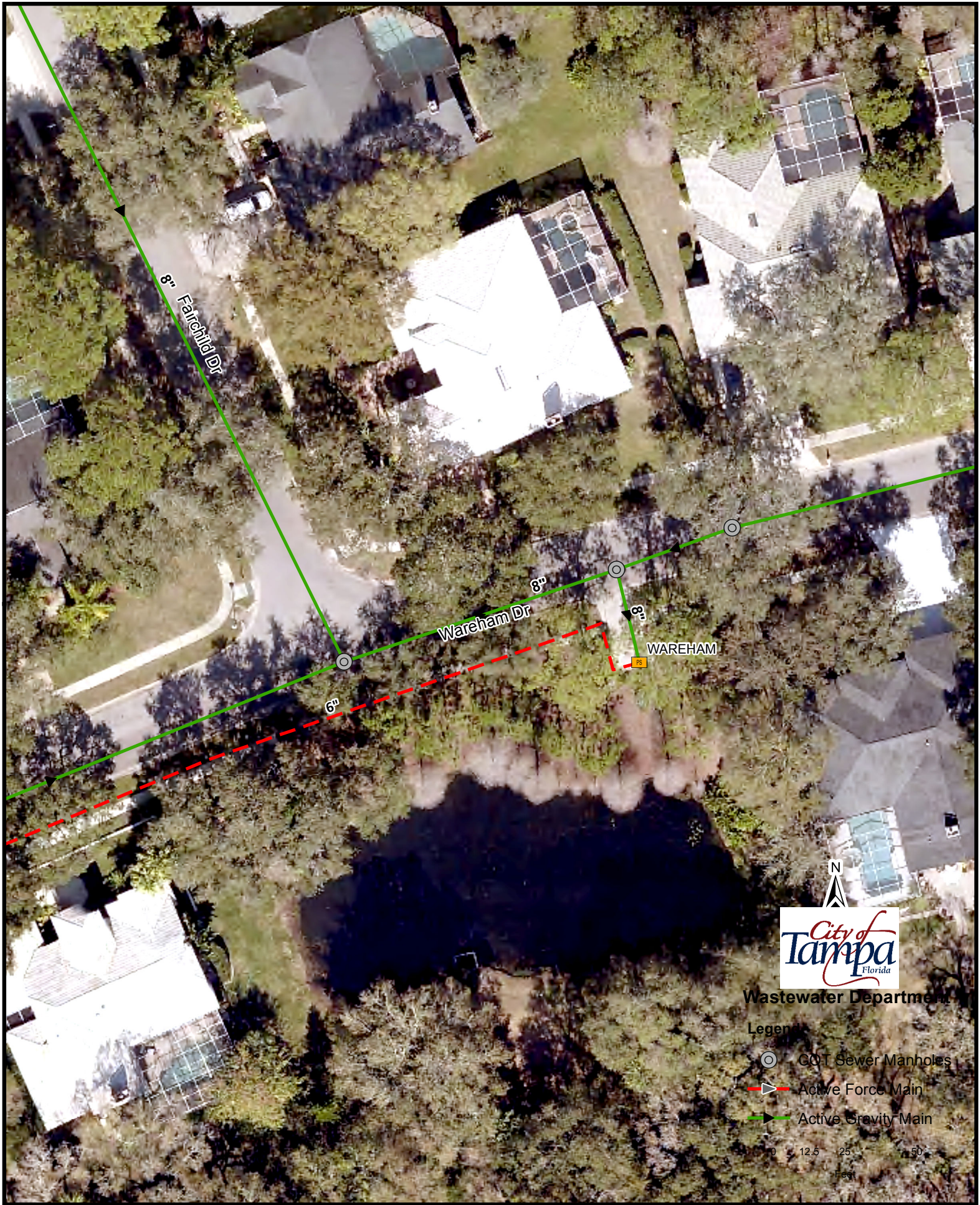
- ⊙ COT Sewer Manholes
- Active Force Main
- Active Gravity Main



Exhibit No. 22 - Cory Lakes No.1 Pumping Station



Exhibit No. 23 - Commerce Park Pumping Station



Wastewater Department

Legend

- ⊙ GDT Sewer Manholes
- ▶ Active Force Main
- ▶ Active Gravity Main



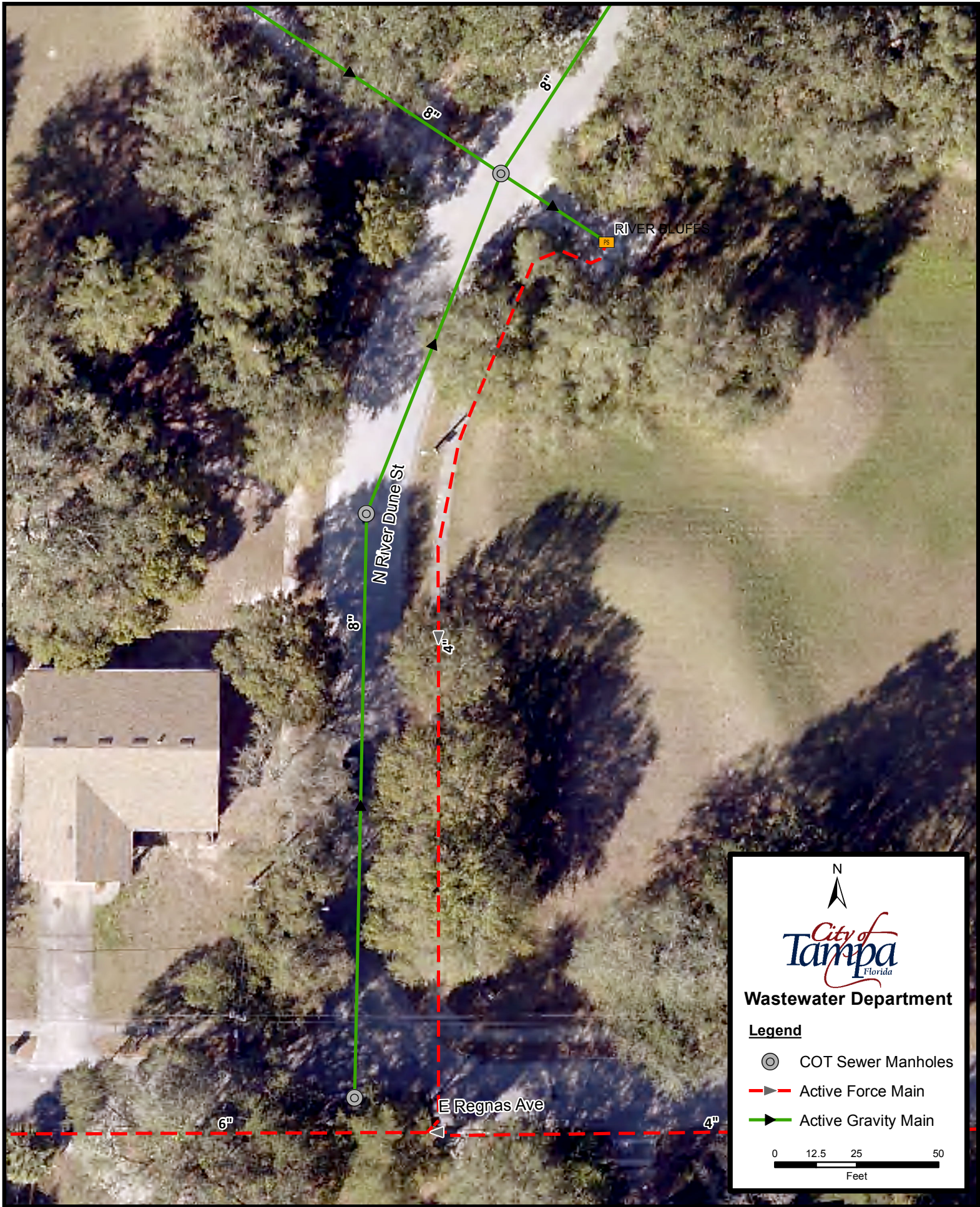
Exhibit No. 24 - Wareham Pumping Station



Exhibit No. 25 - Beach Park Isle Pumping Station



Exhibit No. 26 - University Square Mall Pumping Station





Wastewater Department

Legend

-  COT Sewer Manholes
-  Active Force Main
-  Active Gravity Main

0 12.5 25 50
 Feet

Exhibit No. 27 - River Bluffs Pumping Station



Exhibit No. 28 - Glen Avenue Pumping Station



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City of
Tampa
Florida

Wastewater Department

Legend

- ⊙ COT Sewer Manholes
- ▶ Active Force Main
- ▶ Active Gravity Main

0 10 20 40
Feet

Exhibit No. 29 - Alaska Pumping Station



Exhibit No. 30 - Massaro South Pumping Station