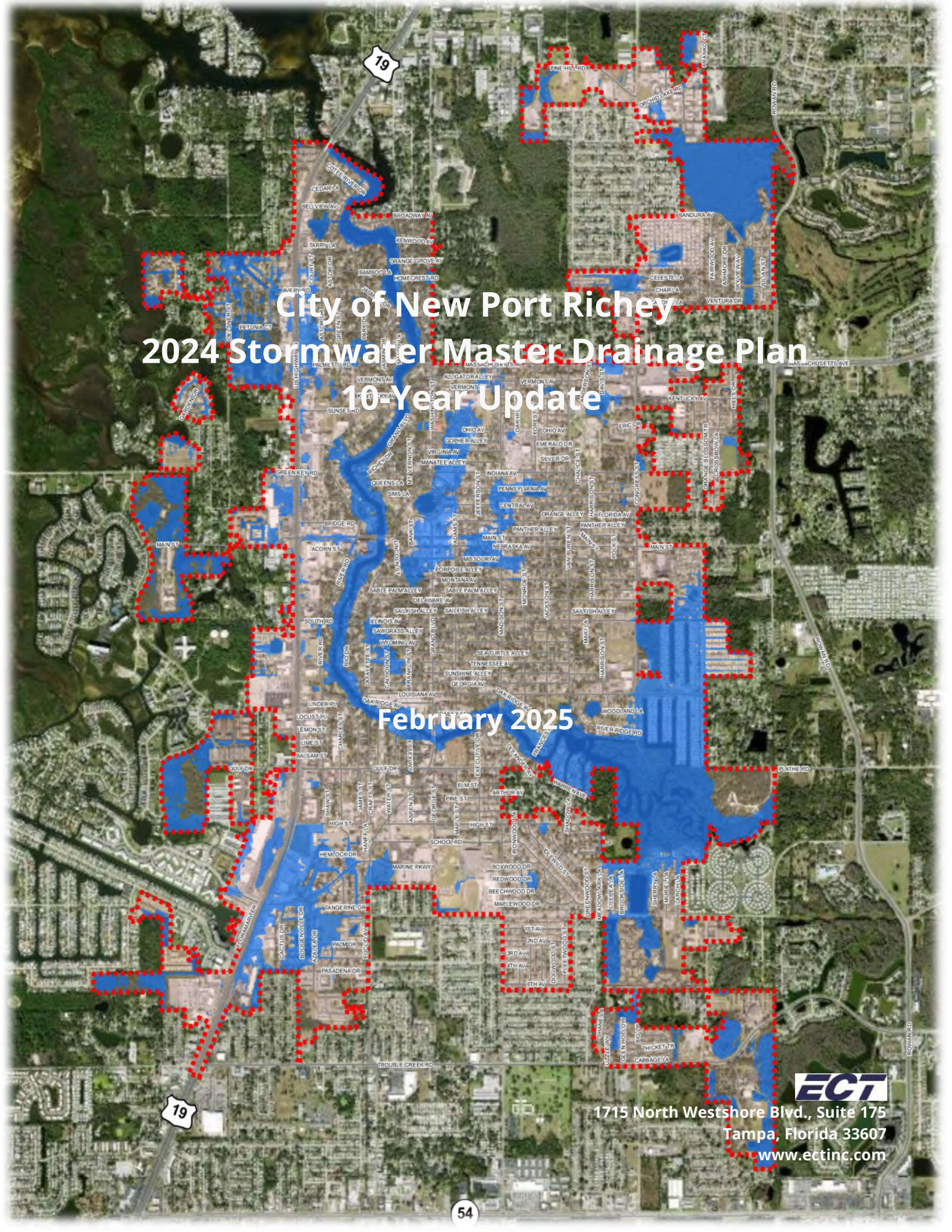

City of New Port Richey
2024 Stormwater Master Drainage Plan
10-Year Update

February 2025

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1.0 Introduction

1.1 Background

This is the 2024 10-Year Update of the City of New Port Richey Stormwater Master Drainage Plan Update. This plan updates the prior stormwater master drainage plans prepared for the City of New Port Richey (City) in 2013 and May 2002.

New Port Richey has identified the following key issues and concerns that are being addressed to meet the stormwater management needs of the citizens and to comply with regulatory requirements of Federal and State agencies:

- **Current Master Plan Update** – This update is based upon current needs within the City and increasingly stringent regulatory constraints. The *2024 Master Drainage Plan 10-Year Update* provides information on the scope and cost of constructing the projects identified in this update. Ten drainage improvement projects have been identified based on input from the City and local residents. In addition, public meetings were held to 1) review current flooding and water quality issues within the City and 2) Review the proposed flood control and water quality projects.
- **Funding** - A major source of funding will be from the stormwater utility billing. Additional funding may be obtained from City secured grants.

1.2 Study Goal and Objectives

The goal of the *2024 Stormwater Master Drainage Plan 10-Year Update* is to provide estimated preliminary cost information needed by City Staff to make their long-term decisions regarding the most effective approach for reducing flooding conditions and improving water quality in the City.

1.3 Authorization

The City of New Port Richey has authorized the 2024 Stormwater Management Drainage Plan 10-Year Update as Task Order No. 2023-002, as approved on December 5, 2023.

2.0 Assessment of Regulatory Constraints

The objective of this Chapter is to assess current Federal, State, and Regional regulations that may impact the City's stormwater management activities with respect to completion of the projects identified in the *2024 Master Drainage Plan 10-Year Update.* The implementation of these projects is dependent on existing regulations currently impacting the City's stormwater management and pending regulations which may impact the future implementation of stormwater projects.

The City's stormwater management activities are currently subject to direct or indirect regulation by:

- The U.S. Army Corps of Engineers (USACE) Dredge and Fill Permitting Program. The 404 program was previously administered by the Florida Department of Environmental Protection (FDEP).
- The U.S. Fish and Wildlife Service (USFWS) and its sister agency, the National Marine Fisheries Service (NMFS).
- The U.S. Environmental Protection Agency (EPA), National Pollutant Discharge Elimination System (NPDES) stormwater regulation program for Municipal Separate Storm Sewer Systems (delegated in 2001 to the FDEP).
- The Federal EPA NPDES stormwater regulation program for Construction activities disturbing land area of 5.0 acres or greater (delegated in 2001 to the FDEP).
- The Southwest Florida Water Management District (SWFWMD) Statewide Environmental Resource Permit (SWERP) Regulations.
- The Florida Fish and Wildlife Conservation Commission (FWCC).

2.1 Existing Federal Regulatory Programs

Several Federal programs regulate stormwater management or related construction activities directly through issuance of permits, or indirectly through commenting authority. Federal programs having potential to impact the City's stormwater management activities over the next 10 years are described below.

2.1.1 USACE Dredge and Fill Permitting

The USACE has authority to regulate activities in waters of the U.S. under the Clean Water Act (CWA) and the Marine Protection, Research, and Sanctuaries Act of 1972, as amended. The USACE regulates all dredging, excavation and filling activities taking place in or adjacent to Waters of the United States (generally including canals, streams, wetland floodplains and coastal plains). Projects are reviewed by USACE for impacts to navigation and environmental resources (wetlands). On December 22, 2020, the EPA delegated the CWA Section 404 (Dredge and Fill) permitting to the FDEP for assumed waters (e.g., not traditionally navigable waters or immediately adjacent Waters of the United States [WOTUS]). On February 15, 2024, a federal

court in the District of Columbia issued a ruling formally vacating EPA's December 2020 decision to allow the state of Florida to assume permitting authority for Section 404 of the CWA. Following the court's decision, anyone seeking a Section 404 permit in the state of Florida will need to work with the USACE instead of the FDEP. This ruling could increase the amount of time and resources spent on acquiring a permit.

The regional USACE office for Dredge and Fill Permit reviews is located in Tampa, Florida, although other regional USACE offices are also performing reviews of Florida projects. The review process is most often carried out concurrently with the SWFWMD Environmental Resource Permit (ERP) review (described in Section 4.2.2).

The completion of some of the current proposed projects in the *2024 Stormwater Master Drainage Plan 10- Year Update* will require USACE/FDEP Section 404 permits, especially those discharging to the Gulf of Mexico, west of U.S. 19 or with an outfall into the Pithlachascotee River.

2.1.2 Federal Fish & Wildlife Service and National Marine Fisheries Service

The USFWS and the NMFS share responsibility for the administration of the Endangered Species Act (ESA), which requires that all Federal agencies undertake programs for the conservation of endangered and threatened species.

A species may be classified as endangered when it is in danger of extinction within the foreseeable future throughout all or a significant portion of its range. A threatened classification is provided for those animals and plants likely to become endangered within the foreseeable future throughout all or a significant portion of their ranges. Critical habitat is defined as the geographic area containing the physical or biological features essential to the conservation of a listed species, or as an area that may require special management considerations or protection.

Generally, the NMFS deals with those protected species occurring in marine environments, while the USFWS is responsible for terrestrial and freshwater species and migratory birds. Both agencies most commonly exert their protection authority through commenting prerogatives associated with the USACE/FDEP Section 404 Dredge and Fill Permit process.

USFWS

The USFWS does review and issue its own Federal "Incidental Take" Permit, where applicants propose to destroy critical habitat or protected species as an unavoidable Impact sufficiently justified by the "public's best interest". Implementation of the remaining and new stormwater management projects within the City should not require USFWS "Incidental Take" permits.

The terrestrial and freshwater species concerns of this agency will need to be addressed in

conjunction with any required USACE Dredge and Fill permits associated with freshwater wetlands, freshwater portions of the Pithlachascotee River or upland areas which may provide "critical habitat" for protected species. USFWS approvals will require the following actions:

- Inquiry to the regional office of the USFWS (located in Vero Beach, FL) prior to submittal of USACE Dredge and Fill Permit applications, to determine the potential for the presence of threatened or endangered species in proposed project areas.
- Where protected species are potentially present, the actual presence/absence of the species should be verified if possible. If protected species are reasonably expected to be present, impacts from proposed project activities must be evaluated.

NMFS

Although the NMFS does not issue permits for, or have direct regulatory authority over, impacts to protected marine species and habitats, the concerns of this agency are addressed through commenting prerogatives associated with required USACE Dredge and Fill permits. In addition to the protection of nationally listed species, recent enactment of the Magnuson-Stevens Fishery Conservation and Management Act (16 USC 1801 et seq. Public Law 104-208) has provided authority and responsibility for the protection of essential fishery habitat (EFH). EFH is broadly defined by the Act as "those waters and substrate necessary to fish for spawning, breeding, or growth to maturity." EFH is regionally identified and described as representative managed fish species by regional fishery management councils.

The City's Gulf of Mexico outfalls are within the Gulf of Mexico Fishery Management Council's area of jurisdiction, which extends from the Texas/Mexico border to the Florida Keys. The Gulf of Mexico Fishery Management Council separates EFH into estuarine and marine components. For the estuarine component, EFH is defined as all estuarine waters and substrates (mud, sand, shell, rock, and associated biological communities), including sub-tidal vegetation (seagrasses and algae) and adjacent inter-tidal vegetation (marshes and mangroves).

Any future drainage or water quality improvement projects with associated dredging, filling or sea grass removal/destruction activities in estuarine portions of the Pithlachascotee River or the Gulf of Mexico will need to address the concerns of this agency by:

- Inquiry to the regional office of the NFMS (located in St. Petersburg, FL) prior to submittal of USACE Dredge and Pill Permit applications, to determine the potential for the presence of threatened or endangered species or EFH in proposed project areas.
- Where protected species are potentially present, the actual presence/absence of the species should be verified if possible.
- If protected species are reasonably expected to be present, impacts from proposed project activities must be evaluated.

Copies of NFMS agency correspondence and subsequent site evaluations and mitigation plans should be included in the USACE Dredge and Fill permit application.

2.1.3 Federal NPDES Permits

The 1972 CWA was amended (refer to Federal Register No. 64, No. 235) to prohibit the discharge of any pollutant to waters of the United States from a point source, unless the discharge is authorized by a NPDES permit. Initial efforts to improve water quality under the NPDES program primarily focused on reducing pollutants from industrial process wastewater or municipal sewage. In 1987 the CWA was amended to require implementation of a comprehensive national program for addressing stormwater discharges. Phase I was promulgated by the EPA in 1990, and required the development and Issuance of general NPDES permits for storm water discharge from a large number of priority sources.

These priority sources included several categories of industrial activity, including construction sites that disturb five or more acres of land, and municipal separate storm sewer systems (MS4s) generally serving populations of 100,000 or more. Implementation of Phase II of the Federal NPDES program was initiated in 2000. Phase II expanded the Phase I program to include smaller municipalities in MS4 permitting, provide certain exclusions for industrial stormwater discharge permitting, and expanded construction permitting to include smaller sites with disturbed area between one and five acres. The NPDES program was subsequently delegated to FDEP and is described in greater detail in Section 2.2 below.

The City has coverage under the Phase I MS4 program as a co-permittee with Pasco County and is currently operating under Permit FLS000032-004. The FDEP still has not issued the new permit, and the City is currently under Cycle 4 Year 8. Specific activities associated with that permit are currently managed and enforced by the FDEP and are described in Section 2.2.

2.2 Existing State Regulatory Programs

State regulatory programs with authority over stormwater management projects within the City of New Port Richey include:

- NPDES Permitting Program, implemented and enforced by the FDEP (Tallahassee Office).
- ERP Permitting Program, implemented and enforced by the Brooksville service office of the SWFWMD.
- FDEP - NPDES Construction General Permit (CGP) for Small Construction Activities.
- Threatened and Endangered Species protection, implemented by the FWCC.

Each of these programs and potential impacts to the city stormwater management activities, are described below.

2.2.1 Florida NPDES Permits

Municipal Separate Storm Sewer (MS4) Permitting

The Tallahassee office of the FDEP has responsibility for management and enforcement of the City's MS4 Permit (FLS000032-0004). The Federal rules and requirements through which the original EPA permit was governed remain the same. There have been no significant functional changes to general stormwater management operations as a result of the State delegation of the program. The MS4 permit requirements mandated the following key stormwater management activities for the City.

- The Inventory (GIS) and Assessment of the structural elements of the City's MS-4 System.
- Develop a stormwater master plan as it relates to the NPDES program. This will include all SOPs and plans implemented by the City.
- Formal record-keeping of stormwater maintenance and inspection activities.
- Monitoring and inspection of high-risk facilities (municipal waste transfer, industrial).
- Road maintenance activities (litter control, street sweeping, CDS devices in stormwater inlets).
- Controlled application of pesticides/herbicides.
- Illicit connection identification and elimination.
- Construction site inspections (turbidity, erosion control).

The City prepares an annual report that documents the City's progress toward permit goals and summarizes permit-related activities. Annual reports and permit correspondence for the City's NPDES MS4 permit are now handled through the FDEP Tallahassee office.

As the City completes improvement projects, the following compliance activities should occur:

- Improvement project facilities must be included/updated in the City storm system inventory, as they are constructed.
- Appropriate maintenance activities and schedules should be developed for any new elements (ponds, new pipe networks, filtration inlets, etc.).
- All new outfall locations must be identified and reported in the NPDES MS4 Annual report.

2.2.2 NPDES Construction General Permit (CGP) for Small Construction Activities

The Phase II expansion of the NPDES program extends the current regulation for construction activities to include "small' construction sites defined as 1 acre up to 5 acres of disturbed land area. The intent is to issue small construction CGPs, to be managed and enforced by the FDEP.

General requirements of the permit to include:

- The submission of a Notice of Intent and a $250 processing fee to FDEP (Tallahassee) and copied to owners of any receiving MS4.
- Previous procurement of a FDEP stormwater discharge permit under Chapter 62-25, F.A.C., or a SWFWMD ERP.
- The development of a Stormwater Pollution Prevention Plan (SWPPP) that describes the design and utilization of project-specific erosion/turbidity control measures.
- Stormwater discharge monitoring after significant rainfall events (to verify the effectiveness of site controls) by qualified inspection personnel.
- Execution and documentation of site erosion control Best Management Practices (BMP) compliance inspections.
- Retention of SWPPPs and inspection records for a specified period after site stabilization.
- Submission of a Notice of Termination to FDEP (Tallahassee) when stabilization of the site has been achieved.

NPDES Construction General Permitting (CGP) or Disturbed Areas Greater than 5 Acres

Under Phase I of EPA's stormwater discharge permitting program, CGPs were required for all construction activities that disturbed 5 acres or more of land area. This program is now implemented and enforced by FDEP. Permit coverage applies only to discharges composed entirely of stormwater (with specific uncontaminated non-stormwater exceptions such as potable waterline flushing, irrigation water, etc.). The permit specifically excludes discharges resulting from groundwater dewatering activities. The focus of permitting requirements has been to protect State Waters through control of sediment transport from clearing, grading, and excavation activities during construction by intentional application of erosion control BMPs. General requirements of the permit include:

- The submission of a Notice of Intent (application for permit coverage) a $400 fee to FDEP (Tallahassee) and copied to owners of any receiving MS4.
- Previous procurement of a FDEP stormwater discharge permit under Chapter 62-25, Florida Administrative Code (FAC.), or a SWFWMD ERP.
- The development of a Stormwater' Pollution Prevention Plan that prescribes the design and utilization of project-specific erosion/turbidity control measures.
- Stormwater discharge monitoring after significant rainfall events (to verify the effectiveness of site controls) by qualified inspection personnel.
- Execution and documentation of site erosion control BMP compliance inspections.
- Retention of stormwater pollution prevention plans and inspection records for a period of three years after site stabilization.
- Submission of a Notice of Termination to FDEP (Tallahassee) when stabilization of the site has been achieved.
- The period of coverage is limited to five years.

Although the design and use of erosion/turbidity control measures have long been a part of Florida's regional storm water management permitting process through SWFWMD, additional budget allocation for the inspection and monitoring elements of the NPDES program should be

included in future project cost projections.

2.2.3 Southwest Florida Water Management District (SWFWMD)

Florida's SWFWMD regulates activities related to State water resources under the authorizations provided in Chapter 373, Florida Statutes, and the ERP review process is defined under Chapter 62-330 F.A.C. Permits are required from SWFWMD for construction. alteration, operation or abandonment of most real property improvements that can control surface waters, affect stormwater pollution, or impact wetlands. An applicant for an ERP must demonstrate that the proposed construction or alteration of the surface water management system will not be harmful to the water resources of the SWFWMD and will not adversely impact adjacent properties, in terms of flooding. Applications for permits to reconstruct existing systems which, over time, have been taxed by surrounding land development beyond their design capacities (municipal retrofit projects) are reviewed under the ERP criteria.

- **Prevention of Water Quality Degradation**· On June 28, 2024, Governor Ron DeSantis signed Senate Bill 7040 into law, which updates Florida's stormwater rules and water quality design criteria to protect the state's waterways. Under the new rule, applicants for stormwater management systems will continue to have flexibility to choose from a range of design options, including a variety of BMPs, when designing systems to meet the performance-based design criteria.

  The amendments to this rule will also ensure that future permitted systems will be better maintained. Operation and maintenance entities will be required to submit estimates for the expected routine maintenance costs and to certify that they have the financial capability to maintain the stormwater system over time. The rule will also provide for more consistent oversight through a required periodic inspection routine and reporting on the inspection results to the permitting agency.

- **Attenuation for Increased Peak Discharge Rates** - Increasing the capacity of the City's stormwater conveyance systems will inevitably increase the peak rate of discharge to the receiving water. Chapter 62-330 requires demonstration that proposed activities will not adversely impact downstream systems or receiving waters. This criterion is typically addressed for new development through a pre- versus post-construction assessment of peak system discharge for the 25-year, 24-hour design storm event. SWFWMD typically requires that the post construction discharge rate does not exceed the pre-construction rate. The SWERP rules make allowances for tidal systems and large waterbodies, which have virtually unlimited receiving capacities (e.g., the Gulf of Mexico) and cannot be flooded by increased discharge rates. It is up to the applicant, however, to demonstrate that the system discharges to the tidal system at a point where unlimited receiving capacity applies. Not all Stormwater Master Plan projects will qualify for a waiver of the pre-construction discharge rate limit.

- **Protection of Sensitive Receiving Waters** - Increased rates of discharge as a result of

enlarged conveyance systems, even if allowed, can produce concentrated flow at erosive velocities. Stormwater Master Plan projects which discharge to wetlands, tidal marshes or the Pithlachascotee River must demonstrate that the selected outfall location(s), and structural designs are protective of the receiving systems. In some cases, energy dissipaters, spreader swales, or similar end-pipe designs will be required to protect the receiving system from adverse impacts.

2.2.4 Florida Fish and Wildlife Conservation Commission (FWCC)

The FWCC serves, at the State level, a function similar to the Federal USFWS agency, which is to ensure the protection and propagation of endangered and protected species, including species of special concern. The FWCC does not issue regulatory permits for construction of water resource projects but has commenting authority for USACE Dredge and Fill permit applications in Florida and SWFWMD ERP applications. The Southwest regional office of the FWCC is located in Lakeland, Florida. The FWCC posts a listing of protected species and has GIS mapping of documented species locations and habitat, with a search engine that can be accessed through the internet site http://myfwc.com.

The concerns of this agency will need to be addressed in conjunction with any required USACE Dredge and Fill permits or SWFWMD ERP applications associated with wetlands, portions of the Pithlachascotee River, or upland areas which may provide "critical habitat" for protected species. FWCC approvals will require the following actions:

- Inquiry through the official website to determine the potential for the presence of threatened or endangered species in proposed project areas. Where species are potentially present, the actual presence/absence of the species should be verified if possible.
- If protected species are reasonably expected to be present, impacts from proposed project activities must be evaluated. This includes potential impacts to the Florida manatee from larger stormwater outfall pipes constructed into the Pithlachascotee River. The FWCC will likely require manatee grates on any pipes larger than 6 inches to prevent entrapment of the manatees.
- Copies of FWCC coordination and subsequent site evaluations and mitigation plans should be included in the USACE Dredge and Fill permit/ERP application.

2.3 Pending Regulations

In addition to the existing regulations described above, there are a number of pending regulations that may impact the City's implementation of improvement projects recommended for the next ten years. Pending regulations for water resources in the State of Florida are described below.

2.3.1 Section 303(d) Impaired Waters TMDL Programs

Section 303(d) of the CWA requires Florida to develop a list of surface waters that do not meet applicable water quality standards or designated uses, after implementation of technology-based effluent limitations and state water resource protection regulations. Florida is required to establish "total maximum daily loads," or TMDLs, for impaired waters. Once TMDLs are established, regulated discharges to any impaired waterbody will be subject to additional water quality controls, designed to reduce annual pollutant discharges and bring the waterbodies back into compliance with State standards. The State's proposed TMDL Allocation Rule is designed to fairly apportion the total allowable load among all identified stakeholders. The anticipated impact to the City is as follows:

- The only applicable waterbody identified near the City is the Gulf Of Mexico (Pasco County; Pithlachascotee River) (WBID 8044E), which was specifically identified as waters not attaining standards for nutrients (Total Nitrogen). This waterbody is not impaired for this parameter but cannot be delisted because the delisting requirement of three consecutive years of Annual Geometric Mean (AGM) values below the Estuary Nutrient Region (ENR) criteria has not been met. This parameter will remain on the Verified List and the 303(d) List. As a discharger to the Pithlachascotee River, the City's *Stormwater Master Drainage Plan* projects may be subject to higher scrutiny to meet future TMDL requirements.

3.0 Review of Stormwater Technologies

The objective of this section is to review technological advancements in stormwater management.

3.1 Identifying Stormwater Technologies

Low Impact Design (LID)

In an effort to control stormwater runoff and improve water quality, the City is striving to use many of the concepts of LID. LID is a principle of design aimed at using a combination of engineered and natural systems to control and utilize rainwater water runoff. The use of porous pavement, permeable paving for the whole street section or just parking lanes, bioretention bump outs (lawn area between sidewalk and curb), bio swales, turf pavement, rain cisterns, etc., are just a few of the technologies used in LID.

3.2 Stormwater Quality Enhancements

A number of new products have entered the market to reduce the amount of sediment and debris transported to storm sewer systems and discharges to surface waters. Designs include stormwater filters, pervious pavement and stormwater inlet modifications, attachments, or custom inlet designs. The use of these products can reduce the total suspended solids load discharged from storm sewer pipes, reduce siltation and clogging problems in low velocity systems, and greatly improve the aesthetic quality of open waters by removing unsightly floatables.

The FDEP has published the Statewide Best Management Practice (BMP) Efficiencies for Crediting Projects in Basin Management Action Plans (BMAPs) and Alternative Restoration Plans Draft – September 2021. This document provides alternative water quality BMPs, BMP efficiencies, and calculation methods for typical BMP performance in Florida, which may be useful to stakeholders when selecting BMPs to achieve nutrient load reductions related to the development and implementation of BMAPs, 4e plans, and 4b/reasonable assurance plans (RAPs). FDEP assigns nutrient removal efficiencies and nutrient credits to BMPs on a case-by-case basis, using the information in this document as a guide during the decision-making process.

4.0 Evaluation of Stormwater Maintenance Needs

The City's stormwater utility division maintains five (5) miles of ditches/canals, forty (40) miles of stormwater pipes, over 800 stormwater structures, and twenty-five (25) detention/retention ponds. In addition, this Division cleans, and repairs catch basins, storm pipes, and ditches, while rebuilding or adding new structures, as needed. Primary drainage systems east of U.S. 19 typically discharge to the Pithlachascotee River. Drainage systems west of U.S. 19 typically discharge through drainage canals and pipe systems to the Gulf.

The performance of a drainage system is directly related to the maintenance level of the conduits and structures from which the system is composed. Failure to adequately maintain pipes, ditches, structures and outfalls can frequently cause local flooding during minor storm events. The effects of inadequate system maintenance are greatly magnified during larger, more significant storm events.

The objective of this Chapter is to update the stormwater maintenance plan for the City, so as to be in compliance with the City's MS-4 Permit (FLS000032-004). The Stormwater Maintenance Plan was developed by:

- Investigating current maintenance practices and frequencies;
- Investigating the adequacy of the current maintenance program; and
- Recommending enhancements to the program.

4.1 Current Maintenance Practices

The current stormwater maintenance consists of the following program elements:

Structural Controls Element - Addresses the inspection of major control structures, maintenance of detention ponds, inspection of major system components, and maintenance of major channels. Major control structures include fifteen (15) detention ponds that are inspected semi-annually. Other structures include outfalls, pipes and culverts, ditches and canals. For ponds and open channels or ditches, erosion damage is noted during inspection and scheduled for repair. Pipes and inlets reported or observed to be functioning poorly, or noted in the field as needing maintenance, are reported to the Stormwater Utility Division. Debris is typically removed from pipes and catch basins using a Vac-Con vacuum truck or SMC pressure wash equipment. Hydraulic capacity of channels and ditches is maintained by removal of accumulated sediment using the Street & Right-of-Way Maintenance Division's tractor equipment with a clam-shell bucket, and major channels are routinely mowed, or cleared of vegetation by other means. Maintenance activities are logged by the Stormwater Utility Division.

Road Maintenance and Street Sweeping Element - Consists of street sweeping and roadside litter collection. Downtown area streets are swept weekly or as needed, whereas residential area streets are swept bi-weekly or as needed. Roadway maintenance is conducted as needed.

Combined Monitoring Element - Applies to monitoring of municipal waste transfer; storage and disposal facilities, industrial facilities, and "high risk" industrial facilities. There are no municipal waste treatment systems or designated "high risk" industrial facilities within the City. Thirteen (13) industrial facilities have been identified that discharge to the New Port Richey MS4. These facilities are inspected by fire safety inspectors each year. Any anomalies related to stormwater pollution prevention or illicit discharges are reported to the Public Works Department.

Pesticide/Herbicide Element - In 2013, the City adopted the FDEP's Model Ordinance for Florida Friendly Fertilizer Ordinance. The City requires that all employees or contractors that spray pesticides/herbicides on City owned or maintained property, must be certified (FDACS).

Illicit Discharges Element - Focuses on the identification and elimination of illicit (unallowable, non-stormwater) discharges to the City MS4. Illicit discharges are controlled through regulations, citizens' complaints, inspection of industrial facilities, and establishment of public awareness programs. The regulations are to protect MS4s by:

- Controlling the quality of industrial discharge;
- Prohibiting illicit discharges; and
- Controlling spilling, dumping and disposal of materials other than stormwater.

Citizens' complaints on suspected illicit discharge may be received by the Public Works Department as frequently as observed. Public awareness programs include issuing newsletters, scheduling annual "River Clean-Up Day" events, and stenciling inlets with "No Dumping" markers. The public awareness program is an ongoing effort.

Construction Element - Addresses construction sites within the City limits. As per the MS4 Permit, construction sites must be inspected a minimum of (3) three times; pre-, mid- and post-construction. Also, sites may be routinely visited by the City's Building and Public Works construction inspectors to ensure that stormwater erosion and sedimentation are effectively controlled.

Some of the accomplishments in FY23 for the stormwater utility division include:

Storm Pipe Maintenance:

- Inspected over 13 percent of stormwater pipes and reactively performed required maintenance on 2 percent.
- Removed sediment accumulation from the detention pond on Kentucky Avenue.
- Removed and replaced broken pipe on Green Key Road.

NPDES Maintenance Activities:

- Inspected and cleaned all 3 CDS units quarterly for fiscal year.
- Surpassed the minimum frequency for inspections of stormwater system and maintained the litter control and street sweeping programs.
- Inspected over 17 percent of inlets/catch basins/grates and reactively performed required maintenance on over 9 percent.

Flood Control:

- Performed inspections and maintenance by cleaning and clearing debris from inlets/catch basins/grates prior to potential flood events.
- Removed 4,446 tons of yard debris from City residents.

4.2 Adequacy of the Current Maintenance Program

This subsection presents an evaluation of the adequacy of the current maintenance program relative to maintaining the hydraulic characteristics and properties of conveyances and structures. The evaluation is based on a review of the current maintenance program specified in the NPDES Permit FLS000032-004, and interviews with City staff.

4.2.1 Maintenance Practices

The maintenance program outlined in the NPDES MS4 Permit (Part II), described in the previous section and confirmed through interviews with City staff, complies with minimum recommended practices, published in EPA guidance manuals, for municipal systems. The inspection and upkeep of structural elements - storm pipe networks, surface water ponds, ditches, and channels appears to be occurring in accordance with permit requirements. The current inspection program could be expanded to be less reactive (complaint or problem-area based) and more pro-active, with a more formal rotating inspection/maintenance schedule. An expanded, pro-active maintenance program will require that the City allocate additional funding or personnel expenses in the Stormwater Utility Operating Budget. In addition, the street sweeping programs and litter control campaigns conducted by the City are recognized as highly effective source controls.

4.2.2 Staffing

The Stormwater Utility Division currently employs six full-time personnel funded from the Stormwater Utility Division fee-based budget. The staff includes: Streets and Stormwater Field Supervisor, Administrative Clerk, two (2) Equipment Operators and two (2) Utilities Mechanics.

The current level of staffing appears to be adequate for the inspection and maintenance of the existing system, which is currently in a mode of prioritized inspection of known problem areas and complaint driven maintenance activity. Additional man-hours may be needed to implement a regular schedule of inspection for all structural elements or to provide a more pro-actively scheduled maintenance program.

Implementation of the next 10-year list of improvement projects is anticipated to add more

surface water facilities, storm sewer/inlets and special water quality controls (such as new water quality inlets and baffle boxes) that will require more frequent inspection, at least initially, and potentially more frequent clean-out and maintenance.

To pro-actively maintain the existing stormwater management system and to meet the maintenance demands of future stormwater management facility construction, additional staff will likely be required. The current level of Stormwater Utility Division funding will not support additional staff.

4.2.3 Equipment

The Stormwater Utility Division has primary control/responsibility for the following stormwater maintenance equipment (FY23/24):

- Vacuum Line Cleaning Truck #73;
- NEW HOLLAND Flail Mower;
- 113 2014 FORD F250 3/4 TON SUPERCAB 114 2015 F550 CRANE TRUCK (old 58) #238 2020 F250 SERVICE BODY TRUCK;
- 150 Gallon Gas – Diesel;
- #238 2020 F250 SERVICE BODY TRUCK #262 2020 F250 SERVICE BODY TRUCK 2020 F250 SERVICE BODY TRUCK;
- 278 F550 2022 DUMP TRUCK (SMALL) HIWAY STAR Enclosed Trailer SCORPION CRASH TRAILER;
- Thompson 6" trash pump;
- #350 2019 THOMPSON 6" PUMP;
- 7130 John Deere Slope Mower;
- 5 Gallon Can – Unleaded;
- 1989 24” Pontoon Boat;
- 96 2013 FORD F450 FLAT BED;
- Aluminum John Boat w/ Trailer;
- JOHN DEERE 4X6 GATOR;
- SCAG MOWER 72 ";
- SCAG MOWER 72"; and
- 2014 Tyco Street Sweeper.

The current inventory of equipment is reported to be adequate for the existing system and current maintenance schedule. However, implementation of a more proactive maintenance program and implementation of the next 10-year list of improvement projects may add more surface water facilities and special water quality controls that will require more frequent maintenance and clean-out. The City has identified additional equipment to be acquired/replaced through FY27-28 that includes:

- GMC C6500 Water Tanker Truck #6;
- New Holland Flail Mower #11 (R&R);

- John Deere Slope Mower #41 (R&R);
- TYCO 600 Street Sweeper #102 (R&R);
- S30 Mid-Size Rider Sweeper (R&R);
- Portable Pumping System (R&R); and
- Sandbagger Machine.

4.3 Recommended Enhancements to the Stormwater Maintenance Program

The current level of pollution prevention and stormwater conveyance system maintenance activity meets the needs of the City at this time. It is expected that the overall performance of the system would be improved by moving toward a more pro-active inspection and maintenance program.

Historically, the City's flood control projects were largely composed of replacing existing pipe networks with larger diameter pipes, which did not substantially increase the maintenance burden on the Stormwater Utility Division. Future improvement projects, for the most part, will be required to include water quality enhancements, such as new stormwater treatment facilities or installation of water quality inlets/baffle boxes, all of which will increase the maintenance burden. As the recommended improvement projects are constructed and brought into operation, additional staff and/or equipment will be required to maintain the current standards and comply with the City's NPDES MS4 permit conditions.

The following recommendations are made for the enhancement of the current stormwater maintenance program:

1. A similar scheduled maintenance program should be developed with defined clean out, mowing, bank stabilization, weed/exotic plant removal schedules for various element types.
2. It is recommended that the City attempt to obtain maintenance easements or permission to access/maintain any open channel or ditch that is believed to be causing upstream flooding of residences or publicly maintained streets.
3. The City should anticipate a Stormwater Utility fee increase sufficient to support one to two additional Stormwater Utility Division staff members over the next 10-year period.

4.4 Recent Enhancements That Have Been Implemented

Some FY24 stormwater maintenance initiatives that have been implemented include:

Storm Pipe Maintenance:

- Remove debris and sediments identified during stormwater inspections.
- Tag and stencil remaining catch basins in Cycle 5.
- Ensure all major outfalls are fully operational and clear of debris.

Stormwater Permit:

- Perform inspections on the remaining pipes and catch basins in Cycle 5.
- Perform quarterly Water Quality Sampling at Sims Park Outfall.
- Complete review of Cycle 5 Permit and Annual Report Form

Flood Control/Storm Situations:

- Ensure inlets and pipes are clear of debris and sediments during rain events.
- Perform maintenance on detention ponds, ditches, and swales for proper flow.
- Distribute sandbags as needed during Hurricane Season.
- Barricade flooded roads for vehicle and pedestrian safety.

A formal scheduled inspection program has been developed for each structural element type in the City's MS4 (See Part II of MS4 Permit). An appropriate inspection interval and rotation have been assigned for different element types, such as:

- Quarterly inspections for catch basins with high sedimentation potential. All catch basins will be inspected for functional and structural defects a minimum of once every 10 years. Semi-annual inspections for catch basins with low sedimentation potential. All catch basins will be inspected for functional and structural defects a minimum of once every 10 years.
- Monthly or bi-monthly inspections of ponds during the rainy season, and once during the dry season. All ponds will be inspected for functional and structural defects a minimum of once every 3 years.
- Bi-monthly inspections for ditches and channels. All ditches and channels will be inspected for functional and structural defects a minimum of once every 10 years.
- Quarterly inspections for water quality inlets and subsurface filtration units. All underdrain filter systems will be inspected for functional and structural defects a minimum of once every 3 months.
- Major outfalls are to be inspected for functional and structural defects annually.

5.0 Evaluation of Levels of Service

The objective of this section is to review the Level of Service (LOS) standards established by the City to determine whether they should be revised, given the City's long-term stormwater management objectives.

5.1 Existing Levels of Service

The concept of establishing a LOS for a municipal storm water system involves the formulation of operational goals for that system. The operational goal sets the target demand load and the desired performance level.

For stormwater management, the demand load is generally defined by a design storm. An established storm return frequency (such as a 10-year or 25-year design storm) is selected and an acceptable level of system performance defined. LOS criteria may allow for some level of road or yard flooding, for passable depths and reasonable durations. Different criteria can be applied to existing versus proposed systems, and for different elements of stormwater management (such as ponds, open ditches, closed conveyances) or various service areas (residential, major transportation corridors, emergency routes, etc.).

Table 5.1 presents a summary of the current LOS utilized by the City. This is taken from the City of New Port Richey Stormwater Management and Erosion Control Policy Procedures Criteria Manual.

Table 5.1 Level of Service Summary

Element	Criteria
Transportation Network	Primary Roadways: Maintain at least one passable lane for all City roads for a 10-year, 24-hour design storm event Secondary Roadways: When local conditions preclude attaining the goal above, a minimum goal of one passable lane for a 5-year, 24-hour event will be applied.
Open Ponds	All retention/detention ponds should operate such that banks are not overtopped during a 25-year, 24-hour design storm event.

Element	Criteria
Habitable Structures	Primary: Peak flood elevations produced from a 100-year; 24-hour design storm event should remain below the pad elevation of adjacent habitable structures. Secondary: Where local conditions preclude attaining the goal above, non-structural options such as purchasing property or flood proofing structures may be considered.
Evacuation Routes	Maintain at least one passable line for vehicular traffic up to and including 100-year, 24-hour design storm event.

5.2 Recommended Level of Service

The current LOS, as referenced in Section 5.1 and Table 5-1, are recommended to remain in place. However, there will be additional costs for future project alternatives associated with achieving a 25-year LOS for existing ponds or providing a new/upgraded storm sewer system to the 10- year frequency design. While these LOS are enforced for new development, it significantly impacts the cost of flood abatement projects serving retrofits of fully developed areas.

It is recommended that the City:

1. Retain the current 10-year LOS for non-emergency roadway protection.
2. Retain the current 100-year LOS for protection of habitable structures.
3. Retain the current elevated LOS (100-year) for evacuation routes.
4. Apply the 100-year LOS to critical community facilities and emergency (hospital, fire, police) entrance/exit routes.
5. Retain the current 25-year LOS for open channels and ponds associated with all new construction.
6. Apply the 25-year LOS selectively, on a case-by-case basis, for existing ponds and open channels where road LOS and habitable structure LOS is being met.
7. Continue to place high priority on construction of CIP projects associated with stormwater systems discharging directly to the Pithlachascotee River or the Gulf of Mexico currently lacking treatment.
8. Provide, at a minimum, sediment sump/oil skimming modifications to the downstream inlets of all untreated stormwater systems.
9. Apply SWFWMD water quality treatment design standards to all stormwater management facilities serving new development or re-development.
10. Apply SWFWMD water quality treatment design standards to newly constructed surface detention/retention facilities, even when not serving new development.

6.0 Existing Conditions

This proposed stormwater master drainage plan update did not include development of an overall City-wide model to identify potential flood prone areas. However, the SWFWMD and the Federal Emergency Management Agency (FEMA) have produced watershed models and floodplain mapping for the areas within the City.

6.1 Existing Watershed Models & Floodplain Mapping

The SWFWMD has developed watershed models for all areas within the City and Pasco County. The models were developed to provide peak flood stages for various design storm events and identify the 100-year floodplain limits for each watershed. The models were developed in ICPR4 and do not include coastal storm surge. The following watershed models include areas within the City of New Port Richey:

- Anclote West: completed in 2018;
- Lower Coastal: completed in 2019;
- Pithlachascotee River / Bear Creek: completed in 2018; and,
- Port Richey: completed in 2013.

The watershed sub-basin delineations from the models within the City are shown in Figure 6-1. The 100-year floodplain delineations from the models for areas within the City are shown in Figure 6-2.

6.2 Federal Emergency Management Agency Mapping

FEMA has also completed floodplain mapping within the City. The FEMA maps are used for flood insurance purposes and include coastal flooding conditions. The FEMA floodplain limits for areas within the City are included in Figure 6-3.

6.3 Existing Drainage Systems

The City provided the location of existing City stormwater drainage structures including manholes, catch basins, pipes and retention and detention ponds which are shown in Figure 6-4. Detailed information on pipe sizes, pipe types, and invert elevations are available from the City GIS system.

6.4 Historical Flooding & Complaints

The City provided the location of historical flooding caused by rain only, rain and tidal and tidal only along with recent flooding complaint locations, which are shown in Figure 6-5. This map does not include recent flooding complaints from Hurricanes Debby, Helene or Milton in 2024.

7.0 Recommended Ten-Year Stormwater Management Plan

The objective of this section is to present an integrated stormwater management plan that provides the necessary information for the City to complete the implementation of the *2024 Stormwater Master Drainage Plan - 10-Year Update* and continue the development of the City's stormwater management program.

7.1 Proposed Projects

A listing of the ten (10) proposed *2024 Stormwater Master Plan- 10-Year Update* project is included below. These projects were developed with City staff utilizing their knowledge of the storm water issues within the City. The proposed projects address flood reduction, water quality improvements and reducing impacts of sea level rise and tidal surge at various locations throughout the City. The text includes a project description, conceptual design and conceptual cost estimate for each project. Detailed cost estimates for each project are included in Appendix A. The projects are not in any order of implementation; implementation of the projects will be determined based on funding availability (including grants), easements and City assets. Additional projects could be developed and included if needs and funding are identified.

1. **Tanglewood Drainage Area**- This area includes an existing developed subdivision area that drains via gutters and inlets to an existing retention pond area. The retention pond is located east of Rosewood Drive and west of Maplewood Drive. The existing pond has no outfall except for percolation. During periods of prolonged rainfall, the pond fills beyond capacity and impacts adjacent yards and roadways. The City has implemented interim measures to reduce flooding including temporary pump stations, small force mains and sluice gates to block flow into the pond during high water conditions.

   The proposed improvements include expanding the pond footprint to increase the storage volume and providing an outfall from the pond to reduce pond stages during major storm events. Due to elevation issues, gravity pipe outfalls are not feasible and an outfall via pump station/force main would be required. The pump station (permanent or temporary) would be located adjacent to the pond's south access location at Maplewood Drive. The pump force main would extend approximately 2,400 feet under local roadways south to Cecelia Drive and then east to a pond located east of Brookside Lane. While the pump station would not be sized to handle the runoff from major storm events, it would allow for drawdown of the pond prior to or after an event. The proposed concept design is shown in Figure 7-1.

   The estimated cost is $1,312,410.

2. **Grand Boulevard (Tennessee Avenue and Georgia Avenue Intersections) Georgia Avenue and Franklin Street Storm Sewer System Drainage Upgrades** (Road Flooding) - There are already small inlets located at each quadrant of the Tennessee Avenue, Georgia

Avenue and Oak Ridge Avenue intersections with Grand Boulevard. These existing inlets tie into a trunkline that flows south along the west side of Grand Boulevard through pipes that vary in diameter from 15 to 30 inches. The trunkline pipe ultimately discharges into the Pithlachascotee River at Grand Boulevard Park. This is the primary outfall that serves the southern portion of the City. The existing inlets and pipe sizes are undersized to convey the runoff from larger storm events, resulting in street flooding.

The proposed improvements include inlet upgrades and increased pipe sizes. The inlets would be upgraded to FDOT curb inlets at each quadrant of the intersections. The pipes from the inlets would be upgraded to a minimum diameter of 18-inch. The stormwater trunkline to the river would be increased from a 30-inch to a 48-inch pipe at the outfall. To meet water quality requirements a baffle box is included in the project. The proposed concept design is shown in Figure 7-2.

The estimated cost is $2,566,490.

3. **Congress Street and Emerson Drive Drainage Improvements** (Road Flooding)- This intersection is in a topographic low and experiences flooding during storm events. There are several small inlets and an undersized 24-inch outfall pipe at the intersection that flows east and then north to the Sunshine Lake Estates Mobile Home Park detention pond and then north under Bandura Avenue to a large wetland area. In addition, some runoff from the roadway flows west into an existing pond adjacent to Congress Street within the Pines development.

   Upgrading the existing 24-inch pipe outfall to the west was considered. However, there are numerous issues with directing additional flow north into the Sunshine Lake Estates Mobile Home Park detention pond. Therefore, a new outfall from the area to the west was identified. Due to elevation issues, gravity pipe outfalls are not feasible and an outfall via pump station/force main would be required. The pump station (permanent or temporary) would be located adjacent to the Congress Street and Emerson Drive intersection within the roadway right-of-way. The pump force main (8-inch) would extend approximately 1,400 feet east under local roadways of the Pines development and outfall into an existing wetland area located west of the Pines development. An easement would be required from the Pines development for construction of the outfall. While the pump station would not be sized to handle the runoff from major storm events, it would allow for drawdown of the pond prior to or after an event. The proposed concept design is shown in Figure 7-3.

   The estimated cost is $771,580.

4. **Massachusetts Avenue and Van Buren Street Drainage Improvements -** Currently stormwater flows down Van Buren Street from the north to Massachusetts Avenue. There are no existing inlets at the Massachusetts Avenue and Van Buren Street intersection and shallow flooding occurs along the roadway and adjacent properties.

The proposed drainage improvements include constructing inlets at the Massachusetts Avenue and Van Buren Street intersection and installation of a 24-inch outfall pipe along the north side of Massachusetts Avenue. The pipe would flow west approximately 1,340 feet and tie into an existing 34"x 53" pipe at Madison Street. This pipe then flows north into an existing wetland area. To meet water quality requirements a baffle box is included in the project. Several driveways and commercial parking areas may be impacted during construction. The proposed concept design is shown in Figure 7-4.

The estimated costs is $1,872,820.

5. **Maple Street and Meadowlane Street Drainage Improvements** – The Maple Street and Meadowlane Street area (including portions of Pine Street) currently drains west along Meadowlane Street in an 18-inch pipe to the existing 24-inch Maple Street outfall pipe. The Maple Street outfall pipe is currently undersized, and flooding has occurred at the intersections of Maple Street and High Street, and Maple Street and Meadowlane Street. To reduce flooding in these areas modifications to the existing drainage system are proposed.

   The proposed improvements include plugging the existing 18-inch pipe to Maple Street and re-routing the Maple Street and Meadowlane Street areas to the east via an 18-inch pipe, which would tie into the Beach Street drainage system that flows north to the Pithlachascotee River. The proposed concept design is shown in Figure 7-5.

   The estimated cost is $399,570.

6. **Install Backflow preventers on selected outfalls to the River for Sea Level Rise and King Tides**. The City has prioritized the Cotee River Drive area for improvements. Currently, this area is located adjacent to the river, and during king tides and storm events, water from the river backs up into the existing storm system and inundates the area.

   The proposed improvements include upgrading the existing pipes and inlets along Cotee River Drive and installation of a backflow preventer at the outfall along Belleview Avenue to prevent water from flowing back into the stormwater system from the river. However, during major surge events (Tropical Storms or Hurricanes) the area may still be inundated due to water from the river tidal surge exceeding the existing seawall elevations along the river in the area.

   In addition, a portion of the existing triangular undeveloped area along Cotee River Drive and Bellview Avenue will be regraded into a shallow pond area to provide stormwater storage and treatment capabilities. The proposed concept design is shown in Figure 7-6.

   The estimated cost is $632,140.

7. **Adams Street and Illinois Avenue Drainage Improvements**- The existing intersection at Adams Street and Illinois Avenue currently does not have any inlets to collect stormwater and experiences shallow flooding during major storm events.

   The proposed improvements include adding inlets at the Adams Street and Illinois Avenue intersection and a low spot to the west along Illinois Avenue. A new 18-inch pipe outfall to the north will be tied into the existing 24-inch storm system on Adams Street and Delaware Avenue. The proposed concept design is shown in Figure 7-7.

   The estimated cost is $523,130.

8. **Rio Drive (road flooding)-** The existing inlets and outfalls along Rio Drive are undersized to handle the volume of stormwater draining to them, which results in shallow road flooding.

   The proposed improvements include adding new larger inlets and upsizing the outfall pipes to the river at the Rio Drive and Tennessee Avenue intersection to accommodate the existing drainage from the east. In addition, the existing inlets on Rio Drive north of the Lafayette Street intersection will be upgraded. Both outfalls include the installation of backflow preventers to prevent water from flowing back into the stormwater system from the river during king tides and storm events. The proposed concept design is shown in Figure 7-8.

   The estimated cost is $422,850.

9. **Grand Boulevard from Sea Turtle Alley to Louisiana Avenue (road flooding)-** This area is included in the Area 2 Grand Boulevard to River Improvement alternative. The proposed concept design is shown in Figure 7-2. The estimated costs are included in the Area 2 costs.

10. **George Street from Elm Street to High Street (road flooding)**- The existing intersection at High Street and George Street currently does not have any inlets to collect stormwater and experiences shallow flooding during major storm events.

    The proposed improvements include adding inlets at the High Street and George Street and the Meadowlane Street and George Street intersections. A new 18-inch to 24-inch pipe outfall to the north will tie into the existing system on George Street south of Gulf Drive which ultimately drains to the river. To meet water quality requirements a baffle box is included in the project. The proposed concept design is shown in Figure 7-9.

    The estimated cost is $1,369,270.

7.2 Other Future Projects

As future redevelopment occurs or additional funding is obtained, these projects could be developed and constructed. Descriptions of the projects have been provided, and estimated construction costs could be developed following refinement of the projects with City input.

7.2.1 Downtown Redevelopment Area Outfall Improvements- The City wants to consider upgrading the existing drainage systems in the downtown redevelopment area to increase conveyance and/or add stormwater treatment capacity for redevelopment areas in lieu of the redevelopment projects individually providing onsite stormwater attenuation and treatment. This would require upsizing outfalls and adding selected inlets.

A. West 1 (W1) to River - Along Main Street to just north of Bridge at Sims Park and the River (24" outfall)

This outfall system drains approximately 4.0 acres along Main Street between the Pithlachascotee River Bridge and just east of Bank Street. All of the drainage area is within the Downtown Redevelopment East Area, and the drainage basin also includes the southern portion of Sims Park and the Hacienda Hotel. The area drains from the east to the west through pipes ranging from 18 to 24 inches at the outfall and the pipe system outfalls to the Pithlachascotee River. The system could be upgraded by increasing pipe sizes from 24" to 30" RCPs (Main St. – Bank St. to River)

B. West 2 (W2) to River - Inlets at Lincoln Street and adjacent to Beef 0'Brady's to the River (15" outfall)

This outfall system drains approximately 2.2 acres between the Pithlachascotee River to the west, Bank Street to the east, Main Street to the north and Missouri Avenue to the south. The area includes an existing restaurant and several undeveloped parcels. All of the drainage area is within the Downtown Redevelopment East Area. The area drains from the east to the west through 15" pipes and the pipe system outfalls to the Pithlachascotee River. System upgrades could include upsizing from 15" to 24" RCPs(Lincoln St. to River)

C. West 3 (W3) to River - North along Grand Blvd to Missouri Avenue west to the River (30" outfall)

This outfall system drains approximately 34.0 acres between Lafayette Street to the west, Adams Street to the east, Nebraska Avenue to the north and Wyoming Avenue to the south. Approximately 28 acres of the W3 drainage area (84%) is outside of the Downtown Redevelopment East Area. The area drains from the south to north and then to the west. Pipe sizes range from 15 to 30 inches and the pipe system outfalls to the Pithlachascotee River. Pipe sizes could be upgraded from 30" to 48' RCPs (North along Grand Blvd to Missouri Avenue west to the River

7.2.2 Nature Based Solutions and Green Stormwater Infrastructure (GSI)

Where applicable, the City will consider Nature based solutions including the use of Green Stormwater Infrastructure (GSI).

Neighborhood scale nature-based solutions manage stormwater and reduce urban heat island effects within a confined area. New or existing developments within limited space can integrate these practices into empty lots, rights-of-way, parks, residential or commercial properties and make them adaptable to urban environments. Examples include: Permeable pavement, tree trenches, green

roofs, and rain gardens. If new development or drainage retrofits are proposed, the City could consider including baffle boxes or other water quality improvement measures on upsized outfalls and outfalls with larger drainage areas that discharge directly to the river. Also, the City should consider GSI use in downtown development / roadways and parking areas.

Coastal nature-based solutions can stabilize shorelines, reduce erosion, and buffer coastal areas from the impacts of storms, sea level rise and flooding. While many watershed and neighborhood-scale practices are applicable in coastal regions, these specialized systems are designed to address the unique challenges faced by coastal communities. Examples include: Coastal wetlands restoration, living shorelines and mangrove restoration.

7.2.3 Main Street West Outfall Improvements- The City should evaluate upsizing of the existing 18" RCP outfall pipe for the Main Street sidewalk drainage outfall. This pipe ties into the County outfall pipe system, coordination with Pasco County will be required for any upgrades.

7.2.4 Regional Collaboration on Future Projects. The City will investigate and evaluate teaming and collaborating with local and regional partners including Pasco County, Port Richey, SWFWMD, Regional Planning Council, private developers, etc. on future stormwater and resiliency projects that may benefit the City. These could include regional stormwater facilities, development of nature-based solutions, vulnerability improvements, and Pithlachascotee River improvements.

7.3 Sea Level Rise & Tidal Surge

Due to the location of the City near the Gulf of Mexico and the tidally- influenced Pithlachascotee River, low-lying portions of the City near these water bodies are vulnerable to tidal and storm surge flooding. This section includes descriptions of available mitigation options to address tidal and storm surge flooding.

7.3.1 Vulnerability Assessment

The City obtained an award from FDEP's Resiliency Grant to assess and prepare a Vulnerability Assessment, Sensitivity Analysis, and Adaptation Plan (GHS, September 2024). The vulnerability assessment identified critical assets, tidal information, sea level rise projections and identified potential sea level rise scenarios and critical asset impacts from the sea level rise scenarios. The study also identified potential City Comprehensive Plan amendments to address sea level rise and adaptation action areas in the City.

7.3.2 Seawall Analysis and Improvements

Raising existing seawalls would provide greater resilience to sea level rise, wave action and storm surge for areas along the Pithlachascotee River. A seawall analysis would need to be completed, and the City would need to determine a cost-effective seawall elevation to meet the City's LOS. Achieving the recommended seawall elevation would be the responsibility of each property owner as most of the seawalls are on private property. The City can implement enforcement mechanisms to require seawall elevation when certain circumstances trigger such enforcement or under a Special

Assessment District with the City coordinating a capital improvement project (CIP) to elevate the seawalls.

The City should evaluate the existing seawalls to determine condition, ownership (public or private), and elevation and develop a CIP for elevating public seawalls. The analysis should evaluate property rights and limitations, additional ordinance changes, set back requirements, upland stormwater drainage needs, upstream flooding and seawall construction code requirements, including material and modular system requirements. Options for seawalls including nature-based solutions should be considered where practicable. The City may also consider development and adoption of a seawall ordinance that includes a minimum seawall height; a maximum seawall height differential from neighboring properties; and enforcement mechanisms. Additionally, the City may consider establishing a timeline to have all seawalls in compliance, evaluate incentive programs, explore the creation of a Municipal Service Benefit Unit (MSBU) or Municipal Service Taxing Unit (MSTU) to fund a seawall elevation project, and development of requirements for property owners with private seawalls.

7.3.3 Check Valves

Installation of check valves at any existing and proposed stormwater outfalls that discharge directly to the river will mitigate backflow of tidal waters into the system during extreme high tides or storm surge events. Replacement / addition of check valves or inline check valves provides additional protection from tidal / salt waters. Check valves would be implemented and maintained by the City in the public stormwater management system. See Figure 7-10 below.

Figure 7-10 Inline Check Valve

7.4 Capital Funding

Implementation of the proposed 2024 Stormwater Master Plan- 10-Year Update projects listed in Section 7.1 are dependent upon the availability of funding for design, permitting and construction. The City has at its disposal several funding tools, which can be divided into two categories:

- Internal Funding Sources including stormwater utility revenues, taxes, bonds, fees, special assessments.
- External Funding Sources including grants, State Revolving Fund loans, and regional/ State/Federal matching funds.

Each of these funding categories is described in greater detail below.

7.4.1 Internal Funding

Internal funding sources, typically available to municipalities and commonly used to fund annual stormwater operations and capital projects include:

- Stormwater Utility Revenues.
- Municipal Budget Allocations from the General Fund.
- Special Taxing/Assessment Districts.
- Permit/Impact Fees.
- Local Dedicated Tax Income (e.g., local option gas tax).
- Issuance of Bonds.

The City historically has financed its general stormwater management operations (primarily system maintenance and repair activities) through the General Fund on a pay-as-you-go basis. Capital improvements were financed through a combination of City capital improvement funds, SWFWMD cooperative funding, community development block grants and local gas tax revenues.

The City took steps to ensure that current and future stormwater infrastructure improvements and water quality enhancement projects are supported when the City Council adopted and implemented a stormwater utility. Fees are paid by property owners based upon their property's impervious area and onsite stormwater management facilities. The stormwater utility is a dedicated funding source that provides predictable annual funding for the ongoing annual operations and capital improvements required to support the City's stormwater management program. The stormwater utility is currently $80.00 per ERU and generates approximately $1,062,215 per year, at the current fee rate.

7.4.2 External Funding

In addition to the City's internal funding sources, several external funding sources exist that

may allow the City to accelerate the implementation of these Projects. Additional funds would enable the City to undertake larger portions of projects each year, thereby increasing the number of projects that can be completed in a fixed timeframe. An alternate strategy would be to take advantage of special grants and/or low-interest loans. Several of these potential Federal, State or Regional financing sources are described below.

Community Assistance Grants

The State of Florida offers several grant programs related to environmental protection (especially for coastal communities), infrastructure improvement, community development, and environmental education. Examples of grant programs that might be investigated for eligibility, to finance specific elements of potential capital improvements, are:

- Community Development Block Grants (through HUD).
- Keep Florida Beautiful Approved Community Based Grant.
- Public Works and Development Facilities Program.
- Flood Mitigation Assistance Program.
- Environmental Education Grants Program.
- Florida Coastal Management Program Coastal Partnerships Initiative.
- Section 319 Nonpoint Source Management Implementation Grant.

Many of these programs have specific requirements and may only be applicable to certain aspects of a stormwater project.

The Community Development Block Grant (CDBG) Program has been successfully utilized for City improvements in the past. However, it should be noted that this program is not applicable for all of the recommended stormwater projects because it is limited to funding improvements in low to medium income areas, these areas being identified by the most recent published U.S. Census data.

The Section 319 Nonpoint Source Management Implementation Grant grants favor projects associated with recognized water quality problems that are listed on the §3030(d) Impaired Waters List, with state Surface Water Improvement and Management priority waterbodies, and for waters with defined TMDL allocations.

Clean Water State Revolving Funds

The CWA replaced the long-running federal Construction Grants program with a more flexible State Revolving Fund (SRF) Program. The SRF Program creates a revolving loan fund to provide independent, permanent sources of low-cost financing for a wide range of water quality infrastructure projects. Funds to establish or capitalize the Florida SRF program are provided by the Federal and State Governments, with SRF loans being administered in the State of Florida through the FDEP in Tallahassee.

SRF programs work like banks, where Federal and State contributions provide the capital to

make low-interest loans for important water quality projects. Loans are made to qualified applicants at a preferential interest rate.

Repaid funds are then recycled to fund other important water quality projects. Advantages to SRF loans include:

- Little or no up-front cash requirements.
- Significant potential interest cost savings over the life of the loan.
- Streamlined federal requirements compared to grants.
- Possible combination of an SRF loan with grants from other sources.
- Interest rates are fixed, and the loan amounts are repayable in equal, semi-annual payments over the useful life (20 years maximum) of the project.
- Preference points are given to communities with an established stormwater utility.

Loans are provided for planning and engineering (pre-construction) as well as construction costs associated with a variety of water management projects, such as stream bank rehabilitation, wetland creation/protection, sedimentation-stormwater treatment basins, and septic system improvements. Loan repayment can be derived from dedicated local taxes or fees, recreational fees, or stormwater utility fees.

SWFWMD Cooperative Funding Initiative

Each year the Basin Boards of the SWFWMD review, prioritize and recommend water resource management projects within their boundaries for cooperative funding (which has been 50 percent matching funds). Funding proposals must be submitted for review at least one year before the fiscal year in which funding is requested. Proposals are accepted for projects related to water supply, water quality, wetland/water resource protection, flood control or a combination thereof.

The City is located within the District's Coastal Springs Basin and has benefited from cooperative funding on non-stormwater projects. Available funds for projects within each Basin are derived from collected millage within that jurisdiction and vary from year to year, based on previous financial commitments. The current Basin Board emphasis appears to be focused on water supply and reclaimed water initiatives. Although SWFWMD encourages cities to apply for cooperative funding each year, there is significant competition in the region for a limited pool of funding.

Figures

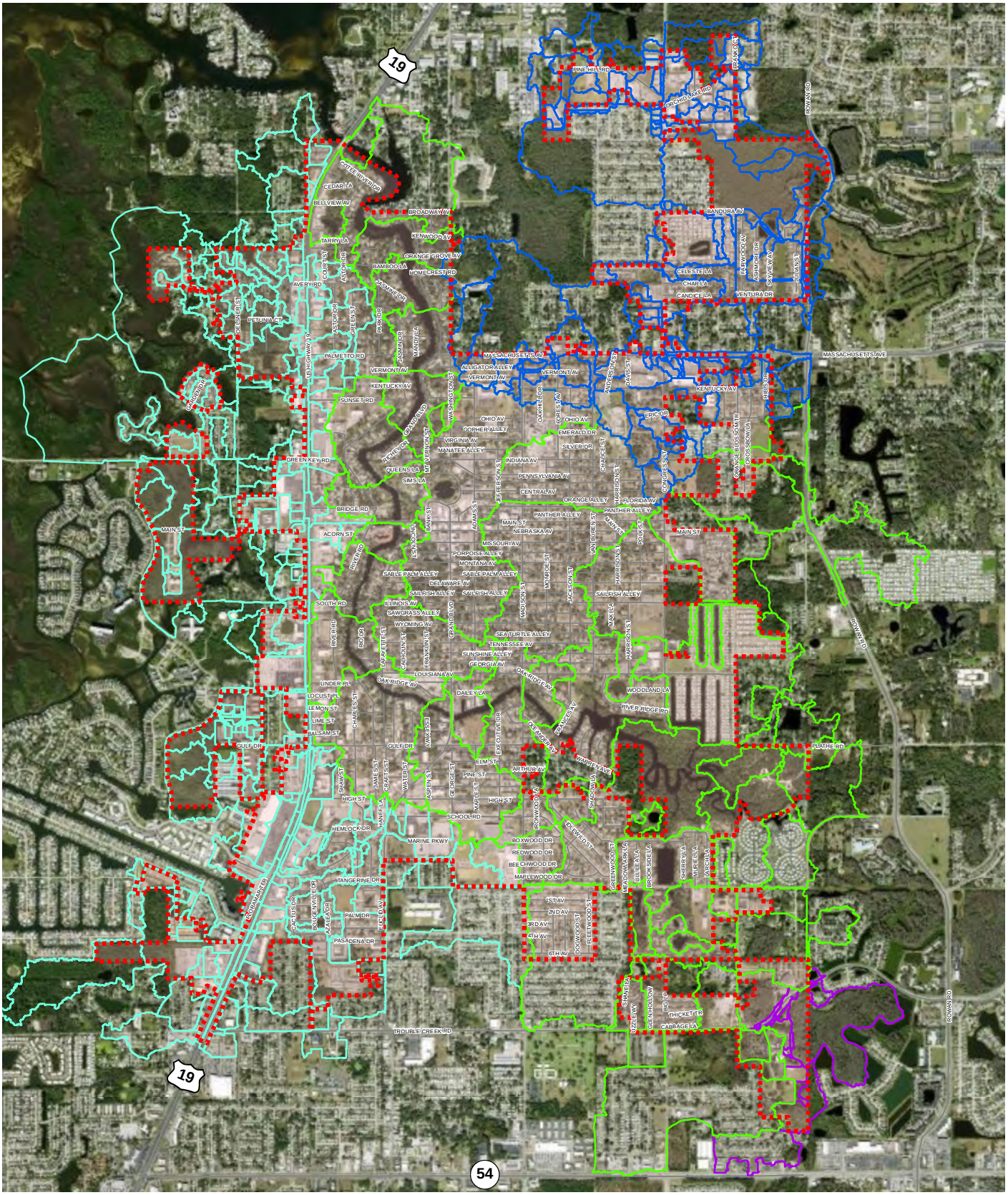


Figure 6-1
Intersecting SWFWMD Basins
New Port Richey Stormwater Masterplan Update
New Port Richey, FL
Date: 3/25/2024

ECT

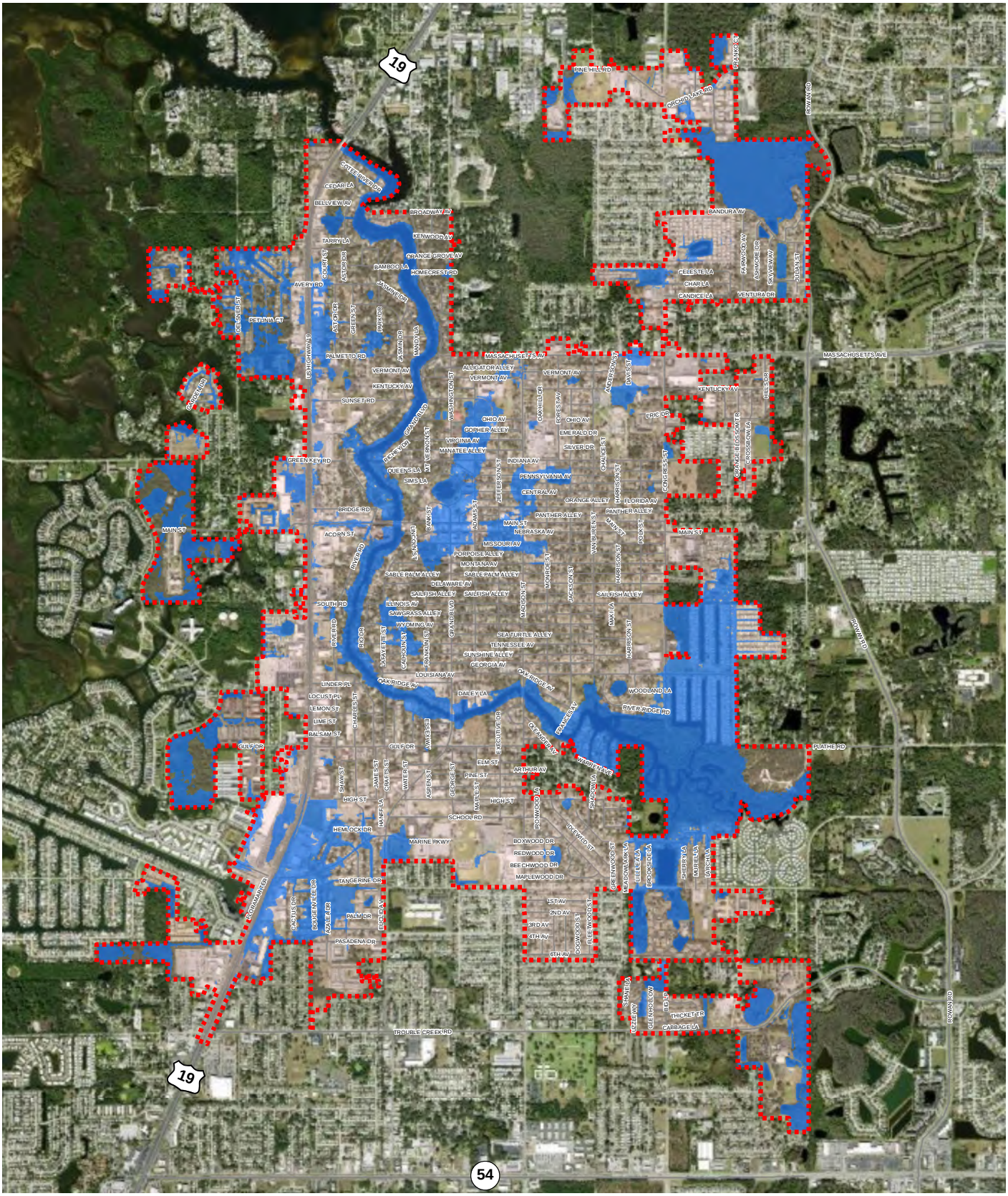
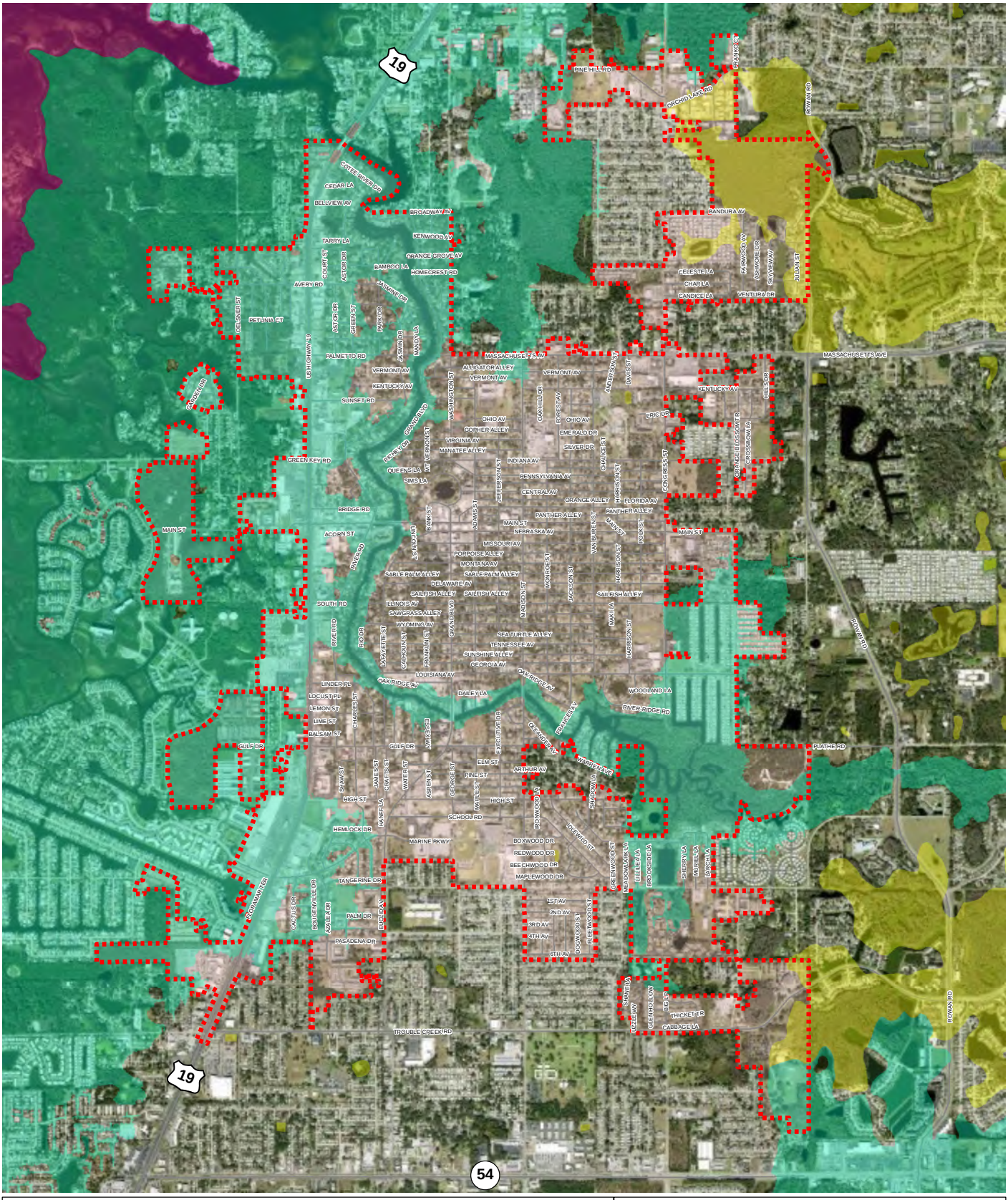


Figure 6-2
SWFWMD 100YR-24HR Floodplain
New Port Richey Stormwater Masterplan Update
New Port Richey, FL
Date: 3/25/2024

ECT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54
PINE HILL RD
ORCHID LAKE RD
ROWAN RD
CEDAR LA
BELLVIEW AV
BROADWAY AV
KENWOOD AV
TARRY LA
ORANGE GROVE AV
BAMBOO LA
HOMECREST RD
AVERY RD
BANDURA AV
CELESTE LA
CHAR LA
CANDICE LA
VENTURA DR
PETUNIA CT
PALMETTO RD
MASSACHUSETTS AV
VERMONT AV
KENTUCKY AV
SUNSET RD
GREEN KEY RD
OHIO AV
EMERALD DR
SILVER DR
INDIANA AV
PENNSYLVANIA AV
CENTRAL AV
ORANGE ALLEY
FLORIDA AV
PANTHER ALLEY
MAIN ST
NEBRASKA AV
MISSOURI AV
PORPOISE ALLEY
MONTANA AV
SABLE PALM ALLEY
DELAWARE AV
SAILFISH ALLEY
ILLINOIS AV
SAWGRASS ALLEY
WYOMING AV
SEA TURTLE ALLEY
TENNESSEE AV
SUNSHINE ALLEY
GEORGIA AV
LOUISIANA AV
OAK RIDGE AV
DAILEY LA
WOODLAND LA
RIVER RIDGE RD
LINDER PL
LOCUST PL
LEMON ST
LIME ST
BALSAM ST
GULF DR
ELM ST
PINE ST
ARTHUR AV
HIGH ST
SCHOOL RD
HEMLOCK DR
MARINE PKWY
BOXWOOD DR
REDWOOD DR
BEECHWOOD DR
MAPLEWOOD DR
TANGERINE DR
PALM DR
PASADENA DR
1ST AV
2ND AV
3RD AV
4TH AV
5TH AV
TROUBLE CREEK RD
PLATHE RD
SOUTH RD
BRIDGE RD
ACORN ST
MAIN ST
MASSACHUSETTS AVE
KENTUCKY AV
ERIC DR
CONGRESS ST
JEFFERSON ST
MADISON ST
MONROE ST
JACKSON ST
WASHINGTON ST
ADAMS ST
DAVIS ST
ANDERSON ST
HILLS DR
ORANGE BLOSSOM TR
ORANGE BLOSSOM LA
MAIN ST
PARK ST
RIVER RD
GRAND BLVD
FRANKLIN ST
CASPIAN ST
MAYFLOWER ST
RIVERRD
ROSA DR
CHARLES ST
EXECUTIVE DR
CLEARVIEW AV
FRANCES AV
WARREN AVE
SHADOW LA
JAMES ST
CRAIG ST
WATER ST
ASPEN ST
GEORGE ST
MAPLE ST
HAPPY LA
JOHN ST
IVERWOOD ST
GREENWOOD ST
MEADOWLARK LA
LILLIE LA
BROOKSIDE LA
SHERRI LA
LARCHLA
FLEETWOOD ST
DOGWOOD ST
SHAMEL LA
GLENDALE LOW
DR
THICKET TR
CABBAGE LA
ROWAN RD
US HIGHWAY 19
CORAL DR
ASTOR DR
COURT ST
GREEN ST
BIRCH DR
JASMINE DR
JASMINE DR
MANDY LA
ROBERT DR
SIMS LA
QUEEN ST
ALLIGATOR ALLEY
VERMONT AV
CROCHILL DR
FOREST AV
OHIO AV
GOPHER ALLEY
VIRGINIA AV
MANATEE ALLEY
CHALET ST
MADISON ST
JANET ST
POLK ST
PANTHER ALLEY
MAIN ST
MAX LA
HARRISON ST
SAILFISH ALLEY
SAILFISH ALLEY
MADISON ST
JACKSON ST
WASHINGTON ST
ADAMS ST
DAVIS ST
ANDERSON ST
MAIN ST
NEBRASKA AV
MISSOURI AV
PORPOISE ALLEY
MONTANA AV
SABLE PALM ALLEY
SABLE PALM ALLEY
DELAWARE AV
SAILFISH ALLEY
SAILFISH ALLEY
ILLINOIS AV
SAWGRASS ALLEY
WYOMING AV
SEA TURTLE ALLEY
TENNESSEE AV
SUNSHINE ALLEY
GEORGIA AV
LOUISIANA AV
OAK RIDGE AV
OAK RIDGE AV
WOODLAND LA
RIVER RIDGE RD
PLATHE RD
MAIN ST
MASSACHUSETTS AVE
KENTUCKY AV
ERIC DR
CONGRESS ST
ORANGE BLOSSOM TR
ORANGE BLOSSOM LA
HILLS DR
ROWAN RD
New Port Richey City Limits
FEMA Flood Zone
A
AE
VE
N
0
0.25
0.5
Miles
Figure 6-3
FEMA Flood Zones
New Port Richey Stormwater Masterplan Update
New Port Richey, FL
Date: 3/25/2024
ECT

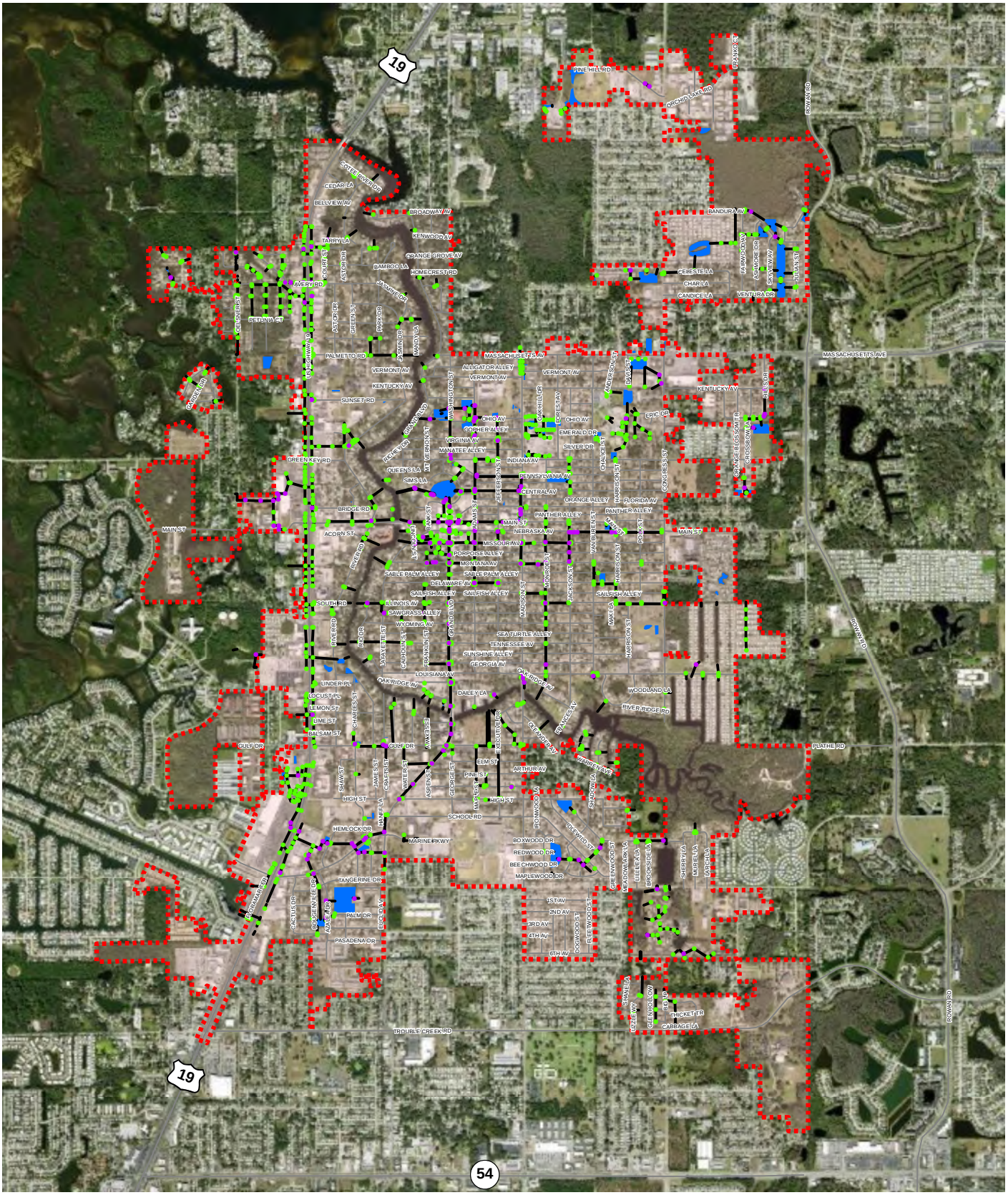


Figure 6-4
Existing Stormwater Drainage System
New Port Richey Stormwater Masterplan Update
New Port Richey, FL
Date: 3/25/2024

ECT

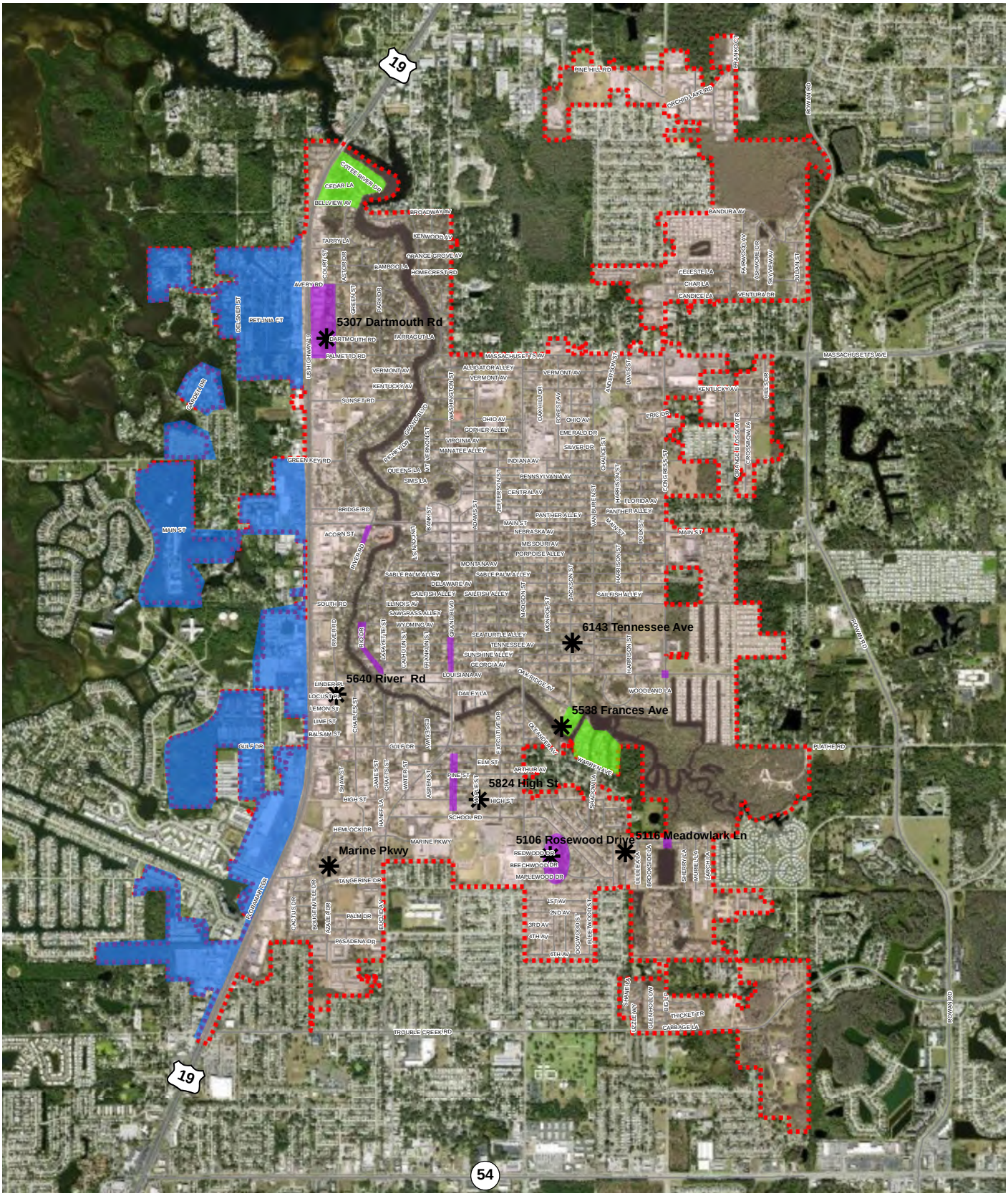


Figure 6-5
Historical Flooding & Complaints
New Port Richey Stormwater Masterplan Update
New Port Richey, FL
Date: 3/25/2024

ECT

Figure 7-1. Stormwater Master Plan Proposed Projects - Tanglewood Pond Outfall Improvements

NPR SWMP Update
New Port Richey, FL

ECT

Proposed Inlet or Manhole
Proposed Stormwater Line
NPR City Limit

Existing Stormwater Systems
Stormwater Line
Stormwater Catch Basins

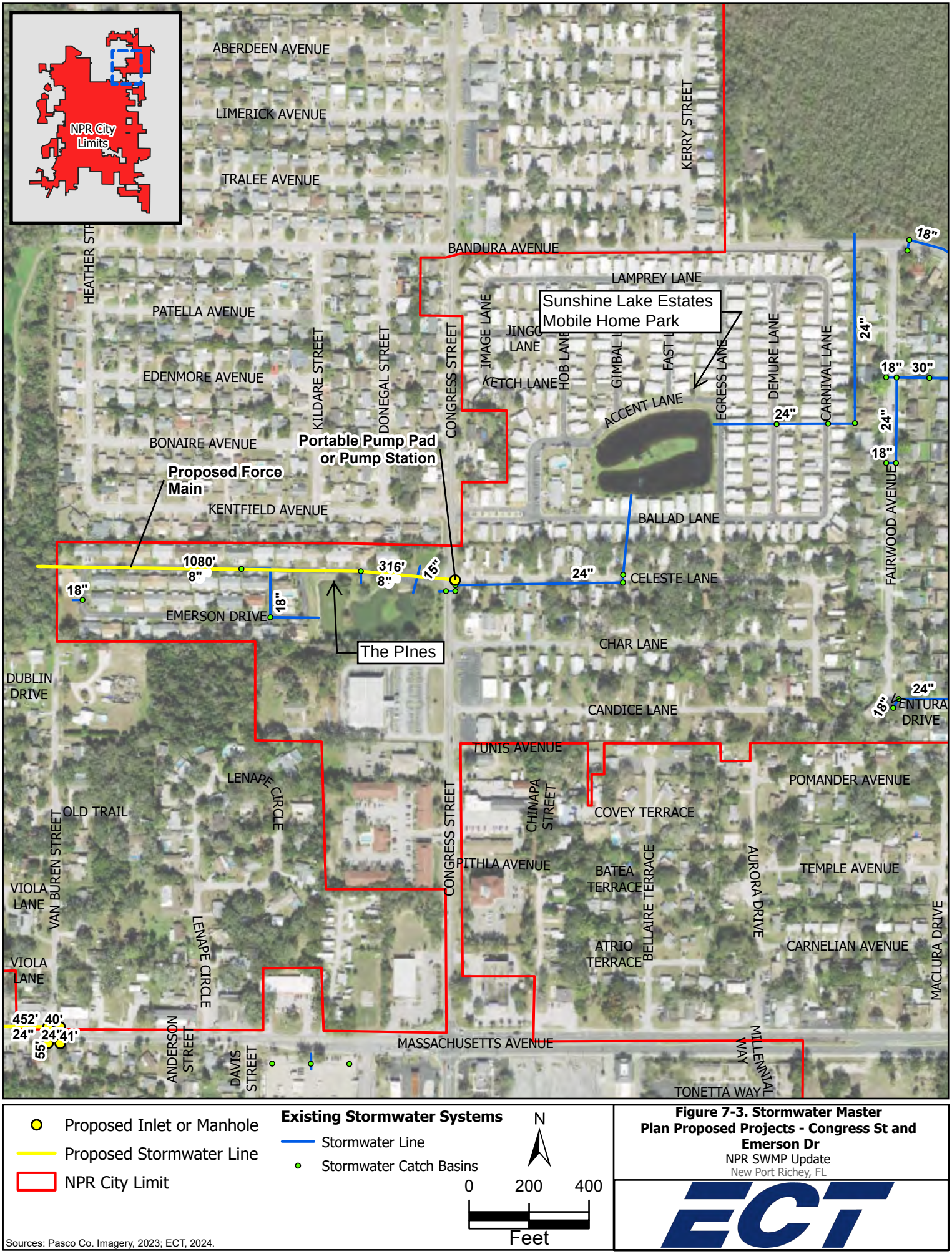
N

0 75 150
Feet

Sources: Pasco Co. Imagery, 2023; ECT, 2024.

Figure 7-2. Stormwater Master Plan Proposed Projects - Grand Boulevard (Sea Turtle Alley to River)
NPR SWMP Update
New Port Richey, FL

ECT



Proposed Inlet or Manhole

Proposed Stormwater Line

NPR City Limit

Existing Stormwater Systems

Stormwater Line

Stormwater Catch Basins

N

0 200 400

Feet

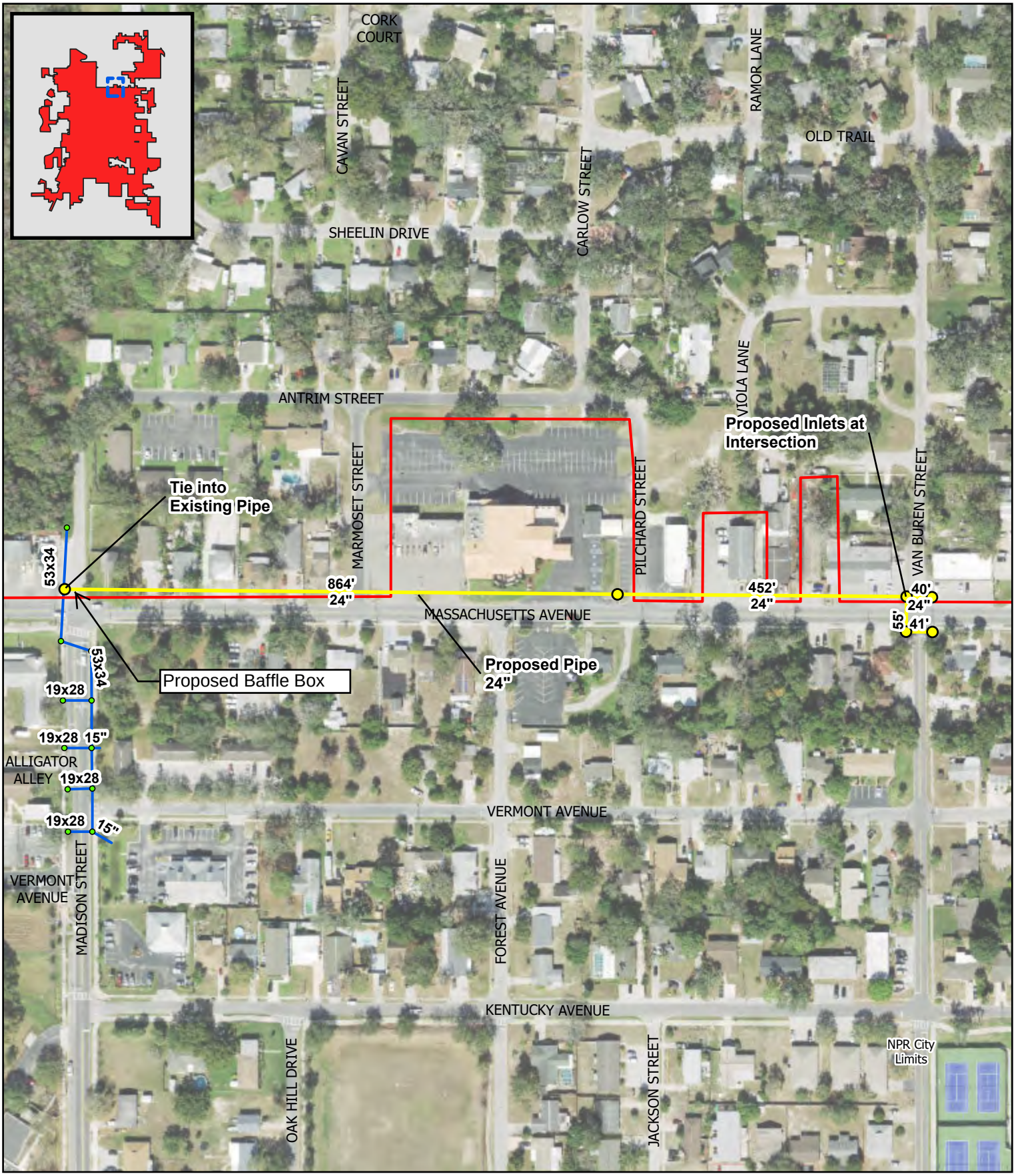
Sources: Pasco Co. Imagery, 2023; ECT, 2024.

Figure 7-3. Stormwater Master Plan Proposed Projects - Congress St and Emerson Dr

NPR SWMP Update

New Port Richey, FL

ECT



Proposed Inlet or Manhole

Proposed Stormwater Line

NPR City Limit

Existing Stormwater Systems

Stormwater Catch Basins

N

0 100 200

Feet

Sources: Pasco Co. Imagery, 2023; ECT, 2024.

Figure 7-4. Stormwater Master Plan Proposed Projects - Massachusetts Ave & Van Buren St

NPR SWMP Update

New Port Richey, FL

ECT

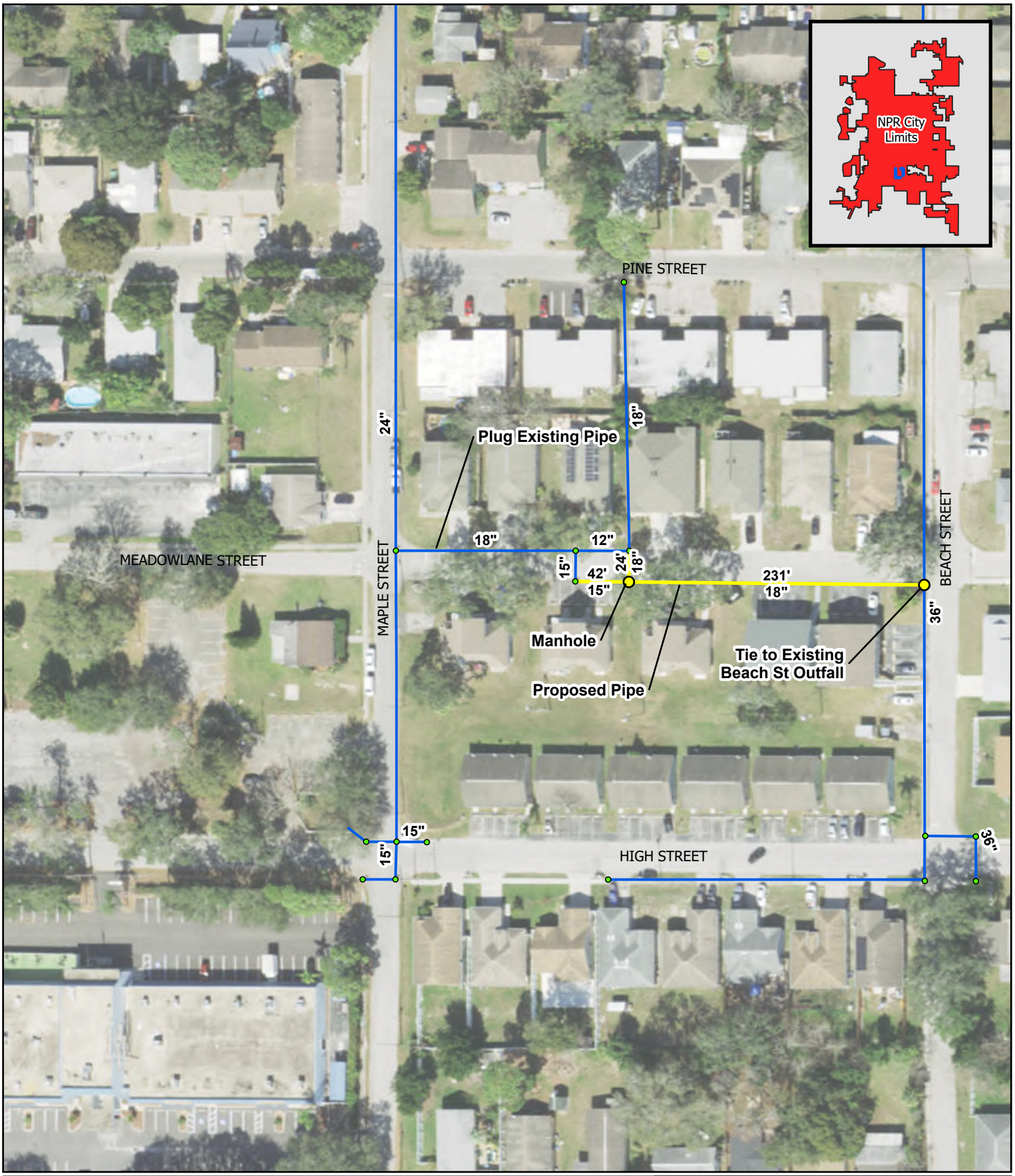


Figure 7-5. Stormwater Master Plan Proposed Projects - Maple St and Meadow Lane

NPR SWMP Update

New Port Richey, FL

ECT

Figure 7-6. Stormwater Master Plan Proposed Projects - Cotee River Drive

NPR SWMP Update

New Port Richey, FL

ECT

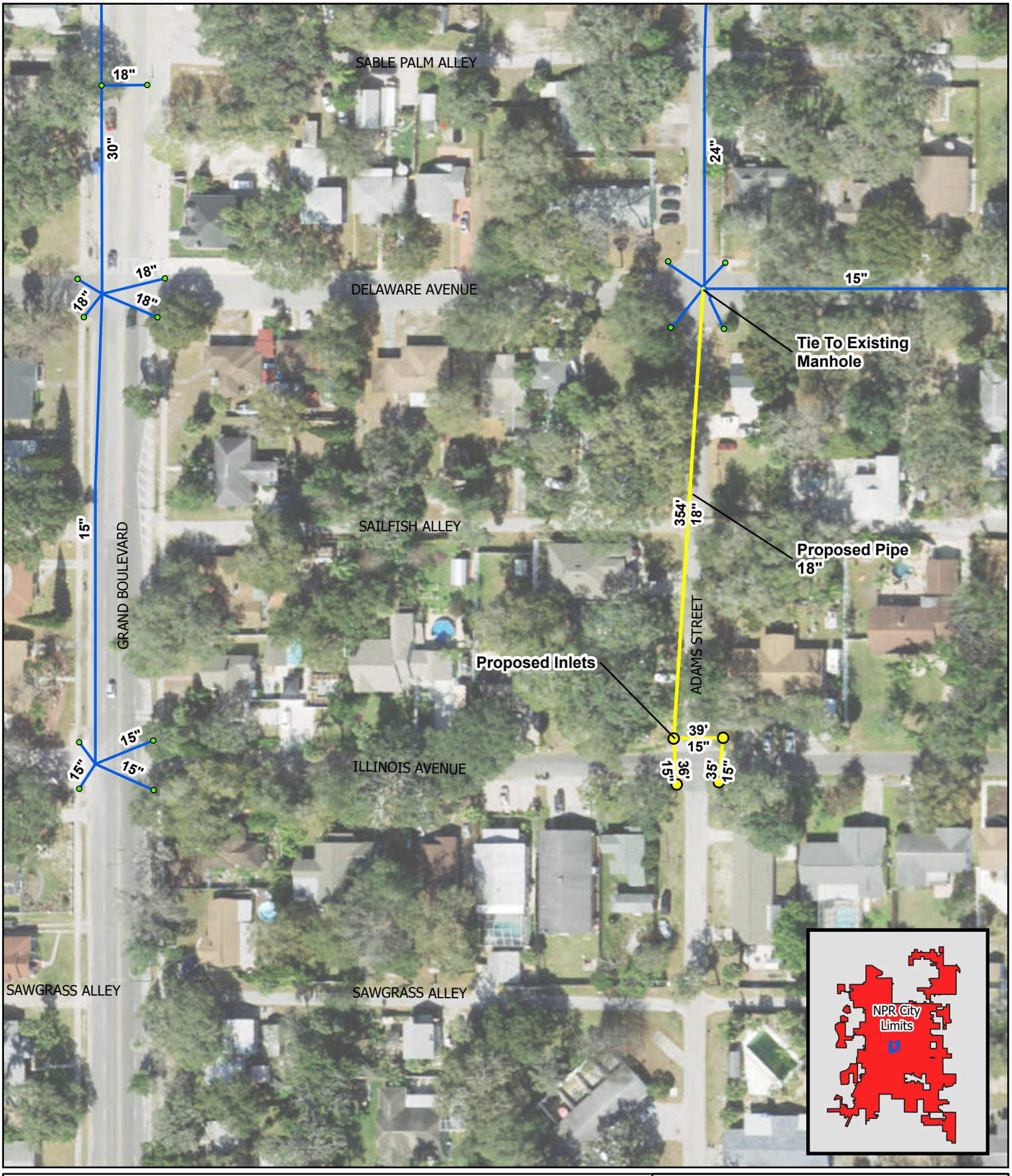


Figure 7-7. Stormwater Master Plan Proposed Projects - Adams St and Illinois Ave

NPR SWMP Update

New Port Richey, FL

ECT

Proposed Inlet or Manhole
Proposed Stormwater Line
NPR City Limit

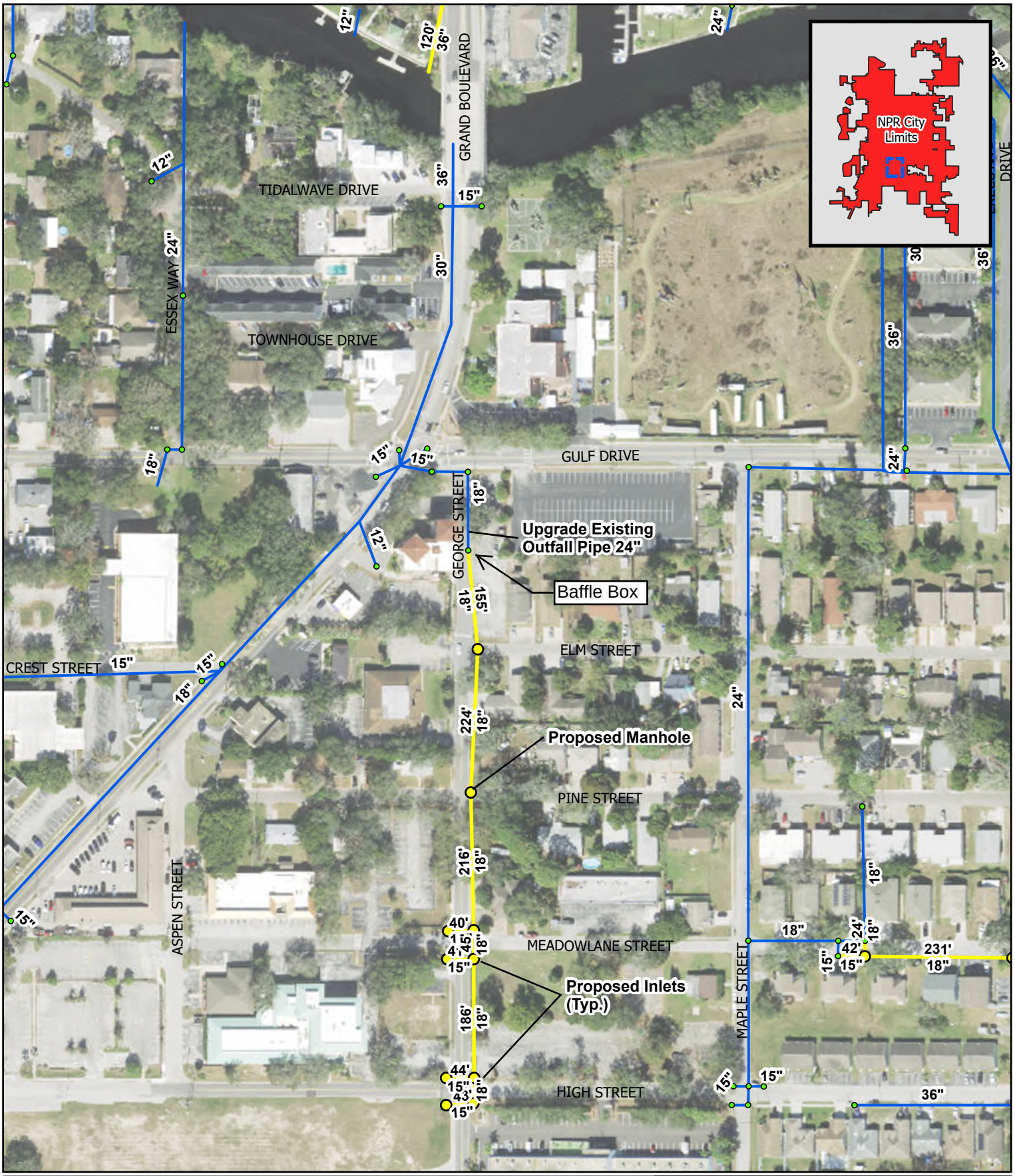
Existing Stormwater Systems
Stormwater Line
Stormwater Catch Basins

N
0 75 150
Feet

Sources: Pasco Co. Imagery, 2023; ECT, 2024.

Figre 7-8. Stormwater Master Plan Proposed Projects - Rio Drive
NPR SWMP Update
New Port Richey, FL

ECT



Proposed Inlet or Manhole

Proposed Stormwater Line

NPR City Limit

Existing Stormwater Systems

Stormwater Line

Stormwater Catch Basins

N

0 100 200

Feet

Sources: Pasco Co. Imagery, 2023; ECT, 2024.

Figure 7-9. Stormwater Master Plan Proposed Projects - George Street from Elm Street to High Street

NPR SWMP Update

New Port Richey, FL

ECT

Appendix A: Proposed Project Cost Estimates

NPR - 2024 SWMP PROJECTS
CONCEPTUAL COST ESTIMATE SUMMARY
ENVIRONMENTAL CONSULTING & TECHNOLOGY, INC.

Project #	DESCRIPTION	TOTAL PRICE
1	Cotee River Dr.	$ 632,144.60
2	Massachusetts Van Buren	$ 1,872,815.32
3	Congress & Emerson	$ 771,579.16
4	Meadowlane	$ 399,570.30
5	Rio Drive	$ 422,851.80
6 & 9	Grand Boulevard (includes Grand Sea Turtle to Louisana)	$ 2,566,486.16
7	George St.	$ 1,369,267.60
8	Adams St	$ 523,132.40
9	Tanglewood	$ 1,312,412.60
		$ 9,870,259.94

NPR - 2024 SWMP PROJECTS-Tanglewood Pond Outfall
CONCEPTUAL COST ESTIMATE
ENVIRONMENTAL CONSULTING & TECHNOLOGY, INC.

FDOT PAY ITEM NO.	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL PRICE
101-1	MOBILIZATION (8% of construction cost)	LS	1	$ 55,980.00	$ 55,980.00
0102 1	MAINTENANCE OF TRAFFIC (5% of construction cost)	LS	1	$ 34,980.00	$ 34,980.00
104-1	Environmental Protection	LS	1	$ 15,000.00	$ 15,000.00
110-0100	Clearing, Grubbing, includes Asphalt Removal	AC	0.5	$ 90,000.00	$ 45,000.00
0120 1	REGULAR EXCAVATION	CY	1,000	$ 45.00	$ 45,000.00
0522 2	CONCRETE SIDEWALK AND DRIVEWAYS, 6" THICK	SY	150	$ 145.00	$ 21,750.00
0570 1 2	PERFORMANCE TURF, SOD	SY	3,000	$ 14.00	$ 42,000.00
160-004	Stabilization, Type B	SY	150	$ 40.00	$ 6,000.00
285-706	Base Group 06	SY	150	$ 95.00	$ 14,250.00
334-1-12	Superpave Asphalt Concrete, Traffic Level B	SY	150	$ 55.00	$ 8,250.00
	8" PVC Force Main	LF	2,387	$ 200.00	$ 477,400.00
	Pump Pad w connections	LS	1	$ 25,000.00	$ 25,000.00
	SUBTOTAL				$ 790,610.00
	15% CONTINGENCY				$ 118,591.50
	Incidental Repair to Existing Roadways / Infrastructure (15% of Construction Cost				$ 118,591.50
	Insurance & General Conditions (5% of Construction Cost)				$ 39,530.50
	Permits / Fees (3% of Construction Cost)				$ 23,718.30
	Engineering & Construction Admin Costs (15% of construction cost)				$ 118,591.50
	Survey / SUE (5% of construction cost)				$ 39,530.50
	Maintenance Cost (3% of construction cost)				$ 23,718.30
	Cost Escalation Factor (5%)				$ 39,530.50
				Total	$ 1,312,412.60

NPR - 2024 SWMP PROJECTS- Grand Blvd. Sea Turtle Alley to the River
CONCEPTUAL COST ESTIMATE
ENVIRONMENTAL CONSULTING & TECHNOLOGY, INC.

FDOT PAY ITEM NO.	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL PRICE
101-1	MOBILIZATION (8% of construction cost)	LS	1	$ 109,102.00	$ 109,102.00
0102 1	MAINTENANCE OF TRAFFIC (5% of construction cost)	LS	1	$ 68,189.00	$ 68,189.00
104-1	Environmental Protection	LS	1	$ 20,000.00	$ 20,000.00
110-0100	Clearing, Grubbing, includes Asphalt Removal	AC	0.5	$ 90,000.00	$ 45,000.00
0522 2	CONCRETE SIDEWALK AND DRIVEWAYS, 6" THICK	SY	450	$ 145.00	$ 65,250.00
0570 1 2	PERFORMANCE TURF, SOD	SY	2,500	$ 14.00	$ 35,000.00
160-004	Stabilization, Type B	SY	1,750	$ 40.00	$ 70,000.00
285-706	Base Group 06	SY	1,750	$ 95.00	$ 166,250.00
334-1-12	Superpave Asphalt Concrete, Traffic Level B	SY	1,750	$ 55.00	$ 96,250.00
0425 2 41	MANHOLES, P-7, <10'	EA	4	$ 11,200.00	$ 44,800.00
0425 1361	INLETS, CURB, TYPE P-6,	EA	14	$ 9,000.00	$ 126,000.00
430174218	PIPE CULVERT, OPTIONAL MATERIAL, OTHER SHAPE - ELLIP/ARCH, 18"SD	LF	350	$ 210.00	$ 73,500.00
430174224	PIPE CULVERT, OPTIONAL MATERIAL, OTHER SHAPE - ELLIP/ARCH, 24"SD	LF	376	$ 275.00	$ 103,400.00
430174224	PIPE CULVERT, OPTIONAL MATERIAL, OTHER SHAPE - ELLIP/ARCH, 30"SD	LF	344	$ 340.00	$ 116,960.00
430174224	PIPE CULVERT, OPTIONAL MATERIAL, OTHER SHAPE - ELLIP/ARCH, 36"SD	LF	439	$ 400.00	$ 175,600.00
430174224	PIPE CULVERT, OPTIONAL MATERIAL, OTHER SHAPE - ELLIP/ARCH, 48"SD	LF	131	$ 525.00	$ 68,775.00
0520 1 10	CONCRETE CURB & GUTTER, TYPE F	LF	300	$ 40.00	$ 12,000.00
	Baffle Box (F&I)	LS	1	$ 150,000.00	$ 150,000.00
	SUBTOTAL				$ 1,546,076.00
	15% CONTINGENCY				$ 231,911.40
	Incidental Repair to Existing Roadways / Infrastructure (15% of Construction Cost				$ 231,911.40
	Insurance & General Conditions (5% of Construction Cost)				$ 77,303.80
	Permits / Fees (3% of Construction Cost)				$ 46,382.28
	Engineering & Construction Admin Costs (15% of construction cost)				$ 231,911.40
	Survey / SUE (5% of construction cost)				$ 77,303.80
	Maintenance Cost (3% of construction cost)				$ 46,382.28
	Cost Escalation Factor (5%)				$ 77,303.80
				Total	$ 2,566,486.16

NPR - 2024 SWMP PROJECTS- Congress & Emerson
CONCEPTUAL COST ESTIMATE
ENVIRONMENTAL CONSULTING & TECHNOLOGY, INC.

FDOT PAY ITEM NO.	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL PRICE
101-1	MOBILIZATION (8% of construction cost)	LS	1	$ 24,770.00	$ 24,770.00
0102 1	MAINTENANCE OF TRAFFIC (5% of construction cost)	LS	1	$ 15,481.00	$ 15,481.00
104-1	Environmental Protection	LS	1	$ 15,000.00	$ 15,000.00
110-0100	Clearing, Grubbing, includes Asphalt Removal	AC	0.3	$ 90,000.00	$ 22,500.00
0120 1	REGULAR EXCAVATION (Swale)	CY	100	$ 45.00	$ 4,500.00
0522 2	CONCRETE SIDEWALK AND DRIVEWAYS, 6" THICK	SY	75	$ 145.00	$ 10,875.00
0570 1 2	PERFORMANCE TURF, SOD	SY	250	$ 14.00	$ 3,500.00
160-004	Stabilization, Type B	SY	100	$ 40.00	$ 4,000.00
285-706	Base Group 06	SY	100	$ 95.00	$ 9,500.00
334-1-12	Superpave Asphalt Concrete, Traffic Level B	SY	100	$ 55.00	$ 5,500.00
	8" PVC Force Main	LF	1,395	$ 200.00	$ 279,000.00
	Pump Pad w connections	LS	1	$ 25,000.00	$ 25,000.00
	SUBTOTAL				$ 419,626.00
	15% CONTINGENCY				$ 62,943.90
	Incidental Repair to Existing Roadways / Infrastructure (15% of Construction Cost				$ 62,943.90
	Insurance & General Conditions (5% of Construction Cost)				$ 20,981.30
	Permits / Fees (3% of Construction Cost)				$ 12,588.78
	Engineering & Construction Admin Costs (15% of construction cost)				$ 62,943.90
	Survey / SUE (5% of construction cost)				$ 20,981.30
	Maintenance Cost (3% of construction cost)				$ 12,588.78
	Cost Escalation Factor (5%)				$ 20,981.30
	Easement Required				$ 75,000.00
				Total	$ 771,579.16

NPR - 2024 SWMP PROJECTS- Massachusetts Ave Van Buren to Madison
CONCEPTUAL COST ESTIMATE
ENVIRONMENTAL CONSULTING & TECHNOLOGY, INC.

FDOT PAY ITEM NO.	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL PRICE
101-1	MOBILIZATION (8% of construction cost)	LS	1	$ 79,872.00	$ 79,872.00
0102 1	MAINTENANCE OF TRAFFIC (5% of construction cost)	LS	1	$ 49,920.00	$ 49,920.00
104-1	Environmental Protection	LS	1	$ 15,000.00	$ 15,000.00
110-0100	Clearing, Grubbing, includes Asphalt Removal	AC	0.6	$ 90,000.00	$ 54,000.00
0522 2	CONCRETE SIDEWALK AND DRIVEWAYS, 6" THICK	SY	150	$ 145.00	$ 21,750.00
0570 1 2	PERFORMANCE TURF, SOD	SY	1,000	$ 14.00	$ 14,000.00
160-004	Stabilization, Type B	SY	1,800	$ 40.00	$ 72,000.00
285-706	Base Group 06	SY	1,800	$ 95.00	$ 171,000.00
334-1-12	Superpave Asphalt Concrete, Traffic Level B	SY	1,800	$ 55.00	$ 99,000.00
0425 2 41	MANHOLES, P-7, <10'	EA	3	$ 11,200.00	$ 33,600.00
0425 1521	INLETS, DT BOT, TYPE C,<10'	EA	4	$ 6,900.00	$ 27,600.00
430174218	PIPE CULVERT, OPTIONAL MATERIAL, OTHER SHAPE - ELLIP/ARCH, 18"SD	LF	136	$ 210.00	$ 28,560.00
430174224	PIPE CULVERT, OPTIONAL MATERIAL, OTHER SHAPE - ELLIP/ARCH, 24"SD	LF	1,316	$ 275.00	$ 361,900.00
	Baffle Box (F&I)	LS	1	$ 100,000.00	$ 100,000.00
	SUBTOTAL				$ 1,128,202.00
	15% CONTINGENCY				$ 169,230.30
	Incidental Repair to Existing Roadways / Infrastructure (15% of Construction Cost				$ 169,230.30
	Insurance & General Conditions (5% of Construction Cost)				$ 56,410.10
	Permits / Fees (3% of Construction Cost)				$ 33,846.06
	Engineering & Construction Admin Costs (15% of construction cost)				$ 169,230.30
	Survey / SUE (5% of construction cost)				$ 56,410.10
	Maintenance Cost (3% of construction cost)				$ 33,846.06
	Cost Escalation Factor (5%)				$ 56,410.10
				Total	$ 1,872,815.32

NPR - 2024 SWMP PROJECTS- Meadowlane St
CONCEPTUAL COST ESTIMATE
ENVIRONMENTAL CONSULTING & TECHNOLOGY, INC.

FDOT PAY ITEM NO.	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL PRICE
101-1	MOBILIZATION (8% of construction cost)	LS	1	$ 17,040.00	$ 17,040.00
0102 1	MAINTENANCE OF TRAFFIC (5% of construction cost)	LS	1	$ 10,650.00	$ 10,650.00
104-1	Environmental Protection	LS	1	$ 5,000.00	$ 5,000.00
110-0100	Clearing, Grubbing, includes Asphalt Removal	AC	0.2	$ 90,000.00	$ 18,000.00
0522 2	CONCRETE SIDEWALK AND DRIVEWAYS, 6" THICK	SY	150	$ 145.00	$ 21,750.00
0570 1 2	PERFORMANCE TURF, SOD	SY	400	$ 14.00	$ 5,600.00
160-004	Stabilization, Type B	SY	300	$ 40.00	$ 12,000.00
285-706	Base Group 06	SY	300	$ 95.00	$ 28,500.00
334-1-12	Superpave Asphalt Concrete, Traffic Level B	SY	300	$ 55.00	$ 16,500.00
0425 2 41	MANHOLES, P-7, <10'	EA	1	$ 11,200.00	$ 11,200.00
430174215	PIPE CULVERT, OPTIONAL MATERIAL, OTHER SHAPE - ELLIP/ARCH, 15"SD	LF	42	$ 200.00	$ 8,400.00
430174218	PIPE CULVERT, OPTIONAL MATERIAL, OTHER SHAPE - ELLIP/ARCH, 18"SD	LF	24	$ 210.00	$ 5,040.00
430174224	PIPE CULVERT, OPTIONAL MATERIAL, OTHER SHAPE - ELLIP/ARCH, 24"SD	LF	231	$ 275.00	$ 63,525.00
	Plug Existing Pipe (18")	EA	1	$ 2,500.00	$ 2,500.00
	Connect to Existing Structure	EA	3	$ 5,000.00	$ 15,000.00
	SUBTOTAL				$ 240,705.00
	15% CONTINGENCY				$ 36,105.75
	Incidental Repair to Existing Roadways / Infrastructure (15% of Construction Cost				$ 36,105.75
	Insurance & General Conditions (5% of Construction Cost)				$ 12,035.25
	Permits / Fees (3% of Construction Cost)				$ 7,221.15
	Engineering & Construction Admin Costs (15% of construction cost)				$ 36,105.75
	Survey / SUE (5% of construction cost)				$ 12,035.25
	Maintenance Cost (3% of construction cost)				$ 7,221.15
	Cost Escalation Factor (5%)				$ 12,035.25
				Total	$ 399,570.30

NPR - 2024 SWMP PROJECTS- Cotee River Drive
CONCEPTUAL COST ESTIMATE
ENVIRONMENTAL CONSULTING & TECHNOLOGY, INC.

FDOT PAY ITEM NO.	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL PRICE
101-1	MOBILIZATION (8% of construction cost)	LS	1	$ 26,960.00	$ 26,960.00
0102 1	MAINTENANCE OF TRAFFIC (5% of construction cost)	LS	1	$ 16,850.00	$ 16,850.00
104-1	Environmental Protection	LS	1	$ 15,000.00	$ 15,000.00
110-0100	Clearing, Grubbing, includes Asphalt Removal	AC	0.6	$ 90,000.00	$ 54,000.00
0120 1	REGULAR EXCAVATION (Swale)	CY	650	$ 45.00	$ 29,250.00
0522 2	CONCRETE SIDEWALK AND DRIVEWAYS, 6" THICK	SY	100	$ 145.00	$ 14,500.00
0570 1 2	PERFORMANCE TURF, SOD	SY	1,500	$ 14.00	$ 21,000.00
160-004	Stabilization, Type B	SY	533	$ 40.00	$ 21,320.00
285-706	Base Group 06	SY	533	$ 95.00	$ 50,635.00
334-1-12	Superpave Asphalt Concrete,1.5 " Thickness	SY	533	$ 55.00	$ 29,315.00
0425 1521	INLETS, DT BOT, TYPE C,<10'	EA	4	$ 6,900.00	$ 27,600.00
430174218	PIPE CULVERT, OPTIONAL MATERIAL, OTHER SHAPE - ELLIP/ARCH, 18"SD	LF	278	$ 210.00	$ 58,380.00
	Backflow Preventer (18")	LS	1	$ 16,000.00	$ 16,000.00
	SUBTOTAL				$ 380,810.00
	15% CONTINGENCY				$ 57,121.50
	Incidental Repair to Existing Roadways / Infrastructure (15% of Construction Cost				$ 57,121.50
	Insurance & General Conditions (5% of Construction Cost)				$ 19,040.50
	Permits / Fees (3% of Construction Cost)				$ 11,424.30
	Engineering & Construction Admin Costs (15% of construction cost)				$ 57,121.50
	Survey / SUE (5% of construction cost)				$ 19,040.50
	Maintenance Cost (3% of construction cost)				$ 11,424.30
	Cost Escalation Factor (5%)				$ 19,040.50
				Total	$ 632,144.60

NPR - 2024 SWMP PROJECTS- Adams St. and Illinois Ave
CONCEPTUAL COST ESTIMATE
ENVIRONMENTAL CONSULTING & TECHNOLOGY, INC.

FDOT PAY ITEM NO.	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL PRICE
101-1	MOBILIZATION (8% of construction cost)	LS	1	$ 22,310.00	$ 22,310.00
0102 1	MAINTENANCE OF TRAFFIC (5% of construction cost)	LS	1	$ 13,940.00	$ 13,940.00
104-1	Environmental Protection	LS	1	$ 15,000.00	$ 15,000.00
110-0100	Clearing, Grubbing, includes Asphalt Removal	AC	0.2	$ 90,000.00	$ 18,000.00
0522 2	CONCRETE SIDEWALK AND DRIVEWAYS, 6" THICK	SY	150	$ 145.00	$ 21,750.00
0570 1 2	PERFORMANCE TURF, SOD	SY	250	$ 14.00	$ 3,500.00
160-004	Stabilization, Type B	SY	450	$ 40.00	$ 18,000.00
285-706	Base Group 06	SY	450	$ 95.00	$ 42,750.00
334-1-12	Superpave Asphalt Concrete, Traffic Level B	SY	450	$ 55.00	$ 24,750.00
0425 2 41	MANHOLES, P-7, <10'	EA	1	$ 11,200.00	$ 11,200.00
0425 1521	INLETS, DT BOT, TYPE C,<10'	EA	4	$ 6,900.00	$ 27,600.00
430174215	PIPE CULVERT, OPTIONAL MATERIAL, OTHER SHAPE - ELLIP/ARCH, 15"SD	LF	110	$ 200.00	$ 22,000.00
430174218	PIPE CULVERT, OPTIONAL MATERIAL, OTHER SHAPE - ELLIP/ARCH, 18"SD	LF	354	$ 210.00	$ 74,340.00
	Connect to Existing Structure	EA	1	$ 5,000.00	$ 5,000.00
	SUBTOTAL				$ 315,140.00
	15% CONTINGENCY				$ 47,271.00
	Incidental Repair to Existing Roadways / Infrastructure (15% of Construction Cost				$ 47,271.00
	Insurance & General Conditions (5% of Construction Cost)				$ 15,757.00
	Permits / Fees (3% of Construction Cost)				$ 9,454.20
	Engineering & Construction Admin Costs (15% of construction cost)				$ 47,271.00
	Survey / SUE (5% of construction cost)				$ 15,757.00
	Maintenance Cost (3% of construction cost)				$ 9,454.20
	Cost Escalation Factor (5%)				$ 15,757.00
				Total	$ 523,132.40

NPR - 2024 SWMP PROJECTS- Rio Drive
CONCEPTUAL COST ESTIMATE
ENVIRONMENTAL CONSULTING & TECHNOLOGY, INC.

FDOT PAY ITEM NO.	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL PRICE
101-1	MOBILIZATION (8% of construction cost)	LS	1	$ 18,034.00	$ 18,034.00
0102 1	MAINTENANCE OF TRAFFIC (5% of construction cost)	LS	1	$ 11,271.00	$ 11,271.00
104-1	Environmental Protection	LS	1	$ 10,000.00	$ 10,000.00
110-0100	Clearing, Grubbing, includes Asphalt Removal	AC	0.2	$ 90,000.00	$ 18,000.00
0120 1	REGULAR EXCAVATION (Swale)	CY	100	$ 45.00	$ 4,500.00
0522 2	CONCRETE SIDEWALK AND DRIVEWAYS, 6" THICK	SY	75	$ 145.00	$ 10,875.00
0570 1 2	PERFORMANCE TURF, SOD	SY	500	$ 14.00	$ 7,000.00
160-004	Stabilization, Type B	SY	75	$ 40.00	$ 3,000.00
285-706	Base Group 06	SY	75	$ 95.00	$ 7,125.00
334-1-12	Superpave Asphalt Concrete, Traffic Level B	SY	75	$ 55.00	$ 4,125.00
0425 1521	INLETS, DT BOT, TYPE C,<10'	EA	6	$ 6,900.00	$ 41,400.00
430174215	PIPE CULVERT, OPTIONAL MATERIAL, OTHER SHAPE - ELLIP/ARCH, 15"SD	LF	35	$ 200.00	$ 7,000.00
430174218	PIPE CULVERT, OPTIONAL MATERIAL, OTHER SHAPE - ELLIP/ARCH, 18"SD	LF	40	$ 210.00	$ 8,400.00
430174224	PIPE CULVERT, OPTIONAL MATERIAL, OTHER SHAPE - ELLIP/ARCH, 24"SD	LF	160	$ 275.00	$ 44,000.00
	Backflow Preventer	LS	2	$ 30,000.00	$ 60,000.00
	SUBTOTAL				$ 254,730.00
	15% CONTINGENCY				$ 38,209.50
	Incidental Repair to Existing Roadways / Infrastructure (15% of Construction Cost				$ 38,209.50
	Insurance & General Conditions (5% of Construction Cost)				$ 12,736.50
	Permits / Fees (3% of Construction Cost)				$ 7,641.90
	Engineering & Construction Admin Costs (15% of construction cost)				$ 38,209.50
	Survey / SUE (5% of construction cost)				$ 12,736.50
	Maintenance Cost (3% of construction cost)				$ 7,641.90
	Cost Escalation Factor (5%)				$ 12,736.50
				Total	$ 422,851.80

NPR - 2024 SWMP PROJECTS- George St.-High St to Elm St
CONCEPTUAL COST ESTIMATE
ENVIRONMENTAL CONSULTING & TECHNOLOGY, INC.

FDOT PAY ITEM NO.	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL PRICE
101-1	MOBILIZATION (8% of construction cost)	LS	1	$ 58,400.00	$ 58,400.00
0102 1	MAINTENANCE OF TRAFFIC (5% of construction cost)	LS	1	$ 36,500.00	$ 36,500.00
104-1	Environmental Protection	LS	1	$ 15,000.00	$ 15,000.00
110-0100	Clearing, Grubbing, includes Asphalt Removal	AC	0.5	$ 90,000.00	$ 45,000.00
0522 2	CONCRETE SIDEWALK AND DRIVEWAYS, 6" THICK	SY	150	$ 145.00	$ 21,750.00
0570 1 2	PERFORMANCE TURF, SOD	SY	600	$ 14.00	$ 8,400.00
160-004	Stabilization, Type B	SY	1,500	$ 40.00	$ 60,000.00
285-706	Base Group 06	SY	1,500	$ 95.00	$ 142,500.00
334-1-12	Superpave Asphalt Concrete, Traffic Level B	SY	1,500	$ 55.00	$ 82,500.00
0425 2 41	MANHOLES, P-7, <10'	EA	3	$ 11,200.00	$ 33,600.00
0425 1521	INLETS, DT BOT, TYPE C,<10'	EA	8	$ 6,900.00	$ 55,200.00
430174215	PIPE CULVERT, OPTIONAL MATERIAL, OTHER SHAPE - ELLIP/ARCH, 15"SD	LF	168	$ 200.00	$ 33,600.00
430174218	PIPE CULVERT, OPTIONAL MATERIAL, OTHER SHAPE - ELLIP/ARCH, 18"SD	LF	871	$ 210.00	$ 182,910.00
430174224	PIPE CULVERT, OPTIONAL MATERIAL, OTHER SHAPE - ELLIP/ARCH, 24"SD	LF	180	$ 275.00	$ 49,500.00
	Baffle Box (F&I)	LS		$ 85,000.00	$ -
	SUBTOTAL				$ 824,860.00
	15% CONTINGENCY				$ 123,729.00
	Incidental Repair to Existing Roadways / Infrastructure (15% of Construction Cost				$ 123,729.00
	Insurance & General Conditions (5% of Construction Cost)				$ 41,243.00
	Permits / Fees (3% of Construction Cost)				$ 24,745.80
	Engineering & Construction Admin Costs (15% of construction cost)				$ 123,729.00
	Survey / SUE (5% of construction cost)				$ 41,243.00
	Maintenance Cost (3% of construction cost)				$ 24,745.80
	Cost Escalation Factor (5%)				$ 41,243.00
				Total	$ 1,369,267.60