

Stormwater Management Master Plan Updates

There are 16 defined watersheds in Volusia County. Stormwater Management Master Plans (SWMP) have been prepared for the 11 of the watersheds, with the concentration on the urbanized basins. Many of these SWMPs were prepared in the 90's and are currently over 20 years old. These plans need to be updated to address current corporate boundaries and responsibilities and to address current priorities. The SWMP updates proposed are for the Indian River Lagoon, the Halifax River, the Tomoka River and Spruce Creek. The studies will update the stormwater system improvements in these watersheds and analyze for water quantity and water quality impacts to the receiving water bodies, each of which is an impaired water body.

Current Situation

The Indian River Lagoon, Halifax River, Tomoka River and Spruce Creek SWMPs were completed in the 90s prior to the cities in these areas completing SWMPs. Each of these basins is an impaired water body with Total Maximum Daily Loads (TMDL) established. A Basin Management Action Plan (BMAP) has been completed for the Indian River Lagoon and the BMAP process has begun for the Halifax River (Northern Coastal Basin). Future BMAPs are scheduled for the Tomoka River and Spruce Creek basins. The goal of the SWMP Updates is to review and update Volusia County's previous SWMPs with a focus on water quality and projects that serve areas within unincorporated Volusia County.

Project

The preparation of a Stormwater Management Master Plan Update for these watersheds will include:

- A review of previous SWMPs to determine if capital projects recommended at that time may still be recommended for grant applications
- An evaluation of potential water quality benefits resulting from altering or increasing stormwater maintenance practices
- An evaluation of water quality conditions to propose additional improvement alternatives and quantify resultant pollutant load reductions

The majority of the land uses in these basins is urban and fall within city limits. The SWMP Updates will not restudy city stormwater systems where they have SWMPs but may incorporate elements of their plans in the Update. The estimated cost of each of the studies is \$75,000 for a total of \$300,000 for these four basins. This cost would be funded by the Stormwater Utility.

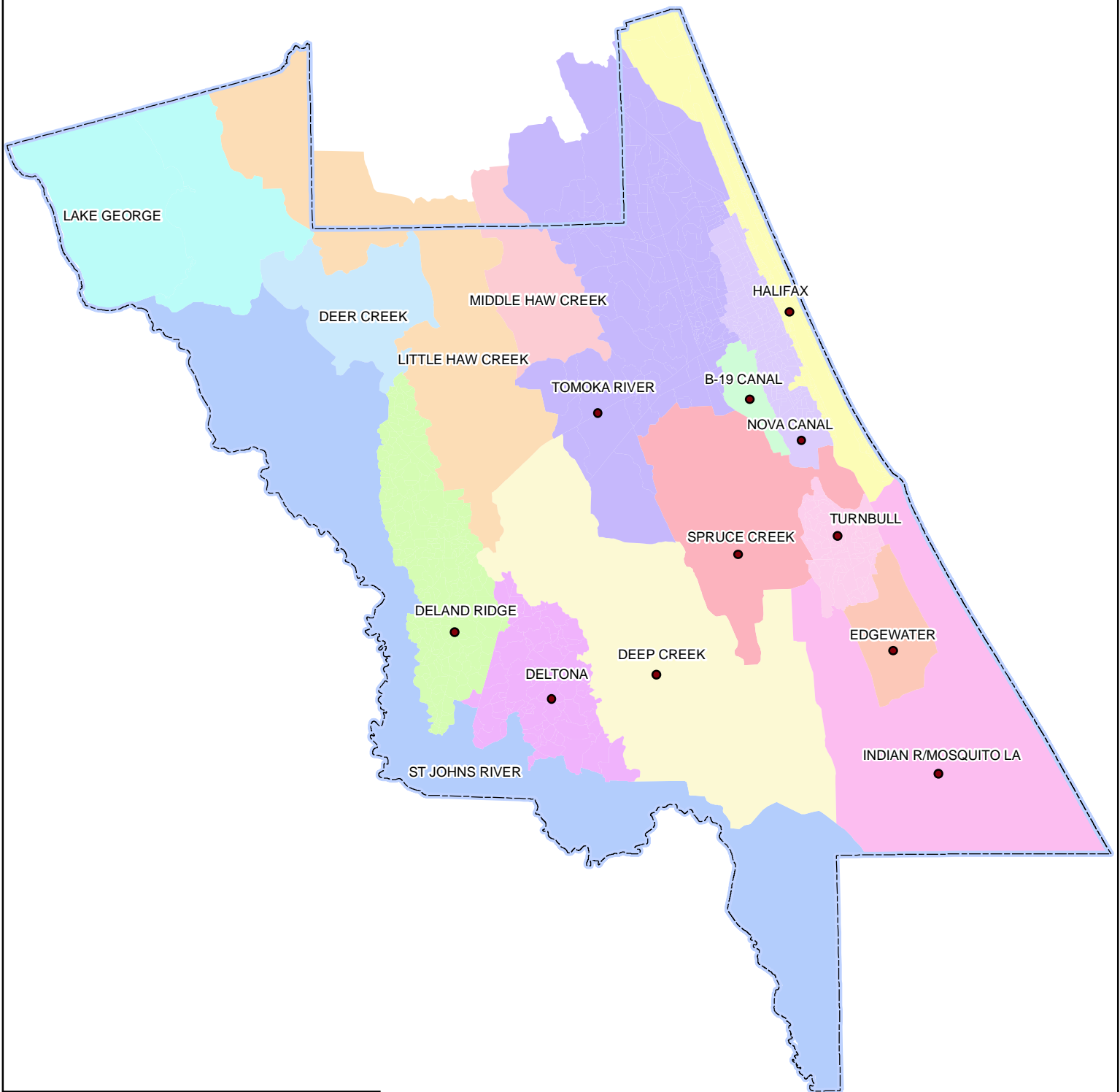
Community Impact and Benefits

This project will:

- Address flooding of structures and roadways
- Address stormwater treatment improving water quality

Typical Timeline for a Stormwater Management Master Plan Update

[illegible]



Legend

- Basin has an existing study



Elizabeth Street Retention Pond Project

The Elizabeth Street Retention Pond Project is a project that will divert stormwater runoff from the portion of the Gabordy Canal adjacent to Edgewater Canal Road into a retention pond that will be constructed on a seven acre parcel purchased by the Volusia County Stormwater Utility just south of Elizabeth Street. The projects will add capacity to the stormwater conveyance system and provide sediment and nutrient removal enhancing water quality discharging to Mosquito Lagoon in the Indian River Lagoon Basin, an impaired water body.

Current Situation

The Gabordy Canal watershed is approximately 7 square miles and drains areas of the City of Edgewater, City of New Smyrna Beach and unincorporated Volusia County. Gabordy Canal discharges directly into Mosquito Lagoon in the immediate vicinity of Riverside Drive at Tenth Street. The majority of the stormwater discharging through the Gabordy Canal is untreated. There are numerous areas within the Gabordy Canal basin that are flood prone and the additional stormwater capacity in the retention pond will also provide flood protection. Drainage from this area currently flows untreated into the Mosquito Lagoon. Negative impacts include:

- Recent storm events have resulted in flooded structures and roadways.
- Untreated stormwater currently discharges to the Mosquito Lagoon in the Indian River Lagoon Basin, an impaired water body.

Project

The construction of a regional stormwater retention pond on the vacant land will allow diversion of a portion of the flow in the Gabordy Canal into the retention pond. This will provide additional stormwater capacity and assist in flood protection for the residential homes and roadways in this area. The retention pond will also provide stormwater treatment.

- Construction of retention pond will improve flood protection and provide sediment and nutrient removal improving water quality
- \$600,000 grant funding, \$600,000 local match money (Stormwater Utility) for total project cost of \$1,200,000

Community Impact and Benefits

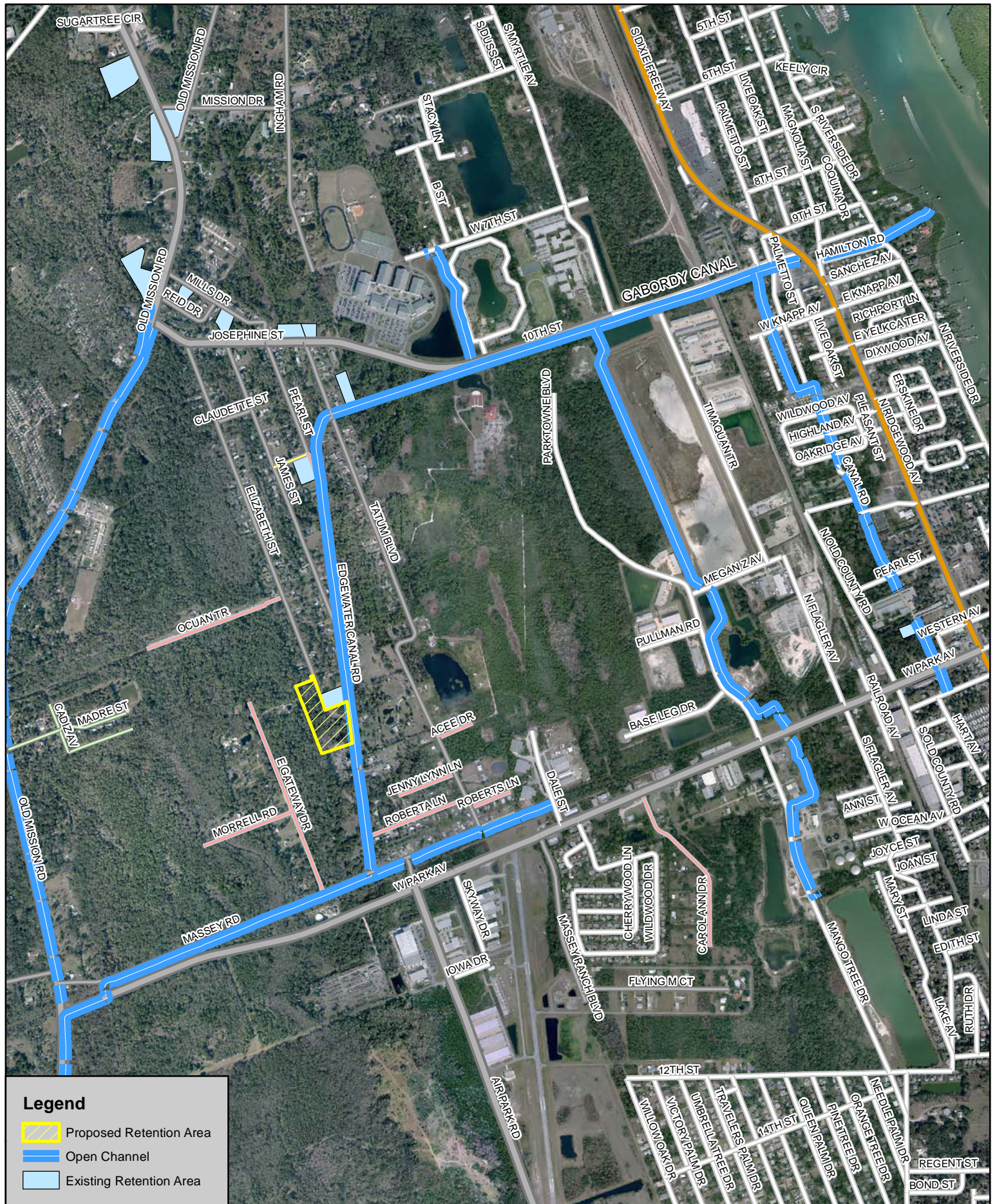
This project will:

- Reduce flooding of structures and roadways
- Provide stormwater treatment improving water quality

The project will reduce the potential for home and roadway flooding, reducing flood damage claims. The project will enhance property values and the quality of life in this vital residential and agricultural community.

Typical Construction Timeline for Elizabeth Street Retention Pond Project

[illegible]



Elizabeth Street
Stormwater Project
County of Volusia
Judy Grim - Road and Bridge Director

ELIZABETH STREET RETENTION POND



Gemini Springs Water Quality Improvement Project

The Gemini Springs Water Quality Improvement Project includes the evaluation of five stormwater outfalls to recommend treatment of the stormwater prior to discharge into Gemini Springs. The stormwater treatment will provide sediment and nutrient removal enhancing water quality discharging to Gemini Springs, an impaired water body.

Current Situation

Gemini Springs is a County owned park that currently prohibits swimming due to poor water quality. The five drainage outfalls currently discharge untreated stormwater into Gemini Springs. The outfalls are County maintained; however the majority of drainage flow is from the City of Debary residential neighborhoods.

Negative impact includes:

- Untreated stormwater currently discharges to Gemini Springs, an impaired water body.

Project

The installation of stormwater treatment will provide stormwater treatment for all of the County maintained drainage outfalls discharging into Gemini Springs.

- Stormwater treatment will provide sediment and nutrient removal improving water quality
- Study will cost approximately \$50,000, funded from the Stormwater Utility
- Construction is estimated to cost \$500,000, \$400,000 will be requested from grant funding, \$100,000 will be local match money from the Stormwater Utility

Community Impact and Benefits

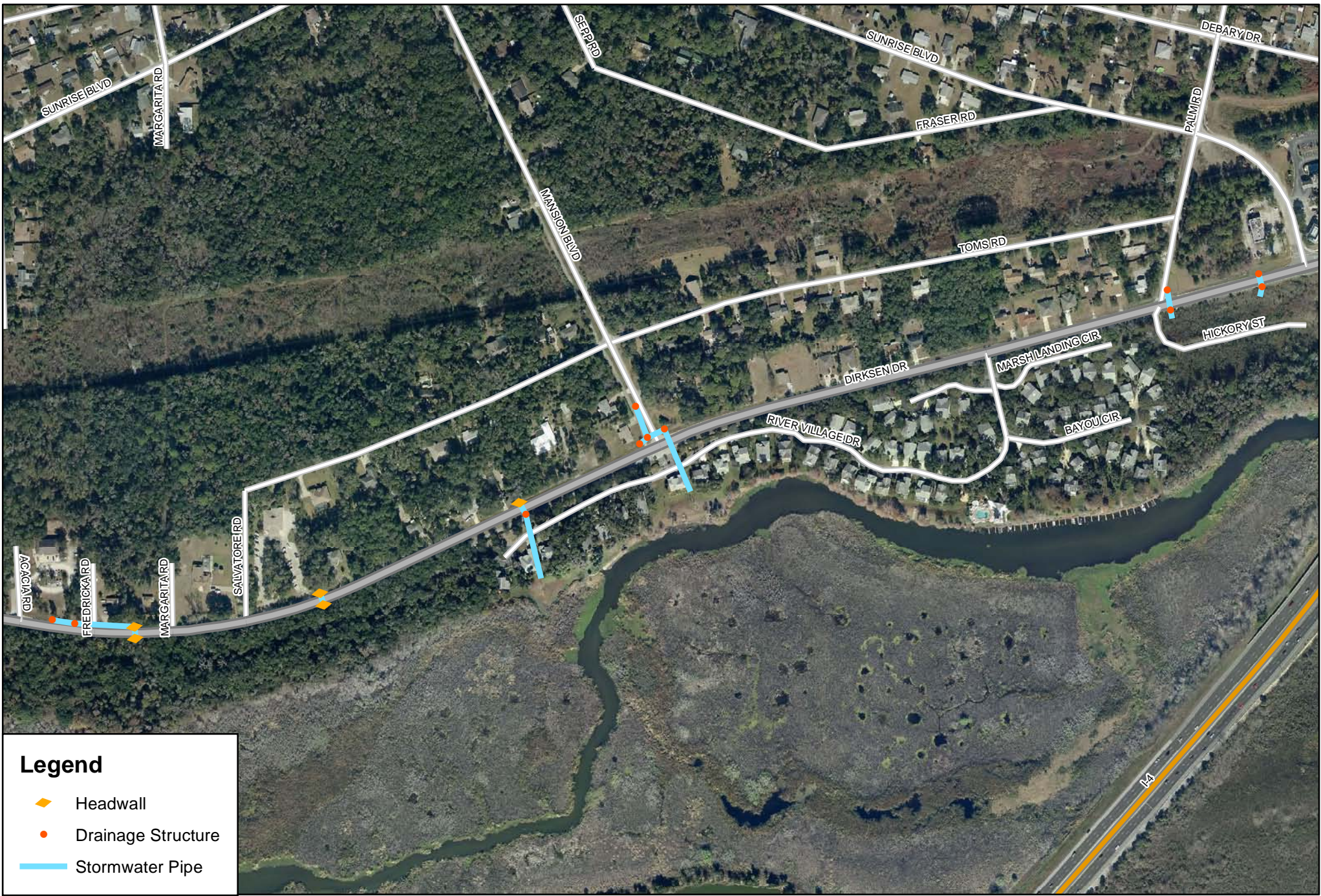
This project will:

- Provide stormwater treatment for City of Debary residential neighborhoods
- Improve usability of County owned park
- Provide stormwater treatment improving water quality

The project will improve the ability for residents to use this beautiful park. The project will enhance property values and the quality of life in this vital community.

Timeline for Gemini Springs Water Quality Improvement Project

[illegible]



Gemini Springs
Stormwater Project
County of Volusia
Judy Grim - Road and Bridge Director

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GEMINI SPRINGS WATER QUALITY IMPROVEMENT PROJECT



North Peninsula Stormwater System Improvements

The North Peninsula includes the Ormond by the Sea area north of the Ormond Beach city limits north to the North Peninsula State Park. The majority of the North Peninsula drainage system was built in the 1970s and is primarily corrugated metal pipe. This pipe has deteriorated over time in the salt environment and is in need of replacement. As the piping system is replaced, exfiltration trench piping is being installed. The exfiltration trench reduces the quantity of stormwater being discharged to the Halifax River and also provides stormwater treatment. These projects will add capacity to the stormwater conveyance system and provide sediment and nutrient removal enhancing water quality discharging to the Halifax River in the Northern Coastal Basin, an impaired water body.

Current Situation

The Ormond by the Sea area currently has a significant amount of deteriorated storm drain piping. Over the last five years, the Drainage Task Team has been replacing the deteriorated corrugated metal pipe with exfiltration trench where appropriate. This program also improves an under capacity stormwater conveyance system with limited stormwater treatment. Negative impact includes:

- Deteriorated pipes cause pipe and roadway maintenance issues
- Recent storm events have resulted in flooded roadways.
- Untreated stormwater currently discharges to the Halifax River in the Northern Coastal Basin, an impaired water body.

Project

The deteriorated corrugated metal pipe is being replaced with an exfiltration piping system. The installation of exfiltration piping will add capacity to the stormwater conveyance system and will provide stormwater treatment. This is an ongoing program with stormwater utility funds dedicated annually.

- Exfiltration piping will add capacity for stormwater conveyance
- Exfiltration trench media will provide nutrient removal improving water quality
- Annual expenditures range from \$300,000 to \$400,000 and are funded with the Stormwater Utility

Community Impact and Benefits

This project will:

- Reduce maintenance of deteriorated piping and roadways
- Reduce flooding of roadways
- Provide stormwater treatment improving water quality

The project will reduce the potential for pipe and roadway failure and reduce roadway flooding. The project will enhance property values and the quality of life in this vital residential community.

Timeline for a North Peninsula Stormwater System Improvements

[illegible]



North Peninsula
Stormwater Project
County of Volusia
Judy Grim - Road and Bridge Director

NORTH PENINSULA STORMWATER SYSTEM IMPROVEMENTS



Rio Way Regional Retention Pond Project

The Rio Way Regional Retention Pond Project is a continuation of the project completed in 2014 to purchase and demolish 21 flood prone homes on Rio Way. The purchase and demolition of the homes was partially funded through a FEMA Flood Mitigation Assistance grant. The projects will add capacity to the stormwater conveyance system and provide sediment and nutrient removal enhancing water quality discharging to the Halifax River in the Northern Coastal Basin, an impaired water body.

Current Situation

The Rio Way drainage basin includes sections of unincorporated Volusia County, the City of Ormond Beach and the City of Holly Hill. The area north and west of Rio Way remains a flood prone area and the additional stormwater capacity in the retention pond will also provide flood protection. Drainage from this area currently flows untreated into the LPGA Canal and to the Halifax River. Negative impacts include:

- Recent storm events have resulted in flooded structures and roadways.
- Untreated stormwater currently discharges to the Halifax River in the Northern Coastal Basin, an impaired water body.

Project

The construction of a regional stormwater retention pond on the vacant land will allow the canal system and overland flow from the unincorporated Volusia County west and north of Rio Way, the City of Ormond Beach canal north of Rio Way and the City of Holly Hill canal and overland flow east of Rio Way be routed into the retention pond. This will provide additional stormwater capacity and assist in flood protection for the residential homes and roadways in this area. The retention pond will also provide stormwater treatment.

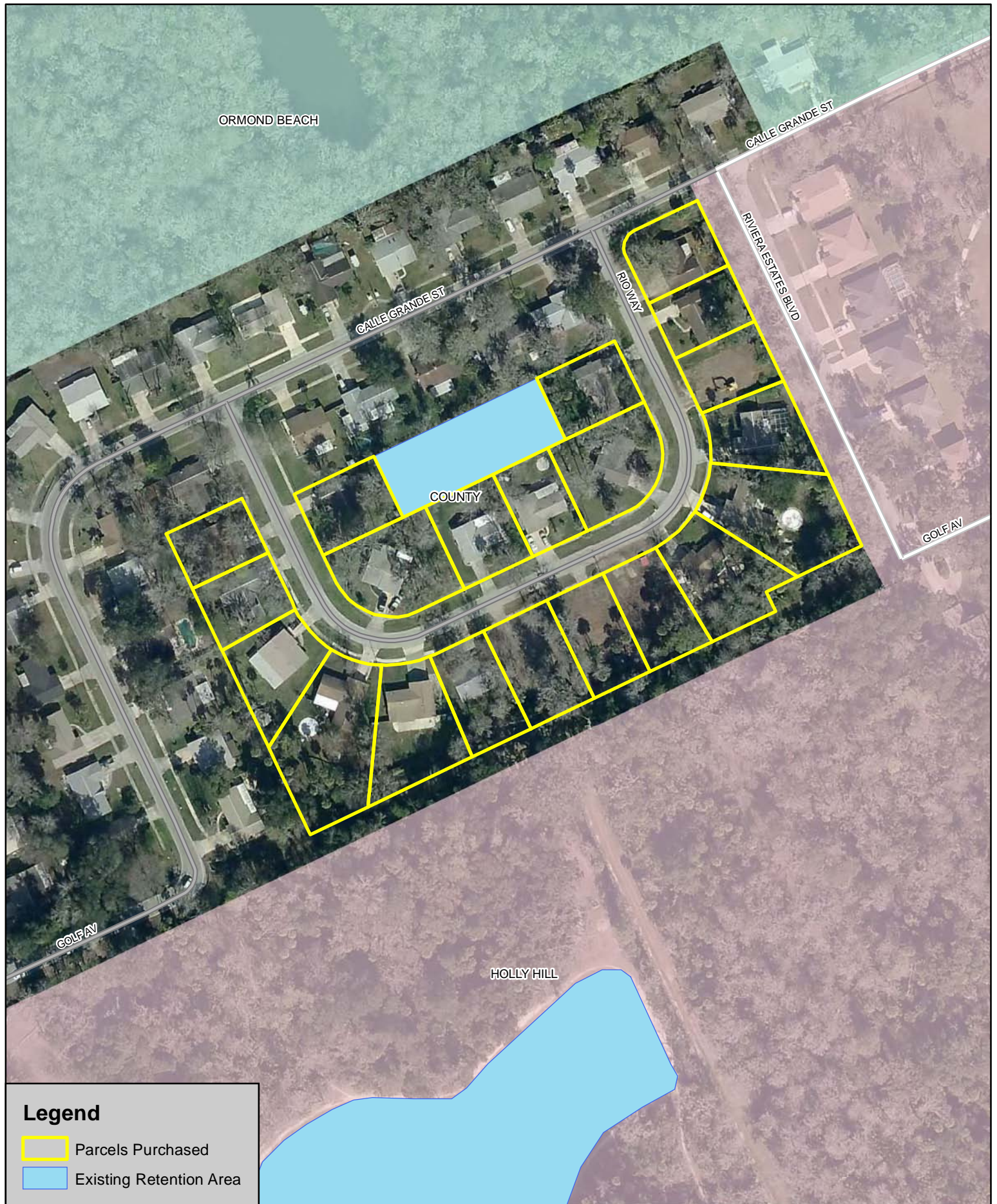
- Construction of retention pond will improve flood protection and provide sediment and nutrient removal improving water quality
- \$200,000 grant funding, \$200,000 local match money (Stormwater Utility) for total project cost of \$400,000

Community Impact and Benefits

This project will:

- Reduce flooding of structures and roadways
- Provide stormwater treatment improving water quality

The project will reduce the potential for home and roadway flooding, reducing flood damage claims. The project will enhance property values and the quality of life in this vital residential community.



Rio Way
Stormwater Project
County of Volusia
Judy Grim - Road and Bridge Director

RIO WAY RETENTION POND PROJECT



St. Johns River Basin Stormwater Management Master Plan

The St. Johns River watershed is one of 16 defined watersheds in Volusia County. Stormwater Management Master Plans have been prepared for the urbanized watersheds. The St. Johns Basin includes primarily rural unincorporated Volusia County, but also includes the urbanized area of the City of Debary. The study will evaluate the stormwater systems in the St. Johns River Basin and analyze for water quantity and water quality impacts to the St. Johns River, including the Blue Springs watershed, an impaired water body.

Current Situation

The St. Johns River Basin includes approximately 142,500 acres. The watershed lies south and east of the City of Deltona, west of the cities of Orange City and DeLand and south of the Town of Pierson. The land use is primarily undeveloped with some portions in agricultural and rural residential use. A portion of the basin is the urbanized area of the City of Debary. The basin includes the Blue Springs watershed and a small portion of the Blue Springs spring shed.

Project

The preparation of a Stormwater Management Master Plan for the St. Johns River Basin will include an evaluation of the stormwater system in the watershed. The evaluation will identify deficiencies in the stormwater conveyance system and recommend improvements. The study will also evaluate the water quality impacts in the basin and recommend improvements. These evaluations will also address the level of service of maintenance and recommended improvements.

The City of Debary has a recently prepared Stormwater Master Plan and will not be restudied by this Master Plan. Elements of the Debary plan may be incorporated into the St. Johns River Stormwater Management Master Plan. The estimated cost of the study is \$300,000 and would be funded by the Stormwater Utility.

The benefits of the Master Plan include:

- Flood Control
- Water Quality Management
- Level of Service
- Deficiency Correction
- Regulatory Compliance
- Water Resource Management

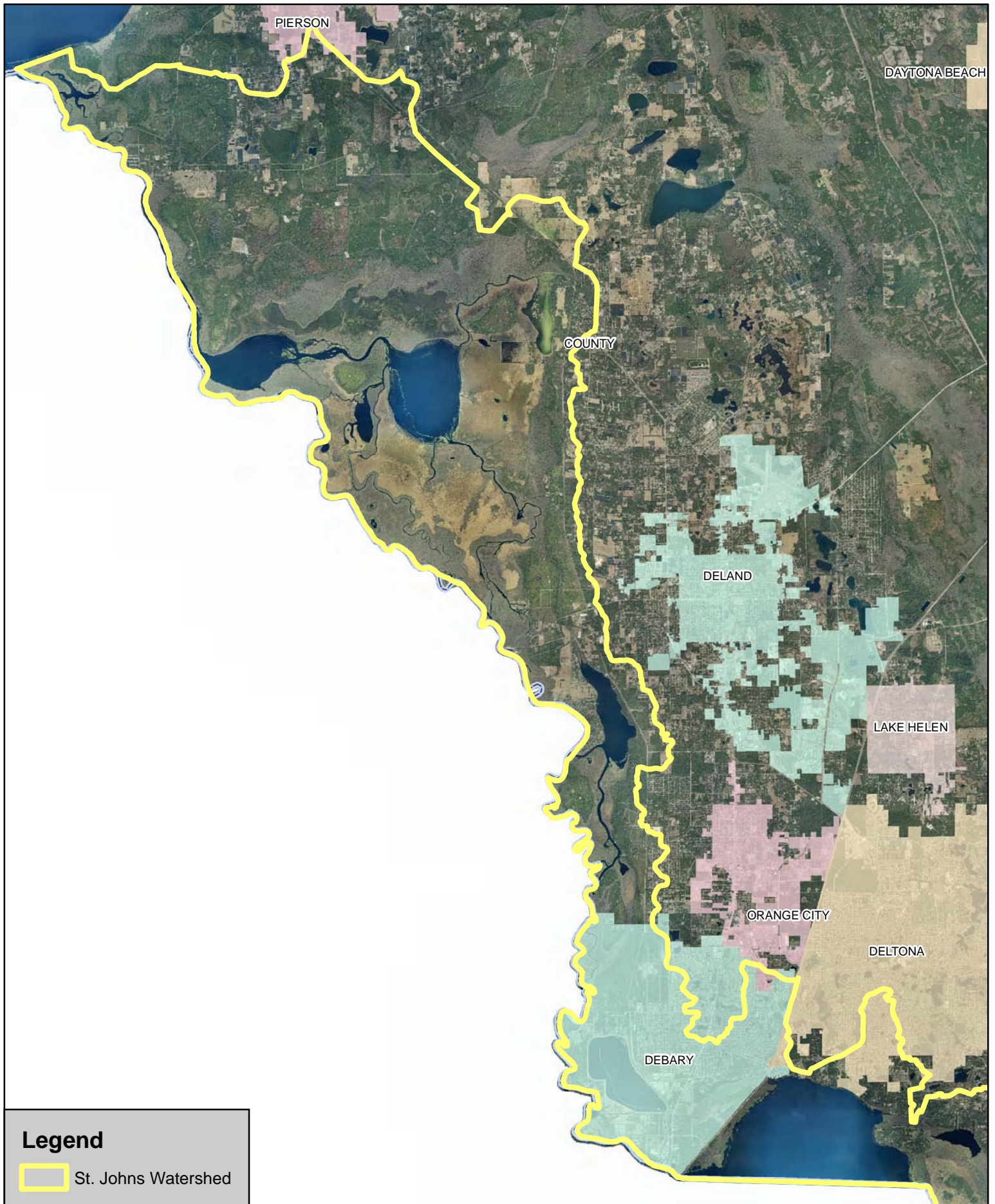
Community Impact and Benefits

This project will:


- Address flooding of structures and roadways
- Address stormwater treatment improving water quality

Timeline for St. Johns River Basin Stormwater Management Master Plan

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Legend

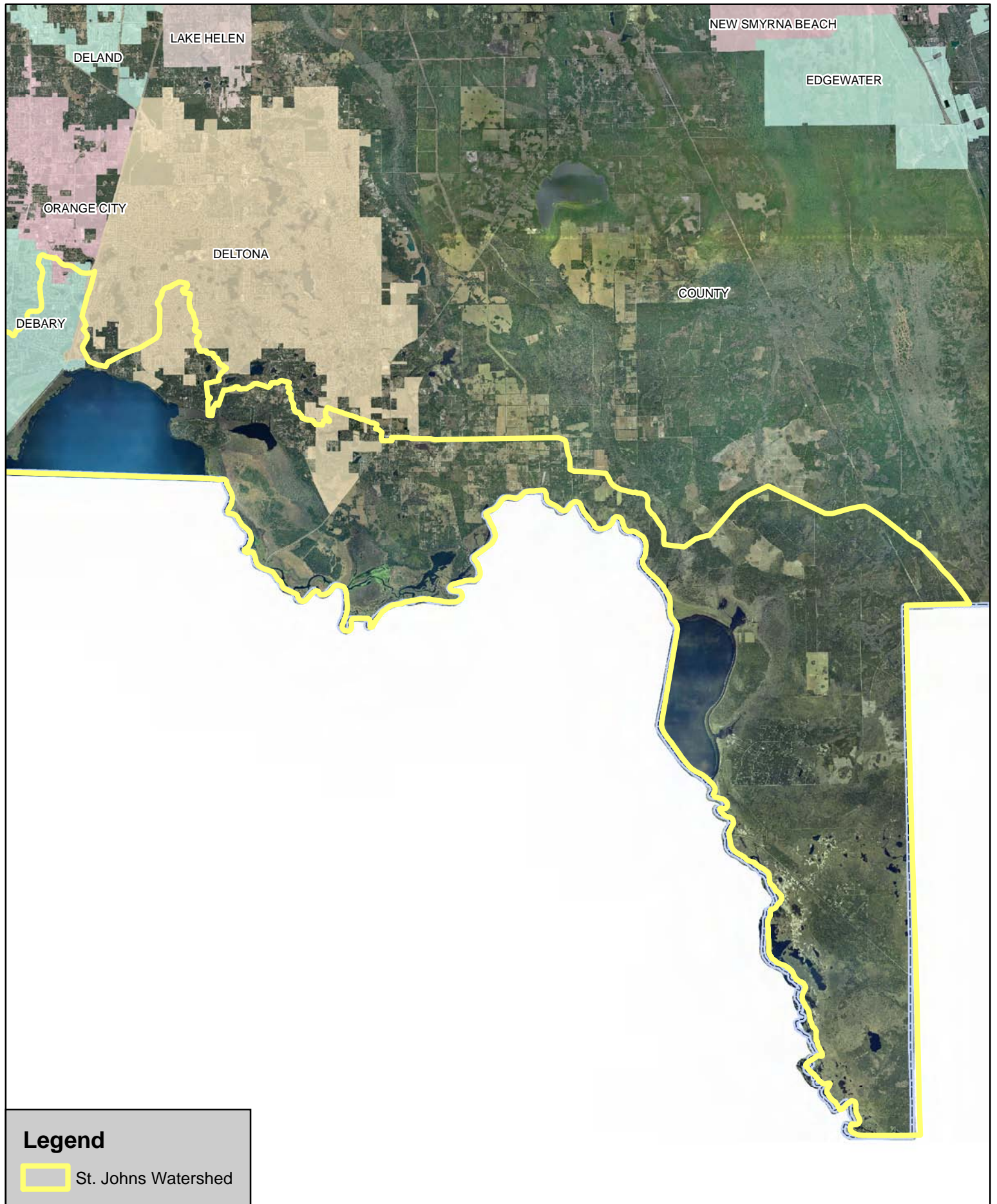
 St. Johns Watershed

St. Johns River
Stormwater Project
County of Volusia
Judy Grim - Road and Bridge Director

ST JOHNS RIVER WATERSHED WATER QUALITY PROJECT



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St. Johns River
Stormwater Project
County of Volusia
Judy Grim - Road and Bridge Director

ST JOHNS RIVER WATERSHED WATER QUALITY PROJECT



Wilbur by the Sea Drainage Improvements Project

The Wilbur by the Sea Drainage Improvements Project is being proposed in two phases. Phase I is the installation of exfiltration piping and a stormwater treatment system for the Marcelle Avenue outfall. Phase II of the project includes the installation of exfiltration piping and the interconnection of stormwater retention ponds. These projects will add capacity to the stormwater conveyance system and provide sediment and nutrient removal enhancing water quality discharging to the Halifax River in the Northern Coastal Basin, an impaired water body.

Current Situation

The Wilbur by the Sea area currently has an under capacity stormwater conveyance system and limited stormwater treatment. Negative impact includes:

- Recent storm events have resulted in flooded structures and roadways.
- Untreated stormwater currently discharges to the Halifax River in the Northern Coastal Basin, an impaired water body.

Project

The installation of exfiltration piping will add capacity to the stormwater conveyance system and will provide stormwater treatment. The installation of a stormwater treatment box and the interconnection of the retention ponds will provide additional stormwater treatment.

- Exfiltration piping will add capacity for stormwater conveyance
- Exfiltration trench media will provide nutrient removal improving water quality
- Stormwater treatment box will provide sediment and nutrient removal improving water quality
- Interconnection of retention ponds will improve stormwater conveyance and provide additional sediment and nutrient removal improving water quality
- \$640,000 grant funding, \$640,000 local match money (Stormwater Utility) for total project cost of \$1,280,000

Community Impact and Benefits

This project will:

- Reduce flooding of structures and roadways
- Provide stormwater treatment improving water quality

The project will reduce the potential for home and roadway flooding, reducing flood damage claims. The project will enhance property values and the quality of life in this vital residential community.

Timeline for Wilbur by the Sea Drainage Improvement Project

[illegible]



Wilbur-by-the-Sea
Stormwater Project
County of Volusia
Judy Grim - Road and Bridge Director

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WILBUR-BY-THE-SEA DRAINAGE IMPROVEMENTS PHASE I - MARCELLE AVENUE



0 50 100 200 Feet



Legend

● Drainage Structure

Storm Pipes

— EXISTING

— PROPOSED

■ Retention Area

Wilbur-by-the-Sea
Stormwater Project
County of Volusia
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**WILBUR-BY-THE-SEA
DRAINAGE IMPROVEMENTS
PHASE II - EGRET & TORONITA**



0 50 100 200 Feet