



AGENDA
CITY OF ORMOND BEACH, FLORIDA
CITY COMMISSION WORKSHOP
February 7, 2023
5:30 PM

Mayor Bill Partington

Zone 1 - Commissioner Lori Tolland

Zone 3 - Commissioner Susan Persis

Zone 2 - Commissioner Travis Sargent

Zone 4 - Commissioner Harold Briley

COMMISSION CONFERENCE ROOM
22 South Beach Street, Ormond Beach, FL 32174
Phone: 386-677-0311 Web: www.ormondbeach.org

1. CALL TO ORDER

2. DISCUSSIONS

A. Stormwater Master Plan

Staff Contact: *Shawn Finley, Public Works Director, (386) 676-3292*

3. ADJOURNMENT

Website Address – www.ormondbeach.org

NOTICE – Pursuant to Section 286.0105 of the Florida Statutes, if any person decides to appeal any decision made by the City Commission with respect to any matter considered at this public meeting, such person will need a record of the proceedings and for such purpose, such person may need to ensure that a verbatim record of the proceedings is made, including the testimony and evidence upon which the appeal is to be based.



For special accommodations, please notify the City Clerk's Office at least 72 hours in advance.
Phone: 386-677-0311



Help for the hearing impaired is available through the Assistive Listening System. Receivers can be obtained from the City Clerk's Office.

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CITY OF ORMOND BEACH

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Meeting Date: 2/7/2023		AGENDA ITEM		Number: 2.A
Section:	DISCUSSIONS			
Item Category:	City Commission Workshop	Res./Ord. No:		
Strategic Goal:	Water Quality & Environment – Other			
Department :	Public Works			
Subject:	Stormwater Master Plan			
Budget Impact:	The stormwater master plan includes projected projects and timeframes for completion; it does not include specific details on funding those projects. Based on direction provided by the City Commission at this workshop, staff will prepare a funding plan. This funding plan will likely include Hazard Mitigation Grant Program and other grants, use of fund reserves, and adjustments to user rates. Staff will present potential funding strategies during the budget process beginning June 2023.			
Summary:	This is a workshop to provide an update to the Commission on the Stormwater Master Plan and provide an opportunity for discussion and comments.			
Recommended Action:	Staff requests that feedback be given to finalize the Stormwater Master Plan Update.			
Staff Contact:	Shawn Finley, Public Works Director, (386) 676-3292			
Approval:				
Claire Whitley, Assistant City Manager		2/2/2023		
Joyce Shanahan, City Manager		2/2/2023		



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CITY MANAGER MEMORANDUM

To: The Honorable Mayor Partington and City Commissioners
Through: Joyce Shanahan, City Manager
From: Shawn Finley, Public Works Director
Date: February 7, 2023
Subject: Stormwater Master Plan
Commission Goal: Water Quality & Environment – Other

Introduction

This workshop is scheduled to present the City Commission with a Stormwater Master Plan Update and provide an opportunity for comment.

Background

In April of 1996, the City of Ormond Beach contracted with a consultant to provide a Stormwater Master Plan (1997) to create a document that would be used as a planning tool for the City's stormwater program, specifically its Capital Improvement Program (CIP). This master plan was subsequently updated in June 2007, with an additional update in 2010 to reflect the impact of the May, 2009 unnamed storm and provide guidance and direction to address flooding resulting from that event. The completion of nearly all projects recommended in the 2007 / 2010 Stormwater Master Plan has positively impacted our community by reducing flooding, protecting homes, and reducing the duration of impassable roadways.

Discussion

Staff selected Geosyntec, a consulting firm with unparalleled experience with stormwater management, to review the City's existing Stormwater Master Plan, identify upcoming regulatory requirements, develop recommendations related to sea level rise, storm surge, and drainage issues and incorporate their findings into an updated and current Stormwater Master Plan. The report will be used to prioritize and schedule stormwater capital improvement projects and make overall enhancements to the stormwater operations and maintenance programs. Input from this workshop will be incorporated into the final report that is taken to the Commission for final approval.

Budget Impact

The stormwater master plan includes projected projects and timeframes for completion; it does not include specific details on funding those projects. Based on direction provided by the City Commission at this workshop, staff will prepare a funding plan. This funding plan will likely include Hazard Mitigation Grant Program and other grants, use of fund reserves, and adjustments to user rates. Staff will present potential funding strategies during the budget process beginning June 2023.

Citizen Impact

The updated stormwater master plan will identify solutions to improve drainage issues, protect against storm surges and hurricane impacts, and enhance the City's overall stormwater operations to improve the quality of life for the residents of Ormond Beach.

Recommendation

Staff requests that feedback be given to finalize the Stormwater Master Plan Update.

Attachments:

1. SMP COMMISSION PRESENTATION 2023-02-07 V3x

Approvals:



Claire Whitley, Assistant City Manager

Date: February 02, 2023



Joyce Shanahan, City Manager

Date: February 02, 2023

CITY OF ORMOND BEACH

STORMWATER MASTER PLAN WORKSHOP

February 7, 2023



Geosyntec[®]
consultants

Meeting Objectives

- Present the **Stormwater Master Plan**
 - Goals
 - Scope of Work
 - Results
 - Recommendations
- Next Steps to Completion
- Obtain Commission Input



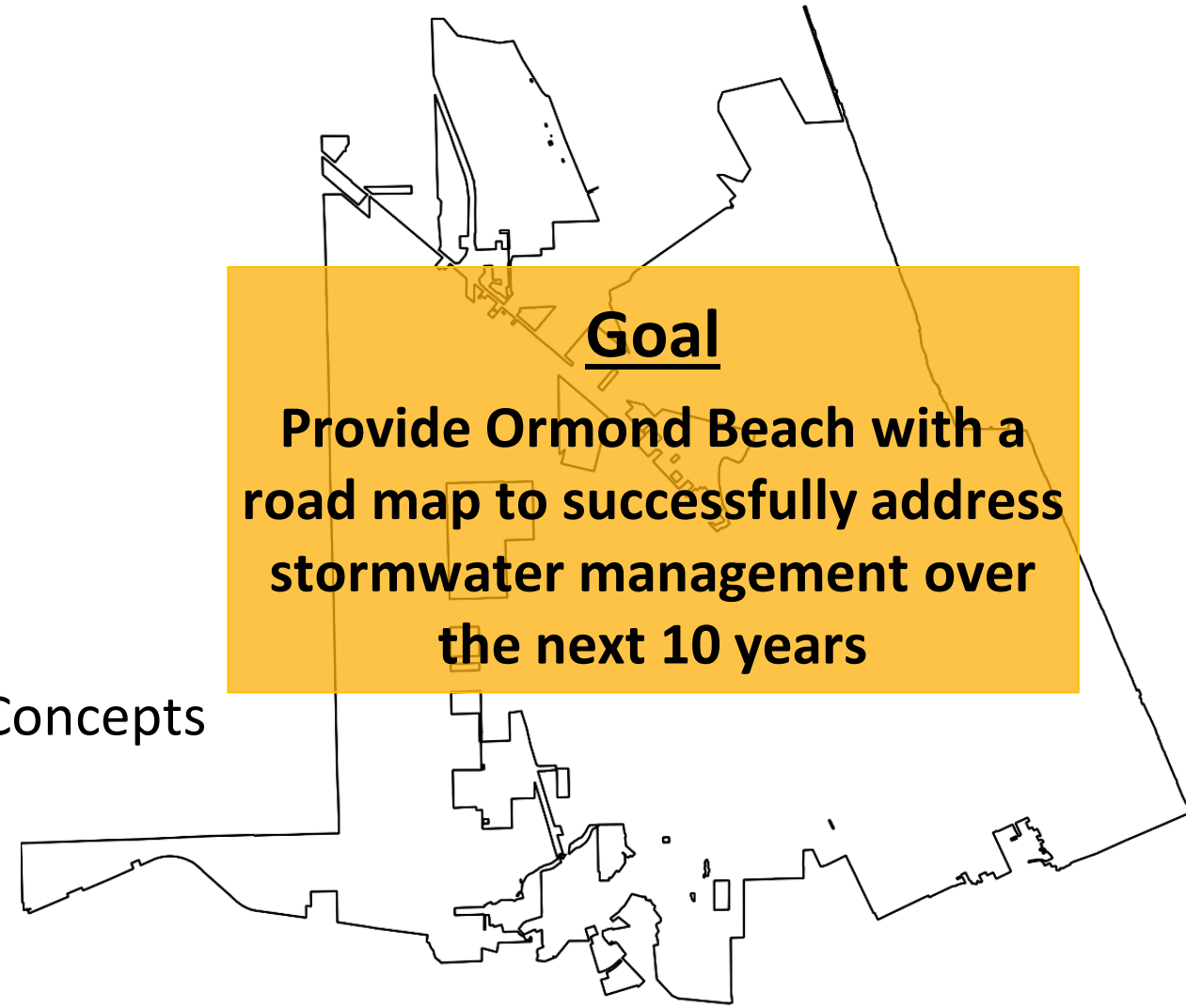
What is Stormwater Management?

- Stormwater is the runoff from the land surface resulting from rainfall
- Stormwater drainage systems are designed to collect, treat, store and move rainwater away from roads, public areas, and properties in an organized way during a rain event
- These systems are the series of storm inlets you see on the side of the road, pipes underground, canals, ponds, pumps and natural systems working together to reduce or prevent flooding
- Stormwater Best Management Practices (BMPs) work individually or in combination with drainage systems to treat pollutant in stormwater before discharging to receiving waters



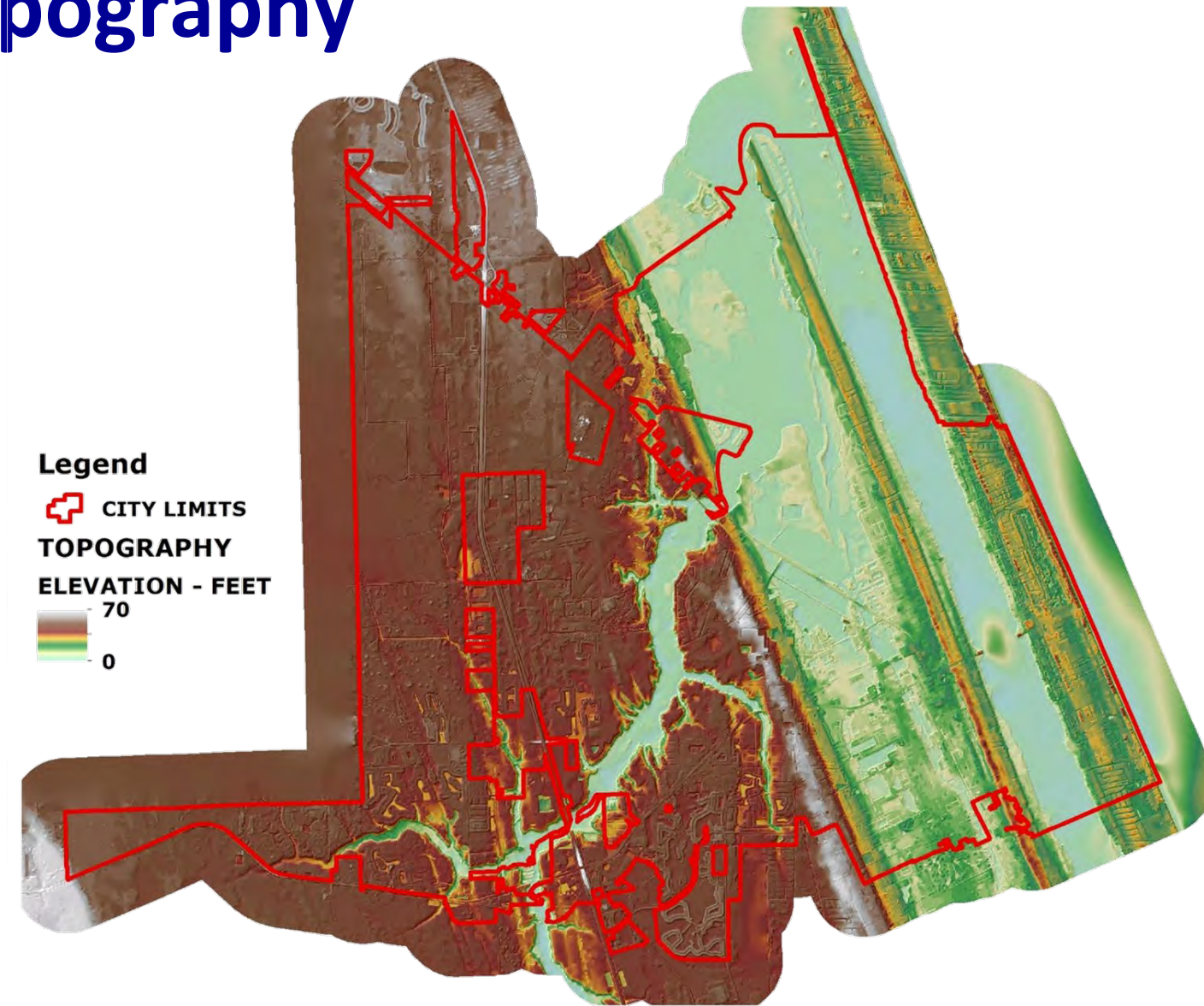
The Stormwater Master Plan Process

- Data Collection and Program Review
- Public Information Meeting
- Stormwater Management Review
 - Drainage
 - Water Quality
 - Future Resiliency
 - Regulatory
 - Operations and Maintenance
- Stormwater Improvements Alternatives Concepts
- Capital Improvement Program
- Stormwater Master Plan Report
- City Commission Workshops



City Characteristics - Topography

- Topography or land elevation, impacts the rate at which stormwater runoff flows and where it collects and is conveyed



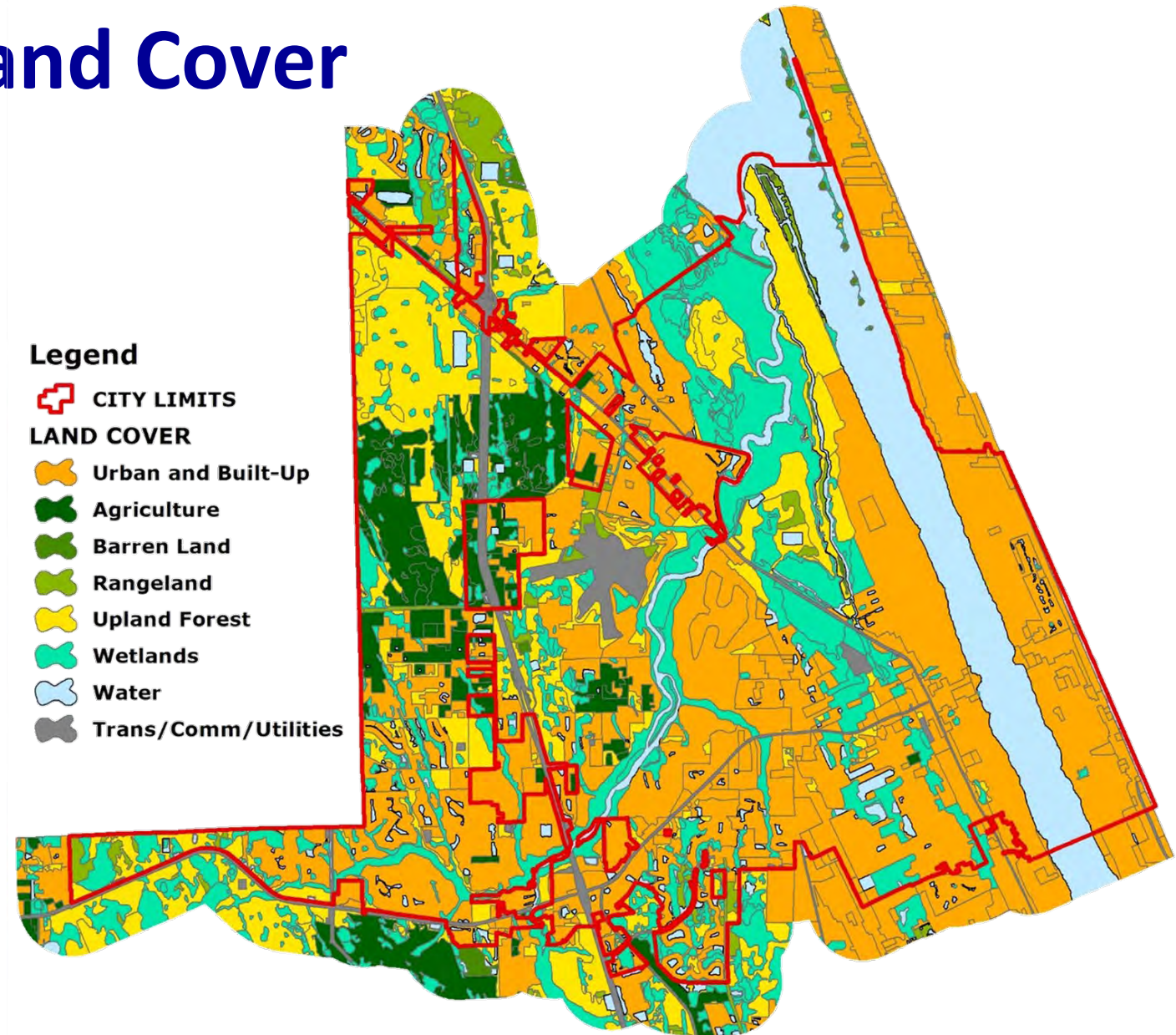
City Characteristics - Soils

- Soil types affect how much rainfall may be absorbed before runoff occurs.
- Higher water tables result in less soil storage and can increase runoff



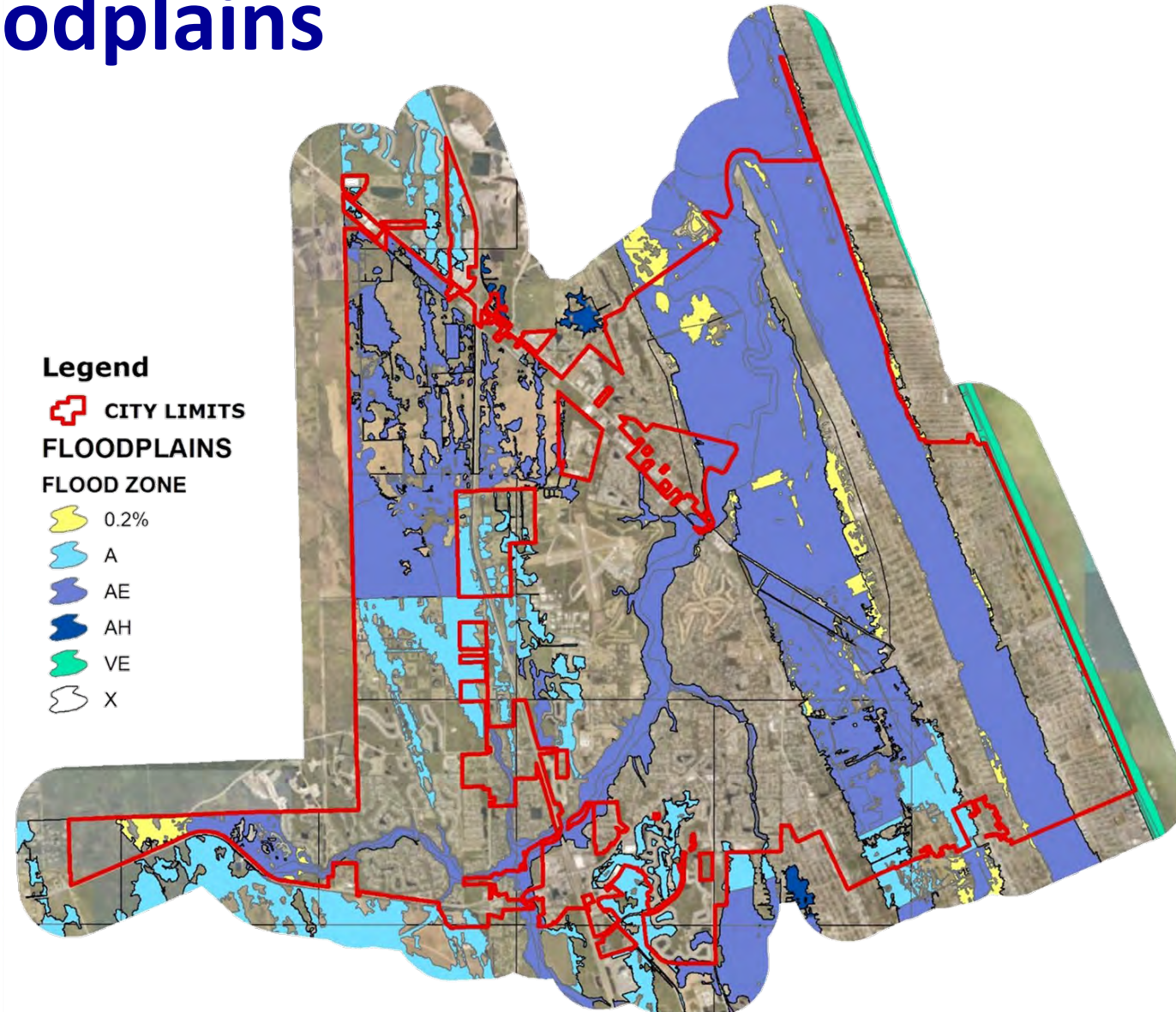
City Characteristics – Land Cover

- Land Cover type influences the volume of runoff produced based on amount of impervious areas (hard surfaces such as parking lots, roads, and buildings)
- Directly connected impervious areas drain right to the stormwater drainage systems



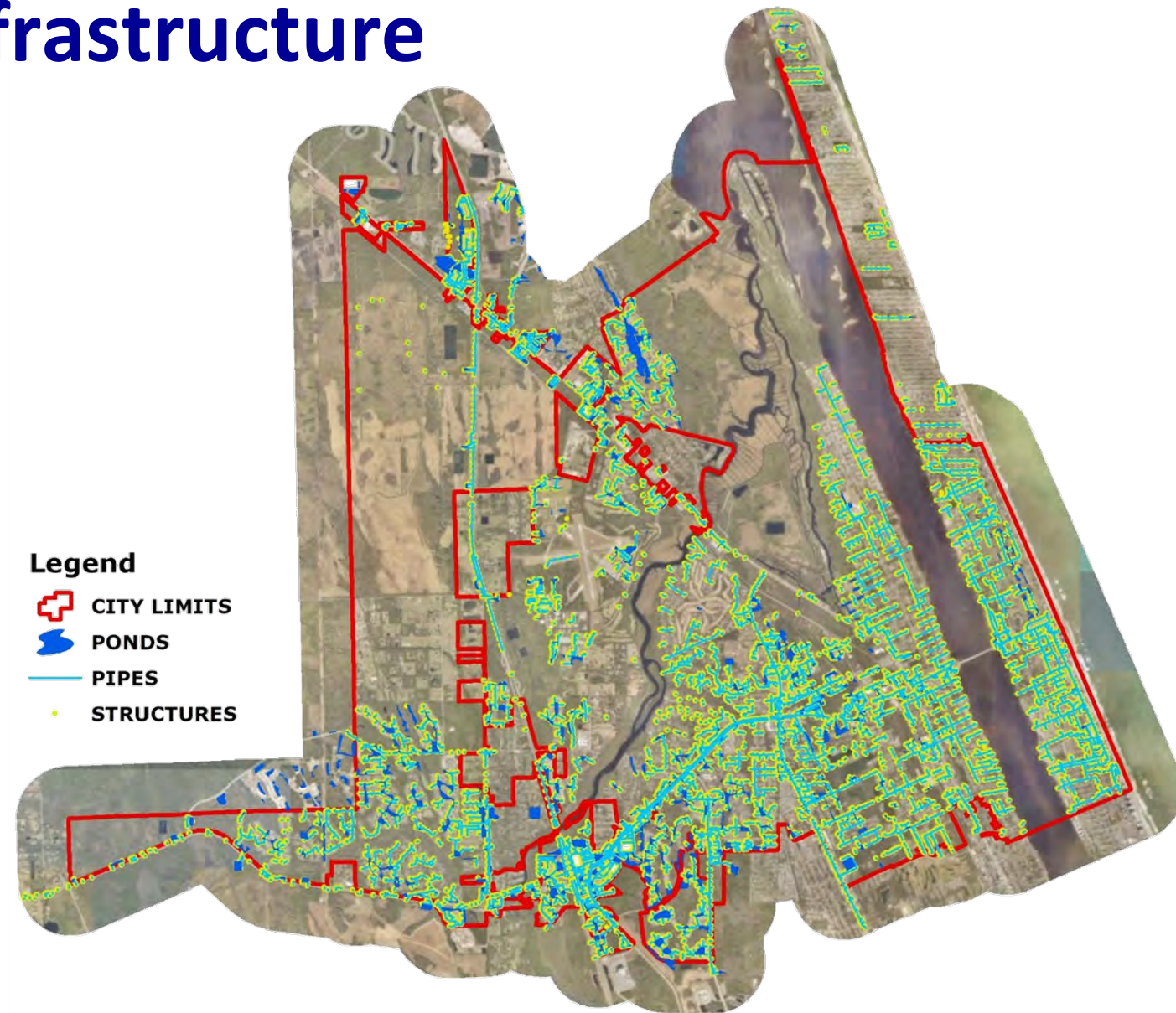
City Characteristics – Floodplains

- Regulatory floodplains are designated areas of potential flood risk established by FEMA
- Flood insurance is required for areas within special flood hazard zones



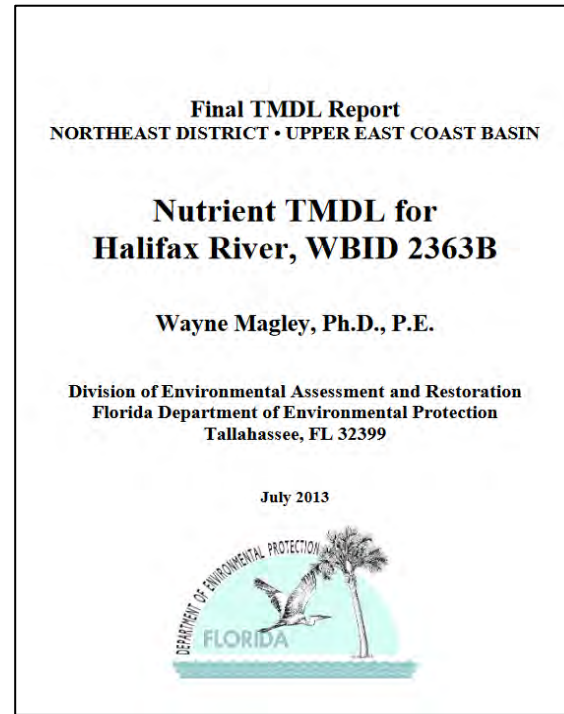
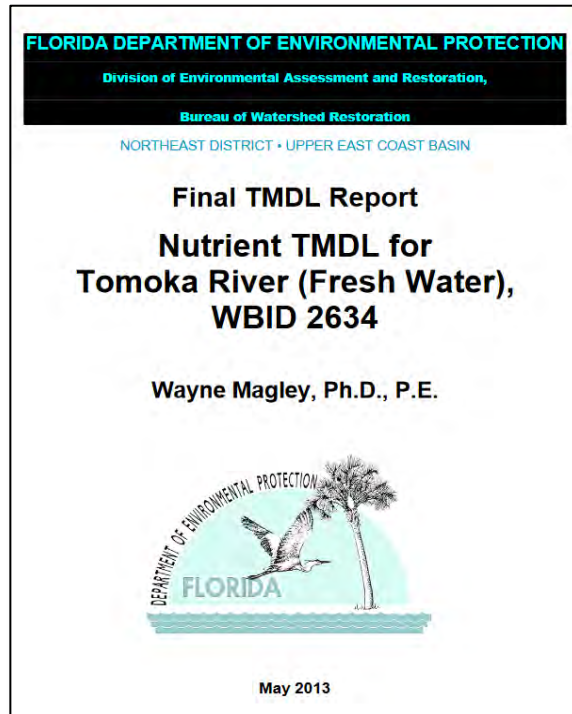
City Characteristics – Infrastructure

- Drainage Infrastructure manages stormwater runoff to reduce the risk of flooding and improve water quality
- These include:
 - Pipes and culverts
 - Drainage inlets and manholes
 - Swales, ditches, canals
 - Retention and detention ponds
 - Water quality structures
- Infrastructure within City right-of-way is operated and maintained by the City



City Characteristics – Nutrient Impaired Waters

- Total Maximum Daily Loads
- Target water quality improvement water bodies



Flooding Assessment

- Flooding Complaint Review
 - City Files / Interviews
 - Public Comments
- Flooding Problem Areas
 - Identified by Staff
 - Nuisance Flooding
 - Aging Infrastructure
- Update Previous Master Plan Projects
- Drainage System Assessment

Identified Flooding Problem Areas

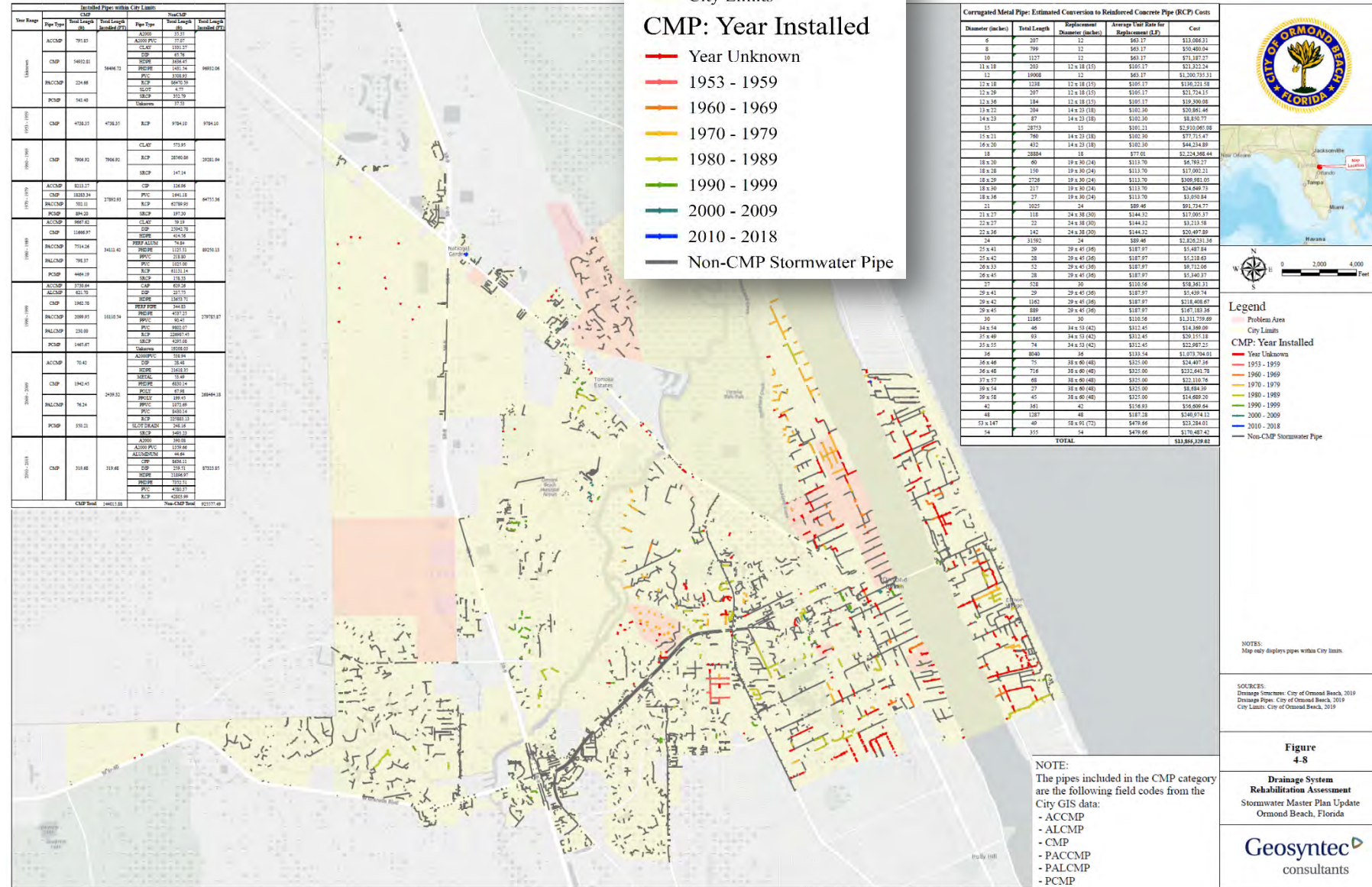
1. Sanchez to SR 40 from Ridgewood to River
2. Woodridge Drive Outfall
3. South Arbor Drive and Grove Street (including Capri Circle)
4. Durrance Acres
5. Cumberland
6. North Highway US1 Drainage
7. Ormond Lakes
8. Alanwood Drive and Beach Street
9. Trails - Dry Well / French Drains
10. Orchard Business Park
11. Railroad Crossing - East Fork of Thompson Creek
12. Railroad Crossing - St. Andrews Discharge
13. Orchard Street and Jeanette



Drainage System Rehabilitation Assessment

- Continue City emphasis on replacing CMP storm sewer pipes throughout the City
- Based on an assessment using City GIS data, this is estimated as upwards of 144,000 feet of pipe
- Corresponds to approximately \$13,855,000 based on current GIS data

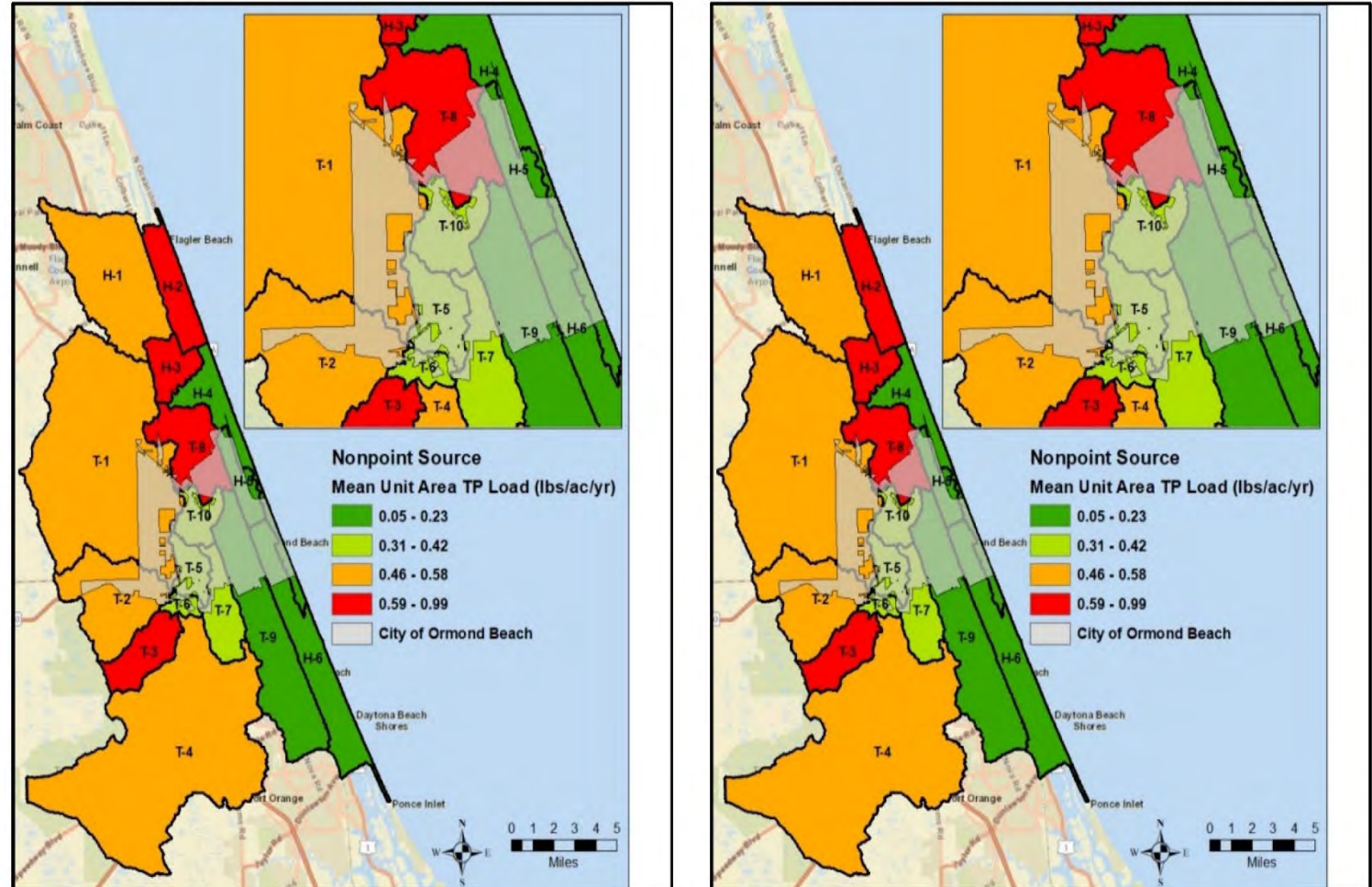
Installed Pipes within City Limits					
Year Range	CMP	Total Length (ft)	Year Range	CMP	Total Length (ft)
Unknown	ACCP	793.81	1951 - 1959	ALCP	173.37
	CMP	14032.81		ALCP	173.37
	PALCP	254.88		ALCP	173.37
	PCSP	141.40		ALCP	173.37
	PCSP	141.40		ALCP	173.37
1960 - 1969	CMP	4738.37	1970 - 1979	ALCP	173.37
	CMP	4738.37		ALCP	173.37
	CMP	4738.37		ALCP	173.37
	CMP	4738.37		ALCP	173.37
	CMP	4738.37		ALCP	173.37
1980 - 1989	CMP	7904.82	1990 - 1999	ALCP	173.37
	CMP	7904.82		ALCP	173.37
	CMP	7904.82		ALCP	173.37
	CMP	7904.82		ALCP	173.37
	CMP	7904.82		ALCP	173.37
1990 - 1999	CMP	11010.74	2000 - 2009	ALCP	173.37
	CMP	11010.74		ALCP	173.37
	CMP	11010.74		ALCP	173.37
	CMP	11010.74		ALCP	173.37
	CMP	11010.74		ALCP	173.37
2010 - 2018	CMP	11010.74	2019 - 2028	ALCP	173.37
	CMP	11010.74		ALCP	173.37
	CMP	11010.74		ALCP	173.37
	CMP	11010.74		ALCP	173.37
	CMP	11010.74		ALCP	173.37



Water Quality Assessment

- Tomoka River North Basins BMP Study - Basins T-1, T-8, and T-10 (WQ-1)
- Tomoka River South Basins BMP Study - Basins T-2, T-5, T-6, T-7, T-9 (WQ-2)
- Halifax River BMP Study - Basins H-4, H-5, and H-6 (WQ-3)
- Maintenance BMP Optimization Study (WQ-4)

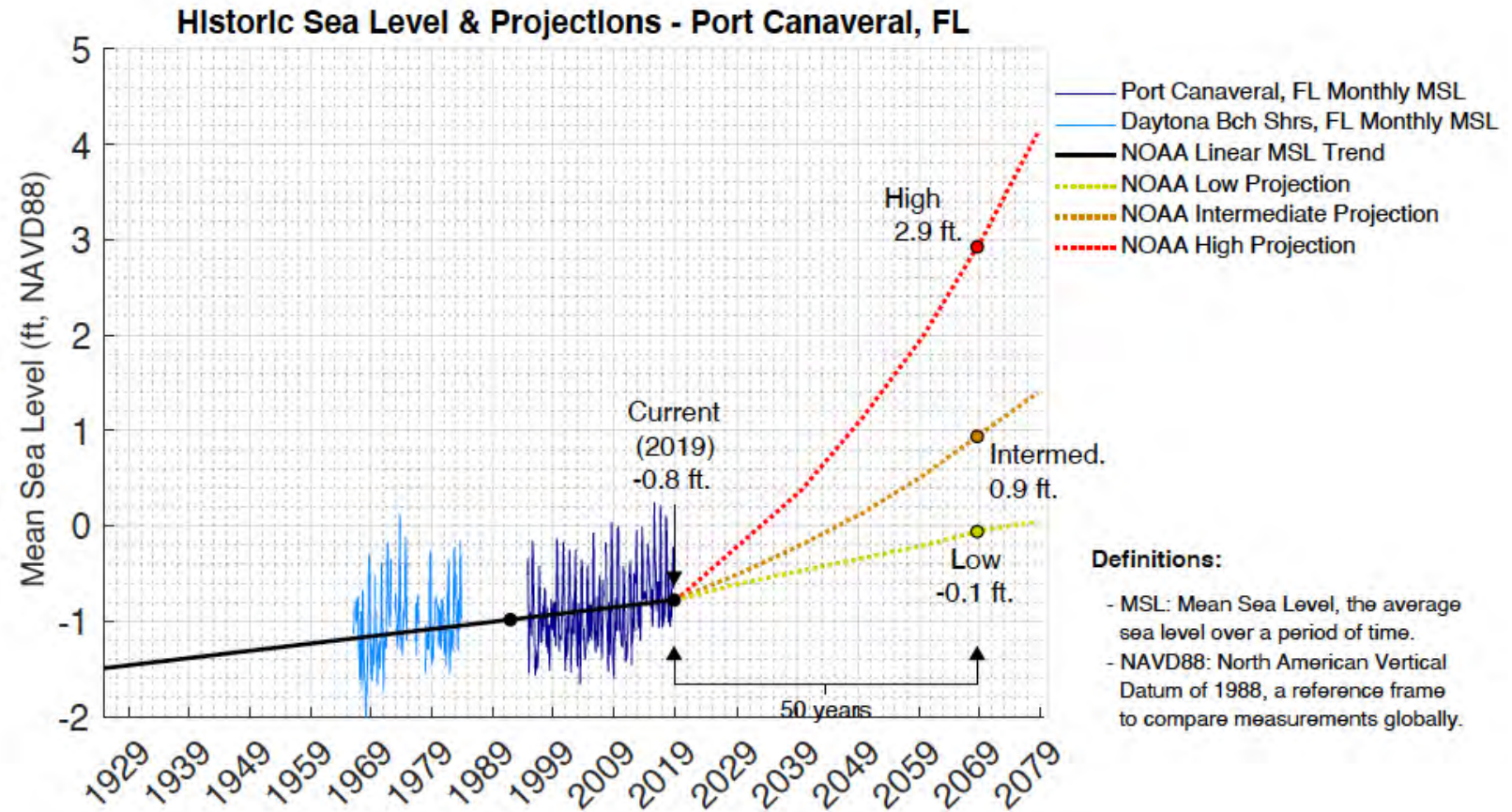
Figure 9-2 - Basin specific mean annual TP loads (left) and mean annual unit area TP loads (right) predicted by the LSPC model in the Halifax and Tomoka River watersheds



Future Resiliency Assessment

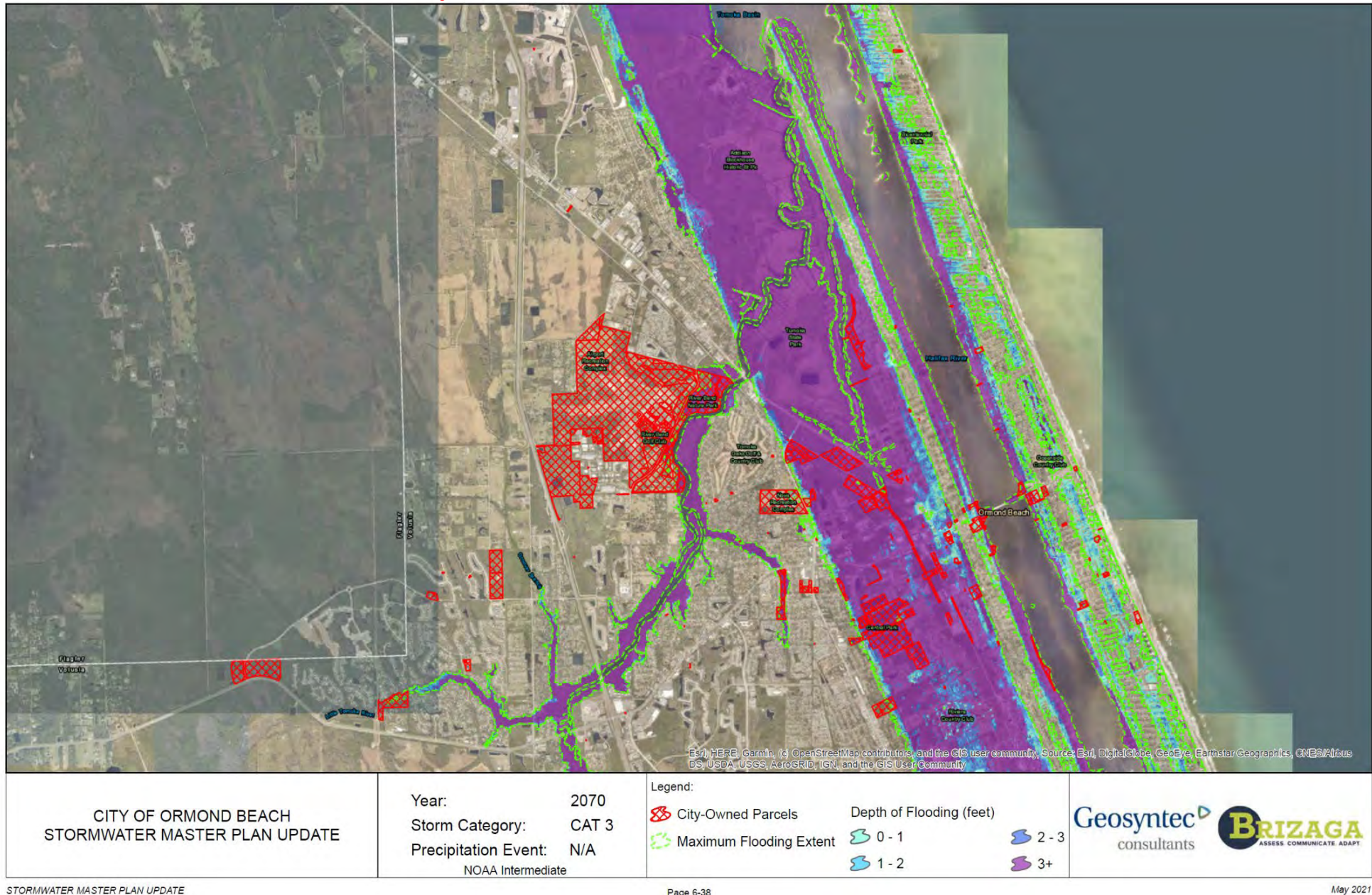
- In the process of determining appropriate sea level rise projection to use for Stormwater Master Plan.
- Effects tidal influence and storm surge
- Changes “tailwater” conditions
- Impacts to vulnerable infrastructure and City facilities

Sea Level Rise Considerations



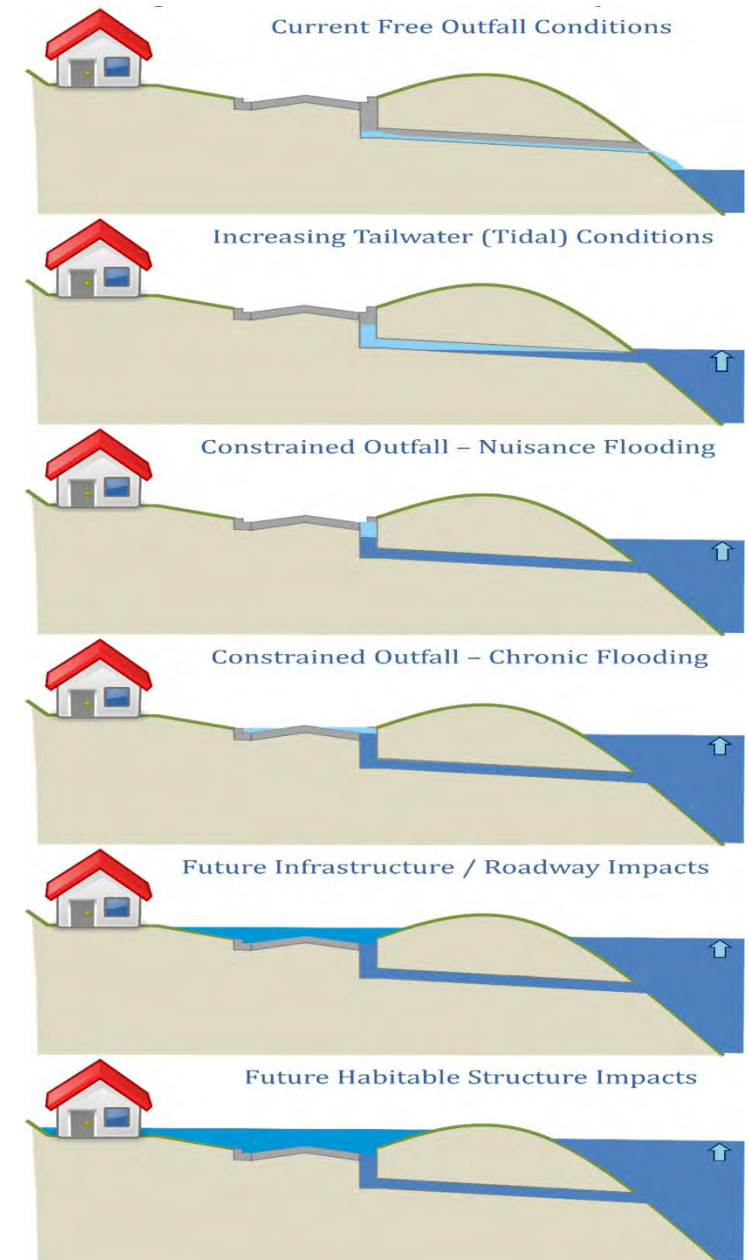
Future Resiliency Assessment

- Potential City Facility Impacts Based on Various Extreme Storm Event and Sea Level Rise Scenario



Future Resiliency Assessment

- Key Resilience Recommendations
 - Adopt sea level rise curves for planning purposes and establish a timeline for updating the curve and planning horizon
 - Examine opportunities to improve public engagement through technology, citizen science, and flooding and maintenance reports
 - Review ordinances and land use code to find specific areas where resilience can be implemented in City regulations
 - **Perform a full Vulnerability Assessment of Critical Assets** - builds off the screening level analysis preformed as part of this Stormwater Mater Plan Update and the 2017 Resilient Volusia County Report
 - **Perform a Stormwater Infrastructure and BMP Future Impact Study** and continue the Low Impact Develop (LID) program with specific considerations for future flooding, sea level rise, and changes in precipitation patterns



Impacts of Future Sea Level Rise on Drainage Infrastructure

Regulatory Review & Recommendations

Stormwater Treatment LOS

- To meet the City's stormwater pollutant load reductions in the Halifax and Tomoka River TMDLs, it is crucial that all future redevelopment and development provide advanced stormwater treatment – i.e., meet the “Net Improvement” performance standard.
- Use site appropriate BMPs, especially LID BMPs integrated into a BMP treatment train, to meet the following levels of treatment, as applicable to the development project and its location:
 1. Projects that discharge directly or indirectly to surface waters - Reduce the post-development annual average stormwater total nitrogen load by at least 70% and the annual average stormwater total phosphorus load by at least 80%.
 2. Projects that directly discharge to Outstanding Florida Waters – Reduce the post-development annual average total nitrogen and total phosphorus load by at least 95%.
 3. Projects within watersheds of Verified Impaired Water Bodies or Water Bodies with Adopted Nutrient Total Maximum Daily Loads (TMDLs) – Either meet the performance standard in 1 or 2 above or reduce the post-development average annual nitrogen and phosphorus load to at least 10 percent less than the pre-development average annual nitrogen and phosphorus load, whichever provides the highest amount of average annual nutrient load reduction (Net Improvement Performance Standard).

Regulatory Review & Recommendations

- Revisions to address incorrect references to laws, rules, or programs: to update terminology and definitions; and to update other information that is referenced
- Adoption of the Florida-Friendly Landscape Guidelines For Model Ordinance Language For Protection Of Water Quality And Quantity
- Revisions to consolidate the stormwater requirements into a single City of Ormond Beach Stormwater Manual
- Revisions to ensure effective implementation and reporting of the City's NPDES MS4 permit.
- Revisions to promote and provide incentives to use LID approaches and BMPs during development and redevelopment
- Additional incentives are needed in the LDC to promote LID BMPs

Maintenance Review & Recommendations

- The City needs to develop and implement a comprehensive Operation and Maintenance Plan
- The City should adopt the recommended Stormwater BMP Inspection and Maintenance Activities and Schedule
- The City needs to expand and improve the stormwater and stormwater pollution prevention educational materials on the City's web site
- The City's inspection and maintenance of its storm sewers needs to be done preventively instead of reactively
- Develop and implement a policy on public drainage easements to ensure the integrity of the City's stormwater outfalls within privately-owned seawalls
- The Pollution Prevention/Good Housekeeping Management Measure in the City's new NPDES MS4 permit need to be implemented cooperatively by each of the City's departments involved in the management of the City's stormwater system
- An analysis needs to be done to determine adequate levels of staffing to ensure the City's stormwater assets are operated and maintained properly

Stormwater Master Plan Recommendations

- Capital Improvement Projects
 - Flood control
 - Water quality improvements
 - Infrastructure Improvements
- Future Resiliency
- Program Operations and Maintenance
- Regulatory Compliance
- 10 Year Planning Horizon

Addressing stormwater management objectives at Ormond Beach Laurel Creek Basin project background

550-acre drainage basin

5 existing lakes (low lying area)

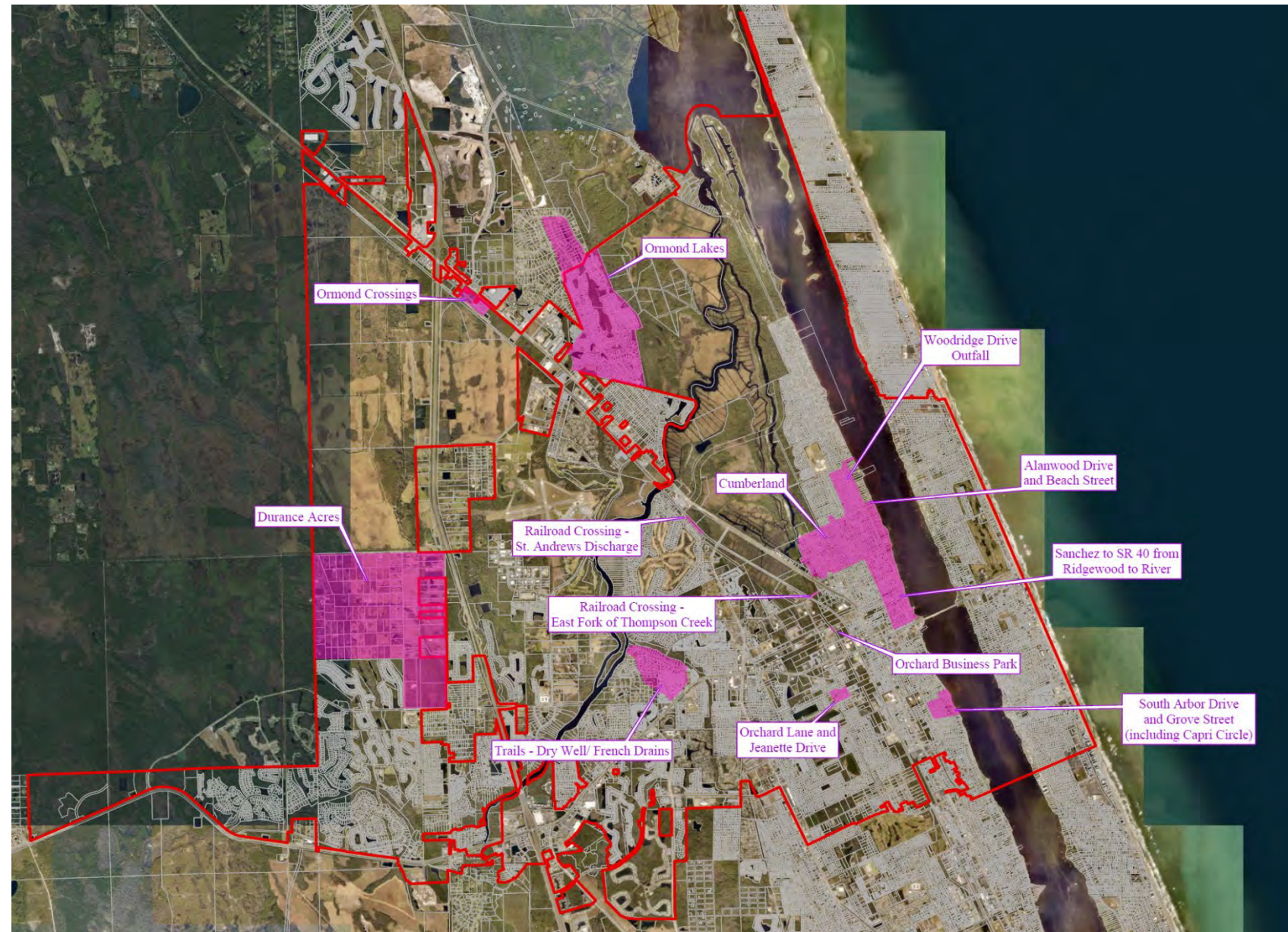
Single family developments

Existing pumps at Lake 1



Flooding CIPs

1. Sanchez to SR 40 from Ridgewood to River
2. Woodridge Drive Outfall
3. South Arbor Drive and Grove Street (including Capri Circle)
4. Durrance Acres
5. Cumberland
6. North Highway US1 Drainage
7. Ormond Lakes
8. Alanwood Drive and Beach Street
9. Trails - Dry Well / French Drains
10. Orchard Business Park
11. Railroad Crossing - East Fork of Thompson Creek
12. Railroad Crossing - St. Andrews Discharge
13. Orchard Street and Jeanette



Sanchez to SR40 from Ridgewood to River

Recommendations

- Detailed Flood Study
- Evaluate Capacity
- CCTV Inspection
- System Upgrades and Identifying New Outfalls
- LID Opportunities
- \$3,181,950
(study, design, construction)



Woodridge Drive Outfall

Recommendations

- Infrastructure Upgrades
- Evaluate Capacity and Additional Storage
- System Upgrades and Identifying New Outfall
- \$1,247,945
(study, design, construction)



South Arbor Drive & Grove Street

Recommendations

- Detailed Flood Study
- Evaluate Capacity
- System Upgrades and Upsize Outfalls
- \$553,920
(study, design, construction)



Figure 10-3

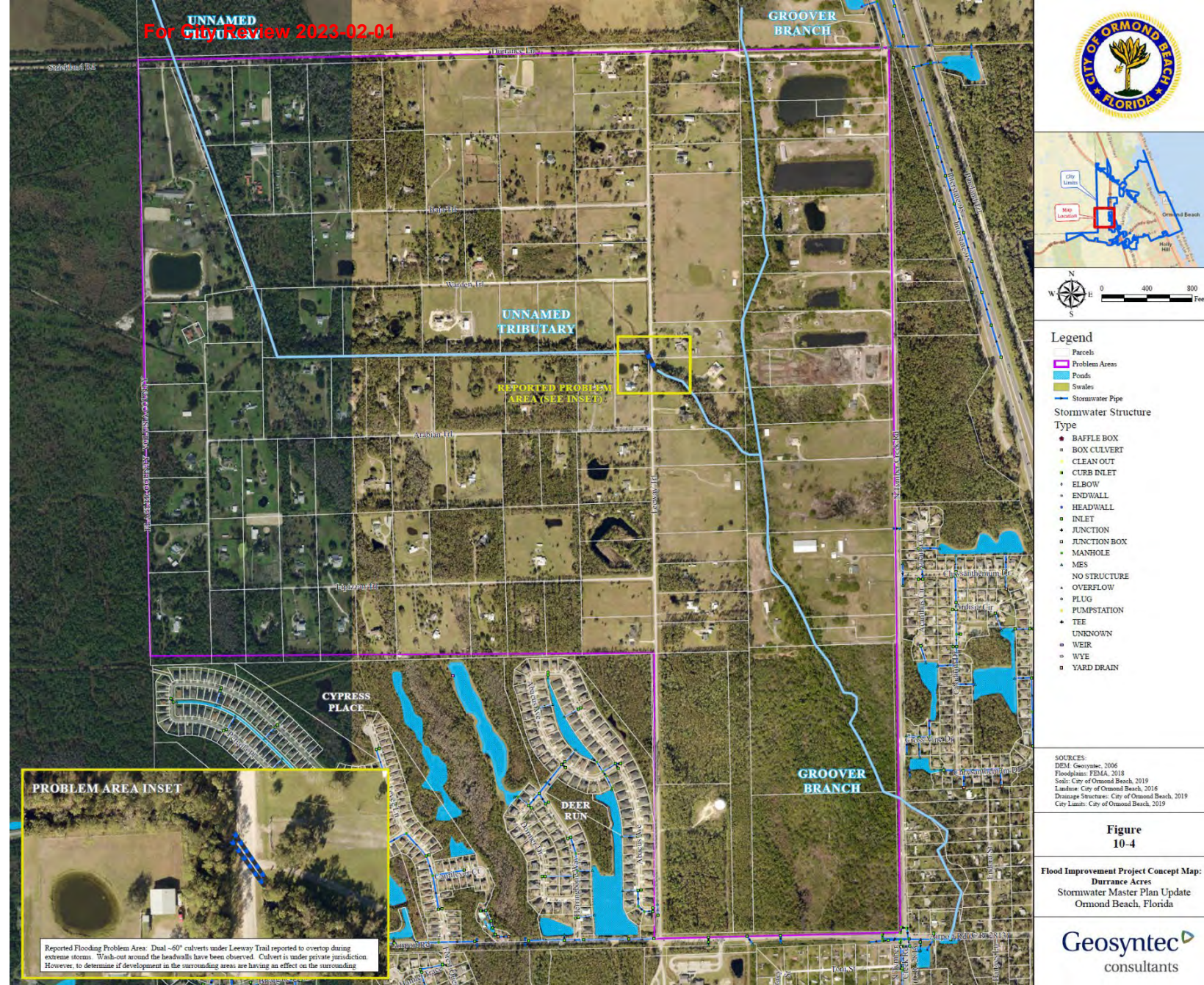
Flood Improvement Project Concept Map:
South Arbor & Grove
Stormwater Master Plan Update
Ormond Beach, Florida

Geosyntec
consultants

Durrance Acres

Recommendations

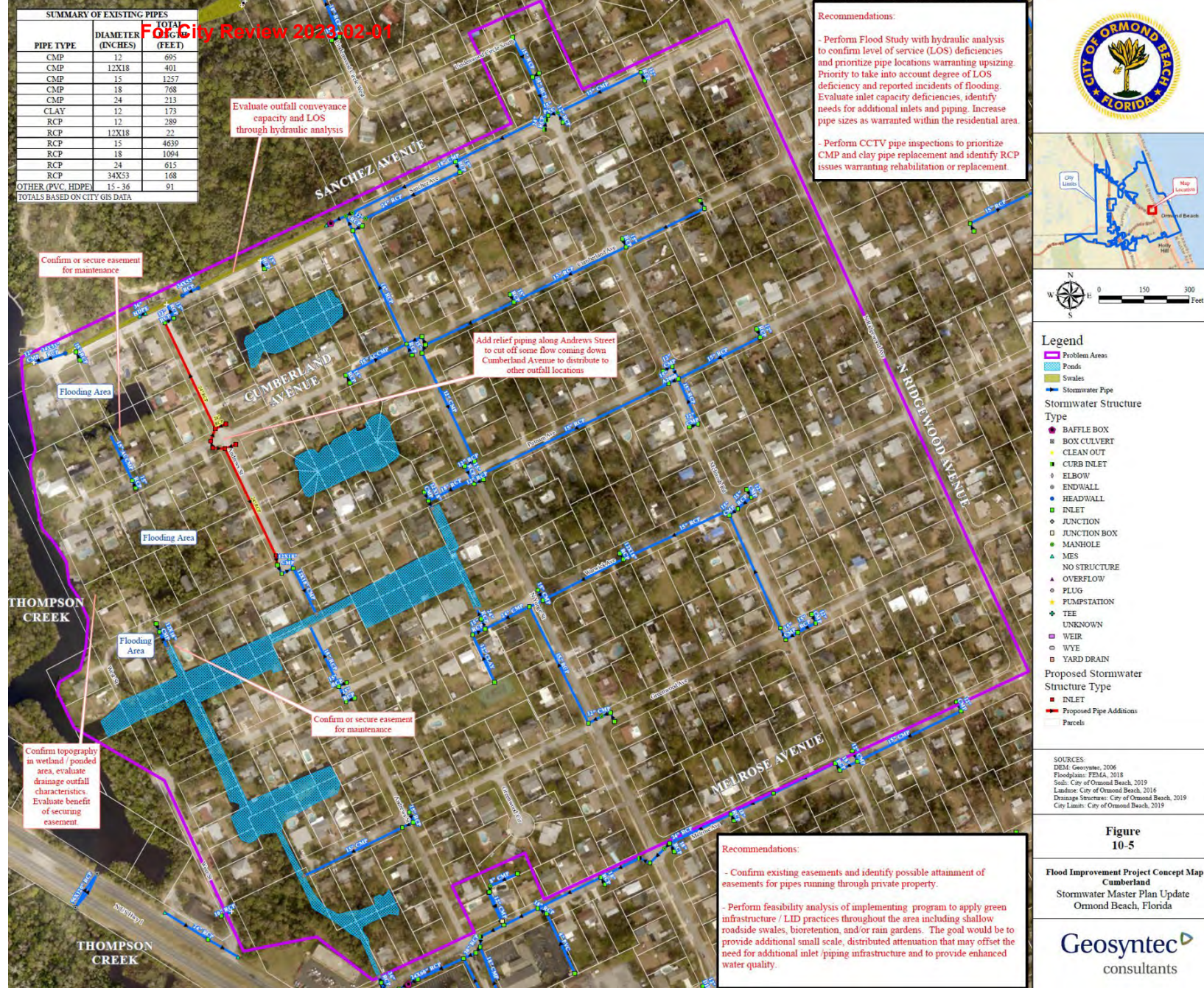
- Detailed Flood Study
- Evaluate Alternatives for Improvement
- Determine Right of Way Needs
- \$100,000 (Study Only)



Cumberland

Recommendations

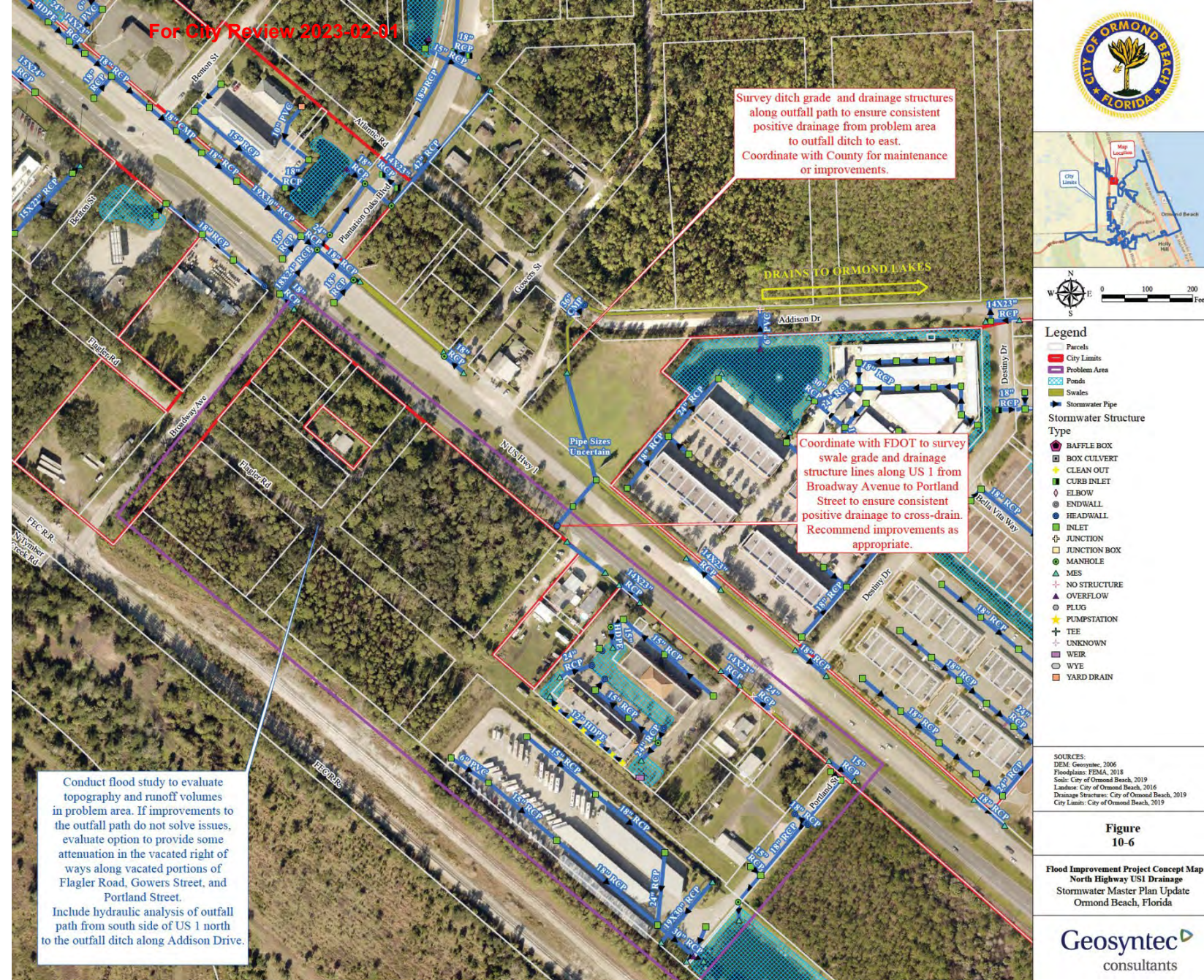
- Detailed Flood Study
- Evaluate Capacity
- System Upgrades and Identifying New Outfalls
- Maintenance Easements
- LID Opportunities
- \$1,433,640
(study, design, construction)



North Highway US1 Drainage

Recommendations

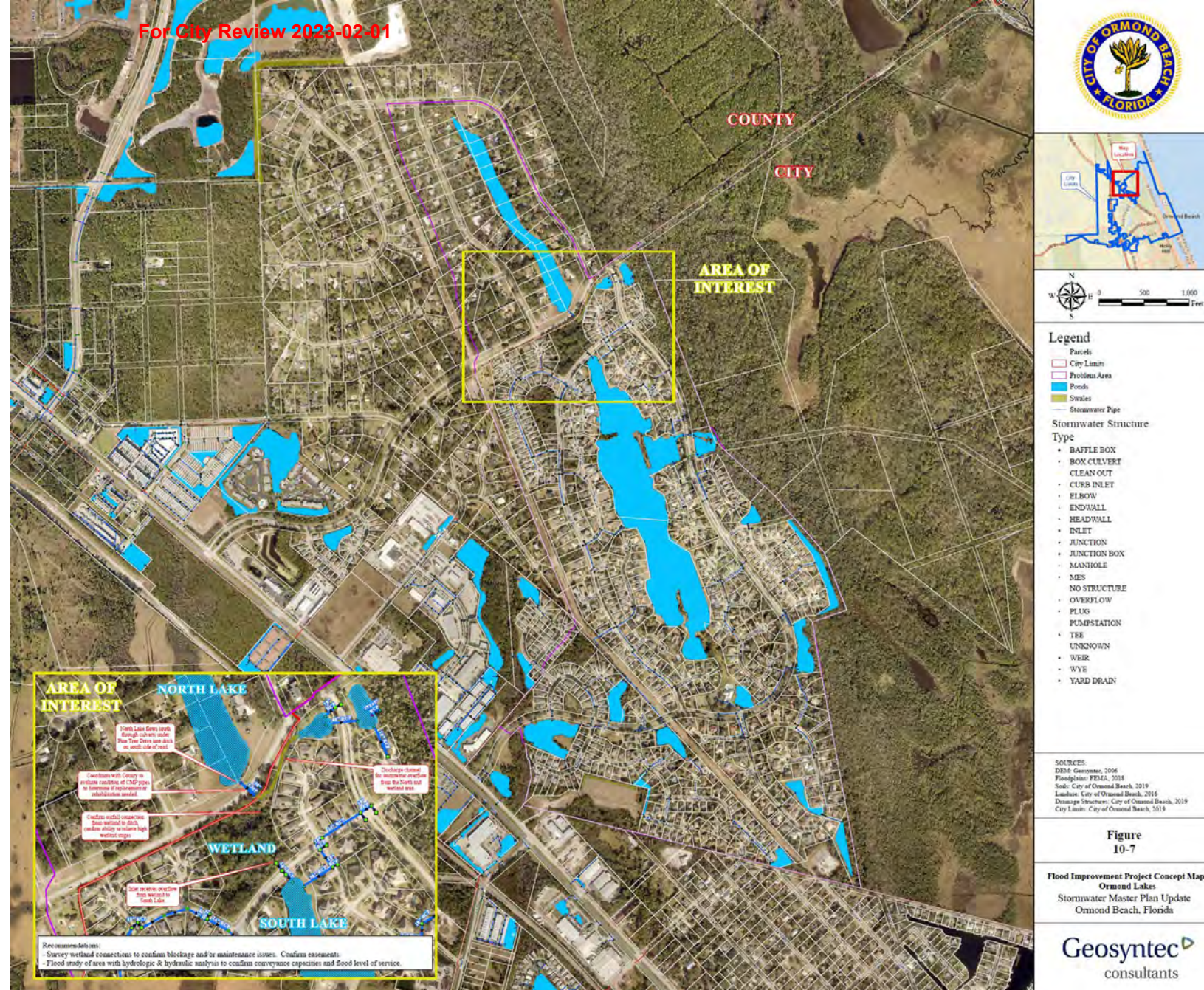
- Detailed Flood Study
- Evaluate Alternatives for Improvement
- Determine Right of Way Needs
- \$75,000 (Study Only)



Ormond Lakes

Recommendations

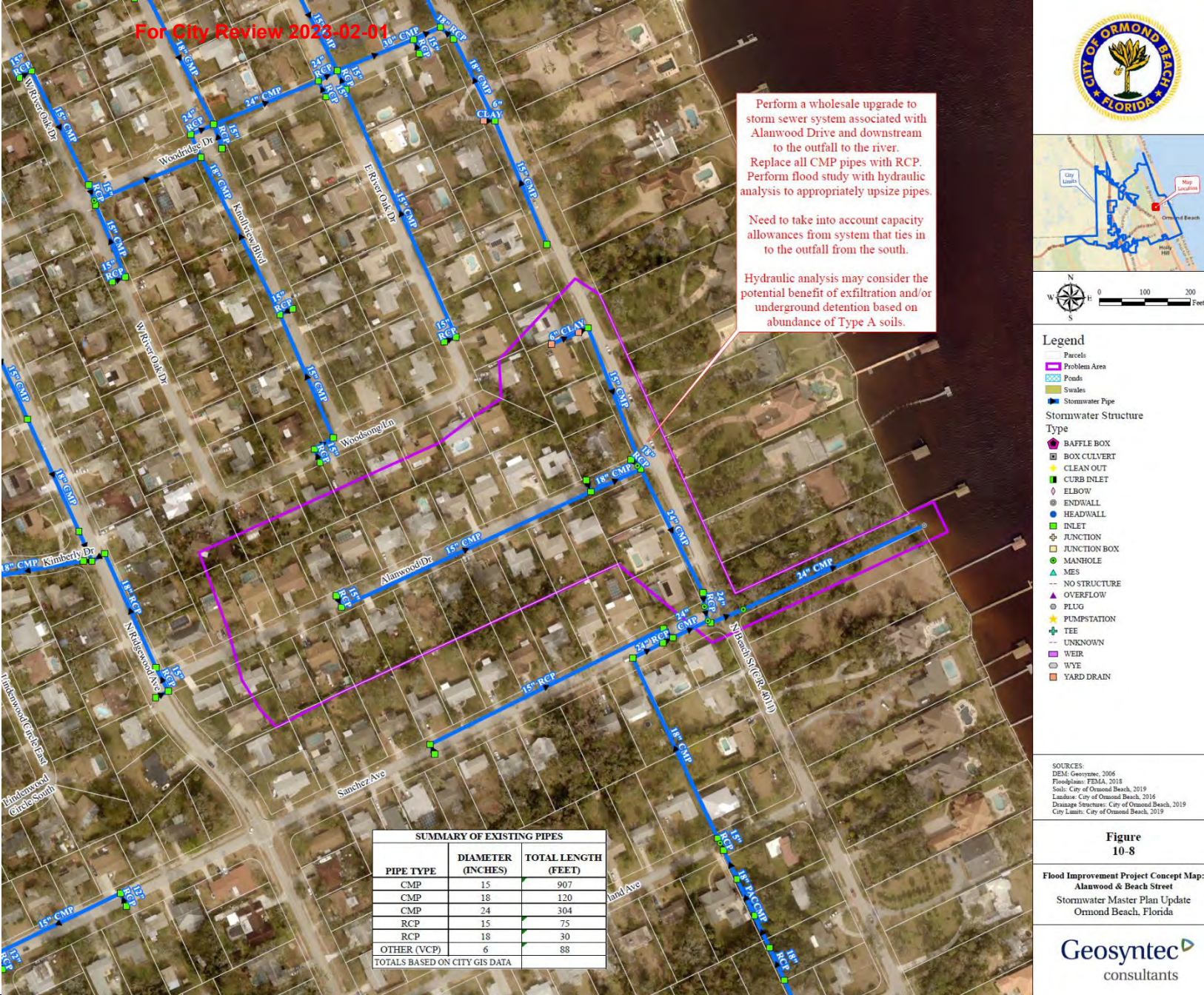
- Detailed Flood Study
- Evaluate Alternatives for Improvement
- Determine Right of Way Needs
- \$75,000 (Study only)



Alanwood Drive & Beach Street

Recommendations

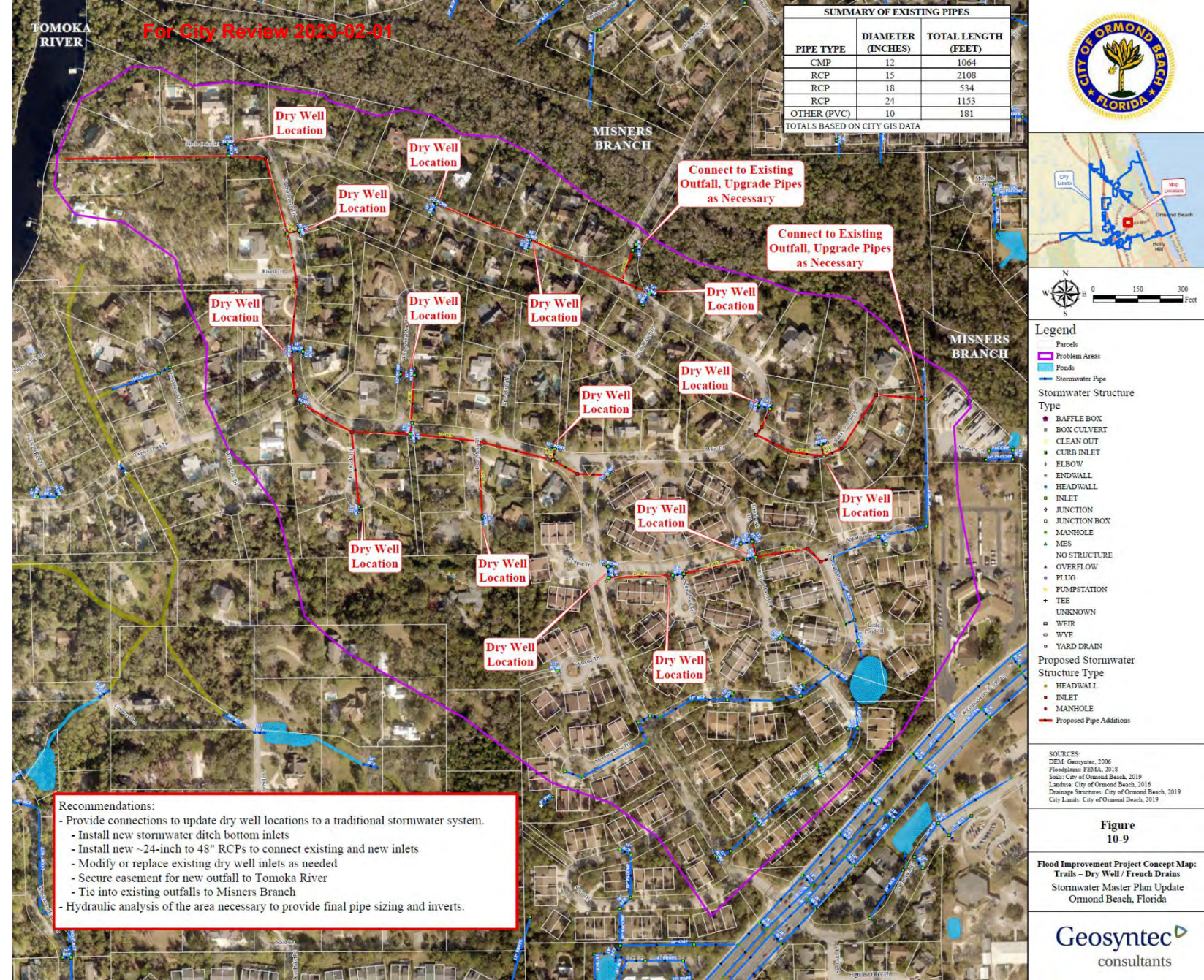
- Infrastructure Upgrades
- Evaluate Capacity System Upgrades
- \$679,000 (study, design, construction)



Trails – Dry Well / French Drains

Recommendations

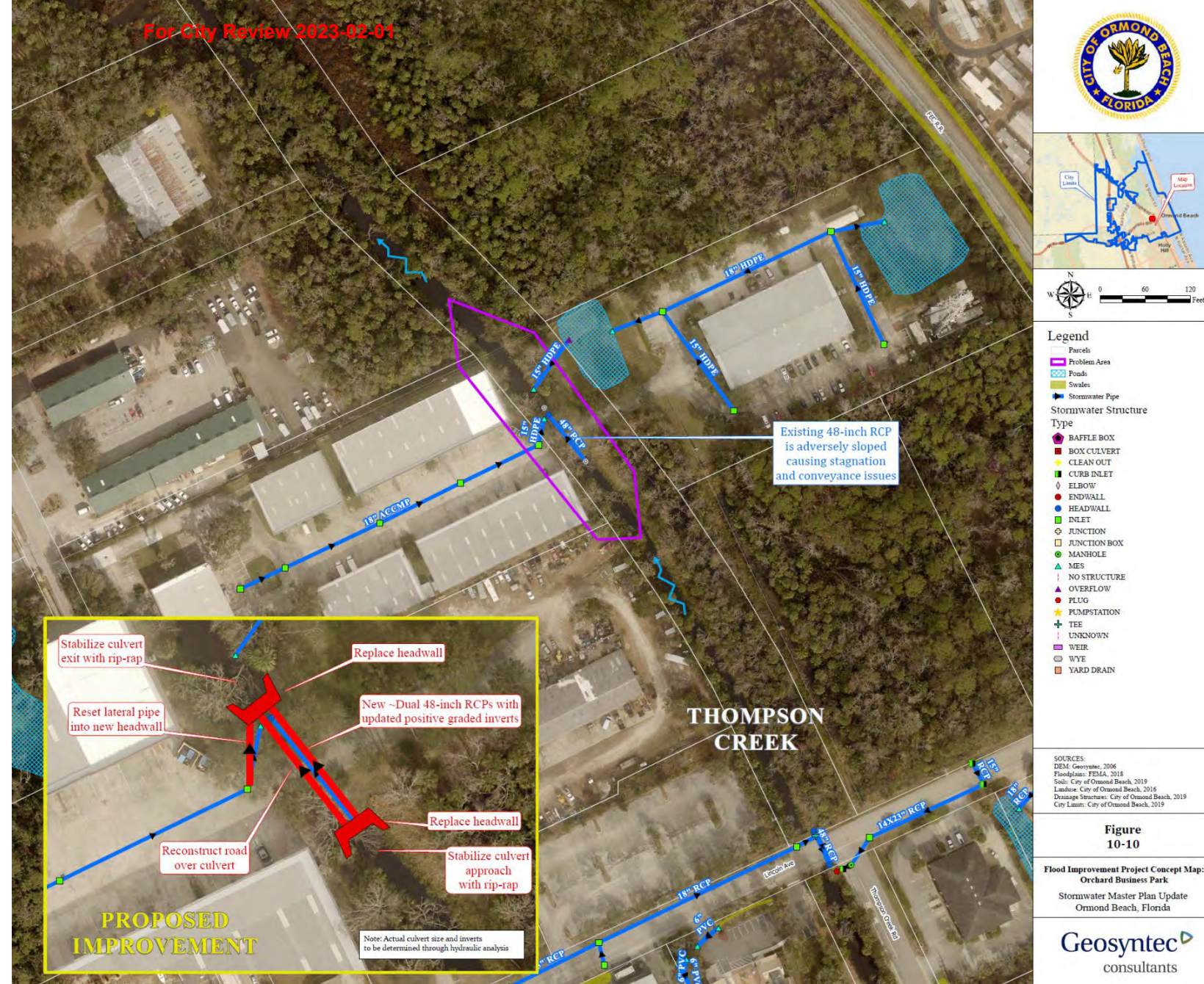
- Infrastructure Upgrades
- Evaluate Capacity
- \$1,583,910
(study, design, construction)



Orchard Business Park

Recommendations

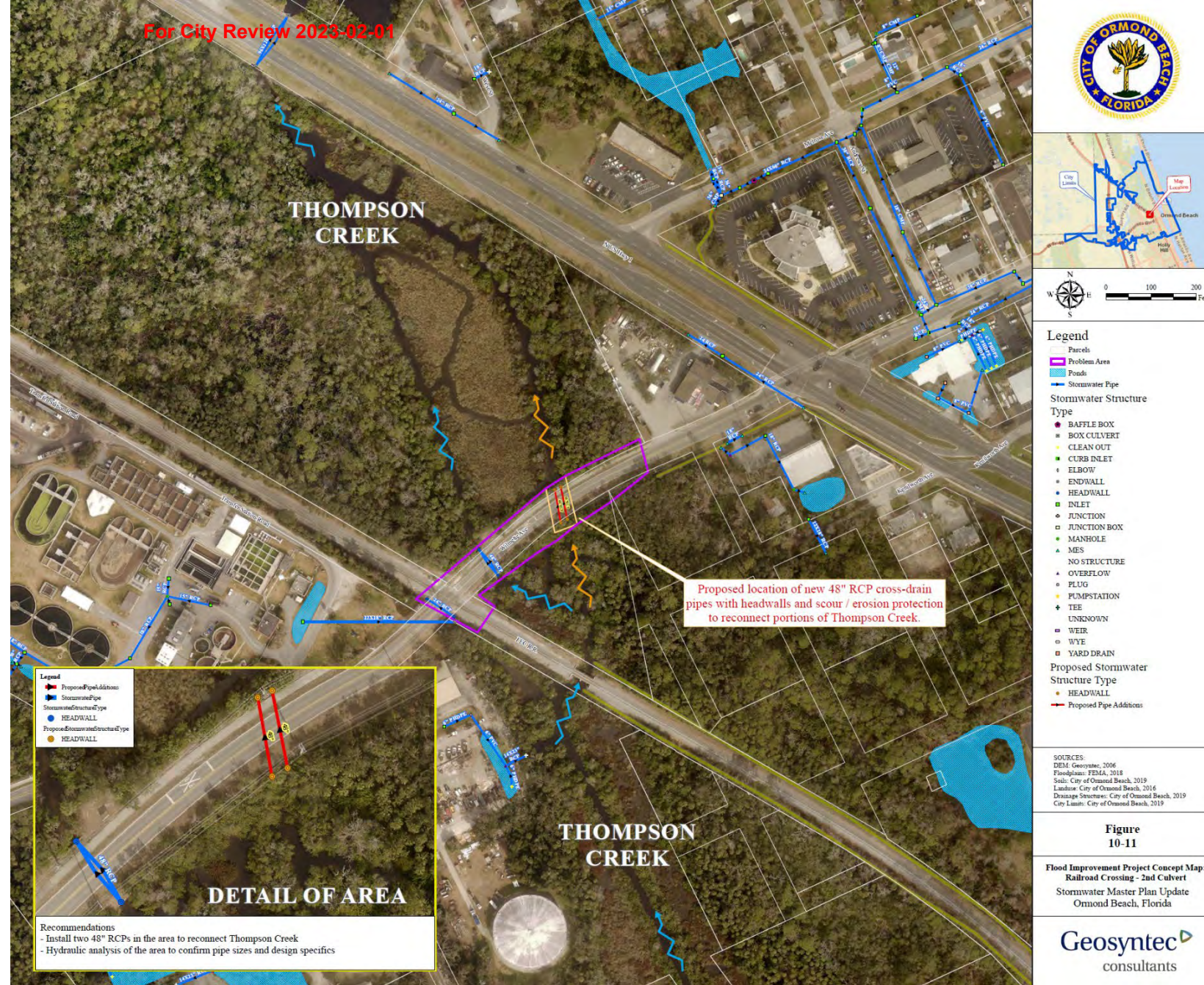
- Flood Study
- Evaluate Capacity
- Infrastructure Upgrades
- \$204,690
(study, design, construction)



Railroad Crossing – East Fork of Thompson Creek

Recommendations

- Flood Study
- Evaluate Capacity
- Infrastructure Upgrades
- \$355,250
(study, design, construction)



Railroad Crossing - St. Andrews Discharge

Recommendations

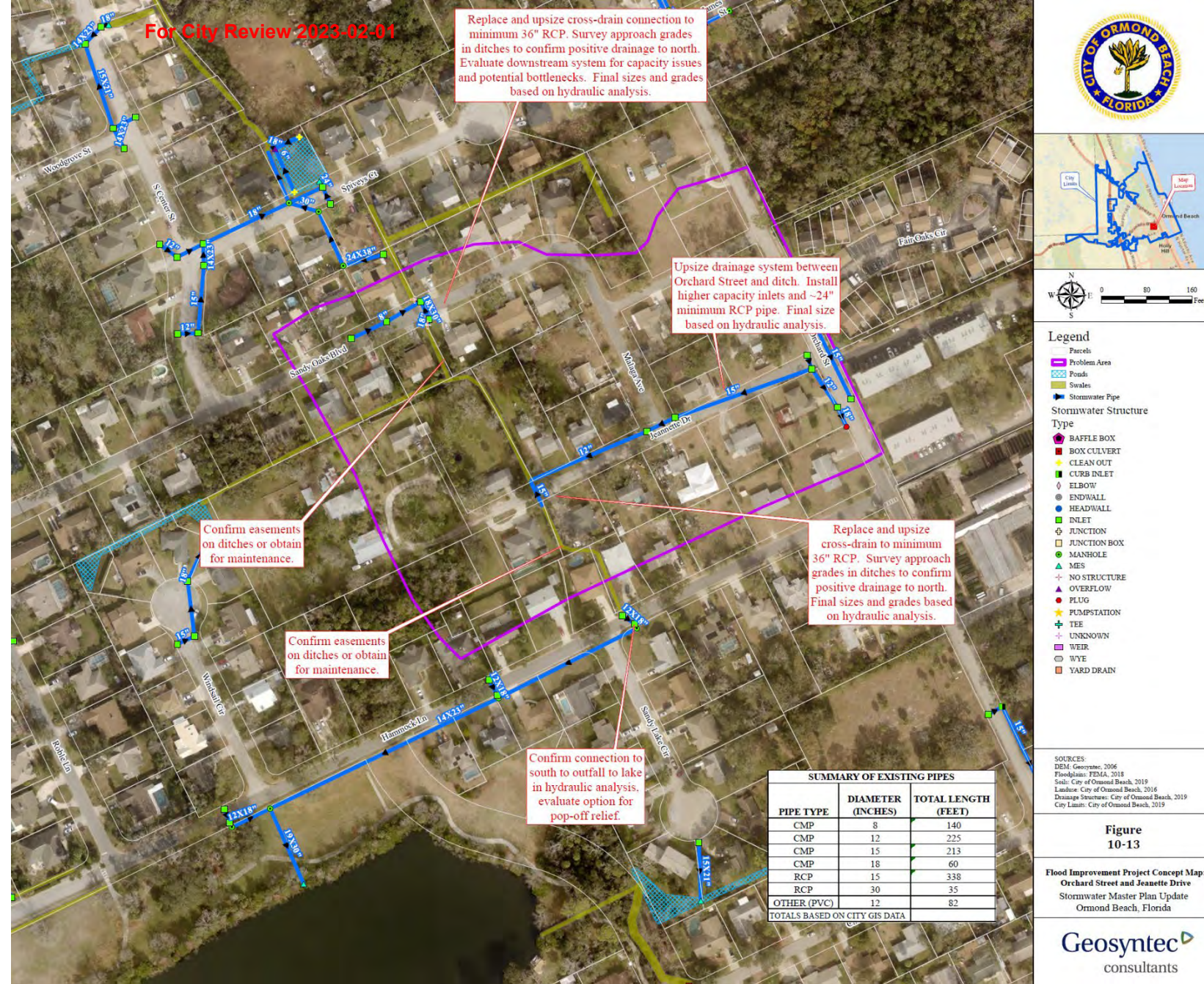
- Infrastructure Upgrades
- Evaluate Capacity
- \$96,475
(study, design, construction)



Orchard Street and Jeanette Drive

Recommendations

- Evaluate Capacity
- System Upgrades
- Maintenance Easements
- \$558,340
(study, design, construction)



Proposed 10 Year Stormwater CIP

- **~\$19,600,000 Project Needs Identified**
 - Flooding Projects: ~\$10,150,000
 - Water Quality Projects: ~\$4,150,000
 - Future Climate Impact Projects: ~\$300,000
 - Infrastructure Assessment Projects: \$4,000,000
 - Design & Construction Contingency: ~\$1,000,000

Table 11-1 – Proposed 10 Year CIP Recommendations

Project Name	CIP ID	CIP Cost Projection	CIP YEAR*									
			YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6	YEAR 7	YEAR 8	YEAR 9	YEAR 10
FLOODING PROJECTS**												
Cumberland	FL-05	\$1,433,640	\$195,000	\$600,000	\$638,640							
Woodridge Drive Outfall	FL-02	\$1,247,945		\$117,500	\$500,000	\$630,445						
Sanchez to SR 40 from Ridgewood to River	FL-01	\$3,181,950				\$450,000	\$1,200,000	\$800,000	\$731,950			
South Arbor Drive and Grove Street (including Capri Circle)	FL-03	\$553,920					\$150,000	\$403,920				
Alanwood Drive and Beach Street	FL-08	\$679,000							\$130,000	\$250,000	\$299,000	
Orchard Street and Jeanette Drive	FL-13	\$558,340							\$205,000	\$353,340		
Ormond Lakes	FL-07	\$75,000		\$75,000								
Durrance Acres	FL-04	\$100,000		\$100,000								
North Highway US1 Drainage	FL-06	\$75,000		\$75,000								
Trails - Dry Well / French Drains	FL-09	\$1,583,910							\$135,000	\$400,000	\$700,000	348910
Orchard Business Park	FL-10	\$204,690									\$75,000	\$129,690
Railroad Crossing - East Fork of Thompson Creek	FL-11	\$355,250									\$110,000	\$245,250
Railroad Crossing - St. Andrews Discharge	FL-12	\$96,475									\$40,000	\$56,475
WATER QUALITY PROJECTS												
Tomoka River North BMP Study***	WQ-1	\$250,000	\$250,000									
BMP Project	TRN-1	\$275,000		\$275,000								
BMP Project	TRN-2	\$275,000				\$275,000						
BMP Project	TRN-3	\$275,000						\$275,000				
BMP Project	TRN-4	\$275,000								\$275,000		
Tomoka River South BMP Study***	WQ-2	\$250,000		\$250,000								
BMP Project	TRS-1	\$275,000			\$275,000							
BMP Project	TRS-2	\$275,000					\$275,000					
BMP Project	TRS-3	\$275,000							\$275,000			
BMP Project	TRS-4	\$275,000									\$275,000	
Halifax River BMP Study***	WQ-3	\$200,000			\$200,000							
BMP Project	HR-1	\$275,000				\$275,000						
BMP Project	HR-2	\$275,000						\$275,000				
BMP Project	HR-3	\$275,000								\$275,000		
BMP Project	HR-4	\$275,000										\$275,000
The Maintenance BMP Optimization Study	WQ-4	\$150,000	\$150,000									
FUTURE CLIMATE IMPACT PROJECTS												
Future Climate Vulnerability Critical Asset Assessment (FCI-1)	FCI-1	\$200,000	\$200,000									
Stormwater Infrastructure and BMP Future Impact Study (FCI-2)	FCI-2	\$100,000	\$100,000									
INFRASTRUCTURE ASSESSMENT PROJECTS												
CMP Rehabilitation****	CMP-01	\$4,000,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000
SUPPLEMENTAL PROJECT IMPLEMENTATION												
Design and Construction Contingency Based on Study Recommendations									\$200,000	\$100,000	\$200,000	\$500,000
TOTALS:		\$19,595,120	\$1,295,000	\$1,892,500	\$2,013,640	\$2,030,445	\$2,025,000	\$2,153,920	\$2,076,950	\$2,053,340	\$2,099,000	\$1,955,325

Next Steps

- Receive Commission Input
- Finalize Stormwater Master Plan Report

Acknowledgements

- **Ormond Beach**

- Alex Schumann, PE – City Engineer
- Shawn Finley, PE – Public Works Director

- **Geosyntec Team**

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 - Janicki Environmental
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Stormwater Master Plan

THANK YOU !