



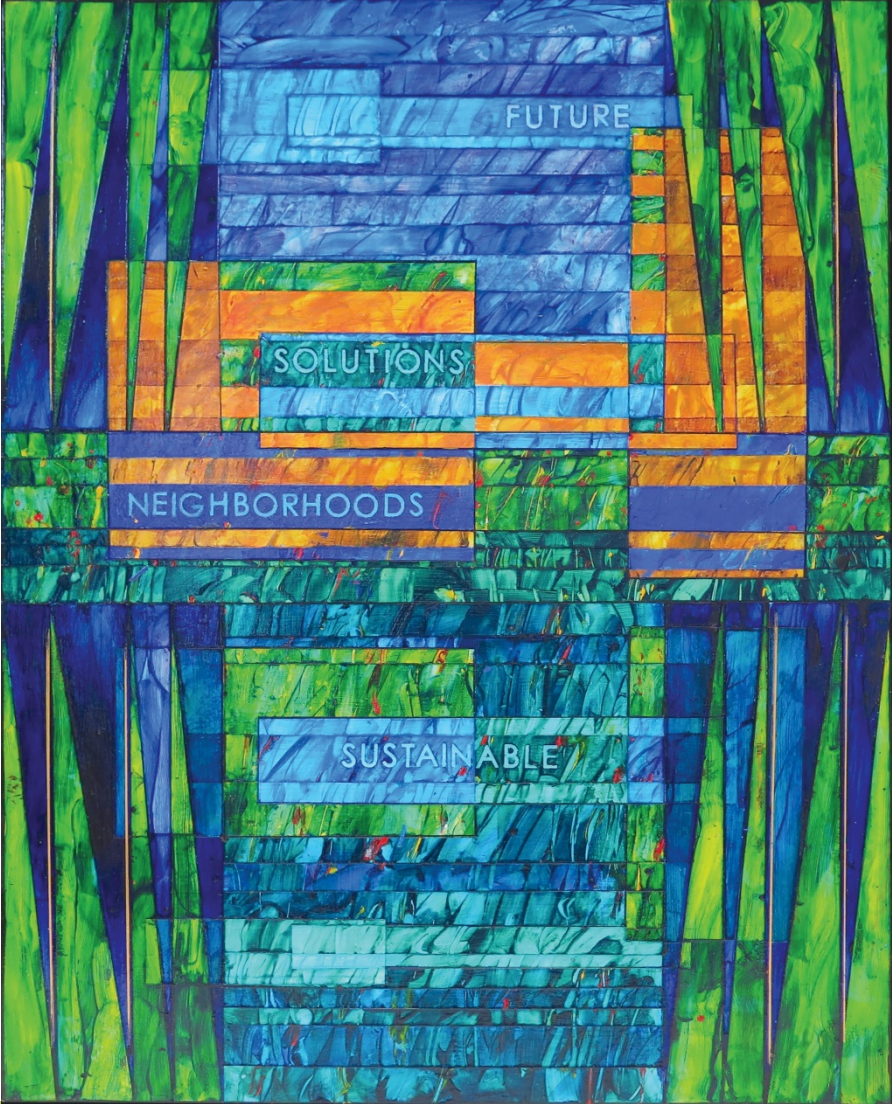
CITY OF
FORT LAUDERDALE

CITY COMMISSION
Conference Meeting
**Stormwater Master Plan Modeling
and Design Implementation Update**

Tuesday, December 19, 2017
100 North Andrews Avenue
Fort Lauderdale, FL

The Hazen Team





Project Elements



Data Collection



Modeling



Design



Public Outreach

NEIGHBORHOODS

SUSTAINABLE

SOLUTIONS

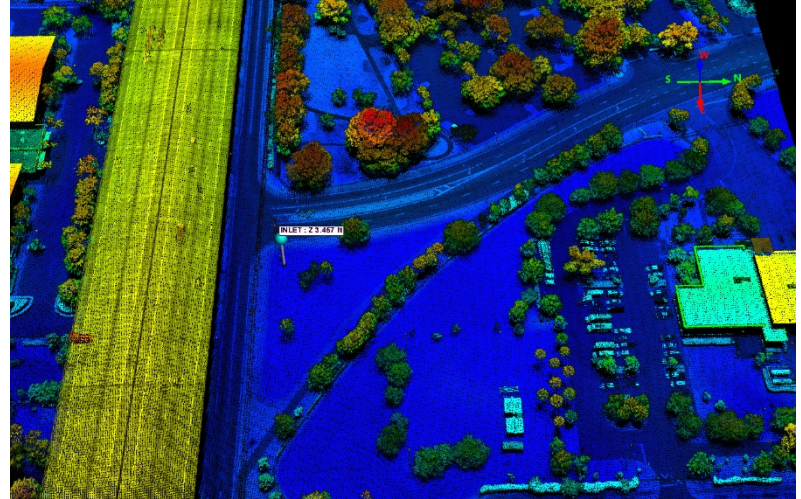
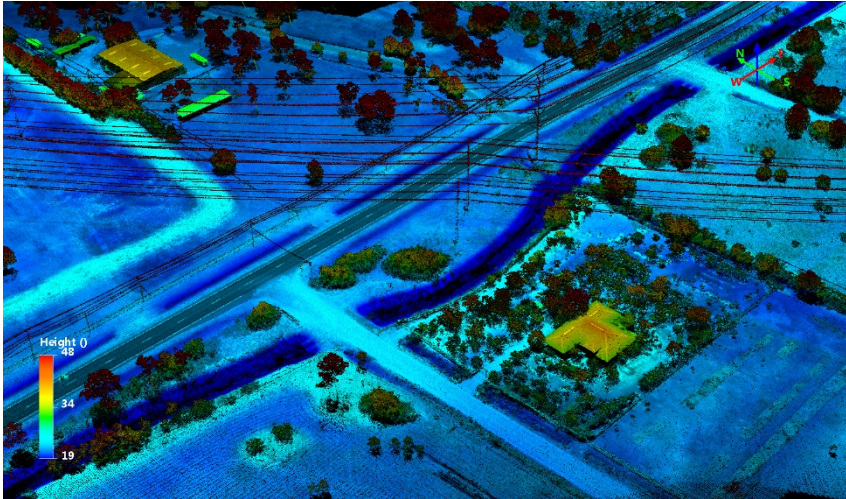
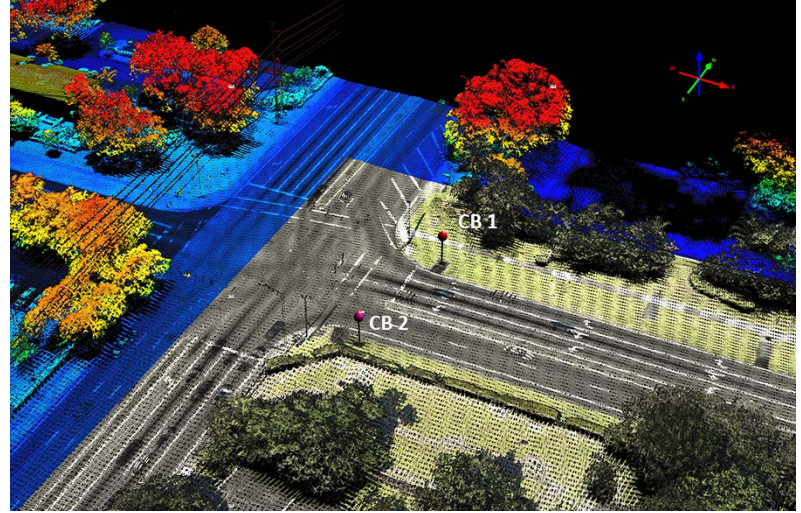
FUTURE



Data Collection

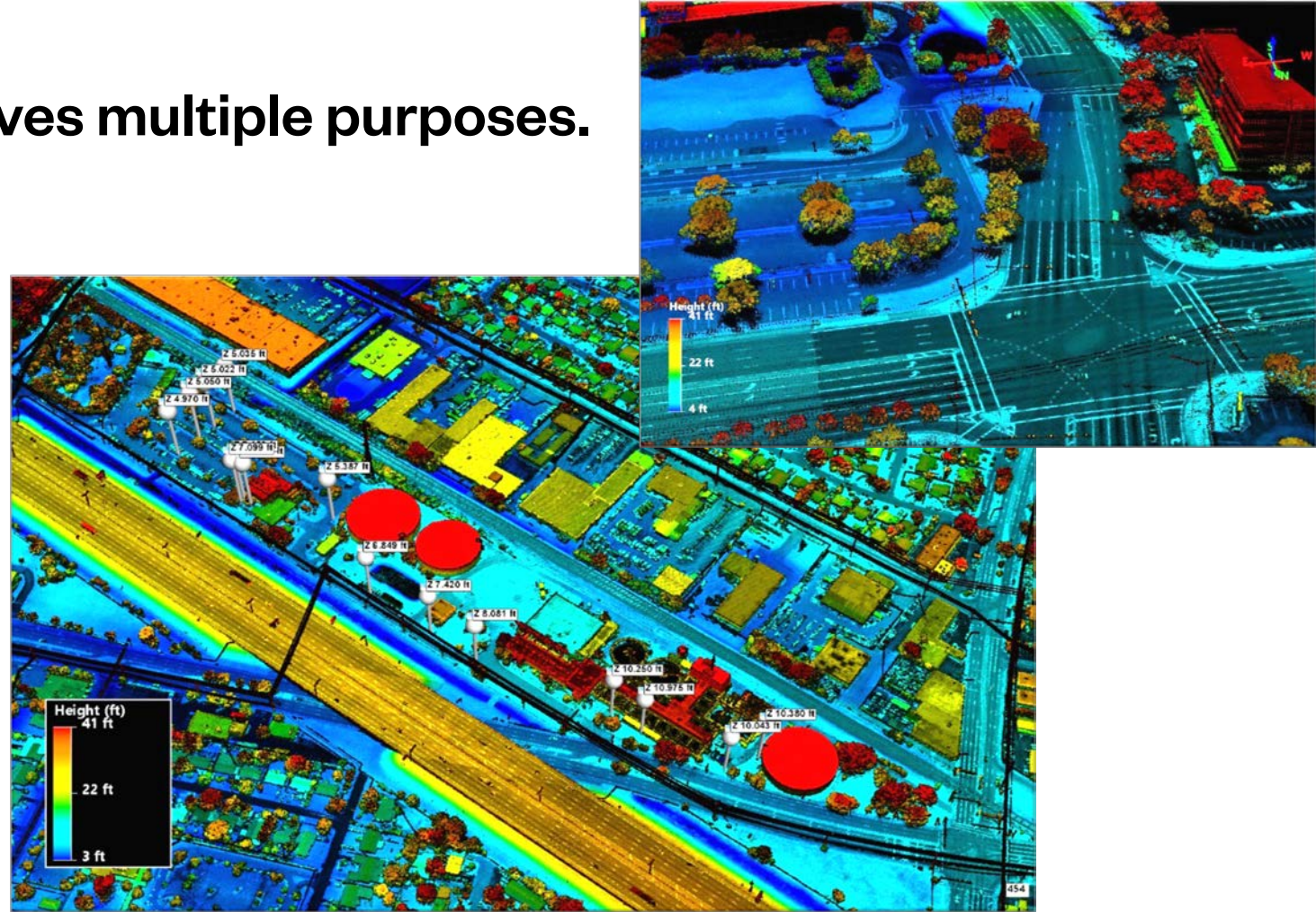
We collected new aerial LiDAR specifically for Fort Lauderdale.

- High Density
- Flown in two directions
- Vertical elevations accurate to within 0.15 ft.



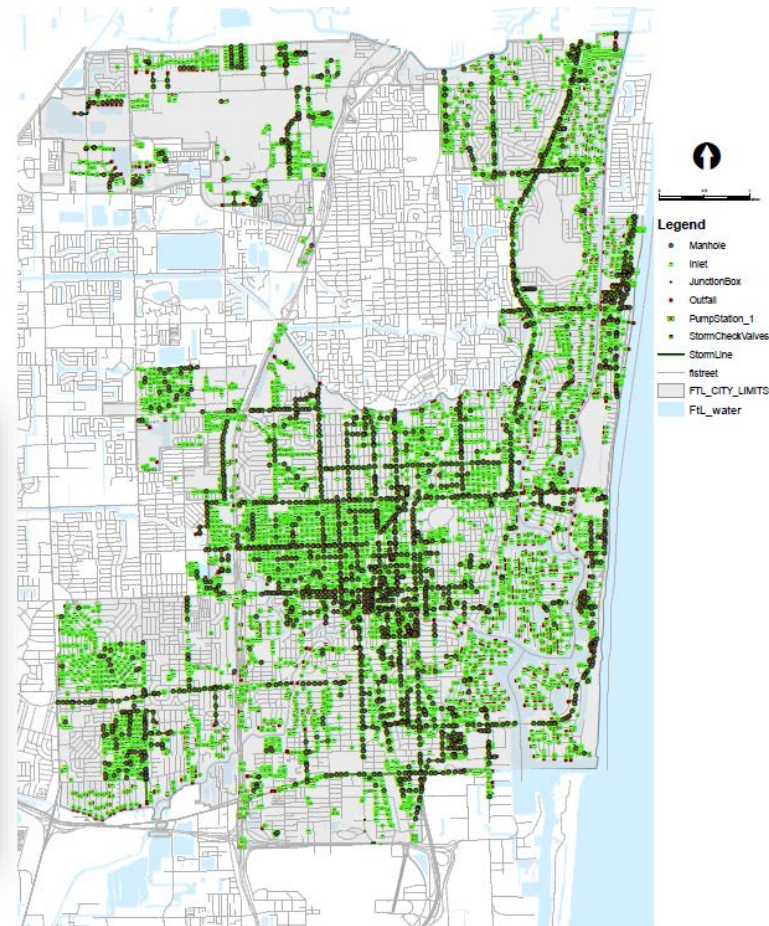
The LiDAR data **serves multiple purposes.**

- Construct Digital Elevation Model (DEM) for modeling/design
- Identify key elevations on assets like seawalls
- Visual inspection of other above ground assets



Five Ash Water Treatment Plant

Additional stormwater asset data were collected to aid model development.



Attributes field surveyed for over 5,000 stormwater features

NEIGHBORHOODS

SUSTAINABLE

SOLUTIONS

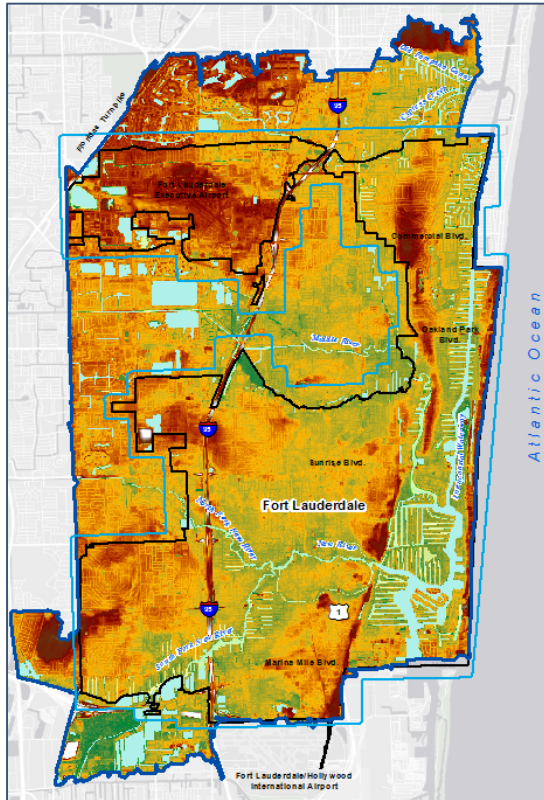
FUTURE



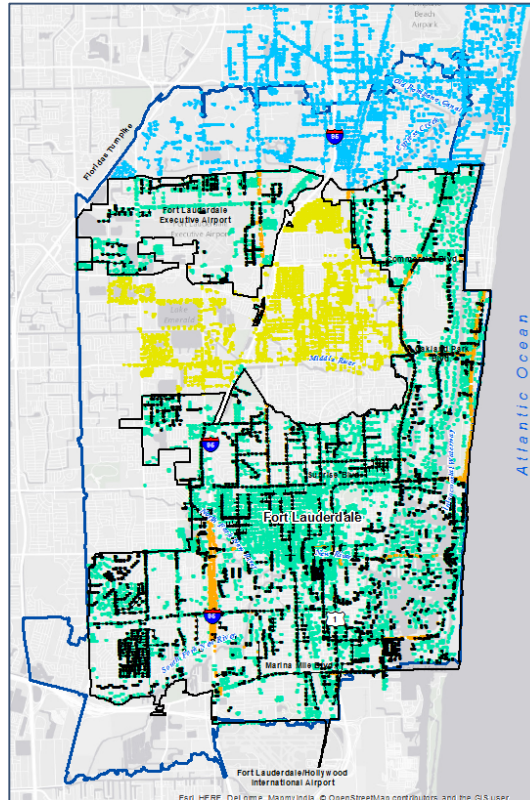
Modeling

Watersheds were delineated (as basis for the model) using DEM, infrastructure and aerial imagery.

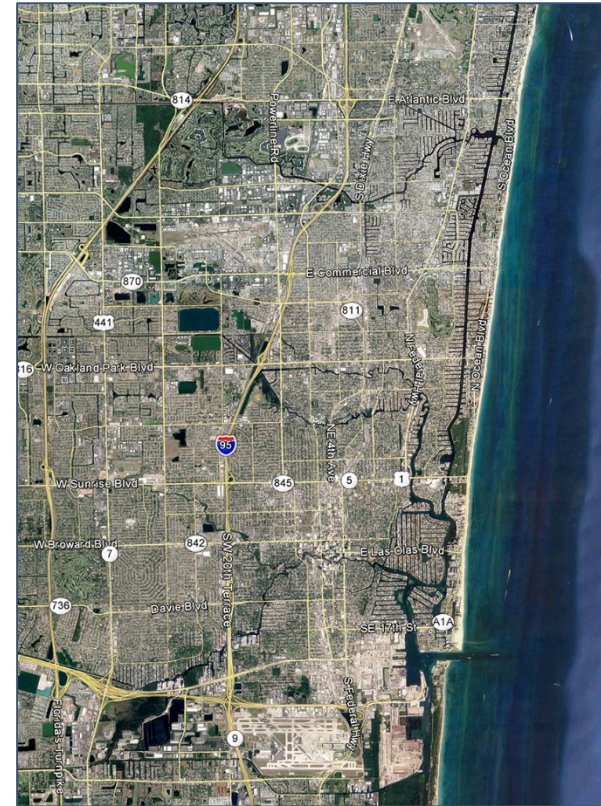
LIDAR/DEM













Infrastructure

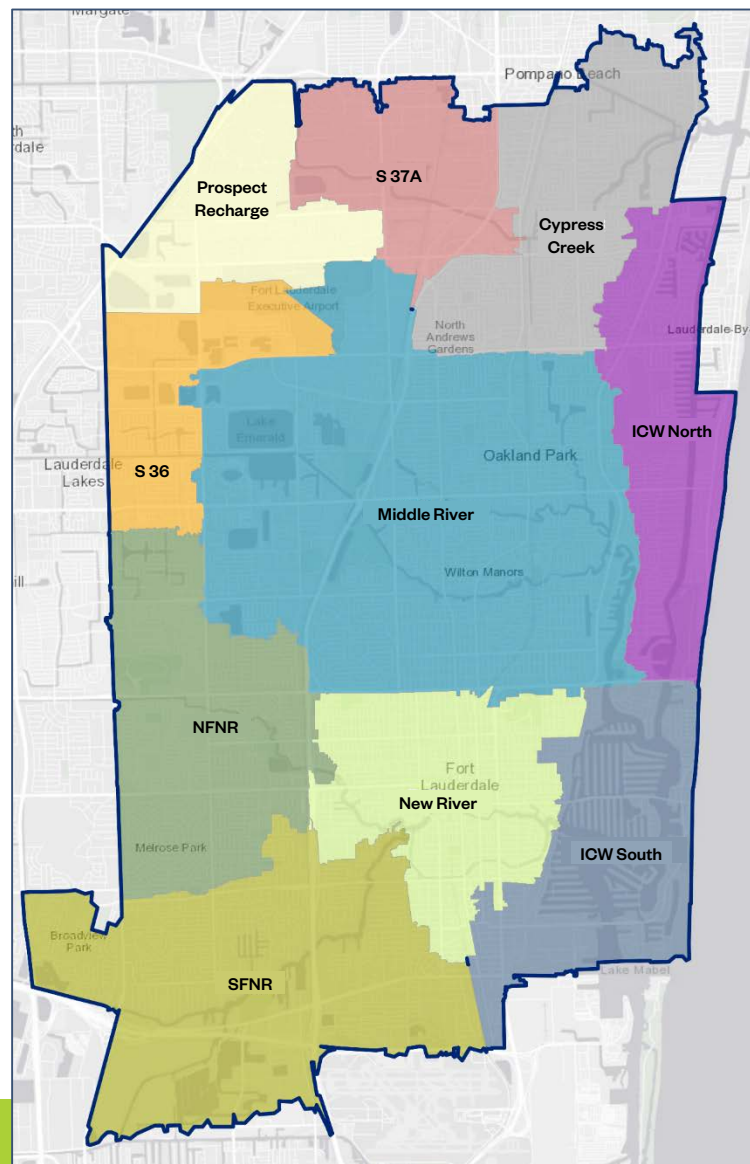


Aerial



Primary watersheds were identified...

-  Cypress Creek
-  ICW North
-  ICW South
-  Middle River
-  North Fork New River
-  New River
-  Prospect Recharge
-  S 36
-  S 37A
-  South Fork New River



... and a suite of **storm events, time horizons, and sea level rise** conditions were modeled.



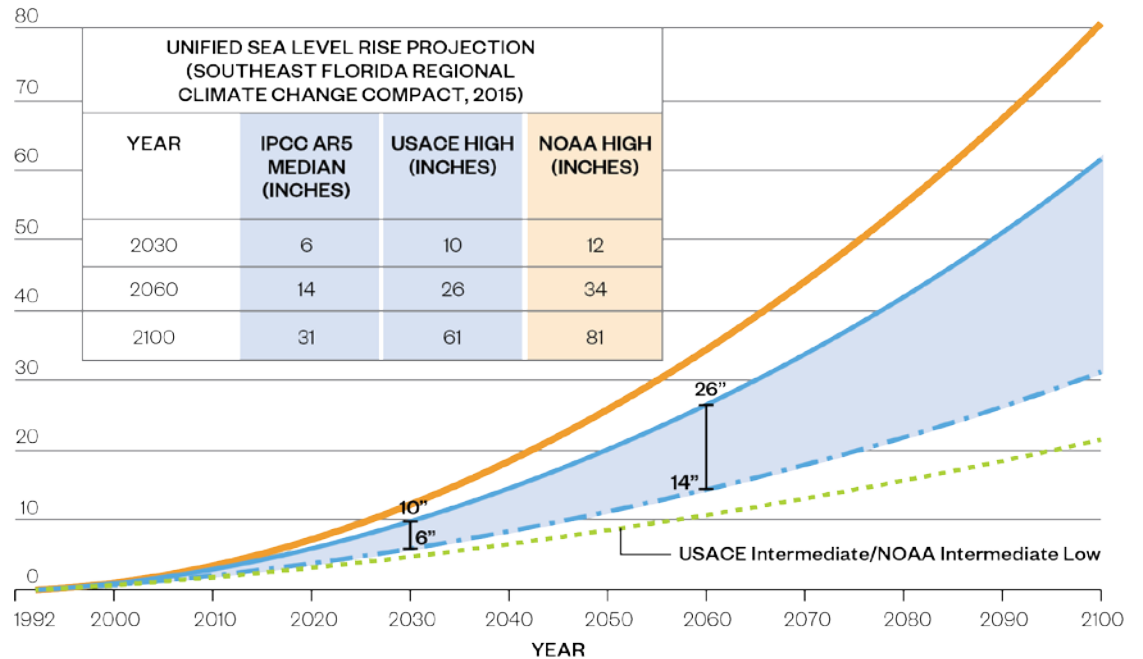
Storm Events

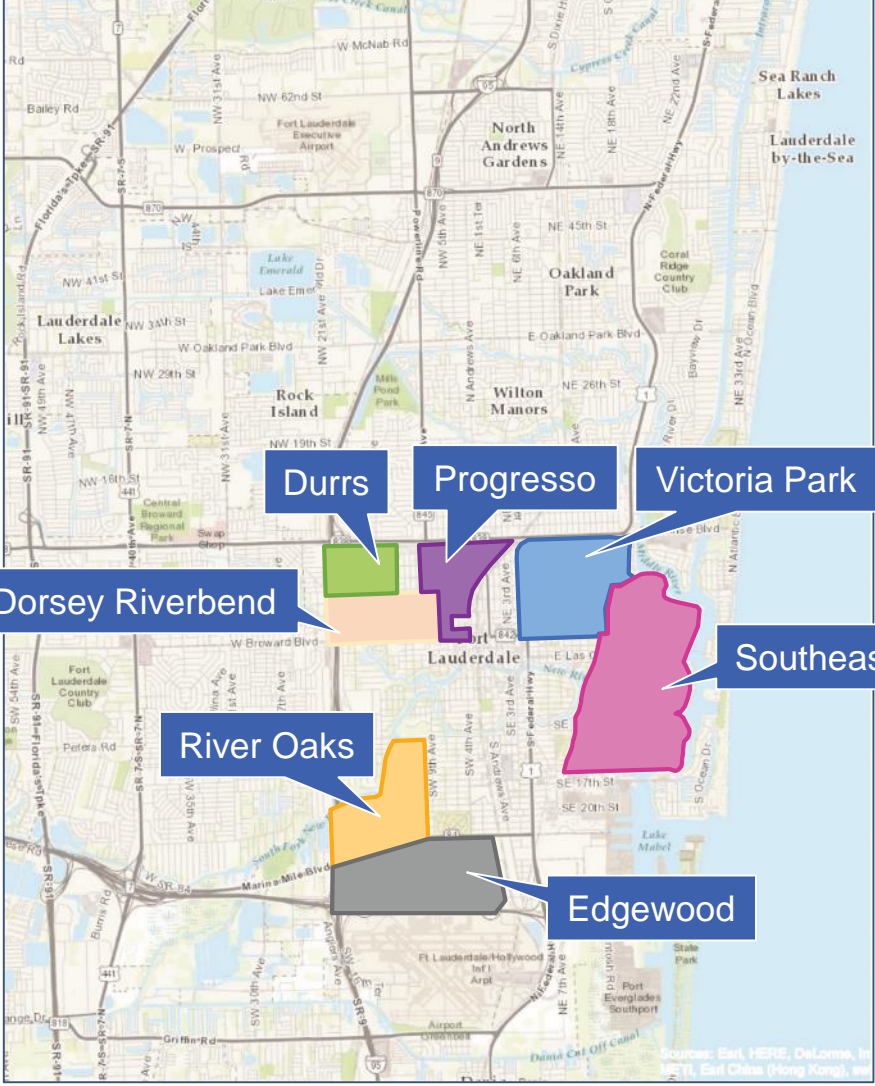
5 Year 24 Hour
 10 Year 24 Hour
 25 Year 24 Hour
 25 Year 72 Hour
 100 Year 72 Hour

Timeline

Existing
 2030
 2060

RELATIVE SEA LEVEL RISE NEAR KEY WEST, FL
 (INCHES RELATIVE TO MEAN SEA LEVEL)





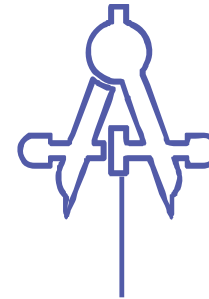
The stormwater model was used to evaluate and inform design efforts in 7 initial neighborhoods.

NEIGHBORHOODS

SUSTAINABLE

SOLUTIONS

FUTURE



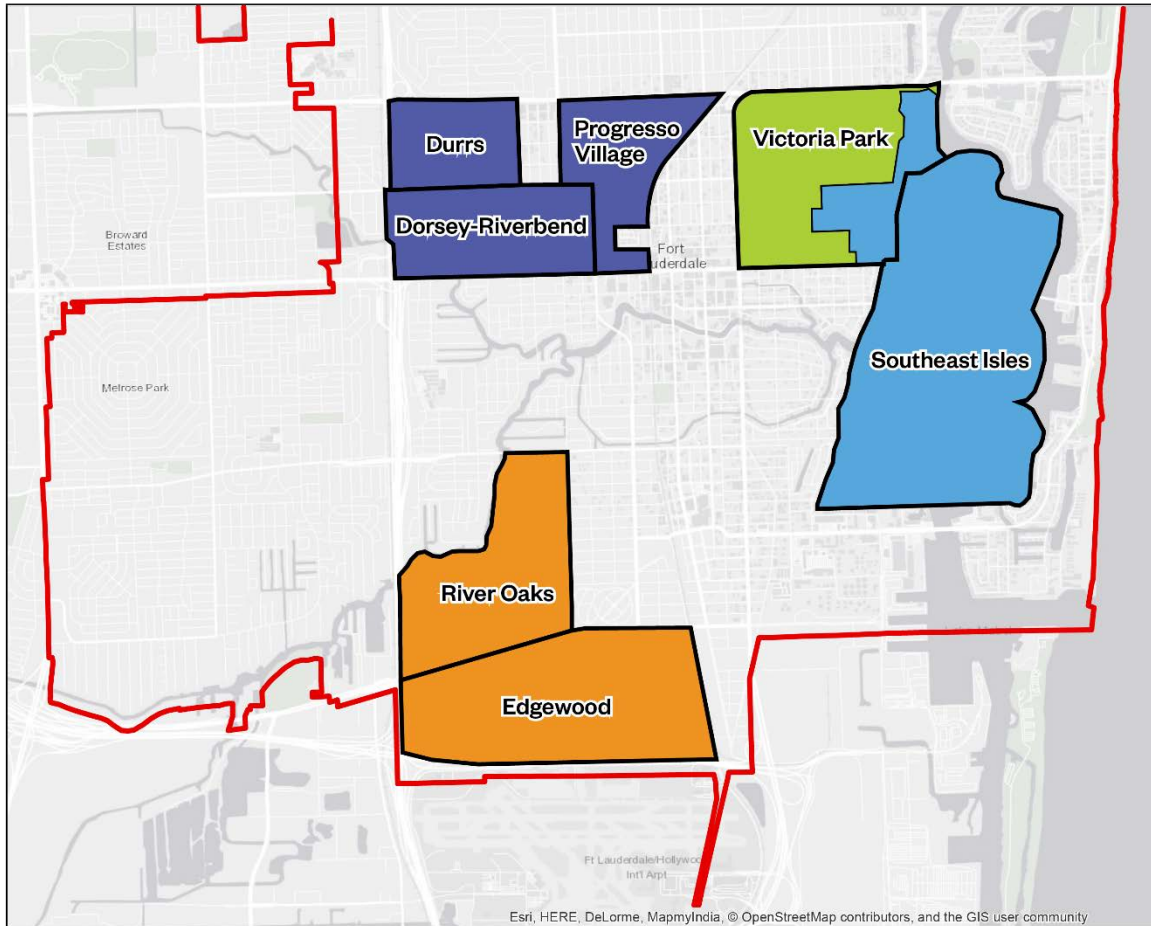
Design

Design Team Assignments were made to tackle the 7 neighborhoods.



Neighborhood	Watershed(s)	Design Consultant
Dorsey Riverbend	Middle River, North Fork New River	HDR
Durrs	North Fork New River	Craven Thompson & Associates
Edgewood	South Fork New River	Hazen
Progresso	New River	HDR
River Oaks	South Fork New River	Craven Thompson & Associates
Southeast Isles	ICW South, New River	Hazen
Victoria Park	New River, ICW South	Chen-Moore & Associates

Each neighborhood has specific flooding vulnerabilities.



Directly tidally influenced:



Indirectly tidally influenced:



Primarily aged and undersized infrastructure



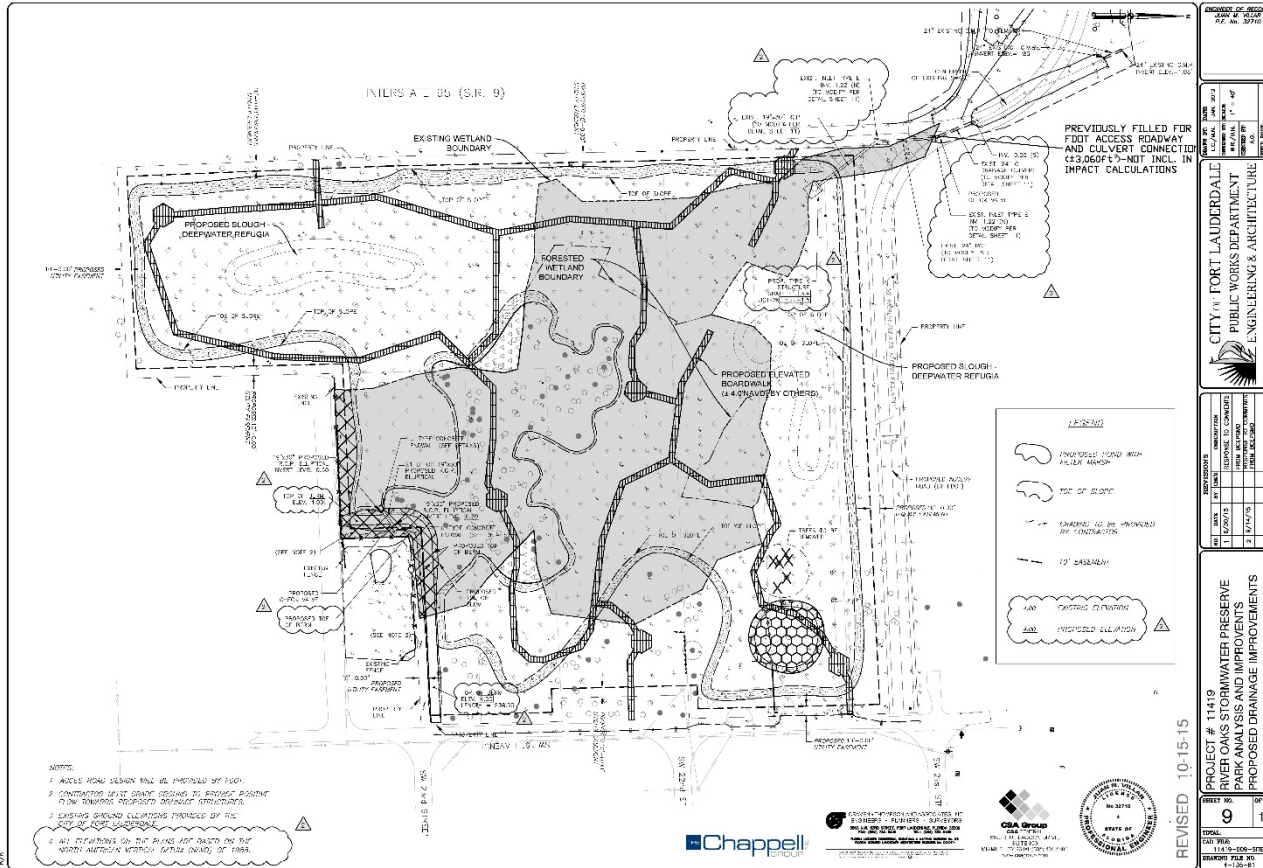
Certain underserved areas



Limited stormwater infrastructure

Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, and the GIS user community

Proposed improvements designed to address water quality also.



- Water Quality Structures
- Permeable Pavement
- Exfiltration Trench
- Swales
- Created Wetland

Extensive **geotechnical investigation** and **design level survey** have been completed.

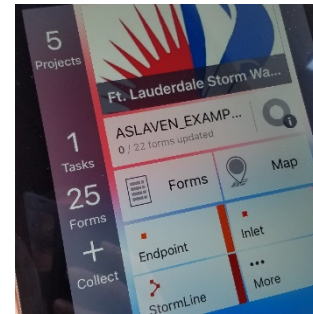
Geotechnical

- Over 100 borings completed/analyzed
- Hydraulic conductivity tested (exfiltration trench design)



Survey

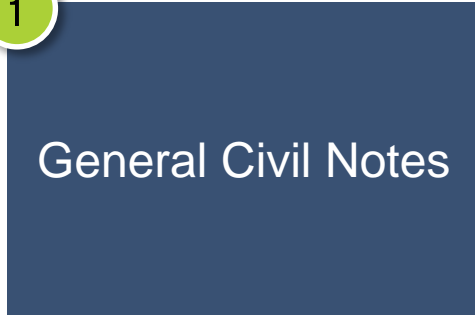
- Over 40 miles of right-of-way surveyed
- Pump station properties
- Other specific stormwater features



Standard details and specifications

were developed for the program.

1



General

2



Erosion and Sediment Control

3



Stormwater

4



Green

5



Water

6

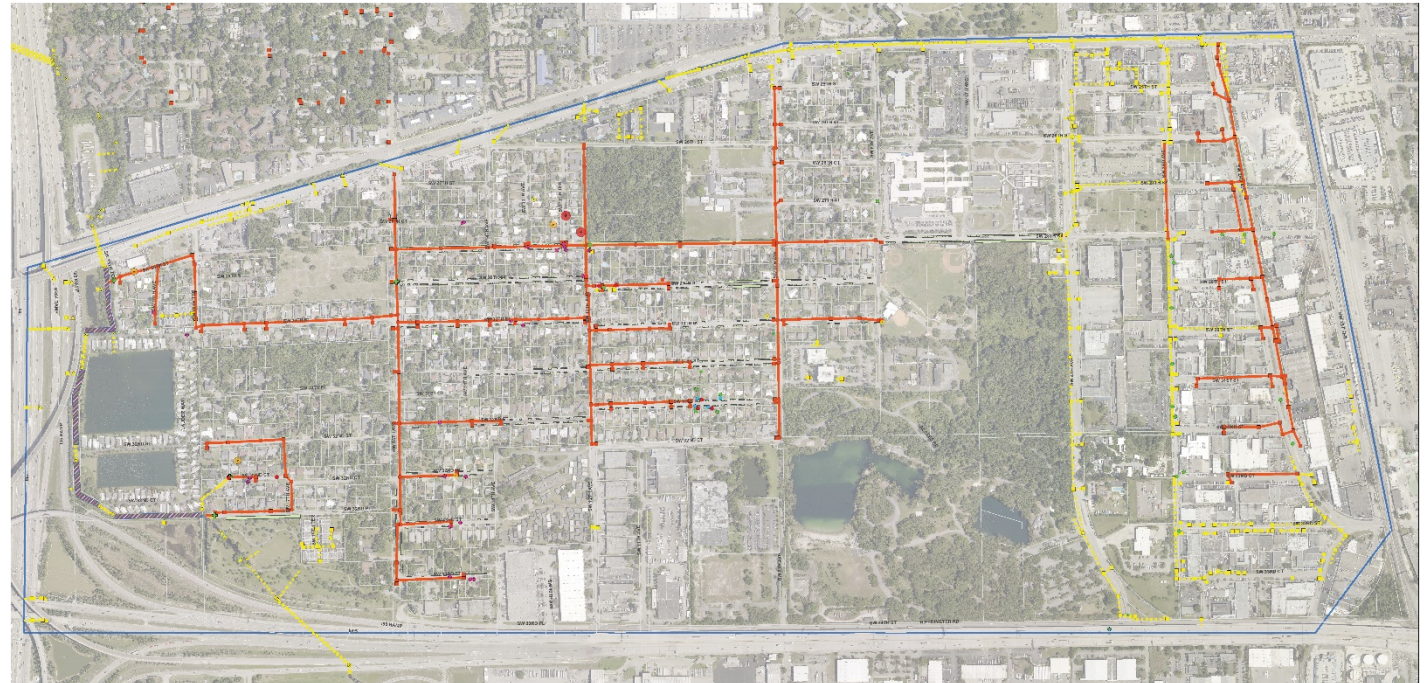


Road

Neighborhood designs were developed to address concerns surfaced.

Via:

- Public input
- City records (including repetitive loss properties)
- Modeling efforts



Edgewood Proposed Improvements

Flooding Reports

- (2017) Road Flooding
- (2017) Structure Flooding
- (2017) Yard Flooding
- CFL QALert Edgewood
- CFL Repetitive Losses Edgewood
- (2009) 1 Complaint Edgewood
- (2009) 2 Complaints Edgewood
- (2009) 3-5 Complaints Edgewood
- (2009) 6-10 Complaints Edgewood

Existing Infrastructure

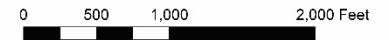
- 20170901_Existing Inlet
- 20170901_Existing Outfall
- 20170901_Existing Manhole
- 20170901_Existing Storm Line

Proposed Infrastructure

- 20171120_Water Quality Structure
- 20171110_Proposed Catch Basin
- 20171110_Proposed Manhole
- 20171110_Proposed Pipe
- 20170901_Swale Area
- 20171211_Canal Improvements

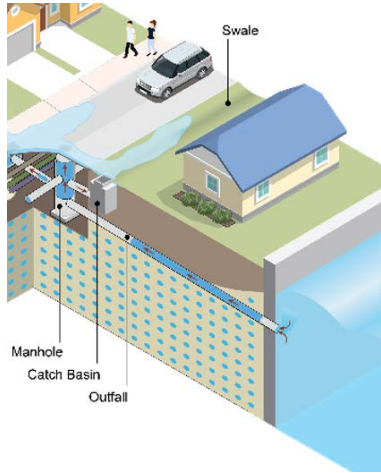
Boundaries

- Parcel
- Edgewood Neighborhood

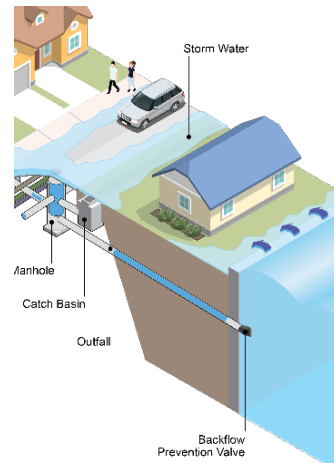


Certain areas will require a systematic, phased approach.

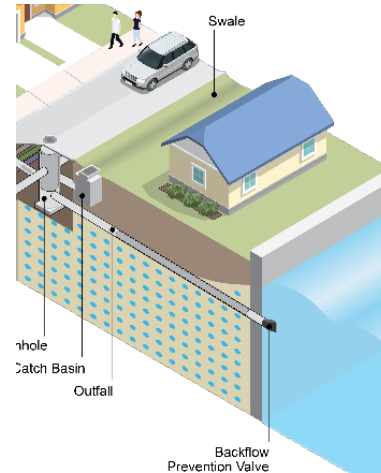
“Holding out the Tide” requires public and private property modifications.



**High Tide
Backflow**



**Seawall
Breaching**

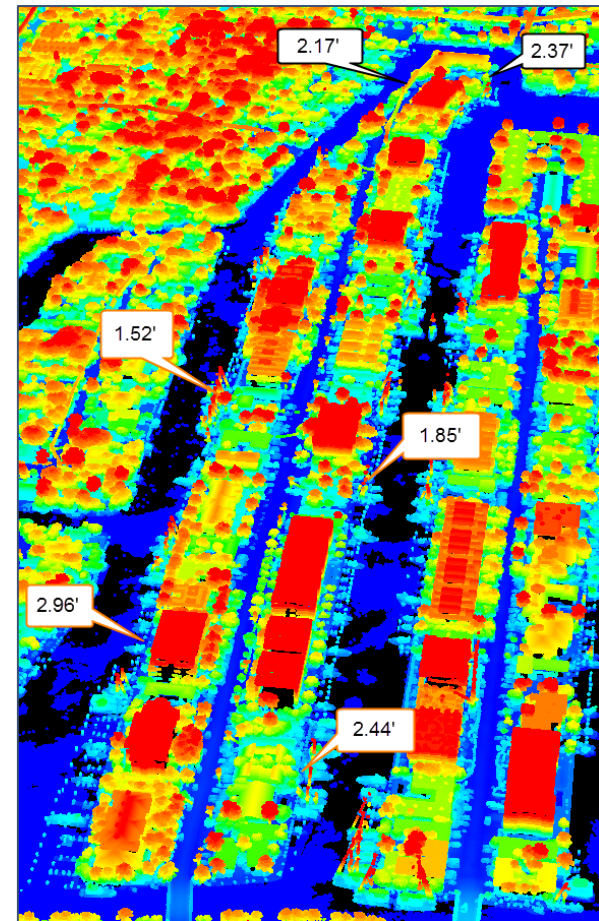
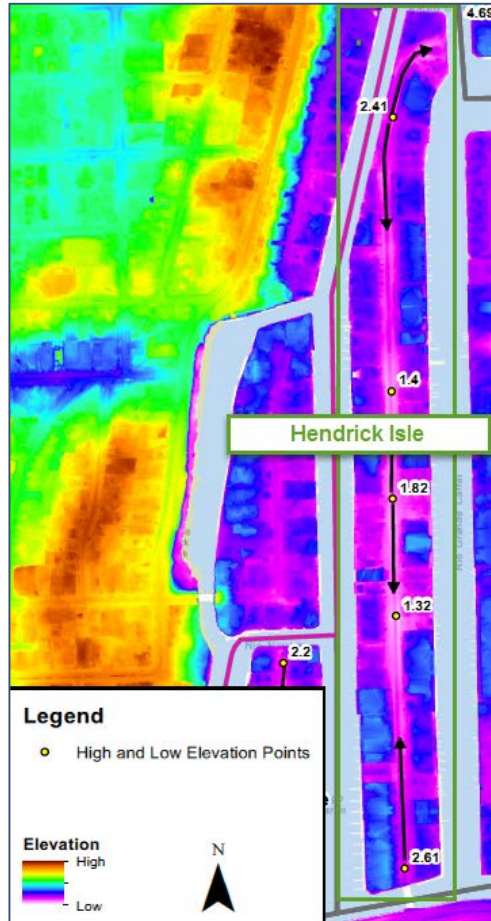


**Tidal Flow
Control**

**INSTALL
Tidal Valves
(this Phase = 104)**

**RAISE
Seawalls
(14 City Owned to 5' NAVD)**

But some areas will ultimately require **raising private seawalls too.**

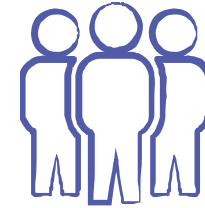


Significant improvements are proposed across the 7 neighborhoods.

Improvement	Dorsey Riverbend	Durrs	Edgewood	River Oaks	Progresso	Southeast Isles	Victoria Park
New storm sewer (LF)	2,400	7,500	27,105	12,550	1,282	9,296	9,300
Replaced storm sewer (LF)	2,350	26,150	5,395	4,850	13,377	30	3,600
Exfiltration trench (LF)	4,700	3,850	2,820	2,640	0	0	9,000
New/restored swale (SY)	7,050	6,850	12,000	7,900	1,450	0	36,000
Drainage wells (#)	24	0	0	0	37	0	0
Water quality structures (#)	2	2	5	4	2	2	6
Pump Stations (#)	1	0	0	2	1	2	1
Back flow preventers (#)	1	0	3	0	1	104	6
Permeable pavement (SY)	9,800	3,520	32,500	3,000	9,400	0	0
Created wetlands (AC)	0	0	0	8.4	0	0	0
Seawall replacement (LF)	0	0	0	0	0	5,262	120
Canal/Creek maintenance (LF)	0	0	2,100	0	0	0	0

Proposed investments in the 7 neighborhoods expected to range from **\$150-\$200M** in total construction costs.

Improvement	Total	Unit
New Storm Sewer	69,433	LF
Replaced Storm Sewer	55,752	LF
Exfiltration Trench	23,010	LF
New/Restored Swale	71,250	SY
Drainage Wells	61	#
Water Quality Structures	23	#
Pump Stations	7	#
Backflow Preventers	114	#
Permeable Pavement	58,220	SY
Created Wetlands	8	AC
Seawall Replacement	5,382	LF
Canal/Creek Maintenance	2,100	LF



**Public
Outreach**

Neighborhood meetings have been held in the affected areas.



Neighborhood	First Meeting	Second Meeting
Dorsey Riverbend	February 27, 2017	May 22, 2017
Durrs Area	April 3, 2017	May 22, 2017
Edgewood	March 8, 2017	June 15, 2017
Progresso	February 20, 2017	June 19, 2017
River Oaks	March 8, 2017	June 15, 2017
Southeast Isles	March 6, 2017	June 5, 2017
Victoria Park	March 1, 2017	June 7, 2017

Final design meetings to occur in **Jan/Feb 2018.**

Neighborhood Meeting Purposes



First Meeting

Get to know neighbors,
share vision, gather input



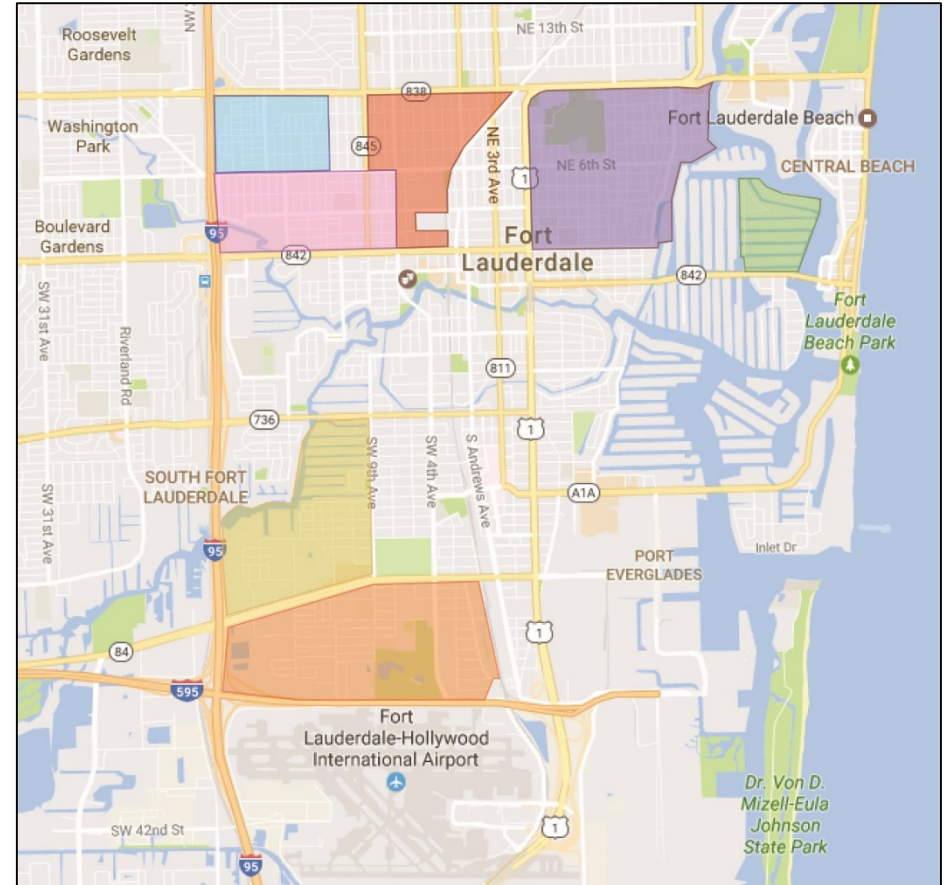
Second Meeting

Present preliminary design



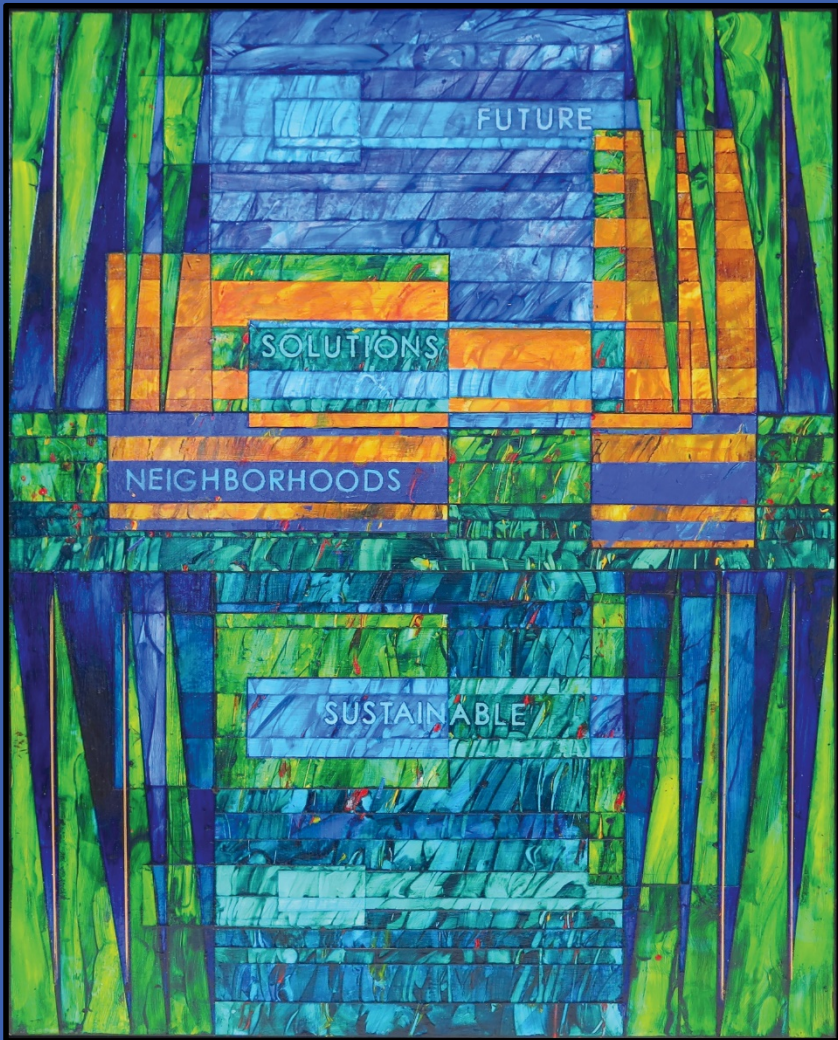
Third Meeting

Share final design



Next steps moving forward include:

- Final design meetings with 7 neighborhoods
- Complete conceptual permitting of City-wide model
- Complete permitting of improvements in 7 neighborhoods
- Complete JPA with FDOT; seek other grant funding
- Finalize design documents based on regulatory comments
- Prepare for bidding once funding is in place
- Use model to evaluate future improvements beyond the initial neighborhood projects



The Hazen Team



City of Fort Lauderdale

Thank you.

DRAFT WATER AND WASTEWATER BOND PROJECTS

AS OF: December 21, 2017

CONSENT ORDER

PROJECT REFERENCE #	FUND	TOTAL PROJECTED COST	PROJECT TITLE	PROJECT DESCRIPTION	Type Project
WW6-02	451	\$ 4,349,900	NE 25TH AVE 24" FORCE MAIN REPLACEMENT	This project is for the replacement of a deteriorated 24-inch diameter DIP sewer force main measuring approximately 5500 linear feet (LF). The force main is located along NE 25th Avenue, from Commercial Blvd. to Oakland Park Avenue.	Wastewater Collection System
WW6-04	451	\$ 10,087,900	NE 38TH ST 42" FM AND NE 19TH AVE 24" FORCE MAIN REPLACEMENTS	This project includes rehabilitation of approximately 8,000 feet of deteriorated DIP force main along NE 38th St., from N Dixie Hwy to Coral Ridge Country Club, including installation of approximately 3,000 feet of new 24" force main along NE 19th Ave., from NE 38th St to NE 32nd St, inspection of existing pipe, and performance of all related work.	Wastewater Collection System
WW6-07	451	\$ 17,919,500	SE 10TH AVE 48" FORCE MAIN REPLACEMENT AND 36" BYPASS	This project consists of replacing approximately 13400 linear feet of deteriorated 48-inch diameter sewer force main along SE 10th Ave., between E. Sunrise Blvd and P.S. A15, and installing approximately 5400 linear feet of 36" force main Federal Hwy. to serve as a bypass and redundancy.	Wastewater Collection System
WW6-08	451	\$ 13,263,500	54" FORCE MAIN REPLACEMENT ON SE 9TH AND 10TH AVE AND NEW PARALLEL	This project is for the replacement of one section of 54" FM and installing a backup 48" FM. The section being replaced consists of approximately 6000 linear feet of deteriorated 54-inch diameter sewer force main along SE 9th and 10th Avenues, between pump station A15 and GTL treatment facility. In addition, as a back-up, approximately 48" FM will be installed in parallel along US1, which will also serve as a bypass during the placement of the 54 " FM.	Wastewater Collection System
WW6-09	451	\$ 7,440,000	EFFLUENT MAIN REHABILITATION	This project includes rehabilitation of the 54" inch PCCP pipeline leading from GTL to the injection wells, including inspection of existing pipe, and performance of all related work.	Wastewater Collection System
	454	\$ 4,000,000	Water and Wastewater Distribution and Collection System Mapping	This project will allow the Program Manager Consultant develop a mapping plan and submit to Florida Department of Environmental Protection (FDEP) within 9 months of the effective date of the Consent Order. In addition, all mapping services outlined in the mapping plan will have to be completed within 21 month of the effective date of the Consent Order	Systems Improvement
WW6-10	454	\$ 3,011,900	NE 13TH ST24" FORCE MAIN REPLACEMENT	This project includes rehabilitation of approximately 3,300 feet of 24" CIP pipeline along NW 13th St., from SR 845 S to SR 811 , including inspection, and all related work.	Wastewater Collection System
WW6-11	454	\$ 1,920,500	18" FORCE MAIN REPLACEMENT ACROSS THE NEW RIVER FROM NE 9TH ST TO N. BIRCH ROAD	This project includes rehabilitation of approximately 1,000 feet of 18" DIP pipeline across the river from NE 9th St. to N Birch Road, including inspection, and all related work.	Wastewater Collection System
	454	\$ 2,500,000	LAS OLAS BLVD 16" FORCE MAIN FROM LIDO ROAD TO INTRACOASTAL WATERWAY (IN-KIND PROJECT) AND UPGRADE PUMP STATION D-38	This project includes construction of a 16" force main from the Lido Road pumpstation to the Intracoastal waterway and upgrade pump station D-38	Wastewater Collection System
P11563	454	\$ 2,010,515	Victoria Park Sewer Basin A-19 Rehab	Rehabilitate main line sewers, manholes, and service laterals to reduce infiltration and inflow	Wastewater Collection System
P12055	454	\$ 1,135,000	Basin A-18 Sanitary Sewer Collection System	Rehabilitate main line sewers, manholes, and service laterals to reduce infiltration and inflow	Wastewater Collection System
P11566	454	\$ 1,215,964	Rio Vista Sewer Basin Rehab Pump Station D-43	Rehabilitate main line sewers, manholes, and service laterals to reduce infiltration and inflow	Wastewater Collection System
P12202	454	\$ 900,000	Pump Station D-10 and D-11 Flow Analysis and Redesign	This project includes the flow analysis of pump stations D-10 and D-11 to verify the available sewer capacity of each station. Additionally, this project includes the re-design necessary to address and correct any concerns that result from the flow analysis.	Wastewater Collection System
	451/454	\$ 5,799,320	Consent Order Phase II CEI and Project Oversight	This project will encompass the civil engineering inspection/construction services (CEI) and overall project oversight to be provided by the Consent Order Program Manager Consultant. These services will be required to complete and deliver all the Phase II force main projects and miscellaneous services in order to remain compliant with the Consent Agreement between the City and the Florida Department of Environmental Protection (FDEP).	Consent Order Program Management

DRAFT WATER AND WASTEWATER BOND PROJECTS

AS OF: December 21, 2017

451/454	\$	100,000	Asset Management and CMOM Program Development Plan	This project will allow the Program Manager Consultant develop a plan for an Asset Management and Capacity Management, Operations and Maintenance (CMOM) Program to be submitted to Florida Department of Environmental Protection (FDEP) for approval within 11 months of the effective date of the Consent Order.	Systems Improvement
451/454	\$	800,000	Sewer Capacity Analysis for Gravity and Force Mains	This project will allow the Program Manager Consultant to conduct a citywide capacity analysis of the force mains, gravity mains and pump stations within 20 months of the effective date of the Consent Order, and submit a report summarizing the findings to Florida Department of Environmental Protection (FDEP) within 22 months of the effective date of the Consent Order.	Systems Improvement
451/454	\$	400,000	Consent Order Asset Management Program	This project will allow the Program Manager Consultant develop and implement an Asset Management Program, as mandated in the Consent Order Agreement between the City and Florida Department of Environmental Protection (FDEP).	Systems Improvement
451/454	\$	400,000	Consent Order Capacity Management, Operations and Maintenance Program	This project will allow the Program Manager Consultant develop and implement an Capacity Management, Operation and Maintenance (CMOM) Program, as mandated in the Consent Order Agreement between the City and Florida Department of Environmental Protection (FDEP).	Systems Improvement
451/454	\$	4,000,000	Force Main Condition Assessment	This project will allow the Program Manager Consultant develop a force main assessment plan and submit to Florida Department of Environmental Protection (FDEP) within 9 months of the effective date of the Consent Order. Pending approval by FDEP of the submitted plan, all the force mains outlined in the plan will have to be assessed within 18 months of the approval.	Wastewater Collection System
	\$	53,060,800	Central Region/Wastewater Fund (451)		
	\$	16,693,879	Water/Sewer Master Plan Fund (454)		
	\$	11,499,320	Joint 451 and 454 funded		
	\$	81,253,999	TOTAL		

Deferred Projects/Additional Funding Required

PROJECT REFERENCE #	FUND	TOTAL PROJECTED COST	PROJECT TITLE	PROJECT DESCRIPTION	Type Project
FY 20150186	454	\$ 5,276,700	BERMUDA RIVIERA SMALL WATERMAIN IMPROVEMENTS	This project is for small water main improvements in the Bermuda Riviera neighborhood. This project will replace existing water mains, which are undersized and deteriorated, with approximately 16,400 linear feet of 6" water mains.	Water Distribution System
P10814	454	\$ 1,632,562	CENTRAL NEW RIVER WATERMAIN RIVER CROSSINGS	The City's existing water transmission system includes a 16-inch pipe that crosses the New River at SE 1st Avenue and an existing 12-inch pipe that crosses the New River at SW 7 Avenue. Both of these river crossings are sub-aqueous pipelines. The 16-inch pipe has suffered repeated failures and these pipe crossings are important to the downtown water supply. Replacement pipelines are currently under design. The staff recommends running a transmission system hydraulic model to determine the impact of changes to the existing and proposed river crossings.	Water Distribution System
P12180	454	\$ 3,460,125	CROISSANT PARK SMALL WATERMANS	This project is for small water main improvements in the Croissant Park Neighborhood. The project will replace existing undersized and deteriorated small water mains with approximately 16,500 linear feet of 6" and/or 8" water mains. These improvements will result in improved fire hydrant coverage.	Water Distribution System
P12184	454	\$ 525,500	DAVIE BLVD. 18" WATER MAIN ABANDONMENT I95 TO SW 9	A new 24" water main was installed to replace the old 18" cast iron water main under the Waterworks Program in 2005-2007, but the old main was never properly abandoned. This work will include identifying and relocating all the service lines currently tied to the 18" main and moving them to the 24" main. This work includes abandonment of approximately 7,788 linear feet of pipe to be abandoned from SW 18th Avenue to Andrews Avenue.	Water Distribution System

DRAFT WATER AND WASTEWATER BOND PROJECTS

AS OF: December 21, 2017

P11589	454	\$ 33,500,000	FIVEASH DISINFECTION/ RELIABILITY UPGRADES	This project is for the construction of two separately designed projects under one construction contract. Combining the projects is necessary because both projects need to be completed at the same time. Having one construction contract will avoid disputes between two contractors working at the same time, and competing for staging areas and storage space on the crowded water treatment plant site. Under this approach, both projects can be constructed in three years. The first project, Reliability Upgrades, installs various repairs and replacements throughout the plant. Major items include replacement of the control system for the entire plant, replacement of the obsolete emergency generators, modifications to the high service pumps, and increasing the weather resistance of the plant buildings. The second project, Disinfection System Replacement, replaces the existing gaseous chlorine system with a new facility.	Plant Improvements
P11080	454	\$ 557,559	PORT CONDO LARGE WATERMAIN IMPROVEMENTS	This project is for the replacement of a small 6" water main with approximately 1,300 linear feet of large 12" water main on SE 17th Street's north access road, bounded by Eisenhower Boulevard and the intracoastal waterway.	Water Distribution System
P10850	454	\$ 4,961,073	VICTORIA PARK A - NORTH SMALL WATERMAIN	This project is for a small water main replacement in the Victoria Park - North neighborhood. Replace approximately 23,740 linear feet (LF) of existing undersized and deteriorated small water mains with new 6" and 8" PVC (poly-vinyl chloride) water mains, and improve fire hydrant coverage on NE 16th Avenue and NE 19th Avenue. In 2014, 2,760 linear feet of water main were installed.	Water Distribution System
P11901	454	\$ 5,437,049	VICTORIA PARK B-SOUTH SMALL WATERMAINS IMPROV	This project is for small water main replacements and improved fire hydrant coverage in the Victoria Park - South Neighborhood. Approximately 29,000 linear feet of existing undersized and deteriorated small water mains will be replaced with new 6" and 8" polyvinyl chloride (PVC) water mains.	Water Distribution System
		\$ 55,350,568	Water/Sewer Master Plan Fund (454)		
		\$ 55,350,568	TOTAL		

Recommended Priority Projects for Bond Funding

PROJECT REFERENCE #	FUND	TOTAL PROJECTED COST	PROJECT TITLE	PROJECT DESCRIPTION	Type Project
UW3-01	454	\$ 660,000	FIVEASH WTP ELECTRICAL STUDIES AND TESTING	Perform Short Circuit Device Coordination and Arc Flash Study; Perform Electrical Maintenance Testing.	Plant Improvements
UW3-02	454	\$ 6,800,000	FIVEASH ELECTRICAL SYSTEM REPLACEMENTS (2015-2020)	Replace medium voltage fused service disconnect switches; Replace medium voltage MCC_5201 and MCC_5202; Replace PNL_5602 (LPHS-3); Replace XFMR5501 and XFMR 5502; Replace MCC_5504 and MCC_5503; Replace MCC_5311; add second feed; incorporate/eliminate MCC_5313; Replace/Convert MCC_5614 to 480V and dedicated to HYD_2103; Replace/Convert MCC_5615 to 480V and dedicate to HYD_2104; Replace SWBD5616; Replace XFMR 5612; Replace PNL 5630; Replace General Circuit Breaker Panel boards, transformers, and branch circuits; Replace Surface Wash Pump 1 starter; Replace 2 HSP starters with VFDs; Convert 240V motors to 480V and re-feed; Replace MSTR3202 (Backwash Pump 2).	Plant Improvements
	454	\$ 10,000,000	FIVEASH UPGRADE/REDESIGN	Design of new Water Treatment Facility to replace Fiveash Water Treatment Facility	Plant Improvements
UW3-06	454	\$ 210,000	PEELE DIXIE ELECTRICAL STUDIES AND TESTING	Update Short Circuit Device Coordination and Arc Flash Study; Perform Electrical Maintenance Testing.	Plant Improvements
UW3-07	454	\$ 100,000	PEELE DIXIE SURGE PROTECTION UPGRADES	Replace/Retrofit existing panel boards with integral surge protective devices to external mounted units connected through a branch circuit breaker.	Plant Improvements
WA5A-5	454	\$ 740,000	WELL REHABILITATION	Rehabilitation work on wells less than 30 years old prior to replacement. This includes maintaining pumps and motors, and replacement of mechanical and electrical components	Plant Improvements
WA5B-2	454	\$ 800,000	FIVEASH WTP GST AND CLEARWELL UPGRADES	Modify the existing piping and system such that the water from the filters drops into a clearwell which the transfer pumps will deliver to the ground storage tanks. The water from the ground storage tanks will flow to a common clearwell for the high service pumps to deliver water.	Plant Improvements
WA5B-4	454	\$ 4,000,000	FIVEASH WTP PCCP REPLACEMENT	Replace PCCP pipe feeding the high service pumps.	Plant Improvements
UW3-10	454	\$ 185,000	PROSPECT WELLFIELD ELECTRICAL STUDIES AND TESTING	Perform Short Circuit Device Coordination and Arc Flash Study; Perform Electrical Maintenance Testing; Generate Accurate As-Built One Line Drawings and plans of the entire wellfield.	Plant Improvements
UW3-11	454	\$ 60,000	PROSPECT WELLFIELD BONDING AND GROUNDING TESTING AND LIGHTING PROTECTION	Perform Bonding and Grounding survey and testing; Add lightning protection to generator buildings.	Plant Improvements

DRAFT WATER AND WASTEWATER BOND PROJECTS

AS OF: December 21, 2017

UW3-31	454	\$ 150,000	PEELE DIXIE WELLFIELD ELECTRICAL STUDIES AND TESTING	Perform Short Circuit Device Coordination and Arc Flash Study; Perform Electrical Maintenance Testing.	Plant Improvements
WA5C-2	454	\$ 850,000	PEELE-DIXIE WTP CHEMICAL STORAGE IMPROVEMENTS	The anti-scalant and corrosion inhibitor bulk chemical tanks do not allow for a full load delivery of chemicals. Investigate the addition of another tank and/or the replacement with multiple, smaller tanks. Also the day tanks for the sodium hydroxide and sulfuric acid do not hold enough chemical to last a whole day and additional storage is required.	Plant Improvements
WA12-2	454	\$ 2,600,000	EXCAVATE AND DISPOSE OF DRY LIME SLUDGE	This project includes the excavation and disposal of dry lime sludge from the west cell sludge pit or delivery to a cement kiln.	Plant Improvements
UW2-7	454	\$ 4,669,090	UTILITIES WIDE AREA NETWORK SCADA IMPROVEMENTS	Upgrade/Improve SCADA Systems and improve flowmeters	Wastewater Collection System
WW-XX	451	\$23,400,000	REDUNDANT FORCE MAIN FROM B-REPUMP TO GTL	This project includes 38,850 linear feet 42"-54" force main from B-Repump to GTL. To provide redundancies (Central Region Large Users System)	Wastewater Collection System
WW3-07	454	\$ 609,000	SUBAQUOUS ORCE MAIN CROSSING REINSTATEMENT (FROM PUMP STATION A-14)	Reinstate the pipeline crossing directly after pump station A-14 to assist with high velocities in the force mains downstream of A-14. Pipe section is 2,100 LF from the corner of NE 22nd Ave and NE 19th across Bal Harbour and connects to the existing main at Middle River Dr.	Wastewater Collection System
WW3-15	454	\$ 988,000	FORCE MAIN (FROM PUMP STATION A-54 TO A-10) UPSIZE - REDUNDANCY	Install approximately 1900 LF of 30" force main parallel to the existing 30" force main running from pump station A-54 to pump station A-10 starting at SW4th Ave. Running east along SW19th St to S Andrews Ave.	Wastewater Collection System
WW3-16	454	\$ 100,000	FORCE MAIN (NEAR PUMP STATION D-34) UPSIZE	Upsize approximately 100 LF of force main running from the discharge side of pump station D-34 to SE 17th St from two smaller 4" and 8" mains to a single 12" main.	Wastewater Collection System
WW3-23	454	\$ 1,300,000	PUMP STATIONS C-1 AND C-2 REPLACEMENT	Replacement of C-1 and C-2 stations. Upgrade C-1 pumps with higher capacity models. Replace station piping, valves and appurtenances and wet well as necessary.	Wastewater Collection System
WW3-27	454	\$ 150,000	FORCE MAIN (B-1 DISCHARGE) IMPROVEMENTS	Tie in the 10" and 18" force main cross over on Bayview Dr (approximately 350 LF) to NE 37th Ct. in order to reduce velocity. A valve closure may be required to implement.	Wastewater Collection System
WW3-29	454	\$ 1,500,000	PUMP STATION A-16 UPGRADE	Replacement of A-16 pumps with higher capacity models. Rehabilitate/replace station piping, valves and appurtenances and wet well as necessary.	Wastewater Collection System
WW3-30	454	\$ 580,000	FORCE MAIN (FROM PUMP STATIONS D-35 TO D-36) UPSIZE	Upsize the existing 8" and 10" force mains to approximately 2,000 LF of new 12" force main, along Harbour Inlet Dr, from A1A to Barbara Dr, and along Barbara Dr, from Harbour Inlet Drive to the Stranahan River.	Wastewater Collection System
WW7-1	454	\$ 843,000	GRAVITY PIPE IMPROVEMENTS TO THE DOWNTOWN COLLECTION SYSTEM	<ul style="list-style-type: none"> • Upsize 920 feet of the existing 12" gravity pipe to a 15" gravity pipe along E Las Olas Blvd from SE 1st Ave to SE 4th Ave. • Upsize 750 feet of the existing 14" gravity pipe to 21" gravity pipe right by the pump station and along SE 2nd St. from SW 1st Ave to SE 1st Ave. • Upsize 84 feet of the existing 14" gravity pipe to 24" gravity pipe right by the pump station A-7 along SW 2nd St. • Upsize 560 feet of the existing 15" gravity pipe to 18" gravity pipe right along SE 1st Ave. from East Las Olas to SE 2nd St. (Need to ensure pipe segments are not lined in current I&I contract) 	Wastewater Collection System
	454	\$ 1,500,000	PUMP STATION A-7 UPGRADE	Evaluation and upgrading of A-7 pumps with higher capacity models. Rehabilitate/replacement of station piping, valves and appurtenances and wet well as necessary.	Wastewater Collection System
WA4-1	454	\$ 338,000	WATERMAIN IMPROVEMENTS AREA 1	<ul style="list-style-type: none"> • Bring the 54-inch water main on 38th Street back into service. • Add approximately 400 feet of 30-inch discharge from the Peel-Dixie high service pumps to the old west existing 30-inch discharge. • Upsize approximately 100 feet of 36 and 30-inch from the 42-inch reducer to the intersection of NE 37th Street and NE 11th Avenue with 42-inch. 	Water Distribution System

DRAFT WATER AND WASTEWATER BOND PROJECTS

AS OF: December 21, 2017

WASF-2	454	\$ 25,000	MISCELLANEOUS WATER QUALITY IMPROVEMENTS	Investigate adding additional automatic flushers at the following locations to reduce water age: PLUG_F10015 – Snyder Park PLUG_F5472 – SW 15th Avenue/SW 33rd Street PLUG_F4373 – SW 32nd Place PLUG_F4366 – SW 32nd Street	Water Distribution System
		\$ 660,000	Central Region/Wastewater Fund (451)		
		\$ 62,497,090	Water/Sewer Master Plan Fund (454)		
		\$ 63,157,090	TOTAL		
TOTAL BOND FUNDING		\$ 53,720,800	Central Region/Wastewater Fund (451)		
		\$ 134,541,537	Water/Sewer Master Plan Fund (454)		
		\$ 11,499,320	Joint 451 and 454		
		\$ 199,761,657	TOTAL		

DRAFT
City of Fort Lauderdale
Infrastructure Task Force Committee
December 4, 2017
2:00 p.m. to 5:00 p.m.
8th Floor City Commission Room – City Hall
Fort Lauderdale, FL 33301

1. **Call to Order:**
 - **Roll Call**

MEMBERS		PRESENT	ABSENT
Marilyn Mammano	P	8	0
Ed Kwoka (By phone)	P	7	1
Ralph Zeltman	P	8	0
Keith Cobb	A	5	3
Leo Hansen	P	7	1
Roosevelt Walters	P	8	0
Fred Stresau	P	7	1
Norm Ostrau	P	5	1
David Orshefsky	P	5	0

Staff Present

Meredith Shuster, Administrative Assistant
Paul Berg, Public Works Director
Lee Feldman, City Manager,
Lian Chan, Prototype-Inc. recording secretary

2. **Approval of Agenda**

Motion made by Mr. Walters, seconded by Mr. Orshefsky, to approve the agenda. In a voice vote, the motion carried unanimously.

3. **Approval of Previous Meeting Minutes**

A. November 6, 2017

Mr. Zeltman requested the following corrections be made:

- Page 3, last sentence, should read **we** instead of he. Take the **s** off needs.
- Page 4, top of page, after Mayor Seiler insert **to evaluate the infrastructures.**
- The next sentence should be **Mr. Zeltman** instead of he.
- Page 6, first sentence; **remove “that”**. The sentence should read, **“Mr. Zeltman indicated the Reiss report as 837 pages and the executive**

summary outlines and characterizes improvements for both water and sewer.” Remove “would save time.”

- Page 7, 4th paragraph should read, “Mr. Zeltman **believes** as opposed to believed. The sentence should read, “**Mr. Zeltman believes that a project schedule can establish milestones and the scope that would be helpful to keep us on track.**”
- Page 10, last sentence, should read, “**Mr. Zeltman commented that currently the City uses a footprint of the impervious area to determine stormwater cost responsibility.**”
- The next sentence take out this is and replace it with “**The proposal methodology uses the travel route method, which is a fairer way for inclusion of the units in the high-rises and vertical structures.**”

Mr. Stresau referenced the top of Page 19 and noted that the second line should say, “**...knew they could not build \$1 billion in five years.**”

Mr. Orshefsky mentioned the following changes/corrections:

- Page 3, last three lines, the problem is; insert a colon, insert a comma.
- Page 9, third paragraph; preview should be **purview**.
- Page 14, second paragraph; third sentence that begins with Mr. Orshefsky did not have a problem with. It is sentence fragment; delete the whole sentence ending with etc.

Motion made by Mr. Stresau, seconded by Mr. Zeltman, to approve the November 6, 2017 meeting as modified. In a voice vote, the motion carried unanimously.

4. General Discussion (Board Members) – 15 minutes

Chair Mammano mentioned available material and was pleased to see a breakdown of projects into categories. There was a concern about potential capital budget substitutions going on and that projects put into the CIP were part of the bond. It was questioned if any of those projects would have been funded in the next CIP round and if those projects are being advanced with the \$200 million.

Mr. Berg explained that the consent order projects are straight forward and there are about \$76 million worth of projects that are fixed. Deferred projects are the ones that were in the CIP but the funding was used for the wastewater project. Those projects are having the funding put back. As long as the projections and the anticipated revenues are there those are the monies reserved for those projects.

Chair Mammano clarified that the \$55 million worth of projects were at one time reserved but the money had to be used on an emergency basis and it is now going back in.

Mr. Berg stated that the third part is the recommended priority projects other than consent order or re-funding of the projects that were defunded before. Those projects are out of the Strategic Utilities Master Plan in terms of what is believed to be priorities that need to be funded first. How much can be built at a time must be anticipated, as everything cannot be done at once and there might be a couple of minor changes due to reviewing the logistics of building over the next three years. One of the restrictions on the bond is that 85% of the money is spent in three to five years.

Mr. Orshefsky questioned if each additional Reiss report element added are the highest of the priorities or if those elements are constrained by the capacity to get the elements implemented.

Mr. Berg indicated that consideration of which priorities are included also depends on what can be done within the given time. He referenced the Coral Ridge area and noted in order to reline the forcemain, a redundant line would have to be built first so there would be capacity while the forcemain is being lined. Rehabbing of the existing line would occur probably in the follow-up bond issue after the redundant line is built.

Mr. Orshefsky questioned if the constraint is the capacity to manage the project or the dollar value of the \$200 million bond.

Mr. Berg advised that both building the redundant line and repairing the Coral Ridge line were priorities but cannot be done simultaneously. It is probably a three-year project to build the redundant line and clarified it is also known as a bypass line.

Chair Mammano asked if using the bond money for CIP projects would mean there would be CIP funding available and what the future CIP money is going to be used for if the bond money is being used for these projects.

Mr. Berg stated that only the priorities are addressed. Every year there will be debt service for the bond issue that will come out of the water and sewer fund and as more gets built there will be more to maintain so there will be more operating costs moving forward. Any money left from the annual operating funds after the bond, debt service, and operating costs have been paid, will automatically go into capital improvements.

Chair Mammano commented that in the recent past about \$20 million worth of capital improvement projects have been allocated. Now bonds have to be paid and more maintenance and operations will be needed because of the bigger system. It is assumed that less money would be available in CIP's going forward.

Mr. Berg stated there will not be as much money due to the increased operating costs as well as increased debt service.

Mr. Orshefsky indicated that some of the answers to previous issues involved contributions of construction fees being collected. It was believed around \$10 million

over the last five years. There were issues about how rates for those impact fees needed to be addressed. Mr. Orshefsky asked that there be a broader discussion on those issues, how much was collected and what the projection was, because it has been an upward progression in terms of collective impact fees. The secondary piece is when is a new rate study likely to update those fees since 2005, the year of the ordinance that originally set the rates. As understood, those dollars get fed into the CIP on an annual basis as they are received. Will there be a plus or minus in the CIP available on an annual basis to additionally serve water and sewer enterprise fund needs. It is believed that is a broader discussion, particularly since the City has, on an annual basis, been adding from general revenues into the CIP. There are three types of dollars coming in; the developer paid dollars; what is likely to come in from potential rate increase in those impact fees; and what Administration is planning to do in the way of additional capital contributions coming out of the general revenue.

Chair Mammano understood there were no capital funds going into the water and sewer fund.

Mr. Orshefsky advised there have been general revenue dollars assigned to capital projects, which may not have been in water and sewer, but if there is a way to reduce the pressure on capital demands elsewhere in the budget then maybe additional capital flows could be available in water and sewer and other enterprise funds. Mr. Orshefsky would like a full discussion about what the City Administration is trying to do with this.

Mr. Walters Understood the City carries a reserve fund and asked if there are any reserve funds for any infrastructure projects.

Mr. Feldman stated that a reserve is maintained in the general fund and there is currently \$76 million in that reserve for general government. Enterprise fund reserves are also maintained and the water and sewer fund is no exception; there are reserves in that fund. There is a goal and it is usually a minimum of 45 days of operating costs in the enterprise funds for reserves. Other enterprise funds have similar reserve targets established through the budget, which is adopted by the City Commission. Mr. Feldman was not aware of any fund within the City that has gone below their minimum reserves. From a fund balance standpoint, healthy reserves are maintained.

Chair Mammano commented that the question was if there were reserves for breakdowns in capital projects. There are reserves for operation; however, there is not a reserve capital fund in the enterprise funds. Whatever money is put in the CIP gets allocated or not and it accumulates. The burden on staff to get things done is becoming an issue on its capacity to get all of the needed things done.

Mr. Feldman stated that consideration is being taken. He indicated that everything cannot be taken out of service at the same time. A way to build the redundant line/bypass line from the Coral Ridge Country Club system is being reviewed. Operational reserves are both operational and capital and are available when needed to

make sure there is enough cash so an emergency line of credit does not have to be floated. Priorities may need to be shifted and it is a matter of moving money that was not going to be spent into the current budget.

Mr. Kwoka mentioned the Coral Ridge Country Club line and the three-year timetable to build the bypass line. The age of the existing line was questioned in relation to the 30-year main where there was a problem. It was also questioned if there is a contingency plan if there are breaks in the line. Mr. Kwoka expressed concern about the three-year timetable and questioned if it would take three years to repair an emergency if there were a similar break in the 30-inch line.

Mr. Berg advised the City is being proactive. The backup plan is to build the redundant line as quickly as possible and that is about a \$20 million to \$25 million project by itself. The design takes a while because it is a major line going through about a two-mile plus area of the City and there are a lot of things to design around in order to get that off the ground. The Coral Ridge line is about the same age as the 30-inch line. It is larger and if it were to fail, it could cause a bigger problem. A spot repair would be done immediately. It is one of the projects on the priority list.

Mr. Feldman stated that a rate study is being considered after the bond issue is closed. Impact fees will be considered as part of the rate study. It was reminded that impact fees can only be collected for the purpose of accommodating growth. Impact fees cannot be used to replace an existing line but can be used for upsizing. The rate study is anticipated to commence in late March.

Mr. Orshefsky asked if impact fees are increased to deal with growth demands how would it get fed into the CIP and asked if it is possible for non-bonding dollars coming into the CIP to be addressed.

Chair Mammano indicated that impact fees are not assigned to specific projects.

Mr. Berg commented that the amount spent on projects in water and sewer with those impact fees are much greater than amounts collected. That could easily be a recommendation.

Mr. Feldman advised that projects are relatively limited to take the system from the beginning to the end. There is enough treatment capacity for water that can be expanded. As far as transmission, some of the water lines may need to be upgraded to meet the fire code and such. On the collection side, larger pump stations may be needed; therefore there would be an impact fee. A lot of impact fees are going into projects where an increase has been needed in the pump station. There is capacity at the treatment facility, GTL, so there are no capacity issues. When looking at the impact fee, it has to be calculated on an equivalent residential unit as to what that impact is going to be on the system. Fees have to be local and tied back to the incremental cost

of the unit onto the system. It was also noted that the results of a rate study may not mean rates will increase but could also decrease.

Mr. Ostrau commented that ultimately rates will go down and questioned how rates are determined.

Mr. Feldman mentioned there are two ways to determine rates. One way is by looking at what is already in the pipeline and the other way is that staff knows what the buildout looks like in terms of permitted land use.

Mr. Zeltman indicated that rates will go down once the sewer collection mains are repaired reducing ground water seeping in and will save even more wastewater treatment plant costs. Once the realization of those repairs is made there should be a big savings. In turn, capacity can be increased.

Mr. Walters referenced an article in the newspaper over the weekend and questioned if it was incorrect.

Mr. Feldman stated the article headline was misleading; it was partially wrong and partially right. With improvements currently being made, there will be enough capacity. Also, all the projected growth is not being done immediately. Currently, about 2,000 to 3,000 units are coming online in a year.

Chair Mammano questioned if a plan is in place to handle 3,000 units every year considering the unknown condition of the pipes downtown and asked specifically about plans for pipes in the downtown area.

Mr. Feldman explained that repairing the I/I (inflow/infiltration) will add 15 to 20 years of life to the pipes. The I/I projects are in the downtown basin and lining the pipes is being done as quickly as we can. The three highest priorities are the redundant line, the aggressive I/I, and making sure the dollars are put into Fiveash or into Peele Dixie to continue the treatment of water.

Mr. Feldman asked the task force to consider where the future water supply should come from. The City could continue using the Biscayne Aquifer, which is basically the Fiveash plan, or dollars could be put into Peele Dixie to expand the system. It is a little more expensive to treat the Floridan Aquifer but that is where the dollars should be put because that is the water supply alternative versus taking the same equivalent dollars and pushing it into Fiveash to treat the surface of the Biscayne Aquifer, which may only be good for another 50 years.

Chair Mammano commented that is a big issue and requires expertise, study, and pros and cons.

Mr. Berg stated that one revision in the project list was the relining of the existing Coral Ridge pipe, which was about a \$16 million project. The next step was what should be

done with water treatment. The final project list will show monies to do the feasibility study to evaluate which is best, expanding Peele Dixie, rebuilding, or replacing Fiveash in terms of major water supply for the City and then actual design work to do whatever that feasibility study says.

Chair Mammano mentioned that the money comes out of the enterprise funds and will be a CIP line item for a consultant contract to do this study.

Mr. Feldman stated the study is part of the bond issue. \$200 million in cash is being put into the CIP through the issuance of a bond to address the capital needs of the system. The bond will be paid off over a 30-year period so the users of the system are paying over the useful life of the system.

Chair Mammano noted that is the capital budget substitution concern.

Mr. Feldman advised that the City believed the increase in the water and sewer rates would add some savings they have been able to achieve through re-funding received in the past that would provide adequate capacity to fund the debt service on this new issue. It will allow the City to continue to fund the CIP.

Chair Mammano expressed concern that by bonding, the same amount of money that has been contributed in the past to the CIP would not be made.

Mr. Feldman commented that the intent is not to substitute.

Mr. Zeltman mentioned that the Floridan Aquifer is 1300 feet down and once the infiltration problem is solved the likelihood of replenishment to the Biscayne Aquifer will increase. As long as that source can be preserved, the longer the source will last and cautioned about saltwater intrusion to the City's wells and having a backup plan.

Mr. Feldman stated that the wellfields are well out west and saltwater intrusion is not a big concern.

Mr. Kwoka mentioned one concern is that a 30-year debt service is being incurred and the life of the infrastructure is being extended for 15 or 20 years.

Mr. Feldman advised that all bonds do not mature in 30 years. The life of the bonds could be tied to the improvements.

Mr. Kwoka mentioned his concern that removing or reducing funds into the CIP because it was infused by a bond issuance. He asked where that would leave the City when additional infrastructure and improvements have to be paid 20 to 25 years from now.

Mr. Feldman reiterated that there has been no mention of reducing the funding for CIP.

Mr. Orshefsky suggested deferring all the Capital Improvement, Contributions in Aid of Construction ("CIAC"), Impact Fee discussions, and potential substitutions to the January agenda instead of trying to speculate..

Mr. Orshefsky commented that the minutes are fine but lengthy. He would like to hear from the Public Information Office as to what the web presence looks like for exchange with the public.

Chair Mammano questioned if Mr. Kwoka spoke to Chaz Adams. She suggested Mr. Adams needs to be at the meeting so there can be a discussion about a greater outreach. This should be placed on the January agenda.

Mr. Kwoka stated that he did not speak to Mr. Adams. If someone could arrange a meeting for them to meet prior to the Joint meeting he would try to meet with them.

Chair Mammano suggested that Mr. Kwoka work that out with Ms. Shuster.

5. Old Business

A. Public Outreach Survey

- i. Survey Distribution and Posting**
- ii. Compilation of survey data**

Discussion ensued regarding survey questions put together by the Committee and sent to Mr. Kwoka. The format of having five topics and five questions per topic was confirmed.

The following comments were made:

- There was concern that questions could not be written without showing bias and a suggestion was made that in lieu of questions, perhaps everyone could go out with handouts or documents to the public that express what the Committee has learned or observed to widen the circle of information available.
- Misinformation and uninformed public will still be inevitable to some degree.
- Once the Committee speaks to the Public Information Office and there is a webpage, the survey could be at one tab and another tab could show what the Committee has been doing for the last six months and what was found about impact fees and capital contributions. One or two pages could be drafted and posted in the same place. It was noted that the questions would be reshaped to eliminate bias and questions would be randomly selected.
- Mr. Kwoka confirmed that he received enough questions and that bias will generally be reduced in the phrasing of the questions and with enough survey results.

- It was suggested to focus on mobility specifically such as roads rather than passenger models. It was believed that retaining the concept of mobility as one of the infrastructure needs would be a good thing.
- The intention was to keep the initial five recommended topics and adding the two components, sea level rise and mobility.
- Mr. Kwoka stated a deadline would be set so the survey could be opened and closed. Because the survey is online the results are tabulated and each survey must be 100% complete; any incompletes will be removed. He stated he would handle the compilation. It was believed that the tabulation would be available by the next meeting.
- A 95% validity rate is the standard for acceptance; however, there is still value to the survey if the number falls slightly under. There must be a certain number to shoot for; perhaps 300-350 responses.
- In non-technological situations, the study could be published in a paper form; however, two independent people would have to transcribe the paper version to the electronic version to eliminate bias. All Committee members could be emailed the survey and the survey could be available at the January candidates meeting.
- If less than 25 questions were answered on the survey the answers would not be statistically counted. The results could still be used for information but could not be counted toward the validity of the survey. Questions would be set up so if people do not have an opinion, that would be the answer.
- The purpose of this survey goes back to the conversation about open discussion with the public and trying to narrow the focus on the topics to keep the conversation on track.
- Some terms will not be readily understood or are too hard and the survey must be simplified so anyone can answer or check "I don't know" at the end of the question.
- Mr. Kwoka explained how the questions are written at about an eighth grade level and by including certain redundancy, emotional factors can be minimized.
- A City survey was recently undertaken dealing with transportation and Mr. Feldman suggested it does not have to be covered again. One of the biggest issues neighbors have is the synchronization of traffic signals and that responsibility was transferred back to the County in the 1970's. He asked if taking back control is something the Committee wants to address.
- Conversation ensued to not take it back.
- Mr. Feldman questioned what type of control there is so the survey will not be done multiple times by the same party.
- Mr. Kwoka explained tooling is used to capture the IP address so duplicates can be seen and any additional surveys would be extracted from the data.
- The survey was not being used to make decisions on the bond and there would not be any long-lasting implications being determined. The survey is to help the Committee shape a forum for discussion, which will be a public forum. The basic statistical validation is for general knowledge.

- A special meeting was suggested to address the survey.

B. Joint Workshop with the City Commission

Chair Mammano announced that the meeting on Wednesday is on priorities and objectives.

Mr. Ostrau asked if the projections were ever updated and provided on the stormwater rate study.

Chair Mammano replied that the update was not received. Her question was does the rate need to be increased 5% every year when the change in methodology could kick in another \$10 million.

Mr. Feldman advised that the Commission received the communication and basically said they were not interested in the methodology at this time.

Mr. Walters suggested bringing it back in May when the new commission would be seated.

Mr. Feldman indicated that the Committee was trying to get discussion on the philosophy not on the numbers so a rate could be created based on the philosophy.

Chair Mammano commented that the methodology should be changed so everyone is paying their fair share. Redundancy should be a high priority; there should be redundancy in the system and the infiltration (I/I) issues should be prioritized along with relining of the pipes.

Mr. Orshefsky stated there is already \$15 million in contracts with I/I that are currently being implemented.

Mr. Berg indicated there is almost \$22 million worth of I/I scheduled over the five-year plan.

Chair Mammano questioned if there is a map of pipes in the I/I project.

Mr. Berg stated that the pipes are prioritized by drainage basin, both for the gravity sewer system and for stormwater. The \$21.6 million is for the sanitary and gravity system and there is \$15 million authorized as part of the existing CIP, which was approved earlier this year. The biggest problem has been with the 100-year rain in June, the king tides, and the hurricane. Groundwater levels have been high but as we get into the dry season the projects will get underway.

Chair Mammano questioned if Mr. Berg was confident that there was enough money in the program to get a hold of this and how long it would take to get this done.

Mr. Berg did not readily have a number as far as the timeframe. The goal is to line it all.

Mr. Orshefsky questioned if there is a sense or a ballpark that the \$22 million is 40% or 80% for I/I potential projects.

Mr. Berg did not readily have a number but believed the \$22 million addresses many of the priorities, especially in the downtown area.

Mr. Stresau addressed resiliency and read his question and Mr. Dodd's response from last month's minutes. Mr. Stresau questioned at what point is it considered that the sea level rise will affect the plan to bury a huge pipe leading into the GTL Wastewater Treatment Plant. His concern was the magnitude of cost as opposed to the added value of security to bury a functioning piece of infrastructure when the plant may need to be replaced in 50 years due to sea level rise.

Chair Mammano questioned what resiliency means to the Committee.

Mr. Stresau described resiliency as money being spent on infrastructure that is not necessary or probably will not be used in 35-40 years.

Mr. Zeltman commented service life is generally 50 years. After the pipes have been lined and the life extended 15-20 years what will happen then? At some point in time, the pipes will no longer be able to be lined.

Chair Mammano referenced the I/I program and questioned which pipes were chosen to prioritize and how that decision was made.

Mr. Berg stated the decision was based on where the demands are and where the most problems have occurred, along with experience in dealing with where the high and low flows are coming out of the gravity systems and how long pump times are. Mr. Berg pointed out that is the reason for master plans that point out useful life and when things will wear out and to build that into future designs and plans because at some point the pipes must be replaced and it must be built into to plan on how to pay for it

Mr. Kwoka mentioned if a line lasts 20 years that is a temporary fix..

Mr. Orshefsky indicated that one of the ways other jurisdictions have dealt with ongoing capital needs is to build a replacement cost into their rates like condos that have to put money into reserves for eventual capital replacement. It could be brought up at another meeting.

Mr. Berg stated It is a continuous process and there is a part built into the operational costs every year to maintain and replace.

Mr. Orshefsky noted it is not the same concept as the reserves.

Mr. Berg commented that it is an ongoing process that has to be projected. It is one of the limitations of having a five-year CIP and that is why the 20-year utilities master plan was done because a longer outlook had to be taken.

Mr. Walters questioned what limitations are being put on the outflow of the pipe once the stint/liner is in.

Mr. Berg advised the lines are going from a 31 ½-inch diameter line to a 30-inch line so one-inch is being lost, which is about 3%. The functional improvement makes up for the loss in pipe diameter.

Mr. Ostrau questioned what is going to be discussed with the Commission.

Mr. Kwoka suggested talking about the duration of the Infrastructure Task Force Committee because that directly impacts what can or cannot be considered.

Mr. Orshefsky stated that the WAVE and the FDEP consent agreement have been taken off the table. There is a methodology for stormwater; a recommendation was made and is likely to come up again but at this point it was taken off the table. If a reserve element for the replacement of the major expenses/projects is put in as part of the rate structure, debt service would not have to be paid or less debt service would be paid. Then all of the extra jurisdictional elements of the system would also pay for the capital replacement. The rate study is coming up and his suggestion is some sort of component should be put into the rate base that provides for the eventual replacement of all major capital systems.

Chair Mammano questioned if whatever is left in the budget once everything is taken care of is put into the CIP that an amount toward replacement could be held in reserve and a “pay as we go” approach would be used .

Mr. Orshefsky commented that based on the current study, a detailed budget of what Reiss’s recommendations are with respect to water and sewer was given for the next 20 years.

Mr. Kwoka stated there is a comment in the minutes by Mr. Feldman that previous ROI was collected against stormwater but is no longer being done. ROI pertains only to wastewater.

Chair Mammano wanted to discuss sustainability because it means different things to different people. She thinks it means preserving the community and asked the board to for comments.

Mr. Kwoka offered to forward literature placing a clear definition on sustainability with regard to the use of innovation, specifically directed at this type of topic.

Mr. Orshefsky questioned if resiliency and sustainability are perceived as different things.

Mr. Stresau believed it has to do as to whether or not good money is put after something considered bad if looking at sea level rise. There is a perfectly good 1,600-foot long pipe that is six or eight feet in diameter and it has been said that the pipe needs to be put underground for security.

Chair Mammano stated if there is a security issue, perhaps the money should be spent even though putting it underground is not a good idea in the long run due to sea level rise but in the short run it is something that needs to be done if it is a question of sabotage that could kill people.

Chair Mammano reiterated what was said about not being able to do everything at the same time or gridlock would occur. She preferred to see a visual such as a map to show the prioritization. What needs to be replaced when and how much it will cost.

Mr. Orshefsky suggested telling the Commission that this Committee is not going to deal with the WAVE.

Mr. Kwoka indicated that the Committee should give some consideration as to when and how to start replacing the pipes. If this buys 20 years, the next time there may not be the capability to line the pipes. This should not be passed on to the next generation. What matters is that the discussion has begun.

Mr. Orshefsky clarified there is rate methodology, stormwater on the side, rate methodology includes “reserves” as a term of art for the water and sewer system, and no WAVE .

Chair Mammano agreed that the Committee should not get into the details of the WAVE but stated there was a question of whether that amount of money should be spent on that mode of transportation when there are other, better, technological and cheaper alternatives that will accomplish the same thing.

Committee members suggested not bothering with the WAVE, discussing the life of this Committee and to suggest an extension, and discussing the ROI.

Mr. Hansen commented that there are certain priorities that are more imperative. When it is something that affects 99% of the population over a “wish list” that may affect only 1% of the population, the Committee needs to make that case.

Chair Mammano stated that all of the infrastructure programs are being funded out of the enterprise funds.

Mr. Orshefsky advised that some of the programs are being funded from the CIP and general revenue.

Chair Mammano was told by Mr. Berg and others that the amount of money coming out of the general fund to fund infrastructure projects is very small. Perhaps there should be some investments of general funds in infrastructure such as seawalls, that are critical. It was questioned why the City is limited to using the enterprise funds for infrastructure.

Mr. Stresau heard the \$200 million was going into the fund to do projects and that there is not a lot of money coming from anywhere else.

Mr. Orshefsky stated that a recommendation was being made to the Commission that 3% or 4% of the overall general revenue be taken. The \$11 million turned out to be about 3% or 4%. There has been discussion at the BAB in the past about whether that percentage should be higher. The question is whether infrastructure should be funded more fully out of general revenue, which goes back to ad valorem.

Mr. Walters expressed concern about trying to be fair with the rate structure homeowners are going to be paying for the sidewalks and/or parks.

Chair Mammano mentioned that the next big discussion would be if the rate structure is changed if there would be enough money to pay for everything or if fees would have to be raised.

Mr. Berg noted that it has not been decided whether seawalls are part of stormwater. It was mentioned that the Commission would have to decide, as a policy issue, how the seawalls are going to be paid for and where the revenue source is.

Chair Mammano commented that if the project could not be bonded as part of the enterprise fund for the stormwater, there is only one other pot of money.

Mr. Ostrau stated that if a piece of property were sold out west something else might be done with the seawalls.

Mr. Stresau mentioned that the difference between ad valorem taxes and selling a piece of property are totally different. There is a major investment in the storm drainage and there is no way to pay for it.

Mr. Zeltman indicated that there are different types of storm drainage.

Mr. Berg advised that the City of Fort Lauderdale has 22 basins and the stormwater master plan is focused on the seven top priority basins which have the most flooding and some of that may be due to maintenance; however, most is due to lack of drainage facilities.

There are two (of the seven) basins where there is almost no existing infrastructure; there are no pipes. There are currently two large and two small stormwater pumping stations. With the new stormwater master plan, for those seven neighborhoods, that number of pumping stations would be increased by eight. Currently, the majority of the stormwater pipes are less than 30 inches and with the new system they are looking at pipes that will be as much as 72 inches in certain locations. Maintenance is an issue in the long run but the way stormwater is managed in this City must change.

Mr. Berg stated that is what the \$200 million being estimated for stormwater is going to be spent on.

A comment was made that the stormwater rate has been increased every year for the last three years and part of the discussion about the rate methodology changing is to go back to what Chair Mammano referred to as a fairness issue to determine whether simply changing the rate methodology could prevent an increase to those rates.

Mr. Stresau again questioned if the \$200 million could be funded for the stormwater program out of the current rates.

Chair Mammano stated that the methodology could be done and there still would not be enough money and still have to raise the rates.

Mr. Walters mentioned neighboring cities that use this system and questioned how they are charged.

Mr. Berg advised that stormwater systems are always neighborhood elements; there are no users outside the City limits; however, there are other users with the sewers. When the water system was regionalized a lot of force mains were built by about six or seven cities and Fort Lauderdale was about 80% and the other cities represented about 20%. Those costs for water treatment are computed every year and included are the operation and capital projects. At the end of the year, if there is money left over the money is rebated and if there are shortages the rates are increased.

Chair Mammano commented that millions of dollars are being spent on lining the pipes to stop the infiltration and sand and questioned if other cities are spending millions of dollars on their pipes.

Mr. Berg stated that other cities have spent some funds but as the City of Fort Lauderdale increases its efforts, the other cities will be looked at.

Mr. Hansen noted that the stormwater problem not being caused by development.

Mr. Orshefsky stated that each project has to handle its own water use. The stormwater system is needed because beyond that point, no one is required to deal with more than the regulatory minimum.

Mr. Berg commented that when applying for a development permit capacity is part of the issue that must be taken care of.

Mr. Hansen stated that overdevelopment is a big issue in the public mind. Water and sewer were looked at and it was determined that both could be handled. Mr. Hansen wanted to be sure stormwater was crossed off the list.

Mr. Orshefsky read his list of the five topics for discussion with the Commission at the Joint Meeting in no particular order.

A: Stormwater rates using the trip methodology and the issue the Committee had with the equity of the rate structure.

B: To include an element of capital reserve for water and sewer so rates could be collected on an annual basis for the eventual replacement of capital facilities as a potential alternative to bonding or ad valorem. [WAVE is in brackets because it is not going to be raised.]

C: Extension of the life of the Infrastructure Task Force Committee.

D: Generic discussion about ROI philosophy.

E: Infrastructure items as a priority, which was a potential increase in general revenue ad valorem contributions to infrastructure.

6. Board Member Comments – None.

7. New Business

A. Criteria for Philosophical Approach to Infrastructure Prioritization

B. Fiveash Water Treatment Plant

Items A and B were discussed under General Discussion mentioned above.

8. Public Comments

Peter Partington, resident, liked the analogy to the condos with their reserve study. It was understood that Condominium Associations can vote not have reserves so the situation is the reverse of how it is with the City. The Reiss study forms the basis of the CIP for 20 years for wastewater. It was suggested that the Committee ask the Commission that somehow funding in the Reiss report each year is a given and a vote

must be taken to take things out rather than take or add things. With regard to priorities, it was suggested that earlier projects in the Reiss report be put into the GIS system so the public can see what is planned year by year.

Tim Smith complimented the amazing service of the Committee. The best way to help citizens is if the Committee is certain with their position. The Commission should be asked to take some hard positions. Mr. Smith hopes the Committee approaches it forcefully and tells the Commission that the Committee only has a certain amount of time and that should be the first thing noted. Tell the Commission what the Committee thinks and ask for specific performance. A trip was put together to visit the wastewater treatment plant and Mr. Smith is going to try to put together a trip to Peele Dixie, which is a historic water plant in the City.

Mr. Kwoka asked Mr. Smith if the Committee should continue in perpetuity.

Mr. Smith did not know about in perpetuity but it was not believed that the work was finished.

Mr. Walters agreed with Mr. Smith. The Committee can be as forceful as allowed, but noted that the Committee is advisory in nature.

Chair Mammano advised that the workshop is going to be televised and will be on the City's webpage. People will see that the Committee has been working for eight months and have come to some conclusions and made some statements. This is a serious issue.

Paul Chettle, resident, referenced a statement that ROI is not taken out of stormwater because there is not a rate structure to support it. Stormwater fees have already gone up 186% in the last six years and the Commission has seen it three times, once directly and twice through the Committee communications and they have no political appetite given the 43 days to deliver. It is imperative that whoever is next on the Commission address this immediately because there needs to be a rate structure in order to support issuing the debt needed to satisfy the \$200 million in projects. When speaking to the Commission, many residents have been begging them for a year to address infrastructure in the budget and by the CIP and they have put themselves in a position where they have not raised the millage, have not adjusted the budget, cut spending on critical infrastructure in the CIP, and now they want to issue \$200 million of debt to pay for water and sewer, taking the amount of debt capacity. Mr. Chettle mentioned the \$60 million debt service difference between the two strategies. If there is a billion dollars of debt, five tranches, \$200 million each, with an additional \$60 million difference between two different strategies, suddenly there is a \$300 million difference in debt service.

Mr. Zeltman indicated there is a problem and a new commission regime is coming in. What is said now will have to be repeated.

Chair Mammano was looking at this as an education process. Issues are put on the table and the next time there is a meeting with the Commission some serious proposals can be put on the table.

Charlotte Rodstrom mentioned the new Commission and suggested the Committee prepare some type of a summary of exact things that have happened on the Committee. Have something ready on day one that can be handed to the new Commission that will give a summary of what has been done over the last eight months and where the ideas are.

9. Adjournment – Next Regular Meeting – January 4, 2018

There being no further business to come before the Committee at this time, the meeting was adjourned at 4:34 p.m.

Any written public comments made 48 hours prior to the meeting regarding items discussed during the proceedings have been attached hereto.