



**CITY OF FORT LAUDERDALE**  
**City Commission Agenda Memo**  
**CONFERENCE MEETING**

**#20-0058**

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**TO:** Honorable Mayor & Members of the  
Fort Lauderdale City Commission

**FROM:** Chris Lagerbloom, ICMA-CM, City Manager

**DATE:** January 7, 2019

**TITLE:** Sewer Force Main Failures during December 2019 – (Commission District  
2 and 4)

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**Background**

This memorandum advises the City Commission of multiple sewer force main failures that occurred from December 10<sup>th</sup> through December 30<sup>th</sup>. The City responded to six sewer force main failures:

- December 10, 2019: Rio Vista/Hector Park (1000 block Ponce de Leon Dr.)
- December 20, 2019: Rio Vista/Young Park (900 block SE 10<sup>th</sup> St.)
- December 21, 2019: Himmarshee Canal (SE 2<sup>nd</sup> St. and SE 9<sup>th</sup> Ave.)
- December 27, 2019: Victoria Park (1600 block NE 5<sup>th</sup> St.)
- December 30, 2019: Victoria Park (1600 block NE 5<sup>th</sup> St.)
- December 30, 2019: Coral Ridge Country Club Estates (1600 block NE 36<sup>th</sup> St.)

The City managed and responded to these incidents with an all “hands on deck” effort involving multiple City agencies by implementing the National Incident Management System (NIMS) approach to emergency events. An Incident Command (IC) was established in the field, operating 24 hours daily during these incidents. The Incident Command was staffed around the clock by a high-level Incident Commander augmented by logistics and support from Public Works, Fire Rescue, Police and Strategic Communications.

In alignment with NIMS guidelines, all public information and public outreach was disseminated centrally by the Office of Strategic Communications. This included two updates to the public daily, one in the morning and one in the evening, and posting through all available digital and social media platforms. Disseminated information included work progress, updated maps, advisories, sampling data and test reports.

Due to the large size of the damaged pipe sections, affected areas, depth of the force main, proximity to waterways, and the need to maintain services, the City immediately engaged several regional and national contractors, subcontractors, and consultants to address these breaks.

### Rio Vista/Hector Park

On December 10<sup>th</sup>, a 46-year old, 54-inch diameter ductile iron sewer force main broke near 1030 Ponce De Leon Drive, affecting Hector Park and adjacent properties along north and south sides of Ponce de Leon Drive, from SE 9<sup>th</sup> Avenue to SE 12<sup>th</sup> Way in the Rio Vista neighborhood. The City immediately mobilized DMSI to perform emergency repairs by bypassing the damaged section, discontinuing sewer discharge into the Tarpon River, replacing the damaged section, and placing the repaired force main back in service. The emergency bypass was activated at 3:04 a.m. on December 18<sup>th</sup> and discharging into the Tarpon River ceased at the same time. DMSI completed final repairs and reactivation of the force main on December 20<sup>th</sup>.

### Rio Vista/Virginia Young Park

The same 54-inch diameter pipe broke near 909 SE 10<sup>th</sup> Street on December 20<sup>th</sup>, affecting Virginia Young Park and adjacent properties along SE 10<sup>th</sup> Street and South Rio Vista Boulevard down to SE 9<sup>th</sup> Street in the Rio Vista neighborhood.

The City quickly shifted DMSI and mobilized Southern Underground Industries, Inc. to perform the repairs at this location. Repairs encompassed setting a new longer bypass from this site to Hector Park. The new bypass was activated on December 25<sup>th</sup> at 12:56 a.m. and discharging into the Tarpon River ceased at the same time. Final repairs of damaged sections on SE 10<sup>th</sup> Street were concluded on December 30<sup>th</sup>.

### Himmarshee Canal

On December 21<sup>st</sup> at 8:19 a.m., a 1982-era 48-inch diameter subaqueous ductile iron canal crossing sewer force main broke affecting the Himmarshee Canal. This was the same location where a similar break occurred in 2016. The City immediately mobilized Industrial Divers to fix this break since they had performed the previous repair. Due to low underwater visibility and constant high-pressure flow from the break in the pipe, another diving team working for DMSI was brought in to assist with the repairs. Using specially-fabricated clamping seal and fittings as a temporary repair, the flow was substantially stopped on December 26<sup>th</sup> at 6:00 a.m. A permanent repair was completed on January 6<sup>th</sup>.

### Victoria Park

On December 27<sup>th</sup> a 16-inch diameter cast iron sewer pipe broke near 1630 NE 5<sup>th</sup> Street affecting the properties along the 1600 block of NE 5<sup>th</sup> Street. This pipe was installed in 1973 and had been repaired previously due to deterioration. City crews immediately mobilized to the area and isolated the sewage flow. The City also mobilized its annual utility contractor, Southern Underground Industries, Inc., to complete the repair, several pumping contractors, and Cliff Berry, Inc. for cleaning and decontamination. The repair was completed in the evening of December 29<sup>th</sup> and the

pipe was placed in service that night.

A second rupture occurred on December 30<sup>th</sup> adjacent to the original rupture near 1631 NE 5<sup>th</sup> Street. This rupture was also due to a hole resulting from deterioration of the metal pipe. This location was quickly repaired, and the pipe was placed back in service.

Due to the high potential for additional immediate failures in this pipe, staff authorized a larger emergency pipe replacement project utilizing an existing continuing service contract. This project will encompass the replacement of approximately 4,800 linear feet of cast iron pipe with new 16-inch diameter ductile iron pipe along North Victoria Terrace and NE 5<sup>th</sup> Street, extending from 625 NE19<sup>th</sup> Avenue and ending at 1011 NE 5<sup>th</sup> Street. This emergency project will be constructed by Southern Underground Industries, Inc., and will begin Monday, January 6, 2020 with an estimated completion date of February 14, 2020. The estimated project cost is \$2.4 million.

### Coral Ridge Country Club Estates

On December 30<sup>th</sup>, a 10-inch diameter cast iron sewer pipe broke on NE 36<sup>th</sup> Street affecting the cul-de-sac on the street. The existing pipe was installed in 1982 (38-years old) and had failed previously due to deterioration. City crews immediately mobilized to the area and isolated the sewage flow. The City also mobilized its annual utility contractor Southern Underground Industries, Inc. for the immediate repairs. There was minimal impact to adjacent properties. The pipe was repaired on December 31<sup>st</sup> and placed back in service.

As with the Victoria Park pipe breaks, this pipe segment presented a high potential for immediate breaks. Consequently, staff authorized a larger emergency pipe replacement project using an existing continuing service contract. This project will encompass the replacement of approximately 1,700 linear feet of cast iron pipe with a new 12-inch diameter ductile iron pipe along NE 36<sup>th</sup> Street from Bayview Drive to the end of the cul-de-sac. This emergency project will be constructed by the Hinterland Group, using a continuing services contract, and will begin in early January 2020 with an estimated completion date in February 2020. The estimated cost of this project is \$850,000.

### Redundant Force Main Design-Build Project

The extent of the deterioration of the 54-inch force main presented an urgent need to proceed with the immediate design and construction of a redundant transmission line from the Coral Ridge Country Club Wastewater Pump Station (“Station B Re-pump”) to the G.T. Lohmeyer Regional Wastewater Treatment Plant.

This project will be accomplished in two segments through three separate design/build contracts:

1. Rio Vista Emergency Force Main Replacement
2. Station B Re-pump to George English Park (“North Project”)

3. George English Park to the G.T. Lohmeyer Regional Wastewater Treatment Plant (“South Project”)

Rio Vista Force Emergency Force Main Replacement

This immediate project will replace the current above ground, high-density polyethylene (HDPE) bypass pipe, extending from Virginia Young Park to Hector Park, and will deactivate the existing pipe that runs near Virginia Young and Hector parks until it is rehabilitated in the future. It includes design and construction of a new underground 48-inch diameter pipe extending from Pump Station A-15 located at the corner of SE 9<sup>th</sup> Avenue and SE 7<sup>th</sup> Street to the corner of SE 12<sup>th</sup> Street and SE 10<sup>th</sup> Avenue near Evergreen Cemetery. Once completed, the above ground pipe will be removed, thus allowing for the re-opening of all blocked driveways and streets. DMSI was awarded an emergency contract in the estimated amount of \$ \$3.5 million. Project completion is expected in approximately 12 weeks.

North and South Projects

On December 23<sup>rd</sup>, the City published a competitive solicitation titled “*Emergency Procurement Proposal No. 12367-496 Design/Build Installation of New Redundant Bypass Line*” for the project from the Station B-Repump to the G.T. Lohmeyer Regional Wastewater Treatment Plant. Responders were asked to submit responses and cost estimates for the full project and/or specific segments. These responses were received on December 30<sup>th</sup> and reviewed by an evaluation committee on December 31<sup>st</sup>. The evaluation committee recommended the city manager award emergency contracts for the North Project to Murphy Pipeline Contractors, Inc. and to DMSI for the South Project. The estimated total project cost both segments is \$61.5 million,

The duration of this fast-tracked project is approximately 14-18 months and will provide the City a new, redundant 48-inch sewer main with interconnects to the existing 54-inch force main. Once this project is completed, another project is planned for the near future using the normal procurement process to rehabilitate the existing 54-inch line. This will result in the City having two wastewater transmission lines for full redundancy and reliability.

These construction projects will include coordinated public outreach and information efforts.

**Resource Impact**

Section 2-181(f)(4) (“Emergency Purchases”) of the Code of Ordinances requires staff to report to the City Commission emergency purchases that exceed \$100,000 at the earliest available Commission meeting. Emergency response, repairs and remediation activities were on-going at the time this update was prepared and not available. Staff is compiling all costs associated with these incidents and will provide the final costs to the City Commission at an upcoming Conference Meeting.

The estimated costs of the force main replacements and redundant line are:

- Victoria Park Force Main Replacement - \$2.4 million
- Coral Ridge Country Club Estates Force Main Replacement - \$850,000
- Rio Vista Emergency Force Main Replacement - \$3.5 million
- Redundant Force Main Design-Build Project - \$61.5 million

Funds are available in the Water and Sewer Central Regional Wastewater System fund balance for the Rio Vista Emergency Force Main Replacement and Redundant Force Main Design-Build projects. A request to transfer funds from two capital projects, SE 10th Avenue 48-inch Force Main Replacement and 36-inch Bypass project (P12385) and Redundant Force Main from B-Repump to GTL (P12406) in the amount of \$65 million is on the City Commission's January 7, 2020 Regular Meeting Agenda (CAM #19-1222).

### **Strategic Connections**

This item is a *Fiscal Year 2020 Commission Annual Action Plan* Top-Priority, included within the Critical City Infrastructure priority.

This item supports the *Press Play Fort Lauderdale 2024 Strategic Plan*, specifically advancing:

- The Infrastructure Focus Area
- Goal 1: Build a sustainable and resilient community.
- Objective 1: Proactively maintain our water, wastewater, road and bridge infrastructure.

This item advances the *Fast Forward Fort Lauderdale 2035 Vision Plan: We are Ready*.

### **Related Item**

CAM 19-1222

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Prepared by: Talal Abi-Karam, Assistant Public Works Director - Utilities

Department Director: Aneisha Daniel, Deputy Director – Public Works



# **PLANT EVALUATION AT THE FIVEASH WATER TREATMENT PLANT UPDATE**

**January 6, 2020**



# Project Scope

# Project Scope

- Existing Facility Condition Assessment
- Existing Water Resources Evaluation
- Treatment Systems Investigation



# Project Findings

# Existing Facility Condition Assessment

- Performed evaluation & visual inspection of existing facilities
- Conclusions
  - Facility has reached/exceeded projected useful life
  - Consistent with the findings of the 2017 Comprehensive Utility Strategic Master Plan
  - Not recommended for significant rehabilitation investment

# Existing Water Resources Evaluation

- Assessed planning period needs (2035)
- Evaluated existing SFWMD water use permit (WUP) allocations
- Performed comparison of C-51 source with Floridan Aquifer source
  
- Conclusions
  - Existing WUP allocations are sufficient for planning period needs
  - Purchase/utilization of C-51 water is cost effective for post planning period requirements

# Treatment Systems Investigation

- Investigated 18 Treatment Schemes
- Assessed ability to locate replacement facility at the existing Fiveash site
- Evaluated locating replacement facility at the Prospect Wellfield site
- Performed siting and cost analysis

# Treatment Schemes Investigation

- Investigated 18 Treatment Schemes
- Primary Goals
  - Meet all regulatory requirements
  - Achieve enhanced/improved aesthetic objectives (color, taste/odor, etc.)
  - Establish “state of the art”/robust treatment system for the long term
  - Optimize fiscal and operational considerations
  - Plan for future considerations (future regulations, byproducts disposal, etc.)

# Treatment Systems Investigation

- Conclusions
  - Multiple treatment schemes available
  - Prospect Wellfield site is most suitable for replacement facility
  - Most “state of the art”/robust treatment system would consist of nanofiltration and ion exchange system
  - Conceptual capital cost range \$350 - \$400+ million

**Questions ?**



# CONSENT ORDER UPDATE

to

City of Fort Lauderdale Infrastructure Task Force

January 6, 2020 - 2 pm



CITY OF FORT LAUDERDALE

Presented by: Omar Castellon PE  
City of Fort Lauderdale  
Acting Assistant Director Public Works

Patricia Carney PE, BCEE, DBIA  
Hazen and Sawyer  
Program Manager

# Agenda



CITY OF FORT LAUDERDALE



**Consent Order  
Team**



**Consent Order Results  
to Date**



**Key Milestones  
and Targets**



**Accomplishments**

# Consent Order Team



CITY OF FORT LAUDERDALE



CITY OF FORT LAUDERDALE  
City Management



City of Fort Lauderdale  
Sr. Project Manager –  
Consent Order

## Hazen

Hazen Team  
Patricia Carnev. PE. DBIA. BCEE  
Program Manager

Project Manager II  
Ray Ramos, PE

Project Manager II  
Viviana Torres-Ortiz, PE

Project Manager II  
Rohan Punit, PE

Procurement  
IT  
GIS  
DSD  
Engineering  
Survey  
and many  
others



CRAVEN THOMPSON & ASSOCIATES INC

**CHEN•MOORE**  
& ASSOCIATES



**JACOBS**

**Nova Consulting, Inc.**  
engineering & environmental services

**RADISE**  
Infrastructure Engineers • Software Developers

**THOMPSON & ASSOCIATES**

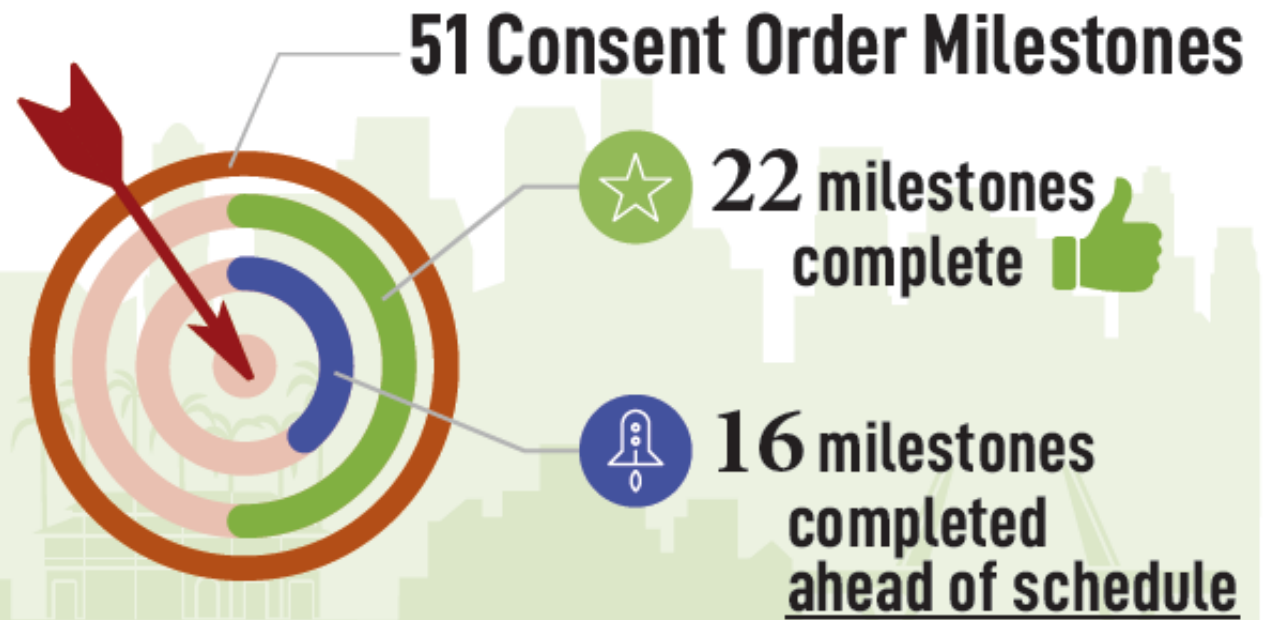




## RESULTS where we are now

There are over 50 milestones in the Consent Order, and The City, along with assistance from the Hazen Team, has met every one to-date. The milestones include administrative items as well as construction and non-construction activities.

## MILESTONES



# What's in the Consent Order and What is the Status?



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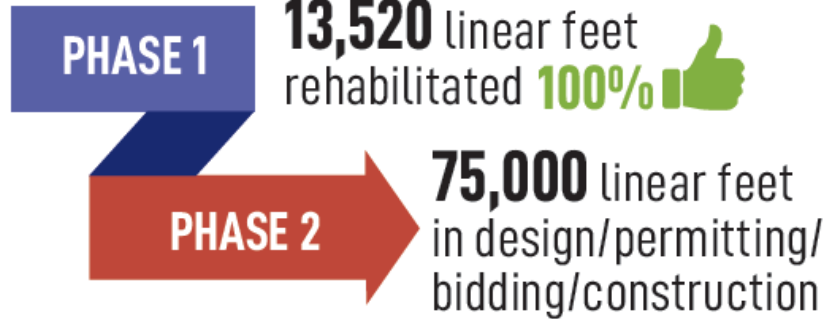
| Consent Order Item  | Status                             | % Complete | Due Date  |
|---|------------------------------------|------------|-----------|
| Fast Tracked Force Main Repairs                                     | Complete                           | 100%       | 5/31/2018 |
| Capacity Modeling   | Complete - Pending FDEP Acceptance | 99%        | 5/29/2019 |
| System Mapping  | Complete                           | 100%       | 6/29/2019 |
| Force Main Condition Assessment                                     | Phase II Field Work                | 90%        | 3/26/2020 |
| Asset Management / Capacity Management, Operations, and Maintenance | On Going                           | 75%        | 3/27/2020 |
| In-kind – In Construction   | In Construction                    | 70%        | 9/2/2020  |
| Pump Station Rehabilitations  | In Construction                    | 99%        | 9/30/2020 |
| Infiltration/Inflow Removal   | In Construction                    | 77%        | 9/30/2020 |
| Phase II Force Mains  | Ongoing                            | 15%        | 9/30/2026 |



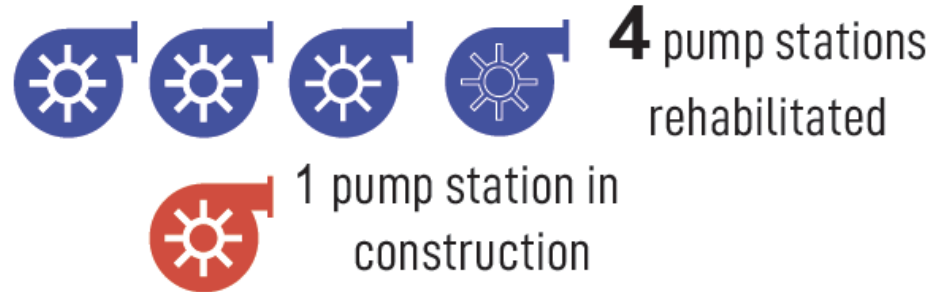


## DESIGN/PERMITTING/BIDDING/CONSTRUCTION

### FORCE MAIN PHASE I & II



### PUMP STATIONS



### IN-KIND PROJECTS

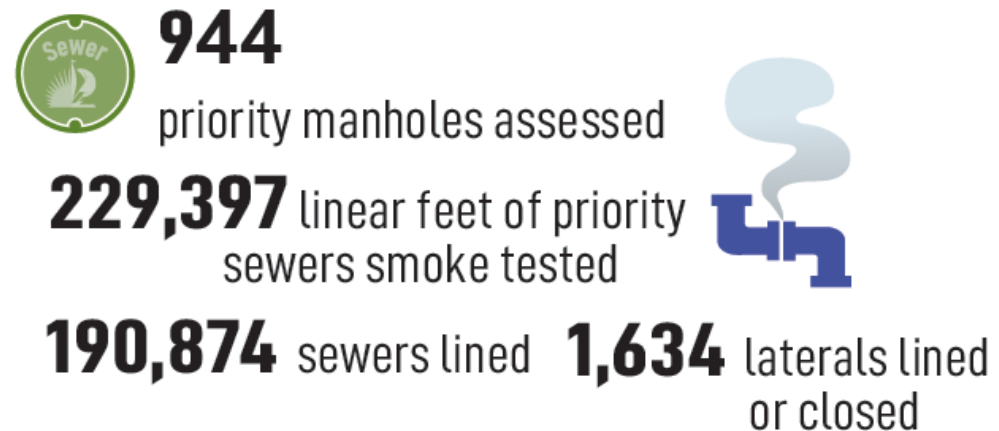


Pump Station D38 Rehabilitation  
In construction  
Scheduled Completion 9/2020



Force Main 2,500 LF  
Construction to begin  
1/2020

### SSES/I/I





## NON-CONSTRUCTION ACTIVITIES

**AM, CMOM PLAN** AM and CMOM Program Plan **complete** and submitted to FDEP and Program underway






### SEWER SYSTEM



 **100%** of sewer system mapped and certified 

 **Force Main Condition Assessment** - Plan and Phase 1 Complete, Phase 2/3 on-going

### CAPACITY

**100%** 

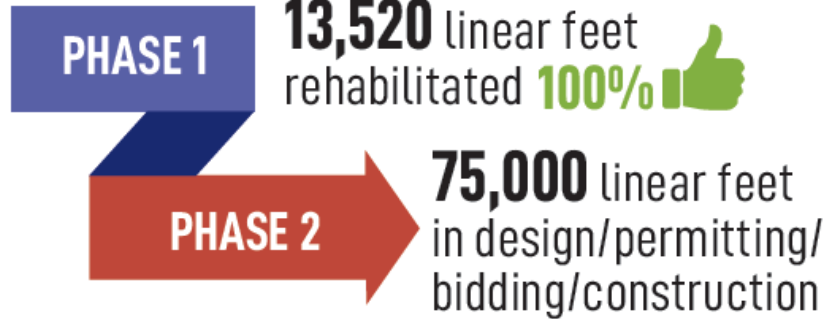
  Model **complete**

  Capacity Report **complete**

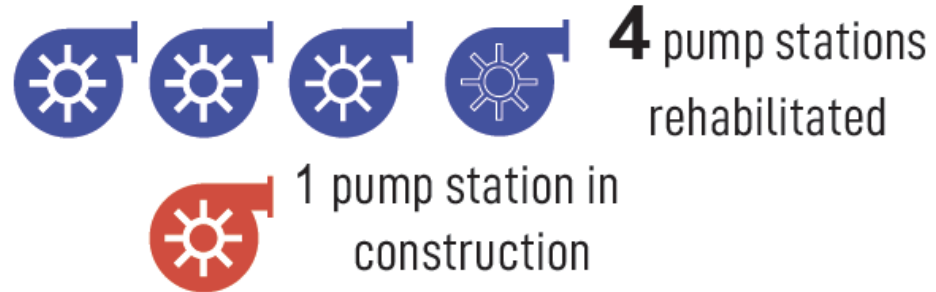


## DESIGN/PERMITTING/BIDDING/CONSTRUCTION

### FORCE MAIN PHASE I & II



### PUMP STATIONS



### IN-KIND PROJECTS

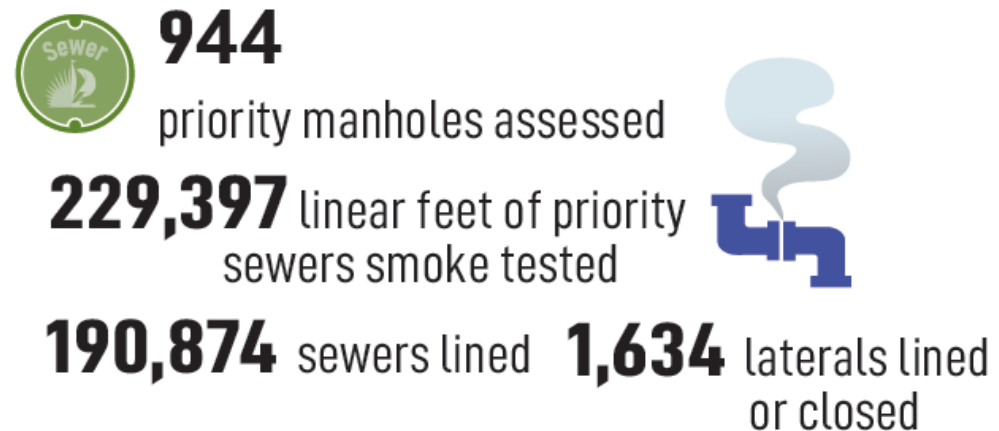


Pump Station D38 Rehabilitation  
In construction  
Scheduled Completion 9/2020



Force Main 2,500 LF  
Construction to begin  
1/2020

### SSES/I/I



# Phase II Force Mains



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**B Repump Suction Lines (2) Pending**  
Start of Design Criteria Package

**NE 9<sup>th</sup> St Crossing Easements** acquired –  
about to Start Construction

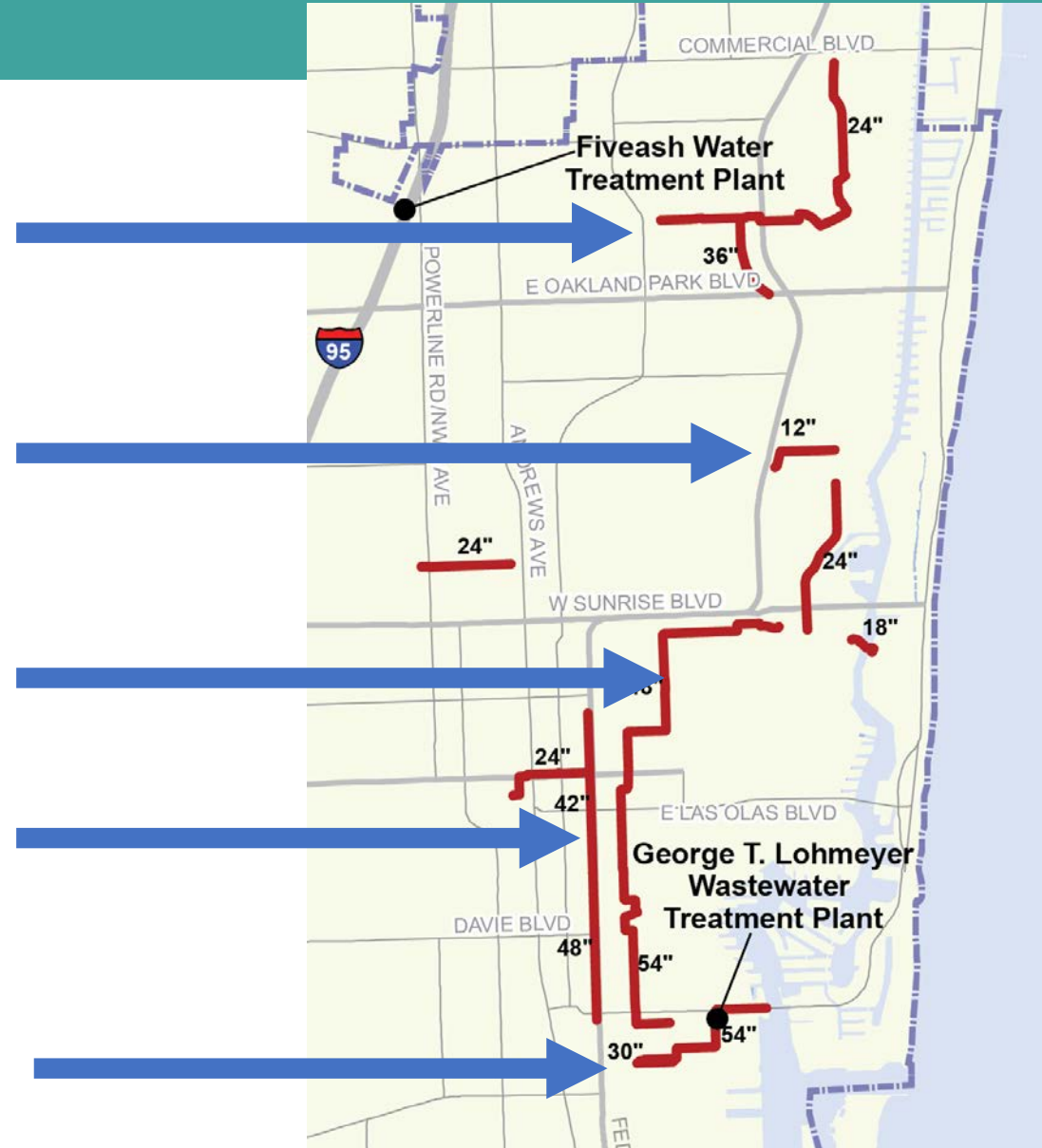
**NW 13<sup>th</sup> St Replacement** Out for Bids

**10<sup>th</sup> Ave FM Rehabilitation** Pending  
Completion of Redundant Line

**Redundant Line** Out for Bids



**GTL Redundant Eff Line** In Design





# Questions?

Thank you.



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