BERT BOSTROM GREEN INFRASTRUCTURE

ABOUT THE PROJECT

The Town of Lake Park has begun the design phase of a green infrastructure project that will improve drainage in and around Bert Bostrom Park. An analysis of the Town's existing drainage infrastructure was completed as part of the Town's Stormwater Master Plan. This analysis highlighted a need to improve underground stormwater drainage infrastructure in order to better serve wet weather events. The improvements to be made at Bert Bostrom Park will provide flood relief and water quality treatment to pollutant-laden stormwater runoff and will preserve the existing green space and land use as a recreational park.

Sustainable Green Infrastructure improvements are coming to Lake Park!

TOWN OF LAKE PARK STORMWATER MASTER PLAN

Development of the Town of Lake Park began in the 1950s. At this time, drainage facilities were installed throughout the Town, including on some private properties (as needed). By 1986, the Town determined there was a need for a comprehensive storm drainage improvement program, and a stormwater master plan (SWMP) was prepared to prioritize operations and maintenance activities. The most recent update to the

SWMP, completed in 2020, was undertaken with the intention of providing the Town with a long-range planning tool that allows for the rehabilitation of the existing drainage over the next 20 years. The SWMP also identifies opportunities to implement new **green infrastructure** planning approaches and **low-impact development best management practices** for stormwater management. The objective of these green infrastructure-based practices, such as the underground storage filtration chambers planned for Bert Bostrom Park, is to reduce flooding throughout the Town and minimize the discharge of untreated runoff into the Lake Worth Lagoon.

UNDERGROUND STORMWATER CHAMBER SYSTEM

Stormwater runoff is a major cause of water pollution in urban areas. Heavy rainstorms can cause flooding and damage properties. Rainstorms can also carry trash, bacteria and heavy metals that enter storm sewers and local waterways. The Town of Lake Park is adding an underground detention/retention and exfiltration system in Bert Bostrom Park to help filter and absorb these pollutants. This underground chamber system will allow the Town to meet runoff reduction requirements (Where do these requirements come from? Are we not currently in compliance with these requirements without the new system?) while maximizing available land space. The Town is dedicated to incorporating sustainable green infrastructure elements in the stormwater management system in order to help protect Lake Park and the ecologically sensitive Intracoastal Waterway.

PROJECT GOALS

The improvements made through this project will provide relief to the Southern Outfall, which drains nearly half of the Town and which can become overloaded during moderate- to high-intensity storm events and which can potentially produce flooding upstream. By detaining and exfiltrating a portion of the flow contributed to the Southern Outfall, we can reduce neighborhood flooding and pollutant load discharge to the Lake Worth Lagoon

LOCAL RESIDENTS/BUSINESSES

Geotechnical investigation and surveying will take place during the design phase of the project. During this phase, residents and business owners within the study area may be notified of any property encroachments within the right-of-way.

FOR QUESTIONS REGARDING THE GREEN INFRASTRUCTURE IMPROVEMENTS AT BERT BOSTROM PARK, PLEASE CONTACT US USING THE INFORMATION BELOW.

John Wille, Capital Projects
Office: 561-881-3345
Email: publicworks@lakeparkflorida.gov

TOWN OF LAKE PARK
DEPARTMENT OF PUBLIC WORKS

MAYOR MICHAEL O'ROURKE
VICE- MAYOR KIMBERLY GLAS-CASTRO
COMMISSIONER ERIN FLAHERTY
COMMISSIONER JOHN LINDEN
COMMISSIONER ROGER MICHAUD

CONTRACT DRAWINGS FOR

STORMWATER IMPROVEMENT PROJECTS

DIVISION B
BOSTROM PARK GI FACILITY

JULY 2021
60% DESIGN

SITE LOCATION MAP
SCALE: 1" = 200'

TOWN OF LAKE PARK
DEPARTMENT OF PUBLIC WORKS
640 OLD DIXIE HWY
LAKE PARK, FL 33403
PHONE: (561) 881-3345
FAX: (561) 881-3349

WRMA FBPE CA26025
WATER RESOURCES MANAGEMENT ASSOCIATES, INC.
250 TEQUESTA DRIVE, SUITE 302, TEQUESTA, FL 33469
PHONE: 561-529-2075 | FAX: 561-401-9385

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NO.	DESCRIPTION	BY	DATE

REVISIONS

TOWN OF LAKE PARK
DEPARTMENT OF PUBLIC WORKS

STORMWATER IMPROVEMENT PROGRAM – DIVISION B
BOSTROM PARK GI FACILITY
60% DESIGN

COVER SHEET

GENERAL

SCALE	AS SHOWN	DRAWN	MRM
CLIENT ID	G0318	CHECKED	RMM
CONTRACT ID	G031801	SUBMITTED	WRMA
SURVEYED	WRMA		
DATE	7/6/2021	RECOMMENDED	
CADD FILE	LPSWB-G001		

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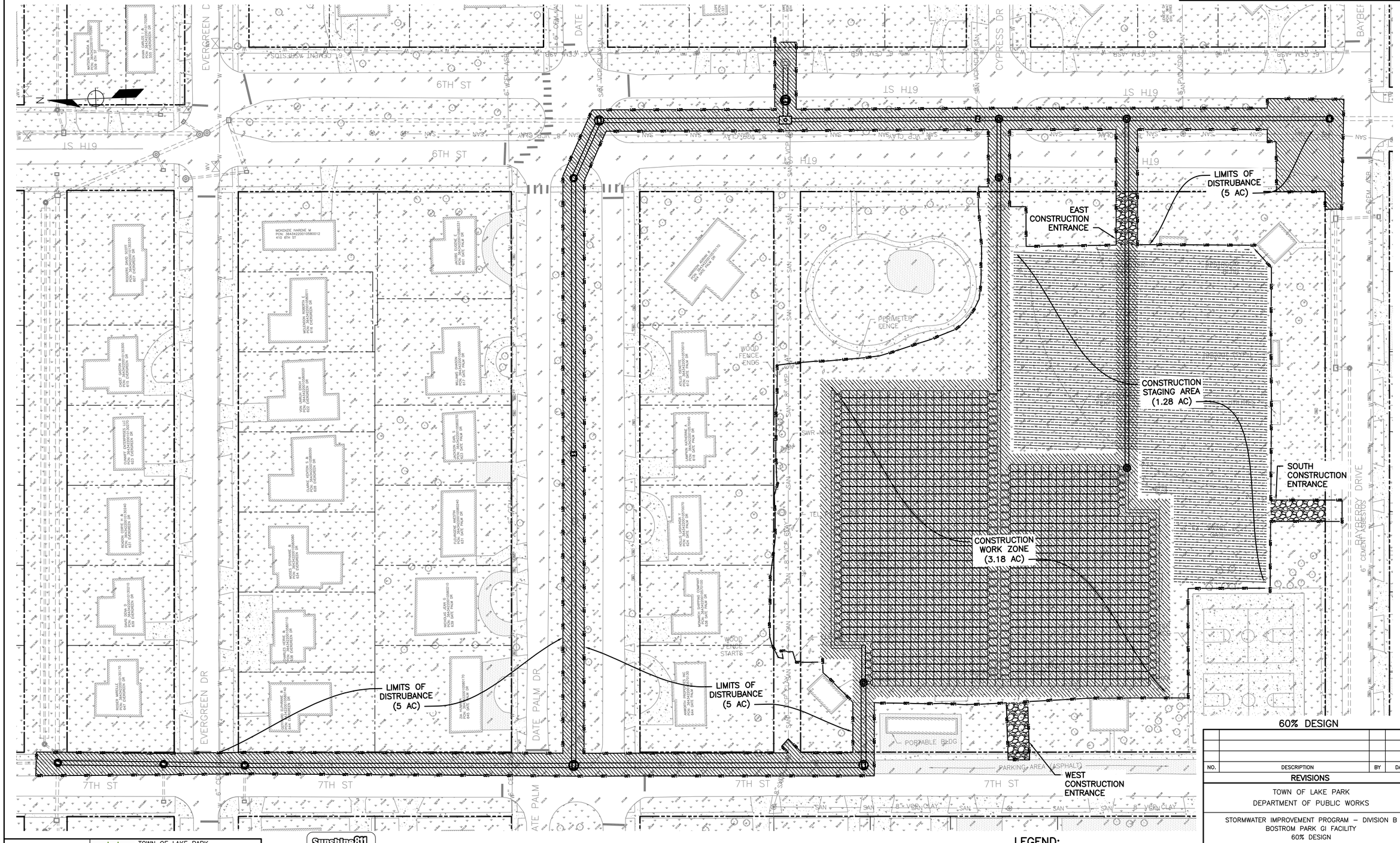

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TOWN OF LAKE PARK
DEPARTMENT OF PUBLIC WORKS

STORMWATER IMPROVEMENT PROGRAM – DIVISION B
BOSTROM PARK GI FACILITY
60% DESIGN

CONSTRUCTION STAGING AREA & WORK ZONE PLAN
GENERAL

SCALE	AS SHOWN	DRAWN	MRM
CLIENT ID	G0318	CHECKED	RMM
CONTRACT ID	G031801	SUBMITTED	WRMA
SURVEYED	WRMA		
DATE	7/6/2021	RECOMMENDED	
CADD FILE	LPSWB-G006		

LEGEND:
- CONSTRUCTION WORK ZONE
- CONSTRUCTION STAGING AREA
- CONSTRUCTION ENTRANCE

TOWN OF LAKE PARK
DEPARTMENT OF PUBLIC WORKS
640 OLD DIXIE HWY
LAKE PARK, FL 33403
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SCALE: 1"=40'

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PROP. DBI TYPE E TYPE J BOTTOM
PROP. 35 LF 48" PP @ 0.00%
PROP. DBI TYPE E TYPE J BOTTOM
PROP. 19 LF 48" PP @ 0.00%
PROP. DBI TYPE E TYPE J BOTTOM
PROP. 174 LF 42" PP @ 0.00%
PROP. 180 LF 36" PP @ 0.12%
PROP. 20 LF 36" PP @ 0.51%
PROP. WET WEATHER BYPASS 120 LF 36" PP @ 0.08%
PROP. 190 LF 36" PP @ 0.15%
PROP. DBI TYPE E TYPE J BOTTOM
PROP. BOX STRUCTURE
PROP. 59 LF 42" PP @ 0.05%
PROP. 55 LF 36" PP @ 0.55%
PROP. MH TYPE J BOTTOM W/WEIR
PROP. STORMTECH OUTELT MH W/WEIR
PROP. DBI TYPE E TYPE J BOTTOM
PROP. 199 LF 36" PP @0.00%
PROP. 327 LF 36" PP @0.09%
PROP. WET WEATHER BYPASS 258 LF 42" PP @ 0.04%
PROP. STORMTECH 36" HDPE INLET MANIFOLD SEE STORMTECH DETAILS
PROP. STORMTECH 36" HDPE OUTLET MANIFOLD SEE STORMTECH DETAILS
PROP. DBI TYPE E
PROP. STORMTECH ISOLATOR ROW
PROP. STORMTECH INTEL MH W/WEIR
PROP. STORMTECH MC-3500 SUBSURFACE CHAMBER FIELD 1265 CHAMBERS-134 END CAPS
PROP. STORMTECH 36" HDPE INLET MANIFOLD SEE STORMTECH DETAILS
PROP. WET WEATHER BYPASS 292 LF 42" PP @ 0.75%
PROP. STORMTECH MC-3500 SUBSURFACE CHAMBER FIELD 1265 CHAMBERS-134 END CAPS
PROP. STORMTECH INTEL MH W/WEIR
PROP. STORMTECH ISOLATOR ROW
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PROP. DBI TYPE E TYPE J BOTTOM
PROP. DBI TYPE E TYPE J BOTTOM
PROP. 98 LF 42" PP @ 0.00%
PROP. 76 LF 42" PP @ 0.00%
PROP. 308 LF 42" PP @ 0.05%
PROP. 271 LF 48" PP @ 0.07%
PROP. 78 LF 48" PP @ 0.09%
PROP. DBI TYPE E TYPE J BOTTOM
PROP. DBI TYPE E TYPE J BOTTOM
PROP. DBI TYPE E
PERIMETER FENCE
RESTROOM BLDG
DUGOUT (TYP.)
4' BASEBALL FENCE
UTILITIES
WOOD FENCE ENDS
WOOD FENCE STARTS
PORTABLE BLDG
PARKING AREA (ASPHALT)
SWR MH
6TH ST
7TH ST
EVERGREEN DR
DATE PALM DR
CYPRESS BAY DRIVE

60% DESIGN

NO.	DESCRIPTION	BY	DATE

REVISIONS

TOWN OF LAKE PARK
DEPARTMENT OF PUBLIC WORKS

STORMWATER IMPROVEMENT PROGRAM – DIVISION B
BOSTROM PARK GI FACILITY
%60 DESIGN

PROPOSED DRAINAGE MASTER PLAN

GENERAL

SCALE	AS SHOWN	DRAWN	MRM
CLIENT ID	G0318	CHECKED	RMM
CONTRACT ID	G031801	SUBMITTED	WRMA
SURVEYED	WRMA		
DATE	7/6/2021	RECOMMENDED	
CADD FILE	LPSWB-C003		

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PHONE: 561-529-2075 | FAX: 561-401-9385

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SCALE: 1"=40'

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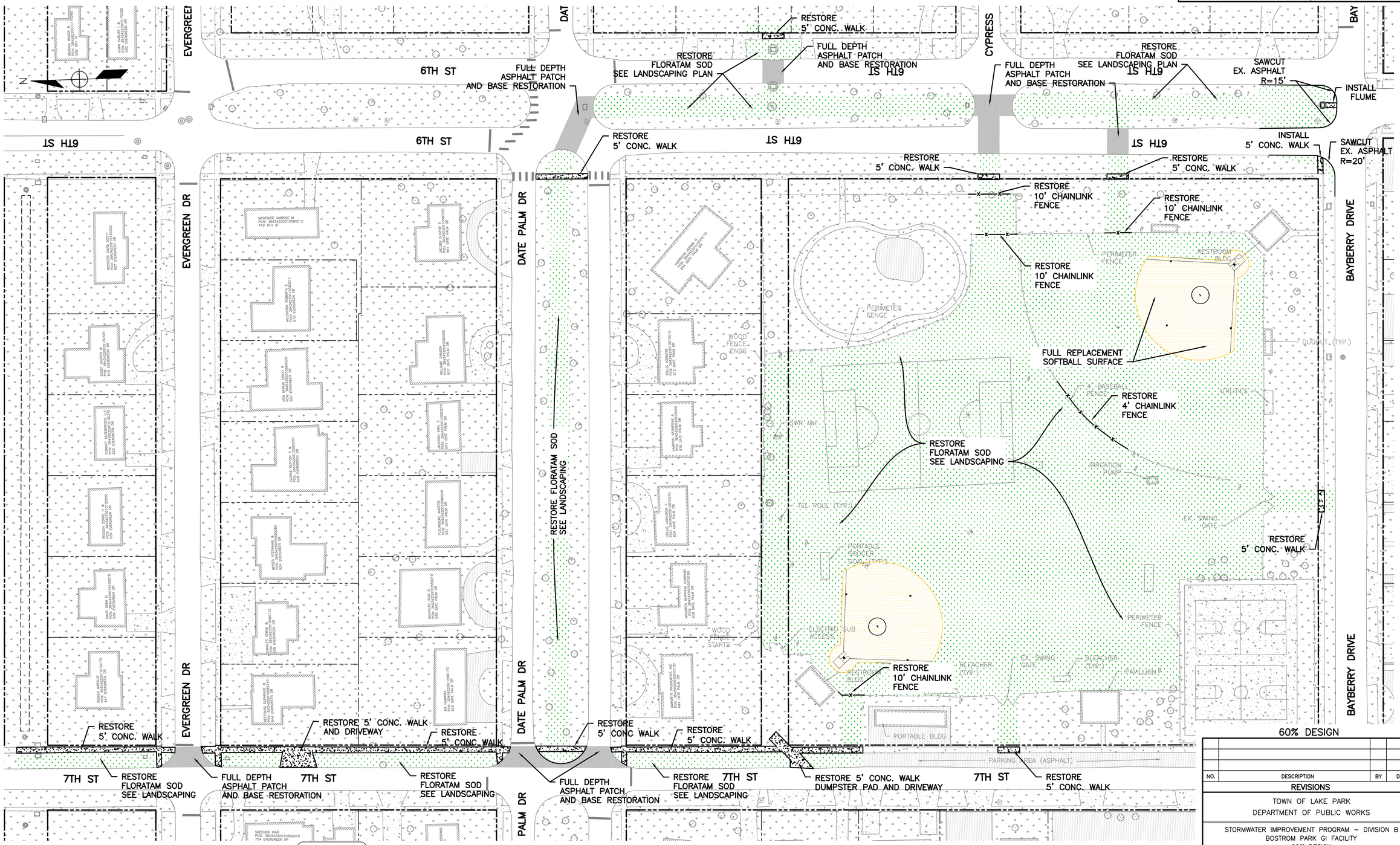

60% DESIGN

NO.	DESCRIPTION	BY	DATE

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TOWN OF LAKE PARK
DEPARTMENT OF PUBLIC WORKS

STORMWATER IMPROVEMENT PROGRAM – DIVISION B
BOSTROM PARK GI FACILITY
60% DESIGN

PROPOSED FINAL SITE PLAN

CIVIL

SCALE	AS SHOWN	DRAWN	MRM
CLIENT ID	G0318	CHECKED	RMM
CONTRACT ID	G03180I	SUBMITTED	WRMA
SURVEYED	WRMA		
DATE	7/6/2021	RECOMMENDED	
CADD FILE	LPSWB-C004		

LEGEND:

- PROPOSED CONCRETE
- PROPOSED SOD
- PROPOSED CLAY
- EXISTING CONCRETE
- EXISTING SOD
- FULL DEPTH ASPHALT RESTORATION

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FBPE CA26025

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40 0 40 80 FT
SCALE: 1"=40'

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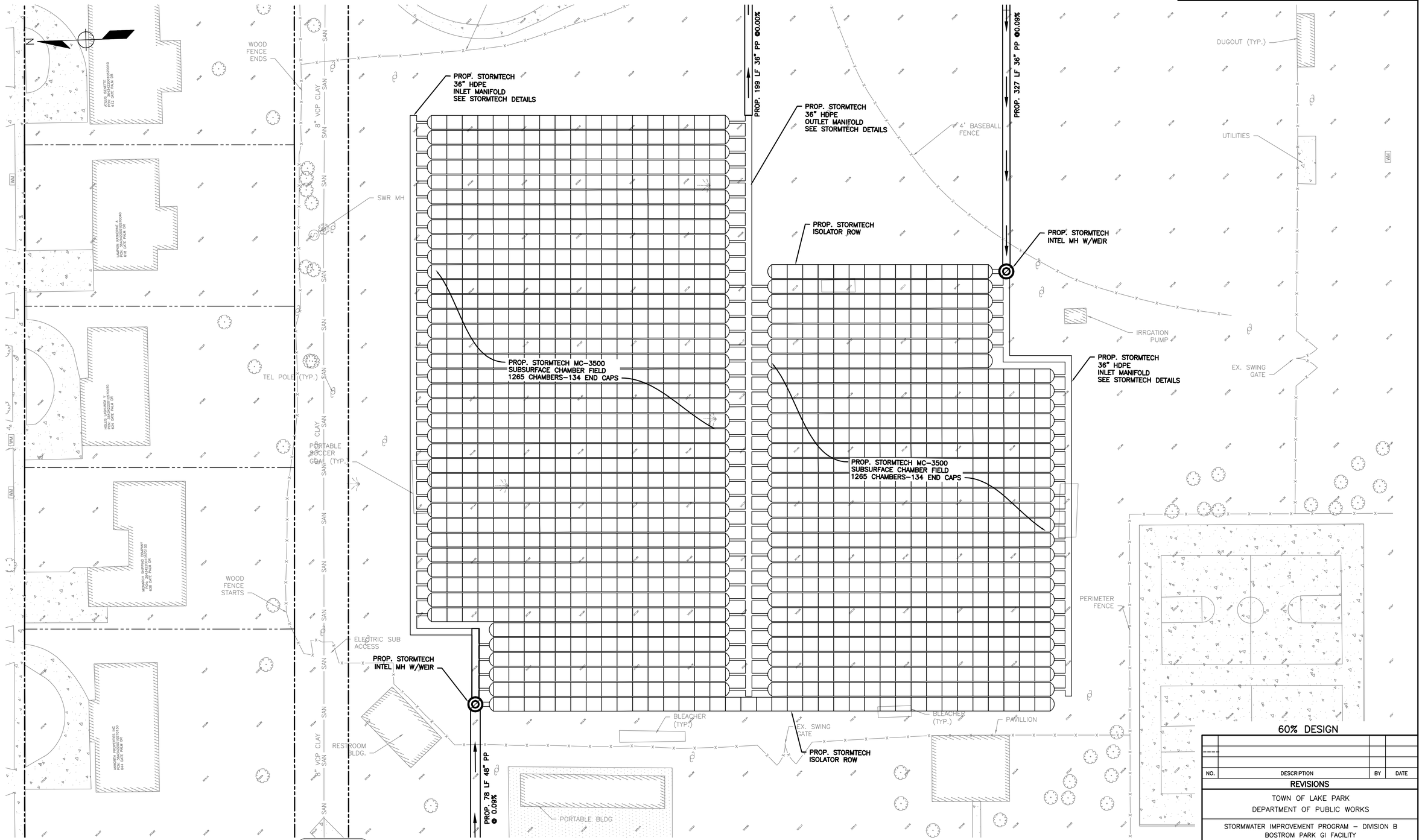

60% DESIGN

NO.	DESCRIPTION	BY	DATE

REVISIONS

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DEPARTMENT OF PUBLIC WORKS

STORMWATER IMPROVEMENT PROGRAM – DIVISION B
BOSTROM PARK GI FACILITY
%60 DESIGN

PROPOSED STORMTECH CHAMBER FIELD LAYOUT

CIVIL

SCALE	AS SHOWN	DRAWN	MRM
CLIENT ID	G0318	CHECKED	RMM
CONTRACT ID	G031801	SUBMITTED	WRMA
SURVEYED	WRMA		
DATE	7/6/2021	RECOMMENDED	
CADD FILE	LPSWB-C005		

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20 0 20 40 FT
SCALE: 1"=20'

DESIGN ELEVATIONS

EXISTING GROUND VARIES FROM	+12.3' TO +10.5'
EMBEDMENT STONE TOP EL.	+8.50'
MC-3500 CHAMBER TOP EL.	+7.50'
MC-3500 CHAMBER BASE EL.	+3.75'
FOUNDATION STONE BOTTOM EL.	+3.00'
INLET MH WEIR CREST EL.	+5.63'
OUTLET MH WEIR CREST EL.	+7.50'
OUTLET MH BLEEDER CREST EL.	+5.63'
OUTLET MH ORIFICE EL.	+3.00'

REDUCTION VERIFICATION SCALE 0 10 INCHES

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Bert Bostrom Park Green Infrastructure Coastal Resiliency Project

Department of Public Works

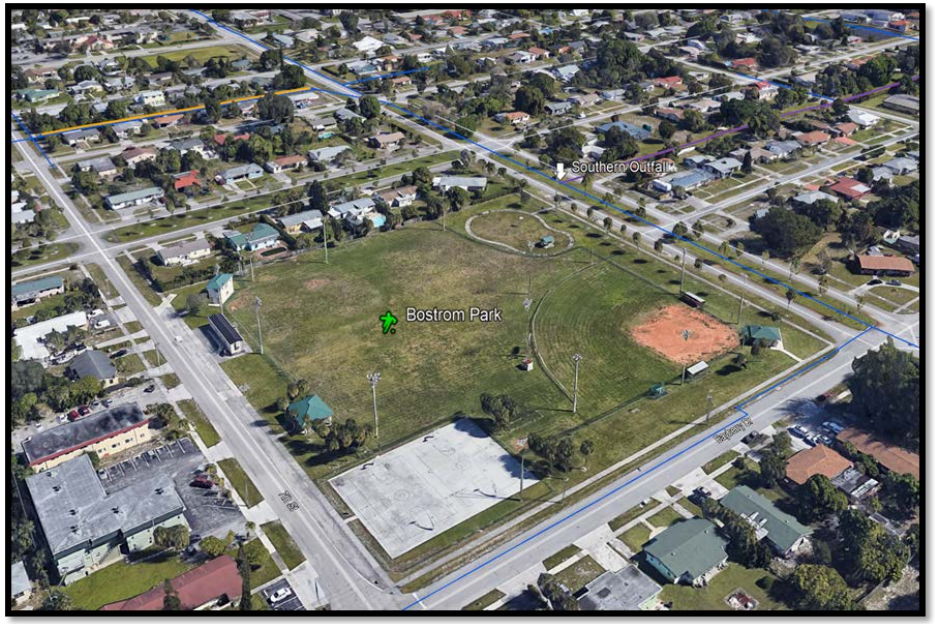
Public Meeting
Saturday, October 8, 2022

Cotleur & Hearing

WRMA

Public Meeting Agenda

1. Introductions
2. Presentation Of Project History
3. Proposed Design
4. Construction Timelines
5. Construction Outreach Issues
6. Construction Funding
7. Open Discussions
8. Table Discussions
9. Next Steps and Closing Comments



Project Team

- **John D'Agostino** – Town Manager
- **Roberto Travieso** – Public Works Director
- **John Wille** – Town of Lake Park Project Manager
- **Raul Mercado** – Principal Engineer, WRMA
- **Michael Mercado** – Lead Design Engineer, WRMA
- **Don Hearing** – Principal/Landcape Architect, Cotleur & Hearing

Project Background & Design Concept

MICHAEL MERCADO, PE

Stormwater Management Needs Assessment
Water Quantity

- Study showed that 29% of the 10.62-mile drainage piping needs to be immediately (1-5 years) rehabilitated (Repaired/Replaced) and the rest within 20 years.
- Identifies key major capacity surcharge flooding problems along Southern Outfall (446 acre watershed)

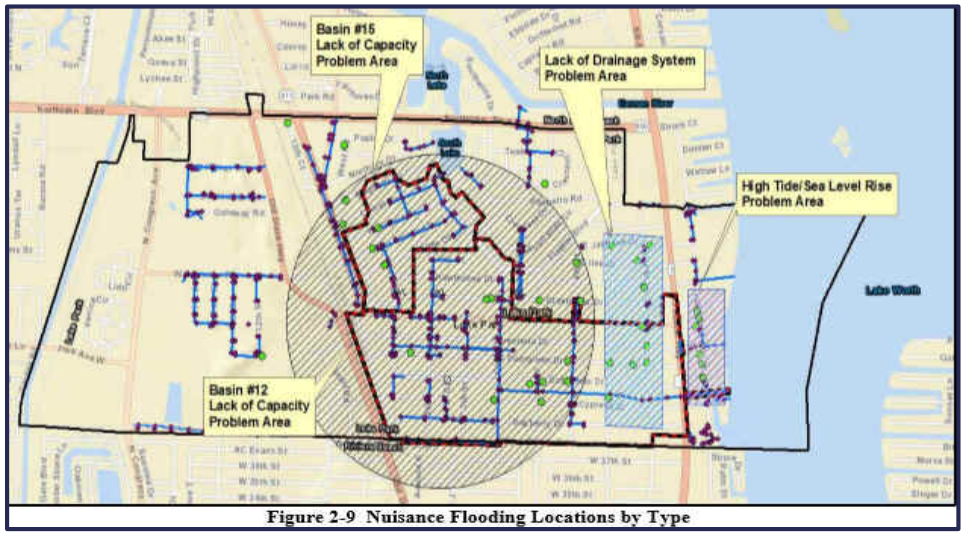


Figure 2-9 Nuisance Flooding Locations by Type

Lack of Drainage
2nd Street Corridor)

Sea Level Rise Sunny Day Flooding
Lake Shore Drive Corridor)

Stormwater Management Needs Assessment
Water Quantity

- Identifies many areas without storm sewers with nuisance flooding
- Identifies long term climate change (Sea Level Rise) challenges along 0.8 miles of LWI waterfront

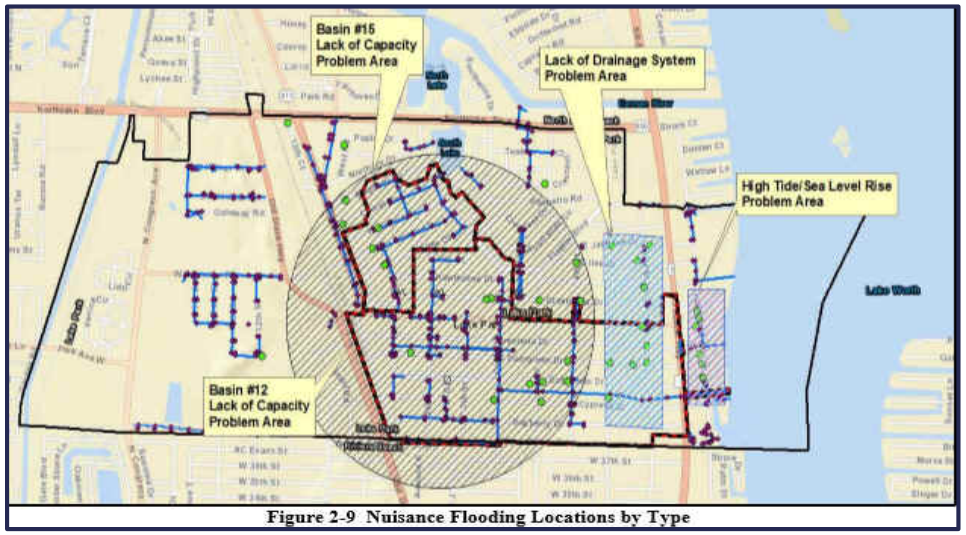


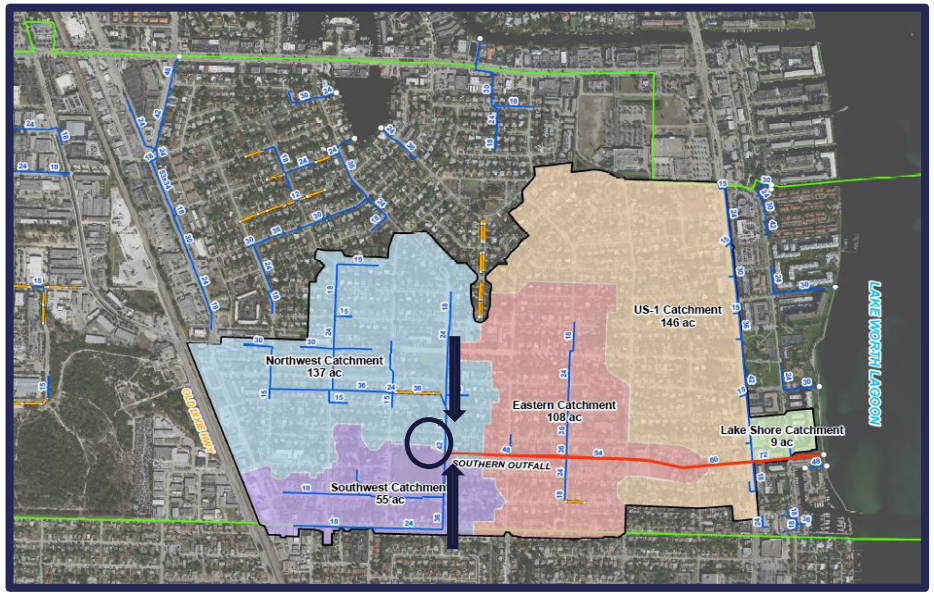
Figure 2-9 Nuisance Flooding Locations by Type

Lack of Drainage
2nd Street Corridor)

Sea Level Rise Sunny Day Flooding
Lake Shore Drive Corridor)

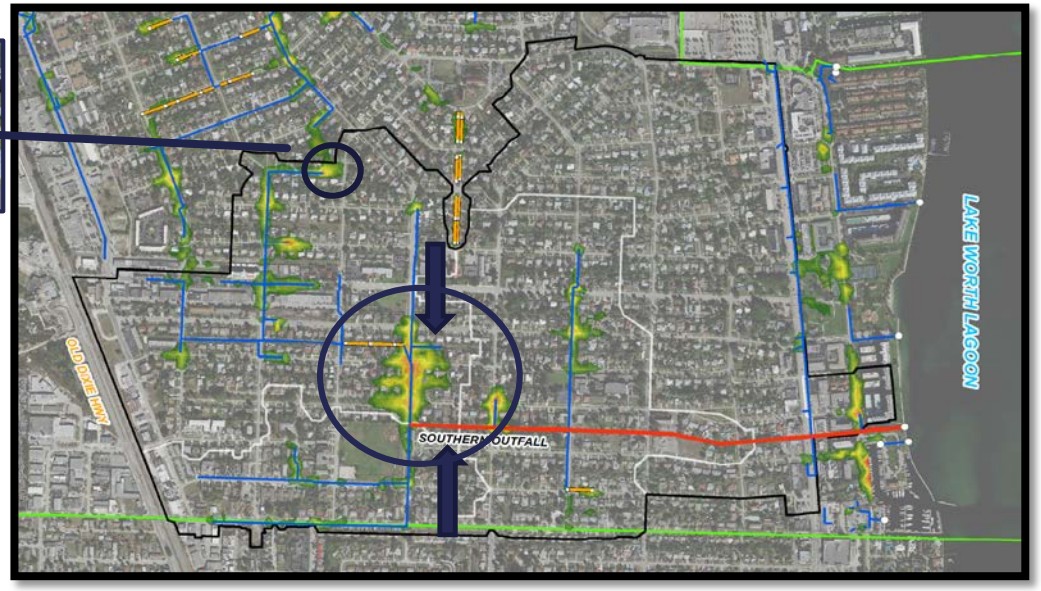
Stormwater Management Needs Assessment
Water Quantity – Drainage Level of Service

Southern Outfall Watershed Tributaries



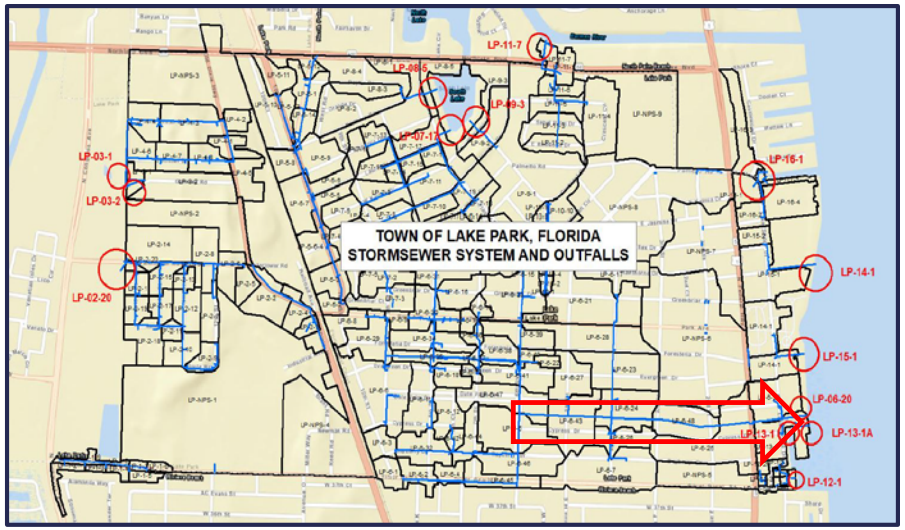
Ilex Court Inlet Surcharge

Southern Outfall Watershed 3-Year, 1 Day Storm Event Flooding



- Peak flows from the Northern and Southern Tributaries can not reach the Southern Outfall Main Trunk at the NE of Bostrom Park (due to undersized stormsewers)
- Major flooding occurs along 6th Street just north of Bostrom park
- Backups translates into inlet surcharges further upstream including at Ilex Court

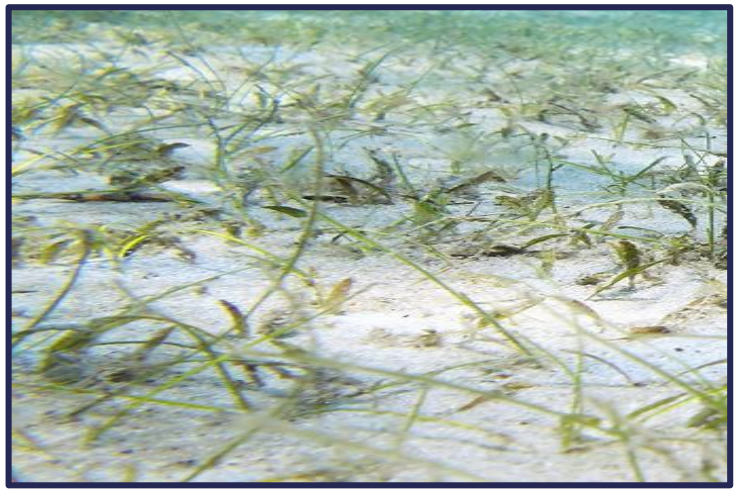
Stormwater Management Needs Assessment – Water Quality



Southern Outfall is a Major Contributor of Sediment s to the LWL

2/3 of the ToLP area Discharges untreated runoff to the impaired Lake Worth Lagoon

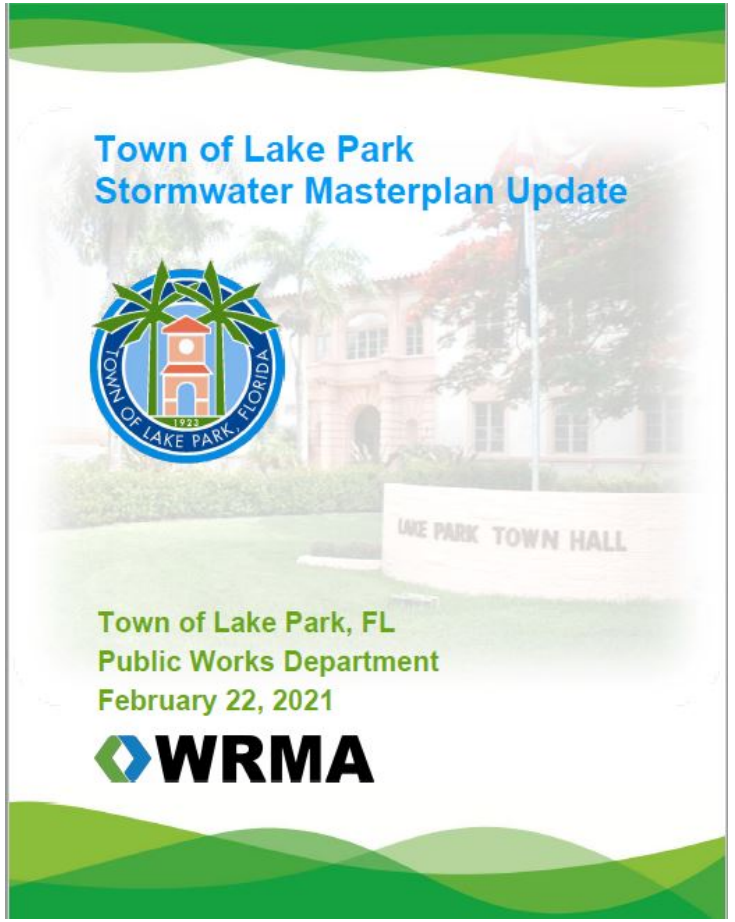
FDEP/NPDES Permit requires the ToLP to monitor runoff discharges from 14 outfalls



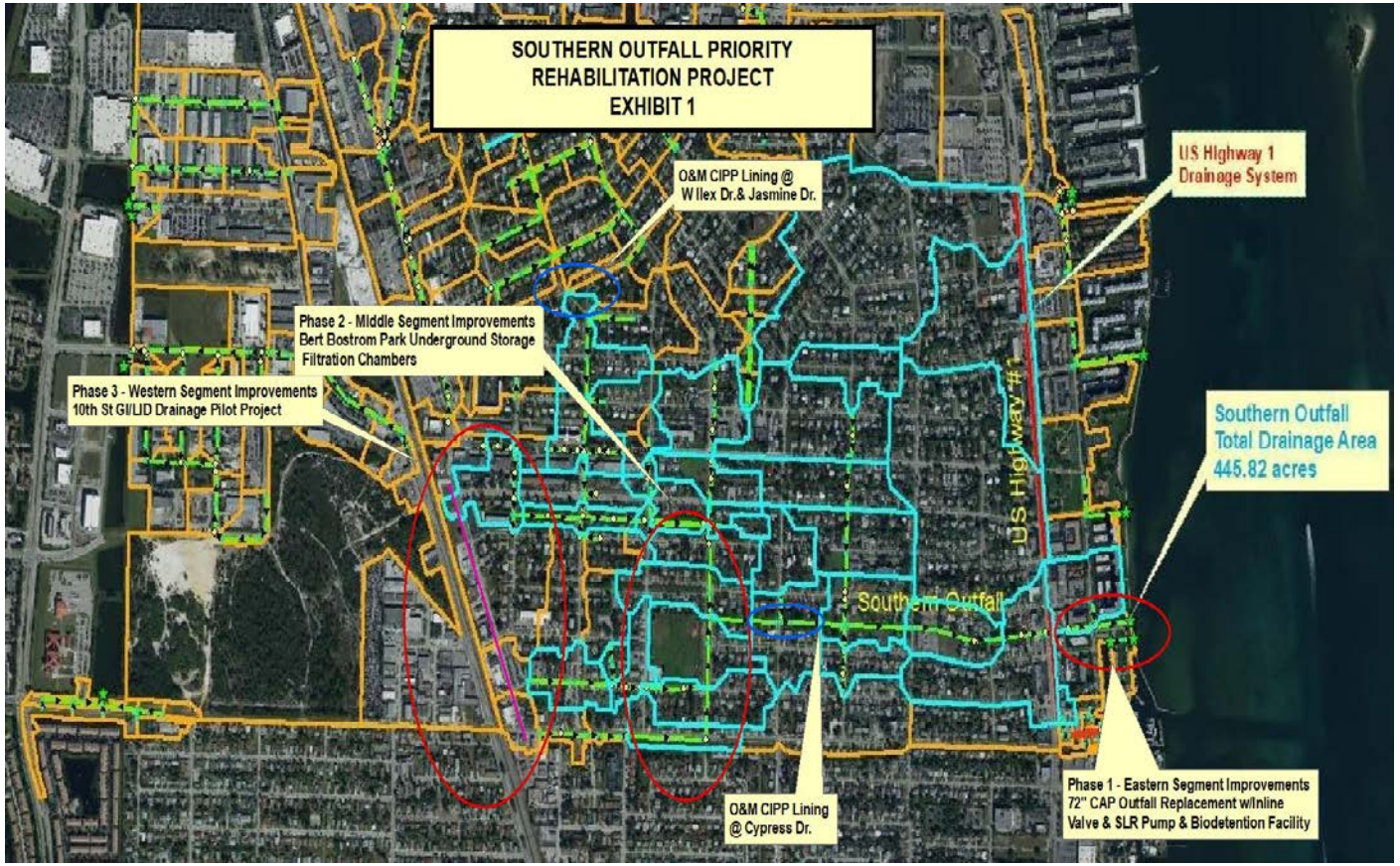
- **83% of the total seagrass acreage is in the Northern ILWL along the Town waterfront**
- **LWLseagrass beds are fast disappearing due to sediments from urban runoff**

Stormwater Master Plan (SWMP)

- Updated in 2019-2020
- Adopted by Town Commission in February2021
- Provided the incremental conversion of 5% roadside Bioswales to green infrastructure, and the placement of Biodetention Facilities at specific areas
- Recommends the use of Stormwater fees exclusively to cover O&M costs (no Capital Improvements)
- Recommends the use of federal grants for project Capital Improvements



The SWMP Approach:
Green Infrastructure For Climate Change

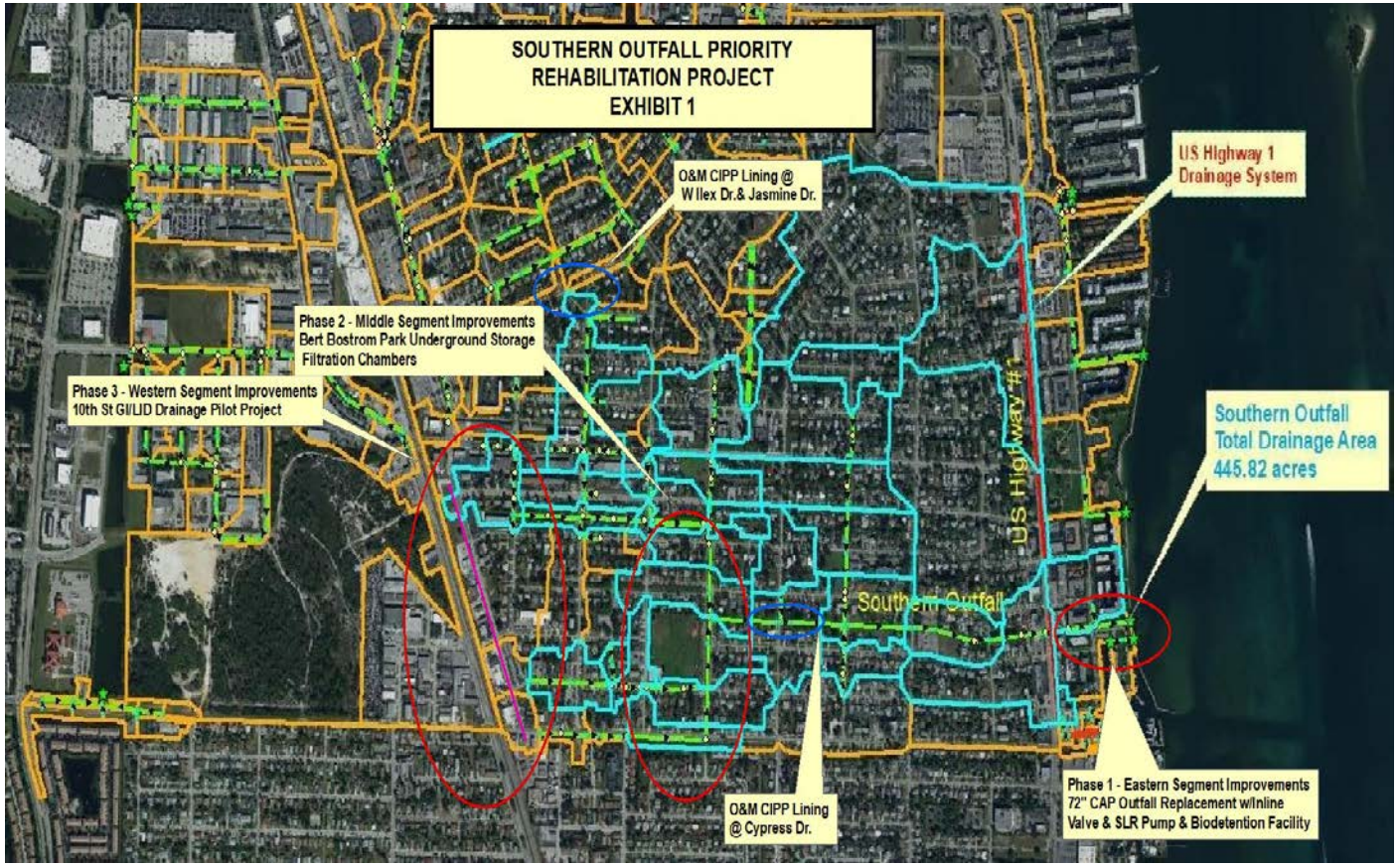


THE TOWN-WIDE PROJECT ADDRESSES CRITICAL STORMSEWER SYSTEM CAPACITY AND WATER QUALITY ISSUES ISSUESS THROUGH SUSTAINABLE GI/LID BEST MANAGEMENT PRACTICE S

The Southern Outfall Priority CIP Rehabilitation Project

- **PHASE I- 72-Inch CAP Outfall Replacement at the Town's Marina (At 90% Design Stage)**

The SWMP Approach:
Green Infrastructure For Climate Change

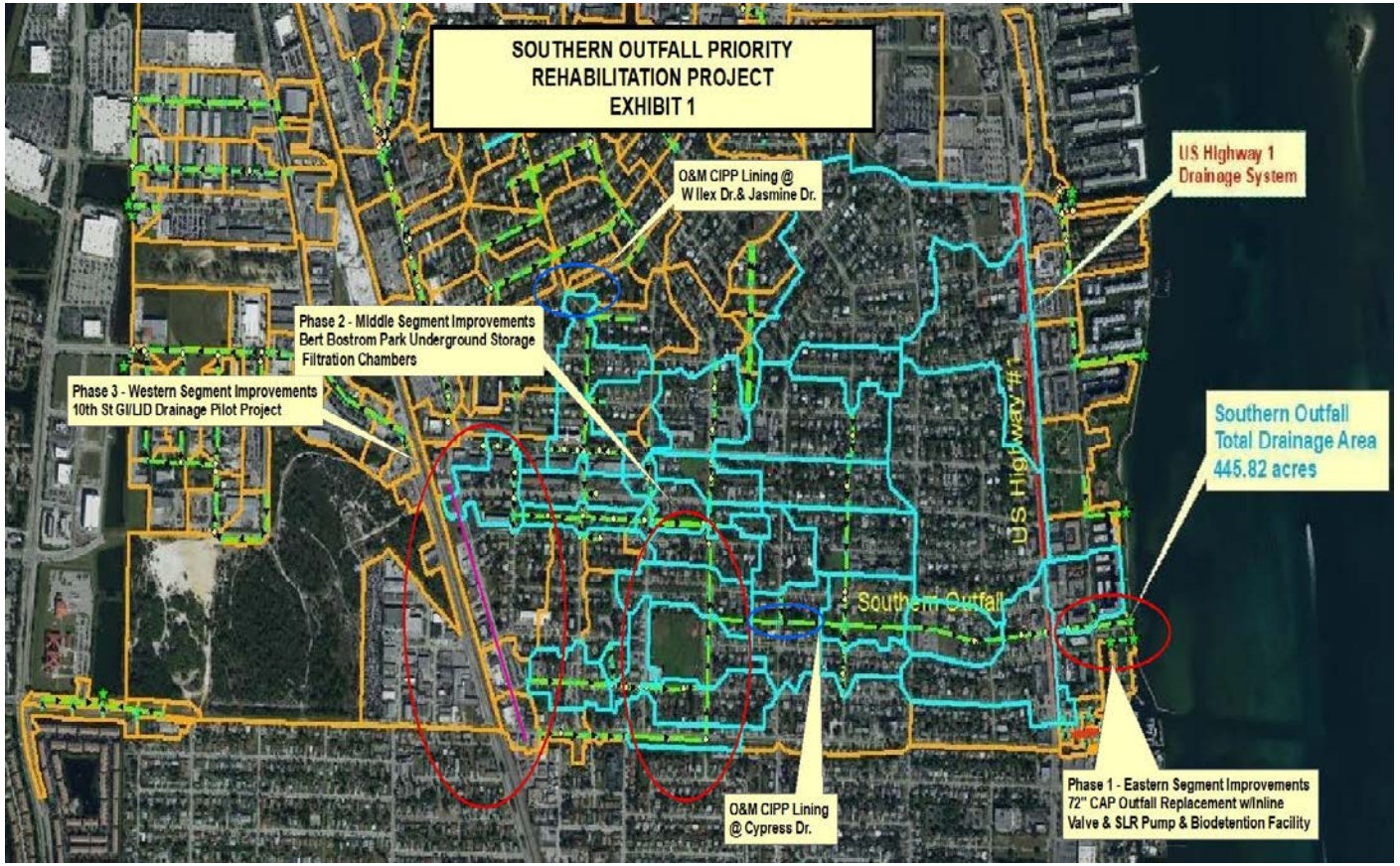


THE TOWN-WIDE PROJECT ADDRESSES CRITICAL STORMSEWER SYSTEM CAPACITY AND WATER QUALITY ISSUES ISSUESS THROUGH SUSTAINABLE GI/LID BEST MANAGEMENT PRACTICE S

The Southern Outfall Priority CIP Rehabilitation Project

- **PHASE 2 - Bostrom Park Underground Storage Filtration Chambers Peak Detention and Water Quality Project (At 90% Design Stage)**

The SWMP Approach:
Green Infrastructure For Climate Change

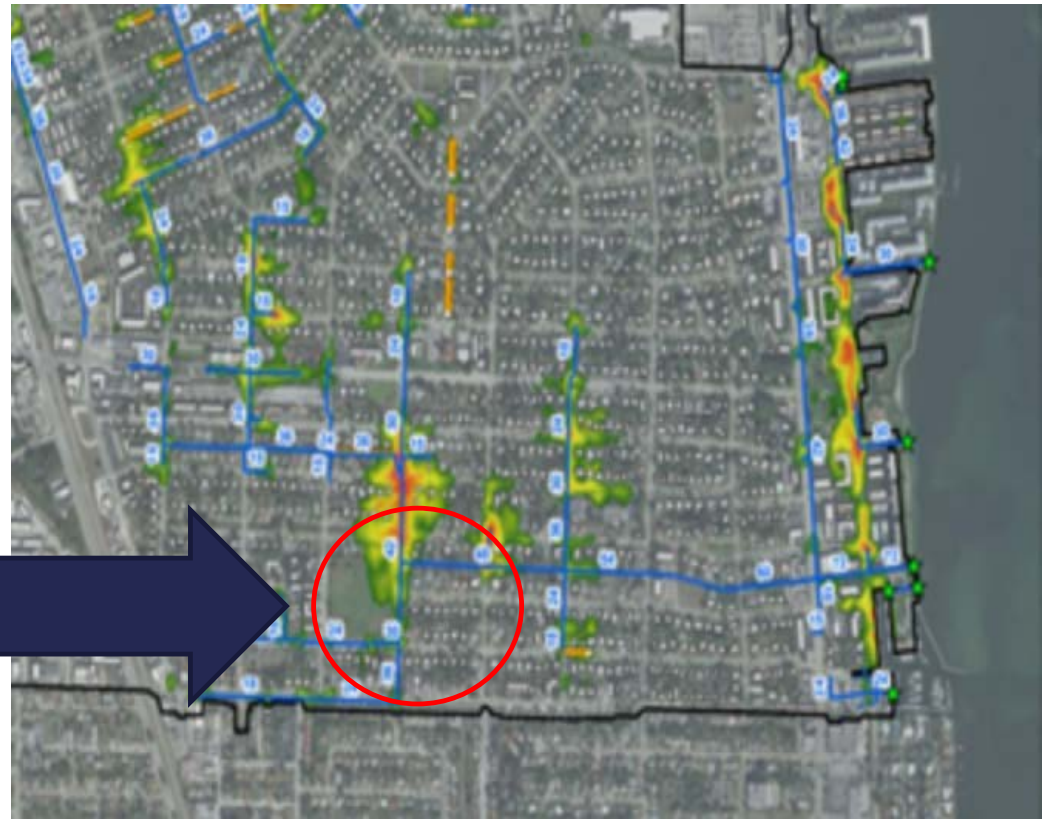


THE TOWN-WIDE PROJECT ADDRESSES CRITICAL STORMSEWER SYSTEM CAPACITY AND WATER QUALITY ISSUES ISSUESS THROUGH SUSTAINABLE GI/LID BEST MANAGEMENT PRACTICE S

The Southern Outfall Priority CIP Rehabilitation Project

- **PHASE 3 -10th Street Right-of-Way GI/LID Water Quality Pilot Project (To be advertise in FY2023)**

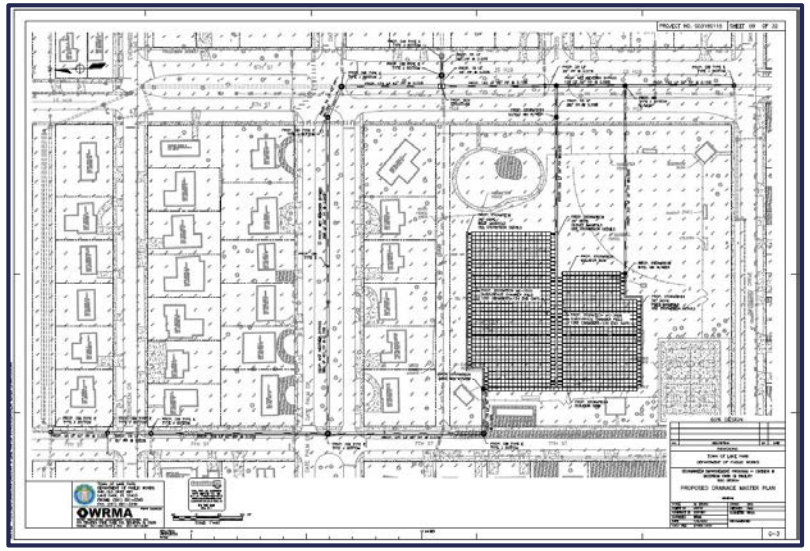
Southern Outfall Phase 2: Bert Bostrom Park Underground Storage Filtration Chambers



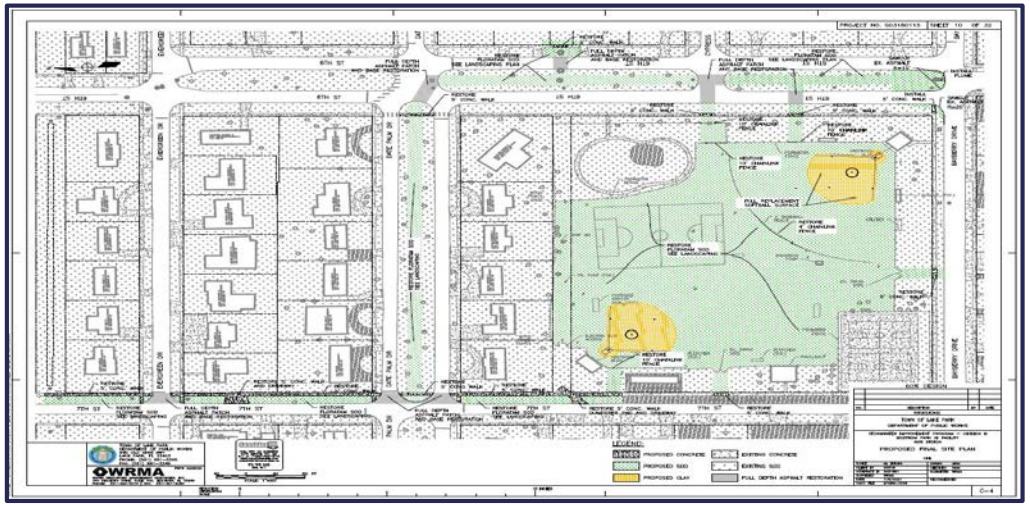
- Upstream Peak Discharge Diversion & Attenuation
- Water Quality Treatment Using GI/LID-based Underground Chamber Filtration
- Surface Playing Fields Remain Intact

Five acres Park underground location is ideal as there is no land available for large surface detention pond facility in the Southern Outfall watershed

State of the art GI/LID Design Solution
Largest Underground Chamber Farm in SE Florida



- Underground *Storage* Chambers provide peak runoff detention
- Underground *Filtration* provides water quality treatment



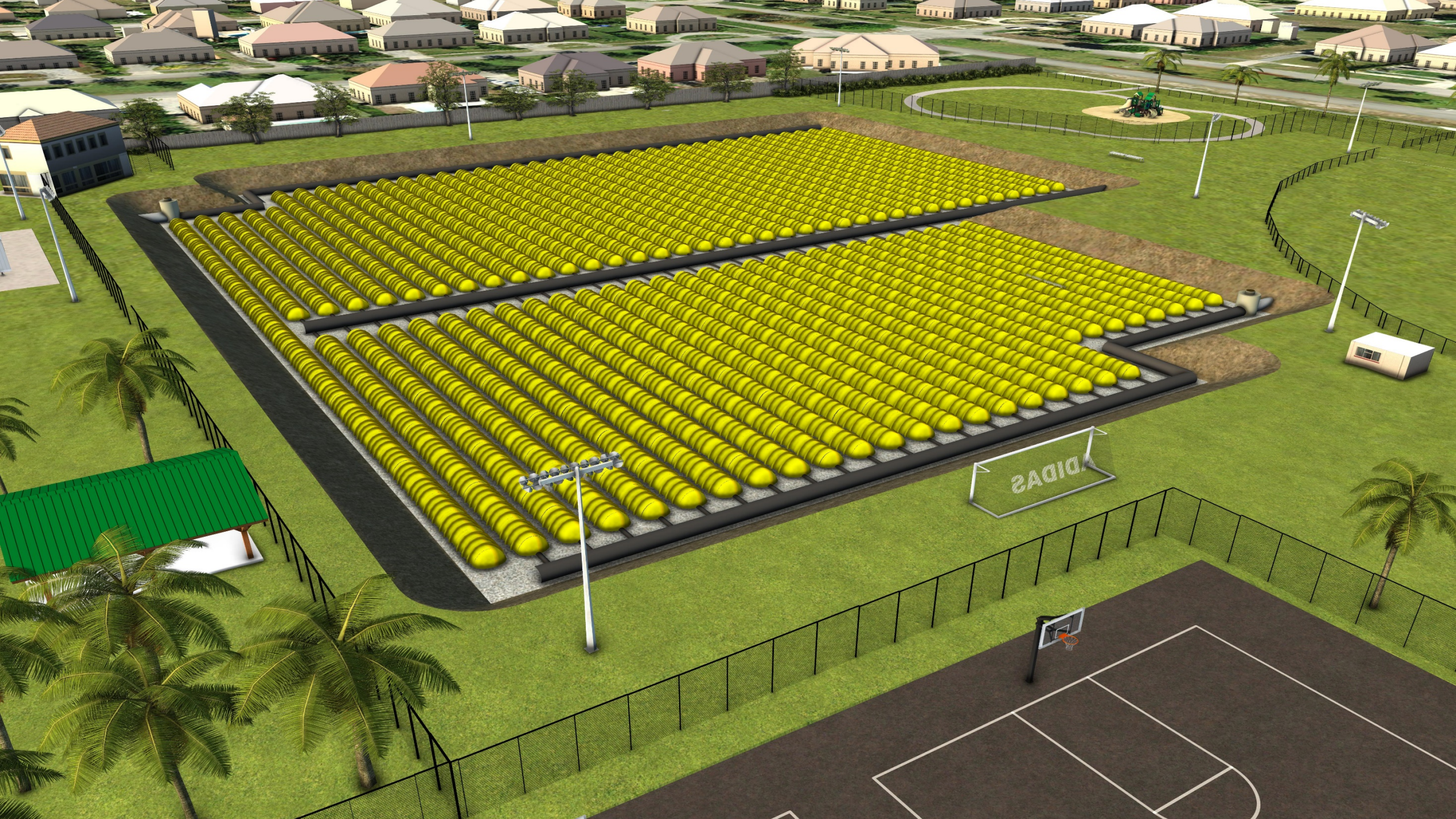
Final Layout (Playing Fields Restore to improved Original Conditions)

Key existing choking flow locations from the north and south are removed

- ❑ Interconnected 3-acre farm chambers for maximum utilization of underground storage space
- ❑ Chambers can be accessed for maintenance to clear debris
- ❑ Combined with Phase I (Southern Outfall Replacement Project,) Bostrom Park drainage improvements will significantly decrease lack of capacity flooding issues in the watershed

Project Design Renderings

RAÚL MERCADO, PE, CFM


ADIDAS


ADIDAS

Table Discussion

UP TO 30 MINUTES

Implementation Timeline & Next Steps

JOHN WILLE, CAPITAL PROJECTS MANAGER

Project Timeframe

1. Design & Bidding

- 100% Design Plans & Specifications: November 2022
- Final Regulatory Permits: December 2022
- Qualification and Bidding Advertisement: January – February 2023
- Contractor Selection: February – March 2023
- Contract Negotiations: April – May 2023

Project Timeframe

2. Construction

- Mobilization/Start Up: June 2023
- Completion/Close Out: June 2024

Closing Comments

Please scan for additional information on this project: