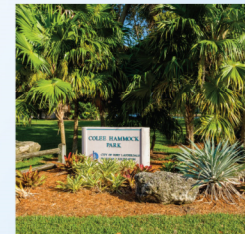




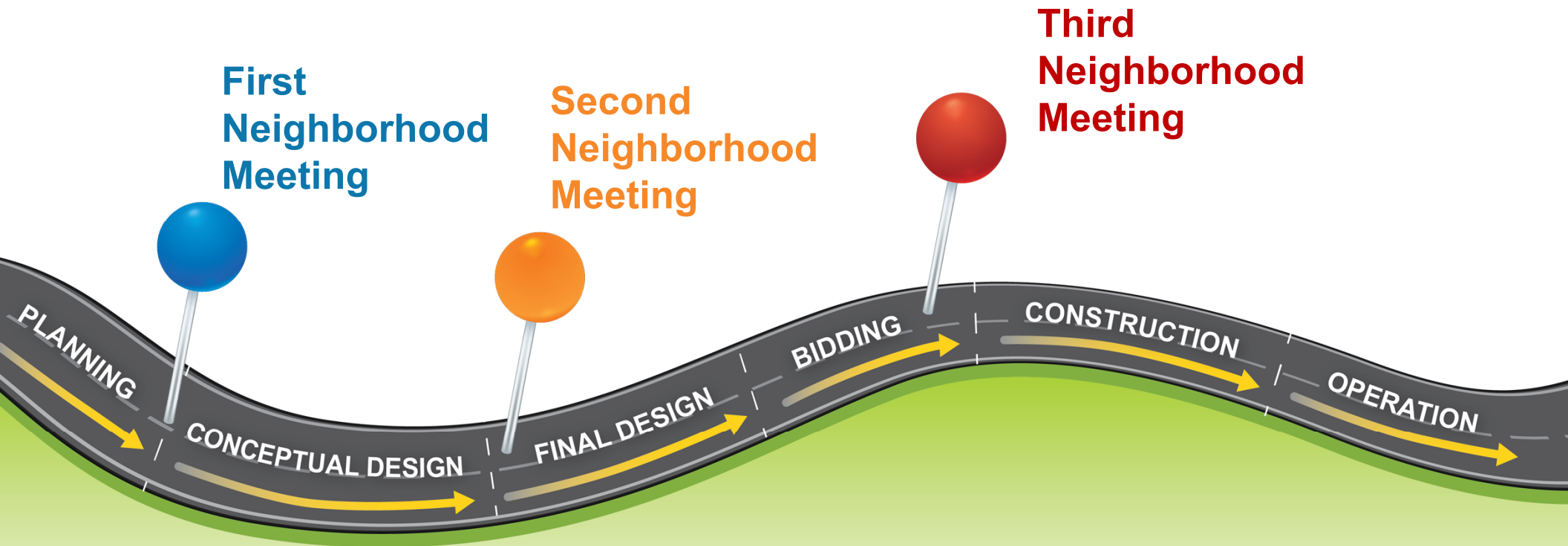
Fortify Lauderdale

Building a Resilient Future
in Fort Lauderdale



Tranche 2 Neighborhoods
Stormwater Management Improvements
City Project No. 12852
Flagler Village
January 15, 2025 at 6:30 pm

The Road to Improvement in Your Neighborhood



Meeting Objectives

- Give an overview of City's overall stormwater management program
- Give overview of current planning and conceptual design efforts for your neighborhood
- Gather your input and concerns about flooding events/conditions in your neighborhood
- Let you know what to expect next



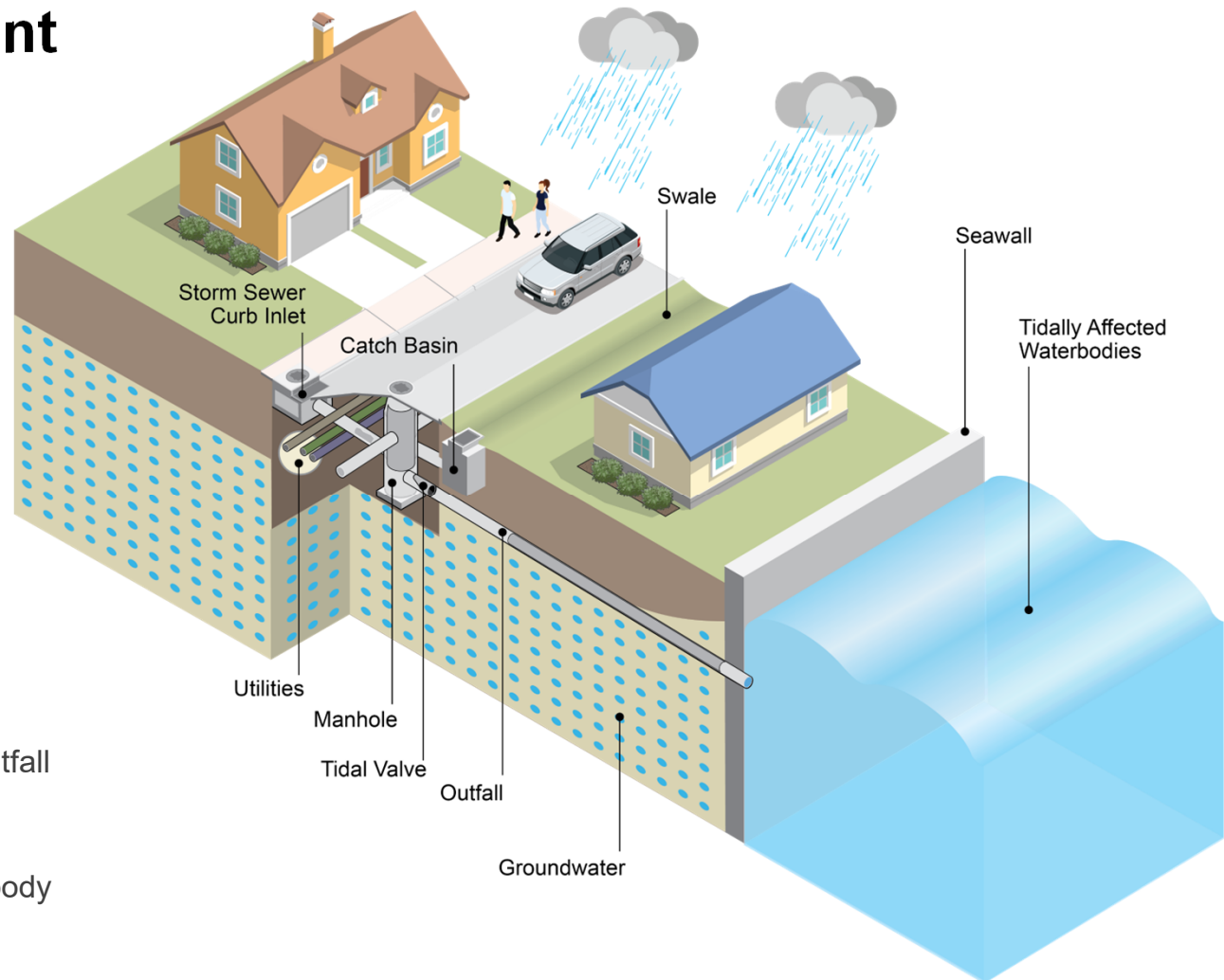
Residents

**"Best results achieved
via collaboration"**

Stormwater Management

Stormwater Terminology

- Rainfall
- Groundwater
- Runoff
- Right-of-Way
- Swale
- Catch Basin/Curb Inlet
- Stormline
 - Gravity main
 - Force main
- Manhole
- Tidal Valve
- Discharge/Outfall
- Seawall
- Canal/Waterbody



Common Stormwater System Features



Swale



Inlet/Catch Basin



Curb Inlet



Tidal Valve



Outfall

Fortify Lauderdale

Primary Goal:

To Improve Resilience to Impacts of Climate Change within the City's Most Vulnerable Neighborhoods and Communities

- Part of public investment includes stormwater improvements for Tranche 2 neighborhoods.
- The Fort Lauderdale Stormwater Program progress reports and events are posted on the City's website: <https://www.fortlauderdale.gov/government/departments-i-z/public-works/engineering-division/fortify-lauderdale>



Fortify Lauderdale Building a Resilient Future in Fort Lauderdale

Fort Lauderdale Stormwater Program Progress Report

October 2024

Work on the Stormwater/Resilience Master Plan continues to progress throughout vulnerable neighborhoods in the City.

Updated project progress for Tranche 1 and Tranche 2 neighborhoods is provided below. Work continues on planning efforts associated with the Tranche 2 neighborhoods, including updates to the City's existing stormwater model allowing simulation of current and future conditions to inform stormwater improvements.

Tranche 1 Neighborhoods
Project Status Update:

- Construction substantially completed
- In Construction
- In Design

Community members actively participating in a previous public outreach meeting.

Public Outreach Meetings for Tranche 2 Neighborhoods.

The City is currently scheduling public outreach meetings, which will begin in October 2024 and continue through December 2024. Please check the Fortify Lauderdale website for the latest information on meetings in your neighborhood. **Your input is essential**—stay informed and take part in shaping the future of your neighborhood at the upcoming meetings.

For updates and information: www.fortlauderdale.gov/fortifylauderdale

Key steps to advance the Tranche 2 planning effort:

STEP
1

Update the City's
Master Plan Stormwater Model

STEP
2

Conceptualize Needed
Improvements

STEP
3

Apply for a Conceptual Permit
with Broward County

STEP
4

Initiate Public Outreach,
Engagement and Private Resiliency

STEP
5

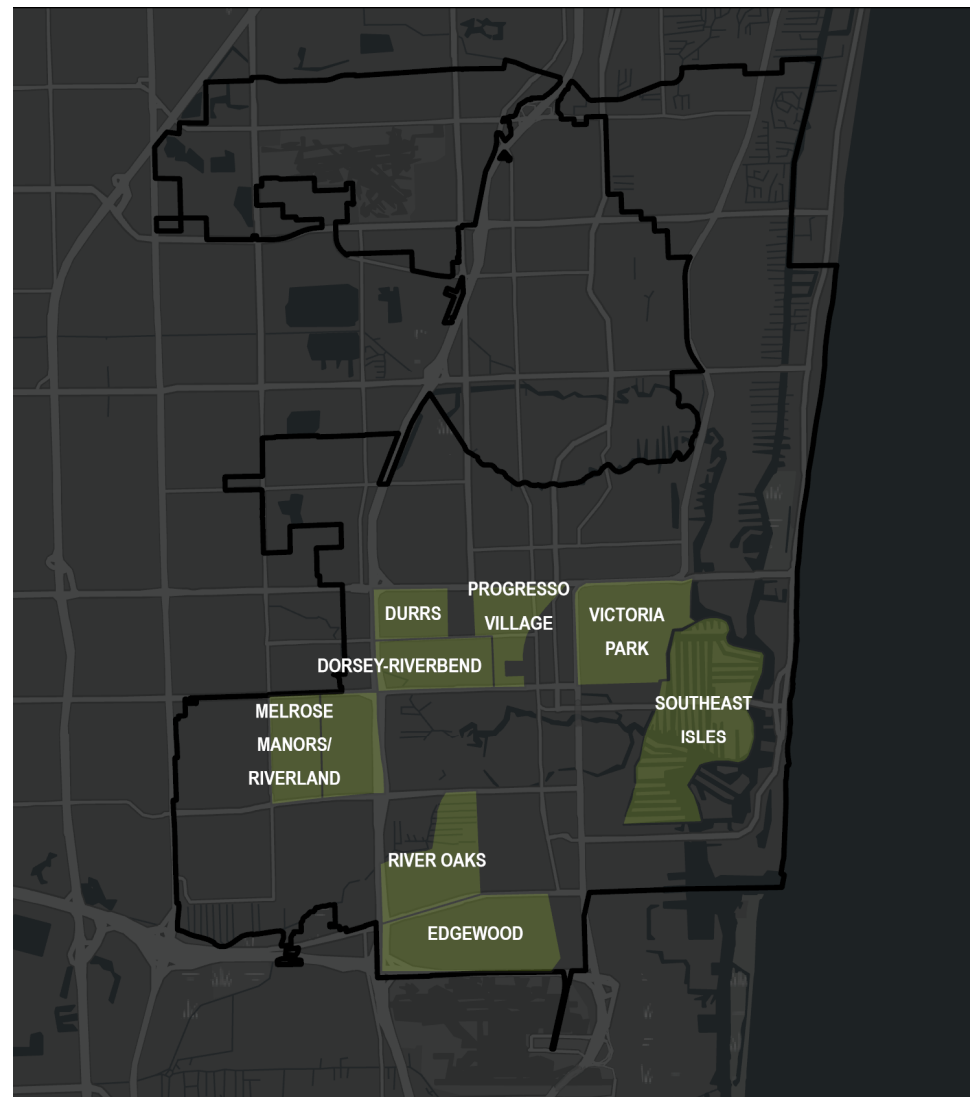
Develop Overall Program
Management Plan

The Phased Project Schedule plans for completion by 2034



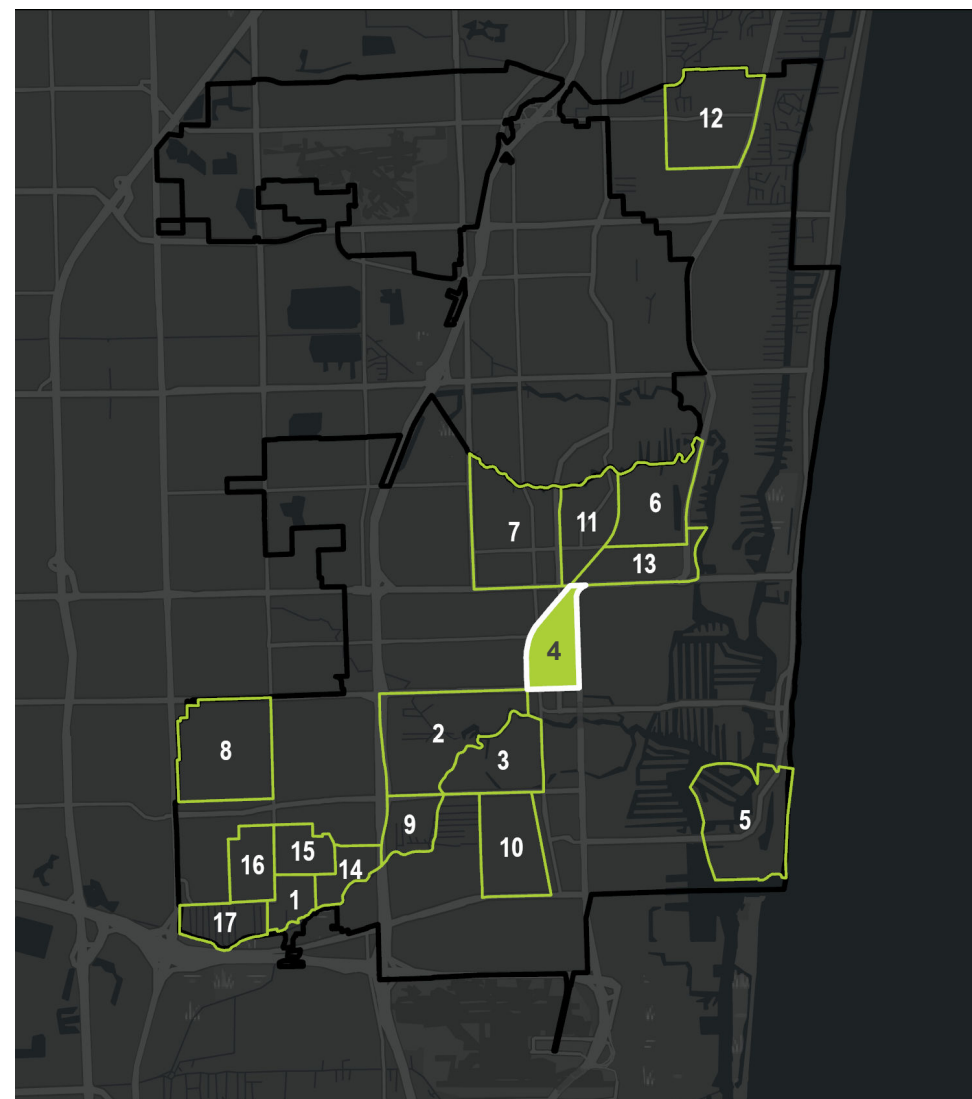
Original Eight Neighborhoods

- Edgewood
- River Oaks
- Dorsey-Riverbend
- Durrs
- Progresso Village
- Victoria Park
- Southeast Isles
- Melrose Manors/Riverland



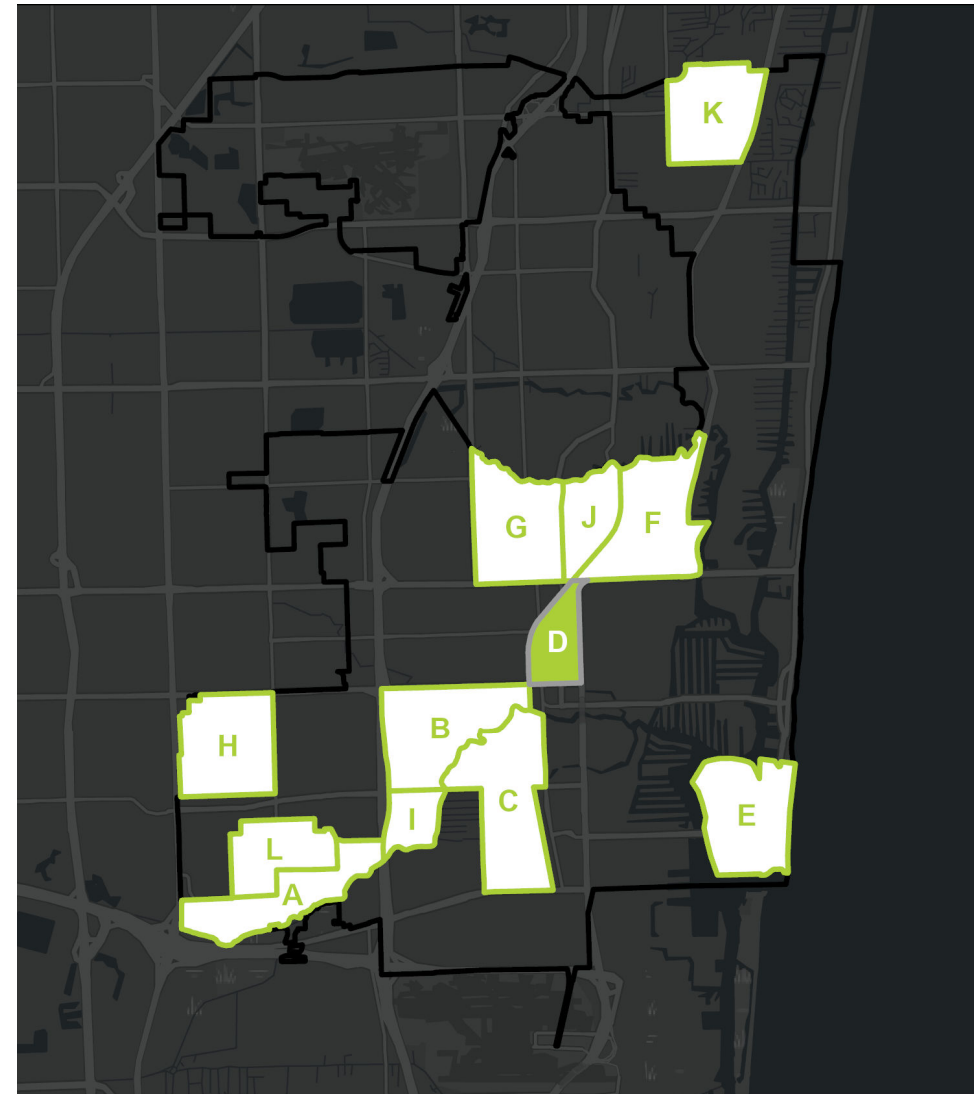
Tranche 2 Neighborhoods

1. River Landings, Riverland Manors/Woods & Adjoining Areas
- 2a. Sailboat Bend
- 2b. Riverside Park
3. Tarpon River
4. **Flagler Village**
5. Harbour Inlet & Adjoining Areas
6. Poinsettia Heights
7. South Middle River
8. Melrose Park
9. Shady Banks
10. Croissant Park
11. Middle River Terrace
12. Imperial Point
13. Lake Ridge
14. Oak River & Adjoining Areas
15. Chula Vista & Adjoining Areas
16. Riverland Village
17. Lauderdale Isles



Projects

- A. Lauderdale Isles & Adjoining Areas
- B. Sailboat Bend and Riverside Park
- C. Tarpon River and Croissant Park
- D. **Flagler Village**
- E. Harbour Inlet & Adjoining Areas
- F. Poinsettia Heights and Lake Ridge
- G. South Middle River
- H. Melrose Park
- I. Shady Banks
- J. Middle River Terrace
- K. Imperial Point
- L. Riverland Village, Chula Vista & Adjoining Areas



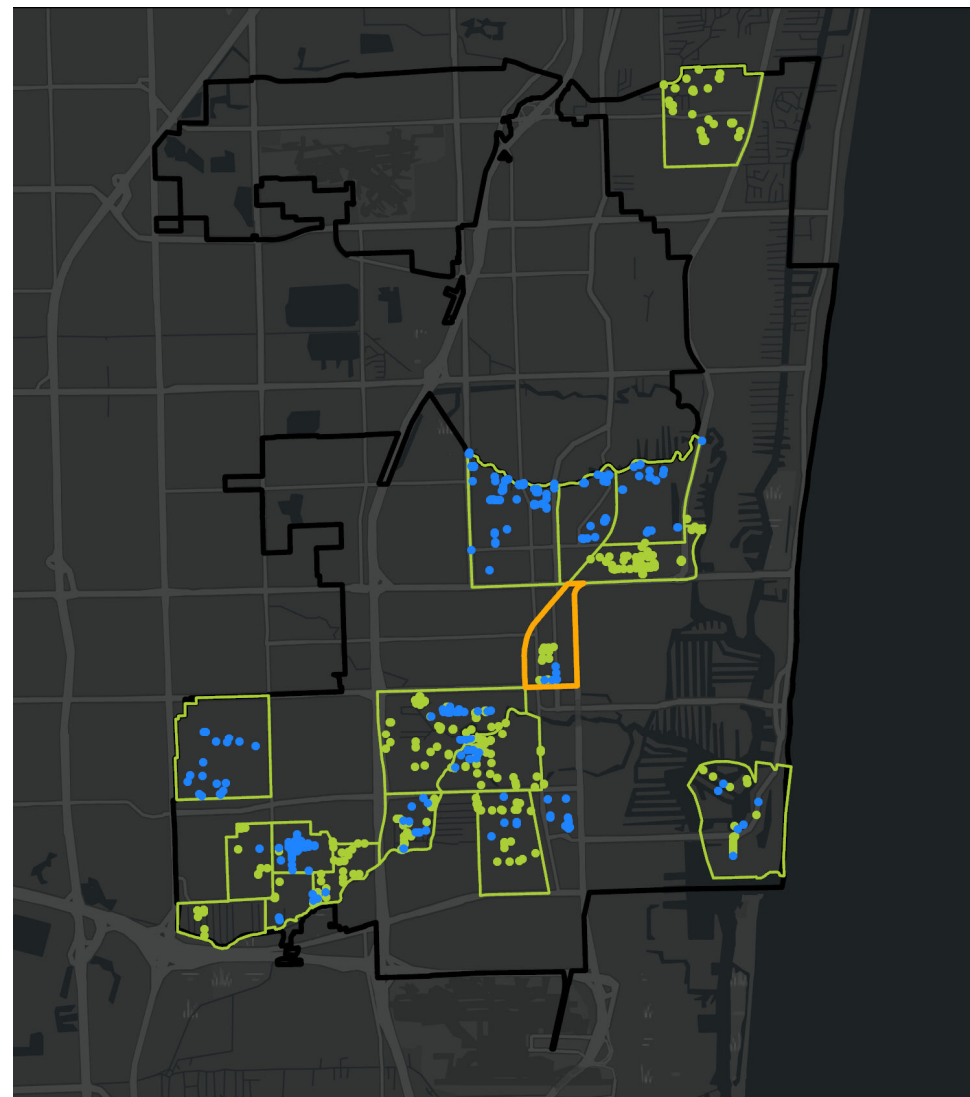
Spatial coverage for data collection was widespread



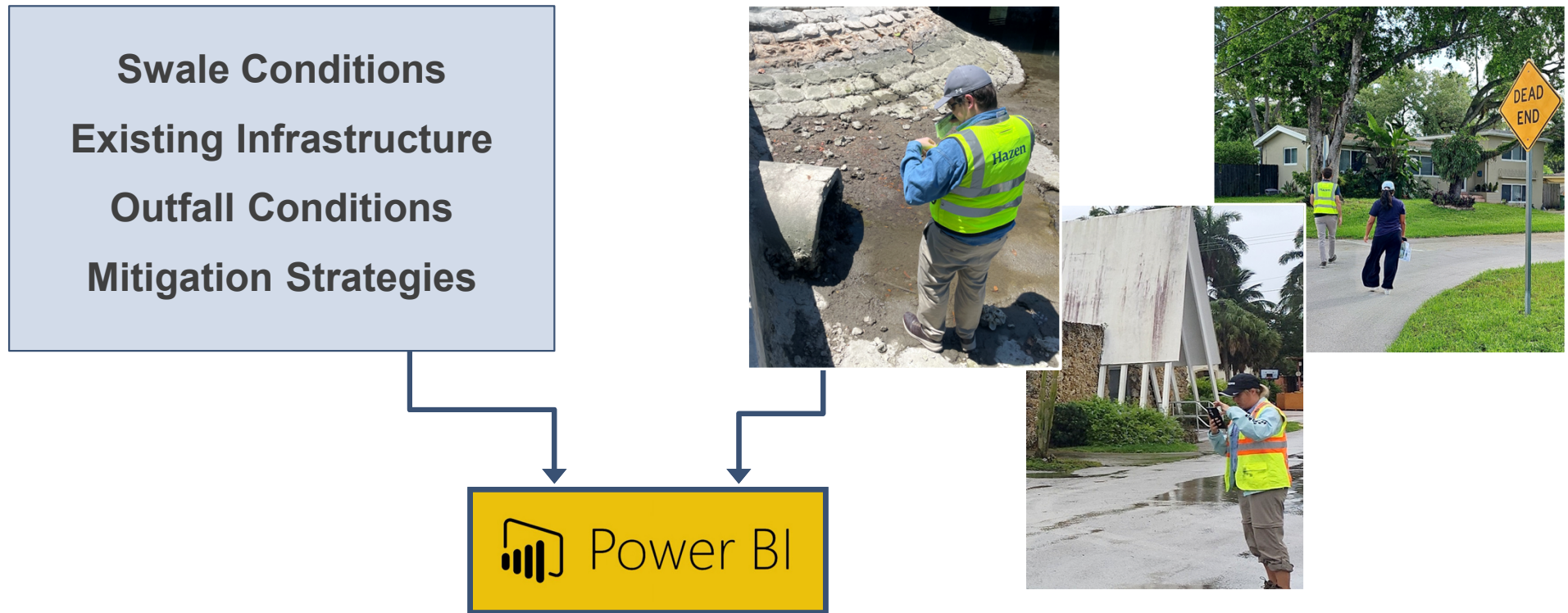
Wet Weather Site Visits



Dry Weather Site Visits



Data Collection Team used ArcGIS Survey123...



...and populated a PowerBI Dashboard

Field Data Summary - Flagler Village



Flooding

Nature of Flooding	Is There Drainage Infrastructure?
Isolated	Existing but undersized

Outfalls

Existing Outfalls?
No

Swales

Existing Swales?	Paved Swales?	Distribution	Grading Problems?
Yes	Yes	Widespread	Yes

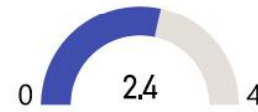
Existing Critical Facilities

Government (1)
Sanitary Sewer Pump Station (1)

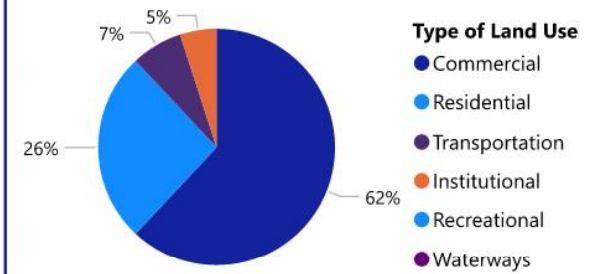
Critical Facilities



Buildings per Acre



Land Use Distribution

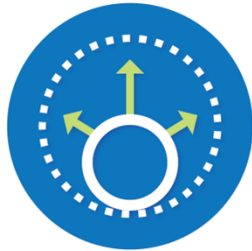


A variety of potential adaptation strategies is proposed



Extend Drainage
System

DS



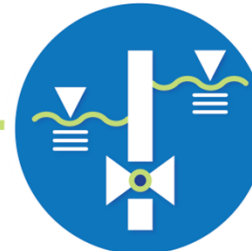
Increase
Conveyance Capacity

UP



Install Pump
Station

PS-I



Install Tidal
Valve

TV



Capital
Maintenance

MA



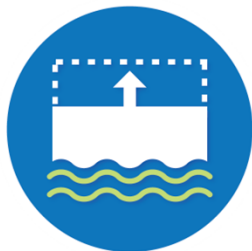
Private Resiliency
Program

PR



Upgrade Existing
Pump Station

PS-U



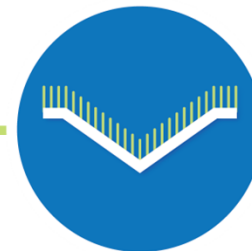
Raise
Seawalls

RS



Grading
Improvements

GI



Rehabilitate
Grass Swales

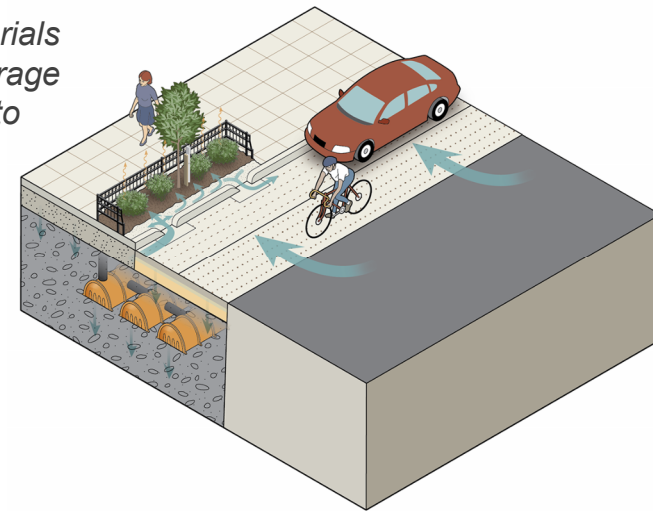
SW

Green Infrastructure and Basin Storage








- Suitable Landscaping and Flood-Resistant Materials
- Enhanced Stormwater Storage or Ponds
- Bioswales and Bioretention
- Permeable Pavement or Pavers
- Rainwater Harvesting



Green infrastructure/materials and non-conventional storage can be incorporated into adaptation strategies.

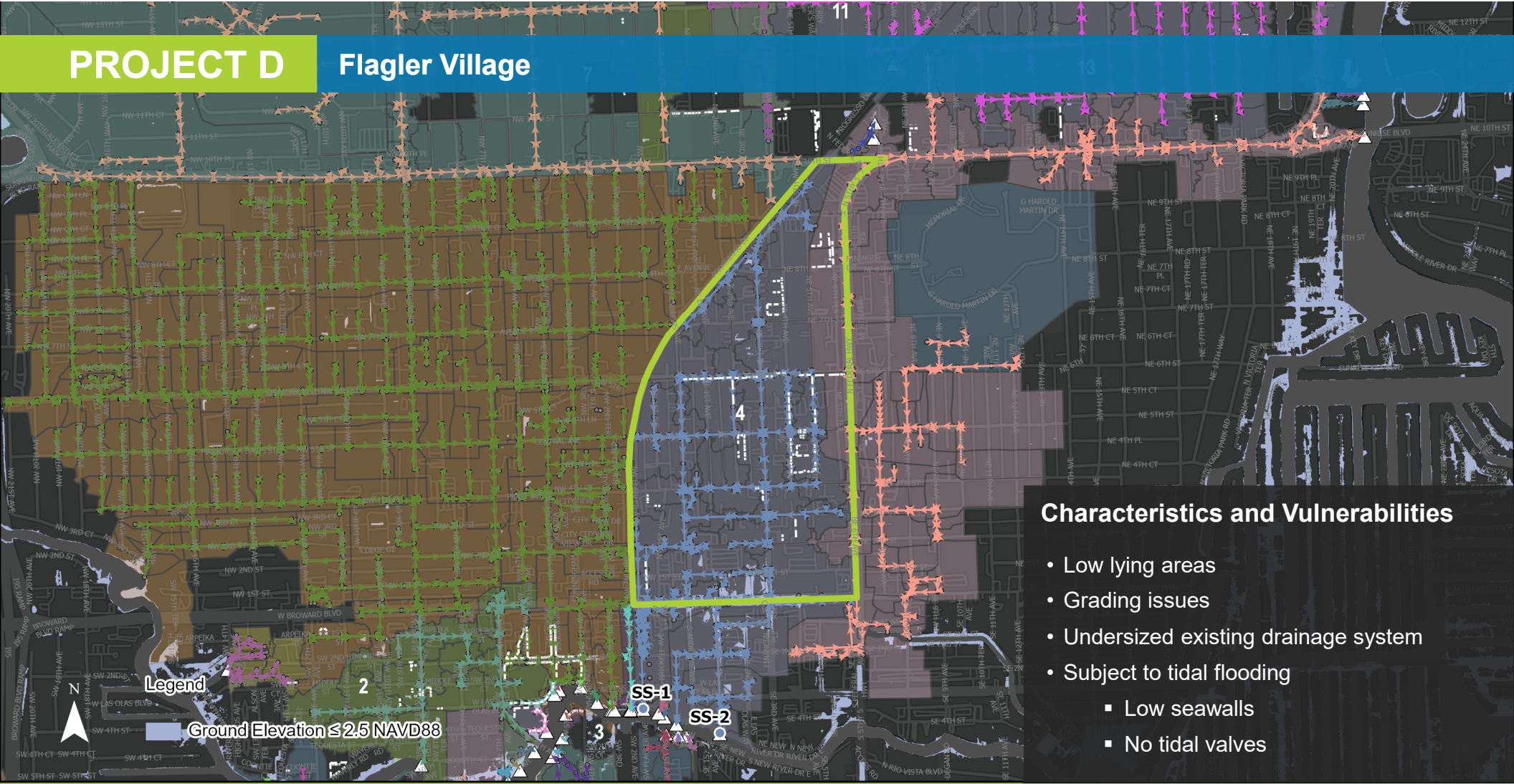


Takeaway from Field Work & Desktop Analyses

		Adaptation Strategies									
											
Project	Tranche 2 Neighborhoods	DS	UP	PS-I	MA	PR	PS-U	RS	GI	TV	SW
A	Lauderdale Isles & Adjoining Areas	✓	✓	✓		✓		✓	✓	✓	✓
B	Sailboat Bend, Riverside Park & Adjoining Areas	✓	✓	✓		✓		✓		✓	✓
C	Tarpon River and Croissant Park	✓	✓	✓		✓		✓		✓	✓
D	Flagler Village		✓		✓	✓	✓		✓		
E	Harbour Inlet & Adjoining Areas		✓			✓				✓	
F	Lake Ridge and Poinsettia Heights	✓	✓	✓		✓			✓		✓
G	South Middle River	✓	✓	✓		✓			✓		✓
H	Melrose Park			✓	✓	✓					
I	Shady Banks	✓	✓	✓		✓		✓		✓	✓
J	Middle River Terrace	✓	✓	✓		✓			✓		✓
K	Imperial Point	✓	✓			✓					✓
L	Riverland Village and Chula Vista & Adjoining Areas	✓	✓	✓	✓	✓		✓		✓	✓

PROJECT D

Flagler Village



Characteristics and Vulnerabilities

- Low lying areas
- Grading issues
- Undersized existing drainage system
- Subject to tidal flooding
 - Low seawalls
 - No tidal valves

PROJECT D

Flagler Village



Potential Adaptation Strategies



Increase Conveyance Capacity



Upgrade Existing Pump Stations



Capital Maintenance

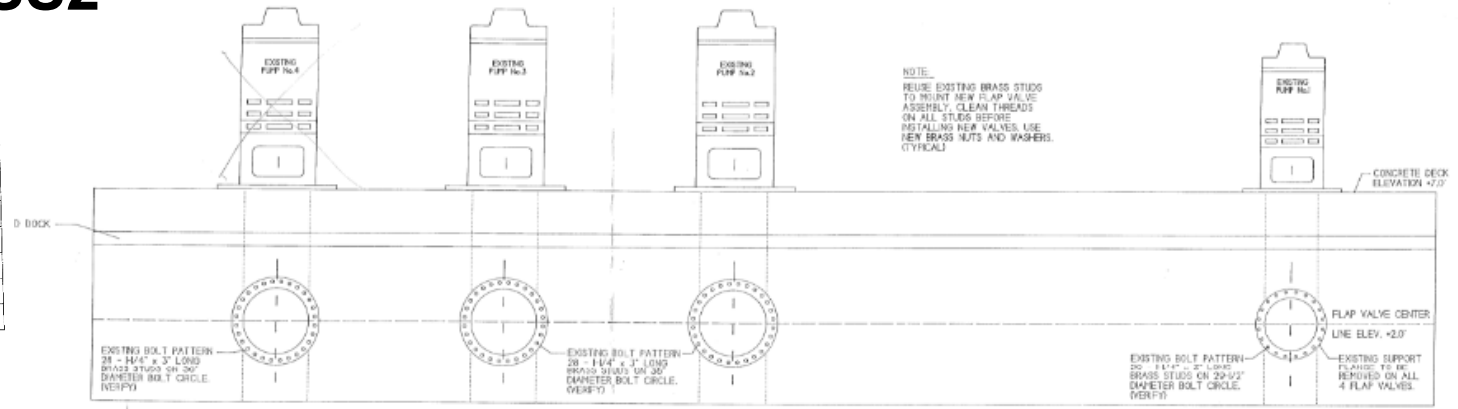


Private Resiliency Program

Pump Station SS2

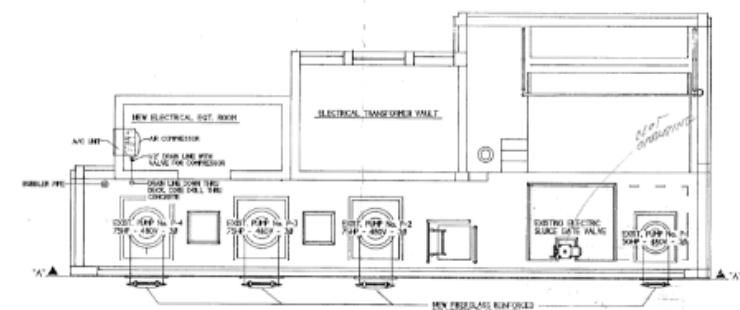
PUMP OPERATION SCHEDULE						
PUMP No.	FLAP VALVE ELEVATION	DISCHARGE IN. DIAMETER	DISCHARGE IN. DIAMETER	DISCHARGE IN. DIAMETER	DISCHARGE IN. DIAMETER	DISCHARGE IN. DIAMETER
RESERVOIR FOR PUMPS No. 1, 2, 3 & 4	-7.0	750	1.35 PSI	-9.0'	750	1.08 PSI
PUMP No. 1	-8.0'	PS1	1.51 PSI	-10.5'	751	0.43 PSI
PUMP No. 2	-6.5'	PS2	2.14 PSI	-9.0'	750	1.08 PSI
PUMP No. 3	-5.0'	PS3	2.81 PSI	-9.0'	750	1.08 PSI
PUMP No. 4	-3.0'	PS4	3.46 PSI	-8.0'	750	1.08 PSI
HIGH WATER ALARM	-2.0'	PLUGAT SWITCH			MANUAL PUMP BATTERY	

NOT CORRECT
NOT INSTALLED

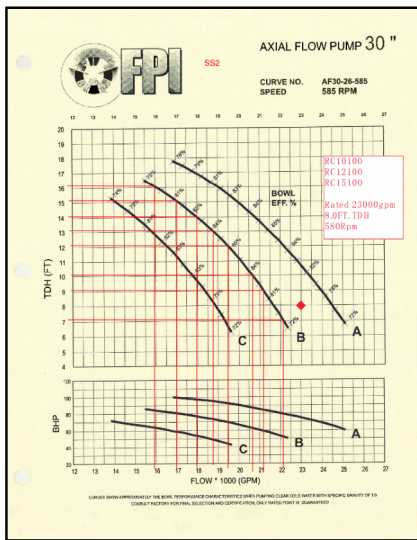


NOTE:
REUSE EXISTING BRASS STUDS TO MOUNT NEW FLAP VALVE ASSEMBLY. CLEAN THREADS ON ALL STUDS BEFORE INSTALLING NEW VALVES. USE NEW BRASS NUTS AND WASHERS. (TYPICAL)

SECTION 'A' - 'A' 1/2" = 1'-0"



NOTE: REMOVE EXISTING STEEL FLAP VALVES EXERCISING EXTREME CARE TO PREVENT DAMAGE TO EXISTING BRASS STUDS.



Neighbor's Input leveraging ArcGIS Survey123 to...

- Identify specific flooding locations
- Describe flooding experiences and associated impacts
- Identify primary concerns related to flooding
- Collect flooding photos/videos

Report Flooding

 Fort Lauderdale Stormwater Program
Flood Survey



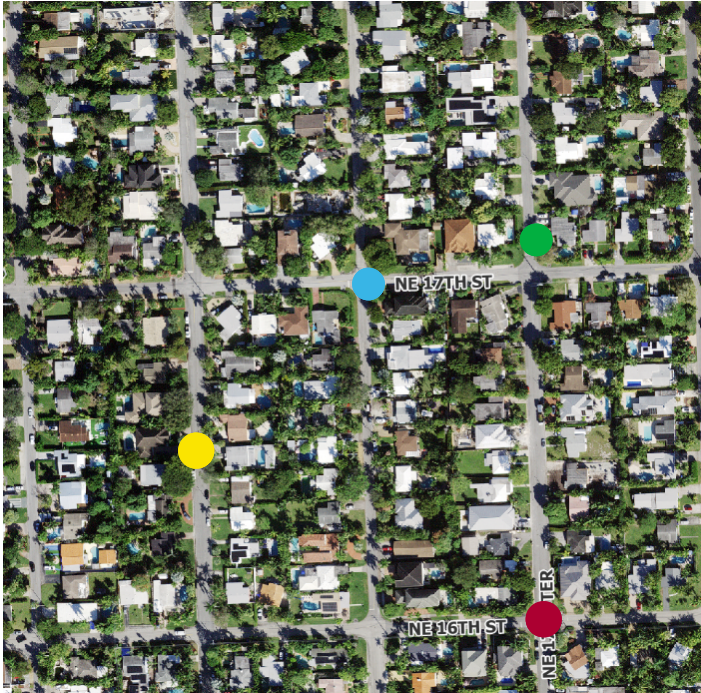
Flood Survey

Please follow link
via QR Code



<https://arcg.is/1fbTbj0>

Data Collection – Flooding Locations



- Green Dot – Nuisance Ponding (< 6 inches)
- Blue Dot – Yard Flooding (except swale)
- Yellow Dot – Roadway Flooding (> 6 inches)
- Red Dot – Impassible Flooding (> 12 inches)

We are available with maps after the presentation to collect flooding location data in addition to the digital survey.

What to Expect Next



- Field crews will continue to collect data in your area
- Collecting of information via survey (QR Code/link) or in person during neighborhood meetings
- Next meeting will include design recommendations for each neighborhood. Check Fortify Lauderdale website for meeting dates:
<https://www.fortlauderdale.gov/fortifylauderdale>







**Fortify
Lauderdale**
Building a Resilient Future
in Fort Lauderdale

Flood Survey



<https://arcg.is/1fbTbj0>

Questions

-  Green Dot – Nuisance Ponding (< 6 inches)
-  Blue Dot – Yard Flooding (except swale)
-  Yellow Dot – Roadway Flooding (> 6 inches)
-  Red Dot – Impassible Flooding (> 12 inches)