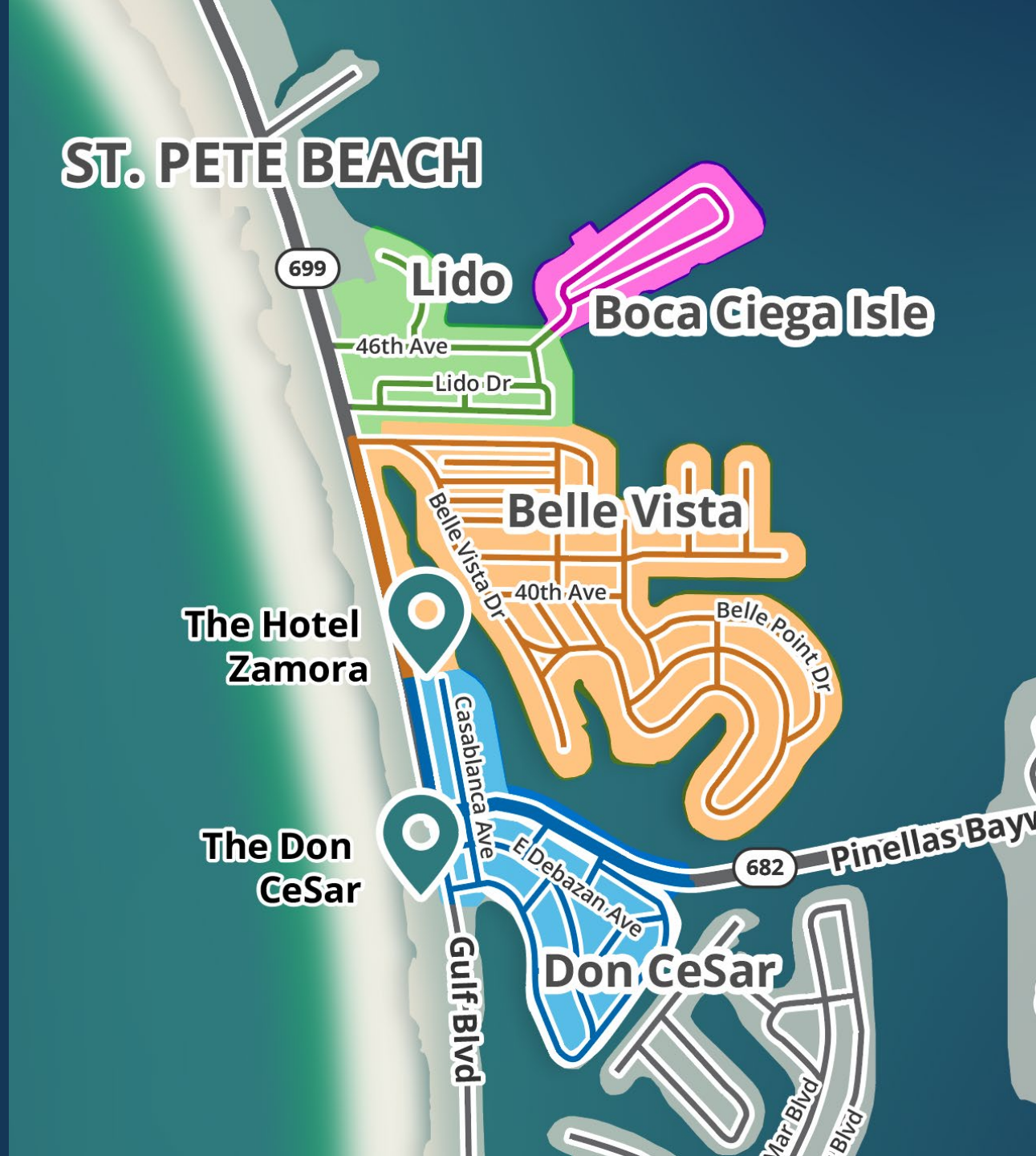
# Don CeSar & Boca Ciega Area Resiliency Adaptation Project

## Stormwater and Flooding Improvements

**PUBLIC WORKSHOP #1**

November 5, 2026



St. Pete Beach
The Sunset Capital of Florida

# We want to hear from You!

## Explore the Interactive Project Area Map

**We invite you to explore the project area map and show us where you experience flooding issues.**

**Sharing your experiences will help shape solutions for your community.**

Show us where you experience flooding:

**ResilientStPeteBeach.com**



# Agenda

01 Tasks Completed and Why

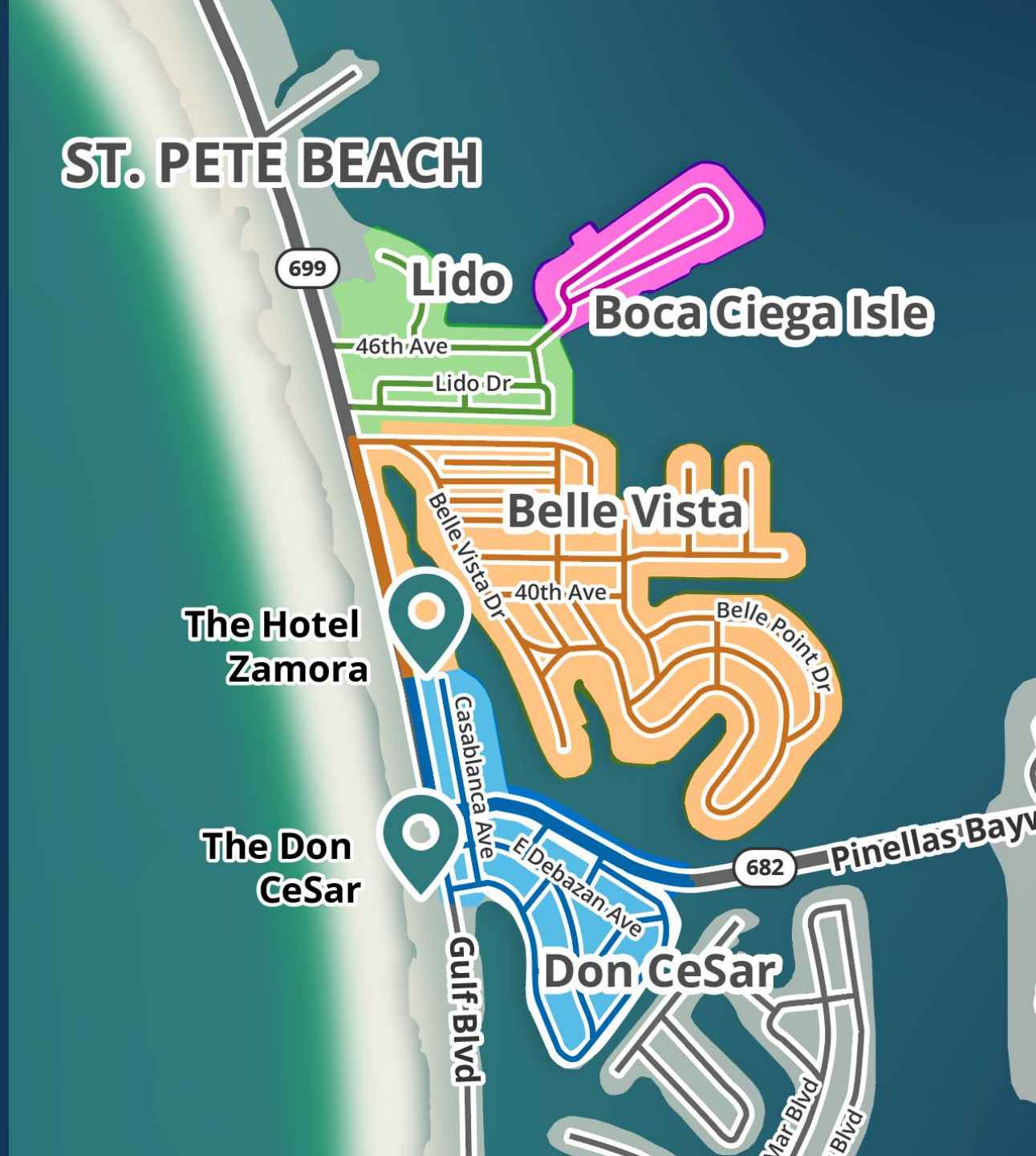
02 Preliminary Modeling Results

03 Current Level of Service

04 Preliminary Adaptations Solutions and Implementation

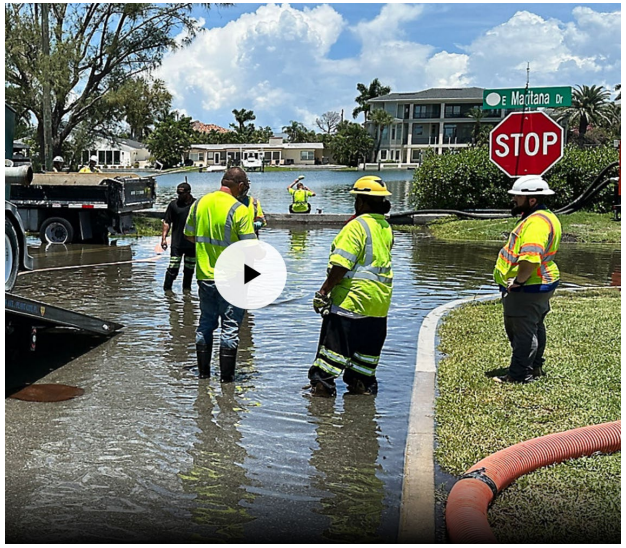
05 Schedule

06 Next Steps



# Why We Are Here.




*Crews installed a large pump on Friday in the Don CeSar neighborhood to drain tidal flood water from the streets. (Spectrum News/Josh Rojas)*

Scan to read article:
**Bay News 9**

Visit us at:
**ResilientStPeteBeach.com**



## Don CeSar and Boca Ciega Area Resiliency Adaptation Project

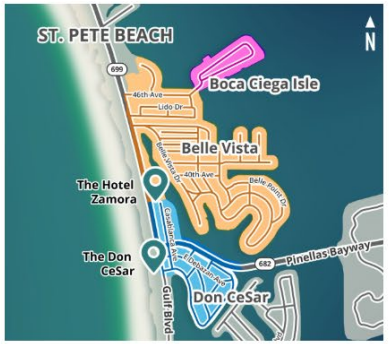


## Help Build a More Resilient St. Pete Beach

The City of St. Pete Beach is starting a new project to reduce neighborhood flooding. The **Don CeSar and Boca Ciega Area Resiliency Adaptation Project** will focus on Don CeSar, Belle Vista, and Boca Ciega Isle neighborhoods. ***View Project Location.***

The project will look at what's causing flooding and explore practical solutions, including technical, regulatory, and funding considerations. The goal is to provide preliminary design plans for the Don CeSar Neighborhood by mid-2027.

The City is committed to keeping residents informed and creating multiple opportunities to ask questions and share feedback. A series of public meetings and workshops will be held, with details posted on this website at least 30 days in advance.




## We want to hear from you!

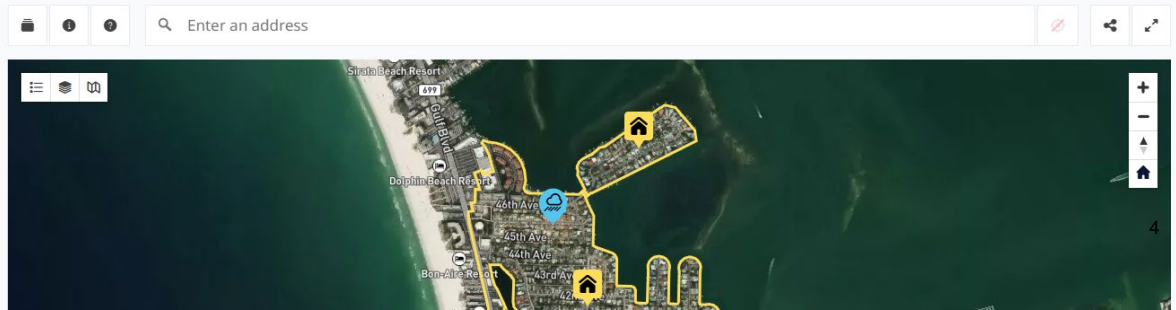
### Interactive Project Area Map

**We invite you to explore the project area map and show us where you experience flooding issues. Sharing your experiences will help shape solutions for your community.**

To participate, zoom in and select a location to highlight. Click **"Add Flooding Marker"** to place a marker in the appropriate location, select a category, and share your issue or experiences.

Click the Question Mark (?) icon to learn more about how to interact with this Interactive Map.

*8* contributions so far



# Purpose and Need

## Flooding Challenges, Vulnerability Assessment, Adaptation Strategies and Project Goals



01

### Flooding Causes and Impacts

Frequent flooding results from tidal backflow, sea level rise, low roads, and aging infrastructure.

02

### Vulnerability Assessment

Don CeSar, Bella Vista, Lido, and Boca Ciega neighborhoods evaluated

03

### Adaptation Strategies

Pumps, regrading, drainage upgrades, seawalls, and living shorelines.

04

### Project Goals and Approach

Identify causes, develop solutions, advance designs, and support construction.

Task 1

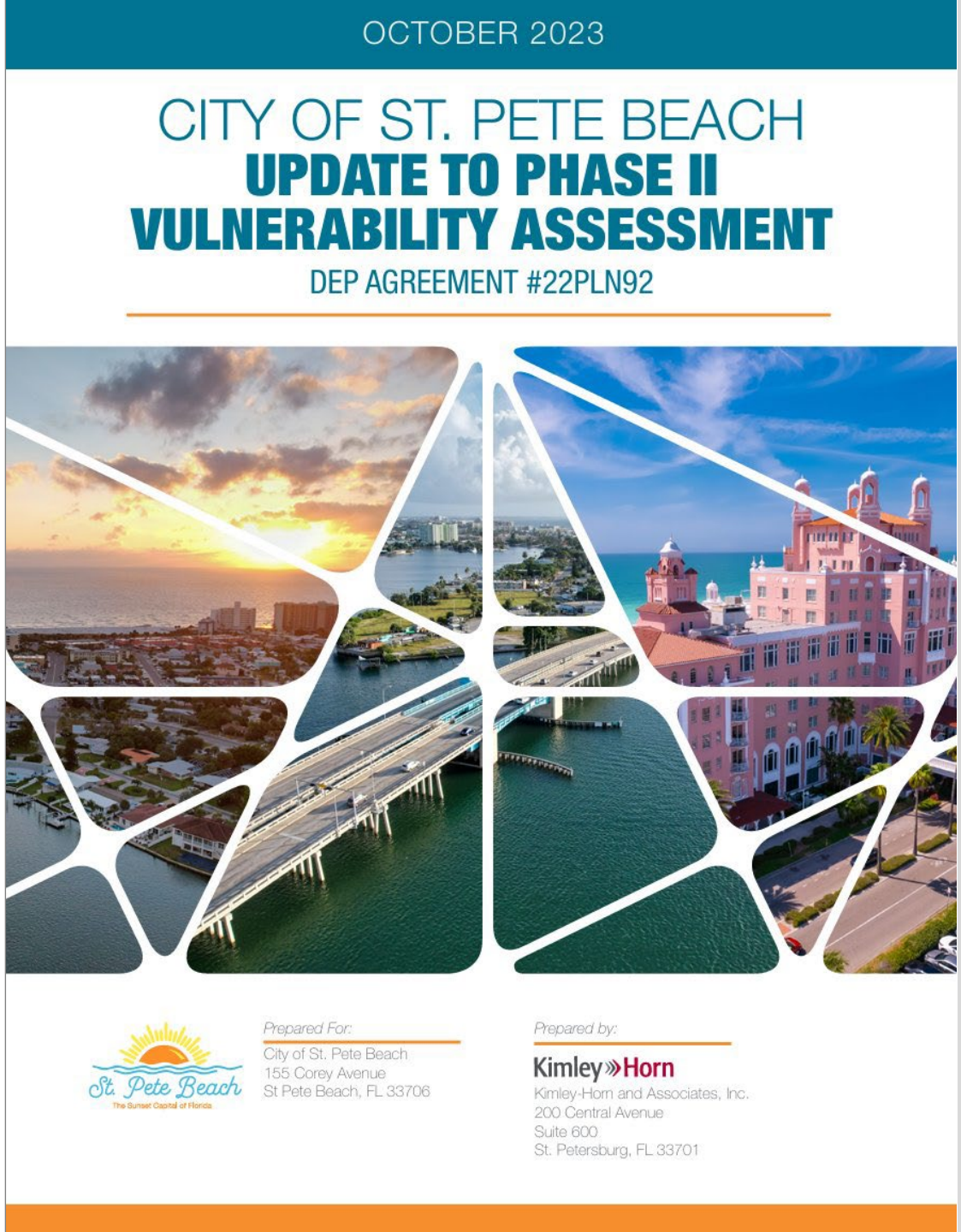
# Data Collection and Existing Conditions

**Develop a unified ArcGIS geodatabase; integrate all datasets into a centralized platform; ensure data consistency and accessibility.**

- Existing Vs Proposed ICPR models by Halff Associates
- Impervious Area (GIS File)
- Soil Map from Web Soil Survey
- Basin Boundary Shape file
- GIS file from City includes Water / Sewer / Storm Structures Data
- Underground utility information for Don Cesar neighborhood
- Underground drainage structure information from survey

Scan to view document:
**Vulnerability Assessment Update**





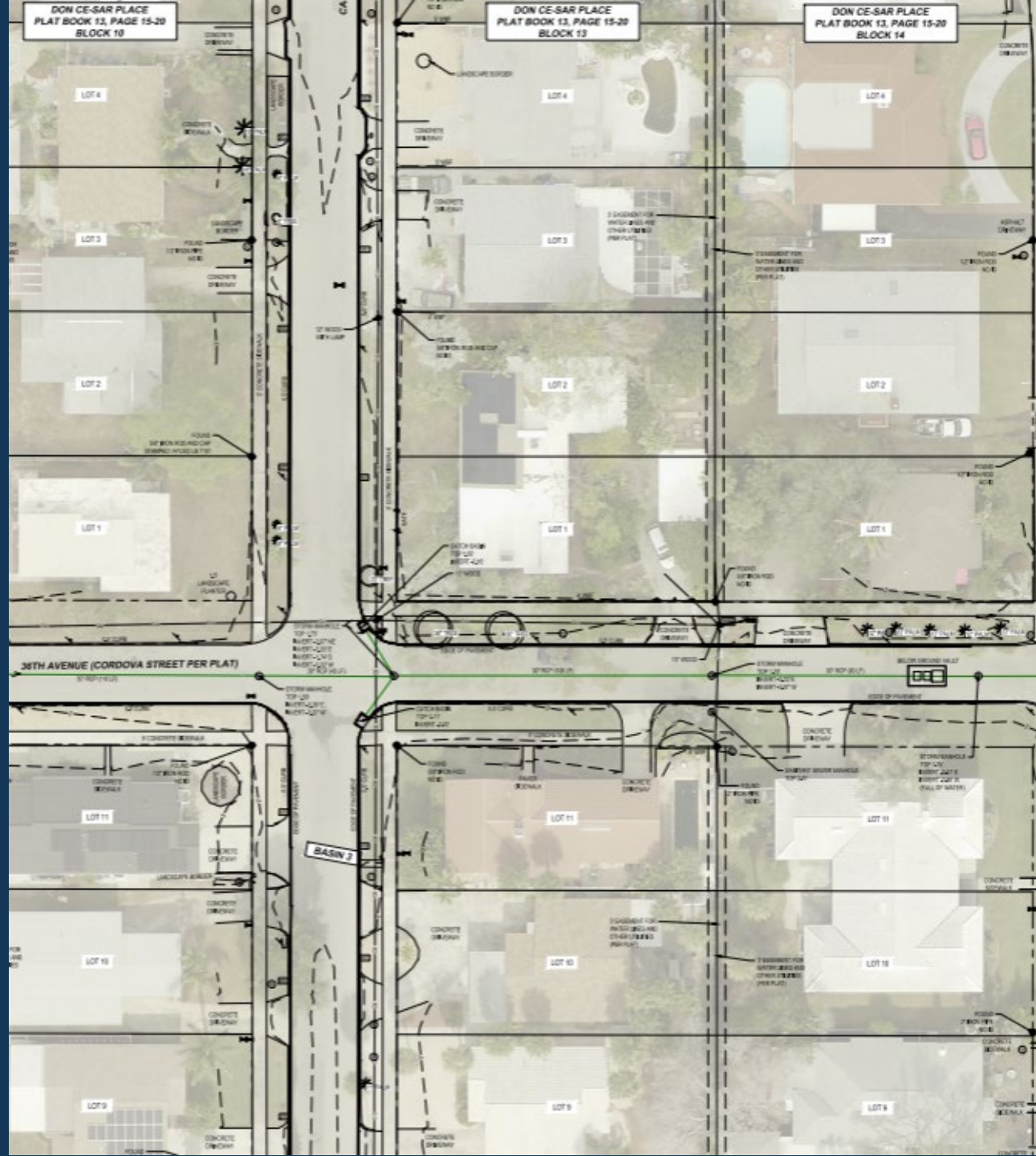
Task 2

# Topographic and Bathymetric Survey

## Project Team completed the following items to obtain existing data:

- LiDAR baseline for design survey
- Topographic survey within Right of Way + 10-foot buffer
- Bathymetric survey within 100 feet of water areas
- Seawall elevations
- Landscape, Driveways and other infrastructure identified in Right of Way
- Drainage structures (pipe / inlet sizes and inverts)

**Bathymetric Survey:** Measurements taken to map water depths and the shape of the ground beneath the water.

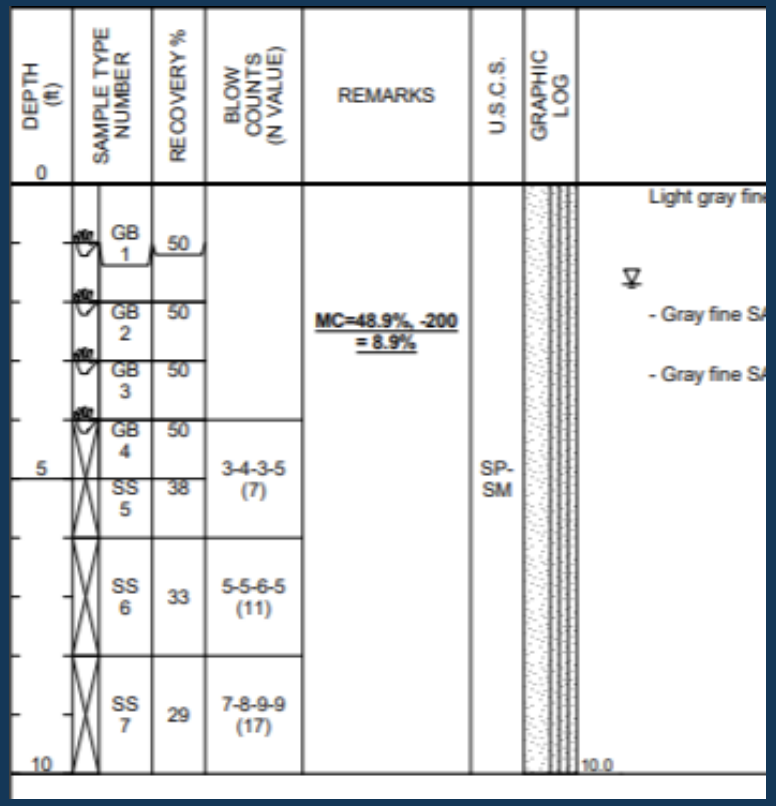


Task 3

# Limited Geotechnical Survey

## Tests Completed




**Soil Borings:** Examine underground soil to understand its type, condition, and stability.

**Infiltration testing:** Measures how quickly water can soak into the ground.

**Soil conditions:** Helps identify unsuitable soil and understand how the ground may settle over time.

**Drainage:** Determines how well the soil can absorb and drain water.

Task 4 & 5

# Desktop Environmental Screening and Field Delineations



GIS + PUBLIC DATASETS

## Desktop environmental screening

Used public datasets to map wetlands, surface waters, and protected lands across Don CeSar, Bella Vista, Lido, and Boca Ciega neighborhoods.

PRIORITY BASIN VERIFICATION

## Field-based environmental assessment

Document vegetation, hydrology, and preliminary wetland delineations in Don Cesar neighborhood is completed.

REGULATORY-READY OUTPUTS

## Integration for permitting

Clarify regulatory jurisdictions, guide avoidance strategies, and reduce permitting risk.

Task 6

# Outfall and Tidal Check Valve Verification

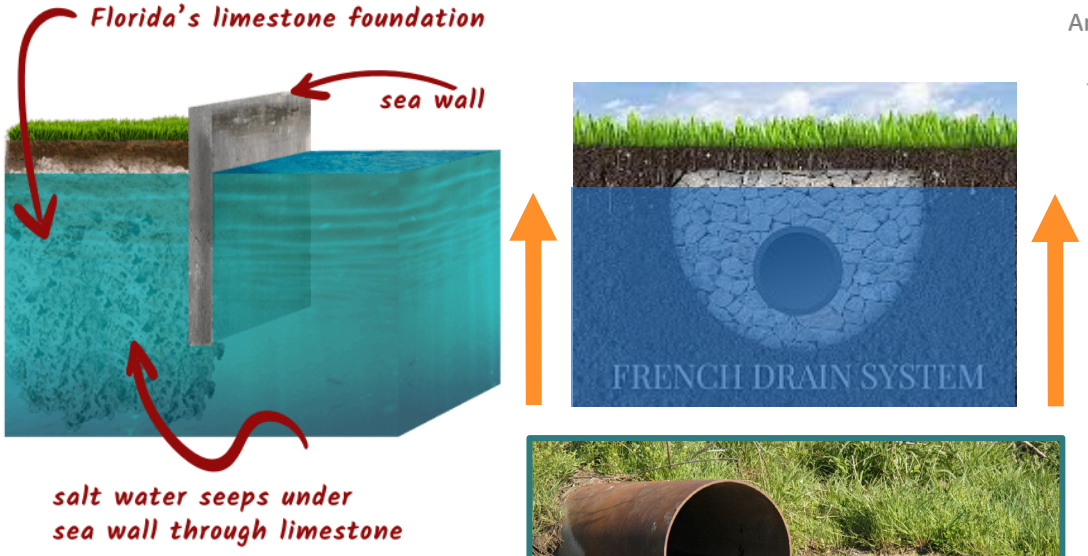
- Field inspections were conducted to verify stormwater outfalls and tidal check valve's location, physical condition and operational functionality under high-tide conditions to identify backflow and constraints
- During the investigation, approximately 70% of the inspected locations exhibited standing water within upstream drainage structures during high tide conditions.
- These observations suggest that several check valves may be submerged, buried, inaccessible, deteriorated, or otherwise ineffective in preventing tidal backflow.







# Gravity dependent Storm Drain systems (Exfiltration and Outfalls) will no longer work

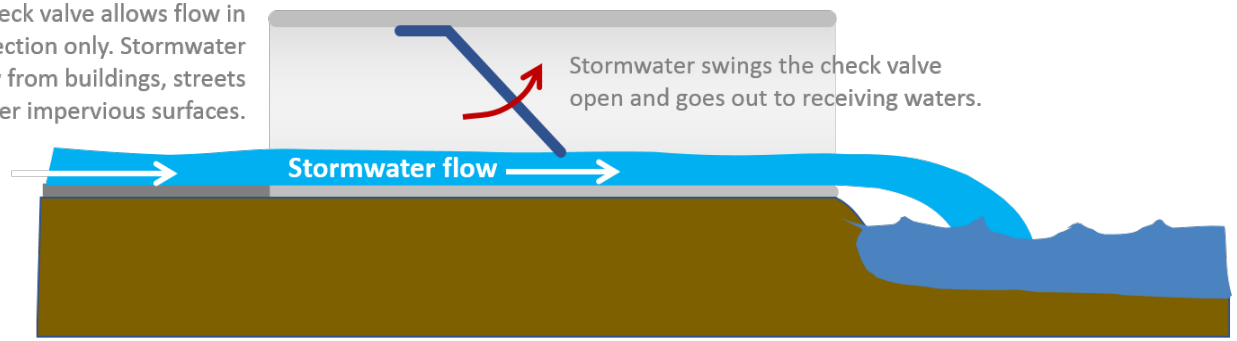



(sealevelrise.org)

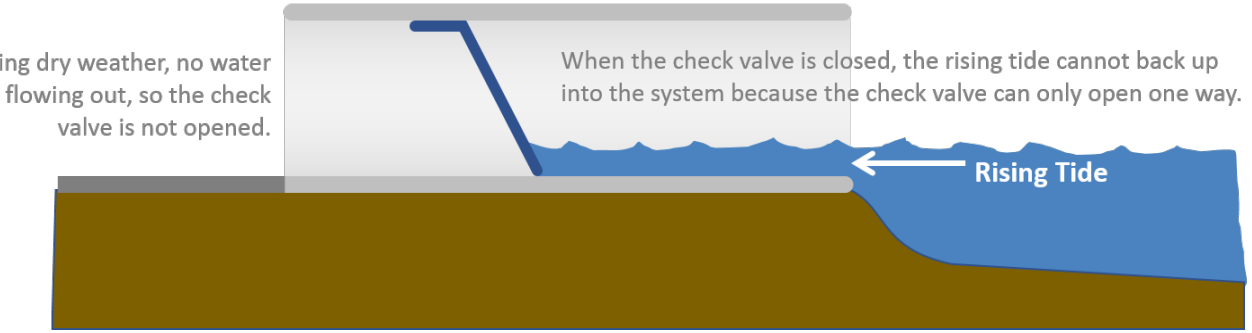





An in-line check valve allows flow in one direction only. Stormwater flows away from buildings, streets and other impervious surfaces.




During dry weather, no water is flowing out, so the check valve is not opened.




(Charleston-sc.org)

# Preliminary Engineering

## & Alternatives Analysis for the Project Area

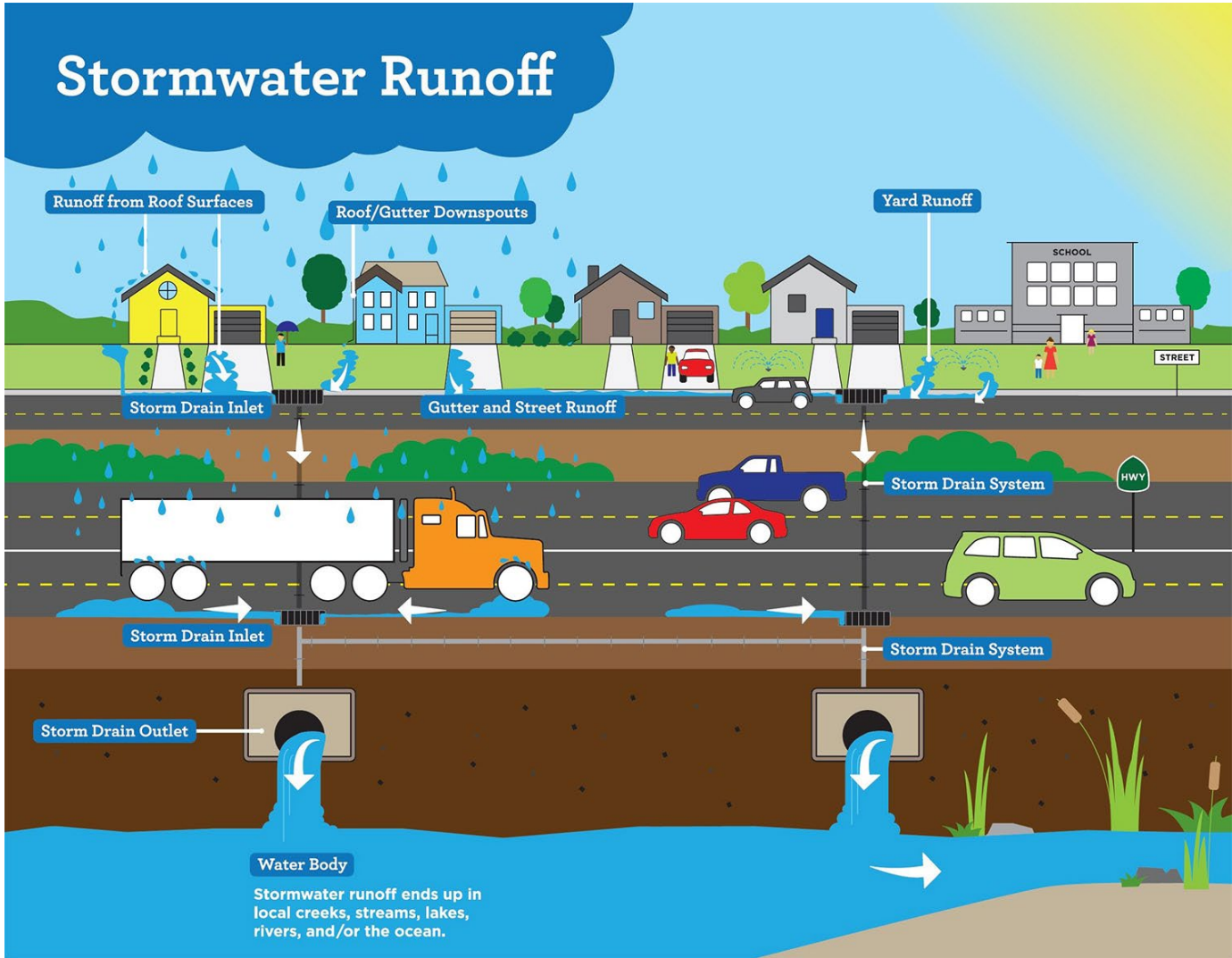
### Hydrologic and Hydraulic (H&H) Modeling

**Existing Conditions Modeling**

- Creating revised existing condition H&H model based on current conditions.
- Evaluate flooding across all Don CeSar, Bella Vista, Lido and Boca Ciega Isle neighborhoods.
- Calibrated using NOAA tidal data, rainfall and observed flooding

**Modeling Scenario Inputs**

- Tailwater Conditions
  - King Tide + Sea Level Rise for 2026 (Current), 2030, 2050, 2070, and 2080
- Rainfall Scenarios
  - 5-, 10-, 25-, 50-, and100-year storm events

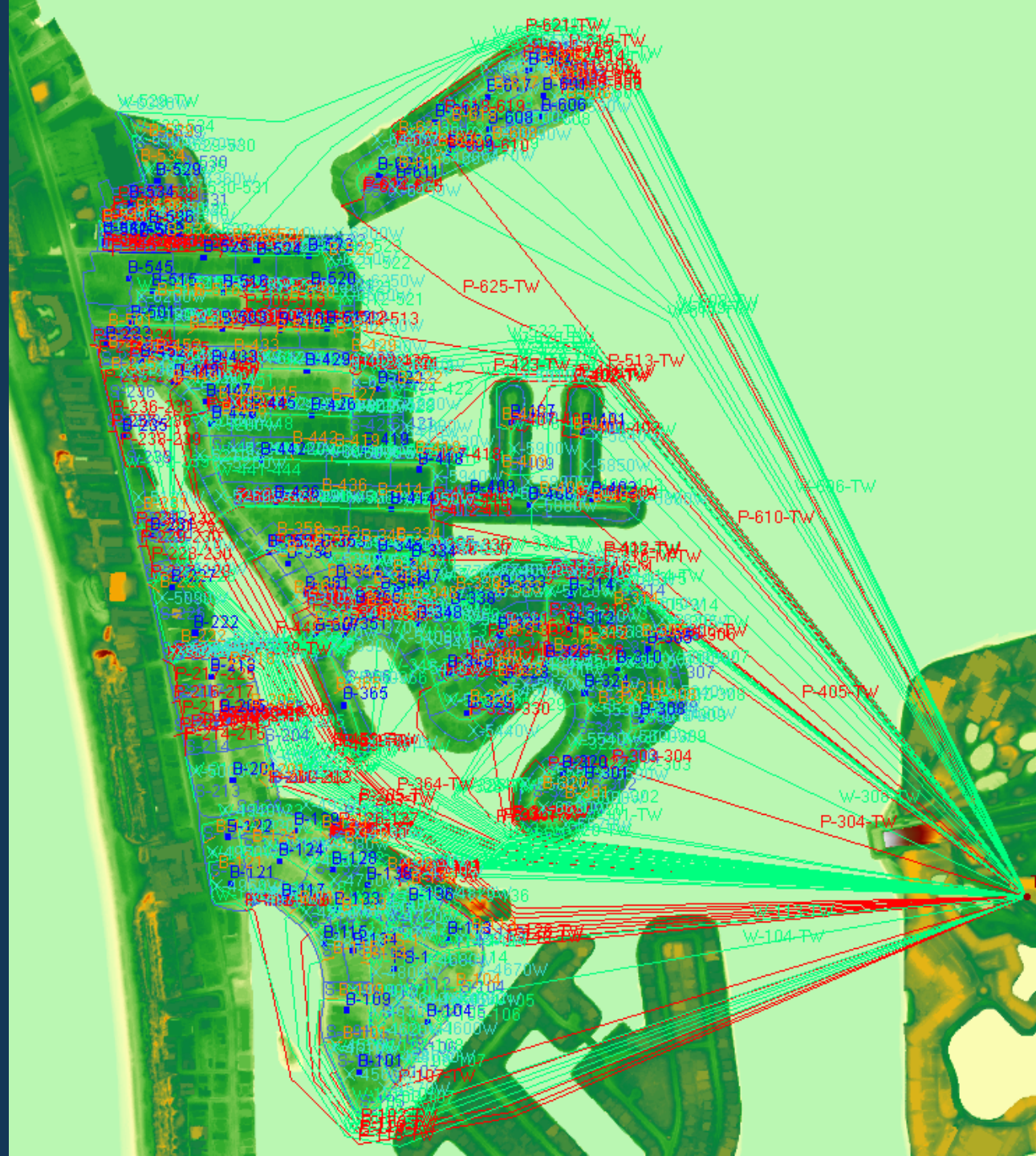


# Hydraulic and Hydrology (H&H) Model Development and Analysis

## How Did We Get These Results?

We looked at how water moves through neighborhoods today and how conditions could change in the future. The model considers **rainfall, existing drainage systems, sea level rise and king tides** to help identify areas that may experience flooding.

- Where rainwater flows in each neighborhood
- Existing drainage systems and infrastructure
- Current conditions that affect how water moves through the area
- The potential effects of sea level rise and king tides in 2026, 2030, 2050, 2070, and 2080
- Current and future rainfall estimates



**Current Code is planned for a heavy 1-hour rainstorm that has a 1-in-10 chance of happening.**

# Existing Conditions

## Roadway and Stormwater Design for Current Code (10 YR 1 HR)

| Don CeSar Neighborhood | |
|---|---|
| **Streets** | **Depth of Water on Streets** *(feet)* |
| E Maritana Drive | 0.40-1.35 |
| E Debazan Ave | 0.00-0.88 |
| Casablanca Ave | 0.00-1.18 |
| 36th Ave | 0.00-0.53 |







## Inundation Map 10YR 1HR

### Legend

Project Area

Value in feet

- 0.18 - 1.00
- 1.01 - 2.00
- 2.01 - 3.00
- 3.01 - 4.00
- 4.01 - 5.00
- 5.01 - 6.00
- 6.01 - 6.29

Current Code is planned for a heavy 1-hour rainstorm that has a 1-in-10 chance of happening.

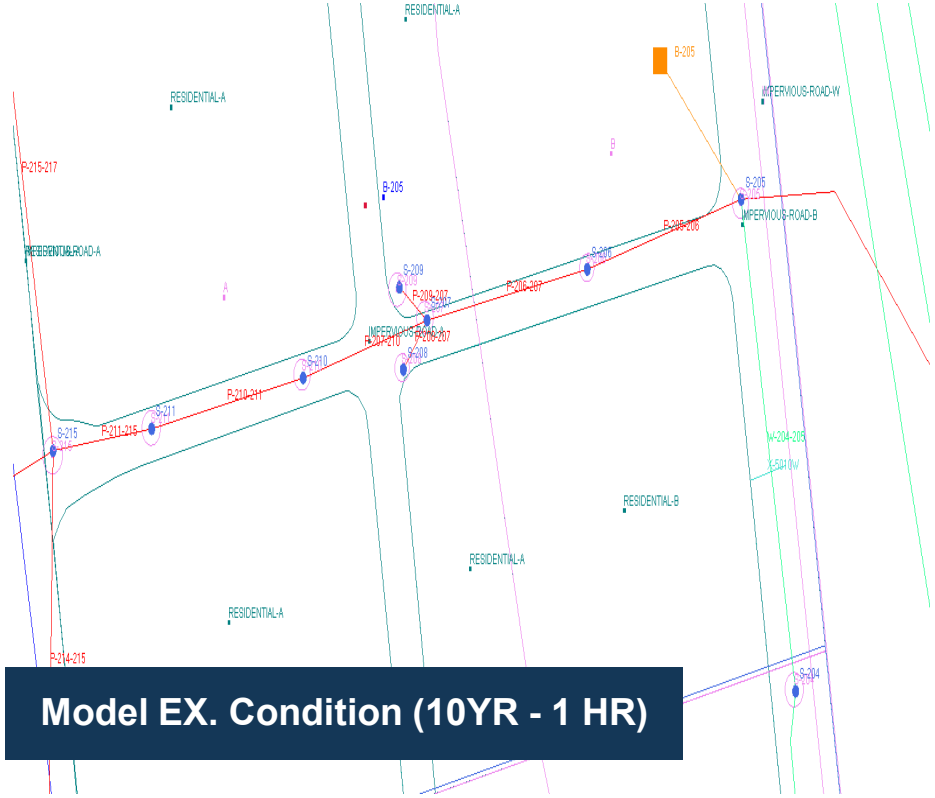
# Existing Conditions

## Roadway and Stormwater Design for Current Code (10 YR 1 HR)

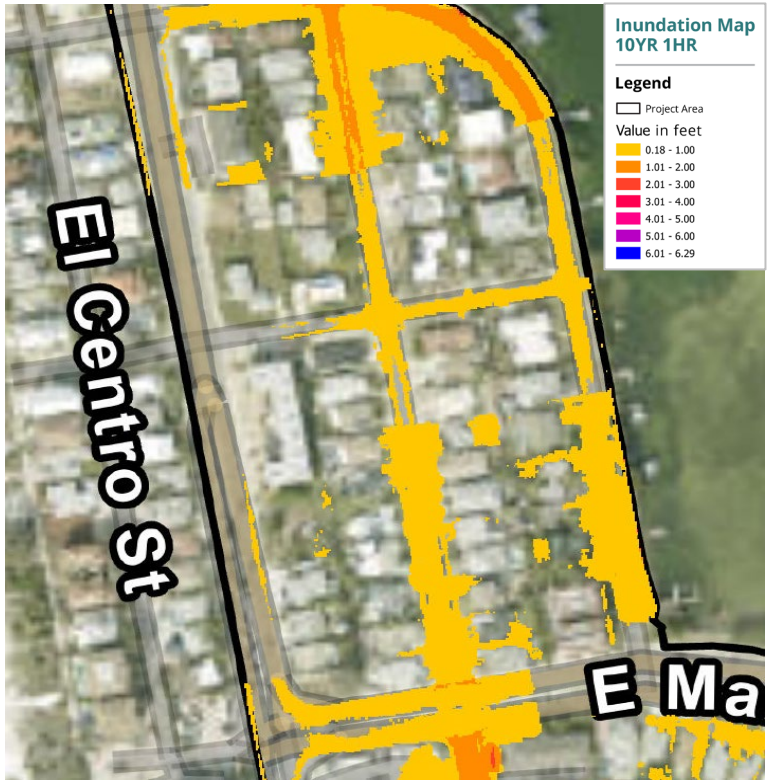
### 36th Ave and Casablanca Ave Intersection




Existing (10/9/2026)




Model EX. Condition (10YR - 1 HR)

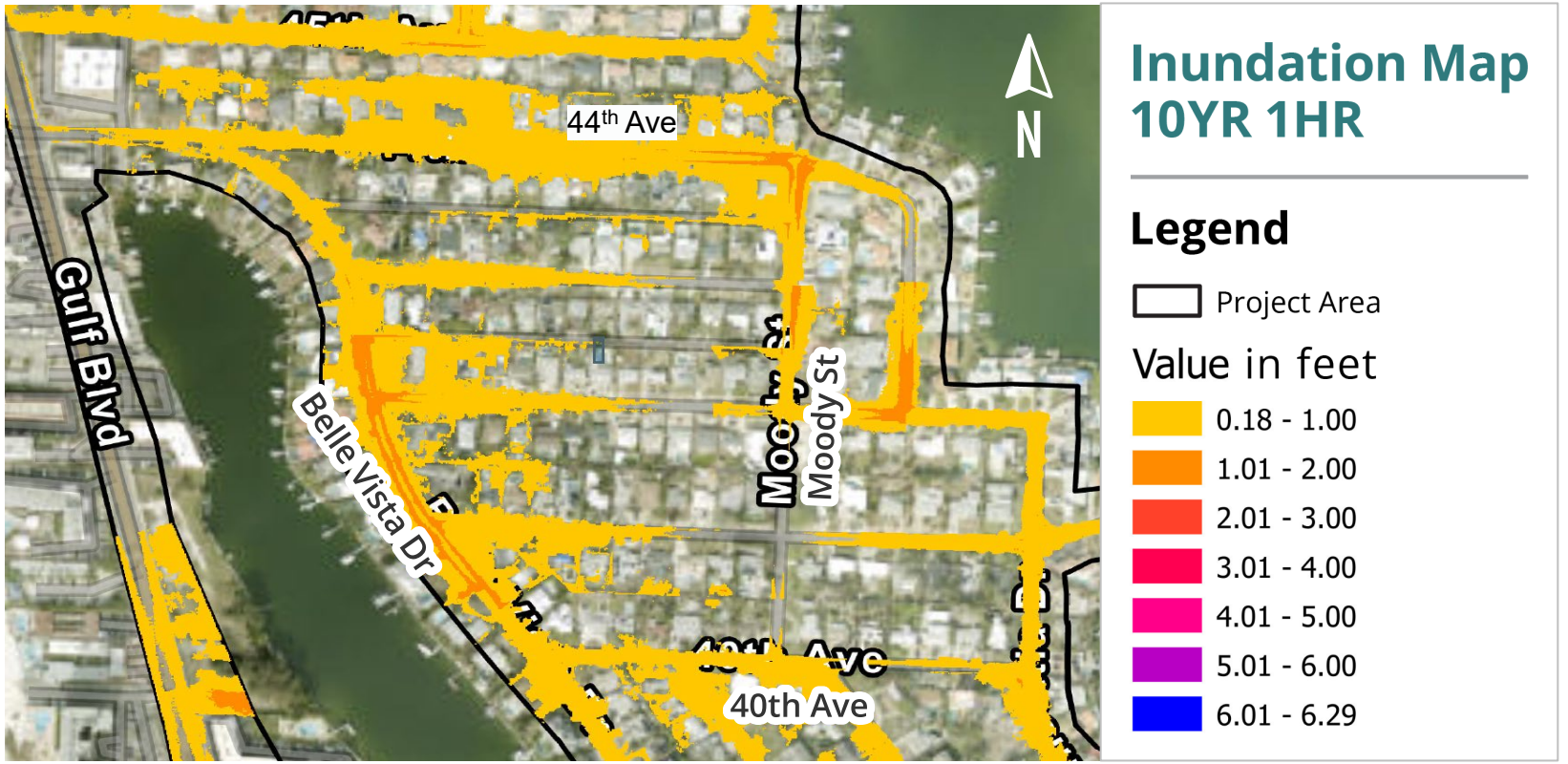


Current Code is planned for a heavy 1-hour rainstorm that has a 1-in-10 chance of happening.

# Existing Conditions

## Roadway and Stormwater Design for Current Code (10 YR 1 HR)

| Bella Vista Neighborhood | |
|---|---|
| **Streets** | **Depth of Water on Streets** *(feet)* |
| 44th Ave | 0.00-1.31 |
| Bella Vista Drive | 0.00-1.30 |

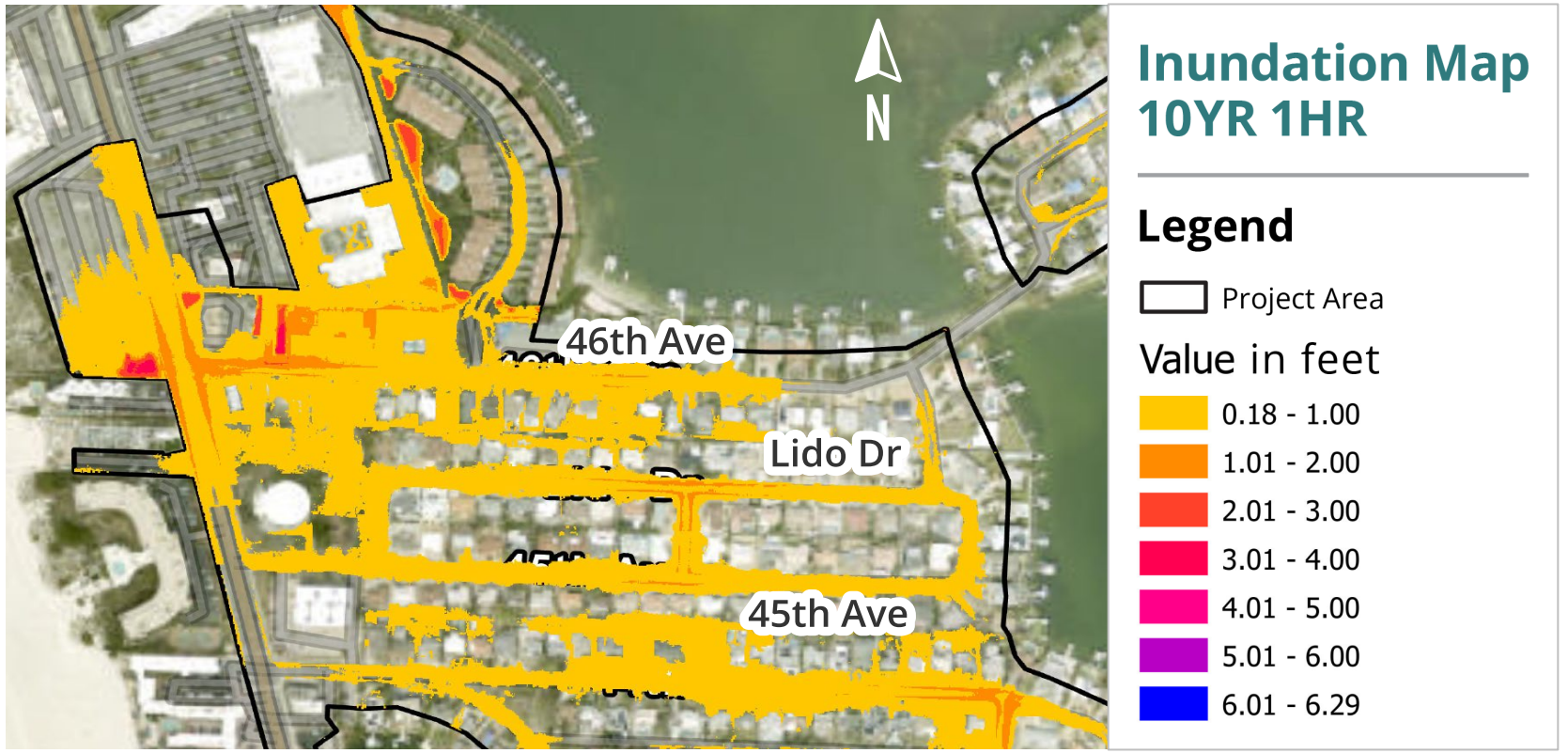


Current Code is planned for a heavy 1-hour rainstorm that has a 1-in-10 chance of happening.

# Existing Conditions

## Roadway and Stormwater Design for Current Code (10 YR 1 HR)

| Lido Neighborhood | |
|---|---|
| **Streets** | **Depth of Water on Streets** *(feet)* |
| Lido Drive | 0.00-1.30 |
| 45th Ave | 0.00-0.64 |
| 46th Ave | 0.00-1.35 |

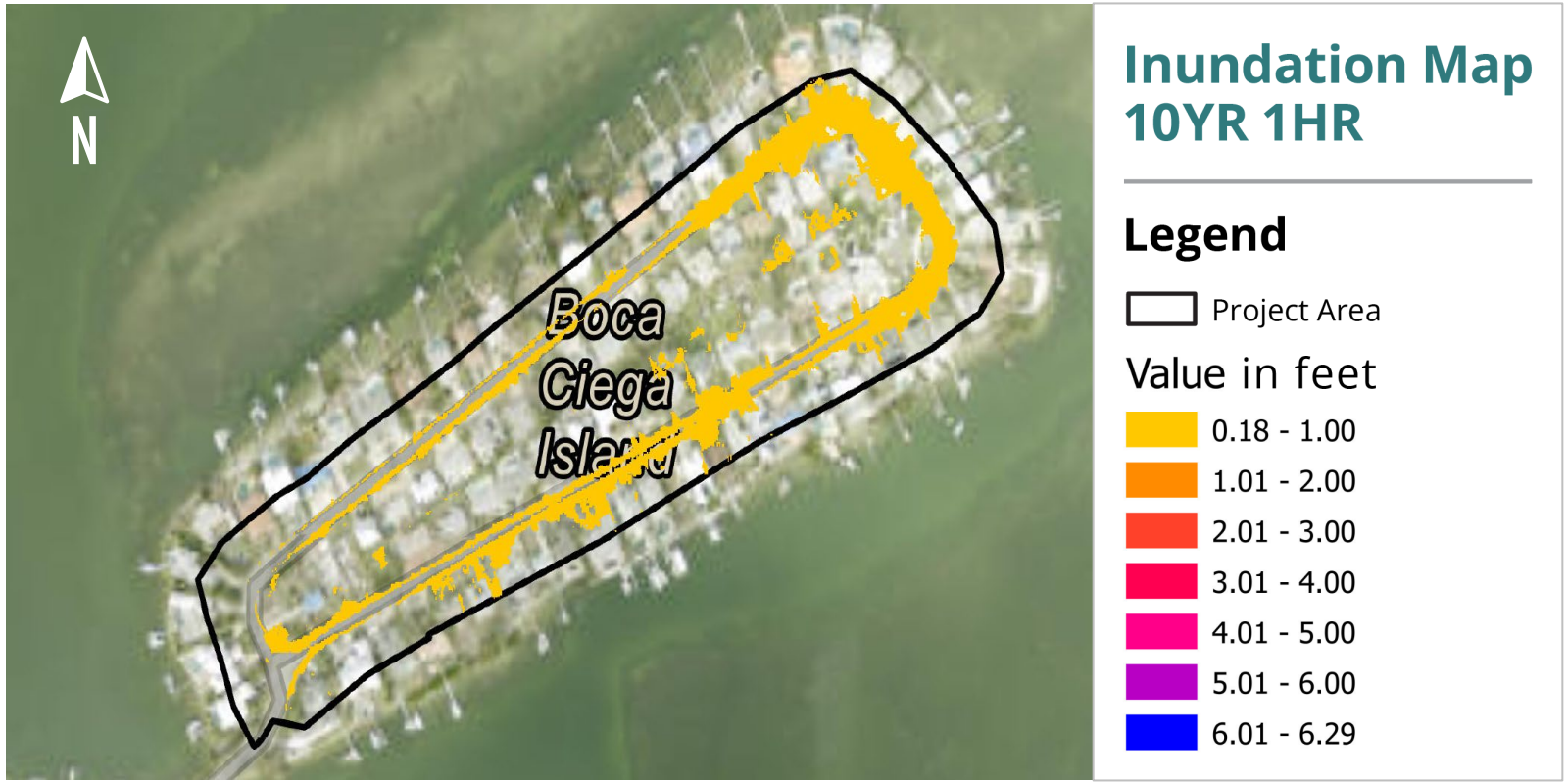


Current Code is planned for a heavy 1-hour rainstorm that has a 1-in-10 chance of happening.

# Existing Conditions

## Roadway and Stormwater Design for Current Code (10 YR 1 HR)

| Boca Ciega Isle Neighborhood | |
|---|---|
| **Streets** | **Depth of Water on Streets** *(feet)* |
| Boca Ciega Isle Dr | 0.00-0.50 |



# More Ways We're Building Resilience

## Other community actions for addressing changing conditions

Monroe County Big Coppitt Road Adaptation and Stormwater Pump Station

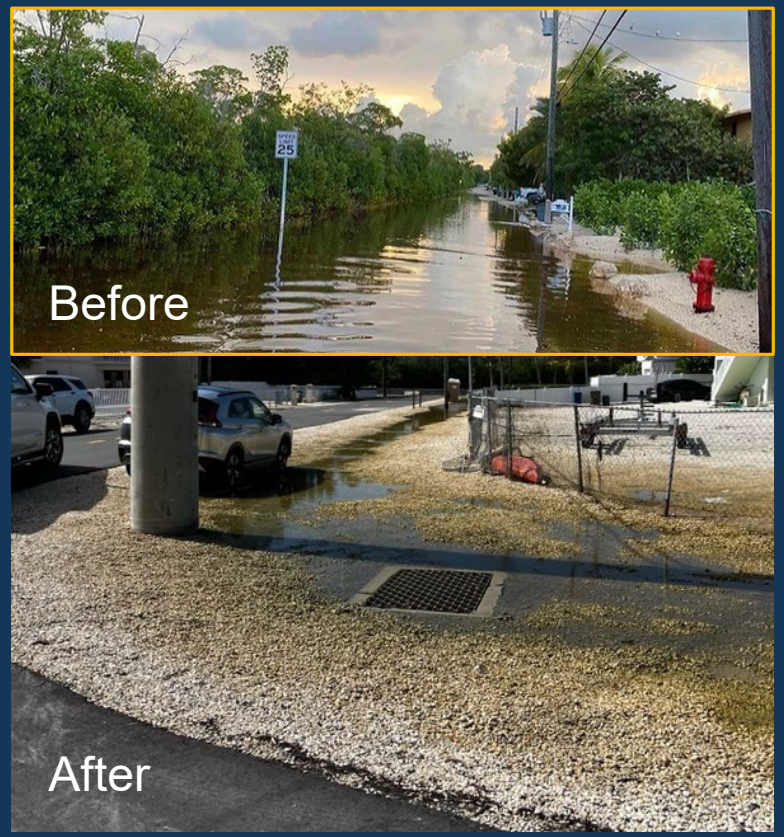
- Elevate roadways (2+ feet)
- Inlets and Stormwater Pipes
- Pump Stations and Injection Wells

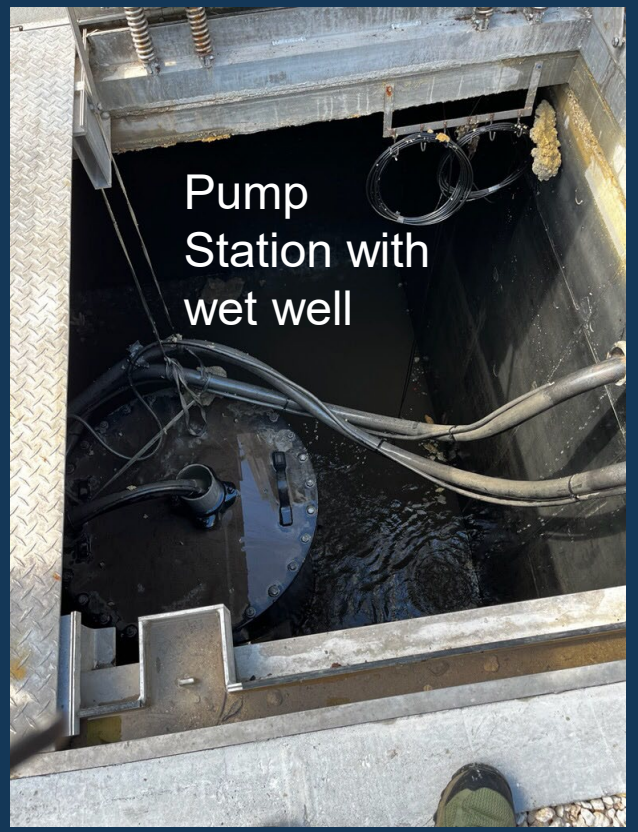
Monroe County Winston Waterways Road Adaptation and Stormwater Pump Station

- Elevate roadways (2+ feet)
- Inlets and Stormwater Pipes
- Pump Station and Injection Wells

Monroe County Stillwright Point Road Adaptation and Stormwater Pump Station

- Elevate roadways (2+ feet)
- Inlets and Stormwater Pipes
- Pump Station and Injection Wells



# Adaptative Solutions for Changing Conditions





**Current – 2030: Gravity Condition**

- Road Raising
- Stormwater upsizing (pipe & inlets)
- Stormwater Retention and Seawall Elevation

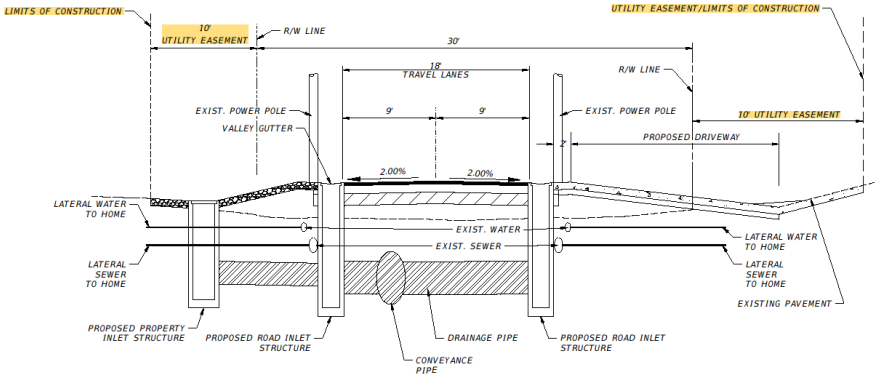
**Future – 2050: Pressurized Condition**

- Road Raising
- Stormwater upsizing (pipe & inlets)
- Seawall Elevation
- Pump Station
- Injection Wells

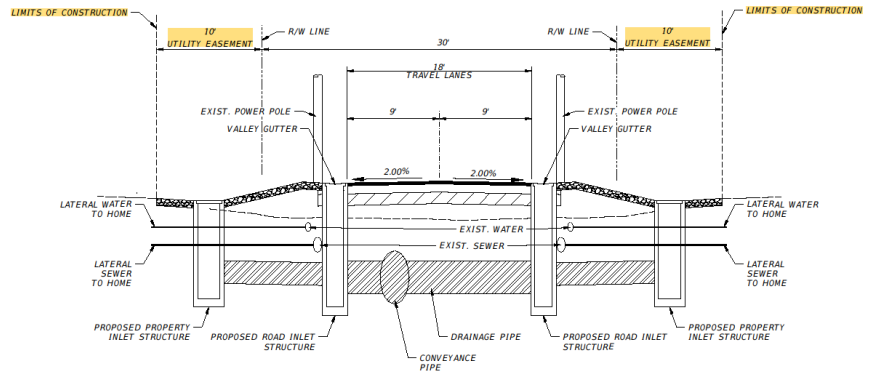
# Construction Feasibility Analysis

| **Level of Service** | **Addresses King Tide and Sea Level Rise** (Yes or No) | **Potential Solutions** | **Cost** (low, medium, high) | **Construction Impacts** (low, medium, high) | **Grant Funding Eligibility** (low, medium, high) |
|---|---|---|---|---|---|
| 2026 | No | Increase stormwater capacity upsizing pipes, inlets and address outfalls. Seawall repair. | $ (Low) | Low | Low |
| 2030 | No | Roadway Rising stormwater retention and Seawall Elevation. | $$ (Medium) | Medium | Medium |
| 2050 | Yes | Roadway Rising stormwater retention, Pumpstation Injection Wells and Seawall Elevation | $$$ (High) | High | High |

TYPICAL DRIVEWAY TRANSITION
WITH DRAINAGE & UTILITIES




TYPICAL ROAD
WITH DRAINAGE & UTILITIES



# What is included in the Cost Estimate?

**Cost Estimates**

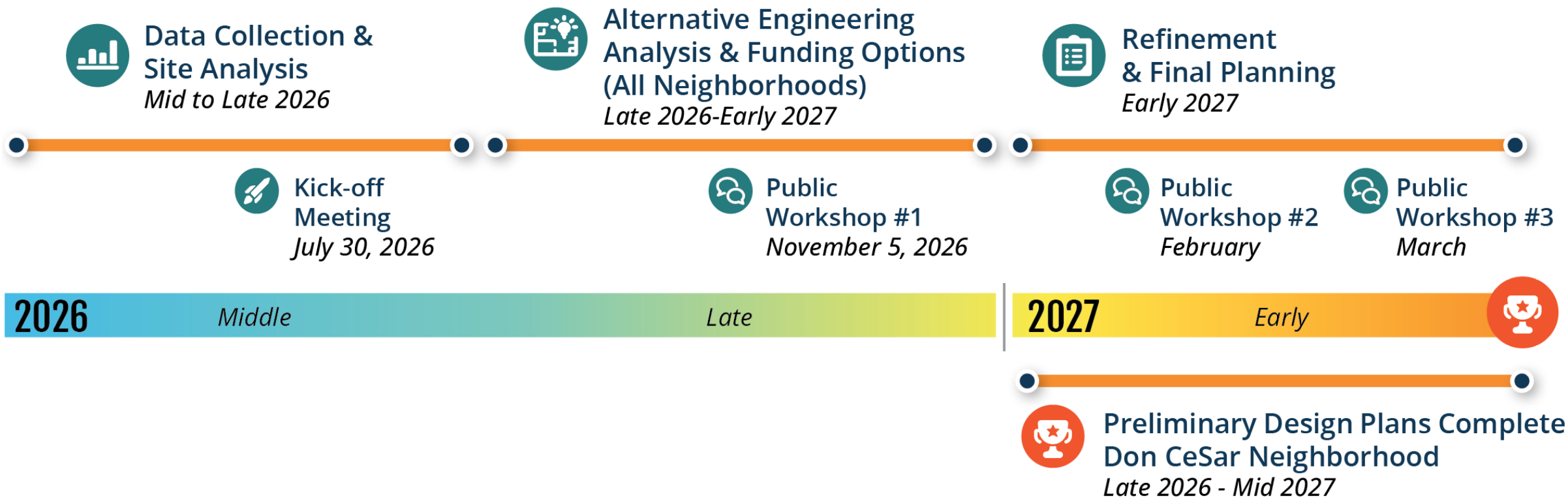
- **Roadway reconstruction (Limerock base / Asphalt Pavement)**
- **Signing and Pavement Marking**
- **Roadside ancillary features**
  - Guardrail
  - Curb & Gutter / Valley Gutters
  - Gravity Walls
  - Turnout connections
- **Erosion Control**
- **Storm Drain System**
  - Catch Basins (Inlets)
  - Pipes
  - Pump Station
  - Injection Wells
- **Mobilization**
- **Maintenance of Traffic**
- **Utility Coordination and Impact Mitigation**
- **Construction Engineering and Inspection**







# Project Schedule and Roadmap to 2027



# What's Next…

Conceptual Analysis being conducted for the neighborhood including cost estimates

Researching Funding Sources

30% Design for the Don Cesar Neighborhood and cost estimates

Final Report and Presentation to Council (May 2027)



St. Pete Beach
The Sunset Capital of Florida

# We want to hear from you!

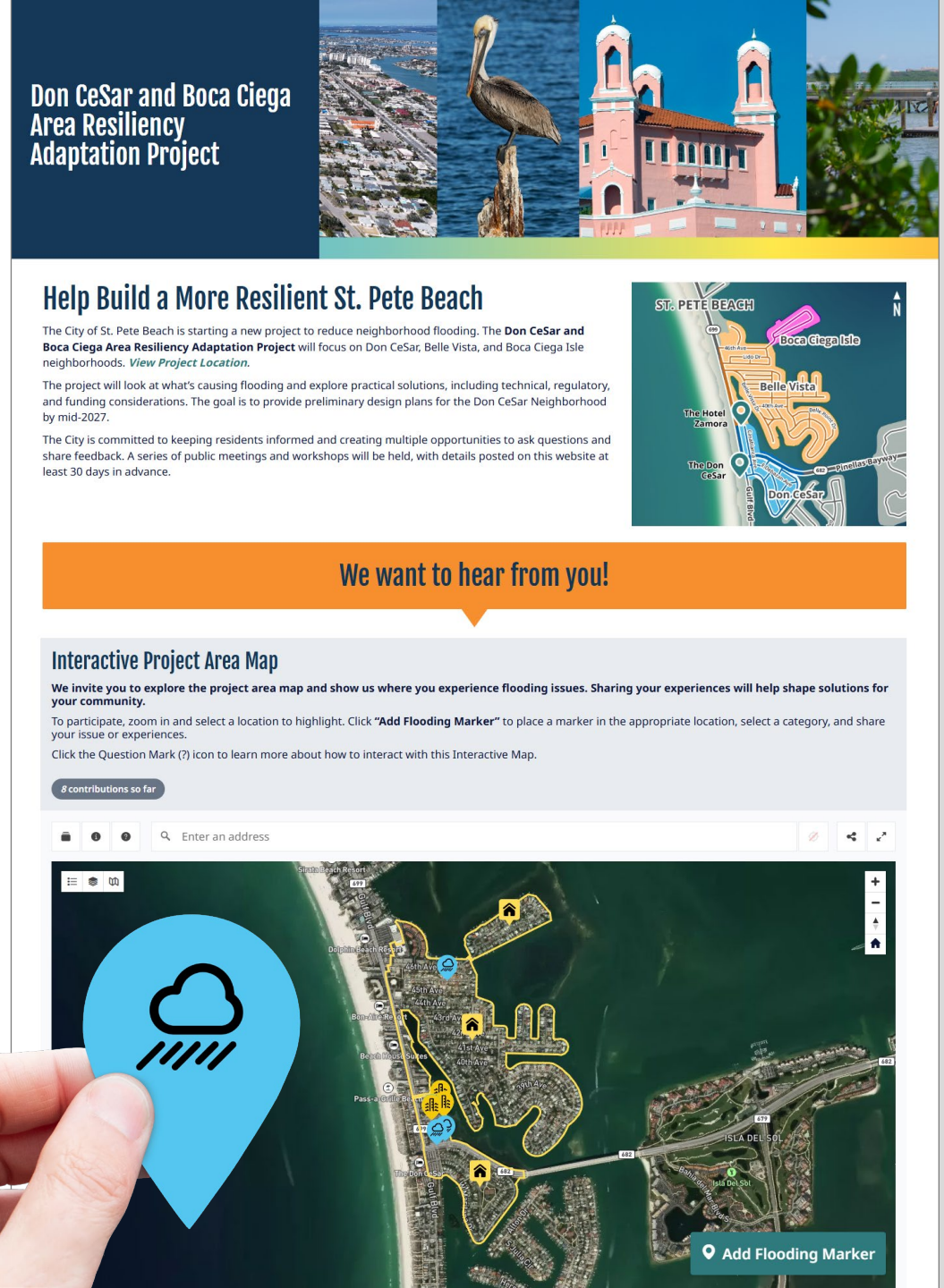
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Show us where you experience flooding:
**ResilientStPeteBeach.com**

Email the Project Team:
**info@ResilientStPeteBeach.com**





St. Pete Beach
The Sunset Capital of Florida

# Q&A

Now it's your turn! We invite you to ask questions, share your thoughts, and join the community discussion.

Show us where you experience flooding

**ResilientStPeteBeach.com**

