

BIG COPPITT ROAD ELEVATION RESILIENCY AND ADAPTATION PROJECT

BIG COPPITT KEY STAKEHOLDER ENGAGEMENT MEETING



February 18, 2026

County Staff:

Judith Clarke, P.E.
Director of Engineering Services

Rhonda Haag
Chief Resilience Officer

Leonel Montiel
Sr Project Manager



Agenda:

1. Project Background
2. Design Approach
3. Roadway Design
4. Stormwater Design
5. Private Property Easements
6. Permitting
7. Project Benefits
8. Funding
9. Next Steps
10. Questions?



Project Background



Avenue C - Big Coppitt (2025)

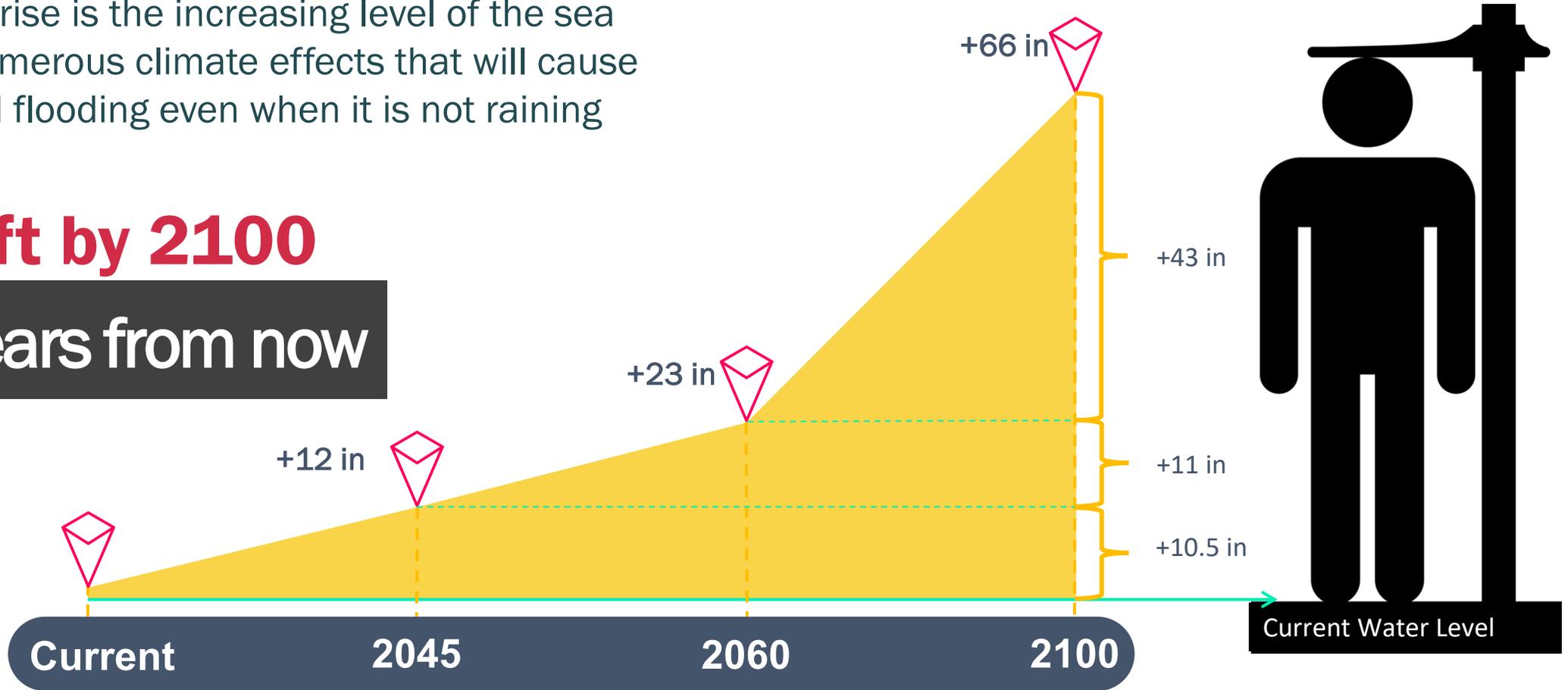
Changing Flooding Conditions That Impact Roads:

Sea Level Rise

Sea level rise is the increasing level of the sea due to numerous climate effects that will cause increased flooding even when it is not raining

+5.5 ft by 2100

74 years from now

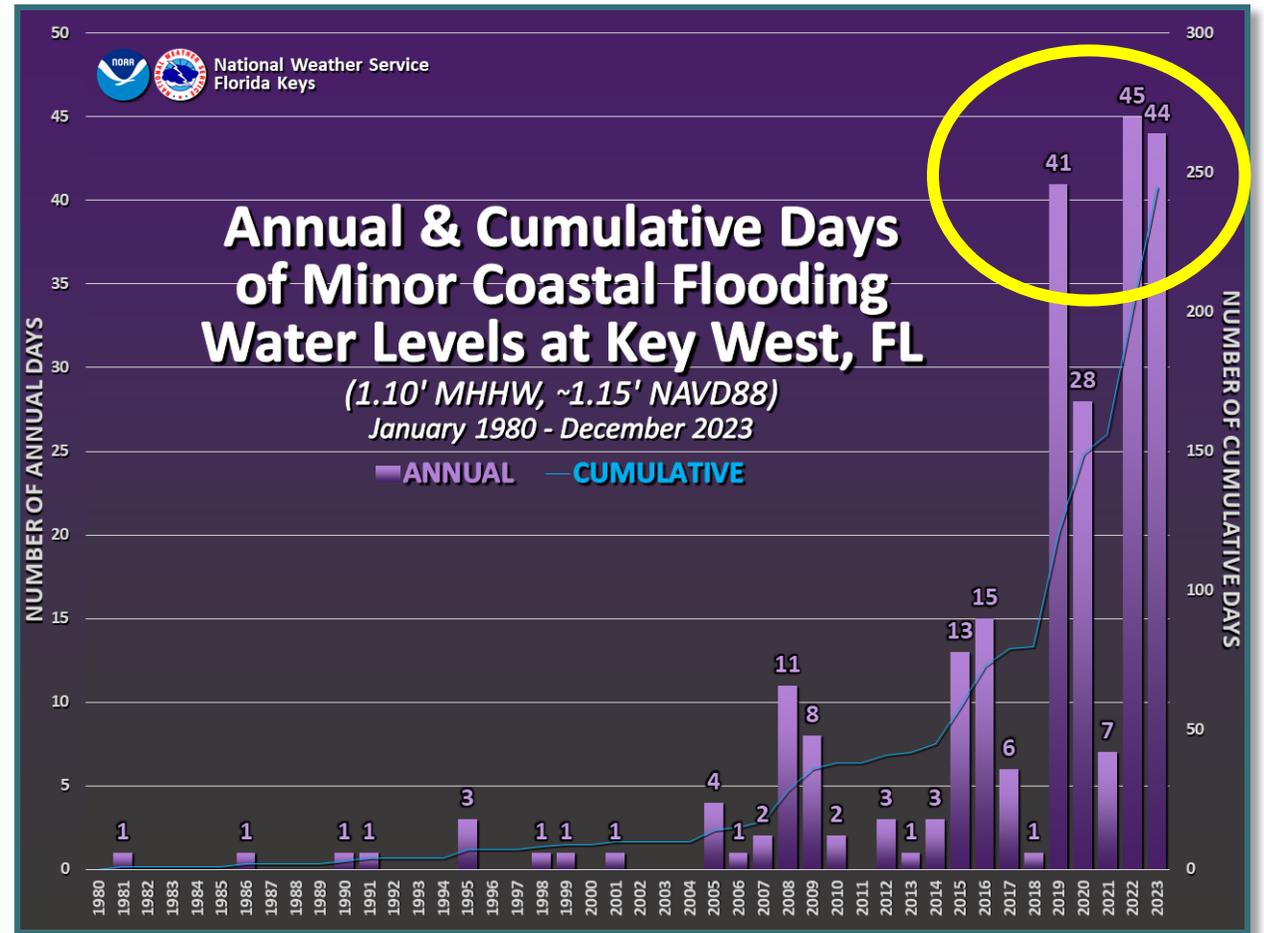


SLR Condition: NOAA 2017 Intermediate-High

Changing Flooding Conditions That Impact Roads: King Tides "Sunny Day Flooding"

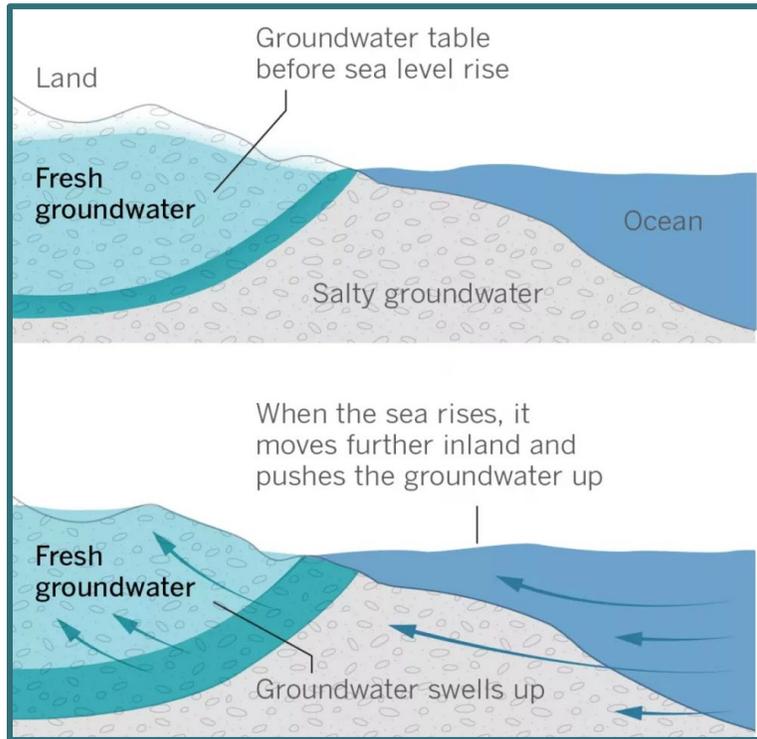


Seasonal tidal flooding on roads is becoming more common especially in the Fall and Spring when the moon is closest to the earth. This is why we see "sunny day flooding" more days of the year.

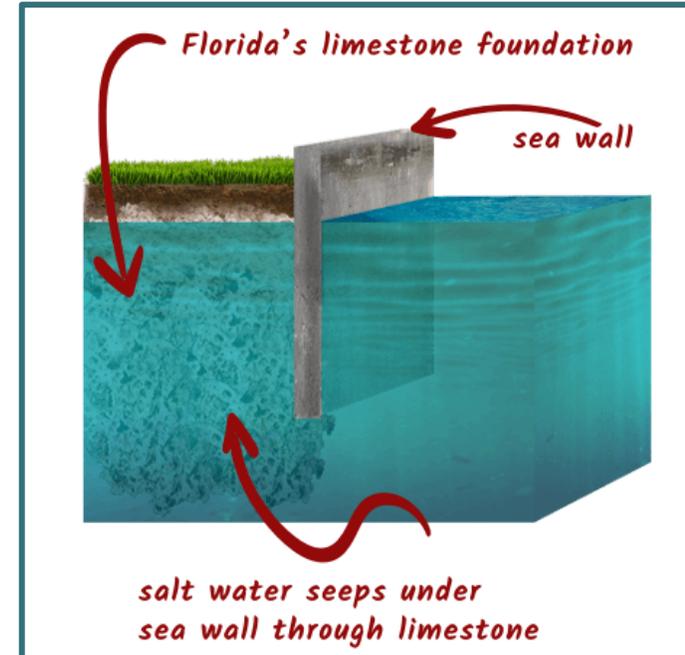


Changing Flooding Conditions That Impact Roads: Increasing Groundwater and Reduced Ability to Drain

When the sea pushes groundwater up, the ground stays saturated → current gravity drainage systems (such as exfiltration trenches) can't absorb and manage the water.



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The County's Response:

The Roads Vulnerability Study (2022-2025)



Evaluation of flooding impacts:

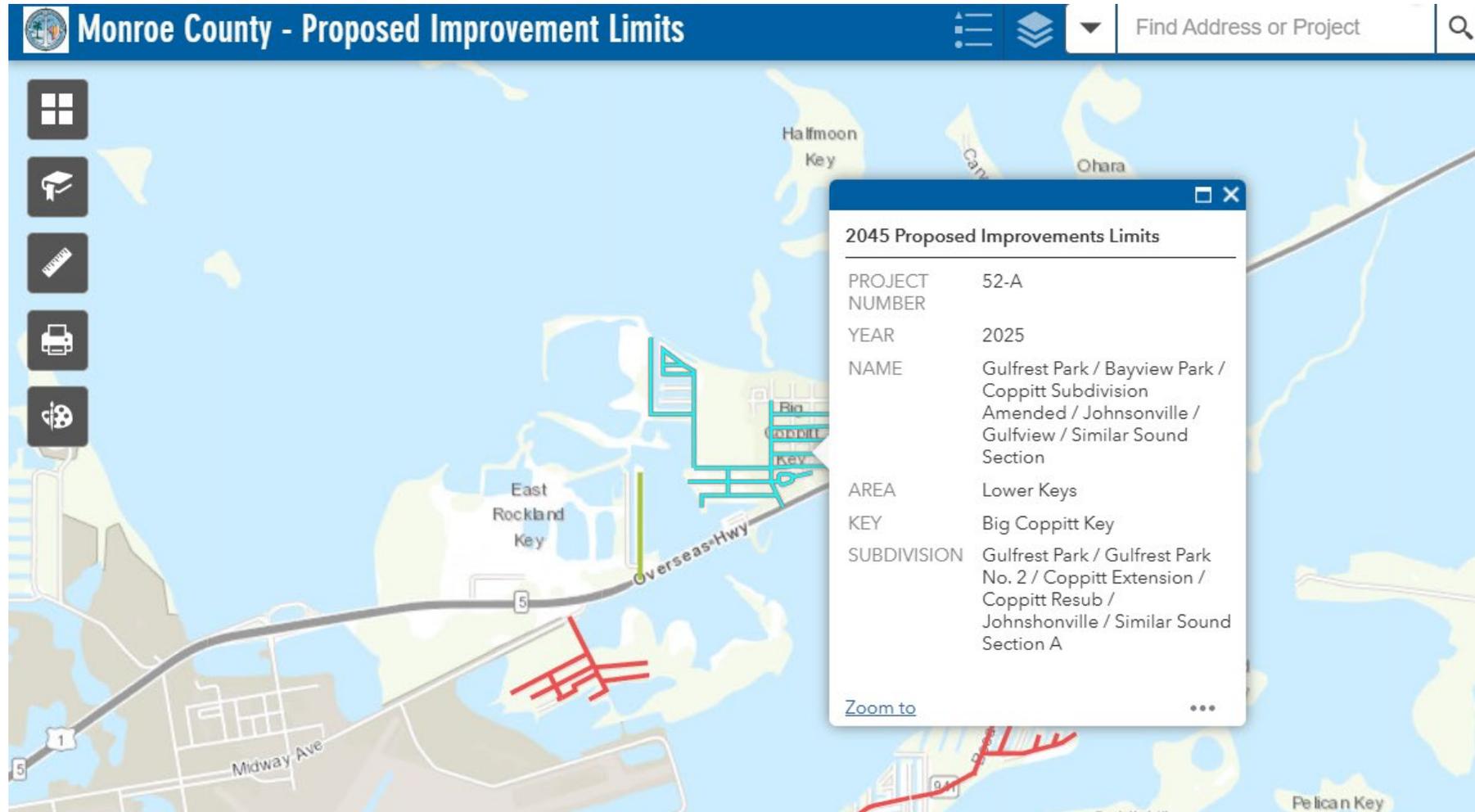
- Years 2025, 2030, 2035, 2040, 2045, 2060, and 2100
- Factored in:
 - Sea Level Rise and King Tide Predictions
 - Roadway LiDAR (current road elevations)
 - Impacts of: storm surge, wind, waves, extreme events



Analysis conducted which allows us to:

- Project water surface elevations from flooding
- Determine where roads are vulnerable and identify areas of concern
- Define road improvement projects limits
- Developed timeline of vulnerability (prioritization/grouping of projects) and road design concepts

82 Neighborhood Areas Were Identified with Road Projects



*Big Coppitt Key included in 2025 grouping.



Monroe County Roads Vulnerability Analysis

Homepage | Monroe County | Islamorada | City of Layton | Marathon | Key Colony Beach | **Contact Us**

Monroe County Vulnerability Analysis

CHECK EXISTING ROADWAY ELEVATIONS | CHECK PROPOSED | ROADWAY ADAPTATION CONCEPTUAL PLANS

PROJECT INFORMATION
Monroe County Roads Vulnerability Analysis Project Overview

MAPS
Study Area Maps

INTERACTIVE MAPS

Each image opens a fully navigable informative map

- Existing Monroe County Roads Elevation
- Neighborhood Areas Recommendations
- Criticality Evaluation Viewer



Design Approach

Sea Level Rise Solutions



Elevate the roads

- Elevate Roadways to minimum 2.26 ft NAVD88
- Driveway and private property harmonization and utility relocation will be required.
- Higher road elevations reverse existing drainage flow, making stormwater collection and management necessary.

Install a Modern Engineered Drainage System

- A closed stormwater system to collect rainfall and mitigate king tides, replacing gravity infiltration which is not working.
- The Drainage System includes a collection system with inlets and pipes, a pump station with a backup generator, and injection wells.

2045	NOAA Tidal Datum (ft) (Relative to 2000 MSL)	SLR Projection (ft)	2045 Water Level Projection (ft) (NAVD88)
NOAA 2017 Int-High (SLR)	0.6037	1.66	2.26
NOAA 2017 Int-High (SLR + King Tide)	-0.6168	4.02	3.40

Design Standards and Regulations



Design standards and regulations that need to be met:

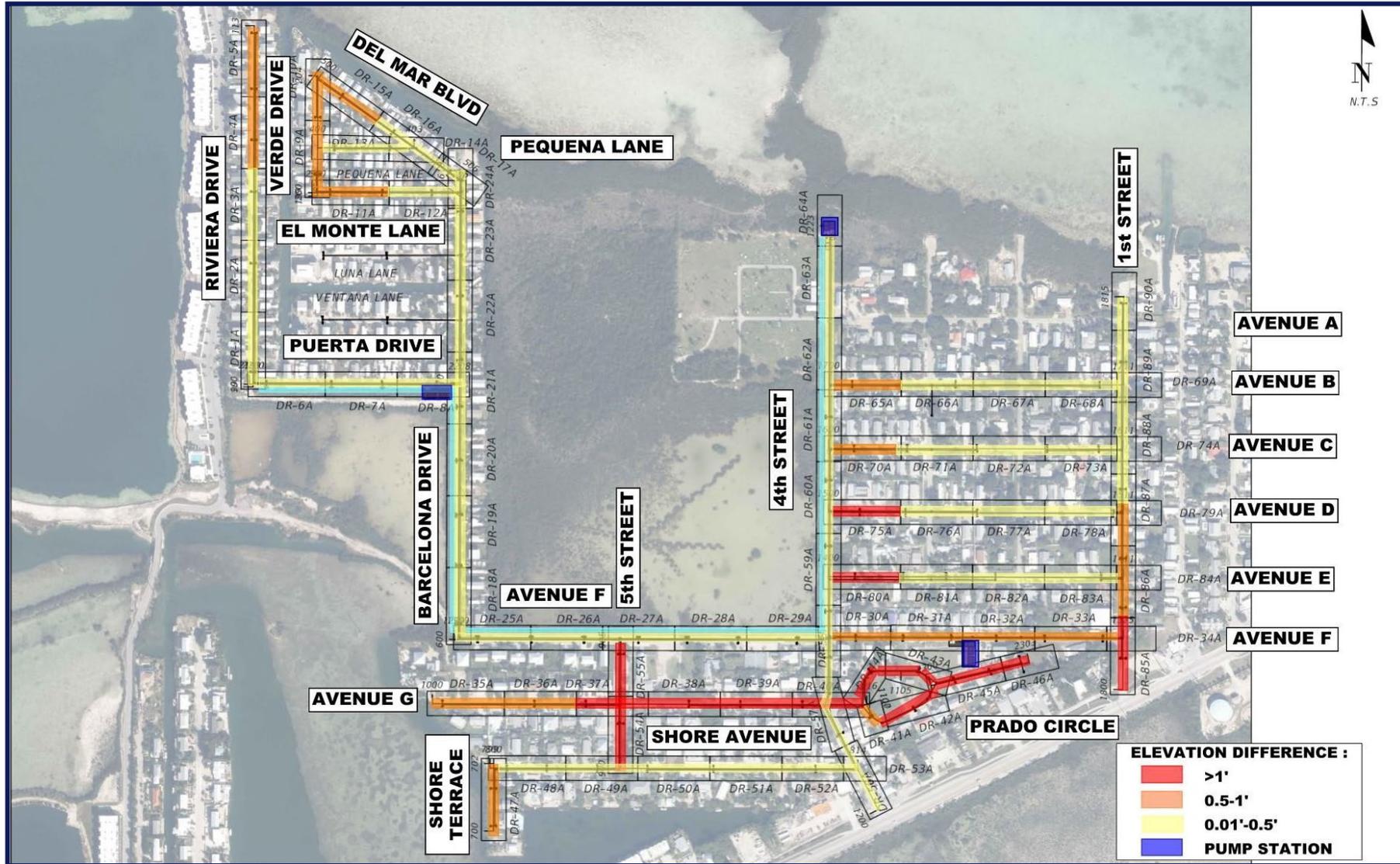
- **FDOT (Florida Department of Transportation)**
Florida Greenbook
 - 9' lane widths
- **SFWMD (South Florida Water Management District)**
 - Project design must demonstrate that changes to rainfall flow patterns do not create adverse impacts to adjacent properties.
- **FDEP (Florida Department of Environmental Protection)**





Roadway Design

Project Location



Project Layout - Sidewalk

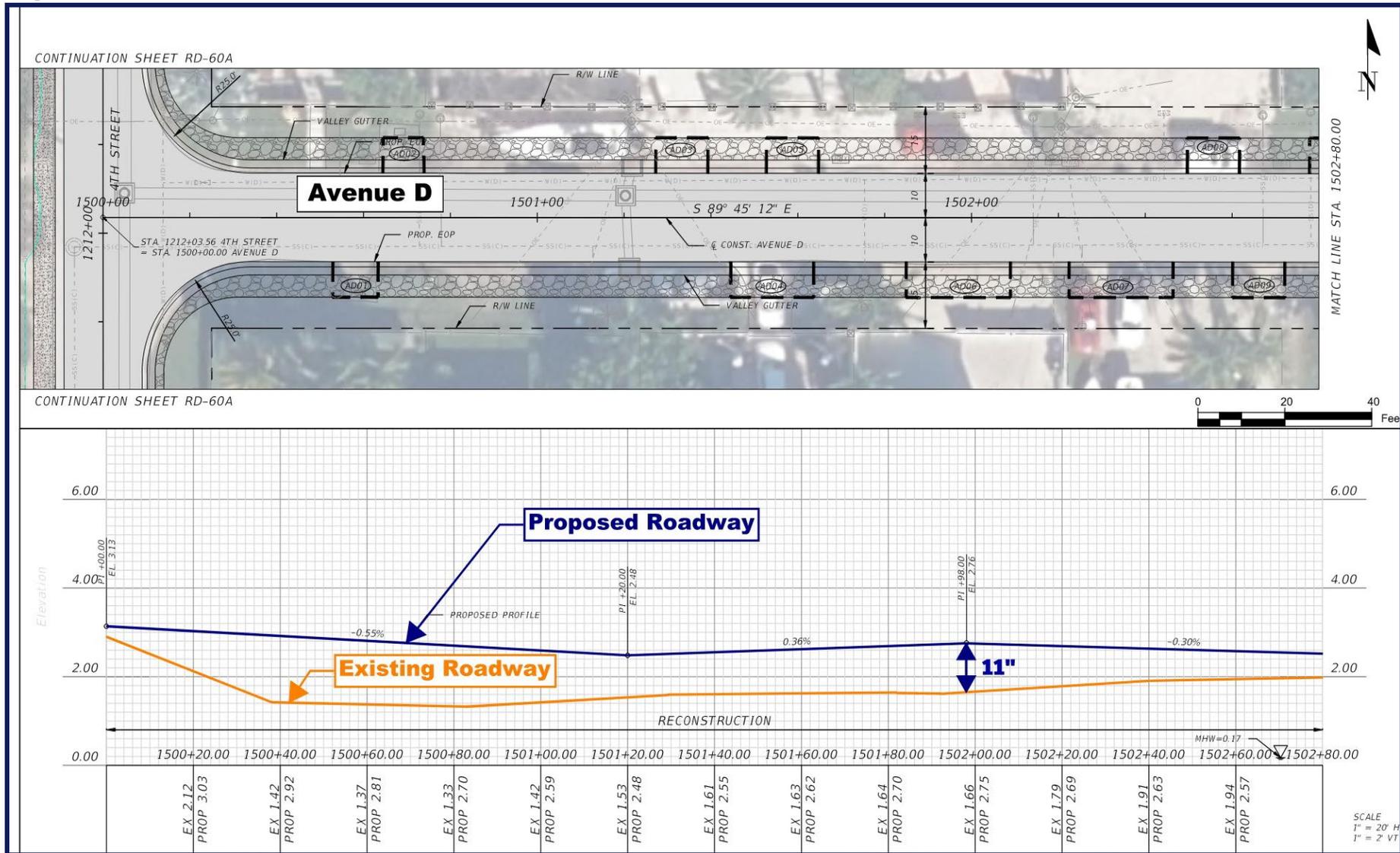


Design Elements – Raising Roads

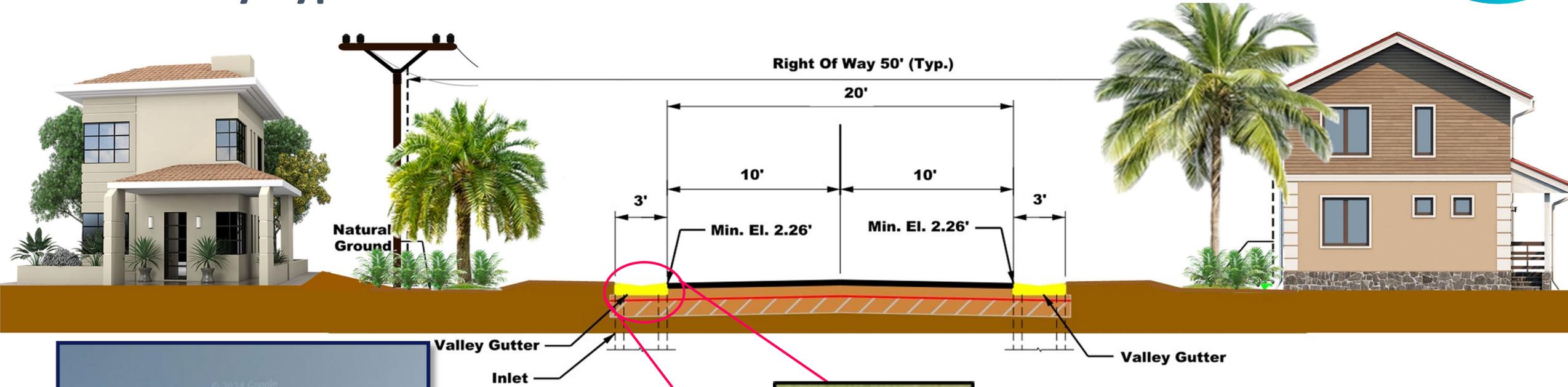


Roadway Segment	Elevation Change (between Existing Ground and Final Grade)
Riviera Drive	0 – 9"
Puerta Dr	0 – 3"
Verde Dr	3" – 10"
El Monte Lane	0 – 6"
Pequena Lane	1" – 9"
Del Mar Blvd	0 – 9"
Barcelona	0 – 6"
Avenue F	0 – 12"
Avenue G	0 – 13"
Prado Circle	1" – 16"
Shore Terrace	1" – 11"
Shore Ave	0 – 6"
5th Street	0 – 13"
4th Street	0 – 5"
Avenue B	0 – 8"
Avenue C	0 – 11"
Avenue D	0 – 18"
Avenue E	0 – 16"
1 ST Street	0 – 13.32"

Roadway Plan & Profile



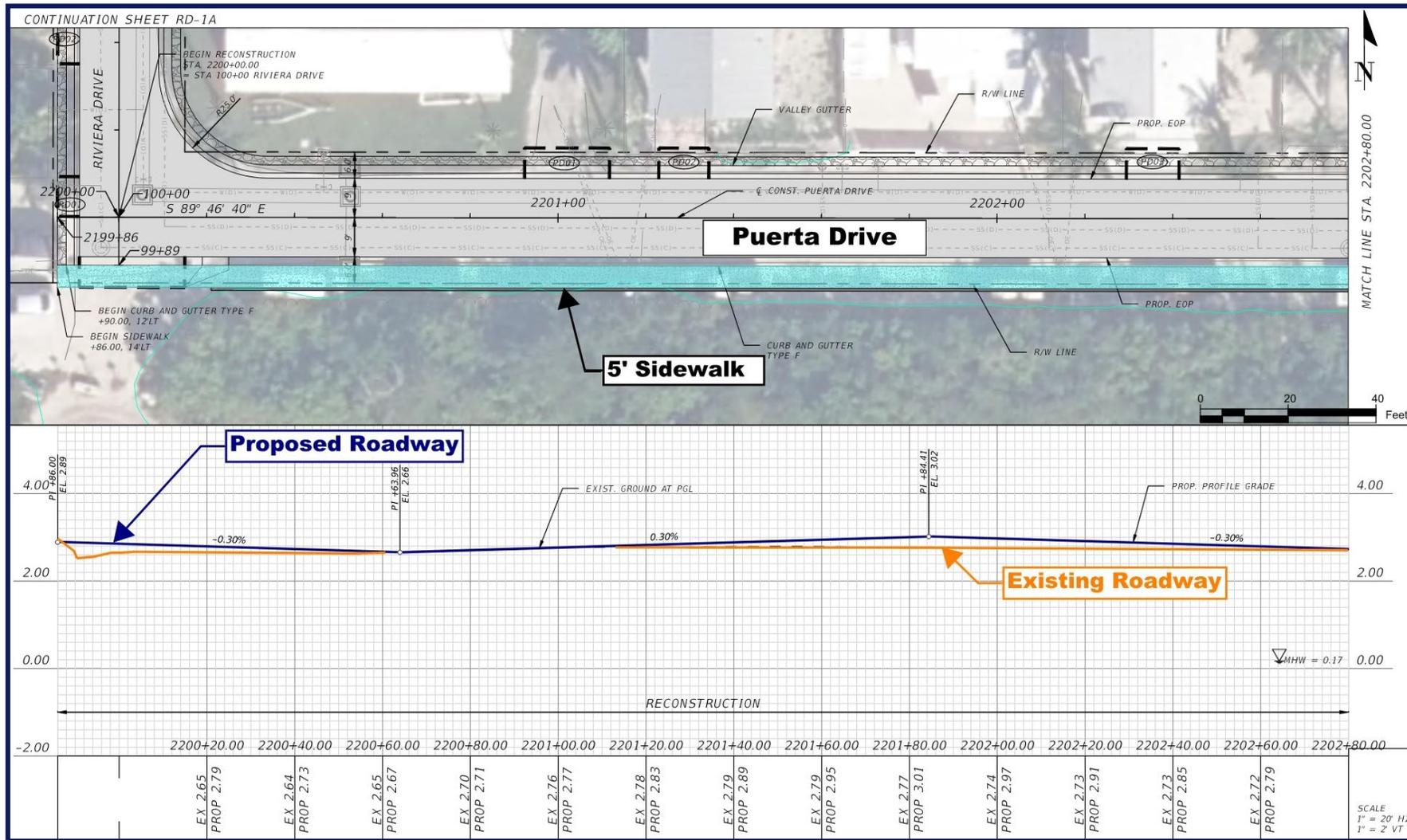
Roadway Typical Sections



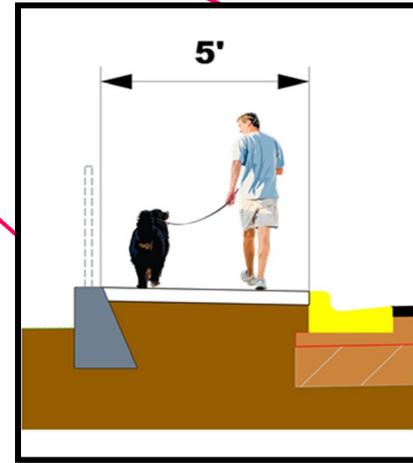
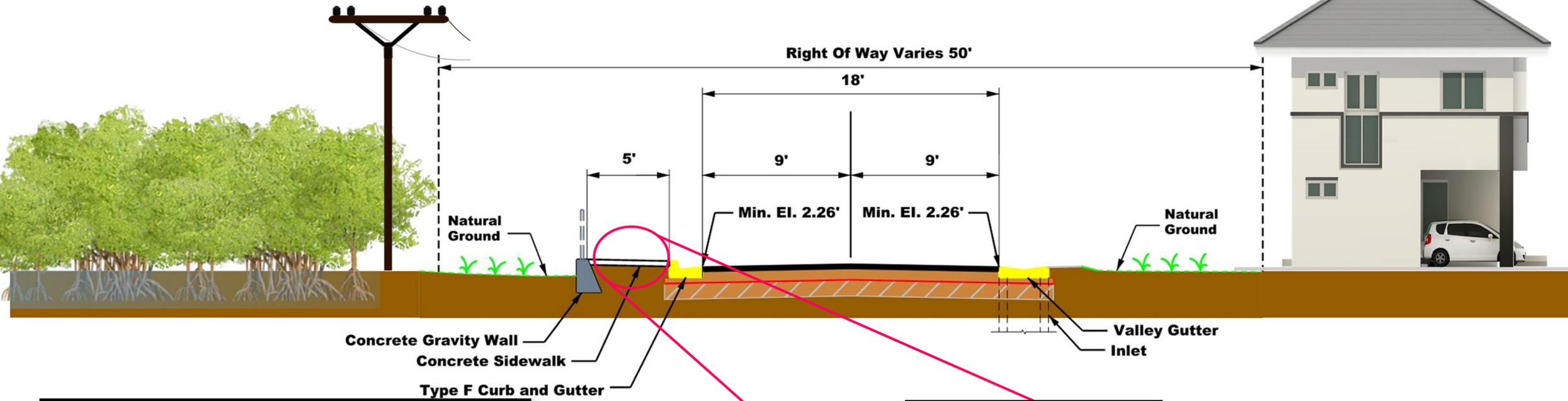
Valley Gutter

Avenue D

Roadway Plan & Profile



Roadway Typical Sections



Avenue F



Stormwater Design

Solutions to Address the Flooding



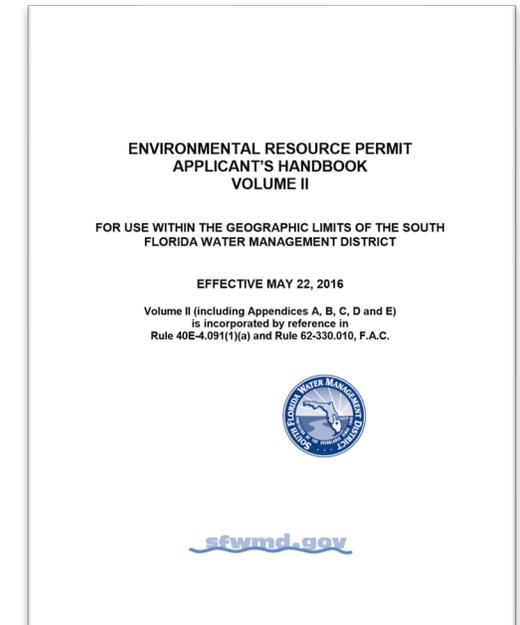
- Raising the roads will be needed to make them higher than the flood waters from increased sea levels, groundwater and tidal flooding.
- Because of the higher roads, new drainage systems will be needed to manage stormwater so that it does not flow onto and flood adjacent properties.
- The design of the Big Coppitt Key Project incorporates both of these elements.



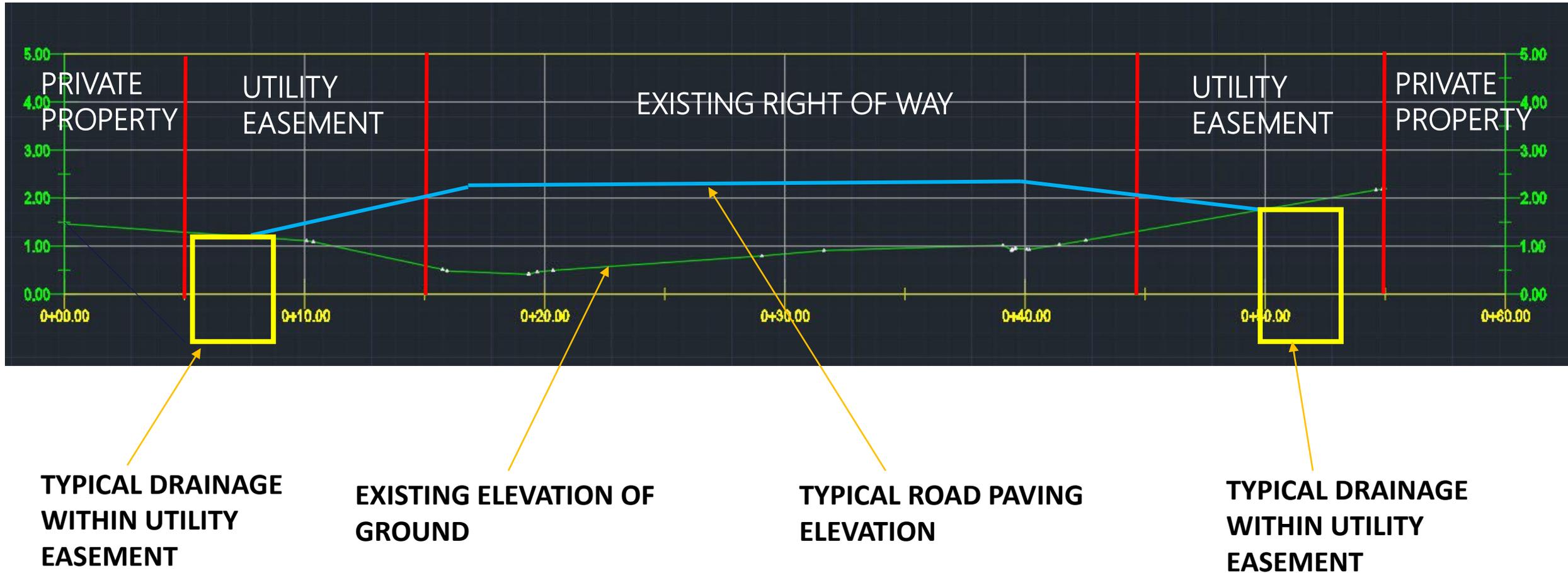
Stormwater Regulations



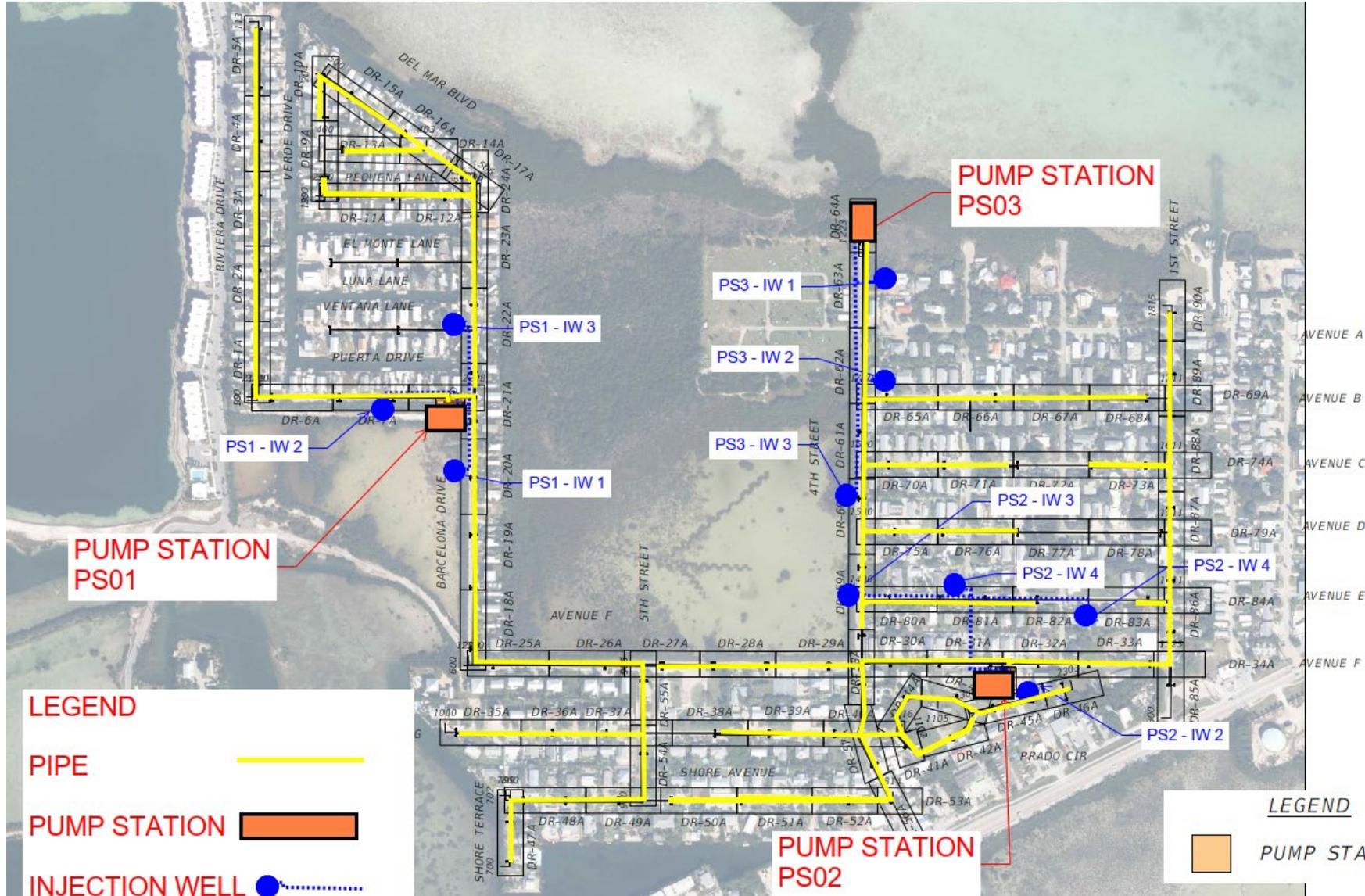
- SFWMD approval is required for any drainage or elevation changes that affect flow, impervious area, water quality, rainfall impacts, or offsite properties.
- Performance based evaluation, i.e. each project (any road modification) **needs to be evaluated to determine drainage parameters so as to not cause adverse impacts to surrounding properties.** We must evaluate:
 - Water movement, land use and soil conditions such as developed properties, vacant properties, pavement, grass, rock affect the movement of the rainfall across the project area that gets incorporated into the Hydraulic models.
 - Groundwater table conditions (King Tide and Sea Level Rise) to determine water storage capacity below the ground
 - Rainfall storm events to be evaluated (500-year, 100-year and 25-year, 3 day and 5-year and 2-year, 1 day)



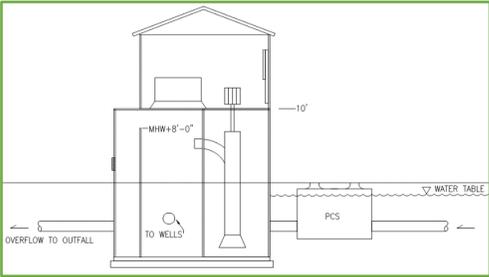
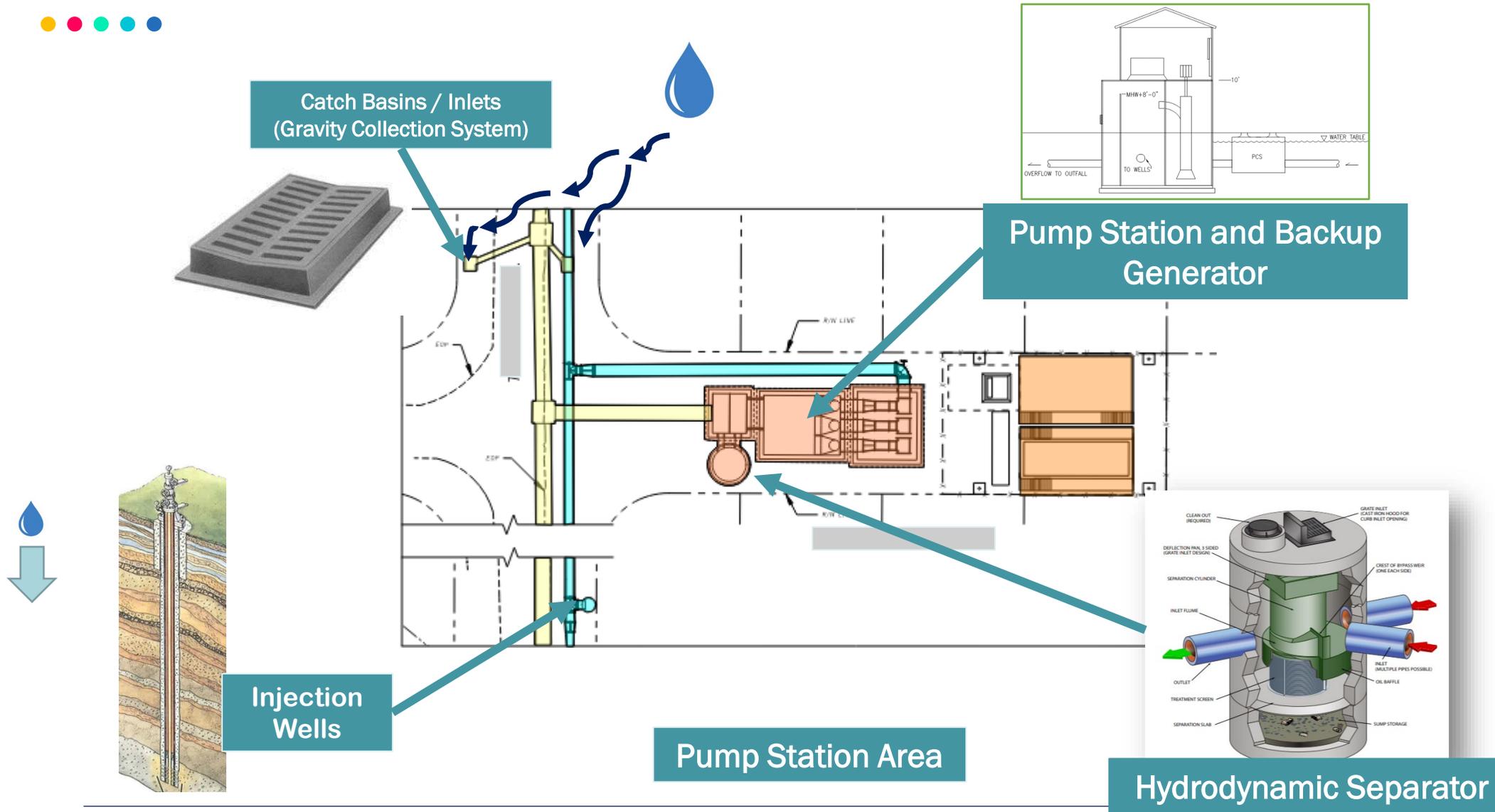
Stormwater Design – Typical Section



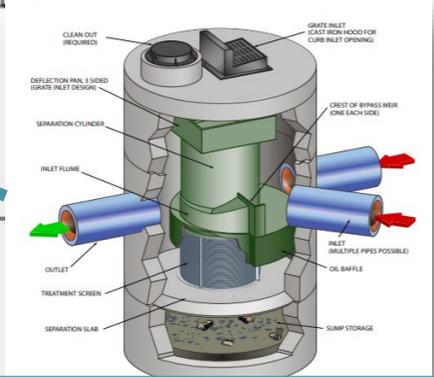
Engineering Stormwater Management System



Engineering Stormwater Management System



Pump Station and Backup Generator



Hydrodynamic Separator



Pump Station

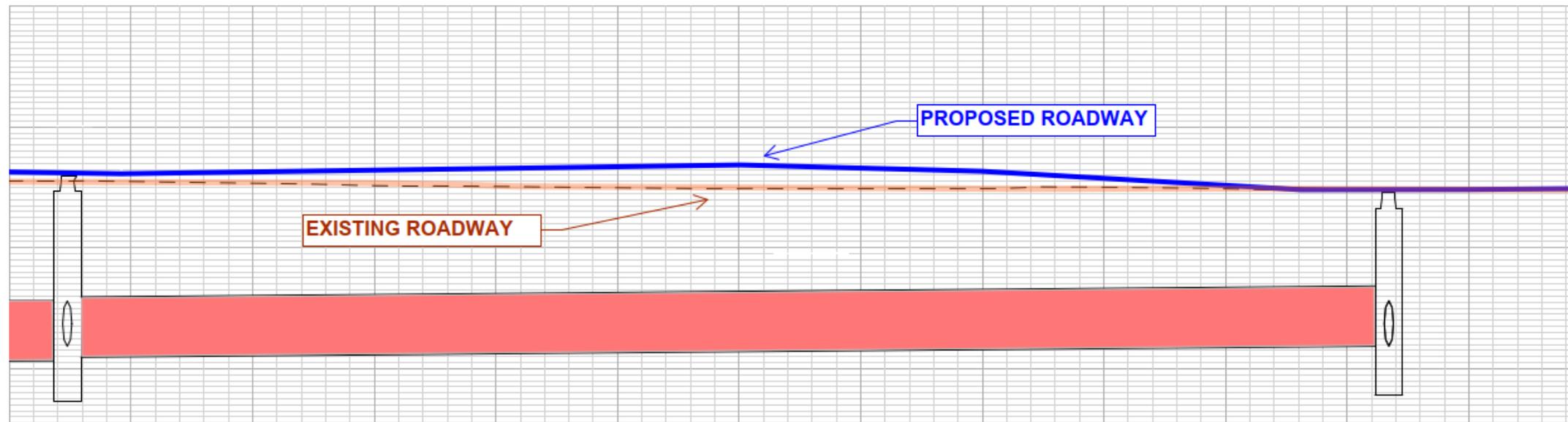
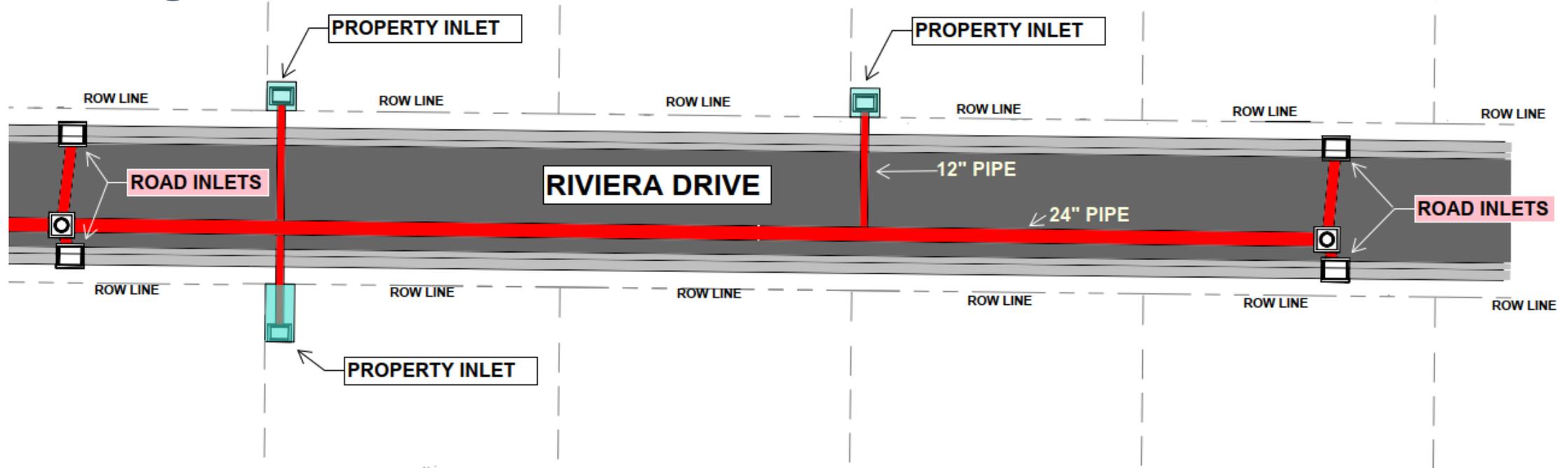


South Roosevelt Blvd - Aboveground



Twin Lakes - Underground

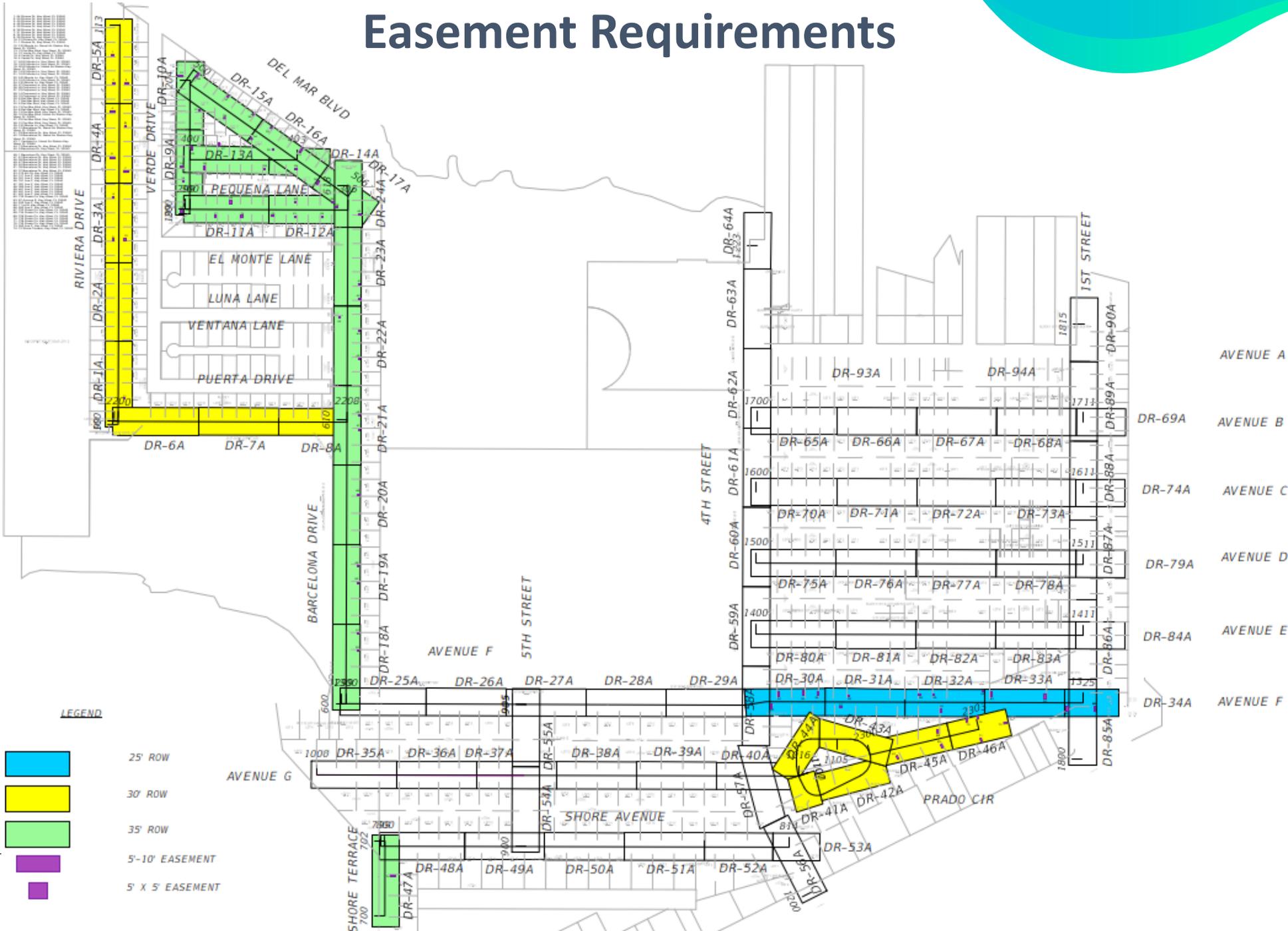
Drainage Plan and Profile



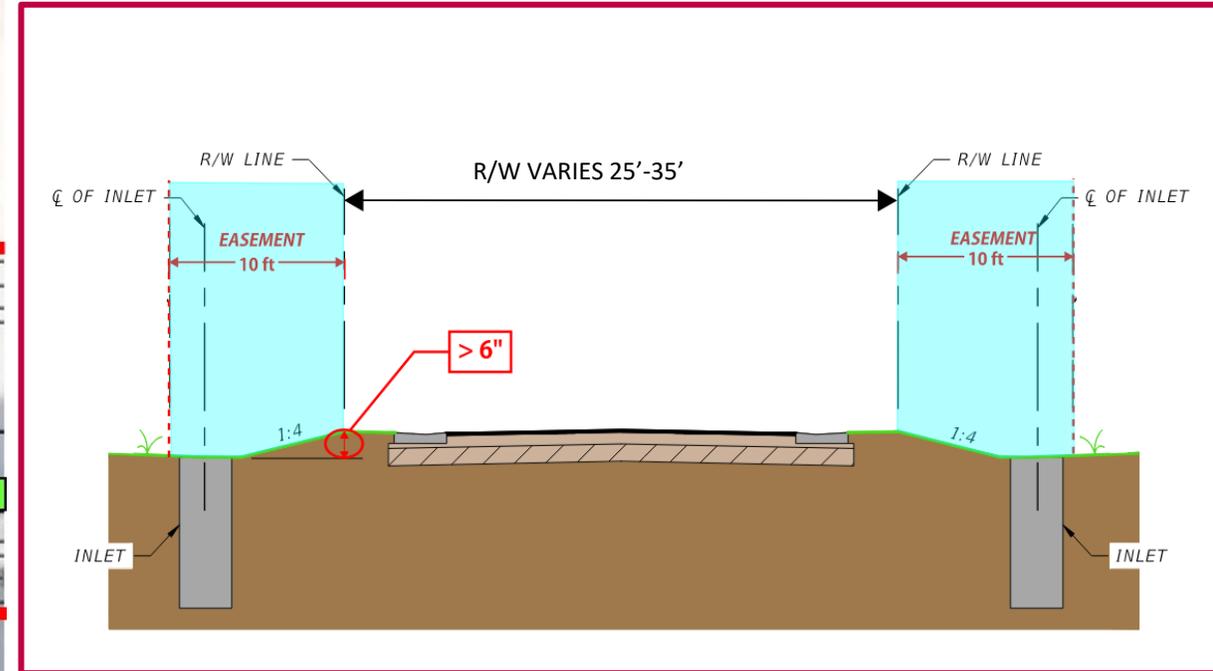
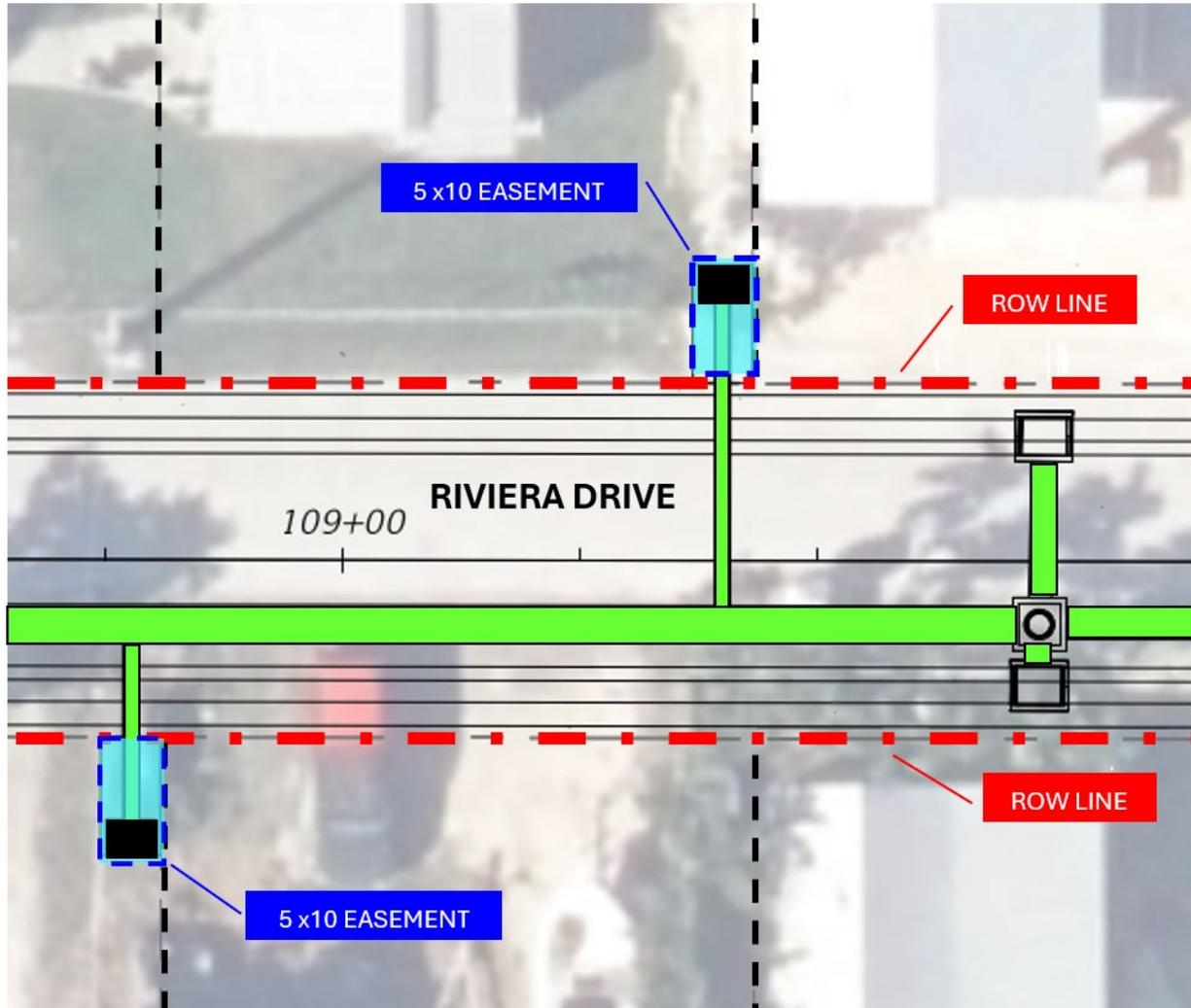


Private Property Easements

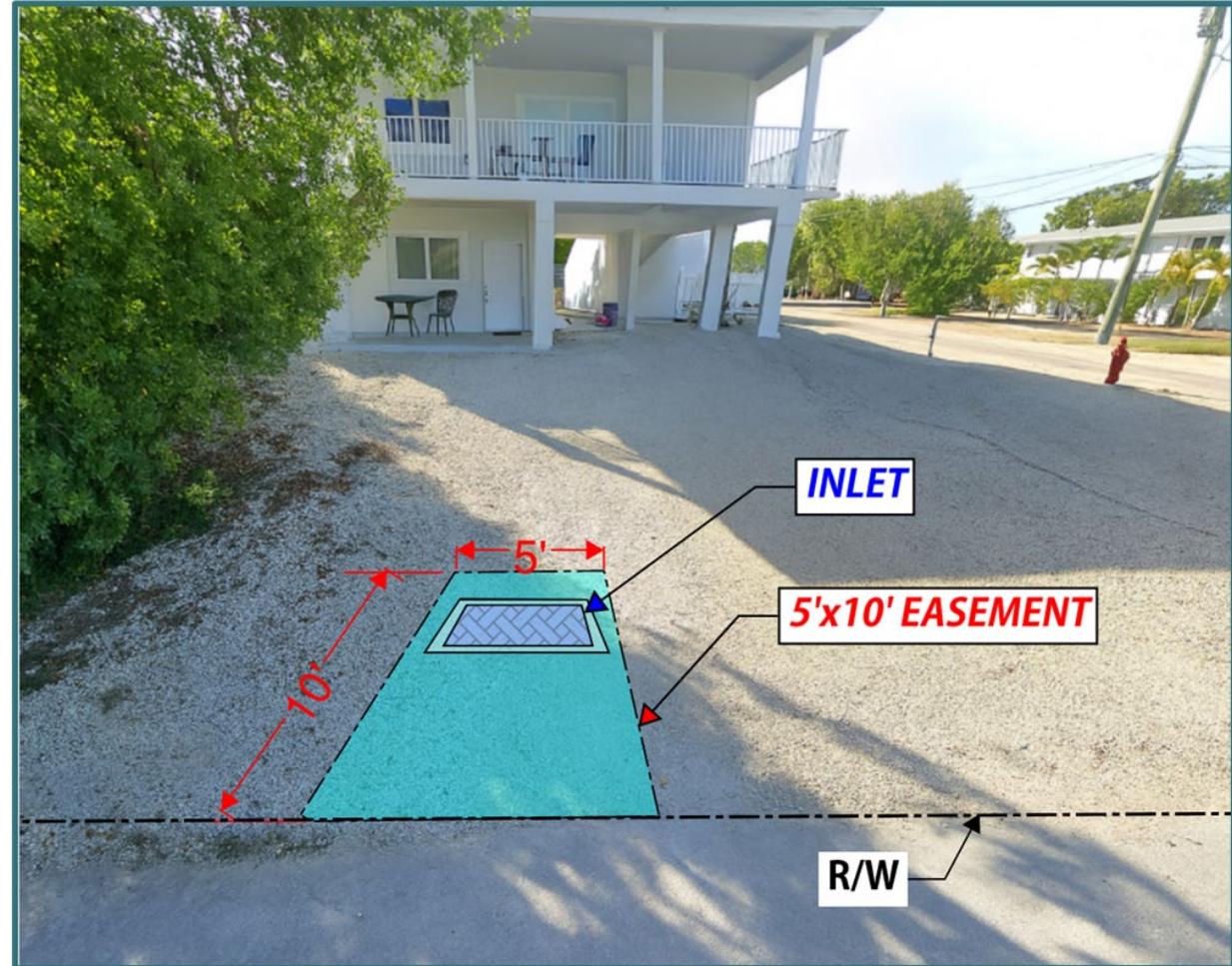
Easement Requirements



Easement Requirements 5' x 10'



Property Drainage Inlets





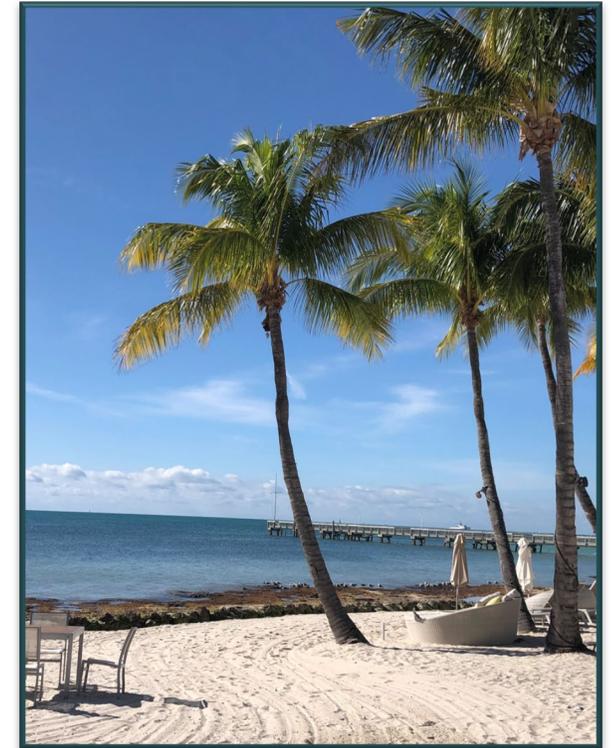
Permitting

Permits are Needed for Road Projects



Meetings and coordination with environmental regulatory agencies during the design phase such as:

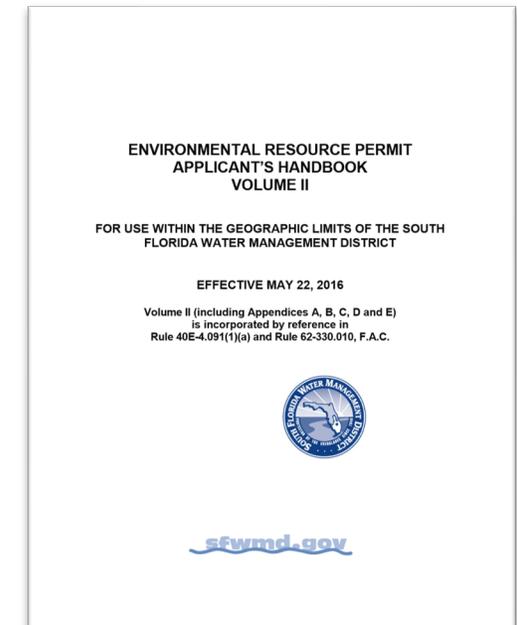
- **Environmental Resource Permit** – South Florida Water Management District (SFWMD)
- **Construction/Clearance Permit for Class V Well** – Florida Department of Environmental Protection (FDEP)
- **404 Dredge & Fill Permit** – U.S. Army Corps of Engineers (USACE)
- **Building Permits** – Monroe County Building Department



Why are Permits Needed and What is Required



- Performance based evaluation, i.e. each project (any road modification) needs to be evaluated to determine drainage parameters so as to not cause adverse impacts to surrounding properties.
- Evaluate water movement, land use and soil conditions such as developed properties, vacant properties, pavement, grass, rock affect the movement of the rainfall across the project area that gets incorporated into the Hydraulic models.
- Groundwater table conditions (King Tide and Sea Level Rise) to determine water storage capacity below the ground
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Project Benefits

Project Benefits



- Proactively addresses drainage and road conditions that will worsen as flooding impacts increase.
- Makes community roads more resilient to future impacts
- Preserves and improves long term access to homes
- Reduces/eliminates standing water on roads
- Increases value of homes and desirability of community
- Level of grant funding is significant; may not be available in the future.



Funding

Capital Construction Cost and Funding



- Florida Department of Environmental Protection (FDEP) Resilient Florida Grant - \$23,661,605
- Federal Emergency Management Agency (FEMA) Hazard Mitigation Grant Program (HMGP) Phase II Grant - \$60,906,616*
- HMGP Phase II funds will be available upon completion of the design and successful FEMA benefit cost analysis outcome.
- **Total Potential Grant Funding - \$84,568,221**
- **Current Construction Estimate - \$85 Million**
- BOCC decided individuals who are benefitting from the project will fund shortfall, if any; residents will vote on whether to proceed when final costs are known.

Annual O&M Assessment



The Annual Operations & Maintenance to be paid by residents benefitting from the project through a Municipal Services Benefit Unit (MSBU) covers:

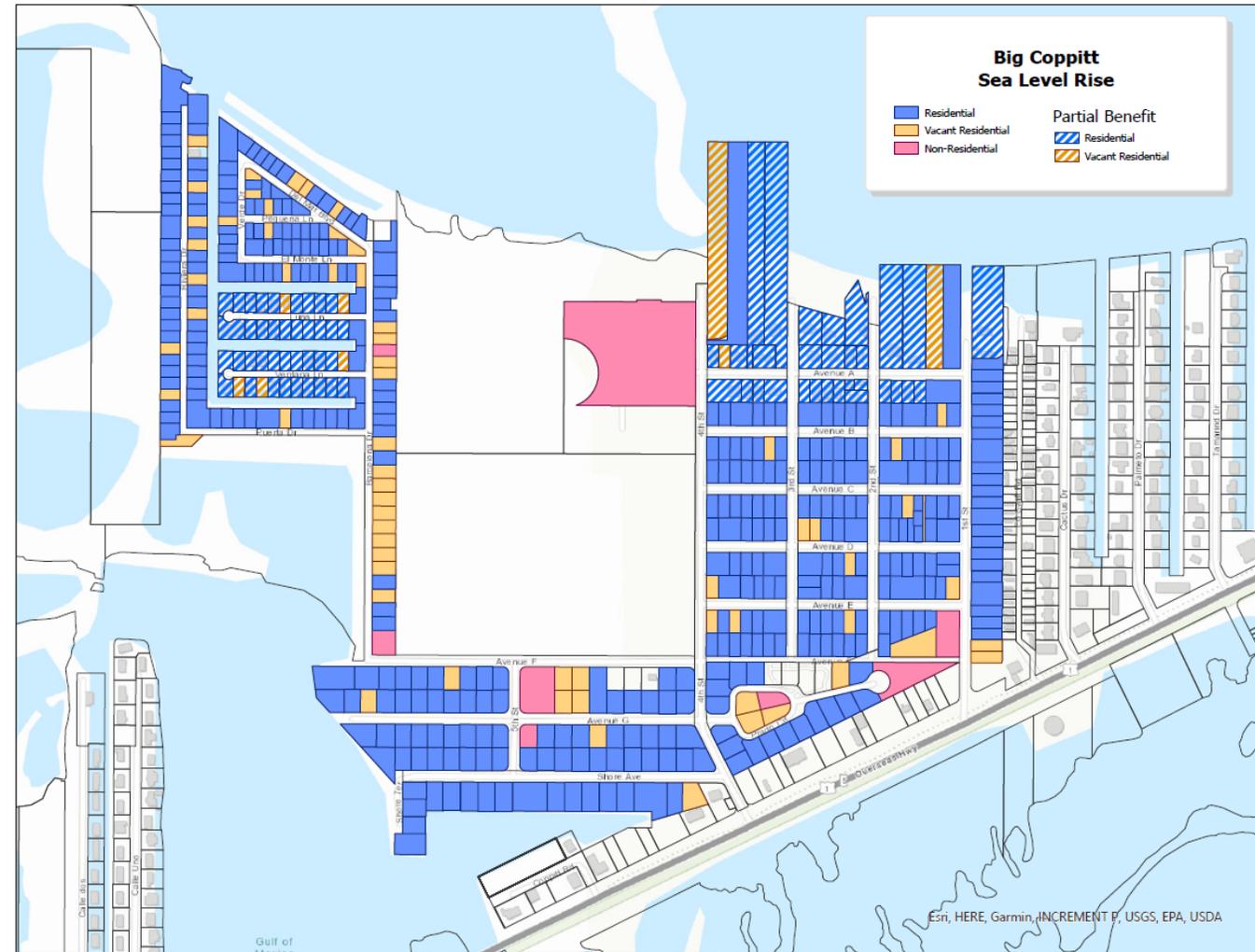
- Electrical costs to operate the pumps
- Repairs to mechanical equipment
- Routine maintenance costs - labor, equipment
- Replacement of Mechanical Equipment when it wears out

It does not cover usual routine road maintenance

Assessment Development



- **Develop Assessment Methodology**
 - Identify Benefit Area and number of parcels
 - Vacant parcels are assessed
- **Determine Annual Assessment Revenue Requirements**
 - Operation and Maintenance Costs – 5% of mechanical equipment costs is standard guidance
 - Annual cost to develop assessment for tax roll and administrative costs



Big Coppitt Estimated O&M



- Project area has 511 parcels
- Estimated Annual Revenue Requirement:
 - 5% Mechanical Equipment Cost: \$868,750
 - Annual Assessment roll costs: \$126,496 (roll development, notices, tax collector, admin)
 - Total Annual Cost: \$995,246
- Estimated **monthly** assessment per parcel: \$162.00
- Individuals within project area will vote whether to proceed





Next Steps

What's Next...



Complete 90% design plans and permit applications; submit to SFWMD, FDEP and USACOE



Prepare easement documents for property owner signature and finalize design plans.



Submit 100% design plans to FDEM and FEMA for approval and Benefit Cost Analysis to secure construction grant funds.



County to advertise for construction bids

Residents vote on whether to proceed with construction

The image features a tropical beach scene in the background, including palm trees, a pier extending into the water, and a boat. The scene is overlaid with large, colorful, wavy shapes in shades of blue, cyan, orange, and red. The word "Questions?" is written in a bold, dark blue font in the center of the image.

Questions?

Public Meeting Feedback

Big Coppitt Resiliency Public
Meeting Feedback



Project Location

