

FINAL PRESENTATION FLAMINGO DITCH FEASIBILITY STUDY CITY OF VENICE

OCTOBER 28, 2025

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FLAMINGO DITCH FEASIBILITY STUDY

■ Study Objectives

- Obtain public input for historical context and local observations
- Review previous studies and existing data for model refinements
- Conceptualize and compare options to reduce flooding potential

■ Timeline

- Commence Study: October 2024
- Public Meeting: December 16, 2024
- City Council Meeting: March 11, 2025
- City Council Workshop: June 30, 2025
- In-Progress Review Meetings with City Staff
- City Council Meeting: October 28, 2025 – Final Results

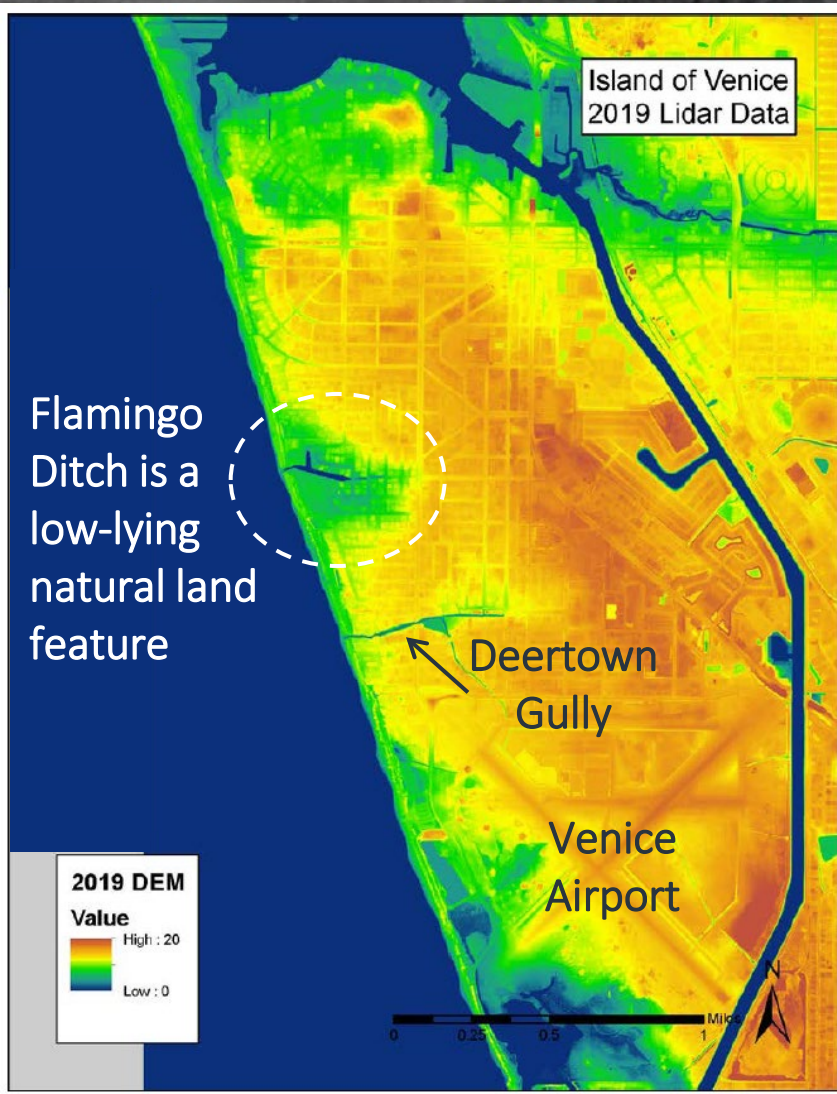


JUNE 30, 2025 MEETING

- ✓ ■ Public comment period
- ✓ ■ Background information
- ✓ ■ Initial model set-up and review
- ✓ ■ Grant application
- ✓ ■ Additional data collection
- ✓ ■ Finalize model set-up
- ✓ ■ Build alternatives in model
- ✓ ■ Simulate a range of rain/surge events
- ✓ ■ Add/refine alternatives
- ✓ ■ Results and reporting



HISTORIC AERIAL IMAGE OF FLAMINGO DITCH (C. 1948)

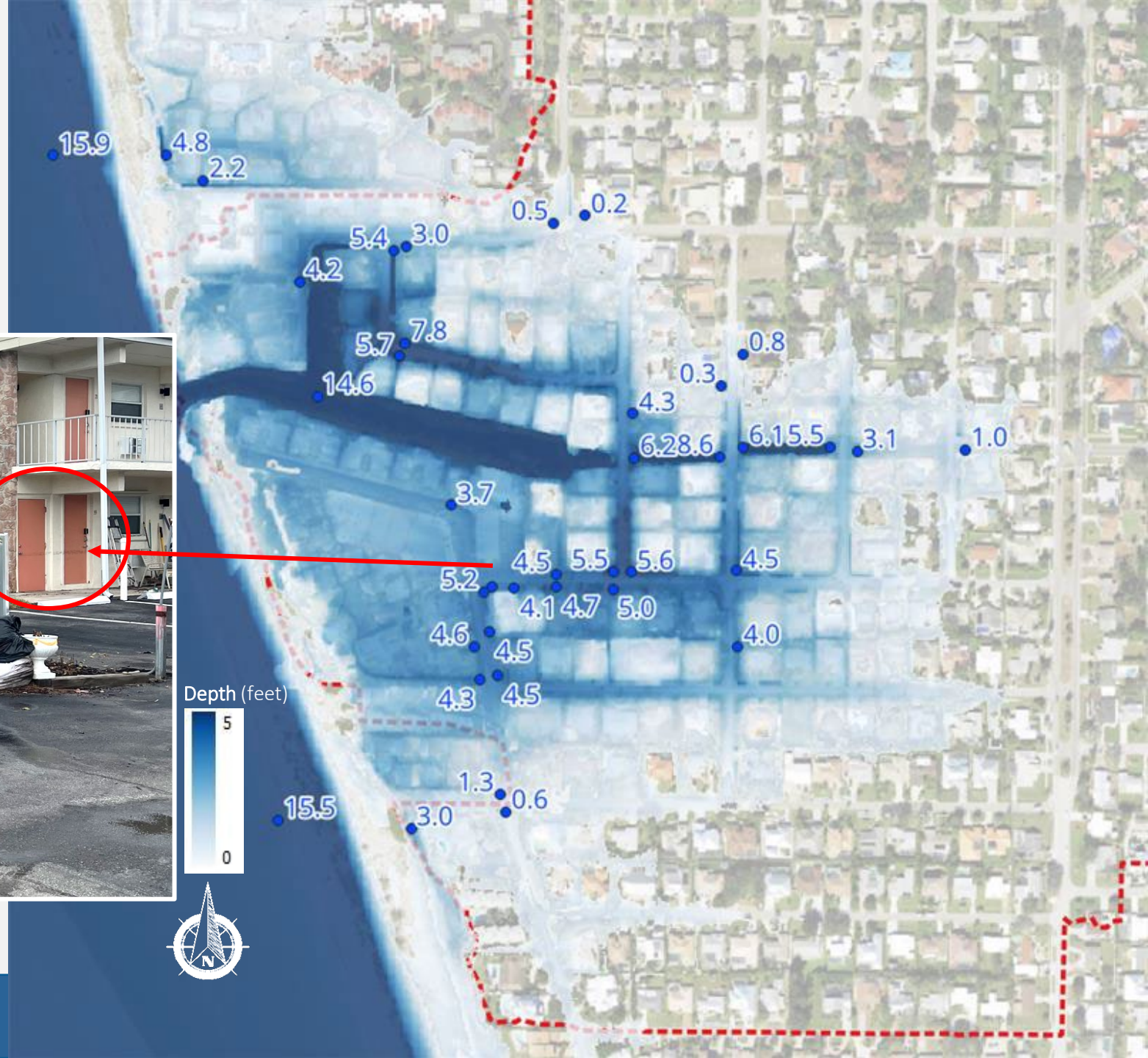


MODEL SIMULATIONS

- H. Helene flooding



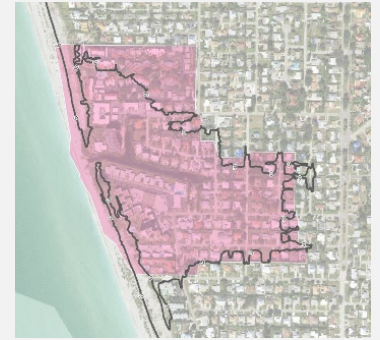
Photo courtesy of City of Venice, photo date of 10/1/2024, view to northwest



PRELIMINARY STUDY FINDINGS

The following concepts were presented at the June 30 City Council Workshop:

- **Raise City-owned roads** to improve ingress/egress during nuisance flooding events and identify properties that may require modifications to meet new elevations (driveways, landscaping, etc.).
- **Install local stormwater system improvements** to accommodate road modifications (replace pipes/grates, install one-way valves, swales, etc.) and seek easements for related actions.
- **Consider acquiring additional property along the ditch** (i.e., empty parcel on Lot 2) to offset loss of road storage and increase overall basin capacity.
- **Approach the U.S. Army Corps of Engineers to discuss surge barrier options** (beach berm, drainage, dune, wall) as it pertains to the federally-authorized Venice Beach Shore Protection Project.
- **Install publicly accessible (web-based) data collection system** for real-time monitoring and early warning of rising water levels.
- **Consider other major improvements as potential components** to the City's Stormwater Master Plan for rerouting/pumping water away from the ditch as part of system-wide upgrades.
- **Continue to pursue grant funding** for short term improvements and major system upgrades.



WORKSHOP FOLLOW-UP



- **Additional Alternatives Considered**
 - Airport Retention Pond
 - Harbor Drive Pipe to Deertown Gully
- **Final Presentation of Findings**
 - Modeling Results
 - Discussion
- **Report Development**
 - Finalize Recommendations
 - Flamingo Ditch Feasibility Study Report

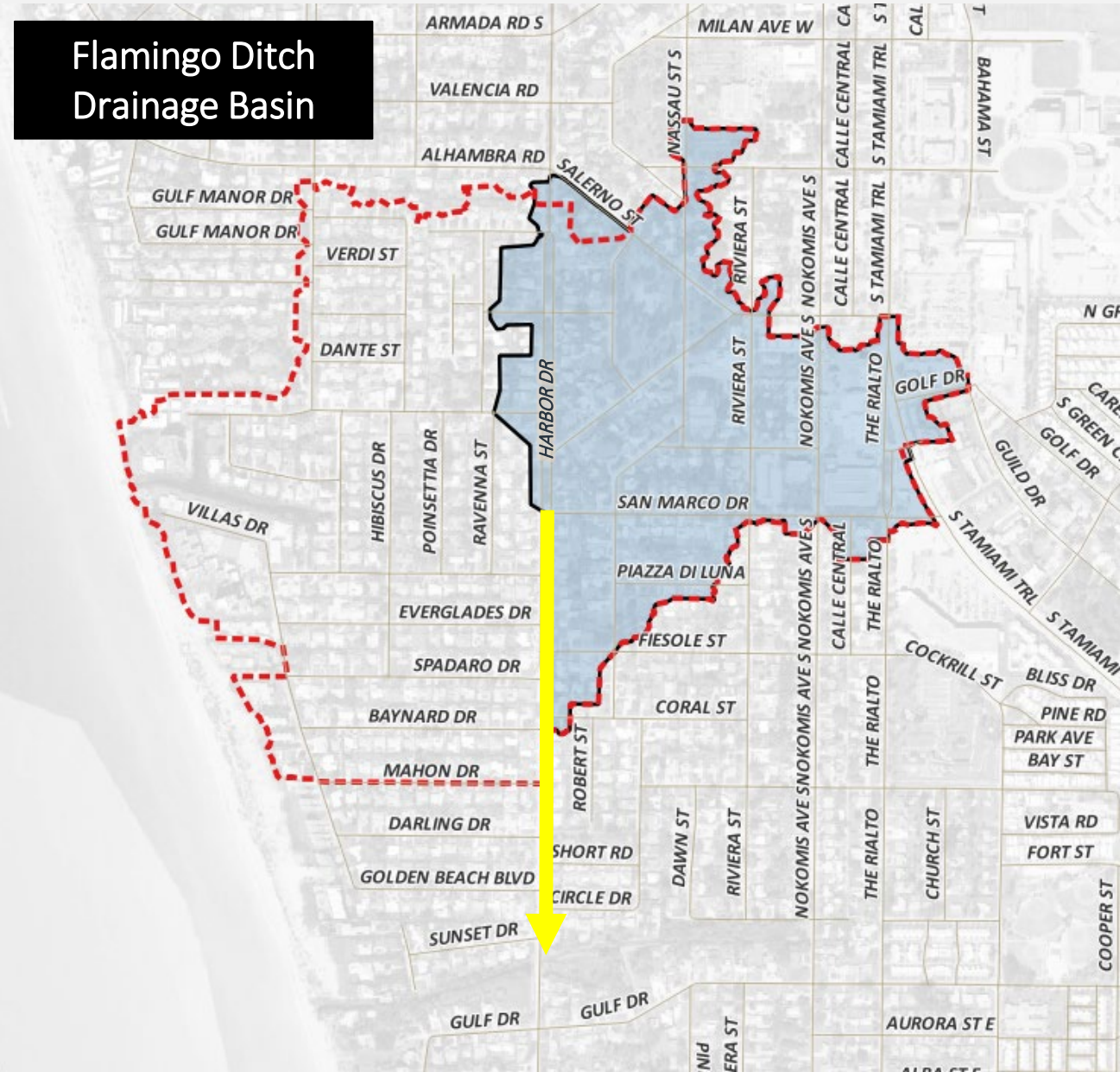
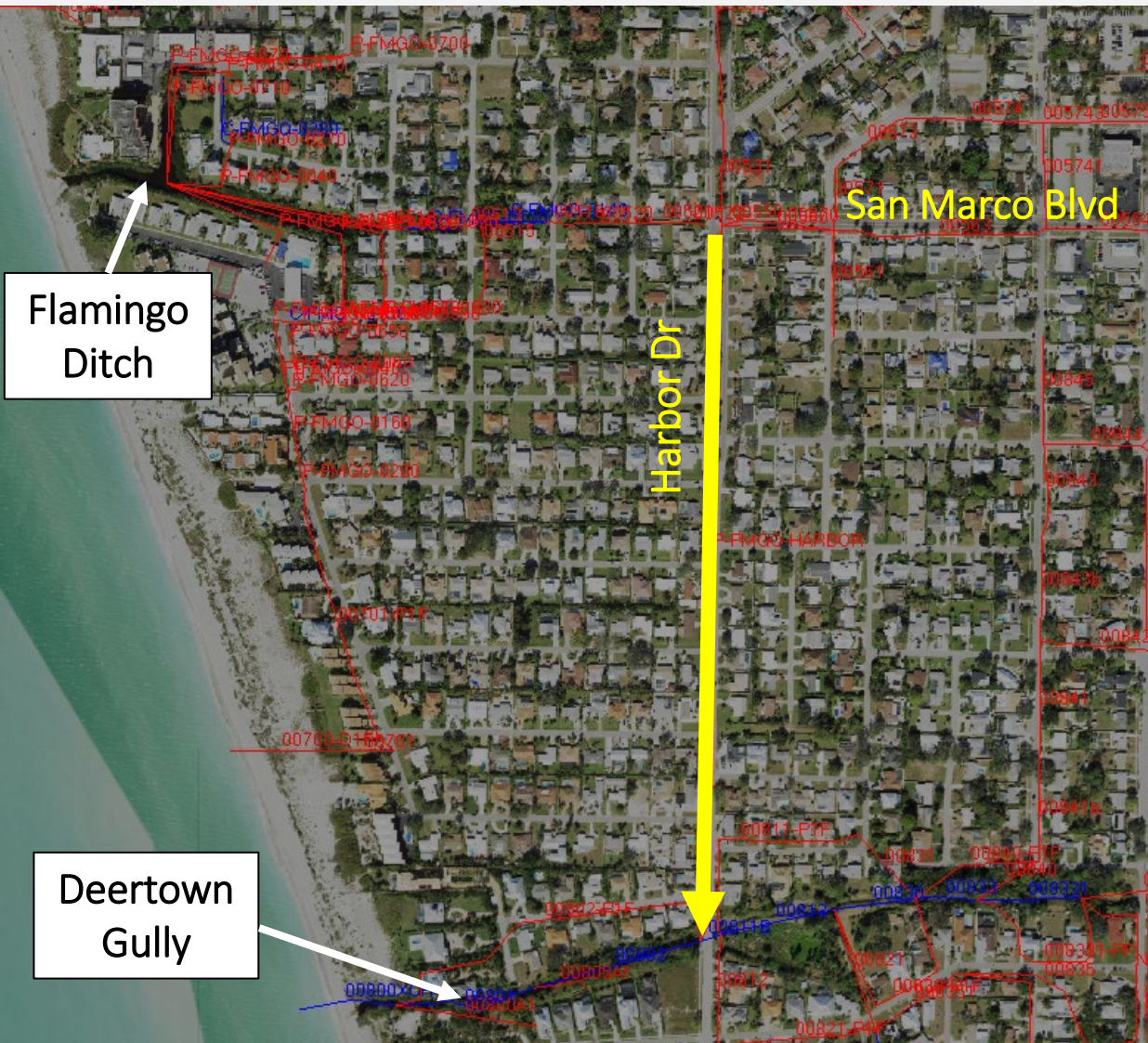
AIRPORT RETENTION POND OPTION

- Federal Aviation Administration (FAA) Considerations

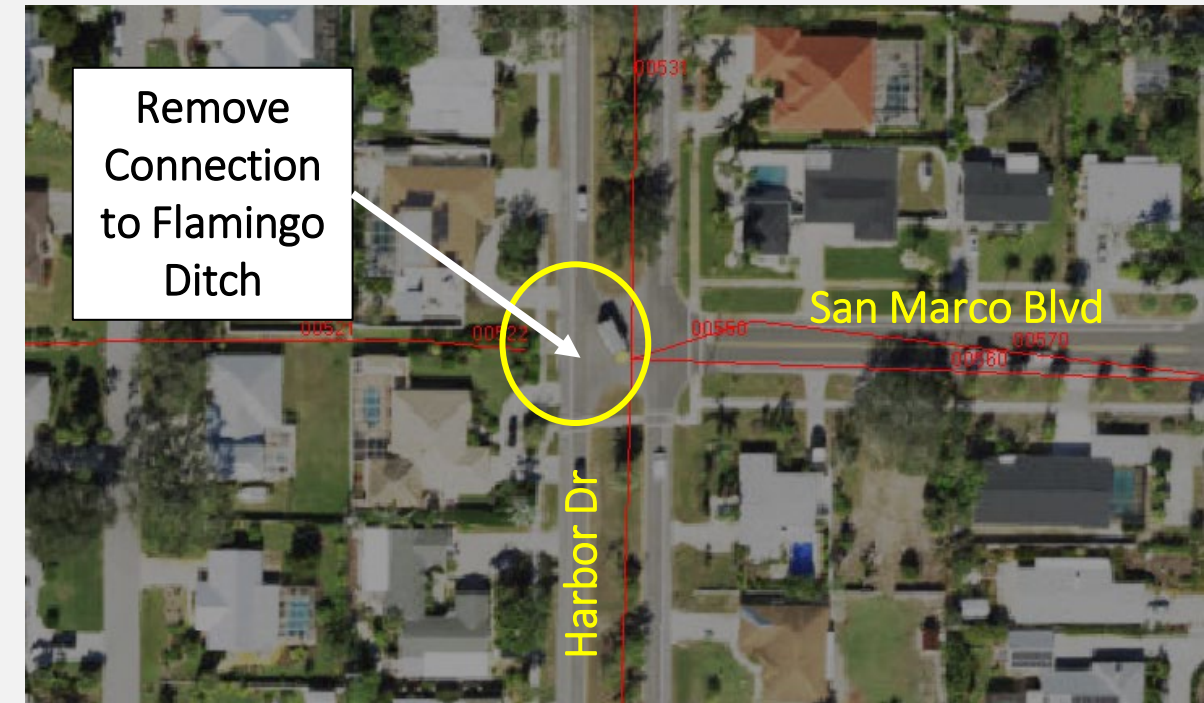
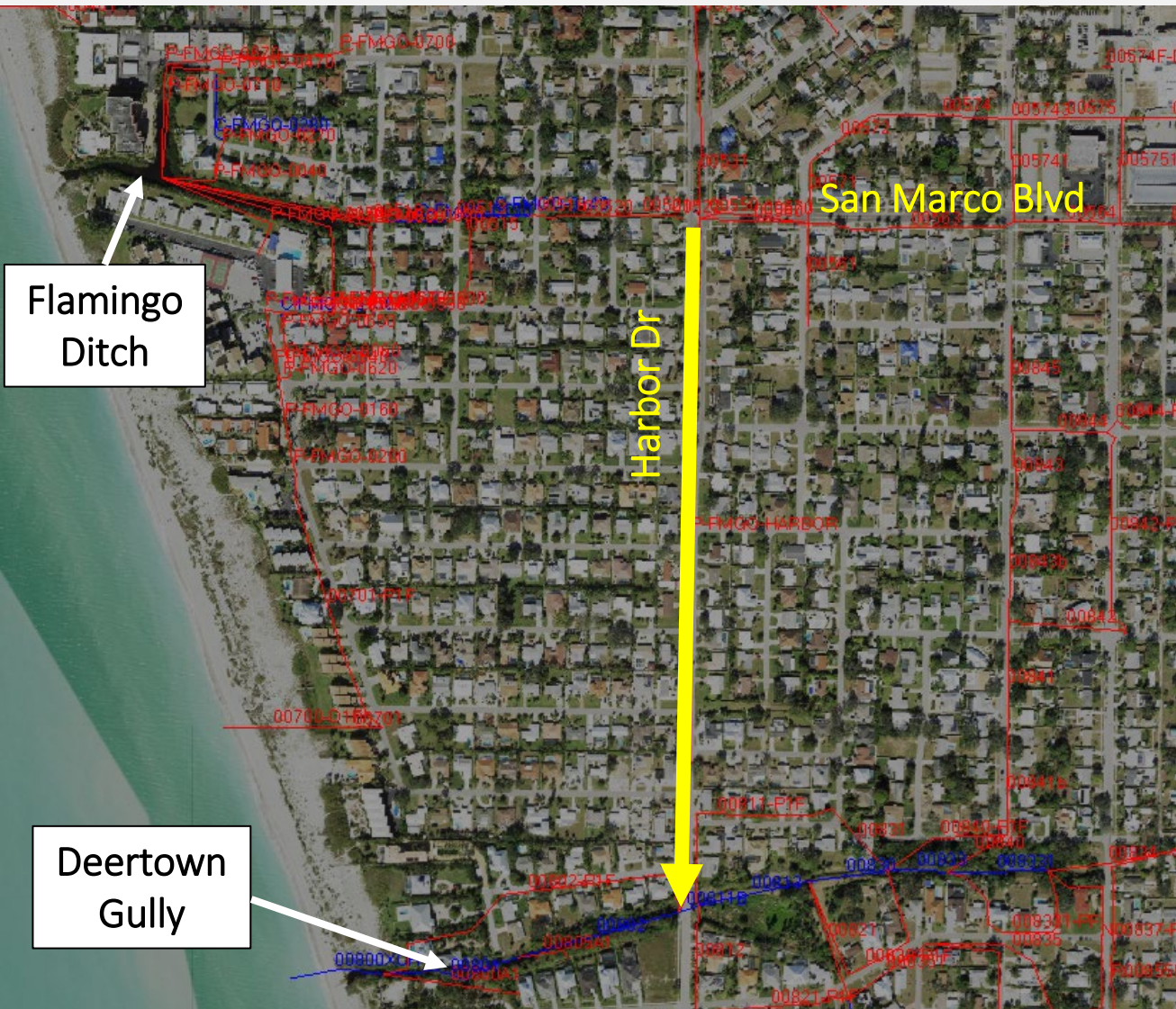
- **FAA Regulations:** The FAA strongly advises against the construction of new open water bodies, including retention ponds, within 10,000 feet of an airport's aircraft movement areas and within 5 miles of approach/departure surfaces.
 - **Hazardous Wildlife Attractants:** The FAA considers water features like retention ponds as hazardous wildlife attractants and recommends avoiding their construction or mitigating their impact through design changes and wildlife management programs.
 - Previous studies also refer to FAA requirement.
-
- **Alternate Option:** Partial diversion along Harbor Dr to Deertown Gully



HARBOR DRIVE STORMWATER PIPE



HARBOR DRIVE STORMWATER PIPE

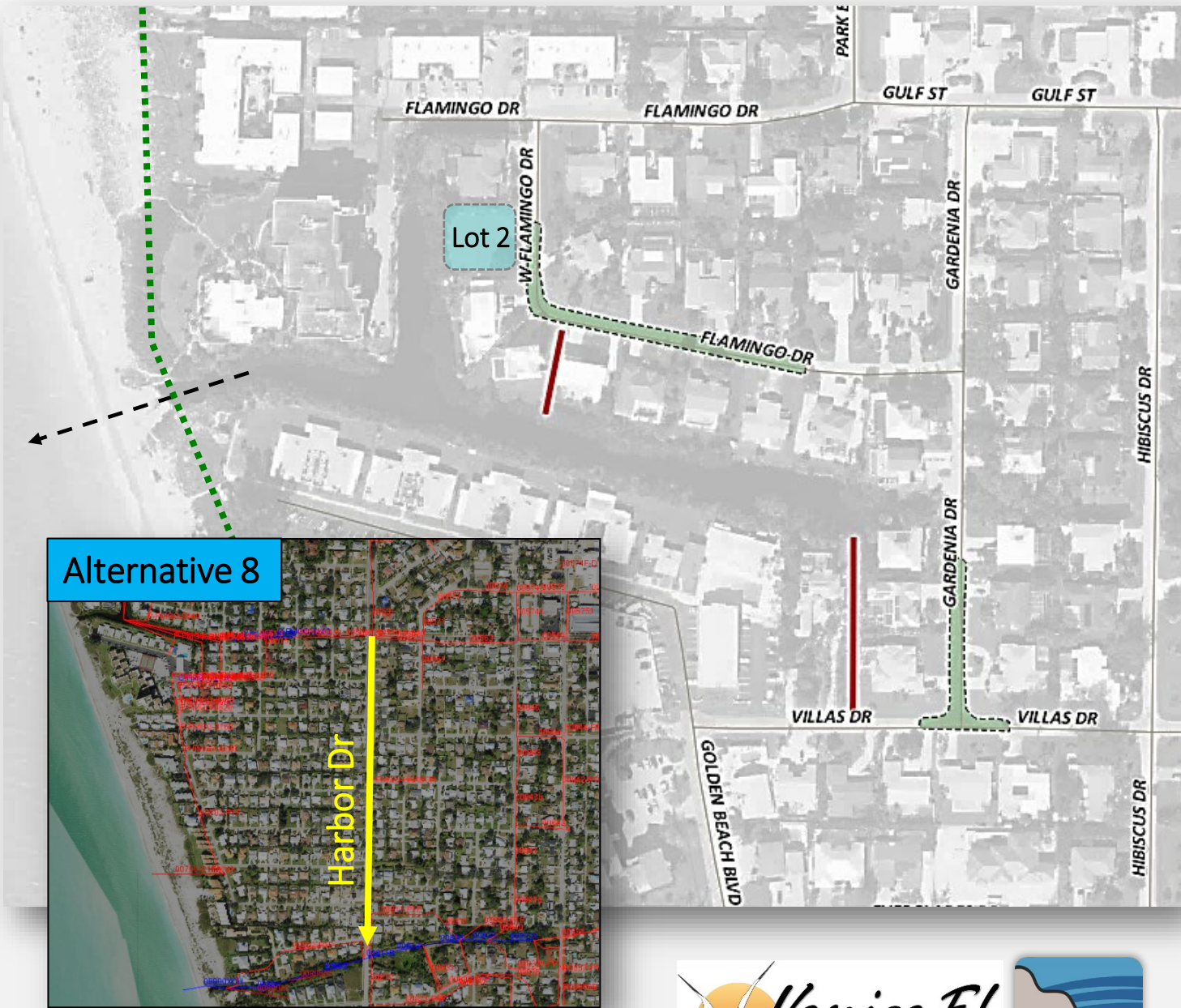


- Remove existing connection to Flamingo Ditch
- New one-way pipe under Harbor Dr to Deertown Gully
- Overland flow weirs retained in model to allow excess street flow from Harbor Dr and San Marco Blvd to flow towards Flamingo Ditch

FINAL ALTERNATIVES

	Components					
	Elevate	Storage	Existing Pipe Improvements	Divert	Drain	Block
Alt 6a	☑	☑	☑	☐	☐	☐
Alt 6b	☑	☑	☑	☐	☑	☐
Alt 7a	☑	☑	☑	☐	☐	☐
Alt 7b	☑	☑	☑	☐	☐	☑
Alt 8a	☐	☐	☐	☑	☐	☐
Alt 8b	☑	☑	☑	☑	☐	☐
Alt 8c	☑	☑	☑	☑	☑	☐
Alt 8d	☑	☑	☑	☑	☑	☑

- Alternative 8a: Divert
- Alternative 8b: Divert + Elevate + Storage + Pipe Improvements
- Alternative 8c: Divert + Elevate + Storage + Pipe Improvements + Drain
- Alternative 8d: Divert + Elevate + Storage + Pipe Improvements + Drain + Block



ALTERNATIVE 8A

RAINFALL

■ Divert

1" – 1 hr

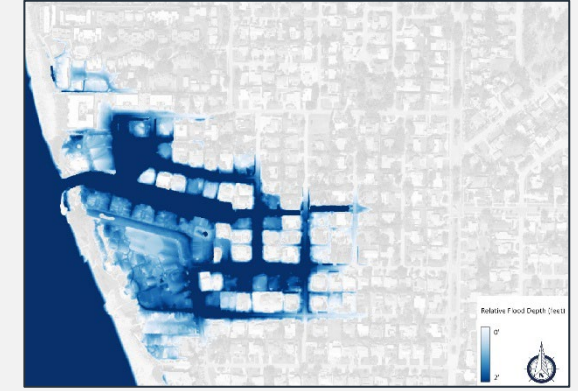
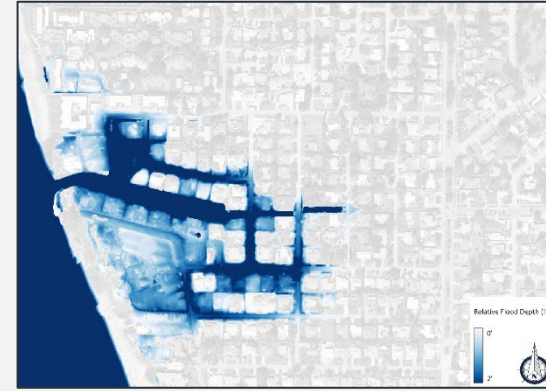
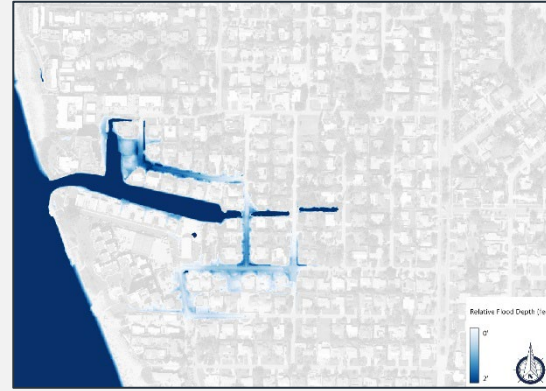
2" – 1 hr

25-year rainfall
(8.18" – 24 hr)

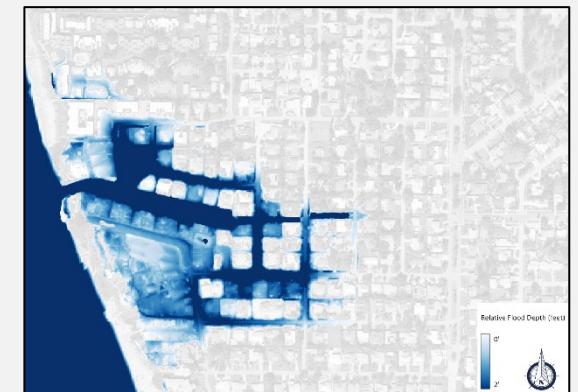
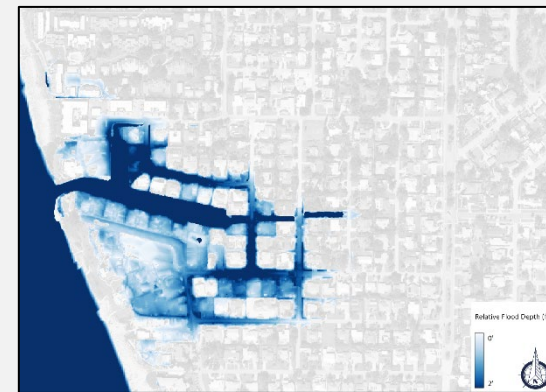
100-year rainfall
(10" – 24 hr)

2-ft
0-ft

Existing
Conditions



Alt 8a



- 1" & 2" storm has greater than 0.5' stage reduction
- Less than 0.5' stage reduction for 25 and 100-year but still a minor benefit

ALTERNATIVE 8B

RAINFALL

- Divert + Elevate + Storage + Pipe Improvements

1" – 1 hr

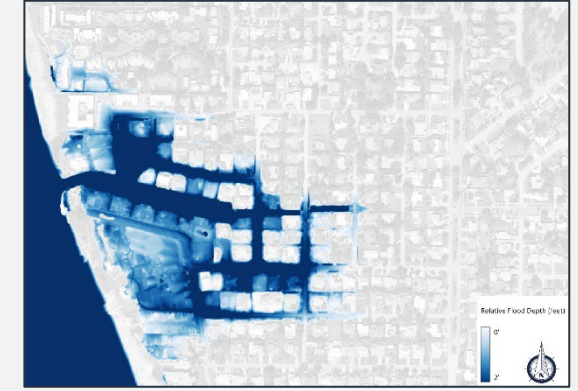
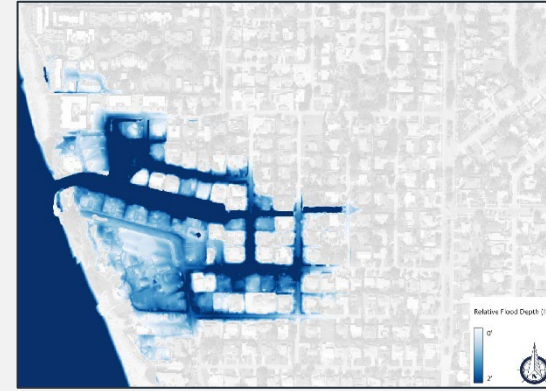
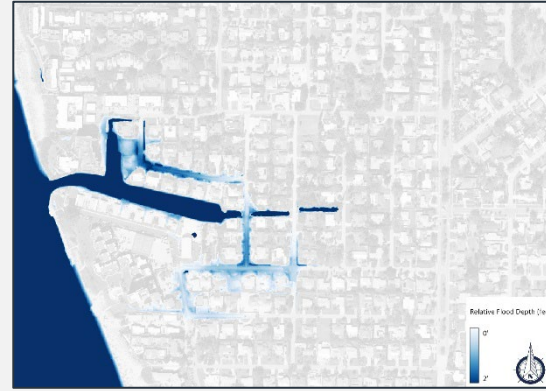
2" – 1 hr

25-year rainfall
(8.18" – 24 hr)

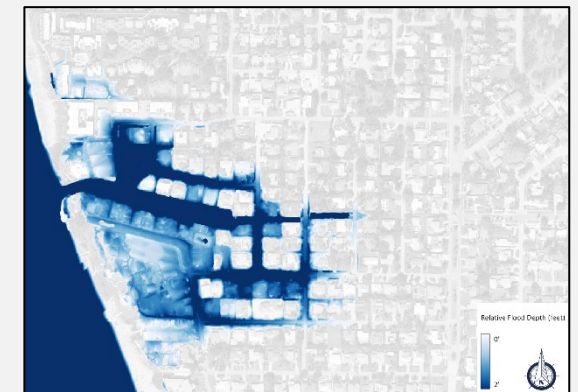
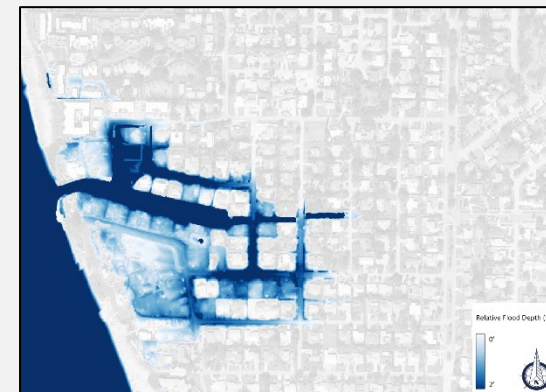
100-year rainfall
(10" – 24 hr)

2-ft
0-ft

Existing
Conditions



Alt 8b



- Similar results to 8a, minor improvement in stage reductions for all rain events

ALTERNATIVE 8C

RAINFALL

- Divert + Elevate + Storage + Pipe Improvements + Gravity Outfall Pipe



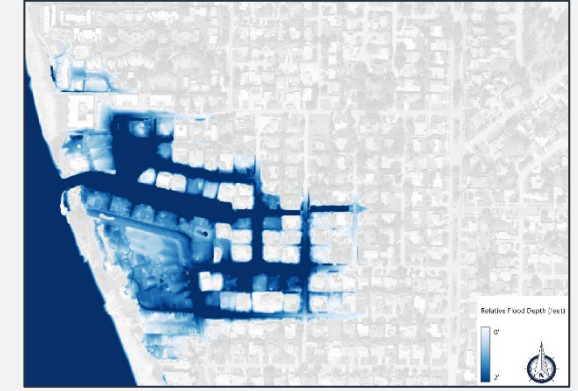
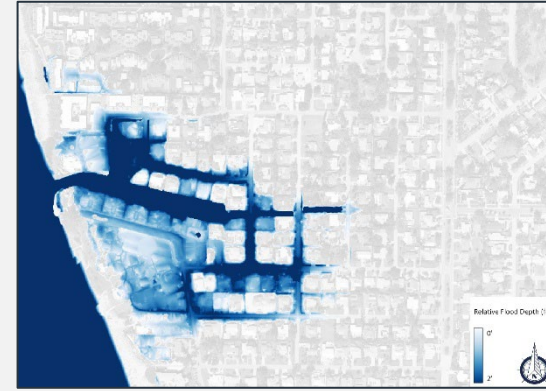
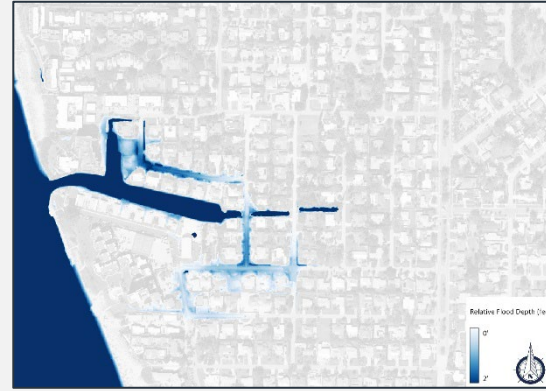
1" – 1 hr

2" – 1 hr

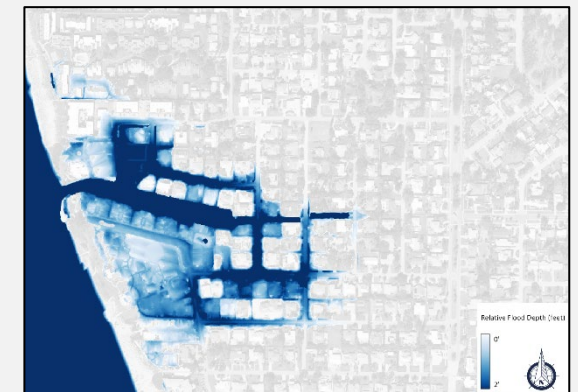
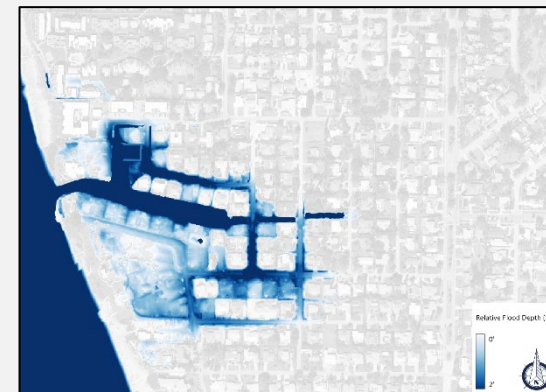
25-year rainfall
(8.18" – 24 hr)

100-year rainfall
(10" – 24 hr)

Existing
Conditions



Alt 8c



- Greater decreases in stage within the ditch vs 8a & 8b

ALTERNATIVE 8D

RAINFALL

- Divert + Elevate + Storage + Pipe Improvements + Gravity Outfall Pipe + Dune



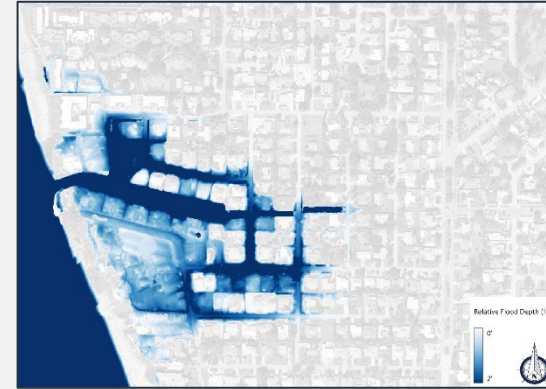
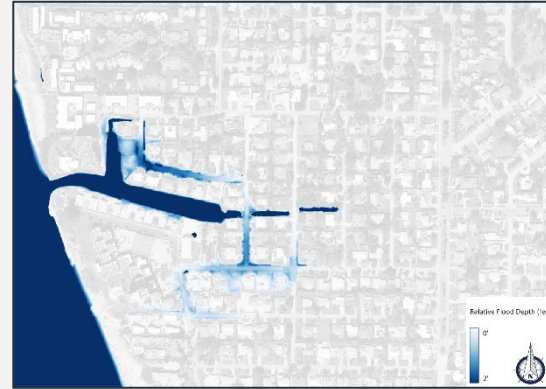
1" – 1 hr

2" – 1 hr

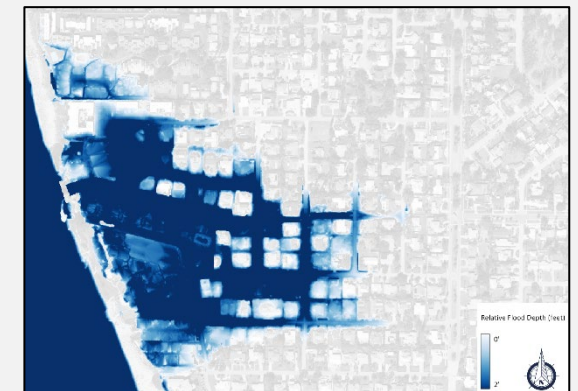
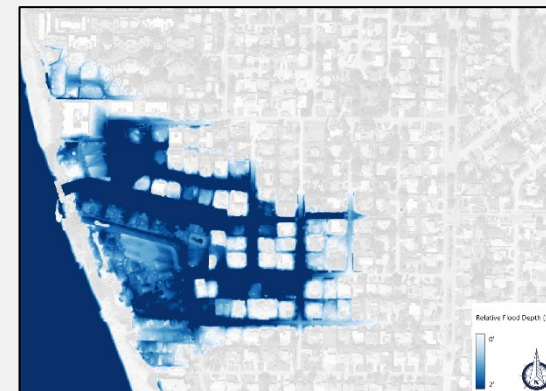
25-year rainfall
(8.18" – 24 hr)

100-year rainfall
(10" – 24 hr)

Existing
Conditions



Alt 8d



- Same as 8c, stage differences compared to the base rainfall results with +15 berm

RESULTS SUMMARY

	Components						Results						
	Elevate	Storage	Existing Pipe Improvements	Divert	Drain	Block	Rainfall Improvement	Surge Improvement	Effect on Rainfall				
									1"	2"	25-year	100-year	
Alt 6a	✓	✓	✓	☐	☐	☐	Y	N	+	+	=	=	
Alt 6b	✓	✓	✓	☐	✓	☐	Y	N	+	+	=	=	
Alt 7a	✓	✓	✓	☐	☐	☐	Y	N	+	+	=	=	
Alt 7b	✓	✓	✓	☐	☐	✓	N	Y	+	-	-	-	
Alt 8a	☐	☐	☐	✓	☐	☐	Y	N	+	+	=	=	
Alt 8b	✓	✓	✓	✓	☐	☐	Y	N	+	+	=	=	
Alt 8c	✓	✓	✓	✓	✓	☐	Y	N	+	+	=	=	
Alt 8d	✓	✓	✓	✓	✓	✓	N	Y	+	+	-	-	

Note: Surge flooding results estimated from previous simulations.

- All Alternative 8 combinations reduce flooding in high frequency rainfall events (1" and 2" rainfall).
- All Alternative 8 combinations have little to no reduction in flooding in low frequency rainfall events (25-year and 100-year rainfall).
- Surge barrier (block) increases flooding in low frequency rainfall events (25-year and 100-year rainfall).
- Water level modeling simulated stage increases at Deertown Gully of 0.53 ft at maximum pipe capacity.
- Broader stormwater analysis needed to assess all upstream effects.

RECOMMENDED ACTIONS



- Grant Applications
- Real-time Water Level Monitoring
- Storage: Purchase easement and excavate Lot 2 BLK 11 of Golden Beach Development (~0.24 acres)
- Pipe Improvements:
 - Flamingo Drive Pipe: make one-way and increase pipe size from 15" to 18"
 - Villas Dr / Gardenia Dr Pipes: further investigate
- Elevate: Raise road sections on Flamingo Drive and Villas/Gardenia to +5'
- Divert: Consider partial diversion along Harbor Drive to Deertown Gully
- Surge Barrier: Coordinate with USACE

CONCEPTUAL CONSTRUCTION COST ESTIMATES



- Storage: \$1.5M
 - Purchase easement and excavate Lot 2 BLK 11 of Golden Beach Development (~0.24 acres)
- Pipe Improvements: \$0.5M
 - Flamingo Drive pipe improvements
- Elevate: \$2M
 - Raise sections of Flamingo Drive and Villas/Gardenia to +5'
- Divert: \$10M+
 - Partial diversion along Harbor Drive to Deertown Gully
- Surge Barrier: TBD
 - Further planning & coordination
- Construction estimates do not include EDSA
- These estimates are feasibility level estimates, based on conceptual quantities and limited data available at this stage, intended for planning purposes only

STUDY COMPLETION

- **Results & Reporting (Complete)**
 - Modeling & Analysis
 - Draft Feasibility Study Report
- **Final Deliverable**
 - Considerations from City Council
 - Feasibility Study Report



IMPLEMENTATION PLANNING

- CIP Planning Comments
 - Jonathan Kramer, PE
- City Council Discussion
 - Q & A

THANK YOU

