

# Weir Creek Community Gathering

Presenter: Jordan Mora, APCC  
April 29th, 2025

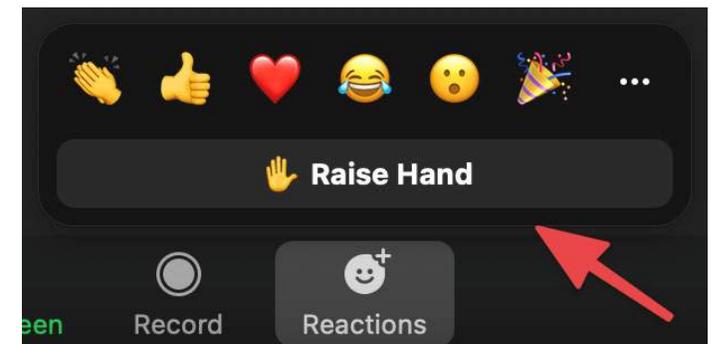


# Housekeeping



Thank you for joining our virtual community event

- Please share your **Name** in the chat
- Please **mute** your microphone when not participating in a conversation
- We look forward to hearing your **thoughts, feedback, and ideas**; we will have **time for discussion** following the project overview
- The Zoom **chat will be monitored** throughout the meeting and questions, thoughts, and comments will be noted
- Please **raise your hand** using “**Reactions**” if you have a question or comment



# POLL QUESTION #1

*How did you hear about today's meeting?*



# Association to Preserve Cape Cod **Ecosystem Restoration Program**

Established in 2015

**Mission:** To assist towns and community groups with planning and implementation of riverine and wetland restoration projects to improve habitat and water quality on Cape Cod.



# Project Team Introductions

- **Town of Dennis**
- Cape Cod Conservation District
- USDA Natural Resources Conservation Service
- NOAA Restoration Center
- Dennis Conservation Land Trust
- Friends of Bass River
- Cape Cod Mosquito Control
- Cape Cod Commission
- Tighe & Bond
- Woods Hole Group



# Today's Goals



Build transparency and trust in the process.



Reassure community that concerns are taken seriously.



Collect input.

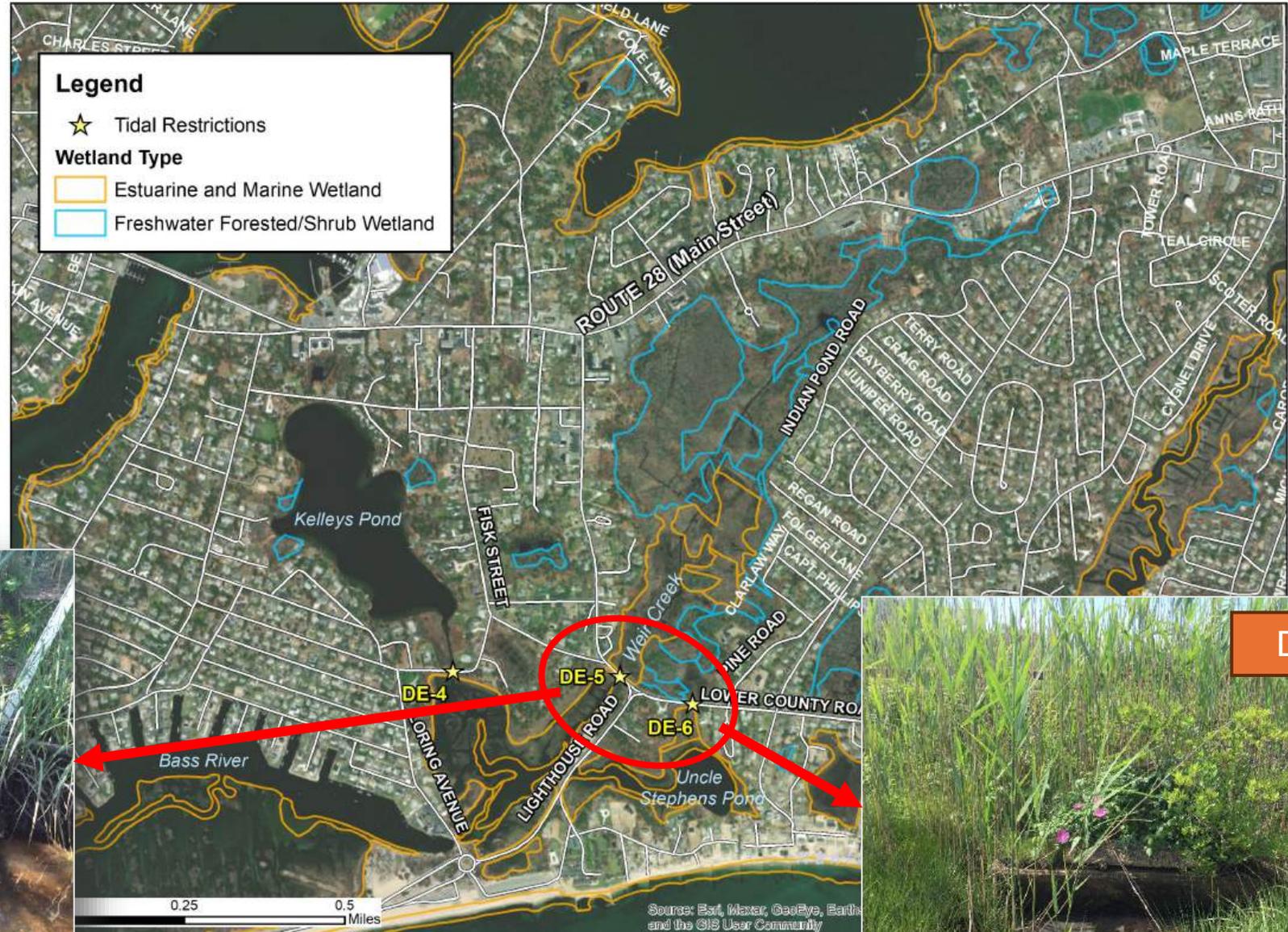


Update on project status.

# Project Goal

To replace the two undersized culverts along Lower County Road to improve the upstream marsh function and reduce the flood risk to the surrounding community.

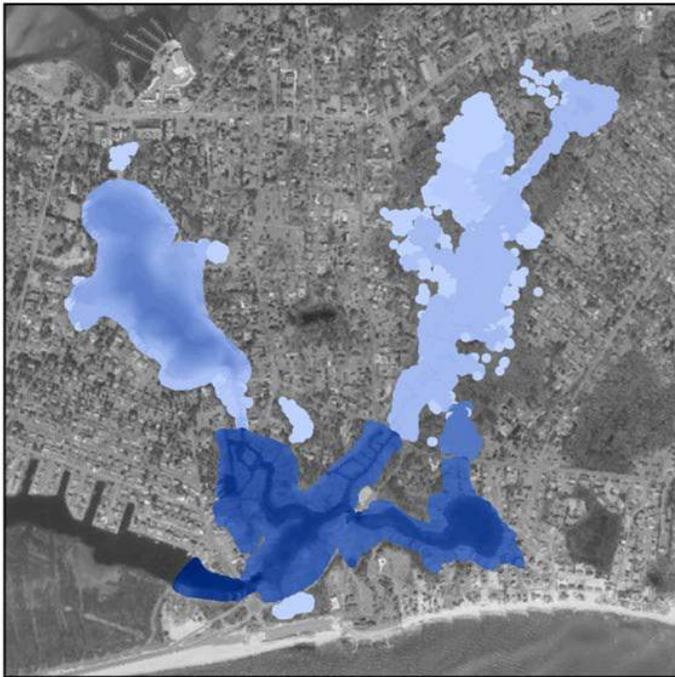
Weir Creek Restoration Site Map



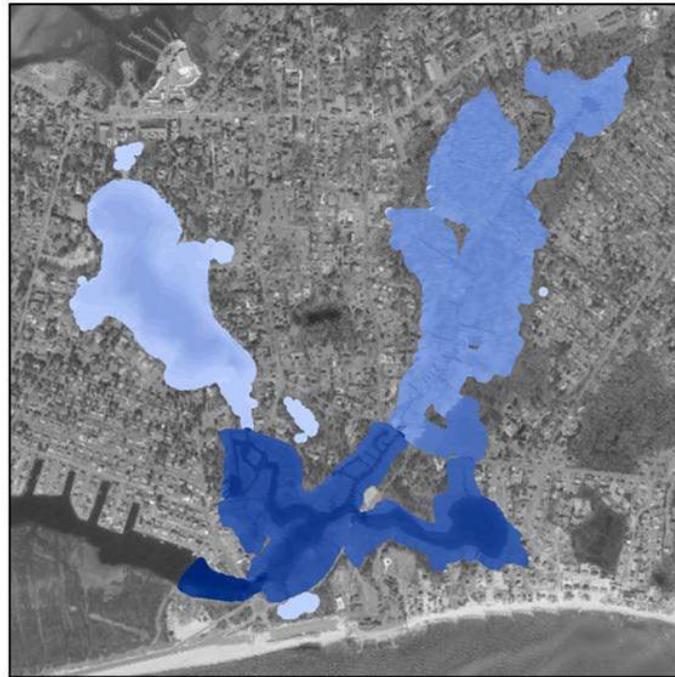
# Preferred Alternative (from March 2024)

Box culverts: 6 ft (H) x 8 ft (W)

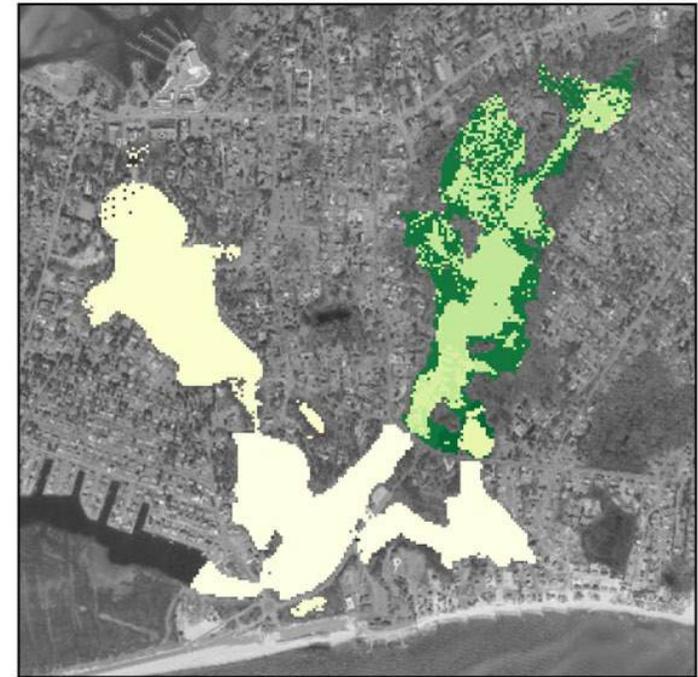
Existing Conditions



Design Conditions



Difference in Maximum Tidal WSE



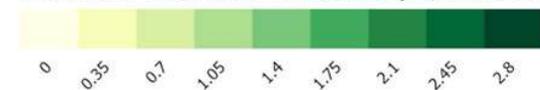
Maximum Tidal Water Surface Elevation (FT, NAVD88)



0 0.13 0.25 0.5 Miles



Maximum Tidal WSE Difference (FT, NAVD88)



# Preferred Alternative (from March 2024)

Downstream

Upstream



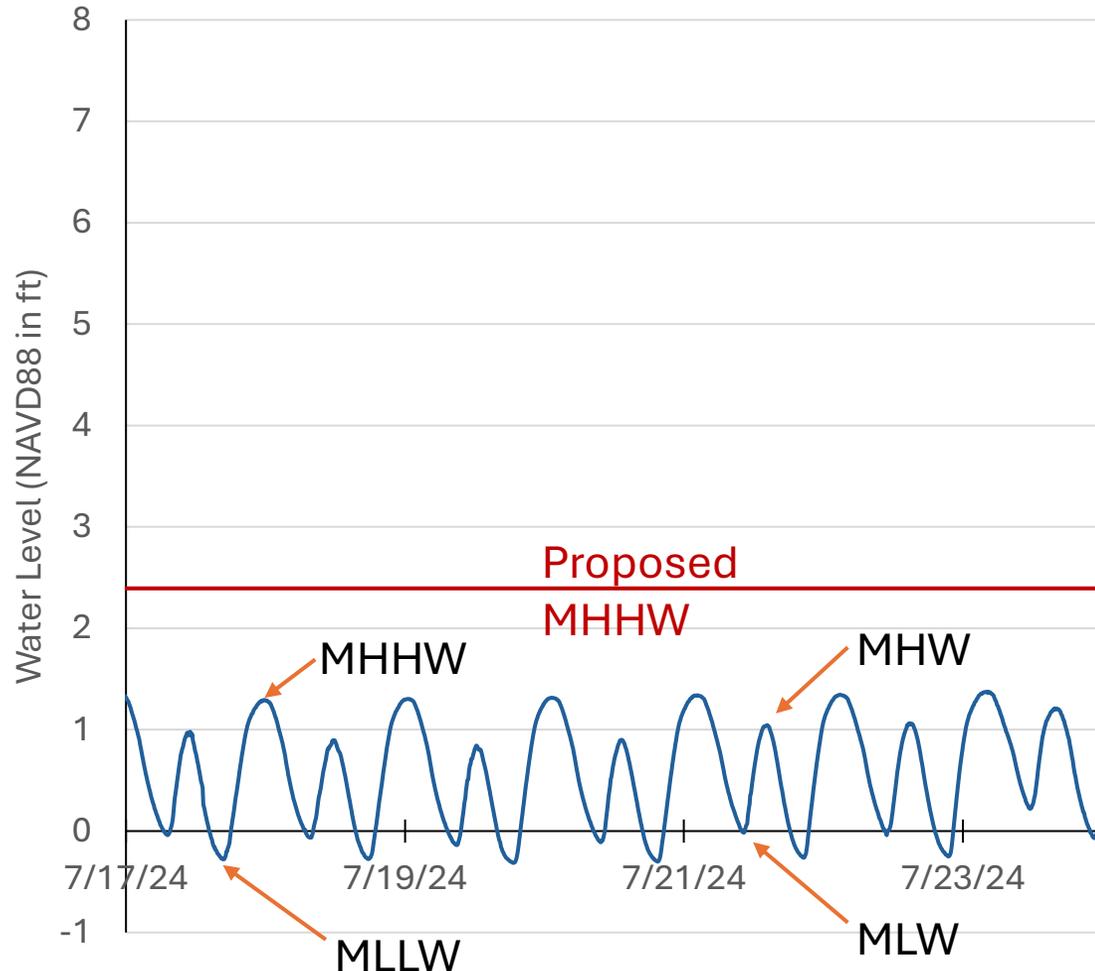
Table 2. Tidal datums at each gauge station in feet-NAVD88.

	WC1	WC2	WC3	WC4	WC5	WC6	WC7	WC8	WC9	WC10
Location	Loring Avenue (DS)	Loring Avenue (US)	Lower County Road (West, DS)	Lighthouse Avenue	Lower County Road (East, DS)	Lower County Road (East, US)	Lower County Road (West, US)	Fisk Street (DS)	Fisk Street (US)	Upper Reach: Weir Creek
MHHW	2.4	2.4	2.4	2.4	2.4	1.8	1.5	2.4	1.5	1.3
MHW	2.0	2.0	2.0	2.0	2.0	1.7	1.4	2.0	1.4	1.3
MTL	0.4	0.8	0.9	0.9	1.3	1.2	0.8	0.9	1.3	1.2
MLW	-1.3	-0.3	-0.2	-0.2	0.6	0.7	0.2	-0.3	1.2	1.1
MLLW	-1.6	-0.4	-0.3	-0.3	0.5	0.7	0.1	-0.3	1.1	1.1
Mean Tide Range (ft)	3.3	2.3	2.3	2.2	1.4	0.9	1.2	2.3	0.3	0.1

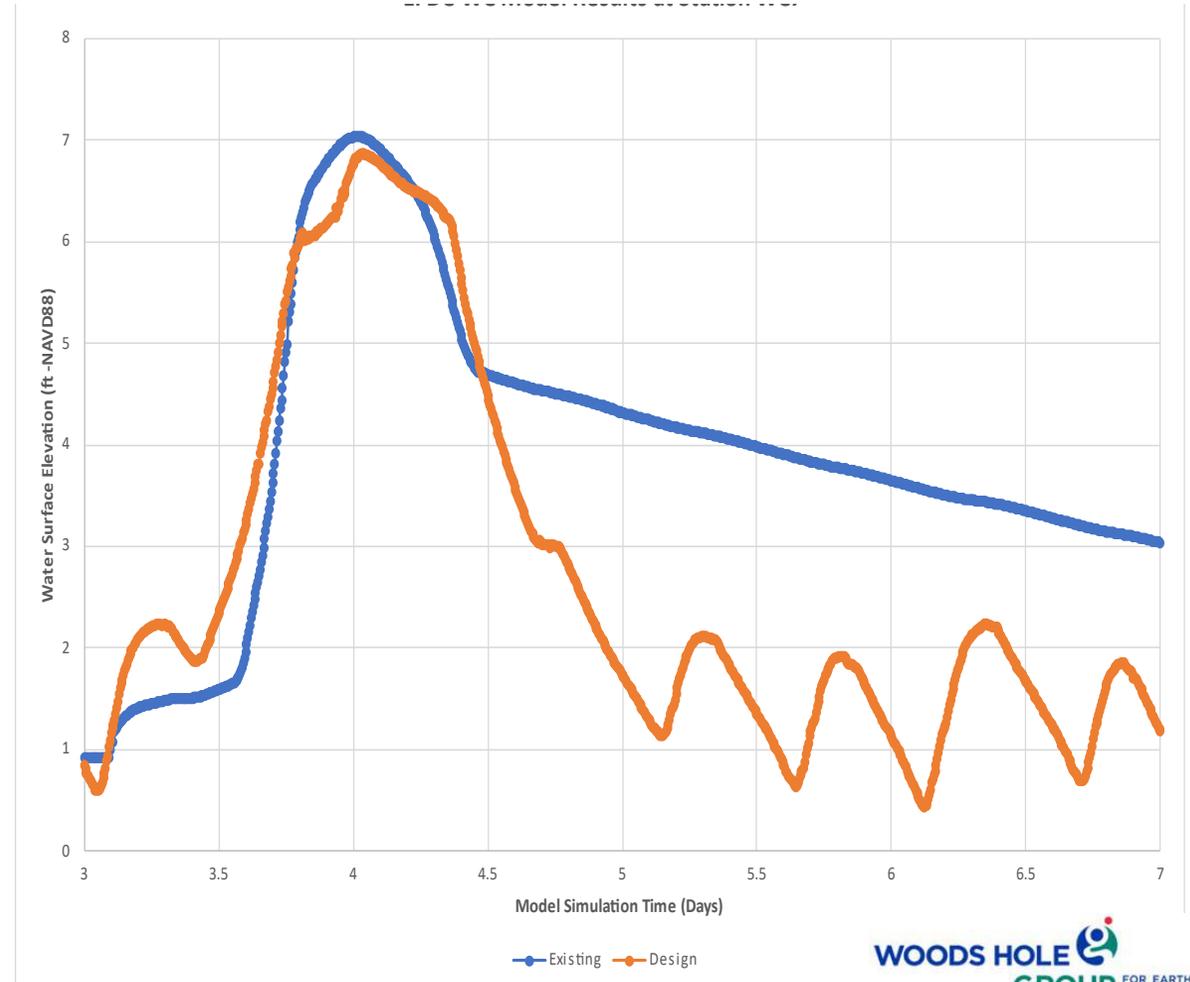
# Storm Surge (10-year flood; + 5.4ft)

(Storm surge with Hurricane Bob was ~10-15 ft)

Existing Conditions: Upstream of Western Culvert

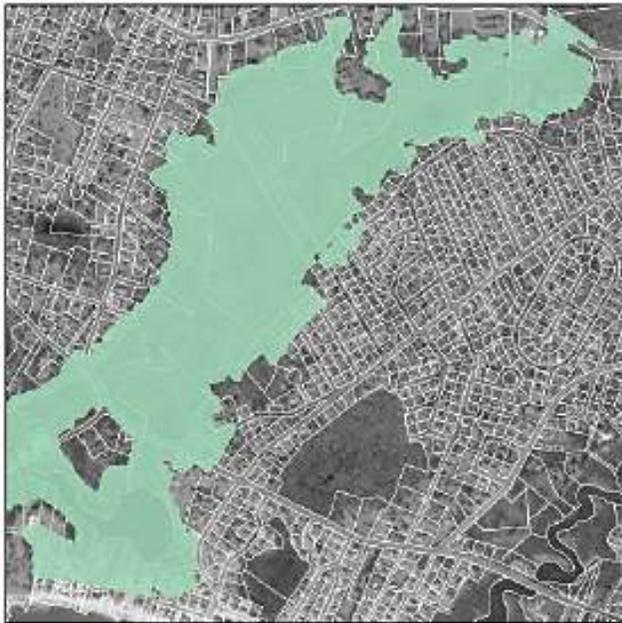


Proposed Conditions  
With 10-year Storm Surge Superimposed



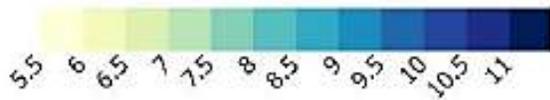
# Storm Surge (10-year flood)

## Flood Scenario: 10 Year Annual Exceedance Probability

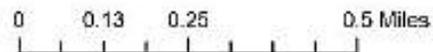


### Existing Conditions

Maximum Water Surface Elevation (FT, NAVD88)



### Design Conditions

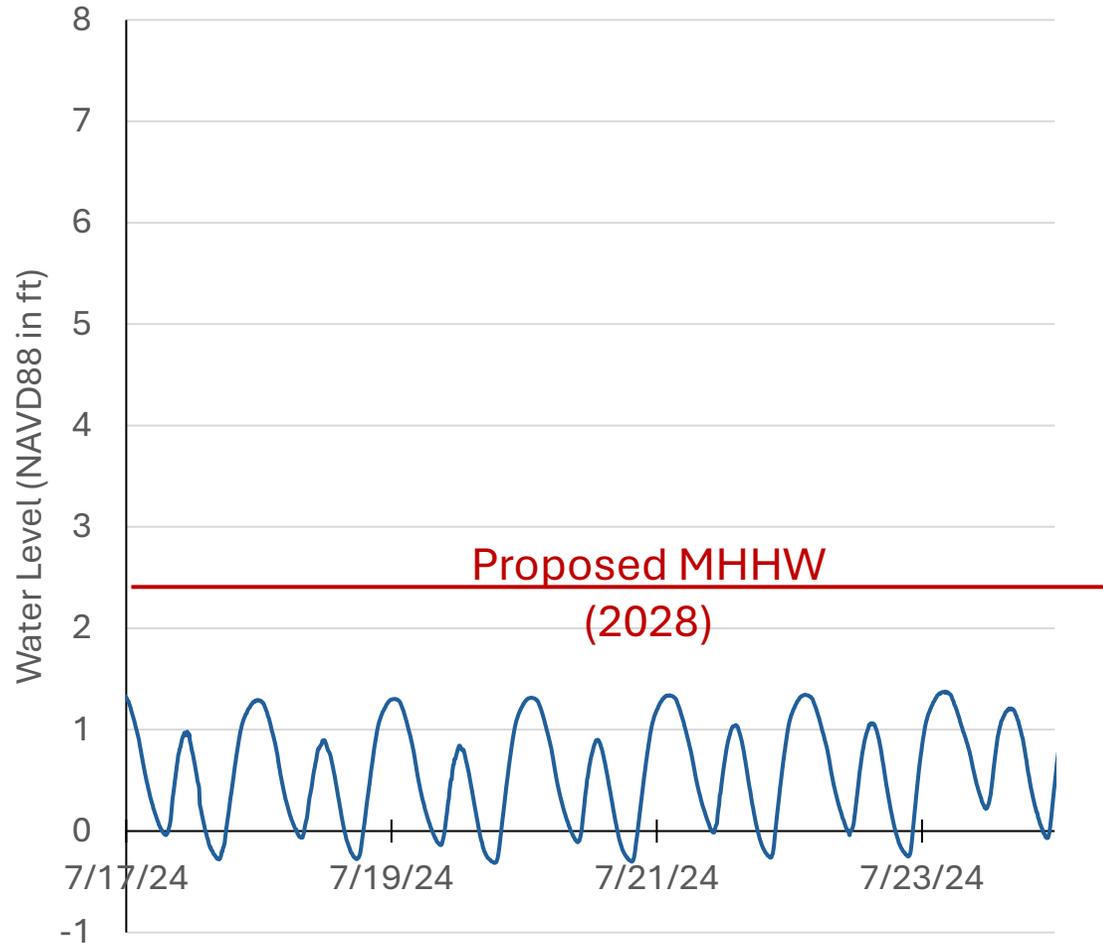


### Flood Inundation Extents

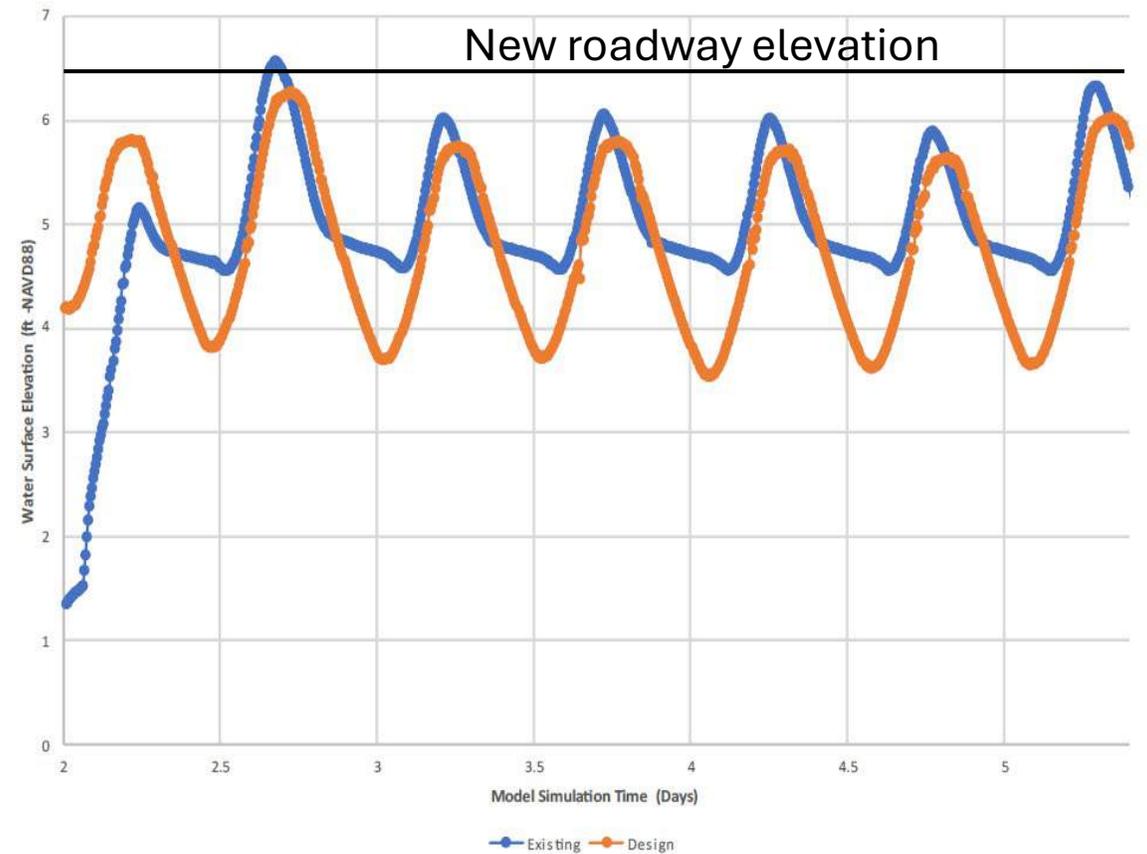
- Existing Conditions Only
- Both Scenarios
- Design Conditions Only

# Sea Level Rise (+ 4.1ft in 2070)

Existing Conditions



Proposed Conditions  
With Sea Level Rise (2070)



## POLL QUESTION #2

*Do you experience flooding on your property?*



# Timeline and Community Engagement

## Timeline

### **2023**

Water level and elevation/bathymetry data collection and hydrodynamic modeling

### **2024**

Alternatives analysis, 30% designs for Lower County Road culverts, pre-restoration data collection

### **Spring 2025**

Adaptive management plan

### **2025 - early 2027**

60% designs, permitting, final designs, and technical specifications

### **Summer 2027**

Construction bidding and contracting

### **Fall 2027 - Summer 2028**

Construction and post-restoration monitoring

# Project Status Updates

- Funding
- Culvert & roadway design considerations
- Flooding Visualization Tool (online & interactive)
- Data Collection
- Adaptive Management Plan



# Project Status Update: **Funding**

- **NEW! 2024 NOAA Transformational Habitat Grant**

- 2025-2028
- \$4.9 million
- Scope
  - Adaptive Management Plan
  - Public Engagement
  - 60% Designs
  - Permitting
  - Final Design
  - Construction

- Total secured funding for project = \$6.7 million

## Previous/Leveraged Funding

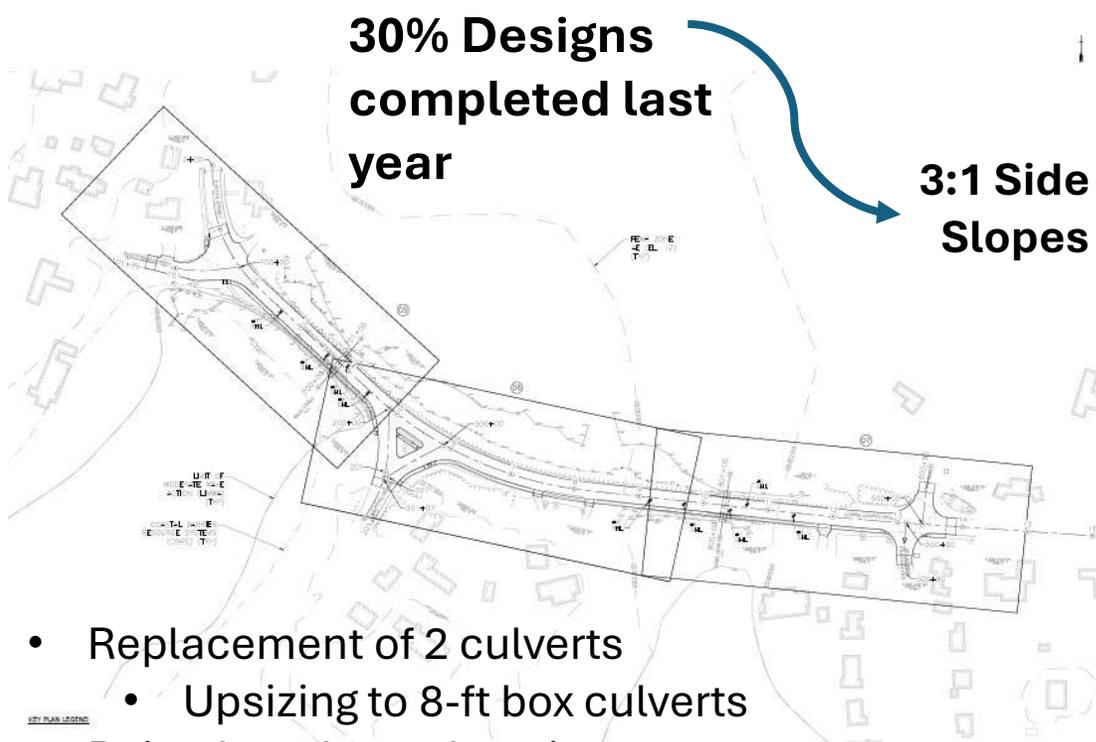
- 2022 National Fish and Wildlife Foundation Grant
- 2022 U.S. EPA Southeast New England Program Watershed Implementation Grant in collaboration with Restore America's Estuaries
- Cape Cod Conservation District under the Cape Cod Water Resources Restoration Project
- Private foundation support
- Town of Dennis (inspection of Loring Avenue Bridge)

# Project Status Updates: Infrastructure Designs



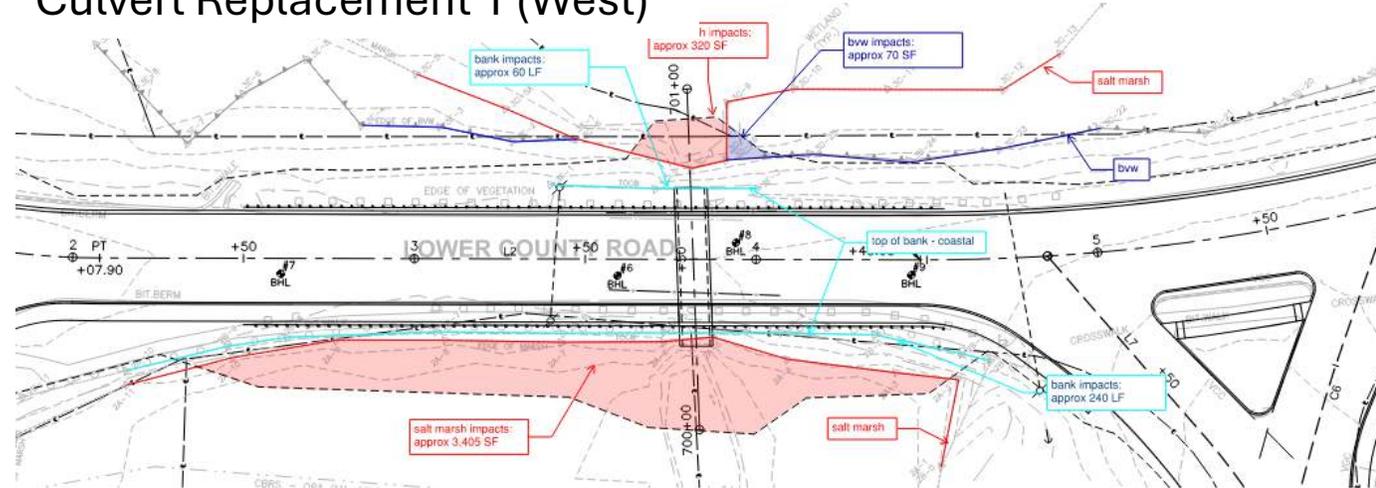
30% Designs completed last year

3:1 Side Slopes

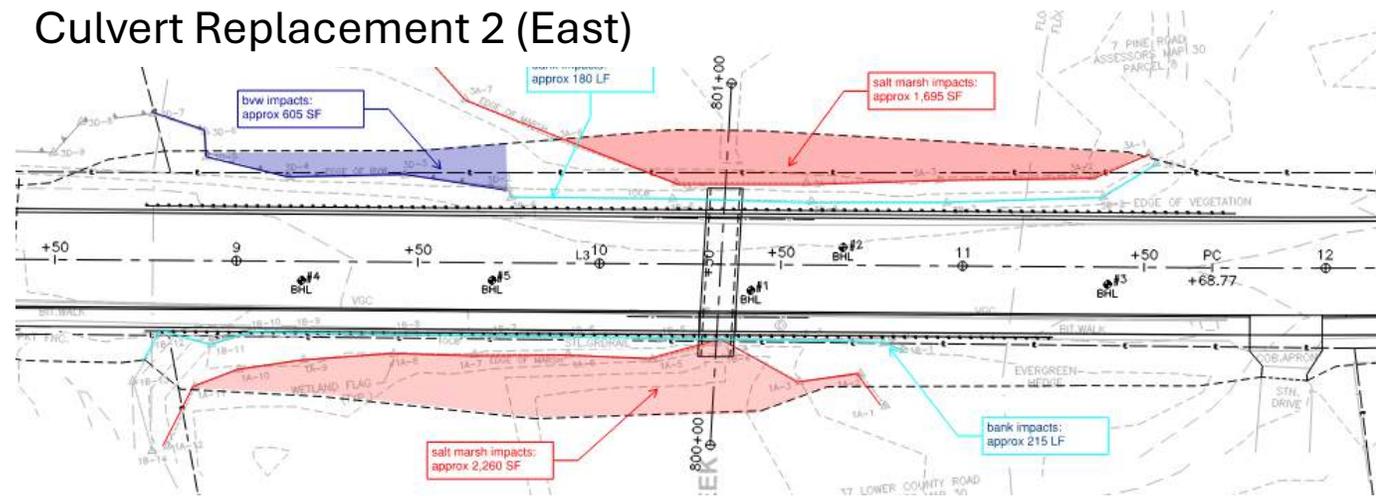


- Replacement of 2 culverts
  - Upsizing to 8-ft box culverts
- Raised roadway elevation
- Improved guardrail protection
- Maintain sidewalks
- Increase roadway shoulder width

## Culvert Replacement 1 (West)



## Culvert Replacement 2 (East)



# Project Status Updates: Flooding Visualization Tool

**APCC**  
Association to Preserve Cape Cod

## Weir Creek Salt Marsh Project: Restoring Habitat and Building Community Resilience

**Project Partners:**

- Tighe & Bond
- Friends of Bass River
- Woods Hole Group
- USDA NRCS
- Other partners: Cape Cod Commission, Division of Ecological Restoration, etc.

Photo Credit: April Weber, APCC (June 2021)  
Photo Credit: Christine Kennedy, Division of Ecological Restoration (August 2024)

This mapping tool is intended to provide users with an understanding of potential inundation areas based on modeling of tidal fluctuations, storm surge, sea level rise, and proposed infrastructure improvements. The information provided is for general informational purposes only. The data used in this tool is subject to limitations and uncertainties, and the results should not be considered as a substitute for professional advice or judgment. The creators of this tool make no representations or warranties of any kind or for any purpose, express or implied, about the completeness, accuracy, reliability, suitability or availability with respect to the tool or the information, products, services, or related graphics contained in the tool. Any reliance the user places on such information is therefore strictly at his/her/their own risk.

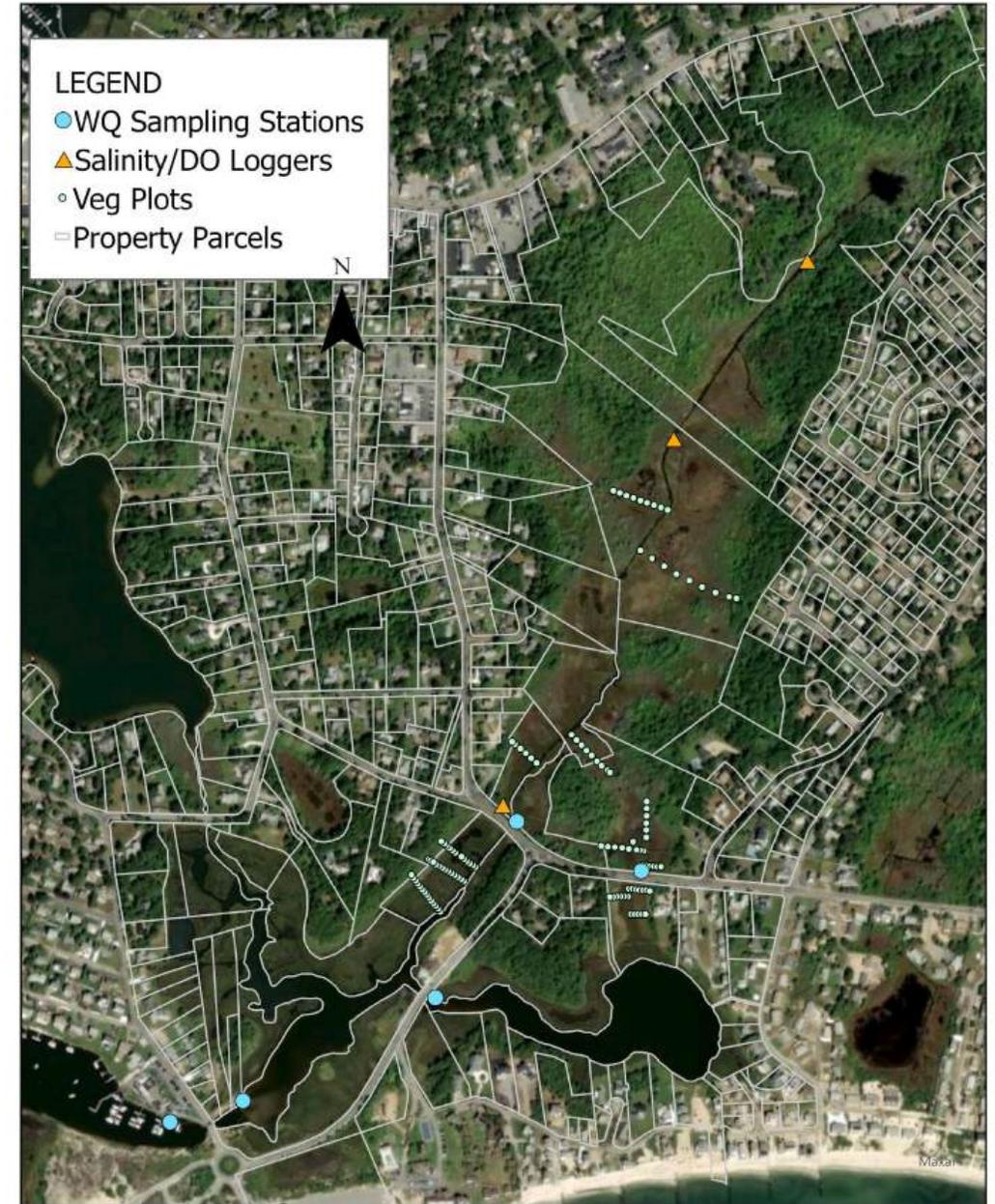
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**Map Layers** Legend Basemaps Print Instruct

Map Layers	Legend	Basemaps	Print	Instruct
<input type="checkbox"/> Contours (1-foot)				
<input type="checkbox"/> MassDEP Wetlands				
<input checked="" type="checkbox"/> MHHW: Existing Conditions				
<input checked="" type="checkbox"/> MHHW: Design Conditions				
<input checked="" type="checkbox"/> 10% AEP Storm: Existing Conditions				
<input checked="" type="checkbox"/> 10% AEP Storm: Design Conditions				
<input type="checkbox"/> NFHLREST FIRMette - Flood Hazard Zones				
<input type="checkbox"/> Weir Creek Leaf On Imagery (Sept 2024)				

# Project Status Update: 2024 Data Collection

- Marsh plant communities
- Water Level
- Salinity
- Water Quality



# Adaptive Management Plan



- **Observed:**

- Berms (manmade earthen restrictions)
- Invasive species, *Phragmites australis*
- Standing water (pools)



- **Proposing additional restoration techniques:**

- Enhance drainage of the marsh platform
- Berm removal
- Active management of Phragmites



## POLL QUESTION #3

*What do you want to hear more about at summer 2025 public meeting? (i.e., What are you most interested in?)*



# POLL QUESTION #4

*How often would you prefer to receive updates about the project?*



# Discussion and Feedback



**Thank you for joining!**

To learn more about Weir Creek and sign-up to receive project updates, please go to our website at:

[apcc.org/weir-creek](https://apcc.org/weir-creek)

Contact information for questions and concerns:

Jordan Mora (APCC Lead Ecologist) – [jmora@apcc.org](mailto:jmora@apcc.org)

