

WEIR CREEK TIDAL RESTORATION MODELING AND DESIGN

Scope of Services

Eric Ohanian, PE, Tighe & Bond
Arden Herrin, Woods Hole Group

PROJECT AREA



PROJECT TEAM

- **Eric Ohanian, PE**
- **Fran Hoey, PE, LEED AP**
- **Sharon Rooney, AICP, RLA**



PROJECT TEAM

- Arden Herrin
- Matt Shultz, PE



Herring River Estuary Restoration
Wellfleet, MA



Eagle Neck Creek Salt Marsh Restoration
Truro, MA

TASK 1: PROJECT KICK OFF (APRIL - JUNE)

- **1.1 Partners Kickoff meeting (April 2023)**

- In-person meeting & site walk with the project partners

- **1.2 Public Meeting and Community Engagement (June 2023)**

- Power Point Presentation at public engagement meeting
- Identify concerns and recommendations from the community

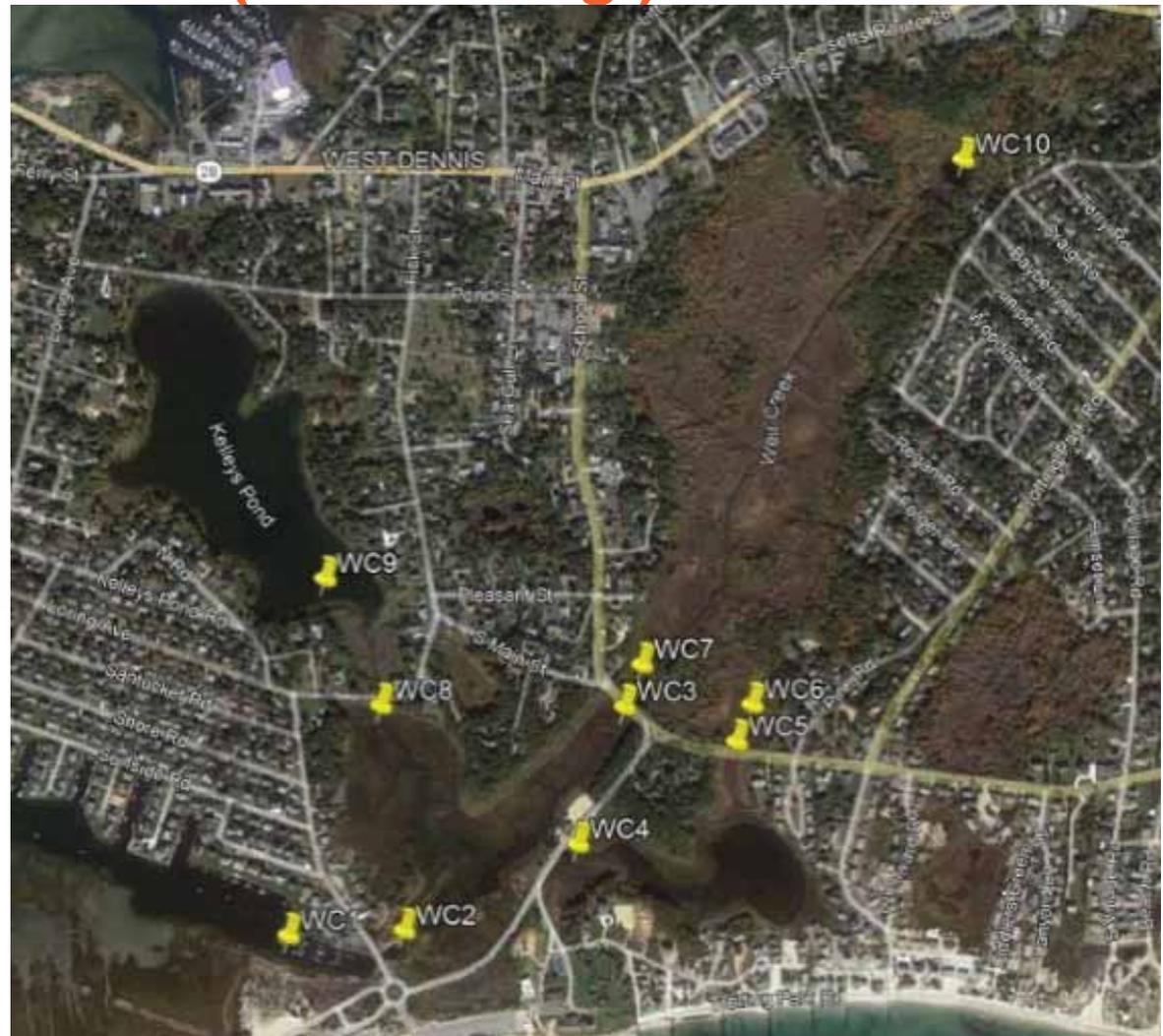
- **1.3 Develop QAPP (June 2023)**

- Quality Assurance Project Plan (QAPP)
 - Hydraulics
 - Geotechnical
 - Survey
 - Field work
 - Design work

TASK 2: TIDAL EVALUATION, H&H AND ALTERNATIVES (JUNE 2023 - JANUARY 2024)

• 2.1 Field Data Collection (June – Aug.)

- Deploy 10 CTDs
- Measuring:
 - Water Levels
 - Salinity
 - Temperature
- Used for:
 - Tidal datums
 - Tidal attenuation
 - Model calibration
 - Boundary conditions



TASK 2: TIDAL EVALUATION, H&H AND ALTERNATIVES (JUNE 2023 - JANUARY 2024)

• 2.1 Field Data Collection (June – Aug.)

- Hydrographic survey:
 - Thalwegs
 - Obstructions
 - Channel banks
 - Pond bathymetry
- Memorandum of findings



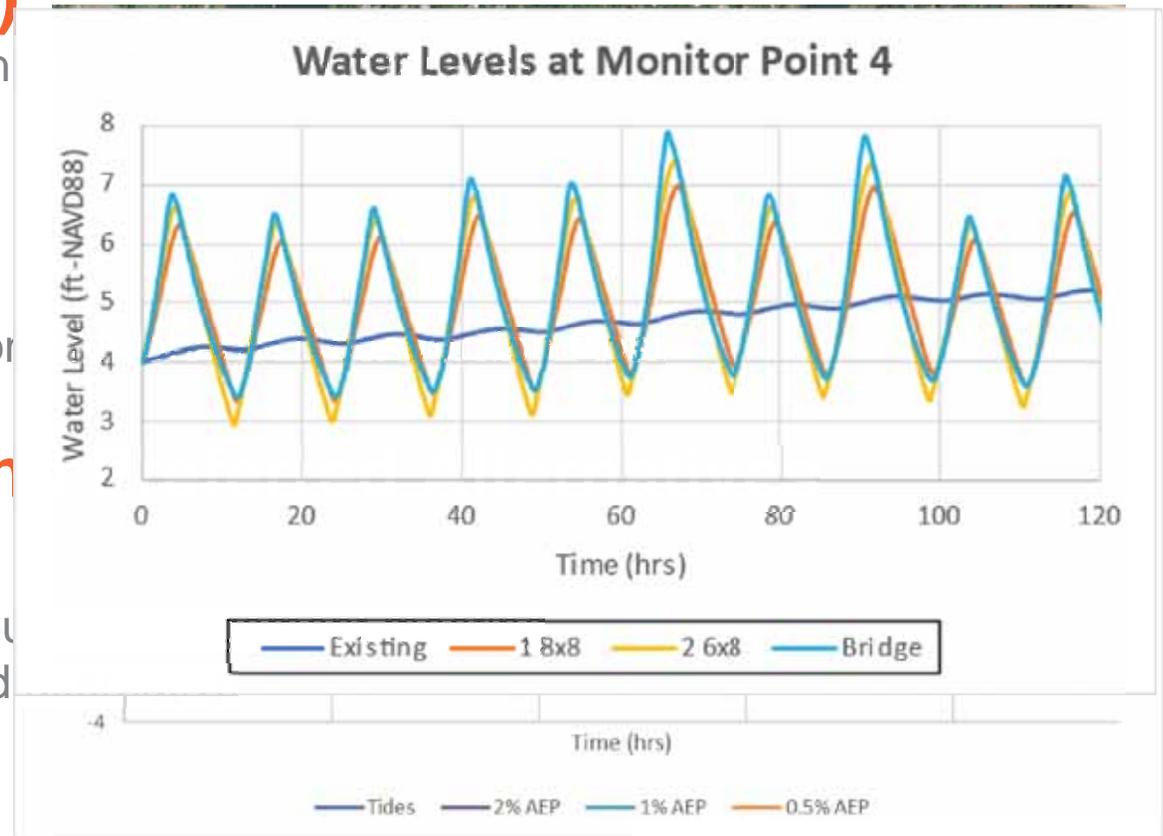
TASK 2: TIDAL EVALUATION, H&H AND ALTERNATIVES (JUNE 2023 - JANUARY 2024)

• 2.2 Hydrodynamic Model and Alternatives Analysis (August – December)

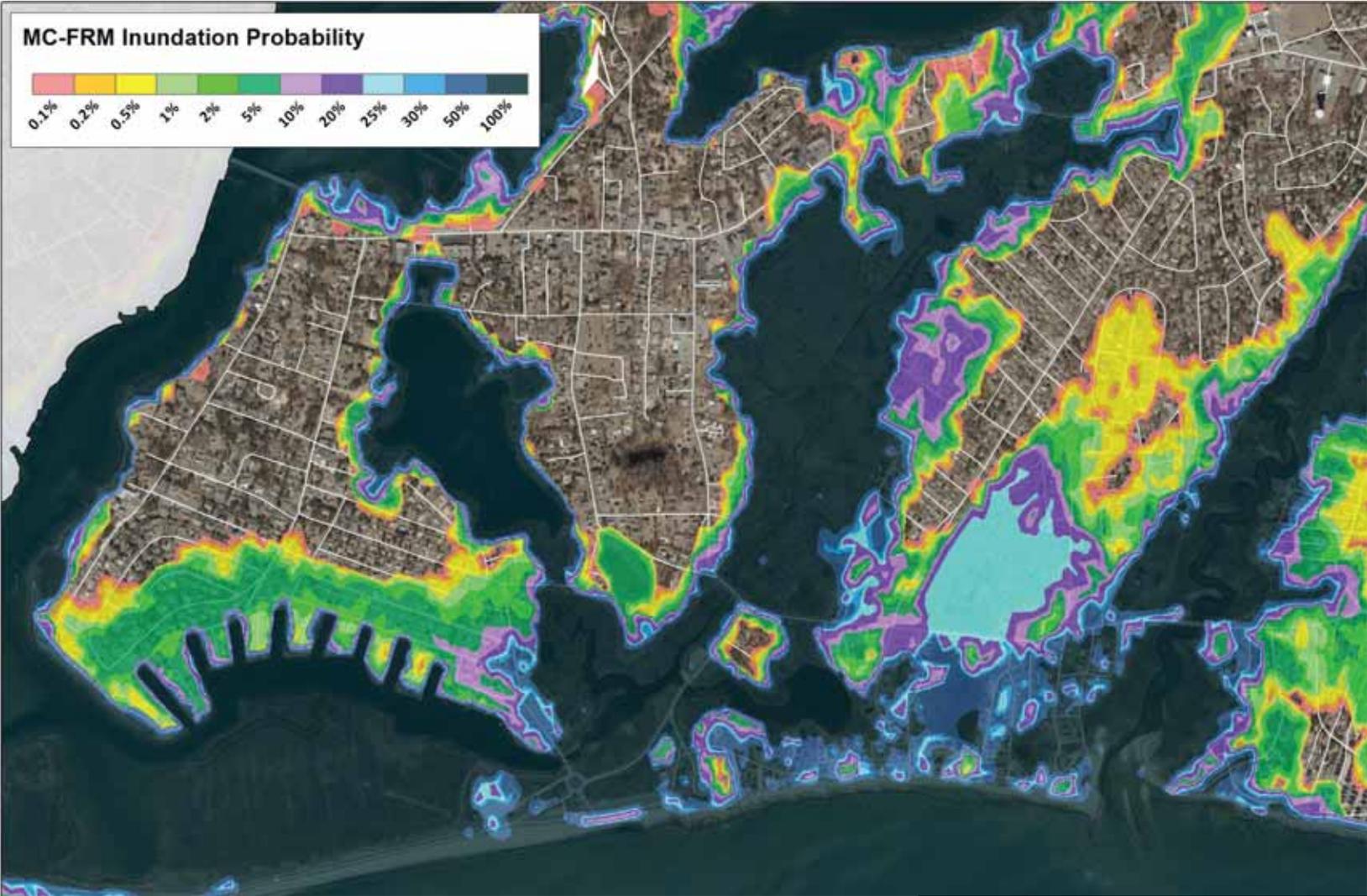
- H&H modeling (Sedimentation)
- Coastal storm surges
- Sea-Level-Rise
- Inundation mapping
- Alternatives analysis
- Preferred Alternative & Opinion

• 2.3 Public Meeting and (January 2024)

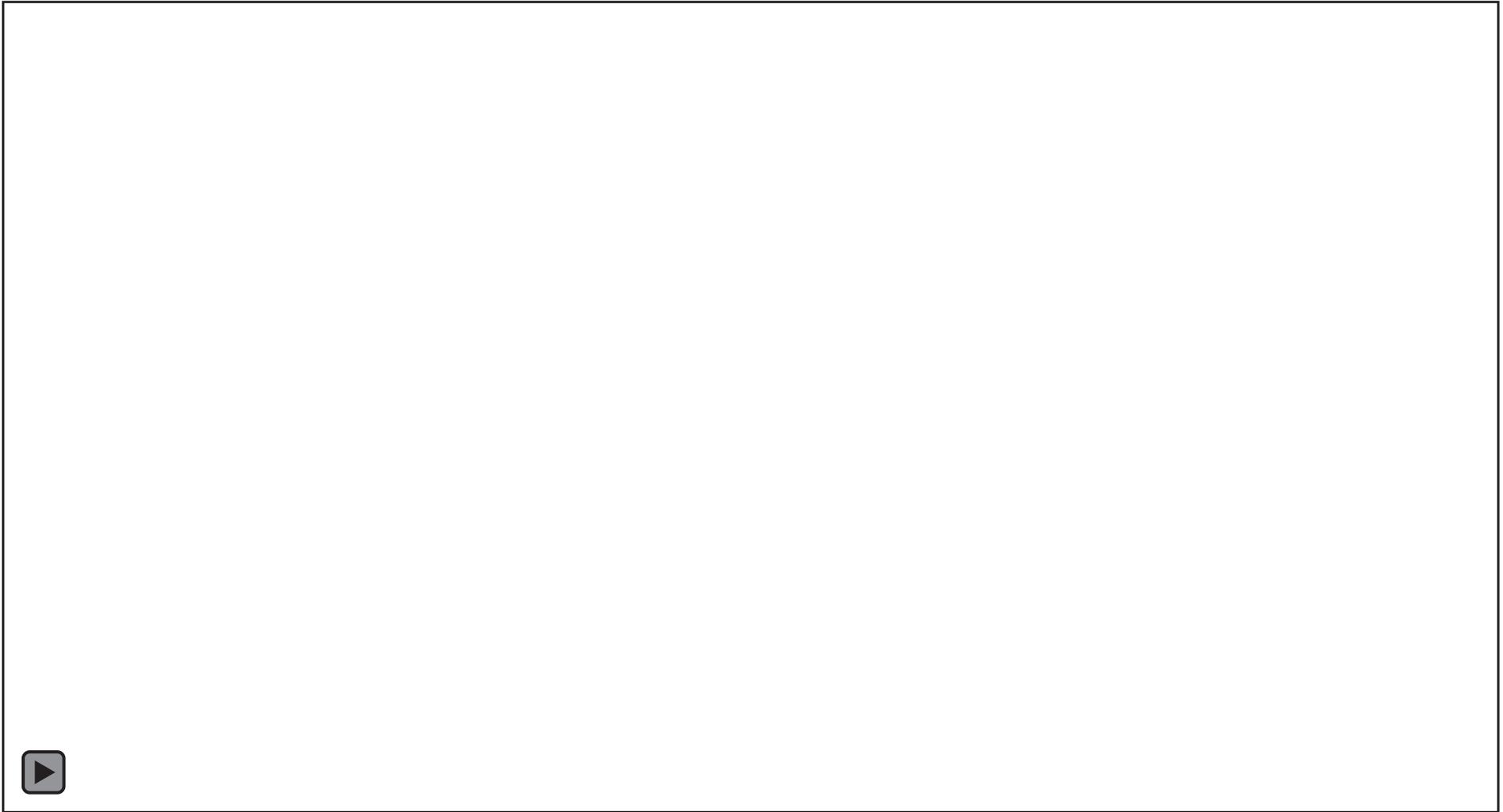
- Power Point Presentation at public meeting
- Present findings and preferred alternative



MCFRM FLOOD RISK MAP: 2030



HERRING RIVER EFDC MODEL- VELOCITY (CM/S)



TASK 3: PRELIMINARY DESIGN DRAWINGS (SEPT 2023 – OCTOBER 2024)

- **3.1 Conceptual 30% Drawings (September-June 2024)**
 - Wetland Resource Delineation (Sept 2023)
 - Topographic survey at each culvert by Coastal Engineering Co. (Sept. 2023)
 - Geotechnical Borings (Sept 2023)
 - Conceptual 30% design plans
 - Lower County Road



GEOTECHNICAL (SEPT-JAN 2023)

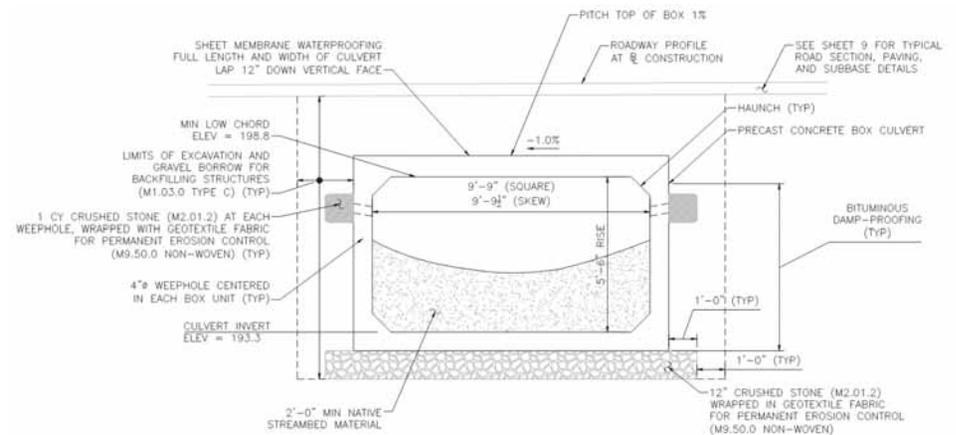
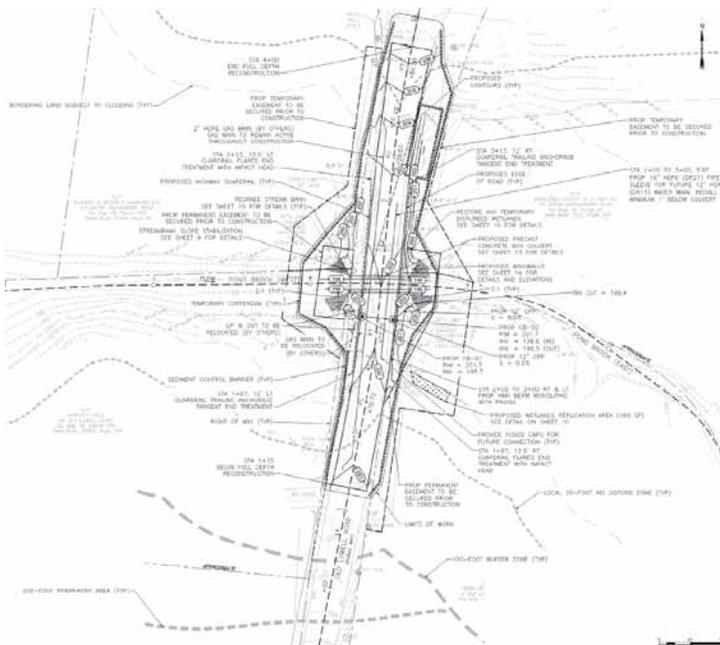
- **Geotechnical Borings and Elevations**

- Test Borings (one day per culvert)
- Material testing
- Calculations
- Bearing resistance
- Geotechnical Memorandum



TASK 3: PRELIMINARY DESIGN DRAWINGS (SEPT 2023 – OCTOBER 2024)

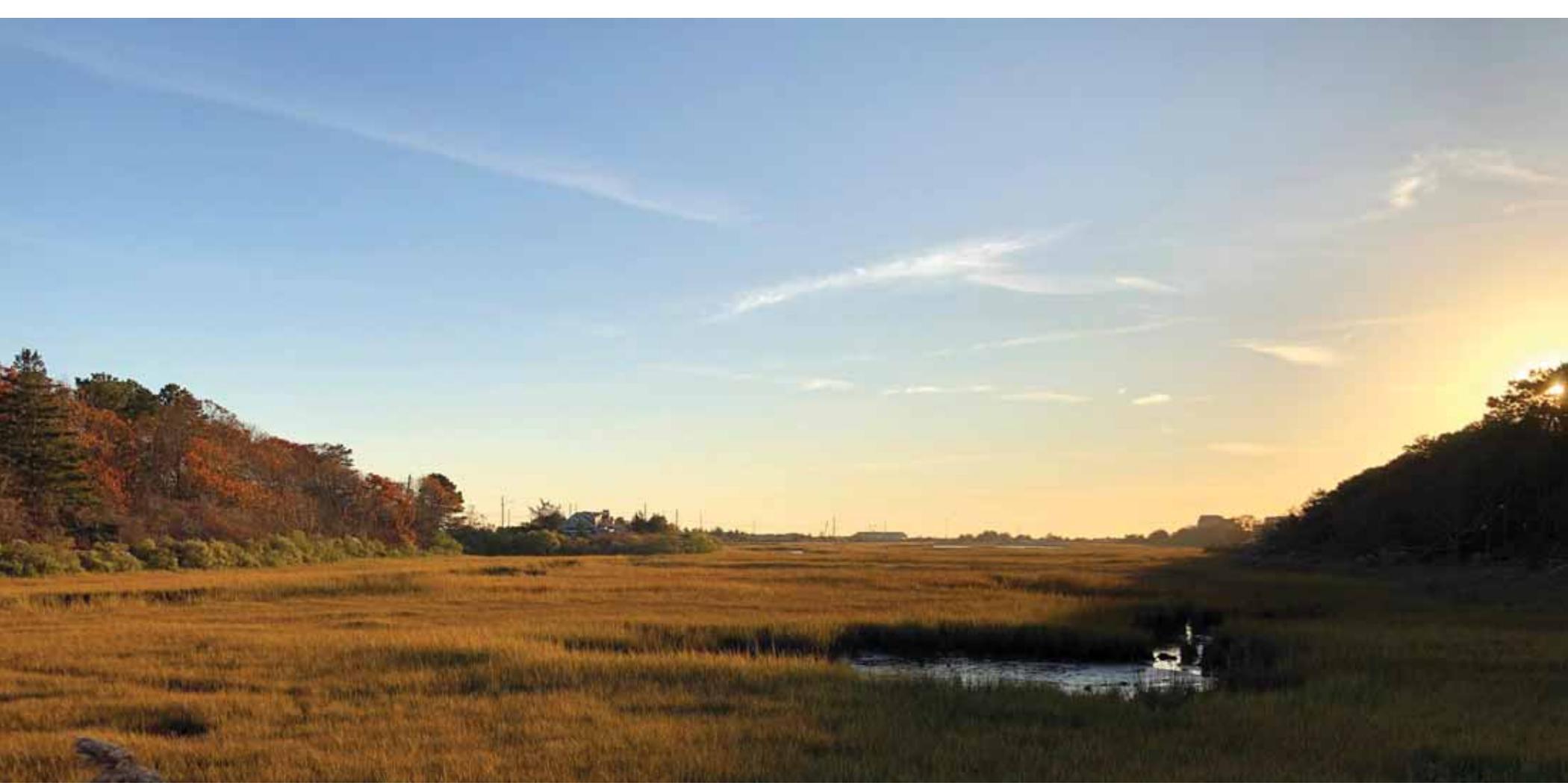
- **3.2 Public Meeting (July 2024)**
 - Present 30% Design
- **3.3 Preliminary 60% Drawings (Aug - Oct 2024)**
 - Participate in Partners Meeting to review potential design revisions
 - Advance 60% permit-ready design
 - Update cost estimation for final design and permitting task
 - Summary of expected permit applications and requirements



PROJECT SCHEDULE

Task	Anticipated Timeline	2023										2024									
		April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	
Notice to Proceed	April 19, 2023	★																			
1 Project Kickoff	April - June 2023																				
1.1 Team Kickoff Meeting	April 2023																				
1.2 Public Meeting and Community Engagement	May - June 2023																				
1.3 Develop QAPP	May - June 2023																				
2 Tidal Evaluation, H&H, and Alternatives	June 2023 - Jan. 2024																				
2.1 Field Data Collection	June - Aug. 2023																				
2.2 Hydrodynamic Model and Alternatives Analysis	Aug. - Dec. 2023																				
2.3 Public input and preferred alternatives	January 2024																				
3 Preliminary Design Drawings	Sept. 2023 - Oct. 2024																				
3.1 Survey & Wetland Delineation	Sept. - Nov. 2023																				
Geotechnical Borings and Evaluation	Sept. 2023 - Jan. 2024																				
Conceptual 30% Drawings	February - June 2024																				
3.2 Public Meeting	July 2024																				
3.3 Preliminary 60% Drawings	Aug. - Oct. 2024																				
Final Completion	October 31, 2024																			★	





QUESTIONS?