



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



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

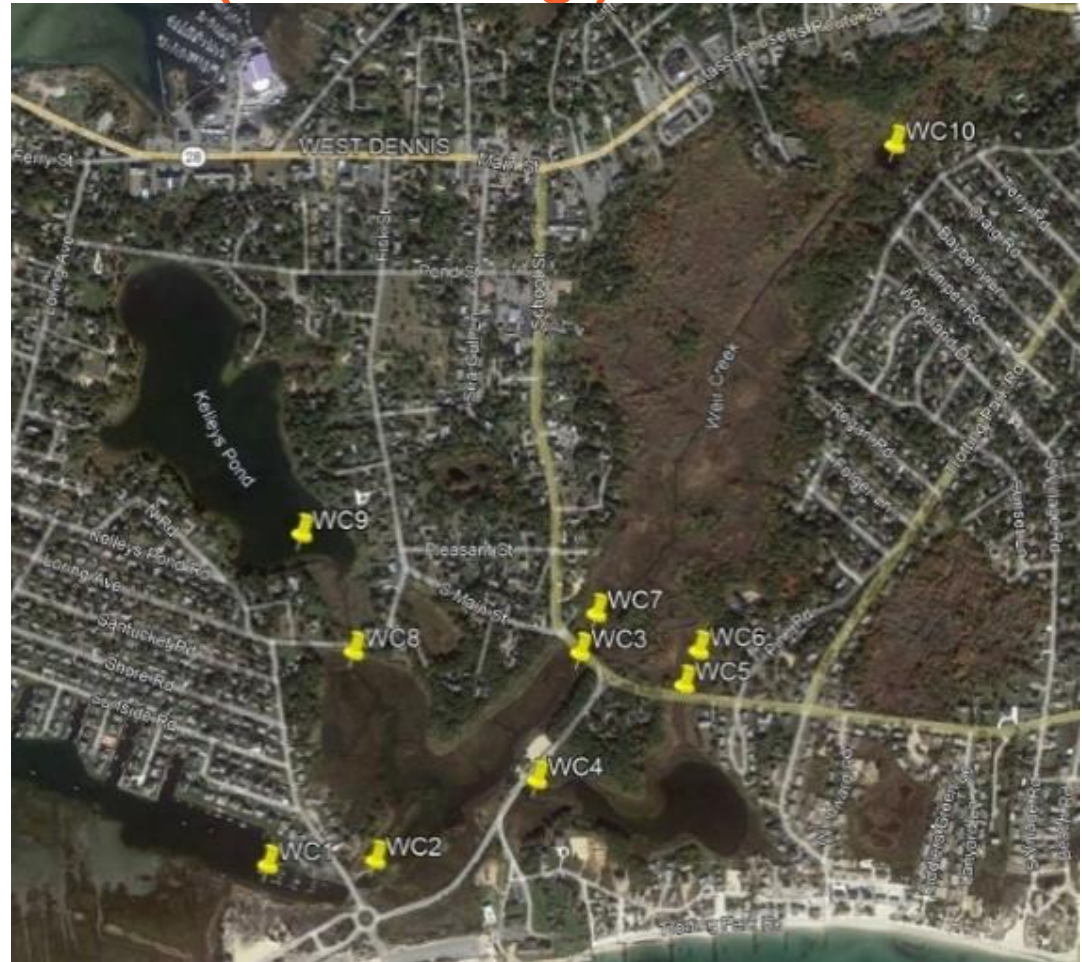
- **1.3 Develop QAPP (June 2023)**

- 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

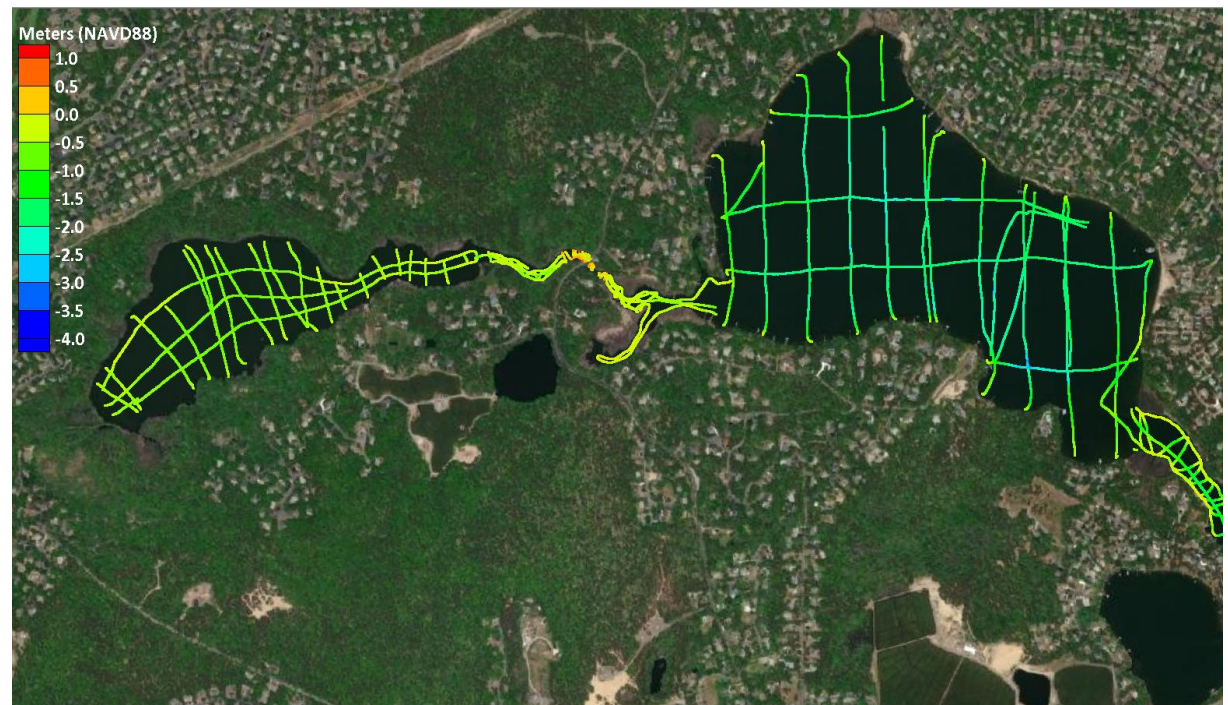


TASK 2: TIDAL EVALUATION, H&H AND ALTERNATIVES (JUNE 2023 - JANUARY 2024)

• 2.1 Field Data Collection (June – Aug.)

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

Example Upper Bass River



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

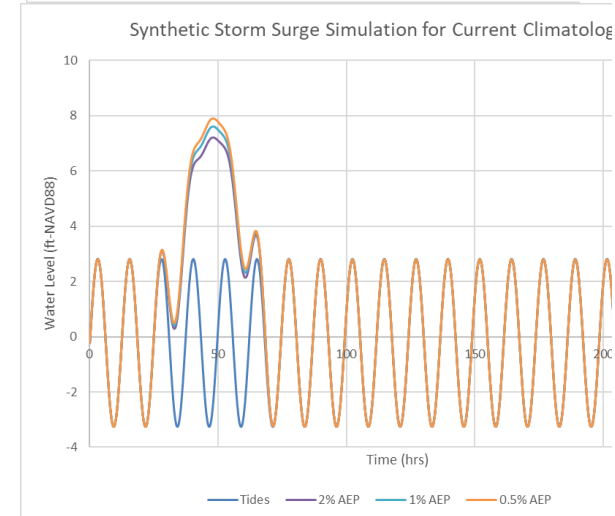
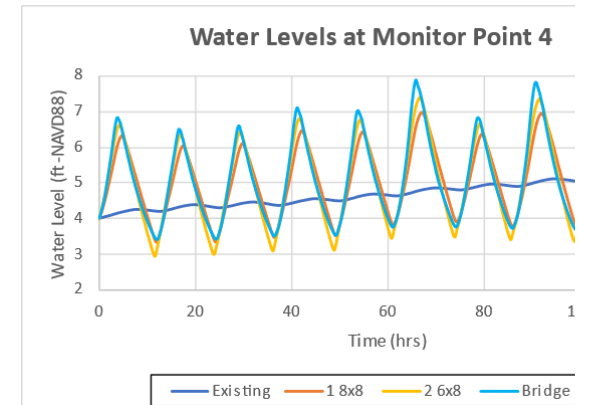
- **2.2 Hydrodynamic Model and Alternatives Analysis (August – December)**

- H&H modeling (Sedimentation and Riverine Hydraulics)
- Coastal storm surges
- Sea-Level-Rise
- Inundation mapping
- Alternatives analysis
- Preferred Alternative & Opinion of Probable Construction Cost

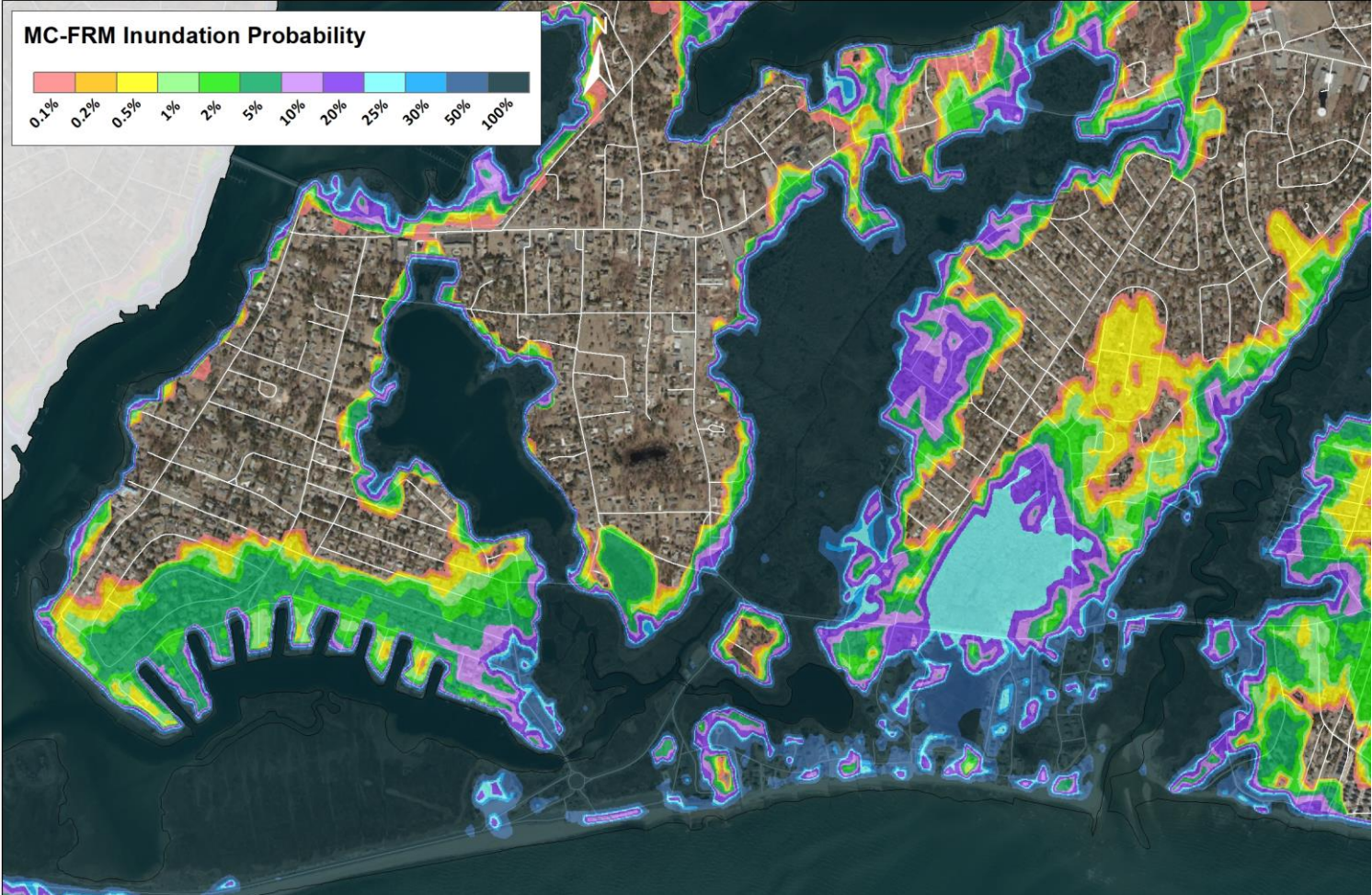
- **2.3 Public Meeting and Preferred Alternatives (January 2024)**

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

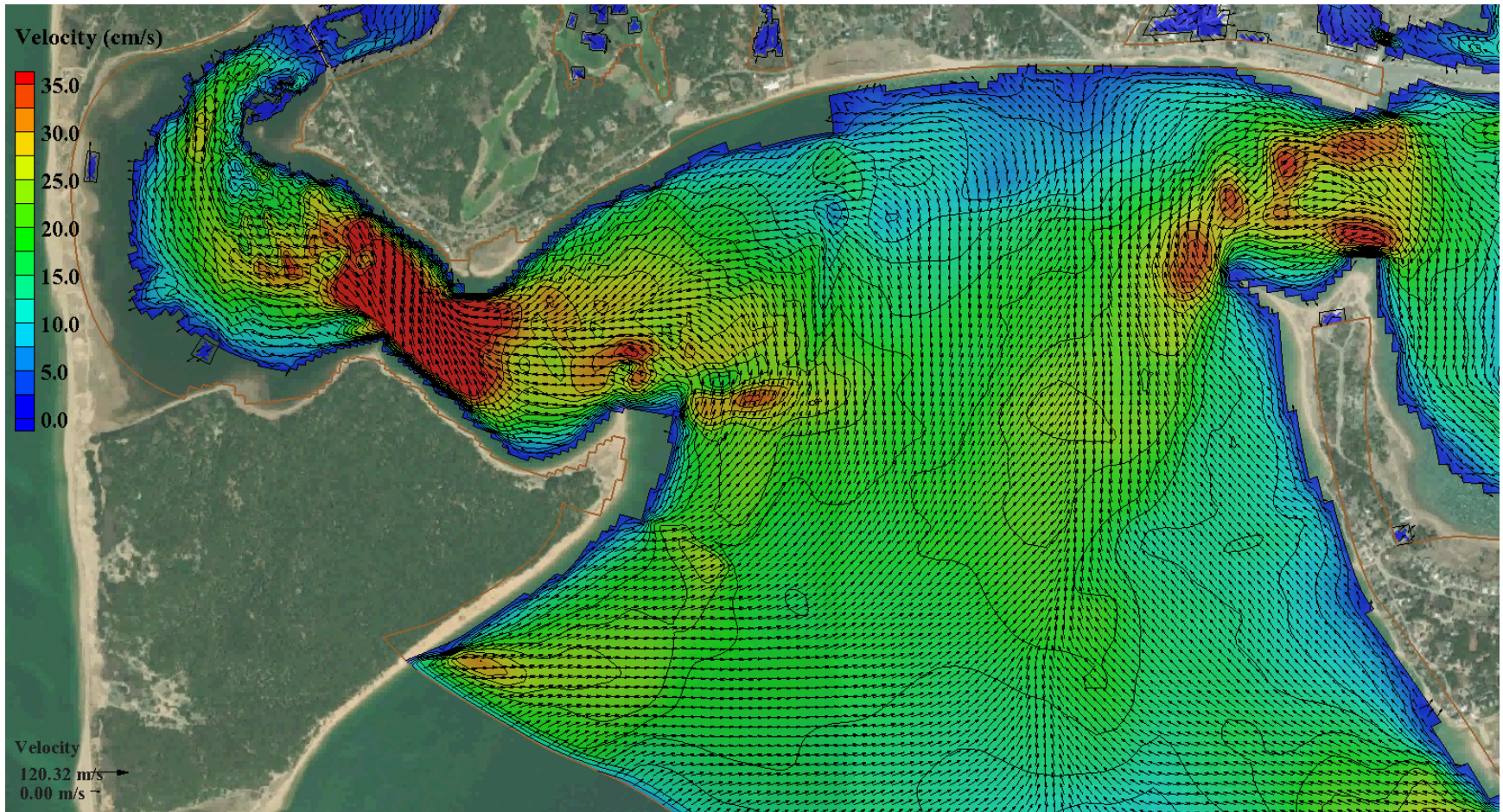
Example Data



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)

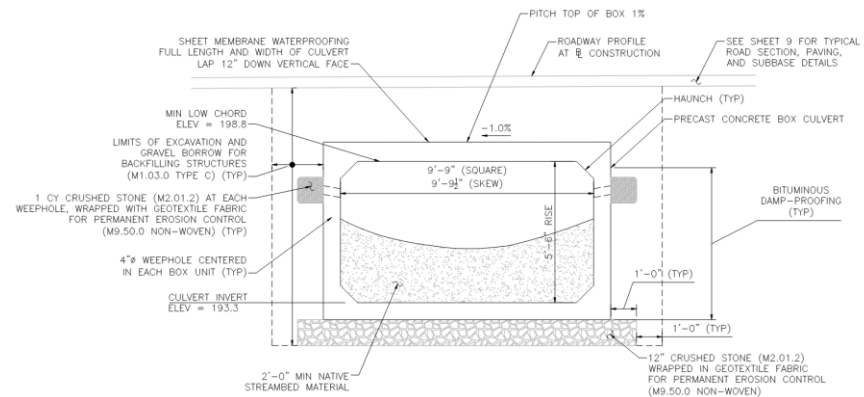
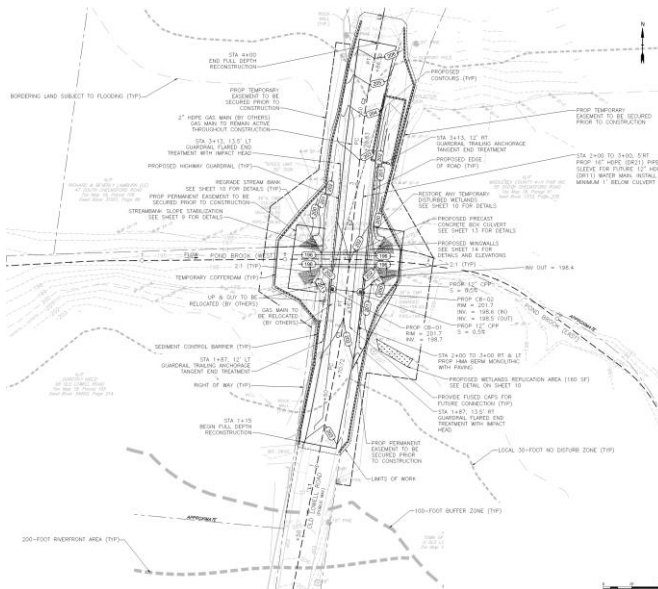
- **Geotechnical Borings and Elevations**

- 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





QUESTIONS?