

TOWN OF FALMOUTH
SELECT BOARD
AGENDA

STRATEGIC PLANNING SESSION
SATURDAY, SEPTEMBER 10, 2022 – 9:00 A.M.

2nd FLOOR TRAINING ROOM
FALMOUTH FIRE & RESCUE DEPARTMENT HEADQUARTERS
399 MAIN STREET, FALMOUTH, MA 02540

THIS IS A WORKSHOP MEETING – THERE WILL BE NO PUBLIC COMMENT.

9:00 a.m. OPEN SESSION

1. Call to Order
2. Waterways Committee – Informational Update on Eel River West Coastal Resiliency Grant Study, and Annual Report (20 minutes)
3. Strategic Planning Discussion
4. Adjourn

Nancy R. Taylor, Chair
Select Board

The Select Board may discuss and vote appropriate action on any item listed on this Agenda unless a different disposition is noted. At the discretion of the Chair, agenda items may be taken out of order.

Falmouth Waterways Committee

2022 Yearly Report to Select Board

Jeff Thomas, Chair

Falmouth Waterways Committee

Sept 8, 2022

Rev 1



2022 Committee Activity Summary Highlights

- General Dredging Activity
- 10 Year Comprehensive Dredging Permit Renewal
- Waquoit Bay Embayment Dredging Project
- Megansett Harbor Dredging Project(s)
- West Falmouth Boat Ramp
- Wild Harbor Bulkhead Floats
- Eel River River West Area Inlet Study

2022 Non Capital Budget requested

- Non Capital Budget requested increase **for FY23** in November Town Mtg.
- Committee asked for the following increases:
 - \$225K for yearly maintenance going forward, up from 150K last year
 - Per Finance direction, future one-off projects will be split with separate Engineering/permitting and dredging budget line items

CY 2022 Spring Inlet maintenance dredging accomplished for:

- Great Pond and Green Pond approaches only
- For 2023, we expect same list plus Eel River Approach

10 Year Comprehensive Dredging Permit

Expired Feb 2022, but Extended due to COVID to Dec 31, 2022

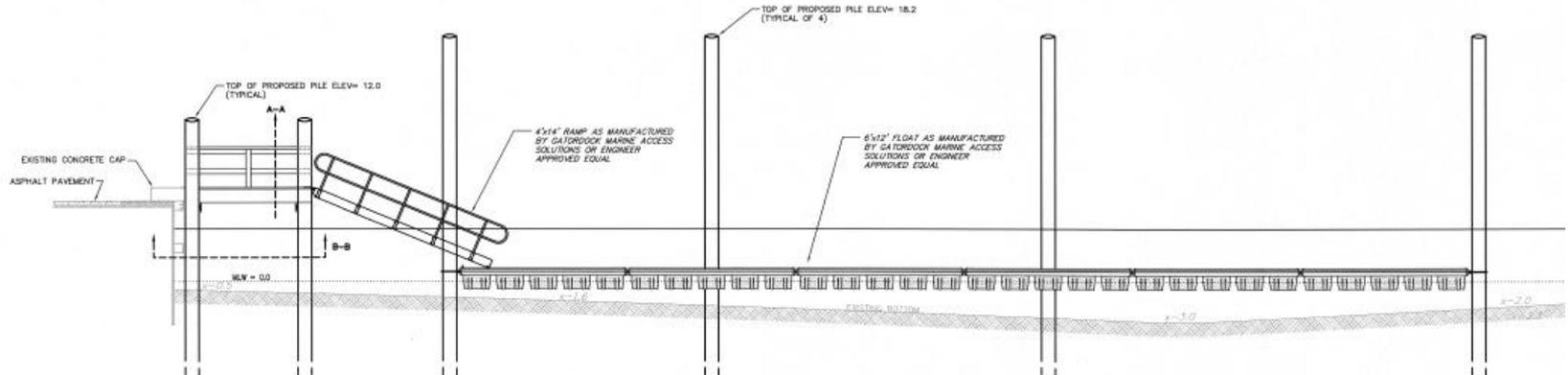
- Covers areas that are dredged on a frequent basis, and due to their relatively simple nature (from a perspective of no conservation or environmental concerns) , plus beaches used for dredge spoils nourishment.
- Covers both Navigational and Water Quality Dredging (Trunk and Salt Rivers)
- Renewal in process but delayed
 - Additional work required this time by MEPA that has delayed permitting
 - Added Great Pond Interior Channel, Megansett Approach, Trunk River Interior
- Regarding Great Pond Interior Channel
 - Needs dredging since 2021, targeted for fall of 2022 ,now retargeted for fall of CY2023.
 - Funds included in recent Non-capital Budget approved in Town Mtg Nov 2021.

West Falmouth Harbor Town Boat Ramp Redesign – Delayed in 2022 due to Permitting

- Long needed boat ramp redesign
- Project scope is redesigned ramp, plus added floats
- Delays in Army Corp responding, and additional discussions/mitigation anticipated due to the nature this ramp location and water depths under floats
- Additional cost increases requested in FY23 Non-Capital Budget of \$208,300

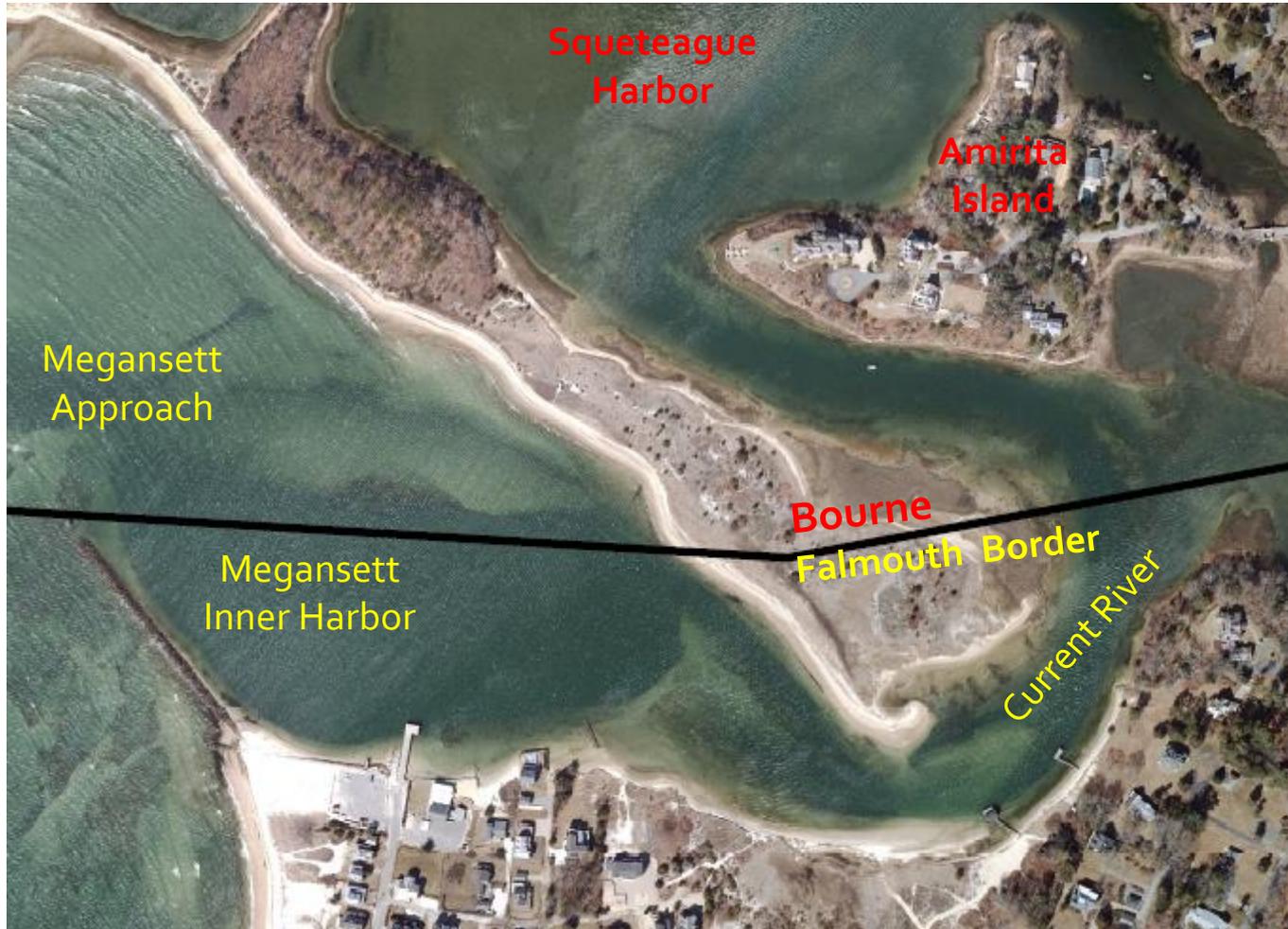
Wild Harbor Bulkhead/Floating Docks – Timeframe 2024

- Wild Harbor Bulkhead rebuilt 6 years ago.
- Design of hard concrete has multiple issues with the boats accessing the Bulkhead
- Committee agreed with residents to pursue adding floats and pilings to make this better accessible
- Non-Capital Budget Line Item of \$50K for 2024



Megansett Harbor

- Megansett Harbor is the only access to Buzzards Bay from Squeteague.
- The last time inner harbor and Current River was dredged was 1938.
- Falmouth dredges Megansett Approach on a semi regular basis.
- Planning and permitting must be a joint effort with Bourne.



Megansett Harbor

Megansett Harbor has 3 different areas subject to potential dredging

- Approach into the harbor, the inner harbor area, and Current River area that runs from the inner harbor basin to Squeteague Harbor in Bourne.
- The approach dredging has been prioritized, budgeted, and in the planning in the WWC with a dredging implementation for a fall 2022.
- The WWC has acknowledged the need for dredging in some of the inner harbor area, plus the Current River area, but has not placed a priority on these areas primarily due to the volume of marine traffic impacted and large scope and potential costs of these 2 areas.

A collaborative effort with WWC was put in place last year between the homeowners and boaters in the Megansett Harbor area to attempt to expedite a dredging solution for the 2 areas not in the WWC priority.

- The Megansett and Squeteague Association has been established, operating under the auspices of the Buzzard's Bay Coalition.
- The Megansett and Squeteague Dredging Fund is raising enough private funding to cover all costs for the engineering and permitting of the 2 inner areas.
- Their goal is turnover to the Town of Falmouth a permitted and shovel ready project, that the town could fund and execute.
- Volumes, timeframes, and costs still TBD.

Megansett Harbor

The status of both the Town led approach dredging, plus the Megansett and Squeteague Association led projects have been delayed by many months due to Engineering resource availability.

- Approach dredging schedule now looks like 2025 execution.

Waquoit Bay Embayment Channel

Waquoit Bay Embayment navigational channel maintenance dredging

- Project to address channel depths
 - Last time embayment was dredged was post WWII

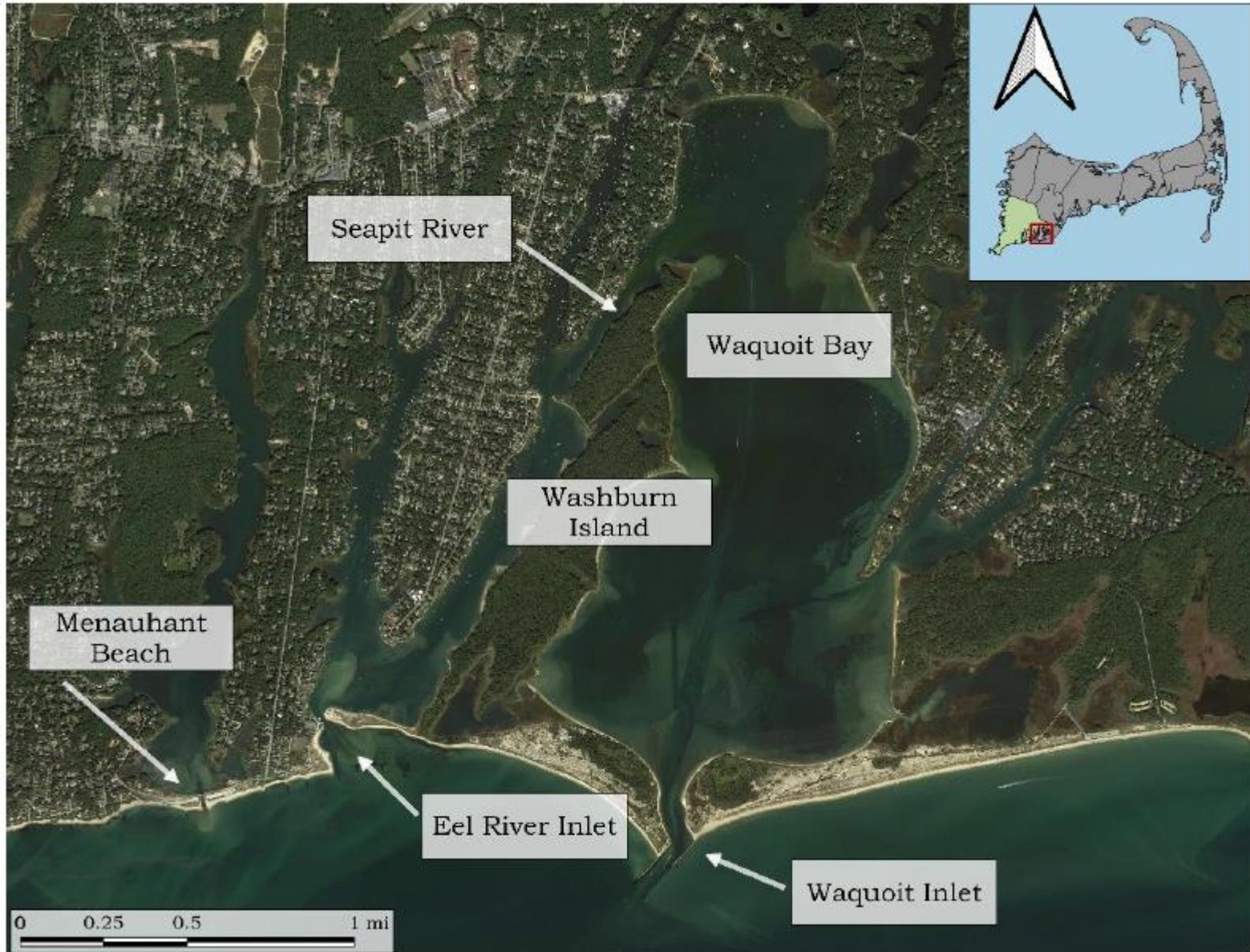


Waquoit Bay Embayment Channel

Waquoit Bay Embayment navigational channel maintenance dredging

- Total scope is approximately 11-13K yards of materials
- Impact is deep draft boats may have a tidal dependency in this area
- Original best-case plan was for dredging in January 2024
 - Latest plan (high risk) would be at best Dec 2025
- Woods Hole Group contracted for Engineering and Permitting
 - Delays in their attention (Falmouth's priority other projects)
 - Spoils composition shows it NOT beach compatible
 - Research and planning for how and where the spoils will go is a big task

Eel River West



Eel River West

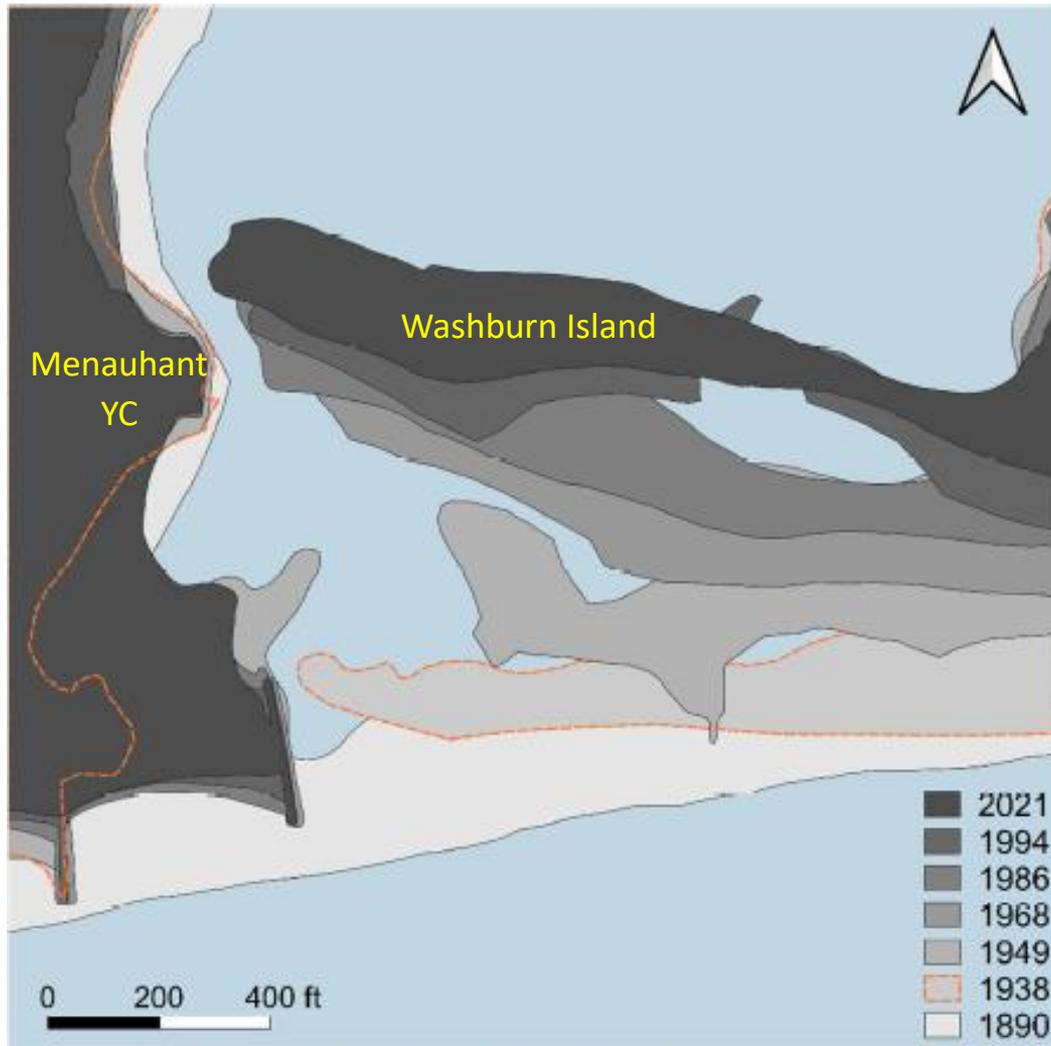


Figure 6.2 Eel River channel location and channel sections as delineated in the 10-Year Comprehensive Permit.

Eel River West



Eel River West – Historical Change



Historical shoreline change in the vicinity of the Eel River inlet channel between 1890 and 2021. During this time period, the barrier beach has receded more than 1000 feet northward into the bay with an average rate of migration of approximately 7.8 feet per year.

Eel River West – Historical Change

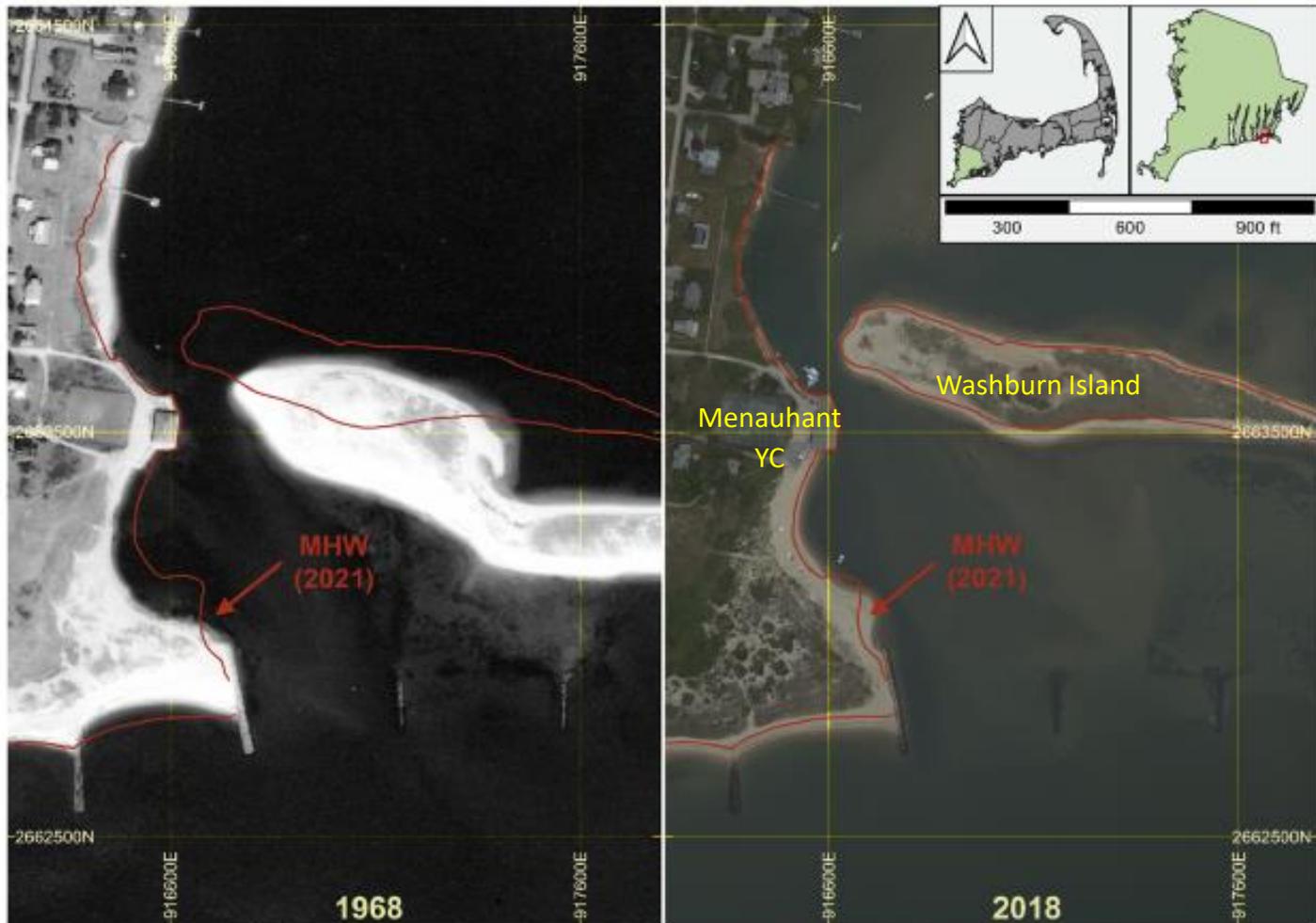


Figure 2. Aerial photographic comparison of the Washburn Island spit in 1968 and 2018. The erosion of the shoreline north of Menauhant Yacht Club and accretion to the south is evident by the Mean High Water (MHW) line surveyed in September 2021 (denoted by the red line).

Problem Statement – what are we trying to solve

- **Navigational Issues**
 - Maintenance dredging is unable to keep the current navigational channel to a state of usability.
 - Eel River West Channel fills in a few months after it is dredged.
- **Public Safety**
 - The physical conditions in the channels around the end of the Washburn Island barrier spit result in a danger to boaters, swimmers, and recreational users of the spit.
 - Fast currents, chaotic vessel traffic due to channel conditions, large volume of recreational use in this area
- **Property Erosion**
 - Homes along the shoreline along the western side of the Eel River entrance channel .

Eel River West

- Falmouth Received a grant from the state for a coastal resiliency project in Aug 2021
 - *Feasibility Assessment for Addressing Increased Erosion along the Eel River Inlet Shoreline Due to Barrier Beach Migration*
 - \$64,170 paid from the state for 75% of the total feasibility Study, the remaining 25% from the MES dredging budget
 - This study was completed in June 2022.
- Sustainable Coastal Solutions (principals from Applied Coastal Research and Eng) is the company contracted for this.
 - They did a similar study for Barnstable.
 - Cotuit 3 Bays Sampson's Island/Deadneck

Washburn Island



Samson's Island



Eel River West Study

**CZM COASTAL RESILIENCE GRANT PROGRAM
FEASIBILITY ASSESSMENT FOR
ADDRESSING INCREASED EROSION ALONG THE
EEL RIVER INLET SHORELINE DUE TO BARRIER BEACH MIGRATION**



Prepared for:

Town of Falmouth, MA

Land Lost since 2009

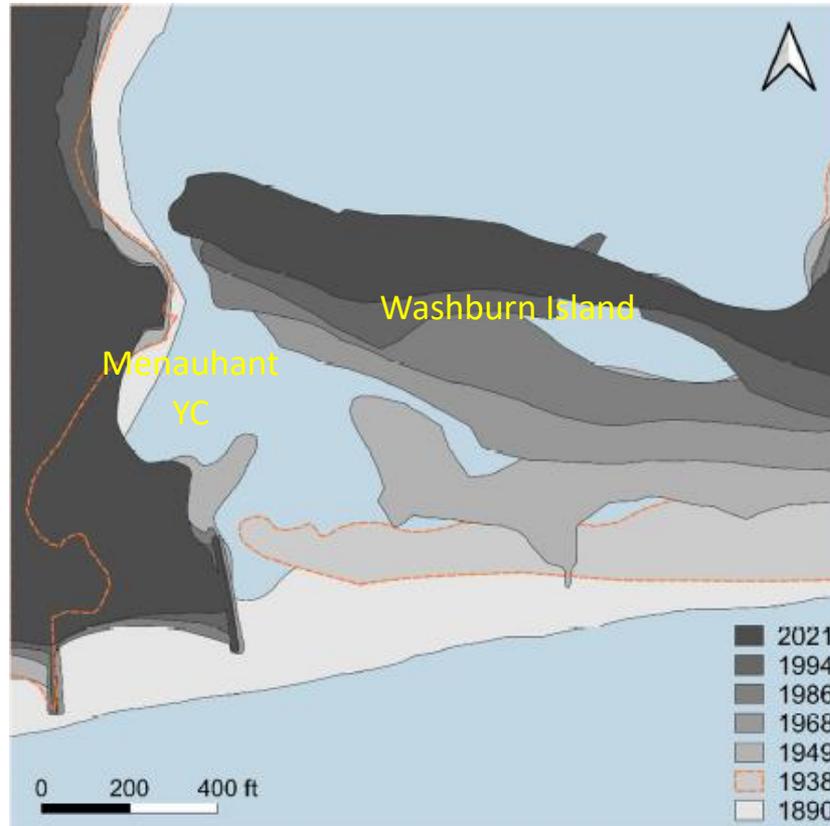


Prepared by:

Sustainable Coastal Solutions
107A County Road
North Falmouth, Massachusetts 02556

June 2022

Eel River West – Ever Changing



Historical shoreline change in the vicinity of the Eel River inlet channel between 1890 and 2021. During this time period, the barrier beach has receded more than 1000 feet northward into the bay with an average rate of migration of approximately 7.8 feet per year.

Video of Changing Washburn Island Spit in Eel River West Area
[Eel River Inlet - Time Sequence - YouTube](#)

Eel River West

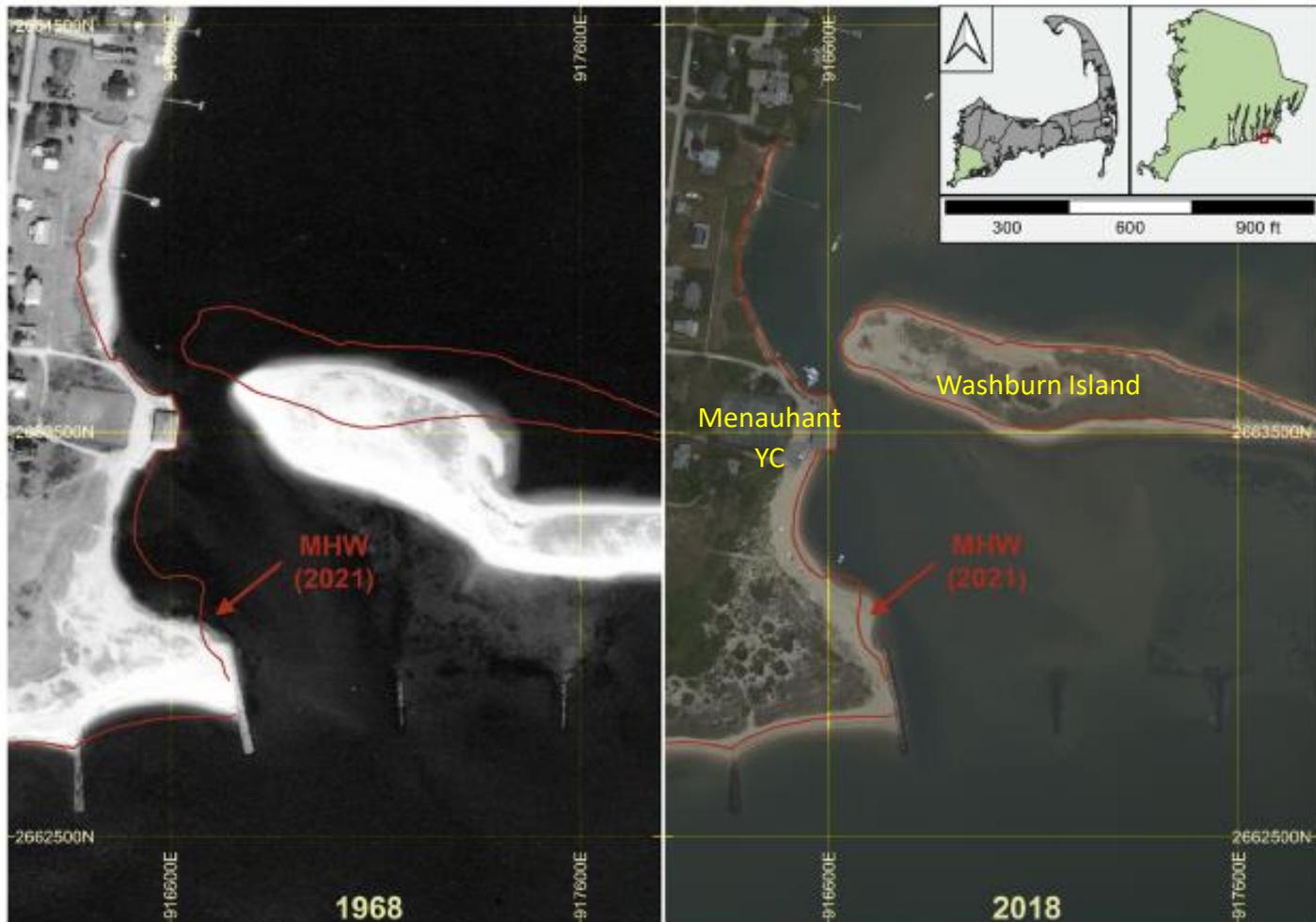


Figure 2. Aerial photographic comparison of the Washburn Island spit in 1968 and 2018. The erosion of the shoreline north of Menauhant Yacht Club and accretion to the south is evident by the Mean High Water (MHW) line surveyed in September 2021 (denoted by the red line).

Eel River West – Hydrodynamic Model Used



Quick Focus on the “Sampson Island” Type Solution

Shortening of the Washburn Island Spit

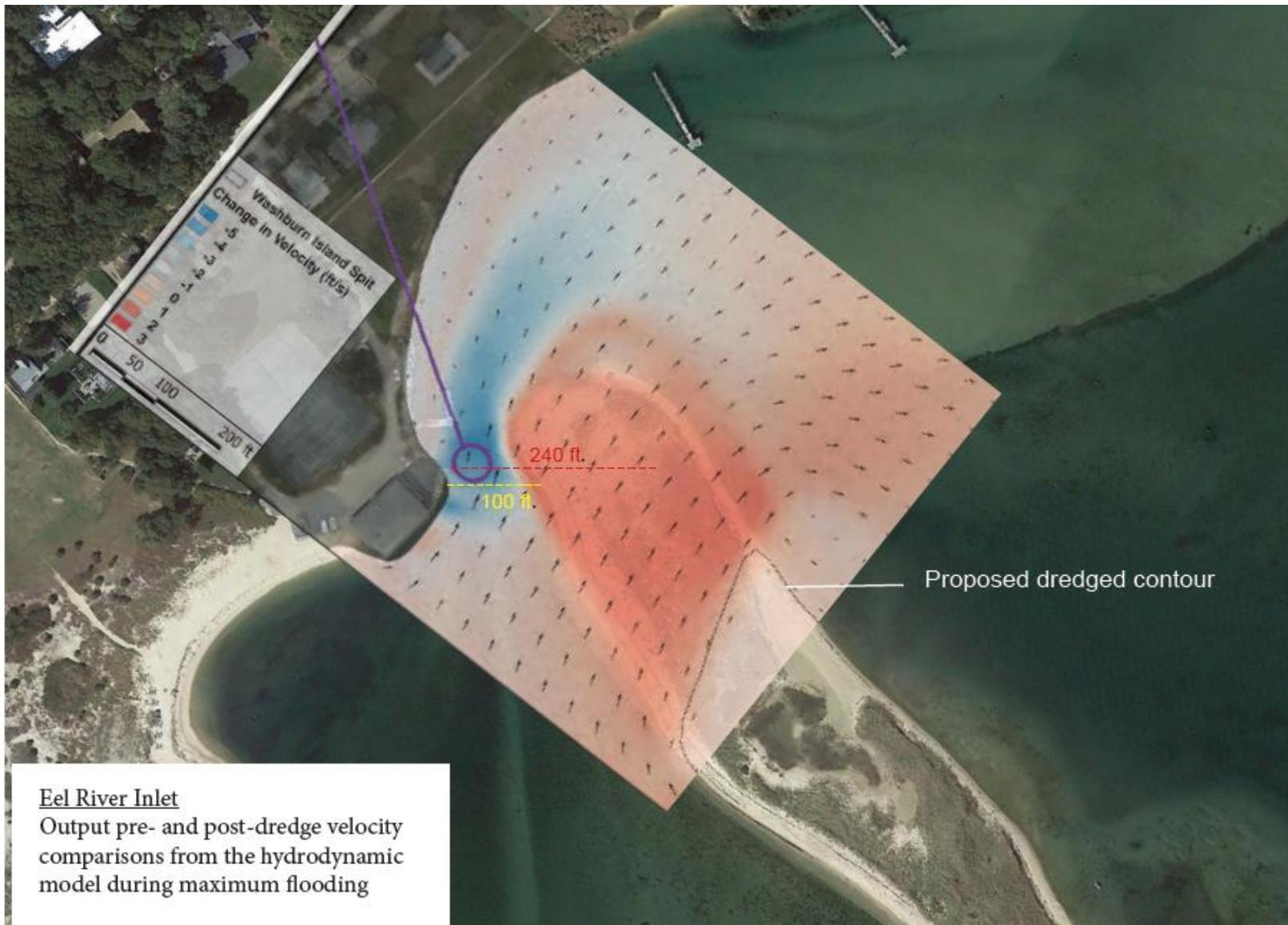
- Dredging the western tip of the spit will create a wider tidal inlet to increase hydraulic efficiency and redirect tidal currents away from the western shoreline of the inlet.
- The proposed widening of Eel River Inlet extends approximately 350 feet.
- Dredging of approximately 31,000 cubic yards of material.
- Could be considered a 20-30 year solution, but still impacted by global sea level rise and potential storm conditions.
- Would take several years for design, permitting and execution.
- Costs would be in the \$ Millions.

Eel River West – Sampson's Island Comparison



Note: 240 ft was the narrowest of the Sampson inlet in 2014
100 ft is about the narrowest of the Eel River inlet as of 2021

Eel River West – Sampson’s Island Comparison



Eel River Inlet

Output pre- and post-dredge velocity comparisons from the hydrodynamic model during maximum flooding

From FEASIBILITY ASSESSMENT Report

Note: 240 ft was the narrowest of the Sampson inlet in 2014
100 ft is about the narrowest of the Eel River inlet as of 2021

Eel River West – Sampson’s Island Comparison



Sampson Island Inlet
Narrowest passage width 240 ft., 2014



Note: 240 ft was the narrowest of the Sampson inlet in 2014
100 ft is about the narrowest of the Eel River inlet as of 2021

Eel River West – Sampson’s Island Comparison



Sampson Island Inlet
Passage width 670 ft., 2021

Note: 240 ft was the narrowest of the Sampson inlet in 2014
100 ft is about the narrowest of the Eel River inlet as of 2021

Consultant Study Potential Solutions/Recommendations

- No action
- Dredge the existing channel (the “status quo”)
- Shortening of the Washburn Island spit
- “Hard” structures
 - Sand trapping structures on the beach (e.g. groins)
 - Shore stabilization structures (e.g. revetments or seawalls)
- “Soft” shore protection measures (e.g. coir logs)
- Combinations of the above

Additional Thoughts on Solutions (WWC and Public feedback)

- Create a more natural sustainable channel to the east of current one
- Look at reconfiguring failed/abandoned groins into a combined one/jetty
- Dredge to the 10 year Comprehensive permit boundaries rather than current operative channel ones
- Combinations of the above ideas with the consultant solution list

Eel River West - Impact Matrix

No improvement
Limited Improvement
Positive Improvement
Solved

Action	Problem Solution Impact		
	Navigation	Safety	Erosion
No action	No improvement	No improvement	No improvement
Dredge Existing Channel	Limited Improvement	No improvement	No improvement
Shorten Spit	Solved	Solved	Positive Improvement
Soft Protection	No improvement	No improvement	Limited Improvement
Hard Protection	Positive Improvement	Positive Improvement	Solved
Create different sustainable NAV Channel	Positive Improvement	No improvement	No improvement

After 3 months of public and Committee Discussions

- We have been unable to reach an agreement or even a consensus on an approach
- Many variables and factors to a solution, no one clear path
- Waterways Committee is now looking for Select Board Input and Guidance on a direction to proceed

Reference Slides Only

Reference: Falmouth Dredging List Areas

Area #	Location	Ranking	Permit
1	Waquoit Bay Inlet	1	No
2	Waquoit Bay Embayment	2	No
3	West Falmouth Inlet	3	No
4	Great Pond Embayment	4	No
5	Child's River Embayment	5	No
6	Seapit River Embayment	6	No
7	Eel River East Embayment	7	No
8	Megansett Approach	8	No
9	West Falmouth Embayment	9	No
10	Megansett Embayment	10	No
11	West Falmouth Approach	11	No
12	Fiddlers Approach	12	Yes Private
13	Megansett/Bourne Channel	13	No
14	Rands Canal	14	No
15	Quissett Embayment	15	No
16	Fiddlers Embayment	16	Yes Private
17	Great Harbor Embayment	17	No
18	Eel Pond Woods Hole	18	No
19	Little Harbor Embayment	19	No
20	Perch Pond Embayment	20	No

The following 12 areas are already covered with permitting and budgets as required, and do not belong in the strategic priority list:

Eng & Permitting in 10 Y Comprehensive permit			
21	Green Pond Embayment		10 Y Com
22	Falmouth Harbor Embayment		10 Y Com
23	Eel River West Embayment		10 Y Com
24	Wild Harbor Inlet		10 Y Com
25	Bourne's Pond Embayment		Yes DPW
26	Wild Harbor Embayment		10 Y Com
27	Wild Harbor Approach		10 Y Com
Annual or Every Other Year			
28	Falmouth Harbor Inlet		10 Y Com
29	Great Pond Inlet		10 Y Com
30	Green Pond Inlet		10 Y Com
31	Bourne's Pond Approach		10 Y Com
32	Eel River Approach		10 Y Com

Documents Referenced

Web Links to referenced and related documents.

Title: **Primer of Dredging Activity in Falmouth Ma- Dec 2, 2020**

<https://www.falmouthma.gov/DocumentCenter/View/8932/Primer-of-Dredging-Activity-in-Falmouth-MA>

Eel River Consultant Report, June 2022

FEASIBILITY ASSESSMENT FOR ADDRESSING INCREASED EROSION ALONG THE EEL RIVER INLET SHORELINE DUE TO BARRIER BEACH MIGRATION

[EelRiver_report_06-17-2022 \(falmouthma.gov\)](#)

Video of Changing Washburn Island Spit in Eel River West Area

[Eel River Inlet - Time Sequence - YouTube](#)

2022 Waterways Committee

	Title	Term
Jeffrey Thomas	Chair	June 30, 2023
Michael Kinney	Vice Chair	June 30, 2024
Charles Eastman		June 30, 2025
Kevin King		June 30, 2023
Daniel Shearer		June 30, 2025
Joseph Vocci		June 30, 2025
R. Charles Martinsen	Board of Health Rep	Permanent
*Gregg Fraser	Director Marine & Environmental Services	Permanent
* <i>Paula Cushman</i>	<i>Recording Secretary</i>	
	*Non Voting Member	