

Meeting Minutes
Herring River Executive Council (HREC)
Thursday, July 15, 2021, 3:00 pm

Virtual meeting via Zoom

HREC members present: Janet Reinhart, Deborah Freeman, Brian Carlstrom, Geoff Sanders, Helen Miranda Wilson; Coordinator: Carole Ridley; Others present: Tim Smith, Christine Odiaga, Martha Craig, Gail Ferguson, Laura Runkel, Moe Borocas, Bill Biewenga, Barton Morris, Gabrielle Sakolsky, Dave Koonce, Elise Leduc, Kirk Bosma

Welcome and introductions

As part of the meeting introductions, Deborah Freeman was welcomed as a member of the Herring River Executive Council. She is an attorney and a Wellfleet resident and has served as a member of the Wellfleet Conservation Commission and Friends of Herring River Board.

Minutes

Helen Miranda Wilson made a motion to vote on the approval of the minutes of April 15, 2021, and Janet Reinhart seconded the motion. The roll call vote was 4-0-1 in favor of voting, with Deborah Freeman abstaining. Ms. Wilson then moved to approve the minutes of April 15, 2021. Janet Reinhart seconded the motion. The roll call vote was 4-0-1 in favor, with Deborah Freeman abstaining.

Herring River Restoration Project Update

Carole Ridley provided the following project updates.

Permitting Update:

Agency review of permit applications is underway.

Massachusetts Department of Environmental Protection (MassDEP) conducted a site visit for the §401 Water Quality Certification application for dredge and fill activities in waters of the U.S. in the Commonwealth. Town of Wellfleet and Cape Cod National Seashore are joint applicants. The dredge and fill components of the application are reviewed separately, and a single Water Quality Certificate encompassing both reviews is expected from the Southeast Regional Office of MassDEP. A site visit was conducted in May, and MassDEP has indicated that it has completed its review of the fill component and determined no additional information is needed. The next step is review for regulatory compliance. The dredge review is not as far along due to backlog at MassDEP.

MassDEP is also reviewing five license applications filed under M.G.L. Ch. 91 Waterways, for dredge and fill or structures in tidelands. The Town is sole applicant on four license applications and co-applicant with Chequessett Club on one application. MassDEP recently provided public notices for publication and distribution to required parties per the regulations, and a thirty-day public comment period is expected to commence on July 23rd.

Ms. Wilson asked who is responsible for distribution of the notices. Ms. Ridley explained that the project team is coordinating with Town administrative staff on the notice distribution. All comments are public comments are to be submitted directly to MassDEP.

A Pre-construction notification form for a §404 General Permit has been filed with US Army Corps of Engineers. The Pre-construction notification form materials have been reviewed by U.S.

Army Corps staff and have been circulated to Joint Agency reviewers from NOAA, Massachusetts Coastal Zone Management, US Environmental Protection Agency and other federal and state agencies. A decision by Joint Agency reviewers is expected in 30-60 days.

Applications are available to the public at: <https://www.wellfleet-ma.gov/home/news/herring-river-project>

The next permitting step will be filing Notices of Intent with the Wellfleet and Truro Conservation Commissions, which is expected to occur some time this fall.

Update on Town Layout of High Toss Road

Wellfleet Town Meeting voted to accept the layout of High Toss Road as a town way. This vote followed several steps taken by the Selectboard and Planning Board, as well as notice and outreach to abutting property owners, all in conformance with Massachusetts General Law. The next step is for the Selectboard to vote to record an Order of Taking with the County Registry of Deeds. Ms. Ridley thanked the Selectboard, Planning Board, town staff and Friends of Herring River for their efforts in this process.

Construction Management

Fuss and O'Neill has been hired through a competitive process to prepare a construction management assessment focused on:

1. Recommendations for organizing the bidding packages to select contractors for construction of multiple project elements,
2. Construction sequencing scenarios and timelines for multiple project elements, and
3. Options for structuring and coordinating construction management activities for different project elements.

This planning analysis is being undertaken in consultation with Town staff and Cape Cod National Seashore. This work so far has helped to identify strategies will generate advisory input to Town of Wellfleet and Seashore to ensure that construction activities proceed efficiently and minimize any disruptions on local roadways.

Fundraising

Based on the current permitting timeline, it is possible that construction could begin at the end of calendar year 2022. However, the timeline is also contingent on funding. A number of project fundraising opportunities are being pursued. A \$2 million grant application to the US Fish and Wildlife Service North American Wetland Conservation Act was submitted by Ducks Unlimited on behalf of the project. Ms. Ridley acknowledged the Wellfleet Conservation Trust, Ms. Jackie Fouse, Massachusetts Division of Ecological Restoration, Town of Wellfleet and Friends of Herring River for their match contributions. Funds would be used primarily for vegetation management prior to construction. Awards will be announced by the end of 2021. In addition the Town of Wellfleet submitted a request for funding through the Small Watersheds Program administered by Natural Resource Conservation Service. That request is currently under review. Efforts continue in conjunction with state and federal delegation members to identify other funding opportunities. Congressman Keating submitted a member request for construction funds for the Chequessett Neck Road bridge, but the request did not make it into the final bill passed by the House.

Brian Carlstrom reported that the Cape Cod National Seashore is continuing to explore a number of funding pathways within the National Park Service for the Mill Creek Water Control Structure, including resiliency funding.

Laura Runkel asked if the Town of Wellfleet's role as a match partner on the NAWCA grant will require an outlay of taxpayer funds. Ms. Ridley explained that the grant has a number of match designations, and provides higher scoring for proposals that have three or more match partners that commit 10% of the grant amount, or \$200,000. The Town's pledge as a match partner involves dedicating a pending grant award to serve as the match value. If the grant is not obtained, the Town can use the value of parcels recently transferred from Selectboard to Conservation Commission ownership, because there is a higher level of protection. Other contributions during a multi-year time period can also be counted as match, so there is a high degree of confidence that no Town taxpayer funds will be needed.

Tide Gate Management Approach:

Ms. Ridley introduced Tim Smith, Research Ecologist with Cape Cod National Seashore, to present alternatives for tide gate management. This is a facet of the adaptive management program that is within the purview of the Herring River Executive Council. Mr. Smith would be presenting tide gate management alternatives for discussion and possible decision-making by the Executive Council.

Mr. Smith mentioned that he was joined by Eric Derleth, formerly of US Fish and Wildlife Service, and Elise Leduc and Kirk Bosma of Woods Hole Group, all of whom participated in the analysis he was presenting.

Mr. Smith noted that an explanation of the tide gate management approach is needed for the Notices of Intent to be filed with the Wellfleet and Truro Conservation Commissions, to provide permit reviewers with an understanding how tidal flow would be reintroduced into the system, at least during the initial stage of implementation.

Mr. Smith reviewed a detailed PowerPoint presentation that described the process of assessing seven different tide gate management policies that how quickly and over how many years tide gates would be opened. Each policy was assessed in terms how it met a series of five restoration objectives and sub-objectives. This assessment was undertaken using a software tool that uses predictive data from models, science experts, and community surveys to help predict future conditions under each of these policies to determine which one best fulfills the project's stated objectives over several time steps.

The analysis, which encompasses all of the modeling data, scientific expert input, and community survey results, shows that two of the seven policies: the even openings spaced over five years, and the fifteen-year rapid then gradual openings, consistently rated at the top 1 and 2, regardless of whether any individual objective was weighted more than others. Accordingly, there is no basis for selecting any of the other policies.

It was also noted that the two policies are the same in terms of gate openings during the first three years. A hybrid of the two would achieve a daily high tide of 1.8 feet in the first year. This elevation is significant because it is the point where tides over top channels and cause flooding of the marsh. In years 2 and 3, the 1.8-foot elevation would be maintained. All throughout the three years, continuous monitoring and data collection would occur, and these data would be inputted into the models to enhance the model's predictive value.

Mr. Smith went through a year by year summary of what might occur:

- **Year Zero” (Construction Stage)**
 - Construct CNR Bridge & Mill Creek WCS
 - Road & property mitigation (not necessarily required to implement initial strategy)
 - Begin vegetation management (Phragmites mowing [45 acres]; Tree removal [42 acres])
 - Continue and complete pre-restoration monitoring

- **Year 1**
 - High Tide of 1.8 feet is a critical water level threshold where tides overflow stream/creek banks and begins to flood marsh surfaces
 - First 1-2 months: Gates set to maintain existing tidal condition to ascertain function and test mechanical systems
 - Next 10-11 months: Initiate small, progressive gate openings approximately two months apart to reach MHW water surface from ~0.2 to ~1.8 feet (Lower River)
 - Continue vegetation management (Tree removal [42 acres]; Shrub cutting [39 acres])
 - Initiate Post-construction monitoring

- **Years Two and Three**
 - Continuous monitoring will occur and the flexibility to adjust management will be based on assessment of project outcomes
 - Apply actual observations to rerun models, data elicitation, and community surveys to improve predictive data for subsequent decision-analysis
 - Formulate longer-term management strategy based on assessment of Years 1-3 data
 - Hold gates for average high tide of ~1.8 feet in Lower River for two years
 - Intensive data collection
 - Year 3 of vegetation management (Tree removal [42 acres]; Shrub cutting [39 acres])
 - Conduct Pilot Project to remove spoil berms and restore marsh elevation
 - Authorize one short-term event-based larger tide gate opening during Annual High Tide or storm surge to collect data on sediment deposition

At the end of year three, a daily average tide of 1.8 ft is equivalent to having five gates opened two feet, and this would achieve a restoration area of 218 acres approximately. In this configuration the storm of record high tide would be 3 ft, which is 1 foot lower than the current elevation of the lowest structure or road in the phase one restoration area. This means that all structures would be protected whether or not all flood protection measures were built by that time.

Monitoring during the initial 3-year implementation period would focus on potential short-term Changes in River and Harbor:

- Tide Levels
- Salinity Changes
- Suspended Sediment
- Water Quality
- River and Harbor Bed Floor Elevations, Sediment Movement

Mr. Smith then reviewed three decision components and alternatives:

1. Limit Initial Policy to First Three Years of Implementation

Advantages of this approach:

- Avoids Reliance on Long-term Predictions With Higher Degree of Uncertainty

- Emphasizes Importance of Actual Observations Over Models/Predictions for Future Planning

Disadvantage of this approach:

- Details About Project Implementation Unresolved for Post 3-Year Timeframe

An alternative approach: Formulate a tide gate strategy for a longer period based on an assessment of years 1-3 data

2. In Year 1, Initiate Several Tide Gate Changes to Raise Average Tide to 1.8 Feet

Advantages of this approach:

- Provides data describing short-term changes under varying conditions to Improve models and predictions
- Achieves significant restoration in short period

Disadvantage of this approach:

- Increased operational resources would be needed for multiple gate changes over one year

An alternative approach: Single Change From 0.2 to 1.8 Foot Water Level

3. In Years 2 and 3, Maintain Consistent 1.8-Foot Average Tide Level for 2 Years

Advantages of this approach:

- Establishes relatively stable tidal conditions, facilitating some long-term changes
- Allows data collection for long-term changes
- Facilitates secondary management

Disadvantage of this approach:

- This approach delays a more significant degree of tidal restoration

An alternative approach: Proceed to Larger Gate Opening(s) in a time period shorter than two years

Ms. Ridley and the Council members individually thanked Mr. Smith and team for an exemplary presentation.

Ms. Ridley asked if the Council was ready to discuss and potentially make a decision about the tide gate management alternatives, or whether they felt they needed more time or additional information.

Ms. Freeman stated that, although she is no longer a Conservation Commission member and does not speak for the Commissioners, she could see that Conservation Commissioners may be receptive to an incremental approach that incorporates continuous monitoring. Ms. Freeman feels that limiting the initial policy to the first three years makes sense, that initiating several tide gate openings to achieve 1.8 feet average tide over the first year makes sense, and maintaining a 1.8-ft average tide level during years 2 and 3 with continuous monitoring is a conservative approach and one she supports.

Ms. Wilson stated that she feels that a faster approach to tidal restoration is potentially beneficial. She also asked whether the increments of increase in year one were fixed equal increments or could be made more rapid. Mr. Smith responded that the steps are not defined

and require further discussion. Based on this information Ms. Wilson expressed support for the approach of limiting the policy to the first three years, achieving a 1.8-ft average tide level in year one with a yet-to-be-determined number of steps and maintaining that average tide level during years 2 and 3 is supportable. If warranted by data, the decision could be revised, she noted.

Ms. Reinhart expressed her view that the hybrid alternative was a conservative approach and she was encouraged by the ongoing monitoring that would occur throughout the three years. She endorsed all three components of the approach, to limit the initial policy to three years, reach 1.8-ft average tide in year one, and maintain a 1.8-ft average tide in years 2 and 3. She reiterated her strong support for all three components of the decision.

Geoff Sanders also stated support for the three-pronged strategy to limit the initial policy to three years, achieve a 1.8-ft tide level in year 1 and hold that level in years 2 and 3. He noted that the continuous data collection would increase the accuracy of model outputs and that would inform decisions about a policy beyond year 3.

Mr. Carlstrom stated strong support for all three of the components: limiting the policy to three years initially, achieving 1.8-ft average tide in year one and maintaining a 1.8-ft average tide in years 2 and 3. He noted that the project already has the benefit of an enormous amount of data in a very robust adaptive management framework, and ongoing data collection will support ongoing assessment and verification of model results.

Ms. Ridley noted that all members expressed support for each of the three components and asked if the members agree that there is consensus on the initial tide gate management policy being limited to three years, achieving a 1.8 ft average tide in year 1 and maintaining a 1.8 ft average tide in years 2 and 3, with ongoing monitoring and data collection, as presented in Mr. Smith's PowerPoint. All five members verbally assented that this was the consensus position.

Ms. Wilson asked that Mr. Smith's PowerPoint be included with the official minutes of the meeting as a clear articulation of the policy.

Land Exchange Update:

The land exchange process is progressing and a July meeting of Mr. Carlstrom and the Wellfleet Selectboard is planned. This would be an opportunity to review and discuss options for the land exchange. Mr. Carlstrom noted that progress continues to be made in this lengthy process.

HREC Member Announcements:

There were no member announcements.

Public Comment

Bill Biewenga asked about any plans for signage or gates to stop traffic along Way 672. Mr. Sanders noted that the Seashore has been in touch with local property owners about this and are contemplating the use of signage to deter vehicle traffic. Ms. Ridley noted that this is not part of the restoration project, and is a standing issue.

Mr. Biewenga asked about the timing of the removal of residential structures near Way 672. Mr. Carlstrom noted that the removal of the structures is in the President's budget, and should happen before construction commences.

Mr. Biewenga asked about the permit recently issued by the Seashore for treatment of mosquitoes. Mr. Carlstrom indicated that the Seashore had issued the first permit for use of larvacide in 40 years. Usually such permits are only granted if there is a public health emergency. This permit was issued out of an abundance of caution. Any future permits will have to go through the same multi-step review process within the National Park Service.

Gabrielle Sakolsky of Cape Cod Mosquito Control noted that the dominant species are *O. sollicitans* and *O. cantator*. These species have a flying range of 5-10 miles. Cape Cod Mosquito Control Project is applying larvacide but it will take some time for the adults to die out.

Ms. Runkel asked about whether any mosquito control measures were occurring in the area of Pole Dike Creek. Ms. Sakolsky said that the Cape Cod Mosquito Control Project is treating larvae wherever they are encountering it.

Martha Craig announced that Friends of Herring River received a \$500,000 grant from Massachusetts Division of Ecological Restoration to continue permitting and design work on the project.

Next Meeting Dates

It was agreed by consensus that the following Herring River Executive Council meetings would be conducted remotely via Zoom:

Thursday, September 16, 2021, 3:00 pm

Thursday, December 16, 2021, 3:00 pm

Adjournment

The meeting adjourned at approximately 4 pm by unanimous consent.

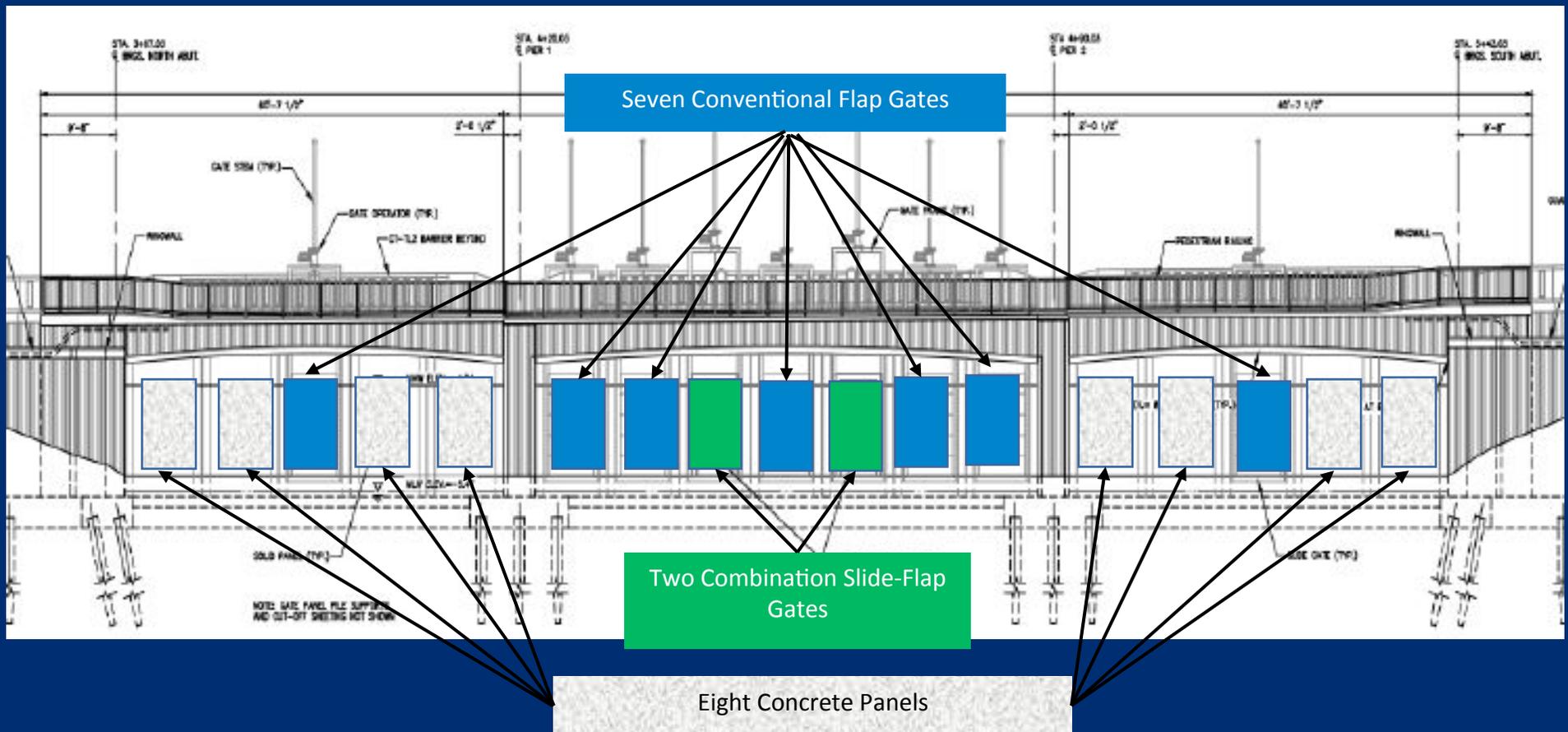
Approved by HREC on September 30, 2021

Submitted by Carole Ridley

Herring River Restoration Project

Review of Tide Gate Management Policy Options at Chequessett Neck Road

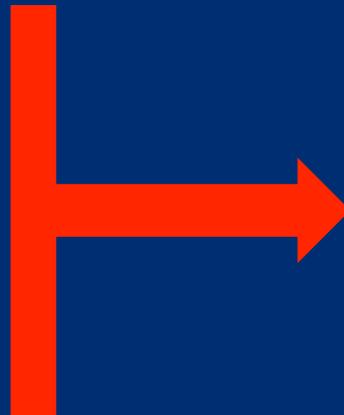
Herring River Executive Council; Thursday July 15, 2021



Differing Strategies for Incremental Opening of Tide Gates (Policies): Frequency and Size of Openings

Proposed policy for the initial implementation stage of the project (~1-3 years) is to be included in the permit (MA Wetlands Protection Act) submitted to the Wellfleet Conservation Commission later in 2018.

- Even Pace
- Near Even Pace
- Far Even Pace
- Near Rapid Then Gradual
- Near Gradual Then Rapid
- Near Targeting Sediment Deposition
- Near Targeting Vegetation Growth



Objectives

- Restore Tide Range and Marsh Surface Elevation (Hydrography)
- Restore Ecosystem Function and Integrity
- Minimize Adverse Effects
- Restore Ecosystem Services
- Minimize Costs

The Decision Analysis Tool uses predictive data from models, science experts, and community surveys to assess future conditions under each of these policies to determine which one best fulfills the project's objectives over several time steps.

The tool provides the ability to assess different tide gate management strategies and how they might affect ecological and community concerns if some objectives are valued more highly than others ("weighting").

Offering Strategies for Incremental Opening of Tide Gates (Policies): Frequency and Size of Opening

Performance of Policies Relative to Objectives

High
Medium
Low

Maximize Size of Area With Tidal Flow: Does Well Across All Policies

Minimize Area With Impounded Water: Varies Across Policies

Maximize Above Ground Sediment Deposition: Does Fairly Well Across All Policies

Maximize Below Ground Marsh Surface Accretion: Does Poorly Across All Policies

Example of Decision Tool Output: Only 4 of More Than 30

	A	B	C	D	E	F	G
1	OBJECTIVES	5-Even	15-Even	25-Even	15 R-G	15 G-R	15 G-R
14	IntertidalArea-Lower Herring River	✓	✓	✓	✓	✓	✓
15	IntertidalArea-Mid Herring River	✓	✓	✓	✓	✓	✓
16	IntertidalArea-Lower Pole Dike	✓	✓	✓	✓	✓	✓
17	IntertidalArea-Duck Harbor	✓	✓	✓	✓	✓	✓
18	IntertidalArea-Lower Bound Brook	✓	✓	✓	✓	✓	✓
19	IntertidalArea-Upper Herring River	✓	✓	✓	✓	✓	✓
20	Ponding-Lower Herring River	✗	!	✓	!	!	!
21	Ponding-Mid Herring River	✗	!	✓	!	!	!
22	Ponding-Lower Pole Dike	✗	!	✓	!	!	!
23	Ponding-Duck Harbor	✗	!	✓	!	!	!
24	Ponding-Lower Bound Brook	✗	!	✓	!	!	!
25	Ponding-Upper Herring River	✗	!	✓	!	!	!
26	Deposition-Lower Herring River	✓	✓	✓	✓	✓	✓
27	Deposition-Mid Herring River	✓	✓	!	✓	!	!
28	Deposition-Lower Pole Dike	!	!	!	!	!	!
29	Deposition-Duck Harbor	✓	!	!	!	!	!
30	Deposition-Lower Bound Brook	!	!	!	!	!	!
31	Deposition-Upper Herring River	✓	!	!	!	!	!
32	Accretion-Lower Herring River	!	!	!	!	!	!
33	Accretion-Mid Herring River	!	!	✗	!	✗	✗
34	Accretion-Lower Pole Dike	✗	✗	✗	✗	✗	✗
35	Accretion-Duck Harbor	!	✗	✗	!	✗	✗
36	Accretion-Lower Bound Brook	✗	✗	✗	✗	✗	✗
37	Accretion-Upper Herring River	!	!	✗	!	✗	✗

the best information currently available (numerical models, expert solicitation, community survey):

Ranking of Policies With Applied to Five Types

Policy	Weighting Toward....				
	Equal	Community Concerns	Cost	Ecological Function	Sediment Accumulation
5-yr Even	1	2	1	2	1
15-yr Even	3	4	3	4	3
15-yr Rapid/Gradual	2	1	2	1	2
25-yr Even	4	3	6	3	5
15-yr Gradual/Rapid	7	7	7	7	7
15-yr Sediment	5	6	4	5	4
15-yr Vegetation	6	5	5	6	6

Example of Decision Tool Output

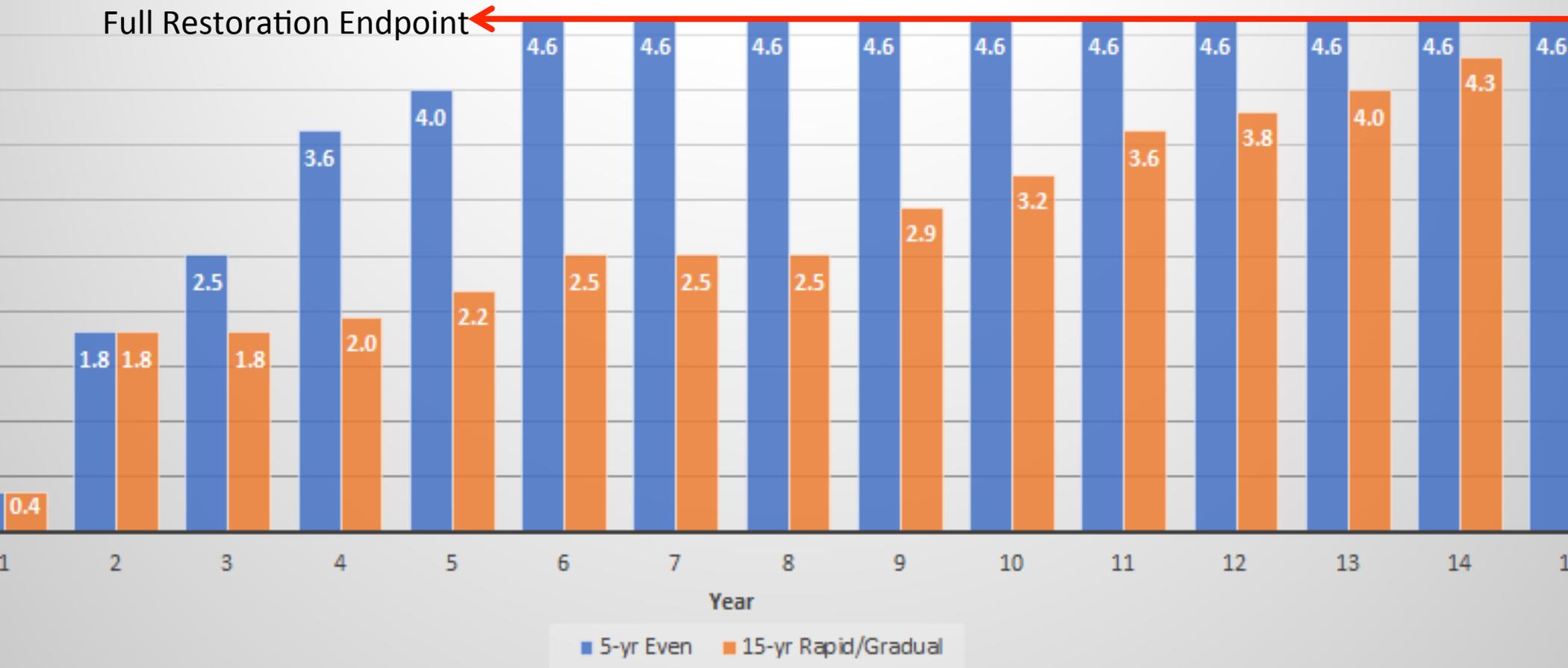
no matter how much weight is placed on varying objectives types, the 5-year Even and 15-Year Rapid/Gradual policies always rank #1 or #2

Impartial science-based analysis strongly supports the 5-Year Even or 15-Year Rapid/Gradual as the best strategy for the initial stages of the project

5-Year and 15-Year Rapid/Gradual Policies are the same until Year 3

Estimated Average Daily High Tide in Lower Herring River Under 5-Year and 15-Year Rapid-Gradual Tide Gate Policies

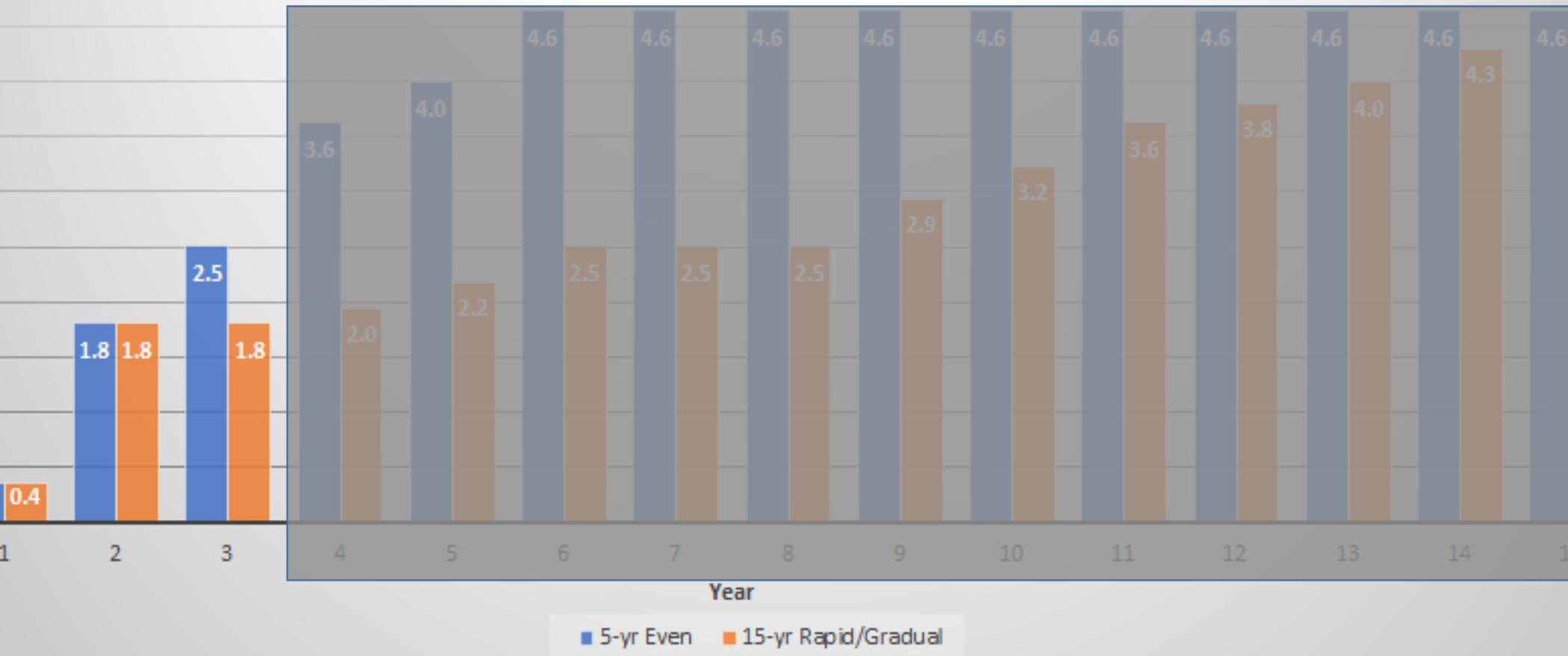
Full Restoration Endpoint ←



Hybrid 5-yr/15-Rapid Tide Gate Policy Approach – 3 Components

1. Limit Initial Policy to First Three Years of Implementation

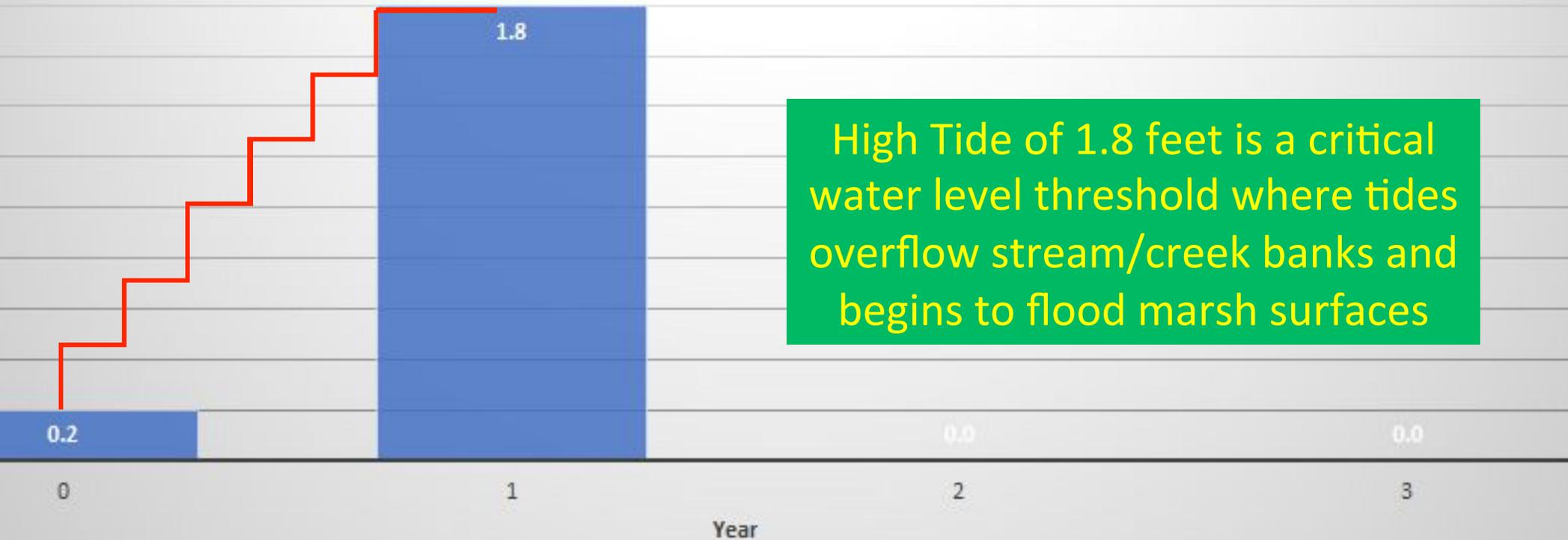
Estimated Average Daily High Tide in Lower Herring River Under 5-Year and 15-Year Rapid-Gradual Tide Gate Policies



Hybrid 5-yr/15-yr Rapid Tide Gate Policy Approach – 3 Components

2. In Year 1, Initiate Several Tide Gate Changes to Raise Average Tide to 1.8 Feet

Estimated Average Daily High Tide in Lower Herring River Under Hybrid Policy, Years 0-1

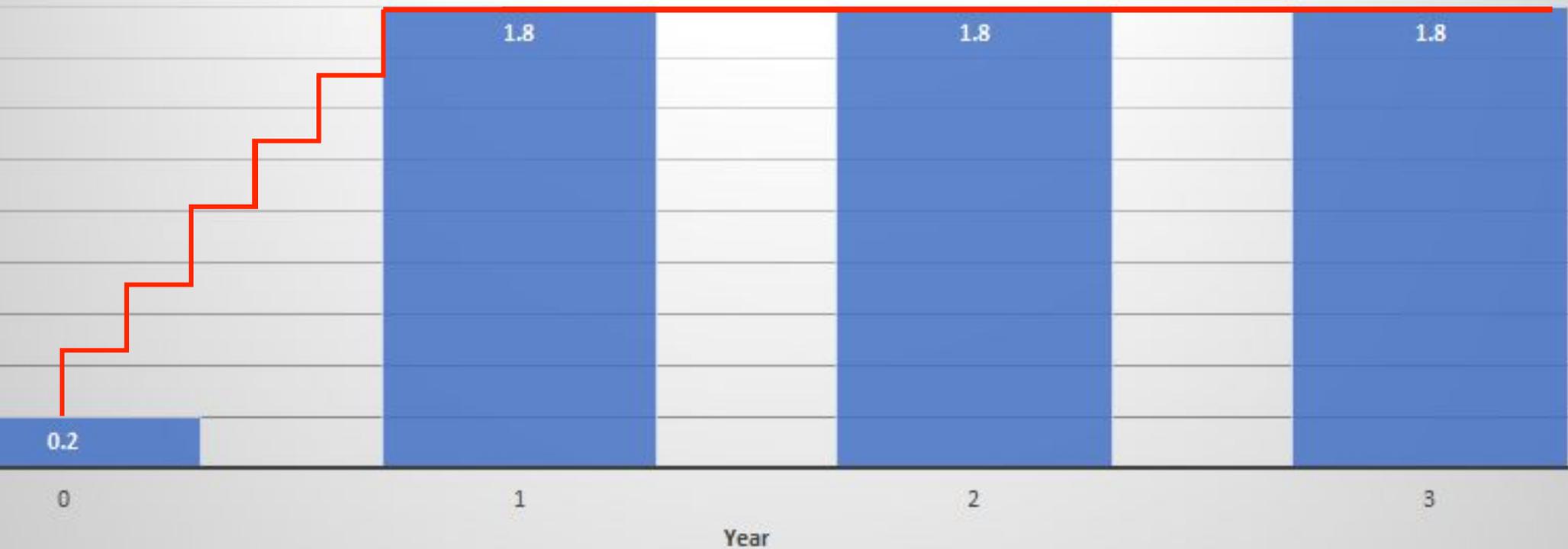


High Tide of 1.8 feet is a critical water level threshold where tides overflow stream/creek banks and begins to flood marsh surfaces

Hybrid 5-yr/15-yr Rapid Tide Gate Policy Approach – 3 Components

3. In Years 2 and 3, Maintain Consistent 1.8 Foot Average Tide Level for 2 Years

Estimated Average Daily High Tide in Lower Herring River Under Hybrid Policy, Years 2-3



Tidal 5-yr/15-yr Rapid Tide Gate Policy for First 3 Years of Implementation

Details (1 of 2)

Year Zero” (Construction Stage)

- ✓ Construct CNR Bridge & Mill Creek WCS
- ✓ Road & property mitigation (not necessarily required to implement initial strategy)
- ✓ Begin vegetation management (Phragmites mowing [45 acres]; Tree removal [42 acres])
- ✓ Continue and complete pre-restoration monitoring

Year 1

- ✓ High Tide of 1.8 feet is a critical water level threshold where tides overflow stream creek banks and begins to flood marsh surfaces
- ✓ First 1-2 months: Gates set to maintain existing tidal condition to ascertain function and test mechanical systems
- ✓ Next 10-11 months: Initiate small, progressive gate openings approximately two months apart to reach MHW water surface from ~0.2 to ~1.8 feet (Lower River)
- ✓ Continue vegetation management (Tree removal [42 acres]; Shrub cutting [39 acres])
- ✓ Initiate Post-construction monitoring

Rapid Tide Gate Policy for First 3 Years of Implementation

Details (2 of 2)

Years Two and Three

- ✓ Continuous monitoring will occur and the flexibility to adjust management will be based on assessment of project outcomes
- ✓ Apply actual observations to rerun models, data elicitation, and community surveys to improve predictive data for subsequent decision-analysis
- ✓ Formulate longer-term management strategy based on assessment of Years 1 data
- ✓ Hold gates for average high tide of ~1.8 feet in Lower River for two years
- ✓ Intensive data collection
- ✓ Year 3 of vegetation management (Tree removal [42 acres]; Shrub cutting [39 acres])
- ✓ Conduct Pilot Project to remove spoil berms and restore marsh elevation
- ✓ Authorize one short-term event-based larger tide gate opening during Annual High Tide or storm surge to collect data on sediment deposition

gates open two feet high

tidal Area: ~218 acres

er HR:

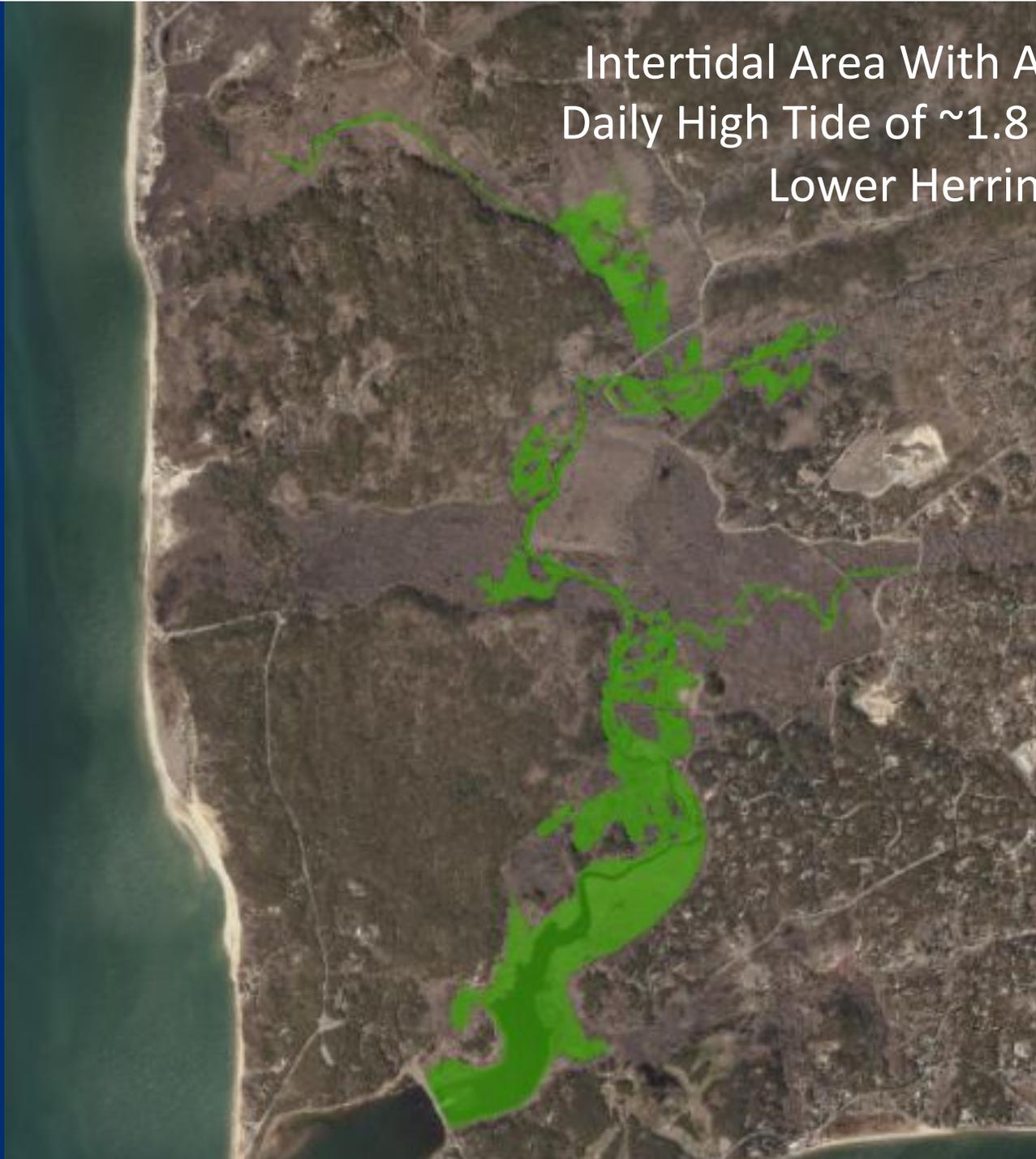
MHW: 1.8 Feet

MHWS: 2.5 Feet

orm-of-Record: 3.0 Feet*

Not Lower Than *CURRENT*
MIN of Lowest Structure and
in Phase One Area

Intertidal Area With A
Daily High Tide of ~1.8
Lower Herring





Monitoring During Initial 3-year Implementation Period

- Focus on Potential Short-term Changes in River and Harbor
 - ✓ Tide Levels
 - ✓ Salinity Changes
 - ✓ Suspended Sediment
 - ✓ Water Quality
 - ✓ River and Harbor Bed Floor Elevations, Sediment Movement

Monitoring During Initial 3-year Implementation

- Reliant on Automated, Continuous Operating Data Recording Systems Already in Place With Real-time Data Availability



Plan for Herring River Executive Council – 3 Components:

From Initial Policy to First Three Years of Implementation

Pros:

Avoids Reliance on Long-term Predictions With Higher Degree of Uncertainty
Emphasizes Importance of Actual Observations Over Models/Predictions for Future Planning

Cons:

- Details About Project Implementation Unresolved for Post 3-Year Timeframe

Alternative: Formulate Tide Gate Strategy for Longer Period based on assessment of Years 1-3 data

Year 1, Initiate Several Tide Gate Changes to Raise Average Tide to 1.8 Feet

Pros:

Provides Data Describing Short-term Changes Under Varying Conditions to Improve Models and Predictions
Achieves Significant Restoration in Short Period

Cons:

- Increased Operational Resources Needed for Multiple Gate Changes Over One Year

Alternative: Single Change From 0.2 to 1.8 Foot Water Level

Years 2 and 3, Maintain Consistent 1.8 Foot Average Tide Level for 2 Years

Pros:

Establishes Relatively Stable Tidal Conditions, Facilitating Some Long-term Changes
Allows Data Collection for Long-term Changes
Facilitates Secondary Management

Cons:

- Delays More Significant Degree of Tidal Restoration

Alternative: Proceed to Larger Gate Opening(s) in Time Period Shorter Than Two Years

Herring River Restoration Project

Review of Tide Gate Management Policy Options at Chequessett Neck Road

Herring River Executive Council; Thursday July 15, 2021

Questions and Discussion

HREC Decision: To Include 3 Components of the Hybrid 5-yr/15-yr Rapid Tide Gate Policy for First 3 Years of Project Implementation in Notice of Intent to Wellfleet Conservation Commission