

Comprehensive Wastewater Management Plan Revisions  
Public Input Session  
February 12<sup>th</sup>, 2022



TOWN OF  
**HARWICH** MASSACHUSETTS



# Background

- CWMP is a nutrient / wastewater management tool developed to support Town vision for growth - not a zoning plan
  - Harwich has 5 nitrogen impaired watersheds and impaired freshwater pond systems
  - Approved CWMP is required to obtain 0% State funding for nutrient related projects
- Initial Comprehensive Wastewater Management Project (CWMP) completed in 2016
  - Current being revised to address topics raised through public discussion
- Targeted Revision Strategy
  - Intended to provide an open and transparent process for the purpose of identifying components of the CWMP that the Town is considering for revision, gain input from community stakeholders, and provide draft recommendations consistent with stakeholder input.



# Comprehensive Wastewater Management Planning

- Updates since 2016 Report
  - Partnership opportunities with neighboring communities (Brewster and Dennis)
  - New data from Muddy Creek culvert widening project, updated SMAST modeling
  - Participation in Pleasant Bay Alliance / Pleasant Bay Watershed Permit
  - Initial sewer implementation
- Topics identified for targeted revision evaluation
  - Zoning and buildout assumptions
  - Partnership opportunities with neighboring communities
  - Ongoing evaluation of incorporating I/A systems through Adaptive Management
  - Implementation phasing & cost models



# Targeted Revision Process

- Public Input Sessions
- Incorporate draft language consistent with stakeholder interests
- Present draft language to the Board for consideration
- Engage regulatory agencies for preliminary review and comment
- Assemble draft Notice of Project Change submission and present to stakeholders
- Submit Notice of Project Change to begin MEPA review process





# CWMP Listening Sessions

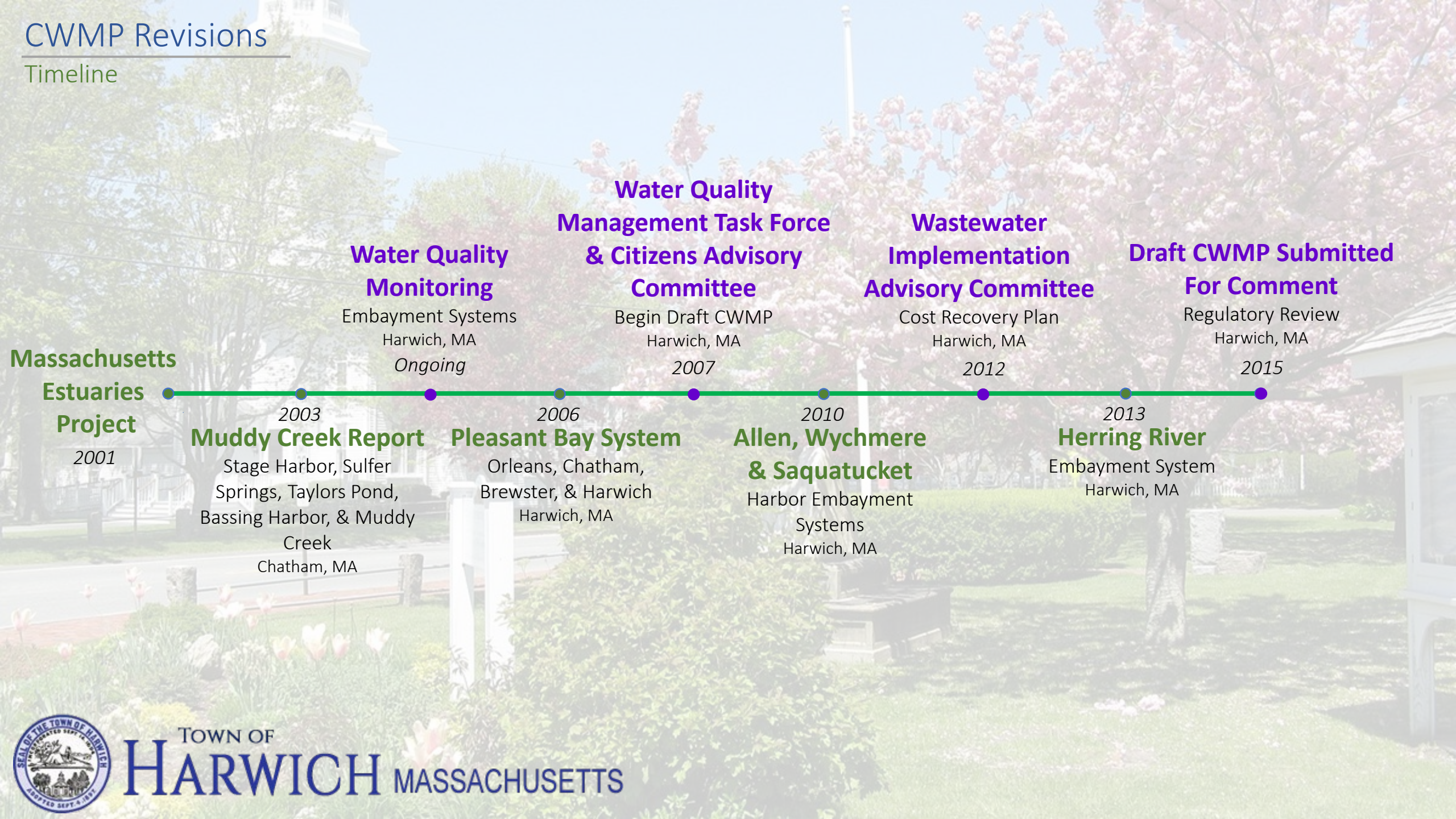
- Public Listening Session 1 – 1/27/2022
  - Common themes
    - Consideration of freshwater pond health in project phasing
    - Potential acceleration of sewer implementation around Bucks Pond and abutting freshwater ponds to prevent system collapse
- Public Listening Session 1 – 2/12/2022
  - Open to Public Comment





# CWMP Revisions

## Timeline



**Massachusetts  
Estuaries  
Project**  
2001

2003  
**Muddy Creek Report**  
Stage Harbor, Sulfer  
Springs, Taylors Pond,  
Bassing Harbor, & Muddy  
Creek  
Chatham, MA

**Water Quality  
Monitoring**  
Embayment Systems  
Harwich, MA  
*Ongoing*

2006  
**Pleasant Bay System**  
Orleans, Chatham,  
Brewster, & Harwich  
Harwich, MA

**Water Quality  
Management Task Force  
& Citizens Advisory  
Committee**  
Begin Draft CWMP  
Harwich, MA  
2007

2010  
**Allen, Wychmere  
& Saquatucket**  
Harbor Embayment  
Systems  
Harwich, MA

**Wastewater  
Implementation  
Advisory Committee**  
Cost Recovery Plan  
Harwich, MA  
2012

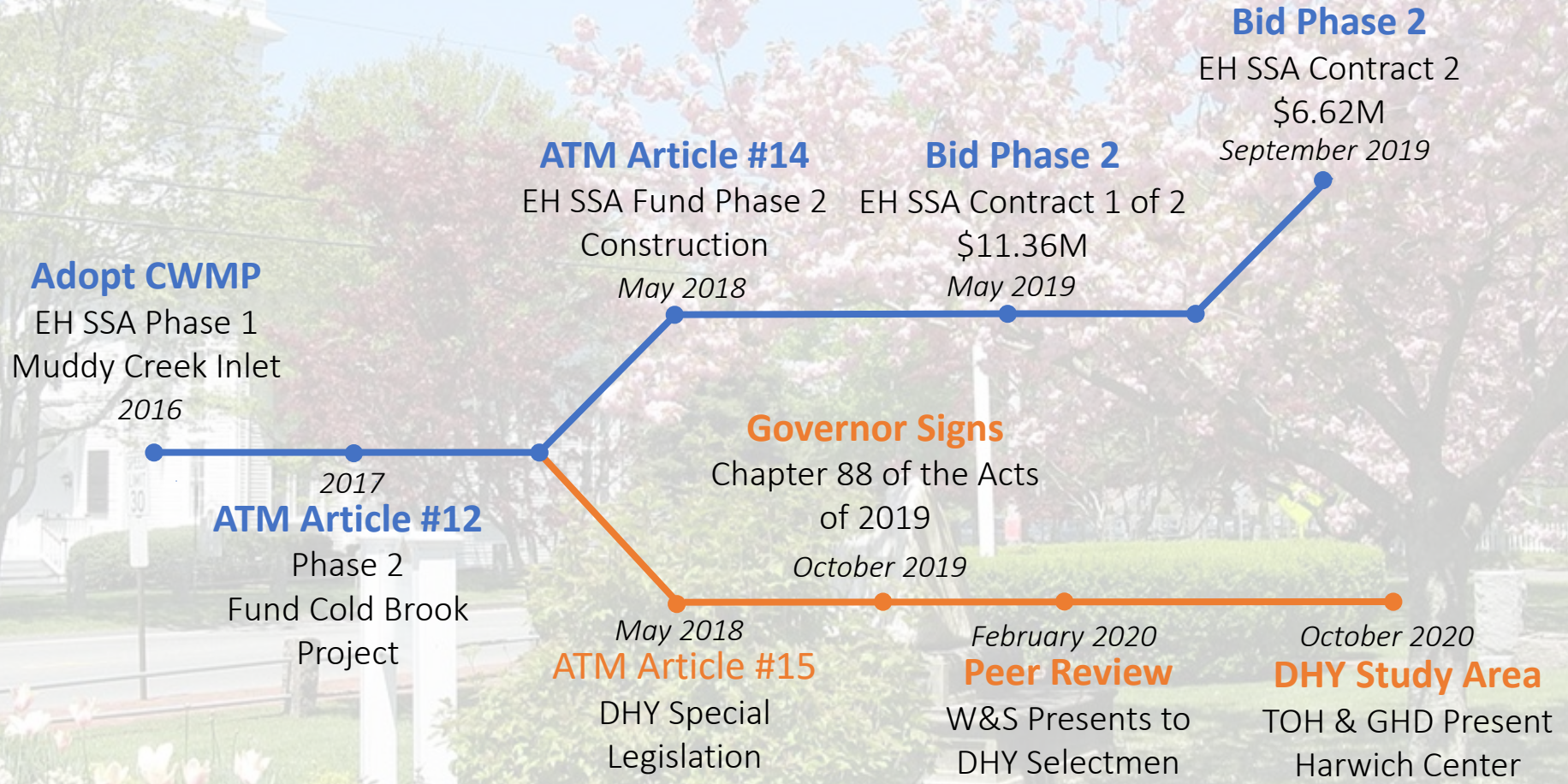
2013  
**Herring River**  
Embayment System  
Harwich, MA

**Draft CWMP Submitted  
For Comment**  
Regulatory Review  
Harwich, MA  
2015



# CWMP Revisions

## Timeline





# Watershed Permit – TWMP

## Regulatory & IMA Implications

Funding Request Year	Fiscal Year	Annual	Cumulative	Funding For	Total Annual Funding Request
<b>Phase H1</b>					
2013	2014	\$1.0 M	\$1.0 M	Muddy Creek Project - Design, Construction and Implementation	\$1.0 M

Harwich Only Phasing Plan					
Funding Request Year	Fiscal Year	Annual	Cumulative	Funding For	Total Annual Funding Request
<b>Phase H1</b>					
2013	2014	\$1.0 M	\$1.0 M	Muddy Creek Project - Design, Construction and Implementation	\$1.0 M
<b>Phase H2</b>					
2017	2018	\$6.8 M	\$7.8 M	Purchase of treatment capacity at Chatham WWTF	\$11.0 M
		\$2.0 M	\$9.8 M	Cold Brook Project - Design, Construction, and Implementation	
		\$2.2 M	\$12.0 M	Phase H2 Collection System, Contracts 1 & 2 - Design	
2018	2019	\$24.8 M	\$36.8 M	Phase H2 Collection System, Contracts 1 & 2 - Construction	\$24.8 M
2020	2021	\$8.4 M	\$45.2 M	Phase H2 Collection System, Contract 3 - Design & Construction	\$8.4 M
<b>Phase H3</b>					
2021	2022	\$1.2 M	\$46.3 M	Phase H3 Collection System - Design	\$1.2 M
2022	2023	\$18.3 M	\$64.7 M	Phase H3 Collection System - Construction	\$18.8 M
		\$0.1 M	\$64.8 M	Effluent Recharge - Design & Construction (PB)	
		\$0.4 M	\$65.2 M	Seymour Pond Restoration Project	
<b>Phase H4</b>					
2027	2028	\$40.9 M	\$106.1 M	Harwich Treatment Facility HR-12 - Design & Construction	\$80.9 M
		\$33.2 M	\$139.3 M	Phase H4 Collection System - Design & Construction	
		\$6.8 M	\$146.1 M	Effluent Recharge - Design & Construction	
<b>Phase H5</b>					
2032	2033	\$33.7 M	\$179.8 M	Phase H5 Collection System - Design & Construction	\$33.7 M
<b>Phase H6</b>					
2037	2038	\$30.1 M	\$209.9 M	Phase H6 Collection System - Design & Construction	\$30.8 M
		\$0.7 M	\$210.6 M	Bucks Pond and Joseph Pond Restoration Projects	
<b>Phase H7</b>					
2042	2043	\$20.5 M	\$231.1 M	Harwich Treatment Facility Upgrade - Design & Construction	\$55.6 M
		\$35.1 M	\$266.2 M	Phase H7 Collection System - Design & Construction	
<b>Phase H8</b>					
2047	2048	\$49.3 M	\$315.5 M	Phase H8 Collection System - Design & Construction	\$49.3 M



Muddy Creek Bridge

\* Table Dated November 2019

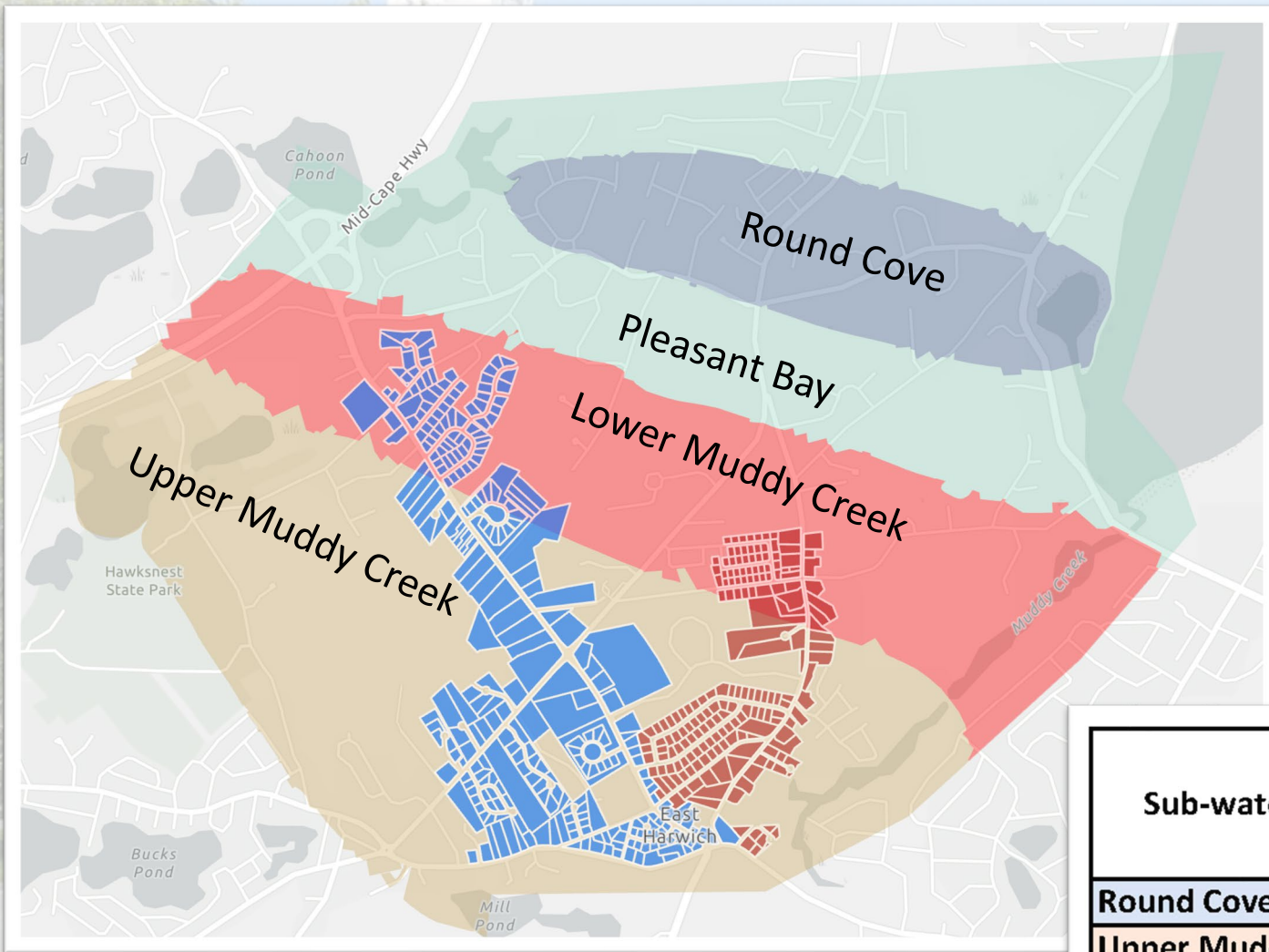




## Nitrogen Removal to Date by Sub watershed

Revised attenuation rates now reflect sufficient removal in Lower Muddy Creek and over removal in Upper Muddy Creek Subwatersheds

No removal to date in the Round Cove or Pleasant Bay Subwatersheds



Sub-watershed	Required N Removal per MEP	N Removal Phase 2 Contract 1 & 2	
		2010 N Attenuation Rates	2021 N Attenuation Rates
Round Cove	1209 kg/yr	0 kg/yr	0 kg/yr
Upper Muddy Creek	584 kg/yr	855 kg/yr	1769 kg/yr
Lower Muddy Creek	986 kg/yr	570 kg/yr	983 kg/yr
Pleasant Bay	1620 kg/yr	0 kg/yr	0 kg/yr
<b>Total</b>	<b>4399 kg/yr</b>	<b>1425 kg/yr</b>	<b>2752 kg/yr</b>





# Watershed Permit – TWMP

## Regulatory & IMA Implications

### A. TWMP Implementation Schedule

1. The Permittees shall take the following actions in accordance with the following schedule:

Phase	Years		Brewster		Chatham		Harwich		Orleans		Total
			Activity	kgN/yr	Activity	kgN/yr	Activity	kgN/yr	Activity	kgN/yr	
	Up to 2018		Capt. Golf Course fertigation	230	Muddy Creek inlet restoration		Muddy Creek inlet restoration				1,769
			Capt. Golf Course fertilizer reduction	930							
			Enact fertilizer reduction by-law	121	Enact fertilizer reduction by-law	247			Enact fertilizer reduction by-law	241	
			All towns: develop TWMP, execute IMA, obtain watershed Permit								
1	1 to 5	2019 to 2023	Develop onsite denitrification plan		Complete Harwich sewer connection		Install Phase 2 sewers	2,672	Amend CWMP		3,145
			Finalize contingency plan				Enact fertilizer reduction by-law	200	Lonnies Pond aquaculture	273	
All towns; update monitoring data; remodel Pleasant Bay; evaluate nitrogen trading; prepare plan for next 5 years											
2	6 to 10	2024 to 2028	Install onsite denitrification	118			Install Phase 3 sewers	1,565	Install Meetinghouse Pond sewers	2,014	5,887
			Subject to adaptive management						Other aquaculture	1,516	
3	11 to 15	2029 to 2033	Install onsite denitrification	118	Install Frost Fish Creek Sewers	803			Install onsite denitrification	675	5,107
			Subject to adaptive management			Install Ryders Cove sewers	2,605			Other Aquaculture	
4	16 to 20	2034 to 2039	Install onsite denitrification	118	Install Muddy Creek sewers	1,597			Install onsite denitrification	675	2,390
			Subject to adaptive management								

