

SELECTMEN’S MEETING AGENDA*

Donn B. Griffin Room, Town Hall

732 Main Street, Harwich, MA

Regular Meeting 6:00 P.M.

Tuesday, December 8, 2020

REMOTE PARTICIPATION ONLY
OPEN PUBLIC FORUM – NEW STEPS – PLEASE READ

1. First, send an email [to comment@town.harwich.ma.us](mailto:tocomment@town.harwich.ma.us) (send emails at any time after the meeting agenda has been officially posted)
 - a. In the subject line enter “request to speak, your name”
 - b. In the body of the email please indicate which specific agenda item you wish to speak on.
No further detail is necessary.
2. The meeting will close to new attendees promptly at the scheduled start time for the meeting, generally 6:30pm. It will remain closed to new attendees until agenda items with scheduled speakers are reached. This is to minimize interruptions. You may join prior to (6:30) or when the meeting has been opened up. You may participate using your computer and the GoToMeeting interface or simply using your phone. Connection information can be found below.
3. After the Chairman has opened the floor to those wishing to speak callers will be taken in the order the emails are received.
Use *6 to mute and unmute your phone

When you join the meeting by phone you should turn off Channel 18 or your computer if streaming the meeting.

Board of Selectmen Meeting
Tue, Dec 8, 2020 6:00 PM - 9:00 PM (EST)
Please join my meeting from your computer, tablet or smartphone.
<https://global.gotomeeting.com/join/595779357>
You can also dial in using your phone.
 United States: [+1 \(571\) 317-3122](tel:+15713173122)
Access Code: 595-779-357

I. **CALL TO ORDER**

II. **PLEDGE OF ALLEGIANCE**

III **NEW BUSINESS**

- A. Discussion of the Comprehensive Wastewater Management Plan (CWMP)
- B. Discussion of the East Harwich Sewer Service Area (EHSSA) Phase 2
- C. Discussion of Sewer Modeling
- D. Discussion of the Dennis Harwich Yarmouth (DHY) Clean Waters Community Partnership (CWCP) Draft Agreement

VII. **ADJOURNMENT**

**Per the Attorney General’s Office: The Board of Selectmen may hold an open session for topics not reasonably anticipated by the Chair 48 hours in advance of the meeting following “New Business.” If you are deaf or hard of hearing or a person with a disability who requires an accommodation contact the Selectmen’s Office at 508-430-7513.*

Authorized Posting Officer:

Patricia A. Macura, Admin Secretary

Posted by: _____
Town Clerk

Date: _____
December 3, 2020

NEW BUSINESS

**Comprehensive Wastewater Management Plan
Elements & Components**

Project	Financing	Governance	Operations
<i>East Harwich Sewer Service Area (EHSSA)</i>	<ul style="list-style-type: none"> • Phase 2, Contract 3? 	<ul style="list-style-type: none"> • Sewer Regulations • IMA • Watershed Permit/Targeted Watershed Management Plan (TWMP) 	<ul style="list-style-type: none"> • O/M costs in FY 22?
<i>Dennis-Harwich-Yarmouth (DHY) Clean Waters Community Partnership</i>		<ul style="list-style-type: none"> • 5/3/2021 – ATM Article on agreement 	
<i>Comprehensive Wastewater Management Plan (CWMP)</i>	<ul style="list-style-type: none"> • WIIF article for FY 24 or 25? 	<ul style="list-style-type: none"> • Updates based on progress to date? 	

Comprehensive Wastewater Management Plan Progress Update & Next Steps

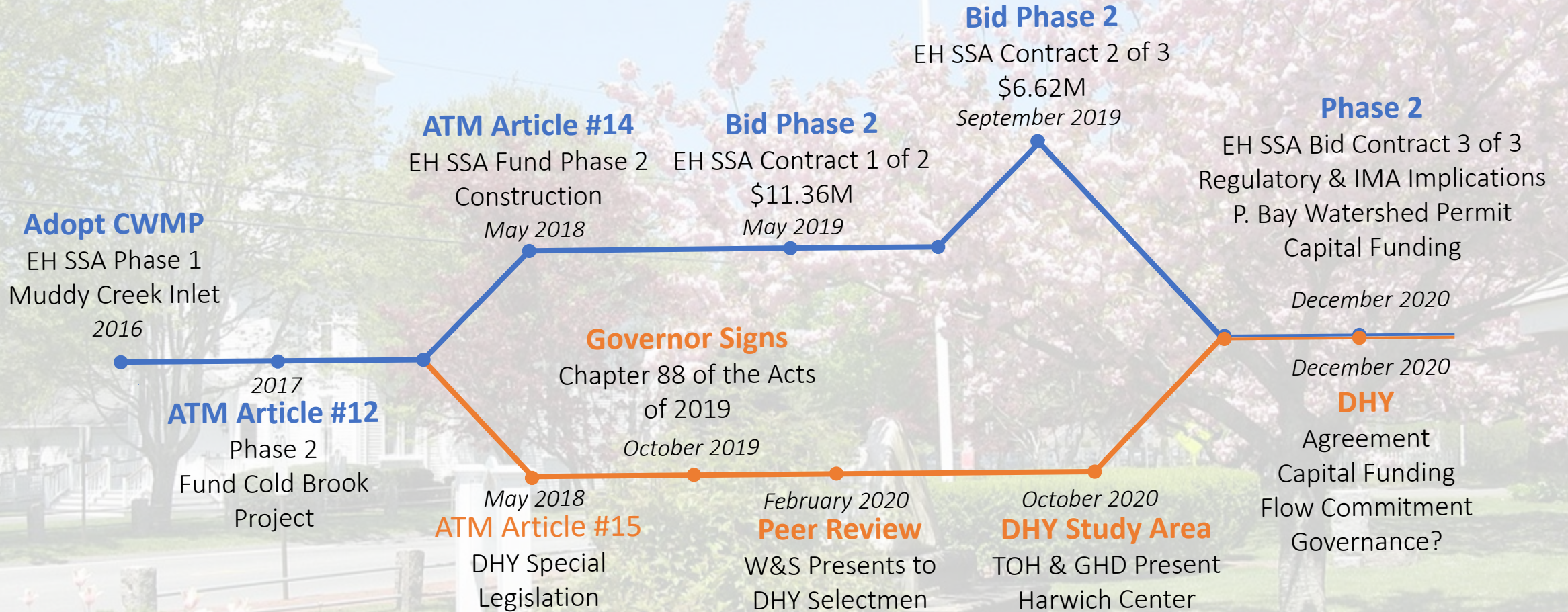
December 2020



TOWN OF
HARWICH MASSACHUSETTS

CWMP Progress Update

Timeline



Phase 2 Contract 3 – East Harwich SSA

Regulatory & IMA Implications

Harwich – Chatham IMA

Capacity Purchase Fee Schedule		
1st Payment	\$ 2,265,000	Upon Execution of IMA (3/27/2017)
2nd Payment	\$ 1,500,000	Upon Commencement of Flow
3rd Payment	\$ 1,500,000	50,000GPD or 5 years (2022) from IMA Execution
4th Payment	\$ 1,500,000	150,000GPD or 7 (2024) years from IMA Execution

1-Year Order to Connect (OTC) will generate 50,000GPD approx. Nov. 2021

2-Year OTC will generate 50,000GPD approx. June 2022

4th Payment will be triggered by date with or without P2C3- 650 x 186gpd = 120,000

What are the impacts on the Chatham WWTP if P2C3 is delayed?

Chatham WWTP staff have advised there would be no negative impacts on plant operations or effluent water quality

What is the impact on sewer operating expenses/revenues if P2C3 is further delayed?

Beyond FY22, a further delay will result in decreased revenue and increased reliance on funding from general government. The majority of operating expenses will remain fixed, flow variable expenses will be slightly reduced but negligible with respect to lost revenue & fixed costs.

Phase 2 Statistics

Contracts 1 & 2

Parcels - 440

Estimated Flow – 82,030gpd

Est. Load Removal – 1,422 kg/yr

Contract 3

Parcels – 227

Estimated Flow – 39,880

Est. Load Removal – 626 kg/yr

FY22 Estimated Sewer Service Connections & Flow Projections						
			1-Year Order to Connect		2-Year Order to Connect	
			Estimated Connections	Estimated Daily WW Flow	Estimated Connections	Estimated Daily WW Flow
FY 21	Q4	Apr-21	36	6,696	18	3,410
		May-21	72	13,392	37	6,820
		Jun-21	108	20,088	55	10,230
Fiscal Year 2022	Q1	Jul-21	144	26,784	73	13,640
		Aug-21	181	33,666	92	17,050
		Sep-21	218	40,548	110	20,460
	Q2	Oct-21	255	47,430	128	23,870
		Nov-21	292	54,312	147	27,280
		Dec-21	329	61,194	165	30,690
	Q3	Jan-22	366	68,076	183	34,100
		Feb-22	403	74,958	202	37,510
		Mar-22	440	81,840	220	40,920
	Q4	Apr-22	440	81,840	238	44,330
		May-22	440	81,840	257	47,740
		Jun-22	440	81,840	275	51,150

Watershed Permit – TWMP

Regulatory & IMA Implications

PRESS RELEASE

Environmental Officials Issue First-of-its-Kind Watershed Permit for Pleasant Bay Communities on Cape Cod

Permit Will Allow Communities to Better Address Nitrogen Pollution in Pleasant Bay

FOR IMMEDIATE RELEASE:
8/03/2018

Massachusetts Department of Environmental Protection

Watershed Permit No.: 001-0

- On August 3rd 2018 MassDEP issued the Towns of Harwich, Brewster, Chatham and Orleans a joint watershed permit to implement the mitigation strategy for Pleasant Bay, as set forth in the plan titled *Pleasant Bay Targeted Watershed Management Plan(TWMP)*, Data May 2018.

The Watershed Permit will:

Provide the communities an opportunity to employ a greater range of solutions to address their water quality needs, not just traditional wastewater systems, but also alternative approaches, such as fertilizer reduction, inlet restoration, aquaculture or permeable reactive barriers

Allow communities to get credit for the nitrogen reductions stemming from non-traditional approaches and/or non-traditional technologies, credit they would not receive through traditional permitting

Account for the need for long-term strategies – such as this 20-year permit – necessary to address wastewater issues – instead of the traditional five-year permits

Employ an adaptive management approach, acknowledging the uncertainties that may be associated with some projects, and carefully monitoring performance and assessing progress in a transparent fashion – and if necessary, making changes in the approach that may be needed to achieve water quality goals in a timely manner

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								



Watershed Permit – TWMP

Regulatory & IMA Implications

Funding Request Year	Fiscal Year	Annual	Cumulative	Funding For	Total Annual Funding Request
Phase H1					
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
Phase H1					
2013	2014	\$1.0 M	\$1.0 M	Muddy Creek Project - Design, Construction and Implementation	\$1.0 M
Phase H2					
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
Phase H3					
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	
Phase H4					
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	
Phase H5					
2032	2033	\$33.7 M	\$179.8 M	Phase H5 Collection System - Design & Construction	\$33.7 M
Phase H6					
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	
Phase H7					
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	
Phase H8					
2047	2048	\$49.3 M	\$315.5 M	Phase H8 Collection System - Design & Construction	\$49.3 M



Muddy Creek Bridge

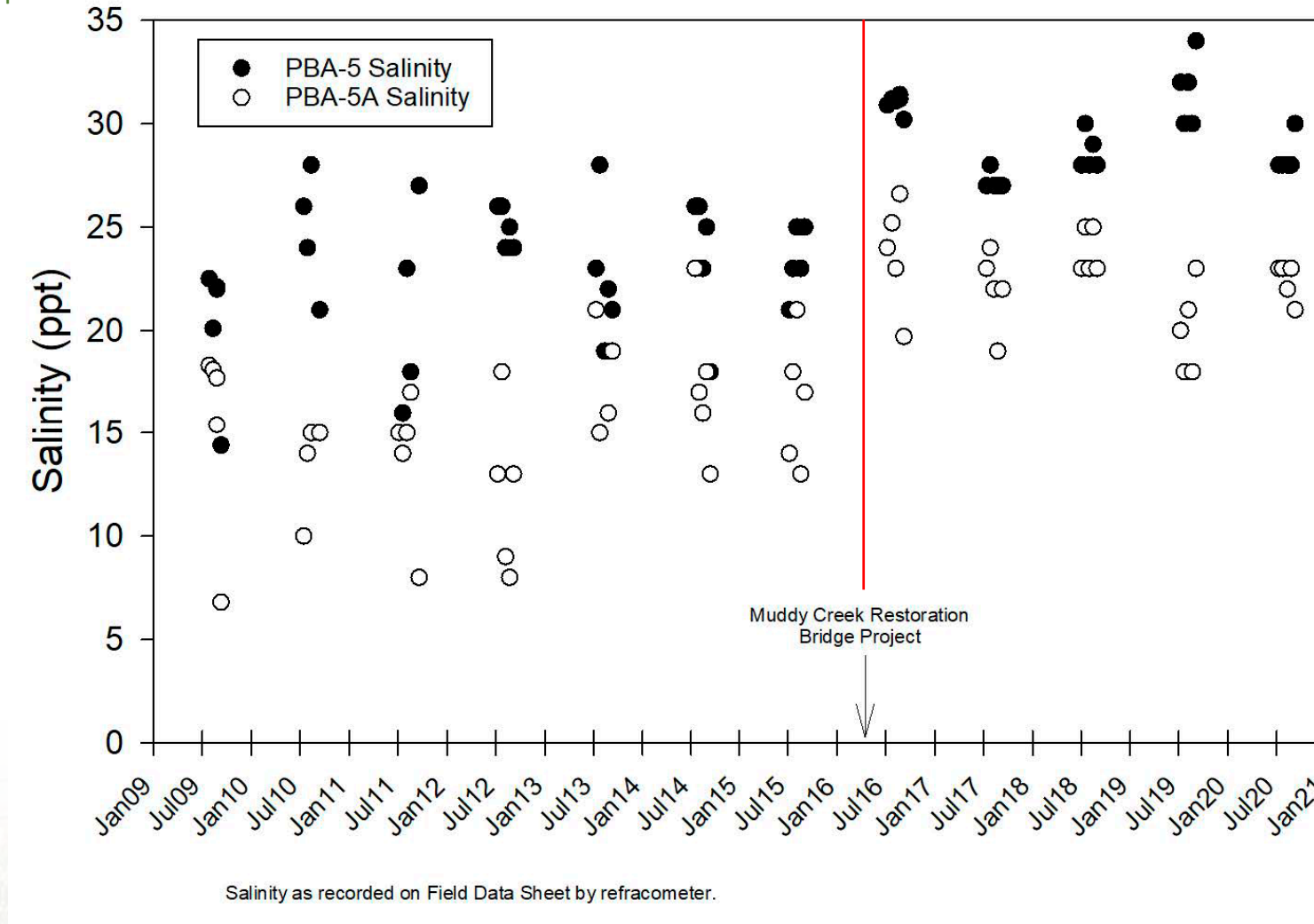
* Table Dated November 2019



Watershed Permit – TWMP

Regulatory & IMA Implications

Muddy Creek Salinity

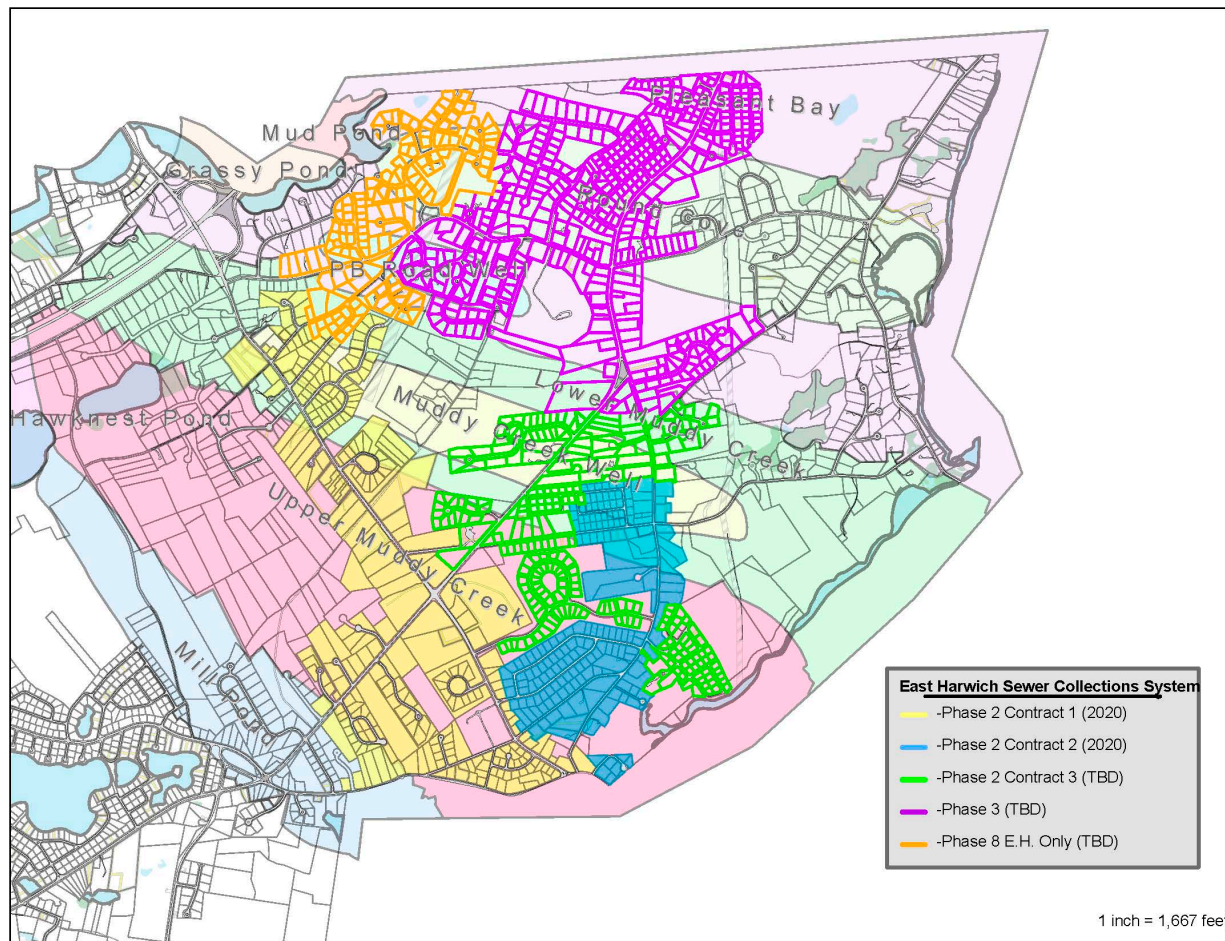


Greater salinity in Muddy Creek reflects the increased tidal flushing achieved by widening the bridge inlet.

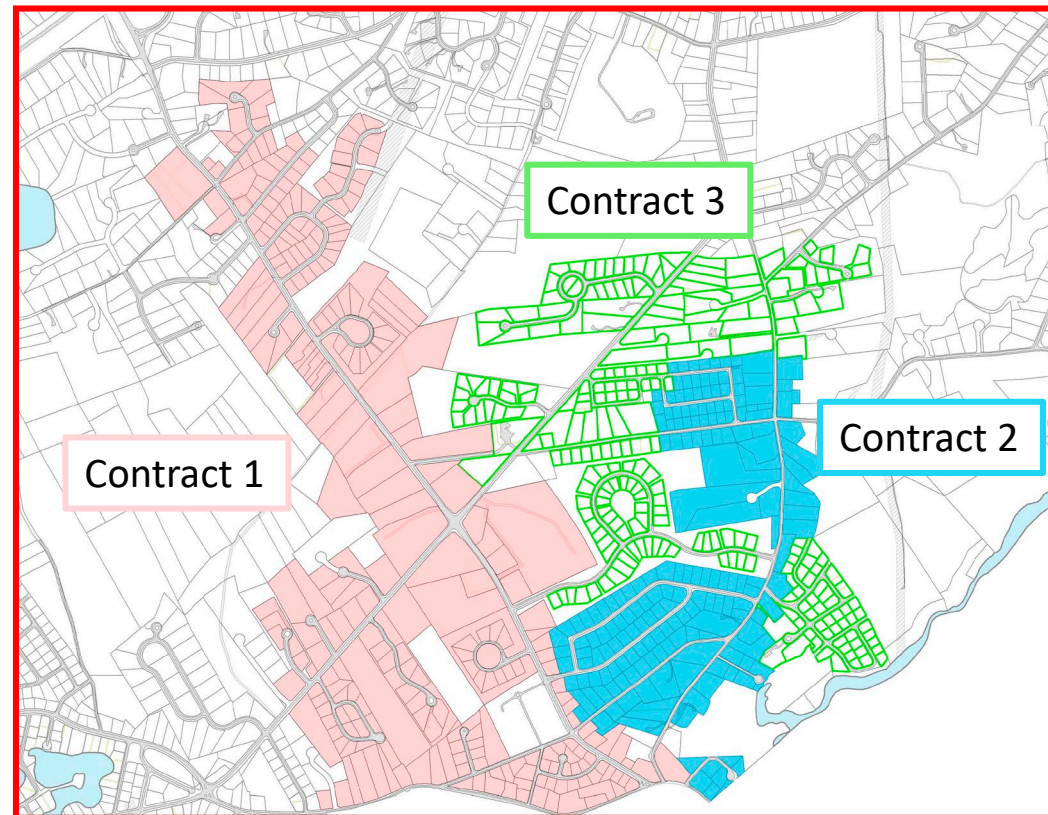


Phase 2 Contract 3 – East Harwich SSA

Regulatory & IMA Implications



East Harwich SSA & Pleasant Bay Sub-Watersheds



Phase 2 Statistics

Contracts 1 & 2

Parcels - 440

Estimated Flow – 82,030gpd

Est. Load Removal – 1,422 kg/yr

Contract 3

Parcels – 227

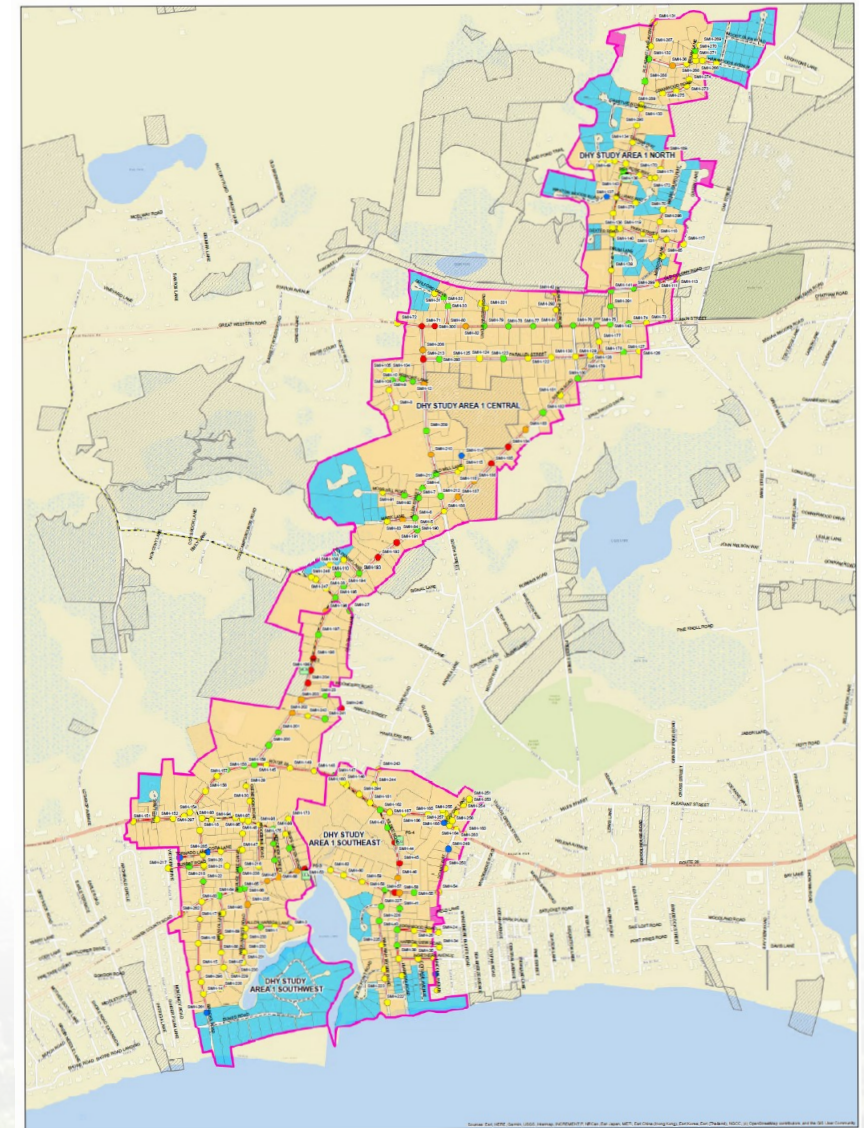
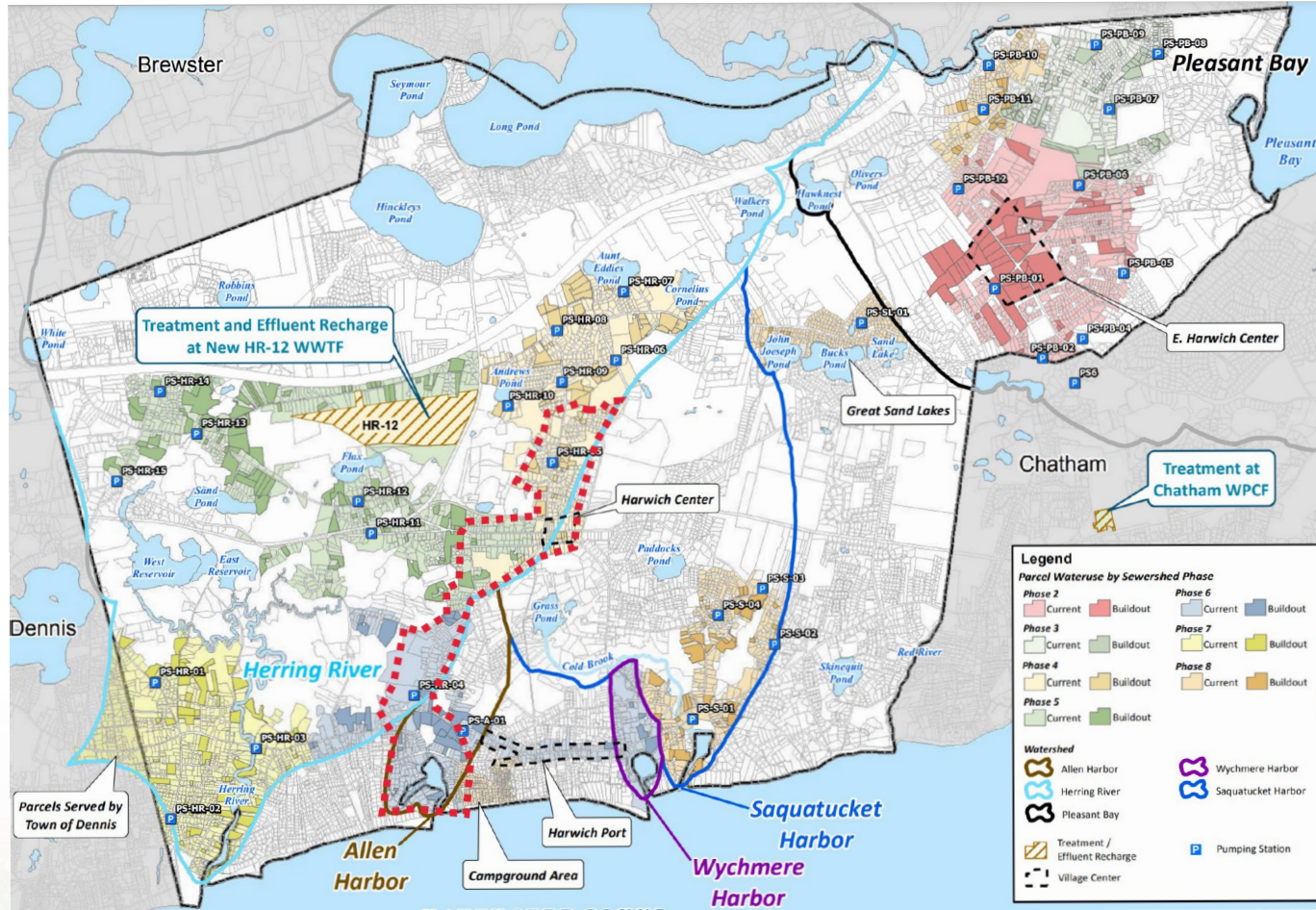
Estimated Flow – 39,880

Est. Load Removal – 626 kg/yr



DHY Re-Phasing Update

Harwich Center Study Area



TOWN OF
HARWICH MASSACHUSETTS



DHY
DENNIS HARWICH YARMOUTH
CLEAN WATERS COMMUNITY PARTNERSHIP

DHY Re-Phasing Update

Harwich Center Study Area

Item Description	Unit	Unit Cost (\$)	DHY Study Area 1 North		DHY Study Area 1 Central		DHY Study Area 1 Southwest		DHY Study Area 1 Southeast		DHY Study Area 1 Total	
			Quantity	Estimated Budgetary Construction Costs (\$)	Quantity	Estimated Budgetary Construction Costs (\$)	Quantity	Estimated Budgetary Construction Costs (\$)	Quantity	Estimated Budgetary Construction Costs (\$)	Quantity	Estimated Budgetary Construction Costs (\$)
Mobilization	LS	\$250,000	1	\$250,000	1	\$250,000	1	\$250,000	1	\$250,000	4	\$1,000,000
Gravity Sewer - Less than 10 Feet Deep, Town Road	LF	\$210	5,900	\$1,200,000	6,500	\$1,300,000	10,100	\$2,100,000	2,400	\$500,000	25,000	\$5,300,000
Gravity Sewer - Greater Than 11 Feet Deep, Town Road	LF	\$330	1,500	\$510,000	12,300	\$4,100,000	4,400	\$1,500,000	5,000	\$1,700,000	23,000	\$7,600,000
Gravity Sewer - Less than 10 Feet Deep, State Road	LF	\$260	0	\$0	0	\$0	2,500	\$650,000	2,100	\$530,000	4,600	\$1,200,000
Gravity Sewer - Greater Than 11 Feet Deep, State Road	LF	\$380	0	\$0	0	\$0	700	\$0	450	\$0	1,200	\$500,000
Low Pressure	LF	\$110	7,000	\$780,000	1,400	\$150,000	3,500	\$380,000	1,900	\$210,000	14,000	\$1,500,000
Force Main - Town Road	LF	\$190	1,200	\$230,000	800	\$160,000	2,900	\$540,000	500	\$90,000	5,400	\$1,000,000
Force Main - State Road	LF	\$250	0	\$0	0	\$0	0	\$0	700	\$170,000	700	\$200,000
Manhole	EA	\$10,000	48	\$480,000	91	\$910,000	90	\$900,000	58	\$580,000	287	\$2,900,000
Dewatering	LS	\$1,000,000	1	\$100,000	1	\$200,000	1	\$400,000	1	\$300,000	1	\$1,000,000
Paving - Primary Roads	LF	\$140	3,300	\$450,000	11,300	\$1,500,000	4,600	\$600,000	3,500	\$500,000	23,000	\$3,200,000
Paving - Secondary Roads	LF	\$130	12,000	\$1,500,000	11,000	\$1,400,000	18,000	\$2,300,000	10,000	\$1,300,000	51,000	\$6,600,000
Pump Stations	EA	\$1,250,000	1	\$1,250,000	1	\$1,250,000	1	\$1,250,000	1	\$1,250,000	4	\$5,000,000
Construction Subtotal (2020 dollars)				\$7,000,000		\$11,000,000		\$11,000,000		\$7,000,000		\$37,000,000
Contingency (30%)				\$2,000,000		\$3,000,000		\$3,000,000		\$2,000,000		\$11,000,000
Construction Total (2020 dollars)				\$9,000,000		\$14,000,000		\$14,000,000		\$9,000,000		\$48,000,000
Fiscal, Legal and Engineering (30%)				\$2,700,000		\$4,200,000		\$4,200,000		\$2,700,000		\$14,000,000
Total Project Cost (2020 dollars)				\$12,000,000		\$18,000,000		\$18,000,000		\$12,000,000		\$62,000,000
Total Project Cost (2025 dollars)				\$14,000,000		\$21,000,000		\$21,000,000		\$14,000,000		\$72,000,000
Total Project Cost (2027 dollars)				\$15,000,000		\$22,000,000		\$22,000,000		\$15,000,000		\$76,000,000
Total Project Cost (2029 dollars)				\$16,000,000		\$23,000,000		\$23,000,000		\$16,000,000		\$81,000,000
Total Project Cost (2031 dollars)				\$17,000,000		\$25,000,000		\$25,000,000		\$17,000,000		\$86,000,000

Notes:

Costs presented in August 2020 dollars (ENR 11455), values should be updated to midpoint of construction. Annual inflation of 3% is typically used.

Values and costs are rounded

DHY Re-Phasing Update

Harwich Center Study Area

Funding Year	Funding For	Developed Parcels	Estimated Flow	Budgetary Cost Estimate
FY24	DHY Plant & Effluent Recharge	0	245,000 GPD	\$30M
FY26	Harwich Center Central Collections System	210	59,750 GPD	\$21M
FY31	Harwich Center North Collections System	163	44,750 GPD	\$17M
FY33	Harwich Center South West Collections System	215	72,750 GPD	\$26M
FY35	Harwich Center South East Collections System	146	67,750 GPD	\$19.2M

Harwich Center Study Area Totals: 734 Parcels 245,000 GPD \$113.2M

*Budgetary Costs have been escalated at 3% annually from 2020 Dollars to the anticipated year of construction

Additional Considerations & Cost Saving Opportunities

Harwich Center Study Area

- The watershed permit and associated TWMP activities should be considered if the Town expects to transition from the East Harwich Sewer Service Area to the DHY Harwich Center Study Area
- The Town could consider re-evaluating the CWMP phasing methodology to reflect smaller but more frequent construction sequences. This would allow the Town to adapt more easily to changing conditions and take advantage of costs saving opportunities when they arise
 - Potential upcoming cost saving/sharing opportunities include:
 1. MassDOT is scheduled to re-pave Route 28 from the Dennis Line to the Herring River Bridge. Partnering with MassDOT as a non-participating entity will allow the sewer mains to be installed under the MassDOT project at a significantly reduced costs to the Town
 2. The Water Department is planning to replace water main on Route 28 within the limits of Harwich Center South East & South West, making this a combined utility project will and share road restoration costs saving money for both entities
- The Town should consider developing a SewerCAD model capturing all 8 phases of the CWMP. The model will streamline evaluating phasing options, flow projections, preliminary design, and cost estimates. The model will also aid in evaluating changing conditions and cost saving opportunities