

**APPENDIX E:**  
**IMPLEMENTATION COST ESTIMATE**

Inflation Calendar Year Plan Year	2025 Year 1	5% 2026 Year 2	5% 2027 Year 3	5% 2028 Year 4	5% 2029 Year 5	5% 2030 Year 6	5% 2031 Year 7	5% 2032 Year 8	5% 2033 Year 9	5% 2034 Year 10
<b>Tier 1 - Number of Installations (Parcels)</b>										
Megansett Squeteague <sup>1</sup>	57	57	57	57	57					
Phinney's Harbor <sup>2</sup>						218	218			
<i>Tier 1 Subtotal</i>	57	57	57	57	57	218	218	0	0	0
<b>Tier 2 - Number of Installations (Parcels)</b>										
Buttermilk Bay - Sewer 1 (TN Removal Goal only)										
Pocasset Harbor										
Pocasset River										
<i>Tier 2 Subtotal</i>	0	0	0	0	0	0	0	0	0	0
<b>Total Installations</b>	<b>57</b>	<b>57</b>	<b>57</b>	<b>57</b>	<b>57</b>	<b>218</b>	<b>218</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Tier 1 - Capital Costs</b>										
Megansett Squeteague <sup>3</sup>	\$ 2,423,000	\$ 2,544,000	\$ 2,665,000	\$ 2,786,000	\$ 2,907,000	\$ -	\$ -	\$ -	\$ -	\$ -
Phinney's Harbor <sup>4</sup>	\$ 200,000	\$ 1,000,000	\$ 800,000	\$ 300,000	\$ 18,748,500	\$ 19,529,688	\$ 20,310,875	\$ -	\$ -	\$ -
<i>Tier 1 Capital Cost Subtotal</i>	\$ 2,623,000	\$ 3,544,000	\$ 3,465,000	\$ 3,086,000	\$ 21,655,500	\$ 19,529,688	\$ 20,310,875	\$ -	\$ -	\$ -
<b>Tier 2 - Capital Costs<sup>5</sup></b>										
Buttermilk Bay - Sewer 1 (TN Removal Goal only)								\$ 2,500,000	\$ 1,200,000	\$ 17,523,975
Pocasset Harbor										
Pocasset River										
<i>Tier 2 Capital Cost Subtotal</i>	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,500,000	\$ 1,200,000	\$ 17,523,975
<b>Annual Capital Subtotal</b>	<b>\$ 2,623,000</b>	<b>\$ 3,544,000</b>	<b>\$ 3,465,000</b>	<b>\$ 3,086,000</b>	<b>\$ 21,655,500</b>	<b>\$ 19,529,688</b>	<b>\$ 20,310,875</b>	<b>\$ 2,500,000</b>	<b>\$ 1,200,000</b>	<b>\$ 17,523,975</b>
<b>Tier 1 - Operation &amp; Maintenance Costs</b>										
Megansett Squeteague	\$ 136,230	\$ 279,272	\$ 429,125	\$ 585,789	\$ 749,265	\$ 974,045	\$ 1,314,960	\$ 1,380,708	\$ 1,449,743	\$ 1,522,231
Phinney's Harbor						\$ 1,261,575	\$ 2,649,308	\$ 2,781,773	\$ 2,920,862	\$ 3,066,905
<i>Tier 1 Operation &amp; Maintenance Cost Subtotal</i>	\$ 136,230	\$ 279,272	\$ 429,125	\$ 585,789	\$ 749,265	\$ 2,235,620	\$ 3,964,268	\$ 4,162,481	\$ 4,370,605	\$ 4,589,135
<b>Tier 2 - Operation &amp; Maintenance Costs</b>										
Buttermilk Bay - Sewer 1 (TN Removal Goal only)										\$ 1,161,450
Pocasset Harbor										
Pocasset River										
<i>Tier 2 Operation &amp; Maintenance Cost Subtotal</i>	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,161,450
<b>Annual Operation &amp; Maintenance Subtotal</b>	<b>\$ 136,230</b>	<b>\$ 279,272</b>	<b>\$ 429,125</b>	<b>\$ 585,789</b>	<b>\$ 749,265</b>	<b>\$ 2,235,620</b>	<b>\$ 3,964,268</b>	<b>\$ 4,162,481</b>	<b>\$ 4,370,605</b>	<b>\$ 5,750,585</b>
<b>Annual Cost Total</b>	<b>\$ 2,759,230</b>	<b>\$ 3,823,272</b>	<b>\$ 3,894,125</b>	<b>\$ 3,671,789</b>	<b>\$ 22,404,765</b>	<b>\$ 21,765,307</b>	<b>\$ 24,275,143</b>	<b>\$ 6,662,481</b>	<b>\$ 5,570,605</b>	<b>\$ 23,274,560</b>

1. Megansett-Squeteague Installations assume all GUIA parcels.  
 2. Phinney's Harbor Installations assume sewer required to meet a conservative TMDL estimate (assuming 10 mg/L discharge into Phinney's Harbor.) Total number may be reduced after detailed groundwater modeling to indicate direction of groundwater flow from Bourne Middle School WWTF groundwater discharge beds.  
 3. Megansett-Squeteague Capital Costs include estimate to design, procure, and install each onsite system, according to estimated 2024 cost of \$42,500 per GUIA system (Class 5 conceptual cost estimates, values may fluctuate -50%/+100%) Costs are inflated to the construction year by increasing 5% annually. This is not a CWSRF Eligible cost as of 2024.  
 4. Phinney's Harbor Capital Costs include: Existing Bourne Middle School WWTF GWD Expansion Permit Assessment and Filing, Preliminary BWS WWTF Design, SRF Support, Filing Watershed Permit, Final Design, Permitting, Bidding, and Construction of the Bourne Middle School WWTF and sewer expansions from Phinney's Harbor to BWS WWTF.  
 5. Tier 2 Parcels assume sewer alternatives (Core Sewer Area in Buttermilk Bay using existing Buzzards Bay WWTF, a new Core Sewer Area in Pocasset Harbor and Pocasset River, using a new satellite WWTF with new GW discharge permit). Costs include WWTF Treatment Construction, Sewer Expansion, Preliminary Modeling and Design, Final Design, Bidding, and Construction Services. Costs do not include any land acquisition as part of WWTF construction.

Inflation Calendar Year Plan Year	5% 2035 Year 11	5% 2036 Year 12	5% 2037 Year 13	5% 2038 Year 14	5% 2039 Year 15	5% 2040 Year 16	5% 2041 Year 17	5% 2042 Year 18	5% 2043 Year 19	5% 2044 Year 20
<b>Tier 1 - Number of Installations (Parcels)</b>										
Megansett Squeteague <sup>1</sup>										
Phinney's Harbor <sup>2</sup>										
<i>Tier 1 Subtotal</i>	0	0	0	0	0	0	0	0	0	0
<b>Tier 2 - Number of Installations (Parcels)</b>										
Buttermilk Bay - Sewer 1 (TN Removal Goal only)	330									
Pocasset Harbor						355	355			
Pocasset River			300							
<i>Tier 2 Subtotal</i>	330	0	300	0	0	355	355	0	0	0
<b>Total Installations</b>	<b>330</b>	<b>0</b>	<b>300</b>	<b>0</b>	<b>0</b>	<b>355</b>	<b>355</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Tier 1 - Capital Costs</b>										
Megansett Squeteague <sup>3</sup>	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Phinney's Harbor <sup>4</sup>	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<i>Tier 1 Capital Cost Subtotal</i>	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Tier 2 - Capital Costs<sup>5</sup></b>										
Buttermilk Bay - Sewer 1 (TN Removal Goal only)	\$ 18,400,174									
Pocasset Harbor				\$ 5,893,985	\$ 11,787,970	\$ 58,939,850	\$ 61,886,843			
Pocasset River	\$ 4,541,345	\$ 22,706,725	\$ 23,842,061							
<i>Tier 2 Capital Cost Subtotal</i>	\$ 22,941,519	\$ 22,706,725	\$ 23,842,061	\$ 5,893,985	\$ 11,787,970	\$ 58,939,850	\$ 61,886,843	\$ -	\$ -	\$ -
<b>Annual Capital Subtotal</b>	<b>\$ 22,941,519</b>	<b>\$ 22,706,725</b>	<b>\$ 23,842,061</b>	<b>\$ 5,893,985</b>	<b>\$ 11,787,970</b>	<b>\$ 58,939,850</b>	<b>\$ 61,886,843</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
<b>Tier 1 - Operation &amp; Maintenance Costs</b>										
Megansett Squeteague	\$ 1,598,342	\$ 1,678,259	\$ 1,762,172	\$ 1,850,281	\$ 1,942,795	\$ 2,039,935	\$ 2,141,931	\$ 2,249,028	\$ 2,361,479	\$ 2,479,553
Phinney's Harbor	\$ 3,220,250	\$ 3,381,262	\$ 3,550,325	\$ 3,727,842	\$ 3,914,234	\$ 4,109,945	\$ 4,315,443	\$ 4,531,215	\$ 4,757,776	\$ 4,995,664
<i>Tier 1 Operation &amp; Maintenance Cost Subtotal</i>	\$ 4,818,592	\$ 5,059,522	\$ 5,312,498	\$ 5,578,123	\$ 5,857,029	\$ 6,149,880	\$ 6,457,374	\$ 6,780,243	\$ 7,119,255	\$ 7,475,218
<b>Tier 2 - Operation &amp; Maintenance Costs</b>										
Buttermilk Bay - Sewer 1 (TN Removal Goal only)	\$ 2,439,045	\$ 2,560,997	\$ 2,689,047	\$ 2,823,499	\$ 2,964,674	\$ 3,112,908	\$ 3,268,554	\$ 3,431,981	\$ 3,603,580	\$ 3,783,759
Pocasset Harbor						\$ 4,265,325	\$ 8,957,183	\$ 9,405,042	\$ 9,875,294	\$ 10,369,058
Pocasset River				\$ 3,304,125	\$ 3,469,331	\$ 3,642,798	\$ 3,824,938	\$ 4,016,185	\$ 4,216,994	\$ 4,427,844
<i>Tier 2 Operation &amp; Maintenance Cost Subtotal</i>	\$ 2,439,045	\$ 2,560,997	\$ 2,689,047	\$ 6,127,624	\$ 6,434,006	\$ 11,021,031	\$ 16,050,674	\$ 16,853,207	\$ 17,695,868	\$ 18,580,661
<b>Annual Operation &amp; Maintenance Subtotal</b>	<b>\$ 7,257,637</b>	<b>\$ 7,620,519</b>	<b>\$ 8,001,545</b>	<b>\$ 11,705,747</b>	<b>\$ 12,291,034</b>	<b>\$ 17,170,911</b>	<b>\$ 22,508,048</b>	<b>\$ 23,633,450</b>	<b>\$ 24,815,123</b>	<b>\$ 26,055,879</b>
<b>Annual Cost Total</b>	<b>\$ 30,199,156</b>	<b>\$ 30,327,244</b>	<b>\$ 31,843,606</b>	<b>\$ 17,599,732</b>	<b>\$ 24,079,004</b>	<b>\$ 76,110,761</b>	<b>\$ 84,394,890</b>	<b>\$ 23,633,450</b>	<b>\$ 24,815,123</b>	<b>\$ 26,055,879</b>

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ENR CCI	Mar-24	13532.01	
Company	Model	Cost	Notes
Aquapoint	Bioclere Model 16/12ss	\$ 12,349.00	MA Sales Tax added
Bio-Microbics	MicroFAST® 0.5 - 9.0, HighStrengthFAST® 1.0 - 9.0, NitriFAST® 0.5 - 9.0	\$ 6,052.60	MA Sales Tax added
Septi-Tech	STAAR 0.5 Denite (M400N)	\$ 10,123.00	MA Sales Tax added
Norweco	Singulair 960 DN models 600, 750, 1000, and 1500;	\$ 8,962.00	Tax Included
	Singulair 960 DN Green model 600	\$ 8,962.00	Tax Included
Orenco	Advantex AX20, AX20-RT, AX25-RT, AX100 <10,000 GPD	\$ 48,600.00	Tax Included
		\$ 15,841.43	

GU I/A System Capital Cost	OPCC (March 2024)	EIA Unit
Average GUIA Unit	\$ 15,850.00	\$ 19,812.50
Design & Permitting	\$ 3,170.00	\$ 3,962.50
Construction (Electrical and Sitework) <sup>1</sup>	\$ 19,020.00	\$ 23,775.00
Permits/Fees <sup>2</sup>	\$ 525.00	\$ 656.25
Contingency (10%)	\$ 3,860.00	\$ 4,825.00
<b>Total</b>	<b>\$ 42,500.00</b>	<b>\$ 53,100.00</b>

1. Landscaping and/or asphalt pavement is not included in base estimate.

2. Includes current Bourne Permit fees for General Permit, I/A Technology, and one Percolation Test

Embayment	Nitrogen Removal Goal (Kg-N/yr.)	Number of GUIA Parcels	Estimated Nitrogen Removal GUIA (kg-N/yr.)	Estimated Stormwater BMP Removal (kg-N/yr.)*
Megansett-Squeteague Harbor	564	285 - 357	504 - 631	113
Phinneys Harbor	1,706	1,133 - 1,235	2,001 - 2,182	341
Buttermilk Bay	1,402	374 - 704	588 - 1,245	280
Pocasset Harbor	3,120	1,450	2,562	624
Pocasset River	1,289	650	1,148	258
<b>Total</b>	<b>8,072</b>	<b>3,892 - 4,396</b>	<b>6,803 - 7,768</b>	<b>1,616</b>