



Board of Selectmen

FY 17 Town Meeting – Article 5 Water Quality and Wastewater Planning Program

March 23, 2016

Agenda

- ❖ Continued Planning and Engineering
- ❖ Adaptive Management Implementation
- ❖ Program Management

Task	Task Description	Hours	FY 2017		Comments & Assumptions	
			Contribution to Total Budget	Other Town Costs and Replacements		
1	Continued Planning and Engineering					
1.1	Site Specific Planning and Engineering	364	\$ 63,700	\$ 40,000	\$ 103,700 RD and Evaluate up to 1 New Effluent Disposal Site	
1.2	NY Technologies - Demonstration Project Planning & Design, Final Design and Implementation	-	\$ 676,000	-	\$ 676,000 w/CTW Data Refinement - verify N Parameters w/Regulator, Chemical Plant Operator Reel, Chemical Plant Utility Dept. (Sewer Extension, Clarifier Efficiency) w/MSL, Levee - Design and Construction (Design Phase - Design)	
1.3	Design - WWTFF, Collection System, Effluent Disposal and NT Technologies	-	\$ 1,950,000	-	\$ 1,950,000 w/Downflow Area Collection - Design 20%, WWTFF - Design 20%, Design and Effluent Disposal - Design 20%, w/Performance Review (Final Design - Design 50%)	
1.4	Construction and Requirements - WWTFF, Collection System, Effluent Disposal and NT Technologies	-	\$ -	\$ -	\$ -	
1.5	10 Town Violation Requirements - Separate Funding Article(s)	-	\$ -	\$ -	\$ -	
1.7	Regulatory Coordination	96	\$ 16,800	\$ 1,500	\$ 18,300 w/Regulatory Coordination with DEP CCC, MEPA, Natural Heritage, OMP & BLM.	
1.8	Municipal Solid Waste Survey	-	\$ -	\$ -	\$ -	
1.9	Update of Amended CDMR	160	\$ 24,000	\$ 2,500	\$ 26,500 w/Update of ACCDMR for review and approval	
2	Adaptive Management Implementation	Sub-Total	600	\$ 1,897,000	\$ 43,500	\$ 1,940,500
2.1	Water Quality Monitoring - Adaptive Management	160	\$ 24,000	\$ -	\$ 24,000 w/Response to 10 Year of monitoring to support MEP implementation.	
2.3	Water Quality Monitoring - Project Enclosures	160	\$ 31,500	\$ 96,480	\$ 127,980 w/Absence for development of Performance Baseline.	
2.5	MEP Study & Report Updates	40	\$ 7,000	\$ 8,000	\$ 15,000 w/Planning and copying for MEP model reports, include external input.	
2.6	Narrative & Life Narrative Adaptive Plans	80	\$ 14,000	\$ 14,000	\$ 28,000 w/Site Survey, current hydrological data.	
2.4	Stormwater & Pollution Management	40	\$ 7,000	\$ -	\$ 7,000 w/Absence for stormwater management process coordination with CDMR Associates.	
2.7	Older Pond & Rock Harbor Creek Resilience Plus, Cedar Brook Stage III, Hazard Expiry Increased Monitoring and Data Model Study	40	\$ 71,000	\$ 2,000	\$ 73,000 w/Planning, review and discussion with DEP to plan Life Attribability with DEP/MSL/MSL.	
3	Program Management	Sub-Total	224	\$ 150,000	\$ 176,880	\$ 326,880
3.1	Technical Oversight & Project Management	200	\$ 144,000	\$ 4,000	\$ 148,000 w/Assure full time program to project manager. Meet by Town.	
3.2	Public Engagement Coordinator	24	\$ 6,000	\$ -	\$ 6,000	
3.3	Financial Planning and Analysis	0	\$ 14,000	\$ 1,500	\$ 15,500 w/Update of financial model and plan contribution.	
3.4	Regulatory Coordination	0	\$ 14,000	\$ 1,100	\$ 15,100 w/Update of financial model and plan contribution.	
Sub-Total		2,224	\$ 189,200	\$ 13,680	\$ 202,880	
Total Budget		3,248	\$ 2,176,200	\$ 225,680	\$ 2,401,880	



Continued Planning and Engineering

Task	Task Description	FY 2017				Comments & Assumptions
		Hours	Construction or Labor Budget	Other Direct Costs and Replacement	Total Budget	
1	Continued Planning and Engineering					
1.a	Preplanning - Treatment and Disposal Site Investigations (new sites)	364	\$ 63,700	\$ 40,000	\$ 103,700	•ID and Evaluate up to 1 New Effluent Disposal Site
1.b	NT Technologies - Demonstration Project Planning & Pre-Design, Final Design and Implementation	-	\$ 676,000	\$ -	\$ 676,000	•FCW (Data Refinement - verify N Removals) •Aquaculture (Terminal Pond Oyster Bed; Quanset Pond Oyster Bed; Shellfish Extension; Quahog Inventory) •PRB (Landfill - Design and Construction; Eldridge Park - Design)
1.c	Design - WWTF, Collection System, Effluent Disposal and NT Technologies	-	\$ 1,060,000	\$ -	\$ 1,060,000	•Downtown Area (Collection - Design 20%; WWTF - Design 25% Design, and Effluent Disposal - Design 25%) •Meelingshouse Pond (Effluent Disposal - Design 50%)
1.d	Construction and Replacement - WWTF, Collection System, Effluent Disposal and NT Technologies	-	\$ -	\$ -	\$ -	
1.e	Tri-Town Transition Requirements - Separate Funding Article(s)	-	\$ -	\$ -	\$ -	
1.f	Regulatory Coordination	96	\$ 16,800	\$ 1,500	\$ 18,300	•Project level coordination with DEP, CCC, MEPA, Natural Heritage, DMF & others.
1.g	Meelingshouse Pond Utility Survey	-	\$ -	\$ -	\$ -	
1.h	Update of Amended CWMP	140	\$ 24,500	\$ 2,000	\$ 26,500	•Update of ACWMP for review and approval.
	Sub-Total:	600	\$ 1,831,000	\$ 43,500	\$ 1,874,500	



Continued Planning and Engineering (cont.)

- ❖ Non-Traditional Technologies - Demonstration Project Planning & Pre-Design, Final Design and Implementation
- ❖ Traditional Technologies - WWTF, Collection System, Effluent Disposal and NT Technologies – 20 to 25 Percent Design
- ❖ Tri-Town Transition Requirements - Separate Funding Article(s)
- ❖ Regulatory Coordination
- ❖ Update of Amended CWMP



Preplanning - Treatment and Disposal Site Investigations (new sites)

❖ Identify and Evaluate Alternative Discharge Sites

- Parcel 1/1A
- Cloverleaf Exit 12
- Orleans Market Place
- Old Colony Village
- Hole-in-One
- Depot Square



❖ Site Selection



Design - WWTF, Collection System, Effluent Disposal and NT Technologies

Objective - 20 to 25 Percent Design to Refine and Reduce Costs

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| <ul style="list-style-type: none"> ❖ Components <ul style="list-style-type: none"> • Topographic Survey • Subsurface Investigation • Cultural Resource Evaluation ❖ Confirm/Modify System Type ❖ Confirm/Modify Construction Methods ❖ Update System Layout/Profiles | <ul style="list-style-type: none"> ❖ Update Costs ❖ Prepare Preliminary Design Report ❖ Basis for Design-Build Discussions ❖ Basis for Public-Private Partnership Discussions ❖ Satisfy MassDEP |
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NT Technologies - Demonstration Project Planning & Pre-Design, Final Design and Implementation

- ❖ Permeable Reactive Barriers
 - Design Demonstration Sites - Town Landfill and Eldredge Park.
 - Implement Town Landfill Demonstration
- ❖ Aquaculture
 - Design and Implement Terminal Pond Oyster Bed Demonstration
 - Design and Implement Quanset Pond Oyster Bed Demonstration
 - Conduct Baseline Quahog Inventory
- ❖ Implement Shellfish Extension Program
- ❖ Floating Constructed Wetlands
 - Confirm N Removal Rates and Re-evaluate Cost Effectiveness



Adaptive Management Implementation

Task	Task Description	FY 2017				Comments & Assumptions
		Hours	Construction or Labor Budget	Other Direct Costs and Replacement	Total Budget	
2	Adaptive Management Implementation					
2.a	Water Quality Monitoring: MEP compliance	140	\$ 24,500	\$ 56,400	\$ 80,900	Allowance for 1st year of monitoring to support MEP model reruns.
2.b	Water Quality Monitoring: Project Baselines	180	\$ 31,500	\$ 96,400	\$ 127,900	Allowance for development of Performance Baseline.
2.c	MEP Study & Report Updates	40	\$ 7,000	\$ 8,000	\$ 15,000	Planning and scoping for MEP model reruns; include external expert.
2.d	Namskaket & Little Namskaket Adaptive Plans	80	\$ 14,000	\$ 14,000	\$ 28,000	Sanitary survey; culvert hydraulics.
2.e	Stormwater & Fertilizer Management	40	\$ 7,000	\$ -	\$ 7,000	Allowance for stormwater management project coordination with CWM/MP Amendment.
2.f	Cedar Pond & Rock Harbor Creek Resolution Plus Cedar Pond Single EIR; Nauset Estuary Increased Monitoring; and Pond Nutrient Study.	40	\$ 71,000	\$ 2,000	\$ 73,000	Preliminary scope and discussions with DEP to plan Use Attainability Analysis (UAA).
	Sub-Total:	520	\$ 155,000	\$ 176,800	\$ 331,800	

- ❖ Water Quality Monitoring: MEP Compliance and Project Baselines
- ❖ MEP Study & Report Updates
- ❖ Namskaket & Little Namskaket Adaptive Plans
- ❖ Stormwater & Fertilizer Management
- ❖ Cedar Pond & Rock Harbor Creek Resolution Plus Cedar Pond Single EIR; Nauset Estuary Increased Monitoring; and Pond Nutrient Study



Program Management

Task	Task Description	FY 2017				Comments & Assumptions
		Hours	Construction or Labor Budget	Other Direct Costs and Replacement	Total Budget	
3	Program Management					
3.a	Technical Oversight & Projects Management	2,080	\$ 146,000	\$ 4,000	\$ 150,000	Assume full time program or project manager hired by Town.
3.b	Public Engagement Coordinator	80	\$ 14,000	\$ 1,000	\$ 15,000	
3.c	Financial Modeling and Analyses	80	\$ 14,000	\$ 1,500	\$ 15,500	Update of financial model and plan.
3.d	Regulatory Coordination	80	\$ 14,000	\$ 5,100	\$ 19,100	Continued overall program regulatory review and approval coordination.
Sub-Total:		2,320	\$ 188,000	\$ 11,600	\$ 199,600	

- ❖ Technical Oversight & Projects Management
- ❖ Public Engagement Coordination
- ❖ Financial Modeling and Analyses
- ❖ Regulatory Coordination



Thank You