

APPENDICES

Appendix A. Aquatic Habitat Maps

Appendix B. Atmospheric Deposition Data for Peconics

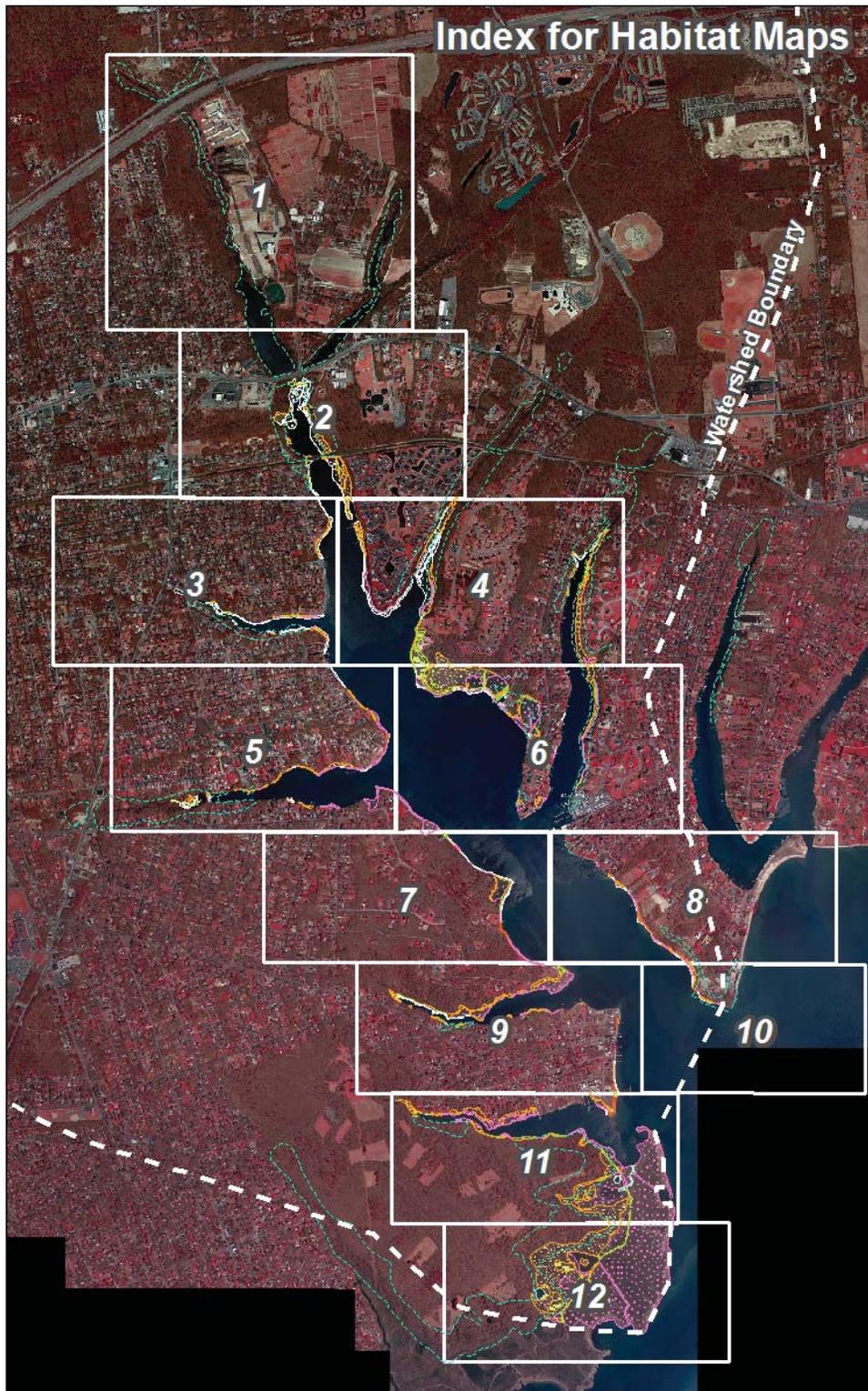
Appendix C. Forge River Priority Waterbody Listing

Appendix D – Cost Information for Strategies

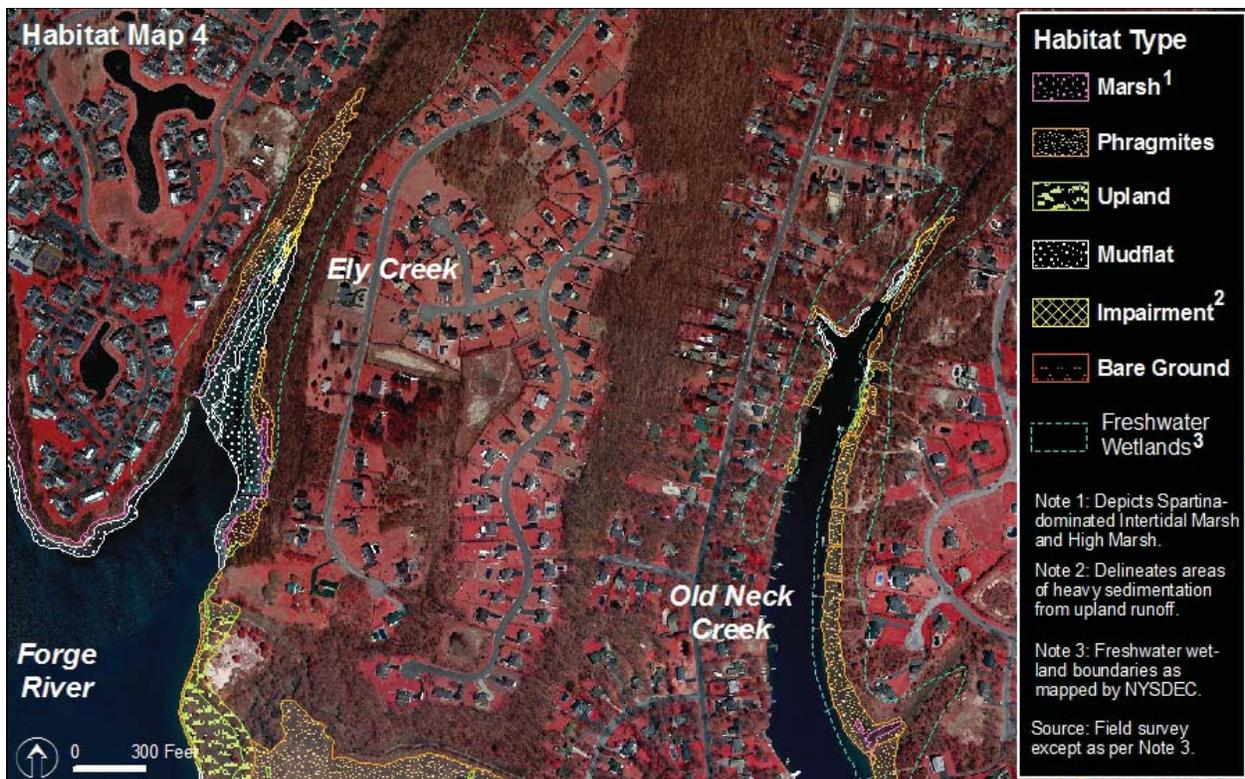
Appendix E – Response to Comments

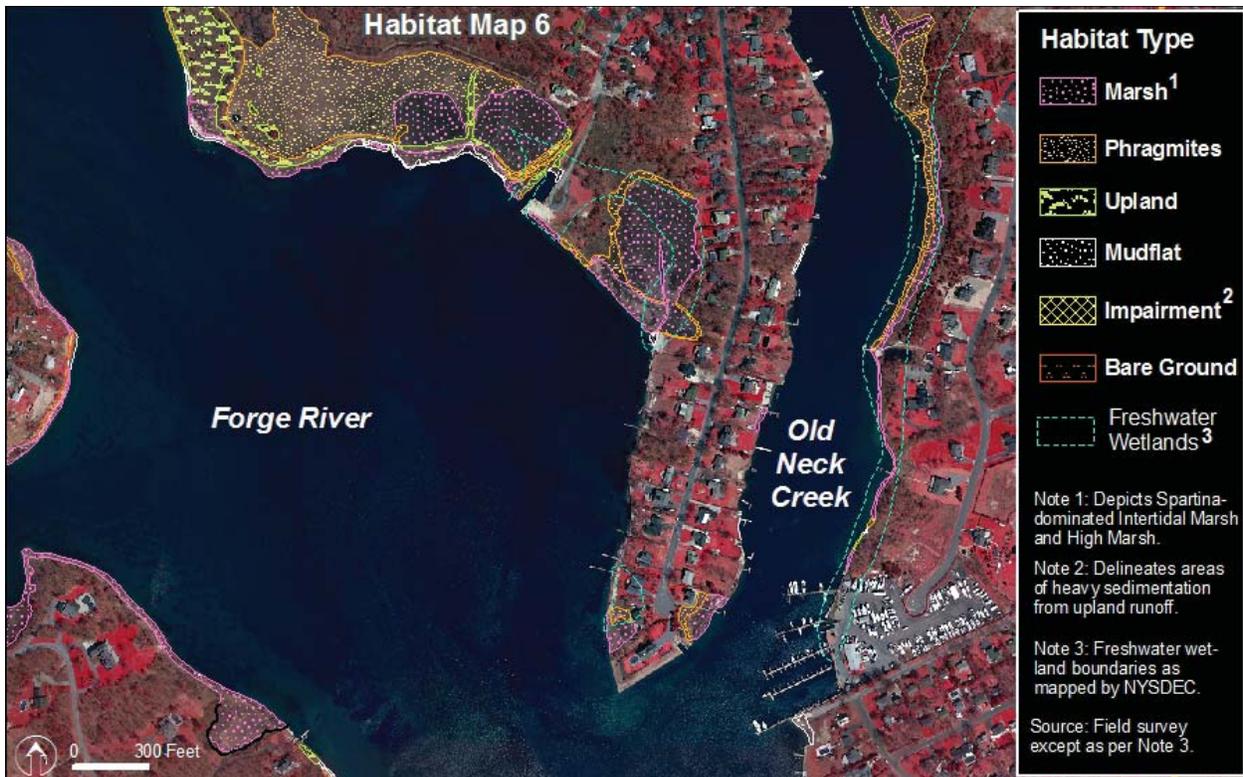
APPENDIX A

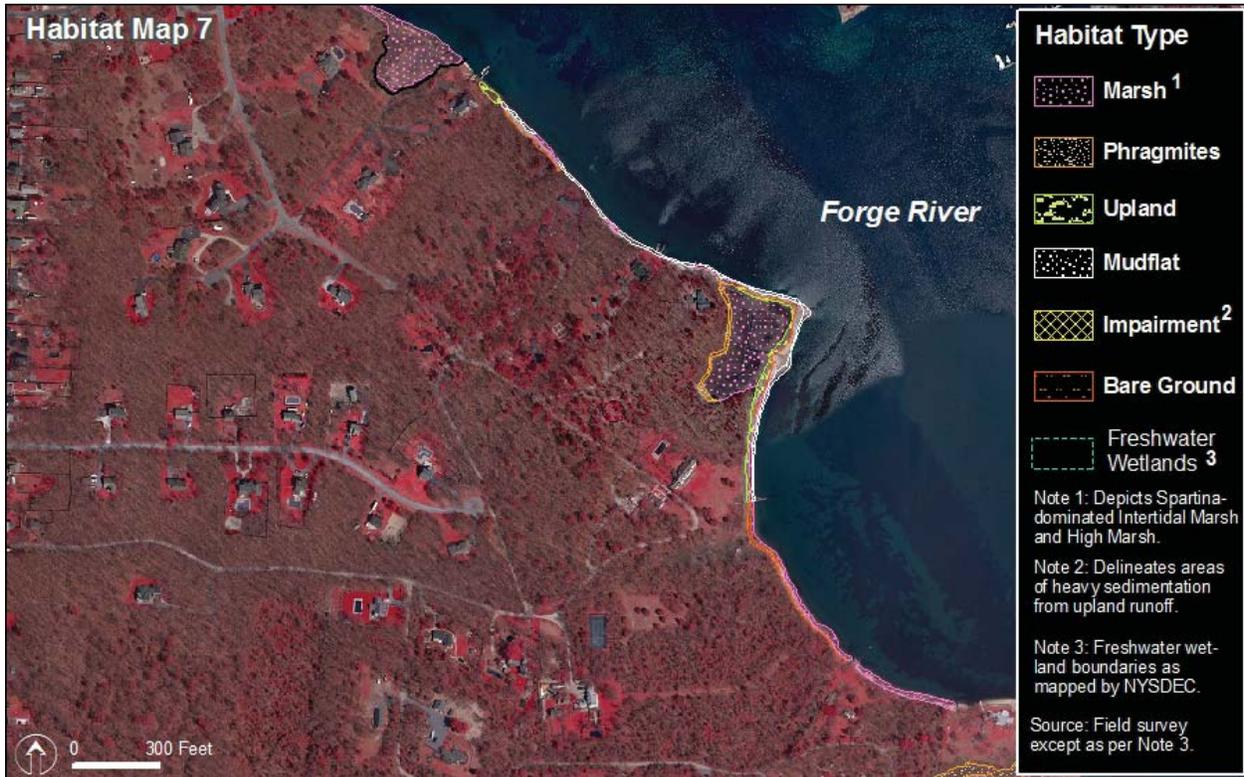
Aquatic Habitat Maps



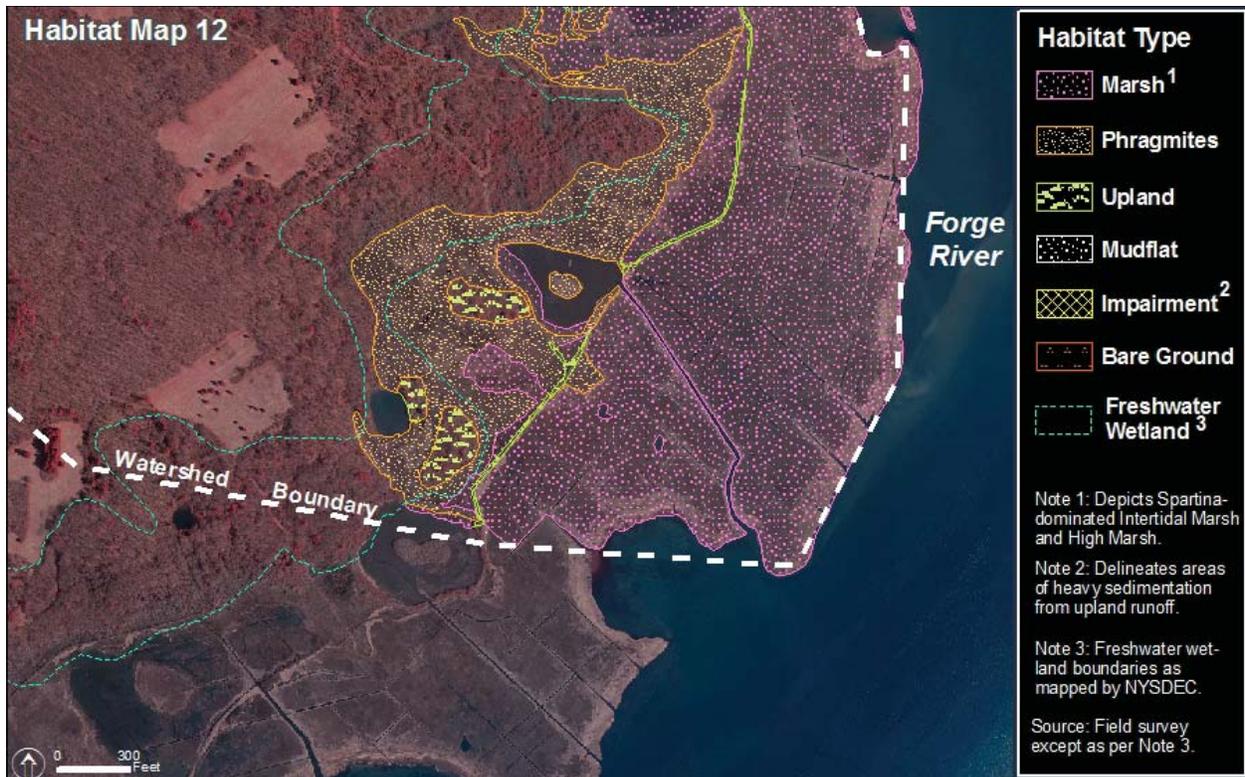












APPENDIX B
Atmospheric Deposition Data
for the Peconics

Suffolk County Department of Health Services - Office of Ecology
 Peconic Estuary Program
 National Atmospheric Deposition Program (NADP) / National Trends Network (NTN)
 Annual Deposition Data for Site NY96

Year	Dates	Days	Deposition (kg/ha)										Totals			% Precip. Rep. by Field Chem.			
			Ca	Mg	K	Na	NH ₄	NH ₄ (lb/acre/day)	NO ₃	NO ₃ (lb/acre/day)	Inorganic-N	CL	SO ₄	H+	(Lab)		Sample Voi. (ml)	Precip (cm)	Precip (in)
2003	11/25/03	12/30/03	35	0.17	0.44	0.14	3.68	0.04	0.0010	0.40	0.0102	0.13	6.7	1.5	0.01	5681.7	9.4	3.7	89
2004	12/30/03	12/28/04	364	1.21	2.06	0.73	17.81	1.20	0.0029	8.66	0.0212	2.89	32.2	13.8	0.24	75120.1	120.2	47.3	98
2005	12/28/04	1/3/06	371	1.65	3.50	1.14	29.88	1.14	0.0027	8.63	0.0208	2.83	53.5	16.8	0.24	66721.0	131.1	51.6	0
2006	1/3/06	1/2/07	364	1.47	2.67	0.94	22.72	1.76	0.0043	9.53	0.0234	3.53	39.2	19.8	0.32	72303.5	134.7	53.0	0
2007	1/2/07	12/31/07	363	1.67	3.34	1.11	28.28	1.83	0.0045	8.72	0.0214	3.40	47.9	18.6	0.25	59047.1	96.1	37.8	0
2008	12/31/07	12/30/08	365	1.68	2.90	0.96	24.08	1.74	0.0043	9.75	0.0238	3.55	43.9	17.4	0.26	80185.1	118.9	46.8	0
			Averages: 1.29 0.0033 7.62 0.02 2.72													47.31*			

Total Nitrogen = NH₄ + NO₃: 0.0234 lb/acre/day to groundwater from runoff/deposition on surface water
 65% removal/plant uptake rate
 0.00820 lb/acre/day to groundwater that has been recharged

* Average Precipitation did not take into account the 2003 data since there was only 3.7 inches in 35 days.

APPENDIX C

Forge River Priority Waterbody Listing

Water Index Number	Waterbody Name (WI/PWL ID)	County	Type	Class	Cause/Pollutant	Source	Year
(MW5.3) LIS-62-P296	<u>Atlantic Ocean/Long Island Sound Drainage Basin</u> Millers Pond (1702-0013)	Suffolk	Lake	C	D.O./Oxygen Demand Phosphorus	Urban/Storm Runoff Urban/Storm Runoff	2002 2002
(MW6.1d) GB..GPB-P495	Mattituck or Marratooka Pond (1701-0129)	Suffolk	Lake	A	Metals D.O./Oxygen Demand	Urb/Storm Runoff Urb/Storm Runoff	2002 2002
(MW7.2a) AO-MB-168a thru 175	Tidal Tribs to West Moriches Bay (1701-0312) ²⁴	Suffolk	Estuary	SC	Pathogens Phosphorus Nitrogen	Urb/Storm Runoff Urb/Storm Runoff Urb/Storm Runoff	2002 2002 2006
(MW7.5) AO-GSB-185-P889	Canaan Lake (1701-0018)	Suffolk	Lake	B(T)	D.O./Oxygen Demand Phosphorus	Urb/Storm, Agric,OWTS Urb/Storm, Agric,OWTS	2006 2006
(MW7.7) AO-GSB-193..P304	Lake Ronkonkoma (1701-0020)	Suffolk	Lake	B	Silt/Sediment Pathogens	Urb/Storm Runoff Urb/Storm Runoff	2002 2002
(MW7.8) AO-GSB-194	Champlin Creek, Upper, and tribs (1701-0019)	Suffolk	River	C(TS)	Phosphorus	Urb/Storm Runoff	2002
(MW8.2a) EB-224 thru 227	LI Tribs, fresh to East Bay (1701-0204)	Nassau	River	C	Thermal Changes Silt/Sediment	Urb/Storm Runoff Urb/Storm Runoff	2002 2002
(MW8.3a) MDB-228	East Meadow Brook, Upper, and tribs (1701-0211)	Nassau	River	C	Phosphorus	Urb/Storm Runoff	2002
(MW8.4) HB	Hempstead Bay (1701-0032)	Nassau	Estuary	SA	Silt/Sediment	Urb/Storm Runoff	2002
(MW8.4a) HB-233-P1005..P1012	Hempstead Lake (1701-0015)	Nassau	Lake	C	Nitrogen	Municipl, Urb/Storm Runoff	2006
(MW8.4a) HB-235-P1017a	Grant Park Pond (1701-0054)	Nassau	Lake	C	Phosphorus	Urban/Storm Runoff	1998
(MW8.5b) JB	Jamaica Bay, Eastern, and tribs, Queens (1701-0005)	Queens	Estuary	SB	Phosphorus Nitrogen	Urban/Storm Runoff Urban/CSO,Municipl	2002 2002
(MW8.5b) JB-247	Bergen Basin (1701-0009)	Queens	Estuary	I	D.O./Oxygen Demand Nitrogen	Urban/CSO,Municipl Urban/CSO,Municipl	2002 2006
(MW8.6) JB-249a	Hendrix Creek (1701-0006)	Kings	Estuary	I	D.O./Oxygen Demand Nitrogen	Urban/CSO,Municipl Urban/CSO/Municipl	2002 1998
					D.O./Oxygen Demand	Urban/CSO/Municipl	1998

Part 1 - Individual Waterbody Segments with Impairment Requiring TMDL Development (con't)

²⁴ Includes Upper Forge River, which is the trib of primary concern. The Lower Forge River is included in Part 2c - Shellfishing Waters portion of the list.

Water Index Number	Waterbody Name (WI/PWL ID)	County	Type	Class	Cause/Pollutant	Source	Year
Part 2c - Multiple Segment/Categorical Impaired Waterbody Segments (shellfishing)							
(Might be addressed by a waterbody specific TMDL or a pollutant/source specific TMDL or other strategy to attain water quality standards)							
Atlantic Ocean/Long Island Sound Drainage Basin							
(MW1.2) RB (portion 1)	Raritan Bay, Class SA (1701-0002)	Richmond	Estuary	SA	Pathogens	Urban/Storm/CSO	1998
(MW3.1) LIS (portion 1b)	New Rochelle Harbor (1702-0259)	Westchester	Estuary	SA	Pathogens	Urb/Storm, Municipal	2002
(MW3.1) LIS (portion 2)	Long Island Sound, Westchester Co Waters (1702-0001)	Westchester	Estuary	SA	Pathogens	Urban/CSO, Municipal	1998
(MW4.1) LIS (portion 3)	Long Island Sound, Nassau County Waters (1702-0028)	Nassau	Estuary	SA	Pathogens	Urban/CSO, Municipal	1998
(MW4.2b) LIS-MB (portion 1)	Manhasset Bay, and tidal tribs (1702-0021)	Nassau	Estuary	SA	Pathogens	Urban/Storm Runoff	1998
(MW4.3b) LIS-41-P145	Dosoris Pond (1702-0024)	Nassau	Estuary	SA	Pathogens	Urban/Storm Runoff	2002
(MW5.4g) LIS-FI-P1101, P1102	Beach/Island Ponds, Fishers Island (1701-0283)	Suffolk	Estuary	SA	Pathogens	Urban/Storm Runoff	2002
(MW6.3b) GB..GPB-122a-P652	Scallop Pond (1701-0354)	Suffolk	Estuary	SA	Pathogens	Urban/Storm Runoff	2002
(MW6.3g) BIS..P764	Oyster Pond/Lake Munchogue (1701-0169)	Suffolk	Estuary	SA	Pathogens	Urban/Storm Runoff	1998
(MW6.3i) AO-SB-155	Phillips Creek, Lower, and tidal tribs (1701-0299)	Suffolk	Estuary	SA	Pathogens	Urban/Storm Runoff	2002
(MW6.3i) AO-SB-QgC	Quogue Canal (1701-0301)	Suffolk	Estuary	SA	Pathogens	Urban/Storm Runoff	2002
(MW7.2a) AO-MB (portion 4)	Forge River, Lower and Cove (1701-0316)	Suffolk	Estuary	SA	Pathogens	Urban/Storm, Agric.	2002
(MW7.6) AO-GSB (portion 6)	Nicoll Bay (1701-0375)	Suffolk	Estuary	SA	Pathogens	Urban/Storm Runoff	2002
(MW7.8) AO-GSB (portion 7)	Great Cove (1701-0376)	Suffolk	Estuary	SA	Pathogens	Urban/Storm Runoff	2002
(MW8.1) SOB	South Oyster Bay (1701-0041)	Nassau	Estuary	SA	Pathogens	Urban/Storm Runoff	1998
(MW8.2) EB	East Bay (1701-0202)	Nassau	Estuary	SA	Pathogens	Urban/Storm Runoff	2002
(MW8.3) MDB	Middle Bay (1701-0208)	Nassau	Estuary	SA	Pathogens	Urban/Storm Runoff	2002
(MW8.3) MDB-ERI	East Rockaway Inlet (1701-0217)	Nassau	Estuary	SA	Pathogens	Urban/Storm Runoff	2002
(MW8.3) MDB-RC	Reynolds Channel, east (1701-0215)	Nassau	Estuary	SA	Pathogens	Urban/Storm Runoff	2002
(MW8.4) HB	Hempstead Bay (1701-0032)	Nassau	Estuary	SA	Pathogens	Urban/Storm Runoff	1998
(MW8.4a) HB-236	Woodmere Channel (1701-0219)	Nassau	Estuary	SA	Pathogens	Urban/Storm Runoff	2002

More Information Regarding Shellfishing

Waters impaired for shellfishing use are based on shellfishing closures issues by New York State Department of Environmental Conservation Shellfisheries Program and the National Shellfish Sanitation Program. Because the specific extent and conditions of the closures are reported more precisely and more frequently through these programs than through the Section 303(d) List, this shellfish closure information provides better delineated and more timely information regarding the support of shellfishing use in the waters of New York than does the Section 303(d) List. For the most current shellfishing closure information, refer to <http://www.dec.state.ny.us/website/dfvnr/marine/shellfish/sfish/index.htm>.

Atlantic/Long Isl. Sound Basin Priority Waterbodies List Table 1

Water Index Number	Waterbody/Segment Name (ID) Use Impairment(s)	County	Seg Size	Type	Class	W.B. Category
		Cause/Source Information				
(MW7.1c) AO-SB-QB-157 thru 160	Tidal Tribs to Quantuck Bay/Canal (1701-0303) Recreation KNOWN to be STRESSED	Suffolk	20.0 Acre	Estuary	SC	Impacted Seg
		Causes: Pathogens Sources: Other Source, Urban Runoff				
(MW7.1c) AO-SB-QB-Q1C	Quantuck Canal/Moneybogue Bay (1701-0371) Shellfishing KNOWN to be IMPAIRED Public Bathing KNOWN to be STRESSED Recreation KNOWN to be STRESSED	Suffolk	200.0 Acre	Estuary	SA	Impacted Seg
		Causes: Pathogens Sources: Other Source, Urban Runoff, Storm Sewers				
(MW7.2a) AO-MB (portion 1)	Moriches Bay, East (1701-0305) Shellfishing KNOWN to be STRESSED Fish Consumption KNOWN to be STRESSED	Suffolk	3120.0 Acre	Estuary	SA	Impacted Seg
		Causes: Priority Organics Sources: Agriculture, Urban Runoff, Other Source, Storm Sewers				
(MW7.2a) AO-MB (portion 2)	Moriches Bay, West (1701-0038) Shellfishing KNOWN to be STRESSED Fish Consumption KNOWN to be STRESSED	Suffolk	3000.0 Acre	Estuary	SA	Impacted Seg
		Causes: Priority Organics Sources: Agriculture, Urban Runoff, Other Source, Storm Sewers				
(MW7.2a) AO-MB (portion 3)	Tuthill, Harts, Seatuck Coves (1701-0309) Shellfishing KNOWN to be PRECLUDED Public Bathing KNOWN to be STRESSED Recreation KNOWN to be STRESSED	Suffolk	1500.0 Acre	Estuary	SA	Impacted Seg
		Causes: Pathogens Sources: Agriculture, Other Source, Urban Runoff, Storm Sewers				
(MW7.2a) AO-MB (portion 4)	Forge River, Lower and Cove (1701-0316) Shellfishing KNOWN to be PRECLUDED Public Bathing KNOWN to be STRESSED Recreation KNOWN to be STRESSED	Suffolk	1500.0 Acre	Estuary	SA	Impacted Seg
		Causes: Pathogens Sources: Agriculture, Other Source, Urban Runoff, Storm Sewers				
(MW7.2a) AO-MB-160a thru 168	Tidal Tribs to East Moriches Bay (1701-0306) Recreation KNOWN to be STRESSED	Suffolk	50.0 Acre	Estuary	SC	Impacted Seg
		Causes: Pathogens Sources: Agriculture, Other Source, Urban Runoff, Storm Sewers				
(MW7.2a) AO-MB-168a thru 175	Tidal tribs to West Moriches Bay (1701-0312) Recreation KNOWN to be STRESSED	Suffolk	50.0 Acre	Estuary	SC	Impacted Seg
		Causes: Pathogens Sources: Agriculture, Other Source, Urban Runoff, Storm Sewers				

APPENDIX D

Cost Information for Strategies

SHORT-TERM MANAGEMENT STRATEGY COSTS

Short-Term (1-3 Years) Management Strategy			\$1-\$1K	\$1K-\$10K	\$10K-\$50K	\$50K-\$100K	\$100K-\$500K	\$500K-\$1M	\$1M-\$10M	\$10M-\$50M	\$50M-\$100M	> \$100M
Land Use Management Strategies												
S1	Establish a Forge River Protection Overlay District	Initial Cost/Owner										
		Annual Cost/Owner										
		Initial Cost/Govt			X							
		Annual Cost/Govt										
S2	Explore Dedicated Funding Sources	Initial Cost/Owner										
		Annual Cost/Owner	X									
		Initial Cost/Govt		X								
S3	Create a Forge River Protection Fund	Initial Cost/Owner										
		Annual Cost/Owner										
		Initial Cost/Govt					X					
S4	Establish a Low-Interest Loan Program for OWTS Improvements	Initial Cost/Owner										
		Annual Cost/Owner	X									
		Initial Cost/Govt		X								
		Annual Cost/Govt										
S5	Identify Properties for Open Space Acquisition or Purchase of Development Rights	Initial Cost/Owner										
		Annual Cost/Owner										
		Initial Cost/Govt		X								
		Annual Cost/Govt										
S6	Acquire Duck Farm Properties, Conduct Environmental Assessment and Prepare Remediation Plan	Initial Cost/Owner										
		Annual Cost/Owner										
		Initial Cost/Govt					X					
		Annual Cost/Govt										
S7	Impose Stricter Clearing Limits	Initial Cost/Owner										
		Annual Cost/Owner										
		Initial Cost/Govt	X									
		Annual Cost/Govt										
Stormwater Management Strategies												
S8	Replace Direct Discharges to the Estuary	Initial Cost/Owner										
		Annual Cost/Owner										
		Initial Cost/Govt						X				
		Annual Cost/Govt		X								
S9	Adopt a Green Streets policy	Initial Cost/Owner										
		Annual Cost/Owner										
		Initial Cost/Govt		X								
S10	Develop a Low-Impact Stormwater Management Demonstration Site	Initial Cost/Owner										
		Annual Cost/Owner										
		Initial Cost/Govt					X					
		Annual Cost/Govt		X								

Management Strategies – Appendix D – Cost Information for Strategies

Short-Term (1-3 Years) Management Strategy			\$1-\$1K	\$1K-\$10K	\$10K-\$50K	\$50K-\$100K	\$100K-\$500K	\$500K-\$1M	\$1M-\$10M	\$10M-\$50M	\$50M-\$100M	> \$100M	
Nitrogen Reduction Strategies													
S11	Impose Strict Limits on Nitrogen Fertilizer Use	Initial Cost/Owner											
		Annual Cost/Owner											
		Initial Cost/Govt		X									
		Annual Cost/Govt											
S12	Develop Installation Requirements for Replacement of OWTS	Initial Cost/Owner											
		Annual Cost/Owner											
		Initial Cost/Govt			X								
		Annual Cost/Govt											
S13	Require OWTS Inspections	Initial Cost/Owner											
		Annual Cost/Owner	X										
		Initial Cost/Govt											
		Annual Cost/Govt											
S14	Enact an Ordinance Requiring Pump-outs for all OWTS within the FRPOD Every Five Years	Initial Cost/Owner											
		Annual Cost/Owner											
		Initial Cost/Govt		X									
		Annual Cost/Govt											
S15	Require all OWTS to Meet New Responsible Party Requirements	Initial Cost/Owner	X	X									
		Annual Cost/Owner											
		Initial Cost/Govt											
		Annual Cost/Govt											
S16	Reduce Residential Water Use	Initial Cost/Owner	X										
		Annual Cost/Owner											
		Initial Cost/Govt											
		Annual Cost/Govt											
S17	Provide Water Conservation Kits	Initial Cost/Owner											
		Annual Cost/Owner											
		Initial Cost/Govt				X							
		Annual Cost/Govt											
Water Quality Improvements and Habitat Restoration													
S18	Encourage Riparian Area Restoration	Initial Cost/Owner		X									
		Annual Cost/Owner											
		Initial Cost/Govt											
		Annual Cost/Govt											
S19	Encourage Use of Indigenous Landscape Plants	Initial Cost/Owner		X									
		Annual Cost/Owner											
		Initial Cost/Govt											
		Annual Cost/Govt											
S20	Install Oyster Grow-Out Systems for Algal Bloom Control	Initial Cost/Owner											
		Annual Cost/Owner											
		Initial Cost/Govt				X							
		Annual Cost/Govt			X								
S21	Install Surface and Water-Column Creek Aerators	Initial Cost/Owner											
		Annual Cost/Owner											
		Initial Cost/Govt						X					
		Annual Cost/Govt		X									

Management Strategies – Appendix D – Cost Information for Strategies

Short-Term (1-3 Years) Management Strategy			\$1-\$1K	\$1K-\$10K	\$10K-\$50K	\$50K-\$100K	\$100K-\$500K	\$500K-\$1M	\$1M-\$10M	\$10M-\$50M	\$50M-\$100M	> \$100M
Research and Data Collection												
S22	Collect Additional Groundwater Data	Initial Cost/Owner										
		Annual Cost/Owner										
		Initial Cost/Govt				X						
		Annual Cost/Govt				X						
S23	Continue Research on Benthic Nitrogen Flux	Initial Cost/Owner										
		Annual Cost/Owner										
		Initial Cost/Govt				X						
		Annual Cost/Govt										
Training, Education, and Stewardship Programs												
S24	Develop Methods to Reduce Agricultural Fertilizer Use and Stormwater Runoff	Initial Cost/Owner										
		Annual Cost/Owner										
		Initial Cost/Govt										
		Annual Cost/Govt		X								
S25	Provide Educational Programs for Property Owners	Initial Cost/Owner										
		Annual Cost/Owner										
		Initial Cost/Govt			X							
		Annual Cost/Govt		X								

MID-TERM MANAGEMENT STRATEGY COSTS

Mid-Term (3-5 Years) Management Strategy			\$1-\$1K	\$1K-\$10K	\$10K-\$50K	\$50K-\$100K	\$100K-\$500K	\$500K-\$1M	\$1M-\$10M	\$10M-\$50M	\$50M-\$100M	> \$100M	
Land Use Management Strategies													
M1	Acquire Selected Open Space and Direct Development to Developed Areas Outside the FRPOD or to Future Sewered Areas in the Watershed	Initial Cost/Owner											
		Annual Cost/Owner											
		Initial Cost/Govt											
		Annual Cost/Govt						X					
M2	Purchase Development Rights for Existing Farms	Initial Cost/Owner											
		Annual Cost/Owner											
		Initial Cost/Govt							X				
		Annual Cost/Govt											
M3	Prepare a Land Use Plan for the Duck Farm Properties and Implement Remediation Plan	Initial Cost/Owner											
		Annual Cost/Owner											
		Initial Cost/Govt						X					
		Annual Cost/Govt											
Stormwater Management Strategies													
M4	Provide Treatment Systems at Selected Creek Heads	Initial Cost/Owner											
		Annual Cost/Owner											
		Initial Cost/Govt						X					
		Annual Cost/Govt		X									
M5	Provide Treatment for Runoff into Mill Ponds	Initial Cost/Owner											
		Annual Cost/Owner											
		Initial Cost/Govt					X						
		Annual Cost/Govt		X									
Nitrogen Reduction Strategies													
M6	Determine the Total Maximum Daily Load for Nitrogen	Initial Cost/Owner											
		Annual Cost/Owner											
		Initial Cost/Govt					X						
		Annual Cost/Govt											
M7	Develop a TMDL Implementation Plan	Initial Cost/Owner											
		Annual Cost/Owner											
		Initial Cost/Govt					X						
		Annual Cost/Govt											
M8	Evaluate Need and Locations for Regional Wastewater Treatment Plant	Initial Cost/Owner											
		Annual Cost/Owner											
		Initial Cost/Govt			X								
		Annual Cost/Govt											
M9	Impose Stricter Nitrogen Limits on STPs within the FRPOD	Initial Cost/Owner											
		Annual Cost/Owner											
		Initial Cost/Govt		X									
		Annual Cost/Govt											

Mid-Term (3-5 Years) Management Strategy			\$1-\$1K	\$1K-\$10K	\$10K-\$50K	\$50K-\$100K	\$100K-\$500K	\$500K-\$1M	\$1M-\$10M	\$10M-\$50M	\$50M-\$100M	> \$100M	
Water Quality Improvements and Habitat Restoration													
M10	Dredge Sills at Creek Mouths and at Mouth of the Forge River	Initial Cost/Owner											
		Annual Cost/Owner											
		Initial Cost/Govt							X				
		Annual Cost/Govt											
M11	Remove Deposits South of Montauk Highway	Initial Cost/Owner											
		Annual Cost/Owner											
		Initial Cost/Govt								X			
		Annual Cost/Govt											
M12	Remove Deposits by LIRR Trestle	Initial Cost/Owner											
		Annual Cost/Owner											
		Initial Cost/Govt					X						
		Annual Cost/Govt											
M13	Deepen Ely Creek	Initial Cost/Owner											
		Annual Cost/Owner											
		Initial Cost/Govt								X			
		Annual Cost/Govt											
M14	Harvest and dispose of <i>Ulva</i>	Initial Cost/Owner											
		Annual Cost/Owner											
		Initial Cost/Govt					X						
		Annual Cost/Govt			X								
M15	Restore Native Riparian Vegetation on Public Land	Initial Cost/Owner											
		Annual Cost/Owner											
		Initial Cost/Govt					X						
		Annual Cost/Govt											
Research and Data Collection													
M16	Measure groundwater nitrogen removal by <i>Phragmites</i> , <i>Spartina</i> , and mudflats.	Initial Cost/Owner											
		Annual Cost/Owner											
		Initial Cost/Govt			X								
		Annual Cost/Govt											
M17	Test permeable reactive barriers for groundwater nitrogen removal and obtain conservation easement in priority subwatershed	Initial Cost/Owner											
		Annual Cost/Owner											
		Initial Cost/Govt					X						
		Annual Cost/Govt											
M18	Test nitrogen reduction by septic systems Bio-Augmentation	Initial Cost/Owner											
		Annual Cost/Owner											
		Initial Cost/Govt				X							
		Annual Cost/Govt											
M19	Test nitrogen reduction by groundwater Bio-Augmentation	Initial Cost/Owner											
		Annual Cost/Owner											
		Initial Cost/Govt					X						
		Annual Cost/Govt											

LONG-TERM MANAGEMENT STRATEGY COSTS

Long-Term (5-10 Years) Management Strategy			\$1-\$1K	\$1K-\$10K	\$10K-\$50K	\$50K-\$100K	\$100K-\$500K	\$500K-\$1M	\$1M-\$10M	\$10M-\$50M	\$50M-\$100M	> \$100M	
Land Use Management Strategies													
L1	Implement the Land Use Plan for the Duck Farm Properties	Initial Cost/Owner											
		Annual Cost/Owner											
		Initial Cost/Govt				X	X	X	X				
		Annual Cost/Govt											
Nitrogen Reduction Strategies													
L2	Install Permeable Reactive Barriers	Initial Cost/Owner											
		Annual Cost/Owner											
		Initial Cost/Govt								X	X		
		Annual Cost/Govt			X								
L3	Pump groundwater to treatment location	Initial Cost/Owner											
		Annual Cost/Owner											
		Initial Cost/Govt								X	X		
		Annual Cost/Govt					X						
L4	Improve operation of private STPs.	Initial Cost/Owner					X						
		Annual Cost/Owner											
		Initial Cost/Govt											
		Annual Cost/Govt											
L5	Sewer Part or all of the FRPOD OR	Initial Cost/Owner											
		Annual Cost/Owner		X									
		Initial Cost/Govt											
		Annual Cost/Govt											
L6	Construct advanced onsite systems for individual FRPOD parcels OR	Initial Cost/Owner			X								
		Annual Cost/Owner	X										
		Initial Cost/Govt											
		Annual Cost/Govt											
L7	Collect septic system effluent from all FRPOD parcels, treat at centralized community STP OR	Initial Cost/Owner		X									
		Annual Cost/Owner		X									
		Initial Cost/Govt											
		Annual Cost/Govt											
L8	Incorporate adjacent areas (Mastic Shirley and Center Moriches)	Initial Cost/Owner											
		Annual Cost/Owner		X									
		Initial Cost/Govt											
		Annual Cost/Govt											
Water Quality Improvements and Habitat Restoration													
L9	Pump bay water to head of Forge River and priority creeks	Initial Cost/Owner											
		Annual Cost/Owner											
		Initial Cost/Govt							X				
		Annual Cost/Govt				X							
L10	Dredge to Remove Accumulated Organic Material	Initial Cost/Owner											
		Annual Cost/Owner											
		Initial Cost/Govt											
		Annual Cost/Govt					X						

Management Strategies – Appendix D – Cost Information for Strategies

Long-Term (5-10 Years) Management Strategy			\$1-\$1K	\$1K-\$10K	\$10K-\$50K	\$50K-\$100K	\$100K-\$500K	\$500K-\$1M	\$1M-\$10M	\$10M-\$50M	\$50M-\$100M	> \$100M
L11	Fill Creek Depressions	Initial Cost/Owner										
		Annual Cost/Owner										
		Initial Cost/Govt					X					
		Annual Cost/Govt										
L12	Maintain Moriches Inlet	Initial Cost/Owner										
		Annual Cost/Owner										
		Initial Cost/Govt										
		Annual Cost/Govt						X	X			

APPENDIX E

Response to Comments

Responses to Comments Received

on the

FORGE RIVER WATERSHED MANAGEMENT PLAN



Prepared for
The Town of Brookhaven

February 2012

Prepared by



**CAMERON ENGINEERING
& ASSOCIATES, LLP**

In Association with



CH2MHILL

The following comments were received on the Draft Forge River Management Plan. The Town of Brookhaven and its consultant have reproduced all of the substantive comments/questions received by Monday February 6, 2012 below. Some of the comments/questions are abridged to retain just the key language – other introductory or explanatory language is deleted. No response is offered and comments are not reproduced where the comment was simply supportive of the Management Plan strategy. Comments are numbered for reference purposes only. All references to use of the Jurgielewicz Duck Farm as a potential site for a STP have been removed from the final Management Plan. The Plan does incorporate other potential sites for a sewer plant.

NYSDEC COMMENTS

Comment 1.

My comment pertains to tables 24-26, table 25-20 and 26-13 (short term, mid-term and long-term management strategies), please add footnote to each of the table to clarify that the DEC, marked as a responsible party under the Responsible Parties column is only responsible as a regulatory agency in terms of enforcement and permitting.

I don't want people to read this and think that we have authority to do many of the items outlined, as an example, take a look at S18 strategy on page 24-33, it says "encourage riparian area restoration by offering tax rebates to property owners for voluntary restoration of the wetland buffer", DEC has no mechanism to offer tax rebates, our involvement would only be in enforcement and permitting pertaining to riparian areas.

Response

Tables referenced in comment will be amended as follows:

Note: the NYSDEC is the responsible entity only in terms of its role in Environmental Conservation Law enforcement and permitting.

NYSDOS COMMENTS

Comment 2.

I do have some concerns over several of the mid-and long-term strategies that are related to dredging, and those recommendations that involve pumping and transferring water. Dredging projects at site specific locations are proposed in four mid-term recommendations, including:

- 25.4.1, Dredge Sills at Creek Mouths and at Mouth of Forge River;
- 25.4.2, Remove Deposits South of Montauk Highway;
- 25.4.3, Remove Deposits by LIRR Trestle; and
- 25.4.4, Deepen Ely Creek

Long term dredging projects include:

- 26.3.2, Dredge to Remove Accumulated Organic Material;
- 26.3.2, Fill Creek Depressions; and

- 26.3.4, Maintain Moriches Inlet

Dredging projects are not without significant issues, and all dredging projects must come into the Department of State for consistency review. That being said, we realize that dredging is an immediate solution, albeit somewhat temporary in nature. Therefore, the Town of Brookhaven may want to consider additional site specific options for reducing sediment, organic material and vegetation that could be used in conjunction with, or instead of extensive dredging. Please note that the New York State Department of State retained the consultant Woods Hole Group to compile existing information on dredging in the South Shore Estuary Reserve (SSER) as a preliminary step to a possible Dredged Material Management Plan. Reports have been completed that contain information and recommendations for improving dredging practices, and can be found at <http://www.estuary.cog.ny.us/dredging/dmmp.html>

Response

The Report does recommend stormwater management measures to reduce future sediment and organic matter loading into the Estuary, particularly at the heads of several creeks, at the Montauk Highway discharge to the Forge River, and at the outfalls of all piped stormwater systems. Although these measures would reduce future inputs, water quality would be improved through the removal of historic accumulations.

Comment 3.

Recommendation 25.4.1 states that stormwater runoff and wave or wind-driven circulation likely cause creek bank erosion. Recommendations should be explored to reduce the stormwater runoff and stream bank erosion.

Response

The report suggests two strategies that are pertinent to stormwater runoff and stream bank erosion. First, the Town or County should restore degraded riparian areas that are under their ownership. Second, the Town should promote conservation easements and riparian area restoration for owners of private shoreline properties.

Comment 4.

Recommendation 25.4.2 states that winter sanding of Montauk Highway is a source of the accumulated deposits south of the highway. Recommendation 25.4.2 is to remove deposits and Phragmites south of Montauk Highway. While dredging this site may offer an immediate solution, it is also a somewhat temporary. The Town of Brookhaven may want to consider adding recommendations that target municipal practices for roads and bridges, such as:

- *Conduct road and bridge maintenance (de-icing material usage and storage, pot-hole repair, bridge washing, scraping and painting, etc.) according to best management practices;*

- *Require a percentage of roads to be tested with non-ice and non-sand de-icing;*
- *Develop and identify erosion/sediment control areas (examples include easily erodible soils, nearby sensitive areas and steep slopes) and retrofit opportunities;*
- *Review municipal practices such as street sweeping to ensure regularity.*

Response

Montauk Highway is a State roadway and thus outside the jurisdiction of the Town. The Report does suggest the installation of a sediment-capture device like a hydrodynamic separator for Montauk Highway roadway runoff.

Comment 5.

Recommendation 25.4.3 proposes to dredge deposits by the LIRR trestle. Is there any way to modify the trestle in order to increase flow and circulation, such as creating additional openings in the trestle?

Response

Although such a solution may be possible and even desirable, it may be far costlier than occasional maintenance dredging. As the train trestle may be considered a ‘dam,’ special permitting would be required. The bridge might need to be modified or one or more culverts installed beneath the trestle.

Comment 6.

Recommendation 25.4.4 is to deepen Ely Creek. This watershed is characterized as having gradual topography and a large contributing area, which may influence the naturally occurring shallow depth of the creek. According to the prioritization, land use and nitrogen pose the greatest threats to water quality in the Ely Creek watershed. Deepening the creek makes me very uncomfortable. If turf grass is a primary land use, where the use of fertilizers is of common practice, then site specific riparian buffers could be proposed, along with other site specific recommendations that reduce nitrogen from entering the groundwater.

Response

The report does recommend replacement of *Phragmites* with riparian buffers of native vegetation. One of the methods that are frequently used to reduce *Phragmites* populations is an increase in exposure to more saline water. Dredging Ely Creek would increase tidal exchange and the salinity of the Creek, which would reduce the growth of the reed. Increased water depths would lower water temperature and make the Creek most hospitable for marine organisms. Dredging would also remove some of the accumulated high-nitrogen sediment that contributes to the flux of nutrients from the benthos to the water column. Cutting and harvesting of *Phragmites* is also recommended as a management technique. Nitrogen reductions to the Creek are also recommended for the Forge River watershed in terms of fertilizer restrictions and wastewater treatment plant upgrades.

Comment 7.

Long term recommendations regarding the pumping or transferring of water are also of concern. The following two recommendations involve pumping and transferring water:

- *26.2.2, Pump Groundwater to Treatment Location; and*
- *26.3.1, Pump Bay Water to Head of Forge River and Priority Creeks*

While the plan states that these are not long term solutions to reduce nitrogen, but rather to move higher concentrations of nitrogen out of the system. Significant research is needed prior to conducting and investing in this type of project in order to weigh the benefits.

Response

The comment is correct in observing that these strategies require additional study. These strategies result from the recognition that even if all nitrogen loading ceased, groundwater nitrogen would continue discharge into the Forge River for decades from legacy nitrogen loading. For instance, although sewerage could substantially lower nitrogen loading to groundwater, the effect of that sewerage would not be realized for decades due to the travel time of groundwater to the Estuary.

These two strategies (26.2.2 and 26.3.1) were proposed as short- to mid-term mechanisms to remove the nitrogen that will continue to flow into the Forge River even if inputs are reduced. Implementing either strategy would be costly, but could be effective in lowering nitrogen inputs sufficiently to generate immediate water quality improvements. The first step would be the completion of the nitrogen TMDL to determine the required reduction in groundwater nitrogen. A preliminary evaluation of one or both of these techniques in the TMDL process could then be conducted to determine the costs and benefits of the strategies.

CITIZENS CAMPAIGN FOR THE ENVIRONMENT

Comment 8.

Upgrading of individual wastewater systems and establishing new wastewater infrastructure in communities within the identified watershed(s) should be given the highest priority...Wills Creek, Poospatuck Creek and West Mill Ponds are identified in the plan as the 3 most impaired subwatersheds entering into the Forge River. It would be advantageous for the Town to prioritize and focus efforts of either sewerage or implementing more modern decentralized waste water systems within these impacted subwatersheds.

Response

The Town agrees with the comment and will seek opportunities to work with community groups to prioritize plan recommendations.

Comment 9.

It is also critical to note that several hundred homes are less than nine feet above groundwater, the minimum currently required by the County for on-site wastewater treatment systems (Figure 10-38). These low-lying homes are clustered primarily in four areas:

- *Along the northern side of Wills Creek*
- *Along the northern side of Poospatuck Creek and*
- *Most of the homes between Lons Creek and Home Creek*
- *Along both sides of the southern end of Old Neck Creek*

Suffolk County has recently identified and allocated a funding source of \$2 million dollars per year to advance the use of these new residential wastewater treatment technologies. In addition, the County has now established a funding source for approximately \$25- \$40 million per year for upgrading existing or constructing new Sewage Treatment Plants. The Town and County need to aggressively work together to prioritize Forge River to be a recipient of these limited but valuable funds. Targeting these funds for use to repair or establish infrastructure which will prevent the worst known sources of nutrient pollution will be meaningful in the long term restoration efforts for the River.

Response

The Town continually seeks outside funding opportunities, and will continue to do so to assist with implementation of plan recommendations.

Comment 10.

The Town should implement a moratorium on septic systems within the defined watershed of the Forge River.

Response

A moratorium requires a comprehensive study of the affected area. The purpose of the Forge River Management Plan and subsequent TMDL are to gather new information and where applicable recommend further study.

Comment 11.

The Town of Brookhaven should seek to upgrade the existing 3 sewage treatment plants[Villas at Pine Hills, Pine Hills South, and Waterways at Bay Pointe] with the possibility of expanding these STPs to include additional areas...It is unacceptable that these 3 sewage treatment plants are, on average, discharging nitrogen above drinking water standards of 10mg/l. CCE is also concerned that these samples are not taken directly from the effluent. Why not? SPDES permits require that effluent meet the state standard of 10mg/l. Once the effluent is discharged into groundwater dilution occurs and masks the actual N concentration. The average downstream monitoring wells are detecting nitrogen concentrations at 19.05, 18.325, and 17.46 mg/l. Peak concentrations are reported as 32, 58.9, and 36.3[mg/l], significantly above the drinking water standard of 10 mg/l. It would also be noted that surface waters have a [nitrogen] standard of 0.25mg/l, since nitrogen is toxic to marine life. CCE urges the town to upgrade these STPs to reduce nitrogen into groundwater and ultimately the Forge River.

The Town should also seek to upgrade the treatment capacity of these facilities to provide for the option to expand treatment for additional properties within the watershed. Upgrading existing antiquated STPs that are clearly identified as a source of N pollution needs to be given a high priority for restoration efforts.

Response

The County has sewerage studies underway that include portions of the Forge River watershed. The Center Moriches study is examining a number of sewerage options, one of which includes upgrading and expanding one of the existing three plants to serve a larger area. The study is also considering a regional wastewater treatment plant that could serve the Mastic/Shirley peninsulas. In that case, these two plants might be converted to pumping stations that would direct wastewater to the regional plant. It should be noted that the three facilities are privately owned and operated and are regulated by the SCDHS. The Town does not have any authority over their operations.

Comment 12.

Sewering the most impacted areas of the watershed should also be a priority.

Response

The nitrogen TMDL will determine the reduction in nitrogen loading required to improve water quality to meet what will be the Forge River nitrogen concentration goal. As suggested in the Prioritization Report, sewerage should start with the subwatersheds with the greatest nitrogen loading from onsite systems.

Comment 13.

It is critical that the town further understand organic decomposition and benthic flux as a nitrogen source. The algae and Ulva growth in the river system are not only indicators of high nitrogen levels, but actually become a source of nitrogen contribution through benthic flux that occurs after they decay. Benthic flux, or internal recycling, represents the transport of dissolved chemical species between the water column and the underlying sediment. This phenomenon is a never-ending cycle, therefore, the presence of the algae and Ulva strengthens the case for eliminating this source as both preventative and remediation action items. The draft watershed plan offers conflicting information on benthic flux. CCE urges the town to clarify these important discrepancies:

According to the draft plan, benthic flux, the breakdown of sediments is a very large contributor to the high nitrogen levels in the Forge River, but it is unclear exactly how much, because of conflicting reports in the document. On page, 10-56, the plan states:

"It is estimated that the largest nitrogen input to the Forge River is from nitrogen released from microbial degradation of sediment organic matter. The majority of the organic matter is from degraded algal (Ulva and phytoplankton) blooms that have settled to the bottom. The second largest source of nitrogen is on-site wastewater treatment systems that release nitrogen to groundwater..."

The table 10-13...shows the above statement to be correct, but it is not consistent with other statements. This table is missing critical nitrogen inputs such as stormwater runoff-stated to be 6% of the nitrogen entering into the river. Please clarify the table...On page 10-37, the draft plan states:

"The authors estimated that approximately 30 to 50 percent of the nitrogen in the Forge River is derived from recycling of nitrogen from organic matter deposited in the sediments. Thus, according to the SOMAS study, sediment-derived nitrogen may account for one third to almost one half of all nitrogen inputs to the system. The majority of the rest of the nitrogen input is (as described above) from groundwater. Approximately 40 to 50 percent of the nitrogen in the system is removed annually due to exchange and flushing with Moriches Bay."

This paragraph states that 30 to 50 percent of the nitrogen in the river is from recycling from organic matter, but table 10-13 states that benthic flux is responsible for 68%. Please clarify which is correct...In table 10-6, benthic flux is not listed as an input at all, yet in the above tables it is listed as a significant input. Please clarify how benthic flux is contributing nitrogen into the Forge River...This information must be clearly stated and understandable to the public, as it is critically important for determining the priority of certain action items, particularly activities related to dredging.

Response

Section 10.9.3 of the draft Management Plan is a summary of the nitrogen budget prepared by SoMAS in May 2009, while sections 10.9.4 through 10.9.10 are based on the nitrogen budget prepared for this study. The nitrogen budget calculated for this study was prepared for each subwatershed for the four primary nitrogen sources. The contributions from each nitrogen source varied between studies because the sources were based on different estimates and were grouped

together differently. The estimates from the studies are, however, within an order of magnitude of each other: 740-1,480 lb/day (SoMAS) vs. 1,743 lb/day from this study. Management strategy S23, Continue Research on Benthic Nitrogen Flux, acknowledges that further research is needed to better quantify the contribution of benthic flux to the Forge River nitrogen budget.

Comment 14.

The final plan should place more importance on breaking the cycle of benthic flux, being it is a significant contributor of nitrogen into the system. According to the draft plan, the recycling of organic matter cycle has been in place for over six decades. Breaking this cycle needs to be a top priority. As long as the present conditions exist, the cycle will continue, and restoration will be marginalized. It is necessary to break this cycle with three main action items:

- *Remove the current nitrogen sources; sediment, algae and Ulva that are largely contributing to the cycle*
- *Prevent further nitrogen inputs from entering the system*
- *Increase the circulation between the estuary and Moriches Bay.*

These three action items should be considered high priority, and should be grouped together within the plan, currently these items are listed separately and are spread over low, medium, and high priorities.

Response

Although correctly identified as three important and related strategies, they were separated in the Management Plan because they would be implemented by different entities and at different times. For example, sediment removal might be conducted by the County or the ACOE or both and would require independent review and permitting. *Ulva* collection could be the responsibility of the Town or County, could be operated by a private entity, and could be implemented more quickly than some of the other strategies can. Preventing further nitrogen inputs from entering the system requires changes to agricultural practices, residential fertilizer restrictions, onsite sanitary system upgrades, and ultimately, sewerage. A number of different Town, County, and State entities would be involved in these efforts.

Comment 15.

On page 10-56, the draft plan states that "The cycle will continue indefinitely until sediment and groundwater nitrogen sources are significantly reduced and circulation within the estuary and between the estuary and Moriches Bay is restored...." The cycle is a critical component of degraded water quality and a flow chart like the one above would help readers better understand this complex cycle.

Response

The flow chart will be incorporated into the report.

Comment 16.

CCE urges the town to incorporate navigational dredging needs into remediation needs. CCE also cautions the town NOT to rely on routine dredging to become a main component of the restoration process. This will not allow for the restoration of a healthy, thriving ecosystem.

a) Dredging Sediments should be a High Priority

CCE agrees dredging is needed and should be utilized as a mechanism to provide immediate improvement of the water body, but it should not be relied upon as a long term water quality protection plan and pollution sources need to be addressed, not just remediated. In addition, more clarification is needed to identify the depth of sediment removal needed for dredging to adequately address benthic flux.

b) Current Plan to Dredge for Navigation Should Include Water Quality Components

A comprehensive, holistic plan that includes both navigational dredging and dredging for water quality needs to move forward simultaneously. Currently, there is a plan moving forward to dredge the Forge River, tributaries, and Narrows Bay. According to Suffolk County, this project is considered to be maintenance dredging and is only being performed to improve navigation and does not incorporate a goal of environmental restoration purposes. This pending plan to dredge the river for navigational purposes needs to be recognized in the management plan. Any dredging activities that occur should not be solely for navigational purposes, but also for maximum benefit in removing sediment that is contributing to benthic flux. In the past, dredging has had beneficial effects on flushing this system and improving water quality, but were not specifically designed and implemented for this reason and, therefore, did not completely remediate the system. For example, navigational dredging would not reach critical parts of sediment deposit near the head of the river that were formed from sand and grit from runoff, this needs to be addressed.

Considering water quality in dredging plans is in accordance with the 2006 Suffolk County determination that "environmental factors and marine productivity should be added to the criteria used to determine if a dredging project is in the public interest." The navigational dredging project as-is is estimated to cost over \$3 million and plans to dredge -6 feet below the plane of mean low water. According to research by Stony Brook University, the sediment in the Forge River is between 2.3 to 9.2 feet to the sand layer. It would waste large sums of tax payer money to do navigational dredging now, only to later determine that further dredging is needed for restoration of the River. This proposal should go before the Dredging Projects Screening Committee to be considered with the current dredging project.

Response

The following paragraph will be added to section 25.4:

The County is currently developing a plan to dredge the Forge River and its tributaries for maintenance 'navigational' purposes. Suffolk County includes environmental factors and marine productivity among the criteria it uses to determine if a dredging project is in the public interest.

The County's plan should therefore be expanded to recognize the importance of dredging to Forge River water quality. Dredging will not only improve navigation, but tidal circulation as well. The dredging plan should be reviewed by the County's Dredging Projects Screening Committee and should include the following several strategies to improve Forge River water quality.

Similarly, the following will be added to section 26.3.2:

The County is planning to dredge the Forge River and its tributaries for 'navigational' purposes. The County's dredging plan for the Forge River should include long-term removal accumulated nitrogen-rich sediments if future benthic flux studies demonstrate that such an initiative could lower water-column nitrogen.

Comment 17.

Include updated information in the Final plan since 2011 closure and lawsuit [related to the Jurgielewicz Duck Farm]. The Draft Plan cites that "The Jurgielewicz Duck Farm, located directly adjacent to West Mill Pond (Figure 10-40), represents the largest nitrogen point source, at 195 lbs N/day." It is necessary to clarify whether these numbers are still accurate considering that the Jurgielewicz Duck Farm shut down operations in summer of 2011. Language used in the plan infers that the Duck Farm is still in operation. If these numbers have not yet been updated, the final plan should identify what are the daily projections of nitrogen input moving forward now that there are no new sources at the farm location.

Response

The following footnote will be inserted in the Report:

The Jurgielewicz Duck Farm ceased operations just prior to the publication of this report. Nitrogen loading will be re-calculated as part of the formulation of the TMDL without the input from the duck farm.

Comment 18.

Immediate remediation of the Duck Farm should be of extremely high priority and expedited due to the extremely high nitrogen contribution from the farm. During operations, the farm contributed 195 pounds of nitrogen into the river every day; this is equivalent to nitrogen input from 4,000 households with properly functioning onsite wastewater treatment systems. The duck farm treatment plant's total effluent nitrogen concentration is similar to the influent concentration at a typical human wastewater treatment plant. Because "groundwater travels slowly to the estuary, nitrogen entering the Forge River through groundwater today may have been released many years or even decades ago." It is necessary to prevent further nitrogen inputs by the swift remediation of duck waste before it leaches into groundwater.

Carryout strict enforcement against the previous owners of the Duck Farm. Enforcement action must be taken by the responsible entity; the DEC. The short term timeline regarding owner responsibility that has been identified by the DEC must be strictly followed and enforced. The DEC originally

requested that the owners of the Farm be fined \$600,000 but ultimately suspended \$450,000 and reduced the fine to \$150,000 after consideration of the owners filing of bankruptcy. The DEC also required them to submit a closure plan, which must address all parts of the wastewater system, including the removal of stockpiled duck manure. According to the DEC, the closure plan shall establish milestone dates for the implementation and completion of closure and remedial activities at the duck farm, identify any environmental consulting firms that would be assisting respondents in closing the duck farm, and provide access to Department staff to oversee the closure and remedial activities. The DEC is not responsible for this closure plan and the respondents must submit this plan 60 days from December 9, 2011. This plan is due on February 6. The final Forge River Watershed Management Plan should lay out this closure plan and use it as a reference for action items. The plan should also identify where the penalty of \$150,000 has gone, and for what purposes it will be used. It should also be noted that if the \$150,000 and the plan are not submitted on deadline, the fine will go back up to \$600,000.

Response

The closure plan is not yet available. The following paragraph will be added to section 24.1.6:

The acquisition of the Duck Farm properties and the associated environmental assessment and remediation plan is a short-term strategy, but would likely follow the closure plan required by the NYSDEC and would be subject to NYSDEC approval. The closure plan should be coordinated with the Town and/or County if it is publicly acquired. Cleanup of the Jurgielewicz Duck Farm property as soon as possible following acquisition could improve water quality relatively quickly. Because accumulated duck waste continues to leach into groundwater and West Mill Pond, its quick removal would be immediately beneficial. Similarly, restoration of the riparian areas of the property even before a land use plan is prepared would benefit Forge River water quality and provide wildlife habitat for a variety of aquatic and terrestrial organisms. Preparation of a land use plan in the mid-term is recommended subsequent to the cleanup and riparian restoration (see strategy M3) followed by its implementation in the long-term (see strategy L1).

Comment 19.

The draft plan states that the property will likely be auctioned off by the bankruptcy court before a cleanup takes place. The plan recommends that the Town of Brookhaven or Suffolk County should acquire the property from the court either individually or in partnership. CCE strongly opposes the auctioning of the land before full remediation and questions the market value of severely contaminated farmland whose development rights are owned by the County. CCE urges the Town of Brookhaven and/or Suffolk County to review and evaluate the feasibility of purchasing the land for use as a site of a regional Waste Water Treatment Plant. An environmental site assessment should be conducted to determine the scope of the work necessary for site remediation. An estimated cost should be associated with the cleanup of the property.

Response

The management Plan recommends such a site assessment prior to conducting any actions associated with acquisition of the properties by the Town or the County.

Comment 20.

Page 4-14 states “The Barnes Road Duck Farm is comprised of four lined lagoons and has a ‘zero-discharge’ SDPES permit. Because the SPDES permit requires no discharge, there is no effluent data collected or available. The presumption is that waste from the Duck Farm’s lined effluent lagoons is removed and taken off-site for disposal.” The plan should recommend testing at this location. Real solutions require real data. Assuming that a duck farm has zero discharge and basing our remediation plan on this assumption seems naive at best and downright foolish at worst:

Response

Section 24.1.6 notes that the “Jurgielewicz Duck Farm absorbed the adjacent Barnes Road Duck Farm.” As such, all strategies for the ‘duck farm properties’ apply to both properties.

Comment 21.

There are several action items on the master list that have to do with the Duck Farm properties. They are located in the short, medium, and long term sections. It would be beneficial to have a single place where all action items having to do with the duck farm are located so that these items are not looked at individually, but holistically. The action items are:

- 24.1.6 Acquire Duck Farm Properties, Conduct Environmental Assessment and Prepare Remediation Plan (S6)
- 25.1.3 Prepare a Land Use Plan for the Duck Farm Properties (M3)
- 26.1.1. Implement the Land Use Plan for the Duck Farm Properties (L1)

Response

See response to Comment 19.

Comment 22.

Conduct Stormwater Education, specifically in the surrounding watersheds of East Mill Pond and West Mill Pond...The Ely Creek area should also be included in targeted education because of the golf courses and ball fields. Many residents remain unaware that hundreds of household products contain contaminants that contribute to the degradation of nearby rivers and streams. An education campaign should be conducted letting residents know about local sources of nitrogen pollution into the Forge River and tributaries. A comprehensive education campaign would be spearheaded and implemented in partnership with the Town and County, and motivate members of the public to become active environmental stewards to prevent further degradation...Things residents can do:

1. Maintain septic systems
2. Use rain barrels and items like permeable pavement to reduce storm water runoff
3. Reduce or eliminate chemical fertilizer application - compost
4. Use natural vegetation and barrier vegetation along properties
5. Conserve water usage
6. Refrain from feeding wildlife along waterways
7. Don't put improper materials down the drain - chemicals, oils, garbage, etc.
8. Properly dispose of boating waste

9. Clean up after pet waste

10. Prevent litter from entering storm drains, which often go unfiltered into waterways

Response

Section 24.7.2 of the Management Plan proposes both broad and targeted community outreach and education programs. The goals of the outreach programs are to: 1) raise public awareness of the management strategies, 2) educate the public on the importance of their implementation, 3) encourage behavioral changes in support of the strategies, and 4) coordinate with the stakeholders and elected officials for the promotion and support of goals 1) through 3).

Comment 23.

There needs to be more clarification as to what is considered direct runoff. Some items (i.e. Farms, golf courses, duck lagoons, etc.) can be considered both stormwater and groundwater contributors. Stormwater on lawns, streets can be washed directly into rivers, and can leach into groundwater which eventually makes its way to rivers. How is this distinction made? Does the nitrogen budget account for this? Direct runoff (stormwater) is listed in table 10-6 as contributing 2.2%, but is not listed at all in table 10-13.

Response

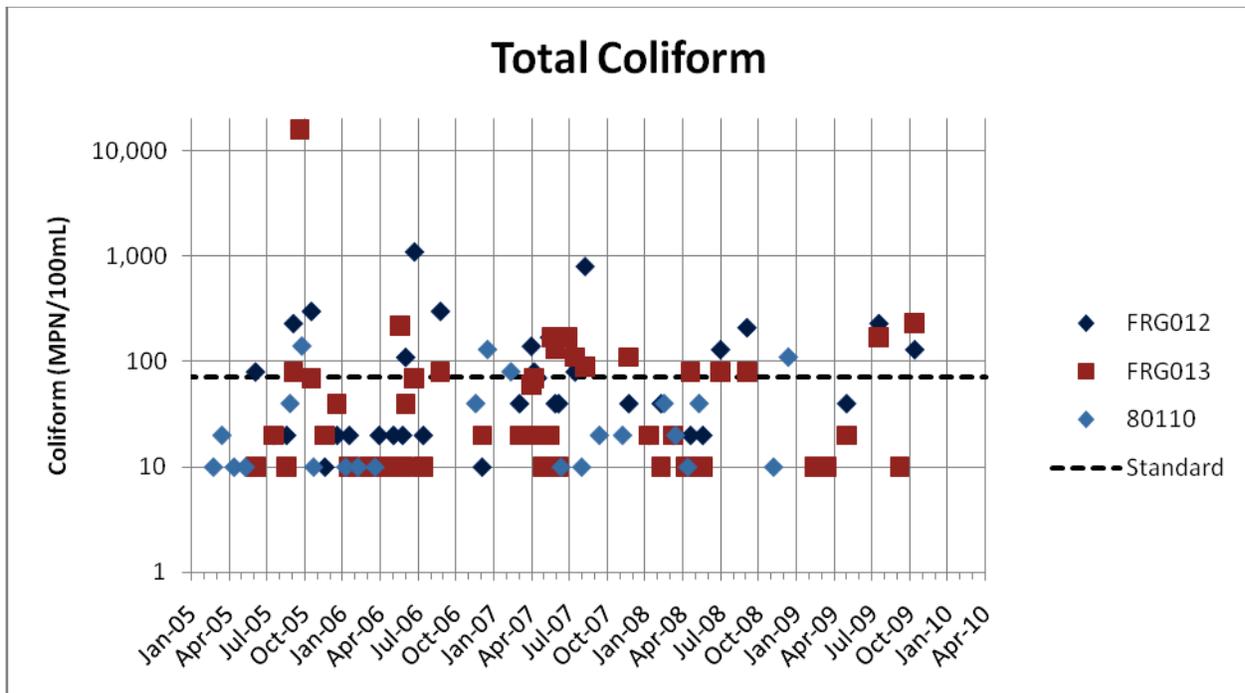
Stormwater (precipitation) that does not pass through the soil to groundwater is considered direct runoff. Stormwater runoff occurs over approximately 590 acres of the watershed (see Figure 3-3 in the Characterization Report). Nitrogen from atmospheric deposition accounted for a greater portion of the nitrogen load for parcels in the 590-acre direct runoff zone than in the remainder of the watershed. In the remainder of the watershed, approximately 8860 acres, rainfall passes into the ground where a portion of the nitrogen and other contaminants are removed by plants and soil bacteria. Stormwater runoff to the Forge River carries a higher concentration of nitrogen to the Estuary than the precipitation passing into the soil.

Comment 24.

CCE is requesting that the Town clarify the graphs regarding Coliform on pages 10-9 to 10-11, 10-14 to 10-15, 10-24 to 10-27, 10-32 to 10-35. The Coliform graphs cover several years but show different months every year. This does not paint a clear or usable picture of the annual cycles and in some cases is misleading.

Response

The graphs will be replaced with a series of new graphs such as the one below. The graphs clarify when samples were taken and indicate which values were higher than the standard.

**Comment 25.**

The town of Brookhaven should work with stakeholders and the Forge River Task Force to prioritize action items. CCE believes the following projects should be given top priority:

Short-term priority management projects:

- *S5 - Identify properties for acquisition or purchase of development rights. CCE urges the Town to work with the County and environmental groups that have maps of open parcels in Suffolk County.*
- *S6- Acquire Duck Farm Properties, Conduct Environmental Assessment and Prepare Remediation Plan*
- *S8 - Replace direct discharge stormwater systems with vegetated swales, rain gardens, and other green treatments.*
- *S11 - Impose strict limits on nitrogen fertilizer to the month of April. The draft plan states that 66.7 lbs of nitrogen enter into groundwater from residential and commercial fertilizer use, which is 87% of the total fertilizer contribution. CCE would urge the town to be aggressive and implement a ban on nitrogen fertilizers within the watershed.*
- *S13 - Require inspections of all OWTS at no cost to the property owners. CCE believes it is important to adequately understand to the full extent the problem of failing septic systems*

and how many cesspools are still in operation. These can be mapped and allow for a targeted approach in deciding what areas should be prioritized for the county funds.

- *S20-Install an Oyster grow-out system for algal bloom control. Oysters feeding on plankton are capable of filtering 10 liters of seawater an hour. There are already aquaculture oyster projects within the South Shore Estuary Reserve. An initial project could act as demonstration for future projects throughout the Reserve.*
- *S23 - Continue research on benthic nitrogen flux. The Watershed Management Plan states that benthic flux is a significant source of nitrogen into the Forge River. Further research is needed to address this issue to remediate the existing conditions and prevent them from reestablishing in the future.*
- *S24-Develop methods to reduce agricultural fertilizer use and stormwater run-off. There are approximately 400 acres of farmland within the watershed and as much as 40-50% of applied nitrogen enters groundwater. Improved management of the farms can help to improve the river. Farmers should be encouraged or mandated to use organic practices, and at a minimum, be required to use slow release or natural fertilizers.*
- *S25 - Provide educational programs for property owners on implementation of Forge River Management strategies. Public acceptance and participation improve with increased outreach to the community.*

Mid-term Management Strategies

- *M1 - Acquire selected open space and direct development to developed areas outside the FROD or to future sewerred areas.*
- *M3-Prepare land use plans for the duck farm properties and include consideration of the properties for a regional sewage treatment plant.*
- *M5- Provide stormwater treatment for run-off into the East and West Mill Ponds and the Forge River from Montauk Highway. Stormwater should be treated to remove sediments and contaminants. CCE urges the town to utilize green infrastructure where possible.*
- *M6-Determine the Total Maximum Daily Load (TMDL) for nitrogen. This is a project that the Town has already taken initial steps to move forward and should continue to pursue. A TMDL can take several years to complete and CCE would urge the Town to continue to reduce nitrogen inputs to the Forge River, while the TMDL is in development. The town should NOT put all efforts on hold while the TMDL is developed.*
- *M8- Evaluate the need and locations for a regional wastewater treatment plant*
- *M14-Harvest and dispose of Ulva to remove assimilated nitrogen and its associated water quality problems.*

- M18-Test Nitrogen reduction by septic system bio-augmentation to improve OWTS efficiency. The management plan states that injection of selected bacteria into a septic system has been shown to improve their effectiveness at reducing nitrogen.

Long Term Management Strategies

- LI - Implement the Land Use Plan for the Duck Farm Properties. CCE urges the Town of Brookhaven and/or Suffolk County to review and evaluate the feasibility of purchasing the land for use as a site of a regional Waste Water Treatment Plant.
- L4-Improve the operation of private STPs.
- L5-L8- Sewer part or all of the FROD.
- L10-Institute long term dredging operations to remove accumulated organic matter from estuary. (However, CCE would alter this to dredging as needed).

Response

The Town recognizes the need to prioritize management plan recommendations and will continue to work with community groups to develop implementation plans.

Comment 26.

CCE strongly urges the town to re-evaluate and potentially eliminate the following recommendations:

- M2-Purchase development rights for existing farms in the Forge River watershed. Allow greenhouse farming with lot coverage limits as less fertilizer and pesticide is released from greenhouse farming than open field farming.

*This statement is not true and is harmful. Greenhouses can and have left a legacy of contamination on Long Island and in our groundwater. One such example, a superfund site, entitled the Bianchi/Weiss Greenhouse site in East Patchogue, housed a greenhouse. The site is now highly contaminated with lead and chlordane. The contamination extends 2,900 feet down gradient of the site with said contamination in both in soil and groundwater. The pesticide Imidacloprid, one of the top 3 most frequently detected pesticides in Long Island's drinking water, is widely used to control white flies in greenhouses. The pesticide is highly likely to leach into groundwater and a recent report released by NYS DEC found it was detected 890 times throughout Suffolk County's groundwater supply. **CCE would urge the town to encourage organic farms that do not use pesticides or chemical fertilizers. We are strongly opposed to a blanket statement allowing and encouraging greenhouses, unless specified that they adhere to the SC local pesticide phase out law. This successful legislation bans the use of pesticides from county owed greenhouses, and only exceptions can be made with an emergency request application.***

Response

Section 25.1.2 and the associated strategies will be rewritten as follows:

In addition to the permanent protection of farmland through purchase of development rights, the Town could consider provisions to support local farmers while reducing nitrogen runoff associated with fertilizer applications. The Town should work with representatives of the agricultural industry and researchers from Cornell Cooperative Extension to select crops and management methodologies that require less nitrogen fertilizer. Similarly, farmers should be encouraged to utilize organic farming techniques and integrated pest management that reduce or eliminate the use of pesticides. Greenhouse farming, can, when well-managed, exert greater control over fertilizer applications (with drip ‘fertigation’ and recirculation), which can thereby reduce total application rates. The potential for visual impacts from greenhouse farming, however, should be reduced using lot coverage limits and a requirement for buffers.

ACTION ITEM

- Purchase development rights for existing farms.

Comment 27.

[With regard to L2- Install permeable reactive barriers], CCE would urge the town to further research this option before advancing this highly questionable procedure. Perhaps first provide a computer model to start with.

Response

Strategy L2 would only be implemented (as stated in the Report) if strategy M17 (Test Permeable Reactive Barriers for Groundwater Nitrogen Removal) proves successful.

Comment 28.

L3-Pump groundwater to treatment locations such as wetlands or denitrification reactors and L-9 - Pump bay water to head of the Forge River and into priority creeks. CCE's position is that these are not long-term treatment and restoration tools for the Forge River. A pump and treat system can be costly and masks the true problems of contamination into the river. It does not remedy the source of the pollution and masks the problem. It needs to be taken off the table. Pumping groundwater to treatment locations is the same “quick fix” mentality and only allows for business as usual without addressing the core of the problems. The town should not invest money into projects that are simply a Band-Aid masking true problems of the river.

Response

See response to Comment 7.

SAVETHE FORGE RIVER

Comment 29.

Moriches Inlet has been shown to have an impact on Forge River tidal flushing. We support the continued maintenance of the Inlet.

Response

Work by the SoMAS at Stony Brook supported the assertion that inlet capacity had a direct relationship on tidal exchange in the Bay and the Forge River. Keeping the Moriches Inlet open and well-maintained is important to improved water quality in the Forge River. The Army Corps of Engineers is the agency that maintains the Inlet.

Comment 30.

Save the Forge River supports the preservation of open space. We believe, however, that not all public land acquisitions should be for preservation alone. Land acquisitions can be for other public benefits including active recreation and in some cases, for public utilities, such as treatment plants. Acquisition of the duck farm property is a good idea. Use of the property for a treatment plant may make sense, though further study would be needed of this and other locations before a determination could be made.

Response

Suffolk County has studies underway that will look at different sewerage options for the Mastic Shirley area and potential locations for one or more treatment plants.

PECONIC BAY BAYKEEPER**Comment 31.**

(S6) Acquire and remediate the duck farm properties - What remains a questionable decision, the TOB in 2006 purchased the development rights on the Jurgielewicz duck farm. The legacy of duck farming in this watershed is well established and although discontinued on this parcel, the future agricultural use has uncertain environmental ramifications. The optimal management action is to restore this property to native riparian habitat that will benefit water quality while providing the community with an area for passive recreational use. The other land-use options identified in 26.1.1 must be secondary to habitat restoration and thoroughly analyzed before any further consideration.

Response

The Management Plan recommends a cleanup, followed by a remediation and land use plan. The Management Plan recognizes the importance of and recommends riparian restoration. For the long term, the Management Plan recommends the preparation of a land use plan that identifies the best use of the properties.

Comment 32.

(S11) Impose strict limits of nitrogen fertilizer use - If this strategy recommends the adoption of Suffolk County's residential fertilizer restriction (November 1 through April 1), the restrictions are already in place and because the restrictive window of time occurs during the cold weather months the benefits to water quality are questionable. If fertilizer restrictions are considered they should include the growing season.

Response

The Management Plan recommends that the Town restrict the use of fertilizer to the month of April only.

Comment 33.

(S12) Develop installation requirements for the replacement of OWTS - Deferring to Suffolk County sanitary health code standards is woefully inadequate for the protection of surface waters. Installation requirements (for nitrogen reduction) need to be directly linked to performance standards for the treatment of effluent. The Nitrex system, which has been recently approved by Suffolk County, can effectively reduce nitrogen concentrations in sanitary wastewater effluent in the range of 3-4 mg/L. Installation of the best available technologies for de-nitrification should be the requirement.

Response

Although installation of the “best available technology” is a good idea, *requiring* its installation would be problematic. The systems are relatively expensive for homeowners, in the range of \$15,000-\$30,000 per unit. Most advanced systems also require routine servicing that would likely be beyond the capability of most homeowners and would add additional annual cost. Community-based,

area-wide, or regional wastewater collection and treatment would be more cost-effective than widespread use of individual systems. A key next step is the development of the TMDL. It will help determine the reduction in nitrogen loading to groundwater required to generate in improvement in Forge River water quality. From this information, decisions can be made on the extent of the sewerage effect necessary to achieve water quality goals.

Comment 34.

(S13) Require inspections of all OWTS – I support the first element of this management action (identifying and documenting the status of existing systems). However, the requirement for upgrades needs to be more clearly defined. If the recommendation is that upgrades meet the current code pursuant to Suffolk County Department of Health Services (SCDHS) standards, negligible water quality improvements relative to nitrogen loadings will be realized. The term "upgrade" needs to be directly linked to nitrogen reduction performance standards and be modified (more restrictive) as the available technologies improve. Use of this term in the current context (SCDHS) is misleading to the public and is inconsequential as a nitrogen reduction strategy.

Response

The term ‘upgrade’ in the relevant sections of the Management Plan will be replaced with ‘bring into compliance with County and new Town requirements.’ Water quality improvements could be realized by bringing into compliance the numerous OWTS constructed prior to current County requirements. Many of these, constructed too close to groundwater, are less effective than they would be if built according to County requirements. Other OWTS systems are simple cesspools that become clogged more quickly than septic systems that have solids collection capability and proper detention time. Clogging reduces the capacity of soils to support the bacteria that degrade OWTS effluent prior to its recharge to groundwater. Presently, SCDHS is the agency charged with regulating the design and installation of OWTS. Modifying current regulations and standards may be a mid- or long-term objective. In the meanwhile, non-compliant installations should be brought into compliance.

Comment 35.

(S14) Enact ordinance requiring pump-outs for all OWTS every five years- From a maintenance standpoint; periodic pump-outs can be beneficial to the functionality and longevity of a system. Relative to nitrogen reduction (both individually and cumulatively), pump-outs, even when performed on an annual basis have minimal effect on nitrogen loadings emanating from OWTS. This assertion is based on the findings of the Buzzards Bay National Estuary Program, the body that conducted an analysis to determine the magnitude of nitrogen reduction if this is a cost effective approach. The conclusion is that it's not and should be omitted as a viable nitrogen reduction strategy.

Response

Onsite systems must be maintained to keep them functioning properly. Drainage fields will clog if septic tanks are not pumped out periodically. Clogged drainage fields reduce the capacity of soil bacteria to degrade nitrogen and other contaminants of OWTS effluent. System backups and overflows can occur if maintenance is not provided leading to public health hazards and possibly to stormwater systems and even receiving waters.

The PBK is correct, however, that the same dollars spent on sewerage instead of OWTS pump outs can achieve much greater nitrogen reduction. The following will be added to this section:

The Buzzards Bay National Estuary Program recommends and the Chesapeake Bay Preservation Act requires onsite wastewater systems pump outs every five years for system maintenance. Although regular OWTS pump outs will help these systems function effectively and will help avoid public health problems, sewerage is ultimately the more effective choice for nitrogen reduction. On average, OWTS effluent contains 50 mg/l total nitrogen, whereas an advanced treatment plant can discharge effluent with nitrogen concentrations less than 10 mg/l.

Comment 36.

(S15) Require all OWTS meet Town requirements at time of sale - What are the specifics of new TOB requirements the Plan is referring to? In 2010, PBK provided the TOB with the specific legal citations that supports enacting municipal sanitary codes that are more restrictive than State or County codes (see Carmen River Study Group). To my knowledge, the TOB retains the position that Suffolk County is “the” only authority that can regulate sanitary wastewater. Is the Plan recommending that the TOB exercise their authority and enact more restrictive wastewater discharge policies that provide greater protection to surface waters? S15 requires further explanation.

Response

The Town has been investigating this issue and is committed to working with its agency partners to develop more restrictive waste water policies.

Comment 37.

(S17) Provide water conservation kits-Although water conservation is a laudable strategy for a host of reasons, it's a conflicting strategy as it pertains to nitrogen reduction. It is well documented that water conservation in wastewater apparatus strengthens the concentration of nitrogen in effluent. This strategy requires scientific justification or stricken from the nitrogen reduction section.

Response

Water conservation will not *directly* reduce nitrogen. It will, however, improve system efficiency by extending residence time and will reduce the likelihood of system failures due to hydraulic overload. The following will be added to this section of the Management Plan:

The USEPA states that “*minimizing wastewater volumes can improve the efficiency of onsite treatment and lessen the risk of hydraulic or treatment failure*” (USEPA, 1995*). The USEPA reports the most common OWTS failure is from hydraulic overloading. Detention is reduced,

which decreases pollutant removal and overloads the infiltration field. The USEPA recommends reducing water use to decrease hydraulic loading and improve system performance.

*U.S. Environmental Protection Agency (USEPA). 1995. Clean Water Through Conservation. EPA 841-B-95-002. U.S. Environmental Protection Agency, Office of Water, Washington, DC.

Comment 38.

(M6&M7) TMDL development and implementation - PBK's primary objective in petitioning the DEC to classify the FR as Impaired Waters (303d) remains the implementation of an effective nutrient reduction strategy best achieved through a TMDL. We're pleased that the TOB is committed to this endeavor. That, being said, the pending TMDL will only succeed if there is the political will to implement the appropriate regulatory policies and the financing required to install the necessary wastewater and stormwater infrastructure. At this juncture in time the TOB should recognize which management actions are essential components of the TMDL and begin discussions on implementation in advance of the draft TMDL.

Response

Implementing TMDL-related management actions in advance of the TMDL is premature.

AFFILIATED BROOKHAVEN CIVIC ORGANIZATION INC. (ABCO)

Comment 39.

The report repeatedly incorrectly identifies and characterizes locations, conditions and water quality present at the headwaters of the Forge River. For the record, the headwaters of the Forge River are located north of Sunrise Highway east and west of Barnes Road and are the major sources of fresh water input to the River.

The report identifies alternately the Long Island Railroad (MTA) trestle crossing as either the headwaters or alternately the northern limits of salt water circulation. The report incorrectly states at the same time “the Forge River contains no fresh water as in the Peconic and Carmans Rivers.” This glaring error resulted in a recommended strategy to pump salt water into the upper reaches of the Forge River to “increase circulation.” There is no scientific evidence that pumping salt water into fresh water habitats is either warranted or even environmentally sound. Perhaps the consultant would have secured more accurate information, reached more reasonable conclusions and developed a clearer picture of the watershed if it had used a marine professional familiar with the Forge River for the tours mentioned in the Plan. Clearly there were several available with long-term expertise on the river that could have been used.

Response

Management Plan references to the Forge River ‘headwaters’ will be clarified. The section on pumping will be revised as follows:

Pumping bay water to the head of the intertidal portion of the Forge River between Montauk Highway and the railroad trestle and to the priority creeks would increase circulation and oxygen concentrations, while reducing temperatures and nitrogen concentrations.

Comment 40.

The report identifies the recently closed Duck Farm, at the West Mill Pond, south of Sunrise Highway, as a possible location for a Regional Sewer Plant. The County and the Town own only the development rights to the now closed duck farm. These rights were purchased in 2006 using open space and farmland preservation funds and as such, the parcel cannot and should not be considered or used for other than parkland or agricultural purposes. The inherent difficulties in acquiring the fee simple title to the site for such a purpose were not even remotely covered in the recommendation of the site for such an intense purpose along a 303d impaired waterway cannot be underestimated.

Response

References to use of the Jurgielewicz Duck Farm for a regional sewer plant have been removed from the Management Plan.

Comment 41.

The Mid-term strategy for use of this site as a potential 'regional' STP was at best poorly researched and offered little more than a speculative off-hand suggestion, endlessly repeated and a limited and cursory view of the environmental adverse impacts for such a use of this location site for a major infrastructure construction. Unfortunately, the consultant failed to realistically research the ownership, purchase terms, bankruptcy status, or previous litigation regarding the location of another STP at the headwaters and along the Forge River that eventually was dropped and the site acquired as open space. The previous plan was litigated, contested and ultimately resulted in a purchase of the 154-acre Mastic Woods, just north of the duck farm, for some \$16,000,000 dollars as preserved open space.

Response

See response to comment 40 regarding the Jurgieliwicz Duck Farm.

Comment 42.

The plan is supposed to be aimed to develop objectives for a Forge River Management Plan, but seems to have morphed mid-way into yet another forum for discussion of plans for regional sewer treatment. Although, such a discussion is necessary and already underway at taxpayer expense, this Plan was supposed to address conditions in the watershed and mythologies [sic] to address remediation and restoration of the waterway and its watershed.

Response

The major conclusion of the Management Plan is that nitrogen reduction should be the number one management priority. Sewering is the strategy that will achieve the greatest reduction in nitrogen. The Management Plan offers sewerage options other than a regional treatment plant, such as community sewerage. The economics of public sewerage, however, favor larger regional plants where the costs can be distributed over a larger number of users. Another alternative, proposed in early 2012 by the Suffolk County legislature, may be the establishment of a Suffolk County sewer district, where presumably all residents of the County would contribute to the costs of sewerage as all residents benefit from clean drinking water and surface water. If the County were to pursue such a course of action, smaller community-sized treatment plants might become more cost effective.

Comment 43.

However, pointedly, several of the strategies recommended and discussed as part of the FRMP included previous feasibility plans developed by the County for regional sewerage that included areas outside the Forge River Watershed. The inclusion of these previous plans seems off-base as these plans were rejected as too costly by both county government and the Mastic-Shirley community at large. Although conditions in the Forge have been used as a repeatedly as a poster for implementation of sewerage, none of these plans purpose was to remediate conditions in the Forge River. In fact, they never indicated any of the plans could actually deliver meaningful or

demonstrable improvements to the nitrogen loads or hypoxic conditions as much of the areas proposed for sewerage were completely outside the boundaries of the Forge River watershed, while large areas within the watershed were completely ignored. Furthermore, these plans focused and included largely business areas along Rt 27A, CR46 and Neighborhood Road with little residential sewerage. Residence and failing cesspool are one of the main remaining sources of nitrogen pollution to the river. Absent plans to remediate the environmental conditions in the Forge River these three plans were simply a wholly unproductive discussion.

Response

The comment is correct in stating that sewerage of the business districts alone would have a relatively small impact on Forge River water quality. However, sewerage of the Forge River watershed could in fact lead to substantial improvements. The County study for the Mastic Shirley peninsulas found that sewerage would substantially reduce nitrogen loading to the Forge River and Moriches Bay/Narrows Bay. The report states “*the abandonment of onsite systems which at most can remove 40% of the conventional pollutants and minimal concentrations of nitrogen and phosphorus would be replaced by the state of the art technology with nitrogen of [sic] concentrations less than 4 mg/l and conventional pollutants in the single digits.*”

Comment 44.

We found the discussion of a strategy for a transfer of development rights program too vague and ill-defined to be a useful tool for protection and or restoration of the Forge River. The report failed to even identify ‘receiving or sending areas.’ Little data was presented for consideration that such a TDR program would be workable. We find it unavailing in the fully built-out communities of the Mastic Peninsular we find their inclusion to be uninformative at best. When one considers that a similar TDR program is presently being considered for the Carmans River data is essential to know how much Transfer of development is reasonable, can be accomplished, and what is the additional realistic carrying capacity of the Town to absorb such increases to development in other non-stressed areas of the town. The TDR strategy is possibly useful in the northern reaches of the Forge River Watershed to preserve those areas intact, but research shows those areas have been identified as TDR receiving areas for the transfer of DR in the Carmans River. Obviously, this is a mutually exclusive concept and is unworkable for the Town to implement two TDR programs that transfer development to other equally if not more environmentally stressed communities.

Response

TDRs are just one tool. Further analysis is required before a TDR program can be considered, including a full investigation of potential sending and receiving sites.

Comment 45.

The Forge River has been a distressed estuary since the early part of the 20th century. Extensive duck farming in the 20th century along the banks of the Forge River and [high density residential development](#) contributed to the high-nitrogen [content](#) sediment load that remains. Residential development booms in

Mastic Beach area in the early and on the peninsula in the mid- twentieth century added thousands of onsite wastewater treatment systems (cesspools and septic systems) inside the Forge River watershed.

Response

Report text will be modified as suggested.

Comment 46.

(S2) - Explore potential dedicated funding sources such as a FRPOD fee to provide water quality improvement services to property owners based on water usage and assessed value. Such a fee could be added to property owners' tax bills. Property owners already connected to private STPs would be assessed a lower fee. - What formula would be implemented to address the inequities of the watershed geographic communities? Since areas within the watershed FRPOD would be subject to the "fee," an inequity arises since the watershed pollution is not contributed equally from all parts of the watershed, and areas more densely populated have historically imposed greater impacts, but have lower assessed valuations than those areas to the north with less density, less impacts and higher assessed valuations.

Response

All residential properties within the watershed contribute to the nitrogen loading of groundwater. Nitrogen from properties located further from the estuary simply takes longer to reach the estuary. Property owners would be assessed a fee based on both water usage and assessed value. The exact formula has yet to be determined, but it is likely that water usage would be weighted more heavily than assessed value as it is more directly related to nitrogen loading.

Comment 47.

(S3) - Create a Forge River Protection (FRP) Fund for program expenditures, green infrastructure, and loans to property owners for eligible improvements. - The sources for this fund should be considered from a variety of town wide fees and assessments, not merely attached to the residents. The pollution has occurred over decades and many have benefited from the permitted higher densities that resulted in deterioration of the ground and surface waters of the river.

Response

The Town will explore all possible revenue sources.

Comment 48.

(S4) - Establish a low-interest loan program for property owners for onsite wastewater treatment system (OWTS) improvements with initial funding potentially from the FRP Fund. Property owners could repay the loans through their tax bill. Loans would survive changes in property ownership and stay with the property. - Consider bundling OWTS for residences located in neighborhoods, identify as sub-districts, and establish routine fees per household for regular maintenance costs associated with such systems.

Response

Community-based sewerage is in fact one of the strategies presented in the Management Plan.

Comment 49.

(S5) - Identify properties for acquisition or purchase of development rights based on location and environmental resources. Reducing future development opportunities can lower future nitrogen generation and release. - Additionally and alternatively, identify and up zone undeveloped watershed areas to reduce future development opportunities; which will lower future nitrogen generation and release.

Response

The Town agrees with the comment and recognizes that this is yet another tool to aid in the reduction of nitrogen loading to the watershed.

Comment 50.

(S6) - Acquire and remediate the duck farm properties and consider their use for temporary dredge material management. - Any consideration for future use as a temporary dredge material management site must be fully explored for adverse impacts on adjacent communities.

Response

Such a use would likely require a permit from the NYSDEC, where potentially adverse environmental impacts would be evaluated.

Comment 51.

(S7) - Impose stricter clearing limits and fertilizer applications inside the FRPOD watershed retain existing native, non-fertilizer dependent vegetation, towards maximizing natural groundwater filtration systems.

Response

Fertilizer limits are addressed elsewhere.

Comment 52.

(S8) - Replace direct discharge stormwater systems, modernize catch basins with new technology systems with end of pipe equipment that removes pollution before entering the water, include where reasonable and possible new vegetated swales, rain gardens and other "green" treatments. Systems that discharge directly to the estuary can do not capture stormwater contaminants and nutrients prior to their release to the estuary. Green alternatives increase infiltration and degradation by soil bacteria.

Response

Management Plan language will be modified as follows:

(S8) - Replace direct discharge stormwater systems by incorporating new technology including, where appropriate, catch basin inserts and end-of-pipe equipment that removes pollutants before they are discharged to the estuary. Utilize preferentially and where possible vegetated swales, rain gardens and other 'green' treatments. Green alternatives increase infiltration and degradation by soil bacteria.

Comment 53.

(S9) - Adopt a 'Green Streets' policy ('Green Streets, application requires details, and (needs explanation and definition) to improve roadway design for capturing, treating and or improving stormwater management, and improve „walk ability“ and lower vehicle miles traveled.

Response

Management Plan language will be modified as follows:

(S9) - Adopt a 'Green Streets' policy to improve roadway design to capture, treat, and improve stormwater management.

Comment 54.

(S10) - Develop a demonstration low-impact stormwater management site to demonstrate to builders and homeowners methods for improved stormwater management. Intent remains unclear, applicability and cost must be better developed.

Response

The Town is already considering this recommendation, Town-wide. Management Plan language will be modified as follows:

(S10) - Develop a low-impact stormwater management demonstration at a Town-owned facility to demonstrate to builders and homeowners methods for improved stormwater management.

Comment 55.

(S11) - Impose strict limits of nitrogen fertilizer use, impose a no fertilizer zone within 1000 feet of the river and permit fertilizer applications only to the month of April for all land uses except agriculture; encourage natural applications for farmland with tools for measuring success.

Response

A portion of the fertilizer applied anywhere in the watershed will reach groundwater. Consequently, fertilizer use should be restricted throughout the watershed. As stated in the Management Plan, its use should be restricted just to the month of April.

Comment 56.

(S12) - Develop installation requirements for replacement OWTS using SCDHS standards as guidelines. pre-1972 and post 1973 septic and cesspool systems with OWTS using newly approved systems identified

by SCDHS and develop lower nitrogen release standards measured “at end of the pipe”, with guidelines and standards designed to limit nitrogen and phosphorous loads.

Response

The intent of this measure is to impose the same requirements for replacement systems as those imposed on new systems.

Comment 57.

(S13) - Require inspections of all OWTS at no cost to the property owner. (Do not limit inspections to FRPOD phase should apply to entire town). Property owners would be required to upgrade systems that do not meet new Town requirements within three years of the initial inspection. A FRPOD town wide fee would cover the cost of the inspection. (Establish a seven year phase-in period). Utilize low interest loans from the FRP Fund for replacement systems. Improvements might include replacement of cesspools with modern septic systems, installation of leaching fields for properties with high groundwater and other improvements required through inspections of self-contained closed systems.

Response

Comment noted. All funding opportunities will be considered.

Comment 58.

(S15) - Require all OWTS to meet new Town requirements on sale of property. Require inspections of all OWTS prior to the sale of property with fee paid by seller. Systems that do not meet new Town OWTS requirements would need to be upgraded prior to sale of the property (similar to existing Wetland and Waterways requirement for building extensions. Add code similar to in sewerred areas requiring sewer hookup for residences located in areas that have capacity to connect) Require any new development provide flow volumes to accommodate a % of the surrounding build environment as condition for approvals.

Response

The Town does not have the authority to require hook ups.

Comment 59.

(S16) - Reduce residential water use to reduce wastewater volume and increase residency time and treatment efficiency in OWTS. Require dual flush toilets for all new bathroom installations or remodels. Require low flow faucets for all new or remodeled bathrooms and kitchens. Update accessory apartment and home rental rules mandating such fixtures be installed upon granting and/or renewal of any rental permit.

Response

Comment noted.

Comment 60.

(S23) - Continue research on benthic nitrogen flux to determine the flux of nitrogen from sediments into the water column. A better estimate of the contribution of sediment nitrogen is necessary to will help determine the value of extensive long-term dredging in the Forge River; before such long-term dredging is contemplated, funded, or undertaken.

Response

Management Plan language will be modified as follows:

(S23) - Continue research on benthic nitrogen flux to determine the flux of nitrogen from sediments into the water column. A better estimate of the contribution of sediment nitrogen is necessary to determine the value of extensive long-term dredging in the Forge River before such long-term dredging is funded and undertaken.

Comment 61.

(M1) - Acquire selected open space and direct development to developed areas outside the FRPOD or to ~~future-sewered~~ areas in the watershed through the Town wide Transfer of Development Rights (TDR) program. Utilize the FRPOD as a 'Sending Area,' and designate selected hamlets and commercial areas outside the FRPOD as 'Receiving Areas.' The Town's long-term land use strategy encourages development in hamlet centers and commercial areas to preserve green space and the character of single-family neighborhoods. The TDR program provides a mechanism to incentivize development in designated mixed-use centers.

Significant problems exist with this TDR 'cookie cutter' approach. The Town is already approaching build-out and now exceeds carrying capacity as evidenced by all recent data on ground and surface waters. TDR's, if practical at all need to be implemented and addressed in concert with all other applicable TDR and sanitary flow credit plans and programs. We do not believe there are sufficient available residential, industrial or wooded undeveloped areas left in TOB to accommodate the volume of TDR programs presently being proposed. Re-zonings to higher densities simply compound the problems inherent in restoring and protection of our natural environment and vital aquifers. In fact, some of the areas that are proposed in this plan proposed as sending areas have been already been designated as receiving areas under the pending Carmans River TDR program. This is not a likely to prove a useful tool for the undeveloped areas of the watershed, where regulatory changes to these areas that require up-zoning to simply make the changes necessary to sustain the environment and the wooded areas providing fresh water to the river. Unless an owner is deprived of all rights to use the land, it does not constitute a taking, and will not require significant payment, much like the re-zonings resultant from the 208 study. No mixed use centers exist in FROD nor has the draft 2030 Comprehensive Plan been adopted.

Response

See response to comment 44.

Comment 62.

(M2) - Purchase development rights for existing farms in the Forge River watershed. The Town and County recognize the value of existing farms to Long Island and have purchased the development rights for thousands of acres of existing farms, including the duck farm properties of the Forge River. Allow for purchase of farms in watershed less than seven acres. Acquire and permit greenhouse farms within watershed. Allow greenhouse farming with lot coverage limits as less fertilizer and pesticide is released from greenhouse farming than open field farming. Farm lot coverage should restrict greenhouse flooring to natural surfaces, while buffer zones should be implemented and lot coverage restricted. Lot coverage should be restricted to maintain the aesthetic appeal of open space acquired through the purchase of development rights program.

Response

See response to Comment 26.

Comment 63.

(M3) - Prepare land use plans for the duck farm properties and include consideration of the properties for a regional sewage treatment plant (STP). Site may not be developed or used for STP, open space parkland will not require sewerage.

Response

See response to comment 40 regarding the Jurgieliwicz Duck Farm.

Comment 64.

(M5) - Provide stormwater treatment for runoff into the East and West Mill Ponds and the Forge River from Montauk Highway. Treat stormwater to remove sediments and associated contaminants prior to its release into the waterbodies. (M5a) Require LI Railroad to remodel the 100 year old artificial bermed land bridge train track crossing south of Montauk Highway to install via larger water conduits that permit better water flow from both the west and east Mill Ponds.

Response

See response to Comment 5.

Comment 65.

(M7) - Develop a TMDL implementation plan based on the preferred allocation scenario. The Town should have an implementation plan prepared for the selected allocation scenario that provides preliminary engineering/phasing plans that detail how each of the reductions could be implemented and where. The implementation plan would include the extent with actual cost estimates, locations, and type of sewerage, if any, required within the FRPOD and Watershed.

Response

Management Plan language will be modified as follows:

(M7) - Develop a TMDL implementation plan based on the preferred allocation scenario. The Town should have an implementation plan prepared for the selected allocation scenario that provides preliminary engineering/phasing plans that detail how each of the reductions could be implemented and where. The implementation plan would include cost estimates, locations, and type of sewerage, if any, required within the FRPOD.

Comment 66.

(M8) - Evaluate the need and locations for a regional wastewater treatment plant. If the Town or County determines that regional sewerage is the best option for meeting the nitrogen TMDL, then a suitable location must be identified. ~~The duck farm may be a good candidate as it is centrally located, sufficiently large, already disturbed, and has few residential neighbors. The property is sufficiently large to permit a substantial riparian restoration and open space set aside. Other potential sites might include Brookhaven Airport and an expansion of the Town's Sewer District #2. Regionalization may include the adjacent hamlet of Center Moriches.~~ The duck farm may not be used for such a project as it was acquired with county and town funds for farmland preservation and may not now or ever be developed. The property should have riparian restoration and be set aside as parkland open space connected by trails to the recently acquired 154-acre Mastic Woods. It is not a candidate or site suitable for a sewer plant. The airport also may not be legally used for purposes disconnected from airport use; see 1961 NYS site transfer statute.) The remaining possibility is an expansion of the Town's Sewer District #2. Regionalization may include the adjacent hamlet of Center Moriches. Not related to study of Forge River and is beyond scope of the DFRMP.

Response

See response to comment 40 concerning the Jurgieliwicz Duck Farm. All potential sites for a sewer plant and proposed sewerage actions must undergo environmental impact reviews and conform to zoning and other land use restrictions.

Comment 67.

(M9) Impose stricter nitrogen limits on STPs presently or proposed for location within the FRPOD based on the nitrogen TMDL. The nitrogen discharge limit for new and existing STPs should be lowered from current County requirements if required by the TMDL. Permit no new subdivisions without "closed system" or surface water Nitrogen standard limits.

Response

The strategy is adequate as written in the Management Plan as it calls for lower nitrogen discharge limits within the FRPOD. New subdivisions that do not meet the SCDHS sanitary requirements for this groundwater zone would require a treatment plant, which would then be covered by the new nitrogen limit.

Comment 68.

(M10) - Dredge sills at mouths of creeks and accumulation at the mouth of the Forge River. Removal of the deposits at the mouths of selected creeks will increase circulation in the creeks and improve water quality. Will the creeks be dredged at taxpayer cost?

Response

If Suffolk County conducts the dredging, then funding would ultimately be derived from County taxes. Alternatively, dredging may be conducted by the Army Corps of Engineers, in which case funding would come from the federal government.

Comment 69.

(M11) - Remove deposits south of Montauk Highway including Phragmites. Removal of the substantial deposits at the head of the Forge River will increase circulation in this portion of the estuary. Removal of the invasive reed Phragmites will increase available open water and tidal wetland habitat. (What deposits, and what location(s) have been identified as the headwaters).

Response

Management Plan language will be modified as follows:

(M11) - Remove stormwater-borne sediments in the waters just south of Montauk Highway including *Phragmites*. Removal of these deposits will increase circulation in this portion of the estuary. Removal of the invasive reed *Phragmites* will increase available open water and tidal wetland habitat.

Comment 70.

(L1) Develop and Implement a ~~the~~ land use plan for the duck farm properties for the uses determined by the Town and community to be most appropriate for the restoration of the estuary. The duck farm land use plan must be consistent with its public purposes attendant to its original acquisition and may only be used for such farmland or open space as delineated by county and town funds for farmland preservation and may not now or in the future be developed apart from the action of the state legislature. The property should have riparian restoration and be set aside as parkland open space connected by trails to the recently acquired 154-acre Mastic Woods. It is not now subject to subdivision or development inconsistent with the original purchase. It is adjacent to open space to the north, east, and south.

Response

See response to comment 40 concerning the Jurgieliwicz Duck Farm.

Comment 71.

(L3) - Pump groundwater to treatment locations such as wetlands or denitrification reactors. The cost and feasibility of moving and treating large volumes of water would need to be measured against the costs of other treatment options. This is an unrealistic and totally cost prohibitive recommendation and should be discarded without further consideration.

Response

See response to Comment 7.

Comment 72.

(L4) - Improve the operation of private STPs. The three existing wastewater treatment plants in the Forge River watershed could be upgraded for additional nitrogen removal or could be converted to pump stations connected to a future regional STP. If feasible economically, legally and environmentally the possibility of conversion to public pump stations connected to a regional STP must be fully and completely explored. Two of these STPs are located on the eastern edge of the watershed, far removed from the main areas contributing pollution to the ground and surface waters of the Forge River.

Response

All three of these STPs contribute nitrogen to the Forge River estuary. Consolidation of these facilities into a larger regional facility is being evaluated by the County.

Comment 73.

L5-L8) - Sewer part or all of the FRPOD. Engineering studies in progress now will help determine the most advisable sewerage strategy for the Forge River watershed and or adjacent communities. Since the TMDL implementation plan will identify the need for and extent of sewerage needed, design plans for reaching the TMDL will be required and may include the following options: a) construct a conventional collection system and treatment plant, or b) construct advanced onsite systems for individual FRPOD parcels to avoid collection system cost, or c) collect septic system effluent from all FRPOD parcels and treat it at a centralized community STP, or d) incorporate adjacent areas also within the groundwater contribution areas of the watershed in Mastic and Shirley and parts of Center Moriches into the sewer district to include areas contributing to the nitrogen load and to reduce per parcel cost and expand environmental benefits.

Response

Management Plan language will be modified as follows:

L5-L8 - Sewer part or all of the FRPOD. Engineering studies in progress now will help determine the most advisable sewerage strategy for the Forge River watershed and or adjacent communities. Since the TMDL implementation plan will identify the need for and extent of sewerage needed, design plans for reaching the TMDL will be required and may include the following options: a) construct a conventional collection system and treatment plant, or b) construct advanced onsite systems for individual FRPOD parcels to avoid collection system cost, or c) collect septic system effluent from all FRPOD parcels and treat it at a centralized community STP, or d) incorporate adjacent areas in the Mastic and Shirley peninsulas and parts of Center Moriches into the sewer district as these all contribute nitrogen to Moriches Bay and their inclusion could reduce per parcel cost and expand environmental benefits.

Comment 74.

(L9) - Pump bay water to head of the Forge River and into priority creeks to increase circulation and increase dissolved oxygen to support marine life. Increased circulation can improve water quality for aquatic organisms, but will require a substantial investment in pumping equipment and operational costs. The headwaters of the river are fresh waters, not salt water. Why pump salt water into fresh waters? What is the impact on those areas if such a practice were to be employed?

Response

See response to Comment 7.

Comment 75.

*(L10) - Dredge to remove accumulated organic matter from estuary. Institute a long- term dredging operation **provided that** benthic flux studies determine that the strategy could be effective **over the long term**. Many feet of duck farm waste and decaying algal blooms **have** accumulated in the Forge River and ~~will~~**may** contribute substantial nitrogen to the water column.*

Response

See response to Comments 13, 14, and 16.

Comment 76.

*The Forge River is a partially mixed estuary that discharges to Moriches Bay. The upland area of the Forge River, i.e., the watershed area, is situated in the southeastern portion of the Town of Brookhaven and encompasses the hamlets of Mastic and Moriches and the Poospatuck Reservation. Portions of the hamlets of Manorville, Shirley and Center Moriches (*Center Moriches is located outside the boundaries of the Forge River watershed see Figure 4-1*) and the Village of Mastic Beach also comprise the watershed. Figure 4-1 provides a location map for the Forge River watershed communities and adjacent areas.*

Response

The Plan correctly states that *portions* of the hamlets of Manorville, Shirley, and Center Moriches are included in the Forge River watershed.

Comment 77.

*The Forge River is a **partially-mixed estuary** that discharges to Moriches Bay. The Forge River contributing area has moderately sloping terrain with greater relief in the upland part of the basin. Hydrology is dominated by groundwater due to highly permeable soils and shallow depth to groundwater in the lower portion, depth to groundwater in the northern portion exceeds 90 feet.*

Response

Management Plan language will be modified as follows:

The Forge River is a partially-mixed estuary that discharges to Moriches Bay. The Forge River contributing area has moderately sloping terrain with greater relief in the upland part of the basin. Hydrology is dominated by groundwater due to highly permeable soils and shallow depth to groundwater in the lower portion of the watershed.

Comment 78.

The SCDHS requires 1.0 acre for the sewage flow from each single-family home (300 gpd) and 0.5 acres for the flow from each Planned Retirement Community (PRC) residential unit (150 gpd). Consequently, for the non-sewered scenario, residential parcels less than 1.0 acre and PRC parcels less than 0.5 acre were not included. Vacant and agricultural parcels within the watershed are zoned residential and were built out based on their zoning and the above SCDHS regulations. The parcels that are part of the Montauk Highway Corridor Study and Land Use Plan for Mastic and Shirley (Figure 5-2) were incorporated into the build-out analysis according to the proposed zoning. Some of the notable changes from the existing conditions are the preservation of vacant parcels for parks, new multi-family zoning, and additional B, C and J6 zoning. The assumptions made in the build-out analysis are shown in Table 5-2 and the results displayed in Table 5-3. Most of the Montauk Highway Study includes areas beyond the boundaries of the Watershed as delineated in this report. Clearly, any build-out analysis that includes areas outside the watershed is inappropriate for determinations of build-out scenarios within the watershed. These projections are deeply flawed as a result.

Response

The Management Plan acknowledges that the Montauk Highway Corridor Study and Land Use Plan include only a portion of the Forge River watershed. Only parcels within the groundwater contributing areas of the Forge River were included in the build out analysis.

Comment 79.

One open space area that is particularly close to the open water of the Forge River is the oak forest north of the West Mill Pond. It is relatively free of exotics and invasives (Figure 8-20) and connects to a well-preserved freshwater wetland that drains to West Mill Pond. This area was recently acquired and preserved as open space, 154 acres to protect the swales that feed fresh water into the Forge River.

Response

Management Plan language will be modified as follows:

One open space area that is particularly close to the open water of the Forge River is the oak forest north of the West Mill Pond. It is relatively free of exotics and invasives (Figure 8-20) and connects to a well-preserved freshwater wetland that drains to West Mill Pond. This area is part of the 154 acres recently placed into public ownership as open space to protect some of the freshwater sources of the Forge River.

Comment 80.

The Town of Brookhaven might consider developing a Forge River zoning overlay district. Additional restrictions on new development would be imposed within such an overlay district. These might include:

- *More stringent requirements for onsite wastewater treatment systems.*
- *Additional development limits to help protect riparian and wetland areas.*
- *Limits on nitrogen concentrations leaving the site.*
- *Up-zone areas to the north to continue minimal development.*

Response

Up zoning is not applicable here. An overlay district adds more stringent standards to existing zoning.

Comment 81.

Because the Forge River empties into Moriches Bay, it may be technically feasible to discharge the effluent from a wastewater treatment plant directly to surface water via a point source discharge (Really...you're got to be kidding...this suggestion is outrageous and unacceptable.). Since the Forge River is an impaired surface water(i.e., on the NYSDEC 303d list) and may ultimately be subject to a Total Maximum Daily Load (TMDL) for nitrogen, a new point source discharge to the Forge River would likely have more strict effluent restrictions than that for a non-impaired surface water.

Response

A modern advanced treatment plant that would collect wastewater that is currently discharged from onsite sanitary systems at a concentration of approximately 50 mg/l nitrogen and would treat and discharge an effluent having a nitrogen concentration of less than 10 mg/l would reduce nitrogen loading to the estuary by approximately 80 percent.

Comment 82.

Sewering of the Forge River Study Area would likely be considered a Type I action.

THE FOLLOWING STUDIES ARE OLD, HAVE BEEN REJECTED BY THE COMMUNITY AND THE COUNTY DUE TO COST AND AS SUCH ARE NOT USEFUL FOR DEVELOPING A FORGE RIVER MANAGEMENT PLAN

Mastic - Mastic Beach - Shirley Alternative #1; Mastic - Mastic Beach - Shirley Alternative #2; Mastic - Mastic Beach - Shirley Alternative #3

Response

See response to Comment 73. The studies were referenced in the Forge River Management Plan solely as a basis for a cost estimate. Capital and operating costs for relatively small sewer districts are high. The cost per property for sewerage decreases as more properties are connected to the same treatment plant. In most cases, sewerage is only 'affordable' when there is a large user base or it receives some form of public grant funding.

Comment 83.**ACTION ITEM**

Establish a Forge River Protection Overlay District (FRPOD) for properties inside the 50(?) - year contributing area to implement special regulations and improve water quality in the estuary.

Response

Properties inside the 50-year travel time for groundwater contribute to Forge River water quality.

Comment 84.**ACTION ITEMS**

- *Explore potential dedicated funding sources such as a FRP Fund to provide water quality improvement services to property owners based on water usage and assessed value.*
- *Add fee to property owners' tax bills.*
- *Assess lower fee for property owners connected to private STPs provided the STP can demonstrate long term compliance with health discharge standards.*

Response

Management Plan language will be modified as follows:

- *Assess lower fee for property owners connected to private STPs provided the STP complies with its SPDES permit discharge requirements.*

Comment 85.

...a significant portion of these farm parcels have been permanently protected through the purchase of development rights; these include the duck farm parcels and several active farm parcels to the east. The Town should consider the acquisition of the remaining farming rights of the duck farm parcels which, given their proximity to the upper reaches of the Forge River, could continue to impact the estuary through future agricultural operations. There still remain a number of unprotected farmland parcels within the watershed, most of which are located north of Montauk Highway.

Response

Management Plan language will be modified as follows:

A significant portion of these farm parcels have been permanently protected through the purchase of development rights including the Jurgieliwicz Duck Farm and several active farm parcels to the east.

Comment 86.

Not workable for area to be sewerred as it is already built out.

*The Town of Brookhaven has identified areas within the township that are most suitable for future development. The Town has, in some cases, revised the zoning in existing or proposed hamlets to encourage mixed use development. These are also the areas that are or will be sewerred. Developers can purchase Transfer of Development Rights (TDR) credits to make development in the selected compact hamlets more economically attractive. Those TDRs come from 'sending areas' identified by the Town. Sending areas are typically places that the Town or County has identified for preservation as open space, as environmentally sensitive, or important to the public in some other way and therefore less appropriate for development. Those hamlets that the Town has identified for TDR redemption are referred to as 'receiving areas.' *Incredibly unrealistic and lacks sufficient data to warrant implementation at this time.**

Response

A full assessment will be conducted prior to any action.

Comment 87.

ACTION ITEMS

- *Identify properties for acquisition or purchase of development rights based on location and environmental resources.*
- *Develop property acquisition list based on location and environmental sensitivity.*
- *Consider acquiring the development rights for additional agricultural acreage.*
- *Develop a strategy to permit limited and controlled greenhouse farming on properties where development rights have been acquired. Limit lot coverage by greenhouses on these parcels. Better idea is to include greenhouse farming that does not have permanent structures, but also does not use fertilizers that create run-off from concrete. Require treed buffer of natural areas to shield non-retail greenhouse operations.*

Response

See response to Comment 26.

Comment 88.

ACTION ITEMS

- *Acquire duck farm properties. Perform site assessment and cleanup. Restore riparian area of the properties. Restore adjacent stream system.*
- *Utilize the property initially for dredged material dewatering and treatment.*
- *Reserve a 5-10 acre portion of the site for possible use as a regional wastewater treatment plant serving the Mastic and Moriches peninsulas.*

ABSOLUTELY NOT! We did not fight to close a polluter to put a different one in its place. Can't tell you how disturbing this recommendation is. We will not permit alienation of these lands for such a use.

Response

See response to Comment 40 regarding the Jurgieliwicz Duck Farm.

Comment 89.

24.2.2 Adopt a Green Streets Policy (S9)

With very significant reservations...most of the area retains the right to remain rural and is not in favor of the unilateral adoption of a green street policy and all that is part of that plan.

ACTION ITEM

Adopt a 'Green Streets' policy to improve roadway design, capture and treat stormwater, ~~improve 'walkability,' and lower vehicle miles traveled.~~

Response

Most Green Streets designs are readily adapted to 'rural' areas. See also response to Comment 51.

Comment 90.

25.1.3 Prepare a Land Use Plan for the Duck Farm Properties (M3)

Following acquisition and remediation, the Town may wish to establish a new use for the former duck farm, i.e., one that supports the restoration and long-term protection of the estuary. Three potential uses of the former duck farm that are worthy of further study and consideration are as follows: ~~1) utilize the former duck farm parcels for the management (e.g., dewatering) of dredge materials from the Forge River, 2) dedicate the site for a regional wastewater treatment plant following the sewerage of all or portions of the watershed or 3) restore the duck farm – as appropriate and feasible – to its original condition comprising wetlands, floodplain forest and upland forest habitats. The first potential use has short- to mid-term application. The second and third concepts – which represent long-term or permanent uses of the former duck farm – could be combined, in varying degrees, to accomplish both water quality improvement and ecosystem restoration goals. These options are discussed in greater detail below.~~

~~The upland area of the duck farm could be very useful as a temporary dredged material dewatering and storage area. Dredging the creeks and main channel of the Forge River is recommended and discussed below. The operation would likely involve hydraulic (suction) dredging where the dredged material is pumped as a slurry to an area where it can be dewatered prior to trucking and off site disposal. Alternatively, it may be possible to compost the dredged material with yard waste, duck waste, or other organic materials (such as harvested Ulva – see below). The duck farm site is large enough to accommodate both a dewatering operation and a composting facility on a temporary basis. The leachate from these operations could be properly contained and treated prior to discharge to the Forge River. The location is ideal for both its proximity to potential dredging and its considerable distance from residential uses.~~

~~Ultimately, the duck farm property should be considered as a location for a regional wastewater treatment plant. It is centrally located between the Mastie and Moriches peninsulas. The groundwater from both of these areas accepts effluent from thousands of onsite wastewater disposal systems and then discharges to Moriches Bay. Regional sewerage is one option that could reduce the nitrogen discharged to groundwater and the Bay. Regional sewerage is discussed below. Collection and pumping costs to a centrally located treatment plant would be lower than if the plant were located at the periphery of the sewerage area. It would be prudent therefore to reserve a significant portion of the duck farm property (e.g., 5-10 acres) for possible construction by the Town or the County of a regional wastewater treatment plant.~~

In addition, the duck farm property is in an important location at the headwaters of the Forge River. The property across the stream from the duck farm is in public ownership and forested. Restoring the riparian area and the stream itself along the duck farm properties would help protect the water that flows into West Mill Pond and from there into the Forge River. The duck farm borders the eastern side of these waters but is highly disturbed. The riparian area should be restored to a condition similar to the western side where forested wetlands support wildlife and protect the headwaters of the Forge River. The restored area would also serve as a substantial buffer for whatever the final upland land use may be. *There will be none!*

The development of the land use plan must be integrated with the requirements of the TMDL, which may require the sewerage of a portion of the watershed. As mentioned above, the former duck farm properties may offer the most favorable site for a wastewater treatment plant. The sizing of the wastewater treatment plant would depend upon the adopted allocation strategies of the TMDL which, in turn, will drive the amount of land necessary to accommodate the wastewater treatment plant.

NOT AN STP AT THIS LOCATION OR THE PRESERVED LANDS TO THE NORTH, EAST, SOUTH OR WEST. ENOUGH WITH THE MORPHING OF THIS FRMP INTO A REGIONAL SEWER DEAL...MAKES ME THINK PERHAPS JURGEILWICZ WOULD BE INTERESTED IN GETTING THE FULL VALUE OF HIS LAND NOW THAT IT IS NOT GOING TO BE LIMITED TO AGRICULTURE OR OPEN SPACE AND PASSIVE PARKLAND. SEEMS A REALLY BAD WAY TO BETRAY THE PUBLIC'S CONFIDENCE IN THE PDR PROGRAM.

ACTION ITEMS:

- Prepare land use and engineering plans for the restoration of the duck farm properties.
- Consider the properties for a regional sewage treatment plant (STP). REJECTED

Response

See response to comment 40 concerning the Jurgieliwicz Duck Farm.

Comment 91.**25.3.3 Evaluate Need and Locations for Regional Wastewater Treatment Plant (M8)**

If the Town or County determines that regional sewerage is the best option for meeting the nitrogen TMDL, then a suitable location must be identified. Why consider just sewerage for the watershed, rather than continuing to endorse regionalization including areas that are removed and apart from the watershed that will be growth inducing to the area, providing additional environmental stresses to the existent communities;

Comments are premature. ...may include the adjacent hamlet of Center Moriches or the entire adjacent Moriches peninsula. The County is currently conducting a sewerage feasibility study for the downtown area of this adjacent hamlet. The County's Center Moriches Study includes both the Forge River and Moriches Bay groundwater contributing areas. The size and location of a treatment plant required will be determined by many factors including current ownership and the site preparation required. The technology required and discharge location (either groundwater or surface water), would be determined in part by the results of the TMDL Study.

Should the DEC approve the STP for surface water discharge, the agency would likely require that it meet a discharge limit lower than the current standard of 10 mg/L of total nitrogen.

If groundwater discharge is permitted, the new STP would be required to follow the SPDES limits as determined by the NYSDEC as part of the final allocation scenario of the TMDL Study. A groundwater discharge would be either in the form of recharge basins or subsurface leaching pools, which both have setback requirements. An STP with groundwater discharge would require a larger site than an STP with surface water discharge.

Surface water discharge is another option for an STP. A surface water discharge could help flushing in the head of the estuary. Where is the data to support this assertion, I have been involved with the FR for 7 years and have never heard such a proposal.

ENOUGH this is NOT happening... The duck farm, if acquired as part of the short term strategies, may be a good location for an STP, as it is centrally located, sufficiently large, already disturbed, and has few residential neighbors. Depending on the size of the STP required, the property may also be large enough to permit a substantial riparian restoration that could be utilized for further polishing of the facility's effluent.

Very old plan...Ed Hennessey is long gone and this has been denied by the FAA and is significantly up-land from the Mastic and Mastic Beach communities.

Two other potential sites for an STP include the Brookhaven Airport and the Town of Brookhaven's Sewer District #2 STP. A portion of the Brookhaven Airport is currently being considered for a regional STP with groundwater discharge located in the 10-25 year groundwater contributing area of the Forge River. Really? This is the first time this has been mentioned. I sit on the Airport Advisory Board and no such proposal is presently under consideration in any legal forum, nor has anyone contacted the adjacent communities for input to this idea. The Town's Sewer District #2 STP located adjacent to the LIE (in the vicinity of the William Floyd Parkway), is located in the...requires a total change to the legislation and approvals that accompanied construction of this STP. 25-50 year groundwater contributing area of the Carman's River. There is currently an STP at this location, however expansion of the STP may be considered.

ACTION ITEMS

Evaluate the need for a regional wastewater treatment plant to serve the FRPOD ~~as well as the adjacent communities of Center Moriches and Mastic.~~ Consider locations including the duck farm, Brookhaven Airport, and an expansion of the Town's Sewer District #2.

Response

It is premature to rule out any area locations for a treatment plant (or plants) whether on publicly or privately owned parcels. Treatment plants must discharge to groundwater or surface water. In either case, if the discharge is inside the watershed, the nitrogen will reach the estuary. Discharging treatment plant effluent directly into the estuary could aid in its flushing. The former duck farm is just one potential location for a treatment plant. The others discussed in the Management Plan remain viable options. Acquisition and expansion of a private plant is also possible. Treatment plants can be located virtually any distance from the wastewater generators they serve. Plants located closer to the users have lower collection system capital and operating costs. County studies currently underway are also examining the feasibility and cost of sewerage for the commercial areas of the Mastic Shirley peninsulas for social, economic, and environmental reasons. Once all the sewer studies have been completed, a determination can be made as to the best location for a treatment plant and the extent of the district it would serve.