



**SUFFOLK COUNTY  
COMPREHENSIVE  
WATER RESOURCES  
MANAGEMENT PLAN**

**Section 9  
PLAN IMPLEMENTATION**



## SECTION 9 RECOMMENDATIONS AND IMPLEMENTATION

# Section 9 Recommendations and Implementation

## 9.1 Recommendations

The framework for implementation of the groundwater resource management recommendations is summarized by **Table 9-1**. These recommendations are intended to provide the framework to guide water resource protection and management in Suffolk County through the years ahead, within the context of adaptive management. It is the County's intention that this table provide a flexible framework to guide water resource management, acknowledging that implementation of each recommendation is likely to be affected by changing priorities and opportunities and the availability of key resources, including funding.

Recommendations are organized into seven separate, but inter-related and overlapping categories:

- Nitrogen
- Volatile Organic Compounds
- Pesticides
- Pharmaceuticals and Personal Care Products
- Potable Supply
- Project Management and Data Collection
- Coastal Resiliency and Surface Water Quality

The first four categories of recommendations directly address Suffolk County's recommended approach to address contaminant loads to our groundwater (and surface water) resource. Implementation of these recommendations will also support achievement of the County's goals to provide a safe potable water supply to all residents, as well as improving coastal resiliency and surface water quality. Nitrogen discharged to the ground in unsewered areas has been identified as a priority in the previous 1987 and draft 2010 Comprehensive Water Resources Management Plans. As the impacts of nitrogen release to our groundwater have resulted in even more visible surface water impacts,

## SECTION 9 RECOMMENDATIONS AND IMPLEMENTATION

contributing to hypoxia, harmful algal blooms and degradation of the wetlands and seagrass beds that provide some protection from the impacts of storm events, the need to develop location-specific wastewater management approaches has been incorporated into this document. Recommendations identified for control of nitrogen sources will improve groundwater quality, surface water quality, potable supply and coastal resiliency.

Management of our water resources in a more comprehensive fashion, simultaneously considering groundwater, wastewater and stormwater management and surface water is necessary for effective protection and management. Comprehensive resource management is especially important considering the accelerated pace of sea-level rise and more frequent extreme weather events. Consequently, a sixth category of recommendations addresses project management and data collection. Comprehensive water resources management was one of the key recommendations in the IBM Smarter Cities Challenge Report. The County has long recognized the need to develop a robust and reliable data collection, evaluation and management program to provide the information necessary to make informed decisions and guide protection efforts; this was another need underscored by the IBM Smarter Cities team.

The success or failure of implementing many of the action items identified in the framework of recommendations is contingent upon securing the necessary funding and stakeholder cooperation. Responsibilities for many of the management activities identified are currently shared by collaborators and partners on the federal, state, county, town and local levels. While Suffolk County may have the ability to implement a number of the actions shown, it will be critical to share data, information and resources with other stakeholders who share water resource protection missions, in order to most effectively accomplish the water quality protection goals articulated in this Plan.

Finally, it will be essential to continue to educate and engage the public to participate in programs to reduce nitrogen, VOC, pesticide and PPCP loading to our waters. Ready access to easily accessible information and resources as identified in the framework will help to provide the information necessary to support informed decision making.

**Table 9-1 Water Resources Management Plan Framework**

Area	Recommendation	Priority	Owner	Collaborators	Key Milestones and Actions	Action Status and Time Range	Funding Status	Variables
1.0 Nitrogen	1.1 As a result of Superstorm Sandy in an effort to promote resilience create and/or expand sewer districts for existing communities identified as priority areas and upgrade current wastewater infrastructure	1	SCDPW	SCDEDP, SCDHS	a. Continue to undertake subregional sewer feasibility studies	Short term - On schedule	CP8134 Forge River; CP8139 Carl's River; CP8153 Smithtown/Kings Park; CP8156 Ronkonkoma Hub; CP8157 Connetquot River; CP8191 Center Moriches; CP8192 Flanders/Riverside	
			SCDPW	SCDEDP, SCDHS	b. Advance sewer expansion projects as funding becomes available	Continuous	\$383 Million announced as of 2014	
			SCDPW	SCDHS, SCDEDP	c. Plan/Construct Bergen Point outfall replacement	Ongoing	CP8108 \$207 million with a \$12.5 million grant and \$37.5 million loan from SRF	
	1.2 Develop a range of approvable advanced alternative on-site wastewater treatment options available for residential and non-residential applicants in Suffolk County. Gain acceptance and encourage participation	1	SCDHS and SCDPW	SCDEDP, NYSDOH, NYSEDEC, USEPA, Towns	a. Assess innovative technologies in nearby states to initiate a County septic demonstration program	Completed; report available online		
					b. Select innovative wastewater treatment companies to participate in a septic demonstration program	Completed		
					c. Select homeowners to participate in a Septic Demonstration Program	Completed		
					d. Install 19 advanced on-site demonstration septic systems	Short term - On schedule	Manufacturers are funding system purchase, installation and maintenance	
					e. Develop demonstration program to evaluate efficacy of shallow narrow drainfields and vegetated wetlands.	Short term - On schedule	Suffolk County Septic/Cesspool Upgrade Program Grant Request	
					f. Monitor effectiveness of on-site demonstration septic systems	Short term - On schedule	SCDHS and SCDPW will perform sampling and analysis, respectively	Effluent nitrogen results
					g. Encourage the use of non-proprietary wastewater treatment systems through demonstration programs	Short term - On schedule		
					h. Develop SCDHS process to approve and permit I/A OWTS systems. Mandate maintenance contracts on all I/A OWTS	Short term - On schedule		
					i. Modify Sanitary Code and establish construction standards for I/A OWTS systems	Short term - On schedule	To be determined - could include Watershed Improvement Districts, State Revolving Loan Fund, NYS Water Quality Improvement Program, the Suffolk County Water Quality Protection and Restoration Program, a proposed Aquifer Protection Fee by the public water suppliers, and the Community Preservation Fund for the East End, if supported at the local and state levels	Results of pilot program
					j. Provide guidelines and train municipalities and private industry to install and maintain advanced onsite systems	Short term - On schedule		Results of pilot program, funding source
					k. Familiarize homeowners and towns on the operations and maintenance of advanced septic systems in comparison to existing septic systems with the goal of providing rationale for an RME.	Short term - On schedule		Public participation, funding
					l. Promote the installation of I/A OWTS systems (Appendix A) for commercial and multi-family development by providing financial incentives	Short term - On schedule		Funding
					m. Establish a database of onsite systems (current and new) to track installation, maintenance, inspection, and performance and use to guide identification of approvable technologies; in coordination with EPA	Short term, On schedule	Integrate with Capital Project 4081, Environmental Health Information Management System	County Funding of Capital Project, see data management below
					n. Continue to develop new standards for clustered decentralized systems and for flows ranging from 1,000 - 30,000 gpd.	Short term - On schedule		
o. Develop and implement a drainfield demonstration program providing alternatives to leaching pools	Short term - On schedule	Suffolk County Water Quality Protection and Restoration Program						

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Area	Recommendation	Priority	Owner	Collaborators	Key Milestones and Actions	Action Status and Time Range	Funding Status	Variables
1.0 Nitrogen	1.3 Develop short term and long term water quality funding and financing mechanisms in partnership with federal, state, county and local agencies and private industry - short term activities may include voluntary homeowner upgrades and in the long term, possible mandatory upgrades that meet specific locational and environmental criteria	1	SCDEDP	SCDPW, SCWA, NYS EFC, USEPA, Towns, NY Works, LIRPC, TNC, CCE, LCV, Estuary Programs	a. Access all potential funding mechanisms, including financing mechanism for long term loans for homeowners, grant opportunities, aquifer protection fee, tax credits, insurance rate adjustments, public private partnerships, benefit assessments, user fees, tax credits, Finance Committee, etc.	Short term - On schedule	To be determined - could include Watershed Improvement Districts, State Revolving Loan Fund, NYS Water Quality Improvement Program, the Suffolk County Water Quality Protection and Restoration Program, the proposed Aquifer Protection Fee by the Suffolk County Water Authority, and for the East End the Community Preservation Fund if supported at the local and state levels	Available funding streams, investor interest, SCWA and homeowner participation
	1.4 Nurture the development of local industries to perform R&D and provide capital to address advanced wastewater treatment	1	SCDHS	SCDPW, SCDEDP, EPA, NYSDEC, LIREDC	a. Participate in the development of a regional (New England and coastal NY) data sharing agreement modeled after CBW data sharing agreement to streamline I/A approval processes	Medium - On schedule		Local industry interest
		1	Stony Brook University	SCDHS, SCDEDP, EPA, Southampton, NYSDEC, LIREDC	b. Participate in the creation of a Wastewater Institute at Stony Brook University	Medium - On schedule		
	1.5 Determine the range of technology options for advanced wastewater treatment by watershed to facilitate further prioritization for collective regional action	1	SCDHS	SCDHS, SCDEDP, SCDPW, USEPA, NYSDEC, NYSDOH, local stakeholders	a. Finalize RFP	Short term - On schedule		
					b. Engage stakeholders			
					c. Identify priority subwatersheds			
					d. Establish goals for nitrogen load allocation for watersheds, estuaries; Evaluate feasibility of enhancing effluent and review water quality goals			
					e. Finalize methodology for parcel analysis for wastewater technology treatment options			
							US EPA 3VS Systems Model	
								NYSDEC nutrient criteria development, water body-specific TMDLs
1.6 Evaluate the feasibility of updating the Sanitary Code to prohibit the "grandfathering" of State Pollutant Discharge Elimination System (SPDES) and/or SCDHS permitted sanitary flows that exceed and predate Sanitary Code density requirements on other than single-family residential lots, without the installation of an I/A OWTS or connection to sewers; review options to effect upgrades under ECL,NYCCR,SPDES	2	NYSDEC, SCDHS	SCDEDP, NYSDOH, local municipalities and stakeholders	a. Fund and conduct a feasibility study or health impact analysis of possible code changes	Short term - On schedule	Underway with existing staff and funding		
1.7 Evaluate the feasibility of updating the Sanitary Code to prohibit the replacement of failed onsite wastewater technology (e.g., "replacement in-kind") without SCDHS approval.	1	SCDHS	SCDEDP, SCDPW, USEPA, NYSDEC, NYSDOH, Towns	a. Conduct a health impact analysis of possible Code amendments	Short term - On schedule	Health Impact Assessment funded by the US EPA	Stakeholder input	
1.8 Establish governance to enable the installation and compliance/performance monitoring of appropriate wastewater technology County-wide	1	SCDEDP	SCDPW, SCDHS, NYSDEC	a. Establish legal authority	Short term - On schedule	Initial funding legislatively approved from the Suffolk County Water Quality Protection and Restoration Program	State approval	
				b. Establish wastewater management district				
				c. Establish Responsible Management Entity to manage funding, implementation, operation and maintenance				
				d. Staff Responsible Management Entity				
						SCDPW, SCDHS, SCWA collaboration, see: <a href="http://www.werf.org/i/c/KnowledgeAreas/DecentralizedSystems/RMsite/RMEs_2.aspx">http://www.werf.org/i/c/KnowledgeAreas/DecentralizedSystems/RMsite/RMEs_2.aspx</a>		
							Selected organizational approach	
1.9 Facilitate conditions for decentralized/virtual sewer districts, where appropriate with local neighborhood interest	1	SCDPW/ SCDHS	NYSDEC, SCDEDP, Towns, Stakeholders	a. Identify tax defaulted properties and develop siting standards for neighborhood sewage treatment plants	On schedule			
				b. Fund initial feasibility and engineering studies	Completed			

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Area	Recommendation	Priority	Owner	Collaborators	Key Milestones and Actions	Action Status and Time Range	Funding Status	Variables
1.0 Nitro	1.10 Continue to maintain active oversight of existing STPs and operators to maintain compliance with effluent nitrogen limit; where possible and appropriate attain more stringent performance goals to protect groundwater and surface waters	1	SCDHS	NYSDEC	a. Continue monitoring and enforcement efforts	On-going, On schedule	Underway with existing staff and funding; continue to seek additional revenue streams	
			SCDHS	NYSDEC	b. Continue to evaluate new and improved technologies for nitrogen and PPCP removal	On-going, On schedule	Underway with existing staff and funding; continue to seek additional revenue streams	
	1.11 Continue to reduce nitrogen load from homeowner fertilizer application.	1	SCDEDP	SCDHS, PEP	a. Assess effectiveness of and potential improvements to Suffolk County Local Law 41-2007 to reduce nitrogen pollution by reducing use of fertilizer in Suffolk County. Suffolk County continues to use two and a half times the amount of residential fertilizer as any other county in NYS	Short Term, On schedule	Underway with existing staff and funding	Evaluation/documentation of effectiveness . Access and analyze additional public and private data on fertilizer inventory, revenue, and sales
			SCDEDP	SCDHS, PEP, NYSDEC, USEPA, CCE, municipalities	b. Enhance educational and advocacy efforts aimed at reducing the negative impacts of residential and commercial yard care (fertilizer and pesticides) on ground and surface water quality	Medium, On schedule	Suffolk County secured funding from NYSDEC for implementation in 2015	Funding
	1.12 Evaluate the feasibility of replicating the Riverhead Sewage Treatment Plant's initiative to re-use wastewater effluent for golf course irrigation countywide, where appropriate	2	SCDHS	SCDPW, NYSDEC	a. Conduct a feasibility study on implementing reuse at candidate sites	Short Term High Priority		Funding

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Area	Recommendation	Priority	Owner	Collaborators	Key Milestones and Actions	Action Status and Time Range	Funding Status	Variables
1.0 Nitrogen	1.13 Work with agricultural community to reduce use and impacts of excess fertilization	1	SCDEDP	SCDHS, NYSDEC	a. Release updated Agricultural Stewardship Plan	Short term, On schedule		Funding
		1	SCDEDP	SCDHS, NYSDEC, PEP, NRCB, SCSWCD	b. Secure funding to implement the Agricultural Stewardship Plan, and continue to fund the CCE Agricultural Stewardship Program.	Short term, Continuous, On schedule		Funding
		1	Cornell Cooperative Extension	SCDHS, SCDEDP, NYSDEC	c. Provide technical staff to implement research, piloting, testing, reporting and education	Short term, Continuous, On schedule		Funding
		1	SCDEDP	Agricultural Stewardship Committee, NYSDEC, CCE, SCSWCD	d. Work with the agricultural community and other stakeholders to incentivize farmers, especially those participating in the County's purchase of development rights program, to implement BMPs to reduce nitrogen release to ground and surface waters.	Short term, Continuous, On schedule		
	1.14 Increase scavenger plant capacity to process waste from on-site system pump-outs	2	SCDPW		a. Evaluate capacity of existing facilities to receive and treat pump-out	Medium, On Schedule		Ability to expand existing capacity
	1.15 Seek ways to remediate existing nitrogen pollution and its impacts (see Coastal Resiliency & Surface Water Quality actions for more detail)	1	SCDHS	Estuary Programs, NYSDEC, SCWA, Scientists, Cornell Cooperative Extension	a. Continue to implement the Harmful Algal Bloom strategy, wetland stewardship, shellfish restoration; continue to support and fund the use, where appropriate, of marine plants and shellfish as biofiltration to reduce nitrogen in surface waters	On-going, On schedule		Funding, technology development, permitting, species selection for uncertified waters
		1	SCDEDP	Towns, NYSDEC	b. Mitigate the nitrogen and bacterial contribution from wildlife and pets by implementing public education and encouraging alternative population control measures	Short term, Not yet scheduled		
		2	USGS	SCDHS	c. Consider localized studies to evaluate nutrient flux from the sediments into the water column and evaluate sediment management options.	Medium, Not yet scheduled		
		2	SCDHS	NYSDEC and municipal partners	d. Encourage the development of pilot programs for the installation of permeable reactive barriers and other innovative in-situ water quality remediation techniques. Work to identify suitable locations for pilot installation, and support monitoring of effectiveness of nitrogen reduction	Short term, Not yet scheduled	Use existing resources and continue to seek supplemental funding sources	Suitable locations and technology effectiveness
		2	SCDHS	Towns, Villages	e. Consider changing densities in all hydrogeologic zones; evaluation of zone 4 would be the first priority, subject to cost benefit analysis	Short term, Not yet scheduled		Effectiveness of 1/A OWTS

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Area	Recommendation	Priority	Owner	Collaborators	Key Milestones and Actions	Action Status and Time Range	Funding Status	Variables
2.0 Volatile Organic Compounds (VOCs)	2.1 Implement VOC Action Plan	1	SCDHS		a. Identify and inspect high priority facilities (e.g., gas stations/dry cleaners)	Short term, Continuous, On schedule	\$100,000 appropriated	Available funding
			SCDHS	NYSDEC, USEPA	b. Initiate enforcement activities to bring facilities into compliance and clean-up actions to address contaminant releases as necessary.	Short term, Continuous, On schedule	Use existing resources and continue to seek supplemental funding sources	Results of initial inspections
			SCDHS		c. Within an adaptive management framework, annually reassess inspection priorities, and continue to inspect the next category(ies) of high priority facilities. Based upon status and trends of VOCs detected in drinking water, refine monitoring and inspection strategies	Continuous, On schedule	Use existing resources and continue to seek supplemental funding sources (see below)	
			SCDHS		d. Establish and apply a fee system to fund continued implementation of the inspection/compliance program.	Short term, On schedule		Number of facilities not in compliance with regulations/or with contaminant releases to the environment
			NYSDEC	USEPA	e. Develop and implement a Gas Station operator training/certification program	Medium term, Not yet scheduled	Available funding	
			SCDEDP	SCDHS, SCLD	f. Continue to coordinate with Suffolk County Land Bank to identify, evaluate, and prioritize tax-defaulted environmentally contaminated properties	Short term, Continuous, On schedule	Use existing resources	Funding status for initial sites secured through EPA, NYS AG office and NYSDEC.
	2.2 Implement Reducing Toxics Capital Program	1	SCDHS		a. Develop approach to prioritize inspection of remaining 17,000 +/- facilities; consider prioritizing those within supply well contributing areas	Short term, On schedule	\$100,000 from 1/4% Program	Available funding
			SCDHS	NYSDEC, NYSDOH	b. Inspect facilities in accordance with identified approach	Short term, Schedule under development	One full time equivalent person to begin implementation in 2016	Available funding
			SCDHS	NYSDEC, USEPA	c. Initiate enforcement/clean-up activities	Medium term, On schedule	Use existing resources and continue to seek supplemental funding sources	Available funding
			SCDHS	NYSDEC, USEPA	d. Continue to require that facility owners at VOC release sites perform soil vapor intrusion investigations where necessary and continue to identify new construction sites with soil vapor intrusion potential.	Short term, Continuous, On schedule	Underway with existing resources	Federal/state guidance, Town/village building codes
	2.3 Implement Remedial Actions	1	SCDHS	NYSDEC, USEPA	a. Initiate enforcement/clean-up activities, refer to Superfund as appropriate	Short term, Continuous, On schedule	Use existing resources and continue to seek supplemental funding sources	Available funding

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Area	Recommendation	Priority	Owner	Collaborators	Key Milestones and Actions	Action Status and Time Range	Funding Status	Variables
2.0 VOCs	2.4 Increase awareness of harmful household products	1	SCDHS	SCDEDP, SCWA, SCDPW, USEPA, NYSDEC, NYSDOH	a. Continue to collaborate with other agencies, remain current on literature to identify bad actors and safer alternatives	Short term, Continuous, On schedule	Use existing resources and continue to seek supplemental funding sources	Availability of green alternatives, funding
			SCDHS	SCDEDP, SCWA, USEPA, NYSDEC, NYSDOH, Estuary Programs	b. Conduct public education and outreach to engage public and modify choices . Educate public about EPA Safer Choice labeling program and encourage consumers to adopt it	Short-term, Continuous, On schedule	Use existing resources and continue to seek supplemental funding sources	Availability of green alternatives, funding
			SCDHS	NYSDOH, NYSDEC, Estuary Programs	c. Work with County and/or State Legislators to ban any harmful products/additives where viable alternatives are available and expand upon the Suffolk County's Green Clean Purchase program	Medium term, Not yet scheduled		Identification of harmful products with available alternatives, available funding
			SCDHS	Towns, SCDEDP, SCWA, NYSDEC, NYSDOH, USEPA, Estuary Programs	d. Increase awareness of and participation in Town STOP programs	Short-term, Continuous, On schedule		Convenience of/availability of Town programs, funding
	2.5 Implementation of sanitary sewerage in priority areas	1	SCDPW	SCDEDP, SCDHS	a. Include areas with high priority facilities in areas to be served by sanitary sewers; see nitrogen recommendations	Medium term, Not yet scheduled		Available funding and competing priorities
	2.6 Continue to evaluate impact of cesspool additives	2	SCDHS		a. Monitor retailers and supply houses to identify drain cleaners and cesspool additives listing organic chemicals as ingredients, and work with companies that have not applied for product certification to remove the products from shelves, obtain certification of safety (if appropriate), or face possible fines.	Short term, Continuous, On schedule	Underway with existing resources	Identification of unregistered products containing organic chemicals

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Area	Recommendation	Priority	Owner	Collaborators	Key Milestones and Actions	Action Status and Time Range	Funding Status	Variables
3.0 Pesticides	3.1 Work with Agricultural Community to Reduce Use and Impacts of Harmful Pesticides	1	SCDEDP	Cornell, SCDHS, NYSDEC, USGS	a. Update Agricultural Stewardship Program (also supports Nitrogen Recommendation 1.13 above)	Short term, On schedule		Funding
		2	SCDEDP	Cornell, SCDHS, NYSDEC, USGS	b. Establish Agricultural Stewardship Advisory Council	Short term, On schedule		Funding
		1	Cornell Cooperative Extension	SCDEDP, SCDHS, USGS	c. Continue to identify pesticides that are persistent/mobile and used on Suffolk County crops, and identify crop-specific integrated pest management or safer alternatives.	Short term, Continuous, On schedule		Funding, ability to identify more environmentally friendly alternatives, participation of the agricultural community
	3.2 Develop a comprehensive pesticide management strategy, incorporating SCDHS recommendations concerning establishment of a pesticide rating testing system that guides pesticide registration/re-registration and integrate into comprehensive lawn care management initiatives.	2	NYSDEC	SCDHS, CCE	a. Formally incorporate SCDHS into the pesticide registration process.	Short term, Not yet scheduled		NYSDEC priorities
		2	NYSDEC	SCDHS, CCE, USGS	b. Modify pesticide registration process to require piloting to assess leachability, mobility, persistence, toxicity or issue conditional registration with targeted monitoring until pesticide impacts are assessed. Work toward implementation of NYSDEC "Long Island Pesticide Pollution Prevention Strategy"	Short term, Not yet scheduled	NYSDEC, pesticide manufacturers	NYSDEC priorities, manufacturer participation
		1	NYSDEC	SCDHS, CCE, USGS	c. Initiate targeted monitoring in the event that a new pesticide is detected in groundwater and consider implementing use restrictions and/or re-registration requirements as appropriate. Work with collaborators to analyze for pesticides that PEHL can not analyze for	Short term, Continuous, On schedule		
	3.3 Increase public awareness of pesticide impacts and encourage use of safer replacements when possible.	1	NYSDEC	SCDHS, CCE, USGS	a. Outreach and education to engage public and modify choices. Enhance commercial applicator training	Short term, On schedule	Funded through NYSDEC	Ability to identify available, effective alternatives.

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Area	Recommendation	Priority	Owner	Collaborators	Key Milestones and Actions	Action Status and Time Range	Funding Status	Variables
4.0 Pharmaceuticals and Personal Care Products (PPCPs)	4.1 Provide actionable information regarding use and disposal of household products, pharmaceuticals and personal care products	1	SCDHS	USEPA, NYSDEC, SCWA	a. Continue to monitor Contaminants of Emerging Concern (CECs), contaminants on the Contaminant Candidate Lists (CCL), and literature	Short term, Continuous, On schedule	Use existing resources and continue to seek supplemental funding sources	Cooperative opportunities, grant availability, other funding options
		1	SCDHS	USEPA, NYSDEC, SCWA	b. Identify safer alternatives to harmful ingredients/additives identified in PPCPs	Short term, Continuous, On schedule	Use existing resources and continue to seek supplemental funding sources	Cooperative opportunities, grant availability, other funding options
		2	SCDHS	USEPA, NYSDEC, SCWA, Group for the East End, Estuary Programs	c. Continue to collaborate with others to implement education and outreach program including development and posting of no-flush signs at pharmacies and identifying the locations of take-back programs. The Group for the East End reports that 2,000 lbs. of unused medications were disposed at seven police stations in east end towns during the first year of program implementation; the program was publicized via mailings, press releases, email blasts and radio and newspapers.	Continuous, On schedule	Implementation of the east end program has been provided through Feb 2016. Covanta Energy's RX disposal program is providing free destruction at the East Northport facility. Continue to use existing resources and continue to seek supplemental funding sources, including 1/4% funding for east end towns	Cooperative opportunities, grant availability, other funding options
	4.2 Continue to assess occurrence of PPCPs in groundwater as well as PPCP sources, to support development of informed management decisions	1	SCDHS	SCWA, USGS, NYSDEC	a. Increase PEHL capabilities to include the following analytes: cotinine, diltiazem, hydrochlorothiazide, meprobamate, metropolol, naproxen, 4-nonylphenol, phenobarbital, sulfamethoxazole, tramadol, Tributylphosphate (TBP), Triphenylphosphate (TPP), Tri (2-butoxy-ethyl) phosphate (TBEP), Tri (2-chloro-ethyl) phosphate (TCEP), Tri (2-dichlorisopropyl) phosphate (TDPP) and the Ames test.	Short term, Continuous, On schedule	PEHL analytical capabilities have been expanded to include 1,4-dioxane; SCDHS has entered into a cooperative agreement with SCWA who will analyze approximately 50 samples from small public supply and private wells for seven PPCPs that currently cannot be analyzed by SCDHS PEHL	Funding options, cooperative opportunities
		1	SCDHS	SCWA, USGS, NYSDEC	b. Continue to expand analytical capabilities based on information from other investigations, occurrence data, and available information on mobility, persistence and toxicity	Short term, Continuous, On schedule	PEHL analytical capabilities have been expanded to include 1,4-dioxane; SCDHS has entered into a cooperative agreement with SCWA who will analyze approximately 50 samples from small public supply and private wells for seven PPCPs that currently cannot be analyzed by SCDHS PEHL	Funding options, cooperative opportunities
		1	SCDPW, SCDHS	USGS, USEPA	c. Implement PPCP Monitoring Plan to evaluate PPCPs in wastewater and effectiveness of existing treatment modalities	Short term, Continuous, On schedule		Funding
		1	SCDHS	SCWA, USGS, NYSDEC	d. Assess magnitude of 1,4-dioxane sources (e.g., industrial/commercial vs. household) by targeted monitoring downgradient of laundromats and other potential sources	Short term, Not yet scheduled	Use existing resources and continue to seek supplemental funding sources	
		1	SCDHS	NYSDEC	a. Update annual notice that goes out to all New York State registered facilities if and when changes/amendments are made.	Short term, On schedule	Use existing resources and continue to seek supplemental funding sources	Changes in regulations
		2	SCDHS		b. Work with facilities to keep them current and implement any changes/amendments as needed to stay compliant	Short term, On schedule	Use existing resources and continue to seek supplemental funding sources	

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5.0 Potable Supply	5.1 To the extent that it is practical, extend community supply to all residents.	1	SCDHS	SCWA	a. Prioritize areas where availability of public supply should be provided	Short term, Continuous, On schedule	SCWA, customers and grants	Community support, infrastructure siting/permitting, funding
		1	SCWA	SCDHS	b. Identify supply sources (existing or new wells) as necessary	Short term, Continuous, On schedule	SCWA	Community support, infrastructure siting/permitting, funding
		1	SCWA	SCDHS	c. Design, construct and connect	Short term, Continuous, On schedule	SCWA	Community support, infrastructure siting/permitting, funding
	5.2 Implement conservation plan to reduce domestic and outdoor irrigation use	2	Suffolk County		a. Require rain sensors/moisture sensors in new sprinkler systems	Short term, Not yet scheduled		Enforcement
		2	Suffolk County	Cornell Cooperative Extension	b. Identify daily irrigation needs on website	Short term, Not yet scheduled		
		2	Suffolk County		c. Implement odd/even irrigation program for non-agricultural properties	Short term, Not yet scheduled		Enforcement
		2	Suffolk County water suppliers		d. If other conservation measures are ineffective, then implement conservation measures including conservation pricing/seasonal rate pricing	Short term, Not yet scheduled		
		2	Suffolk County	SCWA and suppliers, Estuary Programs	e. Implement public outreach/education program to encourage use of water conservation plumbing fixtures	Short term, Schedule varies		
	5.3 Provide safe drinking water to all residents	1	Suffolk County water suppliers	SCDHS	a. Incorporate sub-standard supplies into SCWA or other effectively managed municipal water district.	Short term, Continuous; Schedule varies		
		1	SCDHS		b. Increase capability to analyze private well samples	Short term, Continuous, Not yet scheduled		Funding
		1	SCDHS		c. Increase outreach to private well owners	Short term, Continuous, Not yet scheduled		Funding
		2	SCDHS		d. Increase private well income exemption to \$50,000/year	Short term, Continuous, Not yet scheduled		Funding
	5.4 Evaluate Lloyd aquifer	3	NYSDEC	SCDHS, USGS, SCWA	e. Investigate potential impacts and safe yield of water supply pumping from the Lloyd aquifer. Identify and quantify conditions under which the commissioner of NYS DEC can grant exemptions to non coastal communities to pump water from the Lloyd aquifer	Medium, Not yet scheduled	No funding in place	Scope, work plan and funding

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Area	Recommendation	Priority	Owner	Collaborators	Key Milestones and Actions	Action Status and Time Range	Funding Status	Variables
6.0 Project Management and Data Collection	6.1 Develop a cross departmental leadership team to implement the Reclaim Our Water initiative and manage the County's water from 'cradle to grave.'	1	SCDEDP	SCDHS, SCDPW, SCWA, County Attorney		Completed		
	6.2 Secure the resources and staff necessary to implement the initial phases of the Water Resources Management Plan	1	SCDHS		a. New positions are being filled	Underway, On schedule	Funding from Suffolk County and NYSDEC	
	6.3 Explore the feasibility of operating the existing 193 sewage treatment plants in Suffolk County under the control of the Suffolk County Department of Public Works	1	SCDPW	SCDEDP, SCDHS, NYSDEC	a. Complete sewer consolidation analysis	Short term, Not yet scheduled		
	6.4 Integrate water and wastewater operations	2	SCDEDP	SCDHS, SCDPW, SCWA	a. Assess the feasibility and business case for consolidation	Medium term, Not yet scheduled		
		2	SCDEDP	SCDHS, SCDPW, SCWA	b. Define a future operating model for water and wastewater operations across the County	Medium term, Not yet scheduled		
		2	SCDPW	NYSDEC, Municipalities	c. Evaluate feasibility of including stormwater utility development	Medium term, Not yet scheduled		
	6.5 Facilitate communities to embrace the solutions for improving water quality	1	Suffolk County	SCDEDP, SCDHS, SCDPW, NYSDEC, Estuary Programs, Towns	a. Provide easily accessible information on water quality through online and social media outlets for public knowledge and use	Ongoing, On schedule		
		1	SCDHS	USEPA, Estuary Programs	b. Develop the economic and social value of clean water to our region	Short term, On schedule	Funding secured by EPA for an ecological assessment study and US EPA 3V scoping project which will build social capital among decision makers and stakeholders on water quality issues and more.	
		1	Suffolk County	County, State, Federal and nonprofits	c. Conduct a marketing campaign around the need for upgraded septic systems (2014 Crapshoot Video contest, Teleconference Town Hall with the County Executive)	Ongoing, On schedule	Funding secured	

**Table 9-1 Water Resources Management Plan Framework**

Area	Recommendation	Priority	Owner	Collaborators	Key Milestones and Actions	Action Status and Time Range	Funding Status	Variables
6.0 Project Management and Data Collection	6.6 Implement a comprehensive integrated data collection, analysis and evaluation program to monitor groundwater, drinking water and surface water, and guide informed protection and management strategies. Reinstate comprehensive groundwater and stream monitoring program and report annually	1	SCDHS	USGS, SCWA, USEPA, NYSDEC, NYSDOH	a. Collaborate to provide sampling and analytical capabilities to assess contamination by Contaminants of Emerging Concern (CEC) and contaminants on the Contaminant Candidate Lists (CCL)	Short term, On schedule	Position funded for dioxane, cooperative effort with SCWA established	Plethora of new analytes, laboratory capacity, funding, cooperators analytical capabilities and funding
		1	SCDHS		b. Enhance SCDHS's capabilities to respond to home owners request for private well testing and increase the ability to perform private well surveys of areas of suspected contamination	Short term, Not yet scheduled		Laboratory capacity, funding
		1	NYSDEC	SCDHS	c. Require that all non-residential private wells report well location, depth, screened interval and pumpage to NYSDEC	Short term, Continuous, Not yet scheduled		Legal authority, cooperation
		1	SCDHS		d. Continue community and non-community well sampling	Short term, Continuous, On schedule		
		1	SCDHS	NYSDEC	e. Pesticide monitoring in target areas	Short term, Continuous, On schedule	NYSDEC grant	Farmer cooperation, analytical capabilities and capacity
		1	SCDHS, SCWA	NYSDEC	f. Salt water intrusion monitoring	Short term, Continuous, On schedule		
		1	SCDHS	NYSDEC	g. Groundwater monitoring in industrial areas based on Reducing Toxics capital program	Short term, Continuous, Schedule under development		
		1	SCDHS	USEPA	h. Beach Monitoring in compliance with BEACH act	Short term, Continuous, On schedule	BEACH Act Grant HSV-2355	
		1	SCDHS	USGS, Estuary Programs, Stony Brook University	i. Implement stream and estuary monitoring programs	Short term, Continuous, On schedule		Analytical capabilities and laboratory capacity
		1	SCDHS	USEPA, NYSDEC, Towns, USGS, Stony Brook University, Estuary Programs	j. Monitor to support TMDL programs	Short term, Continuous, On schedule		
1	SCDHS	USEPA, NYSDEC, NYSDOH, USGS, SCWA	k. Continue to update data collection and analytical capabilities to support decision making and consideration of emerging issues	Short term, Continuous, On schedule				
1	SCDHS	NYSDEC, USGS	l. Update water level monitoring program, focus in particular on unsewered near-shore areas to assess impact on on-site wastewater systems	Short term, Continuous, Not yet scheduled		Resources		

**Table 9-1 Water Resources Management Plan Framework**

Area	Recommendation	Priority	Owner	Collaborators	Key Milestones and Actions	Action Status and Time Range	Funding Status	Variables
6.0 Project Management and Data Collection	6.7 Implement and upgrade the Bureau of Public Health Protection and Division of Environmental Quality databases and enhance their capabilities to provide a comprehensive integrated geo-coded data management program for all regulated facilities, public and non-residential private wells (location, pumpage and quality), private well quality, groundwater and surface water quality data, salt water intrusion monitoring data, facility data, inspection records, STP Discharge Monitoring Reports (DMRs) and monitoring data and on-site wastewater management systems' installation, maintenance, inspection and performance	1	SCDHS SCDOIT	SCDPW, SCDEDP	a. Develop scope of work, issue RFP and select data management system	Short term, On schedule with 2015 Capital Program	Capital Project 4081	Funding
		1	SCDHS SCDOIT	SCDPW, SCDEDP	b. Populate database, develop protocols and provide access and training	Short term, On schedule with 2015 Capital Program	Capital Project 4081	Funding
		1	SCDHS SCDOIT	SCDPW, SCDEDP	c. Migrate existing databases to new platform	Medium, On schedule with 2015 Capital Program	Capital Project 4081	Funding
		1	SCDHS SCDOIT	USEPA, NYSDEC, Suffolk County, Estuary Programs	d. Utilize database to access information for management and decisions	Medium, Continuous, On schedule with 2015 Capital Program		Funding
	6.8 Adapt the business processes in the Suffolk County Department of Public Works and Department of Health Services to meet expanded integrated water management responsibility	1	Suffolk County	SCDPW, Performance Management	a. Identify process owners and change agents to prioritize and lead improvement initiatives, create action plans to eliminate problem areas and duplicative work, measure improvements	Ongoing, On schedule		
	6.9 Establish standards for the digital transfer of water quality data parameters between ELAP certified laboratories and NYSDOH, NYSDEC and stakeholders.	2	NYSDOH	SCDHS, NYSDEC, ELAP approved Laboratories	a. Establish Electronic Data Transfer (EDT) standards for water quality parameters	Medium, NYSDEC has standard for non potable water. NYSDOH has no standard.		Funding, Staff
	6.10 Work closely with federal, state and local partners to share readily accessible, actionable information, identify synergies and share resources	1	Suffolk County	USEPA, NYSDOH, NYSDEC, NYSDOS, Towns & Villages, SCWA and other suppliers, stakeholders	a. Produce annual water quality reports on-line including identification of improving trends, areas of concern, new issues	Short term, Continuous, Not yet scheduled		Cooperation and resources
	6.11 Evaluate feasibility of inter-governmental water resource cradle to grave data management plan.	1	Suffolk County	USEPA, USGS, NYSDEC, NYSDOH, SCDHS, SCWA	a. Identify key partners and assess volume of data of interest, data format, plan for periodic EDT updates	Short term, Continuous, Not yet scheduled		Funding, cooperation
		1	Suffolk County	USEPA, USGS, NYSDEC, NYSDOH, SCDHS, SCWA	b. Incorporate key partners' data into County data management plan RFP	Short term, Continuous, Not yet scheduled		Funding, cooperation
		1	Suffolk County	USEPA, USGS, NYSDEC, NYSDOH, SCDHS, SCWA	c. Complete project, mine data from key partners, share access to database with water resource managers/partners	Short term, Continuous, Not yet scheduled		Funding, cooperation
	6.12 Continue to evaluate and address the impacts of composting facilities ,dump sites, micro plastics , sand mines and other emerging contaminants upon water resources	2	SCDHS,CCE, Municipalities	NYSDEC	a. Conduct targeted groundwater monitoring down gradient of composting facilities and work with NYSDEC to define classes of composting and assess appropriate response activities	Short term, Continuous, On schedule	Use existing resources and continue to seek supplemental funding sources	Results of groundwater monitoring

**Table 9-1 Water Resources Management Plan Framework**

Area	Recommendation	Priority	Owner	Collaborators	Key Milestones and Actions	Action Status and Time Range	Funding Status	Variables
6.0 Project Management and Data Collection	6.13 Continue to acquire land and development rights for open space based on water quality criteria	1	SCDEDP	SCDHS	a. Within the context of the SCDEDP's Comprehensive Master List and land acquisition procedures, prioritize parcels within the 50 year contributing area to public supply wells and 25 year contributing area to surface water features for preservation	Continuous, On schedule		Available funding and other priorities
	6.14 Delineation of ground-water source areas and times-of-travel to Long Island streams and estuaries	1	USGS	TNC,SCDHS,NYSDEC	a. Delineate groundwater sources areas and travel times to Long Island streams and estuarine embayments, and (2) produce geospatial layers and metadata that describe these delineations for public dissemination via the Internet.	Short term, Proposed, Not yet scheduled		Funding, cooperation
	6.15 To the extent that it is practical and cost effective incorporate the values and methodologies of EPA's Triple Value decision support tools into the implementation of SCCWRMP	2	SCDHS	SCDEDP	Incorporate the tools of EPA's 3VS into the decision making process of plan implementation	Continuous, Not yet scheduled		Training
	6.16 Optimize compliance with SEQRA regulations. Participate in SEQRA process with towns and other municipalities	2	SCDPW, SCDHS, NYDEC	EPA,NYSDOH, SCWA	Complete Environmental Impact Statement where appropriate.	Medium - On schedule		
	6.17 Coordinate plan implementation with local municipalities. Participate in SEQRA review process and provide data, tools and guidance to municipalities .	2	Towns	SCDHS, SCDPW, SCDEDP, Stakeholders	In implementing plan, county state and municipalities should optimize inter-governmental coordination. This includes participating in SEQRA review, use of GIS coverages (travel times to surface waters and public supply wells), training sessions on wastewater alternatives and programs. SCDHS should continue to use priority sensitive zones (50 yr. to public supply wells 25 yr. to surface water) for programs such as TDR, STP siting, wastewater upgrades and pollution source tracking.	Medium - On schedule		
	6.18 Continuously collect, tabulate and review performance measures of key program elements.	2	Towns	SCDPW, Stakeholders	Annually review key performance indicators and programmatic outcomes. Adaptively manage programs to maximize outputs. At five year intervals reassess programs and goals and key performance indicators	Continuous On schedule		

**Table 9-1 Water Resources Management Plan Framework**

Area	Recommendation	Priority	Owner	Collaborators	Key Milestones and Actions	Action Status and Time Range	Funding Status	Variables
7.0 Coastal Resiliency and Surface Water Quality	7.1 Continue to coordinate regional efforts to address Harmful Algal Blooms by developing and implementing the Harmful Aquatic Blooms Action Plan	1	SCDHS / New York State Sea Grant	SCDHS, NOAA, CCE, PEP	a. Complete HAB Action Plan	Short term, Preliminary Plan Sept. 2015, Final Plan Sept. 2016	SCDHS has developed a work plan and budget for the program.	
	7.2 Coordinate with Federal, State, and local partners to continue to assess the vulnerabilities to sea level rise in Suffolk County and develop action plans that mitigate impacts	1	Suffolk County	NYSDEC, NYSDOS, FEMA, EPA, USACOE, TNC, NY Rising, Estuary Programs, SCSWCD	a. Identify critical areas and review options for sanitary code revisions to address long term needs. Work with local municipalities to help implement Climate Action Plans	Medium term, Underway, On schedule		
	7.3 Implement the Fire Island to Montauk Point project in coordination with the Army Corps of Engineers and appropriate stakeholders	1	US Army Corps of Engineers	Suffolk County, NYSDEC, towns and stakeholders		Short term, Ongoing, On schedule	The Fire Island to Montauk Point (FIMP) project, on the drawing boards since 1964 in various iterations, was allocated \$700M by the Superstorm Sandy relief bill. Preliminary projections approximate \$450M for road and house elevations, with 7 million cubic yards (cy) of sand borrowing from the Atlantic going to a \$207 million, 19 mile-long, 9.5 foot berm to 15 foot dune line interfaced with beach nourishment, plus \$60M for green infrastructure projects.	
	7.4 Support the practical implementation of ideas generated by the Rebuild by Design teams	1	New York State			Medium term, Not yet scheduled		
	7.5 Support the implementation and expansion of NY Rising Community Reconstruction Program	1	New York State	Suffolk County		Short term, ongoing, On schedule	Various projects throughout Suffolk County including the "Living" Marsh Grand Canal Levee Improvement	
	7.6 Implement and expand Wetlands Stewardship Strategy efforts throughout Suffolk County	1	SCDEDP	SCDPW, Estuary Programs	a. Implement ongoing and recently funded projects, continue to seek new funding for priority projects identified by stakeholders	Short term, Ongoing	\$1,310,000 grant to Suffolk County from the NFWF for Integrated Marsh Management. \$525,000 for Smith Point HMGP and \$600,000 from NRCS .	
	7.7 Develop drainage strategies in chronically flooded areas through the installation of green infrastructure measures like permeable pavers	1	SCDPW	Estuary Programs, Municipalities, SCSWCD		Short term, Not yet scheduled		Funding
	7.8 Develop a robust stormwater management program in coordination with local municipalities and New York State	1	Suffolk County	NYSDEC, local municipalities, Estuary Programs	a. Assess the effectiveness of current program and funding allocations. Update town codes as necessary.	Short term, Not yet scheduled		
2		SCDPW	Towns, NYSDEC, SCSWCD	b. Improve coordinated management of streams/sediment removal	Medium Term, Not yet scheduled			
2		Towns	Suffolk County	c. Continue to support municipal stormwater efforts using Suffolk County Water Quality Protection and Restoration funding	Ongoing	Suffolk County Water Quality Protection and Restoration Program		

**Table 9-1 Water Resources Management Plan Framework**

Area	Recommendation	Priority	Owner	Collaborators	Key Milestones and Actions	Action Status and Time Range	Funding Status	Variables
<b>7.0 Coastal Resiliency and Surface Water Quality</b>	7.9 Assess the feasibility and effectiveness of hardening coastal infrastructure and the potential to incorporate living shoreline concepts wherever possible and effective.	1	SCDPW, USACE	SC Parks, Estuary Programs NYSDEC, Municipalities	a. Feasibility study completed; identify early implementation tasks and funding sources	Completed		
	7.10 Support the development of an Inter-municipal Agreement among the East End towns and Villages and Suffolk County with the Peconic Estuary Program to implement water quality initiatives	1	PEP	Suffolk County, East End towns	a. Continue to provide funding for the development of clear and measurable outcomes within the Peconic Estuary	Completed	Resolution 440-2014	
	7.11 Examine feasibility of participating in/initiating other inter-municipal agreements (e.g. Northport Harbor, Oyster Bay/Cold Spring Harbor)	2	Suffolk County	Municipalities	a. Prioritize existing funding for joint water quality improvement initiatives	Short Term, PEP IMA Approved by Suffolk County others pending		LISS,SSER, Municipalities
	7.12 Continue to support and coordinate with the Peconic Estuary Program, Long Island Sound Study, and the South Shore Estuary Reserve Program to implement projects	1	Suffolk County	Estuary Programs	a. Provide in-kind staff and financial support to advance the implementation of stakeholder driven initiatives	Short term, Ongoing, On schedule		
	7.13 Optimize the use of data, computer models and TDRs to minimize the siting of wastewater facilities in 25 and 50 year travel time to surface waters and public supply wells.	1	SCDPW, SCDHS, NYDEC, Private industry	SCWA, stakeholders	a. Disseminate water quality, hydrologic data and computer model outputs to optimize siting. Implement SPDES action limits for enhanced performance standards, ensuring nitrogen loading is reduced compared with as-of-right unsewered alternative	On going	Suffolk County Water Quality Protection and Restoration Program	
	7.14 Continue to evaluate and promote development of improved pollution control management measures and structures	2	Towns	Suffolk County	a. Work with towns promote structural and non-structural methods to reduce pollutants	On going		
<b>Key:</b>	Priority - 1 highest to 3 lowest		<b>LIST OF ACRONYMS</b>					
	Schedule - short term - < 5 years 5 years < medium > 10 years Long term > 10 years		CCE	Cornell Cooperative Extension		NYSDOS	New York State Department of State	
			CP	Capital Program		NYSEFC	New York State Environmental Facilities Corporation	
			ECL	Environmental Conservation Law		PEP	Peconic Estuary Program	
			ELAP	Environmental Laboratory Accreditation Program		RFP	Request for Proposal	
			ESDC	Empire State Development Corporation		SCDEDP	Suffolk County Department of Economic Development and Planning	
			FDA	Federal Drug Administration		SCDHS	Suffolk County Department of Health Services	
			FEMA	Federal Emergency Management Agency		SCDOIT	Suffolk Department of Information Technology	
			HMGP	Habitat Management Grant Program		SCDPW	Suffolk County Department of Public Works	
			I/A OWTS	Innovative Alternative Onsite Wastewater Treatment System		SCDPW	Suffolk County Department of Public Works	
			IMA	Inter-Municipal Agreement		SCLD	Suffolk County Law Department	
			LCV	League of Conservation Voters		SCWA	Suffolk County Water Authority	
			LIREDC	Long Island Regional Economic Development Council		SCSWCD	Suffolk County Soil and Water Conservation District	
			LIRPC	Long Island Regional Planning Commission		SPDES	State Pollutant Discharge Elimination System	
			LISS	Long Island Sound Study		STP	Sewage Treatment Plant	
			NFWF	National Fish and Wildlife Federation		SSER	South Shore Estuary Reserve	
			NOAA	National Oceanic and Atmospheric Administration		TNC	The Nature Conservancy	
			NRCS	National Resources Conservation Service		USACOE	United States Army Corps of Engineers	
			NYSDEC	New York State Department of Environmental Conservation		USEPA	United States Environmental Protection Agency	
			NYSDOH	New York State Department of Health		USGS	United States Geological Survey	

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## SECTION 9 RECOMMENDATIONS AND IMPLEMENTATION

### 9.2 Implementation

The implementation framework summarized by **Table 9-1** includes additional information to further describe how the recommendations will be implemented. The framework identifies an “Owner” for every action and milestone required to fully implement each recommendation. The owner is the organization or entity with the primary responsibility for initiating and coordinating implementation of the activities and programs necessary to achieve the desired result. While some of the actions can be fully implemented by a single organization, many required the cooperation and participation of other stakeholders or collaborators. This will also facilitate sharing key resources – e.g., data and information, technical skills and expertise and funding.

The time frame for implementation of each recommendation is identified as short term (less than five years), medium (five to ten years) or long term (over ten years). Many of the proposed recommendations are targeted to begin implementation in the short term; e.g., within five years. In fact, the County has already initiated many key actions (e.g., initiating identification and piloting of alternative on-site wastewater treatment systems). Nevertheless, full implementation of groundwater resources management recommendations is likely to take decades, and will also be contingent upon available resources.

Successful implementation of each recommendation is subject to a variety of variables, including funding availability, as well as other factors that will influence the timing of implementation, or even whether the recommendation can be fully implemented (e.g., community support). Most of the key activities associated with protection of groundwater quality have already been initiated. The funding status of each of the key milestone and activities is also identified. Full implementation of Plan goals is a long-term process that will require coordination and collaboration with agencies and organizations on the federal, state, county and local level, a careful reevaluation of resource allocation issues, and will also necessitate exploring grant opportunities and other innovative and alternative funding mechanisms. Suffolk County continues to work with state and federal agencies and stakeholders to explore implementation options to cost-effectively execute Plan recommendations.

Clean potable water supply and sanitation are often cited as the most important needs in developing countries and as the most effective means of protecting public health. Due to the efforts of water resource managers on federal, state, county and local levels, Suffolk County residents have access to both. It is critical that County residents do not take access to a safe, reliable supply of clean water for granted.

## SECTION 9 RECOMMENDATIONS AND IMPLEMENTATION

Finally, despite the best intentions, there are a number of factors that will affect the County's ability to implement the recommendations identified, including piloting results, public interest and input and funding. Consequently, these recommendations will be re-evaluated and modified as appropriate in the coming years as new information, opportunities and priorities are identified.

### 9.2.1 Assessment Monitoring

Implementation of the recommendation identified in the framework will be monitored. Monitoring has two objectives:

- To monitor implementation of the Plan recommendations, and
- To monitor the effectiveness of the Plan recommendations in achieving the Plan goals and objectives.

It is important to monitor the effectiveness of the Plan recommendations in achieving the stated goals and objectives, focusing on measures of progress that are quantifiable; the USEPA has reported that if indicators cannot be measured, then it is not possible to identify progress towards achieving goals. The effectiveness of these recommendations in achieving water resource protection goals and objectives will be assessed according to key performance indicators, also summarized in **Appendix K**.

Annual monitoring of Plan effectiveness and early assessments of Plan effectiveness will allow the County to modify their approach within an adaptive management framework and make improvements as necessary – ineffective actions and programs should be discarded and those recommendations that are most effective can be further enhanced.