Coastal Wastewater Solutions, LLC
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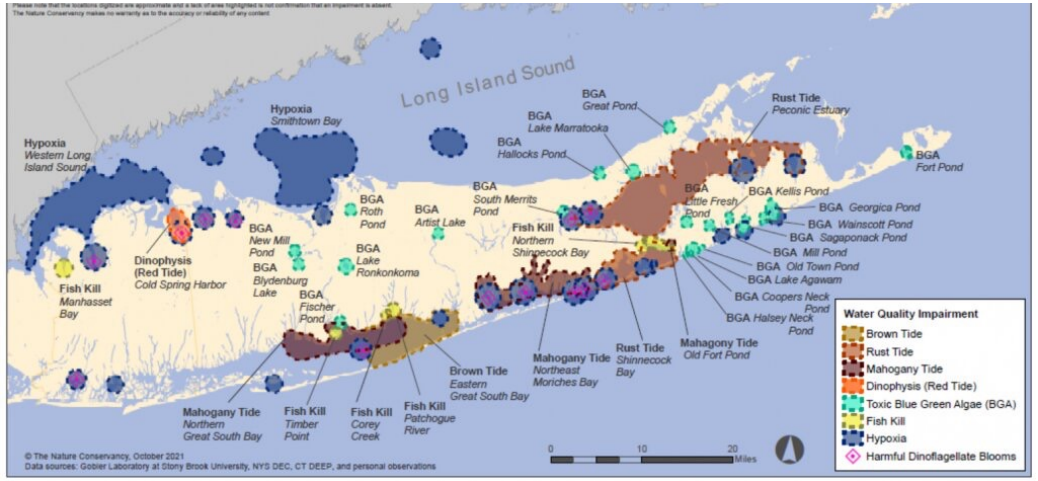
Reclaim Our Water
www.reclaimourwater.info

Nassau County S.E.P.T.I.C. Program

SOIL & WATER CONSERVATION DISTRICT

RESPONSIBLE MANAGEMENT

OF CLEAN-WATER SEPTIC SYSTEMS ON LONG ISLAND



NEW ENGLAND WATER ENVIRONMENT ASSOCIATION
NEWEA
WORKING FOR WATER QUALITY

January 24th, 2022 - New England Water Environment Association

IA OWTS Responsible Management Entity Charrette

Agenda

1. Setting the Stage for the Need and Evolution to Clean-Water Septic Systems on Long Island
2. New York State RME Requirements
3. RME Structure in Suffolk and Nassau Counties (Lessons Learned from Other Jurisdictions)
4. Looking to the Future of RME's in NY
5. Ways to Avoid Future Missed Opportunities
6. Questions

EPA's Management Models – Great Guide but Successful Programs use a Hybrid Approach!

JAMESTOWN, RHODE ISLAND

PROBLEM
Jamestown is a small, island town dependent on private drinking water wells and individual wastewater systems. Poorly maintained onsite wastewater systems on undersized lots with high seasonal water tables were affecting groundwater quality. Studies revealed that 32% of the wastewater treatment systems in the area were contributing to nutrient and pathogen problems in private water wells (Legislative Press and Public Information Bureau, 2006).

SOLUTION
Jamestown adopted an ordinance requiring routine inspections of individual wastewater systems. A High Groundwater Table District also guides future development to protect drinking water quality.

Town of Jamestown
44 Southwest Avenue
Jamestown, RI 02835
www.jamestownri.net

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OVERVIEW
Jamestown is located on a small island situated in the middle of Narragansett Bay in Rhode Island. It is approximately nine miles long and one mile wide. In 2001, Jamestown passed an ordinance to better accommodate growth and manage individual wastewater systems to protect its fresh water supplies. The program consists of:

- **Routine inspections**
- **Maintenance reminders**
- **Web-based system database**
- **Siting and installation rules**
- **Designation of a High Groundwater Table District**

MAINTENANCE INSPECTIONS AND WEB-BASED TRACKING
Jamestown's program provides a framework for the inspection, maintenance, and repair of individual wastewater systems. The town conducted an initial round of inspections in 2003 aimed at identifying and evaluating the condition of 1,608 individual systems. Jamestown then began a routine maintenance inspection program in 2006 under which systems are inspected every three or five years based on size, type of system, and water use. Inspectors record the inspection information in the town's web-based database. The town has the authority to pump tanks at the owner's expense and, if necessary, can place liens on property for failure to reimburse the town for the pump-out.

HIGH GROUNDWATER OVERLAY ZONE AND IMPERVIOUS LAYER DISTRICT
Jamestown adopted a High Groundwater Overlay Zone and Impervious Layer District Ordinance in 2003. The ordinance applies to designated areas in the town that have substandard-sized lots served by private wells. Provisions of the ordinance include a total impervious surface area limit of 15% (calculated for individual lots and excluding wetlands), a requirement to control runoff volume—using low-impact techniques—to maintain predevelopment infiltration for a 25-year storm, and a mandate to use advanced wastewater treatment technologies capable of 50% nitrogen removal.

FUNDING SOURCES
Jamestown's program is funded through an annual user fee of $30 paid by system owners. The fee funds the town's part-time wastewater management specialist.

RESULTS

- **To date, 94% of all septic systems have had an initial maintenance inspection.**
- **Of the systems inspected:**
  - **35 failed (2%)**
  - **85 (5%) were found to be substandard systems (e.g., cesspools, systems with steel tanks)**
  - **1,488 passed (93%)**
- **Since 2003, 50 systems have been subject to repair/replacement actions initiated by the town.**

Property owners are responsible for ensuring that their system is operating properly and that it is maintained in good repair. Systems that do not meet applicable performance requirements can be subject to a repair or replacement order. Addressing malfunctioning systems helps to reduce nitrogen and pathogen pollution that pose threats to Jamestown's drinking water sources.

References and Resources

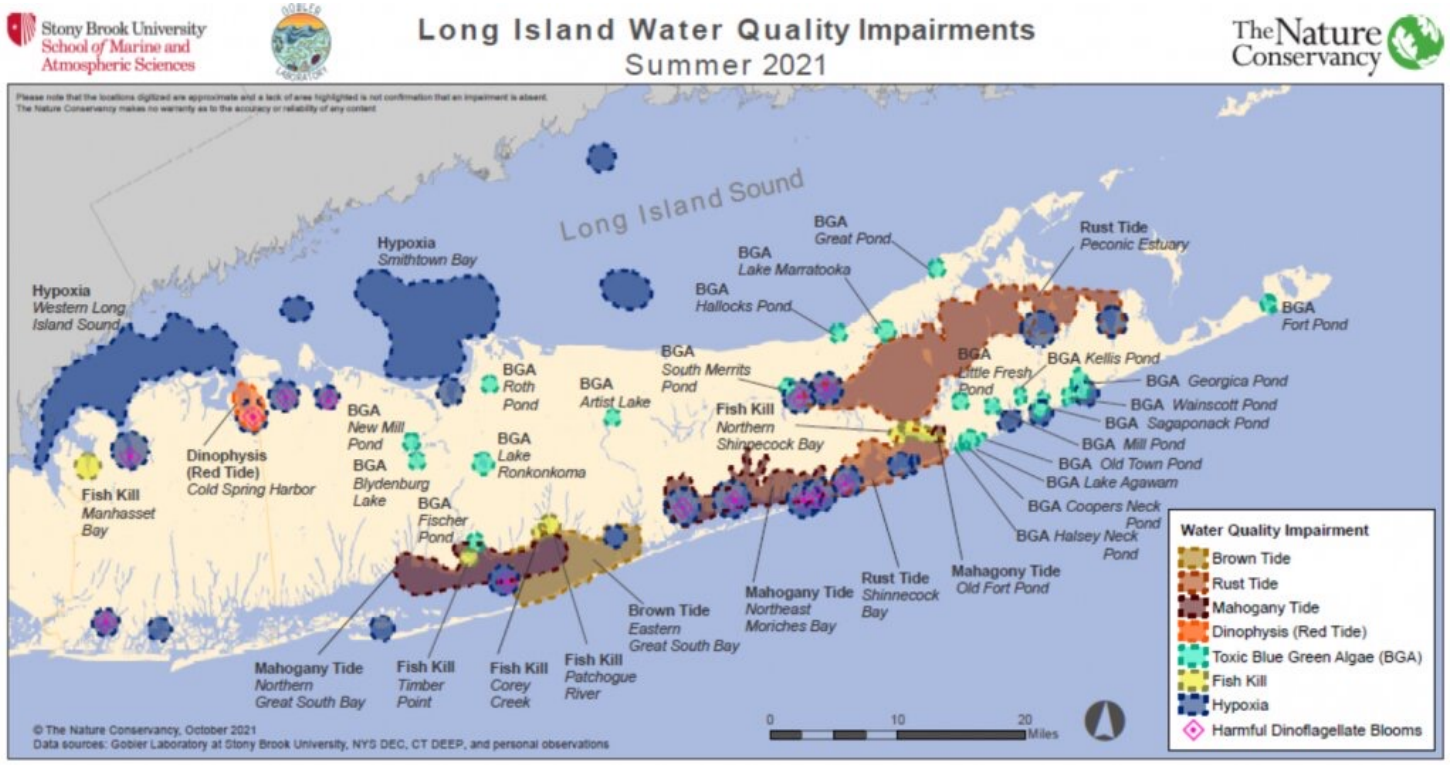
Jamestown Source Water Assessment and Wastewater Needs Analysis. University of Rhode Island Cooperative Extension. **http://www.uri.edu/ce/wq/RESOURCES/dwater/Assessments/PDFs/James_Chapters%203,4.pdf.** Accessed August 9, 2010.

Legislative Press and Public Information Bureau. 2006. Senate passes Paiva Weed bill stemming from Jamestown well contamination. State of Rhode Island, General Assembly. Providence, RI.

Rhode Island Department of Environmental Management. 2008. Rules Establishing Minimum Standards Relating to Location, Design, Construction, and Maintenance of Onsite Wastewater Treatment Systems. Town of Jamestown. High Groundwater Ordinance. **www.jamestownri.net plan/hgwt.html.** Accessed March 31, 2010.

Population data—Town of Jamestown, Rhode Island. **http://www.jamestownri.net/**

Setting the Stage for the Need for Clean-Water Septic Systems on Long Island



Failed Block Cesspool, Shirley, NY

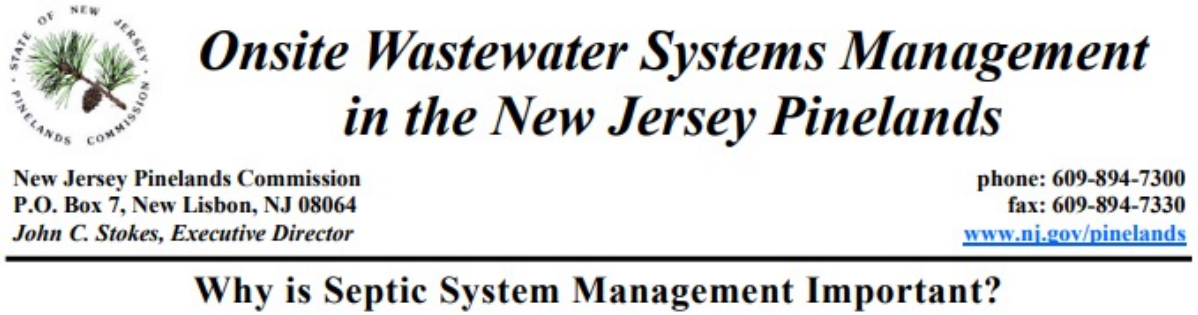
Collapsed Cesspool, Southampton Village

- Over 425,000 On-Site Systems on LI, Hundreds of thousands of cesspools
- 74% of Suffolk County is unsewered, 90 % of Nassau's North Shore is Unsewered
- HAB's, Shellfishing Impacts, Coastal Resiliency, Public Bathing Beaches

The Evolution to the use of Clean-Water Septic Systems on Long Island

A Multi-Jurisdiction Tour Set in Motion an Accelerated 5-Pronged Approach to a Clean-Water Septic System Evolution on LI

MASSTC
The Massachusetts Alternative Septic System Test Center



The Evolution to the use of Clean-Water Septic Systems on Long Island

A Multi-Jurisdiction Tour Set in Motion an Accelerated 5-Pronged Approach to a Clean-Water Septic System Evolution on LI

1. Evaluate Best Management Practices to & Manage IA Systems
2. Train, Inform, and Prepare the Industry and Public
3. Sanitary Code Amendments to Update Outdated Regulations
4. Study and Identify Priority Areas for Advanced Treatment
5. Public Funding to Incentivize Large Scale Installations (up to 7,000 per year)

Approximately $40 Million Invested in IA Grants On Long Island Since 2017

TRAINING OPPORTUNITIES

ENDORSEMENTS

1. SEPTIC TANK PUMPING, CLEANING, AND MAINTENANCE
2. GREASE TRAP CLEANING AND MAINTENANCE
3. YELLOW GREASE / FRYER OIL COLLECTION
4. TEMPORARY RESTROOM FACILITIES
5. WASTE LINE CLEANING AND INSPECTION
6. BULK LIQUID WASTE TRANSPORTATION
7. VACTOR SERVICES
8. ~~CONVENTIONAL MAINTENANCE INSPECTOR~~
9. CONVENTIONAL SEPTIC SYSTEM INSTALLATION
10. **I/A OWTS INSTALLER**
11. **I/A OWTS MAINTENANCE PROVIDER**

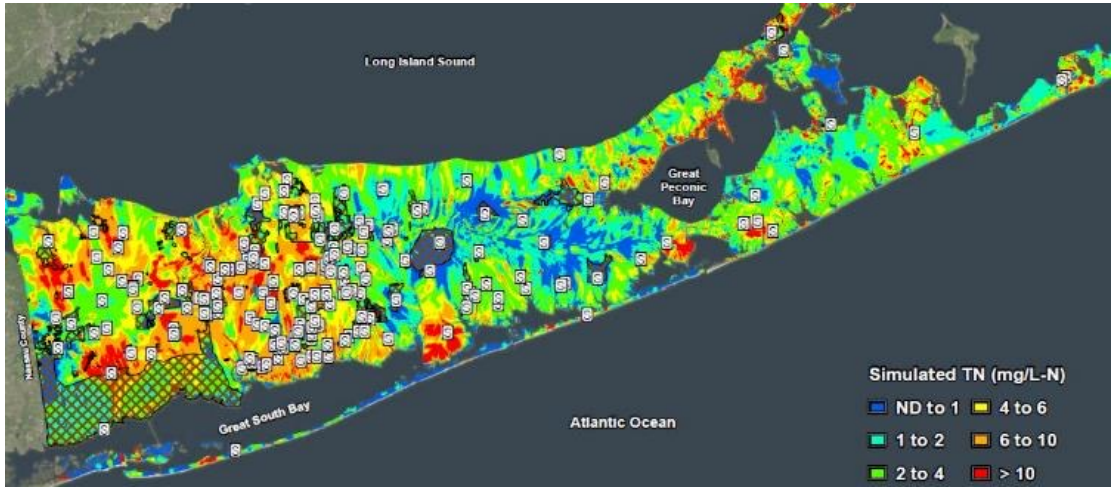
CONTINUING EDUCATION REQUIREMENTS
TRAINING CONTACT HOURS (TCHS)

- ENDORSEMENTS 1 – 8
  - A MINIMUM OF 8 TCHS FOR EACH 2-YEAR ENDORSEMENT RENEWAL PERIOD.
- ENDORSEMENTS 9 -11
  - A MINIMUM OF 12 TCHS FOR EACH 2-YEAR ENDORSEMENT RENEWAL PERIOD.
- SUFFOLK COUNTY DHS ABLE TO OFFER CONTINUING EDUCATION SESSIONS FOR FREE THANKS TO SCUPE GRANT FROM NYSDEC.

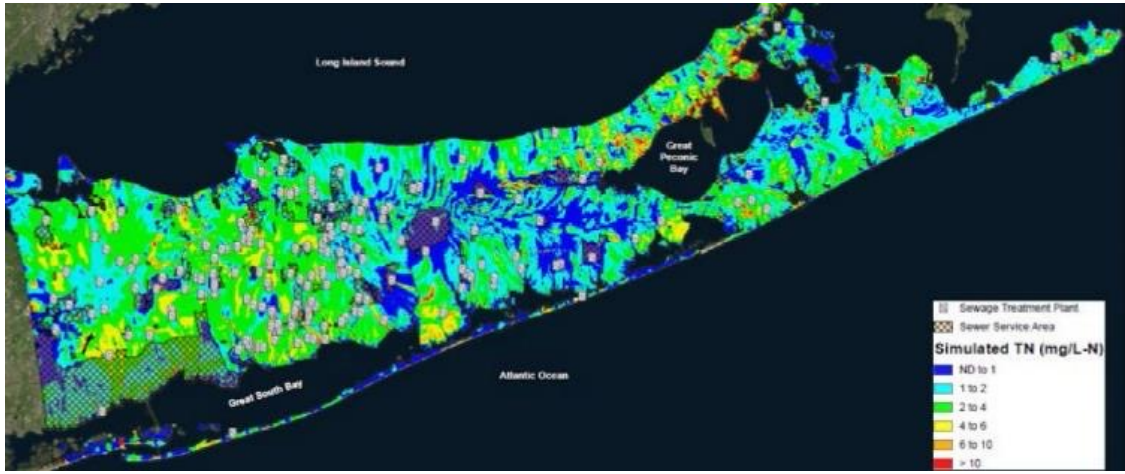
Program Benefits

- **Immediately** (SIP/SWP): Means to replace failing cesspools
- **Within 30 years*:**
  - ✓177,000 cumulative upgrades of existing systems
    - All near shore areas and highest priority areas
    - Removes <u>3,000,000</u> pounds of nitrogen per year
  - ✓Benefits:
    - Arrest and reverse increasing TN within 5 to 10 years*
    - Meet initial HAB/DO goal >50 percent of all areas
    - Upgrade all priority drinking water protection areas
- **Within 45 years***:
  - ✓253,000 cumulative upgrades of existing
    - All priority areas addressed
  - ✓Benefits
    - Initial HAB/DO goal >75 percent of management areas
    - Overall improvement goal in ~50 percent of coastal waters
    - Upgrade all drinking water protection areas

Before wastewater upgrades

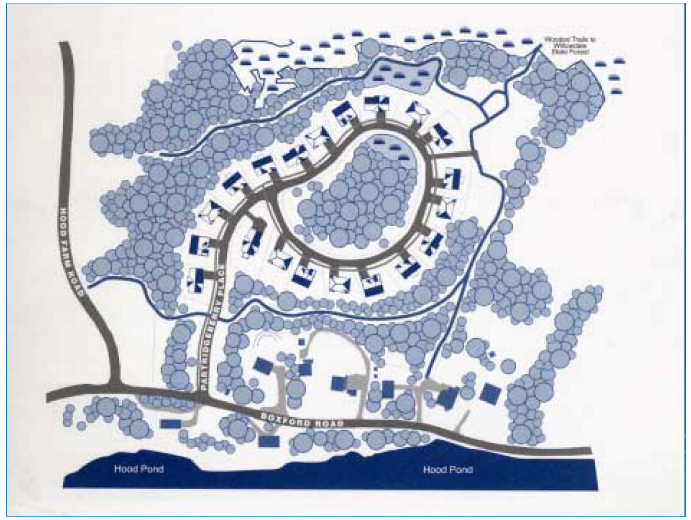


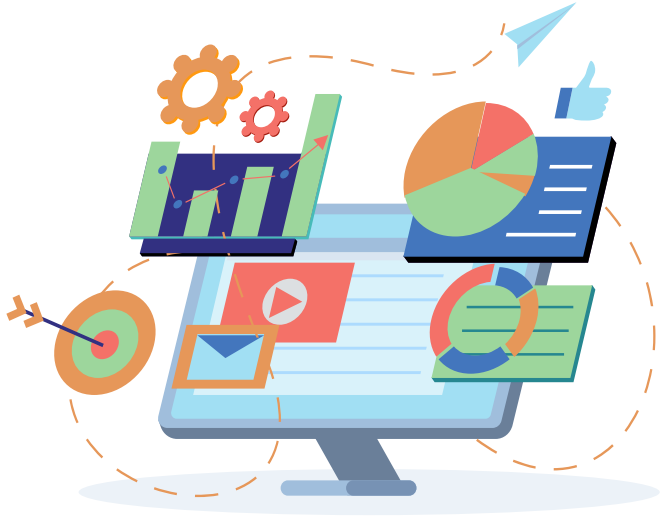
After wastewater upgrades



Regulatory Jurisdiction & NY's RME Requirements

- The Suffolk County Department of Health has jurisdiction over all septic system permitting in Suffolk County
- The Nassau County Department of Health has jurisdiction over septic systems for developments (realty subdivisions) of 5 lots or more.
- For properties not part of a realty subdivision, or for repairs and retrofits of existing systems, the local city, town, or village has jurisdiction
- The New York State Department of Health (NYS DOH) Design Handbook for Residential Onsite Wastewater Treatment Systems, of which includes Appendix 75-A, identifies the need to develop an "approval and management program" for these IA OWTS that includes the following:
  - Define program goals and requirements
  - Educate engineers, contractors, and public on IA OWTS and Codes
  - Oversee site evaluation, design, construction, and maintenance
  - Provide system tracking, maintenance verification and record keeping
  - Confirm availability of service providers for products to be used to establish adequate authority, enforcement, and compliance incentives.
- The District is engaging with individual Towns and Villages to provide requested IA Guidance





Current RME Structure on Long Island

ARTICLE 19
MANAGEMENT OF INNOVATIVE AND ALTERNATIVE ONSITE WASTEWATER TREATMENT SYSTEMS

§760-1901 Declaration of Policy

Key Components of Article 19

- Establishes a framework for the Department, as the Responsible Management Entity, to evaluate, approve, register, oversee, and facilitate the use of I/A OWTS
- Allows the Department the authority to promulgate procedures, protocols, and standards to evaluate, approve, register, oversee, and facilitate the use of I/A OWTS
- Article 19 allows the Department to ensure that I/A OWTS continue to function effectively over the long-term and to benefit the environment.
- The Department shall have the legal authority and technical capacity to ensure the long-term operation, maintenance and management of all I/A OWTS. Activities (monitoring, operation and maintenance, and data management)

Article 19 Specifics

- Department Responsibilities
  - Responsible Management Entity (RME) of I/A OWTS
  - Oversee Installation and O&M
  - Promulgate Procedures, Standards, & Protocols for I/A OWTS
  - Track I/A OWTS: Sampling, O&M, Contracts, Registration
  - Enforcement
- Property Owner Responsibilities
  - Maintain Current O&M Contract
  - Implement requirements to ensure system function
  - Register I/A OWTS with County prior to construction, upon property transfer, and every 36 months after initial registration
- Service Provider Responsibilities
  - Maintain Liquid Waste Endorsement K
  - Annual O&M
  - Notify Department w/ 30 days when O&M Contract is canceled or not renewed
  - Sample I/A OWTS in accordance with Standards
  - Report all O&M, Recommendations, & Emergency Service

Suffolk County I/A OWTS Approval Process
Comparison of Septic Demo vs Piloting

Septic Demo	Piloting	Provisional	General Use
1-5 Systems Required	8-12 Systems Required	Minimum of 20 Systems Required	Greater than 20 Systems
Dataset of 75% of systems must average 19 mg/L or less	Dataset of 75% of systems must average 19 mg/L or less	Entire dataset must average 19 mg/L or less	Entire dataset must average 19 mg/L or less
Procedures for excluding outliers; Streamlined path to Provisional	Procedures in place for excluding outliers	Cannot exclude outliers	Cannot exclude outliers
NSF 245 or USEPA ETV only	NSF 245, USEPA ETV or approval for N reduction in 2 comparable jurisdictions	NSF 245, USEPA ETV or approval for N reduction in 2 comparable jurisdictions	NSF 245, USEPA ETV or approval for N reduction in 2 comparable jurisdictions
Only installed in households who met specific criteria & agreed to routine visits & monthly sampling by SCDHS	Must be year round residences that agree to routine visits & monthly sampling by SCDHS	20 year round residences sampled every 60 days for 2 years by manufacturer with SCDHS QA/QC	All residential systems sampled every 3 years by O&M Provider with SCDHS QA/QC
Proven technologies with >20,000 installed in similar jurisdictions. Great confidence systems will reduce TN by 50% as certified by NSF & ETV	Proven technologies with >20,000 installed in similar jurisdictions. Great confidence systems will reduce TN by 50% as certified by NSF & ETV	Proven technologies with >20,000 installed in similar jurisdictions. Great confidence systems will reduce TN by 50% as certified by NSF & ETV. Proven ≥ 70% TN reduction on limited dataset in Suffolk County (i.e. achieved 19 mg/L)	Great confidence systems will reduce TN by 70%. Large dataset showing reduction of TN to 19 mg/L in Suffolk County

Note - SCDHS is the first jurisdiction to have a program designed with US EPA statistical analysis. Approval process also allows for an experimental phase which requires an additional 12 months of sampling prior to a technology being accepted into the piloting phase.

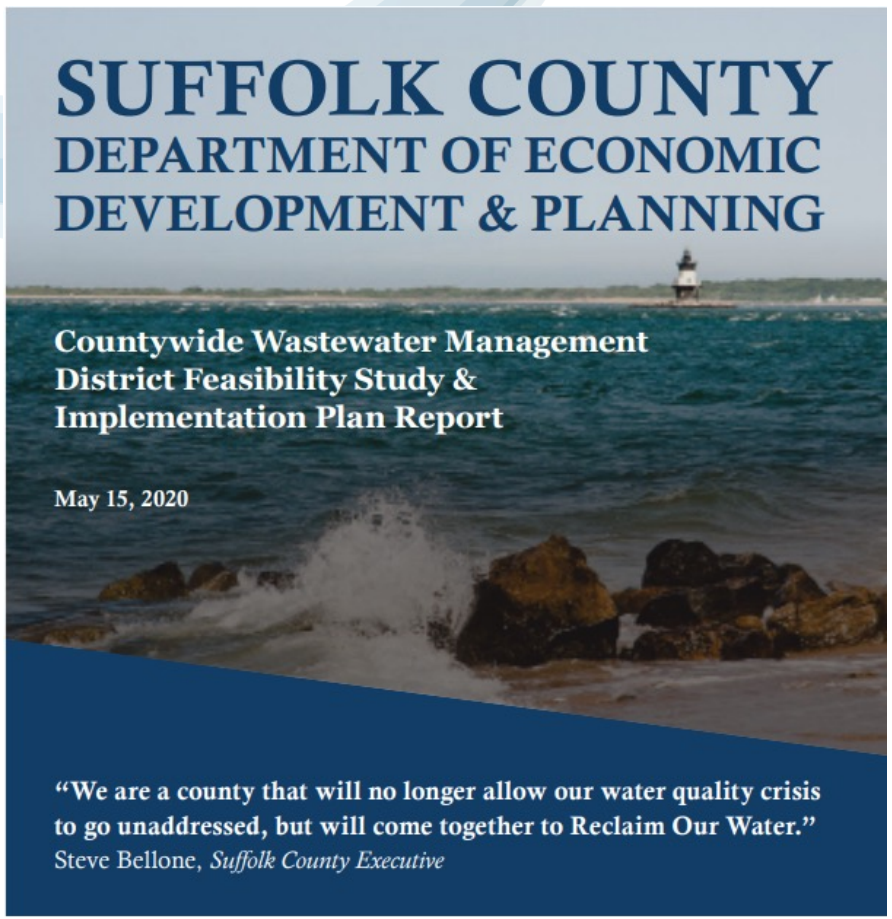
Nassau County SWCD Guidance Memos – Being Finalized

- Guidance Memo #1 – Program Rules for Administration of IA Grant Program
- Guidance Memo #2 – Guidelines for the Acceptance, Use and Management of IA OWTS in Nassau County
- Guidance Memo #3 – Guidance for relaxing NYS 75-A Setbacks in Certain Instances when Utilizing IA OWTS Tech.

Other Guidance – Being Drafted

- Recommended Minimum Guidelines Relating to Location, Design, and Construction of Innovative and Alternative Onsite Wastewater Treatment Systems (I/A OWTS) in Nassau County, NY (Nassau County / Soil and Water Conservation District)
- IA OWTS Installation Certification Packet (Nassau County Soil and Water Conservation District)
- IA OWTS Fast –Track Permit Recommendations (The Nature Conservancy & North Shore Land Alliance)
- Streamlined Permitting and Tracking Database Portal (Conceptual)

Looking to the Future of RME's in NY



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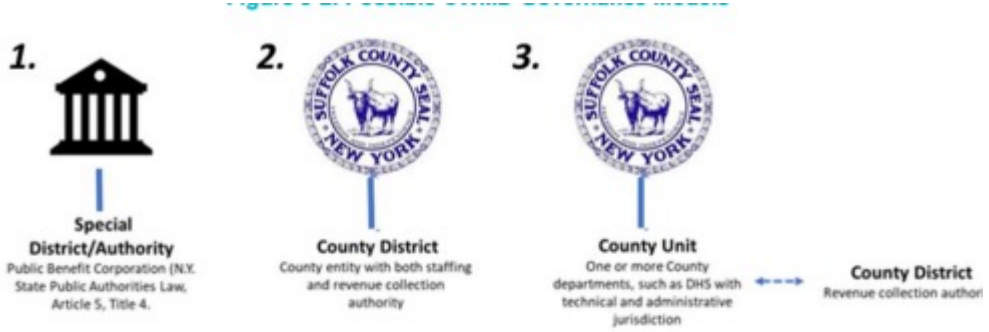


3.7. Evaluation and Development of a CWMD Organizational Structure

3.7.1. An Incremental Approach to Building the CWMD

While some stakeholders support the idea of a single water resources entity that manages public water and wastewater systems along with I/A OWTS systems, others are opposed to the idea or believe that it is too ambitious as a first step. It is recommended that the governance priorities of the entity should be as follows, in order:

1. **Revenue Stream** - Establish an entity with revenue generation/collection authority and one or more dedicated revenue streams to fund I/A OWTS system management activities.
2. **Consolidate I/A OWTS System Management** – Consolidate administrative, technical and managerial functions for I/A system in one entity.
3. **Consolidate County Public Wastewater Districts** – Consolidate the management and operations of the public wastewater districts that are currently administered by DPW into the new entity.
4. **Expanded Water Cycle Management Functions** – Consolidate other functions under the new entity, such as the provision of drinking water, fertilizer regulation, stormwater, management of other contaminants, etc.

Looking to the Future of RME's in NY

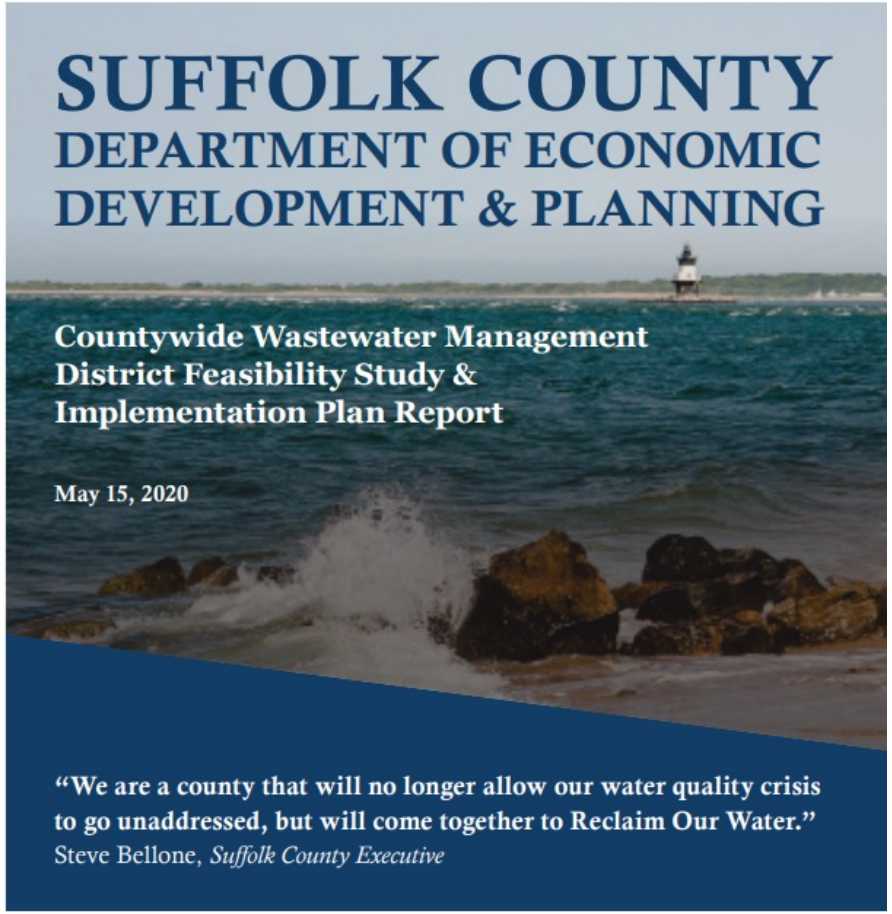


Table 4-5: CWMD Revenue Requirement Forecast - Slower Pace Scenario

Line No.	Description	1 FY 2024	5 FY 2028	10 FY 2033	15 FY 2038	20 FY 2043
1	Program Administrative Expenses					
2	Salaries	$ 2,456,403	$ 3,707,045	$ 4,297,481	$ 4,249,590	$ 5,962,547
3	Employee Benefits	1,489,607	2,251,878	2,616,385	2,593,289	3,641,421
4	Materials & Supplies	245,640	370,704	429,748	424,959	595,255
5	General Fund Indirect	125,750	189,889	220,308	218,035	305,677
6	Total Program Administrative Expenses	$ 4,317,400	$ 6,519,517	$ 7,563,923	$ 7,485,873	$ 10,494,899
7	Capital Expenditures					
8	Debt Service (Sewer Extensions	$ 12,889,813	$ 12,889,813	$ 12,889,813	$ 27,073,648	$ 27,073,648
9	Cash Funded Capital (I/A OWTS Loans)	22,072,750	21,254,820	21,254,820	26,720,998	28,542,920
10	Total Capital Expenditures	$ 34,962,563	$ 34,144,633	$ 34,144,633	$ 53,794,646	$ 55,616,568
11	Total Program Administrative and Capital	$ 39,279,963	$ 40,664,149	$ 41,708,555	$ 61,280,519	$ 66,111,467
12	Rate Revenue Requirement	$ 39,279,963	$ 40,664,149	$ 41,708,555	$ 61,280,519	$ 66,111,467

Table 4-6: CWMD Revenue Requirement Forecast – Medium Pace Scenario

Line No.	Description	1 FY 2024	5 FY 2028	10 FY 2033	15 FY 2038	20 FY 2043
1	Program Administrative Expenses					
2	Salaries	$ 2,924,447	$ 4,799,237	$ 5,563,632	$ 5,277,984	$ 7,760,402
3	Employee Benefits	1,773,438	2,915,341	3,387,240	3,220,861	4,747,361
4	Materials & Supplies	292,445	479,924	556,363	527,798	776,040
5	General Fund Indirect	149,710	245,835	285,217	270,799	398,514
6	Total Program Administrative Expenses	$ 5,140,039	$ 8,440,337	$ 9,792,452	$ 9,297,443	$ 13,682,317
7	Capital Expenditures					
8	Debt Service (Sewer Extensions	$ 12,889,813	$ 12,889,813	$ 12,889,813	$ 27,073,648	$ 27,073,648
9	Cash Funded Capital (I/A OWTS Loans)	35,316,400	34,007,711	34,007,711	42,753,597	45,668,672
10	Total Capital Expenditures	$ 48,206,213	$ 46,897,524	$ 46,897,524	$ 69,827,245	$ 72,742,320
11	Total Program Administrative and Capital	$ 53,346,252	$ 55,337,861	$ 56,689,977	$ 79,124,688	$ 86,424,638
12	Rate Revenue Requirement	$ 53,346,252	$ 55,337,861	$ 56,689,977	$ 79,124,688	$ 86,424,638

RAFTELIS · RIVERA LAW · The LiRo Group · EPOCH 5 public relations

Funding provided by:
NEW YORK Department of Environmental Conservation · Long Island Regional Planning Council

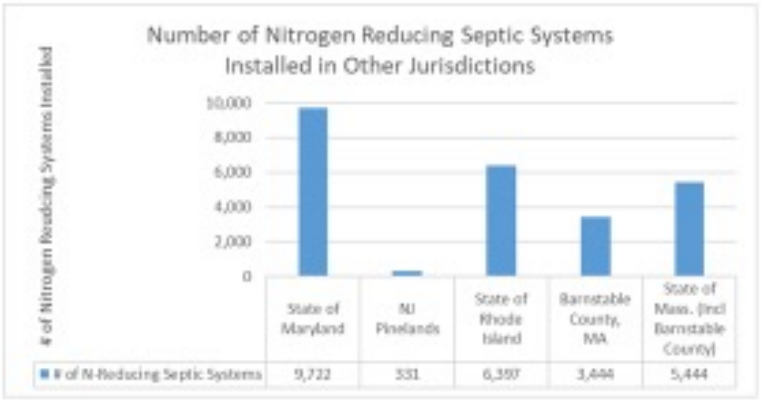
Preventing Missed Opportunities!

1. Revisit Regional Datashare Programs & Collaborations
2. ACT NOW! Utilize Best Available Technologies Now
   - Opens up the market to innovation
   - Streamlined Software for Management and Permitting
   - Remote Telemetry and Performance Sensors
   - Nutrient Polishing Units
   - Contaminants of Emerging Concern
3. Continue to Study and Adapt, but ACT NOW!
4. Property Values Increase with Advanced Treatment
   - Septic Systems Deserve to be treated as a Household Utility…. Homeowners Love Upgrading to the newest technologies

Opportunities for Regional Collaboration

MEMORANDUM OF COOPERATION
Among the
Chesapeake Bay Watershed States, namely,
Delaware, Maryland, Pennsylvania, Virginia, and West Virginia

DATA SHARING TO SUPPORT STATES' ANALYSIS AND APPROVAL OF ADVANCED ONSITE PRETREATMENT UNITS FOR NITROGEN REDUCTION

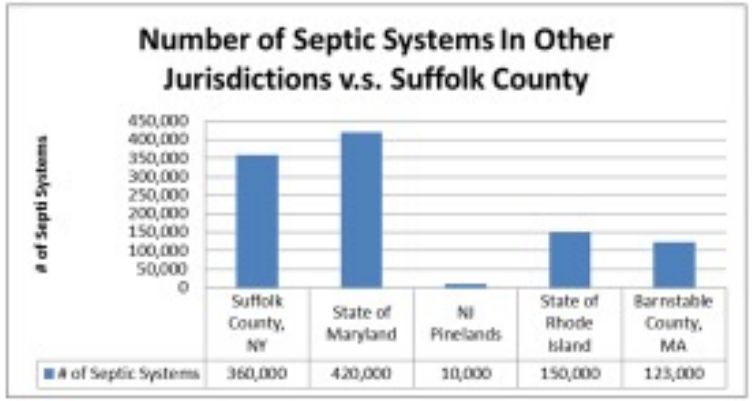


Jurisdiction	Year I/A's gained acceptance
Barnstable County, MA	1992-1995
Rhode Island	1999
Maryland	2005
Suffolk County, NY	2016

- Expand & Continue Regional Data Sharing
- Management, Tracking, & Troubleshooting
- Innovation, Research, & Development
- More technologies, More Competition & Lower Costs
- Coordinated Training of Septic Industry

~1,000 I/A OWTS Installed in Suffolk County as of 6/1/2020

~ Total # of I/A's Installed in MD, NJ Pinelands, RI, Mass **21,894**



	I/A OWTS INSTALLED BY DECADE		
Jurisdiction	1999 or prior	2000 - 2009	2010 - 2019
State of Rhode Island	33	2,490	3,874
Barnstable County, MA	214	2,127	1,103
Anne Arundel County, MD	160	717	1,454
TOTAL	407	5,334	6,431

Suffolk County's Environmental Health Information Management Systems (EHIMS) and Responsible Management Entity Tracking

In the fall of 2019, Suffolk County began a phased launch of their Environmental Health Information Management System (EHIMS). In its current form, EHIMS provides a centralized, GIS linked database to support permitting and oversight of I/A OWTS installations, maintenance, and sampling countywide.

Online Homeowner Registration of I/A OWTS

SCDHS requires property owner registration of their I/A OWTS every 3 year and within 60 days of a property transfer. This allows staff to interface electronically with new homeowners to answer any questions they may have about regulatory and technical issues. EHIMS features automated tracking and online Homeowner Registrations.

Shared Workflows

EHIMS greatly improves communication between County offices through a shared database, and shared workflows, that notify different groups when there is a new application or task that needs their attention, minimizing paper and interoffice communications

Operation, Maintenance, and Service Tracking

EHIMS can track when O&M contracts are due to be submitted, generating automated reminder notices to property owners, allow service providers to notify SCDHS if a contract is canceled or not renewed. In addition SCDHS can use EHIMS to track Notices of Violations (NOV's) and enforcement actions, and allow for online collection of fees and fines

Streamlined Communications

EHIMS will allow citizens to submit applications, upload documents, make payments, and get real-time status updates through an online portal. This will improve and streamline communications and the public portal will facilitate the sharing of submissions and revisions.

Coastal Wastewater Solutions, LLC

ANY QUESTIONS?

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