

Rhode Island:
Coastal Resources Management Council
Department of Environmental Management
Division of Planning, Statewide Planning Program

RI State Guide Plan Update:
Water Quality Management Plan Advisory Committee Meeting

Tuesday, October 22, 2013
10:00 AM – 12:00 PM

Room 280
Department of Environmental Management
235 Promenade Street, Providence

Agenda

1. Agenda Overview - *Nancy Hess, DOP*
2. Feedback on Preliminary Issues & Outline from 9.24.14 - *Sue Kiernan, DEM & ALL*
3. Watershed Planning Areas - *Ernie Panciera, DEM*
4. Subject Topics and Technical Presentations:
 - a. Onsite Wastewater Treatment Systems – *Ernie Panciera*
 - i. Accomplishments, Ongoing efforts, Management Framework -

(Guests: George Loomis - URI & Brian Moore – DEM)
 - ii. Onsite Wastewater Treatment Systems – Draft Goals & Policies
5. Discussion & Feedback – *All - moderated by Sue Kiernan*
6. Looking ahead -
 - a. Next Meeting Date – November 26th- *Nancy Hess, DOP*
 - b. Committee Homework - *Ernie Panciera, DEM*
7. Adjourn 12:00 PM

Onsite Wastewater Treatment Systems

Background for Water Quality State Guide Plan Advisory Committee

October 15, 2013

- What is an Onsite Wastewater Treatment System, or OWTS?
 - An onsite wastewater treatment system is a system of pipes, tanks, and chambers used to treat and disperse sanitary wastewater into the soil from buildings located in areas without centralized sewer service.
 - OWTS are commonly known as septic systems. Cesspools are an antiquated type of OWTS.
 - There are approximately 150,000 OWTS in Rhode Island, of which approximately 20,000 are cesspools. OWTS serve approximately 30% of the state's population and 80% of the state's land area.
 - OWTS most commonly serve an individual building (residence, business, industry or institution) and are located entirely on a single lot. They may also be designed to serve groups of buildings or even a neighborhood. The key distinction from a sewage treatment plant is that the treated wastewater is discharged into the ground rather than through a pipe into a river, bay, or ocean.
 - Design flow from OWTS range from 345 gallons per day for a 3 bedroom residence to greater than 20,000 gallons per day for some schools and other institutions.

- What are the impacted resources?
 - OWTS discharge treated wastewater to the soil, where it percolates downward and eventually into the groundwater. Groundwater is used to supply drinking water in many areas.
 - Groundwater is connected to surface waters of streams, ponds, and saltwater bodies with the result that OWTS have an impact on surface waters as well.
 - Wastewater from a failing or malfunctioning OWTS can flow over the land and directly into surface waters or into stormwater collection systems.

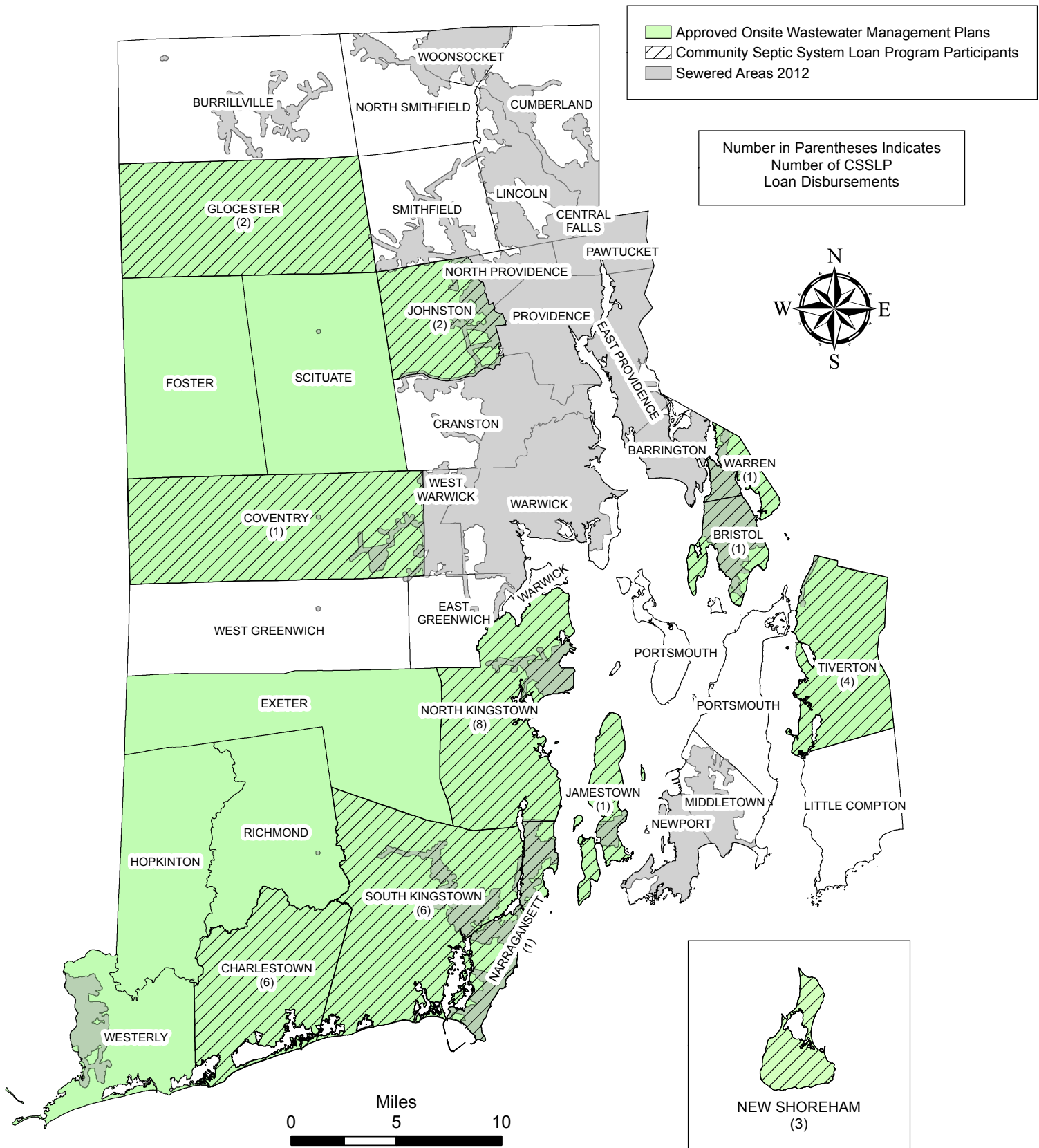
- What are the pollutants of concern?
 - Nitrogen, phosphorus, pathogens, chemicals and pharmaceuticals/personal care products.
 - Excess nitrogen and phosphorus can cause increased algal growth in salt and freshwaters, respectively. Excess algal growth causes changes to habitat for submerged vegetation, fish, and shellfish, decreasing the productivity and reducing the aesthetic quality of waterbodies.
 - Pathogens, nitrogen and improperly disposed chemicals are threat to drinking water wells.
 - Pathogens can cause shellfishing closures.
 - Research is ongoing to better determine the health risks and environmental impact of pharmaceuticals and personal care products.

- How are OWTS regulated and managed?
 - OWTS are regulated and permitted by DEM -- DEM rules for siting, design, construction and maintenance of all OWTS.
 - Rules set prescriptive standards for the OWTS components, size of systems based on intended use and soil conditions on each site, and the location of systems based on maintaining minimum separation distances from drinking water wells, wetlands and waterbodies, property lines, and other structures.
 - Private sector professionals are licensed by DEM to conduct soil evaluations, design systems and install systems.

- 25 types of alternative or experimental OWTS technologies and drainfields have been approved for use in RI. Through 2012, approximately 17,000 alternative or experimental technologies and drainfields have been installed in the state. These systems are used on difficult sites and to achieve water quality objectives (e.g., coastal pond watersheds).
- Operation and maintenance of existing systems is responsibility of property owner. All OWTS, whether passive conventional systems or alternative treatment systems with pumps and other electronic components, require periodic maintenance to achieve expected levels of treatment performance.
- 18 towns in RI have adopted onsite wastewater management plans to encourage or require maintenance activities such as inspections or pumping of septic tanks. These plans make the towns eligible for the Community Septic System Loan Program (CSSLP), in which the towns access funds from Clean Water Revolving Loan Fund for low interest loans to homeowners for OWTS repairs. As of September 2013, 37 loans have been issued to 12 towns over the past 15 years totaling \$8,800,000.

Onsite Wastewater Management Plans

Status as of September 30, 2013



DRAFT Policies and Actions for OWTS Management

Water Quality State Guide Plan

10/15/13

Goal: OWTS are managed (properly sited, designed, constructed and maintained) to protect groundwater and surface water quality and public health.

Policy: Ensure proper siting, design and construction of onsite wastewater management systems. Actions:

- Implement current OWTS Rules and continually evaluate the effectiveness of these Rules.
- Provide sufficient training opportunities to meet the needs of OWTS design and installation professionals.
- Evaluate DEM licensed professionals through continual DEM oversight, including field inspections.
- Strengthen disciplinary process for DEM licensed professionals.
- Support development of alternative technologies.
- Develop an approach for assessing and responding to cumulative impacts of OWTS.
- Enhance the DEM data management system to allow for more efficient management of applications and integration of OWTS information across water quality management programs.

Policy: Ensure that OWTS are properly operated and maintained, with particular emphasis on alternative treatment systems. Actions:

- Evaluate performance of advanced treatment OWTS and the level of maintenance necessary. Revise rules, guidance and technology approvals accordingly.
- Establish a technical working group to develop standards and processes to ensure operation and maintenance of alternative treatment OWTS. Implement strategies accordingly.
- Establish operating permits for large OWTS to ensure permit compliance.
- Promote proper use of OWTS through active public outreach programs.

Policy: Local government wastewater programs facilitate proper OWTS operation and maintenance. Actions:

- Develop and implement local onsite wastewater management programs in communities that rely in whole or in part on OWTS.
- Provide funding for Community Septic System Loan Program (CSSLP) to meet the needs of the local onsite programs with respect to providing financial assistance to homeowners for repair and upgrade of OWTS.
- Require updated local Onsite Wastewater Management Plans to continue to be eligible for CSSLP.
- Improve data management systems to facilitate data sharing among the state agencies and local government programs.

Policy: Apply alternative technologies to reduce impacts of OWTS on sensitive resources. Actions:

- Continue implementation of denitrification requirements in the Salt Pond and Narrow River critical resource areas.
- Expand denitrification requirement to other poorly flushed coastal embayments that are documented to have nutrient caused water quality impairments due in part to OWTS.
- Evaluate technologies/strategies for phosphorus reduction in areas documented to have nutrient caused water quality impairments due in part to OWTS.
- Further investigate impacts of OWTS on private wells in densely developed areas and develop appropriate strategies to mitigate impacts.

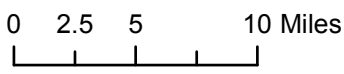
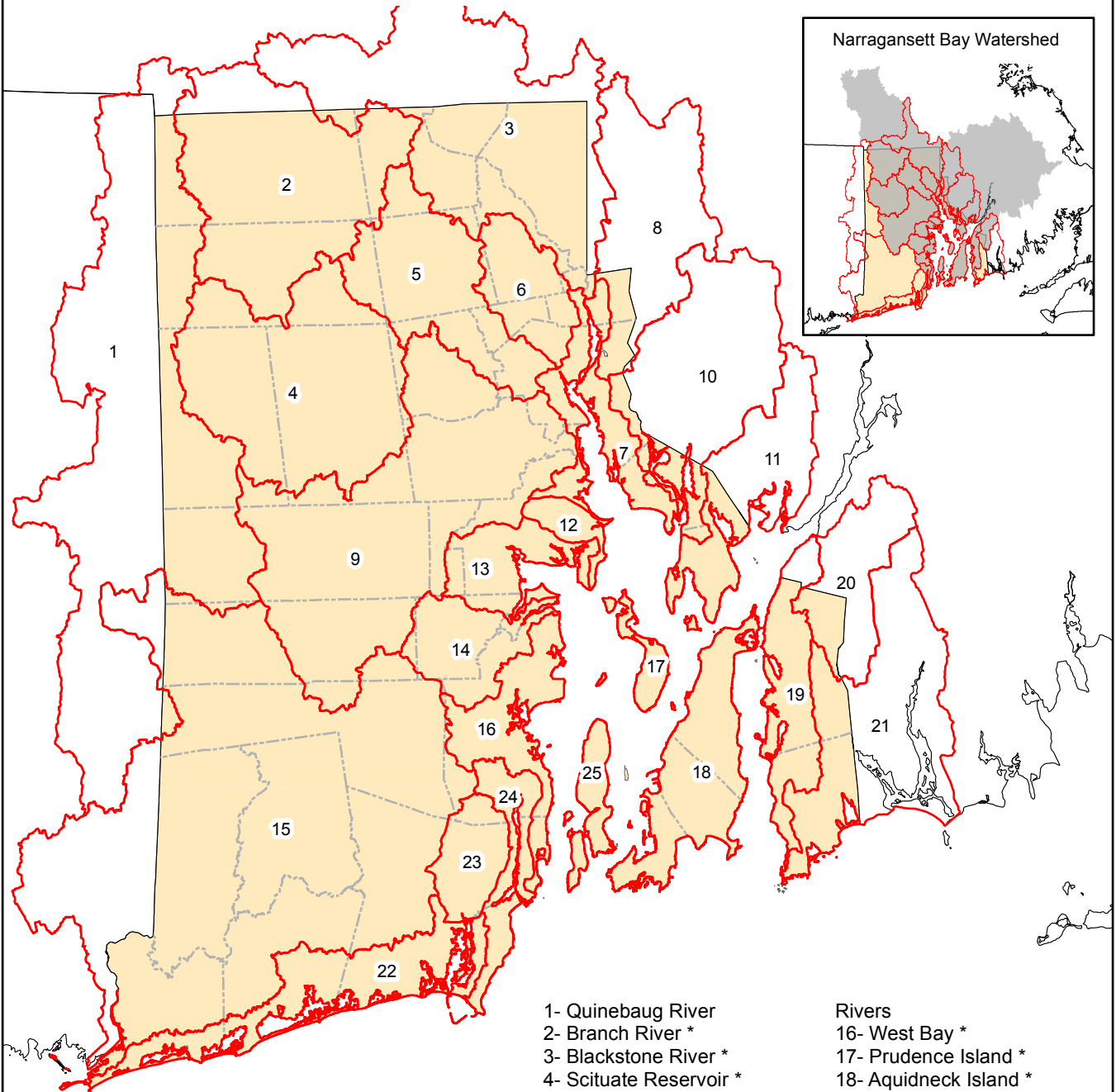
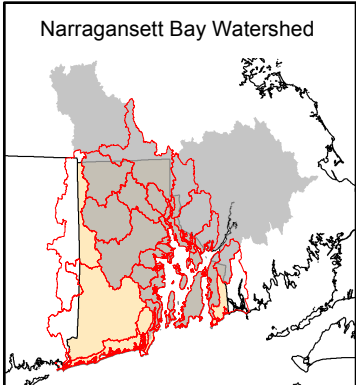
Policy: Ensure wastewater management planning for OWTS and sewer areas is coordinated. (*This topic will also be addressed under the Wastewater Treatment/Sewering discussion*) Actions:

- Ensure that facilities planning for municipal/public sewer systems properly assesses areas for OWTS suitability.
- Require extension of sewers to areas currently served by OWTS where it is shown to be necessary to mitigate an existing water quality impairment caused in part by OWTS or to eliminate a threat to public health.
- Require connection to sewer systems where access exists.

Policy: Eliminate use of cesspools. Actions:

- Complete 2007 Cesspool Phaseout requirements.
- Eliminate continued use of large capacity cesspools as required by state and federal rules.
- Develop and implement strategies for further reduction of cesspool use at single family homes (e.g., point of sale).

DEM Watershed Planning Areas



- | | |
|---------------------------------------|------------------------|
| 1- Quinebaug River | Rivers |
| 2- Branch River * | 16- West Bay * |
| 3- Blackstone River * | 17- Prudence Island * |
| 4- Scituate Reservoir * | 18- Aquidneck Island * |
| 5- Woonasquatucket River * | 19- Sakonnet-East * |
| 6- Moshassuck River * | 20- Stafford Pond * |
| 7- Providence-Seekonk River * | 21- Southeast Coastal |
| 8- Ten Mile River * | 22- Southwest Coastal |
| 9- Pawtuxet River * | 23- Saugatucket River |
| 10- Barrington-Palmer-Warren Rivers * | 24- Narrow River * |
| 11- Bristol-Kickemuit River * | 25- Jamestown * |
| 12- Buckeye Brook * | 26- Block Island |
| 13- Greenwich Bay * | |
| 14- Hunt River * | |
| 15- Wood-Pawcatuck | |
- *Located within Narragansett Bay Watershed