

**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, November 26, 2013**  
**10:00 AM – 12:00 PM**

**Room 300**

Department of Environmental Management  
235 Promenade Street, Providence

**Agenda**

1. Agenda Overview - *Nancy Hess, DOP*
2. Feedback on Draft OWTS Goals, Policies and Actions from 10.22.13 – *DEM & ALL*
3. Subject Topics and Technical Presentations:
  - a. Public Wastewater Treatment Facilities in RI – *DEM*
    - i. Accomplishments, Ongoing efforts, Management Framework -  
  
Guests: Angelo Liberti, Jay Manning, Art Zeman – DEM  
Michael Laroque, Clean Water Finance Agency
    - ii. Draft Goals & Policies –*DEM & ALL*
4. Discussion & Feedback – *All - moderated by Sue Kiernan*
5. Looking ahead -
  - a. Next Meeting Date – December 17<sup>th</sup>? - *Nancy Hess, DOP*
  - b. Committee Homework - *Ernie Panciera, DEM*
6. Adjourn 12:00 PM

## Background Facts on Wastewater Management

### Facts about Wastewater Systems in RI

A majority of the sanitary wastewater generated in RI is disposed of via public sewer systems. About 140 million gallons per day is generated; 75% of which is discharged directly into estuarine waters. Four rivers also receive discharges from major wastewater treatment facilities (WWTFs): Blackstone, Pawtuxet, Woonasquatucket and Clear.

NBC's Field's Point WWTF, the state's largest with a design flow (monthly dry-weather average) of 65 million gallons per day (MGD), currently discharges an average of about 46 MGD.

Number of Major WWTFs (public): 19

15 of 19 Major WWTFs have finalized facility plans; 3 more are in active development

Number of Other Major RIPDES dischargers: 4 (Blount Fine Foods, Kenyon Industries, ExxonMobil and Manchester Street Power Plant.)

Number of minor RIPDES wastewater dischargers: 77

All of the major dischargers and most of the minor dischargers are issued water quality based permits. 13 of 19 major dischargers have effluent limits related to nutrients including nitrogen, ammonia, or phosphorus that require more advanced treatment. Effluent monitoring data is reported monthly to DEM and is shared with EPA.

Percent of RIPDES wastewater permits expired (tracked as the permit backlog) = 16%; target for September 2014 is 10%.

Since 1979, per state law, RI has required that wastewater operators be certified. The program provides for four levels of certification.

WWTFs operate 13 septage receiving facilities receiving over 40 million gallons per year primarily from licensed haulers. In 2012, 45,278,157 gallons of septage were received with the most going to Cranston (21,718,700) and NBC (7,037,522).

Sludge generated at major WWTFs is disposed of at four locations: Central Landfill, 2 on-site incinerators and one on-site composting site. 16 of 19 WWTFs dispose of sludge off-site.

In recent years, performance of WWTFs has been generally very good. 1-2 instances of significant non-compliance may occur each quarter (3 month period).

### Strategies to Abate Pollution from WWTFs

State law established a goal of reducing the nitrogen pollutant loadings to upper Narragansett Bay from 11 RI WWTFs by 50% over seasonal 1995-96 averages. Upgrades at most of the WWTFs targeted by the law have been completed; all planned upgrades expected to be completed by 2017. DEM is tracking the resulting reductions in pollutant loadings as well as continuing to measure dissolved oxygen levels in Narragansett Bay.

Combined sewer overflows occur within both the NBC and Newport wastewater service districts. NBC has a three-phased plan to abate the over 80 CSO outfalls that known to discharge into the Providence River or its tributaries prior to 2008. Some outfalls have since been closed (plugged). The Phase 1 CSO storage tunnel and associated infrastructure, completed in 2008 at a cost of \$359 million, has allowed over 5.2 billion gallons of combined wastewaters to be captured and treated. As a result, DEM has been able to raise the rainfall amount that triggers the closure of shellfishing in the upper bay region and thereby allow for open more days of shellfishing. NBC's Phase 2 of CSO abatement, estimated at \$363 million, is under construction. Further evaluation is planned as part of Phase 3. Newport, which has some existing infrastructure to treat combined flows, is also engaged in developing a long-term CSO abatement plan.

12 wastewater systems are involved in an recent EPA enforcement initiative aimed at reducing sewer system overflows (SSOs) that occur when lines break, etc.

15 of 19 Major WWTFs implement approved industrial pretreatment programs with state oversight. As a result of implementation of industrial pretreatment, Narragansett Bay Commission has documented a 97% reduction in total metal loadings discharged 1981 through 2002 and thereafter.

Investments in wastewater infrastructure:

Construction grants program (mid 1970s – 1998) = \$284.2 million from EPA & \$64.6 million in matching funds from state bonds; also matched by local contributions

Clean Water Finance Agency Programs (Data from 2013 Annual Report)

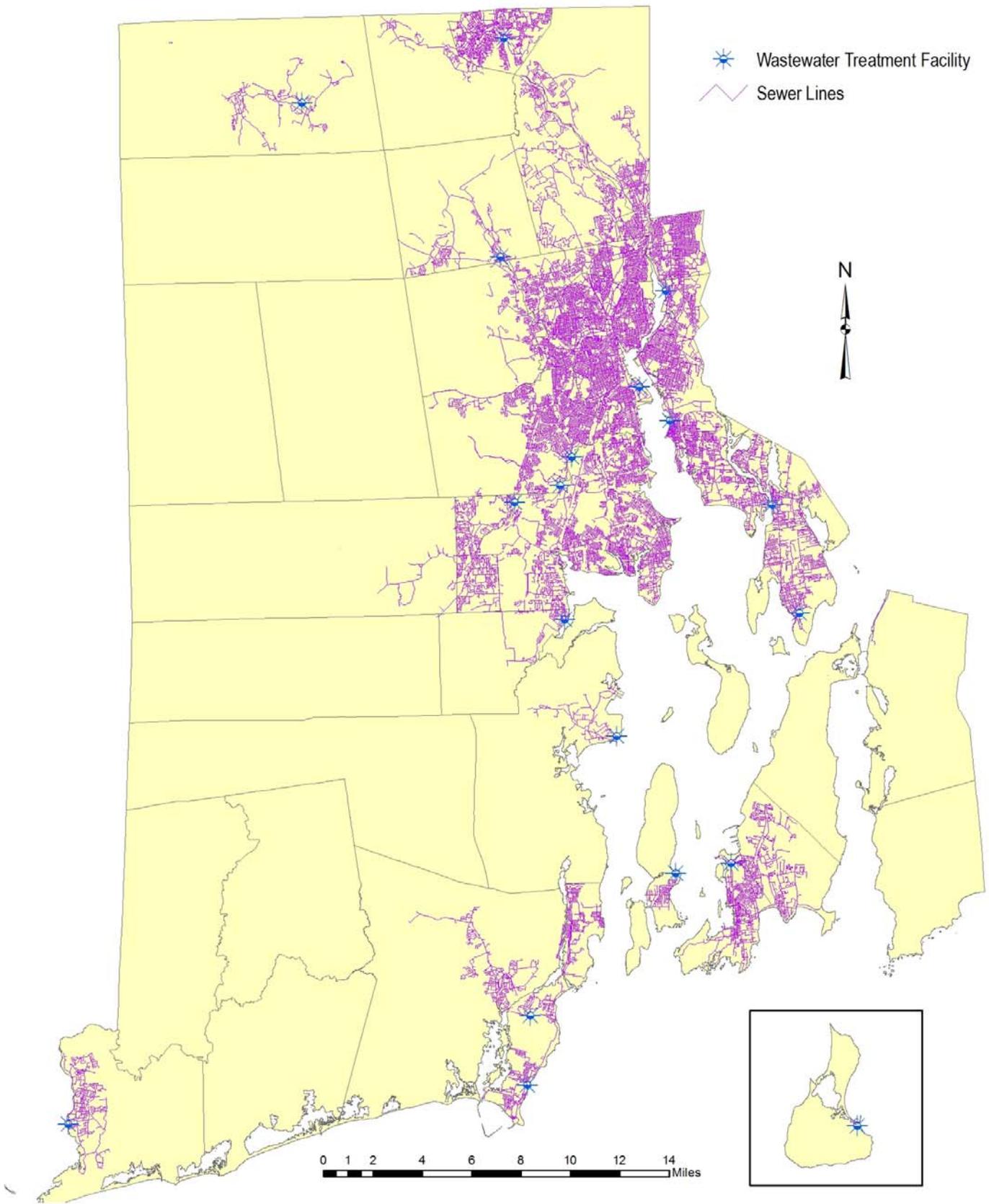
Clean Water State Revolving Fund (CWSRF) 1990- present - \$1.017 billion in below market rate loans for all projects – primarily wastewater related (federal)  
Community Septic System Loan Program (CSSLP) (federal)-\$10,000,000  
RI WPC Revolving Loan Fund- \$57,920,000 (State match to federal funds)  
Sewer Tie-In Loan Program - \$600,000 (non-federal)  
Facility Plan Loan Program - \$325,000 (non-federal)  
Other agency funds – loans for wastewater projects - \$5,998,005 (non-federal)

DEM estimates \$275 million has been invested in wastewater improvements directly related to controlling nutrient pollutant loadings from WWTFs

2012 Clean Water Survey Capital Needs Related to Wastewater = \$1.858 billion  
(capital needs pertaining to wastewater infrastructure)

2013 Capitalization Grant from EPA to CWFA SRF = about \$10 million

# RI Sewer Lines and Municipal Wastewater Treatment Facilities As Of Feb. 2012



## Strategies for Wastewater Management

### Water Quality State Guide Plan Element

11/21/2013

**Goal: Wastewater systems are planned, designed, constructed and operated to protect surface water quality and public health.**

Policy: Wastewater planning is based on time horizons that reflect the useful life of the infrastructure; e.g. twenty or more years.

Actions:

- On a statewide basis, periodically survey wastewater systems to identify, document and prioritize capital needs.
- Maintain and enhance data systems that document capital needs of wastewater systems to facilitate data sharing.

Policy: The facility planning process guides the orderly expansion and utilization of public wastewater systems including the extension of public sewers to those areas deemed necessary to achieve water quality protection goals.

Actions:

- Mandate all publicly owned wastewater systems maintain facility plans. Encourage data collection to reduce gaps in information on the location and ownership of public sewer lines.
- Strengthen the state oversight role in wastewater system facility planning and ensure modifications to such plans, to either expand or reduce service, are done in a manner that is cost-effective and supports the optimal use of existing infrastructure.
- Continue state review and approval of facility plans. Ensure such plans are consistent with policies reflected in Land Use 2025.
- Evaluate opportunities for regional approaches to various aspects of wastewater management, especially within the urbanized service districts in which different authorities maintain portions of a common system.
- Complete vulnerability assessments of wastewater systems relative to potential impacts from climate change. Use the resulting information to devise and implement over time adaptation strategies that will improve wastewater system resiliency to a changing climate.
- Periodically update facility plans to reflect new information including the results of assessments pertaining to climate change impacts.
- Develop incentives for wastewater system owners to develop, update and implement facility plans.

- Strengthen state authority to compel municipalities to develop community – based solutions to persistent on-site wastewater management problems; e.g. develop sewer systems or extend service.

Policy: Ensure wastewater management for on-site wastewater systems and sewer areas within a community or service district is coordinated.

Actions:

- Foster the development of community-wide wastewater plans that integrate facility planning and on-site wastewater management planning.
- Strengthen state oversight to require that comprehensive plans, local wastewater management plans and facility plans are consistent. Develop procedures to resolve conflicts among the plans.
- Strengthen policies and/or state law to ensure properties with ready access to public sewer systems are connected.
- Provide guidance to wastewater systems to foster sewer assessments and use fees that are fair and equitable.
- Develop targeted financial assistance program to facilitate sewer extensions and connections to priority areas necessary to restore water quality in circumstances where traditional financing mechanisms constitute an obstacle to implementation, e.g. excessive individual property owner cost.
- Develop policies to ensure privately constructed WWTFs are properly operated and maintained and that sufficient financial resources will be available to repair and upgrade such systems as needed in the future.

Policy: Ensure wastewater systems are designed and constructed to provide reliable wastewater treatment in a manner consistent with facility plans.

Actions:

- Continue state oversight of the design of major components of wastewater system infrastructure.
- Ensure policies for the design of wastewater systems accommodate advancements in technologies and allow for the incorporation of newer technologies that have been demonstrated effective elsewhere.
- Utilize inspection processes to ensure wastewater infrastructure projects are properly constructed as designed.

Policy: Ensure discharge permits are protective of water quality.

Actions:

- Continue to maintain the state discharge permitting program (RIPDES) as delegated by the EPA pursuant to the federal Clean Water Act.

- Implement water quality monitoring programs to ensure data is available to support the development and re-issuance of RIPDES permits. This includes monitoring the ecosystem response in receiving waters as part of an adaptive management approach to wastewater management.
  - Continue to develop, refine and apply improved scientific tools and data systems, e.g. water quality models, to support permitting decision-making.
  - Develop and periodically update water quality based permits for public and industrial wastewater discharges that include discharge limits that will allow water quality standards to be achieved.
  - Develop and periodically update permits for cooling water discharges to ensure thermal impacts do not degrade aquatic ecosystems.
- Stay abreast of technological innovations in wastewater management and utilize advanced treatment technologies where warranted to abate water quality degradation associated with wastewater discharges.
- Improve data management systems to ensure effluent data and other important information on wastewater treatment performance is reported and reviewed in a timely and efficient manner among federal, state and local entities. In coordination with federal EPA requirements, adapt data systems to support the electronic submittal of permit applications and associated reports.
- As new science warrants, develop policies to address pollutants of emerging concern including compounds associated with personal care products and pharmaceuticals discharged from wastewater facilities in their effluent or solids (sludge).
  - Reduce the deliberate disposal of unused drugs into wastewater systems via expanded public education.
  - Expand capacity of existing programs that provide alternative disposal of unused pharmaceuticals to capture a wider range of contaminants; e.g. over-the-counter drugs.
  - Encourage research

Policy: Encourage and support efforts to achieve effective control of upstream wastewater discharges in MA which affect downstream water quality in RI.

Actions:

- Continue to collect, synthesize and share scientific information that characterizes the upstream contribution from MA to water pollution problems in RI waters.
- As needed, participate in EPA decision-making to ensure downstream impacts on RI waters from MA wastewater sources are properly considered in EPA permit decisions.

Policy: Prevent the introduction of toxics and other substances into wastewater systems in quantities that may cause disruption of desired treatment processes.

Actions:

- Continue to implement effective pretreatment programs at the state and local/system level.
- Develop policies to improve coordination among municipal pretreatment programs and private operators of WWTFs.
- Expand programs that collect grease from restaurants and other sources for beneficial re-use.

Policy: Ensure wastewater systems are operated and maintained to provide effective wastewater treatment.

Actions:

- Require operation and maintenance plans for all WWTFs to be followed. Continue to conduct periodic inspections of WWTFs.
- Maintain wastewater operator certification program to ensure qualified staffing at wastewater treatment facilities.
  - Provide sufficient training to meet needs of WWTF operators including those associated with the greater use of more advanced and complex treatment technologies.
  - Provide training and professional development opportunities to attract and develop effective managers to serve in wastewater systems.
  - Expand wastewater certification requirements where warranted to ensure effective operation of privately owned and industrially operated wastewater treatment systems.
- Establish asset management programs within all major public wastewater systems to facilitate preventative maintenance and prompt replacement or repair of wastewater infrastructure.

- Continue to implement policies that require prompt reporting and response actions in the event of sewer system overflows.
- Provide technical assistance to wastewater dischargers to foster improved performance.
  - Develop programs to provide technical assistance to private businesses, in particular small businesses.
- Revise policies to broaden the use of sustainable practices in wastewater operations.
  - Facilitate the broader use of beneficial reuse of biosolids generated via wastewater treatment.
  - Promote the practice of wastewater reuse where appropriate and cost-effective.
  - Reduce amount of chemical use where feasible.
  - Promote practices that achieve energy efficiencies and increase use of cost-effective alternative energy sources.
- Maintain and periodically update a statewide plan to ensure Rhode Island has adequate septage disposal capacity that is reasonably distributed throughout the state.

Policy: Sludge generated via wastewater treatment is handled and disposed of in a manner that is protective of public health and the environment.

Actions:

- Maintain and update a statewide sludge management plan to ensure sufficient disposal for sludge generated at WWTFs.
- Promote the beneficial re-use of sludge; e.g. compost. Revise policies as needed to support acceptable re-use opportunities.

Policy: Utilize informal and formal enforcement procedures to deter non-compliance by wastewater dischargers.

**Goal: Wastewater infrastructure is improved to reduce pollutant loadings to restore water quality.**

Policy: Reduce nutrient pollutant loadings from wastewater treatment facilities.

Actions:

- Complete implementation of strategy to upgrade WWTFs to reduce pollutant loadings of nitrogen from 11 RI WWTFs affecting upper Narragansett Bay.

- Encourage timely implementation of WWTF upgrades in MA portion of the Narragansett Bay watershed.
- Complete implementation of upgrades for phosphorus controls at targeted WWTFs.
- Develop improved decision-making tools that can be applied to support future decisions on nutrient reductions from WWTFs discharging to the Narragansett Bay watershed including its tributaries.

Policy: Minimize untreated discharges from Combined Sewer Overflows.

Actions:

- Implement CSO abatement strategies for Providence metropolitan region and City of Newport.
  - Evaluate the effectiveness of Phase 2 of NBC CSO abatement and use information to adapt Phase 3 plans.
- Encourage CSO abatement in MA portion of Narragansett Bay watershed (Fall River).
- As practicable, minimize the generation of combined sewer overflows by redirecting and capturing stormwater runoff through application of green infrastructure practices in urbanized areas.

Policy: Reduce discharges that result from sewer system overflows.

Actions:

- Develop and implement effective programs to detect, replace or repair conveyance systems and pump stations in order to prevent sewer systems overflows within all public wastewater systems.
- Conduct infiltration and inflow detection programs to identify and eliminate sources of excessive amounts of water entering into sewer systems.
- Continue to provide state technical assistance to aid in the investigation of sewer system overflows.

Policy: Extend or establish public sewer service to mitigate pollution problems resulting from continued reliance on septic systems.

Actions:

- On a statewide basis, identify and prioritize areas where sewers are needed, as determined by technical information including water quality data or other factors (e.g., public health risks from increasing numbers of failing systems).
- Enact state law to require connections to public sewer systems. Such law should allow for reasonable waiver period for properties that have recently installed or repaired an OWTS.

**Goal: Wastewater systems have sufficient financial resources to meet operating and maintenance needs as well as invest in priority infrastructure repairs and upgrades.**

Policy: Ensure wastewater systems have access to needed financial support.

Actions:

- Continue to provide financing via the Clean Water SRF Program.
- Evaluate long-term infrastructure financing needs and identify options for supplementing existing funding mechanisms including increasing capacity of the State Revolving Fund.
- Encourage the use of enterprise funds as an appropriate means of managing WWTF financial resources.
- Lower annual operating costs through by incorporating energy efficiencies and use of sustainable energy sources in wastewater operations.

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**Tuesday, October 22, 2013**

**10:00 AM – 12:00 PM**

Room 280  
Department of Environmental Management  
235 Promenade Street, Providence

## **Meeting Notes**

### Greetings and Introduction of Members

Committee Members in attendance were: Jane Austin (Save The Bay), Eric Boettger (NRCS), Janine Burke (NWPCA), Kathy Crawley (WRB), , Ames Colt (BRWCT), , Peter Healey (RIDOT), Alicia Leher (Woonasquatucket WC), Eugenia Marks (RI Audubon), Vincent Murray (SK Planning Dept.), Jennifer Paquet (Town of West Greenwich), Margharita Pryor (EPA), Marilyn Shellman (Town of Westerly), Judith Swift (URI). DEM/Statewide Planning staff in attendance included:, Nancy Hess, Sue Kiernan, Erinie Panciera, Jon Zwarg and Paul Gonsalves. Guest speakers in attendance included George Loomis (URI) and Brian Moore (DEM).

### Introduction and Agenda Overview

Nancy Hess started the meeting with a brief overview of the agenda, including key subject areas and contributions from two guest speakers.

### Feedback on Issue Identification

There was a question regarding the topics to be included in the plan, specifically the connection between water quality and habitat. Sue added that no emailed comments were received on the outline and that habitat will be part of the plan. The group then discussed the idea of people taking water quality for

granted. Several added that many water quality problems remain. The issue of toxic substances including pharmaceuticals, in water bodies is one that the group agreed should not be overlooked.

Several people had questions about the timeframes involved. Nancy and Ernie explained that we are working with a few different timeframes in this plan. There will be 5-10 actions (short and medium), while the overall "vision" of the plan comes with a 20 year timeframe. General public awareness seemed to be another point of concern. Members agreed that many residents have a general lack of awareness with water issues. People notice when beach closures occur each summer, but basic public understanding of hydrology should be strengthened. More structured methods of education need to be addressed. John mentioned that many calls are taken from Realtors and their general understanding of water and wastewater issues could be improved. Brian stated that there is a training program at the RI Board of Realtors for septic issues in particular.

### Watershed Planning Areas

Ernie led the discussion into the designated planning areas for watersheds in the states. He explained the Hydrologic Unit Codes (HUC) for the watersheds in the state. Several watersheds cross state lines. Kathy mentioned that the WRB has done some recent work with USGS that could be beneficial to share with the group.

### Onsite Wastewater Treatment Systems (OWTS)

Ernie began the discussion on OWTS by giving a background on state policy since 1995, when the Non-Point Source plan was released. The plan covered 5 areas and had 48 recommendations and 48 actions. The plan also looked at the cumulative effects of septic systems, as well as the size of systems. Brian then talked about DEM's process for permitting and regulating OWTSs. They average about 2,000 applications per year (includes alterations, repairs, etc.). The average turn-around time is 2.2 weeks (3-5 days for repairs). Variances can take much longer, based on the details of the relief sought. Group members had several questions about the processes involved. The question of the chronology of approvals came up, and it was answered by stating that DEM approvals come before local approvals. As for wetlands, the DEM approval comes after the wetlands approval. "Critical resources areas" were discussed, most notably areas near the salt ponds which have a 200 ft setback.

Several group members were concerned about the overlap of DEM and CRMC jurisdictions. When speaking of the success of setbacks, it was noted that there are some problem areas such as Jamestown, Charlestown and Bonnet Shores in

Narragansett. There has to be a mechanism to coordinate situations where the DEM and CRMC permitting standards are not in line with each other.

A question about cumulative impacts for future developments arose. Specifically, who looks at the incremental impacts in subdivision rules? DEM does look at nitrogen levels as cumulative impacts. Sue added that DEM does a cursory review for surface water, but an organized system does not exist for ground water, as it was not required under the Clean Water Act. A more thorough policy for looking at cumulative impacts should be considered for new developments. There is a need for policy for sewers based on population density. One member of the group went on to suggest that phosphorous in water levels could be a bigger issue.

The group members then discussed the idea of identifying general regions around the state where sewers can or cannot go, and if it were at all possible to require any municipality to get public water. George went on to describe a recent wastewater study in Chepachet Village. The study involved identifying problems and finding creative ways that are not particularly difficult to engineer, as it was meant to inform areas that will not get municipal sewers.

Following the discussion on OWTS, there was a suggestion to also look into dealing with stormwater. Alternative systems were discussed as well. It was pointed out that the industry is slowly moving towards modularity and system costs are becoming more realistic for many homeowners.

The meeting finished up with a brief discussion about cesspools, as they are continuing to be phased out. It was suggested that the current system for phase-out needs to be revised.

#### Next Meeting Date

The group agreed upon a date of November 26<sup>th</sup> for the next meeting..