

# Proposed OWTS Rules Public Workshop

Rhode Island Department of Environmental  
Management

June 29, 2007



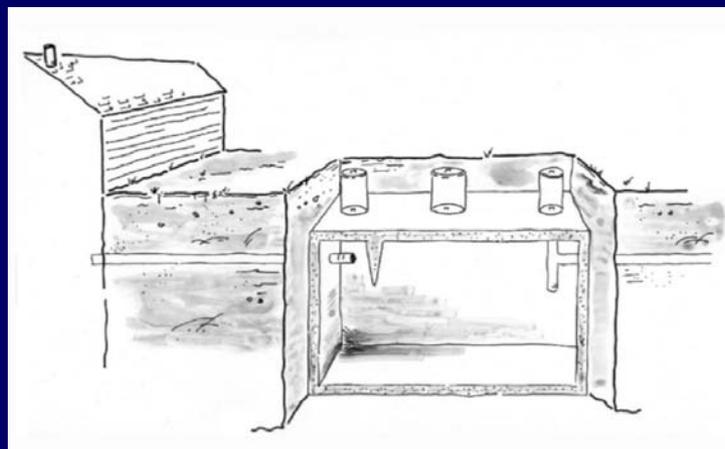
# Purpose of Workshop

- Inform Public of Proposed Rules.
- Solicit Public Input.



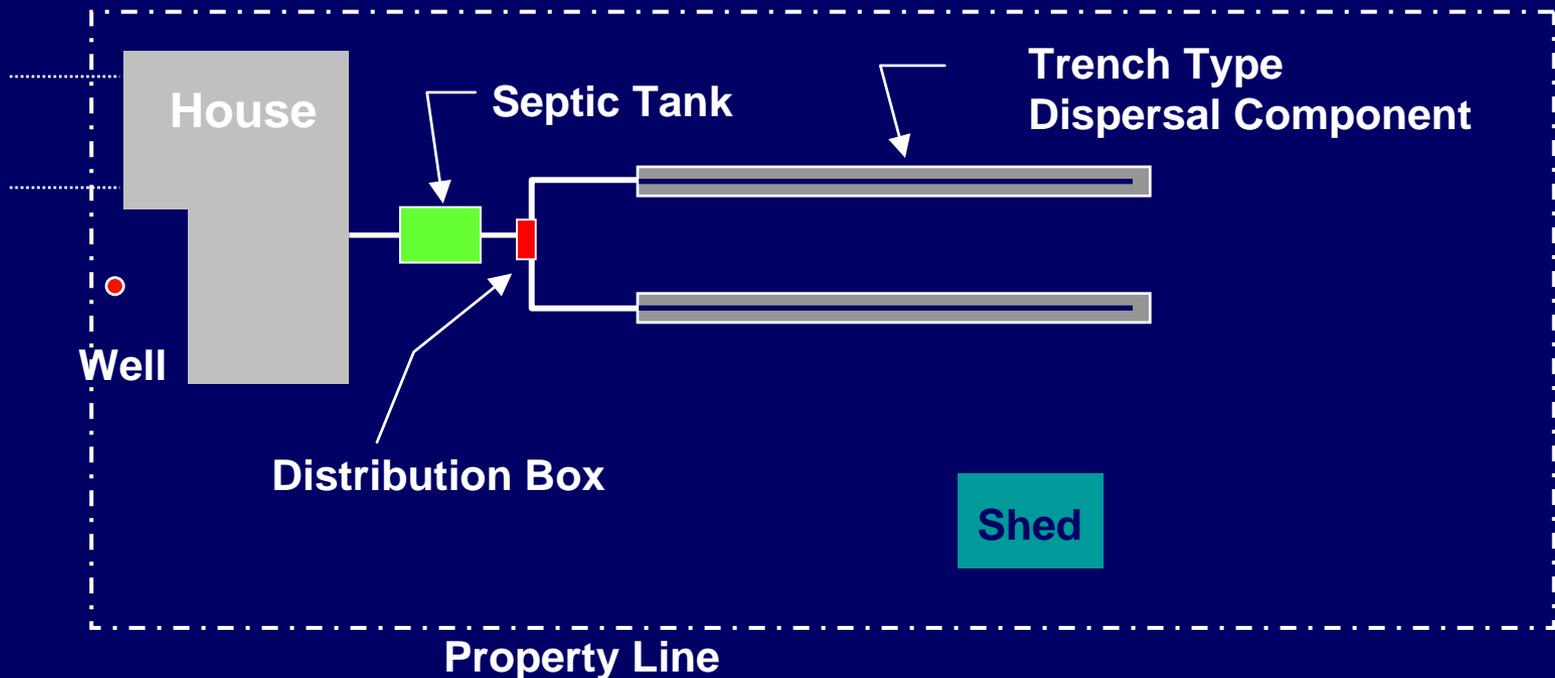
# What Is An OWTS?

- **Onsite Wastewater Treatment System**
  - Onsite: Not all systems serve individual structures.
  - Wastewater: Wastewater is more consistent with terminology used elsewhere.
  - Treatment: Not just disposal.
  - Name change recognizes advances made in technology to better treat wastewater prior to discharge.

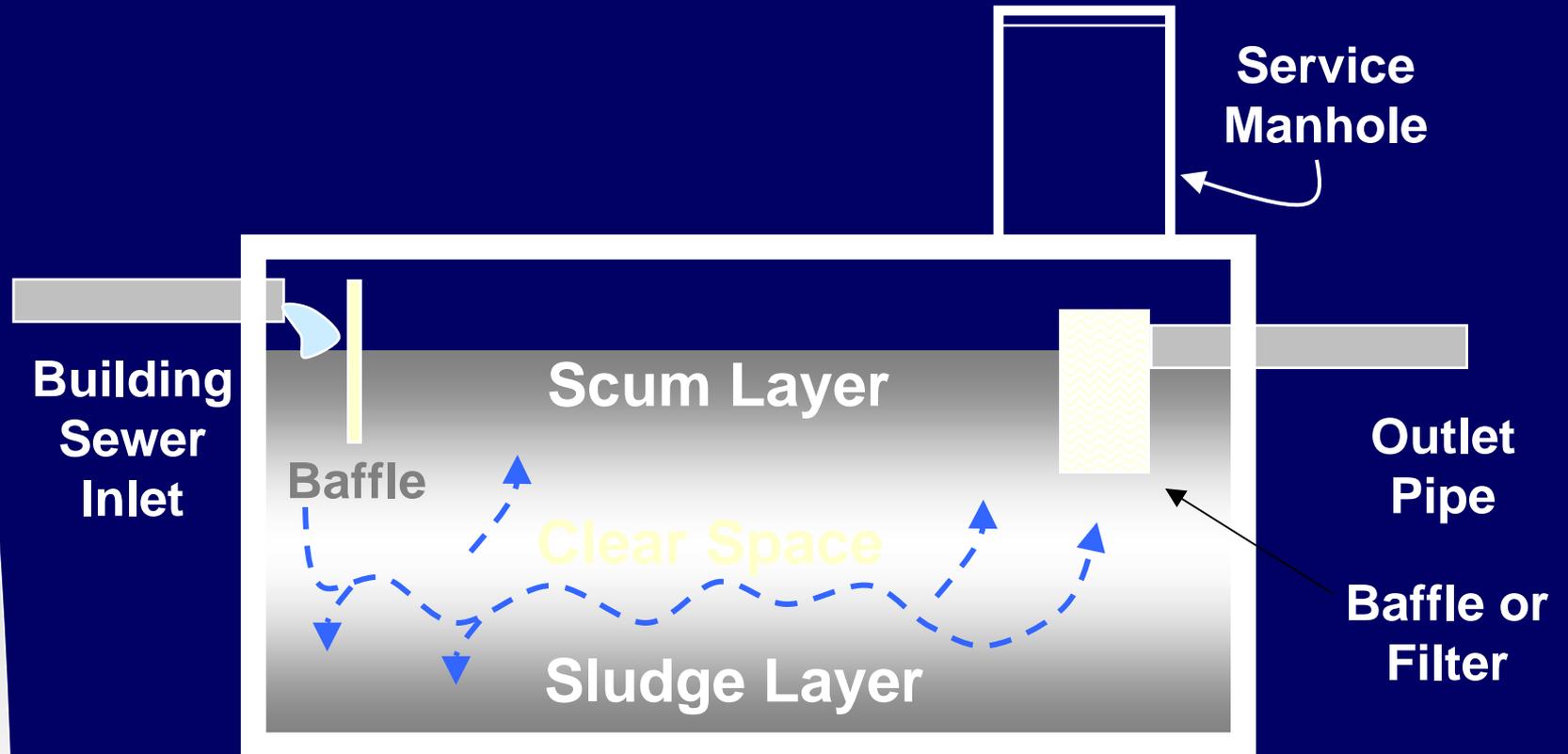




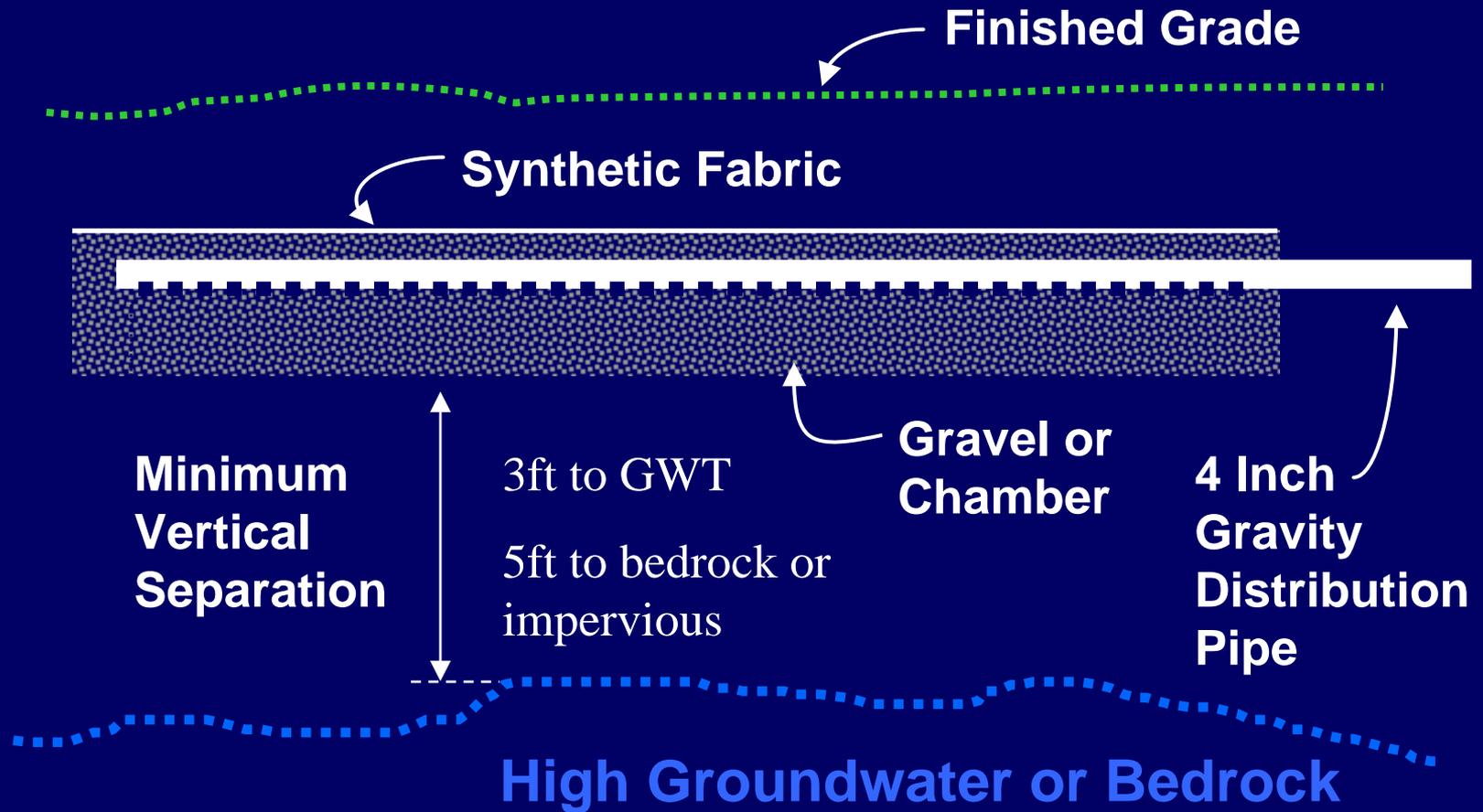
# Typical OWTS Layout



# Septic Tank



# Conventional System Dispersal Trench



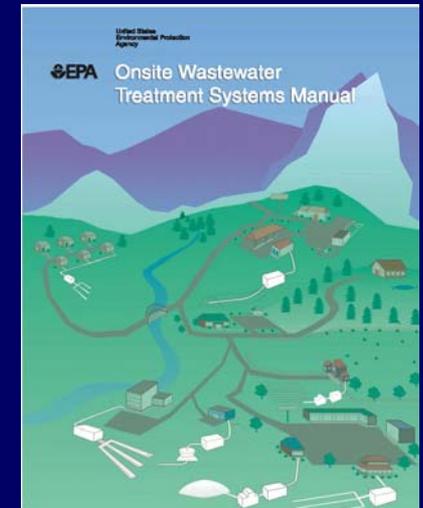
# Why Change the Rules?

- Update technical standards.
- Improve treatment for environmental protection and public health.
- Increase protection of water resources:
  - Salt Ponds
  - Welled Areas
- Streamline permitting process.
- Reformat rules to follow the sequence of steps in permitting an OWTS.



# Sources of Information for Rule Development

- Task Force Recommendations
  - ◆ <http://www.dem.ri.gov/programs/ombuds/pstream/isds/pdf/finalrep.pdf>
- Stakeholder Groups
- Scientific Literature
- Other States' Septic System Rules
- Industry Standards
- EPA "Onsite Wastewater Treatment Systems Manual" 2002



# System Suitability Determination

- OWTS Suitability Determination is a mechanism to determine if an application will be required for a proposed project.
- For proposed building construction, renovation or change of use when the building is served by an:
  - ◆ OWTS installed with state approval after April 9, 1968- Application to the Department is only required when there will be an increase in flow to the existing system or a change of use to a facility that prepares food.
  - ◆ OWTS installed without state approval, prior to April 9, 1968, or cesspools- Building renovations specified or change of use means OWTS must be upgraded to current standards.



# Subdivisions

- Subdivisions of 5 lots or less that have frontage on an existing road have the option to apply for a Certification of Subdivision Site Suitability or submit applications for the individual lots.
  - ◆ Note: Applications for individual lots must be submitted together.
- At least one soil evaluation must be conducted for each lot.
- Subdivision applications must be submitted by Class II or Class III Licensed Designers.



# Sewage Flows

- Flows established for additional types of facilities.

- ◆ Assisted Living Facility
- ◆ Church
- ◆ Group Home
- ◆ Campground w/washrooms & toilets
- ◆ Correctional or Rehabilitational Facility
- ◆ Day Care Center
- ◆ Banquet Hall
- ◆ Bed & Breakfast
- ◆ Doctors Office
- ◆ Pet Grooming
- ◆ Food Store (multiple categories)
- ◆ Funeral Home
- ◆ Health Club
- ◆ Kennel
- ◆ Retail Store
- ◆ Shopping Center/Strip Mall
- ◆ Skating Rink
- ◆ Tennis Court
- ◆ Veterinary Office



# Sewage Flows

- Residential design flow per bedroom reduced to 115 gpd with a minimum total design flow of 345 gpd.
  - \*\* DEM determined that the size of existing leachfields is appropriate, therefore the leachfield loading rates are adjusted accordingly.
- Guidelines established for determining the number of bedrooms in a single family dwelling.



# Single Family Dwellings: Bedroom Determination

- ◆ May use State Building Code definition of bedroom:

“Any room in a residential structure which is greater than seventy (70) square feet in area, which is susceptible to present or future use as a private sleeping area and which satisfies all of the following requirements has at least:

- (1) Has at least one (1) window that meets the four point four (4.4) square foot minimum size and all other requirements of the “Rhode Island State Building Code SBC-1”; and
- (2) Has at least one (1) interior method of entry and egress, excluding closets and bathrooms, allowing the room to be closed off from the remainder of the residence for privacy; and
- (3) Is a heated living space that is unrestricted for year-round use.



# Single Family Dwellings: Bedroom Determination

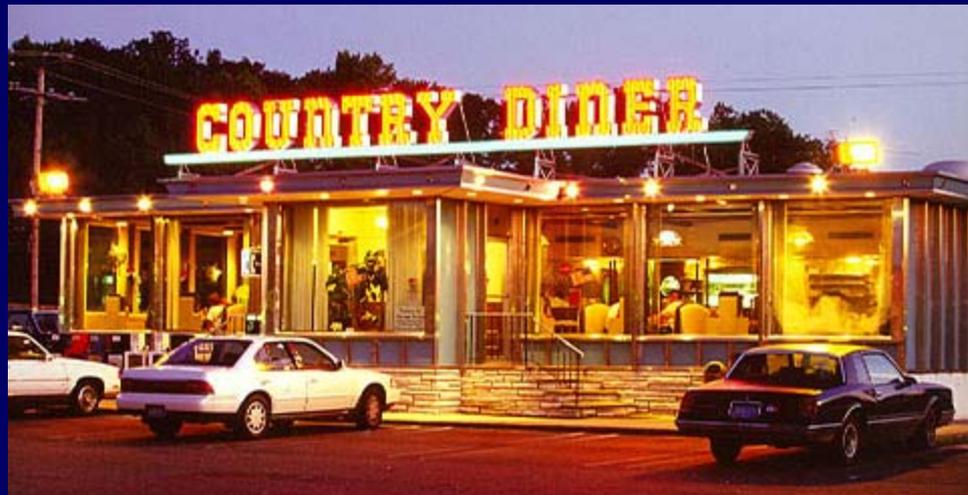
- ◆ Number of bedrooms may be determined from floorplans, municipal records.
- ◆ Number of bedrooms based on total number of rooms in structure:
  - ◆ Foyers, closets, bathrooms, rooms without windows are not counted as rooms.
  - ◆ Functionally combined kitchens/dining rooms and living/dining rooms greater than 300sq ft. counted as 2 rooms.

Total # of rooms	Assumed # of Bedrooms
5 or less	2
6-7	3
8-10	4
11-12	5
13 or more	6



# Sewage Flows

- Restaurants:
  - ◆ Minimum design flow 500 gpd.
  - ◆ Full service flows reduced from 70gpd per seat to 40 gpd.

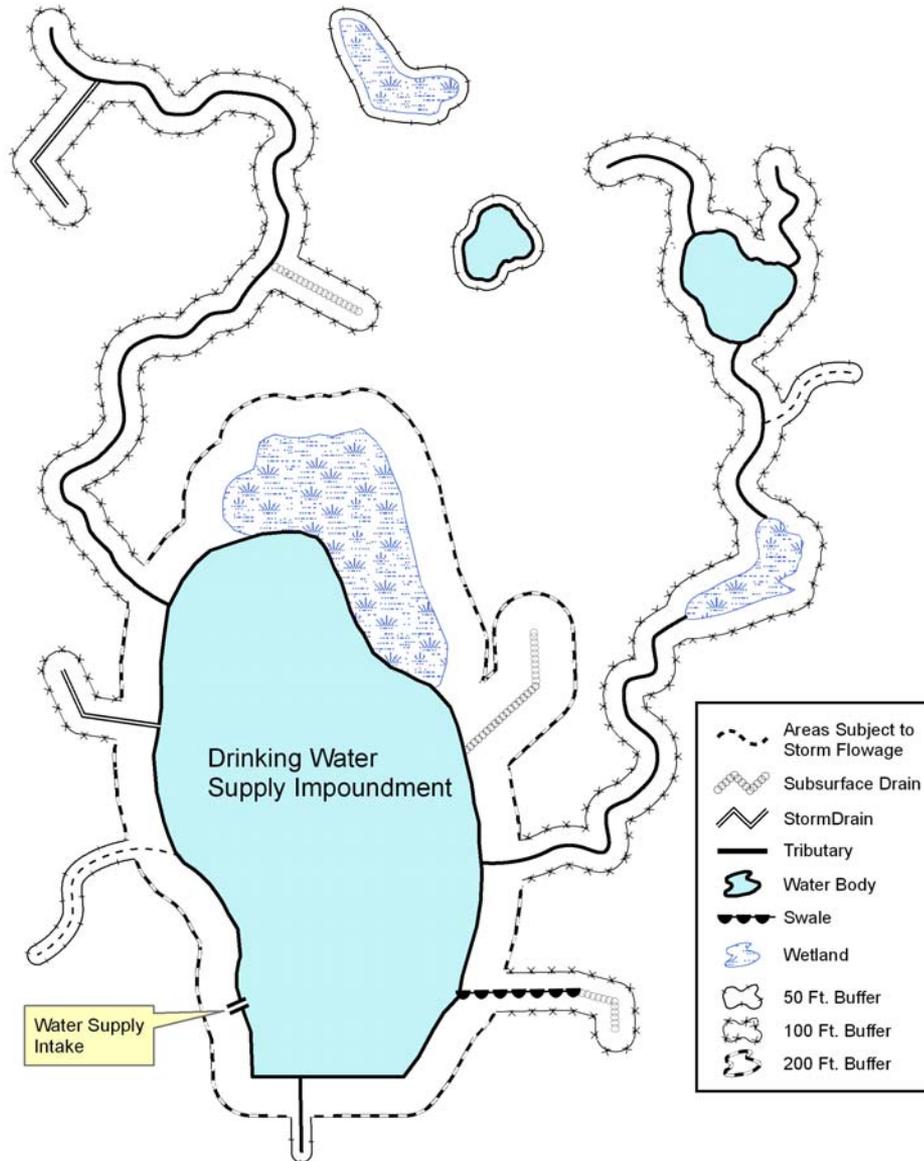


# Minimum Setback Distances

- Generally, the setbacks for OWTS greater than 5,000 gpd will be 2 times the setbacks for systems less than 5,000 gpd.
- 50' setback from downgradient subdrains.
- In coastal areas, the setbacks will be measured from CRMC designated "Coastal Feature."
- Setback from private drinking water wells ranges from 100 feet to 400 feet depending on OWTS design flow.
- Consistent with Department of Health public well requirements.



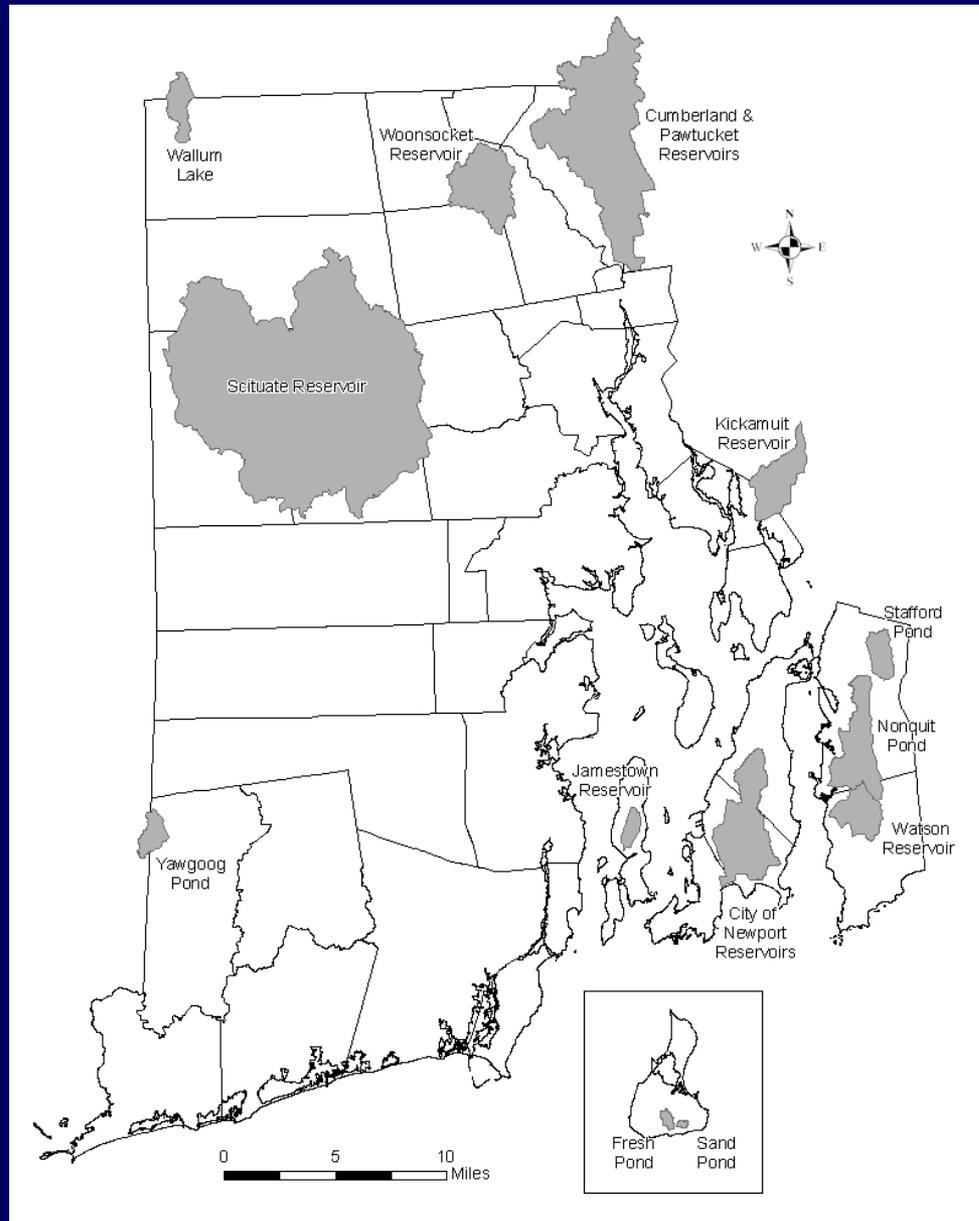
## Minimum Setback Distances in Drinking Water Supply Watershed



# Minimum Setback Distances

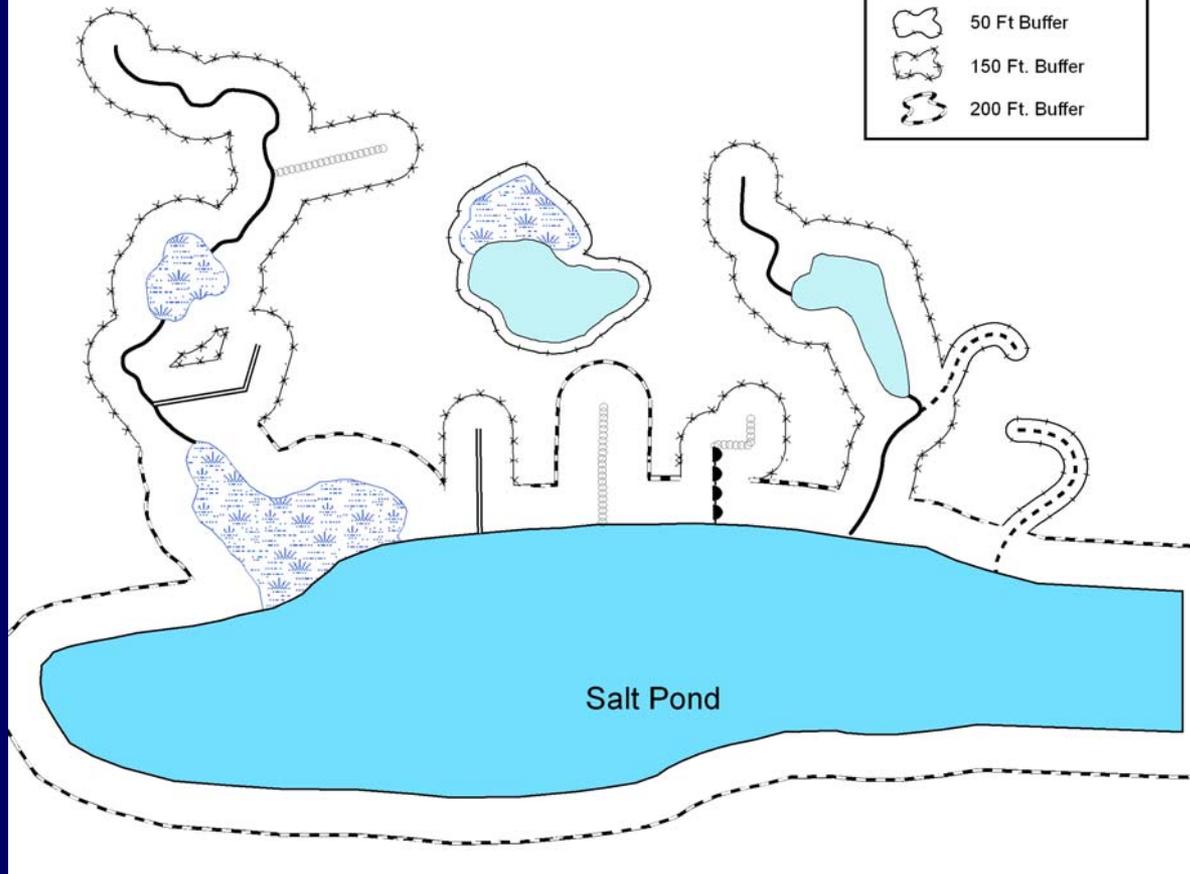
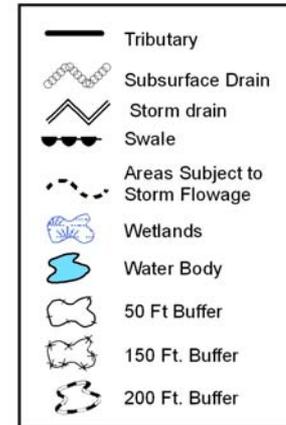


# Drinking Water Supply Watersheds



# Minimum Setback Distances

Minimum Setback Distances  
in the Salt Pond and Narrow  
River Critical Resource Areas



# Septic Tank Specifications

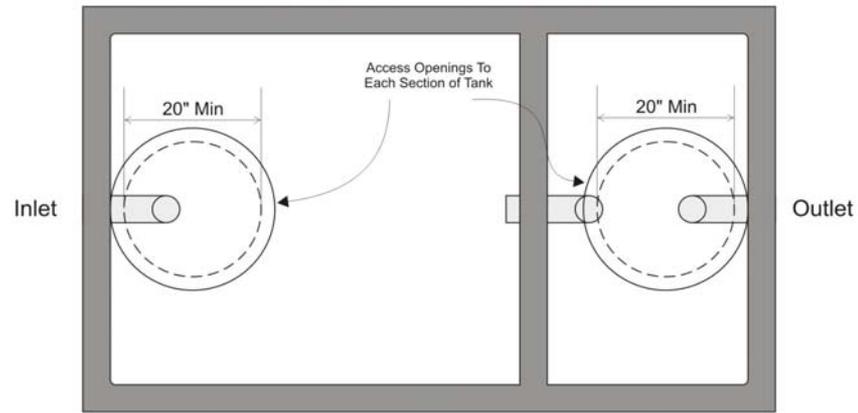
- Standards established to improve safety of tank lids.
- New tanks must have access risers to grade over inlet and outlet.
- All septic tanks must have 2 compartments.
- Fiberglass and polyethylene tanks must comply with “Material and Property Standard for Prefabricated Septic Tanks IAPMO PS 1-2004e1” (2004).
- Outlet tees must be equipped with an effluent screen.
- Tanks must be certified watertight either by the manufacturer (one-piece tanks) or by on-site leakage testing (tanks assembled at the installation site).



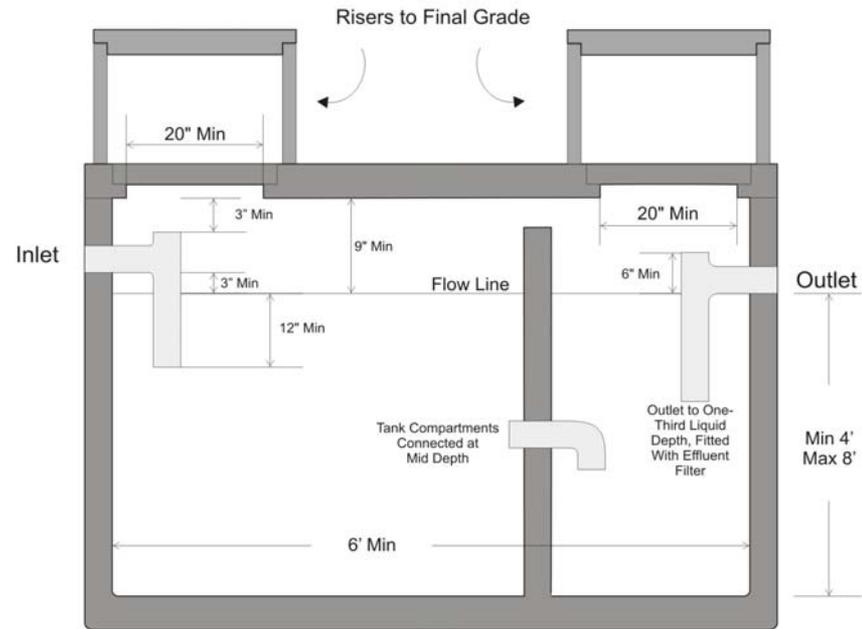
Image: George Loomis



# Septic Tanks



Plan View

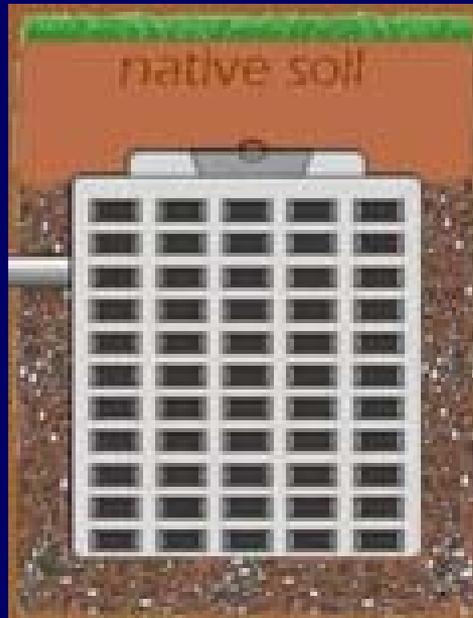


Cross Section View



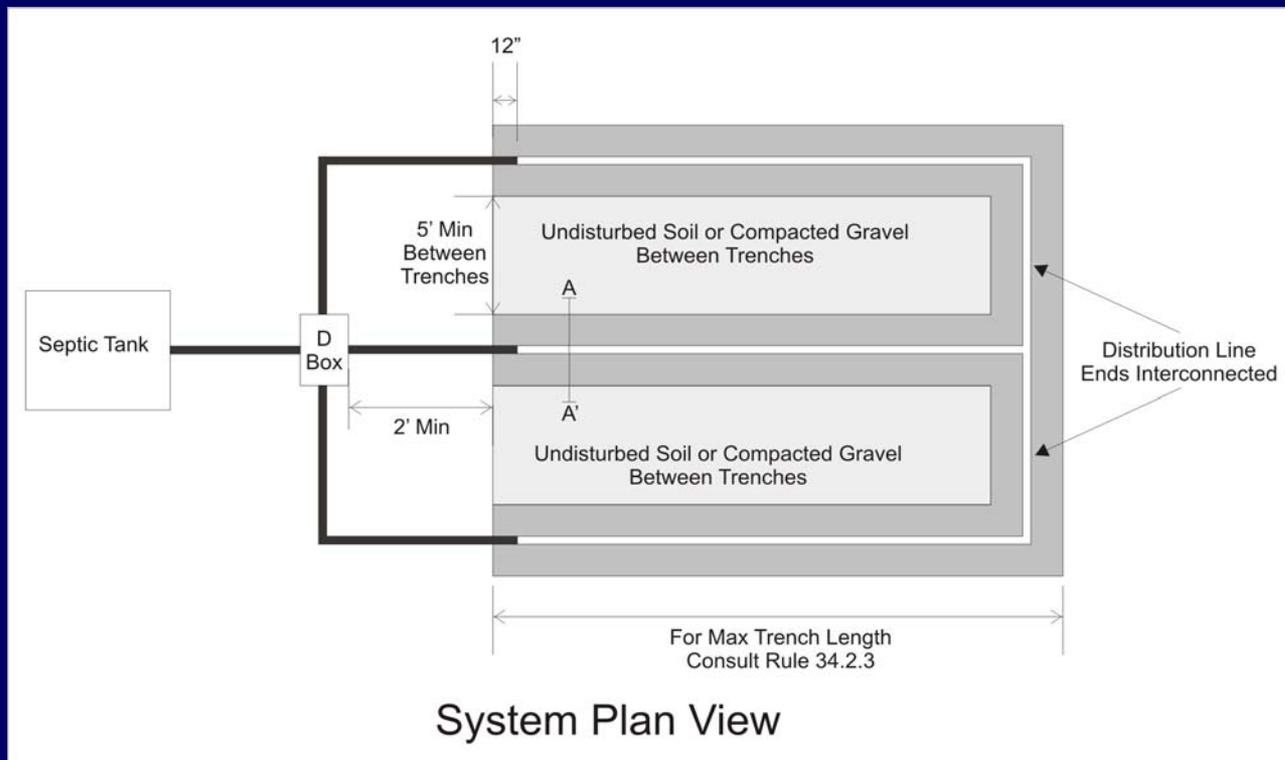
# Leachfield Construction

- Galleys prohibited.



# Leachfield Construction

- Trench excavation required unless demonstrated to be impractical due to site conditions.

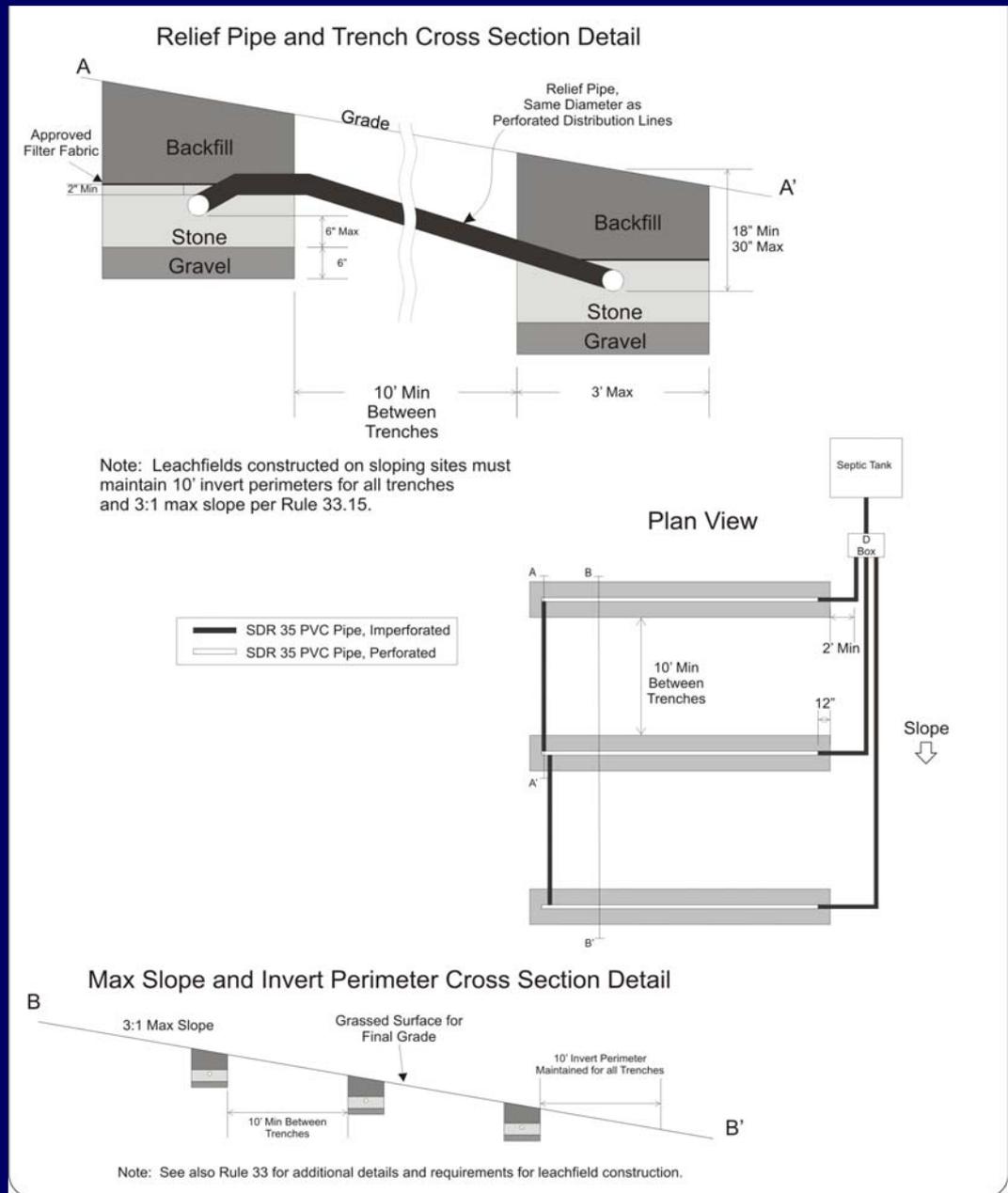


# Leachfield Construction

- Standards for sloping sites established.
- Minimum 10 feet horizontal separation distance between outer trench and adjacent side slope. Side slope must not be steeper than 3:1.



# Leachfield Construction on Sloping Sites



# Leachfield Construction

- Dispersal trenches located higher in soil profile because of reduced depth of stone below trench and reduced depth of cover.
- B Horizon soils should remain in place.



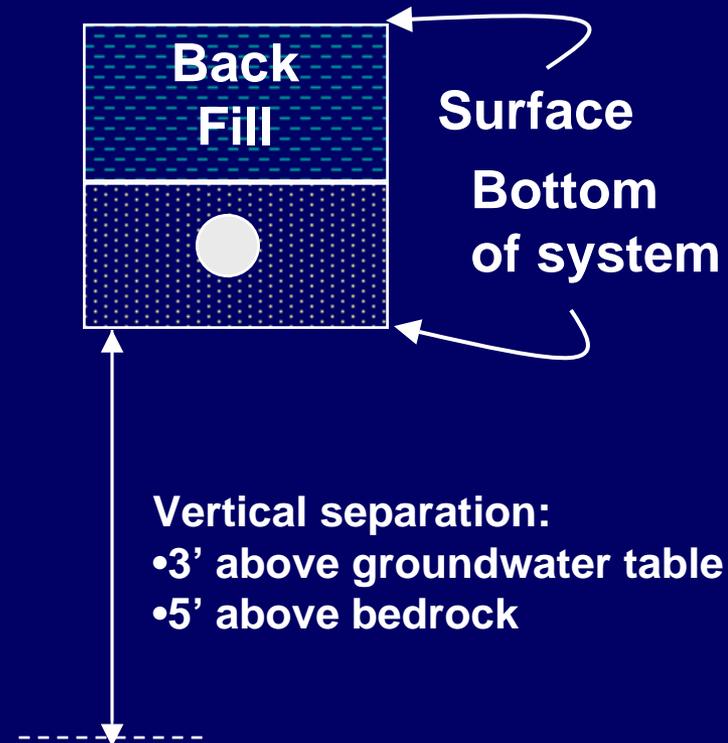
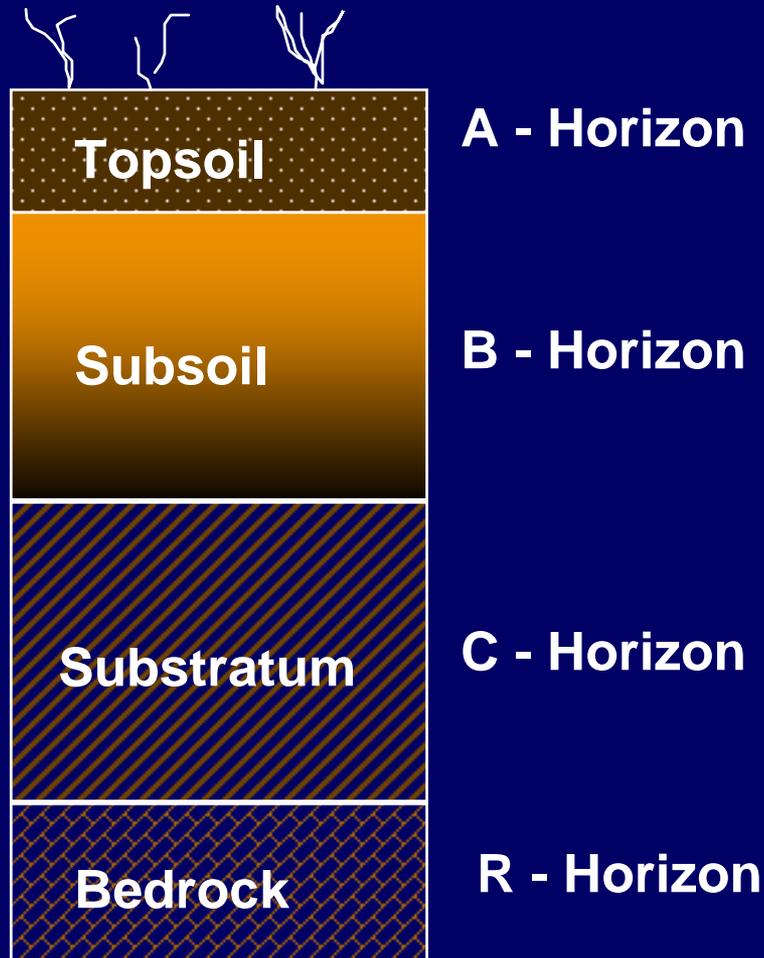


# Leachfield Construction

- Loading rate determined by soil horizons within 5 feet below distribution line, including the sidewall.
- Depth to groundwater from original ground surface will be 2 feet.
- Minimum depth to GW of 18" may be allowed on lots larger than 20,000 sq. ft. with the use of a bottomless sand filter and if there are no variances.



# Soil Profile



# Large Systems

- Definition captures systems with multiple leachfields.
- 2000 gpd, 5000 gpd, 10,000 gpd design flow regulatory thresholds for setbacks, notice requirements simplified.
- New Definition:
  - ◆ Any single OWTS with a design flow of 5,000 gpd or greater;
  - ◆ Multiple OWTSs for any project on one or more parcels of land, excluding residential subdivisions, where the total design flow for the project is 5,000 gpd or greater; or
  - ◆ Multiple OWTSs serving more than one unit in a residential subdivision, provided that the total design flow of these OWTSs, each serving more than one unit, is 5,000 gpd or more.



# Large Systems

- Groundwater certification no longer needed, OWTS program review only.
- Impact analysis modeling: Shall include a minimum of nitrate mass balance model at downgradient point of compliance.
- Setbacks generally two times larger than for systems less than 5000 gpd design flow.

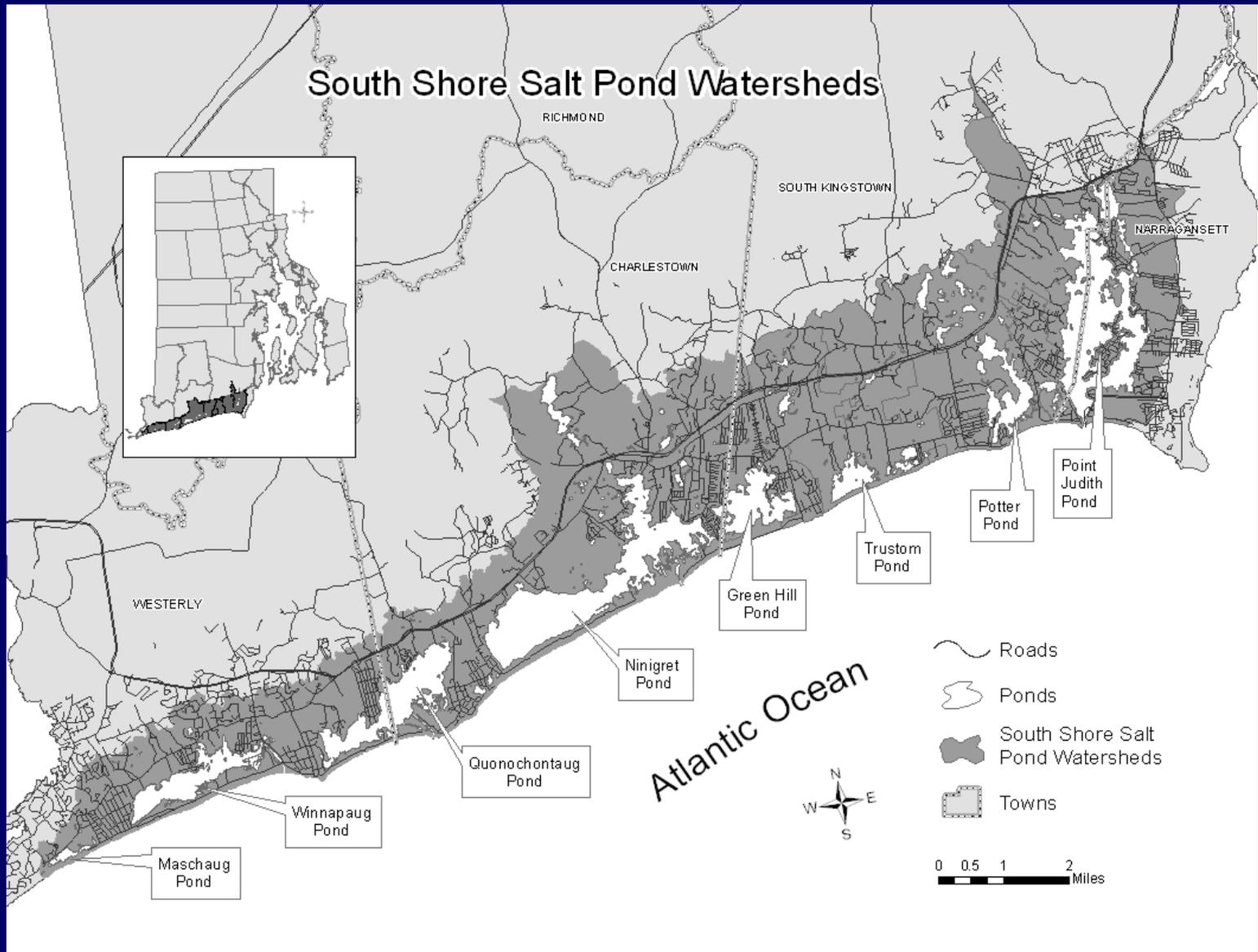


# Salt Ponds and Narrow River Critical Resource Areas

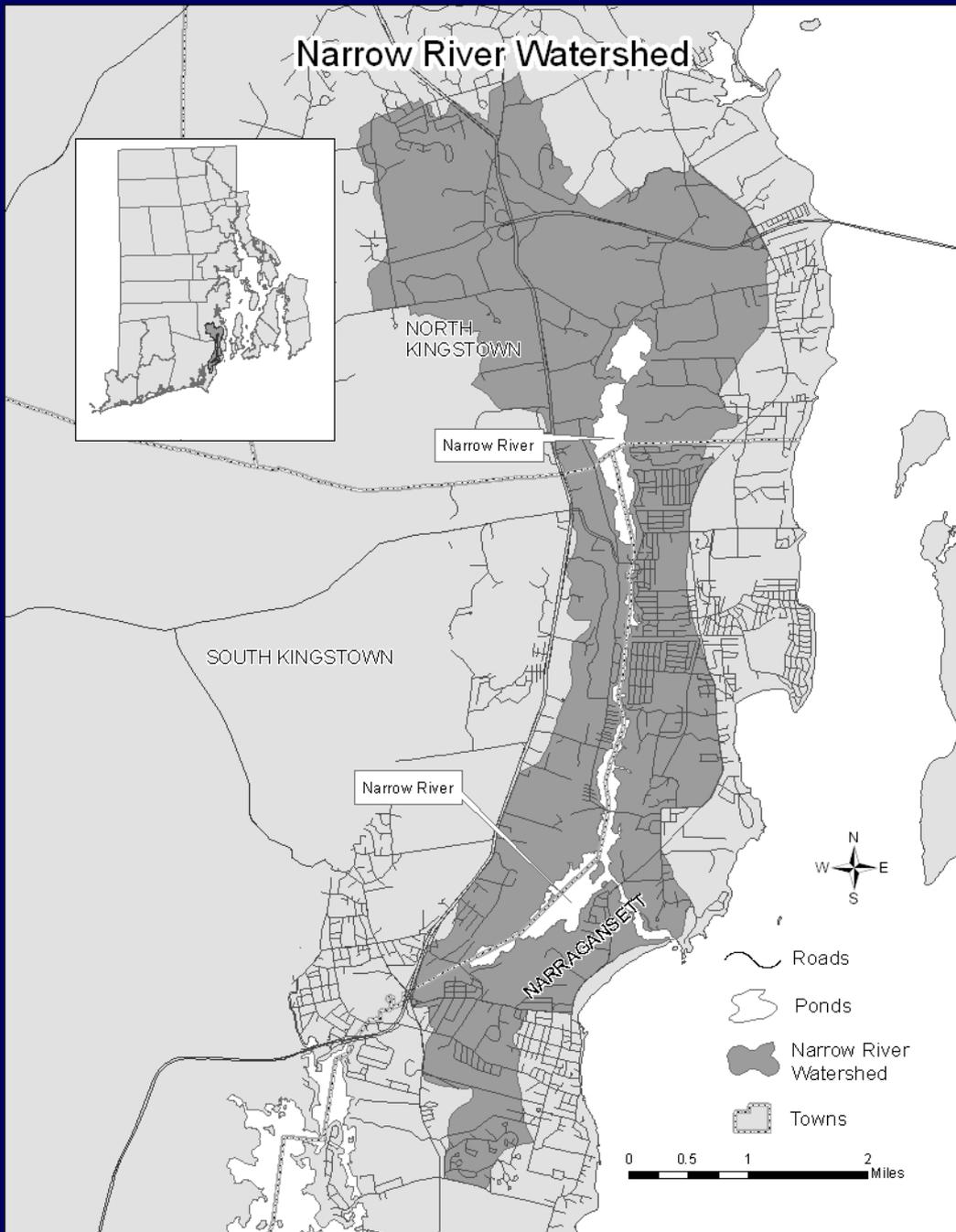
- Nitrogen reducing technology required for New Building Construction, Alterations, and Repairs to leachfields in the Salt Pond and Narrow River Critical Resource Areas.
- Consistency with CRMC policies:
  - ◆ Critical Resource Area boundaries consistent with CRMC SAMP area boundaries.
  - ◆ CRMC density requirements still apply.



# Salt Ponds Critical Resource Area



# Narrow River Watershed



# Narrow River Critical Resource Area



# Nitrogen Loading – Areas of On-Site Wells

- Policy applies where both OWTs and on-site drinking water wells used.
- Loading rate: OWTs design flow must not be greater than 345 gpd/20,000 sq. ft. of lot size.
- Loading rate may be exceeded with use of nitrogen reducing technology or designation of nitrogen credit land.
- Nitrogen credit land: Deed restrictions or conservation easements prohibit sources of nitrogen and reduce impervious surfaces on nitrogen credit land.



# Variations

- Requests for variance will not be required for Repairs and for Alterations where there will be no increase in sewage flow.
- The Director may waive the notification requirements if the requested variance is from a horizontal setback distance from a feature on the applicant's own property.
- Variance requests as part of an Alteration are exempt from the notification requirements.



# Variations

- Additional provisions:
  - ◆ Proof: Burden on applicant to submit clear, scientific evidence to prove how the design will mitigate impacts on public health and the environment. (Comprehensive Analysis)
  - ◆ Recognition of Role of Local Ordinance: Local requirements not a basis to support or justify a variance.
  - ◆ Compensatory Mitigation: Other elements of the applicant's system design (for which no variance is requested) may result in greater protection; the applicant may include how these elements of the system provide compensatory mitigation for the variance(s) requested.



# Variance Review

- Standards of Review re-organized to provide increased predictability in variance process.
- 11 Scenarios for denial of variance request:
  - ◆ Drawn from current regulations.
  - ◆ Drawn from analysis of variance request outcomes.
  - ◆ Developed to increase protection of public health and the environment.



# Variance Review

- Variance requests will not be approved under 11 specific scenarios, including:
  - ◆ The request is for an action that is prohibited in Rule 8.
  - ◆ The variance request is from the requirements of Rule 15.1 on a site located within the Salt Pond or Narrow River Critical Resource Areas.
  - ◆ The request resulted from the applicant subdividing his property after December 31, 1995, unless the applicant shows that the variance is not required due the action of the applicant or prior owner(s).
  - ◆ The request is from the requirement that soil and seasonal high groundwater table data must have been determined within the past 5 years.
  - ◆ There is a sanitary sewer reasonably accessible.
  - ◆ The request is for new lots under 10,000 sq. ft. platted or otherwise created after June 18, 1992.



# Variance Review

- ◆ The request is for less than the 80 foot minimum setback distance from a private drinking water well.
- ◆ The variance request is from the public well 200 foot setback to drilled rock, driven, or dug well; or from the public well 400 foot setback from a gravel packed or gravel developed well unless the applicant shows evidence that the RI Dept. of Health has granted approval for the activity.
- ◆ The request is for a depth to groundwater from original ground surface of less than 12 inches.
- ◆ The request is from the denitrification requirements in the Salt Pond and Narrow River Critical Resource Areas.
- ◆ The request is from the nitrogen loading rate in areas served by onsite drinking water wells.



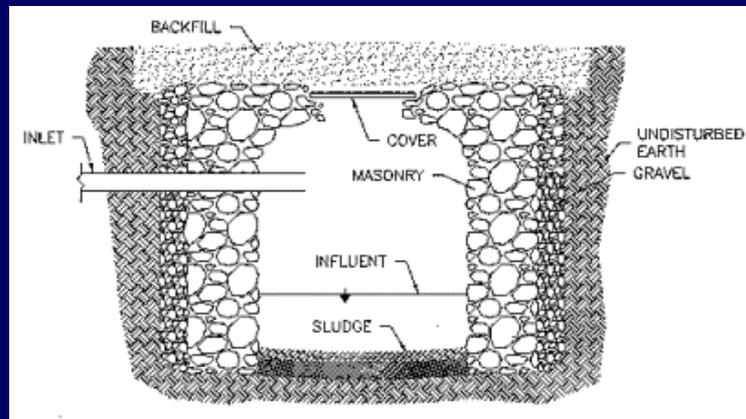
# Additional Changes

- Designer's licenses valid for 3 years.
- Alternate area requirement eliminated.
- Repairs – certain circumstances will not require application prior to conducting the repair.
- There are no setback distances proposed for wells serving non-potable uses.
- A soil evaluation is required for all alteration applications.



# Cesspools

- Limited cesspool phase-out legislation passed by Legislature. Affected areas are those:
  - ☞ Within 200' of the coastal feature of a tidal waterbody.
  - ☞ Within 200' of a public drinking water well.
  - ☞ Within 200' of a surface drinking water supply.
- ◆ Cesspools in these areas must be inspected by 2012 and removed no later than 2013.



# Cesspools

- Cesspool provisions in OWTS Rules:
  - ◆ The use of large capacity cesspools is prohibited by EPA and such cesspools must be properly removed or abandoned.
  - ◆ Definition of “failed system” updated to include new criteria:
    - ☞ Cesspool that needs pumping more than twice per year.
    - ☞ Liquid level in cesspool within 6 inches of inlet pipe.



# Schedule for Rule Promulgation: (Target Dates)

<http://www.dem.ri.gov/programs/benviron/water/permits/isds/draftreg.htm>

- Public Workshops: Comments received by July 11
  - ◆ Revise draft rules as needed in response to comments.
- Public Notice: August 1
  - ◆ Workshop
  - ◆ Hearing
- Adopt the Rules: File on October 1
  - ◆ Provided second public notice not necessary.
  - ◆ Effective date: October 22, 2007

