Legislative Task Force

Meeting #2

Thursday, October 24, 2013
8:00 – 10:00 AM

Room 280, 2nd Floor
Department of Environmental Management
235 Promenade Street Providence, RI

Agenda

8:00 Welcome and Overview of Agenda (5 minutes) – *Kevin Flynn, DOP*

8:05 Scope of Work for Task Force (15 minutes) - *Kevin Flynn & All*

8:20 Summary of Prior Wetland Task Forces (10 minutes) – Carol Murphy, DEM

8:30 Subject Topics and Technical Presentations: (60 minutes)

A. Existing Agency Rules and Regulations for Wetlands and Septic Disposal Setbacks
   - **a.** DEM
     - **i.** Freshwater Wetlands – Carol Murphy (10 minutes)
     - **ii.** OWTS – Ernie Panciera, DEM (10 minutes)
   - **b.** CRMC – Coastal Wetlands – James Boyd, CRMC (10 minutes)

B. Summary of Municipal Rules and Regulations for Wetlands and Septic Disposal Setbacks (20 minutes) - *Lorraine Joubert, URI*

C. Questions & Task Force Discussion – (10 minutes) *All - moderated by Kevin Flynn, DOP*

9:55 Next Steps (5 minutes) – *Nancy Hess, DOP*

A. November meeting date /topics
B. URI 2013 wetlands workshop on 11/21/13

10:00 Adjourn

Legislative Task Force Meeting #2

Thursday, October 24, 2013

8:00 AM – 10:00 AM
Room 280, 2nd Floor
Department of Environmental Management (DEM)
235 Promenade Street, Providence, RI

Task Force members in attendance were: Jim Boyd (Coastal Resources Management Council), Joseph Casali (Civil Engineer Representative), Russell Chateauneuf (Civil Engineering Representative), Janet Coit (DEM Director), Thomas D'Angelo (Builder's Trade Association), Gary Ezovski (Business Community Representative), Kevin Flynn (DOP-Associate Director), Vincent Murray (Municipal Representative – South Kingstown), Lorraine Joubert (Environmental Entity), Thomas Kravitz (Municipal Representative-Burrillville), Tom Kutcher (Wetlands Biologist), Scott Moorehead (Business Community Representative), Scott Rabideau (Business Community Representative), Leslie Taito (Office of Regulatory Reform).

Task Force members absent were: Eric Prive (Licensed Designer/Environmental Engineer)

The Division of Planning (DOP) and DEM also had several agency staff members present. From DEM, those present were Alicia Good, Carol Murphy, and Ernie Panciera. Nancy Hess and Paul Gonsalves were on hand from DOP.

Amendments/Corrections to Meeting Notes

Russell Chateauneuf suggested for the group to review the previous meeting notes at the start of each meeting. In addressing the previous meeting's notes, in regards to defining buffers and setbacks, he raised the point that jurisdiction should also be defined.

Scope of Work for Task Force

As requested at the September Task force meeting a scope was presented to the Task Force. The Scope was written by Nancy Hess, DOP with help from DEM and CRMC staff and outlined the purpose and legislative charge of the Task force. It defined the approach and the work products that would be produced. All were in agreement that the Scope adequately summarized the intent and concerns of the group. It will be available on the DOP website for future reference.

Summary of Prior Wetland Task Forces

The meeting began with a review by Carol Murphy, DEM, of the work done by previous wetland task forces in 1996 and 2000. It was noted that the Task Force formed in 2000, while larger in scope, had great participation, including some members of the current Task Force, and that most of the recommended changes were fully or partially implemented. Nancy Hess, DOP, stated that the reports from the previous Task Forces would be made available on the DOP Legislative Task Force website for those interested in reviewing them.

Subject Topics and Technical Presentations

A. Existing Agency Rules and Regulations for Wetlands and Septic Disposal Setbacks

a. DEM –i. Freshwater Wetlands

Carol Murphy presented the existing regulation regarding wetlands, beginning with the legal definitions of jurisdictional wetlands. Swamps, marshes, ponds, and bogs, and the 50 foot perimeter surrounding them, are defined as jurisdictional wetlands in the Freshwater Wetlands Act. Rivers and streams enjoy a 100 or 200 foot perimeter, depending on their width. These areas in their entirety are legally considered a wetland, and the feature itself (the stream, river, swamp, marsh, pond, or bog) is referred to as the main body of the wetland. Floodplains are also regulated as jurisdictional wetlands.

There are other types of wetlands as defined by the rules- forested wetlands, emerging plant communities, special aquatic sites (vernal pools)- which do not have a 50 perimeter surrounding them. For these types of wetlands, the jurisdictional wetland is simply the feature itself. A buffer zone is defined in the rules as "[a]n area of undeveloped vegetated land, retained in its natural undisturbed condition, or created to resemble a natural vegetated area, that mitigates the negative impacts of human activities on wetland functions and values." DEM rules do not define setbacks.

Members asked what the genesis of the 50 foot perimeter is. Carol has partially researched this question, and found out that the 50 foot perimeter was added as an amendment to the Freshwater Wetlands Act three years after the original law was passed in the 1970s. She shared that, given the thoroughness of the other details in the Act, the 50 foot figure was probably not arbitrarily created. It was agreed the scientific basis of the policy would be revisited in the future. The idea that a larger buffer zone may be appropriate for some wetlands to protect them from outside activity was discussed, as it may improve predictability of regulation by the State. Leslie Taito restated the importance of using the same definitions for terms.

ii. OWTS Regulations

Ernie Panciera described the regulatory framework for onsite wastewater treatment systems (OWTS). For OWTS regulations, the term watercourse is the term of reference. Watercourses include all bodies or standing or flowing water, and the setbacks for OWTS are based off of the system's proximity to a watercourse, whether it is located in a critical resource area, and the size of the system (measured in gallons per day). In most cases, the setback from the watercourse (not a jurisdictional

wetland, so this setback is measured right up to the feature) is 50 feet. For systems over 5000 GPD, the setback from the watercourse is required to be at least 100 feet. OWTS components located near a critical resource area (such as a drinking water supply watershed or the Salt Pond/Narrow River areas) require a setback of at least 100 feet in most cases. A 200 foot setback is required for OWTS components located near the impoundment areas of the watershed and the Salt Pond/Narrow River coastline. Ernie stated that the variance of the setbacks is based on practice more so than specific scientific findings, although nutrient loading was a factor when setbacks were revised in 2008.

The discussion moved to OWTS management in other states in New England and the fact that buffer zones are not the only tools used by some states. Ernie stated that some systems require monitoring of discharge, and should the effluent be unsatisfactory, the system performance would be monitored continuously. Members discussed reviewing the data of these large, monitored systems. The subject of variances for certain projects was raised in cases where the system would have no impact on the resource.

b. CRMC - Coastal Wetlands

James Boyd, CRMC, presented the regulatory framework for coastal wetlands in the state. He described three areas that CRMC maintains regulatory jurisdiction over: within tidal waters, on a coastal shoreline feature, or within 200 contiguous feet of coastal features. There are also special area management plans, namely the Salt Pond and Narrow River areas, which each have their own regulations that apply only to their specific geographic area. For areas outside of CRMC jurisdiction, DEM manages the wetlands regulation. The agencies have nearly identical rules, however CRMC has different management procedures (such as permit extensions or appeals processes) and the management of tributary wetlands have stricter regulations under CRMC than DEM (because of their proximity to receiving waters). Members discussed the origin of this policy and some raised the point that this system creates two set of regulations depended on the site's location.

Boyd continued explaining CRMC regulations by highlighting the CRMC definitions of freshwater wetlands, buffer zones, coastal features, and setbacks. The CRMC definition of a setback is simply the minimum nominal distance the proposed development must be from a coastal feature, while a buffer zone is the actual vegetated area *within* that setback that is meant to remain undisturbed. Boyd noted that while the scientific literature on the subject recommended much larger buffer zones than were eventually enacted, for implementation and practicality purposes smaller buffers were enacted. The areas within the special management plans are resource based, and have differing setbacks for self-sustaining areas and critical areas within the management plan. Director Coit suggested creating a matrix for a future meeting that visualizes the CRMC regulations.

B. Summary of Municipal Rules and Regulations for Wetlands and Septic Disposal Setbacks

Lorraine Joubert, URI, presented a summary of the rules and regulations for wetland and septic disposal setbacks at the municipal level. Over the years, some municipalities developed wetlands regulations that go beyond the state's regulations. Twenty communities have their own wetland

setback regulations, primarily to deal with stormwater management, OWTS, and wellhead and groundwater protection. The municipal setbacks can vary in application, as some communities apply setbacks town-wide and others have setbacks only in certain locations (such as within water supply watersheds and groundwater overlay districts). The wetland setbacks can sometimes be in conflict with frontage and other zoning setbacks, which can require an appeal for a variance to the municipal zoning board. Some communities use other devices to mitigate the possible negative impacts of development near wetlands, such as restrictions on the amount of impervious surfaces there can be, development density controls, and other means. Lorraine explained that many of the municipal regulations were driven by state and federal initiatives for communities to adopt plans to protect local water resources.

Kevin Flynn began discussion by asking about the varying motivations for communities to create their own standards, which Lorraine addressed as largely being resource-based concerns. Water quality has been an issue for some towns in the more densely developed areas of the municipalities, and is addressed based on the resources, existing conditions, and development pressure. Mr. Casali raised a concern that developers, in the process of obtaining the necessary permits for development on a lot or parcel, can be stymied in seeking dimensional relief by zoning boards of appeals despite being granted approval for development by DEM or CRMC, which is an issue of predictability and consistency of regulation in regards to wetlands. It was recommended that the task force examine some case studies of such developments in order to examine the process more closely. Mr. Ezovski agreed with Mr. Casali that the two-layer system of approval, both at the state level and municipal level, complicates matters that should be science-based. He contributed that municipalities- town councils and zoning boards- examining these scientific matters may not be appropriate if they do not possess the scientific expertise to make informed decisions. Director Coit also requested creating a matrix that visualizes the varying regulations.

Next Steps and Next Meeting

Nancy Hess, DOP, reviewed the month of November for the Task Force. November's meeting was originally scheduled for the 21st, however a URI workshop on wetlands issues was scheduled for that day, which Task Force members were encouraged to attend. The Task Force agreed the new meeting date would be Nov. 19th. Nancy explained the working group was planning future sessions and that a possible subcommittee on zoning board meetings could be formed in the future.

Adjourn
10:00 AM

RHODE ISLAND DIVISION OF PLANNING

Legislative Task Force

Scope of Work 2013 -14

Purpose:

The Legislative Task Force was established by the General Assembly in 2013 by the respective bills, House 5425A and Senate 672A**.** The purpose of the Task Force is to solicit input from stakeholders with subject matter expertise related to Rhode Island's wetlands, water resources, onsite wastewater systems, and the business community.

Legislative Charge:

The Division of Planning in consultation with the Task Force will prepare a report based on current science and wetland protection needs that assesses the adequacy of wetland protection in the state, identifies gaps in protection, and recommends statutory or regulatory changes to protect wetlands statewide.

The primary effort of the Task Force (agreed upon at the organizational meeting on 9.26.13) is to focus on wetland buffers and setbacks for land disturbances and for impacts from Onsite Wastewater Treatment Systems (OWTS) (pollutant impacts via groundwater). Other topics will be acknowledged and addressed as time allows.

Approach:

The Legislative Task Force will review the topics listed below in order to meet the legislative charge described above.

- Overview of prior stakeholder processes
- Overview of State and municipal regulatory authorities and frameworks as they relate to wetland buffers and setbacks for land disturbances and for OWTS including:
    - Overview of current R.I. General Laws for wetlands and OWTS, and
    - Overview of municipal ordinances or regulations.
- Overview of wetland buffers and setbacks of neighboring states.
- Overview of the functions and values of wetlands, the important role of buffers, and economic benefits that wetlands provide.
- Overview of what an OWTS is and how it works.
- Evaluate the current scientific literature summaries regarding protective wetland buffers:

- Establish a Task Force Subcommittee;
  - Compile relevant literature summaries to be reviewed; and
  - Summarize and present findings to the full Task Force.

Note: Evaluation of the literature summaries will be broken into two separate categories:

one looking at the science of buffers related to land disturbances and protection of functions and values of different wetland types; and

secondly review the science of buffers related to impacts from OWTS (different treatment techniques and wetland types will be considered).

- Conduct open discussion of the scientific findings.

Work Products:

1. Proceedings of the Task Force - agendas, meeting notes including recommendations offered in the Task Force meetings, presentations, technical reports, and scientific literature presented to the Task Force will be maintained by the Division of Planning. An archive of materials will be made available on the Division's website.

2. Final Report - The responsibility for the final report is legislatively charged to the Division of Planning. The Division of Planning will prepare a Final Report with recommendations that ensures the protection of the State's wetland resources while balancing the need for economic development. The report will be compiled in consultation with the Task Force, the CRMC and DEM, and submitted to the Legislature by the due date of December 31, 2014. The final report will include a summary of the discussions and deliberations of the Task Force during the 2013-14 meetings.

Legislative Task Force Meeting #2 on 10/24/2013
TALK #1 HISTORY - Summary of Prior Wetland Task Forces
Presented by Carolyn Murphy, RI DEM Office of Water Resources

I talked a bit about prior wetlands task forces at 9/19 meeting. There have been several wetland-related task forces or advisory groups since the Act was promulgated in 1971, some of which also included review of the septic system program. The Department values the high-level work that the groups have conducted, the expertise of the members, and especially the time members have invested.

Since the last meeting, I have had a chance to look again at the final reports for the **Governor's Advisory Committee on Wetlands and Septic Systems (dated 1995**) and the **Director's Wetlands Task Force (2001)** and research or remind myself of Actions completed since the reports.

As I said last month, the Gov. Advisory Committee was established by Executive Order of Gov. Almond. There were 17 total members, including Russ and Scott Morehead from this Task Force. **Per the Executive order, the charge was very broad to *"examine ways to improve the regulation of septic systems and the protection of wetlands."* Also, to "examine the timetables, staffing, funding, process for dispute resolution, and licensing as they pertain to these programs."**

There were 60 meetings.

The Final Report (1995) provided numerous recommendations, and it discussed the background and the benefits of each. There were 44 wetland specific or wetland-related recommendations including about funding, general administration, and enforcement.

In consultation with today's program supervisors, I identified that approximately ~45 % of the recommendations were partially or fully implemented. Many of the recommendations were to be implemented via revisions to the wetlands statute, which was attempted 4 times unsuccessfully. The greatest percent completion (~65 %) was of the general recommendations that were under the wetland program managers' authority to implement.

One of the Governor's Committee recommendations WR #4 - is related to this task force's scope. It reads: Redefine what are now considered perimeter wetlands and riverbank wetlands to regulate them as buffer zones and transition zones.

This was addressed in the bills in 1996 through 1999, and I recall was one of the primary issues driving the Committee to pursue the bills.

During this period there were other noteworthy actions that affected the wetlands program:

- The Department was reorganized, and the Division of Wetlands permitting and enforcement functions were split. The permitting functions was brought under the Office of Water Resources and the enforcement function and staff became part of the new Office of Compliance and Inspection;

- Also during this time, the General Assembly approved amendments to the State Coastal Management law that gave **authority for freshwater wetlands in the vicinity of the coast** to CRMC in order to eliminate duplicative permitting.

- Also, the wetland programs were staffed up in 1998-2000 with new scientist positions and the first wetland policy position.

In 2000, the then new Director initiated a series of permit streamlining task forces, starting with the wetlands program. ***The objective was to investigate specific administrative, policy, regulatory and statutory changes that could be used to further streamline program operations, increase customer satisfaction and meet the mandates of the law.*** There were 25 people invited to assist the Department and over 40 participated. The group identified 37 issues to pursue and they were assigned to 9 subgroups to discuss and report back on.

Members of the current task force who participated were from DOA, CRMC, RIBA, STB, and consultants Gary Ezovski and Scott Moorehead. Scott Rabidue participated for the House.

The Final Report (2001) did not recommend statutory changes at that time. It did recommend regulatory, policy, and outreach changes or projects to streamline the program. The Department has focused on implementing those and ~84 percent of them have been partially or fully completed. Noteworthy, I think, has been the completion of 3 phases of wetland rule revisions, including the significant re-authoring of the rules in 2007 for improved clarity.

The Task Force's Statutory subgroup and the Watershed Working Group discussed and provided recommendations on buffers and setbacks.

See Final Report page 21 for discussion from the Statutory subgroup. The group acknowledged that the bordering areas were worthy of protection and regulation based on their significance in protecting or enhancing the value of adjacent wetlands.

The Watershed Group included in their report a Tiered Buffer Model as a way to articulate the rationale for permit decisions. The buffers are tiered by wetland types based on the functions and values the wetland types provide.

Conclude: An advantage of this Task Force is its narrow focus on wetland buffers and setbacks.

CM/102313

Legislative Task Force Meeting #2 on 10/24/2013
TALK #2 Existing DEM RULES - Freshwater Wetlands
Presented by Carolyn Murphy, RI DEM Office of Water Resources

At our first meeting I told you about the Rhode Island Freshwater Wetlands Act and the public policy stated in it to preserve and protect freshwater wetlands for the public benefits that they provide.

I also introduced you to the definition of Freshwater Wetlands in the Law and some of the common wetland types. *The Law does not define the terms Buffer Zone or Setback, but it does define, and the State does regulate, the 50-Foot Perimeter around swamps, marshes, bogs, and ponds, and a 100-Foot or 200-Foot Riverbank adjacent to rivers and streams.* One purpose of regulating activities in these areas is that they act as buffer zones, amongst other things.

Today I am going to talk about related Rules and Regulations.

The Rules and Regulations define other Freshwater Wetland types, including Forested Wetland, Shrub Wetland, Emergent Plant Community, Submergent Plant Community, and Special Aquatic Site. Just quickly, *a Special Aquatic Site* is commonly known as a vernal pool. The wetland types I just mentioned, including vernal pools, do not have any associated protection or review areas around them.

Unlike the Law, the Rules and Regulations <u>do define</u> **the term Buffer Zone as *an area of undeveloped vegetated land retained in its natural undisturbed condition, or created to resemble a naturally occurring vegetated area that mitigates the negative impact of human activities on wetland functions and values* (Rule 4.00)**

The DEM wetland permitting program uses the term Buffer Zone to describe the area of a property that is to remain vegetated and undisturbed after a permitted project is built. It is the remaining vegetated jurisdictional area (or area to be planted), beyond an approved project's limit of clearing and disturbance. See attached illustration.

The wetland compliance program may use the term Buffer Zone in conversation with property owners. The concept of protecting or restoring a Buffer Zone is more easily understood than the terms perimeter wetland or riverbank wetland.

The Rules <u>do not define</u> Setback or Setbacks, and use the term Setbacks once, to describe as a mitigation measure "Maximizing setbacks of septic systems and other land disturbances from wetlands" (Rule 9.02 D(3)(n)).

The wetland Rules include one requirement regarding septic disposal systems, i.e., that a wetland permit is required for new systems with leaching fields proposed within fifty feet (50') of any Emergent, Shrub, or Forested Wetland, Special Aquatic Site, Area Subject to Flooding, or Area Subject to Storm Flowage (Rule 5.01 B(4)).

(Note, many of the wetland types named are the small ones that do not otherwise have an associated 50-Foot Perimeter Wetland. This rule gives them a 50-foot area within which new septic systems must be reviewed for impacts to wetlands.)

CM/102313

CRMC – Rules and Regulations Governing the Protection and Management of Freshwater Wetlands in the Vicinity of the Coast

- Rules are essentially identical to the DEM Freshwater Wetland Rules with the exception of some application processes for consistency with the CRMC Management Procedures. For example, permit extensions, decisions and notifications, objections and appeals must be done in accordance with the Management Procedures. Same application fee structure.
- Tributary wetlands within CRMC Salt Pond Region and Narrow River SAMPs are regulated more stringently. See SAMP outline below.
- Additional Definitions for Coastal feature, Coastal Resources Management Program, Council, Management Procedures, SAMP, Setback and In the Vicinity of the Coast.
- ***Setback*** means the minimum distance from the edge of a freshwater wetland at which an approved activity or alteration may take place.
- ***Buffer Zone***: An area of undeveloped vegetated land retained in its natural undisturbed condition, or created to resemble a naturally occurring vegetated area that *mitigates* the negative impact of human activities on wetland functions and values.
- Maps depicting the CRMC and DEM freshwater wetland jurisdictional boundaries are posted on both agencies' websites. See: http://www.dem.ri.gov/maps/wetjuris.htm.

Coastal Resources Management Program – Red Book

Section 140 Setbacks

A ***Setback*** is the minimum distance from the inland boundary of a coastal feature at which an approved activity or alteration may take place

Section 150 Coastal Buffer Zone

A ***Coastal Buffer Zone*** is a land area adjacent to a Shoreline (Coastal) Feature that is, or will be, vegetated with native shoreline species and which acts as a natural transition zone between the coast and adjacent upland development. A Coastal Buffer Zone differs from a construction setback (Section 140) in that the setback establishes a minimum distance between a shoreline feature and construction activities, while a buffer zone establishes a natural area adjacent to a shoreline feature that must be retained in, or restored to, a natural vegetative condition (Figure 2). The Coastal Buffer Zone is generally contained within the established construction setback.

- Coastal Buffer Zones are determined by Table 2A and are based on parcel size and abutting CRMC water type.

Section 210.3 Coastal Wetlands

1. Coastal wetlands include salt marshes and freshwater or brackish wetlands contiguous to salt marshes or physiographical features. Areas of open water within coastal wetlands are considered

a part of the wetland. In addition, coastal wetlands also include freshwater and/or brackish wetlands that are directly associated with non-tidal coastal ponds and freshwater or brackish wetlands that occur on a barrier beach or are separated from tidal waters by a barrier beach.

2. Salt marshes are areas regularly inundated by salt water through either natural or artificial water courses and where one or more of the following species predominate: smooth cordgrass (*Spartina alterniflora*), salt meadow grass (*Spartina patens*), spike grass (*Distichlis spicata*), black rush (*Juncus gerardi*), saltworts (*Salicornia* spp.), sea lavender (*Limonium carolinianum*), saltmarsh bulrush (*Scirpus* spp.), high tide bush (*Iva frutescens*).

3. Contiguous freshwater wetlands are those wetlands which border directly on salt marshes or brackish wetlands or physiographical features and which, except for size limitations, meet the definition of bog, marsh, swamp, or pond under the Rhode Island Freshwater Wetlands Act (R.I.G.L. § 2-1-18 *et seq*.). All contiguous freshwater wetlands are protected under this Program, regardless of their size.

4. Contiguous brackish wetlands are those wetlands which border directly on salt marshes and where one or more of the following species predominate: tall reed (*Phragmites communis*), tall cordgrass (*Spartina pectinata*), broadleaf cattail (*Typha latifolia*), narrowleaf cattail (*Typha angustifolia*), spike rush (*eleocharis rostellata*), chairmaker's rush (*Scirpus americana*), creeping bentgrass (*Agrostis palustris*) sweet grass (*Hierochloe odorata*), wild rye (*elymus virginicus*).

5. High salt marsh is defined as that portion of the salt marsh that typically is flooded by spring, moon, or other flooding tides but otherwise is not flooded on a daily basis. The vegetative composition of high salt marsh typically consists of one or more of the following: salt meadow grass (*Spartina patens*); spike grass (*Distichlis spicata*); black rush (*Juncus gerardi*); tall reed (*Phragmites communis*); Sea Lavender (*Limonium carolinianum*); tall cordgrass (*Spartina pectinata*); saltmarsh bulrushes (*Scirpus* spp.); and high tide bush (*Iva frutescens*).

6. Low salt marsh is defined as that portion of the salt marsh that is flooded daily. The vegetative composition of the low salt marsh typically consists predominantly of smooth cordgrass (*Spartina alterniflora*).

CRMC Salt Pond Region Special Area Management Plan (SAMP) and Narrow River SAMP

Tributary wetlands are freshwater wetlands within the watershed that are connected via a watercourse to a coastal wetland and/or tidal waters.

Section 920.1.A – Self-Sustaining Lands

(e) A minimum ***200' setback*** from the salt ponds, their tributaries, and coastal wetlands, including tributary wetlands, is required for OWTS in Self Sustaining Lands for activities within 200' of a coastal feature and all watershed activities as defined in Section 900.B.3 and 900.B.4. Relief from this regulation requires a Special Exception as defined in Section 130 of the RICRMP, unless the lands were subdivided prior to April 12, 1999 and cannot accommodate the requirement.

(f) A ***150' buffer zone*** from the salt ponds, their tributaries, and coastal wetlands, including tributary wetlands, is required for activities within 200' of a coastal feature and all watershed activities as defined in Section 900.B.3 and 900.B.4 in Self Sustaining Lands. Relief from this

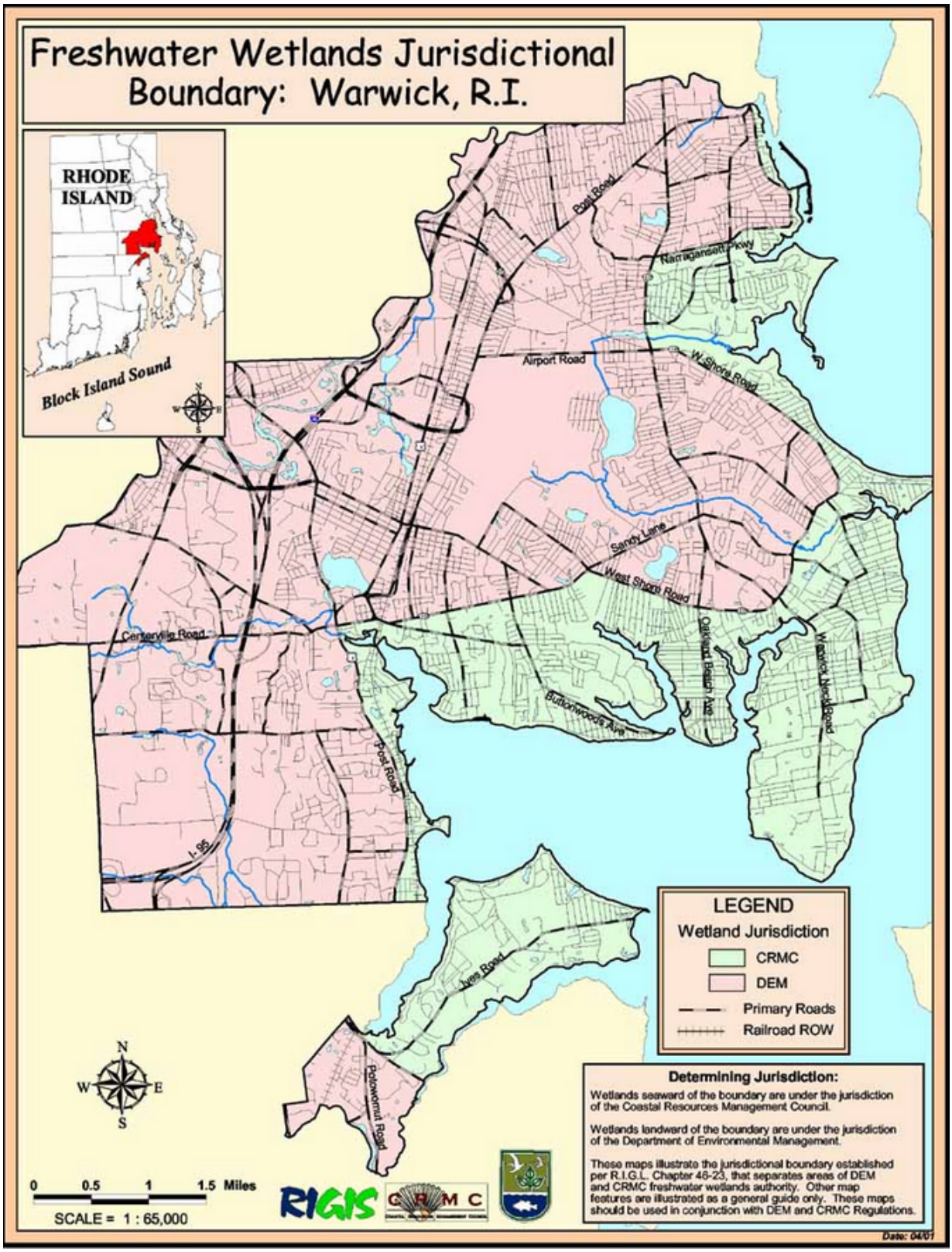
regulation requires a Special Exception as defined in Section 130 of the RICRMP, unless the lands were subdivided prior to November 27, 1984 and cannot accommodate the requirement.

Section 920.1.B – Lands of Critical Concern

(f) A minimum ***225' setback*** from the salt ponds, their tributaries, and coastal wetlands, including tributary wetlands, is required for OWTS in Lands of Critical Concern for activities within 200' of a coastal feature and all watershed activities as defined in Section 900.B.3 and 900.B.4. Relief from this regulation requires a Special Exception as defined in Section 130 of the RICRMP, unless the lands were subdivided prior to April 12, 1999 and cannot accommodate the requirement.

(g) A ***200' buffer zone*** from the salt ponds, their tributaries, and coastal wetlands, including tributary wetlands, is required for all development activities within 200' of a coastal feature and all watershed activities as defined in Section 900.B.3 and 900.B.4 in Lands of Critical Concern. Relief from this regulation requires a Special Exception as defined in Section 130 of the RICRMP, unless the lands were subdivided prior to November 27, 1984 and cannot accommodate the requirement.

Maps for all 21 coastal communities showing CRMC and DEM freshwater wetland jurisdiction are found online at: http://www.dem.ri.gov/maps/wetjuris.htm



Municipal Wetland Buffer Ordinances in Rhode Island

University of Rhode Island Cooperative Extension
RI Nonpoint Education for Municipal Officials (NEMO)
Updated Draft October, 2013 by Lorraine Joubert, ljoubert@uri.edu

A. Summary

Twenty Rhode Island cities and towns establish wetland buffer setbacks through zoning that are more protective than state standards for the purpose of minimizing impacts to wetlands. Most communities are outside the Providence urban area and have surface water supply watersheds, local groundwater resources used for either public or private wells, other sensitive fresh or coastal water resources, and rely at least in part on Onsite Wastewater Treatment Systems (OWTS) for wastewater treatment. Other findings include:

- Eleven of the communities reviewed have wetland buffer ordinances that regulate any land disturbance, structures, impervious area and/or OWTS within the buffer.
- Nine municipalities establish wetland buffers only for location of OWTS.
- Wetland buffer setbacks may apply town wide or only in watershed protection districts, other overlay zones, or for certain land uses.
- In addition to the setback distance, many towns establish standards that are more protective than state regulations for use of the buffer area including for example, limits on percent impervious cover, stormwater management requirements, performance standards for alternative OWTS.
- For substandard lots of record, relief may be granted either by a special use permit or variance application where special conditions may be applied to minimize impacts.

B. List of Ordinances

1. Barrington Zoning. Wetland setback from all disturbances in Wetland Overlay District (100 ft) and wetland setbacks from structures in all areas (100 ft from wetlands; 200 ft from streams > 10 ft. wide).
2. Burrillville Zoning. On lots containing > 40% wetlands, land use restrictions apply including wetland setbacks from OWTS (200 ft).
3. Charlestown Zoning. Wetland setback from OWTS only (100 ft.).
4. Coventry Zoning. Wetland setbacks from OWTS (75 ft) and from structures (50 ft).
5. Exeter Zoning. Wetland setback from all soil disturbance (100 ft.)
6. Foster Zoning. Surface water setback from OWTS (200 ft); with commercial or industrial development, wetland setback from all soil disturbance (100 ft).
7. Jamestown Zoning. Setback from freshwater wetlands to OWTS only; High Water Table ordinance requires use of advanced treatment systems, restricts impervious cover and sets stormwater management standards. Both provide for administrative review.
8. Little Compton Zoning. Wetland setbacks from structures and OWTS (100 ft); administrative review provision for lots of record.
9. Middletown Zoning. Setback from freshwater wetlands from OWTS only (100 ft).
10. Narragansett Zoning. In the Coastal and Freshwater Wetlands Overlay District, wetland setback from all land disturbance for pre-existing lots with sewer and water (100 ft.); in all other areas, wetland setback from OWTS and all land disturbances (150 ft. from all

wetlands except areas subject to stormflowage and flooding 50 ft.). In Coastal Resources Overlay District, coastal features setback from all disturbances in "areas of critical concern" and "self-sustaining lands" (150 ft), and from structures, roads and OWTS in all other areas (100 ft).

11. New Shoreham Zoning, Wetland setback from OWTS setback (150 ft.) and from surface drinking water supplies and contiguous freshwater wetlands (200 ft). Advanced wastewater treatment specified based on location within wetland buffers, drinking water source area, or other critical watershed and on depth to water table and bedrock.
12. Newport Zoning. Ocean Drive Overlay District wetland buffer (all disturbances)
13. North Kingstown Zoning. OWTS setbacks
14. North Smithfield Zonin., Wetland Setbacks from OWTS, Buildings and Impervious Surfaces and Cesspool Phaseout.
15. Portsmouth Zoning. Watershed Protection District OWTS setback (from drinking water tributaries and adjacent wetlands) Also limits impervious area.
16. Scituate Zoning. setbacks from water bodies (OWTS and structures)
17. Smithfield Zoning. Dimensional regulations, buffers (structures)
18. South Kingstown Zoning. location of OWTS (includes wetland buffers; amended in 2011 to restrict impervious area and establish stormwater management standards)
19. Tiverton Zoning. Setbacks from certain water bodies (OWTS only); Watershed Protection Overlay District (all disturbances and limits on impervious cover)
20. Warren Zoning. Setbacks from wetlands and water bodies (OWTS only)

C. About the Ordinances

The following excerpts were compiled in 2008 and periodically updated through October 2013. These are limited updates, made as we happen to learn about changes, and not through a comprehensive review process.

The source and type of ordinance is listed first, followed by the ordinance selection. More than one entry may be listed for a municipality. Where the ordinance is lengthy only the most pertinent sections are included except that some of the more recent or innovative examples are reproduced in their entirety.

These excerpts are provided for informational purposes only. For the official version of the local code or more recent amendments, please check current online codes or contact the municipality.

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1. BARRINGTON

Source: Barrington RI Code of Ordinances, Chapter 185. Zoning, Article VII. Supplementary Regulations, Sec. 22. Setback from wetlands and water bodies. www.generalcode.com accessed July 30, 2007 and October 23, 2013.

§ 185-22. Setback from wetlands and water bodies.

Except as otherwise provided, no building, structure or sign may be located within 100 feet of any wetland, water body or stream, or within 200 feet in the case of flowing water bodies in excess of 10

Municipal Wetland Buffer Ordinances in Rhode Island

University of Rhode Island Cooperative Extension
RI Nonpoint Education for Municipal Officials (NEMO)
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A. Summary

Twenty Rhode Island cities and towns establish wetland buffer setbacks through zoning that are more protective than state standards for the purpose of minimizing impacts to wetlands. Most communities are outside the Providence urban area and have surface water supply watersheds, local groundwater resources used for either public or private wells, other sensitive fresh or coastal water resources, and rely at least in part on Onsite Wastewater Treatment Systems (OWTS) for wastewater treatment. Other findings include:

- Eleven of the communities reviewed have wetland buffer ordinances that regulate any land disturbance, structures, impervious area and/or OWTS within the buffer.
- Nine municipalities establish wetland buffers only for location of OWTS.
- Wetland buffer setbacks may apply town wide or only in watershed protection districts, other overlay zones, or for certain land uses.
- In addition to the setback distance, many towns establish standards that are more protective than state regulations for use of the buffer area including for example, limits on percent impervious cover, stormwater management requirements, performance standards for alternative OWTS.
- For substandard lots of record, relief may be granted either by a special use permit or variance application where special conditions may be applied to minimize impacts.

B. List of Ordinances

1. Barrington Zoning. Wetland setback from all disturbances in Wetland Overlay District (100 ft) and wetland setbacks from structures in all areas (100 ft from wetlands; 200 ft from streams > 10 ft. wide).
2. Burrillville Zoning. On lots containing > 40% wetlands, land use restrictions apply including wetland setbacks from OWTS (200 ft).
3. Charlestown Zoning. Wetland setback from OWTS only (100 ft.).
4. Coventry Zoning. Wetland setbacks from OWTS (75 ft) and from structures (50 ft).
5. Exeter Zoning. Wetland setback from all soil disturbance (100 ft.)
6. Foster Zoning. Surface water setback from OWTS (200 ft); with commercial or industrial development, wetland setback from all soil disturbance (100 ft).
7. Jamestown Zoning. Setback from freshwater wetlands to OWTS only; High Water Table ordinance requires use of advanced treatment systems, restricts impervious cover and sets stormwater management standards. Both provide for administrative review.
8. Little Compton Zoning. Wetland setbacks from structures and OWTS (100 ft); administrative review provision for lots of record.
9. Middletown Zoning. Setback from freshwater wetlands from OWTS only (100 ft).
10. Narragansett Zoning. In the Coastal and Freshwater Wetlands Overlay District, wetland setback from all land disturbance for pre-existing lots with sewer and water (100 ft.); in all other areas, wetland setback from OWTS and all land disturbances (150 ft. from all

wetlands except areas subject to stormflowage and flooding 50 ft.). In Coastal Resources Overlay District, coastal features setback from all disturbances in “areas of critical concern” and “self-sustaining lands” (150 ft), and from structures, roads and OWTS in all other areas (100 ft).

11. New Shoreham Zoning, Wetland setback from OWTS setback (150 ft.) and from surface drinking water supplies and contiguous freshwater wetlands (200 ft). Advanced wastewater treatment specified based on location within wetland buffers, drinking water source area, or other critical watershed and on depth to water table and bedrock.
12. Newport Zoning. Ocean Drive Overlay District wetland buffer (all disturbances)
13. North Kingstown Zoning. OWTS setbacks
14. North Smithfield Zonin., Wetland Setbacks from OWTS, Buildings and Impervious Surfaces and Cesspool Phaseout.
15. Portsmouth Zoning. Watershed Protection District OWTS setback (from drinking water tributaries and adjacent wetlands) Also limits impervious area.
16. Scituate Zoning. setbacks from water bodies (OWTS and structures)
17. Smithfield Zoning. Dimensional regulations, buffers (structures)
18. South Kingstown Zoning. location of OWTS (includes wetland buffers; amended in 2011 to restrict impervious area and establish stormwater management standards)
19. Tiverton Zoning. Setbacks from certain water bodies (OWTS only); Watershed Protection Overlay District (all disturbances and limits on impervious cover)
20. Warren Zoning. Setbacks from wetlands and water bodies (OWTS only)

C. About the Ordinances

The following excerpts were compiled in 2008 and periodically updated through October 2013. These are limited updates, made as we happen to learn about changes, and not through a comprehensive review process.

The source and type of ordinance is listed first, followed by the ordinance selection. More than one entry may be listed for a municipality. Where the ordinance is lengthy only the most pertinent sections are included except that some of the more recent or innovative examples are reproduced in their entirety.

These excerpts are provided for informational purposes only. For the official version of the local code or more recent amendments, please check current online codes or contact the municipality.

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1. BARRINGTON

Source: Barrington RI Code of Ordinances, Chapter 185. Zoning, Article VII. Supplementary Regulations, Sec. 22. Setback from wetlands and water bodies. www.generalcode.com accessed July 30, 2007 and October 23, 2013.

§ 185-22. Setback from wetlands and water bodies.

Except as otherwise provided, no building, structure or sign may be located within 100 feet of any wetland, water body or stream, or within 200 feet in the case of flowing water bodies in excess of 10

feet in width as provided by the state Freshwater Wetlands Act, except boat sheds, piers and similar structures accessory to a permitted use; or docks, floats, marine railways and other facilities normally requiring a location on or adjacent to the shore within the Waterfront Business District.

Source: Barrington RI Code of Ordinances, Chapter 185. Zoning, Article XXV. Wetlands Overlay District, Sec. 174. Developmental Standards. www.generalcode.com accessed July 30, 2007; updated October 23, 2013.

Chapter 185. ZONING
Article XXV. Wetlands Overlay District

§ 185-169. Applicability.
The Wetlands Overlay District shall overlie portions of other zoning use districts established by this chapter. The Wetlands Overlay District shall apply to all new construction or reconstruction or expansion of existing buildings, or new, expanded or modified uses of property within, or within 100 feet of, the Wetlands Overlay District. Those areas lying within, or within 100 feet of, the Wetlands Overlay District shall be subject to both this section and the provisions pertaining to the underlying use district in which such areas are located. Nothing in this Article shall limit those restrictions pertaining to wetlands contained in other sections of this chapter, or in any other applicable laws or regulations.

§ 185-170. Purpose.
The purpose of this Article is the protection of wetlands, water resources and adjoining lands through control of activities impacting wetlands values, including but not limited to the following values: public or private water supply, groundwater resources, flood control, erosion control, storm damage prevention, water pollution prevention, wildlife habitat and agricultural values.

§ 185-171. Definition.
The Wetlands Overlay District shall consist of coastal wetlands, defined as salt marshes bordering on tidal waters, and freshwater wetlands, defined as those areas of 1/2 acre or greater, that are inundated or saturated with surface and/or ground water at a frequency or duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. The boundaries of the Wetlands Overlay District are generally shown as Coastal Wetlands, Freshwater Wetlands or Hydric Soils on that map titled "Wetlands Area Map" (Town of Barrington, Rhode Island Comprehensive Community Plan) and filed at the office of the Building Official. In the event that there is a conflict in the boundary of this District between the written definition above and the map, the written definition shall prevail.

§ 185-172. Prohibited uses.
The following activities are prohibited in, or within 100 feet of, the Wetlands Overlay District:
A. The discharge or introducing of any organic or inorganic chemical or biological pollutants.
B. The storage of any hazardous, toxic or infectious materials or wastes.
C. The placing or depositing of any solid waste or debris.
D. The discharging of any effluent creating a thermal gradient deleterious to indigenous plants, fish or wildlife.

§ 185-173. Application procedure.

A. Any use that is not specifically prohibited in this Article or under any other applicable law or regulation, and which is allowed in the underlying zoning district, but meets the applicability requirements of § **185-169**, is allowed in the Wetlands Overlay District, or within 100 feet thereof, only as a special use pursuant to the provisions of Article **XIV** of this chapter.

B. All applications to the Zoning Board of Review for a special use permit under this Article shall be accompanied by a site plan which delineates the boundary of the wetland, as defined in § **185-171**, on the subject property.

C. All applications shall be referred to the Barrington Conservation Commission, who shall review the application and submit a report and recommendations thereon to the Zoning Board of Review prior to the hearing on the application. The Conservation Commission shall visit the site of the proposed activity and, in their report to the Zoning Board, recommend one of the following:
   (1) Approval of the site plan as submitted.
   (2) Approval of the site plan conditioned on changes as listed.
   (3) Disapproval of the site plan and the reasons therefor.

D. In reviewing the site plan, the Conservation Commission may require that the wetland boundary be delineated by a wetland biologist or other qualified person according to current standards for such delineation as established by the state Department of Environmental Management.

§ 185-174. Development standards.

The Zoning Board of Review may grant a special use permit only if it determines, taking into full consideration the report of the Conservation Commission, that the application minimizes, to the degree possible, any negative impacts to the wetlands values described in § **185-170**, and meets the following development standards:

A. All new structures and expansions, paved areas and land disturbances will be set back at least 100 feet from the wetland edge.

B. The proposed project will not obstruct floodways in any detrimental way, or reduce the net capacity of the site and adjoining properties to retain floodwaters.

C. The proposed project will not cause any sedimentation of wetlands, and will include all necessary and appropriate erosion and sediment control measures.

D. The proposed project will not reduce the capacity of any wetland to absorb pollutants.

E. The proposed project will not directly or indirectly degrade the water quality in any wetland or water body.

F. The proposed project will not reduce the capacity of any wetland to recharge groundwater.

G. The proposed project will not degrade the value of any wetland as a spawning ground or nursery for fish and shellfish or habitat for wildlife or wildfowl.

§ 185-175. Exemption.

Any proposed construction which is no closer to the wetland than existing construction on the lot in question may be exempted from the one-hundred-foot setback requirement in § **185-174** if the Zoning Board of Review determines that there is no potential for significant environmental impact.

§ 185-176. through § 185-179. (Reserved)

2. BURRILLVILLE

Source: Burrillville RI Code of Ordinances, Chapter 30. Zoning, Article V. Special Regulations, Sec. 153. Lots containing wetlands. www.municode.com accessed July 30, 2007.

Sec. 30-153. Lots containing wetlands.

For any lot which has been determined by the Rhode Island Department of Environmental Management to contain a wetland, if the wetland area, including wetland buffer, is greater than 40 percent of the total area, the following restrictions shall apply:

(1) Only single-family housing will be allowed in all residential zones;

(2) All commercial and manufacturing uses must be sewered;

(3) Each lot shall have a minimum buildable area of 12,000 square feet excluding wetland and wetland buffer zone as defined by the Wetland Act of the State of Rhode Island;

(4) No individual sewage disposal system (ISDS) shall be located:

a. Within 200 horizontal feet of a "fresh water wetland" as defined in G.L. 1956, § 2-1-20, as amended.

b. Within 200 horizontal feet of a "river" as defined in said G.L. 1956, § 2-1-20, as amended.

3. CHARLESTOWN

Source: Charlestown RI Code of Ordinances Chapter 218. Zoning, Article XV. Performance Standards, Sec. 86. Water Bodies. www.generalcode.com accessed July 31, 2007

§ 218-87. Water bodies.

A. Generally. No facility designed to leach liquid wastes into the soil shall be located in areas outlined below, except by the granting of a special use permit. Exception: The repair or alteration of an existing waste disposal system. [Amended 9-13-2004 by Ord. No. 263]

(1) Within one hundred feet of a boundary of a fresh water or coastal wetland as defined by Rhode Island General Laws §§ 2-1-14 and 2-1-20.

(2) That area of land within two hundred feet of the edge of any flowing body of water having a width of ten feet or more and that area of land within one hundred feet of the edge of any flowing body of water having a width of ten feet or less; and

(3) That area of land within one hundred feet of the edge of any intermittent stream; and

(4) The area of land defined as a one hundred year flood hazard boundary indicated by Zone A or Zone V on the official Flood Insurance Rate Maps of the Town of Charlestown prepared by the Federal Emergency Management Agency and dated September 30, 1995 and any and all revisions thereto.

4. COVENTRY

Source: Coventry RI Zoning Regulations, Article 9. Supplementary Regulations, Section 925. Waterbodies. www.town.coventry.ri.us/zoningregs.pdf accessed July 31, 2007.

Section 925 Water Bodies.
A. No disposal trench or bed, cesspool, seepage pit or other facility shall be located:
1. Within seventy-five (75) feet of a fresh water wetland, stream, river, pond or lake as defined in Rhode Island General Law, Title 2, Chapter l, as amended, except that the required set backs shall not be considered.
2. Within seventy-five (75) feet of the flood water source if such facility is located on a "Flood Plain" as defined in Rhode Island General Law, Title 2, Chapter l.
B. No structure may be erected within fifty (50) feet of any fresh water wetland, stream, river, pond or lake except sheds, for the storage of boats and accessories, piers and similar structures.

5. EXETER

Source: Exeter RI Code of Ordinances, Appendix A. Zoning, Article II. Zoning District Use Regulations, Sec. 5. Development Plan Review, Subsection 2. Performance and Design Standards, *Part 16 (proper title for subsection of subsection.)* Water bodies

2.5.2.16. Water bodies.
Whenever situated in the whole or in part, within 300 feet of any pond, lake, river or other freshwater wetland (as defined by RIDEM), the proposed project shall not adversely effect the quality of such body of water or unreasonably affect the shoreline of such body of water. There will be no disturbance of soil within 100 feet of the outer edge of a wetland (as defined by RIDEM).

Source: Exeter RI Code of Ordinances, Appendix A. Zoning, Article II. Zoning District Use Regulations, Sec. 5. Development Plan Review, Subsection 2. Performance and Design Standards, *Part 14 (proper title for subsection of subsection.)* Wastewater disposal

2.5.2.14. Wastewater disposal.
The planning board shall require a total nitrogen removal of 50 percent at the treatment unit before discharge to the wastewater disposal system that is located within the groundwater protection zone as described in section 7.3 of the zoning ordinance. This same requirement may apply for sewage disposal systems located within a wellhead protection area. The applicant shall also determine any potential impacts from a proposed wastewater disposal system to surface [water] and groundwater. In addition, the potential impacts to adjacent public or private wells shall be assessed. An operation and maintenance plan shall be developed to ensure a regular inspection and maintenance of the wastewater disposal system. The Rhode Island Handbook for Inspection of Operating Septic Systems shall be used as guidance for operation and maintenance.

6. FOSTER

Source: Foster RI Zoning Ordinance, Article 6. Supplementary Regulations, Section 6. Sewerage Disposal.

Section 6. Sewerage Disposal

{tc \l2 "Section 6. Sewerage Disposal**}**A shallow surface leaching field following a septic tank shall be located at least one hundred feet (100') from a dug well or from a drilled well. No portion of the leaching field shall be closer than one hundred feet (100') to the property line except where the property borders a public road in which case the distance to the road line may be reduced to sixty feet (60') .

A cesspool or seepage pit shall be located at least one hundred fifty feet (150') away from a well and at least one hundred fifty feet (150') from the property line except where the property borders a public road in which case the distance from the road line may be reduced to one hundred ten feet (110'). Any sewerage disposal system designed to leach or otherwise dispose wastes into the soil shall be located at least two hundred feet (200') from any pond, stream, spring or brook.

Source: Foster RI Zoning Ordinance, ARTICLE IX. SITE PLAN REVIEW, Section 8. Site Plan for Commercial and Industrial Development, F. Performance standards, 17. Waterbodies

17. Water Bodies

Whenever the proposed development is situated, in whole or in part, within three hundred feet (300') of any pond, lake, river or other freshwater wetland, it will not adversely affect the quality of such body of water or unreasonably affect the shoreline of such body of water. There will be no disturbance of soil within one hundred feet (100') of the outer edge of a wetland.

7. JAMESTOWN

Source: Jamestown RI Code of Ordinances, Chapter 82. Zoning, Article 3. Application of District Regulations, Sec. 308. Setback from freshwater wetlands. www.municode.com accessed July 31, 2007.

Sec. 82-308. Setback from freshwater wetlands.

A. No sewage disposal trench, drain field, bottomless effluent filter, nor any component of a system designed to leach liquid wastes into the soil shall be located within 150 feet from a freshwater wetland edge, excluding the state designated perimeter wetland and riverbank wetland. For the purposes of this section, the freshwater wetland edge shall be the RIDEM verified edge of wetland. If the wetland is not on the subject property and in the absence of RIDEM verified wetland mapping on the adjacent property,then best available mapping should be utilized, as determined by the building official.

B. *Requests for dimensional variances.* Application may be made to the zoning board of review for a dimensional variance seeking relief from the setback requirement contained in this section. All such applications shall be first referred to the planning commission for development plan review for an advisory opinion, per the requirements for development plan outlined in section 82-314 C. However, where the applicant is requesting less than 25 percent relief the town planner shall administratively process the application for recommendation to thezoning board of review. The planning commission and/or town planner and the zoning board shall consider the following minimum development standards:
In addition to the standards contained elsewhere in this section and in article 6 hereof the applicant shall demonstrate that the implementation of the proposal:

1. Will not degrade the quality of groundwater or any wetland or surface water body, either directly or indirectly, on site or off site;

2. Will result in the least site disturbance and removal of vegetation as possible, every attempt shall be made to site the wastewater treatment system and the associated dwelling as far as possible from the wetland edge;

3. Will not obstruct floodways or reduce the net capacity of the site to retain floodwaters;

4. Will not cause any sedimentation of wetlands, and will include all necessary erosion and sediment control measures; plans for erosion and sediment control and stormwater management shall be completed which meets standard requirements for such plans and also includes:
a. The limits of disturbance during construction including areas to be cleared and/or graded, construction easements, temporary stockpiles and material/equipment storage areas, and protection of individual trees and groups of trees to avoid construction injury by fencing off trees at the drip line. In critical areas the limits of disturbance will be fenced off in the field.
b. A plan for revegetation, stamped by a landscape architect of wetland buffers, slopes and erodible areas.

5. Will not reduce the capacity of any wetland to absorb pollutants;

6. Will not degrade the recreational or educational value of any wetland or water body;

7. Will not reduce the capacity of any wetland to recharge groundwater; and

8. Will not degrade the value of any wetland or water body as a spawning ground or nursery for fish and shellfish, or habitat for wildlife and wildfowl. In considering the above, the cumulative impact of all land within a 500-foot radius must be addressed. Where vernal pools are found, the applicant will identify mitigating measures to protect such habitat.
Note: High water table ordinance has other restrictions related to hydric soils and marginal sites. See Town website or Municode (2011)

Source: Chapter 82 - Zoning, Code of Ordinances of the Town of Jamestown, RI. High Groundwater Ordinance http://www.jamestownri.net/plan/hgwt.html Accessed October 21, 2013.

Sec. 82-314. High ground water table and impervious layer overlay district.
This district encompasses specific areas of the town as shown on the attached map depicting the High Ground Water Table and Impervious Layer Overlay District where natural physical limitations render the land unsuitable for development without restrictions. These are areas where non-conforming lots predominate, no public sewer and water are available, and the water table is within four feet below the original grade or where the depth to impervious layer is within five feet below original grade. These conditions create severe limitations for development and require special design and/or infrastructure in order to be safely developed. Lots 40,000 square feet or greater are exempt from this section.

The purpose of this district is to invoke development standards for development within these areas. Applications for development meeting these development standards may be reviewed administratively. The district shall be broken into two sub-districts.

Sub-district "A" shall consist of those lots where the seasonal high ground water table has been determined, to be less than or equal to 18 inches or the impervious layer is less than or equal to 42 inches below the original grade.

Sub-district "B" shall consist of those lots where the seasonal high ground water table has been determined to be greater than 18 inches and equal to or less than 48 inches or the impervious layer is - greater than 42 inches and up to and including 60 inches - below the original grade.

The decision as to whether a particular lot is located in either sub-district "A" or sub-district "B" shall be made by the zoning enforcement officer based on evidence the Town determines to be sufficient and/or which is submitted to the Town by a RIDEM Class IV Soil Evaluator engaged by the lot owner or a potential developer of the lot. A submission to the zoning enforcement officer shall include all of the results of examination or testing conducted on the lot and shall be accompanied by a written representation by the Soil Evaluator that no such results are being withheld. Where the examination and/or testing of multiple areas of a lot yield different results, the zoning enforcement officer shall make a determination: (1) that the lot is in sub-district "A" if any of the multiple areas examined or tested meet the sub-district "A" criteria; (2) if the lot is not in Sub-district "A", that the lot is in sub-district "B" if any of the multiple areas examined or tested meet the sub-district "B" criteria; or, (3) if none of the multiple areas examined or tested meet either the sub-district "A" or the sub-district "B" criteria, that the lot is not in the Overlay District.

For any development in sub-district A and for any development in sub-district B which includes the construction of a new dwelling or which requires a septic suitability determination from the Department of Environmental Management, the number and location of test holes shall be in accordance with the following Table.

Criteria for testhole location within Subdistricts A and B

Lot Size (s.f.)	# of Testholes	Criteria for testhole location (# indicates testholes in that location)				
		within 25' of ISDS leachfield	within 10' of building foundation	within footprint of building foundation	evenly spaced over remaining area	central to the remaining area
0-7,200	3	2*		1		
7,201-14,400	4	2*		1		1
14,401-21,600	5	2*	2**			1
21,601-39,999	6	2*	2**		2	

* minimum 10 ft. apart

For Development in sub-district B which does not involve a new dwelling and which does not require a septic suitability determination from the Department of Environmental Management, a single test hole in the area of the proposed development shall be required, but such development may be relieved by the zoning enforcement officer after review with the town planner and the town engineer of any test hole requirement upon presentation of existing water table and impervious layer data.

A. ***Prohibited uses.***

The following activities are prohibited:

1. In sub-district A:

a. The installation of basements associated with either new construction or additions to existing construction where the finished or unfinished level of the basement floor is within 12 inches of the seasonal high ground water table

b. In-ground swimming pools.

2. In sub-districts A and B:

a. The installation of subsurface drains designed to intercept and lower the groundwater table for the installation of an ISDS.

b. Standard footing and stemwall foundations below the seasonal high-groundwater are prohibited.

B. ***Development within sub-district B.***

Development within sub-district B shall comply with the development standards below in Section 82-314. B. 1.- 6. Development proposals that meet these standards will be reviewed administratively by the zoning enforcement officer after review with the town planner, and the town engineer. The town may engage professional assistance to assist with the professional review of applications and advise with the applicant responsible for such cost. Applications failing to meet one or more of the development standards in 1. – 6. below shall require a special use permit per article 6 and meet the development standards for sub-district A in section 82-314 C. 1 - 4 below.

1. The slab, not including pilings/footings, of a dwelling shall have a 12-inch separation between the bottom elevation of the structure and the seasonal high groundwater table. All Foundation elements below the seasonal high-groundwater table shall be engineered to allow for free passage of water.

2. All new ISDSs and ISDSs requiring major repair shall have been approved by RIDEM and provide for either denitrification or enhanced pathogen removal. Denitrification or pathogen treatment levels, measured at the outlet of the treatment unit prior to discharge to a drainfield shall achieve:

a. Minimum total nitrogen removal of 50 percent and a reduction to less than or equal to 19mg/1 total nitrogen.

b. TSS and BOD5 shall be equal to or less than 10mg/l each.

c. For pathogen removal fecal coliform treatment achieving minimum fecal coliform removal to less than or equal to 1,000 fecal coliform MPN/100 ml.

Approved technologies shall be those listed by the department of environmental management and capable of achieving the above treatment levels.

3. Where RIDEM approves the separation between a leach field and a potable well which is less than 100 feet, the ISDS design shall provide for microbiological treatment of the effluent which shall result in a final concentration of fecal coliform of less than or equal to 200 mpn/100ml.

4. All ISDS and any well serving a new dwelling shall be located on the same lot as the structure it/they serve.

5. Total impervious surface coverage shall not exceed 15 percent. Elevated structures with roofs allowing for groundwater infiltration that are less than 120 square feet in size are exempt when calculating the amount of impervious surface coverage in sub-district B or sub-district A.

6. Proposals shall provide storm water controls demonstrating that the increase in the difference between the predevelopment and post development volume of runoff from a 10-year 24-hour storm will be contained on site. For the purposes of this calculation the following table will be used:

Percent of Rainfall Which Becomes Runoff

Bare soil	40%
Grassland	35%
Cultivated	30%
Timber/Forest	15%
Lawn 0--5% slope	15%
>5% slope	30%
Roofs	95%
Paved areas (conc, asphalt, brick etc)	85%
Gravel surfaces (constructed)	60%

There shall be a ten-foot separation between a leach field and the edge of any storm water infiltration system.

Elevated structures with roofs allowing for groundwater infiltration and structures less than 120 square feet in size are exempt from this standard.

C. ***Development within sub-district A***

Any development within sub-district A shall, after review by the Planning Commission require a special use permit per article 6 from the zoning board of review, in accord with the Special Use Permit standards contained in this section.

A development plan shall be filed with the zoning enforcement officer and shall be at a suitable scale, to show the following information:

• Property boundary lines, with area and dimensions of the property to be developed;

• Vicinity plan showing adjacent or nearby properties, uses, ISDS's, wells, wetlands, streams or surface water reservoirs within a 500-foot radius;

• Topography map of the property;
• Site specific soils map of the property;
• Storm water management plan;
• Wetlands map (wetlands on site shall be verified by DEM);
• The applicant shall provide a copy of the RIDEM ISDS approval; and
• The planning commission may require additional information that they determine to be necessary to act on the application

The applicant shall also indicate proposed use and development. For the purposes of this section, development shall be defined as any manmade change to improved or unimproved real estate, including but not limited to buildings or other structures, mining, dredging, filling, grading, paving, excavation, or drilling operations upon the lot.

1. Criteria for the issuance of Special Use Permit.
The Special Use Permit criteria contained in this section are implemented in recognition of:

• The natural characteristics of the land, including its suitability for use based on soil characteristics, geology, topography and susceptibility to surface and groundwater pollution;

• The values of unique or valuable natural resources and features;

• The availability and capacity of existing and planned public and/or private services and facilities;

• The goals and pattern of land use contained in the Jamestown Comprehensive Plan;

• The need to protect the island's vulnerable and limited water supplies by maintaining maximum groundwater recharge of rainfall and treated wastewater to replenish drinking water supplies and avoid salt water intrusion;

• The need to prevent further impacts and restore impaired areas where intense development and water use, in combination with limited land development suitability, have resulted in localized flooding, incidents of groundwater contamination, low well yields, and salt water intrusion.
• All efforts should be made to maintain original grade while minimizing cut and fill. All grading and filling should benefit the Stormwater management plan for the site and surrounding area.

All proposals for the granting of special use permit under this article 82-314 C shall, in addition to the requirements of article 6 hereof, meet the following criteria and, in addition the standards outlined in 83-314. B. 1-6, which ever are greater:

2. Subsurface structures.
• The design of the subsurface structures shall minimize the problems and hazards created by the seasonal high ground water table and/or impervious layer and result in the least grading, filling, or other disturbance to the site and to any wetland buffer as possible. Any foundation elements below the seasonal high-groundwater table shall be engineered to allow for free passage of water

• The seasonal high ground water table will not damage, interfere or reduce the potential for the proper functioning of the subsurface structure.

• The subsurface structure will not pose any threat to public health or safety or to the water resources of the town, including groundwater

• The siting and design of the ISDS and dwelling it serves shall result in the least disturbance to the site and to the wetland buffer as possible.

3. Individual sewage disposal systems.

• All proposals relating to the installation of an ISDS shall insure that the system, once in use, will not pose a threat to the public health and safety nor cause any degradation of ground or surface water quality, including adverse effects due to cumulative impact.

• All proposals relating to the installation of an ISDS shall demonstrate that the design, siting and selection of technologies for the treatment and dispersal units are the most appropriate for the site.

• All proposals relating to the installation of an ISDS shall demonstrate that the project has been designed so as to minimize combined impacts related to the ISDS, storm water runoff, and potential disturbances to wetland buffers.

4. Storm water management.

• The applicant shall demonstrate that runoff control measures have minimized site disturbance, maximized nonstructural controls, and have not adversely affected subsurface flow of groundwater.

• All proposals shall show, to the greatest extent possible that the proposed site improvements shall minimize fill and grading, and maintain, to the greatest extent possible, the existing overland flow of runoff from the site to surrounding areas.

• All storm water management measures will maintain the water quality function of wetland buffers and avoid any encroachment that might impair the wetland's pollutant removal capacity such as directing channelized flow to the wetland, reducing subsurface flow through the buffer, increasing sedimentation, reducing shade cover, or any alteration that would result in fluctuating water levels that negatively impact sensitive habitat.

Percent Maximum Impervious Cover Table for Sub-District A Lots *

Water Table	0 - 10 "	10.1 - 14"	14.1 - 18"	Greater than 18”
Impervious Layer				
0 - 20"	8%	9%	10%	11%
21 - 31"	9%	9%	10%	12%
32 - 42"	9%	10%	10%	13%
Greater than 42”	9%	10%	10%	see Sub-District B

***** Where the examination and/or testing of multiple areas of a lot yield different results as to the Water Table and/or Impervious Layer, the percentage of maximum impervious cover for the lot shall be calculated on the most restrictive result. No lot in Sub-District A shall be allowed impervious cover in excess of 2,000 square feet, regardless of lot size. Freshwater wetlands shall be subtracted from total lot size prior to calculating maximum impervious cover above.

2. Variances for prohibited development in sub-district A

Applicants proposing uses prohibited pursuant to section A hereof shall, after development plan review by the planning commission, be required to obtain a use variance pursuant to

article 6 hereof. In addition to the standards contained in article 6 hereof, all applicants shall demonstrate that the proposal meets, to the greatest extent possible, all of the development standards contained in subsections B and C hereof.

1. Property boundary lines, with area and dimensions of the property to be developed;

2. Vicinity plan showing adjacent or nearby properties, uses, ISDS's, wells, wetlands, streams or surface water reservoirs within a 200-foot radius;

3. Topography map of the property

4. Site specific soils map of the property

5. Storm water management plan

6. Wetlands map (wetlands on site shall be verified by DEM); and

7. The planning commission or the zoning board may require additional information that they determine to be necessary to act on the application.

Section 4. This Ordinance shall take effect upon passage and all Ordinances or parts of Ordinances inconsistent herewith are hereby repealed.

Sec. 82-103. Definitions (adopted with Section 314**)**

Impervious surface coverage. Includes paved driveways, concrete surfaces, rooftops, basketball courts, accessory structures such as sheds, and any other surfaces that restrict water from infiltrating into the ground. Gravel driveways, walkways and patios constructed using permeable pavements are not included as impervious areas.

Impervious layer. Consists of category 9 or 10 soils as defined by the Rhode Island Department of Environmental Management (RIDEM) and shall be as determined by a RIDEM licensed Class IV Soil Evaluator

Major repair (of an ISDS). Any work performed on an ISDS, excluding minor repairs a system.

(75) *Minor repair (of an ISDS).* Any work performed on an ISDS involving the repair, replacement or upgrade of the building sewer, septic tank or distribution box and/or the installation of inspection ports and/or effluent filters on septic tanks.

(85) *New individual sewage disposal system (ISDS).* The installation of an ISDS on property where none had previously existed.

(92) *Original grade.* The level of the top of the geologically deposited mineral surface. This specifically excludes soil deposits which have been placed as fill and/or do not exhibit soil structure.

(104) *Seasonal high-ground water table.* The seasonal high ground water table shall be as determined by soil evaluation methodology found in the most current RIDEM ISDS rules and

regulations and shall be ~~as~~ determined by a RIDEM Licensed Class IV soil evaluator. RIDEM depth to verified water table shall be used as the seasonal high-groundwater table when available.

(126) *Wetland, freshwater*. Those lands defined in G.L. 1956, § 2-1-20 and in any subsequent amendments hereto, and in any regulations propounded by the Rhode Island Department of Environmental Management and/or Rhode Island Coastal Resources Management Council and subsequent amendments thereto, including but not limited to marshes, swamps, bogs, ponds, rivers, river and stream flood plains and banks, areas subject to storm flowage, emergent and subemergent plant communities in any body of fresh water, special aquatic sites, vernal pools.

Summary of the High Groundwater Ordinance
Source: http://www.jamestownri.net/plan/hgwt.html

In June 2001, The Jamestown Town Council directed the Planning and Conservation Commissions to review the Zoning Ordinance and consider enacting a high water table ordinance to provide local jurisdiction over development on lots where the subsurface water table is less than (3) feet. The ordinance was adopted by Council in 2003 and amended in 2004, 2005 and 2007.

Main Focus of the High Groundwater Ordinance:

- Protect groundwater by denitrification, pathogen or microbiological treatment
- Reduce Impervious surface coverage
- Provide adequate stormwater controls
- Protect wetlands and their buffers
- Not to impede groundwater flow

8. LITTLE COMPTON

Source: Little Compton RI Code of Ordinances Chapter 14. Zoning, Sec. 5. Supplementary Regulations, Subsection 8. Water bodies and Wetlands. http://www.little-compton.com/laws/laws.htm accessed July 31, 2007.

14-5.8 Water Bodies and Wetlands.

The following are minimum requirements mandated by this chapter. All other requirements of any other Town agency or commission, the State of Rhode Island, or of the United States of America shall also be met.

a. *New Subdivisions: Setbacks from Water Bodies and Wetlands.* For all lots created after the effective date of this subsection, no building, structure or septic system may be located within one hundred (100) feet of any freshwater or coastal wetland as defined by the Rhode Island Department of Environmental Management and/or the Coastal Resources Management Council. Administrative subdivisions shall be excluded from this provision. For the purposes of this section the term freshwater wetlands excludes from the definition, Areas Subject to Storm Flowage (ASSF) and the land area within fifty (50) feet of any freshwater wetland,

defined by DEM as the perimeter wetland and commonly referred to as the wetland buffer zone. Boat sheds, piers, bathhouses, cabanas, fences and similar structures are exempt from these setback provisions.

b. *Lots of Record: Administrative Approval.* In order to minimize the impact to the wetland on lots of record existing as of the effective date of this subsection, no building, structure or septic system shall be installed within the 100-foot wetland buffer without first obtaining an administrative approval from the Building Official. The Building Official may issue an administrative approval, and where applicable a building permit, for a septic system, building or structure between the 50-foot RIDEM wetland buffer and the 100-foot Little Compton wetland buffer, where due to site constraints and/or the configuration of the lot, the septic system, building or structure cannot meet the requirements of paragraph a. above. Prior to issuing the administrative approval or building permit, the Building Official must determine that the following standards have been met. Boat sheds, piers, bathhouses, cabanas, fences and similar structures are exempt from these setback provisions. All administrative approvals shall be posted at Town Hall for a period of ten (10) days.

1. Septic Systems.

(a) The septic system design has been approved by RIDEM and once in use, will not pose a threat to the public health and safety nor cause any degradation of ground or any surface water quality, including adverse effect due to cumulative impact.

(b) An enhanced onsite wastewater treatment system, approved by RIDEM, must be installed in order to remove either increased pathogens and/or nitrogen as determined on a case by case basis by the Building Official based upon the adjacent wetland resource.

(c) The type of septic system to be installed must be accepted by the Rhode Island Onsite Wastewater Training Center or RIDEM as capable of meeting the following performance standards:

(1) Denitrification. Minimum total nitrogen removal of fifty (50%) percent or a reduction to 19mg/l, and biochemical oxygen demand and total suspended solids each reduced to less than or equal to 30 mg/l; all as measured at the outlet of the treatment unit prior to discharge to a drain field.

(2) Pathogen. Reduces fecal coliform to less than or equal to 1,000 fecal coliform counts/100ml and reduces biochemical oxygen demand and total suspended solids to less than or equal to 10 mg/l as measured at the outlet of the treatment unit prior to discharge to a drain field.

(d) The septic system must be located as far from the water body, stream, river, shoreline, coastal/tidal wetlands and/or freshwater wetlands as is practical in the context of the lot. The RIDEM-verified wetland edge must be shown on the site plan.

(e) Where, due to site constraints and/or lot configuration, it is impossible to locate the septic system both one hundred (100) feet from a drinking water well and one hundred (100) feet from the wetland, the distance from the septic system to the well shall be maximized even if it means constructing the septic system closer to the wetland.

2. Buildings, Structures and ISDS.

(a) The applicant has provided an erosion and sediment control plan that also depicts the demarcation of the undisturbed wetland buffer.

(b) There shall be no net increase in off-site run-off.

(c) Where, due to site constraints and/or lot configuration, it is impossible to locate both the septic system and the house one hundred (100) feet from wetland, the distance from the wetland to the septic system shall be maximized.

c. *Failed Systems.* Persons with a failed ISDS as defined by RIDEM, within the 100-foot wetland buffer shall notify the Building Official prior to the repair or replacement of the system. System repairs that include replacement of the drainfield shall be subject to the following performance standards:

1. An enhanced onsite wastewater treatment system, approved by RIDEM, must be installed in order to remove either increased pathogens and/or nitrogen as determined on a case by case basis by the Building Official based upon the adjacent wetland resource.

2. The type of ISDS to be installed must be accepted by the Rhode Island Onsite Wastewater Training Center or RIDEM as capable of meeting the following treatment standards. Discharge to a shallow drainfield shall be required where technically feasible.

Denitrification. Minimum total nitrogen removal of fifty (50%) percent or a reduction to 19mg/l, and biochemical oxygen demand and total suspended solids each reduced to less than or equal to 30 mg/l; all as measured at the outlet of the treatment unit prior to discharge to a drain field.

Pathogen. Reduces fecal coliform to less than or equal to 1,000 fecal coliform counts/100ml and reduces biochemical oxygen demand and total suspended solids to less than or equal to 10 mg/l as measured at the outlet of the treatment unit prior to discharge to a drain field.

3. The owner is encouraged to locate the septic system as far away from the wetland as practical within the context of the lot.

d. *ISDS Alterations and Upgrades.* An ISDS alteration or upgrade within the 100-foot buffer, required because of improvements to the home and associated with a RIDEM System Suitability Determination, must comply with the performance standards in paragraph c. above. In addition the applicant must provide a soil and erosion control plan.

e. *Technical Review and Assistance.*

1. The contracted services of professionals with expertise in enhanced onsite wastewater treatment systems, soils, and site plan review shall be made available to the Building Official by the Town on an as needed basis.

2. A list and schematic drawings of treatment systems that meet the treatment standards of subsection 14-5.8b,1(c) of this subsection shall be kept on file in the Building Official's Office.

3. Guidelines for determining whether an enhanced nitrogen and/or enhanced pathogen removal system is required shall be kept on file in the Building Official's Office. In general, denitrification will be required only when the system is within the buffer of a coastal wetland.

f. *Maintenance.* All enhanced onsite wastewater treatment systems shall be regularly inspected and maintained. A maintenance contract shall be required on any system with mechanical components such as pumps, timers and alarms. The owner shall provide a copy of said contract and subsequent renewals to the Building Official

9. MIDDLETOWN

Source: Middletown RI Zoning Ordinance, Article 7. Supplementary Regulations, Sec 707. Setback from Wetlands or Rivers. http://www.middletownri.com/townclerk accessed July 31, 2007; updated 10/21/13 http://www.middletownri.com/government/1/Building-Zoning-Department

§ 707 Setback from Wetlands or Rivers.

No disposal trench, disposal bed, cesspool, seepage pit, septic tank, septic field or other facility designed to leach liquid wastes into the soil shall be located:

(A) Within 100 feet of a fresh water wetland, as defined in R.I. Gen. Laws Title 2, Chapter 1, as amended, excluding from such definitions:

(1) That area of land within 50 feet of the edge of any bog, marsh, swamp or pond; and

(2) That area of land within 200 feet of the edge of any flowing body of water having a width of ten feet or more; and

(3) That area of land within 100 feet of the edge of any flowing body of water having a width of less than ten feet during normal flow; and

(4) That area defined as a floodplain in R.I. Gen. Laws Title 2, Chapter 1.

(B) Within 100 feet of a river as defined in R.I. Gen. Laws Title 2, Chapter 1.

(Ord. passed 10-30-06)

10. NARRAGANSETT

Source: Narragansett RI Code of Ordinances, Appendix A. Zoning, Section 4. Overlay Districts, Subsection 3. Coastal and Freshwater Overlay District, Paragraph 4. Development standards.

(4) ***Development standards.*** Any proposed use or development in a coastal or freshwater wetlands overlay district must comply with the following development standards:

a. For lots platted prior to August 7, 1989, in areas serviced by both sewers and water, structures, roads and land disturbance shall be set back 100 feet from the wetland edge;

b. In all other areas, sewage disposal systems and land disturbance shall be set back 150 feet from any wetland edge except for areas subject to storm flowage and areas subject to flooding, which shall have a 50-foot setback;

Source: Narragansett RI Code of Ordinances, Appendix A. Zoning, Section 4. Overlay Districts, Subsection 4. Coastal Resources Overlay District, Paragraph c. Development standards, Subparagraph 8.

(8) Development standards. Except for foot paths and selective thinning of vegetation for view corridors as approved by CRMC, a 150-foot wide natural undisturbed buffer drawn from the inland edge of the coastal feature shall be required for "areas of critical concern" and "self sustaining lands" as these areas are defined by CRMC, and lands adjacent to Wesquage Pond and other poorly flushed estuarine areas. A 100-foot wide buffer is required for other areas fronting on other natural shoreline features in the coastal resource overlaydistrict. Within these buffer areas all structures, roads, individual sewage disposal systems are prohibited, except as allowed by section 16 of this ordinance.

11. NEW SHOREHAM

Source: New Shoreham, RI, Code of Ordinances, Appendix E, Zoning Ordinance, Sec. 506. Individual Sewage Disposal Systems. http://clerkshq.com/default.ashx?clientsite=newshoreham-ri Accessed 10/21/13

Section 506. Onsite Wastewater Treatment Systems (OWTSs)

A. *Findings and Purpose.*

1. *Findings.* The provisions of this Ordinance are based upon the following findings.

a. New Shoreham's groundwater and surface water provide important natural and recreational resources, the protection of which is vital to the Island's economic and environmental well-being.

b. In 1984, The United States Environmental Protection Agency (USEPA) designated all of New Shoreham a Sole Source Aquifer (SSA) under the authority of the Safe Drinking Water Act. Certain land uses, and improperly functioning Onsite Wastewater Treatment System (OWTS) poses a threat to the quality and quantity of the Sole Source Aquifer.

c. Block Island's aquifer is integrally connected with surface waters, streams, wetlands, the coastal ponds and the Island's limited potable water supply. Groundwater generally flows towards and discharges to streams and ponds. Damage to any one component of this system could result in damage to another.

d. Location of an OWTS in close proximity to wetlands and waterbodies or in constrained soils such as those with high water tables, seasonal flooding, and excessive or restrictive permeability, negatively affects the ability of an OWTS to treat wastewater.

e. An OWTS, when improperly designed, installed, maintained or located may contaminate surface water and groundwater.

f. Contamination of the aquifer and related surface water poses a serious threat to the health, safety and financial well being of the Town.

g. According to the United States Geological Survey (USGS) report 94-4096 as amended, Hydrogeology and Water Resources of Block Island, RI, water conservation and protection on the Island is of vital importance. Availability of fresh drinking water depends on:

(1) Number, location, depth and pumping rate of wells;

(2) Volume of groundwater discharged to the ocean by the wastewater treatment facility;

(3) Volume and distribution of water discharged by an OWTS;

(4) Effect of OWTSs and other land uses on groundwater and surface water quality.

h. Water treated by the wastewater treatment facility is discharged offshore and is presently unavailable for recharging the Island's water supplies.

i. The Comprehensive Plan states that any capacity expansions of the Town's wastewater treatment facility should be used to support the land use objective of a compact town center. Outside of the town center OWTSs will continue to be the principal means of wastewater management.

j. The Town Comprehensive Plan establishes a water quality protection goal of maintaining existing high water quality for maximum protection of the Island's limited water supplies and vulnerable unique natural habitat.

k. In areas outside of the designated sewer area, OWTS maintenance, repair or replacement of a failing OWTS, water conservation, waste flow reduction measures, use of site appropriate, enhanced on-site wastewater treatment and land use and buffer requirements, all help to make OWTSs an efficient and environmentally sound method of wastewater treatment. Enhanced on-site wastewater treatment also results in less site disturbance, a goal of the New Shoreham Comprehensive Plan.

l. Even properly functioning OWTSs, in soils typical of Block Island, remove only an estimated ten (10) to twenty (20) percent of associated nitrogen. Excess nitrates contaminate drinking water and may indicate the presence of other contaminants. In salt water nitrogen results in habitat loss through the destruction of eel grass beds and eutrophication. Poorly flushed estuarine coves exacerbate the nitrogen problem.

m. Water Quality Impacts of Changing Land Use on Block Island (URI Cooperative Extension, 1996), assesses potential changes in pollutant inputs given projected growth. This study also demonstrates the beneficial impact of various wastewater management options. It demonstrates that existing water quality can be maintained only if there is enhanced treatment of the OWTS effluent for certain areas of existing and future construction.

n. In recent years, OWTS technology for enhanced treatment of wastewater has progressed rapidly, providing for improved and cost-effective nutrient and pathogen removal. Enhanced treatment is needed to reduce nitrogen in wastewater and to enhance pathogen removal, particularly in high water table areas and areas with either excessively permeable or slowly permeable soils.

o. Innovative dispersal trench options such as shallow, pressurized dispersal trenches into which treated wastewater is discharged provide additional cost-effective opportunities for nutrient and pathogen removal in biologically active near-surface soils and require minimal site disturbance.

2. *Purpose.* The uses and regulations contained in this section of the Ordinance are intended to protect the health, safety and general welfare of the of the Town's residents and visitors and to prevent any degradation to New Shoreham's surface water or groundwater. This will help to ensure adequate effluent treatment by controlling pathogen and nutrient inputs to public and individual wells, shellfish beds, groundwater and surface water. It establishes minimum standards for the proper location, design, construction and maintenance of onsite wastewater treatment systems (OWTSs) used for the treatment and dispersal of wastewater. Together with the Wastewater Management Ordinance it will facilitate proper OWTS design, location and maintenance, help to prevent OWTS failure, extend system longevity and reduce long-term repair costs. As per G.L. 1956, § 45-24-30 the methods of protection recognize:

a. The natural characteristics of the land, including its suitability for use based on soil characteristics, topography and susceptibly to surface water and groundwater pollution;

b. The values of unique or valuable natural resources and features;

c. The availability and capacity of existing and planned public and/or private services and facilities;

d. The goals and patterns of land use contained in the New Shoreham Comprehensive Plan.

B. *Authority.* The Town of New Shoreham, in recognizing its authority to adopt requirements that are more restrictive than the Rhode Island Department of Environmental Management (RIDEM or Department) "Rules Establishing Minimum Standards Relating to Location, Design, Construction and Maintenance of Onsite Wastewater Treatment Systems" (OWTS Rules) as promulgated by the RIDEM, in accordance with G.L. 1956, § 42-17.1-2 and The Rhode Island Zoning Enabling Act, G.L. 1956, § 45-24, hereby establishes the following requirements. These requirements shall be considered an addition to, and not a replacement for, the referenced OWTS Rules and any subsequent amendments thereto.

C. *Definitions.* Any term not defined herein, shall be governed by the definition as it appears in the current OWTS Rules.

"Alternative OWTS Component" means any part of an OWTS that does not meet the design or construction requirements as provided by the OWTSs Rules, but has been demonstrated through field testing, calculations and other engineering evaluations to be equal to, or provide the equivalent performance of any part of an OWTS within the OWTSs Rules or to enhance or facilitate treatment, maintenance, longevity or efficiency of an OWTS, and for which a certification from RIDEM has been issued.

"Alternative Technology" means any OWTS technology for which design parameters are not specified in the OWTSs Rules, but has been demonstrated through field testing, calculations and other engineering evaluations to comply with performance standards consistent with the OWTSs Rules, and for which a certification from RIDEM has been issued.

"Applicant" means the owner or owners of the property or easement that is the subject of the application, or the person who holds a valid purchase and sales agreement for said property.

"Area Subject to Storm Flowage" means drainage swales and channels which lead into, out of, pass through, or connect other watercourses, and which carry flows resulting from storm events but may remain relatively dry at other times.

"Bedrock" means rock, commonly called ledge, that forms the earth's crust. Bedrock includes rotten rock.

"Bedroom" means 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:

(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 or SBC-2";

(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. Rooms located below grade that are not recognized as bedrooms by the "Rhode Island State Building Code SBC-1 or SBC-2" are not recognized as bedrooms under this ordinance.

"Blackwater" means liquid and solid human body waste and the carriage waters generated through toilet usage.

"Building Sewer" means the pipe that begins outside the building foundation wall and extends to the septic tank, the pipe that begins outside the building foundation wall and extends to the grease tank, the pipe from a grease tank to a septic tank, or the pipe carrying laundry wastes directly to a leachfield.

"Cesspool" means any buried chamber, including, but not limited to, any perforated metal tank, perforated concrete vault or covered hollow or excavation, which receives discharges of wastewater from a building sewer for the purpose of collecting solids and discharging liquids to the surrounding soil. As of December 31, 2005, the use of a cesspool is prohibited.

"Change of Use" means any change in use or occupancy of any structure or part thereof which would violate any provision of the Rhode Island State Building Code, G.L. 1956, ch. 23-27.3, as amended, or any regulation promulgated thereto without first obtaining a certificate of occupancy indicating that the structure complies with the provisions of the state building code for the proposed new use. Change of use shall also be held to mean a conversion of a seasonally used structure to a structure for year-round use.

"Coastal Shoreline Feature" means a part of the shore as categorized by the State of Rhode Island Coastal Resources Management Program using the following categories: coastal beaches; barrier islands and spits; coastal wetlands; coastal headlands, bluffs and cliffs; rocky shores; manmade shorelines; and dunes.

"Compost Toilet" means any self-contained toilet from which no liquid or solid waste materials are regularly discharged and from which a humus-like end product is produced.

"Department" or "RIDEM" means the Rhode Island Department of Environmental Management.

"Director" means the Director of the Rhode Island Department of Environmental Management or any subordinate(s) to whom the Director has delegated the powers and duties vested in him/her pursuant to G.L. 1956, chs. 46-12 and 42-17.1, as amended, or any other duly authorized Agent.

"Dispersal Trench" means a shallow ditch with vertical sides, filled with stone, in which a single perforated distribution line or other suitable distribution device is laid and over which a cover of earth is placed.

"Distribution Box" means a watertight compartment that receives effluent and distributes it in approximately equal portions to two (2) or more distribution lines leading to some type of leachfield.

"Distribution Line" means the imperforated and perforated pipe or other suitable distribution device used to disperse effluent that extends from the distribution box.

"Dosing" means the pumped or regulated flow of wastewater.

"Experimental Technology" means any OWTS technology that does not meet the location, design or construction requirements as provided by these Rules, but has been demonstrated in theory to meet the requirements of these Rules and may not be in use in Rhode Island or elsewhere as an approved technology for wastewater treatment.

"Failed OWTS" means any OWTS that does not adequately treat and disperse wastewater so as to create a public or private nuisance or threat to public health or environmental quality, as evidenced by, but not limited to, one or more of the following conditions:

(1) Cesspools are not an approved method of wastewater disposal under the OWTSs Rules and this Ordinance. All existing cesspools are considered to be substandard wastewater treatment systems. As of December 31, 2005, the use of a cesspool is prohibited, and shall be considered a failed system.

(2) Failure to accept wastewater into the building sewer;

(3) Discharge of wastewater to a basement; subsurface drain; stormwater collection, conveyance, or treatment device; or watercourse unless expressly permitted by the Department;

(4) Wastewater rising to the surface of the ground over or near any part of an OWTS or seeping from the absorption area at any change in grade, bank or road cut;

(5) The invert of the inlet or the invert of the outlet for a septic tank, distribution box, or pump tank is submerged;

(6) Pumping of the septic tank is required more than two (2) times per year;

(7) OWTS is shown to have contaminated a drinking water well or watercourse;

(8) If a septic tank, pump tank, or distribution box is pumped and groundwater seeps into it; or

(9) Any deterioration, damage, or malfunction relating to any OWTS that would preclude adequate treatment and dispersal of wastewater.

(10) Excessive solids are evident in the distribution box or distribution lines.

"Financial Surety" means a general obligation bond, revenue bond, performance bond, or any other type of financial guaranty, in fully marketable form, as evidence to the commitment of the construction of a sewer project.

"Floodplain" means that land area adjacent to a river or stream or other body of flowing water which is, on the average, likely to be covered with flood waters resulting from a one hundred (100) year frequency storm. A one hundred (100) year frequency storm is one that is to be expected to be equaled or exceeded once in one hundred (100) years; or may be said to have a one percent (1%) probability of being equaled or exceeded in any given year. Rainfall intensity data for a one hundred (100) year frequency storm are those established for New England locations by the National Weather Service.

"Foundation Drain" means any mechanical or gravity drainage system, including all porous media installed to facilitate drainage, that lowers the groundwater elevation beneath a building foundation and which has an outlet for the collected groundwater.

"Freshwater Wetland" is defined as set forth in G.L. 1956, § 2-1-20(4), as amended, and as further defined by the Department's "Rules and Regulations Governing the Administration and Enforcement of the Fresh Water Wetlands Act." The term shall further be held to include those wetland types defined by the remainder of G.L. 1956, § 2-1-20 and the wetland regulations, including, but not limited to: marshes, swamps, bogs, ponds, rivers, river and stream floodplains and banks, areas subject to flooding or stream water, including rivers and streams, and that area of land within fifty (50) feet of the edge of any bog, marsh, swamp or pond or that area within one hundred (100) feet of a flowing body of water less than ten (10) feet wide or that area within two hundred (200) feet of a flowing body of water greater than ten (10) feet in width.

"Graywater" means wastewater drained from sinks, tubs, showers, dishwashers, clothes washers, and other non-toilet sources.

"Groundwater Table" means the upper surface of the zone of saturation in an unconfined aquifer; includes a perched groundwater table.

"Holding Tank" means a closed watertight structure used to contain wastewater prior to being removed from the premises. A holding tank does not discharge wastewater to the surface of the ground or to the subsurface.

"Human Transported Material" means any materials, other than those emplaced pursuant to the OWTS Rules, including but not limited to artifacts, organic materials, soil, rock, or sediment moved horizontally by directed human activity.

"Invert" means the lowest portion of the interior of a pipe or fitting.

"Large Onsite Wastewater Treatment System" means an OWTS that meets any of the following:

(1) Any single OWTS designed to treat five thousand (5,000) gallons or more per day;

(2) Multiple OWTSs for any project on one or more parcels of land, excluding residential subdivisions, where the total design flow for the project is five thousand (5,000) gallons or more per day; or

(3) All OWTSs serving more than one (1) unit in a residential subdivision, provided that the total design flow of these OWTSs, each serving more than one unit, is five thousand (5000) gallons or more per day.

"Large Capacity Cesspool" means a cesspool that serves any non-residential facility that has the capacity to serve more than twenty (20) people per day or serves any multi-family residence or apartment building. As of December 31, 2005, the use of a large capacity cesspool is prohibited.

"Leachfield" means a group of one or more dispersal chambers or trenches designed for the final treatment and dispersal of wastewater into the underlying soil. The leachfield shall be held to mean the horizontal and vertical lines circumscribing the outermost edges including the area between the chambers or trenches and the depth to the bottom of stone.

"Linear Loading Rate" means the loading rate per linear foot of leachfield (gallons per day per linear foot) along the land's contour.

"Maintenance" means the regular cleaning of any concrete chamber, cesspool, septic tank, building sewer, distribution lines or any other component of an OWTS for the purpose of removing accumulated liquid, scum or sludge. The term, "maintenance," shall also be held to include regularly required servicing or replacement of any related mechanical, electrical, or other component equipment.

"Nitrogen reducing technology" means a wastewater treatment technology that is accepted by the Department as capable of reducing the total nitrogen concentrations by at least 50% and meeting an effluent concentration of less than or equal to 19 mg/l.

"Onsite Wastewater Treatment System (OWTS)" means any system of piping, tanks, dispersal areas, alternative toilets or other facilities designed to function as a unit to convey, store, treat or disperse wastewater by means other than discharge into a public sewer system.

"Original Ground" means those soils that have been deposited or developed by natural processes, excluding storm deposited sand in the backdune environment.

"Owner" means any person who holds legal title to any real property; or has possession or control of any real property through any agent, executor, executrix, administrator, administratrix, trustee or guardian of the estate of a holder of a legal title. Each such person is bound to comply with the provisions of these Rules.

"Person" means any individual, group of individuals, firm, corporation, association, partnership or any federal, state or municipal governmental entity.

"Private Drinking Water Well" means any manmade opening into the ground developed for the purpose of meeting a person's current potable drinking water needs provided said well does not supply a public water system. This definition shall include proposed private drinking water wells on an applicant's property and on other properties with an approved OWTS permit. Wells serving non-potable or non-drinking water needs are not considered private drinking water wells under either this Ordinance or the OWTS Rule. A well on a property that is served by a public water system is not considered a private drinking water well under the OWTSs Rule.

"Probe" means any exploratory test employing a driving rod, tool or other device to establish the depth of bedrock.

"Public Drinking Water Supply Well" or "Public Well" means any manmade opening into the ground developed for the purpose of meeting all or part of a public water system needs.

"Public Water System" means any water system that provides piped water to the public for human consumption, provided that such system has at least fifteen (15) service connections or serves an average of twenty-five (25) individuals daily at least sixty (60) days out of the year. A public water system shall include all sources and facilities involved in collecting, treating, storing and distributing the water.

"Pump Tank" means a watertight structure equipped with one or more pumps designed to discharge wastewater intermittently into a leachfield.

"Repair" means any work performed on an OWTS in order to mend or renovate a specific defect or deficiency after the failure, injury, deterioration or partial destruction of a previously existing OWTS or component thereof. A repair shall include any upgrade or modernize of an OWTS (e.g., replacement of cesspool). A repair shall not include any work performed on an existing OWTS that increases the flow capacity of the system.

"Residence" means any structure used for housing purposes, including, but not limited to, single or multiple family dwellings, duplexes, tenements, apartment buildings, residential condominiums, mobile homes, recreational vehicles or trailers.

"Restrictive Layer" means a soil horizon that is assigned to a soil category 10 as defined in Rule 15.11 of the OWTS Rules.

"Rotten Rock" means any decomposed but still coherent rock. Rotten Rock is greater than 50% coherent rock and lies above equal or more coherent rock.

"Seasonal High Groundwater Table" means the elevation of the groundwater table during that time of the year at which it is highest as determined by direct observation or by interpretation of hydromorphic features in the soil profile.

"Septage" means any solid, liquid or semi-solid removed from septic tanks, cesspools, privies, domestic wastewater holding tanks or other similar onsite wastewater treatment systems.

"Septic Tank" means a watertight receptacle which receives the discharge of wastewater from a building sewer, and is designed and constructed to permit the deposition of settled solids, the digestion of the matter deposited, and the discharge of the liquid portion into the next treatment component or distribution box.

"Septic Tank Effluent Pipe" means the gravity-flow pipe that begins at the outlet of the septic tank or other treatment tank and extends to the next treatment component or distribution box.

"Single-service articles" means tableware, carry-out utensils, and other items such as bags, containers, placemats, stirrers, straws, toothpicks, and wrappers that are designed and constructed for use one time by one individual.

"Storm Drain" means any pipe or structure designed to collect, carry and divert surface water runoff.

"Structure" means any residence (as defined herein), building, garage, shack, trailer or other permanent or semi-permanent facility, whether commercial or non-commercial in use, which is proposed to be placed or has been built or otherwise placed on a parcel of real property.

"Subsurface Drains" means any system of below surface piping or highly permeable material intended to lower the groundwater table of an area, and which has an outlet to the surface for the collected groundwater.

"Test Hole" means any excavation in the proposed leachfield area to collect information on the soil profile, depth to a restrictive layer or bedrock, depth to seasonal high groundwater table or any other applicable field information.

"Tipping Distribution Box" means a type of distribution box where the effluent from the septic tank flows into a tipping pan, which when full, empties into the leachfield lines, thereby facilitating a more uniform distribution of effluent over the entire leach field.

"Tributary" means any flowing body of water or watercourse that provides intermittent or perennial flow to down-gradient watercourses that eventually discharge to the waters of concern (e.g., reservoir impoundment or salt pond).

"Tributary Wetland" means freshwater wetlands within a watershed that are connected via a watercourse to the waters of concern (e.g., drinking water supply impoundment or coastal wetland or tidal waters).

"Wastewater" means human or animal excremental liquid or substance, putrescible animal or vegetable matter or garbage and filth, including, but not limited to, water discharged from toilets, bath tubs, showers, laundry tubs, washing machines, sinks, and dishwashers. Both blackwater and graywater are considered wastewater under these Rules.

"Watercourse" means any river, stream, brook, pond, lake, swamp, marsh, bog, fen, wet meadow, area subject to storm flowage, or any other standing or flowing body of water, including such watercourses that may be affected by the tides.

"Wellhead Protection Area" means the area as designated by the Director in the RIDEM "Rules and Regulations for Groundwater Quality" surrounding a public well or wellfield through which water will move toward and reach such well or wellfield.

D. *Regulations.*

1. Given the findings in Subsection A above, in particular Block Island's SA water quality designation, the benefits and cost-effectiveness of enhanced wastewater treatment, and the fact that Block Island's groundwater and surface water are integrally connected with each other, the following shall apply:

a. It is the applicant's responsibility to ensure that the OWTS application to the Department is in compliance with this Ordinance regarding the location, design, construction and maintenance of an OWTS prior to submission to the Department. The OWTS application to the Department must be reviewed by the Building Official or his designee and/or the Sewer Commission for compliance with this Ordinance prior to RIDEM initiating its review. Applicants must submit documentation to RIDEM on forms approved by RIDEM that the Town of New Shoreham has certified that the OWTS application is in compliance with this Ordinance.

b. The use of on-site wastewater treatment that meets or exceeds the design and performance standards in Subsections E and F of this Section shall be required for all new OWTS installations, OWTS alterations and major repairs, except as noted in Subsection C.

c. To help locate and facilitate the inspection, maintenance and pumping of a septic tank and ultimately to increase the longevity of the OWTS, all septic tanks installed, repaired or altered after the effective date of this Ordinance, shall be equipped with access risers to grade located at the inlet and outlet ends of the septic tank and an effluent filter located at the outlet end of the septic tank. These access risers shall be a minimum of twenty (20) inches in diameter. These items shall be installed in accordance with specifications available from the Building Official or his designee and/or the Sewer Commission.

d. For all septic tanks installed after the effective date of this Ordinance, the manufacturer must provide a written warranty that the tank to be installed has been constructed and tested in accordance with the American Society for Testing and Materials (ASTM) standard C-1227-02. In addition, tanks must be tested on-site and a written guarantee provided by the installer that the tank is water-tight. The accepted procedure for site-testing tanks as water-tight shall be performed in accordance with Rule 26.11 of the OWTS Rules.

e. To help locate and facilitate the inspection and maintenance of a tipping distribution box and ultimately to increase the longevity of the OWTS, all tipping distribution boxes installed, repaired or altered after the effective date of this Ordinance, shall be equipped with an access riser brought to finished grade. The access riser shall be a minimum of ten (10) inch diameter. The access riser shall be installed in accordance with specifications available from the Building Official or his designee and/or the Sewer Commission.

2. Effluent Filters and Inspection Ports. To help locate and facilitate the inspection, maintenance and pumping of a septic tank and ultimately the longevity of the OWTS, all septic tanks installed prior to the effective date of this Ordinance shall, when determined technically feasible by the Building Official or his designee, be retrofitted with an effluent filter and access risers. The effluent filter shall be located at the outlet end of the septic tank and the access risers shall be located at grade at the inlet and outlet ends of the septic tank. These items shall be installed in accordance with the specifications available through the Building Official or his designee and/or the Sewer Commission.

a. To help locate and facilitate the inspection and maintenance of a tipping distribution box and ultimately the longevity of the OWTS, all tipping distribution boxes installed prior to the effective date of this Ordinance shall, when determined technically feasible by the Building Official or his designee, be retrofitted with an access riser. The access riser shall be installed in accordance with the specifications available through the Building Official or his designee and/or the Sewer Commission.

3. Cesspools. Cesspools are not an approved method of wastewater disposal under the OWTSs Rules and this Ordinance. All existing cesspools are considered to be substandard wastewater treatment systems. As of December 31, 2005, the use of a cesspool is prohibited, and shall be considered a failed system.

4. Deep concrete chambers (galleys), as described in Rule 34.4 of the OWTS Rule, are prohibited for OWTS Applications for New Building Construction and OWTS applications for Alterations to a Structure. Deep concrete chambers will not be permitted except for OWTS applications for Repair when no other type of leachfield can be utilized. The licensed designer must demonstrate that the repair alternatives to a deep concrete chamber are not feasible.

5. Alternative toilets, such as composting toilets, as described in Rule 36 of the OWTS Rules are prohibited, for use at a private dwelling, commercial facility, or any other structure; except, composting toilets may be permitted at a facility which is operated by the Town of New Shoreham, or a non-profit environmental, conservation, historical, or youth oriented organization when water is not regularly used at the facility.

6. All OWTS shall be maintained in accordance with the provisions of the Town of New Shoreham Wastewater Management Ordinance. Maintenance contracts shall be required on any system with mechanical components such as pumps, timers and alarms.

7. An OWTS shall be located on the same lot as the structure it serves, except when a system approved by the RIDEM is (1) also approved in a Flexible Design Residential Development or Land Development Project where approved by the Planning Board as part of the utilities plan for the development; or (2) where a wastewater treatment system serving two (2) or more houses is proven necessary to remediate failed systems.)

8. When existing sewer lines are available and when connection to the sewers is in conformance with the Land Use and Facility Goals of the New Shoreham Comprehensive Plan, all new development shall be serviced by the municipal sewer system.

9. In order to ensure proper treatment of wastewater, an OWTS must be sized to handle the number of persons living in the house as calculated using RIDEM OWTS Rules and standards. This includes properties that are rented in excess of one (1) week per year.

10. Wherever lot size and configuration permit, there shall be maintained a one hundred fifty (150) foot setback from any new OWTS to any freshwater wetland as defined in Rule 7 of the OWTS Rules. The term wetland excludes from the definition, the land area within fifty (50) feet of any freshwater wetland, defined by RIDEM as the perimeter wetland and commonly referred to as the wetland buffer zone. Likewise, there shall be maintained a one hundred fifty (150) foot setback from any new OWTS to the inland edge of coastal feature of any salt marsh or other tidal wetland or waterbody.

11. Wherever lot size and configuration permit there shall be maintained a two hundred (200) foot setback from an OWTS to Sands Pond, Fresh Pond and Peckham Pond or any contiguous freshwater wetland (excluding from the definition, the land area within fifty (50) feet of any freshwater wetland, defined by RIDEM as the perimeter wetland and commonly referred to as the wetland buffer zone). These ponds are identified in the Town of New Shoreham's map of the "Water Supply Reservoir Watersheds" as delineated by RIDEM for the RI Geographical Information Systems.

12. Buffer and/or setback requirements, at a minimum, shall be those established by RIDEM or CRMC as applicable.

13. On those parcels where the setbacks required in 10 and 11 above would preclude the construction of the dwelling or other principal structure and associated OWTS, the licensed OWTS designer must prepare a "Cumulative Impact Assessment" of the deviations from this Ordinance and submit it to the Building Official along with the deviation request. The Cumulative Impact Assessment shall include, but not be limited to: a description of all abutting properties identifying the location of all OWTSs, surface waters, wetlands, and private or public drinking water wells, a concise description of all variances and/or deviations granted in the permitting of these abutting OWTSs and any additional information which the Building Official may deem appropriate. The Cumulative Impact Assessment shall include a certification

by the licensed OWTS designer that the OWTS has been located as far as possible from the wetland. The Building Official may submit the Cumulative Impact Assessment for review and advisory opinion to the Conservation Commission, the RI On-Site Wastewater Training Center, RIDEM, Town Engineer or other experts as deemed necessary. If the Building Official or his designee believes that there are no alternative and less detrimental locations for the OWTS, he shall approve it. Even if the Building Official or his designee believes that there are alternative and less detrimental locations for the OWTS, even if it means changing the proposed location of the house or other principal structure, the plan shall be amended to accommodate those suggestions or the applicant shall seek relief through a Special Use Permit.

14. For all new OWTSs with a maximum daily flow over six hundred ninety (690) gallons or for subdivisions or land development projects where there is concern regarding the potential adverse impact of an OWTS on surface water and groundwater, the Zoning Board or Planning Board or Wastewater Management Inspector may require the applicant to submit an engineering report prepared by a professional engineer registered in the State of Rhode Island. The objective of the engineering report is to assess the potential impact of the proposed development on groundwater and surface water quality and to detail mitigative measures regarding the specific siting and design of an OWTS. The engineering report shall be required to demonstrate the capability of the proposed OWTS to accept and transmit effluent at the proposed application rate without failure or adverse effect to groundwater or surface water. Such analysis shall include the following:

a. Complete site evaluation, including results of soil morphological analysis, of percolation tests, record of groundwater monitoring, and location of any water course, wetlands, and any existing or proposed private well or drain within 500 feet and any existing or proposed public well within 3000 feet of the proposed OWTS; and

b. Hydrogeologic assessment of the disposal area considering potential of pollutant loading to groundwater below the OWTS; and

c. Adequate scientific and technical evidence on how the proposed design will mitigate potential adverse impacts on the following:

(1) Public health;

(2) Any surface water; including the cumulative impacts of the system to the surrounding area;

(3) Groundwater;

(4) The ability of groundwater and surface water to support or maintain plant and wildlife as well as any designated water uses;

(5) Public use and enjoyment of any recreational resource; and

(6) Surrounding persons or property as potential cause of any public or private nuisance.

E. *Performance Standards.* All new OWTS installations, OWTS repairs and upgrades to an OWTS must conform to the following minimum performance standards. When necessary to further the purpose and intent of this Section, the Zoning Board of Review may require more stringent standards when granting a Special Use Permit.

1. All new OWTS installations, OWTS repairs and upgrades to an OWTS must conform, to OWTS Treatment Level 1 (T1) or to OWTS Treatment Level 2 (T2) standards, except as noted in Subsection c below.

a. *T1.* A conventional OWTS with the addition of a certified water-tight tank, an effluent filter at the outlet end of the septic tank, at finish grade access risers over the septic tank inlet and outlet. If a tipping distribution box is installed, the distribution box shall have a minimum ten (10) inch diameter access opening brought to finished grade.

b. *T2.* A level of OWTS that includes the improvements of T1 and reduced biochemical oxygen demand and total suspended solids, and removal of total nitrogen and/or fecal coliform as specified below:

(1) *T2N.* A type of T2 system that achieves a minimum total nitrogen removal of fifty percent (50%) or a reduction to 19 mg/l, and biochemical oxygen demand and total suspended solids each reduced to less than or equal to 30 mg/l; all as measured at the outlet of the treatment unit prior to discharge to a dispersal trench.

(2) *T2C.* A type of T2 system that reduces fecal coliform to less than or equal to 1,000 fecal coliform counts/100 ml and reduces biochemical oxygen demand and total suspended solids to less than or equal to 10 mg/l as measured at the outlet of the treatment unit prior to discharge to a dispersal trench.

c. *Shallow Dispersal Trenches.* In addition to the system improvements and wastewater specifications above, shallow dispersal trenches may be required on a case by case basis in T2 treatment areas, where the soil rating is high or extreme, where the system is in a wetland buffer or where other site constraints exist.

2. The required level of wastewater treatment shall be determined based on site-specific data using TABLE 1 and TABLE 2. TABLE 1 shall be used to assign a site vulnerability rating. TABLE 2 shall be used to assign an OWTS treatment level to a site (T1 or T2) by combining the vulnerability rating with the site's location in a given resource protection area.

a. When a site requires both T2N and T2C treatment levels, the OWTS designer shall, after consulting with the Town Wastewater Management Inspector, recommend either T2N or T2C as the more appropriate choice. This decision is to be approved by Town Wastewater Management Inspector or Building Official. As of January 17, 2001, if a variance is still required for a T2C system, then the Wastewater Management Inspector shall authorize a T2N.

3. There shall be no net increase in off-site run-off.

TABLE 1

SITE VULNERABILITY FOR AN ONSITE WASTEWATER DISPOSAL SYSTEM

TOWN OF NEW SHOREHAM

	Site Characteristics		
Critical Depth[1]	Depth to Seasonal High Water Table	Depth to Restrictive Layer and/or bedrock[2]	Depth to Water Table AND One of the Following: Restrictive Layer Or OWTS Soil Category 1 soils[3]
< 2 ft.	Extreme, Repairs Only	Extreme, Repairs Only	Extreme, Repairs Only
2 ft. to < 4 ft.	High	Extreme, Repairs Only	Extreme, Repairs and New Construction
4 ft. to 6 ft.	Moderate	High	High
> 6 ft.	Low	Moderate	Moderate

1. All depths are measured from the original ground surface. Maps developed from the RI Geographic Information System (RIGIS) are available to show approximate depths to water table at 0 to 1.5 feet and 1.5 to 3.5 feet. Mapping is not available to show water table depths greater than 3.5 feet. These maps are to be used only as a planning tool. Actual measurements must be obtained from on-site date. In the event that critical depths for the various site characteristics overlap, the most restrictive shall apply.

2. Restrictive layer and or bedrock are identified as category 10 soils in the RIDEM OWTS Rule.

3. Excessively permeable soils and have the potential to contaminate groundwater due to limited pollutant removal capability with rapid drainage. Excessively permeable soils includes all highly permeable well drained soils (hydro group A) and other excessively permeable soil groups, as identified in the OWTS Rules as category 1 soils.

TABLE 2

OWTS TREATMENT FOR RESOURCE PROTECTION AREAS

CRITICAL RESOURCES ISLAND RESOURCES

TOWN OF NEW SHOREHAM[1]

	Critical Resources				Island Resources[2]	
Site Vulnerability Rating	Peckham, Sands & Fresh Pond Reservoir Watersheds & Associated WHPA's	Other WHPA	Great Salt Pond Watershed	Wetland Buffers to Critical Resources[3]	Island Aquifers	Wetland Buffers
Extreme, Repairs Only	T2C	T2C	T2N	T2	T2	T2
High to Extreme	T2C	T2C	T2N	T2 & ≤ 450 gpd & < 1880 sq ft Dwelling	T1 or T2[4]	T2
Moderate	T2C	T1	T1	T2 &; ≤ 450 gpd	T1	T1[5]
Low	T2C	T1	T1	T2 & ≤ 450 gpd	T1	T1[6]

1. Shallow dispersal trenches may be required in certain T2 areas where the soil rating is high or extreme, where the OWTS is in a wetland buffer or where other site constraints exist.

2. In Island Resource Areas, where T2 treatment levels are stipulated either T2C or T2N system may be required, based on specific site characteristics.

3. All T2 systems in wetland buffers to critical resources shall meet either a T2N or T2C treatment as specified for the watershed or wellhead area in which they are located.

4. Where the water table depth is 4-6 feet and soil is excessively permeable and no other constraint exists to result in High Site Vulnerability Rating, T1 treatment may be allowed.

5. A T1 treatment system may be permitted where the wetlands is only associated with open ocean waters.

6. A T1 treatment system may be permitted where the wetlands is only associated with open ocean waters.

F. *Design Standards.* The following standards are designed to minimize soil compaction and vegetative disturbance, reduce run-off, maintain groundwater infiltration and ensure a high level of on-site wastewater treatment.

1. All OWTS must follow the design criteria for the treatment zone in which they are to be located. Acceptable technologies for OWTS Treatment Level 1 and Treatment Level 2 areas are on file with the Building Official or his designee and/or the Sewer Commission. This listing provides standards relative to the acceptability and suitability of various enhanced wastewater treatment technologies for various environmental conditions and geographical locations. It also provides criteria as to which subcategory of T1 or T2 treatment level shall be used. The Building Official or his designee and/or the Sewer Commission, in consultation with the Town Engineer, RIDEM and the Rhode Island On-Site Wastewater Training Center may periodically update this list to allow for advances in on-site wastewater technology.

a. An associated map of OWTS Treatment Level Zones for New Shoreham indicates whether Treatment Level 1 or Treatment Level 2 is likely to be required. The map, on file with the Building Official or his designee and/or the Sewer Commission, is for planning purposes only and is not a substitute for site specific information. The final decision relative to the required level of treatment will be based on location within a given watershed and site specific soil and water table information.

2. Limit of construction and disturbance shall be designated on all plans and marked in the field with staked hay bales or silt fencing.

3. In coastal areas, buffer management and/or design shall, at a minimum, follow the Coastal Resource Management Council's technical regulations as per Section 150 of the RI Coastal Resource Management Plan, Adopted October 9, 2003.

4. To reduce the impacts of non-point source run-off and potential impacts to OWTS, driveways shall be constructed of permeable material. Run-off from all impermeable surfaces shall be discharged to grassed or wooded areas or landscaped retention areas for temporary storage and infiltration.

G. *Special Use Permit.*

1. The Zoning Board of Review may grant a Special Use Permit for the installation of an OWTS which cannot meet the regulations and standards of this Section 506.

2. Any new OWTS or OWTS alteration to be located in an OWTS Treatment Level 2 Area which has a water table less than or equal to two and one half feet (2'6") or an restrictive layer at less than or equal to four feet (4') shall obtain a Special Use Permit.

3. In order to obtain a Special Use Permit, the applicant must demonstrate to the Zoning Board's satisfaction, compliance with the criteria contained in Section 401(A)(1-9) -General Standards for Special-Use Permits, the performance and design standards located in sections E and F of this Subsection, and submit an engineering report as described in Section 14 of this Ordinance to address the following criteria:

a. The design of the OWTS, associated buffer and building site in general shall minimize the problems and hazards associated with proximity to a critical resource area, excessively permeable soils, high water tables and impermeable or highly compacted soil. Such problems and hazards include, but are not limited to, surface break out of effluent, inadequately treated wastewater being discharged into the groundwater, contaminants such as viruses, bacteria and nutrients migrating above compacted layers or in the groundwater towards water supplies and sensitive surface waters.

b. The system, once in use, will not pose a threat to the public health and safety nor cause any degradation of groundwater and/or surface water quality, including adverse effects due to cumulative impact.

c. In order to obtain relief from Subsections D and E, the applicant must also demonstrate that complying with the requirements of these Subsections would render the construction of the requested permitted use impossible.

d. The fact that the granting of a Special Use Permit would result in less expense to the applicant in implementing a permitted use shall not be used by the Zoning Board as a justification for granting the permit.

H. Technical Review. The Town may forward plans and related information submitted pursuant to this Section for review and comment to the Town Engineer, the RI On-Site Wastewater Training Center, or other experts as deemed necessary.

I. Severability. If any provision of this ordinance or any rule or determination made hereunder, or application hereof to any person, agency, or circumstances is held invalid by a court of competent jurisdiction, the remainder of this ordinance and its application to any person, agency, or circumstance shall not be affected thereby. The invalidity of any section or sections of this ordinance shall not affect the validity of the remainder of this ordinance.

(Adopted Dec. 1, 1999. Entire Section 506 was amended September 17, 2008)

(Ord. of 8-17-2011)

12. NEWPORT

Source: Newport RI Code of Ordinances, Chapter 17. Zoning, Sec. 92. Critical Area Review - Ocean Drive District, Subsection 070. Paragraph E. http://municipalcodes.lexisnexis.com/ accessed July 31, 2007.

E. There shall be a minimum setback of seventy-five (75) feet from either a designated wetland or a coastal feature as defined by the coastal resources management council. This setback shall be maintained in its natural state.

13. NORTH KINGSTOWN

Source: North Kingstown RI Code of Ordinances, Chapter 21. Zoning, Article XII. Miscellaneous Provisions, Sec. 326. Septic system setback. www.municode.com accessed July 31, 2007.

Sec. 21-326. Septic system setback.

(a) Except as provided in subsections (b) and (c) of this section, no part of a subsurface wastewater disposal system or other facility designed to leach liquid wastes into the soil shall be located within 150 feet of any river, stream, surface water body (including a seasonal surface water body), coastal or freshwater wetland, or within 150 feet of the line of mean high water of any tidal water body. This section shall not be interpreted to require a 150-foot setback from a perimeter wetland as that term is defined by the state department of environmental management and the state coastal resources management council.

(b) Subsection (a) of this section shall not apply to any replacement, repair, alteration or modification of a system or facility which exists on February 12, 2001.
(c) Subsection (a) of this section shall not apply to the location of such a system on a residential lot located in a recorded subdivision which received final approval from the planning commission prior to the adoption of the ordinance from which this section is derived.

14. NORTH SMITHFIELD

Source: North Smithfield Planning Department. Zoning Section 6, Supplementary District Regulations, Section 6.12 Wetland Setbacks for Onsite Waste Water Treatment Systems, OWTS, Buildings and Impervious Surfaces

Section 6.12. Wetland Setbacks for Onsite Waste Water Treatment Systems, OWTS, Buildings and Impervious Surfaces

Section 6.12.1 Purpose and Authority

(1) Purpose. The standards and provisions in this section are intended to protect the health, safety and general welfare of the Town's residents, property owners and businesses, to prevent nuisance, to prevent degradation of North Smithfield's surface or ground waters, and to maintain and enhance the water quality function of wetlands and associated wetland buffers, in accordance with goals of the North Smithfield Comprehensive Plan. It establishes standards and procedures for the use of wetland buffers, including the location and design of OWTS, buildings, impervious cover and other land development, and use of best management practices to minimize pollution sources, ensure proper management of stormwater runoff, and adequate treatment of pathogen and nutrient inputs to wells, groundwater and surface waters from onsite wastewater treatment systems.

As per RIGL 45-24-30 the methods of protection recognize:

1) the natural characteristics of the land, including its suitability for use based on soil characteristics, topography and susceptibly to surface and groundwater pollution;
2) the values of unique or valuable natural resources and features;
3) the availability and capacity of existing and planned public and/or private services and facilities;
4) the goals and patterns of land use contained in the North Smithfield Comprehensive Plan.

(2) Authority. The Town of North Smithfield recognizes its authority to adopt requirements that are more restrictive than State minimum standards to address the combined impacts of land use, stormwater runoff and wastewater effluent to locally important water resources. These State standards include: the *Rules Establishing Minimum Standards Relating to Location, Design, Construction and Maintenance of Onsite Wastewater Treatment Systems* (OWTS Regulations); the *Rules and Regulations Governing the Administration and Enforcement of the Freshwater Wetlands Act (Rules)*; and the *Rhode Island Stormwater Design and Installation Standards Manual*, as promulgated by the Rhode Island Department of Environmental Management (RIDEM). The following requirements are hereby established in accordance with *The RI Zoning Enabling Act* RIGL 45-24. These requirements shall be considered an addition

to, and not a replacement for, the referenced regulations and any subsequent amendments thereto.

(3) Wetlands and water bodies covered under this ordinance include: Wetland, freshwater are defined as in G.L. 1956, 2-1-20 as follows: Marshes; swamps; bogs; ponds; rivers; river and stream floodplains and banks; areas subject to flooding or storm flowage; emergent and subemergent plant communities in any body of fresh water including rivers and streams and that area of land within 50 feet of the edge of any bog, marsh, swamp, or pond.

(4) Scientific findings. There is ample and defensible scientific justification for increased buffer width benefiting water quality (EPA 2006; Wenger, 1999; Vermont Agency of Natural Resources, 2005). The EPA (2006) notes that nitrogen removal efficiencies of 80-90% are obtained for wetland buffers overall that are 30m, or approximately 100ft wide. In contrast, only 65-75% of nitrogen is removed for buffers 15m, or approximately 45 ft wide. Grass buffers alone are only 75% effective at 28m; and only 50% effective at 16m. Water bodies with little or no riparian buffer zones are found to have two to three times the annual nitrate concentration of streams with buffers. Wenger (1999) reviewed 140 scientific studies and notes, “Reduction of various forms of nitrogen in surface runoff is reasonably well correlated with buffer width.” Studies of sediment in surface runoff show that the most efficient width for sediment removal is 82 feet. The Vermont Agency of Natural Resources summarized 22 scientific studies recommending buffer widths for riparian ecosystem function. Eighty percent of the studies recommended a mean width of 100 feet. Wenger (1999) writes that a 100 ft option, including adjacent wetlands “provides the greatest level of protection for stream corridors, including good control of sediment and other contaminants, maintenance of quality aquatic habitat, and some minimal terrestrial wildlife habitat.”

6.12.2 Onsite Wastewater Treatment (OWTS) setback.

(1) This section applies only to properties located within any surface water supply basins in town, including the surface water supply basins for Woonsocket’s Reservoirs 1, 2 and 3, and to school well-head protection areas, as delineated in the North Smithfield, RI Zoning Ordinance Map: Water Supply Protection Overlay District. Except as provided in subsections (2), (3), (4) and (5) of this section, no component of an onsite wastewater treatment system (OWTS) facility designed to leach liquid wastes into the soil shall be located within 150 feet of the defined edge or channel of any Freshwater Wetland as defined in the Rules. This section shall not be interpreted to require a 150-foot setback from a riverbank wetland, areas of land within fifty feet 50’ of wetlands (perimeter wetlands) or area(s) subject to storm flowage as defined in the Rules.

(2) No part of an OWTS or other facility designed to leach liquid wastes into the soil shall be located within 200 feet of any drinking water supply impoundment or tributary that directly discharges to a drinking water supply, including storm and subsurface drains that directly discharge to a tributary stream surface water body.

(3) Subsection (1) of this section shall not apply to any replacement, major repair, alteration or modification of a system or facility which exists 20 days after the Date of Passage of this Section provided that the replacement, repair, alteration or modification meets the Minimum Requirements for Advanced OWTS Treatment as defined herein.

(4) Subsection (1) of this section shall not apply to the location of such a system on a residential lot located in a subdivision which received final approval from the Planning Board or from RIDEM prior to the adoption of this section provided that the replacement, major repair, alteration or modification meets the Minimum Requirements for Advanced OWTS Treatment as defined herein.

(5) Administrative review: Development within the areas required to have an OWTS system shall comply with the development standards listed below. Development proposals that meet these standards will be reviewed administratively by the zoning enforcement officer and/or his her designee after review with the town planner. The town may engage professional assistance to assist with the professional review of applications and advise with the applicant responsible for such cost. Applications failing to meet one or more of the development standards listed below shall require a special use permit per section 6.12.2.(5).

The administrative review shall apply the following criteria:
a. The design of the OWTS and layout of the building site in general shall minimize or mitigate the potential for ground and surface water contamination to the greatest extent possible.
b. The system, once in use, will not pose a threat to public health and safety or cause any degradation of ground or and surface water quality, including adverse effects due to cumulative impact.
c. The foundation not including pilings/footings of a dwelling shall have a 12-inch separation between the bottom elevation of the structure and the seasonal high groundwater table. All foundation elements below the seasonal high-groundwater table shall be engineered to allow for free passage of water.
d. All new OWTSs and OWTSs requiring major repair shall have been approved by RIDEM and provide for either denitrification or enhanced pathogen removal.
e. If the setback does not meet the standard in Section 6.12.2(1), the applicant shall demonstrate that the OWTS and associated building have been sited as far as possible from the wetland edge.

(6) Special Use Permit Criteria. The Zoning Board of Review may grant a Special Use Permit for construction of an OWTS not less than 100’ from Freshwater Wetlands as defined in the Rules provided that the applicant submits a site plan meeting the requirements of Section 7(I) demonstrating that the buffer provided is sufficient to substantially attenuate pollutants from the OWTS and associated land disturbance, and:

1. Advanced OWTS Treatment meeting the performance standards of section (7) and approved by RIDEM are used.
2. Will not degrade the quality of groundwater or any wetland or surface water body, either directly or indirectly, on site or off site;
3. Will result in the least site disturbance and removal of vegetation as possible, every attempt shall be made to site the wastewater treatment system and the associated dwelling as far as possible from the wetland edge;
4. Will not obstruct floodways or reduce the net capacity of the site to retain floodwaters;
5. Will not cause any sedimentation of wetlands, and will include all necessary erosion and sediment control measures; plans for erosion and sediment control

and stormwater management shall be completed which meets standard requirements for such plans and also includes:

a. The limits of disturbance during construction including areas to be cleared and/or graded, construction easements, temporary stockpiles and material/equipment storage areas, and protection of individual trees and groups of trees to avoid construction injury by fencing off trees at the drip line. In critical areas the limits of disturbance will be fenced off in the field.
b. A plan for revegetation, stamped by a landscape architect of wetland buffers, slopes and erodible areas.

6. Will not reduce the capacity of any wetland to absorb pollutants;
7. Will not degrade the recreational or educational value of any wetland or water body;
8. Will not reduce the capacity of any wetland to recharge groundwater; and
9. The potential for wetland impact based on the type of development, soil type, potential for future disturbance of the buffer and size of the wooded swamp or pond to be buffered is determined to be minimal.

(7) Performance Standards: Applications for a Special Permit under provisions of this Section shall meet the following minimum performance standards:

A. Minimum Requirements for Advanced OWTS Treatment. All new, replacement and alterations for OWTS that do not meet the dimensional requirements set forth in Section 6.12.2. (1) and (2) above shall be approved by RIDEM and provide advanced treatment to achieve the following levels, as measured at the outlet of the treatment unit prior to discharge to a drainfield, and to achieve the following performance based on siting.

1. System Type - Category 1 Alternative and innovative system as defined by RIDEM Use of a Category 1 Alternative and Innovative system shall be required in the watersheds of drinking water supplies, other phosphorus-sensitive surface waters, and areas where maximum pathogen and nutrient removal is required for either protection of surface or groundwaters.

2. System Type - Category 2 Alternative and innovative system as defined by RIDEM Use of a Category 2 Alternative and innovative system may be permitted in watersheds of non-critical water resources.

3. Permitted OWTS Technologies. Installation of Advanced OWTS treatment technologies permitted shall be those technologies certified by RIDEM pursuant to their procedures and regulations. Innovative or alternative OWTS technologies shall have documented the ability to achieve the minimum treatment requirements set forth in this Ordinance.

4. Seasonal High Water Table Determinations. For the purpose of determining the seasonal high water table, detailed soil morphological data to a depth of four feet shall be prepared and submitted by a professional soil scientist recognized by the Soil Science Society, Southern New England Chapter, or ARCPAC certified, professional soil scientist or licensed Class IV Soil Evaluator.

5. Operation and Maintenance. All installations of Advanced OWTS Treatment technologies, or any other OWTS with mechanical components, shall include a continuous Operation and Maintenance (O & M) agreement with the property owner that shall be duly recorded in Land Evidence Records.

B. Minimum Requirements for Storm Water Management.

1) Total impervious cover shall be reduced to the maximum extent practicable using Low Impact Development (LID) methods as specified in the RI Stormwater Design and Installation Standards Manual and supporting guidance documents (as amended), and shall not exceed the maximum allowed within a given district. Elevated structures with roofs allowing for groundwater infiltration that are less than 120 square feet in size are exempt when calculating this percentage. Impervious cover shall be calculated based on the area of the parcel suitable for development, excluding wetlands, hydric soils, high flood zone, and other lands identified as unsuitable for development. The use of permeable pavements is encouraged where the risk of groundwater contamination is low.

2) Storm water control measures shall be designed to ensure that no net increase between pre and post development site conditions in volume or rate of storm water runoff for a 25 year frequency rainfall occurs onto adjacent properties or roadways from the proposed individual residential lot.

C. Stormwater Management Plan. A detailed stormwater management plan shall be submitted to the Town that includes a drainage plan and drainage calculations prepared by a Rhode Island Registered Professional Engineer. Proposed grading shall maintain existing natural drainage patterns to the degree feasible. Use of small scale “low impact development” stormwater controls designed to disperse, store, filter and infiltrate stormwater runoff at points close to where runoff is generated, with minimal site alteration and filing shall be required.

D. Storm Water Controls and OWTS Location. Storm water runoff shall be diverted from any OWTS. Also, there shall be a minimum fifteen foot horizontal separation distance between any OWTS drain field and the edge of any storm water infiltration system, or as otherwise required by the RI Stormwater Design and Installation Standards Manual and supporting guidance documents as amended.

E. Required Information. A development plan shall be filed with the Building Official’s Office and the Planning Department to show the following information:

1. Property boundary lines with area and dimensions of property to be developed;

2. Vicinity plan showing adjacent or nearby properties, uses, OWTS, wells, wetlands, streams, or surface water reservoirs within a 500 foot radius;

3. Topographic map of property showing existing and proposed two foot contours;

4. Site specific soils map of property prepared by a professional soil scientist recognized by the Soil Science Society, Southern New England Chapter, or ARCPAC certified.

5. Storm water management plan;

6. Soil erosion and sediment control plan, and;

7. Wetlands delineation map as field verified by DEM for new OWTS construction or alternation.

8. A plan for revegetation of the buffer following constructing using native shrubs and trees for maximum water quality protection benefit and habitat value.

6.12.3 Structure and Impervious Surface setback.

(1) Except as provided in subsections (2)-(7) of this section, no part of a residential, commercial or industrial structure (including accessory structures such as garages or sheds) or impervious surface shall be located within 100 feet of Freshwater Wetlands as defined in the "The Rules" and in "Definitions", Section 20 of this Zoning Ordinance. This section shall not be interpreted to require a 100-foot set back from a riverbank wetland or land within fifty feet 50' of wetlands (perimeter wetlands) or area(s) subject to storm flowage as defined in the Freshwater Wetlands Act.

(2) Subsection (1) of this section shall not apply to the location of such a structure which received final approval from the Planning Board prior to the adoption of this section.

(3) Subsection (1) of this section shall not apply to: 1) areas where the wetland buffer area is already substantially developed and retains none of the natural features necessary to support native flora or fauna and where the volume of stormwater runoff has been maintained at pre-development levels, or restored to the extent possible.

(4) Subsection (1) of this section shall not apply to the location of elevated structures with roofs allowing for groundwater infiltration that are less than 120 square feet in size.

(5) Subsection (1) of this section shall not apply to the following accessory structures to existing households: Decks, porches, gazebos, patios, above-ground swimming pools, in-ground swimming pools, fences, signs, and permitted accessory residential and/or non-residential structures under two hundred (200) square feet

(6) Any proposed construction which is no closer to the wetland than the existing construction on the lot in question may be exempted from the one-hundred-foot setback requirement if the Zoning Board of Review determines that there is no potential for significant environmental impact, taking into full consideration the report of the Conservation Commission. Development standards for review include the following:

1. The proposed project will not obstruct floodways in any detrimental way, or reduce the net capacity of the site and adjoining properties to retain floodwaters.

2. The proposed project will not cause any sedimentation of wetlands, and will include all necessary and appropriate erosion and sediment control measures.

3. The proposed project will not reduce the capacity of any wetland to absorb pollutants.

4. The proposed project will not directly or indirectly degrade the water quality in any wetland or water body.

5. The proposed project will not reduce the capacity of any wetland to recharge groundwater.

6. The proposed project will not degrade the value of any wetland as a spawning ground or nursery for fish and shellfish or habitat for wildlife or wildfowl.

(7) This section is exempt in the following districts due to economic impact: RS20, MU1, and MU2. In addition, all nonconforming RS40 lots that are less than or equal to 20,000 square feet are also exempt until they reach conforming status.

6.12.4. Substandard Systems: Cesspools
According to RIDEM's OWTS Regulations, cesspools are not an approved method of sewage disposal and all existing cesspools are considered to be substandard. As such, all cesspools should be brought into conformance with current and local standard within 12 months after the sale or transfer of a property, or by January 1, 2020, whichever date comes first.

This subsection shall take effect as of (Jan. 1, 2014) unless: either a listing agreement contract with a licensed real estate broker shall have been signed by the owner(s) of the property and the broker prior to (June 1, 2013), in which case any buyer(s) of said property from that owner(s) while the listing agreement contract is in effect shall be exempt from this requirement; or a purchase and sales agreement for the property shall have been signed by the owner(s) of the property and the prospective buyer(s) prior to (June 1, 2013), in which case, the buyer(s) named in such purchase and sales agreement shall be exempt from this requirement.

6.12.4.1. Hardship extension. Property owners of a Substandard system may qualify for a hardship extension of up to five years if the Substandard OWTS is not failed, and their household income is less than 80% of the appropriate household size area median income determined by federal Housing and Urban Development standards for the community in which the Substandard system is located. The Public Works Department shall develop an application for hardship extension.

6.12.5. Definitions. Wetland, freshwater are defined as in G.L. 1956, 2-1-20 as follows: Marshes; swamps; bogs; ponds; rivers; river and stream floodplains and banks; areas subject to flooding or storm flowage; emergent and subemergent plant communities in any body of fresh water including rivers and streams and that area of land within 50 feet of the edge of any bog, marsh, swamp, or pond**.**

Category 1 System: Advanced treatment units that are time dosed and have been classified by the RI Department of Environmental Management as meeting effluent standards less than or equal to 20 mg/l for both BOD5 and TSS; and FOG (fats, oil and grease) of less than or equal to 5 mg/l. *Example Category 1 systems: textile filter, peat filter, recirculating sand filter, single pass sand filter, trickling filter).*

Category 2 Systems: Advanced treatment units that are not time dosed and have been classified by the RI Department of Environmental Management to at least meet effluent standards of 30 mg/l for both BOD_5 and TSS; and FOG (fats, oil and grease) of less than or equal to 5 mg/l. *(Examples: FAST, Singulair, Bioclere, RUCK)*

Major Repair (of an OWTS): Any work performed on an OWTS, excluding minor repairs, in order to repair or replace a failed system.

Minor Repair (of an OWTS): Any work performed on an OWTS involving the repair, replacement or upgrade of the building sewer, septic tank or distribution box and/or the installation of inspection ports and/or effluent filters on septic tanks.

Nitrogen Reducing System: An alternative system classified by the Rhode Island Department of Environmental Management as a nitrogen reducing system under RIDEM Innovative or Alternative ISDS Technologies List as amended and which achieves a minimum total nitrogen removal of fifty percent and a reduction to less than or equal to 19mg/l total nitrogen.

(Adopted May 6, 2013. Replaces previous Section 6.12 which read:

Section 6.12. Sewage facility setback from water bodies.

Sewage disposal facilities designed to leach wastes into the soil shall be located no closer than one hundred (100) feet from the edge of any watercourse.)

15. PORTSMOUTH

Source: Portsmouth RI Zoning Ordinance, Article III. Section H. Watershed Protection District. [24] http://www.portsmouthri.com/bldginspection Accessed July 31, 2007, verified October 21, 2013.

Section H. Watershed Protection District

4. DESIGNATION OF HYDROLOGICAL ZONES WITHIN THE WATERSHED PROTECTION DISTRICT

The Watershed Protection District is composed of two subzones with differing permitted uses and other regulations, as approximated on Map III-2 herein. The reservoir/adjacent recharge zone "A" zone, and an upland drainage area or "UD" zone.

6. PROHIBITED USES IN ZONE "UD"

(2)Placement of an ISDS within 200 feet of the surface water of a reservoir;

9. MANDATORY DEVELOPMENT RESTRICTIONS

b) Septic Systems Regulations

(1) Septic systems, including all leaching fields and other parts of a septic system, shall not be allowed within 200 feet of any water body or any stream or wetland that is determined by RIDEM application procedures to be tributary to a drinking water reservoir.

(2) A reserve area for replacement systems is mandatory in the watershed district. Said reserve area shall be subject to the same requirements as the main septic system. (Dual alternating leach fields, where the idle one is allowed to clean itself out over time, are encouraged.)

(3) Innovative/Alternative technology septic systems, as approved by RIDEM, which have been shown to greatly reduce nitrogen, pathogens, BOD and TSS, shall be used in all new construction within the "A" zone. Such systems must have pressurized distribution to leach fields.

(4) All septic tanks installed after the effective date of this ordinance shall be certified watertight in accordance with ASTM standards, and guaranteed as such by the manufacturer.

(5)Galley systems are prohibited.

c) Sub-Drains on Lots: Installation of conduits such as tile, pipe, or tubing beneath the ground surface on a lot to divert ground water, to intercept or prevent water movement into a wet area, to relieve artesian pressure, to remove surface runoff, to serve as an outlet for other drains, or to replace natural subsurface drainage patterns that are interrupted or discontinued due to construction operations are prohibited if the individual and/or collective purpose is to obtain a septic system. Sub-drains are permitted in accordance with Article X. of the Portsmouth Land Development and Subdivision Regulations for other purposes, provided they are located at least 20 feet from any portion of the septic system.

(1) Location and Placement of Developed Areas
All development shall be situated as far from the reservoirs, tributaries, wetlands as reasonably possible. The Town shall consider soils and topography in making such decisions.

(2) At least 50% of each parcel within 300 feet of the surface water of a reservoir shall remain undisturbed.

10. MANDATORY SITE DESIGN STANDARDS

Environmentally sensitive site design standards (best management practices) are required for all permitted uses, whether by special use permit or otherwise, in the Watershed Protection District. These standards are developed to optimize water quality, as opposed to technical "make do" compliance.
The following measures shall be required, as applicable and feasible, in the best interests of protecting water quality:

a) Vegetated buffers must be maintained or planted around all critical environmental areas, including reservoirs, and their tributaries.

Vegetated buffers 95 feet in width shall be composed of the following:

(1)A strip of land fifteen (15) feet wide starting at the edge of the pond or stream bank, which shall be comprised of mature trees and shrubs that are to remain undisturbed. Outflow from subsurface drains must not be allowed to enter or pass through this area

(2)Next to the 15 foot strip, a strip of land at least sixty (60) feet wide, which shall be comprised of trees and shrubs that may be managed as necessary. Outflow from subsurface drains must not be allowed to enter or pass through this area.

(3)Thence a strip of land at least twenty (20) feet wide, which shall be comprised of the devices designed to convert concentrated overland or piped flow to uniform shallow sheet flow.

(4)Specifications for these buffers shall be according to a publication entitled "Riparian Forest Buffers", U.S. Department of Agriculture. 1991. Trees and shrubs employed shall be selected based on a publication entitled "Sustainable Trees and Shrubs for Southern New England", University of Rhode Island, 1995.

b) Surface water runoff shall be directed toward areas covered with vegetation for surface infiltration.

c) Surface water runoff shall be directed toward the lesser restricted district where the property is located within two or more districts, as feasible.

d) Parking lot controls, including pervious surfaces and drainage facilities shall be employed.

e) Buildings and impervious surfaces shall be set back at least 150 feet from the inland edge of the reservoirs and their tributaries.

f) Minimize tree removal: Applicant must demonstrate why each area must be cleared. Priority shall be given to maintaining established trees. Existing natural buffers, as in 10.a) above, shall be maintained.

g) All grading, filling, excavation, tilling, or chemical use shall be set back at least 100 feet (or RIDEM regulations, whichever is greater, or per the R.I. Right to Farm Act if applicable) from the inland edge of the reservoirs and their tributaries.

h) Areas to be disturbed within 300 feet of any water body or wetland shall be clearly marked on approved plans. On site, prior to any construction activity, the areas to be disturbed shall be clearly delineated with stakes and ropes, or other appropriate material, and the

downhill border of said area lined with staked hay bales in accordance with the Portsmouth Soil Erosion and Sedimentation Ordinance.

11. DESIGN PRINCIPLES

The following design principals shall be employed for all developments in the Watershed Protection District:

a) Addressing Development Constraints with Respect to Site Features.
- (1) Avoid slopes greater than 15%.
- (2) Minimize impacts to groundwater.
- (3) Recognize soil limitations.
- (4) Avoid wetlands.

b) 'Sustainable Development' Principles
- (1) Design with topography and natural features.
- (2) Creative preservation of open space.
- (3) Compatibility with surrounding land uses.

c) Employing 'Mesi-scaping' Principles
- (1) Plant or preserve native vegetation to minimize need for irrigation and use of chemical additives.

d) Use of Vegetative Buffers
- (1) Create or restore vegetative buffers for non-point source pollution control and wildlife habitat.
- (2) Link with existing buffer areas to protect stream and river corridors.

e) Orienting Layout to Minimize Pollutant Loading
- (1) Minimize roadways; locate roads to reduce de-icing requirements.
- (2) Consider alternative ISDS/treatment systems, as approved by RIDEM.

Footnote:
[24] Adopted November 17, 1997.

16. SCITUATE

Source: Scituate RI Code of Ordinances, Appendix A. Zoning, Article IV. Special Regulations, Sec. 7. Setback from water bodies. www.municiode.com accessed July 31, 2007.

Section 7. Setback from water bodies.

Sewage disposal facilities designed to leach wastes into the soil shall be located no closer than one hundred fifty (150) feet from the edge of any pond or stream. No building or structure, except a dock shall be placed or erected within seventy-five (75) feet from the edge of any pond or stream, except as may be granted by the board as a special use permit.

17. SMITHFIELD

Source: Zoning, Article 5 Dimensional Regulations.
http://www.smithfieldri.com/pdf/Zoning/SmithfieldZoningOrdinance.pdf accessed 12/13/12

5.3.4 Buffers

A. No structure, except as provided below, shall be located within one hundred (100) feet of a Fresh Water Wetland (as defined herein), with the exception of the required buffers for rivers and streams which must comply with Rhode Island Department of Environmental Management (RIDEM) standards. Within the additional fifty (50) feet of Fresh Water Wetlands buffer required by this Ordinance, the following structures are permitted:

1. Decks, porches, gazebos, patios, above-ground swimming pools, inground swimming pools, septic systems, fences, signs, permitted accessory residential and/or non-residential structures under two hundred (200) square feet, driveways, parking lots.

B. No structures shall be erected in a non-residential zone within one hundred (100) feet of a residential zone.

18. SOUTH KINGSTOWN

Source: South Kingstown, RI Code of Ordinances, Appendix A, Zoning, Article 5 Supplementary Regulations. Section 504 Special Use Permits (pertaining to OWTS).
http://www.municode.com/library/RI Accessed 10/22/13

Sec. 504. Special use permits.

504.1 *Location of OWTS*

A. No onsite wastewater treatment system (OWTS), disposal trench, disposal bed, or other facility designed to leach wastewater into the soil from any development which includes construction of a new dwelling or the complete replacement of an existing dwelling, shall be located in areas outlined below, except by the granting of a special use permit by the Zoning Board of Review.

1. Within 150 feet of “fresh water wetlands” as defined in Article 12 (as *wetlands, freshwater*) of this Ordinance excluding from such definition that area of land within 50 feet of the edge of any bog, marsh, swamp or pond. Also excluded from such definition are "river and stream flood plains and banks".
2. Within 150 feet of a “coastal wetland” as defined in Article 12 of this Ordinance (as *wetlands, coastal*) or within 150 feet of the line of mean high water of any tidal water body as defined in the regulations adopted by the Coastal Resources Management Council of the

State of Rhode Island and subsequent amendments thereto, except by the granting of a modification or special use permit.

B. The Zoning Board of Review shall review these projects in accordance with the criteria found in this ordinance to determine the potential cumulative and integrated impacts to wetlands through the use of OWTS, the clearing and grading of land, and/or the generation of stormwater runoff from impervious surfaces. It is specifically noted that residential construction associated with an application for a special use permit for an OWTS must meet the minimum dimensional setbacks of the zoning district in which the property is situated. The Zoning Board may not grant any dimensional relief for setbacks concurrent with the special use permit application.

C. Not withstanding the foregoing, an existing OWTS, leach field or other facility designed to leach wastewater into the soil located within 150 feet of a fresh water wetland or coastal wetland may be replaced and/or its associated leach field repaired upon approval by the Building Official/Zoning Officer, without the need for a special use permit, if the replacement, or repairs meet the performance standards for alternative technologies contained in Section 504.4.

504.2 *Conditions for OWTS*.

A. An application involving any onsite wastewater treatment system (OWTS), requiring approval by the Zoning Board of Review shall require an advisory opinion from the Conservation Commission prior to filing. The Conservation Commission shall prepare an advisory opinion based on the following information to be submitted by the applicant as part of any application:

1. Proximity to the 100 year floodplain level;
2. Location of coastal features and relationship to jurisdiction of the Coastal Resources Management Council Special Area Management Plans for the Narrow River and the Salt Pond Region;
3. The location and delineation of, and distance from the nearest public water supply watershed or aquifer;
4. Proximity to Class SA and/or Class A water body or area where the water quality is suitable for harvesting shellfish for direct consumption, where applicable;
5. Soil types present on the site within the vicinity of proposed construction and land disturbance (referencing the Soil Survey of Rhode Island and based on collected field data) to include but not limited to; depth of soil to the seasonal high water table, with areas having a depth of 18 inches clearly shown, hydric soils, and hydrologic soil groups.
6. The presence of a restrictive layer, ledge and/or dense basal till between the soil surface and groundwater;
7. Detailed soil morphological characteristics to a depth of four feet as analyzed by a licensed Class IV Soil Evaluator, for the purpose of determining seasonal high water table;
8. Direction of groundwater flow;
9. Direction and characteristics of stormwater flow based on an analysis of area topography, existing impervious surfaces, drainage infrastructure, soils and ground cover;

10. Availability of public water system;
11. The dimensions of the proposed structure, the square footage apportioned to living space for each floor and number of bedrooms. The number of bedrooms in the proposed structure shall not exceed the design capacity of the OWTS servicing the same;
12. The acreage and percentage of impervious cover of the lot under current conditions and with proposed development;
13. Drinking water wells within 200 feet of the proposed OWTS;
14. Precise reference points to aid in locating the property and the proposed OWTS site. For example, street number of adjacent dwellings, utility pole number, curb drains, distance to the nearest street intersection, benchmark of coastal and geodetic survey marker;
15. The surveyed edge of all coastal and freshwater wetlands within 200 feet of the leach field, where feasible, as flagged by a qualified professional who meets the minimum qualifications for professionals that delineate wetlands as set forth in the Freshwater Wetlands Program guidelines noted in Rule 12.01(C) of the Rules and Regulations Governing the Administration and Enforcement of the Freshwater Wetlands Act;
16. Documentation that the wetland edge has been verified pursuant to Rule 9.02(A)(2) of the Rules and Regulations Governing the Administration and Enforcement of the Freshwater Wetlands Act;
17. Approximate location and type of OWTS of properties within 200' of the subject site; and
18. Use of LID (Low Impact Design) Techniques. The applicant shall demonstrate that the design of the OWTS, residence and other site alterations addresses the ten (10) objectives of LID Site Planning and Design Criteria as detailed in the "Rhode Island Stormwater Design and Installation Standards Manual" to the maximum extent practicable).

504.3 ***OWTS Design.*** The separation distance between the bottom of any OWTS leaching field and the season high water table shall be as follows.

A. Conventional OWTS design – no less than three feet.

B. Advanced Technology OWTS design – no less than the distance required by RIDEM.

C. Critical Resource areas – no less than four feet for OWTSs located within a Critical Resource area, as defined in Rule 38 of Rules Establishing Minimum Standards Relating to Location, Design, Construction and Maintenance of Onsite Wastewater Treatment Systems, RIDEM, January 1, 2008, as amended.

D. Where RIDEM grants a variance to permit separation distances that are less than the above, a modification or Special Use Permit pursuant to Article 9 of this Ordinance shall also be required.

504.4 *Performance Standards.* Applications for a Special Use Permit under provisions of Section 504 of the Zoning Ordinance shall meet the following minimum performance standards.

A. Alternative technologies. Alternative technologies that provide advanced treatment shall be used in all new, replacement and OWTS alterations or repairs to leachfields, to achieve minimum treatment requirements as set forth in Section B below where the OWTS is or will be located within the following areas.

1. The CRMC Salt Pond Region Special Area Management Plan;
2. The CRMC Narrow River Special Area Management Plan;
3. Within a designated community Well Head Protection Area (WHPA) and/or the Town's Groundwater Protection Overlay District
4. (GPOD) per Section 602;
5. A site where the seasonal high ground water table is located less than or equal to forty eight (48) inches below the original grade;
6. A site requiring a Special Use Permit under the provisions of Section 504.1 or 504.3 of the Zoning Ordinance: and
7. Where the proposed or existing OWTS leach field is less than one hundred feet from any well used as a potable water supply.

B. *Minimum Requirements for Advanced OWTS Treatment.* All new, replacement and OWTS alterations or repairs to leachfields for OWTSs located within those conditions set forth in Section A above shall be approved by RIDEM and provide advanced treatment to achieve the following levels, as measured at the outlet of the treatment unit prior to discharge to a drain field:

1. Minimum total nitrogen removal of fifty percent and a reduction to less than or equal to 19mg/l total nitrogen;
2. TSS (Total Suspended Solids) and BOD_5 (Biological Oxygen Demand-5 Day) shall be equal to or less than 30 mg/l each.
3. Minimum fecal coliform removal to less than or equal to 1,000 fecal coliform MPN/100 ml.

C. *Additional Treatment Requirements.* Where the distance between a drainfield and private potable water supply well is less than 100 feet alternative OWTS microbiological treatment of the effluent shall result in a final leach field effluent fecal coliform concentration of less than or equal to 200 MPN/100ml.

D. *Permitted OWTS Technologies.* Installation of alternative OWTS technologies permitted shall be those technologies approved by RIDEM pursuant to their procedures and regulations. Alternative OWTS technologies shall have documented the ability to achieve the minimum treatment requirements set forth in this Ordinance.

E. *Seasonal High Water Table Determinations.* For the purpose of determining the seasonal high water table detailed soil morphological data to a depth of four feet shall be prepared and submitted by a Rhode Island licensed Class IV Soil Evaluator.

F. *Operation and Maintenance.* All installations of alternative OWTS technologies shall include a continuous Operation and Maintenance (O & M) agreement with the property owner that shall be duly recorded in Land Evidence Records.

G. Minimum Requirements for Storm Water Management. Development of an individual residential lot shall include storm water control measures to ensure that no net increase between pre and post development site conditions in volume or rate of storm water runoff for a 24 hour, 25 year frequency rainfall event occurs onto adjacent properties or roadways from the proposed individual residential lot development. Said plan shall include a certification by a registered professional engineer that the post development site conditions will meet or exceed the criteria noted herein.

H. Use of Subsurface Drains. The installation of subsurface drains designed to intercept and lower the groundwater table for the installation of an OWTS is prohibited.

I. *Drainage Design.* A detailed stormwater management design shall be submitted to the Town, for all projects proposing a new OWTS. Said plan shall include drainage calculations for a 24 hour, 25 year storm event prepared by a Rhode Island Registered Professional Engineer. Proposed grading shall maintain existing natural drainage patterns to the degree feasible.

J. *Storm Water Controls and OWTS Location*. Storm water runoff shall be diverted from any OWTS. Also, there shall be a minimum fifteen (15) foot horizontal separation distance between any OWTS drain field and the edge of any storm water infiltration system.

K. *Maximum Impervious Lot Coverage.* In the consideration of a Special Use Permit under this section, the maximum impervious coverage allowable for the lot (all areas of the lot proposed to be covered including: driveways and parking areas, walkways, patios and rooftops of the principal and any accessory structures, where impenetrable) shall not exceed fifteen (15) percent of the buildable area of the lot.

M. *Minimize Wetland and Site Disturbance.* The applicant shall demonstrate that the proposed use will result in the least disturbance to the site as possible; that the OWTS and dwelling have been located as far as possible from the wetland edge; and that the size of the dwelling, its configuration, and extent of disturbance has been reduced by the maximum extent practicable.

N. *Site Restoration.* The wetland buffer shall be revegetated to restore buffer functions using native plants; permanent fencing will be used to demarcate the protected wetland buffer edge to avoid future encroachment. Soils compacted during construction shall be restored using compost amendments appropriate to the soil types present and plant materials utilized to restore site infiltration capabilities.

Section 504.5 ***Required Information.*** In addition to the submittal requirements under 504.2 above, all projects proposing a new OWTS shall provide a development plan that shall be filed with the Planning Department to show the following information:

1. Property boundary lines with area and dimensions of property to be developed;
2. Vicinity plan showing adjacent or nearby properties, uses, OWTS's, wells, wetlands, streams or surface water reservoirs within a 500 foot radius, where feasible;
3. Site plan showing the proposed location of the OWTS, residence, impervious cover, and all other improvements, **i**ncluding the total area to be disturbed with limits clearly shown along with calculation of the impervious area and percentage lot coverage under current and proposed conditions;
4. Topographic map/grading plan of property showing existing and proposed two foot contours within and proximal to areas of the property to be developed;
5. Site specific soils map of property including at a minimum, delineation of soil features required in section 504.2;
6. Stormwater management plan;
7. Soil erosion and sediment control plan;
8. Wetlands delineation map, as field verified by DEM;
9. Plan for revegetation of the site, including buffer restoration using native plants and fencing to prevent future disturbance; and
10. Any additional information related to the location of the floodplain, the profile of existing soils, the availability of water supply and any other site features or constraints that will be required by the Conservation Commission to prepare an advisory opinion pursuant to Section 504.2.A.

504.6 ***Post-construction certification.*** For all approved applications under this section, the applicant shall, upon completion of construction, provide a certification from a registered professional engineer that all site infrastructure and improvements have been installed per the approved plans and is compliant with all conditions imposed on the special use permit by the Zoning Board of Review. (Amended 4/4/11)

19. TIVERTON

Source: Tiverton RI Code of Ordinances, Appendix A. Zoning, Article VI. Other District Regulations, Sec.7. Setbacks from certain water bodies. www.municode.com accessed July 31, 2007.

Section 7. Setbacks from certain water bodies.

a. The installation of individual sewage disposal systems (ISDS), or other facilities for the leaching of fluid waste into the soil, shall be set back from the water bodies listed in [subsection] c below, as follows, except where they are exceeded by state requirements:

(1) For single-family homes: 125 feet.

(2) For all other uses: 200 feet.

Setbacks shall be measured to the water body's average annual high-water mark, or biological edge of wetland, whichever is greater.
b. Any such facility which cannot meet the setback requirements listed above shall require the issuance of a special use permit by the zoning board of review under the provisions of article XVI.
c. The specific water bodies to which the setback requirements shall apply include, but are not limited to, the following: Pocasset Cedar Swamp; Sucker Brook; Sakonnet River; Creamer (Lent) Pond; Archer Brook; Sin and Flesh Brook; Quaket River; Basket Swamp; Borden Brook; Cedar Swamp; Seapowet Marsh; Adamsville Brook; Great Swamp; Nonquit Pond; Nonquit Brook; Almy Brook; Fogland Marsh; unnamed perennial streams as designated on the United States Geologic Service (USGS) quadrangle map; and any other waters or wetland as defined herein.
Stafford Pond and associated wetlands and watercourses within the Stafford Pond watershed overlay district shall have setbacks as established in article VIII of this ordinance.

Source: Tiverton RI Code of Ordinances, Appendix A. Zoning, Article VIII. Watershed Protection Overlay District, Sec.3. Use Regulations, paragraph d. Limitations. www.municode.com accessed July 31, 2007.

Watershed Protection Overlay District, Section 3
d. *Limitations.* All development and activities in a watershed protection overlay district are subject to the following limitations and conditions:
(1) No development may occur within 200 feet of Stafford or Nonquit Ponds and their direct tributaries, unless a use variance is granted under the provisions of article XVII. Unless specifically exempted in writing, natural vegetation shall not be disturbed within this buffer area. Efforts to improve existing buffer areas are encouraged.

20. WARREN

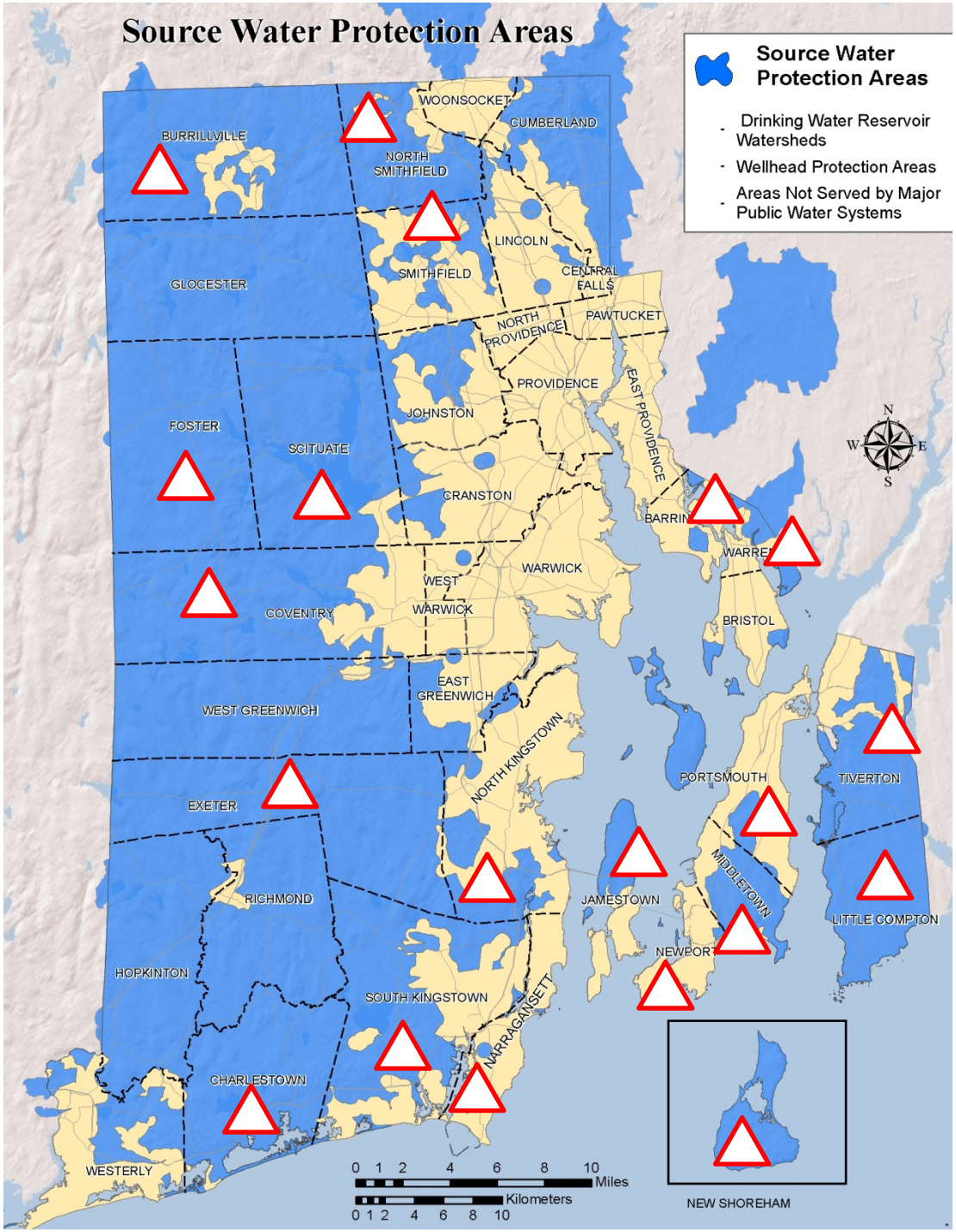
Source: Warrren RI Code of Ordinances, Chapter 32. Zoning, Article XV. Special Yard and Dimensional Requirements, Sec 89. Setback from Wetlands and Water Bodies. http://www.townofwarren-ri.gov/services/general/zoning.pdf accessed July 31, 2007

32-89. Setback from Wetlands and Water Bodies
Sewage disposal facilities which are designed to leach fluid wastes into the soil shall be located not less than one hundred fifty (150) feet from the edge of any wetland, water body or stream. On tidal water bodies, this measurement shall be made from the normal high tide mark.
Except as otherwise provided in this or other applicable regulations, no development shall be located within fifty (50) feet of any wetland, water body or stream unless a variance is granted by the Zoning Board of Review under the provisions of Article IV. In areas of Warren served by individual sewage disposal systems (ISDS), no development shall be located within one hundred (100) feet of any wetland, water body, coastal features or stream unless a variance is granted by the Zoning Board of Review under the provisions of Article IV.

Definitions in Freshwater Wetlands Act, Rhode Island General Laws

RIGL 2-1-20: (4) "Fresh water wetlands" includes but is not limited to, marshes, swamps, bogs, ponds, rivers, river and stream flood plains and banks, areas subject to flooding or storm flowage, emergent and submergent plant communities in any body of fresh water including rivers and streams and that area of land within fifty feet (50') of the edge of any bog, marsh, swamp or pond.

RIGL 2-1-20 (8) "River" means a body of water designated as a perennial stream by the United States department of interior geologic survey on 7.5 minute series topographic maps and which is not a pond as defined in this section.



Municipalities with wetland setbacks

- 20 total.
- All have drinking water sources.
- 7 rely on sole source aquifers
- 13 have nitrogen-sensitive coastal waters.
- All but one have DEM-designated Special Resource Protection Waters.
- All have impaired waters.

Map Source: Clayton Commons, RI HEALTH; RIGIS 2011

THE UNIVERSITY OF RHODE ISLAND
COOPERATIVE EXTENSION
RI NEMO

OWTS Setbacks from Water Resources
RI DEM OWTS Rules (July 2012)

"Watercourse" means any river, stream, brook, pond, lake, swamp, marsh, bog, fen, wet meadow, area subject to storm flowage, or any other standing or flowing body of water, including such watercourses that may be affected by the tides.

From: Table 22.1
For areas <u>not</u> located within a Critical Resource Area:

	All other OWTS Components		Leachfield	
	Design Flow <5000 gpd	Design Flow ≥5000 gpd	Design Flow <5000 gpd	Design Flow ≥5000 gpd
Coastal Shoreline Feature (Note 11) not in a Critical Resource Area, Flowing Water (Rivers and Streams), Open Bodies of Water (Lakes and Ponds), Other Watercourses Not Mentioned Above, and Any Stormwater Management Structure That Potentially Intercepts Groundwater	25	50	50	100

Note (11): The minimum setback distance from the inland edge of the coastal shoreline feature of the ocean or Narragansett Bay is either fifty (50) feet or twenty five (25) feet plus the CRMC calculated shoreline change setback pursuant to the CRMP Section 140, whichever is greater. Shoreline change rates and maps are available on CRMC's web site. This setback distance is doubled for OWTSs with design flow greater than five thousand (5000) gallons per day.

Table 22.2 Minimum Setback Distances from Drinking Water Supply Watershed Critical Resource Area Features (distances in feet from all OWTS components). See also Figure 2. If it is shown to the Department's satisfaction by clear and convincing evidence that the feature of concern in this table is upgradient (for both groundwater and surface water flow) of the OWTS, the minimum setback distance will be determined from Table 22.1. Subsurface drains to lower the seasonal high groundwater table are not permitted in accordance with Rule 40.2.

Feature	**OWTS Design Flow < 5000 gpd**	**OWTS Design Flow ≥5000 gpd** (Note 1)
Impoundment with Intake for Drinking Water Supply and Adjacent Wetlands (Note 2)	200	400
Subsurface Drains and Foundation Drains that Discharge Directly to the Impoundment	200	400
Subsurface Drains and Foundation Drains that Discharge to a Drainage Swale that Subsequently Discharges to the Impoundment: Paved Swale Unpaved Swale <200 feet long Unpaved Swale ≥200 feet long	 200 200 100	 400 400 200
Tributaries, Tributary Wetlands, Swales, and Storm Drains that Discharge Directly to the Impoundment	100 Note (3)	200 Note (3)
Subsurface Drains, Foundation Drains, and Storm Drains that Discharge to Tributaries and Tributary Wetlands	100 Note (3)	200 Note (3)
Any other Watercourse in the Drinking Water Supply Watershed (Not Connected to the Impoundment) or Areas Subject to Storm Flowage	50	100

Notes:

(1) As defined in Rule 35.1.1.

(2) Distances measured from the yearly high water mark.

(3) The distance between the building sewer or septic tank effluent pipe and a drain may be reduced and the building sewer or effluent pipe may cross the drain provided that the building sewer or septic tank effluent pipe is sleeved whenever they are within twenty-five (25) feet of the drain. The sleeve shall be seamless or schedule 40 PVC or equivalent with watertight joints, and it shall have a watertight seal that is fastened to the pipes with a stainless steel retractable clamp.

Figure 2

Minimum Setback Distances in Drinking Water Supply Watershed Critical Resource Areas

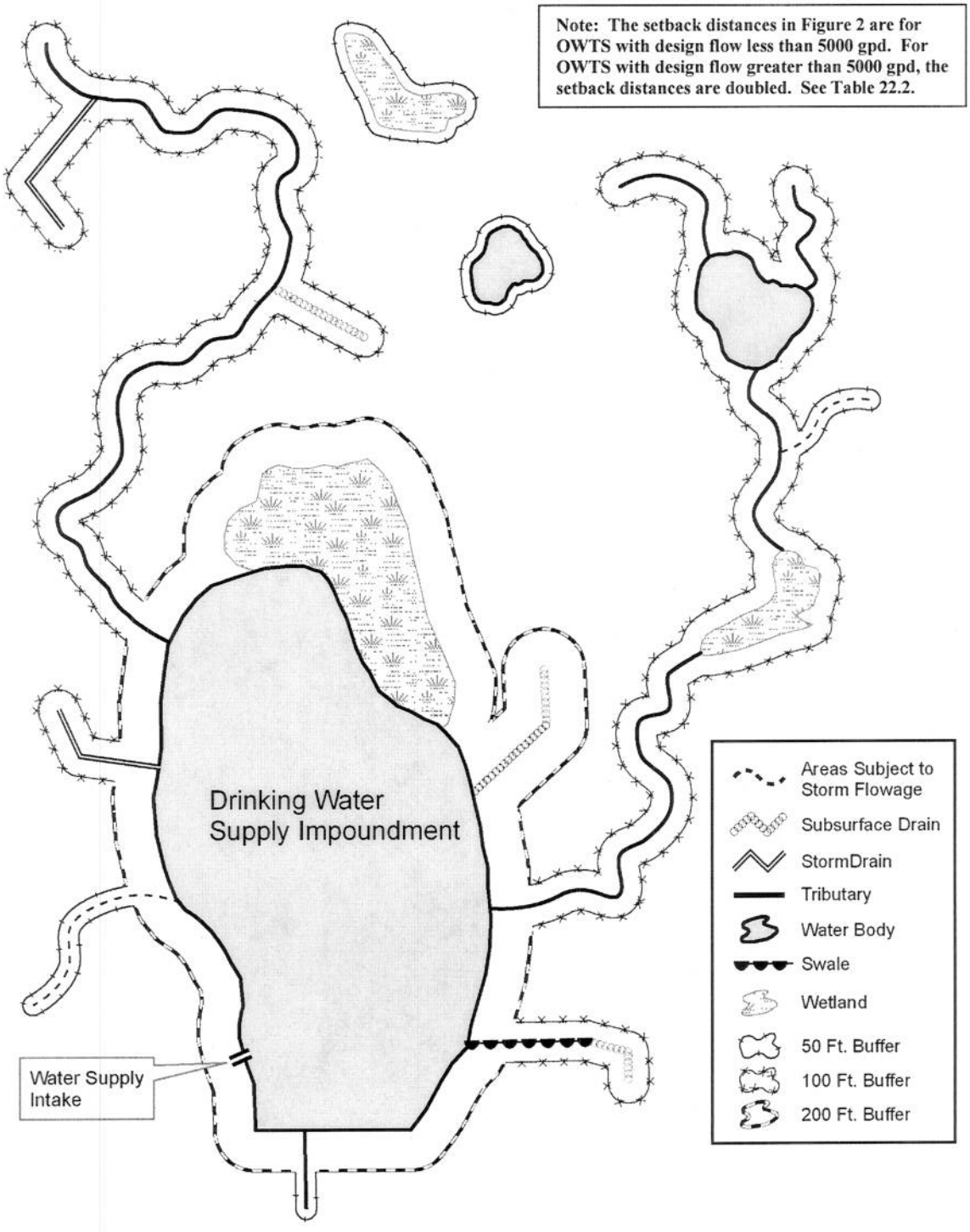


Table 22.3 Minimum Setback Distances from Features in the Salt Pond and Narrow River Critical Resource Area (distances in feet from all OWTS components). See also Figure 3. If it is shown to the Department's satisfaction by clear and convincing evidence that the feature of concern in this table is upgradient (for both groundwater and surface water flow) of the OWTS, the minimum setback distance will be determined from Table 22.1. Applications for an OWTS permit that are approved by DEM are subject to the requirements of CRMC.

Feature	**OWTS Design Flow < 5000 gpd**	**OWTS Design Flow ≥5000 gpd** (Note 1)
Salt Pond/Narrow River Coastal Shoreline Features, excluding the ocean	200	400
Subsurface Drains and Foundation Drains that Discharge Directly to the Salt Pond/Narrow River	200	400
Subsurface Drains and Foundation Drains that Discharge to an open Drainage Swale that Subsequently Discharges to the Salt Pond/Narrow River:		
Paved Swale	200	400
Unpaved Swale <200 feet long	200	400
Unpaved Swale ≥200 feet long	150	300
Tributaries, Tributary Wetlands, Swales, and Storm Drains that Discharge Directly to the Salt Pond/Narrow River	150 Note (2)	300 Note (2)
Subsurface Drains, Foundation Drains, and Storm Drains that Discharge to Tributaries and Tributary Wetlands	150	300
Any Other Watercourse in Salt Pond/Narrow River Critical Resource Area (Not Connected to Salt Pond/Narrow River), Areas Subject to Storm Flowage, or the inland edge of the coastal shoreline feature of the ocean. (Note 3)	50	100

Notes:

(1) As defined in Rule 35.1.1.

(2) The distance between the building sewer or septic tank effluent pipe and a drain may be reduced and the building sewer or effluent pipe may cross the drain provided that the building sewer or septic tank effluent pipe is sleeved whenever they are within twenty-five (25) feet of the drain. The sleeve shall be seamless or schedule 40 PVC or equivalent with watertight joints, and it shall have a watertight seal that is fastened to the pipes with a stainless steel retractable clamp.

(3) The minimum setback distance from the inland edge of the coastal shoreline feature of the ocean is either fifty (50) feet or twenty-five (25) feet plus the CRMC calculated shoreline change setback pursuant to CRMP Section 140, whichever is greater. Shoreline change rates and maps are available on CRMC's web site. This minimum setback distance is doubled for OWTSs with design flow greater than five thousand (5000) gallons per day.

Figure 3

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

Note: The setback distances in Figure 3 are for OWTS with design flow less than 5000 gpd. For OWTS with design flow greater than 5000 gpd, the setback distances are doubled. See Table 22.3.