

Article 5 - 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:
 - i. Number, location, depth and pumping rate of wells;
 - ii. Volume of groundwater discharged to the ocean by the wastewater treatment facility;
 - iii. Volume and distribution of water discharged by an OWTS;

- iv. 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.

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 it must be 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.

“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, R.I. General Laws Chapter 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 Rhode Island General Laws Chapters 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) Failure to accept wastewater into the building sewer;
- (2) Discharge of wastewater to a basement; subsurface drain; stormwater collection, conveyance, or treatment device; or watercourse unless expressly permitted by the Department;
- (3) Wastewater rising to the surface of the ground over or near any part of OWTS or seeping from the absorption area at any change in grade, bank or road cut;
- (4) The invert of the inlet or the invert of the outlet for a septic tank, distribution box, or pump tank is submerged;
- (5) The liquid depth in a cesspool is less than six (6) inches from the inlet pipe invert;
- (6) Pumping of the cesspool or 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, distribution box, or cesspool 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 Rhode Island General Laws Section 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 section 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.

“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.

“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 surfacewater 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 onsite 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 repairs, except as noted in Subsection C.
 - c. To help locate and facilitate the inspection 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.
2. Effluent Filters and Inspection Ports: To help locate and facilitate the inspection, pumping and maintenance of a septic tank and ultimately the longevity of the OWTS, all septic systems 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.
 3. Cesspools: Cesspools are not an approved method of wastewater disposal under the OWTSs Rules and this Ordinance, and all existing cesspools are considered to be substandard wastewater treatment systems.
 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, except for use at a facility serving the public. Alternative toilets for use at a public facility will only be permitted 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 Major 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 saltmarsh 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 under this Section.
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 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:
 - (i) Public health;
 - (ii) Any surface water; including the cumulative impacts of the system to the surrounding area;
 - (iii) Groundwater;
 - (iv) The ability of groundwater and surface water to support or maintain plant and wildlife as well as any designated water uses;
 - (v) Public use and enjoyment of any recreational resource; and
 - (vi) 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:
 - i. **T2N**: A type of T2 system that achieves a minimum total nitrogen removal of fifty percent (50%) 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 dispersal trench.

- ii. **T2C:** A type of T2 system that 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 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. (Amended January 3, 2001)
- 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 Depth¹	Depth to Seasonal High Water Table	Depth to Restrictive Layer and/or bedrock²	Depth to Water Table AND One of the Following: Restrictive Layer Or OWTS Soil Category 1 soils³
<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
>6ft.	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 data. 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 SHOREHAM¹**

Site Vulnerability Rating	CRITICAL RESOURCES				ISLAND RESOURCES²	
	Peckham, Sands & Fresh Pond Reservoir Watersheds & Associated WHPA's	Other WHPA	Great Salt Pond Watershed	Wetland Buffers to Critical Resources³	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 T2⁴	T2
Moderate	T2C	T1	T1	T2 & ≤450 gpd	T1	T1⁵
Low	T2C	T1	T1	T2 & ≤450 gpd	T1	T1⁶

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 surfacewater 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.