Topic:	Aquifer Protection; Drinking Water Protection & Conservation; Water Conservation; Overlay District
Resource Type:	Regulations
State:	Rhode Island
Jurisdiction Type:	Municipal
Municipality:	City of Jamestown
Year *(adopted, written, etc.)*:	2004
Community Type – applicable to:	Urban; Suburban
Title:	City of Jamestown High Groundwater Table Ordinance
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Abstract

The City of Jamestown designated a High Ground Water Table and Impervious Layer Overlay District in which, in order to preserve the town's fresh water supply, the area has been deemed unsuitable for unrestricted development. The District is divided into two sub-districts: sub-district A has a higher groundwater table, and thus heightened restrictions on development, and sub-district B, a lower groundwater table, and less restrictive development requirements. The ordinance lays out the restrictions on development within each zone, as well as the obstacles to obtaining a variance.

Resource

Adopted 2/10/03
Amended 3/22/04
"Jamestown High Groundwater Table Ordinance"

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

(60) *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.

(61) *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.

(73) *Major repair (of an ISDS).* Any work performed on an ISDS, excluding minor repairs, in order to repair, replace or alter 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 defined in the most current RIDEM ISDS regulations and shall be as determined by a RIDEM Licensed Class IV soil evaluator.

(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 and that area of land within 50 feet of any bog, marsh, swamp or pond.

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. 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 shall 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 between 42 inches and 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 he or she determines to be sufficient and which is submitted to him or her 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 subdistrict "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. 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 10' within footprint evenly spaced central to ! within 25' of of building of building over remain- the remain- ! ! ISDS leachfield foundation foundation ing area ing area 0-7200 3 2* 1 7201-14400 4 2* 1 1 14401-21600 5 2* 2** 1 21601-28800 6 2* 2** 2 28801-39999 6 2* 2** 2 * minimum 10 ft. apart ** minimum 20 ft. apart A. *Prohibited uses.* The following activities are prohibited in sub-district A:

1. 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.

2. In-ground swimming pools, and

3. The installation of any new individual sewage disposal system (ISDS) excluding replacements or repairs of preexisting ISDS or cesspools. The installation of subsurface drains designed to intercept and lower the groundwater table for the installation of an ISDS are prohibited in sub-districts A and B.

B. *Development within sub-district B.* Development within sub-district B shall comply with the following development standards. Development proposals that meet these standards will be reviewed administratively by the building official and the town planner. In subdivisions other than an administrative subdivision, the town may engage professional assistance and advise with the applicant responsible for such cost. Applications failing to meet one or more of the development standards shall require a variance per article 6 and section 82-314 C. below.

1. The lowest habitable area of a dwelling shall have a 12-inch separation between the bottom elevation of the structure and the seasonal high groundwater table.

2. All new ISDSs and ISDSs requiring major repair shall 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 the separation between the leach field and a potable well is less than 100 feet, microbiological treatment of the effluent shall result in a final concentration of fecal coliform of less than or equal to 200 mpn/100ml.

4. All ISDS serving new dwellings shall be located on the same lot as the structure it serves.

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 this percentage.

6. Proposals shall provide stormwater 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 leachfield and the edge of any stormwater infiltration system. Elevated structures with roofs allowing for groundwater infiltration an structures less than 120 square feet in size are exempt from this standard.

C. *Variances.*

1. Dimensional variances for development in subdistrict B. All development within sub-district B that does not meet the development criteria listed in 82-314 B. may be permitted by dimensional variance from any one of the development criteria by the zoning board of review, after development plan review by the planning commission in accord with the development 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;

• Stormwater management plan;

• Wetlands map (wetlands on site shall be verified by DEM);

• The planning commission or the zoning board may require additional information that they determine to be necessary to act on the application. The applicant for a variance 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.

a. Development standards. The development standards 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 proposals for the granting of variance(s) under this article shall, in addition to the requirements of article 6 hereof meet the following development standards:

b. 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.

• 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.

c. 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, stormwater runoff, and potential disturbances to wetland buffers.

d. Stormwater 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 stormwater 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.

2. Variances for 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 subsection C. 1. b., c., and d. hereof. Applicants shall file a development plan with the zoning enforcement officer which shall be at a suitable scale and which shall show the following information:

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

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

c. Topography map of the property;

d. Site specific soils map of the property;

e. Stormwater management plan;

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

g. The planning commission or the zoning board may require additional information that they determine to be necessary to act on the application. (Ord. of 2-10-2003)