

Groundwater Source Drinking Water Overlay Districts



Background

Problem

Various ways in which we utilize land within our municipalities often affects waterways and groundwater sources through point source and nonpoint source pollution, as well as development patterns and increased impervious surfaces. These land uses are able to compromise the quality of drinking water for communities, especially those that utilize groundwater wells as a main source of drinking water.

Solution

Oregon Department of Environmental Quality recommends the use of overlay zones in municipal planning to protect groundwater sources of drinking water, stating that safe drinking water is fundamental to any community's viability, and the cost of treating contaminated water is high. The use of overlay zones allows for the continued health of the source to remain viable for the community it serves.

Overlay Zoning

"Overlay Zoning to Protect Surface Waters" from the Planning Commissioners Journal outlines that the use of zoning, and the subsequent zoning toolset, is the "second generation" of water quality regulation in the United States. A shift from the point source pollution reduction strategies of the 1970s and 1980s and into a more nonpoint source pollution reduction method of viewing water quality. This nonpoint source pollution outlook ties together land use and water quality in that the ways we occupy and utilize the spaces around us that has a both direct and indirect impact on the quality of the water we use for drinking.

Boundaries

- An essential first step
- The establishment of the location requires the study of topographical and hydrologic data
- Important to include all lands that drain into the water body (or that infiltrate into the aquifer)

Standards

- The Purpose is to mitigate adverse impacts that may arise from development or activities
- Set stricter limitations within the overlay zone
- Setbacks may establish a minimum distance structures

Non-Zoning Approaches

- Zoning is a tool for water quality protection, but not the only means of achieving
- Other non-zoning approaches include:
 - Public education
 - Acquisition of lands
 - Protection regulations
 - State involvement

Case Studies

STERLING, NY



Introduction

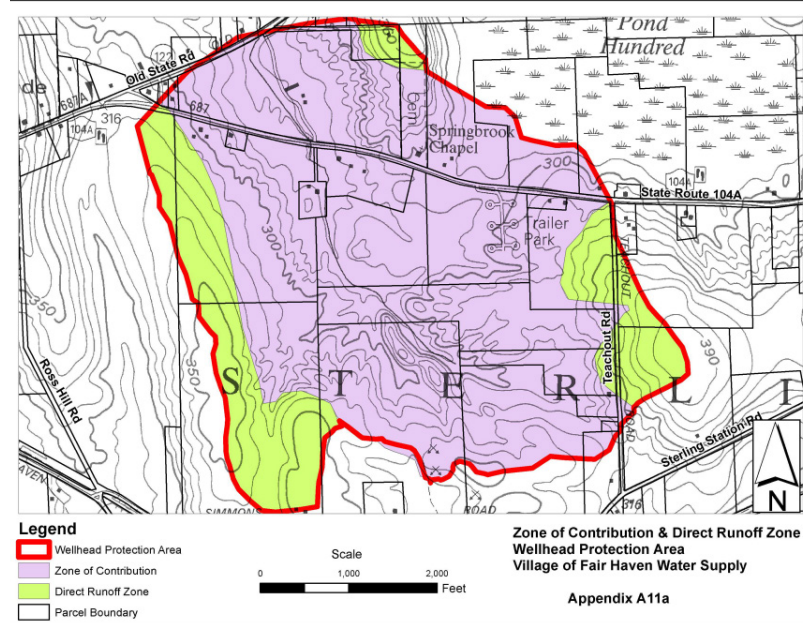
Sterling is a Town of 3,040 people (2020 Census) in Cayuga County, New York. The Town is on the shore of Lake Ontario and encompasses Little Sodus Bay. Sterling Creek runs through the town before terminating at Lake Ontario. On December 19, 2022, the Town enacted Local Law 7 which implements an amendment to enact a "Wellhead Protection Overlay District."

Boundaries

Includes all areas in the "zone of contribution" and the direct runoff zone. These zones comprise all areas that directly channel stormwater and other runoff directly onto the groundwater aquifer used by the Town as a drinking water supply. The map identifies the zone of contribution in purple and the direct runoff zone in yellow. The zone of contribution identifies the land in which water infiltrates the groundwater supply.

Maximum Impervious Coverage

Within the district, no more than 10% of a single parcel or building site may be rendered impervious to infiltration. An exception is made for single-family dwellings or farm operations within a county-adopted and state-certified agricultural district. Residential structures and accessory structures and uses require a calculation of impervious surfaces during the permitting process.



Wellhead protection Area By: Town of Sterling NY

Prohibited Uses & Activities

- Furniture strippers and refinishers
- Wood preserving or treatment
- Metal fabricator, plater, finisher
- Public utility or transportation use
- Municipal or industrial sewage treatment facilities
- Storage of petroleum, except for on-site consumption
- Any activity that involves on-site disposal of solid, medical, or hazardous waste
- Any solid waste management facility
- Surface land application of septage, sewage, or sludge
- Construction of a concentrated animal feeding operation
- A facility that receives hazardous or toxic substances
- Disposal of snow containing de-icing compounds

Case Studies

PHILLIPSTOWN, NY



Introduction

Philipstown is a Town of 9,831 people (2020 census) in Putnam County, New York. The Town follows the shore of the Hudson River and has several small lakes and marshlands throughout. The Town's zoning code, as of 2019, includes the implementation of an Aquifer Overlay District with the purpose of "protect[ing] the health and welfare of residents of the Town of Philipstown by minimizing the potential for contamination and depletion of the Town's aquifer system."

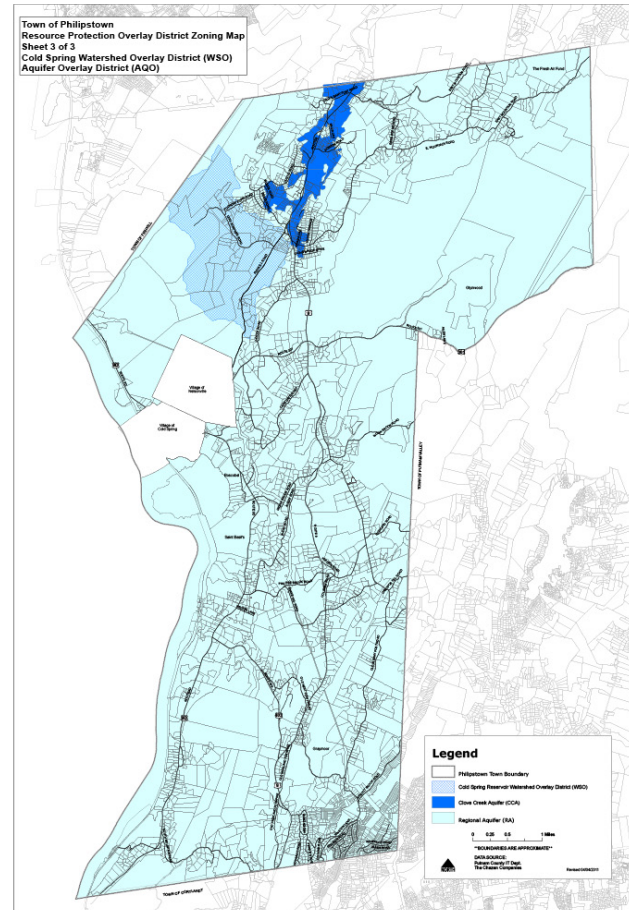
Boundaries

District encompasses the entire Town. Separated into two sub-districts:

1. Clove Creek Aquifer District on extensively developed land that is fully dependent on groundwater as a source of water supply
2. Regional Aquifer District which encompasses the remainder of the town

Prohibited Uses

- Landfills as defined in 6 NYCRR Part 360-2 and 6 NYCRR Part 360-7
- Disposal, by burial, of any hazardous waste
- Large quantity generators of hazardous waste
- Gas stations and major oil storage facilities
- On-site dry cleaning



Resource Protection Overlay Map By: Town of Philipstown, NY

Consumption and Recharge

All proposed actions that result in discharges exceeding state standards and all proposed actions that would result in water consumption exceeding the natural recharge rate of water for the given site are designated as a Type 1 action under the State Environmental Quality Review Act unless the action is listed as a Type 2 action. The determination of a parcel's natural recharge rate is done through soil identification and multiplying the recharge rate for the soil group by the total acres in the parcel.

Case Studies

SPRINGVILLE, OR



Introduction

Springfield is a city with a population of 61,851 (2020 census) in Lane County, Oregon. The City borders both the Willamette River to the south and the McKenzie River to the north. The City, as of the June 2022 code supplement, details a “Drinking Water Protection Overlay District” “The Drinking Water Protection (DWP) Overlay District is established to protect aquifers used as potable water supply sources by the City from contamination.”

Boundaries

Utilizes Time of Travel Zones (TOTZ), which refers to the time it takes for water to return to the given water feature. Four TOTZs:

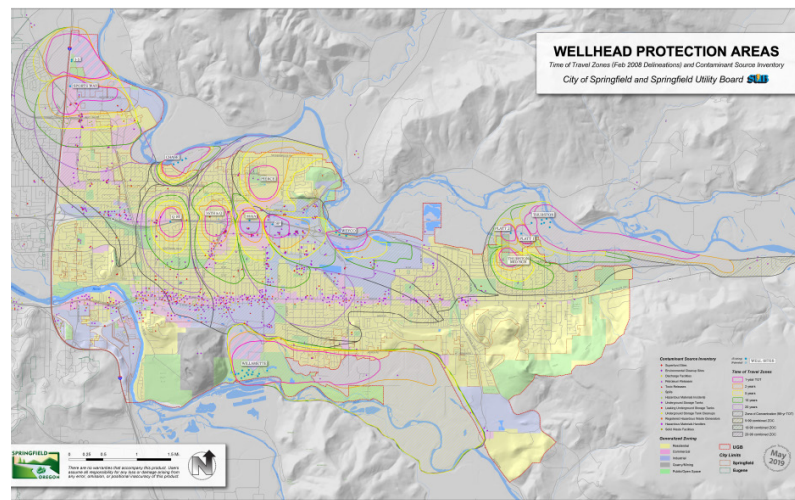
1. 0-1 Year
2. 1-5 Years
3. 5-10 Years
4. 10-20 Years

Determining the location of a property within a TOTZ, the following applies:

1. The Lane County Department of Assessment and Taxation maps shall be used as a base map with the addition of TOTZ boundaries
2. That portion of a tax lot that lies within a TOTZ is governed by the restrictions applicable to that TOTZ
3. Tax lots having parts lying within more than one TOTZ are governed by the standards of the more restrictive TOTZ

Standards

Within the TOTZ, only hazardous materials are regulated. This includes the storage, handling, treatment, use, application, or production of hazardous materials that are found to be a risk to groundwater in aggregate quantities. While each TOTZ has a specified amount of material that is allowed on each site within that zone, they all require regular inspections and record keeping procedures.



Wellhead Protection Area Map By: Town of Springfield, OR

Development Application Review

A development application is required when the following are met:

1. There is a change in land use, occupancy, or tenancy of a property
2. During the building permit process
3. In conjunction with any development action, including site plan review and minimum development standards
4. The above actions will affect the storage, use, or production of hazardous or other materials that pose a risk to groundwater

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