

**§ 8-4. Water Resources Protection Areas****A. Purpose and Intent.**

1. Ensure that land use activities are conducted in such a way as to minimize the impact on, and reduce the risk of contamination to, excellent groundwater recharge areas and wellhead protection areas which are the source for public drinking water in the Town.
2. Satisfy the requirements of the Delaware Source Water Protection Law 2001 in Title 7 Chapter 60 of the *Delaware Code*, Subchapter VI Source Water Protection, Section 6082 (b) and (f).

**B. Definitions—**The definitions contained in this Subsection pertain to water resources protection areas.

**ABOVEGROUND STORAGE TANK (AST)**—A single containment vessel greater than 250 gallons as defined in the Delaware regulations Governing Aboveground Storage Tanks. ASTs with a storage capacity greater than 12,499 gallons containing petroleum or hazardous substances, and ASTs with a storage capacity greater than 39,999 gallons containing diesels, heating fuel or kerosene are subject to the design, construction, operations, and maintenance requirements of the Delaware AST regulations.

**BEST MANAGEMENT PRACTICES**—Structural, nonstructural and managerial techniques that are recognized to be the most effective and practical means to control nonpoint source pollutants yet are compatible with the productive use of the resource to which they are applied; used in both urban and agricultural areas.

**CONTAMINATION**—Any physical, chemical, biological, or radiological substance that enters the hydrologic cycle through human action and may cause a deleterious effect on ground water resources.

**EXCELLENT GROUNDWATER RECHARGE AREAS**—Those areas with high percentage of sand and gravel that have “excellent” potential for recharge as determined through a Stack Unit Mapping Analysis delineated by the Delaware Geological Survey and presented in the Report of Investigations No. 66, Ground-water Recharge Potential Mapping in Kent and Sussex Counties, Delaware, Geological Survey, 2004. Excellent Groundwater Recharge Areas are delineated on the excellent groundwater recharge area maps described in Section B. 1) of this ordinance.

**GREEN TECHNOLOGY BEST MANAGEMENT PRACTICES (BMP’S)**—Those practices that achieve stormwater management objectives by applying the principles of filtration, infiltration and storage most often associated with natural vegetation and undisturbed soils while minimizing a reliance on structural components. They may also be constructed using an imported soil medium and planted with vegetation designed to promote the natural hydrologic process. These practices include, but are not limited to, vegetative filtration, riparian buffer plantings, bio-retention areas, vegetative flow conveyance, as well as recharge and surface storage in undisturbed natural areas.

**GROUND WATER**—The water contained in interconnected pores located below the water table in an unconfined aquifer or located in a confined aquifer.

**HAZARDOUS WASTE**—A solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may cause or significantly contribute to an increase in mortality or an increase in serious irreversible or incapacitating irreversible, illness, or pose a substantial present or potential a hazard to human health or the environment when improperly treated, stored, transported, or disposed of, otherwise managed. Without limitation, included within this definition are those hazardous wastes described in Sections 261.31, 261.32, and 261.33 of the Delaware Regulations Governing Hazardous Waste.

**INFILTRATION**—The passage or movement of water through the soil profile.

**IMPERVIOUS COVER**—The sum of parking lots, roads, buildings, sidewalks, or other surfaces through which rainwater cannot pass or infiltrate the soil.

**LAND DISTURBING ACTIVITY**—A land change or construction activity for residential, commercial, industrial, and institutional land uses.

**LEADERSHIP IN ENERGY AND ENVIRONMENTAL DESIGN (LEED)**—A rating system developed and administered by the U.S. Green Building Council based in Washington D.C. It is designed to promote design and construction practices that increase profitability while reducing the negative environmental impacts of buildings and improving occupant health and well-being. The LEED rating system offers four certification levels for new construction which includes Certified, Silver, Gold, and Platinum, corresponds to the number of credits accrued in five green design categories: sustainable sites, water efficiency, energy and atmosphere, materials and resources, and indoor environmental quality. LEED standards cover new commercial construction, major renovation projects, interiors projects, and existing building operations.

**PUBLIC WATER SUPPLY WELL**—Any well from which the water is used to serve a community water system by section 22.146 (Public Water Systems) in the Delaware State Regulations Governing Public Drinking Water Systems.

**PUBLIC DRINKING WATER SYSTEM**—A community, non-community, or non-transient non-community water system, which provides piped water to the public for human consumption. The system must have at least 15 service connections or regularly serve at least 25 individuals daily for at least 60 days.

**RUNOFF**—That portion of precipitation or snow melt that has not evaporated or infiltrated into the soil, but flows on land or impervious surfaces.

**SANITARY LANDFILL**—A land site at which solid waste is deposited on or into the land as fill for the purpose of permanent disposal, except that it will not include any facility that has been approved for the disposal of hazardous waste under the Delaware Regulations Governing Hazardous Waste.

**STORMWATER**—Water runoff from the surface of land resulting from precipitation or snow or ice melts.

**STORMWATER MANAGEMENT**—(1) For water quantity control, a system of vegetative, structural, and other measures that may control the volume and rate of stormwater runoff, which may be caused by land disturbing activities or activities upon the land; and, (2) For water quality control, a system of vegetative, structural, and other measures that control adverse effects on water quality that may be caused by land disturbing activities upon the land.

**UNDERGROUND STORAGE TANK (UST)**—One or a combination of Tanks including underground Pipes, the volume of which is 10% or more below ground, as defined in the Delaware Regulations Governing Underground Storage Tank Systems, dated March 12, 1995. The following USTs are not subject to the design, construction, operation, and maintenance requirements of the Delaware UST Regulations: Residential Heating Fuel, Agricultural, and Residential Motor Fuel USTs less than 1,100 gallons and any UST less than 110 gallons.

WATER QUALITY—Those characteristics of stormwater runoff from an impervious surface or a land disturbing activity that relate to the chemical, physical, biological, or radiological integrity of water.

WATER QUANTITY—(1) Those characteristics of stormwater runoff that relate to the volume of stormwater runoff to downstream-gradient areas resulting from land disturbing activities; (2) Those characteristics of stormwater that relate to the volume of stormwater that infiltrates the land surface and enters the underlying aquifer.

WELLHEAD PROTECTION AREAS—Surface and subsurface area surrounding a water well or well field supplying a public water system through which contaminants are likely to reach such well, or well field.

C. Source Water Protection Area Boundaries.

1. Official Boundaries—The official boundaries for Water Resources Protection Areas are as follows.
  - a. Wellheads—Prepared by DNREC, Division of Water Resources, Water Supply Section.
  - b. Excellent Recharge Areas—Delaware Geological Survey, Digital Ground-Water Recharge Potential Map for Kent and Sussex Counties, 2002 or as subsequently amended.
2. Identification on Development Plans Required.
  - a. Development plans depicting development or land disturbance shall delineate the locations of Source Water Protection Areas. If a tract proposed for development contains no Source Water Protection Areas, the plan shall include a statement affirming this.
  - b. When there appears to be a conflict between official boundary maps and actual site conditions, the applicant may engage the services of a Professional Geologist to prepare a report intended to determine more accurately the precise boundary of the Source Water Protection Area. This Report shall include all of the following.
    - (1) A detailed topographic layout of the subdivision and/or area to be developed prepared by a Delaware-registered professional land surveyor, professional engineer, or professional geologist.
    - (2) Evidence derived from a site-specific investigation that may include aquifer testing, test borings, test pits, observation wells, groundwater elevations, and topography surveys as appropriate for the types of source water protections area that clearly demonstrate that the area in question does not meet the definition of a Source Water Protection Area as defined.
  - c. Any challenges to the delineation of the excellent groundwater recharge potential areas must follow the methods used in the Delaware Geological Survey Publication: *Report of Investigations No. 66, Ground-Water Recharge Potential Mapping in Kent and Sussex Counties, Delaware*. The challenge must be approved by DGS and DNREC SWAPP.

## D. Applicability.

1. The regulations contained in this Section are in addition to other applicable regulations in this Land Use and Development Code.
2. All public drinking water well systems constructed after the effective date of this ordinance are required to comply with this ordinance in addition to other applicable ordinances, regulations, and standards.
3. Dimensional Regulations governing properties within Source Water Protection Areas shall apply in all instances except where uses are specifically prohibited by this Section and except pertaining to impervious cover. Where issues of impervious cover are concerned, the provisions this Section shall prevail.

## E. Exemptions—The following are exempt from the requirements of this Section.

1. Recorded subdivisions
2. Revisions to recorded subdivision plans that do not result in the creation of additional lots
3. Conditional use applications not requiring development-plan review
4. Improvements to existing residential lots, including additions to existing one-family dwellings, the placement of sheds, and fences; and

## F. Environmental Assessment Report.

1. Definition—Documents detailing the post-development recharge rates and quality and which compares them to the predevelopment recharge for both water quality and quantity computed on an annual basis.
2. When Required—Whenever land proposed for development contains Source Water Protection Areas.
3. Elements—The Environmental Assessment Report shall include all of the following elements.
  - a. Site description of proposed development within the water resource protection area.
  - b. Climatic water balance comparing pre-development and post-development recharge potential for both water quantity and quality.
  - c. Analysis of the results of subsurface exploration including borings, test pits, and infiltration tests.
  - d. Demonstration that the design of ground-water-recharge facilities will assure water quality as well as water quantity.
  - e. Construction and maintenance considerations.
  - f. Recommended ground-water monitoring plan.
  - g. Water-management agreement between the applicant and the Town providing for monitoring and maintenance of the recharge system. The applicant shall abide by the Ground Water Management Agreement as written in the DNREC Supplement to the *Source Water Protection Guidance Manual for the Local Governments of Delaware: Ground-Water Recharge Design Methodology* dated May 2005 or as later revised.

## G. Standards for Source Water Protection Areas.

1. Tier 1 Areas—See Figure 5.
  - a. Definition—Surface area extending in a 150-foot radius around the wellhead.
  - b. Regulations Governing Tier 1 Areas.
    - (1) Impervious cover shall be prohibited except for buildings, pumps, water storage tanks, generators and related appurtenances, and access associated with the well and related treatment and distribution facilities.
    - (2) Natural runoff into Tier 1 Areas shall be allowed, but all new stormwater runoff shall be diverted around Tier 1 Areas.
  - c. Prohibited Uses—The following uses are prohibited in Tier 1 Areas.
    - (1) On-site wastewater treatment and disposal systems.
    - (2) Underground and aboveground storage tank systems subject to the registration requirements of DNREC.
    - (3) Junk, scrap, and salvage yards.
    - (4) Mines and gravel pits.
    - (5) Hazardous Waste Treatment, Storage and Disposal Facilities, as defined in 7 DE Admin. Code 1302, *Delaware Regulations Governing Hazardous Waste*
    - (6) Sanitary and Industrial Landfills, as defined in 7 DE Admin. Code 1201, *Delaware Regulations Governing Solid Waste*.
2. Tier 2 Areas—See Figure 5.
  - a. Definition—Tier 2 Areas include the following.
    - (1) Surface area of a wellhead protection area outside of the Tier 1 Area, i.e. the area between the 150-foot radius around the wellhead and the boundary of the wellhead protection area.
    - (2) For an excellent recharge area having a wellhead protection area within its boundary, the surface area between the Tier 1 Area boundary and the boundary of the excellent recharge area.
    - (3) For an excellent recharge area not having a wellhead protection area within its boundary, the entire excellent recharge area.
  - b. Regulations Governing Tier 2 Areas.
    - (1) New development in Tier 2 Areas shall not exceed 20% impervious cover.
    - (2) New development may exceed the 20% gross impervious cover threshold up to 50% gross impervious cover provided that EITHER of the following methods is utilized. The Environmental Assessment required pursuant to § 8-4.F must describe how the chosen method will ensure compliance with the maximum allowable impervious cover.
      - (a) Method 1—Where stormwater shall be:
        - [1] Treated according to Green Technology Best Management Practices;
        - AND
        - [2] Directed to recharge facilities designed per the *Delaware Sediment and Stormwater Regulations* dated October 11, 2006 or as later revised.
      - OR
      - (b) Method 2—The project is LEED-certified (Leadership in Energy and Environmental Design) in the sustainable sites category.
    - (3) Roof Drains—For all new construction, additions and substantial improvements, structures shall be required to discharge roof drains into recharge facilities designed per the *Delaware Sediment and Stormwater Regulations* dated October 11, 2006 or as later revised. No discharge by roof drains to impervious surfaces except for residential dwellings is permitted in excellent groundwater recharge areas.

- (4) Stormwater Treatment—Stormwater from new development shall be treated using the Green Technology Best Management Practices designed in accordance with current requirements of the *Delaware Sediment and Stormwater Regulations* dated October 11, 2006 or as later revised.
- c. Prohibited Uses—The following uses are prohibited in Tier 2 Areas.
  - (1) On-site wastewater treatment and disposal systems.
  - (2) Underground storage tank systems subject to the registration requirements of DNREC—except those that are required for home heating fuel use. These tanks must meet all applicable federal, state, and local regulations concerning their use and maintenance.
  - (3) Chemical processing and storage facilities.
  - (4) Junk, scrap, and salvage yards.
  - (5) Mines and gravel pits.
  - (6) Hazardous Waste Treatment, Storage and Disposal Facilities, as defined in 7 DE Admin. Code 1302, *Delaware Regulations Governing Hazardous Waste*.
  - (7) Sanitary and Industrial Landfills, as defined in 7 DE Admin. Code 1201, *Delaware Regulations Governing Solid Waste*
3. New Developments in More Than One Source-Water Protection Area—For developments located partially in either a Tier 1 or Tier 2 Area, the more restrictive regulations shall apply.
  - a. The portion of a new development in a Tier 1 Area shall be subject to the regulations governing Tier 1 Areas.
  - b. The portion of a new development in a Tier 2 Area shall comply with the regulations governing Tier 2 Areas.
  - c. The portion of a new development outside of either a Tier 1 or Tier 2 Area shall not be subject to the provisions of this Section.
4. Existing Developments—Existing, developed land located in either a Tier 1 or Tier 2 Area shall be treated as nonconforming uses.

**Figure 5. Source Water Protection Areas**

