

## ARTICLE XI

### **GROUNDWATER PROTECTION DISTRICT**

#### 1.0 Purpose.

The purpose of the Groundwater Protection Districts Bylaw is to preserve and protect the groundwater of the Town of Topsfield, the Town's sole source of potable water, against degradation through either planned or unplanned disposal of wastes or hazardous material that may result in the contamination of the Town's well water. The Groundwater Protection Districts established hereunder delineate the areas in which groundwater is drawn into the Town's well fields. Since these areas are particularly sensitive to contamination, the Bylaw restricts certain uses and activities therein to safeguard the quality and healthfulness of the Town's drinking water.

#### 2.0 Scope of Authority.

A Groundwater Protection District (GPD) is an overlay district superimposed on the Town of Topsfield's zoning districts. This overlay district shall apply to all new construction, reconstruction or expansion of existing buildings and new or expanded uses of a property located within the GPD. Activities or uses within the GPD shall be limited to those permitted in the district as well as the underlying zoning district. Uses that are prohibited in the underlying zoning district are not permitted in the GPD.

#### 3.0 Definitions.

**Groundwater Protection District** - A zoning district defined to overlay the zoning districts of the Town of Topsfield, Massachusetts. The GPD includes both Zone I and Zone II areas. The GPD's are delineated on the Groundwater Protection Districts Plan.

**Impervious Surface** - Material or structure on, above, or below ground that does not allow precipitation or surface water to permeate into the soil below the material or structure.

**Mining** - The removal or relocation of geologic materials such as topsoil, sand, gravel, metallic ores, or bedrock.

**Recharge Areas** - Areas that collect precipitation or surface water and carry it to aquifers. Recharge Areas include areas designated as Zone I, and Zone II.

**Special Permit Granting Authority (SPGA)** - The Topsfield Planning Board Pursuant to Art. V, sec. 5.02B of the Topsfield Zoning Bylaw, hereinafter called the Zoning Bylaw.

**Toxic or Hazardous Material** - Any substance or mixture of physical, chemical, or infectious characteristics posing a significant, actual, or potential hazard to human health if such substance or mixture were discharged onto land or into surface - or groundwater of the Town of Topsfield. Toxic or hazardous materials include, without limitation, synthetic organic chemicals, petroleum products, heavy metals, radioactive materials, infectious wastes, acids, alkalis and all substances defined as Toxic or Hazardous under G.L.C. 21C and 21E and 310 CMR 30.00. Toxic and hazardous materials also include such products as solvents, oil based paints, thinners, fertilizers and pesticides in quantities greater than is customary for normal household or lawful agricultural uses.

**Zone I** - The protective radius required around a public water supply well or well field. The zone I radius for a public water system with an approved yield of 100,000 gallons per day (gpd) is 400 ft for a well and 250 ft for a well field.

Zone II – The area of an aquifer that contributes water to a well or well field under the most severe pumping and recharge conditions that realistically can be anticipated defined to be 180 days of pumping water at the approved yield limit with no recharge from precipitation. The Zone II boundary is characterized by the intersection of the normal groundwater level with the geohydrological gradient of the groundwater in the vicinity of the well or well field.

#### 4.0 Establishment and Delineation of Groundwater Protection District.

For the purpose of this By-Law there are hereby established within the Town of Topsfield groundwater protection districts which are delineated on the Groundwater Protection District Plan. This plan, as amended from time to time by Town Meeting vote, is hereby made part of the Groundwater Protection District By-Law and is on file in the office of the Town Clerk.

#### 4.1 District Boundary Disputes.

Where the location of the GPD boundary in relation to a particular parcel is in dispute, an appeal may be made to the Topsfield Zoning Board of Appeals pursuant to G.L.C 40A, sec's 8 and 15. Any application for an Appeal Hearing for this purpose shall be accompanied by adequate documentation and shall be filed with the Town Clerk in accordance with the Topsfield Zoning Board of Appeals Rules and Regulations.

#### 5.0 Severability.

A determination that any portion or provision of this Bylaw is invalid shall not invalidate any other portion or provision thereof, nor shall it invalidate any special permit previously issues there under.

#### 6.0 Use Regulation.

In the Groundwater Protection District the following regulations shall apply:

#### 6.1 Permitted Uses

The following uses are permitted within the Groundwater Protection District provided that any permits, orders, and approvals required by local, state, or federal laws or regulations are obtained:

1. All uses customary and incidental to maintaining and using a residential dwelling.
2. Conservation of soil, water, plants and wildlife.
3. All outdoor passive recreation and sports where these are permitted in the underlying zoning districts.
4. Foot, bicycle and/or horse paths and bridges.
5. Normal operation and maintenance of existing water bodies and dams, splash boards and other water control, supply and conservation devices;
6. Maintenance, repair, and enlargement of any existing structure, subject to Section 6.2 (prohibited uses) and Section 6.3 (Special Permit uses).
7. Residential development, subject to Section 6.2 (prohibited uses) and Section 6.3 (Special Permit uses).
8. All agricultural uses exempted from local zoning regulations under the provisions of G.L.C. 40A, Sec. 3.

9. Construction, maintenance, repair, and enlargement of drinking water supply related facilities such as, but not limited to; wells, pipelines, aqueducts, and tunnels.
10. Storage of liquid petroleum products for the following purposes:
  - a. Normal household uses.
  - b. Fuel supplies for emergency electrical generators required by law.
  - c. Fuel supplies for water treatment works for ground or surface water approved under 310 CMR 32.05. All petroleum product storage tanks shall be free standing within a building or outside in a covered container on an impervious platform surrounded by a containment dike constructed in accordance with all applicable provisions of 310 CMR 22.21 (2)(b)5 as most recently amended.
11. Storage of hazardous waste materials for the following purposes:
  - a. Waste oil retention and reuse facility required or permitted by law.
  - b. Very small quantity generator as defined by 310 CMR 30.00.
  - c. Water remediation facility approved under 314 CMR 5.00.
12. Maintenance and repair or replacement of existing waste water treatment works provided however, these are not replaced by works of greater design capacity.
13. The replacement of an existing subsurface sewage disposal system with a waste water treatment works of equal design capacity.
14. Water treatment works approved by the Mass. DEP.
15. Storage of sludge and septage, provided however, such storage is in compliance with the provisions of 310 CMR 32.30 and 32.31.
16. Storage of deicing materials provided however, these are stored within a structure designed to prevent the generation and escape of contaminated leachates into the soil.
17. Storage of animal manure as permitted by the Topsfield Board of Health. Provided however, that all such manure is stored in a container or covered shed in accordance with all applicable provisions of 310 CMR 22.21 (2)(b)4 as most recently amended.
18. Storage of liquid hazardous materials provided however, these are stored in free standing tanks within a building or outside on an impervious platform surrounded by a containment dike capable of holding the volume of the tank or tanks.
19. Storage of commercial fertilizers and soil conditioners within a structure designed to prevent the generation and escape of contaminated leachates into the soil.
20. The removal of earth products for the purpose of building foundations as provided under Art. IIV, sec. 7.01 of the Zoning Bylaw and the construction of roads and septic systems.

## 6.2 Prohibited Uses

The following uses are prohibited in the Groundwater Protection Districts:

1. Landfills and open dumps as defined in 310 CMR 19.006;
2. Storage of liquid petroleum products for purposes other than those listed in section 6.1, paragraph 10.

3. Landfilling of sludge or septage as defined in 310 CMR 32.05;
4. Individual sewage disposal systems that are designed in accordance with 310 CMR 15.00 to receive more than 110 gallons per day of sewage per quarter acre of land under one ownership, except for repair and replacement with a system of equal capacity.
5. Earth removal, consisting of the removal of soil, loam, sand, gravel or any other earth material (including mining activities) to within six (6) feet of the seasonal high groundwater as determined by a soil evaluator certified pursuant to 310 CMR 15.017, or to within four (4) feet of the historical groundwater level pursuant to the provisions of 310 CMR 22.21 (2)(b)6 as most recently amended – whichever of these is higher at the sites.
6. Automobile graveyards and junkyards, as defined in MGL c140B, s.1.
7. Waste water treatment works that are subject to 314 CMR 5.00 including privately owned sewage treatment facilities except as permitted under sec. 6.1, paragraphs 12 and 13.
8. Industrial and commercial uses which discharge process wastewater on-site.
9. The use of septic system cleaners which contain toxic or hazardous chemicals.

### 6.3 Uses and Activities Requiring a Special Permit.

The following uses and activities are permitted only upon the issuance of a Special Permit by the Special Permit Granting Authority (SPGA) under such conditions as it may require:

1. The application of herbicides, pesticides, insecticides, fungicides, and rodenticides for non-domestic and non-agricultural purposes as applied in accordance with state and federal standards.
2. The application of fertilizers and soil conditioners for non-domestic and non-agricultural purposes.
3. Activities and processes that involve the storage and use of toxic and hazardous materials in quantities greater than those associated with normal household use or within the limits defined by 310 CMR 30.00 where such activities or processes are permitted in the underlying zoning district
4. The construction of dams or other water control structures, ponds, pools, or changes to natural water bodies or watercourses for the purpose of recreational, agricultural, or drainage improvements inclusive of alterations to the normal operation and maintenance of existing water bodies, dams, splash boards, and other water control, supply, and conservation structures. Such structures approved by the Topsfield Planning Board pursuant to the provisions of the Rules and Regulations Governing the Subdivision of Land in the Town of Topsfield are exempted from this provision.
5. Any use that will render impervious more than 2,500 square feet or 15% of any lot whichever is less pursuant to all applicable provisions of 310 CMR 22.21 (2) (b) 7 as most recently amended.
6. Excavations for purposes other than those itemized in sec. 6.1, para. 20, except those made for the repair and maintenance of the Town's water supply and wells serving residential dwellings as permitted by the Topsfield Board of Health.

### 7.0 Procedures for Issuance of Special Permits.

Art. V, sec. 5.02 B of the Zoning Bylaw establishes the Topsfield Planning Board as the Special Permit Granting Authority (SPGA). All applications for a Special Permit shall be submitted to the SPGA in accordance with the provisions of Art. V, sec. 5.04A of the Zoning Bylaw and any rules and regulations that the SPGA may adopt under the provisions of this Bylaw. In addition, the applicant shall submit 4 copies of the application and any relevant supporting material to the Town Clerk for distribution to the following boards, and agents: Board of Health, Conservation Commission, Board of Water Commissioners, and Town Engineer. All applications shall be accompanied by a site plan drawn by a registered professional engineer. The SPGA may waive said plan requirement by vote of its members at a regular or advertised meeting.

#### 7.1 Action by the Special Permit Granting Authority.

The SPGA shall hold a Public Hearing on the application as provided in Art. V, sec. 5.04. of the Zoning Bylaw. Respondent boards and agents have thirty-five (35) days upon the date of receipt of the application by the Town Clerk to submit written comments and/or findings relative to the application to the SPGA.

The SPGA shall make a decision on the application within ninety (90) days of the closing date of the public hearing. Where no such decision has been made in the absence of any extensions for time agreed upon by the SPGA and the applicant, the application shall be granted constructive approval as provided under Art. V, sec. 5.04, par. A-4.

The SPGA shall make written findings on which a decision for the approval or denial of an application is based. A true copy of said findings, the vote, and the decision by the SPGA shall be filed with the Town Clerk no later than ten (10) days after the date at which the action was taken.

#### 7.2 Rules and Regulations.

The SPGA may make rules and regulations relative to the special permit procedure. These may set submission material standards, formulate special permit forms to be filled out, and set notice requirements. All such rules and regulations shall be consistent with the Zoning Bylaw and the subdivision rules and regulations. A true copy of the rules and regulations and any subsequent amendments adopted by the SPGA shall be submitted to the Town Clerk's office no later than ten (10) days after the date of adoption of said rules or amendments thereto.

#### 8.0 Standards for Special Permit uses in the Groundwater Protection District.

The following sections list information that shall be submitted with the Special Permit application to enable the SPGA to render a decision on the Special Permit applications:

1. Applications for storage and use of chemicals.

A complete list of chemicals, pesticides, herbicides, fertilizers, fuels and other potentially hazardous materials to be used or stored on the premises in quantities greater than those associated with normal household use shall be submitted to the SPGA with each application. For activities using or storing such hazardous materials, a hazardous materials management plan shall be prepared and filed with the Hazardous Materials Coordinator, Fire Chief, and Board of Health. The plan shall include:

- a. Provisions to protect against the discharge of hazardous materials or wastes to the environment due to spillage, accidental damage, corrosion, leakage, or vandalism, including spill containment and clean-up procedures.
- b. Provisions for indoor, secure storage of hazardous material and wastes with impervious floor surfaces and dikes surrounding any storage area for liquid chemicals.

c. Evidence of compliance with the Regulations of the Massachusetts Hazardous Waste Management Act 310 CMR 30.00, inclusive of an EPA identification number from the Massachusetts Department of Environmental Protection.

d. Proposed down-gradient locations(s) for groundwater monitoring wells, where the SPGA or respondent boards or agents deem the proposed storage and use of chemicals poses a potential groundwater threat.

2. Applications for the construction of dams, ponds, and water control structures.

Where these are not part of a subdivision approval process, the application shall include the following items:

a. Geohydrological analyses of the effect of the proposed project on the groundwater table.

b. Analyses of the effect of the project upon surface water run-off and distribution of such. The analyses shall include estimates of any changes in surface water infiltration rates and/or times of concentration of run-off in the vicinity of the project.

c. Estimates of the ability of the proposed project to affect the infiltration of surface water contaminants inclusive of chemical and biological wastes into the ground water.

3. Applications for rendering impervious a parcel of land.

Applications for a Special Permit to render more than 5,000 square feet or 25% of a lot impervious, inclusive of the paving of surfaces and the construction of dwellings shall provide the following items:

a. Plans showing grading to control run-off from the structure or paved surface inclusive of the location of infiltration into the ground and the time of concentration for a 100 year frequency storm. The storm water control system shall be designed such that neighboring lots are unaffected by the proposed project.

b. Plans showing control devices for the interception of surface water contaminants inclusive of oil separators and other such devices in the design of the storm water control system.

4. Applications for excavations.

Applications for deep excavations shall provide the following items:

a. A plan showing the excavation depth and the maximum annual groundwater elevation.

b. An analysis of the geo-hydrological effect that the proposed excavation has on the groundwater elevation within a 300 ft radius of the excavation.

c. A plan showing the finished project inclusive of man-made structures, devices installed in the excavation pit, proposed septic systems, and all paved areas within a radius of 100 ft of the site.

#### 9.0 Violations of Groundwater Protection District By-Law.

Written notice of any violations of this bylaw shall be given by the Building Inspector and/or the Board of Health Agent to the responsible person as soon as possible after detection of a violation or a continuing violation. Notice to the assessed owner of the property shall be deemed notice to the responsible person. Such notice shall specify the requirement or restriction of the bylaw that has been violated and

the nature of the violation, and may also identify the actions necessary to remove or remedy the violations and preventative measures required for avoiding future violations and a schedule of compliance. Copies of such notice shall be submitted to the Building Inspector, the Board of Health, Conservation Commission, Town Engineer and the Water Department. The cost of containment, clean-up, or other action of compliance shall be borne by the owner and/or operator of the premises.

Situations that require remedial action to prevent adverse impact to the water resources in the Groundwater Protection District, the Town of Topsfield, the Building Inspector, the Board of Health, Town Engineer or any of their agents may order the owner or operator of the premises to remedy the violation. If said owner and/or operator does not comply with said order the Town of Topsfield, the Building Inspector, the Board of Health, Town Engineer or any of their agents, if authorized to enter upon such premises under the terms of the special permit or otherwise, may act to remedy the violation of the owner and operator of the premise.

#### 10.0 Fines for violations of the Bylaw.

Fines for violations of the Groundwater Protection District Bylaw shall be levied in accordance with the provisions of Art. V, Sec. 5.06 of the Zoning Bylaw.  
(Art. 6, 9/21/99; Art.35, 5/4/99)