



CHRISTIANSEN & SERGI, INC

PROFESSIONAL ENGINEERS AND LAND SURVEYORS

160 SUMMER STREET, HAVERHILL, MA 01830

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XIX-E - Allowed uses within the water resource protection district.

6. Residential development, subject to sections XIX-H, I, and J (prohibited uses) and section XIX-K (special permitted uses).

Note section F is not referenced here. Residential development is allowed subject to H, I, J and K.

XIX-F - Prohibited uses within the water resource protection district.

10. Any other activity deemed likely to cause or contribute to the contamination of the public water supply.

The word “other” is intended to include activities not otherwise described within the rules. (But because in XIX-E Section F is not referenced I don’t think this prohibits allowed uses listed in E.) For instance, the salting of streets in winter could be an “other” activity because it is not listed or described elsewhere and as defined by AECOM using road salt adds sodium to the water supply and therefore “causes or contributes” to the contamination of the water supply. Therefore, applying road salt to streets within Zone II is prohibited by Section F. Strict interpretation of the rules would require that the practice of applying salt to streets within Zone II be stopped.

It could be argued that the maintenance of roadways, sewer, drainage, water and utilities within the water resource protection district is prohibited because such maintenance is an “other” because it is not listed in allowed uses or in prohibited uses and because repaving of roadways could “cause or contribute” to the contamination of the water supply.

XIX-G - Prohibited uses within the Zone A, Zone B, Zone I and Zone II.

Nothing in this section applies to residential development as specified in XIX-E. The reference to septic systems in item 1 is the same as required by Title 5 in nitrogen sensitive areas and would not impede development. While the section prohibits altering bordering vegetated wetlands (item 7), there aren’t any bordering vegetated wetlands on site as determined by the ORAD issued by the Conservation Commission for the property. It is my understanding the wetlands are Isolated Wetlands not BVW.

XIX-I - Uses requiring a special permit within the entire water resource protection district.

For a subdivision to move forward special permits for each of the following activities would have to be obtained.

5. Construction of dams or other control devices, ponds or other changes in waterbodies or courses, created for swimming, fishing or other recreational uses, agricultural uses,



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or drainage improvements. Such activities shall not adversely affect water quality or quantity.

6. Any use that will render impervious more than five thousand (5,000) square feet of a residential lot or ten thousand (10,000) square feet of a nonresidential lot. A system for groundwater recharge shall be provided which does not degrade ground or surface water quality. For all nonresidential uses, recharge shall be by stormwater infiltration basins or similar systems covered with natural vegetation. Dry wells shall be used only where other methods are infeasible. For all nonresidential uses, all such infiltration basins and dry wells shall be preceded by oil, grease, and/or sediment traps to facilitate removal of contaminants. All recharge areas shall be regularly maintained in proper working order by the owner.

7. Residential construction upon a lot with an average slope exceeding fifteen (15) percent. An acceptable plan for site stabilization and control of erosion and sedimentation shall be provided.

8. Any new stormwater runoff shall be set back from the receiving water a minimum of one hundred (100) feet, and shall include best management practices appropriate to the site. Existing and replacement discharges shall be set back from the receiving water when either the site stormwater drainage system is changed or the discharge is increased. The best management practices shall be designed so as to maximize infiltration and minimize erosion, and to mitigate water quality impacts, including those due to total suspended solids and oil and grease. This applies to stormwater runoff from all impervious surfaces, including roads and parking lots.

XIX-J - Procedures for issuance of special permit.

3. The SPGA may grant the required special permit only upon finding that the proposed use meets the requirements specified in sections XIX-E, F, G, H, and I of this ordinance, any regulations or guidelines adopted by the SPGA, and the following standards. The proposed use must:

a. In no way adversely affect the existing or potential quality or quantity of water that is available for on-site recharge in the water resource protection district, during or after construction.

b. Be designed to avoid substantial disturbance of the soils, topography, drainage, vegetation, and other water related natural characteristics of the site to be developed, in adherence to the practices outlined in "Guidelines for Soil and Water Conservation in Urbanizing Areas of Massachusetts" (USDA Soil Conservation Services, October 1977)



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Item “a” does not refer to the water in the aquifer but rather to the “water that is available for on-site recharge”. The board would have to determine if the proposed activity adversely affects the quality or quantity of water available for recharge. This is certainly a criteria that the board needs to address.

It would be difficult to design a residential development allowed under XIX-E and meet the requirements of item “b” as written. However, little of the site is “natural”. It had been a gravel pit and is now a golf course. If this is only a prohibition of disturbing natural areas it would not apply to this site.

Types of Drinking Water Contaminants

The Safe Drinking Water Act defines the term "contaminant" as meaning any physical, chemical, biological, or radiological substance or matter in water. Therefore, the law defines "contaminant" very broadly as being anything other than water molecules. Drinking water may reasonably be expected to contain at least small amounts of some contaminants. Some drinking water contaminants may be harmful if consumed at certain levels in drinking water while others may be harmless. The presence of contaminants does not necessarily indicate that the water poses a health risk.

This definition of “contaminant” confuses the discussion. Chlorine and Fluoride which are introduced into the water are contaminants by this definition. Strict interpretation of XIX-F would prohibit the introduction of chlorine and fluoride into the water supply. Additionally, the chemicals used at the water treatment plant that raise the sodium levels in the water are contaminants and are prohibited from use by this section. Furthermore, the water from the treatment plant has higher contaminant levels than that water from well 2 and therefore the addition of that water to well 2 water constitutes a violation of the rules.

The presence of “contaminants” as defined by EPA is not the same as contamination. Contamination is the presence of contaminants above a certain defined level and to assume any level of contaminants is a danger to public health is unrealistic.

The project being considered would not be the only entity within the watershed protection district adding contaminants to the aquifer. There is an accumulation of contaminants from all sources within the district that could lead to contamination. It is a shared responsibility that the community must accept and address and not fix blame on a single entity within the community for a problem that may not exist.

Summary

Whether a project is an OSRD or a conventional subdivision I think that special permits must be issued as required by Section XIX-I.



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Section XIX-F is poorly worded. I think “any other activities” is used to regulate activities that do not fall under items 1 through 9 in Section F. I don’t think XIX-F applies to allowed uses.

In Section F the phrase “Deemed likely to cause” is an extremely broad phrase that would allow the prohibition of almost any activity the Board considers “likely to cause” contamination. The phrase is addressed to activities and not contaminants. So, because no specific criteria are provided I think it gives the City broad discretion in determining what is likely to cause contamination.

Section F addresses “contamination of the public water supply”. Contamination must be defined by a standard. All water contains contaminants. The presence of contaminants is not contamination. Contamination must be defined as the presence of contaminants above a certain established level. If an activity adds sufficient contaminants to a water supply to likely move the contaminant level above the standard defined as contamination that activity can be determined to likely cause contamination and therefore be prohibited. However, the mere presence of contaminants is not a reason for a prohibition.