

March 30, 2016

To: Groundwater Protection Committee

From: Steven Winkley, NYRWA

Re: Tomorrow's Meeting

I have reviewed pertinent aspects of the Town of Wales' code with respect to groundwater protection. This includes the following: Chapter 120 – Junkyards, Chapter 150 – Open Development Area, Chapter 162 – Protection of Natural Resources, Chapter 181 – Subdivision of Land, and Chapter 200 – Zoning. Based upon this review, I have several recommended code revisions that could be enacted to better protection Wales' groundwater and drinking water resources.

I would like the Groundwater Protection Committee to review these potential code revisions and endorse which of these you would like me to incorporate into the source water protection plan for the Town of Wales that I am currently preparing. This plan will contain drafts of local laws that the Town Board may wish to pass. Feel free to eventually recommend text changes or offer other ideas.

Unconsolidated Aquifer Protection Overlay District

Currently, the Town of Wales does not have any overlay zoning districts. An overlay zoning district is a common technique to protect a community resource such as an area of environmental, scenic, cultural, historic, natural resource, or other unique significance. An overlay district is a zoning district that is applied over one or more previously established zoning districts. It establishes additional or stricter standards and criteria for covered properties in addition to those of the underlying zoning district.

I am proposing that the Town of Wales adopt an Unconsolidated Aquifer Protection Overlay District (UAPOD). These are areas where significant, water-bearing sand and gravel deposits exist. I have created a detailed map of unconsolidated aquifers in Wales that I am presenting to the Committee tomorrow. A simplified map for your review is presented at the end of this document.

I have superimposed the extent of the unconsolidated aquifers on Wales' zoning and found that a significant portions of the aquifer areas fall into the Business Zone. A number of uses are

allowed by special use permit that have the potential to contaminate groundwater. These include: dry-cleaning shops, automotive repair shops, personal-service shops, funeral homes, and *“other uses which, in the opinion of the Town Board and upon recommendation of the Planning Board, are similar in nature to those permitted uses.”*

In the UAPOD, one approach would be to prohibit specific uses that historically have been associated with groundwater contamination. Rather than prohibit specific uses, another approach would be to prohibit activities that could lead to contamination. I think that the latter approach might be more effective in Wales, and have a greater chance of being enacted.

Thus, I am proposing that the following uses activities be prohibited within the UAPOD:

- a. Any use or activity that involves the on-site disposal of solid waste, medical waste, petroleum, radioactive material, hazardous or toxic substances, hazardous waste, process wastes, including wastewater (except for the disposal of sewage through an on-site wastewater treatment system, or the agricultural use of animal manure, associated bedding material, and food processing wastes where such wastes are applied at or below agronomic rates).
- b. Storage of petroleum except for on-site consumption or at facilities registered with the New York State Department of Environmental Conservation at the time of enactment of this Law.
- c. Storage of hazardous or toxic substances, hazardous waste, medical waste, or radioactive material generated off-site.
- d. Bulk stockpiling or storage of coal, cinders, deicing compounds, hazardous substances, hazardous wastes, toxic substances, fertilizers, herbicides and/or pesticides except in packaging for individual use or resale or in structures designed to prevent contact with precipitation and constructed on low permeability pads designed to control seepage and runoff.
- e. Establishment of a junkyard or automotive junkyard.
- e. Storage of manure, except for individual household or agricultural use, or at commercial establishments in packaging for individual use or resale.
- f. Drilling of wells to be used for: natural gas and/or petroleum exploration, extraction, production, and/or storage; solution salt mining; open-loop geothermal heating and cooling systems; or disposal of wastes including brine, natural gas exploration and/petroleum production waste, process waste, hazardous wastes, radioactive material, and wastewater.

- g. Installation of pipeline facilities used in the transportation of hazardous liquids, including crude oil, condensate, natural gasoline, natural gas liquids, liquefied petroleum, and other petroleum products.
- h. Application of production brine from an oil or gas well source or a liquefied petroleum gas (LPG) storage facility onto roads or other land surfaces.
- i. Excavation of overburden and/or minerals from the earth for sale or exchange, or for commercial, industrial, or municipal use (except for the sale of incidental overburden and/or minerals from excavation related to construction as part of an agricultural or residential use).

I believe that there could be some specific special use approval standards related to groundwater protection within the UAPOD. I would recommend that the following could be standards for approval of special use permit applications within the UAPOD:

- a. Green infrastructure practices that reduce runoff must be implemented to the maximum extent practicable within the UAPOD. Note that green infrastructure planning includes measures for preservation of natural features of the site and reduction of proposed impervious cover. Green infrastructure practices are detailed in the New York State Stormwater Design Manual.
- b. The proposed activity or use is to be located, developed, and maintained in such a manner as to not adversely impact the quantity or quality of groundwater available to private water supply wells and/or public water supply wells.

Applications for special use permits within the UAPOD could also contain the following information:

- a. Details regarding the proposed conveyance, storage, distribution, generation, handling, use, and/or treatment of any sewage, process wastes, aqueous-carried wastes, petroleum, hazardous substances, hazardous waste, solid waste, radioactive material, and/or incidental wastes.
- b. A statement as to the degree of threat to groundwater and surface water quality that could result if the control measures identified in a. above failed.

Protection of Groundwater in Areas Outside of UAPOD

The vast majority of Wales' citizens live outside of the proposed UAPOD. What are the best ways to protect groundwater here? One way would be to regulate and/or prohibit high-risk

land uses that might contribute to the contamination or substantial depletion of groundwater resources. Some of the items I have prohibited only in the UAPOD could be extended Town-wide. Alternatively, we could extend the special use permit standards (to not adversely impact the quantity or quality of groundwater available to wells) Town-wide.

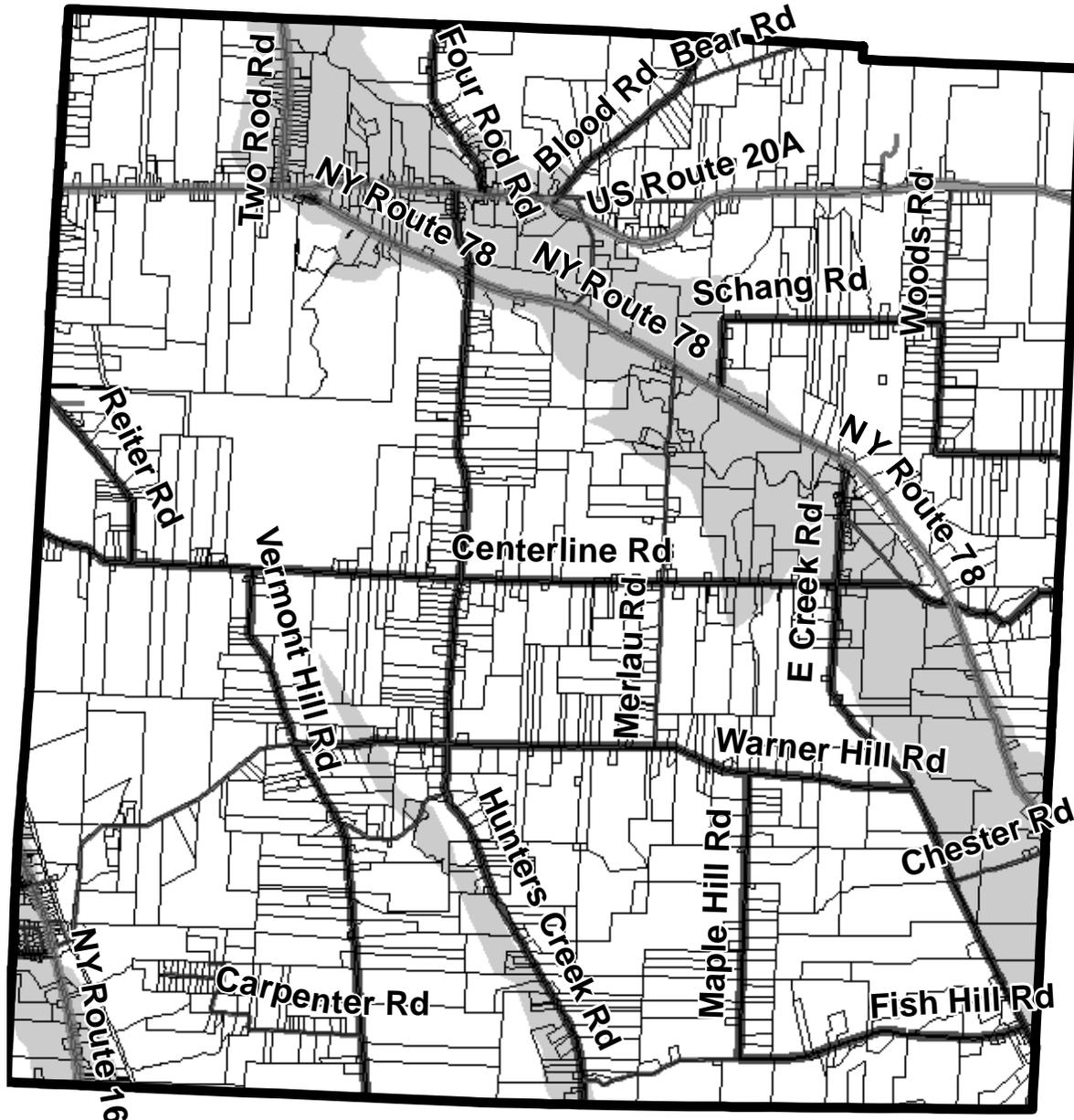
The median yield of bedrock wells in Wales is just 3 gallons per minute (gpm). This is far below the NYSDOH requirement of an average of 5 gpm for approval of proposed realty subdivisions by NYSDOH (Erie County). The Health Department requires that test wells on a proposed subdivision average 5 gpm. However, they only require that one test well be drilled for every five to ten lots. In my opinion, that is not enough in an area such as Wales where well yields are highly variable and tend to be low overall. My recommendation is to amend the subdivision regulations to increase the number of required test wells. Typically I have increased the number of test wells to be installed to at least twenty percent (20%) of the proposed lots of the subdivision. Test well locations should also provide a representative geographic distribution across the proposed subdivision, including each topographic setting present (e.g. high areas, low areas, sloping areas, etc.). Furthermore, test wells should include a representative number of wells in each geologic formation that is proposed to be used (i.e. bedrock vs. unconsolidated deposits). Lastly, test wells should also be installed in order to evaluate potential adverse impacts to adjacent wells and surface water.

Due to the problems that people in Wales have experienced in finding and sustaining an adequate well yield (many wells have been deepened over the years), it is critical that new developments have enough water and do not impact existing water supplies. The Town could consider requiring a groundwater resources assessment for certain-sized subdivisions. This assessment would be performed or directly supervised by a professional geologist or by a licensed professional engineer who is experienced in performing groundwater studies. I have detailed requirements of such a study if you care to follow this path. A threshold for this study could be based upon the number of lots to be developed. Five or ten lots is a common starting point.

Final Thoughts

I hope that our meeting will be productive and we discuss the various regulatory approaches I have outlined above. If anyone has other thoughts on how to best protect groundwater I am all ears. Please note however, that I feel it would not be a productive use of my time to further discuss the proposed biosolids local law. You all know my thoughts on this matter and there are many other topics related to groundwater protection that should be addressed instead.

Town of Wales, New York Proposed Unconsolidated Aquifer Protection Overlay District (UAPOD)



 Proposed UAPOD



Scale

1 in = 1 miles

