

August 21, 2013  
*Electronic Submission*  
Ms. Jackie Bay [jackiebay@optonline.net](mailto:jackiebay@optonline.net)  
Citizens for Health, Safety & Welfare

*Scientists, Engineers &  
Environmental Planners  
Designing Innovative  
Solutions for Water,  
Wetland and Soil  
Resources Management*

RE: Preliminary Review  
Waterview Boulevard Application, Block 421 Lot 29  
R D Realty, LLC  
Troy Brook, Parsippany-Troy Hills Township  
Morris County, New Jersey  
**pH**

Dear Ms. Bay:

Princeton Hydro, LLC has completed a preliminary review of the above referenced project and offers the following comments specific to proposed development. Topics specific to the preliminary review are presented in the following sections.

#### Geology/Geotechnical

The site is underlain by a deposit of continuous till over sedimentary rocks situated on the hanging wall portion of the Ramopo fault.

The soil deposits at this location provide a direct connection of stormwater to the underlying formations. This is particularly the case on this site due to the laucustrine fan and till deposits. These formations are sandy to gravelly and can have cobbles and boulders. These mixtures of materials are uniquely suited for infiltration of water.

Over-burden soils of this thickness and gradation provide ideal treatment to stormwater prior to discharging into the surface waters in the watershed. The development proposing to seal and remove this protective layer will significantly impair the watershed and groundwater resources.

Sedimentary rocks situated under these formations provide ideal conditions for the infiltration of stormwater into the geologic formations. These sedimentary formations provide a significant source of potable water to both municipal and private purveyors. The sites located at the base of the footwall block of these normal faults more significantly impact the recharge to the hanging block formations as these formations unconformably terminate that the footwall. That is to say the originating source of the available groundwater to this and all down gradient municipalities rely upon the infiltration of the stormwater into the subsurface and recharge the aquifer.

The Ramopo fault is one of the largest fault systems in the northeast and arguably the largest in New Jersey. This fault is still active and is credited to

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recent earthquake activity in New Jersey. Of particular concern is the loose granular overburden on this site in close proximity to the fault system. This results in a high potential for earthquake induced damage to structures built in this area. The current allowable use provides the opportunity for more robust construction and engineering techniques due to the use and nature of the zoning.

The possible implementation of unrestricted height retaining walls for this development will prove to be highly problematic. The potential for diamicton in the overburden soils is high. These types of deposits make the proper design and construction of vertically substantial retaining walls extremely difficult and prone to long term maintenance issues. To allow this in a zoning overlay would present long term issues that the Municipality will need to address long-term and present chronic Engineering problems throughout the life span of the site.

The proposed overlay district will increase the complexity of the development unnecessarily in the context of the site geology.

#### Stormwater/Flooding

Rutgers has completed a thorough review of the watershed and the related impacts. Important points that report include the significant degradation of the streams within the Municipality and watershed. Erosion related to unmitigated runoff has significantly reduced the capacity, health, and functionality. The current plan, as discussed in professional's letters, proposes the use of a single stormwater management facility. In order to adequately mitigate stormwater impacts from a development a decentralized approach needs to be considered.

The plan presented does not attempt to address proper and adequate storm water. The proposed zoning changes are predicated on the presented plan. Insomuch that this plan could not reasonably be developed in terms of adequate stormwater control, this must be considered in the decision to provide the requested overlay.

Improper or inadequate stormwater control in this proposed overlay will exacerbate the current flooding issues in the municipality.

The proposed Commercial/Residential Development is notoriously inadequate in long term stormwater maintenance. New Jersey experiences a significant rate of failure (80% in some studies) – when related to commercial or residential development this failure rate can increase significantly. Enforcement of stormwater control in industrial or office developments, allowed in the current zoning, is more rigorous than the development contemplated in the proposed overlay district.

The proposed overlay will result in detrimental stormwater impacts to the watershed and municipality.

## Groundwater

The wellhead protect areas (WHPA) are intended to not only limit the storage of hazardous materials but to conserve the recharge to the wellhead as a significant water source to the community. Of the hazardous materials listed for a wellhead protection area is *road salt*. Maintaining piles of road salt or the excessive use of road salt in these WHPA will contribute substantially to the contamination of the well heads.

Commercial/residential community development, in contrast to the currently allowed office, will typically require substantial use of salt to maintain safe conditions. This concern should be considered more directly during this stage of a zoning change as the mapped underlying natural resources will provide conditions that could result in a wide spread impact to natural resources.

This proposed overlay is in conflict with the basic tenants of the WHPA – reduction of contamination to water supply wells. This concern must be considered for the proposed zoning change compounded by the relatively high mobility of contaminants in the over burden soils.

## Soil Erosion and Sediment Control (SCD)

It is well established that construction runoff is the single most significant impact to water quality in watersheds. The propose overlay will engender a lax approach to the implementation and enforcement of soil erosion and sediment control (SESC). This is particularly the case as it relates to residential development.

Best regards,



Keith J. Merl, PE, CPESC  
Associate

c. M. Gallagher, pH  
G. Goll, pH  
J. Miller, pH