

Dolph Rotfeld Engineering, P.C.

MEMORANDUM

To: Peter Dolan, Town Supervisor;
Town Board Members

C: Thomas Wilson, Tuxedo Land Trust
Stephen Gross, Hudson Highlands Environmental Consulting

From: Anthony Oliveri, P.E.

Date: December 30, 2009

Re: Tuxedo Reserve
EIS Review
Town of Tuxedo

With regard to the above mentioned project, this office has reviewed The Supplemental Environmental Impact Statement (SEIS), prepared by: AKRF, inc. dated September 2009, as well as additional supporting documentation available on the Town of Tuxedo web site and at the Town offices.

Our preliminary comments are as follows:

Overall Stormwater Management Plan

1. The SEIS contains only new information with regard to the Tuxedo Lake and Mountain Lake watersheds. No additional information with regard to Stormwater Management for the remainder of the development has been submitted. Therefore, in an effort to understand this new information in the context of the overall Stormwater Management Plan, the previously submitted stormwater reports have been reviewed. These reports were only found at the Town offices and were not posted online. However, it was soon realized that the majority of the Southern Tract was analyzed at a “conceptual” level only. Site specific analysis reflecting changes to the proposed phasing plan and impervious area coverage have not been reflected in an overall site-specific stormwater report.

The conceptual analysis (only found at the Town offices, not online or at the Public Library) does not include detailed plans or hydrologic routing calculations to verify detention requirements. Instead storage volume requirements based on the North Ridge section calculations were used as a “design guideline” to provide conceptual storage volumes for much of the Southern Tract. This approach can only be taken as noted to be “conceptual”; detailed hydrologic routing calculations and design plans

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must be submitted to verify actual feasibility. A total of 981 acres out of the total 1236 acres have been analyzed on a “conceptual” level only.

2. A detailed Stormwater Management Report has been prepared for the “North Ridge” section of the development as part of Phase 1A; however the current plan proposes only a small part of the North Ridge section to be developed initially. The “Commons” are now proposed as Phase 1A; no site specific design has been completed for this section.
3. Pollutant loading calculations must be prepared to demonstrate improvements to water quality with the proposed Stormwater Management Practices (SMP’s).
4. The “Conceptual Stormwater Management Report” prepared for the project contains a preliminary analysis of Subbasin 4 which is tributary to the Ramapo River and is the largest of the project watersheds with over half of the overall area included. This analysis looks at the use of “decentralized stormwater management water quality techniques” in conjunction with use of the NYSDEC methodology for fourth order streams (ie. direct release of stream channel protection and overbank flood control waters from major watersheds earlier in the storm period). The analysis concluded that this approach would help to minimize flooding impacts to the Ramapo River, reducing 100-year peak flow, but by only 2.8 cfs.

However, this approach increases peak flows from Subbasin 4 by 34.5 cfs. The analysis further concluded that with the addition of a “hypothetical detention facility” (i.e. the Quail Road detention basin and bypass) the peak rate of discharge from Subbasin 4 can remain unchanged, but the peak flow in the Ramapo River would increase by 7.3 cfs.

Thus, the analysis concludes that the preferred scenario is to provide no detention (with the exception of limited water quality volumes) and release the water early to the Ramapo River; as such the project would increase peak flows from the Subbasin by 34.5 cfs while decreasing peak flow in the Ramapo by only 2.8 cfs. The report states that “Although Basin 4 tributary can potentially create some periodic localized flooding...it is the overriding influence of the Ramapo River that controls flood elevations....and that potential impacts from increased flows ...will be mitigated where necessary”.

This analysis is misleading in that the sizing of the hypothetical detention basin was limited to a single basin at the end of the discharge path sized only to *match* the pre-development flow rates. If the entire Subbasin were modeled and analyzed in more

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detail with multiple basins as was originally proposed, it is likely that significantly more storage can be realized, and *both* the peak flow rates from Subbasin 4 *and* the Ramapo River could be reduced, creating less impact from the proposed project.

5. The technical memorandum from AKRF notes that if the decentralized and direct discharge approach is not approved, the Quail Road detention facility and bypass can be utilized. However as per the Conceptual Stormwater Management Report discussed in comment #5, if the peak 100-year flow rates in the Ramapo River would increase under this scenario, can this be mitigated? At this time, only a brief description of the Quail Road alternative is discussed. A more detailed design will need to be submitted for review.
6. It is our opinion that approval of a project of this scope without a more site-specific stormwater analysis is inappropriate. A more detailed overall comprehensive stormwater management plan should be submitted for review.

Stormwater Management Report - Tuxedo Lake Watershed

1. As noted in the report, Tuxedo Lake is designated as a Class AA water body by NYSDEC. As such, NYSDEC requires coverage under an individual SPDES permit for stormwater discharges on Soil Slope Phases identified as an E and F. Some discussion should be included with regard to this determination and the NYSDEC's disposition on this requirement.
2. Time of concentration paths should be indicated on the post-development watershed maps.
3. Pollutant loading calculations must be prepared to demonstrate improvements to water quality to Tuxedo Lake.
4. Incomplete hydrologic data makes it impossible to verify calculations.

Stormwater Management Report - Mountain Lake Watershed

1. Pollutant loading calculations must be prepared to demonstrate improvements to water quality to Mountain Lake.
2. It should be noted that the proposal is to provide only water quality treatment practices for the increased impervious areas, thus utilizing Mountain Lake for stormwater detention of all storms beyond the 90% storm. It is this writer's understanding that use of NYSDEC wetlands for stormwater detention is prohibited. Stormwater detention attenuating up to the 100 year storm must be provided.

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Sanitary Sewer

1. The project proposes to upgrade the Hamlet Sewage Treatment Plant (STP) to accept flows for the Southern Tract. The SEIS notes that an additional capacity of 30,000 GPD exists at the plant. The report further states that the additional capacity will be capable of serving approximately 80 units before the upgrade to the STP is needed.

However, effluent levels have not been discussed in the SEIS. Calculations must be provided to analyze the impact of any additional flows on effluent parameters and limitations as set forth in the SPDES permit for the plant. If the existing treatment plant is meeting effluent standards it may only be because it is treating less than design flows.

2. Adding additional flow to the treatment plant without detailed supporting calculations could easily cause a violation of effluent standards. Calculations should include supporting data from continuous effluent sampling not just from grab samples.
3. The existing plant must also be analyzed for its capacity to handle the additional flow rate during peak flow periods. It is unknown if the plant incorporates flow equalization to handle these surges. Flow equalization is the process of controlling hydraulic velocity, or flow rate. The equalization of flow prevents short term, high volumes of incoming flow, from forcing solids and organic material out of the treatment process. Flow equalization also controls the flow through each stage of the treatment system, allowing adequate time for the physical, biological and chemical processes to take place.

Conclusion

As presented, the impact of this project can not be fully and adequately assessed given the current information that is available, particularly with respect to the potential for degradation to the Ramapo River in its capacity for flood control and its status as a water supply for residents of Rockland County and New Jersey.

We will be happy to continue our review once additional information is available.

Thank you,

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A handwritten signature in black ink, appearing to read "D. Rotfeld", is written over the "Thank you," text.