3.2.4 Wetlands Comments and Responses

Comment 3.2-1 (Letter 3, John W. Petronella, Environmental Analyst, New York State Department of Environmental Conservation, July 1, 2010): It is indicated in the DEIS that a permit will be required for the two road crossings of NYS Freshwater Wetland HA-40. The project sponsor should be aware that an Article 24 Freshwater Wetlands permit will be required for the following activities:

1. two proposed road crossings of NYS Freshwater Wetland HA-40 (Class 2)
2. the waterfront activities on Lost Lake Freshwater Wetland HA-27 (Class 2) marina, beach, dock etc.
3. altering water levels within Lost Lake (HA-27) for golf course irrigation
4. wildlife observation station(s) within the 100 foot adjacent area of HA-40

Response 3.2-1: *At this time, the Applicant has not prepared applications for wetland permits from NYSDEC (or related permits from the US ACOE) pending the conclusion of SEQR. Once the SEQR process is concluded, the Applicant will file site plans with the Planning Board and contemporaneously submit permit applications to NYSDEC and the Corps. Specific to the four items above:*

1) DEIS Figures 3.2-4 and 3.2-5 show preliminary designs of the two road crossings. As explained in the DEIS, Figure 3.2-6 identifies a suitable area proposed for wetland creation for the purpose of mitigating the impacts of the crossings. The permit application to NYSDEC will include a grading detail, limit of disturbance, restoration plantings and monitoring specifications for the impact areas and mitigation area, along with appropriate explanation for these requested disturbances.

2) Waterfront activities are a fundamental part of the Lost Lake Resort plan. While a detailed design of this area of the plan has not been developed for Phase 6 which includes the beach and boat dock construction, it is estimated that such disturbance will entail less than one acre in the wetland/adjacent area for which a NYSDEC permit will be required.

3) Lost Lake is known to experience seasonal fluctuations in the water level. In 2010, there was not any discharge from Lost Lake from the beginning of August (possibly earlier) through September, and during August the lake surface was more than 8 inches below the normal pool elevation. This is a normal summertime condition in the lake and its surrounding wetland areas. The observed, normal decline in water level substantially exceeds the projected decline from irrigation withdrawals in a drought year, and therefore, no significant impact to the wetland is expected from drawdown. (Further discussion of impacts and mitigation measures is provided in Response 3.5-16.) The permit application to NYSDEC for taking surface water for irrigation will document these data.

4) The permit application to NYSDEC will include a detail of the two wildlife observation stations and the pervious recreation trail proposed, and specifications of construction to avoid impact to the wetland adjacent area, along with appropriate explanation for these requested disturbances.

Comment 3.2-2 (Letter 3, John W. Petronella, Environmental Analyst, New York State Department of Environmental Conservation, July 1, 2010): In planning a project for this site, all disturbances within the wetlands and their 100-foot adjacent areas (AA) must be avoided to the maximum extent practicable. The project sponsor will be required to demonstrate that the project meets the permit issuance standards contained in the Freshwater Wetland Permit Requirements Regulations (6 NYCRR Part 663). The applicable weighing standards for issuance state: "Class II wetlands provide important wetland benefits, the loss of which is acceptable only in very limited circumstances. A permit shall be issued only if it is determined that the proposed activity satisfies a pressing economic or social need that clearly outweighs the loss of or detriment to the benefit(s) of the Class II wetland." Therefore, the burden is on the applicant to demonstrate that 1) no other practicable alternative are available on a site that is not a freshwater wetland or AA, 2) the impact to the wetland has been minimized to the greatest extent possible, 3) adequate mitigation is offered to offset the impacts. Additional comments may be generated on freshwater wetland impacts during the application process.

> ***Response 3.2-2:*** *The Applicant acknowledges the stated permitting requirements to demonstrate that the project meets the permit issuance standards for a Freshwater Wetland Permit.*

Comment 3.2-3 (Letter 3, John W. Petronella, Environmental Analyst, New York State Department of Environmental Conservation, July 1, 2010): Golf Course Irrigation - According to the DEIS, water for golf course irrigation will be withdrawn from Lost Lake. The perimeter of Lost Lake is part of NYS Freshwater Wetland HA-27 (Class 2) and pursuant to Freshwater Wetland Permit Requirements Regulations (6 NYCRR Part 663), the draining and altering of water levels, except as part of an agricultural activity, is considered an activity that is "incompatible with a wetland and its functions and benefits". According to the DEIS, the withdrawal of irrigation water for the golf course will result in an estimated 3.7 inch drawdown during a drought year (the month of July) and 2.1 inches during a normal precipitation year (July). The project sponsor will have to demonstrate that no other alternatives are available to meet freshwater wetland permit issuance standards. As previously discussed with the project sponsor, one alternative that may be feasible includes supplementing the irrigation water with waste water treatment plant effluent. This alternative has not been thoroughly evaluated in the DEIS. The project sponsor should also be aware that any Freshwater Wetland permit authorizing this activity will have strict conditions that require monitoring the drawdown and potential impacts to the resource. If adverse impacts are observed, alternative irrigation sources must be employed.

> ***Response 3.2-3:*** *The Applicant proposes using Lost Lake surface water for irrigation water, providing that the Lost Lake surface is at least 0.05 foot above the spillway surface (i.e., 0.6-inch). At this height there would still be a discharge from the lake, and the water storage above the spillway height would be in the range of 0.8 MG. This trigger level would be determined from a gage accurate to ±0.01 foot installed at the spillway that will be monitored and recorded on a daily basis by the golf course superintendent. For periods when the lake surface is less than 0.05 foot above the spillway, the irrigation system will use groundwater from the supply wells until such time in the future as there is sufficient treated wastewater to use as an alternate source. Refer to Response 3.5-16 for additional discussion of surface water use for irrigation.*
>
> *The DEIS describes the anticipated long term buildout rate anticipated for the resort style of development planned for Lost Lake Resort, as has been experienced by this*

developer at its Eagle Rock Resort in Hazelton, Pennsylvania. Eagle Rock has experienced a development rate of eleven (11) percent (of the 6,924 residence lots sold over the past thirteen years under Double Diamond management, 764 lots are occupied by a house). The Applicant conservatively projects that in the early stage of LLR development (Phases 1 and 2 built and 11% occupied), average wastewater discharge from the treatment plant will total up to 23,897 gallons per day. (Table below lists phase by phase summary.) This volume represents 21% of the total irrigation demand for the golf course. After Phase 3 (with 11% occupied), average wastewater discharge from the treatment plant will total up to 42,371 gallons per day. This volume represents 37% of the total irrigation demand for the golf course. Based on this projection, utilization of wastewater from the STP would become an economically viable consideration after Phase 3 of the project is developed and approximately 150 houses are occupied. The Applicant believes that any volume less than 33% of the total irrigation demand for the golf course is an insufficient source to economically use for irrigation water.

The project proposal to utilize surface water without supplement in the foreseeable future is based on the Evaluation of Lost Lake for Irrigation Water that concludes that sufficient surface water is available to provide for golf course irrigation with minimal potential affect on Lost Lake, its associated wetland fringe and downstream tributaries. Refer to Response 3.2-1, item 3. As mentioned above, the project will include alternative irrigation sources from groundwater and eventually by recycling WWTP effluent.

Wastewater Flow Available for Golf Course Irrigation			
Phase	Average Daily Wastewater Flow (design flow)[1] (gpd)	Cumulative Flow (11% occupancy)[2] (gpd)	Percent of GC Irrigation Requirement[3]
Phase 1	128,545	14,625	26%
Phase 2	76,200	23,897	21%
Phase 3	131,540	42,371	37%
Phase 4	138,930	67,666	59%
Phase 5	144,125	83,631	74%
Phase 6	319,770	109,196	96%
Phase 7	111,225	129,285	100%

[1] Average daily flow (assumes 100% occupancy) taken from DEIS Appendix K.
[2] Occupancy of single-family units 11%, like Eagle Rock Resort.
[3] Irrigation demand for LLR golf course (DEIS Appendix U) equals 24,349,370 gallons per season (average 113,782 gpd). Irrigation demand for Phase 1 (nine holes) is 56,891 gpd.

The Applicant acknowledges that the Freshwater Wetland permit authorizing this activity may have conditions that require monitoring the drawdown and an alternative irrigation source if significant drawdown is recorded. Refer to Response 3.5-16 regarding mitigation measures during an extreme drought condition.

Other alternative water sources for irrigation water are: Bush Kill surface water withdrawal, and surface impoundment of rainwater. The Applicant rejects these alternatives in favour of utilizing the most available resource on the property, Lost Lake. The use of this existing man-made impoundment (with the proposed use of available groundwater from on-site wells if needed) will avoid depriving flow from downstream waters and the lake already functions as a rainwater impoundment.

Comment 3.2-4 (Letter 3, John W. Petronella, Environmental Analyst, New York State Department of Environmental Conservation, July 1, 2010): Vernal Pools - The DEIS documents multiple vernal pools throughout the site. In addition, it appears that substantial effort was made to evaluate these sites through multiple surveys, egg mass counts, photo documentation, etc. However, it appears that the vernal pools have not been assessed with regard to their ecological value as required by the adopted scoping document (Section B.1.b.vi). Based upon review of the information provided in the DEIS with regard to vernal pools, it appears that the majority of the vernal pools have low species diversity. However, several of these pools have substantial egg mass counts, greater than 100 egg masses per pool relative to other vernal pools onsite; specifically, Wetland EE (250-300 egg mass), Wetland T-C (250-300 egg mass) and to a lesser extent, Wetland U (100-150 egg mass). These vernal pools should be considered as having a higher ecological value when the project sponsor completes the required vernal pool analysis.

> ***Response 3.2-4:*** *The table below indicates the relative ecological value of the productive vernal pools identified in the DEIS field studies, based on the criteria published by Klemens and Calhoun ("Klemens"). Tier I denotes the most sensitive areas; Tier III the least sensitive. Vernal pools EE and T-C are notably of higher value due to the existence of more than one species and the substantial number of egg masses found.*

Productive Vernal Pools			
Vernal Pool Location	Species Observed	Number of Species	Relative Ecological Value[1]
Vernal Pool EE (in Wetland EE)	Spotted Salamander	4-6 egg masses	Tier I
	Wood Frog	250-300 egg masses	
Vernal Pool CC (in Wetland ABD, NYSDEC HA-40)	Spotted Salamander	3 egg masses	Tier II
	Wood Frog	10 egg masses	
Vernal Pool ABD (in Wetland ABD, NYSDEC HA-40)	Spotted Salamander	20 egg masses	Tier II
	Wood Frog	More than 10 egg masses	
Vernal Pool TT-A (in Wetland TT-A)	Spotted Salamander	3 egg masses	Tier II
	Wood Frog	8 egg masses, adults	
Vernal Pool T-C (in Wetland T-C)	Spotted Salamander	More than 34 egg masses	Tier I
	Wood Frog	250-300 egg masses	
Vernal Pool M-A (in Wetland M-A)	Spotted Salamander	4 egg masses	Tier III
Vernal Pool DD (in Wetland DD)	Wood Frog	20-30 egg masses	Tier II
Vernal Pool U (in Wetland U)	Wood Frog	100-150 egg masses, numerous tadpoles	Tier II
Vernal Pool V (in Wetland V)	Wood Frog	Numerous tadpoles	Tier II

Source: Tim Miller Associates, 2010. (Revised DEIS Table 3.2-1)

[1] Value rating based on guidelines provided in "Best Development Practices: Conserving Pool-Breeding Amphibians in Residential and Commercial Developments in the Northeastern United States." Wildlife Conservation Society, Klemens and Calhoun, 2002.

Caution note in the Klemens study: The suggested rating system is designed strictly as a planning tool to identify the relative ecological value of pools under study. This is not an officially adopted assessment system.

Comment 3.2-5 (Letter 3, John W. Petronella, Environmental Analyst, New York State Department of Environmental Conservation, July 1, 2010): Alternative designs that avoid impacts to vernal pools to the maximum extent practicable are required. The protection of vernal pools is an example of where the DEIS presents an acceptable identification of these resources, but fails to follow through with an adequate assessment of impacts to these resources. The DEIS needs to clearly identify each pool using a number identifier, or equivalent, which should be indicated on all applicable plan drawings, text assessments and tables to facilitate interpretation of the information presented. In addition, a plan clearly indicating the vernal pools, the 100 foot envelope and the 750 foot critical terrestrial habitat relative to the proposed development should be included. If presented as an overlay to the preferred alternative Site Master Plan, there will be a substantial amount of development within these identified valuable resources and there is no attempt to modify the project to avoid these impacts and sustain amphibian populations. The DEIS fails to consider the most obvious method of protection such as avoiding development within areas critical to ensuring the viability

of these pools. With a development property encompassing some 2,000+ acres, it is reasonable to design a development that is able to avoid the more "valuable" pools. While the proposed development plan may attempt to protect the pools proper, the sprawling pattern of the site plan will have limited value for any long term conservation of the vernal pool species. While it is clear that avoidance of all identified vernal pools may not be feasible, the impact to vernal pools across the site can be minimized while still allowing for a substantial development.

Response 3.2-5: *The table presented in Response 3.2-4 lists each productive vernal pool found on the site with a letter identifier, corresponding to the locations shown in DEIS Figure 3.4-1 and the wetland identifiers used throughout the DEIS. FEIS Figure 2-5 shows the 100-foot vernal pool envelope ("VPE") and the 750-foot critical terrestrial habitat ("CTH") suggested by Klemens for protection of vernal pool species, overlaid on the revised Master Plan. (Klemens' management recommendations for vernal pool areas are a minimum 75% undeveloped VPE and 50% undeveloped CTH.) Response 3.2-4 explains that vernal pools EE and T-C are of higher value than the other areas listed.*

Vernal pool EE (Tier I) is located close to Lost Lake in an area that otherwise provides ideal conditions for development -- a broad upland with minimal slopes that affords overlooks to the lake itself, a primary feature for the resort development. This central area of the northerly portion of the property provides significant opportunities for development of the Amenity Village area of the project. In the proposed layout, the recreational amenities have been concentrated around this area while avoiding disturbance to the lake shore and wetlands (development constraints) as much as possible. As stated in the DEIS, this is an area where impacts to some amphibians that utilize the vernal pool will result from construction within the adjacent upland associated with the vernal pool. In this case, 100 percent of the VPE and approximately 50 percent of the CTH will remain undisturbed and undeveloped.

Vernal pool T-C (Tier I) is located in the southwestern side of the site. In the revised Master Plan this area and a significant portion of its CTH are proposed to be protected within dedicated open space. In this case, 100 percent of the VPE and 71 percent of the CTH will be undisturbed and undeveloped.

The other seven vernal pool habitats on the site (Tier II except as noted) are preserved in the revised plan as follows:

- *Vernal Pool CC - 100 % VPE & 33 % CTH undeveloped*
- *Vernal Pool ABD - 100 % VPE & 79 % CTH undeveloped*
- *Vernal Pools TT-A & V - 100 % VPE & 55 % CTH undeveloped*
- *Vernal Pool M-A (Tier III) 100 % VPE & 27 % CTH undeveloped*
- *Vernal Pool DD - 100 % VPE & 62 % CTH undeveloped*
- *Vernal Pool U - 100 % VPE & 71 % CTH undeveloped*

All Tier I pools on the property will have 100% of the VPE undisturbed and in the existing condition and at least 50% of the CTH undisturbed and preserved within the dedicated open space. All Tier II pools will have 100% undisturbed VPE and at least 33% of the CTH undisturbed. These numbers do not include additional undisturbed CTH land that will exist in the rear yards of house lots on account of the Applicant's limitations on lot development.

As noted in the DEIS, vernal pools do not have any greater regulatory protection than any other wetland type. No legally protected species were found in any of the vernal pools on-site.

Comment 3.2-6 (Letter 4, CT Male Associates, July 1, 2010): Wetland Mitigation: The Applicant proposes to create approximately 1.01 acres of wetlands to mitigate for impacts to existing on-site wetlands. In addition to this wetland creation, it is recommended that created wetlands and any wetlands not impacted be placed under restrictive covenants or a conservation easement to protect the created and existing wetlands in perpetuity.

Response 3.2-6: *Nearly all wetlands on the property are proposed to remain within common areas that will remain in the ownership of Lost Lake Resort, Inc., and designated as "open space" pursuant to the Town's PDD regulation such that the land will be subject to restrictions on any further development by the Town in its final PDD approval of the project. All of the created wetlands proposed will be located within permanent open space areas.*