

# **Save the Lakes Proposed Findings for HRVR FEIS**

## **I. Water Issues (Surface and Groundwater Resources and Water Supply)**

Concerning Hydrology/Wetlands issues identified in the FEIS, Appendix T, p. 6 of 17, earlier detailed comments were provided by HydroQuest (Paul Rubin), on behalf of Save the Lakes and the Sierra Club, in several documents including 1-11-13 (HydroQuest Comments on HRVR Water Supply and SPDES Issues).

New HydroQuest comment on the finalized FEIS: There continues to be no characterization and assessment of wetlands, wetland species (inclusive of the presence of threatened and endangered species), water quality, etc. along the planned effluent discharge course by HRVR for review by NYSDEC or for public review and comment. Detailed wetland assessments were conducted on project area wetlands, yet here, where the adverse environmental impact is likely to be greatest, HRVR has elected to not conduct important baseline water quality and species assessments. This will make it impossible to accurately assess stream impacts in the future.

---

Concerning Hydrology/Wetlands issues identified in the FEIS, Appendix T, p. 8 of 17, earlier detailed comments were provided by HydroQuest (Paul Rubin), on behalf of Save the Lakes and the Sierra Club, in several documents including 1-11-13 (HydroQuest Comments on HRVR Water Supply and SPDES Issues).

New HydroQuest comment on the finalized FEIS: The diversion of 90,000± gallons per day of wastewater to an area downstream of the Lake will adversely impact NYSDEC Wetlands RD-2 and RD-4. As repeatedly stated in documents provided, Fourth Lake does not provide any input to wetland RD-2 during dry periods. Similarly, HRVR again provides both limited and flawed data to support the erroneous concept that there is always sufficient outflow from Williams Lake to maintain the health of wetland RD-2. This ignores the extensive photo-documentation provided that refutes this, for up to months at a time. Thus, HRVR still provides misleading hydrologic information to support their flawed contentions that outflow from Williams Lake occurs through drought periods and that lowering of Williams Lake will not adversely impact down-gradient wetlands. HRVR's decision to again ignore the detailed technical comments and documentation provided, deciding to instead reiterate the same flawed material, is irresponsible.

---

Concerning Hydrology/Water Budget and Water Adequacy issues identified in the FEIS, Appendix T, p. 8 of 17, earlier detailed comments were provided by HydroQuest (Paul Rubin), on behalf of Save the Lakes and the Sierra Club, in several documents including 1-11-13 (HydroQuest Comments on HRVR Water Supply and SPDES Issues).

New HydroQuest comment on the finalized FEIS: HRVR again claims that their watershed analysis demonstrates a sustainable water supply from Williams Lake for the projected water demand. They again claim that total runoff (surface water runoff plus groundwater recharge) is 204 gallons per minute (gpm) under average annual precipitation and 130 gpm under drought

conditions. STL and Sierra Club have repeatedly submitted comments that solidly document that HRVR has failed to recognize obvious surface water flow conditions on their property, failed to acknowledge major karstic outflow (i.e., millions of gallons per day) via conduits, failed to acknowledge long periods of no lake outflow, and thus used completely unfounded and flawed data to “model” recharge and hydrologic water budget factors. This failure to correctly characterize site hydrology (inclusive of required tracer testing) is, again, used to erroneously support lake outflow and water availability information. This is baseless hydrologically. The proposed HRVR project should not be approved based on this flawed water budget.

---

Concerning Hydrogeology/Water Budget and Water Adequacy issues identified in the FEIS, Appendix T, pp. 9 and 11 of 17, earlier detailed comments were provided by HydroQuest (Paul Rubin), on behalf of Save the Lakes and the Sierra Club, in several documents including 1-11-13 (HydroQuest Comments on HRVR Water Supply and SPDES Issues).

New HydroQuest comment on the finalized FEIS: Without dye tracer testing to establish groundwater flows in the area, the water budget analysis is insufficient. HRVR’s water budget is completely flawed and without solid foundation. Regarding tracer tests, the page 9 Appendix T chart states: *“These tests are not a feasible measure for establishing areawide groundwater flows. HRVR used other conventional and accepted means to determine groundwater flow.”* Statements such as this one show that HRVR consultants have no idea or concept whatsoever of methods used to document groundwater flow by karst experts throughout the world. All involve the use of tracers, as were required by NYSDEC. Hollow, unfounded statements of *“conventional and accepted means”* are grossly wrong, unsupported, and irresponsible. The simple fact is that HRVR still has not conducted the tracer testing needed to determine groundwater flow paths and the site’s karst hydrology. One potential consequence of this is that site alteration may well adversely impact critical bat hibernacula. A “water budget” in a karst terrain that fails to determine major surface and subsurface water losses, groundwater flow paths, receptors, and discharge points is meaningless and should not be used to support any project’s needed water availability. HRVR’s failure to conduct required tracer testing puts into question the site’s ability to supply sufficient water for the proposed project and potentially jeopardizes the bat hibernacula. These topic areas have been repeatedly addressed in detail by HydroQuest. HRVR simply fails to acknowledge them and again repeats baseless conclusions as if by repetition they will become reality. Project approval should be denied until the most basic tenets of the proposed project are documented: 1) a scientifically, reproducible, water budget based in large part on tracer testing as used by expert karst hydrologists throughout the world, and 2) tracer testing that documents karstic groundwater flow paths (natural and manmade) throughout the project area, inclusive of hydrologic connectivity to bat hibernacula in mines. HRVR’s water budget is baseless, fails to address a major elongate trench that almost certainly shunts flow out of the Williams Lake watershed, and ignores the well-established science and methods of karst hydrology used by experts worldwide.

---

Concerning HRVR project water demand, professional engineer John Keith submitted comments on both the DEIS and the finalized FEIS on behalf of the Sierra Club.

On the DEIS, he commented: *The water demand analysis in the HRVR DEIS seems low – 82,683 gpd average at full build-out versus 127,020 gpd estimated by J. Keith. HRVR’s estimate is based assuming extensive water conservation measures, such as low flow fixtures, use of grey water systems and more, but there is no calculation or explanation showing how HRVR came to the conclusion that, based on these measures, HRVR can reduce its demand by 20%. (FEIS pp. 143 and 144, comments 5 and 6)*

On the FEIS, he commented in a 5/23/13 letter to the DEC as follows: *Other commenters also stated that the water demand in the DEIS seemed low and presented their own estimates: NYSDEC – 104,035 gpd; NYSDOH – 93,000 gpd; Ulster County – 91,500 gpd. In response, HRVR raised their estimated average use at full build out to 91,968 gpd, with a maximum use of 183,936 gpd. The higher average number is more realistic and in line with government agency estimates, although it may still be low. To achieve this low rate at maximum build-out, extensive water conservation measures must be implemented and maintained. The FEIS still does not clarify the extent of water reductions (from “conventional” water use numbers) that conservation measures will achieve. Presumably, water conservation measures will be stipulated in government approvals and construction covenants; this should be made clear. Note that the FEIS statement that “only water saving fixtures are available for sale in this country and only water saving fixtures can legally be installed” on page 147 of the FEIS is disingenuous, as what legally counts as “water saving fixtures” is often not the modern low-flow fixtures apparently contemplated in the water demand estimate, which fixtures often use much less water than the legal requirement. Such disingenuous statements detract from the confidence that the low water use estimate in the FEIS will be achieved.*

*Maintaining the low water use proposed could be a challenge as time progresses, as property owners (homeowners) have an incentive to use less expensive plumbing fixtures, which often have higher flows, and to plant lawns and gardens that will require irrigation (the FEIS assumes and stipulates no irrigation using potable water supplies.) Similar concerns relate to the HRVR resort and its associated restaurants, spa, etc. – an incentive to become lax about water conservation and to add plantings that require irrigation. An enforceable mechanism to assure water conservation measures is needed, including at least an annual comprehensive inspection or water use and conservation measures by a qualified, independent agent.*

---

Concerning HRVR’s claim about the viability of Williams Lake to provide adequate water supply over the long term at full build, professional engineer John Keith submitted comments on both the DEIS and the finalized FEIS on behalf of the Sierra Club.

On the DEIS, he commented as follows: *Based on his own estimate of 127,000 gpd use, the lake must be capable of providing 88 gpm on average and have additional flow to assure an outflow and support of downstream wetlands. The key period is during extended dry weather. If there is no net outflow from the Lake in dry weather, the lake level could drop by a foot over a 100-day drought. This could significantly impact the life in and around the lake. (Page 163, Comment 32).*

On the FEIS, he commented in a 5/23/13 letter to the DEC as follows: *The FEIS response*

*reiterates that there is sufficient inflow into Williams Lake through rainfall and runoff from the 779-acre drainage basin to support the proposed HRVR development. Based on the 91,968 gpd average water use discussed above, this would require 64 gpm of average flow (compared to J. Keith estimate of 88 gpm), plus a surplus to allow for long stretches of drier weather and to support the downstream wetlands. The FEIS gives a brief demonstration on page 151 as to why the Lake can support the water supply: "In 2010 this area received approximately 48 inches of rainfall (the lowest in the past 5 years). Assuming 48 inches of precipitation – 20 inches of evapotranspiration (and a 43 acre Lake area) = 28 inches which equates to 91,000 gallons/day or approximately 63 gpm." This calculation, which is reasonable, only accounts for rain falling directly on the Lake; additional input can certainly be expected from the 779 acre drainage basin addition. Even a 1 inch runoff from this area over the course of a year (a conservative 2% runoff factor) would be sufficient to add over 40 gpm to the average annual flow. The conclusion is that on average there should be sufficient water input to Williams Lake to support the proposed withdrawal (neglecting the significant issue of whether water in the drainage area is drained to subsurface Karst formations or mines rather than Williams Lake, which is the subject of other comments and responses.)*

*The real issue is whether Williams Lake can support the proposed withdrawal during prolonged droughts or below average rainfall periods. The FEIS admits that there are times when there is no outflow from the Lake and thus that there will be times when the Lake is effectively serving as a large storage tank. Clearly, there have been extended drought periods in the Hudson Valley in the past, lasting 6 months or more. With climate change, while the Hudson Valley likely will receive similar or more rain on average than in the past, there will also likely be greater swings in weather patterns, resulting in the continued chance for severe droughts. Of course, as in any area experiencing drought, HRVR would take water conservation measures should a drought occur. In view of the capacity in Williams Lake, the development could probably muddle through until rains returned. However, the FEIS should at least acknowledge the risk of droughts and significant water declines in Williams Lake during droughts, and comment on the possible resulting ecological impact on life in the Lake and the downstream wetlands. Certainly the impact of a drought on the Lake aquatic life and downstream wetlands will be greater with the HRVR development than without it.*

---

James Gatherer submitted the following comments to DEC on the finalized FEIS:

I am a practicing hydrogeologist with 15 years experience. I have reviewed the responses to comments Nos. 10 - 23 of *FEIS Chapter IV.Y, DEIS Appendix J.1, Hydrogeology Study – Comments and Responses*, and have the following follow-up comment:

The Consultant did not adequately address my comments provided on the DEIS Appendix J.1 -- Hydrogeology Study (provided by e-mail on 7/10/11). The Consultant claims that a well-developed conduit system typical of a karst aquifer is not present at the site which is not the case at Williams Lake. However, they failed to provide an adequate explanation of how, after precipitation events, rapid and dramatic increases in potentiometric head are observed in all of the observation wells for which water level data was presented. This evidence clearly contradicts the claim that the karst limestone aquifer lacks well-developed hydraulic connections.

Semantics aside, the evidence suggests that there is clearly a direct, well-defined, hydraulic connection between surface water runoff and the underlying aquifer. Furthermore, the fact that all of the observation wells showed a similar response to precipitation events (rapid and dramatic increase in water levels) indicates that the bedrock fracture network is well developed, and well connected. In aquifer settings in the northeast, where diffuse recharge predominates, my experience has been that there is normally a 2 to 5 feet seasonal fluctuation in water levels. The emphasis is on the word 'seasonal', as gradual changes in water levels are observed over days, weeks and months, not changes in head of up to 21-ft in a matter of minutes and hours as has been observed at this site.

The implications of the contention in the DEIS/FEIS that the aquifer lacks hydraulically well-developed interconnections between groundwater and surface water runoff are that:

- (1) the future impacts to groundwater and surface water quality in the area caused by the development have not been fully evaluated, and
- (2) the impacts of the high demand of water use by the development and the radius of potential influence to other potable water wells in the area has not been adequately defined.

The failure of the DEIS/FEIS to acknowledge that there is clearly a direct, well-defined, hydraulic connection between surface water runoff and the underlying limestone karst aquifer may have a large negative impact on future groundwater resources in terms of both quantity and quality in the surrounding area.

## **II. Terrestrial and Aquatic Ecology**

Concerning Rattlesnakes issues identified in the FEIS, Appendix T, pp. 13 and 14 of 17, earlier detailed comments were provided by HydroQuest (Paul Rubin), on behalf of Save the Lakes and the Sierra Club, in several documents.

The permit application and draft permit do not adequately account for other endangered or threatened species in the project area including the timber rattlesnake. HydroQuest and Save the Lakes have provided detailed and sufficient documentation of the presence of rattlesnakes on the project area, including a photograph to warrant detailed investigation. The photograph that “*appears*” to be a rattlesnake clearly is a rattlesnake. HRVR is disingenuous in their discussion. Furthermore, as solidly documented by HydroQuest, there are no known dens within documented rattlesnake migration distances. Thus, one or more must exist that have not been documented – possibly in or near HRVR lands. NYSDEC’s own expert, Randy Stechert, has recommended that a thorough investigation, by a rattlesnake expert, be conducted for den sites and property usage (e.g., basking, migration, etc.). This recommendation is cited in HydroQuest material submitted to NYSDEC as per Mr. Stechert’s request. This study should be conducted immediately, preferably by Randy Stechert.

---

(See earlier comments, under “Water Issues,” by HydroQuest concerning HRVR failure to conduct baseline species assessments in the wetlands along the planned effluent discharge course, thus preventing any environmental impact review by DEC and the public.)

---

(See earlier comments, under “Water Issues,” by HydroQuest concerning HRVR’s failure to conduct required tracer testing to determine groundwater flow paths and the site’s karst hydrology, thus putting into doubt the site’s ability to avoid adverse impacts on the site’s critical bat hibernacula.)

---

(See earlier comments, under “Water Issues,” by John Keith concerning potential drought effects on water supply and water declines in Williams Lake and potential negative impact on Lake aquatic life and the downstream wetlands.)

### **III. Land Use and Zoning**

Concerning Land Use and Zoning, on FEIS page 275 is the submission by Shannon LaFrance, Town of Rosendale Attorney, on 7/21/11: "Any Zoning Law amendment should be consistent with the vision of the Comprehensive Plan and should not be a reaction to the unique desires of a specific applicant or a specific parcel as indicated in the DEIS." The PRSP amendment to which this comment refers has been replaced by the BLCPPDA amendment; the comment is applicable to both. The BLCPPDA is defined as an area within which theoretically one or more Lakes Conservation Planned Developments can be created, but "redevelopment of the Williams Lake Hotel Resort...is required as part of any Lakes Conservation Planned Development application." (BLCPPDA Section 75-29(C)), thus there can be only one LCPD in the Town, which is the Applicant's project.

The BLCPPDA is therefore admittedly a request for spot zoning, of dubious legality.

---

Concerning Land Use and Zoning, at FEIS p. 308-9 (Save the Lakes) Chris Beall, Email of 7/11/12, Exhibit A, states: "Their proposed PRSP, however, has serious areas of vagueness and omissions..."

The HRVR response is that the PRSP has been withdrawn (after the DEIS was accepted), without mentioning any replacement.

However, the FEIS p. 19 Summary of Project Modifications to the Project states: "In September 2011, the Applicant modified the original PRSP zone text amendment and submitted a revised zone text amendment (“Binnewater Lakes Conservation Planned Development Area, BLCPPDA”) to the Town of Rosendale Board for consideration. This revised zone text amendment addresses public comments received during the DEIS."

Nevertheless, the Applicant fails to state how the replacement amendment (BLCPPDA) responds to the comment. Because the BLCPPDA postdates the DEIS and is not otherwise addressed in the FEIS, no SEQRA review of the BLCPPDA has taken place. It should therefore be the subject of a Supplemental EIS.

---

Concerning, Land Use and Zoning, the DEIS p. 434, para 2 states "the current zoning

regulation[s]...are not sufficiently flexible to permit the type of planned development envisioned under the Town's Comprehensive Plan." In the FEIS, p. 307-8, (Save the Lakes) Chris Beall's Email of 7/11/12 responds: "current law does provide the potential for each of the proposed uses and bulk variances." Applicant responds by quoting FEIS p. 274 Shannon LaFrance, Town of Rosendale Attorney, Submission 7/21/11, discussing townhouses, "It is unlikely that HRVR would be able to obtain a use variance as Section 75-44 of the Zoning Law requires the applicant to show that the existing Zoning Law provisions 'have caused unnecessary hardship.' Thus, an amendment to the Zoning Law is arguably necessary."

The arguable necessity for a zoning amendment results only from the Applicant's desire to circumvent current zoning law regarding multi-family housing. The circular reasoning seems to be: we want to build townhouses; we cannot do so because they are not permitted in a residence A zone, so we would need a variance; we cannot get a variance because our hardship is self-inflicted (we knew what the zoning was when we purchased the property and planned to have townhouses); we therefore need a zoning amendment because...we want to build townhouses.

No zoning amendment is necessary. The project should not include townhouses.

#### **IV. Transportation and Traffic**

David Porter commented on the DEIS and in a 5/15/12 letter to the DEC and Town that since the HRVR project traffic analyses had shown resulting project-build unacceptable "E" and "F" levels of service for AM and PM eastbound weekday traffic at the Rt. 32/Tillson Rd., it was the obligation of HRVR to present acceptable mitigation for this projected unacceptable condition.

Concerning this issue of specific intersection unacceptable level of service, HRVR refused in the FEIS to offer any definite mitigation.

---

David Porter commented on the DEIS and in a 5/15/12 letter to the DEC and Town that likely construction stage truck traffic damage to local roads needed to be addressed in the FEIS. Construction phase transportation issues were required by the SEQRA Scope to be covered in the EIS.

Concerning this issue, despite commonly-expected damage to local roads resulting from extensive heavy truck volumes associated with projects of this magnitude, the FEIS claims that only minimal damage will occur and that, in any case, contrary to SEQRA intent, this potential significant negative impact issue should be deferred for consideration at the site plan stage.

#### **V. Community Facilities and Services**

Concerning public access to swimming in Williams Lake, in Mourka Meyendorff's comments to the DEIS, she stated that the loss of public access to swimming in Williams Lake would be detrimental to Rosendale community's quality of life; that the Ulster County Open Space Plan

underlines the fact that while there is much water in the Hudson Valley area, there are very few areas for swimming; that the Mohonk Mountain House and the Mohonk Preserve models for day passes that HRVR wants to use as their model for public access to swimming in Williams Lake, would be too expensive for most Rosendale residents and therefore swimming in Williams Lake would be prohibitive for most. (HRVR states in the Land Use and Zoning Section of the FEIS that public access to swimming in Williams Lake will be modeled after the Mohonk Mountain House and the Mohonk Preserve models.)

Response: For \$12.00 per day, an individual can hike in the Mohonk Mountain Preserve area. No swimming. For \$17.00 per day, an individual can hike and climb in the Mohonk Mountain Preserve. No swimming. For \$20. - \$25.00 per day, an individual can hike near and around the Mohonk Mountain House Resort on a day pass. Swimming in the lake by the resort, use of the spa and swimming pool are prohibited on a day pass. Swimming in the Mountain House Resort lake and the use of the Spa and all its amenities are only for those individuals who have reserved a room in the Mountain House. Rooms start at \$400-\$500 per night.

Conclusion: The Mohonk Mountain House model for day passes for swimming in Williams Lake (as well as Fourth Lake) is too expensive for most Rosendale residents, therefore swimming in Williams Lake would be prohibitive for most. The Mohonk Mountain House and the Mohonk Preserve model for allowing swimming at Williams Lake is inconsistent with the Rosendale Comprehensive Plan which states the need for a process to enhance public access to Rosendale's significant waterbodies and natural areas, including the Binnewater Lakes. The prohibitive cost of swimming in Williams Lake is further inconsistent with the RCP because the cost is not consistent with typical discretionary income in the Town Rosendale.

## **VI. Fiscal Impact Analysis**

David Porter commented on the DEIS and in a 5/15/12 letter to the DEC and Town that the DEIS and draft FEIS failed to account for likely major taxpayer costs of potentially millions of dollars for town and county road repairs due to expected extensive heavy truck traffic caused by the project construction phase activity.

Concerning this issue, HRVR claimed that only minimal damage would occur and that the project's expected tax revenue generation for town and county would easily cover such expenses if needed. HRVR also incorrectly asserted that the standard fiscal impact analysis formula methodology employed in the DEIS for cost estimates for local governments also factored in potential local exceptionally large road repairs. In fact, the formula used is based on aggregate per capita costing (similar to average costing) for each new person added to the local jurisdiction (FEIS, p. 408). It does not take into account line-item extraordinary expenses of the sort discussed here on grounds that it would be too expensive and unreliable to calculate. The apparent endorsement of the methodology by the Town consultant, Mullin Associates (p. 405), appears to be concerned with the per capita incremental revenues and expenses, not with the issue of extraordinary expenses as can be expected in this case. Together, these several responses indicate HRVR's failure to offer potential mitigation, as with an escrow account, and failure to

accurately present likely Town and County expenses due to the project.

## **VII. Alternatives**

According to Nancy Schniedewind, in the draft FEIS HRVR claimed that, “The Project can be considered a Conservation Resort (p. 466)” (consideration of which alternative was required by the EIS Scope) and in doing so dismissed a full discussion of other alternatives, particularly a “Conservation Resort Alternative” as defined by the DEC. In its letter of August 11, 2011, the DEC asked HRVR to give strong consideration to DEC’s preferred alternative, the “Conservation Resort Development”, for the project design. This was defined by the DEC as “redevelopment of the property as a resort and/or residential community primarily within the existing disturbed area footprint”. HRVR did not comply with this request. Its project design in the draft FEIS is still well beyond the “existing disturbed area footprint”.

Furthermore, in the DEIS, HRVR itself spelled out what a Conservation Resort Alternative would look like and how it would differ from HRVR’s proposed plan. “The major differences being that the hotel is smaller and there is no detached housing.” (DEIS p. 639). In the draft FEIS the hotel is comparable to the original proposal and detached housing remains. HRVR discounts this alternative without adequate rationale or analysis.

What rationale it offers is based on the argument that other alternatives would not be profitable because the vast majority of infrastructure costs are fixed, making little difference in building costs but producing a significant difference in profits given the smaller size of the alternatives. Yet the finalized FEIS offers no detailed site plan alternatives or detailed monetary cost data of smaller components. This prevents a reasonable independent analysis of income potentials from smaller alternatives, contradicting the purpose of SEQRA.

In the May 16, 2012 Save the Lakes letter to DEC and Town of Rosendale concerning HRVR’s Draft FEIS, Nancy Schniedewind stated that no serious consideration was given to a “Conservation Resort Alternative.” She pointed out that Hudson River Valley Resort’s FEIS submission in regard to Alternatives was inadequate and misleading. HRVR did not comply with DEC’s definition of a “Conservation Resort Alternative” nor did it address that alternative as requested by the DEC. This critique still applies to the present completed FEIS.

---

According to Nancy Schniedewind, under the “No Action” Alternative, the EIS Scope indicates that, “a discussion shall be provided that evaluates the potential designation and use of the site as permanent and publicly-accessible open space or parkland” (p.623). HRVR’s discussion of this issue in the DEIS (p. 628) was cursory and incomplete.

Several organizations documented the omission of a substantive discussion of this alternative in their response to the DEIS, including the Shawangunk Ridge Biodiversity Partnership (draft FEIS p.456-7), the Sierra Club (draft FEIS p. 458-9) and Save the Lakes (draft FEIS p.461).

In the draft FEIS (p. 457) HRVR claims that it discussed the site becoming a permanent, publically accessible parkland in the DEIS, when it did not do so. It added no new data about this alternative in the draft FEIS.

HRVR did not address the critical points above regarding alternatives with any new data in the FEIS. Thus the required analyses of Alternatives are not complete.

---

Concerning the required analysis of alternatives, professional engineer John Keith submitted comments on both the DEIS and the finalized FEIS on behalf of the Sierra Club.

On the DEIS, he stated that the alternative analysis was incomplete. Specifically, that the Conservation Resort alternative was not fully addressed (Page 504, comment 18).

On the FEIS, he commented in a 5/23/13 letter to the DEC as follows: The earlier comment by himself expressed the view that the Conservation Resort was included in the DEIS as the minimally economically feasible development. The FEIS response basically agrees with this position but then goes on to say it is not economically feasible, an apparent conflicting view. It appears the alternative was never a serious alternative and is a red herring. A true analysis of economically feasible alternatives should be done. The implied position that the proposed development is the only economically feasible alternative, or has been reduced to the economically feasible minimum needs substantiation. What the FEIS appears to say is that the proposed development, as reduced from the original plan, is the minimum economically acceptable alternative *to this developer in view of the developer's risk tolerance and return on investment (ROI) objectives*. This is quite different to any economically feasible alternative, as others may have higher risk tolerance or lower ROI requirements.

**Conclusion:**

The Applicant has failed to adequately mitigate significant adverse environmental impacts and to provide adequate and appropriate information consistent with the EIS Scope in order to enable a hard look at various potential significant adverse environmental impacts, with regard to at least the above specified FEIS issues. Because these failures are sufficiently numerous and serious, they cannot be outweighed by any potential economic or social benefits of the project in the required balancing test. Therefore, the SEQR permit approval for the HRVR application should be denied.

# **Proposed Findings for the HRVR FEIS – Supplement 1**

## **I. Water**

Erik Kiviat, PhD of Hudsonia Ltd., submitted on 6/2/13 to DEC the following remarks about potential groundwater pollution on behalf of the Sierra Club in response to the finalized HRVR FEIS.

(FEIS p. 15). Karst geology. FEIS refers to modifications of green infrastructure for stormwater treatment to protect groundwater in karst areas, and states that karst has “limited” distribution on the site. There is no map showing the distribution of karst, and no explanation whether the (unmapped) mine complex is considered part of the karst area. (Both natural karst and mined areas will be vulnerable to groundwater pollution from development activities.)

---

Erik Kiviat, PhD of Hudsonia Ltd., submitted on 6/2/13 to DEC the following remarks about a potential engineered wetland treatment system on behalf of the Sierra Club in response to the finalized HRVR FEIS.

(FEIS p. 16). FEIS mentions the possibility of adding an engineered wetland treatment system to the proposed wastewater treatment system. If there is to be an engineered wetland treatment system, it should be described in detail before final approval of the FEIS, so that the public and independent experts have an opportunity to comment on design and potential environmental impacts.

---

## **II. Terrestrial and Aquatic Ecology**

Erik Kiviat, PhD of Hudsonia Ltd., submitted on 6/2/13 to DEC the following remarks about potential bat hibernacula adverse impacts on behalf of the Sierra Club in response to the finalized HRVR FEIS.

(FEIS p. 9). Bat hibernacula. The elimination of certain formerly proposed features (houses etc.) of the development plan is a good step for protection of bats and other biodiversity. However, there remain a number of potential impacts to the mine complex that serves as hibernacula, including blasting, changes in hydrology, and disposal of debris in crevasses. Because the mine features have not been mapped, there is no way to know how close to construction or development activity these features are, and thus no way to accurately assess the impacts of, for example, blasting or changes in groundwater hydrology. FEIS refers (p. 18) to preserving the land overlying the bat hibernacula. Given that the mines have not been mapped, bats require only a tiny passage to move from one part of a mine (or karst feature) to another, and the changes in the mines that may be caused by blasting and other activities, I don't believe the applicant, the DEC, or FWS know where all the bats hibernate and where they might hibernate in the future. The EIS documents assert that blasting will not cause subsurface harm to biodiversity. But my

concerns about the potential instability of geological faults and mine structures have not really been addressed. I recommend that blasting be eliminated from the resort construction plan. There is no necessity to excavate basements, and it should be possible to install underground utilities without blasting. The stakes are simply too high.

In his earlier 7/4/12 letter to the DEC responding to the draft FEIS on behalf of the Sierra Club, Erik Kiviat pointed out that the HRVR response concerning the blasting issue (p. 231, response #64) was completely inadequate. The response stated that blasting "...is not likely to adversely impact bats." Given the importance of the bat community, and especially the Indiana bat overwintering population, of the HRVR site, and in light of the general threats to bats, the HRVR project should be designed to definitively have no negative impact on bats. "not likely" is not good enough. The site can be developed for residential and resort uses without blasting.

---

Erik Kiviat, PhD of Hudsonia Ltd., submitted on 6/2/13 to DEC the following remarks about bog turtle habitat assessment on behalf of the Sierra Club in response to the finalized HRVR FEIS.

(FEIS p 18).. Bog turtle habitat assessment. It should be noted that according to policy of the U.S. Fish and Wildlife Service the entire wetland containing an area of potential or suitable bog turtle habitat is considered potential bog turtle habitat, and the conservation zones described in the federal Recovery Plan apply to the entire wetland. (This is because bog turtle use of habitat within a wetland may change as vegetation and hydrology change, bog turtles may use portions of a wetland that do not conform to concepts of core habitat, and because impacts to one part of a wetland may propagate through the wetland via water.) It is likely that the 240 feet separation between the suitable bog turtle habitat identified in the Tesauro bog turtle habitat assessment report and HRVR development activity would not be sufficient to buffer impacts. Limestone terrains are especially susceptible to pollution of groundwater, and bog turtle habitats are fed by groundwater discharge. The Recovery Plan requires consideration of development impacts on groundwater discharging to potential bog turtle habitat.

The Tesauro report stated that wetland HRVR-01, which contains the suitable bog turtle habitat identified just west of Williams Lake, was apparently fed by groundwater seepage, intermittent streams, and seasonal flooding from the lakes. FEIS does not analyze how water supply withdrawal from Williams Lake, treated sewage discharge south of Williams Lake, or other alterations of surface or groundwater hydrology might affect the hydrology of the suitable bog turtle habitat. Bog turtles require vary particular hydrological and geochemical conditions and are sensitive to changes in the quantity, quality, and timing of water inflows.

---

Erik Kiviat, PhD of Hudsonia Ltd., submitted on 6/2/13 to DEC the following remarks about vernal pool amphibian breeding areas on behalf of the Sierra Club in response to the finalized HRVR FEIS.

(FEIS p. 27). Vernal pools. FEIS notes disturbance of more than 25% of an area within 100 feet of a particular vernal pool and cites Calhoun and Klemens. This reference recommended that no more than 25% of area be disturbed within 750 feet of a vernal pool. FEIS does not address comment that a vernal pool found to be of low value for breeding amphibians in a particular year might improve in a wetter year, or if annual precipitation continues to increase in the region, or if development causes greater surface runoff into the pool.

---

Erik Kiviat, PhD of Hudsonia Ltd., submitted on 6/2/13 to DEC the following remarks about the ecological importance of protecting crevasses on behalf of the Sierra Club in response to the finalized HRVR FEIS.

(FEIS p. 215). Crevasses, etc. I fail to see why these crevasses, before being filled with refuse, could not be investigated for rare vascular plants, bryophytes, amphibians, reptiles, and small-footed bats. The response makes a weak case for the crevasses not serving as habitat for the small-footed bat (“do not provide summer roosting habitat...as they do not receive any direct sun exposure which this species seems to prefer”). The presence of, e.g., walking fern, indicates the likelihood of finding rarer vascular plants. Rare species are typically distributed unevenly in the potentially suitable habitats, so it is quite possible that one or more of the crevasses proposed to be filled support a species of conservation concern that does not use crevasses elsewhere on the property.

---

Erik Kiviat, PhD of Hudsonia Ltd., submitted on 6/2/13 to DEC the following remarks about the clam shrimp on behalf of the Sierra Club in response to the finalized HRVR FEIS.

The clam shrimp *Cyzicus (Caenestheriella) gynecia*, although an unlisted species, is globally rare and *de facto* endangered. This species has been found near enough to Rosendale (Saugerties, Staatsburg, Hyde Park) that any clam shrimp should be identified to species by an expert so that any previously undetected occurrences of this species can be conserved aggressively. This concern is dismissed in the FEIS.

---

Erik Kiviat, PhD of Hudsonia Ltd., submitted on 6/2/13 to DEC the following remarks about rare plants and cave invertebrates on behalf of the Sierra Club in response to the finalized HRVR FEIS.

(FEIS p. 254). Rare plants, cave invertebrates. FEIS, and previous documents, dance around the issue of rare plants. It remains clear (as demonstrated in my 7/4/12 report) that applicant did not perform an adequate rare plant survey. The number of egregious errors in the plant list admitted in the FEIS call into question the accuracy of the entire plant survey and list. The species accumulation curve does not show that the survey was adequate for sedges and other difficult obscure groups, because it is obvious from the plant list that sedges, grasses, and rushes (for example) were not being searched for. The EIS documents do not show where purple milkweed was found nor do they characterize the population. Cave and groundwater invertebrates are

important for conservation and should be surveyed on the site; this can be done during the warm season when hibernating bats are not in the mines (despite FEIS statements that the hibernacula will not be disturbed, there are potential subsurface impacts from blasting and changes to surface water and groundwater hydrology that could be caused by development of the site).

---

Erik Kiviat, PhD of Hudsonia Ltd., submitted on 6/2/13 to DEC the following remarks about timber rattlesnakes on behalf of the Sierra Club in response to the finalized HRVR FEIS.

(FEIS p. 256). I continue to think that a dedicated survey for this species should be conducted by an experienced rattlesnake field worker. One cannot depend on finding this species (where it occurs) during surveys for bats and plants. I have conducted field work extensively for more than 40 years in areas of the Hudson Valley where there are timber rattlesnake populations and I have only seen this species when naturalists experienced at finding it took me to den areas under the appropriate conditions. There may well be dens on the HRVR site or closer than the known den five miles distant; I am aware of multiple situations where timber rattlesnake dens were found in previously unknown locations when naturalists or biologists experienced with this species searched for dens. A survey for snakes and dens should be repeated for two or three years because small populations may be difficult to locate.

---

Erik Kiviat, PhD of Hudsonia Ltd., submitted on 6/2/13 to DEC the following remarks about the overall need for a serious spatial survey of potential rare species on behalf of the Sierra Club in response to the finalized HRVR FEIS.

Concerning the finalized FEIS, overall, there are serious deficiencies in the environmental analysis process and the planning of the proposed resort as they relate to biological resources. This is crucial because of the large size of the site, its limestone geology, environments of surrounding areas, the reported rare biota on and near the site (e.g., Indiana bat, northern cricket frog, purple milkweed), the presence of plants (e.g., walking fern, shrubby cinquefoil) that indicate the likelihood of occurrence of rarer species, and the intensive nature of the proposed development (as well as the pace of land use change and other impacts on biodiversity in the region). Previous land uses (mining, resort) do not obviate the likelihood of rare species occurrences, nor the need to survey and conserve rare species that do occur. All the rare species and their habitats need to be identified and adequately surveyed (including bats, raptors, forest interior songbirds, reptiles, amphibians, vascular plants, and bryophytes). Then a spatial analysis needs to be performed and shared with the public. This analysis, when combined with engineering and other non-biological considerations, should be used to redesign the layout of the development as well as the conservation and management of rare species and their habitats. Until this is done, any development proposal for the HRVR site will be largely arbitrary with regard to biological conservation. It is not enough to protect bat hibernacula and build LEED certified green buildings. HRVR could provide an important example of ecologically planned development but the current proposal is clearly not that. Without protecting rare species and their habitats, no development can be considered green or sustainable.

---

Erik Kiviat, PhD of Hudsonia Ltd., submitted on 7/4/12 to DEC the following remarks about the likelihood of the northern cricket frog on the project site on behalf of the Sierra Club in response to the finalized HRVR FEIS.

(Draft FEIS, p. 213: Response #42). It is highly likely that northern cricket frog occurs on the site (see Comments 44 and 45). The cricket frog surveys performed by the applicant were not thorough (see comment 45). Cricket frogs are reported to be adept at shifting their breeding habitats. DEIS and PFEIS do not admit of the likelihood that this species may in the future begin to breed in habitats that are within the proposed development area, due to climate change, hydrological change, a local population increase, or even changes to habitats caused by the project. The seasonal migratory paths of this species and the overwintering habitats (whatever they are) might also shift. The development should be planned such that potential breeding, migratory, and overwintering habitats are protected regardless of what habitats cricket frogs are using now. The environment is far from static and the biota needs to accommodate a changing environment; planning should take this into account or rare species will be lost. The EIS focuses on the currently proposed development area rather than the entire site; yet it is common for site design to change and use portions of a development site not originally proposed for construction. Moreover, even trail maintenance and use can affect otherwise undeveloped portions of a site, and the proposed development will have many impacts that extend considerable distances from the actual development footprint (e.g., noise, dust, air emissions, alterations of surface water and groundwater flow patterns, and emissions of water pollutants).

---

Spider Barbour, ecologist, Hudsonia Ltd., made the following comment about the HRVR FEIS inadequacy of literature review on the endangered Northern Cricket Frogs and thus incomplete data concerning its possible presence at the project site.

Northern cricket frog comments:

NYNHP Conservation Guide - Northern Cricket Frog (*Acris crepitans*) (2012)

Although published Mar 18 2012, the most recent publications cited in the NYNHP Conservation Guide number only 3, and all are 5-8 years old. The most recent, Gibbs et al. 2007, is a field guide based in even earlier research on NYS amphibians and reptiles.

More recent published research on Northern Cricket Frog is not cited in the NHP guide. The FEIS does not address Northern Cricket Frog potential on site adequately, given the progress of recent research (here cited) on the ecology of this highly fragile, vulnerable and rapidly declining Threatened species.

Literature Cited

Irwin, J.T., J.P Costanzo & R.E. Lee, Jr. 1999. Terrestrial hibernation in the northern cricket frog (*Acris crepitans*). Canadian Journal of Zoology. 77: 1240-1246.

This 1999 paper based on 1998 studies first reported acclimatization by overwintering cricket frogs to selected terrestrial hibernacula, presaging studies of the past few years that present more detailed documentation of this newly known ecological adaptation of this amphibian species.

Gibbs, J.P., A.R. Breisch, P.K. Ducey, G. Johnson, J.L. Behler, and R.C. Bothner. 2007. The amphibians and reptiles of New York State. Oxford University Press, NY.

Gray, R.H., L.E. Brown, and L. Blackburn. 2005. *Acris crepitans*. Pages 441-443 in M. Lanoo (ed.), Amphibian declines: The conservation status of United States species. University of California Press, Berkeley

Gray, R.H., and L.E. Brown. 2005. Decline of Northern Cricket Frogs (*Acris crepitans*). Pages 47-54, in M. Lanoo (ed.) Amphibian declines: The conservation status of United States species. University of California Press, Berkeley

Westerveld, Jay 2012. Tiny Caller, The Northern Cricket Frog. New York State Conservationist,

February 2012.

---

The Shawangunk Ridge Biodiversity Partnership submitted the following critique of the draft FEIS on June 1, 2012 concerning the issue of rare plant species: Karst Limestone formations give rise to a range of rare plant species. Typically in an area like this, a focused approach on special microenvironments would be designed to examine the habitats that would be likely to support these rare species. Rather, the consultant relied on a species detection analysis (we believe they intended to state 'species discovery curve' not the 'species detection curve' stated in the FEIS) to determine the species present. This approach is only narrowly used in the literature, and is not universally accepted (Beber et al. 2007). In contrast, a rare plant survey conducted by a botanist with extensive and local experience is typically conducted in a circumstance such as this one. In our earlier comments, we suggested that a rare plant survey would be appropriate and provided a list specifying species that should be surveyed. We now suggest that the DEC vet potential botanists for this analysis through a Request for Proposal process. In addition, the lack of voucher specimens and errors in the species identification in the FEIS cause concern and lead us to question conclusions about the presence or absence of rare species. In sum, we find that the information presented in the FEIS is not adequate for reaching conclusions regarding the presence and/or potential for rare plant species.

In the Partnership's June 2013 letter to DEC, signed on its behalf by Cara Lee, Director, Shawangunk Ridge Program, The Nature Conservancy, it is stated that the finalized FEIS did not respond to this earlier comment and serious issue.

---

The Shawangunk Ridge Biodiversity Partnership submitted the following critique of the draft FEIS on June 1, 2012 concerning the issue of the Northern Cricket Frog: It is known that wetlands within the RLC provide habitat for the state-listed endangered northern cricket frog (NCF). The FEIS dismisses concerns for NCF, citing plans to protect the stated 1,500 foot dispersal distance that was determined in one study. There is no scientific evidence presented that the NCF will tolerate the

extensive development proposed in the FEIS. Additionally, the upland habitat of this animal has not yet been fully characterized (particularly with regard to overwintering sites), but evidence indicates that this aspect of habitat is important to survival. The potential for the NCF to be present and the real likelihood of irreversible damage to this species has not been sufficiently addressed in the FEIS.

In the Partnership's June 2013 letter to DEC, signed on its behalf by Cara Lee, Director, Shawangunk Ridge Program, The Nature Conservancy, it is stated that the finalized FEIS did not respond to this earlier comment and serious issue.

---

The Shawangunk Ridge Biodiversity Partnership submitted the following critique of the draft FEIS on June 1, 2012 concerning the issue of vernal pool assessment: Short-term assessment of vernal pools can be severely biased. Ponds that are dry for several years can serve as breeding grounds in future years. Breeding patterns are complex and cannot be predicted based simply on the amount of snow and rainfall. The FEIS refers to data that was collected over 5 years (only intensely for 2 years). The ecological trap concept presented is just a concept. Studies of less than 5- years are inadequate for assessments of ecological quality unless the evidence is structural and obvious (e.g. too shallow, high light and heat exposure).

In the Partnership's June 2013 letter to DEC, signed on its behalf by Cara Lee, Director, Shawangunk Ridge Program, The Nature Conservancy, it is stated that the finalized FEIS did not respond to this earlier comment and serious issue.

---

The Shawangunk Ridge Biodiversity Partnership submitted the following critique of the draft FEIS on June 1, 2012 concerning the issue of the Indiana Bat: The caves in the RLC have been deemed among the top 15 sites in the world for hibernating populations of both Indiana bat and small-footed bat. The Hudson River Estuary corridor is an especially important area for rare bats and the RLC provides important roosting and wintering habitat for bats. As stated in the Wildlife and Habitat Conservation Framework document, "appropriate conservation measures should be taken to protect these communities from land-use practices that would threaten their long-term viability". In light of the devastating effect of White Nose Syndrome, maintenance of the hibernaculum system is imperative for the recovery of the bat species populations. The FEIS indicates that 100 mines are present in the area surveyed. Without a map of the mine systems, it is not possible to determine the connection of these mines to the known bat hibernacula. We are particularly concerned about the plan to use mine openings as a site for deposition of excess excavation material as this may disturb the microenvironments that support the endangered bats. All waste should be shipped off site to avoid disturbance to the hibernacula.

The presence of potential roosting trees is not given thorough consideration in the FEIS. As the bats roost in a variety of live trees, as well as the dead trees that are addressed, a full survey of live roosting trees (ex. shagbark hickory and black locusts) should be included and addressed in the tree clearing plan. The dead trees that appear to qualify as an 'abundance of roost trees', will only be present for a few years and a plan for the replacement of this important aspect of the bat lifecycle must be provided.

In the Partnership's June 2013 letter to DEC, signed on its behalf by Cara Lee, Director, Shawangunk Ridge Program, The Nature Conservancy, it is stated that the finalized FEIS did not respond to this earlier comment and serious issue.

---

The Shawangunk Ridge Biodiversity Partnership submitted the following critique of the draft FEIS on June 1, 2012 concerning the issue of self-administered restrictive land covenants: We continue to maintain that the self-administration of restrictive land covenants in this highly sensitive and important habitat is not sufficient for long-term maintenance and protection of the rare and endangered animal and plant species. The developers indicate an 'expectation' that landowners will adhere to the covenant plans. They indicate they are 'almost certain' that the restrictions will be enforced. We suggest that a third party monitor be required and identified prior to approval of the development. The easement outlined in the FEIS has serious limitations i.e. the plan for maintenance of the easement area is not addressed.

In the Partnership's June 2013 letter to DEC, signed on its behalf by Cara Lee, Director, Shawangunk Ridge Program, The Nature Conservancy, it is stated that the finalized FEIS did not respond to this earlier comment and serious issue.

---

The Shawangunk Ridge Biodiversity Partnership submitted the following critique of the draft FEIS on June 1, 2012 concerning the issue of the proposed mitigating effect of the grassland area: The proposed mitigating effect of the grassland area is not accurate nor is it ecologically justified. First, the grassland will be created at the cost of forest area. Second, the acreage proposed is not sufficient to be beneficial to important species. Lastly, to maintain a grassland proper mowing or grazing practices must be in place, but no management plan is identified.

In the Partnership's June 2013 letter to DEC, signed on its behalf by Cara Lee, Director, Shawangunk Ridge Program, The Nature Conservancy, it is stated that the finalized FEIS did not respond to this earlier comment and serious issue.

---

The Shawangunk Ridge Biodiversity Partnership submitted the following critique of the draft FEIS on June 1, 2012 concerning the overall issue of insufficient data for making informed decisions: This complex contains significant cave and cliff sites that serve as critical rare habitats for animals and plants and should be protected from activities that threaten the integrity of these habitats. The potential for endangered and rare species is unusually high in this significant biodiversity area and precautions should be taken to protect habitat as well as known locations of specific species. Absent appropriate data, it is not possible to quantify or predict the impacts of the proposed development. We remain concerned that the methodology employed by HRHV has not provided appropriate data for making informed decisions regarding habitat and species protection.

In the Partnership's June 2013 letter to DEC, signed on its behalf by Cara Lee, Director, Shawangunk Ridge Program, The Nature Conservancy, it is stated that the finalized FEIS did not respond to this earlier comment and serious issue.

---

**Conclusion:**

The above expert findings, identifying potential and likely significant adverse environmental impacts where the Applicant failed to present any or adequate mitigation or failed to offer adequate and appropriate information to enable a SEQRA-required hard look to occur are further reasons why, as stated in the original Proposed Findings, the Applicant should not receive SEQRA approval.