Professional Review of the DEIS and Related Documents for the Rapp Road Residential/Western Avenue Mixed Use Redevelopment Projects, Town of Guilderland, Albany County, New York

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Report prepared for the Town of Guilderland Planning Board
at the request of Save the Pine Bush, Albany, New York

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Contact Information and Statement of Qualifications

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Dr. Lane completed her Ph.D. dissertation on Karner Blue Butterfly population biology and habitat restoration. Cynthia has published book chapters and scientific papers on the butterfly, was on the Karner Blue Butterfly USFWS recovery planning team, wrote sections of the recovery plan, and since has consulted with MN DNR and USFWS regarding recovery implementation (USFWS 2003). In particular, the USFWS hired her to research and develop guidelines to assist commercial operators in managing forest lands where Karner blue butterflies occur. She has worked as ecologist throughout the U.S. and Canada. As Conservation Director for the Yellowstone to Yukon Conservation Initiative she oversaw the application of wildlife corridor related research. She has managed the vegetation component for numerous EIAs, as well as conducted many wetlands surveys and health assessments. To guide large oil sands developments in Alberta, Cynthia led a team to develop a Best Management Practices document aimed at providing methods for protecting wetland and wildlife habitat during facility construction and operation. She is hired as a third-party reviewer regularly to evaluate the scientific validity and thoroughness of environmental impact assessment and similar reports.

Approach

Ecological Strategies, LLC was hired by Save the Pine Bush to provide a third-party review of essential documents related to the proposed development of parcels titled "Rapp Road Residential/Western Avenue Mixed Use Redevelopment Projects" in the Town of Guilderland, Albany County, New York. The purpose of the review was to examine the completeness and scientific validity of the DEIS and related documents, including key communications to ensure that the intended environmental protection and mitigation are occurring as part of the proposed development. The focus of this review was primarily on vegetation and Karner blue butterfly elements given the expertise of the reviewer.

A review of gaps and issues is provided. Following this review, recommended actions to address the gaps and issues are suggested.

Issues Identified

Incomplete and Inaccurate Assessment and Conclusions

The reports prepared by B Laing Associates (2019a, 2019b, Appendix F and G in the DEIS), are incomplete and have numerous inaccuracies. This renders the DEIS incomplete and insufficient since the DEIS is built upon the findings of these reports. The key issues identified include:

1) The methods section is incomplete and/or incorrect methods may have been employed.
2) Incomplete vegetation survey.
3) Traffic impacts on wildlife are insufficiently addressed and mitigated.
4) Night lighting impacts on insects need to be examined.
5) Heat island and cumulative effects need further study.
6) Climate change impacts not considered.

Mitigation Measures Insufficient and Unsupported

1) The rationale for the proposed 200' buffer on the northern portion of Site 1 is unclear.
2) The rationale for justifying mitigating the loss of 19.68 acres with the protection of 8.4 acres of land is lacking or insufficient.
3) The use of native species is insufficient in the current plan.

Incomplete and Inaccurate Assessment and Conclusions

1) Methods Section

One of the primary issues with the B. Laing Associates reports is the almost complete lack of a methods section. In particular, survey dates, conditions, search methods, and other parameters are either too generally stated or completely missing. Without having a complete methods section, it is not possible to determine whether survey methods meet industry standards or whether the assessment is complete.

For Site 1 Appendix F (B. Laing Associates, 2019a) states that surveys were conducted on "multiple occasions in June 2017, again June 2018". For Sites 2 and 3, the date of July 2019 is given. Without exact dates, it is impossible to determine whether the site survey was conducted during dates when the Karner blue butterfly would have been in an adult stage. Surveying during the adult stage is important because the immature stages, i.e. larvae and pupal stages, are more difficult to locate. Also, adult surveys are needed to determine whether a site is being used for mating, nectaring and/or roosting (USFWS 2003). When only one survey can be conducted to determine the presence/absence of the Karner blue butterfly, it is usually done during the second flight occurring mid-July through August to increase the change of detecting butterflies given there are typically larger numbers during this flight period.

Frosted elfin adult flight occurs from late April through mid-June and generally mid-May in northern parts of the range (USFWS 2018). The adults are known to nectar on a variety of species including *Rubus* spp., which was recorded as present on all three sites (B. Land Associates 2019a and 2019b, USFWS 2018). Again, for frosted elfin, it is not known whether the survey was conducted during the right seasonal window to detect adults.

For all insect surveys, it is critical to conduct site visits when suitable temperature, moisture, and wind conditions are conducive to detection. Targeting nectar plant patches or other habitat features and/or sampling a minimum percentage of potential habitat is necessary to determine the presence or absence of a species with any confidence. Survey conditions or methods were not stated or stated so generally in the report that it was not possible to determine whether methods were suitable to detect present or confirm the absence of insect species.

2) Incomplete Vegetation Survey

Plant survey methods were similarly lacking. The use of transects is mentioned, but no information about the width of transects, the intensity of sample effort, etc. Therefore, it cannot be determined whether a sufficient percentage of the site was surveyed, whether a rare plant survey was conducted, and what subset of the flora the tables providing species lists for the three sites represents. It is unusual for so few grasses and no sedge species were seen and reported. In Appendix F (B. Laing and Associates 2019a), only one grass species is listed *Andropogon virginicus* (Brome sedge), and in Appendix G the 2019b report only "grasses", "Poaceae species" are listed. Warm-season prairie grasses are most easily detected in late July-August when flowering or seeding, but it does not appear that the surveys included searches during this time. Explanations for the absence of grasses and sedges are 1) the site is unusually depauperate in grass and sedge species, the sampling area and/or season was insufficient to detect these species, or the surveyors did not have the botanical expertise to identify grasses and sedges – two of the more difficult plant groups.

Rare plants associated with disturbance have been known to occur on impacted sites. For example, Houghton's umbrella-sedge (*Cyperus houghtonii*) has been documented to respond positively to soil disturbance (https://guides.nynhp.org/houghtons-sedge/) and Schweinitz's flatsedge (*Cyperus schweinitzii*) has been shown to return, and in abundance, to a sandy area that had been covered for decades by a concrete parking lot (https://guides.nynhp.org/schweinitzs-flat-sedge/)

Unless a rare plant survey was done, and during the correct time of year, especially for species that are cryptic and/or ephemeral, it is not possible to state that no rare plants occur on site.

Regarding Site 1, the report states that "…the site is currently disturbed and lacks any characteristics typical of Albany Pine Bush habitats." However, [letter from another consultant – says likely restorable]

3) Traffic Impacts on Wildlife

The proposed development will increase traffic levels in the area of the project and impact wildlife crossing between habitat areas. The letter from the Commission states that "Studies of KBB and spotted turtle movement and dispersal patterns along Albany County Route 155 illustrate that traffic volume plays a significant role in impeding wildlife dispersal across roads. When combined with potential direct impacts on wildlife habitat, the impact of increased traffic on Rapp Road may be significant and further reduce the APBPC's and NYSDEC's ability to successfully manage these rare wildlife populations."

A letter by the Commission dated March 10, 2020, states: "In its review of the DEIS, the Technical Committee again noted that the potentially significant negative impacts of traffic mitigation options 1, 2 and 3 are in-fact more significant to APBPC's ability to create and manage a viable preserve and conserve rare wildlife, than the impacts of the Site 1 development itself. As described in the DEIS, these options would also reduce, rather than improve, the linkage between the KBB Preserve and the APBP, and further complicate habitat management on these protected lands."

Several different road alignments and treatments were provided to reduce traffic impacts to wildlife crossing. However, none of these options truly mitigates the impacts of increased traffic.

Over and underpasses have been shown to be effective in providing wildlife crossing in relation to roads. It is not clear why wildlife crossings were not included as potential mitigation options for this development.

4) Night Lighting Impacts

Artificial night lighting has been shown to impact moth behavior including adult feeding and may be linked to moth population declines (Macgregor, et al. 2017, Knop et al. 2017, Seymoure 2018, Van Langevelde et al. 2017, Van Langevelde et al. 2018). Therefore, the increased lighting associated with the proposed development may impact moth species present onsite and nearby.

The potential impacts of night lighting on moths and other nocturnal wildlife was not investigated.

5) Heat Island and Cumulative Effects

The B. Laing Associates report (Appendix F) states that "…the residential buildings will not add materially to any "heat island" effects of the current commercial development which flanks Western Avenue (including the Crossgates Mall)." No evidence for making this statement is offered. Further, the importance of examining cumulative effects, which is considering the combined addition to the heat island from other planned developments, is a commonly accepted requirement and/or practice in assessing environmental impacts.

6) Climate Change Impacts

Predicted climate change related impacts were not addressed in the DEIS. While these changes are not possible to accurately predict, some consideration of likely events and extremes should be considered (Ahrens et al. 2009). For example, more frequent and severe

thunderstorms have been predicted and are occurring. Hotter temperatures are predicted which could exacerbate any heat island effects.

Further, the USWFS Karner Blue Butterfly Recovery plan (USFWS 2003) was based on the best available information on the population biology of the butterfly and its habitat at the time. It was not possible then, or at this time to accurately predict how climate change may alter habitat management approaches. Given predicted climate change impacts, it is logical that restoring more land, over a wider area, and with unique microsites would offer greater resiliency to rare wildlife and their habitat.

Mitigation Measures Insufficient and Unsupported

1) The rationale for the proposed 200' buffer on the northern portion of Site 1 is unclear.

Similar to the term "habitat", a "buffer" is relative to a specific threat and/or habitat need for a particular species. The characteristics of a buffer to protect ground vegetation from road salt are different than a buffer to prevent light pollution or a buffer to create a barrier to reduce human use. Until the threats the buffer is intended to protect against or benefits it will provide are clearly stated, it is not possible to judge whether the proposed composition and structure of vegetation or the width of the buffer are sufficient. Once goals for the buffer have been identified, the design of the buffer should be based on relevant scientific findings.

2) The rationale for justifying mitigating the loss of 19.68 acres in Site 1 with the protection of 8.4 acres (parcels #62 and 79) in parcels to north of the proposed project is lacking or insufficient.

The Albany Pine Bush Preserve Commission 2017 Management Plan, recommends Area 57 for "Partial Protection." This partial protection designation is further described as, "Partial development of Area 57 may be appropriate provided proper set-asides are protected and native pine barren plantings are used for landscaping to ensure that the area can widen and protect the existing Karner blue butterfly linkage between Crossgates Hill and Preserve lands to the east." The proposed development would eliminate any chance of restoring pine barrens habitat to this site, as well as Sites 2 and 3 if developed.

Several letters were written by the Commission to the Town of Guilderland as part of the project planning and environmental assessment process. In the first letter, dated January 25, 2019 raised concerns about gaps in the SEQR FEAF and associated environmental impacts

to listed species and habitat loss. In this letter the loss of restorable habitat and other impacts were identified as significant.

Subsequently, protection of Areas 62 and 79 were offered as mitigation, along with educational measures. A letter from the The Albany Pine Bush Preserve Commission (the Commission) dated April 18, 2019, states "The Commission anticipates that if these protection and education/outreach measures are employed, in addition to those already outlined, and/or proposed (e.g. traffic control on Rapp Road, 200 ft buffer to Gipp Rd.) as part of municipal approval for the proposed project, the most significant potential adverse environmental impacts outlined in our January 25, 2019 letter may be avoided, and the loss of Partial Protection Area 57 (Area 57) mitigated."

It is not clear why the protection of 8.4 acres of pine barrens habitat is sufficient to mitigate the almost complete and permanent loss of 19.68 acres at Site 1, plus acres that would be lost at Sites 2 and 3. No new habitat would be created with this mitigation arrangement. In earlier letters from the Commission loss of habitat for Full Protection Area 62 was recommended to include "habitat or fees sufficient to protect 2 acres of open space elsewhere in the APB Study Area, for every acre lost in Full Protection Area 62". In the case of wetland loss to development, protection of wetlands in exchange for loss is typically a minimum of a 1:1 ratio and often higher ratios are required as needed to offset habitat and ecosystem function losses. As with wetland mitigation, on-site mitigation is preferred. In the case of loss of potential pine barrens habitat for Area 57, identified for Partial Protection in the management plan, a 1:1 mitigation ratio would seem a more reasonable ratio than the less than half an acre protected (not added) to an acre lost.

The DEIS frequently mentions the degraded and disturbed nature of the site, including noting the presence or activities of pigs 33 times, and concludes that since soils and conditions do not support pine barrens vegetation, there are no impacts. However, a recent assessment of soils by soils and geology professor J. Curt Stager, concluded suitable soils are still present and capable of supporting pine barrens vegetation (Stager 2020). Further, numerous successful restoration efforts of degraded and disturbed sites in both the Pine Bush and across North America are well documented.

Protecting the 8.4 acres in Areas 62 and 79 would widen habitat near the Karner Blue Butterfly Preserve. However, the loss of potential habitat at Site 1, particularly in the northern portion, would create a narrower linkage section with Preserve lands directly to the north and would also preclude any widening in the future. The impact of reducing habitat connectivity by developing Area 57, along with increased traffic flow needs to be more thoroughly assessed and mitigated.

3) Use of Native Species is Insufficient in Current Plan

The current landscaping plan includes some native species, but also several non-native species and cultivars. There are numerous examples for both private and state developments where native species and habitat have been successfully incorporated into the development. The habitat value of the proposed landscape plantings could be much improved by including a wider diversity of native plant species, including grasses and wildflowers, and by establishing larger areas of native plantings. All native plants should be sourced within 50 miles if available.

Recommended Actions

- Redo the site survey for vegetation, Karner blue butterfly and Frosted elfin with qualified personnel. Rewrite the B. Laing Associates reports and submit to third party review before adoption.
- Use a 1:1 mitigation ratio for lands developed to lands protected or restored. Include funds for habitat restoration on the 8.4 acres to be protected as part of the mitigation commitment.
- Add linkage restoration to the north of Site 1 to "expand linkage" as stated for this type of partial protection and improve the ratio of mitigation. This restored habitat can provide refugia from fire and additional microhabitat for climate change mitigation. Reduced traffic speeds along the adjacent road would be advised as part of this mitigation.
- More clearly define the goals and purpose of buffer areas and determine characteristics such as species composition, structure and patch size accordingly.
- Incorporate vegetated overhead wildlife crossing over Rapp Road targeted for Karner Blue butterfly and other wildlife known to use overhead crossings. Evaluate the feasibility of installing underpass for reptiles, amphibians and mammals known to use these structures.
- Consider the impacts of heat island effect including a cumulative impacts analysis
- Consider how climate change impacts may exacerbate or alter predicted impacts. Update pine barrens management plan to incorporate additional climate change related resiliency.
- Utilize a greater diversity and abundance of native pine barrens plantings in landscaping.
- Consider fencing between buffer area and restored habitat on the north end of Site 1 to limit trampling and other human use impacts.

References

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Additional resources:

https://www.epa.gov/heat-islands/heat-island-impacts

https://ec.europa.eu/environment/eia/pdf/EIA%20Guidance.pdf