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Via: email (kovalchikk@togny.org)

Mr. Kenneth Kovalchik
Town of Guilderland Planning Board
5209 Western Turnpike
Guilderland, NY 12084

**Re: The Environmental Impact Statement for the Rapp Road
Residential/Western Avenue Mixed Use Redevelopment Projects**

Dear Mr. Kovalchik,

The Pace Environmental Litigation Clinic submits the following comments on behalf of our client, Save the Pine Bush in response to the proposed Draft Environmental Impact Statement (“EIS”) on the Rapp Road Residential/Western Avenue Mixed Use Redevelopment Projects (“The Project”) submitted to the Town of Guilderland’s Planning Board on February 19, 2020, by the project sponsor Rapp Road Development, LLC. Collectively, Commenters represent over 690 members and online activists in New York State.

The project sponsor has made it painfully clear they do not care about the protecting the unique Albany Pine Bush Environment. The EIS is woefully deficient in methodology, containing almost no substantive scientific proof to support their sweeping conclusions that support their baseless claims. The project proponent on March 26, blatantly violated the SEQRA process by clear-cutting almost the entirety of site 2. This was clearly an attempt to cut down the trees on the site before the April 1, moratorium on

tree cutting due to northern long-eared bat roosting. Thereby, the project proponent violated one environmental regulation to evade another environmental regulation. Lastly, it was discovered that the project sponsor did not include an important wetland report that the EIS relied on for its conclusions. The non-inclusion of the report is seemingly deceptive, especially when the report indicates the possibility of a wetland on site 2, the same site that was just clear-cut. The project sponsor is playing fast and loose with environmental regulations, trying to subvert the process at every opportunity, and it's up to the Planning Board to uphold and enforce these regulations, especially when Guilderland is steward of one of the last remaining inland pine barrens in the United States.

Summary of Evidence Submitted with These Comments

In support of these comments, we also submit several technical memorandums (Appendixes A-M) authored by experts in their respective fields. Appendix F is authored by Dr. Cynthia Lane of Ecological Strategies LLC, she is one of the foremost experts on the Karner Blue Butterflies. Her accreditations include writing papers, reports, books and best management practices for the conservation of the federally endangered Karner Blue Butterfly. Dr. Lane identified that the EIS's methodology was insufficient to support the EIS's findings, and that the mitigation efforts proposed either have no impact on the conservation of the Karner Blue Butterfly, or fail to state a valid connection in the conservation of the Karner Blue Butterfly. Appendix A is authored by Dr. J. Curt Stager, the endowed chair of Paleocology Department of Natural Sciences at Paul Smith's College. Dr. Stager reviewed several soil and vegetation samples both directly on site and those identified in the EIS and they indicate that the project is indeed an Albany Pine Bush ecosystem. Appendix B, authored by Zamurs and Associates, LLC, experts in conducting environmental analysis for air quality, climate change and sustainability,

found that the EIS did not conduct adequate air quality analysis up to the standards set by the New York State Department of Environmental Conservation (“NYSDEC”). Furthermore, they confirmed that the EIS was woefully deficient in studying the potential impact the project will have on climate change. Appendix C, produced by Dr. Erik Kiviat of Hudsonia, an environmental research and conservation institute, not only identified the soils and vegetation of the project sites as Albany Pine Bush, but also found the methodology used by B. Laing Associates in producing the EIS to be scientifically flawed. Dr. Jeffrey Corbin, a professor of biological sciences at Union College, authored Appendix D, which states that the vegetation and soils located on the project sites denote the land as Albany Pine Bush. Moreover, Dr. Kiviat concludes that there is a high likelihood of success in converting the land into fully managed Albany Pine Bush. Lastly, Zachary Davis, a conservation biologist and contemporary master’s student pursuing a degree in Ecology, authored Appendix E, and Dr. Starkloff, an expert in ornithology, authored Appendix I, identifying the inexplicable absence of any discussion on how to mitigate the harms the project will pose to the fragile threatened bird populations of the Albany Pine Bush. Please see the other Appendixes for further research backing the individual claims. These expert reports prove that the prepared EIS is painfully inadequate and thus incapable of providing either the Guilderland Planning Board (“The Board”), or the public with an ability to make an informed decision on the project’s actual potential impacts to community of Guilderland.

SEQRA’s Purpose and Impact on the Project

The New York State Legislature through the State Environmental Quality Review Act (“SEQRA”) has given the Town of Guilderland Planning Board the responsibility of “steward[] of the air, water, land and living resources, and... an obligation to protect the environment for

the use and enjoyment of this and all future generations.” N.Y. State Environmental Quality Review Law § 617.1(b) (McKinney 2020). Per the court in *Matter of Coca-Cola Bottling Co. v Bd. of Estimate*, 72 NY2d 674, 679 (N.Y. 1988) “SEQRA's fundamental policy is to inject environmental considerations directly into governmental decision making.” SEQRA requires a “strict compliance with [its] review procedures,” failing to meet SEQRA’s standards opens up the entire review process to legal review. *Merson v McNally*, 90 N.Y.2d 742, 750 (N.Y. 1997). And at “[t]he heart of SEQRA is the [environmental impact statement] process.” *Citizens Against Retail Sprawl v. Giza*, 280722 N.Y.S.2d 645, 649 (N.Y. App. Div. 4th 2001).

SEQRA does not provide a provision for judicial review, and so review is guided by the standard for inadequate agency actions, namely arbitrary and capricious review under a C.P.L.R. 7803(3) action. *See*, N.Y. C.P.L.R. 7803(3) (McKinney 2020); *Matter of Nash Metalware Co. v Council of N.Y.*, 836 N.Y.S.2d 487, 487 (N.Y. Sup. Ct. N.Y. Cty. 2006). Based on the below factual allegations it is apparent that “the procedure used to prepare the EIS [] violate[d] mandated procedures [and] rel[ied] on improper methodology of information collection.” *Id.* Nevertheless, even if the EIS was properly prepared the “Planning Board [is] required to take a hard look at all of the relevant and identified concerns” when making a decision on the adequacy of an EIS. *Matter of Cade v Stapf*, 937 N.Y.S.2d 673, 675 (N.Y. App. Div. 3d 2012). Based on the evidence in this public comment, detailing the issues and concerns not adequately addressed in the EIS, the Planning Board of Guilderland has failed to take an adequate hard look at the EIS. Therefore, to avoid potential arbitrary and capricious litigation challenges after the SEQRA process has finished, Save the Pine Bush strongly recommends that all inadequacies be resolved during this SEQRA review process. These inadequacies include insufficient surveying for the Karner Blue Butterfly, existence of an Albany Pine Bush ecosystem, the presence of other

threatened species, impacts of traffic and pesticides, the presence of wetlands, the impacts on climate change and air quality, and the use of improper methodologies, and implementation of inadequate mitigation measures to address these issues. The deficient preparation, development and implementation of the EIS, by the project proponent, leaves no other choice but for the Guilderland Planning Board to require the project proponent to remedy their EIS's deficiencies.

Project Sponsor's Clear Cutting

On March 26, the project sponsor, citing its own reports from the EIS for support, started to clear-cut the trees on site 2. Their report stated no harm would come from the clear-cutting and that no scrub oak nor pine bush would be affected, and therefore clear-cutting would have no negative effects on the environment. Even if this was true, which it is not, this was a clear violation of SEQRA. (See, N.Y. State Environmental Quality Review Law § 617.3(a) (McKinney 2020) "A project sponsor may not commence any physical alteration related to an action until the provisions of SEQR have been complied with."). Thankfully, the Board posted a cease and desist order, and the clear-cutting was halted, but not before the damage was already done to site 2. It was evident that the clear-cutting was done to evade another environmental regulation the New York State Department of Environmental Conservations' moratorium on tree cutting which starts on April 1, instituted to protect the Northern Long-Eared Bat, a bat which the EIS claims could never even live on site 2. These actions put the project proponents' motives in question, and demonstrate a clear willingness by the project sponsor to violate environmental laws and regulations.

Concealed Wetland Report

Wetlands are one of the most highly protected types of ecosystems in not only New York, but also the United States having clear regulatory protections under the Clean Water Act and

NYSDEC regulations. So when, Dr. Kiviat made the alarming discovery that the project proponent relied on a wetland report when making its environmental findings, but failed to attach that wetland report to the EIS when the project proponent submitted it to the Board, it provides another incident of the project proponent trying to deceptively circumvent environmental regulations. If there is a wetland it may require a permit under Article 24 of the Environmental Conservation Law. (*See*, N.Y. Environmental Conservation Law Implementing Regulations § 663, 664, 665 (McKinney 2020)). Furthermore, the report was not provided to the public until April 15, after it was specifically asked for by Save the Pine Bush.

The report indicated a possible wetland on site 2, a “large south-north ditch... was delineated as a wetland []; the tributary ditch from Rapp Road to the western side of the south-north ditch may be part of this wetland but was not included in the delineation nor did the wetland report [] explain how the non-wetland status of the tributary was determined.” (Appendix C, 4). Moreover, the EIS “identified a histosol, which is a highly organic wetland soil that would have taken centuries or millennia to form.” *Id.* Dr. Kiviat does not “know the exact spot in the ditch where this soil boring was done or whether it’s representative of a larger area. [And he hypothesizes that] [t]here may be a buried histosol that remains from a formerly larger wetland, and it is possible that this wetland could be restored.” (Appendix C, 4-5). Moreover, the EIS’s Appendix F states “No wetlands or hydrologic features [presumably meaning surface waters] occur on-site or adjacent to the site,” however the EIS surveys list the bog deltoe and the black duckweed moths, common wetland moth species. (Appendix C, 8). Dr. Kiviat posits four possible explanations “1. There is indeed at least one wetland, vernal pool, or pond on or adjoining Site 1; 2. The two moths in questions were attracted to the collecting light or dispersed onto the site from wetland nearby; 3. These species can use non-wetland habitats; or 4. The two

species were misidentified.” *Id.* “Because these two moths are usually found in or near wetlands or ponds, there may be an unreported small wetland or temporary pool on Site 1, perhaps hidden by dumped logs and slash.” *Id.* The fact that the applicant hid the report, fails to provide methodology on how they concluded there were no wetlands, and fail to account for the contradiction between the wetland moths and there conclusion that there are no wetlands on the project sites raises serious questions as to the existence of an important wetland on the Project sites, that needs to be addressed by the applicant.

Existence of Albany Pine Bush Soil

One of the most important indicators that the project sites can be restored to a proper Albany Pine Bush ecosystem is the presence of unique soils that are naturally occurring in the Albany Pine Bush. The EIS, which contains the environmental study conducted by B. Laing, “describes well-drained sandy and sandy-loam soils that are typical of the Albany Pine Bush Preserve including Colonie and Enora soil types” (Appendix D, 1). The soil accounts in the EIS are corroborated by the “USDA Soil Conservation survey for Albany County (USDA 1922), the soils on sites 1-3 mostly belong to the Colonie (sandy loam) and Elnora (loamy fine sand) Series along with closely related types such as Granby and Stafford [soils].” (Appendix A, 1). Dr. Stager, Dr. Kiviat and Dr. Lane all agree that the soil on the sites are indeed Colonie and Enora, the typical soils found in the Albany Pine Bush. (*See*, Appendix A; C; F). “All of these soil types are widespread in the Albany Pine Bush and are capable of supporting...the classic community of pitch pine and scrub oak [] as well as the lupines necessary to support the Karner Blue Butterfly.” (Appendix A, 1).

The EIS claims “whatever qualities the original soils had, especially in comparison to the Albany Pine Bush, have been lost/disturbed since at least the 1960’s” due to extensive pig farming and human activity. (EIS, 7). However, “the reports [] did not show any actual soils data to support the statement that soils had been extensively modified by farming and that the Poorly Drained [] and Somewhat Poorly Drained [] soils no longer existed onsite.” (Appendix C, 6). Dr Stager and Dr. Kiviat both agree that the conclusions reached by the EIS are “incorrect,” the soils are still that of the Albany Pine Bush and rigorous testing of the soils is still needed. (See, Appendix A, 1; C, 13). Furthermore, the EIS suggests that the pig farm “disturbances disqualify [the project] from classification as potential pine bush habitat. In fact, such physical disturbances do not at all preclude development of [pine bush scrub oak] communities in these kinds of soils.” (Appendix A, 2). Alterations of soil by human activity does not make the land unsuitable habitat for organisms of conservation need. (See Appendix C, 5-6).

The EIS suggests that the vegetation on the site indicates that the soil is no longer capable of supporting Albany Pine Bush ecosystems. (EIS, pg 36-9) Notwithstanding, Dr. Stager states that “[t]he secondary growth woodland and open meadow vegetation that is currently on Site 1... is not there because of soil conditions... but rather because of the legacy of human activities on the site,” because “vegetation community composition [] is not solely a product of soil type, but more often due to the legacy of human activity on a given site.” (Appendix A, 1).

In other words, the current vegetation on Sites 1-3 is not primarily due to some quality of the soils that would be inappropriate for [pitch pine scrub oak] and other pine bush assemblages, but is instead due to how they have been managed, neglected, or otherwise affected by human activity. Restoration of heavily disturbed sand barren ecosystems is widespread and often successful despite former land use and soil disruptions of the sorts experiences on site 1-3.

(Appendix A, 2; See Appendix F, 8 “numerous successful restoration efforts of degraded and disturbed sites in both the Pine Bush and across North America are well documented.”; Appendix C, 6 These sites have potential for the restoration of pine barrens... [or] the study area in its current condition may be more valuable for ecosystem services (including habitats for biodiversity).”; Appendix D, 2 “the existence of the unique soils of the proposed development area mean is the key determinant of restoration potential, not present-day vegetation composition.”). The experts all agree that the soil is Albany Pine Bush soil and the fact that the land has had human activity on it does not preclude the project from being restored to a proper pine bush scrub oak ecosystem.

Inept Plant Survey

The EIS’s survey for plant species is substantially lacking. “[U]rban woodlands provide important ecosystem services by storing carbon, absorbing stormwater, shading and evapotranspiration (which cool[s] the local environment in summer), and providing healthful amenity value to human residents.” (Appendix C, 6). A comment letter provided by the Albany Pine Bush Commission (“the Commission”) on January 25, 2019 says that “the site likely contains a portion of Pitch Pine-Scrub Oak Barrens.” (Appendix G, 2). And it is unnerving that “the removal of substantial areas of woodland habitat as a result of the proposed development has not been adequately addressed in the [EIS], nor has the cumulative impact of these habitat changes in combination with the many other land use projects proposed or being undertaken in Guilderland and neighboring towns.” (Appendix C, 6).

The lack of a certain plant species, as well as the absence of the methodology used to conduct the surveys indicate that the surveys in the EIS are faulty. First, “Table 1 in Appendix F [of the EIS] is a list of plants identified on Site 1. The list is short, contains a single grass and no

sedge species, and is not a complete flora of the site.” (Appendix C, 8). Dr. Lane agrees that “it is unusual for so few grasses and no sedge species were seen and reported” (Appendix F, 5). Further proof that the survey is insufficient is the lack of plant survey methods. (See, Appendix C; F). “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 rare plant survey was conducted, and what subset of the flora the tables providing species lists for the three sites represents.” (Appendix F, 5; Appendix C, 5). And “[u]nless 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.” (Appendix F, 5). The fact that the EIS does not contain an accurate representation of the methodology used, and common species expected to be found on the site are absent from the report, the survey was either conducted fraudulently, and the methodology removed to hide their misconduct, or the survey was performed incompetently and would require being done correctly. Until a proper survey is completed, we cannot know the extent both rare, and Albany Pine Bush species live on the sites.

Animal Surveys

The EIS’s surveys for animal life contain both improper methodologies and a complete lack methodologies at the same time making the conclusions reached by the surveys unsubstantiated. The Karner Blue Butterfly is a federally listed endangered species, and requires the utmost protection. The EIS claims that project site 1 does not have any Karner Blue Butterflies, or Frosted Elfin Butterflies another insect species of great conservation need. (EIS, pg 48-51). However, a comment letter prepared by the Commission contradicts this claim and states the site likely contains Karner blue butterfly and frosted elfin (a portion of the site is within the Karner Blue Butterfly Preserve and immediately adjacent to known occurrences of

both species)” (Appendix G, 2). As seen in the previous surveys, the survey for the Karner Blue Butterfly was severely lacking in methodology. Dr. Lane states “[f]or all insect surveys, it is critical to conduct site visits when suitable temperature, moisture, and wind conditions are conducive to detection.” (Appendix F, 4). And “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.” (Appendix F, 4). However, “[s]urvey 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.” How can the EIS be so confident that Karner Blue Butterflies do not exist on the site, when experts can’t even be sure that a proper survey for them was conducted?

The EIS has implied that the human activity on the project sites has made it incapable of supporting animal and plant life of conservation need, however the project sites in their current state are capable of supporting organisms of conservation need including the Wood Thrush, (a species of greatest conservation need in NY) Eastern red bat, Silver-haired bat and Indiana bat. (See, Appendix C, 5). All three bats are of species of greatest conservation need in NY and the Indiana bat is listed as endangered in NY. (See, Appendix C, 5). In, “Appendices F and G [of the EIS], it was asserted that, following NYSDEC guidance, northern long-eared bat (*Myotis septentrionalis*) would not use the study area in summer because it is more than five miles from the nearest known hibernaculum.” (Appendix C, 7). Five miles is an inappropriate guideline, as it has been found that northern long-eared bat has seasonal migration distances up to 25 miles. (See, Appendix C, 7). Furthermore, the EIS does not state how any of the bat surveys were performed. (See, Appendix C, 7-8).

A local study was conducted by concerned citizens near the properties to observe and document bats living on or near the sites. (*See* Appendix J). The study identified several different species of bat and documented the methodologies used to observe and lure the bats out for observation. (*See* Appendix J). The study puts into question the legitimacy of the EIS's bat surveys, requiring further research into the presence of bats on the sites.

The EIS animal index for the project does not include sightings of common garter snake nor brown snakes, “[t]heir absence from the lists suggests herpetofaunal survey techniques and effort might have been inadequate.” (Appendix C, 6). If the surveyor's failed to find common snakes, then the EIS's non-reporting of the worm snake is questionable. (*See*, Appendix C, 6). Research suggests worm snakes can live in both dry soils and moist soils, and worm snakes were reported in the area in 2009. (*See*, Appendix C, 6). Furthermore, Dr. Kiviat has “found no information suggesting that cut-and-fill or pig disturbance of soils decades ago would make Site 1, unsuitable for [worm snakes] now.”

Another inaccuracy is the reporting of the southern house mosquito in Table 2 of the animal surveys in the EIS. (*See*, Appendix C, 8). The max Northern range of the Southern House Mosquito is Southern New Jersey, making its inclusion a likely misidentification. (*See*, Appendix C, 6).

Avian species were not only misidentified, but also woefully neglected when it comes to mitigation. First, “[i]t should be assumed that bird populations occurring on the [project] area[] are a part of the same populations that extend into the Albany Pine Bush Preserve... Thus, any impact on the avian communities which occur on the proposed sites should be considered detrimental to the Albany Pine Bush Preserve and its avian population. (Appendix E, 1). The EIS states that it conducted general wildlife searches, but “There is no elaboration on the

methods employed to accrue the list of reported avian species, and thus [it is] uncertain if these protected species were considered “general” wildlife, despite their protected statuses, and were therefore not given proper consideration. (Appendix E, 2; *see also*, Appendix I). The EIS does “not mention the methods employed for conducting surveys for the two hawk species of special concern—Cooper’s hawk and sharp-shinned hawk” nor what methods were employed to search for these nesting birds. (Appendix E, 2). The EIS only states that as a closed canopy/successional woodland, the site has the potential to be hunting habitat for Cooper’s Hawk and Sharp-shinned Hawk, but that B. Laing personnel searched for these raptors on Site on many occasions, and never spotted them. (*See*, EIS, pg 55-6). Mr. Davis concludes that “Without further elaboration on the techniques employed for these searches, and whether searches were conducted to locate nests, it is ill advised to accept any conclusions regarding the status of [the hawks] on the proposed sites, and the degree to which impacts will be incurred on them via this assessment.” (Appendix E, 2; *see also*, Appendix I). Especially when the sites contain preferred habitat for both species of hawk. (See, Appendix E). Not surprisingly, “many species [are] absent from the report which are commonly occurring throughout the area, and [] would be expected to be [on] the sites based on reported observations from areas adjacent to the proposed sites.” (Appendix E, 2). “These reported results may [] indicate that the sites were not sufficiently sampled [], or that surveys were carried out by unskilled observers.” (Appendix E, 2; *see also*, Appendix I).

Because the EIS does not acknowledge the existence of avians of conservation need on the project sites, despite the populations of avians in the Pine Bush Preserve being the same found on the sites, the EIS does not provide any mitigative efforts to protect the avian species that it will impact. Two of the biggest risks to bird mortality are light pollution and building

glass panes. (See, Appendix E, 3; *see also* Appendix I). “Birds do not perceive window installments as physical barriers; they instead see contiguous space to fly through because windows reflect the environment. It has been estimated that upwards of 1 billion birds succumb to window strike mortality annually in the U.S. alone.” (Appendix E, 3; *see also*, Appendix I). Furthermore, “human disturbance is associated with [an increase] in invasive species populations.” (Appendix E, 3). And an increase in the invasive species surrounding the Albany Pine Bush Preserve, combined with habitat fragmentation surrounding the site increases the invasability of the preserve itself. (See, Appendix E, 3). Invasive species pose a real threat to all species no just to avians, because “Invasive species cause reduced fecundity [], increase competition, and harbor disease causing parasites such as *Trichomonas* sp. which are thought to reduce predatory bird populations and are important to consider as per the New York State DEC.” (Appendix E, 3). Putting in bird-safe glass, limiting light pollution and causing minimum impact to the sites will not only help save avian lives, but also those of bats and insects as well. (See, Appendix E, 3-4)

It is abundantly clear that all of the surveys conducted in the EIS to detect the critically endangered species, and species of conservation concern were conducted to such an improper degree that no one can be certain whether the species do or do not exist on the project sites. And until we know for sure, the town of Guilderland should err on the side of caution to protect these endangered and important species.

Air Quality

The “Operati[on] [of] motor vehicles (cars, trucks, busses, motorcycles) emit[s] a myriad number of different substances... most have serious negative implications for human health and wildlife health.” (Appendix B, 3). The “pollutants of concern for this project [are]... carbon

monoxide [], Particulate Matter 10 microns in diameter or less [], Particulate Matter 2.5 microns in diameter or less [], and Nitrogen dioxide.” (Appendix B, 3). These are localized pollutants “in that their concentrations can vary substantially over short distances.” (Appendix B, 3). Because the pollutants are localized in nature “[t]heir concentrations will be highest near the source of emission and decrease fairly rapidly as the distance from the source increases.” (Appendix B, 4). The pollutants should be analyzed for their effects on humans as well as “endangered and threatened species and species of special concern in the project area (Karner blue butterfly, frosted elfin, northern long-eared bat, worm snake, eastern spadefoot toad, eastern hog-nosed snake, eastern whip-poor-will).” (Appendix B, 3). Appendix P of the EIS “lists [that] the NYSDEC monitors [air quality] in Loudonville, downtown Albany and the Bronx, miles away. The NYSDEC monitors do not reflect the air quality in the project area and their measurements do not reflect the air quality in the project area that will occur with the completion of the project.” (Appendix B, 4). Appendix P in the EIS doesn’t even list where the nearest NYSDEC monitors are located. (*See*, Appendix B, 3).

Due to the effect the project will have on the local environment proper air quality measures need to be taken, and the EIS failed to take those measures. The EIS “does not properly apply the New York State Department of Transportation [] air quality analysis procedures as described in Section 4.4.16 (Chapter 1 Air Quality) of The Environmental Manual.” (Appendix B, 1). There are three intersections which will operate at a level of service of “D” upon completion of the project and they were not screened using the proper methodology required by The Environmental Manual (*See*, Appendix B, 1-2). The traffic study conducted in

the EIS did not properly account for criteria three and five in The Environmental Manual.¹ (*See*, Appendix B, 1-2). Before the Town of Guilderland approves the project, the EIS must use the proper NYSDEC guidelines and apply the tests in the Environmental Manual. (*See*, Appendix B). Moreover, the report failed to analyze the impact the 1700 new parking spots will create on air quality. (*See*, Appendix B, 6). Failing to use the proper tests given by the NYSDEC, as well as failing to take into consideration something as monumental as 1700 new parking spots is a critical oversight, and before the project is approved these revisions need to be implemented into the air quality studies.

Climate Change

The EIS fails to address one of the biggest issues facing the planet, climate change. None of the experts found any “meaningful consideration of GHG emissions [or] climate change implications in the [EIS] as is strongly encouraged under SEQRA.” (Appendix C; *See also*, Appendix B, C, F). The project site will increase greenhouse gases, by attracting new vehicle trips to the project area, by increasing congestion on nearby and upstream roadways, by using diesel powered construction equipment during project staging and construction, and by using building materials, fixtures, interior materials etc... that were not sustainably sourced. (*See*, Appendix B, 10). Moreover, the vegetation on the sites currently act like carbon sinks, and without meaningful vegetative offset, carbon sequestration loss will occur. (*See*, Appendix C, 10).

¹ Screening capture criteria 3: “a 10% or more increase in vehicle emissions for ETC, ETC +10 or ETC+20; increase in vehicle emissions can be due to speed changes, changes in operating conditions (hot/cold starts), changes in vehicle mix etc..

Criteria 5: a 20% reduction in speed, when build estimate average speed is 30 mph or less (AB)

Furthermore, local climate change in the form of heat islands was also overlooked by the EIS. Appendix F in the EIS states, “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).” (EIS Appendix F, 19). However, “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.” (Appendix F, 6). So again, the EIS makes a baseless conclusion without providing the methodology of how it came to that conclusion. And when it comes to an issue like climate change, shortcuts cannot be taken, and the issues must be considered seriously.

New York State recently enacted the New York State Climate Leadership and Community Protection Act, which amends the environmental conservation law and sets greenhouse gas emission reduction targets to 60% of 1990 emissions by 2030 and 15% of 1990 emissions by 2050 (See, Appendix B, 9; S. 6599, 2019-202 Leg. Sess. (N.Y. 2019)).

Furthermore section 7(2) states,

In considering and issuing permits, licenses, and other administrative approvals and decisions, including but not limited to the execution of grants, loans, and contracts, all state agencies, offices, authorities, and divisions shall consider whether such decisions are inconsistent with or will interfere with the attainment of the statewide greenhouse gas emissions limits established in article 75 of the environmental conservation law.

(S. 6599 § 7). Without a proper climate and Greenhouse gas analysis, it is not possible for the Board to have considered whether approval of the project will be inconsistent with the state emission reduction targets.

Nevertheless, the Planning Board should, at bare minimum, consider the implementing the following mitigative efforts to reduce the effect that the project will have on climate change. Require sufficient electric vehicle charging stations and ensure sufficient charging capacity for all in-use stations, enhance transit service to the project area, facilitate ride-sharing and taxi service drop-off and pick-up areas, require electric powered construction and staging equipment, require renewable fuels in construction and staging equipment, require leadership and environmental design certification for building design, and require building fixtures, furnishings, merchandise etc... to be sustainably sourced. (*See*, Appendix B, 10).

8.4 Acre Mitigation

Unfortunately, “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.” (Appendix F, 8). The commission’s 2017 Management Plan states, “[p]artial 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.” (Appendix H). Dr. Lane concludes that “[t]he proposed development would eliminate any chance of restoring pine barrens habitat to this site, as well as Sites 2 and 3 if developed.” (Appendix F, 7). Moreover, if the goal of mitigation is to prevent the loss of potential pine barrens ecosystems then for area 57 “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.” (Appendix F, 8). Under the current plan, no new habitat is created, only lost. (Appendix F, 7-8). If instead the Board approved “[p]rotecting [] 8.4 acres in Areas 62 and 79 [then the mitigation] would

widen habitat near the Karner Blue Butterfly Preserve.” (Appendix F, 8). The board needs to seriously reconsider the current mitigation plan and how it will affect the ability to not only preserve the Karner Blue Butterfly Preserve, but also help expand it.

Other Issues

Still some unique issues remain that were not adequately addressed in the EIS. Dumps are widespread on site 2 and likely occur on sites 1 and 3 as well. (*See*, Appendix C, 9). The dumps need to be mapped throughout the study area and analyzed for hazardous wastes before development planning. (*See*, Appendix C, 9). And if the sites do contain dumps then the project sponsor will need to conduct a hazardous wastes site assessment. (*See*, Appendix C, 9). How plant life on the site will be managed after construction is also a concern. The construction will allow for many invasive species to take root, especially weeds. (*See*, Appendix C, 9). Certain invasive weeds can cause severe building damage and the EIS should address the non-chemical management of such weeds prior to and following construction, to avoid creating a nuisance for landscaping and a possible hazard to building footings. (*See*, Appendix C, 9). Furthermore, the EIS mentioned the sites would emphasize “native species, but [the EIS failed to] say if the “native” species would be species of the Albany Pine Bush region and [if the plants would be] propagated from locally sourced material.” (Appendix C, 10). The “[p]lantings should be limited to species native to the region (e.g. Albany County).” (Appendix C, 10; *See also*, Appendix F, 9). Also, no purpose is given for the 200-foot buffer, or what threat it is protecting against. (Appendix F, 7). 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. (Appendix F, 7). Finally, “[t]he sandy Colonie soils are very permeable and groundwater is easily polluted, especially when there

is a gas station which is a risk for spills of gasoline and other motor vehicle fluids that could move through the permeable soils into the unconsolidated aquifer.” (Appendix C, 9). Until these issues are discussed and addressed in the EIS, the EIS will remain incomplete and in need of revision.

Conclusion

After the tree cutting incident by the project sponsor on March 26, which was a clear violation of SEQRA, and the missing wetland reports in the EIS, it becomes clear that the project sponsor is not concerned with protecting the unique Albany Pine Bush habitat. (See, N.Y. State Environmental Quality Review Law § 617.3(a) (McKinney 2020)). It is up to the Guilderland Planning Board to oversee that the oversights in the EIS do not go unchecked, and the public gets the protection it deserves. Save the Pine Bush asks that the Guilderland Planning Board thoughtfully considers the points made in this comment and asks for the project sponsor to remedy the oversights.

Respectfully submitted,

Christopher Walker, Legal Intern
(appearing pursuant to the Practice Order of Pace Environmental Litigation Clinic, Inc.)

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Stephen J. Feeney, Chairman – Town of Guilderland Planning Board
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RE: City of Albany's Comments on the Rapp Road Residential / Western Avenue Mixed Use
Redevelopment Projects Draft Environmental Impact Statement

Dear Chairman Feeney:

The many members of Save the Pine Bush, were dismayed to read the City of Albany's May 13, 2020 letter regarding the "Rapp Road Residential / Western Avenue Mixed Use Redevelopment Projects Draft Environmental Impact Statement". **We strongly concur with Albany Pine Bush Commission, that Alternative 1 would be an an ecological disaster and must be be vigorously opposed at all levels of government and community advocacy.**

In the letter, the City of Albany writes in support of Alternative 1:

"The City proposed a bypass (Alternative 1) which we felt solved the issues related to the Rapp Road and its inability within the Historic District to accommodate increases in traffic. This alternative was intended to allow for future growth. By August 2019, the SEQRA process was restarted to incorporate COSTO and associated gas stations. It is likely, this is not the end of the expansions within the Crossgates / Pyramid parcels."

"The City understand that this alternative would impact an area noted in the Pine Bush 2017 Management Plan Update as recommended for full protection. However, in balance with the need to protect a significant cultural and historic area, provide for continued economic development of the area, protect the quality of life of the residents in the area, and continue to protect the the Pine Bush area, we feel this Alternative is clearly the best one and the only one which accomplishes all of those objectives. The area required for this alternative represents a small fraction of the total land area recommended for full protection."

Here is how the DEIS describes the Rapp Road Bypass, as put forward by the City of Albany.

Alternate 1- Relocated Upper Rapp Road to East ("Eastern Bypass")

- Construct two way relocated Rapp Road shown in Section 9, Figure 16 and Appendix I.
- The Eastern Bypass would be located on private property within the City of Albany on tax map numbers 52.02-1-16, 52.06-2-35, 52.06-2-29.1, 52.06-2-33. The bypass would connect on the north at the existing Springsteen Street, near South Frontage Road, traverse to the south and then west to connect at Rapp Road, north of the National Grid right of way.

- The Eastern Bypass would be purchased by and dedicated to the City of Albany for highway purposes.
- Modify Rapp Road to include two cul-de-sacs on the north and south ends of the existing Rapp Road.
- Install proper traffic signage and traffic controls to accommodate Eastern Bypass and the two cul-de-sacs.

Alternative 1 is Completely Unacceptable to Pine Bush Advocates

This alternative is **completely unacceptable** to the Save the Pine Bush, along with most advocates for protection of the Pine Bush (see Map 1 on Page 9). Specifically we note,

- **This proposal would create a major new north-south highway in Albany Pine Bush**, between US Route 20 and Washington Avenue Extension, only feet away from the butterfly corridor.
- **This proposal would lead to bulldozing and road building on over 2 acres of largely-intact Pine Bush recommended for Full Protection for a busy new arterial highway.**
- **The Rapp Road bypass would send potentially thousands of cars per day across the Butterfly Corridor easement, increasing** automobile and truck exhaust belched into the Butterfly Corridor easement, along with significant road noise.
- The entire “Recommend for Full Protection” Parcel 62 is **within 500 feet of the proposed new Rapp Road Bypass**, and the proposed road would permanently develop roughly 2 of the remaining 12 acres (see Buffer Map 2 on Page 10).
- This proposal would greatly **increase traffic crossing the butterfly corridor between Gipp and Pine Lane** which is problematic for wildlife crossing the area.
- **This proposal will garner significant community opposition from Pine Bush advocates**, and will require a full environmental impact statement and Endangered Species take permits by the City of Albany, potentially leading to years of delay in it’s city environmental review and construction.

Albany Pine Bush Commission’s Technical Commission believes Alternative 1 would be devastating for the Albany Pine Bush

On October 7, 2019, the Albany Pine Bush Commission came out strongly against Alternative 1 for Northern Rapp Road. *“The Technical Committee noted that the proposed Bypass introduces additional potentially significant adverse environmental impacts that, itself, exceed the potential impacts of the initial Rapp Road Residential development proposal. These additional impacts, exceed several SEQR Type 1 thresholds and are likely to have a significant adverse impact on the environment, and should*

therefore be thoroughly evaluated within a Draft Environmental Impact Statement (DEIS) consistent with the hard look required by 6 NYCRR Part 617.”

The commission notes the Rapp Road Bypass would lead to:

- *“Alteration of a historic sand dune. The proposed Bypass traverses a large dune and would likely result in significant excavation. The 2014 National Natural Landmark designation indicated that the Pine Bush protects the largest remaining area of inland sand dunes in the eastern United States.*
- *Direct, indirect and cumulative impacts on wildlife species listed as threatened and endangered with extinction, including the Karner blue butterfly and frosted elfin butterfly, through habitat loss and fragmentation Consultation with New York State Department of Environmental Conservation (NYSDEC) and the U.S. Fish and Wildlife Service (USFWS) is requisite to determining the extent to which the site is occupied by listed species.*
- *Direct, indirect and cumulative impacts on multiple NYS listed SGCN wildlife, including rare birds, reptiles and important pollinators (butterflies, moths, and bees), through habitat loss and fragmentation. In particular, the proposed Bypass, **would likely result in increased traffic volume and therefore further worsen, rather than improve, the ability of wildlife to successfully cross Rapp Road and move between preserve properties. [emphasis added]**”*

Furthermore from the Commission’s October 7, 2019 letter, *“The proposed Bypass is likely to have potentially adverse impacts on the APBPC’s ability to manage adjacent protected lands as outlined in the 2017 Management Plan Update for the APBP (APBPC 2017). The project is likely to have similar potentially negative impacts on the NYSDEC’s ability to manage the Karner Blue Butterfly Preserve pursuant to NYSDEC Permit #4-0130-00007/0002, issued December 10, 1996. The site of the proposed Bypass is adjacent to existing preserve and the Karner Blue Butterfly Preserve, owned by the applicant and managed by the NYSDEC in consultation with the APBPC.*

*A coordinated SEQR review should also provide the necessary hard look at how potential changes in traffic volume resulting from the proposed Bypass, may affect the ability of rare wildlife to disperse between protected properties. The City of Albany, The Nature Conservancy (TNC), The Town of Guilderland, Albany County and the applicant have all cooperatively protected considerable habitat on both sides of Rapp Road that help provide a critical linkage between the Karner Blue Butterfly Preserve and APBP. **Successful dispersal between these properties, however, is highly contingent upon these species successfully crossing Rapp Road. [emphasis added]**”*

“Studies of Kbb and spotted turtle movement and dispersal patterns along Albany County Route 155, for example, illustrate that traffic volume plays a significant role in impeding wildlife dispersal across roads. When combined with potential direct impacts to wildlife habitat, the impact of increased traffic on Rapp Road, as a result of the Bypass, is likely significant and will further reduce the APBPC’s and NYSDEC’s ability to successfully manage these rare wildlife populations.”

“The Technical Committee recommends fully evaluating alternative traffic mitigation measures, including those previously proposed by the applicant, which can reduce both traffic volume and speed along Rapp Road between protected properties, to reduce rather than exacerbate existing and anticipated impacts of traffic on wildlife moving between protected properties. Technical Committee members noted that encouraging use of the Crossgates Mall Ring Road would reduce wildlife-related traffic impacts on Rapp Road and be more consistent with the Transit Oriented District, by channeling traffic to the larger highways better capable of managing the volume.”

Even the city’s own engineers concedes that Alternative 1 would be very bad for the future of Albany Pine Bush. In the city’s own words on Page 2 of the City’s May 13th letter: *“The City understand that this alternative would impact an area noted in the Pine Bush 2017 Management Plan Update as recommended for full protection.”*

**Developer Rapp Road LLC also Opposes Alternative 1
as bad for the Albany Pine Bush**

Indeed, in as Rapp Road Development, LLC says this alternative is problematic, and should be rejected, as stated on on pages 90 and 91 of the Draft Environmental Impact Statement.

“While shifting traffic from Rapp Road to the Eastern Bypass would provide a decrease in traffic on Rapp Road, the land upon which the Eastern Bypass would be located is identified as Area 62 in the Albany Pine Bush Preserve Commission’s 2017 Management Plan. Area 62 is designated as “Full Protection” meaning the land has been determined to contain or serve some environmental and ecological resources or purposes important to the Pine Bush Preserve.”

“As part of the Rapp Road residential project, the project sponsor has proposed to convey this land to the Pine Bush Commission for management purposes as part of the Pine Bush Preserve. The Karner blue corridor area has been established and part of the planning and management for the preservation of the Karner Blue butterfly for decades immediately adjacent to such Eastern Bypass road. If the Eastern Bypass is constructed, this environmental benefit would not be possible and/or the benefit significantly diminished.”

*“The new road and cul-de-sacs would potentially impact linkage for the Karner blue butterfly in this area contrary to the Management Plan. **On October 7, 2019, the Pine Bush Preserve Technical Committee commented that this alternative is not acceptable as being contrary to the Pine Bush Management Plan. (emphasis added)** In this alternative, traffic would be shifted from the front of the existing homes on the east side of Rapp Road to the rear of these homes.”*

City of Albany Traffic Engineers Find Rapp Road Residential Project and Costco
WILL Induce Traffic on Northern Rapp Road, including crossing the Butterfly Corridor

Save the Pine Bush agrees with the Rapp Road Historical Association and the City of Albany that the proposed Rapp Road Developments would increase traffic through the historic district. As the City describes on Page 2 of the letter:

“Based on a review of the trip generation estimate and methodologies, our traffic consultants believe that the trip generation has been over estimated during the AM peak hour and under estimated during the PM and Saturday peak hours. Their trip generation estimates is as follows:”

- *150 fewer trips during the AM peak hour*
- *90 more trips during the PM peak hour*
- *220 more trips during the Saturday peak hour*
- *The distribution of traffic traveling through the City of Albany is expected to be higher than presented in the traffic study. Specifically, the TIS estimates that 20% of the Rapp Road residential project will go through the City but only 10% of the traffic from Costco and the mixed-use project. It’s likely that the Costco and mixed-use traffic will be closer to 20% like the Rapp Road residential project.*
- *Based on the trip generation and trip distribution changes, the increase in traffic through the City of Albany will likely be higher than presented in the traffic study.*
- *An estimate of the number of site-related trips that will travel through the City of Albany will be provided for each of the roadway alternatives as part of the detailed review.”*

These increases in traffic are extremely problematic to Save the Pine Bush. For one, it will further deteriorate the butterfly corridor crossed by a wide variety of endangered and threatened, along with other native species. **Building Alternative 1 will induce potentially hundreds of additional trips per day along Rapp Road, leading increased morality of wildlife.** Increased automobile crashes with deer, turkey and other large species, will increase greatly costs to local police forces, as they are dispatched to provide residents with collision reports and dead deer tags.

A Karner Blue Endangered Species Take Permit Will Be Required for Alternative 1

Save the Pine Bush believes **Alternative 1 WILL require a take permit under the Endangered Species Act**, due to increased morality of endangered species including the Karner blue Butterfly, opening the city up to costly permitting, approval and litigation delays.

Discouraging Traffic on Rapp Road is Save the Pine Bush's Goal

Save the Pine Bush is generally supportive of any of the alternatives that **reduce traffic along Rapp Road**, such as those described in Alternatives 4 and 5. These alternatives call for:

Alternate 4 – Southbound only on “Middle Rapp Road”

Alternate 5 – Closure of Rapp Road at northern access to Rapp Road project driveway and Gipp Road.

The city believes these alternatives are impossible due to “difficult enforcement without physical barrier”.

We think it's a mistake for the city to dismiss it's broad traffic enforcement powers, especially in the era of automated traffic enforcement such as a cameras and license plates readers. Similar to what the City does with Red Light Cameras, a license plate reader could be installed on Rapp Road to prevent vehicles violating, “One way”, “Do Not Enter” or “Emergency Vehicle Only” signs. Motorists who ignore these signs could be summoned to court via mail and have their licenses suspended should they fail to respond to the traffic summons.

Additionally, Rapp Road has a large pull over that is screened from motorists for conventional police enforcement. The city could easily undertake an aggressive enforcement effort to discourage violators of traffic law. Motorists ignoring the signs could be cited or even arrested and cars impounded by local police. We note, existing city law prohibits motorists from driving on Albany Pine Bush lands, including the Karner Butterfly Preserve. **This law allows for the city to impound violator's vehicles, along with the possibility of a \$500 fine and up to 14 days in jail.**

Additional Alternatives for North Rapp Road That Should be Considered in the DEIS

We think additional traffic calming measures, not considered by Rapp Road Development, LLC or the City of Albany, could further slow and discourage traffic on Rapp Road – and improve wildlife crossings over the Butterfly Corridor.

Proposed Alternative 10: Convert Rapp Road to Historically Accurate Sand Road between Gipp and Pine Lane

Until the 1960s, most of Rapp Road was a sand road. Restoring it to a sand road would slow and discourage motorists from crossing this way. Sand roads typically rough and jarring to motorists, especially urban commuters. Sand roads are subject to icing in the winter, mud and potholes in the spring, and severe washboarding in the summer. Washboarding is when an overly dry dirt road is pounded by vehicles, creating a surface similar to a washboard. It forces very slow driving, and is very taxing on automobile suspensions of motorists who speed.

A sand road would be highly beneficial to the Pine Bush ecosystem. It would allow a wide variety of wildlife to cross the butterfly corridor in an close natural status. A low speed limit, such as 10 miles per hour, could be posted on this ‘rough’ section of sand road crossing the butterfly corridor. Rough sand roads have self-enforcing speed limits. To protect the sensitive ecosystem, no salt should be used on this road, and native species including pitch pine, scrub oak and lupine should be planted along this section of narrowed road.

We think this plan would work well with Rapp Road LLC’s proposed “Alternate 6 – Gipp Road Realignment”, which proposes to move Gipp Road further south to align it Crossgates Mall Ring Road and could potentially expand the Butterfly Corridor. A longer sand road, along with wider butterfly corridor would be beneficial for highly wildlife.

It should be noted this sand road proposal simply discourages motorists, it does not prohibit them. It allows for the passage of all city vehicles, including emergency vehicles.

Proposed Alternative 11: Narrow Rapp Road to a Historically Accurate Single-lane Ten Foot Lane between Gipp and Pine Lane

Consider restoring the road to a historically-accurate 10-foot wide, one lane, two-way road between Gipp Road and Pine Lane. Boulders or a wood-capped steel guard-rail, as allowed under the Manual of Universal Traffic Control Devices (MUTCD), could be place to ensure traffic remains in the single 10-foot wide roadway. An example of what Rapp Road looked like in 1952 can be found on page 12.

A narrow road would provide for easier wildlife crossings, and be very beneficial for the butterfly corridor.

To permit two-way traffic, “Stop” and “Traffic Must Alternate” signs would be placed at Gipp Road and Rapp Road, along with Pine Lane and Rapp Road. These signs are permitted per MUTCD and are frequently used in rural areas where the road is restricted to a single lane due to construction or a wash-out (Proposed Alternative 11A).

Alternatively, a traffic light could be placed at both sides of one-way section of Rapp Road. The traffic light could have a signal time of 2 to 3 minutes in each direction to discourage people from crossing this way. A one minute “all red” signal could be used to permit wildlife crossing, during each cycle. Signs could be posted on both ends of Rapp Road that say, “Avoid Rapp Road – Expect Lengthy Delays”. These lengthy delays would encourage commuters and shoppers to instead choose to Crossgates Mall Road. (Proposed Alternative 11B).

Traffic signals could be timed to avoid delays with city trash trucks in the early morning hours and/or city vehicles could be equipped with extended green infrared transmitters, similar to what exists on CDTA’s Bus Plus. Emergency vehicles are already allowed to ignore traffic signals.

Proposed Alternative 12: Consider Both a Sand Road and One Lane 10-foot wide, Two-Way Rapp Road

If traffic is to be allowed on Rapp Road to continue to cross the Butterfly Corridor, the best solution from an ecological, historical, and traffic stand point is to have traffic delayed and slowed on a narrow, sand road crossing. Combined with “Alternative 6, Gipp Road Alignment” this would be the most ecologically and historically sensitive option outside of a complete closure of Rapp Road between Gipp and Pine Lanes.

Animals are much more likely to safely cross a road that is only a single 10 foot wide lane, where traffic is slow, alternates, and the surface is sand. This proposal maximizes the deterrent value of traffic passing along Rapp Road, while allowing emergency vehicles and other motorists to occasionally pass through this way for tourism purposes.

An example of what Save the Pine Bush’s Proposed Alternative 12 would look like is shown on Map 3, Page 11.

Best for the Pine Bush: Don’t Build the Rapp Road Apartment Complex or the Costco

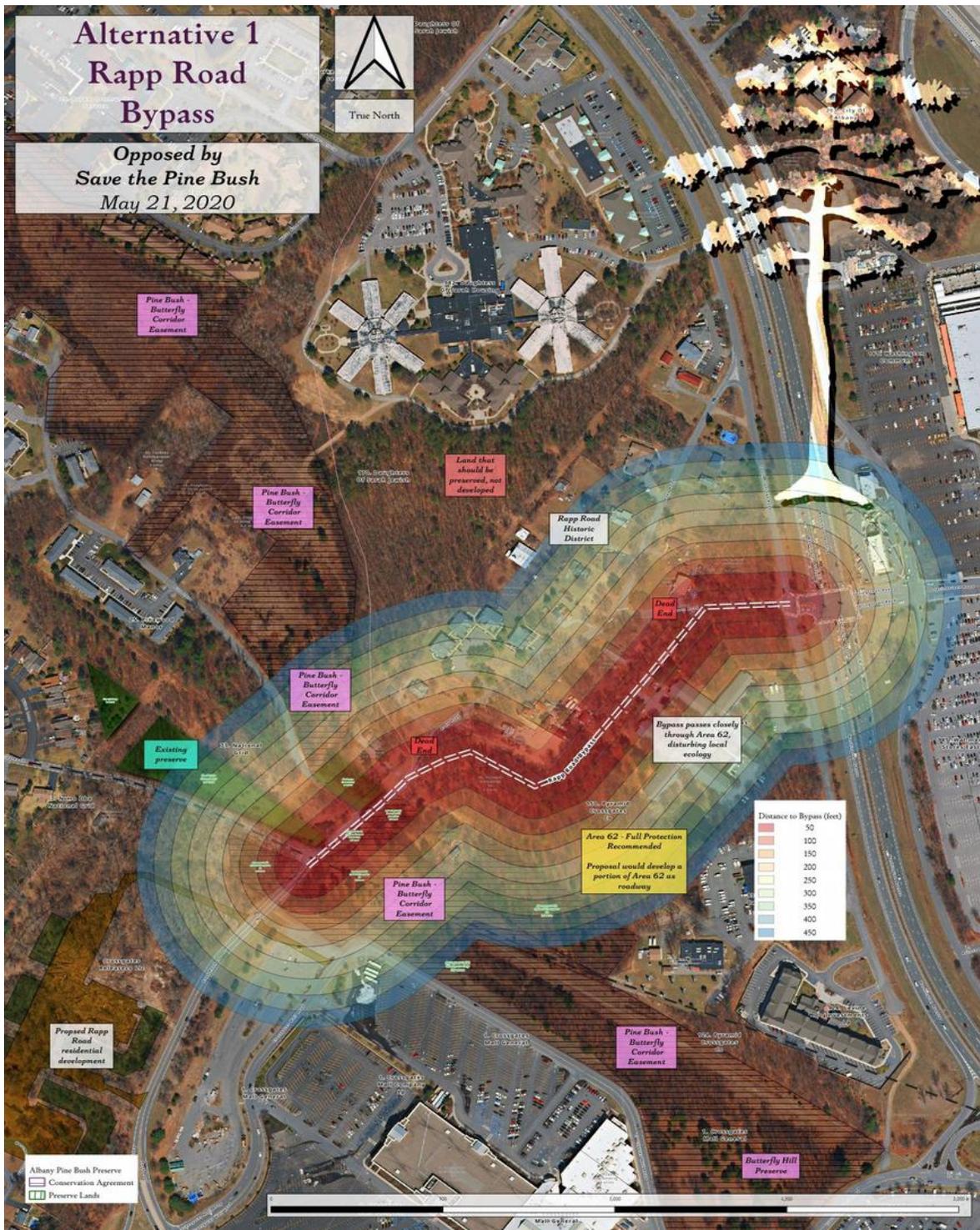
While traffic calming measures, such as an alternating direction narrow road or historical sand road across the Butterfly Corridor is one way to help protect the Pine Bush ecosystem and the Rapp Road Historic District, the best solution for the Pine Bush would be to reject the proposed Rapp Road Apartment Complex and Costco in it’s entirety and dedicate these lands to the preserve.

Sincerely,

Andy Arthur for
Save the Pine Bush



Map 1 – Alternative 1 and its impacts on Butterfly Corridor and Area 62 (Full Protection Recommended)



Map 2 - Alternative 1 runs through the Butterfly Corridor and Through Area 62 (Full Protection Recommended)



Map 3 – Rapp Road, SPB Proposed Alternative 12, Historically Accurate, Alternating Traffic Sand Road



Map 4 - Rapp Road, a narrow sand road back in 1952

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International Society of Arboriculture
Certification #PN-1157

Re. Rapp Road Development Corporation's Proposed Development on 46 Acres of the Pine Bush.

To whom it concerns,
on April 30, 2020 I walked on and near the lands slated for development, as follows.

Walking along the road on the mall side of site 1, I noticed more diversity of tree species than I remember the DEIS stating. I observed Red Maple, Silver Maple, Norway Maple, Box Elder, Cottonwood, Callery Pear and Weeping Willow.

Similarly, site 2 contained Red Oak, Red Maple, American Elm, Silver Maple, Box Elder, Black Cherry, White Pine and Pitch Pine. As mentioned in the DEIS, other cultivated species were in the maintained areas surrounding houses. Among the houses a wooded area contained several mature Pitch Pines.

On the undeveloped side of Site 2, most of these trees had been felled recently, and most appeared to me to have been in good condition at the time of felling. On the Rapp road side of this area, the as-yet uncut, elevated area contained several Pitch Pines. Nearby these, at the edge of a dropoff were two or three pitch pines which were felled during the recent clearing. One of these was clearly alive and well prior to being felled. Photos of these are provided with this statement.

The Pitch Pines in both of these parts of Site 2 exhibit no signs of having been planted, and are doing reasonably well despite the competition from faster-growing species. These may be compelling empirical data to support the case for it being an area conducive to supporting this species, contrary to assertions based on soils analyses in the DEIS.

I hope this information is of use.

Sincerely,

May 3, 2020

Jack Magai

Report on Acoustic Bat Survey Conducted for Save the Pine Bush

By Conrad Vispo, Hawthorne Valley Farmscape Ecology Program

May 2020

Introduction

Regional bats are facing a variety of modern challenges. The most devastating has been White Nose Syndrome, a fungal disease which struck certain smaller cave hibernators particularly strongly. First detected in 2006, it apparently reduced populations of Little Brown Bat (*Myotis lucifugus*), Indiana Bat (*Myotis sodalis*), Northern Long-eared Bat (*Myotis septentrionalis*) and Tri-colored Bats (*Perimyotis subflavus*) by at least 80-90% (New York Natural Heritage Program 2020). Our migratory bats – the Eastern Red Bat (*Lasiurus borealis*), the Hoary Bat (*Lasiurus cinereus*), and the Silver-haired Bat (*Lasionycteris noctivagans*) – seem to have largely escaped the effects of White Nose Syndrome, but appear to suffer especially high mortality because of collisions with wind turbines (AWWI 2018). Finally, as strict insectivores, declines in insect populations could affect all of our bat species (UNEP/Eurobats 2018).

These threats emphasize the importance of bat conservation, and maintaining summer habitat is one ingredient. Forests seem to be key habitat components for most of our bat species, because they provide summer roosts and/or help support ample insect populations. Forest removal, especially when followed by conversion to extensive impermeable surfaces (e.g., parking lots and buildings), is likely to reduce local bat populations.

This short study was undertaken at the behest of Save the Pine Bush in response to proposed development on lands within Albany Pine Bush ecological area. Acoustic sampling from the properties of collaborating land owners was used to gather preliminary information on bat diversity.

Methods

Five Anabat Express bat detectors (see Figure 1 for locations of detectors) were active during the nights of 12-16 May 2020. Due to low temperatures and/or rain storms, conditions were optimal on only two or three evenings.

Four detectors were located in the backyards of houses on the east side of Westmere Terrace (west of Rapp Road). These detectors pointed along the forest edge behind these houses. (Because of the proximity of the detectors to one another, the calls of some bats likely were registered by more than one detector.) One detector was located at the Mobil gas station immediately south of Crossgates Mall; it pointed northwest towards the adjacent lot. Calls were analyzed using Anabat Insight and Wildlife Acoustics Kaleidoscope software. Vetting was primarily manual based on the inspection of each call and comparison to known calls, to call guides, and to expert guidance. The author has carried out periodic bat call recording and analyses since 2006. A Kaleidoscope Auto ID (in the “conservative” mode) was also run on the call files, the same list of species was derived from that analysis as from manual vetting, although there were consistent differences in the assignments of specific calls.

Bat call analysis cannot easily distinguish among all of our bat species. Differentiating between Big Brown Bat and Silver-haired Bats is particularly difficult and for most such calls the safest designation is “Big Brown Bat or Silver-haired Bat”.

Results

Seventeen identifiable call sequences were obtained from the Mobil gas station. Two hundred and twenty-nine identifiable calls were gathered along Westmere Terrace.

Taken together, the calls indicate the definite presence of Big Brown Bat (*Eptesicus fuscus*), and the probable presence of Silver-haired bat, Hoary Bat and Eastern Red Bat. A more detailed summary of the results from the two recording areas follows. There were no apparent recordings of the Tri-colored Bat or any species of *Myotis*.

Mobile Gas Station. The most conservative assignment of almost all these calls would be Big Brown Bat/Silver-haired Bat.

One call appears to be from a Red Bat, although seeing more call sequences would increase the confidence of that attribution. Red Bats have been reported from the Albany Pine Bush.

In order for the detector to remain hidden in this well-travelled site, its location was not optimal from a bat recording perspective. In addition, the proximity of the busy street and gas station may have masked or deterred bat activity.

Back Yards on Westmere Terrace. A greater number of calls were gathered at Westmere Terrace, in part because there were simply more detectors in operation. Most calls were from either Big Brown Bat or Silver-haired Bat. For the majority of these, the species could not be differentiated, but especially high starting frequencies indicated that a few calls were almost certainly Big Brown Bats. A few almost flat calls at ca. 26 kHz were highly suggestive of Silver-haireds, although Big Browns cannot be ruled out.

Four calls indicated the presence of Hoary Bat, while these calls were not abundant and none was of particularly high quality, the fact that four different call sequences suggested the presence of this species make its occurrence distinctly possible. Hoary Bats have also been reported from the Albany Pine Bush.

Conclusions

This short, snapshot survey at properties adjacent to the proposed development sites documented definite bat activity at both sites. The most extensively documented species, Big Brown Bat, is our most common bat species, but all of our bats are facing threats from development that results in loss of roosting habitat and insect life.

At least one, if not all, of the following species were likely present: Silver-haired Bat, Eastern Red Bat and Hoary Bat. This suggests that additional bat surveys would be appropriate for an adequate assessment of the conservation value of adjacent lands. All are considered 'Species of Greatest Conservation Need' in New York (NYS DEC 2015) and all three (together with at least one species of *Myotis*) have been documented in the Albany Pine Bush (Albany Pine Bush Preserve Commission 2017). During summer, the Hoary and Eastern Red Bats roost in tree foliage, whereas the Silver-haired Bat roosts beneath tree bark. All three species are thus largely dependent on the presence of forest during the breeding season. Furthermore, together with the above bats, the post-White Nose Syndrome presence of the Little Brown Bat (*Myotis lucifugus*), a critically imperiled species in New York State (NatureServe 2020), has been documented at the Pine Bush (Albany Pine Bush Preserve Commission 2015-2016). An earlier report (Lookingbill *et al.* 2013) also reported the presence of Northern Long-eared Bat (*Myotis septentrionalis*), also a critically imperiled species (NatureServe 2020). The potential presence of these even rarer species further suggests that a careful evaluation of the bat fauna should be made if one wants to understand the potential ecological impact of development on lands in this area.

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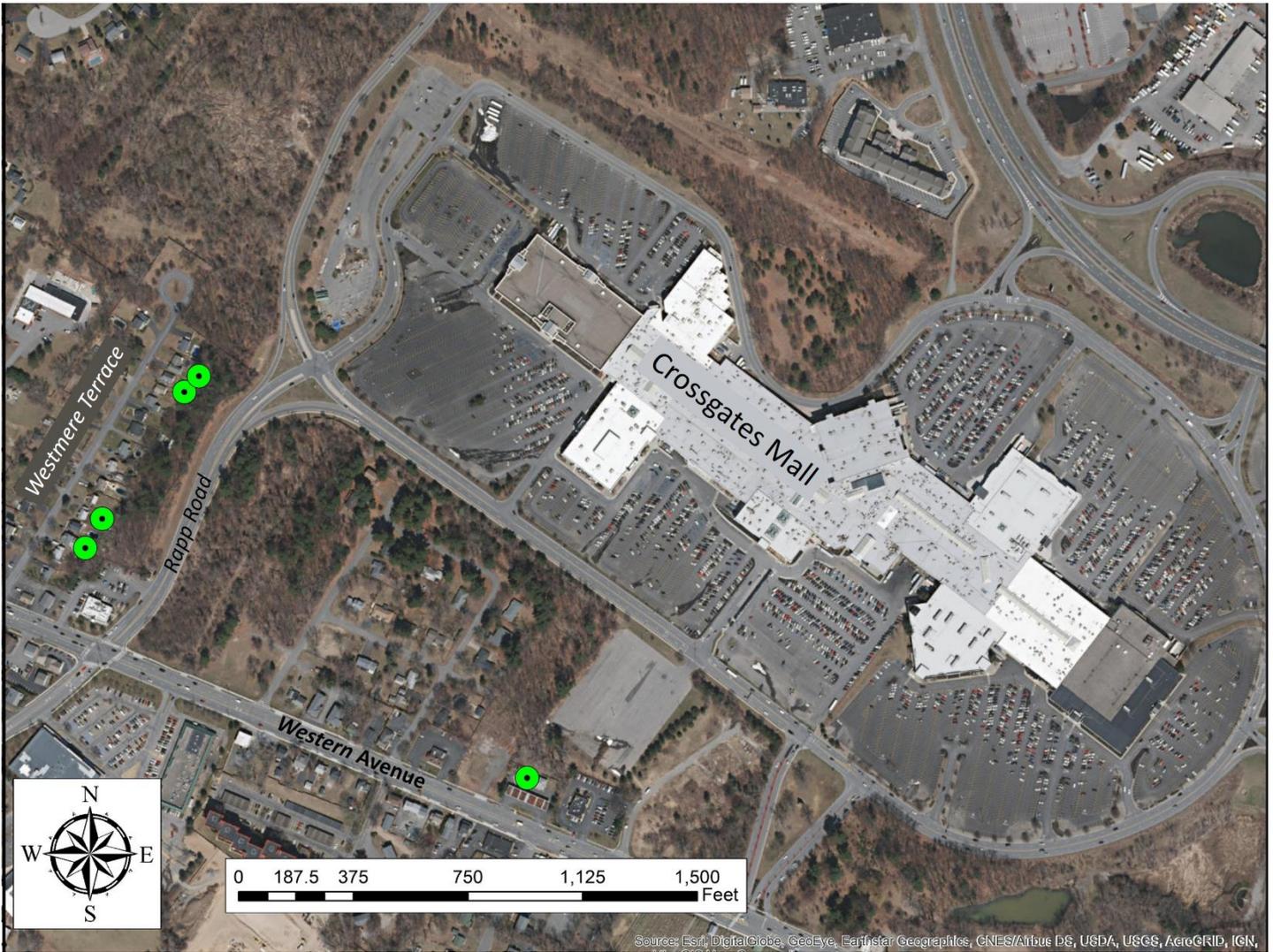


Figure 1. The green dots indicate the locations of the five bat detectors used in this study. The detectors along Westmere Ave. were directed parallel to the forest edge behind the houses. The easternmost detector (at the Mobil gas station) was directed northwest.

Report of the Naturalist Study Group, a Citizen Science Team on May 2020 bat observations:

Team Members: Grace Nichols, Cynthia Johnson, Andy Arthur, Diana Morales, Diana Wright, Susan Longtin, Susan DuBois, Zach Squires

Materials: 4 Magenta 5 Bat Detectors.

Locations: Rapp Rd between an access gate and Gipp Rd, and 100 ft up Gipp Rd. This is across from Macy's.

Lawton Terrace, Gabriel Terrace, Tiernan Court, Rielton Court. This is the "ghost town" on Western Ave.

Dates: First observation 8pm to 9:30 pm on 5/10/20

Second observation: 8:15 pm to 9:45 pm on 5/16/20

Methodology: We stood at various points on the edge of the bat habitat and scanned frequencies from 15 kHz to 50 kHz, listening for bat calls.

Observations:

Night One: It was chilly about 37 degrees.

We heard some clicks; most were "clicks" but some were like moans or clunking.

about 8:20 pm: Rielton Court Dead end near hotel (abandoned garage): 21.4 hz, 23.0 hz. (Grace)

Nearby Zack heard 19.0 Hz.

8:24 pm. At Tiernan Ct: Loud Clicks at 23 and 21 Hz (Andy)

9:05pm Gipp and Crossgates 20.4 and 21.8 Hz (me)

Tree on Gipp Rd. 28 Hz (Andy)

Crossgates Ring Rd near little logging gate: 20.4 Hz (Diana M)

Incidental: A dead garter snake was found on Gipp Rd, onsite on the soil, next to the asphalt by Cyndy. This is mentioned because the DEIS did not find snakes on the 19+ acre site.

Night Two: It was warmer at about 70 degrees, and clear with a light wind.

Susan DuBois: 9B Lawton: 8:30pm nothing.

Tiernan Ct: 8:40 pm rapid clicking in the range of 22 to 43 kHz.

While facing the house, she saw a bat flying overhead at 8:51 pm. It appeared to be near the treetops.

8:55pm at house on Gabriel Court Clicks between 24 and 40 kHz.

9:20 pm: Corner of Rapp and Gipp, Clicks in the mid 20s of varying rapidity.

200 ft down Gipp at 9:28 pm short burst of clicks around 25 kHz.

Grace Nichols and Diana Wright:

8:30 pm at Lawton Terrace 21.7 ch ch sound. And 22.1 ch ch sound.

8:40 pm- 8:50 pm Gabriel Terrace

24.1 click

26 kHz low regular sound near a vacant house.

24.8 pops, rapid.

Lawton Terrace 20.5 clicks;

20.1 chirping.

22.4 chirping

Grace Nichols and Sue Longtin: on Rapp Rd, we stood about 20 ft from Gipp Rd.

9 pm

26.1 knock knock x 6x

19.8 8x Knock.

21.5 ch-ch sound.

9:10 pm

23.4 squeak, squeak

33.1 ch ch

33.2 ch ch

26.5 squeak

32.5 clicking.

Andy Arthur:

8:27 20.3 Few soft clicks (various points in the Ghost Town at Western Ave.)

8:30 pm 31.5 kHz squawk

8:32 pm 31.5 squawk,

8:35 21.5 click pop.

8:37 21.7 call

8:38 21.7 loud bat sound.

8:39 32.9

31.3 popping noise.

32.3 popping

8:45pm 34.3 Loud engine knock;

34.0 firecracker sound, very loud at Gabriel and Lawton Terrace.

8:49 25.5 loud popping.

Rapp Rd.

9:18 pm 24.9 Loud Click

9:20 pm 25.2 Loud click

32.7 chirping.

9:21 pm 19.7 chirping, popping.

9:22pm 19.2 chirping

Conclusions:

There are bat populations on all three sites. The bat calls we observed were between 19 and 43 kHz. We heard a variety of sounds at these frequencies which appeared to be from different types of bats. One observer saw a bat at Tiernan Court which appeared level with the treetops there.

More study is needed to characterize the bat communities which use Site 1, 2 and 3 as habitat. Our observations were only at the edge of the sites.

Additionally, all NY bat species are under threat due to a variety of factors including insect population declines. It appears that some bats are thriving on all three proposed development sites. More study is needed to determine what species would be impacted by the proposed development and if there is any way to mitigate this type of damage to their populations.

We suggest that technicians, who are given permission to enter the sites, look for these bats using the analysis of bat calls, and mist netting if appropriate.

**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**

Naima Starkloff, Ph.D.

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

15 May 2020

Contact Information and Statement of Qualifications

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Dr. Starkloff completed her Ph.D. at the State University of New York and has a background in disease ecology and community ecology of songbirds in North America. Naima has been awarded three research grants to carry out field and lab work and has presented her work at conferences in three continents. She was an ornithology research fellow at the New York State Museum from 2016-2020. She has participated in bird banding programs at the Albany Pine Bush Preserve during the fall migration of 2016 and 2017 as well as in their Advanced Bird Banding workshop in 2017. She is an active member of the American Ornithological Society and Wilson Ornithology Society.

ISSUES

Incomplete and inaccurate assessment and conclusions

1. Bird survey techniques or times have not been documented
2. The status of avian vulnerability has been insufficiently considered
3. Climate change impacts have not been assessed
4. Impacts of window collisions on birds have not been assessed
5. Effective habitat restoration was not considered as a reasonable alternative

Mitigation measures insufficient and unsupported

1. Rational for justifying the loss of 19.68 acres with the protection of 8.4 acres of land is not sufficiently demonstrated
2. The appropriateness of the 200' buffer zone is not demonstrated

INCOMPLETE AND INACCURATE ASSESSMENT AND CONCLUSIONS

1. Bird survey techniques or times have not been documented

These sites provide habitat for year-round residents, breeding migratory birds and birds taking a migratory stopover along the Atlantic Flyway. The DEIS states that “extensive multi-year and multi-season examinations” were conducted for all flora and fauna (p46), however, the time of day, frequency and length of individual assessments were not stated. As habitat use by bird species varies considerably through the year, an accurate representation of the avifauna of these sites must include surveys throughout the two migratory seasons (Spring and Fall) and throughout the breeding season. Different species of birds breed and migrate at different points within these seasons. In addition, surveying throughout the breeding season is necessary as birds often use different habitats for building nests than for post-fledging (Pagen et al. 2000). Lastly, bird species vary in their activity levels and thus detectability throughout the day (Ralph et al. 1995). Bioacoustic surveys—in addition to more typical point count surveys—would provide a more accurate idea of the full assemblage of birds in these sites, especially more cryptic species (Teixeira et al. 2019).

The DEIS also did not provide qualifications of the surveyor of bird species in the sites. The experience level of the surveyor would significantly affect the data collected. I noticed three inaccuracies in the bird lists in the Vegetation, Wildlife and Soil Conditions Reports for Site 1 and Site 2/3: (1) the common name “Feral Pigeon” was incorrectly used for “Rock Pigeon”, (2) while the taxonomic distinction within this species is still under debate (Toews et al. 2016), its official common name is “Yellow-rumped Warbler” rather than “Myrtle Warbler”, and (3) the scientific name of the Blue Jay was incorrectly labelled “*Buteo jamaicensis*” rather than “*Cyanocitta cristata*”. Additionally, several species that are easily identifiable by call or sight were absent from the lists. I surveyed the sites on two occasions: (1) 10-minute quick walk-throughs (along the road for Site 1) between 6:30am and 7:30am on April 25, 2020 and (2) 40-minute point counts between 6am and 7:30am on May 1, 2020 (again, along the road for Site 1). During these surveys, six species were absent from the list from Site 1 and eight species from Site 2/3 (Appendix 1). These species should not have been missed

considering the “extensive multi-year and multi-season examinations”. Lastly, the DEIS states “One Cooper’s hawk was observed during field investigations, but it was soaring high over the Site and so was not utilizing it. The site and many other sites may provide hunting habitat for these hawk species. As none of these species have been observed to use the site, there are no potential significant adverse impacts to such avian species.” As several common and easily detectable species were absent from their surveys, more extensive site evaluations are necessary to ensure that these hawk species (1) do not hunt there and (2) will not experience adverse impacts of habitat loss.

2. Inadequate consideration of the status of avian vulnerability

Species risk is only considered here in an “emergency room” manner, i.e. which species are **most** at risk for extinction (Redford et al. 2011). However, as climate change and other human-induced environmental risks have put us in what is called “the sixth mass extinction event” (Ceballos et al. 2017), it is important to have more precautionary metrics of species risk. These metrics do exist and tell a story that is much more urgent than the current federal and state metrics of vulnerability.

Extinction begins with the loss of population numbers and 29% of bird abundance has been lost in the last 50 years and losses are occurring in 57% of bird species in North America (Rosenberg et al. 2019). More than 90% of this loss in bird abundance is a result of declines in 12 families, eight of which are represented across the three sites (Appendix 1). Loss in bird numbers is not just seen in rare and threatened species, but also in widespread and common species that may have disproportionate contributions to ecosystem function. Eastern North America is experiencing significant loss of birds throughout the annual cycle. Firstly, there is a significant drop in migratory birds using the Atlantic Flyway, more so than any other region of country. This makes the protection and creation of more habitat suitable for migratory stopovers of crucial conservation significance. Secondly, 63% of birds in eastern forests are in decline, which is higher than birds across the continent as a whole. Based on these findings, Rosenberg and colleagues (2019) communicate the urgency of addressing issues such as habitat loss and climate change to “avert continued biodiversity loss and potential collapse of the continental avifauna.”

The urgency of the decline in North American birds has led to new and more robust metrics of the vulnerability of species than standard state and federal metrics. The Cornell Lab of Ornithology and Partners in Flight used population numbers over long periods of time to determine the status of conservation concern of 1154 native bird species in North America (Panjabi et al. 2017). This metric states that of the 54 bird species documented in the three sites, 36 species are of low concern, 14 are of moderate concern and one species—the Wood Thrush—is of high concern putting it on the “Watch List” (Appendix 1). Another metric was established by scientists in collaboration with the National Audubon Society assessing the vulnerability of 588 North American Bird species to climate change (Langham et al. 2015, Wilsey et al. 2019). If we experience a warming of 3 degrees Celsius by the year 2080 as is currently expected (“business as usual” scenario), 53% of North American bird species will lose more than half of their geographic range due to changes in climatic conditions. Of the 54 bird species documented in the three sites only 22 species are expected to have stable ranges

by the year 2080. Contrastingly, 10 have low vulnerability, 12 have moderate vulnerability and 10 have high vulnerability. Included in those birds highly vulnerable to climate change, is the Wood Thrush which has been designated a “Priority Bird”.

Even if these more robust and precautionary metrics are not considered as they should be, the DEIS did not adequately evaluate species risk based on the current state metrics. The DEIS quotes the NYDEC in defining a threatened species as “any native species likely to become an endangered species” (p48). Table 2 in the Vegetation, Wildlife and Soil Conditions Report for Site 1 documents the presence of the Wood Thrush in this site, which I confirmed on May 1, 2020 in my survey from the road between 6:05 am and 6:45 am. This species is listed as a “Species of Greatest Conservation Need” which states that the “status is known and conservation action is needed. These species are experiencing some level of population decline, have identified threats that may put them in jeopardy, and need conservation actions to maintain stable population levels or sustain recovery” (NYDEC 2015). In addition to being identified as a “Priority Bird” with high vulnerability to climate change risks (Wilsey et al. 2019) and on the “Watch List” for population decline (Panjabi et al. 2017), the Wood Thrush is listed as a “Bird of Conservation Concern” by the Migratory Bird Treaty Act as stated by the USFWS in Appendix B of the Vegetation, Wildlife and Soil Conditions Report for Site 2 and 3. The lack of inclusion and discussion of the Wood Thrush in the DEIS and related documents even based only on state metrics of species makes the DEIS incomplete.

The DEIS states “no significant adverse environmental impacts will occur to any wildlife species, flora and fauna” (p46), however, this is an overstatement. It is clear that these three sites are providing habitat for birds that are experiencing declines in population numbers and are at risk of habitat loss. As a result, it is necessary to conduct more thorough evaluations of habitat use and reproductive output of these bird species to address the true risk of loss of habitat as a result of development on these three sites.

3. Climate change impacts have not been assessed

The impacts of climate change have not been assessed at all. Impacts of predicted climatic changes such as increases in temperature and extreme weather events on the development should be explored.

Felling of trees has commenced in Site 2, yet there has been no evaluation of the loss of carbon sinks and subsequent emissions of carbon dioxide associated with these actions. Additionally, there are no mitigations described to account for these actions, such as the planting of trees that allows for equal amounts of, or ideally more, carbon to be sequestered.

Over half of the bird species that can be supported in these sites are expected to have some loss of habitat due temperature rises as a result of unmitigated global carbon emissions. This “business as usual” will lead to ten of these species being highly vulnerable and losing up to half of their geographic ranges (Wilsey et al. 2019). Thus, the additional loss of habitat as a result of development adds further strain to these vulnerable species.

4. Impacts of window collisions on birds have not been assessed

Up to one billion birds die of window collisions each year (Loss et al. 2014). If a bird does not die immediately from colliding with a window, it will likely perish later from internal bleeding (Powell 2019). Certain species of birds have a higher risk of collision with windows and that risk varies with type of building: residence (1-3 stories), low rises and high rises (Loss et al. 2014). Many bird species that currently occur in these sites as well as those that occur in the local habitat are documented as high risk for collision (Loss et al. 2014). Two bird species of Conservation Concern found in the sites that are at risk of collision with residence buildings include the Wood Thrush and the Field Sparrow. There are several methods that can be used to minimize window collisions that should be considered in the DEIS such as screens, netting, shutters and shades (Powell 2019).

5. Effective habitat restoration was not considered as a reasonable alternative

While there is a “no action” alternative proposed, there is no suggestion of habitat restoration as a reasonable alternative. As stated in a letter from the Albany Pine Bush Preserve Commission dated March 10, 2020: “the soils analysis indicates the site supports APB soils and could be restorable to pitch pine-scrub oak barrens”. That suggests that if these sites were managed and restored, they could provide habitat to rare species associated with this unique ecosystem. These sites already support species such as the Eastern Towhee, Pine Warbler and Common Yellowthroat (Appendix 1) which are species that are associated with pitch pine-scrub oak barrens (Albany Pine Bush Preserve Commission 2017).

While North American birds are seeing declines in numbers in almost every habitat type, the habitat type seeing the steepest decline is grassland habitat, such as pitch pine-scrub oak barrens (Rosenbeurg 2019). This loss in bird numbers is seen in 74% of grassland species leading to a cumulative loss of 55% of grassland birds in the last 50 years. This habitat and its species are the most vulnerable in the continent and every opportunity to restore and protect it should be taken.

The DEIS should consider the benefits of restoring and conserving this land as a viable alternative. In addition to the ecological benefits of creating habitat for rare species, there are numerous benefits to the residents of these neighborhoods. The DEIS states “the development of Site 1, Site 2 and Site 3 will provide connectivity with nearby neighborhoods” (p26), however, the restoration of this land to barrens can provide a similar connectivity through trails for human use and through green corridors for use of wildlife. This green space will provide recreational use for surrounding residents, a commodity that has been in short supply during the current pandemic.

MITIGATION MEASURES INSUFFICIENT AND UNSUPPORTED

1. Sufficient rational for justifying the loss of 19.68 acres with the protection of 8.4 acres of land must be provided

The DEIS states that the voluntary donation of an 8.4-acre parcel of land “offset[s] this development, and the potential greenhouse gas emissions”, however, there is no evaluation of carbon sinks on this parcel or the three sites to support this claim. A formal evaluation of net losses and gains of sequestered carbon should be carried out in all three sites and the 8.4-acre parcel. However, the maintenance of a **current** carbon sink is unlikely to account for the loss of several other carbon sinks as a result of the felling of trees across the three sites (including those already cut without permission) as well as the carbon and other greenhouse gases expelled through construction and maintenance of this development. To truly mitigate the greenhouse emissions associated with construction and maintenance as well as the loss of current carbon sinks in the three sites, **new** and equivalent carbon sequestration needs to be employed.

Net carbon balancing aside, the DEIS does not provide a sufficient explanation as to why the protection of 8.4 acres of pine barrens habitat sufficiently mitigates the loss of ~47 acres of the three sites. No new habitat is being created to mitigate the loss of the acreage on these three sites which have the potential to be restored to barrens habitat. The 8.4 acres are barrens habitat proposed for Full Protection by the commission and should be maintained as such regardless. Meanwhile, this development leads to the loss of ~47 acres of potential barrens habitat, ~20 acres of which have been identified for Partial Protection. As such, development on at least Site 1 should be mitigated with a 1:1 ratio of new, protected land.

2. The appropriateness of the 200’ buffer zone is not demonstrated

Ecological buffers are used as a protective zone around sensitive or critical areas (Godfrey 2015). However, the width of an effective buffer varies depending on the conservation function of that buffer (wildlife, fire, erosion, flood control, etc.) as well as factors such as slope and vegetation. Typically buffers for wildlife exceed 200’ (Godfrey 2015). The function of the buffer should be outlined more clearly to adequately allocate the width of the buffer.

Recommendations

1. Clear outline of methods for bird surveying.
2. Bioacoustic surveys to document the full assemblage of bird species.
3. Updated assessment of bird vulnerability based on newer metrics associated with habitat loss and climate vulnerability.
4. Appropriate calculations of greenhouse emissions and loss of carbon sinks as a result of development.
5. Fair provision of land and carbon sinks in mitigation of loss of ~47 acres of potential barrens habitat. A 1:1 ratio of land is recommended.
6. Mitigations to limit avian mortality as a result of window collisions.
7. Assessment of climate change impacts on development.

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Appendix 1

List of species identified in the sites based on lists provided in the Vegetation, Wildlife and Soil Conditions Reports for Site 1 and for Site 2 and 3. Species identified in each site were denoted with a “Y”. Species that were absent from these lists but were identified in my surveys in either site were noted with a red “Y”. Data on the species’ annual habitat use in the local area is noted. The vulnerability of each species is described based on (1) habitat loss due to climate change (“Climate Vulnerability”, Wilsey et al. 2019) and (2) population sizes and trends (“State of North American Birds”, Panjabi et al. 2017). The second metric only considers native birds and allocates them into the “low” category with a score of <9, in a “moderate” category from 9-13 and a “high category” >13. Bird families experiencing the highest loss of population numbers in North America are bolded (Rosenberg et al. 2019).

	Common Name	Family	Scientific Name	Site 1	Site 2/3	Local habitat use	Climate Vulnerability	State of North American Birds score	State of North American Birds Conservation Concern
1	Wild Turkey	Phasianidae	<i>Meleagris gallopavo</i>	Y		Year-Round	Stable	7	Low
2	Canada Goose	Anatidae	<i>Branta canadensis</i>		Y	Breeding	Moderate	6	Low
3	Mourning Dove	Columbidae	<i>Zenaida macroura</i>	Y		Year-Round	Stable	7	Low
4	Rock Pigeon	Columbidae	<i>Columbia livia</i>		Y	Year-Round	Stable	-	-
5	Killdeer	Charadriidae	<i>Charadrius vociferus</i>	Y		Breeding	Stable	11	Moderate
6	Great Blue Heron	Ardeidae	<i>Ardea herodias</i>	Y		Visitor	Stable	7	Low
7	Black Vulture	Cathartidae	<i>Coragyps atratus</i>	Y		Breeding	Stable	5	Low
8	Turkey Vulture	Cathartidae	<i>Carthartes aura</i>	Y	Y	Breeding	Stable	5	Low
9	Cooper's Hawk	Accipitridae	<i>Accipiter cooperii</i>	Y		Year-Round	Stable	7	Low
10	Red-tailed Hawk	Accipitridae	<i>Buteo jamaicensis</i>	Y	Y	Year-Round	Stable	6	Low
11	Yellow-bellied Sapsucker	Picidae	<i>Sphyrapicus varius</i>	Y		Year-Round	High	7	Low
12	Red-bellied Woodpecker	Picidae	<i>Melanerpes carolinus</i>	Y	Y	Year-Round	Stable	7	Low
13	Downy Woodpecker	Picidae	<i>Dryobates pubescens</i>	Y	Y	Year-Round	Stable	7	Low
14	Northern Flicker	Picidae	<i>Colaptes auratus</i>	Y	Y	Year-Round	Moderate	9	Moderate
15	Pileated Woodpecker	Picidae	<i>Drycopus pileatus</i>		Y	Year-Round	Stable	7	Low
16	Eastern Phoebe	Tyrannidae	<i>Sayornis phoebe</i>		Y	Breeding	Low	8	Low
17	Eastern Kingbird	Tyrannidae	<i>Tyrannus tyrannus</i>	Y	Y	Breeding	Moderate	11	Moderate
18	Blue Jay	Corvidae	<i>Cyanocitta cristata</i>	Y	Y	Year-Round	Stable	8	Low
19	American Crow	Corvidae	<i>Corvus brachyrhynchos</i>	Y	Y	Year-Round	Low	6	Low
20	Fish Crow	Corvidae	<i>Corvus ossifragus</i>		Y	Year-Round	High	10	Moderate
21	Black-capped Chickadee	Paridae	<i>Poecile atricapillus</i>	Y	Y	Year-Round	Low	7	Low
22	Tufted Titmouse	Paridae	<i>Baeolophus bicolor</i>	Y	Y	Year-Round	Stable	7	Low
23	Ruby-crowned Kinglet	Regulidae	<i>Regulus calendula</i>	Y	Y	Migrant	High	6	Low
24	White-breasted Nuthatch	Sittidae	<i>Sitta carolinensis</i>	Y	Y	Year-Round	Low	6	Low
25	Blue-gray Gnatcatcher	Poliptilidae	<i>Poliptila caerulea</i>		Y	Visitor	Stable	7	Low
26	House Wren	Troglodytidae	<i>Troglodytes aedon</i>	Y		Breeding	Moderate	5	Low
27	Carolina Wren	Troglodytidae	<i>Thryothorus ludovicianus</i>	Y	Y	Year-Round	Stable	7	Low
28	Gray Catbird	Mimidae	<i>Dumetella carolinensis</i>	Y	Y	Breeding	Stable	8	Low

29	Northern Mockingbird	Mimidae	<i>Mimus polyglottos</i>	Y	Y	Year-Round	Stable	8	Low
30	Wood Thrush	Turdidae	<i>Hylocichla mustelina</i>	Y		Breeding	High (Priority Bird)	14	High
31	American Robin	Turdidae	<i>Turdus migratorius</i>	Y	Y	Year-Round	Moderate	5	Low
32	Cedar Waxwing	Bombycillidae	<i>Bombocilla cedrorum</i>	Y	Y	Year-Round	Low	6	Low
33	House Finch	Fringillidae	<i>Haemorhous mexicanus</i>	Y	Y	Year-Round	Low	6	Low
34	American Goldfinch	Fringillidae	<i>Spinus tristis</i>	Y	Y	Year-Round	Moderate	6	Low
35	Chipping Sparrow	Passerellidae	<i>Spizella passerina</i>	Y	Y	Breeding	Moderate	8	Low
36	Dark-eyed Junco	Passerellidae	<i>Junco hyemalis</i>	Y	Y	Wintering	High	8	Low
37	White-throated Sparrow	Passerellidae	<i>Zonotrichia albicollis</i>	Y		Wintering	High	9	Moderate
38	Song Sparrow	Passerellidae	<i>Melospiza melodia</i>	Y	Y	Year-Round	Moderate	8	Low
39	Field sparrow	Passerellidae	<i>Spizella pusilla</i>	Y		Breeding	High	12	Moderate
40	Eastern Towhee	Passerellidae	<i>Pipilo erythrophthalmus</i>	Y	Y	Breeding	High	11	Moderate
41	House Sparrow	Passeridae	<i>Passer domesticus</i>	Y	Y	Year-Round	Low	-	-
42	Baltimore Oriole	Icteridae	<i>Icterus galbula</i>	Y		Year-Round	Low	10	Moderate
43	Red-winged Blackbird	Icteridae	<i>Agelaius phoeniceus</i>		Y	Breeding	Stable	8	Low
44	Brown-headed Cowbird	Icteridae	<i>Molothrus ater</i>		Y	Breeding	Stable	7	Low
45	Common Grackle	Icteridae	<i>Quiscalus quiscula</i>	Y	Y	Breeding	Low	9	Moderate
46	European Starling	Sturnidae	<i>Sturnus vulgaris</i>		Y	Year-Round	Stable	-	-
47	Common Yellowthroat	Parulidae	<i>Geothlypis trichas</i>	Y	Y	Breeding	Low	9	Moderate
48	American Redstart	Parulidae	<i>Setophaga ruticilla</i>	Y	Y	Breeding	Moderate	11	Moderate
49	Blackburnian Warbler	Parulidae	<i>Setophaga fusca</i>		Y	Migrant	High	9	Moderate
50	Pine Warbler	Parulidae	<i>Setophaga pinus</i>		Y	Breeding	High	7	Low
51	Yellow-rumped Warbler	Parulidae	<i>Setophaga coronata</i>		Y	Migrant	Moderate	6	Low
52	Ovenbird	Parulidae	<i>Seiurus aurocapilla</i>	Y		Breeding	Moderate	9	Moderate
53	Northern Cardinal	Cardinalidae	<i>Cardinalis cardinalis</i>	Y	Y	Year-Round	Stable	5	Low
54	Indigo Bunting	Cardinalidae	<i>Passerina cyanea</i>	Y		Breeding	Moderate	9	Moderate



March 10, 2020

Mr. Kenneth Kovalchik (*via electronic mail only*)
Town of Guilderland Planner
Guilderland Town Hall – 2nd floor
5209 Western Avenue
P.O. Box 339
Guilderland, NY 12084

RE: DEIS for Rapp Road Residential Development/Western Avenue Redevelopment

Dear Mr. Kovalchik,

Thank you for your February 20, 2020 e-mail providing the Albany Pine Bush Preserve Commission (APBPC) with an internet link to the materials for the above referenced project and requesting APBPC review and comment. The APBPC appreciates the opportunity to work with the Town of Guilderland and the applicant to balance appropriately located development with the successful conservation of the Albany Pine Bush (APB). The APBPC Technical Committee and staff reviewed the materials at its March 3, 2020 meeting. The comments provided below are a result of that discussion.

In response to earlier comment requests from the Town and Albany County planning, we previously provided:

- January 25, 2019 review of the Site Plan Application materials.
- April 18, 2019 summary of proposed mitigation.
- October 7, 2019 review of proposed Rapp Road bypass options.

As stated in these earlier comments (referenced and attached below), the APB supports the world's best remaining example of an inland pitch pine-scrub oak barrens (PPSOB), 78 wildlife Species of Greatest Conservation Need (SGCN), including the federal and state-endangered Karner blue butterfly (Kbb) and state-threatened frosted elfin butterfly, and the largest inland sand dune system in eastern North America. The site has been designated a National Natural Landmark, a National Heritage Area Site, a NYS Bird Conservation Area and a National Audubon Society Important Bird Area. Consequently, coordinating the review of development proposals within the Albany Pine Bush Preserve (APBP) Study Area is an essential part of achieving the vision for the APBP consistent with Environmental Conservation Law (ECL) Article 46, the 2017 Management Plan Update for the APBP (APBPC 2017);

<http://www.albanypinebush.org/commission/management-plan>) and the Town of Guilderland Comprehensive Plan.

We provide the following summary, reference our earlier comments, and offer clarification where appropriate.

Protection: The proposal for Site 1 will result in the irreversible loss of the ability to protect and manage 19.68 acres recommended for partial protection (Area 57). We do not disagree with the conclusions regarding potential impacts to listed wildlife species, and the fact that the site is highly degraded and dominated by invasive plant species. However, the soils analysis indicates the site supports APB soils and could be restorable to pitch pine-scrub oak barrens (PPSOB). As such, the applicant's proposed mitigation to offset the loss of this restorable acreage on Site 1 is appreciated and consistent with the site's Partial Protection recommendation.

Proposed mitigation includes:

- protecting approximately 8.4 acres within Full Protection Areas 62 and 79;
- providing new/updated indoor and outdoor education/outreach space highlighting Kbb and PPSOB conservation, the APBP, and the applicant's role in balancing conservation and economic development in the APB;
- modifying Rapp Road to improve ecosystem function within the Kbb corridor area; and
- maintaining a 200-foot permanent buffer near Gipp Road in Partial Protection Area 57.

The proposed and conceptual development described for Sites 2 and 3, respectively, are not within areas recommended for protection in the 2017 Management Plan Update. Consequently, their development is unlikely to result in potentially significant adverse impacts on APBPC's ability to create and manage a viable preserve. Native plant landscaping, LED exterior lights, and eliminating non-native invasive plants on Sites 2 and 3 would be consistent with APBPC comments for other non-protection areas in the APB Study Area.

Preserve Habitat Management: We appreciate the applicant's incorporation of meaningful measures to avoid potentially significant impacts on the ability of the APBPC and NYSDEC to manage adjacent protected lands north and east of the Site 1. However, contrary to the summary provided within Section 3.3.1.9 (page 63), it is important to clarify that while it is not envisioned that prescribed fire will be used to manage lands within the proposed 200 foot buffer on Site 1, the APBPC and NYSDEC do intend to use this ecological management tool to restore and maintain adjacent and nearby protected wildlife habitat.

Traffic: The applicant's hard look at evaluating, and potentially offsetting, multiple traffic-related impacts associated with the proposed development of Sites 1, 2 and 3 are appreciated. The DEIS and Appendix I identified several potential options for mitigating traffic on Rapp Road. As outlined in our earlier comments, the APBPC's evaluation of traffic mitigation options is from the perspective of reducing potential impacts on protected lands and the effective conservation of the rare wildlife populations they support. While we empathize with the traffic-related concerns of the Rapp Road Historic District residents and other adjacent neighborhoods, we trust the Planning Board will ultimately select a traffic mitigation option that simultaneously minimizes potential traffic impacts, while maximizing cumulative potential benefits, consistent with the 2017 Management Plan Update, the Guilderland Comprehensive Plan, and the Albany 2030 Comprehensive Plan.

- Alternative 1 (eastern bypass), Alternative 2 (western bypass 1), and Alternative 3 (western bypass 2): As described in Section 3.5.4, and consistent with our October 7, 2019 comments, all three options pose significant adverse and growth-inducing impacts to areas recommended for Full Protection (Areas 29, 79, 62) that currently support globally-rare PPSOB habitat, and rare and listed wildlife species. As such, they are inconsistent with ECL Article 46, the 2017 Management Plan Update, the Guilderland Comprehensive Plan and the Albany 2030 Comprehensive Plan. Additionally, Alternative 1 would significantly reduce the existing and potential ecological function of the applicant's proposed mitigation for the loss of restorable pitch pine-scrub oak barrens on Site 1, by donating 8.4 acres within Full Protection Areas 62 and 79 to the APBPC. 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. Given the potential for these impacts, we recommend that a separate SEQR process and DEIS is warranted to evaluate these bypass options. Lastly, these three options may likely increase, rather than decrease traffic volume and exacerbate existing impacts on wildlife attempting to travel this constricted wildlife corridor between protected areas east and west of Rapp Road.
- Alternative 4 (middle Rapp Road) and Alternative 5 (w/ emergency access-movable gate): Of the nine options proposed, Alternatives 4 and 5 appear to be the most effective options for simultaneously reducing impacts to ecosystem function and wildlife movement, while also reducing (but not eliminating) thru traffic in the Rapp Road Historic District.
- Alternative 6 (Gipp Road realignment): Alternative 6 would also reduce traffic volume, albeit to a lesser extent than Alternatives 4 and 5, and reduce ecological and wildlife impacts, compared to the existing condition. Additionally, and as noted in the DEIS, combining the Gipp Road realignment with Alternative 4, would also reduce traffic and offer the potential for expanding the size of Kbb corridor area.
- Alternative 9 (Rapp Road Realignment – no direct thru traffic): Alternative 9 would reportedly reduce thru traffic on Rapp Road, by encouraging access to the Crossgates Mall ring road. This option appears less effective than Alternatives 4, 5 and 6 in reducing traffic impacts on ecosystem function, but if successful, would likely be an improvement to the current condition, and offer some benefits to conservation and neighborhood traffic concerns.

Site 1 Landscaping: We appreciate that the applicant has proposed using some native plants and native cultivars for landscaping the site, including the use of white pine for screening. However, we suggest eliminating species that would be potentially problematic should they escape into the nearby-protected lands, including scotch pine (which could be replaced with red or white pine).

In conclusion, with the exception of traffic mitigation Alternatives 1, 2 and 3, the DEIS overall appears to satisfy the hard look required by SEQR from the perspective of the APBPC and our mission. The DEIS also appears to have adequately considered, and is consistent with, earlier APBPC comment. The APBPC appreciates the Town of Guilderland's and the applicant's efforts to support creating and managing a

viable preserve while balancing conservation and economic development interests. Thank you for considering these comments and recommendations. If you have any questions or comments regarding this matter, please do not hesitate to contact me.

Sincerely,



Neil A. Gifford
Conservation Director
Albany Pine Bush Preserve Commission

cc: APBPC Technical Committee
Mr. Keith Goertz, APBPC Chair – NYSDEC Region 4 Director
Mr. Christopher A. Hawver, APBPC Executive Director
Ms. Trish Gabriel, NYSDEC Environmental Analyst – Region 4
Mr. Michael Clark, Regional Wildlife Supervisor, NYSDEC-Region 4

Citations:

APBPC. 2017. Management Plan Update for the Albany Pine Bush Preserve. Albany, NY. (www.albanypinebush.org)



January 25, 2019

Mr. Kenneth Kovalchik (*via electronic mail only*)
Town of Guilderland Planner
Guilderland Town Hall – 2nd floor
5209 Western Avenue
P.O. Box 339
Guilderland, NY 12084

RE: 222 Unit Rapp Road Residential Development

Dear Mr. Kovalchik,

Thank you for providing the Albany Pine Bush Preserve Commission (APBPC) with a copy of the Site Plan Application materials for the above referenced project and requesting APBPC review and comment. The APBPC appreciates the opportunity to work with the Town of Guilderland and the applicant to balance appropriately located development with the successful conservation of the Albany Pine Bush (APB). The APBPC Technical Committee and staff reviewed the initial concept for this site at the committee's January 15, 2019 meeting. The comments provided below are a result of that meeting and the application materials provided.

The APB supports the world's best remaining example of an inland pitch pine-scrub oak barrens, 76 wildlife Species of Greatest Conservation Need (SGCN), including the federal and state endangered Karner blue butterfly (Kbb) and state threatened frosted elfin butterfly, the largest inland sand dune system in eastern North America and has been designated a National Natural Landmark, a National Heritage Area Site, a NYS Bird Conservation Area and a National Audubon Society Important Bird Area. Coordinating the review of development proposals within the Albany Pine Bush Preserve (APBP) Study Area is therefore an essential part of achieving the vision for the APBP consistent with Environmental Conservation Law (ECL) Article 46, the 2017 Management Plan Update for the APBP (APBPC 2017; <http://www.albanypinebush.org/commission/management-plan>) and the Town of Guilderland Comprehensive Plan.

The Technical Committee indicated several concerns and recommendations regarding the potential short and long-term adverse environmental impacts associated with the proposed site plan concept, including:

Protection: The proposal is located within the APB Study Area, described in the 2017 Management Plan Update for the APBP and, as proposed, would result in the irreversible loss of the ability to protect and manage 19.68 acres that are recommended for partial protection (Area 57) as part of the APBP.

State Environmental Quality Review Act (SEQR): The application exceeds several SEQR Type 1 thresholds, and is likely to have a significant adverse impact on the environment, impacts that should be thoroughly evaluated within a Draft Environmental Impact Statement (DEIS) consistent with the hard look required by 6 NYCRR Part 617.

Full Environmental Assessment Form (FEAF): The SEQR FEAF provided by the applicant included several errors and omissions. According to the New York State Department of Environmental Conservation (NYSDEC) EAF Mapper (<http://www.dec.ny.gov/eafmapper/>) the following items require correction and in several cases follow-up on-site evaluation by a qualified biologist in consultation with the NYSDEC and US Fish and Wildlife Service (USFWS).

Specifically, correct FEAF items:

- C.2.b. Yes – the site is within a NYS Heritage Areas: Mohawk Valley Heritage Corridor
- E.2.i. Yes – the site is located over a principal aquifer
- E.2.n. Yes – the site likely contains a portion of Pitch Pine-Scrub Oak Barrens; 210.97 acres
- E.2.o. Yes – the site likely contains Karner blue butterfly and frosted elfin (a portion of the site is within the Karner Blue Butterfly Preserve and immediately adjacent to known occurrences of both species).
- E.2.p. Yes – the site is likely to contain several NYS rare species or species listed as special concern including, but not limited to the eastern hognose snake, worm snake, eastern spadefoot, fowlers toad, eastern whip-poor-will, Cooper’s hawk, sharp-shinned hawk, inland barrens buckmoth, and mottled duskywing skipper.
- E.3.c. Yes – the site is substantially contiguous to a designated National Natural Landmark - APB, Acres: 3165.255038
- D.1.b.b. – Physical disturbance ~10.5 acres; P. 9. E.1.b shows a loss of 11.64 acres of forest.

In addition, the applicant should note that a State Historic Preservation Office Section 14.09 review is required for this project.

Preserve Management: The proposed residential complex is likely to have potentially adverse impacts on the APBPC’s ability to manage adjacent protected lands as outlined in the 2017 Management Plan Update for the APBP (APBPC 2017). The project is likely to have similar potentially negative impacts on the NYSDEC’s ability to manage the Karner Blue Hill Preserve pursuant to NYSDEC Permit #4-0130-00007/0002, issued December 10, 1996 (See map below). The site of the proposed residential complex includes a portion of the Karner Blue Butterfly Preserve, owned by the applicant and managed by the NYSDEC in consultation with the APBPC. Accordingly, the SEQR review of this project should accurately identify and evaluate the potential direct, indirect, short and long-term cumulative impacts

of the above referenced project to rare, threatened and endangered species and their habitats. These potential impacts should be part of the SEQR coordinated review and DEIS scoping. Consultation with NYSDEC and the U.S. Fish and Wildlife Service is requisite to determining the extent to which the site is occupied by listed species.

Traffic: A coordinated SEQR review should also provide the necessary hard look at how potential changes in traffic volume and timing on Rapp Road, may affect the ability of rare wildlife to disperse. The City of Albany, The Nature Conservancy (TNC) and Albany County have all helped protect considerable acreage on the West Side of Rapp Road that provides a critical linkage between the Karner Blue Butterfly Hill Preserve and APBP lands to the west. Successful dispersal between these properties, however, is highly contingent upon these species successfully crossing Rapp Road. 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 to 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.

Mitigation: Once all potentially adverse impacts are fully-vetted through a coordinated review the applicant should lastly identify and evaluate all appropriate measures to avoid, minimize and mitigate those impacts.

Interested and Involved Agencies: Since federal and state endangered and threatened species and storm water management permits (or permit modifications) are likely required for this project, please include the USFWS and NYSDEC as involved agencies and the City of Albany, Albany County and the APBPC as interested agencies in SEQR-related coordinated review of the project.

Alternatives: Whether in a DEIS or other appropriate vehicle, a SEQR coordinated review should include an evaluation of development alternatives and associated potential environmental impacts including reduced footprint and no-build alternatives.

In conclusion, the conceptual proposal for this project is likely to result in significant direct and indirect short and long-term adverse effects on the environment and the APBPC's ability to create and manage a viable preserve as described in ECL Article 46 and the 2017 Management Plan Update for the APBP, and the long term potential viability of the species that exist within it. As such, it appears appropriate to issue a positive declaration under SEQR for this proposal and request/require that the applicant prepare a DEIS, consistent with 6NYCRR Part 617.7. The APBPC applauds the Town of Guilderland's long-standing support for creating and managing a viable preserve and for its efforts to balance conservation and economic development throughout the Town. The APBPC looks forward to continuing that tradition with this proposal. Thank you for your consideration of these comments and recommendations. If you have any questions or comments regarding this matter, please do not hesitate to contact me.

Sincerely,



Neil A. Gifford
Conservation Director
Albany Pine Bush Preserve Commission

Encl: Southeast Pine Bush Context Map

cc: APBPC Technical Committee
Mr. Keith Goertz, APBPC Chair – NYSDEC Region 4 Director
Mr. Christopher A. Hawver, APBPC Executive Director
Ms. Robyn Niver, Endangered Species Biologist, USFWS – NYS Field Office
Ms. Kathy O'Brien, Endangered Species Biologist, NYSDEC
Ms. Trisha Gabriel, NYSDEC Environmental Analyst – Region 4
Mr. Michael Clark, Regional Wildlife Supervisor, NYSDEC-Region 4

Citations:

APBPC. 2017. Management Plan Update for the Albany Pine Bush Preserve. Albany, NY. (www.albanypinebush.org)



Southeastern Pine Bush



**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**

Dr. Cynthia Lane

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

15 April 2020



Ecological Strategies, LLC

Contact Information and Statement of Qualifications

Cynthia Lane, Ph.D.
Ecological Strategies, LLC
Wisconsin Office

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Pepin, WI 54759
715-442-2399

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 chance 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 USFWS 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.



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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>



To Whom It May Concern,

My name is Zachary Davis, I am a conservation biologist and contemporary master's student pursuing a degree in Ecology. I specialize in bird biodiversity and conservation.

It is my opinion based on the draft impact assessments that these projects will be detrimental to the conservation goals set forth by the Albany Pine Bush Commission, and that these projects will indefinitely limit the vitality of the Preserve's avian populations in ways that are not considered in the DEIS.

The overall trend of increasing urbanization in the area, and specific targeting of land adjacent to the Preserve will limit the conservation value of the Preserve (Radeloff et al. 2010, Brambilla and Ronchi 2016). As a NYS Bird Conservation Area ("Albany Pine Bush Bird Conservation Area - NYS Dept. of Environmental Conservation"), and designated Important Bird Area by Audubon ("Audubon names Albany Pine Bush" 2014), the study region is considered critical to the success of bird populations ("Important Bird Areas" 2015), many of which are federally protected under the Migratory Bird Treaty Act (16 U.S.C. § 703-711).

Thus, the immediate direct and indirect effects that these proposed projects will have on the Pine Bush Preserve and its bird populations, as well as the negative impacts that will accumulate over time should the projects occur, must be considered strongly. This is especially true given that we are in an era of unprecedented avian and insect population declines (Goulson 2019, Rosenberg et al. 2019).

It is my opinion that these impacts have not been properly addressed within the draft impact statement.

Because these projects are proposed to occur within the Pine Bush study area, it should be assumed that bird populations occurring on the proposed areas are a part of the same populations that extend into the Albany Pine Bush Preserve (Opdam 1991). Thus, any impact on the avian communities which occur on the proposed sites should be considered detrimental to the Albany Pine Bush Preserve and its avian populations. Land-scape use changes adjacent to parks and preserved lands have significant negative impacts on populations within those preserved lands, and occur through multiple mechanisms including: edge effects; disruption of ecological flows; and disrupting animal movement (Hansen and DeFries 2007). These projects collectively pose the threat of impacting APBP populations through each of these mechanisms. Therefore, greater consideration to the indefinite impacts, and the larger scale these impacts will occur on is warranted.

However, the report fails to demonstrate adequate consideration of the significant impacts these projects will have on protected avian communities, and it is unclear if these communities were appropriately addressed scientifically. Therefore, any proposed mitigation actions which are currently suggested are potentially inadequate, and uninformed. This is for the following reasons:

- 1) It is unclear if targeted surveys for protected avian species occurred at all (e.g. point-counts). Thus, the species lists presented, and the documented judgements of occurrence by any avian species may be inaccurate. A running list of species observed passively during visits to the site for reasons other than focused avian observations, i.e. "Any "general" wildlife and plant life encountered in these more specific surveys were also identified and

recorded” (Appendix F section 1.1.4), would be inappropriate to accrue information necessary to gain knowledge of the mitigation actions required for protecting bird species. There is no elaboration on the methods employed to accrue the list of reported avian species, and thus I am uncertain if these protected species were considered “general” wildlife, despite their protected statuses, and were therefore not given proper consideration.

- II) The statements within the Vegetation, Wildlife, and Soil Conditions Report regarding the Rapp Road Residential proposal (Appendix F) do not mention the methods employed for conducting surveys for the two hawk species of special concern—Cooper’s hawk and sharp-shinned hawk.

It is unclear what the searches mentioned in Appendix F entail, or if methods were appropriate for surveying the site for active nesting birds. These sites would be appropriate for use as nesting habitat for both Cooper’s hawk (Murphy et al. 1988, Cornell Lab of Ornithology 2020a) and sharp-shinned hawk (Cornell Lab of Ornithology 2020b) however the report makes no mention of this.

The report states: “As a closed canopy/successional woodland, the site has the potential to be hunting habitat for Cooper’s Hawk and Sharp-shinned Hawk” and further states “B. Laing personnel has searched for these raptors on Site on many occasions.” (Appendix F §3.5.2)

Without further elaboration on the techniques employed for these searches, and whether searches were conducted to locate nests, it is ill advised to accept any conclusions regarding the status of these two species on the proposed sites, and the degree to which impacts will be incurred on them via this assessment.

Thorough searches are the standard to conclude that nesting does not occur in potential breeding habitat, and these often incorporate broadcasting the calls of the target bird species, or their competitors, in order to increase detectability (Mosher et al. 1990, Anderson 2015). In order to properly document occurrence and use-value which a site holds for a raptor species, repeated surveys for extended periods of time, generally 1 hour of focused observation, must be carried out (Skipper et al. 2017)

- III) It appears no assessments for the above-mentioned hawk species of special concern were carried out for the proposed Western Avenue Mixed Use Redevelopment Projects sites, as they are not considered in the Vegetation, Wildlife and Soil Conditions Report (Appendix G).

The report makes no mention of searches or surveys for these species, but does elaborate on surveys for other species of concern which are also included in Appendix F. Unless otherwise stated, I can only conclude that the appropriate surveys were not conducted for these species at these sites.

The conditions which were present on this site would be preferred habitat for Cooper's hawk (Murphy et al. 1988), and appropriate for nesting.

- IV) There are many species absent from the report which are commonly occurring throughout the area, and which would be expected to be use the sites based on reported observations from areas adjacent to the proposed sites, as well as by the description of the habitat characteristics elaborated on in the report. Through examining observations submitted to the premier citizen science tool eBird ("eBird" 2009), followed by personal communications with its users, it can be concluded that species likely went undocumented.

It is possible that these commonly occurring species were indeed unavailable for detection due to truly being absent during observation periods. However, these reported results may also indicate that the sites were not sufficiently sampled (Ugland et al. 2003), or that surveys were carried out by unskilled observers (Fitzpatrick et al. 2009).

Without proper knowledge of the avian communities, the impacts which will be incurred by these projects cannot be accounted for, and thus no further actions progressing these projects should be undertaken until adequate sampling has been demonstrated, and the direct, indirect, and cumulative negative impacts these projects will impose on these protected species are considered.

These impacts will be incurred via: light emission; increased risk of window strikes; potential for disease prevalence increases; creation of sink habitat; as well as increases in invasive species, and invasibility of the Preserve by these species. Alternative structural designs and increased mitigation actions must take these effects in to account regarding the avian community as a whole in order to sufficiently conclude what mitigation actions must occur.

Land-use change, and habitat alterations will affect all the avian populations in the area, including those within the protected boundaries of the Albany Pine Bush Preserve; this limits the vitality of the preserve (Radeloff et al. 2010). While most of the current suite of species present on the sites are protected native species, human disturbance is associated with increases in invasive species populations (Martin-Albarracin et al. 2015). Increased invasive species abundance in the area surrounding a preserve, and habitat fragmentation surrounding that site increases the invasibility of the preserve (Shawn Smallwood 1994). Invasive species cause reduced fecundity (Wilsey et al. 2014), increase competition, and harbor disease causing parasites such as *Trichomonas sp.* which are thought to reduce predatory bird populations and are important to consider as per the New York State DEC (NYSDEC, Mannan et al. 2008). These cumulative and additive impacts, the increase in disease occurrence and nestling mortality rates, as well as the increase in invasive species pressure on the preserve itself, should warrant further consideration and mitigation.

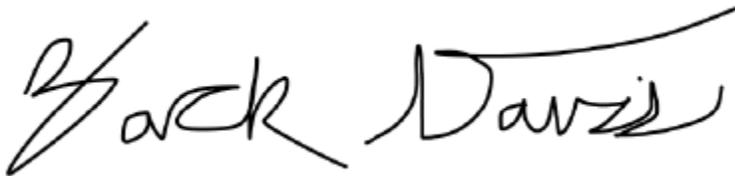
Light pollution and glass pose serious risk to migratory bird species (Parkins et al. 2015). Birds do not perceive window installments as physical barriers; they instead see contiguous space to fly through because windows reflect the environment. It has been estimated that upwards of 1 billion birds succumb to window strike mortality annually in the U.S. alone because of this (Loss et al. 2014). Light emitted from fixtures, as well as polarized light reflected from windows and parked vehicles can attract and trap insects in the area. Though the project is proposed to be offset by a 200 foot buffer, mobile

species such as birds and bats will be attracted off of Pine Bush Preserve land, or use these parcels during migration, which will increase their risk of window strike mortality (Horváth et al. 2009, Straka et al. 2019). Thus the project does not sufficiently mitigate the creation of an ecological traps for protected species (Ries and Fagan 2003, Hale et al. 2015) which presents as a threat to the conservation of the Albany Pine Bush Preserve.

These impacts may be mitigated by alternative project builds: using bird-safe glass (Klem and Saenger 2013, Parkins et al. 2015), implementing bird safe structural designs, limiting the number of light fixtures on the structure and reducing their luminosity through shades, as well as through increasing the size of the buffer proposed (Straka et al. 2019). In order to not interfere with the fire management goals of the APBC, a reduction in the footprint to allow for increased buffering, or conveyance of equivalent parcels should be considered. It should be noted that New York City now mandates these bird friendly structural designs be implemented for all new structures, thus there is precedent for requiring this alternative design (“New York City Passes a Landmark Bill to Make More Buildings Bird-Friendly” 2019).

In its current form the draft impact statement is not adequate in regarding the impacts these projects will impose on wildlife. Elaboration on the methods employed during surveys to verify their validity and revisiting the mitigation actions proposed based on these surveys is necessary. Considering the direct, indirect, and long-term cumulative impacts incurred via these projects, further mitigation is warranted. Alternative bird safe builds, reduced footprints, increased land conveyance to the preserve, and increased buffer sizes are all actions which have not been considered to mitigate the effects of these projects.

Thank you for taking my comment,

A handwritten signature in black ink that reads "Zack Davis". The signature is written in a cursive, fluid style with a long horizontal line extending from the top of the "D" in "Davis".

Zachary Davis

Zack.Davis.Wildlife@gmail.com

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April 2, 2020

Dear Kenneth Kovalchik and Members of the Town of Guilderland Planning Board:

I write to comment on the Draft Environmental Impact Statement (DEIS 2019) for the proposed development of Sites 1, 2, and 3 in the Town of Guilderland adjacent to the Albany Pine Bush Preserve. On the basis of my more than 20 years of experience as an ecologist including as a professor at Union College and my direct and ongoing scientific research of the Pine Bush ecosystem, I conclude that the proposed development sites have the potential to support significant ecosystem services including habitat for pitch pine and scrub oak, hosting wild blue lupines, and supporting the endangered Karner blue butterflies.

The DEIS describes the existing vegetation closed-canopy of mixed pine and hardwood species that is typical of other successional forest within areas of Albany Pine Bush Preserve (APB) from which low-intensity fires have been suppressed for decades. As part of my ongoing work to understand the dynamics of the APB ecosystem, I have surveyed extensive forested areas within the Preserve that closely resemble the species composition described in the DEIS (Corbin et al. 2016). Indeed, such secondary succession forests were far more abundant in the Preserve at the time it was established in 1988. Today, the area of habitat that supports pine barren habitat including wild blue lupines and the federally endangered Karner blue butterfly has greatly expanded from what existed 20 years ago as a result of active tree removal and prescribed fire (APB Management Plan 2017). I see no reason that similar restoration protocols could not be applied to the proposed development sites to create more conditions suitable for Karner blue butterflies.

The DEIS describes well-drained sandy and sandy-loam soils that are typical of the Albany Pine Bush Preserve including Colonie and Elnora soil types. These soils create appropriate hydrological conditions that, when combined with occasional fires, gives rise to the unique conditions found in Pine Barrens. Though more mesic species including northern hardwood (e.g. maples and aspens) and southern hardwood (e.g. black locust) trees are able to establish when fire is suppressed for long periods of time, *the conditions that support pine barren vegetation including pitch pines, scrub oaks, and lupines and associated animals including endangered species and species of special concern can be restored.* The existence of the unique soils of the proposed development area mean is the key determinant of restoration potential, not present-day vegetation composition. Nothing noted in the DEIS suggests that restoration of this site is not possible, including past use as a pig farm and the deposition of mesic tree leaves.

The APB Preserve Commission has cleared extensive forest from hundreds of acres of Preserve lands since 1989 (APB Management Plan, 2017). After removing the trees, cover vegetation including wild blue lupines are replanted, and new plants including pitch pine and scrub oaks

colonize ; when fuel builds up to a sufficient volume, prescribed fire is used to further the ecological recovery of pine barren habitat. In 2015-2019, I conducted vegetation and soil surveys of sites at various stages of restoration at APB, including present-day forests, remnant pine barren habitat, and former forests that had been restored. *My research demonstrates that active management efforts to sites very much like the proposed development areas succeed in greatly expanding ecosystem function including providing habitat for indicator species such as pitch pines, scrub oaks, wild blue lupine, and the Karner blue butterfly.*

Forested areas very much like the proposed development site are capable of supporting native pine barren species including pitch pine, scrub oak, wild blue lupine, and little bluestem individuals. Closed-canopy forests on well-drained soils can be feasibly removed, and target species replanted while appropriate plants and animals return through natural processes. Within the scale of a few years, the sites are excellent examples of “successional sandplain grasslands” that support a variety of pine barren species. These efforts have increased by several times the area of Karner blue butterfly habitat, and their population, numbering under 1000 only 10 years ago, is now over 15,000 individuals per year (APB Management Plan, 2017). Over time, species composition and habitat conditions improve naturally, with minimal ongoing management besides prescribed fire.

Based on my research, the DEIS is factually incorrect when it states (p.31) that, “...converting of (sic) this site to Pine Bush habitat would be very challenging, if not impossible given the enormous costs involved in creating what amounts to new ecological conditions, as no qualities of the natural state remain.” The qualities of the natural state – namely, the well-drained sandy and sandy-loam soils described above – definitively do remain in place at the site as described by the DEIS. As long as the site is not developed, as proposed, for commercial or large-scale residential use, the potential remains to apply exactly the same restoration tools as have been used at the adjacent APB Preserve.

The DEIS is also factually incorrect when it states (p. 18) that “no significant impacts are anticipated” because “the site is currently disturbed and lacks any characteristics of the Albany Pine Bush habitats...” This statement ignores the documentation of at least 44 plant, 36 bird, 91 invertebrate, one frog, and four mammal species at the site (DEIS 2019). These species provide ecosystem services including pollination, pest control, carbon storage, and water retention that benefits nearby residents and the APB ecosystem itself. These services and benefits are a function of the *existing* habitat conditions, to say nothing of the potential services if the site is restored as other forested sites within the Preserve have been restored.

The Albany Pine Bush Preserve is a relatively small remnant of what was once a much larger ecosystem. Its small area, combined with the significant fragmentation that such urban corridors as the NY State Thruway and other roads, commercial and residential neighborhoods, and Crossgates Mall have caused, make it a very threatened habitat. We are fortunate that the potential exists to expand the area of habitat that can support the unique plants and animals of the Pine Bush Preserve. Yet, we can only protect that potential if we preserve even small parcels of land that have remained free of impervious surfaces. *The DEIS incorrectly writes off the woodlot as having no value, either in its present “green” state, or as a potential future site for restoration back to pine barren habitat.*

The United Nations has declared a biodiversity crisis, a crisis that is driven primarily by habitat destruction (UN IPBES 2019). Conserving biodiversity does not happen passively, and it is not only the responsibility of people in and around, for example, the Amazon rainforests. Conserving biodiversity is an *active choice*, often at the scale of tens of acres such as the proposed development in Guilderland. What is left of the Albany Pine Bush – small and fragmented as it is – exists because it was not developed in decades past. We must be grateful for those active choices made in decades past to preserve open space. But if we are to leave a healthy planet for future generations, then we too must actively preserve even small parcels of undeveloped land such as proposed sites 1, 2, and 3. They may seem like insignificant patches of forest, but really this is the scale where conservation is truly meaningful. They have ecological value in their present state, plus the potential to grow the footprint of the Albany Pine Bush Preserve.

In summary, in my professional opinion as a professional scientist with ongoing research to understand the ecology of the Albany Pine Bush, the development of the three Guilderland sites would have significant environmental impacts that will be experienced by current and future residents.

Sincerely,



Dr. Jeffrey D. Corbin
Professor of Biological Sciences
corbinj@union.edu

cc: Christopher Walker
Save the Pine Bush

Cited Resources:

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Preliminary Biodiversity Assessment and Comments on the DEIS for the Rapp Road Residential/Western Avenue Mixed Use Redevelopment Projects, Town of Guilderland, Albany County, New York

by Erik Kiviat PhD PWS

Hudsonia

Report prepared for the Town of Guilderland Planning Board

at the request of Save the Pine Bush,

1667 Western Avenue, LLC, and Red-Kap Sales, Inc.

14-April-2020

At the request of Save the Pine Bush, 1667 Western Avenue, LLC, and Red-Kap Sales, Inc., Hudsonia conducted a preliminary biodiversity assessment and a review of the DEIS for the proposed development of three parcels separated by streets on the south and west of the Crossgates Mall in the Town of Guilderland, Albany County, New York. Hudsonia does not support or oppose land use proposals; rather, we conduct field work, review documents, maps, and literature, and provide observations, data, analyses, and recommendations, as appropriate, to provide a stronger scientific basis for environmental and land use decision-making.

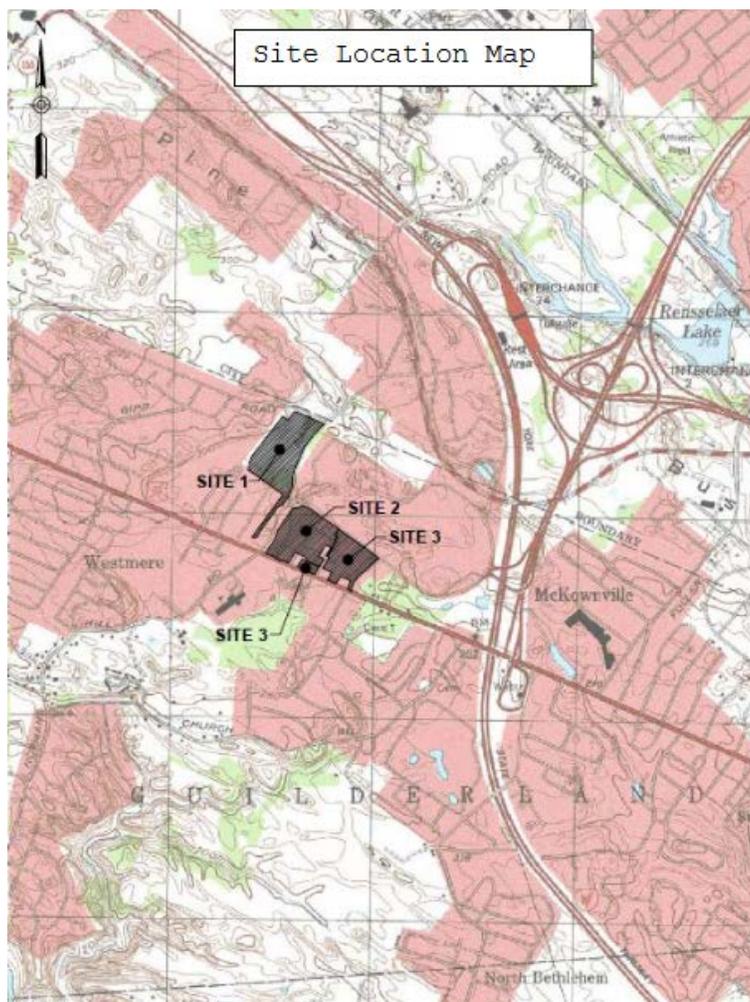


Figure 1. Locations of the three sites in the Town of Guilderland, Albany County, New York. (From DEIS:1.)

Three parcels are proposed for development, from west to east: Site 1, Site 2, and Site 3; Figure 1 shows the locations. Sites 2 and 3 are contiguous whereas Site 1 is separated from Site 2 by Rapp Road which is a two lane street with additional turning lanes creating a four-lane street between the southern dogleg of Site 1 and the west end of Site 2. Site 1 is proposed for construction of a large apartment complex, commercial space, and parking areas. Sites 2 and 3 are proposed for construction of a large retail center, office space, associated parking areas, and a gas station. I refer to the three sites collectively as the study area. Site 1 covers ca. 19 acres, Site 2 ca. 16 acres, Site 3 ca. 11 acres (DEIS 2020:2). Elevations in the study area are about 84-105 m (Google Earth).

I spent about 3.5 hours midday - early afternoon on 15 March and 5.5 hours midday – mid-afternoon on 6 April 2020 reconnoitering the study area to familiarize myself with the field situation and to be able to review the DEIS incisively. The weather was mild and sunny both days, calm on the first visit and with a light breeze on the second visit, with no snow on the ground or ice in ditches. I observed Site 1 from the edges, and walked extensively on Sites 2 and 3. I also reviewed relevant portions of the DEIS including the biological reports in Appendices F and G, and selected information about the Albany Pine Bush (e.g., Rittner 1976, Barnes 2003, Gifford et al. 2010, U.S.G.S. 2019a, b) and I consulted the scientific literature on a few of the key wildlife species addressed in the DEIS.

Geology and Soils

Bedrock underlying the study area is predominantly or all shale; there may be some sandstone in the west end (Fisher et al. 1961). Surficial geology was mapped as “dunes,” non-calcareous sorted sand that is generally lakeshore-associated (i.e., associated with Lake Albany which existed during the period of glacier melting; Cadwell and Dineen [1987]).

Soils of the study area, which I observed on all three sites, are loamy fine sands and belong to the Colonie series, similar to the core Pine Bush a short distance to the north (Brown 1992). Study area soils, as mapped by Brown, are Stafford, Elnora, Colonie, Granby, and Udipsamments. Topography, as depicted on U.S.G.S. (1947), is or was dune-like, with the study area roughly similar in this respect to the core Pine Bush. The entire study area and its surroundings were mapped as part of the Pine Bush dune field by Donahue (1976). Although the Pine Bush soils in the Colonie series are generally moderately to strongly acidic, there are local occurrences of less acidic and even calcium-rich soils (Barnes 2003) that potentially support calcium-associated animals and plants. The dune in the northwestern corner of Site 2 was mentioned in Hartgen Archaeological Associates (2019).

Observations

At the time of my first visit, all three parcels were substantially covered by mature hardwood forest with an overstory dominated by native tree species (although clearing began on Site 2 on 26 March, see below). White pine was also prominent in some areas. There was an open, sparsely vegetated, non-forested area in the east-central portion of Site 1 next to Rapp Road and other non-wooded areas in the southwestern portion of Site 1 that I did not see, and there was another open, sparsely vegetated area in the south end of Site 2. These areas, as far as I could see, had weedy native and nonnative herbaceous plants including goldenrod (*Solidago*), mugwort (*Artemisia vulgaris*), common evening-primrose (*Oenothera biennis*), mullein (*Verbascum thapsus*), and grasses (Poaceae). One clump of knotweed (*Polygonum cuspidatum*) was present in the open area of Site 1 not far inside the vehicle entrance at Rapp Road, and a sparse but substantial patch of knotweed was present among the easternmost houses between sites 2 and 3. Other open, formerly managed, areas occurred around these houses.

Woody plants of Site 1, as seen from Rapp Road, included box-elder (*Acer negundo*), eastern cottonwood (*Populus deltoides*), red maple (*Acer rubrum*), black oak (*Quercus velutina*), tree-of-heaven (*Ailanthus altissima*), weeping willow (*Salix ×babylonica*), staghorn sumac (*Rhus typhina*), grape (*Vitis*), and Oriental bittersweet (*Celastrus orbiculatus*).

Woody plants of Site 2 included white pine (*Pinus strobus*), pitch pine (*Pinus rigida*), black walnut (*Juglans nigra*), black locust (*Robinia pseudoacacia*), tree-of-heaven, eastern cottonwood, Bell's honeysuckle (*Lonicera ×bella*, a hybrid swarm of Tartarian and Morrow honeysuckles), grape, and

Oriental bittersweet. The trees were generally pole-to-mature size with scattered large trees (up to 60+ cm [2 feet or greater] dbh), and fairly common seedling and sapling white pine. Standing dead and downed wood was uncommon, suggesting a modest age of the forest, with occasional large, dead eastern cottonwood and red maple. Tangles of woody vines were locally common. Pitch pine was rare and local (see below). Native trees (especially the fast-growing eastern cottonwood, red maple, and locally white pine) dominated the woodlands.

Woody plants of Site 3 were eastern cottonwood, red maple, box-elder, Norway maple (*Acer platanoides*), catalpa (*Catalpa*), white pine, pitch pine, black oak, white oak, ash (seedlings), black locust, black cherry (*Prunus serotina*), gray birch (*Betula populifolia*, one dead tree), common buckthorn (*Rhamnus cathartica*), tree-of-heaven, Bell's honeysuckle, American hazel (*Corylus americana*), mock-orange (*Philadelphus inodorus*), Japanese barberry (*Berberis thunbergii*), winged euonymus (*Euonymus alata*), multiflora rose, poison-ivy, grape, Virginia creeper (*Parthenocissus*), and Oriental bittersweet. I saw numerous honey locust (*Gleditsia triacanthos*) fruits on the forest floor but did not find the tree.

DEIS Appendix G asserted that there were only one or two planted pitch pines (*Pinus rigida*) on Sites 2 and 3 (“The Site lacks pitch pine (*Pinus rigida*)... Save for one or two individuals used as ornamental/landscape vegetation in the unoccupied residential lots.”). However, I found seven live and one dead pitch pine. Two live pitch pines were about 12 meters apart in the east-central edge of Site 3 and each measured 39 cm dbh. One live pitch pine in the Site 3 dogleg north of Tiernan Court measured 47 cm dbh (possibly I missed one or more other pitch pines there). Four live pitch pines on the northwestern dune in Site 2 measured 23, 24, 33, 39 cm dbh, and one dead pitch pine 40 cm dbh, all in a cluster. One of this last group of pitch pines can be recognized by the coarse, platey bark in Hartgen Archaeological Associates (2019: Photo 13). Pitch pine is important because it confirms, along with the soils and dune, that Sites 2 and 3 were once part of the Albany Pine Bush and thus could support additional Pine Bush species.

While many herbaceous plants are undetectable or unidentifiable at the season of my visits, a few species were noteworthy. I saw several clumps of a woodfern, probably *Dryopteris carthusiana*, in the large central ditch and at the north end of Site 2. I also saw skunk-cabbage (*Symplocarpus foetidus*), multiflora rose (*Rosa multiflora*), and an unidentified sedge (*Carex*) in the ditch. A single paper birch (*Betula papyrifera*), ca. 22 cm (9 inches) dbh, stood at the big ditch. There was a small patch, perhaps two square meters, of common reed (*Phragmites australis*), not very vigorous-looking, in the north end of the ditch, presumably the nonnative subspecies *Phragmites australis australis*. The large central ditch, on both days, had discernible flow from south to north, steep (excavated) sides ca. 2-3 meters high, water up to 15-20 cm deep, and a firm silty-sandy bottom. Cobble-size rocks were present in old riprap at the mouths of culverts at each end of the ditch, within the site. The large south-north ditch, a channelized stream, was delineated as a wetland (Appendix G and Laing 2019c); the tributary ditch from Rapp Road to the western side of the south-north ditch may be part of this wetland but was not included in the delineation nor did the wetland report (see below) explain how the non-wetland status of the tributary was determined.

Any additional information about the wetland (the south-north ditch) on Site 2, and the mitigation proposed for culverting and filling it, are relevant to the biological impacts of the proposed development of Site 2. I was unable to find the wetland report (Laing 2019c) cited in Appendix G; Save the Pine Bush finally obtained it from the Town. Most of the site-specific information in the wetland report is copied from the other Laing reports. It contains nothing about mitigation although Appendix G stated that the wetland report discussed mitigation. The wetland report does not mention the common reed in the ditch. An interesting point is that Laing (2019c) identified a histosol, which is a highly organic wetland soil that would have taken centuries or millennia to form. I don't know the exact spot in the ditch where this soil

boring was done or whether it's representative of a larger area. There may be a buried histosol that remains from a formerly larger wetland, and it is possible that this wetland could be restored.

My assessment was not intended to be a wildlife species survey, and the middle of the day is not a good time to observe most wildlife. For the sake of completeness, I mention the following species (or their sign) observed casually: opossum (a skull on Site 2), unidentified mole burrow (Site 1), woodchuck, gray squirrel, raccoon, white-tailed deer, red-tailed hawk (overhead), pileated woodpecker, red-bellied woodpecker, common raven, common crow, white-breasted nuthatch, Carolina wren, tufted titmouse, northern mockingbird, blue jay, house sparrow, common grackle, dark-eyed junco, and northern cardinal. The raven was calling just southwest of Site 1. There were weathered pileated woodpecker feeding trenches in a dead red maple stem on Site 2. Pileated woodpecker was listed for Sites 2-3 in Appendix G (Laing 2019b).

The southern end of Site 3, just north of the Mobil station, had a substantial population of ostrich fern (*Matteuccia struthiopteris*) that extended more sparsely northward on the site. There were probably 50 or more clumps of this plant. Ostrich fern is readily identified by its fertile (spore-producing) leaves. Ostrich fern is not listed in the plant species list in Appendix G, surprisingly on account of its being conspicuous and easily identified. Appendix G also did not report woodfern, *Carex*, common reed, motherwort (*Leonurus cardiaca*), paper birch, American hazel, mock-orange, black raspberry (*Rubus occidentalis*), or knotweed, all of which I observed on Site 2 or Site 3.

Biodiversity Assessment

The soils of the study area are typical Pine Bush soils (Colonie series) according to Brown (1992), but the vegetation is a combination of hardwood forest and weedy species of disturbed areas (ruderals). As stated by Laing (2019a), the agricultural history of Site 1 (and probably portions of Sites 2 and 3 [my interpretation]), in addition to the surrounding urbanization, have probably contributed to the replacement of pine barrens vegetation by common woodland trees and ruderal herbs. Although the habitats of the study area are unsuitable for many rare Pine Bush animals and plants (but not all of them), these habitats nonetheless are capable of supporting other organisms of conservation concern (see Albany Pine Bush Commission 2019). The wood thrush could breed in the study area; wood thrush is a Species of Greatest Conservation Need (SGCN) in New York. Eastern red bat, silver-haired bat, and Indiana bat (in addition to northern long-eared bat, see below) roost in trees during the active season (Whitaker and Hamilton 1998) and could occur in the study area woodlands where there are dead and live trees with suitable bark voids. All three are SGCN and Indiana bat is listed as Endangered in New York. Laing (2019a) implied that the history of farming and soil alterations made Site 1 unsuitable for rare wildlife. Notwithstanding, New York City (Kiviat and Johnson 2013) and the New Jersey Meadowlands region (Kiviat and MacDonald 2004) support many rare animals and plants of conservation concern, despite massive alterations of soils, hydrology, and vegetation over hundreds of years making those regions far more disturbed than the present study area. I have also found uncommon and rare plants in abandoned soil mines in the Hudson Valley.

Evidently surveys were not specifically conducted for rare plants; no rare plant species is mentioned as a survey target in Appendix F or G. Yet B. Laing Associates found nodding trillium (Natural Heritage Program rank S3) and river birch (S3), both reported in Appendix G. Inasmuch as the plant species list in Table 1 is incomplete, plants of conservation significance that could occur very locally on Site 1 could have been missed by the Laing field workers, and by me.

It is noteworthy that the study area sites are connected to, or close to, a network of woodlands in small and large patches within and adjoining the developed areas of Guilderland (see satellite imagery on

Google Earth). These woodland patches include preserves as well as privately-owned “vacant” lands, and are loosely connected to the numerous, mostly larger, preserves described by Schmitt and Brennan (1991). Although some animals and plants may not be able to disperse across four-lane roads such as Rapp Road between Sites 1 and 2, and Crossgates Mall Road, many birds and many flying insects, among other wildlife, can easily disperse across roads from one habitat patch to another. The presence of pileated woodpecker sign on Site 2 attests to this kind of connectivity, inasmuch as the pileated woodpecker typically has a home range much larger than any one of the three sites. The impact of removal of substantial areas of woodland habitat as a result of the proposed developments has not been adequately assessed in the DEIS, nor has the cumulative impact of these habitat changes in combination with the many other land use projects proposed or being undertaken in Guilderland and neighboring towns. In addition to the individual and collective habitat functions of the sites, urban woodlands provide important ecosystem services by storing carbon, absorbing stormwater, shading and evapotranspiration (which cool the local environment in summer), and providing healthful amenity value to human residents (e.g., Livesley et al. 2016).

The Colonie soils of the study area indicate that it was once part of the Pine Bush but has since been altered by farming, road building, ditching, and other activities. The sites have potential for the restoration of pine barrens vegetation although this would be difficult due to the probable increases in soil organic matter and nutrients, as well as an increase in pH, suggested by the current plant cover. The study area in its current condition as greenspace may be more valuable for ecosystem services (including habitats for biodiversity) than any tenuously-achievable and sustainable pine barrens restoration.

Worm snakes may well occupy the study area. Appendices F and G (Laing 2019a, b) asserted that the worm snake (*Carphophis amoenus*), a Special Concern species in New York, requires damp soils and would therefore not inhabit an area lacking Somewhat Poorly Drained or Poorly Drained soils and formerly affected by pig rooting (on Site 1). Worm snakes have been found across Rapp Road from Site 1, and in the electric transmission right-of-way near Site 1, as recently as 2009 (Conrad 2017, Gabriel 2019). The worm snake, however, has been reported from dry soils as well as moist soils (Willson and Doras 2004). Klemens (1993), writing about Connecticut, stated “Worm snakes were collected in well-drained soils, often in or near deciduous woodland.” Klemens also noted that “...worm snakes appear able to persist in small patches of habitat in relatively urban areas.” Cover objects, such as rotting logs and flat pieces of refuse, conserve moisture at the soil surface and possibly substitute for otherwise moist soils (this characteristic of microhabitats used by worm snakes was implied by Klemens [1990]). Worm snakes were found to use both natural and artificial cover objects in an unpublished Massachusetts study (Alan Richmond, presentation at 2019 Northeast Natural History Conference). The discovery of nodding trillium (*Trillium cernuum*), which is a FACW (facultative wetland) plant associated with moist to wet soils (Gleason and Cronquist 1991, Gargiullo 2007), at or in the big south-north ditch on Site 2 suggests there are at least pockets of moist soils that could be used by worm snakes in addition to the possibly predominant dry soils. Earthworms, generally considered the staple food for worm snakes (Gibbs et al. 2007), occur in the study area (Appendices F and G; E. Kiviati, personal observation). This information indicates that habitats on all three sites are potentially suitable for the worm snake. I have found no information suggesting that cut-and-fill or pig disturbance of soils decades ago would make Site 1 unsuitable for this species now. Only a single herpetofaunal species, northern gray treefrog (*Hyla versicolor*), was reported for Site 1 in Laing (2019a) and for Sites 2-3 in Laing (2019b); I would have expected at least red-backed salamander (*Plethodon cinereus*), garter snake (*Thamnophis sirtalis*), and brown snake (*Storeria dekayi*); these species are often urban-tolerant (Mitchell et al. 2008). Their absence from the lists suggests herpetofaunal survey techniques and effort might have been inadequate. The worm snake is a difficult species to detect due to its strongly fossorial (burrowing) behavior. The Pine Bush is a hotspot of herpetofaunal diversity (Stewart and Rossi 1981), although fragmentation and the historic changes in soils and vegetation would limit the occurrence of some species on the current study area. The

lack of complete search effort data and descriptions in Appendices F and G prevents judgment about the adequacy of survey coverage.

There is a well-known population of the eastern hog-nosed snake (*Heterodon platirhinos*; New York Special Concern) in the Pine Bush (Stewart and Rossi 1981). Appendices F and G dismissed the potential of the study area to support hog-nosed snakes because the sites lack “undisturbed, moist habitats” and do not provide suitable habitat for frogs and toads. Nonetheless, both Appendices reported the northern gray treefrog. And although the literature states that toads are the staple food of this snake, it is also reported to eat other frogs, invertebrates, and small mammals (Gibbs et al. 1981, Hulse et al. 2001, White and White 2002). I have no reason to think that past soil disturbance would limit the hog-nosed snake as it has been reported from soil mine pits in Connecticut (Klemens 1990) and I have found it in disturbed areas around occupied buildings in Maryland and in Dutchess County, New York. A sparse population of the hog-nosed snake would be difficult to detect and this has been my experience where I have lived in Dutchess County for most of my life. It is possible that hog-nosed snake and worm snake have persisted in the study area from the time when it was ecologically part of the Pine Bush.



Figure 1. Live trees and snags that were cut on 26 March 2020 on Site 2. Two of the trunks lack bark, therefore were standing snags prior to cutting. Photograph by Erik Kiviat 6 April 2020.

Also in Appendices F and G (Laing 2019a, b), it was asserted that, following NYSDEC guidance, northern long-eared bat (*Myotis septentrionalis*) would not use the study area in summer because it is more than five miles from the nearest known hibernaculum. Five miles is an insufficient DEC guideline. For example, White et al. (2017) found seasonal migration distances of northern long-eared bat up to 41 km (ca. 25 miles) in Nebraska. DEIS (52-53) stated that this species was not found on Site 1, but did not

say how bat surveys were performed (e.g., by means of bat call detector equipment; however the calls of the several *Myotis* bats in the region are difficult or impossible to distinguish in bat detector recordings). The DEC recommends (<https://www.dec.ny.gov/animals/106090.html>), regardless of location with respect to documented hibernacula or summer roosts, “Leave uncut **all** snag and cavity trees unless their removal is necessary for protection of human life and property.” The DEIS did not refer to this recommendation although it is now posted on the Town Planning Department Web page at <https://www.townofguilderland.org/planning-department/news/tree-cutting-begin-proposed-costco-site>. It is important to note that retention of snags and cavity trees is very important for many birds, as well as arboreal mammals, and many invertebrates, fungi, lichens, mosses, and liverworts, as well as potentially the gray treefrog. At least a few snags were cut on 26 March on Site 2; two are shown in Figure 1.

I commend B. Laing Associates for surveying moths (Laing 2019a), a diverse and important but generally underappreciated group of wildlife. Two species included in the list in Appendix F, the bog deltote (*Deltote bellicula*) and the black duckweed moth (*Elophila tinealis* = *Synclita tinealis*), are wetland or pond species. Bog deltote is usually found in acidic bogs and fens; the larva of the black duckweed moth feeds on duckweed (*Lemna*, and possibly the related *Spirodela* and *Wolffia*, pond and wetland plants) (Forbes 1954, Beadle and Leckie 2012). The larva of the bog deltote feeds on the wetland plant, tussock sedge (*Carex stricta*) (Tim McCabe, personal communication). Appendix F stated “No wetlands or hydrologic features [presumably meaning surface waters] occur on-site or adjacent to the site.” I can think of four possible explanations for this seeming contradiction: 1. There is indeed at least one wetland, vernal pool, or pond on or adjoining Site 1; 2. The two moths in questions were attracted to the collecting light or dispersed onto the site from wetland nearby; 3. These species can use non-wetland habitats; or 4. The two species were misidentified. Appendix F did not state who identified the moths on the list, or what the qualifications of the taxonomist were, nor did the text say if the identifications were documented with voucher specimens or photographs (these are all standard practices in reporting any organism that is not well-known). There appear to be ponds within ca. 620-760 m of Site 1. It is possible that duckweed occurs in the large ditch on Site 2 seasonally; I did not see any nor was duckweed (*Lemna*, *Spirodela*, or *Wolffia*) mentioned in either Appendix F or Appendix G. Interestingly, the only amphibian reported in Appendix F and G, gray treefrog, is a pond breeder, and the breeding habitat of this species was not reported. Although not typical, both bog deltote and black duckweed moth occasionally are found away from wetlands (Dylan Cipkowski, personal communication; Tim McCabe, personal communication). Because these two moths are usually found in or near wetlands or ponds, there may be an unreported small wetland or temporary pool on Site 1, perhaps hidden by dumped logs and slash, and this possibility needs to be addressed by the applicant.

Table 1 in Appendix F is a list of plants identified on Site 1. The list is short, contains a single grass and no sedge species, and is not a complete flora of the site. One plant on the list, white sagebrush (*Artemisia ludoviciana*), is a nonnative species that is probably rare in New York, and the New York Flora Atlas (Weldy et al. 2020) shows no specimen record for Albany County. Although this species has no conservation value, its occurrence in Guilderland may constitute an important locality record. Without photographic or specimen documentation, however, it is impossible to know if white sagebrush was correctly identified. There is also the potential that any nonnative plant can become weedy or invasive on a development site.

The southern house mosquito (*Culex quinquefasciatus*) listed in Appendix F, Table 2 is an extralimital species – its geographic range extends only as far north as Virginia although hybrids with the northern house mosquito (*Culex pipiens*) occur as far north as southern New Jersey (Savage and Miller 1995). Southern house mosquito in Guilderland is probably a misidentification. Southern house mosquito was also listed in Appendix G (Laing 2019b).

In Appendix G (Laing 2019b), hawthorn (*Crataegus* sp.), identified only to genus, is referred to as UPL (Upland). However, there is a number of hawthorn species with variable habitat affinities, and without knowing the species, the wetland indicator status can't be known. For example, *Crataegus crus-galli* is FAC (a facultative wetland species). (Wetland plant indicator rankings are explained in Lichvar et al. [2016]; FAC or facultative wetland species are found about equally in wetland and upland habitats, whereas 99% of UPL species occurrences are upland rather than wetland.)

Appendix G includes river birch (*Betula nigra*) in the plant list for Sites 2 and 3, but omits paper birch (*Betula papyrifera*). The Appendix does not mention that river birch in New York is classified as S3 Rare (Young 2019). Where is the river birch and was it planted? Or was paper birch misidentified as river birch?

Some Potential Impacts of Development

The sandy Colonie soils are very permeable and groundwater is easily polluted (Dineen 1976, 1979). A gas station on these soils is a risk for leaks and spills of gasoline and other motor vehicle fluids that could move through the permeable soils into the unconsolidated aquifer.

Dumps are widespread on all three sites (Hartgen Archaeological Associates 2018, 2019: Photo 8; E. Kiviat, personal observations). Text and photos in Hartgen Archaeological Associates (2018) indicate extensive surface and subsurface dumping associated with cut-and-fill soils. Part of the disturbed area adjoining Rapp Road on Site 1 was evidently used as a log dump and also contains a large soil pile; the area could contain other kinds of refuse. On Sites 2 and 3 I saw tires, other vehicle parts, electronics, household garbage, demolition debris, cinder blocks, bottles, cans, household garbage, a backpacking tent, lumber, a fragment of chain-link fence, and other refuse at scattered locations. Hazardous materials such as pesticides or asbestos could have been disposed of in the study area; this is common on undeveloped lands in urban areas. Dumping was extensive in the Pine Bush prior to creation of the Albany Pine Bush Preserve. I have been unable to find a site assessment for hazardous wastes in the DEIS, although this is typically done in such situations. Dumps and soil piles need to be mapped throughout the study area and analyzed for hazardous wastes before any further development planning.

The warm local climate of the Pine Bush (Barnes 2003), together with vegetation and soil disturbance associated with site preparation and construction, would make the sites highly invasible by weeds such as knotweed, tree-of-heaven, multiflora rose, and other species that are already present. The EIS should address non-chemical management of such weeds prior to and following construction, to avoid creating a nuisance for landscaping and a possible hazard to building footings. Knotweed, in particular, has been considered hazardous to structures, although this hazard may be exaggerated; nonetheless, knotweed can damage pavement, walls, and foundations by growing into preexisting cracks (Fennell et al. 2018).

Light pollution from artificial night lighting has had strong negative impacts on the Pine Bush moth fauna, according to moth researcher Tim McCabe (personal communication). Night lighting associated with the proposed buildings and infrastructure may exacerbate this effect. (See, e.g., van Langevelde et al. [2017] regarding light pollution effects on moths.)

It is proposed to replace the open south-north ditch on Site 2 with a culvert (Maser Consulting 2019). This seems unfortunate inasmuch as restorationists are working to “daylight” previously culverted streams in the U.S. and many other countries (e.g., Neale and Moffett 2016). As mentioned above, there may be a buried wetland soil that could be uncovered and restored to wetland ecology.

Additional Comments on the DEIS

The Vegetation, Wildlife, and Soil Conditions Reports (Laing 2019a, b) briefly mentioned the wildlife survey methods used but did not describe the amount of effort (e.g., person-days for a particular technique), the dates of particular surveys, the references used for identification, or the names and qualifications of the surveyors. These would have a major effect on survey findings, potentially resulting in misidentifications as well as species that are present but overlooked. Appendices F and G did not even list their authors. These are serious omissions that compromise the credibility of the Appendices and the DEIS that cited them. The reports also did not show any actual soils data (just a single photograph) to support the statement that soils had been extensively modified by farming and that the Poorly Drained (PD) and Somewhat Poorly Drained (SPD) soils no longer existed onsite because of filling. Given that PD soils are usually hydric (wetland) soils, and SPD soils are sometimes hydric, as well as the reports onsite of animals that are usually associated with wetlands, rigorous documentation of soils is needed.

Ca. 10 acres of vegetation were proposed to be removed from Site 1 and replaced with structures and landscaping. Topsoil was also proposed to be stockpiled and reapplied (DEIS). This represents a substantial loss of carbon storage in plant material (including wood) and soil organic matter – even if topsoil is stockpiled and reapplied carbon loss will occur. Conveying 8.4 acres of land (at another location) to be preserved by the Pine Bush Commission is not really a greenhouse gas offset as claimed (DEIS:127 etc.) – there will still be net emissions of GHGs from organic matter that will decompose faster than if left onsite in existing live and dead vegetation and soil. I do not find meaningful consideration of GHG emissions and climate change implications in the DEIS as is strongly encouraged under SEQRA (Ahrens et al. 2009). DEIS (33) stated “Additional grading and clearing activities will also be required and will include removal of the trees, shrubs, stumps and topsoil in the western portion of Site 2.” – not only does this represent additional GHG emissions, but also seems to include the many native trees among which are the pitch pines on the dune in the northwest of the site (Laing [2019b] did not mention the northwestern pitch pines, or the pitch pines in the eastern edge of Site 3, only those among the unoccupied houses). The DEIS apparently did not state whether the logs, stumps, and slash from forest clearing would be carted to a dump or used to build brushpiles for wildlife onsite. (See below regarding vegetation cutting that occurred between my two visits to the study area.)

DEIS (100) stated that plantings would emphasize native species but did not say if the “native” species would be species of the Albany Pine Bush region and propagated from locally sourced material. There is a planting list that includes mostly nonnative species, some of which could become invasive. Plantings should be limited to species native to the region (e.g., Albany County) from locally-sourced stock, and perhaps a few species such as forsythia that have been planted in the Hudson Valley for many years without displaying invasive tendencies.

Appendix F (Laing 2019a) contained a January 2017 letter reporting field data on rare species from the New York Natural Heritage Program. NYNHP recommends that requests for data be updated annually prior to actual construction.

Clearing of Site 2

On 26 March 2020, vegetation cutting commenced on a large area of Site 2, with virtually no alert to the community and before regulatory approval of the development applications. Many trees were cut. I examined photographs and video recordings made by Save the Pine Bush and examined the area on 6 April. Vegetation cutting represents an unnecessary loss of habitat values and other ecosystem services (see above). The heavy equipment used caused severe rutting to the sandy soils (Figure 2); vegetation

removal and soil disturbance will make the site more invasible by nonnative weeds. The pitch pines in the northwest corner of the site and the paper birch at the ditch were not cut; I don't know if the nodding trillium reported in DEIS Appendix G was destroyed. The soil disturbance and vegetation debris from cutting could mask the dumps on Site 2 (see above). Inasmuch as it has not yet been determined under SEQRA how Site 2 will be used, the clearing is premature and may foreclose certain potential land uses.



Figure 2. Soil damage from tracked logging equipment operated 26 March 2020 on Site 2. Photo by Erik Kiviat 6 April 2020.

A “Tree-clearing Report” (Laing 2020) implied justification for cutting vegetation because it was second growth forest and because some invasive plants were common. Almost all forest in New York State is second growth (as opposed to forest that has never been cleared or logged during the historic period).

Moreover, urban forests usually have a mixture of nonnative and native plants, some of which are invasive species. These characteristics do not contradict the importance of urban forests, including Site 2, for biodiversity and other ecosystem services. The vegetation cutting and soil disturbance on Site 2 will make the site more invasible, and repeated management treatments may be needed to control the very weeds that Laing (2020) implied were justification for clearing the forest.

I counted more than 80 annual growth rings in one white pine stump near the north end of Lawton Terrace that was cut 26 March. Save the Pine Bush (personal communication) counted 53, 56, 67, and 72 rings on four other freshly-cut stumps of various species on Site 2. There are many large trees on sites 2 and 3; I measured trees of several species in the 60 to 99 cm (about 24 to 39 inches) dbh range. These ring counts, and the sizes of the larger trees, clearly indicate the inaccuracy of the description of the trees onsite as “young” and “transitional” (Appendix G).

On 27 March 2020, the town issued a stop work order for the vegetation cutting. Irrespective of the eventual regulatory decisions regarding the proposed developments, it seems appropriate for the applicant to be required to fund an environmental benefit project as compensation for the unapproved vegetation clearing.

Conclusions

It is apparent from examining DEIS Appendices F and G that at least some of the biodiversity issues have been dismissed without adequate attention to either the literature or the field situation, including the Threatened northern long-eared bat and the Special Concern worm snake and hog-nosed snake. There are oddities in the species lists, some of which are likely due to misidentifications, and the lists are very incomplete. Personnel who conducted the surveys and identified the species listed are not named nor are their qualifications stated, and there is no indication whether voucher photographs or specimens were made of the unusual organisms identified as white sagebrush, moths, or southern house mosquito. Descriptions of survey methodology are scant, and the person-hours or person-days of survey effort for various groups of organisms are not stated. There are no soils data presented to support the assertions regarding cut-and-fill and pig rooting having occurred on Site 1, although it is clear that all three sites have been substantially disturbed historically. There is no mention of the numerous dumps containing a wide variety of materials, and the potential for the existence of hazardous materials beneath soil mounds and other cover.

Sites 1, 2 and 3 are part of an extensive network of preserved and non-preserved greenspaces in the Town of Guilderland and neighboring urban and urbanizing areas. These greenspaces have great importance for biodiversity, water resources, carbon storage, microclimate, and amenity. Clearing and development of these sites would cause further fragmentation and degradation of habitat for many common and uncommon wildlife and plant species. Operation of the proposed gas station (Site 2) would pose a high risk of groundwater contamination from spills and leaks in the highly permeable Colonie soils. The cutting of vegetation on a large portion of Site 2 on 26 March 2020 is causing a massive loss of ecosystem services, including woodland habitat, carbon storage, microclimate amelioration, and stormwater absorption. Many of the existing and potential impacts of proposed development in the study area will be cumulative with other land use change proposed or underway in Guilderland. Before the town permits any further development, the cumulative impacts of all new development on water resources, biodiversity, and other ecosystem services should be analyzed.

The data requests to the New York Natural Heritage Program should be updated as there may be newer records of rare wildlife or plants than those reported in the 2017 correspondence. NYNHP recommends repeating requests annually.

All three sites should be examined by an independent, experienced wetland delineator for any small wetlands or vernal pools that may have been overlooked. New surveys for all species of bats, worm snake, hog-nosed snake, wood thrush, prairie warbler, other wildlife Species of Greatest Conservation Need, and rare plants (S1, S2, and S3-ranked species) should be conducted by independent, experienced field biologists at the appropriate seasons and with appropriate techniques and adequate survey effort. The cutting of vegetation on Site 2 has changed the habitat which will soon support species that were not using the study area when the Laing surveys were performed. This increases the need for new surveys.

There are incorrect implications in the Laing reports that, because the sites are covered by second growth forests, and because nonnative weeds are common, it is environmentally acceptable to clear vegetation. Inasmuch as the sites are part of a network of preserved and private greenspaces in a town with a lot of development activity, biodiversity assessments and biological surveys of better quality are necessary to allow the regulatory agencies and citizenry to have scientifically accurate, properly documented, up-to-date, and site-specific biodiversity information for land planning, conservation, and management purposes. At present, this information does not exist.

It would be expensive, laborious, and maintenance-intensive to restore the study area to Pine Bush vegetation. However, the three sites in their current condition, especially with the numerous large trees remaining on Sites 1 and 3, and portions of Site 2, provide many important habitat functions for biodiversity and non-habitat ecosystem services in an urban environment. This is the yardstick against which development should be assessed, not restoration to a historic state. The use of Sites 1, 2, and 3 should also be considered within the cumulative impact framework of the entire Town of Guilderland.

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ZAMURS AND ASSOCIATES, LLC

Transportation Air Quality Energy Climate Change Sustainability

Environmental Impact Statement - Rapp Road Residential/Western Avenue Mixed Use Redevelopment Projects

Review and Comments

This review of the Draft Environmental Impact Statement (DEIS) for the Rapp Road Residential and Western Avenue Mixed Use Redevelopment Projects focusses on two issues: air quality and climate change/greenhouse gas emissions. For both issues, the DEIS is woefully inadequate.

Air Quality

The air quality discussion in the DEIS and Appendix P is inadequate. Its inadequacy is described in the following five issues: 1) it does not properly apply the New York State Department of Transportation (NYSDOT) air quality analysis procedures, as described in Section 4.4.16 (Chapter 1 Air Quality) of The Environmental Manual (TEM); 2) it does not recognize the importance of minimizing exposure of the public and wildlife to air pollutants that will be generated by this project; 3) it does not address parking lots, which are expected to be the highest source of emissions in the project area; 4) it does not address all air pollutants that will be emitted as a result of this project; and 5) the traffic study is insufficient for a project of this scale and magnitude.

1) Incorrect application of NYSDOT's air quality analysis procedures

The TEM does allow for the exclusion of signalized intersections operating at a Level of Service (LOS) of C or better from an air quality analysis. However, signalized intersections operating at a LOS of D or worse must undergo an examination to determine if there is a need for an air quality analysis using screening capture criteria. The screening capture criteria are:

- 1) a 10 % or more reduction in the source-receptor distance (that is, the straight- line distance between the edge of the travel lane closest to the receptor and that point of the receptor closest to the roadway);
- 2) a 10 % or more increase in traffic volume on affected roadways for ETC, ETC+10 or ETC+20);
- 3) a 10% or more increase in vehicle emissions for ETC, ETC+10 or ETC+20; Increases in vehicle emissions can be due to speed changes, changes in operating conditions (hot/cold starts), changes in vehicle mix, etc. ...
- 4) any increase in the number of queued lanes for ETC, ETC+10 or ETC+20; This criterion applies to intersections. Typical projects that may result in an increase in the number of queued lanes include intersection channelization projects and projects that install turn lanes at intersections.
- 5) a 20% reduction in speed, when build estimated average speed is at 30 mph or less.

(Section 9.A.i of the Air Quality Chapter of the TEM, ETC is Estimated Time of Completion, ETC+10 is 10 years after completion, ETC+20 is 20 years after completion)

Examination of the DEIS and its traffic analysis indicates that three existing signalized intersections will operate at LOS D upon completion of the project (Crossgates Mall Road /I-87 ramps, Washington Avenue Extension/ Springsteen Road/Crossgates Commons Road, and Route 20/Johnston Road). In fact, the Route 20/Johnston Road intersection is shown to degrade to a LOS D as a result of the project. In addition, one intersection to be built (Crossgates Mall Road/ Gabriel Terrace Connector) is shown to operate at a LOS of F as an unsignalized intersection and the DEIS contains discussion of needing to signalize this intersection (pages 84-85 of the DEIS).

As a signalized intersection, the Crossgates Mall Road/Gabriel Terrace Connector requires an air quality analysis by screening capture criteria 1 and 4 above.

The three existing signalized intersections that will operate at a LOS of D must be screened using the capture criteria. The Build/No-Build volumes must be examined to determine if there is a 10% increase in traffic volume at these intersections. The traffic study appears inadequate to determine if screening capture criteria 3 and 5 are triggered. The traffic study must be enhanced to allow for evaluation of these intersections against all the screening capture criteria as listed in the TEM.

It is evident that the air quality discussion in the DEIS is inadequate and incorrect and an air quality analysis for this project is triggered.

2) Why Air Quality Matters

Operating motor vehicles (cars, trucks, busses, motorcycles) emit a myriad number of different substances as a result of combustion of fuel. Some are harmless (e.g. water vapor), while most have serious negative implications for human health and wildlife populations. As a result of these emissions (and from other sources such as smokestacks), the Clean Air Act establishes a process for the USEPA to enact National Ambient Air Quality Standards (NAAQS). Primary NAAQS are promulgated to protect public from adverse health effects of these pollutants. These standards are designed to protect sensitive populations (children, the elderly, people with cardio-vascular and pulmonary conditions) from unhealthful levels of air pollution with an adequate margin of safety. Secondary NAAQS are promulgated to protect wildlife, crops, vegetation, buildings and visibility. For the pollutants of concern for this project, primary and secondary NAAQS are in place for carbon monoxide (CO), Particulate Matter 10 microns in diameter or less (PM₁₀), Particulate Matter 2.5 microns in diameter or less (PM_{2.5}), and Nitrogen dioxide (NO₂). Primary and secondary NAAQS are also in place for ozone, but it is more of a regional pollutant, in that its concentration in the lower atmosphere does not vary substantially over relatively large distances. The other pollutants listed previously are localized (or microscale) pollutants in that their concentrations can vary substantially over short distances. These are the pollutants of most concern for this project and should be analyzed for their impact on public health in general and on sensitive populations such as visitors and shoppers to the project area, pedestrians walking near the project area, nearby current and future residents and businesses, and their impact on the endangered and threatened species and species of special concern in the project area (Karner blue butterfly, frosted elfin, northern long-eared bat, worm snake, eastern spadefoot toad, eastern hog-nosed snake, eastern whip-poor-will).

For those pollutants that USEPA has not established primary or secondary NAAQS, other federal agencies and state health and environmental agencies have established guidelines for safe atmospheric concentration levels. For example, New York State Department of Environmental Conservation has done so (<https://www.dec.ny.gov/chemical/8568.html>). Ambient levels of these pollutants above the guideline concentration levels have been associated with increased risk for cancer, other serious illnesses, birth defects, and immediate death. USEPA has identified 21 hazardous air pollutants associated with gasoline and diesel combustion and listed six of them (benzene, 1,3-butadiene, formaldehyde, acrolein, acetaldehyde, and diesel particulate matter) as having the greatest influence on health. Collectively, these six hazardous air pollutants are known as mobile source air toxics (MSATs). These pollutants are also localized in that their concentration varies significantly over short distances. Due to the emissions from increased traffic and new parking lots from this project and emissions from construction equipment that will be used for this project, a comprehensive study of the impacts of these pollutants from this project is needed also.

The localized nature of these pollutants is of particular concern. Their concentrations will be highest near the source of emissions and decrease fairly rapidly as the distance from the source increases. Figure 1 shows this effect. The Figure shows CO concentrations for three atmospheric stability classes (stability classes A, D, and F)¹ with distance from the source. By 100 meters (~300 feet), the concentration is greatly reduced from what it is a few meters from the source. Appendix P of the DEIS suggest that because NYSDEC air quality monitors show concentrations below the primary and secondary NAAQS that air quality is not, and will not be, a problem at locations in and around the project area. As Appendix P lists, the NYSDEC monitors are in Loudonville, downtown Albany and the Bronx, miles away. The NYSDEC monitors do not reflect the air quality in the project area and their measurements do not reflect the air quality in the project area that will occur with the completion of the project. Figure 1 demonstrates how quickly concentrations can change, and while Figure 1 shows concentration variability for CO, similar trends occur for the other localized pollutants listed above (See Figure S-3, Near-Roadway Air Quality: Synthesizing the Findings from Real-World Data, Karner, Eisinger and Niemeier, Environmental Science and Technology, June, 2010).

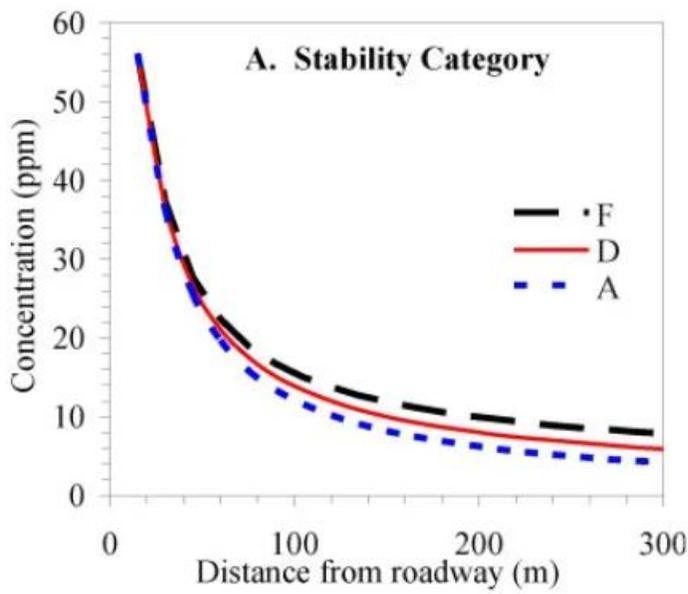


Figure 1. From "Prediction and analysis of near-road concentrations using a reduced-form emission/dispersion model"; Batterman, Zhang and Kononowech; Environmental Health; June 2010

It should be noted that Appendix P does not even list where the nearest NYSDEC monitors for air toxics are located. The nearest monitor for many of these air toxics, including benzene and

¹ Stability class categorizes the atmospheric turbulence. There are six stability classes named A, B, C, D, E and F with class A being the most unstable or most turbulent class, and class F the most stable or least turbulent class. The more turbulent, or less stable, the atmosphere is allows for air pollution to disperse more readily.

formaldehyde, is located in South Albany. This monitor was installed after health complaints by residents of the affected neighborhood of heavy diesel truck traffic and proximity of their residences to the nearby roadway.

Another important consideration is the impact of more traffic congestion in the project area due to the completion of this project. Figure 2 shows the change in emissions for CO as speeds decrease. Emissions quickly increase as vehicle speeds decrease. Although Figure 2 shows the change in emission with speeds for CO, similar trends occur for the other localized pollutants described above (see Figure 23 in “Near-road Dispersion Modeling Of Mobile Source Air Toxics (msats) In Florida”; K. Westerlund, University of Central Florida, 2013 for a similar figure for benzene emissions) . The traffic studies don’t describe what will happen to speeds at affected intersections in the project area. Calculations of LOS are not adequate since each LOS has within that LOS a range of delay and associated speeds. Thus, within one LOS category, speeds, and therefore emissions (as shown in Figure 2) could change substantially. This is especially true for the worse LOS cases (D, E or F). The degrading of the Route 20/Johnston Rd intersection to LOS D will result in an increase in emissions and could result in unacceptable levels of air pollution. An analysis is needed to determine if this will be the case, and, if so, how those levels of air pollution could be mitigated.

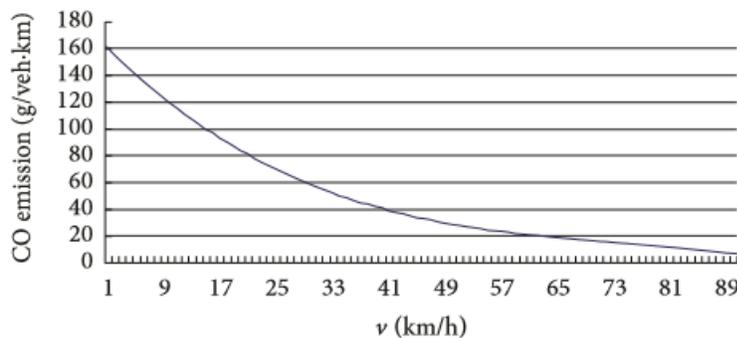


Figure 2. Curve of CO emission factor with speed. From “A study on the model of traffic flow and vehicle exhaust emission”, Xue, Jiang, and Liang; *Mathematical Problems in Engineering*; December, 2013

In addition, by the nature of this project, more heavy-duty vehicles will be operating in the project area and nearby area. These vehicles will be in the project area during construction bringing construction materials, equipment and supplies to the area, as well during the operation of the Costco facility, with the constant need to re-supply the facility. Typically, this re-supply will be with heavy-duty trucks.

These vehicles emit much more pollution than light-duty vehicles (passenger cars). For example, in 2018, the average emission rate for a passenger car was 3.941 grams of CO per mile while heavy duty vehicles emitted 21.252 grams of CO per mile (<https://www.bts.gov/content/estimated-national-average-vehicle-emissions-rates-vehicle-vehicle-type-using-gasoline-and>). Large increases in emission rates for heavy-duty vehicles (trucks), compared to passenger cars, occur also for the other pollutants discussed

above. This expected significant increase in truck traffic in the project area likely triggers a need for an air quality analysis per screening capture criteria 3 of NYSDOT's TEM air quality analysis procedures.

3) Parking lots

This project will create 1700 new parking spaces. This amount of parking spaces will likely have a significant impact on air quality in the project area. In terms of vehicle operation and emissions, parking lots have substantially different operating characteristics compared to highways, intersections and roadways. In parking lots, vehicles drive around slowly looking for parking spots (see Figure 2), they idle while waiting in line to enter or exit the parking lot, pedestrians walking nearby and shoppers entering and leaving the facility are very close by and exposed to air pollution (see Figure 1), and vehicles that have been parked and then start their engines (so-called "cold starts") emit more pollution than vehicles that have warmed up to their normal operating temperature (up to 80% higher emissions for some pollutants ("The problem of cold starts: A closer look at mobile source emissions levels"; Reiter and Kockelman; Transportation Research Part D: Transport and Environment; Volume 43, March 2016). In addition to the typical air quality effects of parking lots, the Costco parking lot will have the added negative effect of vehicles idling in lines at the gas pumps. This will only exacerbate the potential negative air quality impact of the parking lots associated with this project.

The NYSDOT air quality analysis procedures do not address the air quality aspects of parking lots. However, USEPA does recognize the nature of vehicle operation and emissions in parking lots. Their latest version of the emission model, MOTO Vehicle Emission Simulator (MOVES), MOVES2014b, does take into account vehicle emissions from parking lots and generates much higher emissions than from vehicles operating on roadways. This feature, so-called "off-network", captures start, evaporative and extended idle emissions, typical of parking lots. The DEIS for this project should include an air quality analysis of all the new parking lots, especially the Costco parking lot, using the "off-network" approach as if they are all in operation.

4) All Air Pollutants

Relying solely on the NYSDOT air quality analysis procedures will miss other important potential air quality impacts of this project. NYSDOT's procedures were first written in the 1980's and focused on CO, which was the main pollutant of concern back then. While far-reaching at that time, these procedures have become incomplete and outdated. In the interim, USEPA has established NAAQS for three additional pollutants, PM₁₀, PM_{2.5}, and NO₂. MSATs and greenhouse gasses have also become air quality issues of national concern. (See the discussion in the Climate Change section for a discussion of project analysis needs and considerations for greenhouse gasses.)

NYSDOT's current air quality analysis procedures do mention PM₁₀ in a general sense and liken this pollutant to CO. However, previously NYSDOT did have guidance related to PM but it has been rescinded in favor of less rigorous and less protective Federal guidance (see <https://www.dot.ny.gov/divisions/engineering/environmental-analysis/manuals-and-guidance/epm/chapter-1>). The previous guidance triggered an air quality analysis for PM₁₀ based on the environmental classification of a project. Projects classified as an EIS typically required an analysis. Under the previous guidance on PM₁₀, by nature of the EIS classification of this project and its scale and scope, an air quality analysis would likely have been triggered. NYSDOT's guidance is silent on PM_{2.5} and MSATs but it is likely the agency would defer to weaker Federal guidance should an air quality analysis for these pollutants be necessary for one of their projects. The Federal guidance (USEPA and Federal Highway Administration (FHWA)) triggers for PM₁₀, PM_{2.5} and MSATs analyses is based on car and truck volumes on freely flowing highways. They do not address parking lots and congested intersections where traffic is moving slowly, frequently idling, and the public is very close to emission sources (see Figures 1 and 2). The NAAQS for NO₂ was established relatively recently and no guidance on its analysis for projects of this scale and magnitude have been developed by USEPA, FHWA, or NYSDOT. Nevertheless, this pollutant has negative health effects on the population and negative impacts on wildlife and should be part of the air quality analysis for this project.

The air quality analysis for this project must consider concentrations of these pollutants (CO, PM₁₀, PM_{2.5}, NO₂ and MSATs) near parking lots and near congested existing and to be built intersections (at least LOS D or worse) to fully assess the potential air quality impacts of the project on visitors to and residents of the area. Should the analysis uncover any primary or secondary NAAQS violations or unhealthful levels of hazardous air toxics, mitigation measures must be implemented to eliminate or reduce these negative impacts.

5) Traffic Study

Page 32 of the DEIS states "Given the lack of Costco locations in the middle of this radius, it is likely that the Costco to be developed at Site 2 will capture the market of Costco brand-loyal customers that exist between the site and halfway between these other locations, roughly a radius of a one-hour drive from Site 2." Given this impact on regional travel, the current traffic study, which is focused on intersections in the immediate project area, is insufficient for a project of this scale and magnitude.

The traffic study must look at impacts to the regional transportation network. It should use a transportation demand model to examine the impacts on roadways of, at least, the one-hour drive upstream from the project area. The Capital District Transportation Committee, the local Metropolitan Planning Organization, has such a model that may be available for use, or the project sponsor could choose to use a different, technically-sound model. In either case, the

number of additional trips must be identified and the roadway network extending out at least one hour's drive must be modeled. Roadways expected to experience a 10% increase (using one of NYSDOT's screening capture criteria) in traffic, or trigger one of the other capture criteria must be identified. The emissions impact from all these affected upstream roadways must be accounted for and documented, and other potential sites (neighborhoods, schools, nursing homes, etc.) must be examined to make sure that those locations do not suffer the same air quality impacts that will likely occur in the immediate project area with the completion of the project.

An important element that is missing from the traffic study is the prediction of traffic levels and speeds in the project area during the winter holiday season. This time of year attracts many more visitors to shopping centers in general and will likely also do so in the project area as well if this project is completed. There will also be extra diesel truck trips to re-supply the Costco facility. This time of year is also of particular concern for air quality. The cold, stable atmosphere makes it more difficult to disperse some air pollutants. Thus, concentrations of these pollutants will likely be higher than other times of year with warmer temperatures and less congested traffic and will be more likely to cause a negative air quality impact.

Finally, an unsystematic spot check of the traffic study found some odd results. For example,

- At the intersection of Route 20 and Johnston Road, the traffic study concludes that there will only be 5 additional vehicles with the project completed, compared to the No-Build case, on one of the approach legs of the intersection during one of the peak hours. This seems unrealistically low. What will likely happen at this intersection is that additional cars and trucks will be queueing on Johnston Road (as well as the other approaches), with the queues (and emissions) moving closer to Westmere Elementary School.
- The traffic study indicates that at the intersection of Washington Ave Extension/Springsteen Road/Crossgates Common Road during one of the peak hours analyzed, the LOS will improve from LOS D to LOS C between 2022 and 2025. This is unrealistic unless there is some physical improvement at this intersection to account for this "improvement" is LOS.

These incongruities suggest that the traffic study be revisited.

Climate Change

The DEIS hardly mentions greenhouse gas emissions or climate change. It is completely inconceivable that a project of this scale and scope would not consider its impact on

greenhouse gas emissions and the issue of climate change. The vast majority of scientists and government leaders recognize the threat of climate change and the need to reduce greenhouse gas emissions.

New York State adopted highly ambitious greenhouse gas emission reduction targets of 40% of 1990 emissions by 2030 and 85% reduction of 1990 emissions by 2050 in the New York State Climate Leadership and Community Protection Act. Furthermore, Section 75-0119, Paragraph 7 of the Act states; “In considering and issuing permits, licenses, and other administrative approvals and decisions, including but not limited to the execution of grants, loans, and contracts, all state agencies, offices, authorities, and divisions shall consider whether such decisions are inconsistent with or will interfere with the attainment of the statewide greenhouse gas emissions limits established in article 75 of the environmental conservation law. Where such decisions are deemed to be inconsistent with or will interfere with the attainment of the statewide greenhouse gas emissions limits, each agency, office, authority, or division shall provide a detailed statement of justification as to why such limits/criteria may not be met, and identify alternatives or greenhouse gas mitigation measures to be required where such project is located. 3. In considering and issuing permits, licenses, and other administrative approvals and decisions, including but not limited to the execution of grants, loans, and contracts, pursuant to article 75 of the environmental conservation law, all state agencies, offices, authorities, and divisions shall not disproportionately burden disadvantaged communities as identified pursuant to subdivision 5 of section 75-0101 of the environmental conservation law. All state agencies, offices, authorities, and divisions shall also prioritize reductions of greenhouse gas emissions and co-pollutants in disadvantaged communities as identified pursuant to such subdivision 5 of section 75-0101 of the environmental conservation law.”

The DEIS indicates that at least one New York State permit will be required, a NYSDEC SPDES permit. Since the DEIS does not address greenhouse gas emissions and climate change, NYSDEC is unable to determine “whether such decisions are inconsistent with or will interfere with the attainment of the statewide greenhouse gas emissions limits” and is unable to grant the permit.

This section of the Act applies to New York State agencies. However, it is hoped that the Town of Guilderland, recognizing the threat of climate change, adopt similar requirements as a matter of good policy and good government. The Town should consider the impact of this project on climate change and greenhouse gas emissions before it issues any approvals or permits for this project. Since the DEIS does not address greenhouse gas emissions and climate change, the Town of Guilderland should not issue any permits or approvals until the project sponsors are able to document the impact of the project on greenhouse gas emissions and identify and commit to measures to reduce or eliminate that impact.

It is clear that the project, as currently designed and planned, will cause an increase in greenhouse gas emissions and make it harder for the State to reach its greenhouse gas emission targets. It will generate greenhouse gas emissions (both direct and indirect emissions) by:

- Attracting new vehicle trips (cars and trucks) to the project area
- Increasing congestion on nearby and upstream roadways
- Using diesel-powered construction equipment during project staging and construction
- Using building materials, fixtures, interior materials, etc. that were not sustainably sourced.

The Town should require the project sponsor, as a condition of approval or permit, to commit to all reasonable and practicable measures to reduce the project's greenhouse gas emissions and to assist the State in meeting its greenhouse gas emission reduction targets. Some reasonable and practicable measures could include:

- Require sufficient electric vehicle charging stations and ensure sufficient charging capacity for all in-use stations
- Enhance transit service to the project area
- Facilitate ride-sharing and taxi service drop-off and pick-up areas
- Require use of renewable fuels in construction and staging equipment
- Require electric powered construction and staging equipment
- Require Leadership in Energy and Environmental Design (LEED) certification for building design and construction, interior design and construction, and building operations and maintenance
- Require building fixtures, furnishings, merchandise etc. to be sustainably produced.

In summary, the DEIS is flawed and incomplete. As prepared, it cannot proceed to the Final EIS stage until it is re-done to address the issues described above. At that point, it should undergo another round of public review and comment before continuing to the FEIS stage.

The DEIS is flawed because:

1. The NYSDOT air quality analysis procedures were incorrectly applied, and

2. The requirements of the New York State Climate Leadership and Community Protection Act are not met.

The DEIS is incomplete because:

1. Likely air quality impacts from parking lots and from all other localized air pollutants are not addressed, and
2. The traffic study does not address regional impacts to the transportation network and to local roads and streets upstream from the project area.

There should be no cost to the Town of Guilderland to correct the DEIS and address the air quality and greenhouse gas issues. Those costs would be borne by the project sponsor.

Assistance can be provided to the Town of Guilderland to review and advise on the proper: inputs into the air quality modeling process; the outputs of the air quality modeling process; and the results from, and implications of, the findings of the study, if desired.

March 11, 2020

To Whom It May Concern;

I submit here my assessment of the nature of the soils in proposed Rapp Road Development Sites 1, 2, and 3 adjacent to Crossgates Mall (EIS, 2020). On the basis of my experience with teaching Forest Soils and Environmental Geology courses as Professor of Natural Sciences at Paul Smith's College, in addition to four decades of experience working with sediments worldwide in the context of my paleoecological research, I have found the soils at those sites to be typical of the Albany Pine Bush.

According to the USDA Soil Conservation Service survey for Albany County (USDA, 1992), the soils on Sites 1-3 mostly belong to the Colonie (sandy loam) and Elnora (loamy fine sand) Series along with closely related types such as Granby and Stafford that differ more in their degrees of hydrological drainage than the composition of their parent materials. All are fine-grained, sandy deposits that were well sorted through water and wind transport and deposited on the bed of former de-glacial Lake Albany after the last ice age. Microscopic examination of samples collected from the roadside edge of Site 1 shows the sand to be primarily composed of well-rounded grains of quartz, a silica-rich parent material that accounts for the acidic nature and relatively poor nutritional content of pine bush soils.

All of these soil types are widespread in the Albany Pine Bush and are capable of supporting a variety of vegetational assemblages including the classic community of pitch pine and scrub oak (PPSO), as well as the lupines necessary to support Karner Blue populations. For example, Figure 8 in the Albany soil survey document is a photo of pitch pines and brush growing on Colonie sand, one of the soil types found on Site 1. The survey also notes that the Elnora Series is typical of the pine bush and occurs in a diversity of woodland, brushland, residential, and industrial settings (pp. 45-46).

The secondary growth woodland and open meadow vegetation that is currently present on Site 1, including white pines and various hardwoods, is not there because of any soil conditions that differ markedly from adjacent pine bush soils, but rather because of the legacy of human activities on the site. The property was formerly cleared and occupied by a pig farm and associated buildings, as the environmental impact statement (EIS, 2020) and aerial photos taken during the 1950s attest. In the absence of frequent fires or active management, this type of vegetation often sprouts up elsewhere in formerly disturbed areas of the Albany Pine Bush.

A report by B. Laing Associates (2019) concluded on page 7 that "whatever qualities the original soils had, especially in comparison to the Albany Pine Bush, have been lost/disturbed since at least the 1960's." That statement, which specifically suggested that the soils in Site 1 should not be considered part of the surrounding Albany Pine Bush, was absent from the same section in a previous report (Laing 2018) but referenced indirectly in the EIS (2020). It is incorrect. The dry, fine-grained, highly siliceous soils are still classified as standard Colonie, Elnora, and other typical pine bush series by the USDA, and



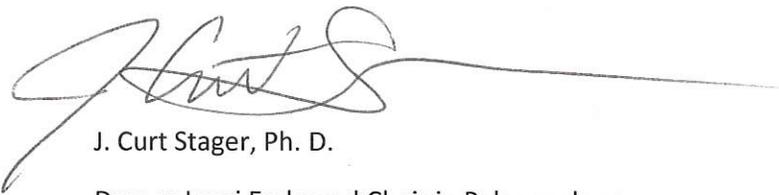
their basic composition is still predominantly paleo-Lake Albany sand mixed with small amounts of silt and organic matter.

The Laing reports also stated (page 7; Laing 2018, 2019) that erosion and rooting or gouging by pigs significantly disturbed the soils in Site 1. The draft environmental impact statement (EIS 2020; page 46) repeats the text of the Laing reports, and again seems to imply that such disturbances disqualify Site 1 from classification as potential pine bush habitat. In fact, such physical disturbances do not at all preclude development of PPSO communities on these kinds of soils.

The presence of formerly plowed and bulldozed sands beneath what is now classic Albany Pine Bush vegetation is well documented. For example, Gebauer *et al.* (1996) stated that "...the existence of plow layers in many Pitch Pine - Scrub Oak Forest stands and the tendency of successional hardwoods to occur on severely disturbed sites suggest that land-use activities ... played an important, if not primary, role in determining the distribution of modern plant communities." Their canonical correspondence analyses of the pine bush ecosystem showed that vegetation community composition there is not solely a product of soil type, but more often due to the legacy of human activities on any given site. In their study, 5 out of 7 sites with PPSO vegetation were formerly plowed. These findings are not unique to their study. Invasions of formerly plowed lands with pitch pine have long been documented in Massachusetts, Vermont, and the Connecticut River Valley (Thoreau, 1993; Howe, 1910; Patterson and Stevens, 1995; Gebauer *et al.*, 1996). Tellingly, pitch pines are also common alongside white pines and other Site 1 successional species on the heavily disturbed sandy soils surrounding Crossgates Mall and in adjacent residential neighborhoods, including Sites 2 and 3.

In other words, the current vegetation on Sites 1-3 is not primarily due to some quality of the soils that would be inappropriate for PPSO and other pine bush assemblages, but is instead due to how they have been managed, neglected, or otherwise affected by human activity. Restoration of heavily disturbed sand barren ecosystems is widespread and often successful despite former land use and soil disruptions of the sorts experienced on Sites 1-3 (Raleigh *et al.*, 2003). For example, previous research on restoration of pine bush habitat on the Rome Sand Plains, NY, has shown that even simple removal of white pines allows lupine-friendly habitat to re-establish on the same soils (Pfitsch and Williams, 2009).

In my professional opinion, and in light of the well-documented facts regarding local soils and vegetation, the sandy soils beneath Sites 1-3 are typical of the surrounding Albany Pine Bush and are potentially capable of supporting PPSO and other pine bush vegetation assemblages under suitable restoration and management regimes.



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