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:

I) 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 searchers 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 invasability 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.

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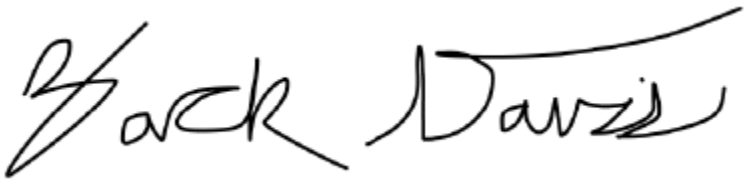

Zachary Davis

Zack.Davis.Wildlife@gmail.com

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