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HABITAT DISTURBANCE ASSESSMENT

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Robear Subdivision, 3954 Williston Road

Williston, VT

The project site is a 55.7-acre parcel bounded on the north by Williston Road, on the south by Shunpike Road and on the east and west by commercial and industrial development off Shunpike Road and Engineers Drive. A proposal has been developed to subdivide the parcel into nine lots. Except for the northeastern extension along Williston Road (proposed Lots 1-3), the property is currently undeveloped and is about ca. 80% forested and 20% scrub/shrub swamp. Lots 1 is dominated by a young stand of black locust, while Lots 2 and 3 are formerly cleared land, slowly reverting to forest as woody vegetation encroaches from the edges. White pine and mixed hardwoods dominate the southern margin of these lots, but the northern margin is dominated by hardwoods (red maples, ash, aspen, oaks and box-elder) along Williston Road and a band of hybrid poplar (*Populus grandidentata x alba*) invading the open field. Woodlands at the western end of Lot 3 and all of Lot 4 consist of conifers (mostly white pine and Scotch pine), and hardwood swamp (green ash, yellow birch, alders, etc.) covering most of Lot 5. Lots 6 – 9 are primarily mature pine and hemlock, with little understory and sparse ground cover; the exception is a band of hardwoods on the southern margins of Lots 7 – 9 next to Shunpike Road.

Personnel from Gilman & Briggs Environmental visited the site on 24 May and 13 June 2018 to investigate wetlands, wildlife habitat, natural communities and rare species. In addition to the site visits, the following resources were also accessed:

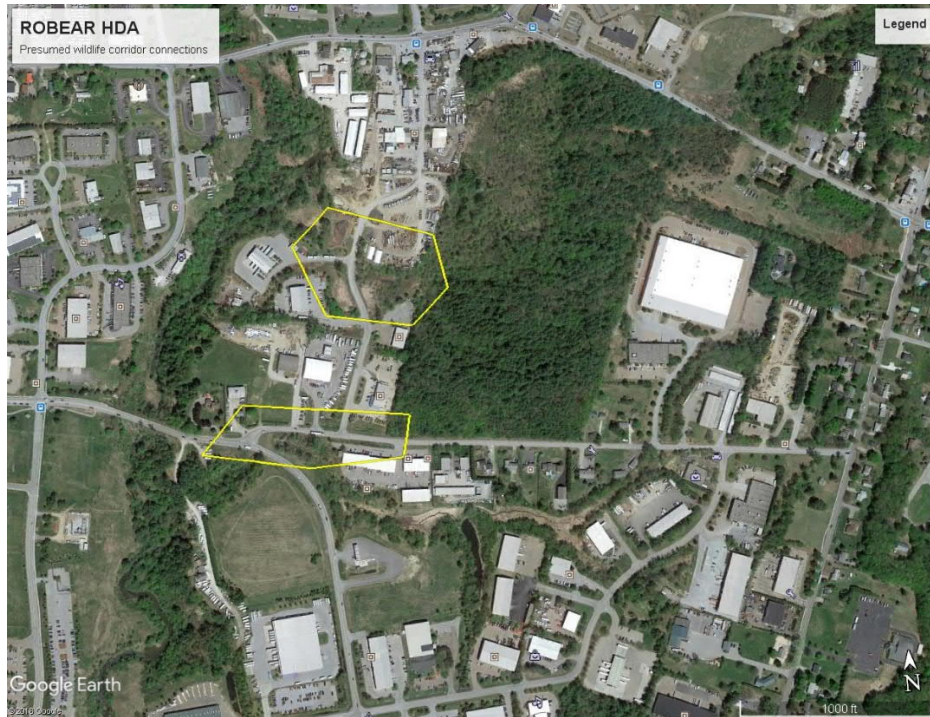
- Town of Williston reports regarding Town wildlife resources (McFaden et al. 2011)
- current and past aerial photographs (Google Earth; Bing)
- Vermont Natural Resources Atlas, Fish & Wildlife Layers
- Gilman & Briggs files regarding fieldwork on nearby parcels in the town of Williston (approximately 4 projects).

HABITAT INVENTORY. The McFaden et al. study showed the site to be mostly coniferous forest but with wetland associations in the northwest quadrant. In general, we concur that these communities are accurately mapped on the Land Use/Land Cover (LULC) map, although there is mixed transitional forest, a residential lot and open land in the eastern extension along Williston Road and hardwood forest next to Shunpike Road.

The main body of the site constitutes part of a 39-acre habitat block with a weighted priority score of 2 (out of 10) designated by the Vermont Fish and Wildlife Department. It is isolated from a larger, higher ranked (5) habitat blocks at the eastern end of the Burlington Airport.

HABITAT ASSESSMENT. As noted above, the site consists of four general habitat types: (1) the broken old field and scrubby eastern areas along Williston Road, (2) the marsh and wooded swamp that makes up most of Lot 5, (3) deciduous forest that occupies a strip along Shunpike Road on Lots 7, 8 & 9, and (4) mature conifer woods covering the rest of the property. This last habitat type is mostly natural pine and hemlock stands, but also an old plantation of Scotch pine at the western end of Lot 2. In our opinion, the relative importance of habitats (except for the wetland) at this site does not constitute what is defined as a significant wildlife habitat area (SWHA) under the Town of Williston's Unified Development Bylaw for the Town of Williston, VT, as adopted 18 August 2015 (Unified Bylaw). It does not provide core habitat that "contributes to the survival and/or reproduction of the wildlife of Williston and surrounding communities" (Unified Bylaw), except for common species typical of suburban neighborhoods. Although the main forested section of the parcel is "large" for the neighborhood, it is mostly uniform mature pine forest with little diversity and correspondingly little evidence of wildlife use. Such valuable environments as early successional habitats and wetlands are restricted to the margins of the site.

Although the Significant Wildlife Habitat map for Williston shows the southwest corner of this parcel overlapping with a wildlife travel corridor, in reality there is a choke point or gap of about 300 feet (along heavily traveled Shunpike Road and through commercial development) between forest cover on the parcel and a narrow, forested strip along an un-named tributary to Muddy Brook. This strip is, in turn, fragmented by Marshall Avenue and its heavily used intersection with Shunpike Road. Another possible habitat connection between the parcel and a designated wildlife travel corridor might be along a very narrow of scrubby land, ca. 500 feet long, along the route of the stream draining the project site wetland complex westerly through the exceptionally congested industrial development along Engineers Drive.



The photo above shows the approximate locations of connections indicated on the Significant Wildlife Habitat Official Map for Williston. In neither instance are there unobstructed areas that serve to link large tracts of unfragmented core habitat.

The most valuable habitats are the broken forest, scrub and old field on Lots 1, 2 & 3 and the swamp on Lot 5. The former supports a diverse community with plentiful edge habitat and a



wide range of wildlife cover and food sources: pines and oaks along the southern boundary, maple, cherry, butternut and aspen along Williston Road, and grassland and shrub thickets (including patches of raspberry) between. While this is far from “wilderness” it offers favorable habitat for the types of urban/suburban species that are likely to be present.



The wetlands on the parcel is a ca. 16-acre swamp covering most of proposed Lot 5. This wetland complex drains to the west through an area of industrial development via a tributary to Muddy Brook. Most of the wetland is mapped in the Vermont Significant Wetlands Inventory (SVWI) as a Class Two wetland, with additional areas added to the south and east included on the

Wetlands Advisory Layer. The wetland consists of marsh and forested swamp, drained by several slow-moving streams. This constitutes the most valuable wildlife habitat on the property and supports the widest variety of wildlife species. The fact that bordering development is industrial and commercial rather than residential means that there is less intrusion by humans and their domestic pets than would otherwise be the case.

Most of the forest on this property is mature pine and hemlock woods with little or no regeneration or understory development. Ground cover is spotty and is generally restricted to locations where there have been breaks in the overstory. The result is a sterile habitat with little or no diversity that represents an obstacle to movement of wetland wildlife into and out of the swamp. Indications of wildlife presence in the pine woods are likewise sparse.

Comparing this site to others we have worked on in Williston, we believe the communities on the property would primarily support common species of birds and mammals (See Table below). With limitations on ingress and egress, the area comprising Lots 1, 2 and 3 serves as temporary habitat for transient species, as well as common species with relatively small home ranges such as skunks, raccoon, gray squirrel, woodchuck, small rodents and insectivores that are common in urban habitats. Similarly, birds to be expected in this area would include species that utilize forest edges, small woodlots and suburban backyards such as catbirds, cardinals, robins, song sparrows, etc. The larger, undeveloped forest and wetland are important as home territory to the common species that can complete their life cycles, or parts of their life cycles, in the available habitat. This is especially true of the wetland and adjacent forested slopes, but as noted above, most of the forest is mature coniferous woodland with relatively sparse understory and therefore little habitat diversity.

A comprehensive list of possible resident and seasonal wildlife is found at Table 1.

There is no indication that there are any uncommon, rare, threatened or endangered species on the site, nor in our estimation, with one exception, is there habitat that would likely support such species. One species of endangered wildlife, the northern long-eared bat (NLEB) is mapped as occurring near the Burlington Airport. The subject parcel contains trees that might be used by NLEB, a species that is not restricted to certain species of trees, and there is no limiting factor involved for this species to occur in any woodlot. This places the Project within the Special Management Zones described in the Regulatory Review Guidance for Protecting Northern Long-eared Bats and Their Habitats (Vt. Fish & Wildlife, 2017), and the provisions for “potential summer habitat”, to include limiting impacts to less than 1% of the forested acreage within a mile or limiting the time of clearing to the period between September 1 and April 14 would apply.

The tables below list species that might utilize habitats on this parcel.

Reptiles & Amphibians

Spotted salamander	<i>Ambystoma maculatum</i>	Marshy pools, streambanks	Probable
Red-spotted newt	<i>Notophthalmus viridescens</i>	Pools of shallow slow-moving streams	Probable
Northern redback salamander	<i>Plethodon cinereus</i>		Possible
Northern two-lined salamander	<i>Eurycea bislineata</i>		Probable
American toad	<i>Bufo americanus</i>	General	Probable
Northern spring peeper	<i>Hyla crucifer</i>		Probable
Gray treefrog	<i>Hyla versicolor</i>	Wooded low areas	Probable
Wood frog	<i>Rana sylvatica</i>		Possible
Northern leopard frog	<i>Rana pipiens</i>		Possible
Garter snake	<i>Thamophis sirtalis</i>	General	Probable
Eastern milk-snake	<i>Lampropeltis triangulum</i>	Brushy woods & ledges	Possible

Mammals

Masked shrew	<i>Sorex cinereus</i>	Wet woods & swales	Possible
Northern short-tailed shrew	<i>Blarina brevicauda</i>	Hardwood forest; riparian meadows	Possible
Star-nosed mole	<i>Condylura cristata</i>	Low wet areas	Probable
Little brown myotis	<i>Myotis lucifugus</i>		Possible
Northern long-eared bat	<i>Myotis septentrionalis</i>	SEE TEXT ; known from site near Burlington Airport	Possible
Cottontail rabbit	<i>Sylvilagus floridanus</i>		Possible
Chipmunk	<i>Tamias striatus</i>	Deciduous edges,	Probable
Woodchuck	<i>Marmota monax</i>	Edges & meadows	Probable
Gray squirrel	<i>Sciurus carolinensis</i>	Hardwood forests	Probable
Red squirrel	<i>Tamiasciurus hudsonicus</i>	Conifer woods	Probable
Deer mouse	<i>Peromyscus maniculatus</i>	Forests & forest edges	Probable

Meadow vole	<i>Microtus pennsylvanicus</i>	Fields & scrub	Possible
Meadow jumping mouse	<i>Zapus hudsonicus</i>	Brushy riparian thickets & meadows	Possible
Porcupine	<i>Erethizon dorsatus</i>	Hemlock forest, ledges	Possible
Coyote	<i>Canis latrans</i>	Edges	Transient
Raccoon	<i>Procyon lotor</i>	Forests & riparian corridor	Probable
Striped skunk	<i>Mephitis mephitis</i>	General	Possible
Bobcat	<i>Lynx rufus</i>		Transient
White-tailed deer	<i>Odocoileus virginianus</i>	General	Probable

Birds

Chickadee	<i>Parus atricapillus</i>	Alder thickets	Observed
Great blue heron	<i>Ardea herodias</i>	Wetland	Possible
Green heron	<i>Butorides virescens</i>	Wooded wetland	Possible
Mallard	<i>Anas platyrhynchos</i>	Wetland	Possible
Kestrel	<i>Falco sparverius</i>	Forest edges	Possible
Turkey	<i>Meleagris galapavo</i>	Fields & forest edges	Confirmed
Woodcock	<i>Scolopax minor</i>	Alder thickets	Probable
Mourning dove	<i>Zenaida macroura</i>	Lots 2 & 3	Probable
Yellow-bellied sapsucker	<i>Sphyrapicus varius</i>	Forests	Possible
Downy woodpecker	<i>Picoides pubescens</i>	Forests; edges	Probable
Hairy woodpecker	<i>Picoides villosus</i>	Forests, edges	Probable
Northern flicker	<i>Colaptes auratus</i>	Forests, edge	Possible
Phoebe	<i>Sayornis phoebe</i>	Edges, out buildings	Probable
Alder flycatcher	<i>Empidonax alnorum</i>	Alder thickets	Possible
Great crested flycatcher	<i>Myiarchus crinitus</i>		Confirmed
Kingbird	<i>Tyrannus tyrannus</i>		Probable
Warbling vireo	<i>Vireo gilvus</i>	Forest edges, fencerows	Possible
Blue jay	<i>Cyanocitta cristata</i>	General	Confirmed
Common crow	<i>Corvus brachyrhynchos</i>	General	Confirmed
Tree swallow	<i>Tachycineta bicolor</i>	Fields, pastures, wetlands	Probable
Black-capped chickadee	<i>Parus atricapillus</i>	Mixed forests, thickets	Probable
Red-breasted nuthatch	<i>Sitta canadensis</i>	Conifer forests	Possible
White-breasted nuthatch	<i>Sitta carolinensis</i>	Mixed forests	Probable
Wood thrush	<i>Hylocichla mustelina</i>	Mixed forests	Possible
Robin	<i>Turdus migratorius</i>	General	Observed
Gray catbird	<i>Dumetella carolinensis</i>	Thickets and edges	Probable
Brown thrasher	<i>Toxostoma rufum</i>	Thickets and edges	Possible
Cedar waxwing	<i>Bombycilla cedrorum</i>	General	Possible
Chestnut-sided warbler	<i>Dendroica pensylvanica</i>	Shrubby areas	Probable
Blackburnian warbler	<i>Dendroica fusca</i>	Hemlock woods	Possible

Common yellowthroat	<i>Geothlypis trichas</i>	Brushy areas, thickets	Probable
Tree sparrow	<i>Spizella arborea</i>	Brushy fields, edges	Probable
Chipping sparrow	<i>Spizella passerina</i>	General	Confirmed
Field sparrow	<i>Spizella pusilla</i>	Meadow	Probable
Savannah sparrow	<i>Passerculus sandwichensis</i>		Possible
Song sparrow	<i>Melospiza melodia</i>	Brushy areas, edges	Observed
Northern cardinal	<i>Cardinalis cardinalis</i>	Thickets, edges	Probable
Rose-breasted grosbeak	<i>Pheucticus ludovicianus</i>	Mature hardwoods	Possible
Red-winged blackbird	<i>Agelaius phoeniceus</i>	Wetland	Possible
Common grackle	<i>Quiscalus quiscula</i>	General	Possible
Baltimore oriole	<i>Icterus galbula</i>	Deciduous forest edges, shadetrees	Probable
American goldfinch	<i>Carduelis tristis</i>	Field edge, scrub	Probable

SITE DESIGN. The proposed development consists of a 9-lot subdivision (8 commercial lots and one lot dedicated as conservation land. Access will be from Williston Road (Lots 1-4) and Shunpike Road (Lots 6-9). With the exception of Lot 1, the proposed development is located in the area designated as Industrial Zoning District West by the Town of Williston, so prospective uses will be commercial and industrial, not residential.

IMPACT ASSESSMENT. The subdivision, as proposed, is not located in the most resource rich habitat (the wetland and adjacent wooded slopes), and therefore it will have only peripheral impact on core habitat and the target species: bobcat, fisher, mink, four-toed salamander, wood frog, smooth green snake, and wood turtle. With the exception of the wood frog, we do not believe any of these species would use the areas of the parcel proposed for development, and if present, would represent transient individuals. As with any development, the proposed subdivision of this parcel will be favorable to some species listed above and have negative impacts on others. In balance, however, we do not conclude that any currently resident species will be eliminated from the site.

RECOMMENDATIONS. Maintain generous buffer zone around the Class II wetland, as envisioned by designation of Lot 5 as Conservation Land, and avoid clear cutting of woodland and thickets on development parcels to provide additional edge habitat.

LITERATURE

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