



## Memorandum

To: Gravel Pit Solar, LLC  
Gravel Pit Solar II, LLC  
Gravel Pit Solar III, LLC  
Gravel Pit Solar IV, LLC

Date: May 20, 2020  
Updated: July 20, 2020

Project #: 42569.00

From: Jeffrey Peterson, PWS  
Chelsea Glinka, ENV SP

Re: Wildlife Habitat and Vegetation Cover Type Evaluation  
Gravel Pit Solar Project  
East Windsor, Connecticut

### Introduction

This Wildlife Habitat and Vegetation Cover Type Evaluation Report (Report) has been developed for the Gravel Pit Solar Project (GPS or the Project) proposed by Gravel Pit Solar, LLC, Gravel Pit Solar II, LLC, Gravel Pit Solar III, LLC, and Gravel Pit Solar IV, LLC (collectively Gravel Pit Solar or the Applicant) in the Town of East Windsor, Connecticut. The Project includes the development of a 120-megawatt (MW) alternating current (AC) ground-mounted solar photovoltaic system. The Project will encompass 485 acres (the Project Area) and will be sited on eight parcels of land totaling approximately 737 acres (the Project Site) located near Apothecaries Hall Road, Plantation Road, Wapping Road, and Windsorville Road (see Project Location Map **A-1** provided in **Attachment A**).

This Report begins with an overview of the vegetation, habitat types and a general description of the wildlife present within the Project Site. These investigations were used to identify Key Habitat Types and wildlife species of Greatest Conservation Need (GCN) according to the Connecticut Wildlife Action Plan (CWAP) (CTDEEP, 2015). Natural vegetation is described according to the system provided in Vegetation Classification for Connecticut, which is one of the standard classification systems used to develop the Key Habitat Types in the CWAP (Metzler and Barrett, 2006).

This Report also addresses State-listed plant and animal species that have the potential to occur within the Project Site and are subject to protection under the Connecticut Endangered Species Act (CGS Section 26-303) (CT ESA). A total of 15 State-listed plant and animal species (**Table 1**) was provided by Connecticut Department of Energy and Environmental Protection (CTDEEP) Natural Diversity Data Base (NDDDB) via two Preliminary Assessments (PAs) Nos. 201914275 and 2020022957 dated December 31, 2019 and March 4, 2020, respectively. The species list in the second NDDDB PA No. 2020022957 was a smaller subset of the first and did not add any "new" species to the list provided in PA No. 201914275 (see the Proposed Conservation Measures to CTDEEP in **Exhibit J** for documentation of the PAs). **Figure A-2** shows the potential locations of state-listed species evaluated by the NDDDB as well as Critical Habitat types mapped within or adjacent to the Project Site.

The goal of the CT ESA is to conserve, protect, restore and enhance endangered or threatened species and their essential habitats. Under the CT ESA, species are listed according to their level of risk for extirpation in one of three designations:

*"Endangered Species" means any native species documented by biological research and inventory to be in danger of extirpation throughout all or a significant portion of its range within the state and to have no more than five occurrences in the state, and any species determined to be an "endangered species" pursuant to the federal Endangered Species Act (ESA).*

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"Threatened Species" means any native species documented by biological research and inventory to be likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range within the state and to have no more than nine occurrences in the state, and any species determined to be a "threatened species" pursuant to the ESA, except for such species determined to be endangered by the Commissioner of the CTDEEP in accordance with section 4 of the CT ESA.

"Species of Special Concern" means any native plant species or any native non-harvested wildlife species documented by scientific research and inventory to have a naturally restricted range or habitat in the state, to be at a low population level, to be in such high demand by man that its unregulated taking would be detrimental to the conservation of its population or has been extirpated from the state.

In addition to State-listed species, the NDDB PAs indicated that three significant natural communities may occur within the Project Site: Alluvial Swamp, Dry Acidic Oak Forest on stratified sand and gravel, and Floodplain Forest. Additionally, one critical habitat was identified as potentially occurring within the Project Site: poor fen. Descriptions of these unique plant communities and field assessment-based determinations of their occurrence are provided separately in the Proposed Conservation Measures Memorandum to the CTDEEP NDDB under **Exhibit J**.

**Table 1. Survey Results for Species Provided in NDDB Preliminary Assessments**

<b>Common Name</b>	<b>Scientific Name</b>	<b>Status</b>	<b>Survey Planned/Timing</b>	<b>Observations</b>
<b><i>Invertebrates</i></b>				
Big sand tiger beetle	<i>Cicindela formosa generosa</i>	SC	Yes/May and June	No
Bog copper	<i>Lycaena epixanthe</i>	SC	No suitable habitat	No
Eastern pearlshell	<i>Margaritifera margaritifera</i>	SC	No (assume presence)	No
Scribbled sallow moth	<i>Sympistis perscripta</i>	SC	Yes/June (host plant)	Yes <sup>1</sup>
<b><i>Vascular Plants</i></b>				
Climbing fern	<i>Lygodium palmatum</i>	SC	Yes/March-April	No
Dwarf huckleberry	<i>Gaylussacia bigeloviana</i>	T	No suitable habitat	No
Short-awned meadow foxtail	<i>Alopecurus aequalis</i>	T	Yes/June-July	No
Purple milkweed	<i>Asclepias purpurascens</i>	SC	Yes/June-July	No
<b><i>Vertebrates</i></b>				
American brook lamprey	<i>Lethenteron appendix</i>	E	No	No <sup>2</sup>
American kestrel	<i>Falco sparverius</i>	SC	Yes/May and June	Yes <sup>3</sup>
Red-headed woodpecker	<i>Melanerpes erythrocephalus</i>	E	Yes/May and June BBS	No
Savannah sparrow	<i>Passerculus sandwichensis</i>	SC	Yes/May-Mid June BBS	No
Sharp-shinned hawk	<i>Accipiter striatus</i>	E	Yes/ May and June	Yes <sup>4</sup>

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Common Name	Scientific Name	Status	Survey Planned/Timing	Observations
Short-eared owl	<i>Asio flammeus</i>	T	Yes/May and June	No
Wood turtle	<i>Glyptemys insculpta</i>	SC	Yes/May and June	No

Source: CTDEEP NDDDB Preliminary Assessment File Nos. 201914275 and 202002957

- 1: Small (< 30 genets) patches of the host plant, *Nuttallanthus canadensis*, observed on-site.
- 2: Spawning adult sea lamprey (*Petromyzon marinus*) were observed in southern reaches of Ketch Brook.
- 3: At least two pairs observed within Project Site, one pair south of Plantation Road, another pair near the gravel pit in parcel 025-49-017C (west of the railroad ROW) and the adjacent offsite capped landfills.
- 4: Calls believed to be heard from the southwestern corner of Project Site north of Plantation Road in March/April (migrant?).

VHB Scientists also used the United States Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) tool to assess the potential presence of species subject to federal protection under the Endangered Species Act of 1973 within the Project Site. According to the USFWS IPaC-generated Official Species List, the only federally listed species with the potential to occur within the Project Site is the federally threatened northern long-eared bat (*Myotis septentrionalis*). A copy of the Official Species List is provided in **Attachment D**.

Finally, the field survey methods used to identify rare plants and animals within the Project Site are described, followed by the consideration of anticipated Project-related direct and indirect effects on listed species and recommended mitigative measures to avoid and minimize these effects. This subset of the Report has been summarized separately and provided to CTDEEP NDDDB for review and approval and is included in **Exhibit J**.

VHB botanists and wildlife scientists initiated a series of field investigations, including wetland mapping, bird surveys, vernal pool surveys, wildlife observations, surveys targeting State-listed species, and description of the floristic composition and structure of the plant associations present within the Project Site. These field efforts began in the late fall of 2019 and were finalized in July 2020 to observe wildlife during their active periods, including breeding birds, reptiles, and certain plants during their flowering period to correctly identify taxa.

## Project Site Vegetation Cover Type Descriptions

The existing cover types and the areas that will be converted as a result of the Project are provided in **Table 2**. Brief descriptions of each cover type are included below and a figure depicting the habitat cover types is included in **Figure A-3** in **Attachment A**. **Tables B-1 through B-3** in **Attachment B** list observed wildlife species and species with a potential to occur within the Project Site according to cover type.

**Table 2 Project Site Cover Types: Existing and Proposed**

Cover Type	Existing Area (Acres)	Area to be Altered <sup>1</sup> (Acres)	Area to Remain (Acres)
Agricultural Fields	229.6	209.7	19.9
Sand and Gravel Quarries	78.0	61.2	16.8
Early successional	61.6	35.4	26.2
Deciduous Forest	264.4	76	188.4
Coniferous Forest	26.7	15.2	11.5
Forested Wetland	39.4	0.4 <sup>2</sup>	39.0
Vernal Pools	0.3	0	0.3
Manmade Features	40.9	27.6	13.4

- 1: Solar fields will all be managed as warm or cool season grassland.  
 2: This area represents Wetland 10, a depression within an agricultural field. See the Soil Scientist/Wetland Delineation Report in Exhibit H for further details.

**Agricultural Fields**

In the CWAP, farmland corresponds to the Manmade designation portion of Key Habitat 10, Sub-habitat Agricultural Lands. A large portion of the farmlands occupy broad level terraces that consist of sandy outwash and/or deltaic deposits capped by an aeolian mantle all resting on glacio-lacustral lakebed deposits. Farmland along Plantation Road in the southern part of the Project Site (see Site Photos in **Attachment C**) has traditionally been used to produce shade-grown wrapper tobacco which is cured in one of the twenty tobacco barns around the field perimeters. This labor-intensive crop is raised under partial shade inside “tents”. Field margins and grounds associated with the tobacco barns and other outbuildings provide some edge habitat. Cover crops including annual rye grass and oats are sown in the fall after tobacco harvest provide a limited habitat for wintering songbirds and small mammals.

Along Plantation Road, three fields were not in tobacco; one was planted in gourds, one in vegetables and one field adjoining Plantation Road was planted in seed corn that was not harvested. In the northern Project Site two fields along Apothecaries Hall Road were planted in seed corn and cut leaving only stubble in the fields.

The fields managed as a monoculture of tobacco provide little wildlife value. The two fields with corn stover and two with stubble provide forage for mourning dove (*Zenaida macroura*), European starling (*Sturnus vulgaris*), common grackle (*Quiscalus quiscula*), Canada goose (*Branta canadensis*) and small mammals such as southern red-backed vole (*Myodes gapperi*), white-footed mouse (*Peromyscus leucopus*) and larger mammals such as white-tailed deer (*Odocoileus virginianus*), racoon (*Procyon lotor*), and Virginia opossum (*Didelphis virginiana*).

Disturbance associated with tillage as well as weed and insect pest control precludes utilization of farm fields by grassland birds. Song sparrow (*Melospiza melodia*), chipping sparrow (*Spizella passerina*), tree swallow (*Tachycineta bicolor*) and barn swallow (*Hirundo rustica*) were observed foraging over fields or along field edges. Tree and barn swallows, house sparrows, and European starlings were observed following a tractor tilling the winter cover crop, presumably to forage on insects flushed or exposed by the tractor.

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At least two pairs of American kestrels (*Falco sparverius*), a state species of special concern, were observed along field margins and early successional habitats around gravel mines and off-site capped landfills in the southern Project Site. A northern harrier (*Circus cyaneus*), likely a migrant and a species of greatest conservation need (GCN) species according to the CWAP, was observed flying across the southern agricultural fields as it scouted field margins north of Plantation Road on May 5, 2020.

### **Sand and Gravel Quarries**

These earth material mines are grouped under the Manmade designation of Key Habitat 10, Sub-habitat Urban and Man-made Features in the CWAP. Approximately 78.0 acres of the Project Site are occupied by one of two sand and gravel quarries. Recently mined open areas within the quarries generally do not support vegetation or function as wildlife habitat. These quarries attract illicit recreational use by all-terrain-vehicle (ATV) users and dirt bikers. The southern pit is also used for firearm target practice.

Very little wildlife activity was noted in the floor and walls of the open pits. However, the early succession margins and partially restored areas attract species such as song sparrow, field sparrow (*Spizella pusilla*) (GCN species), indigo bunting (*Passerina cyanea*) and wild turkey (*Meleagris gallopavo*). Suitable substrate for big sand tiger beetle (*Cicindela formosa generosa*), a state species of special concern, may be present in inactive portions of the pits.

### **Early Successional Grassland and Shrubland**

These cover types correspond to the Upland Shrub designation portion of Key Habitat 2, Sub-habitat Reverting Field and Early Successional Shrubland. Approximately 61.6 acres of the Project Site are occupied by early successional habitat consisting of grassland with patches of shrubs, shrubland, or open woodland with low tree cover. These areas occur in partially reclaimed quarry areas, along the margins of agricultural fields, within the Eversource overhead electric transmission right-of-way (ROW), adjacent to the State of Connecticut Railroad line, off-site on adjacent closed landfills and gravel pits, and as patches in recently harvested forest areas.

The vegetation in these areas is variable and may be dominated by cool season grasses such as fescues (*Festuca* spp.), rye (*Lolium perenne*), and others. Alternatively, warm season grasses such as little bluestem (*Schizachyrium scoparium*), poverty grass (*Danthonia spicata*) colonize drier substrates often with goldenrod (*Solidago canadensis*, *S.* spp.), common mullein (*Verbascum thapsus*), and invasive species such as wormwood (*Artemisia vulgaris*).

Shrub and low tree species that are early colonizers include black cherry (*Prunus serotina*), alder (*Alnus* sp.), autumn olive (*Elaeagnus umbellata*), blackberry (*Rubus occidentalis*), multiflora rose (*Rosa multiflora*). Cleared woodland patches are often quickly colonized by black birch (*Betula lenta*).

Depending on habitat size and the proportion of grass versus shrub cover, these areas provides nesting and foraging grounds for field sparrow, song sparrow, prairie warbler (*Setophaga discolor*) (GCN species), eastern bluebird (*Sialia sialis*), American goldfinch (*Spinus tristis*), yellow warbler (*Setophaga petechia*), eastern towhee (*Poecile atricapillus*), and several other passerine species. A pair of American kestrel was observed foraging within these early successional habitat types. Other wildlife that may utilize this scrub-shrub cover include mammals such as mice, shrew, voles, striped skunk (*Mephitis mephitis nigra*), and red fox (*Vulpes*

*vulpes*). These areas also provide wintering habitat for songbirds including dark-eyed junco (*Junco hyemalis*) and white-throated sparrow (*Zonotrichia albicollis*).

The early successional shrub and grass cover established around a process water pond in the northern gravel pit provided foraging habitat for a spotted sandpiper (*Actitis macularius*) in breeding plumage observed on April 28 and May 21, 2020.

### Mixed Deciduous and Coniferous Upland Forests

The cover types within the upland forested portion of the Project Site correspond to the Upland Forest Key Habitat and includes the Mixed Hardwood Forest and Coniferous Forest Sub-habitats listed in the CWAP.

Forest and woodland are present throughout the Project Site and mostly occupy irregularly sloping ice-contact stratified drift deposits and terrace escarpments that are too rugged to farm (see Photos in **Attachment C**). The forests can be generally classified as upland broad-leaved deciduous, approximately 264.4 acres and upland coniferous evergreen which comprises approximately 26.7 acres.

Upland deciduous forests mostly fall into the *Northern red oak / Maple-leaf viburnum* community<sup>1</sup> along terrace escarpments and low ice-contact stratified drift terraces. Kame summits support a community similar to the *Northern red oak-Black oak / Blue ridge blueberry* community proposed by the same authors. Pignut hickory (*Carya glabra*), red maple (*Acer rubrum*), sugar maple (*A. saccharum*), and American beech (*Fagus grandifolia*) are common trees. Most of these forests have been selectively cut, but still contain numerous standing snags and large trees with defects that provide nesting cavities and mast.

The most common evergreen forest type is *Eastern hemlock* which occupies much of the steep terrace escarpment along Ketch Brook in the southern part of the site. Other components of this forest include white (*Pinus strobus*) and pitch pine (*Pinus rigida*), red oak (*Quercus rubra*), black oak (*Q. velutina*), sugar maple (*Acer saccharum*) and red maple (*A. rubrum*). This community is deeply shaded and supports little understory.

The forests provide habitat for several year-round resident and neo-tropical migrant songbirds as well as several other classes of fauna, including mammals such as white-tailed deer, reptiles and amphibians, and invertebrates. Species commonly encountered include white-breasted nuthatch (*Sitta carolinensis*), black-capped chickadee (*Poecile atricapillus*), downy (*Dryobates pubescens*), hairy (*Dryobates villosus*), red-bellied (*Melanerpes carolinus*) and pileated woodpecker (*Dryocopus pileatus*), northern flicker (*Colaptes auratus*), American red squirrel (*Tamiasciurus hudsonicus*) and eastern gray squirrel (*Sciurus carolinensis*), and wild turkey. Potential summer breeding species, including yellow-rumped warbler (*Setophaga coronata*) and magnolia warbler (*S. magnolia*), and suspected migrant species, including blackpoll warbler (*S. striata*) were also observed.

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<sup>1</sup> Community types in italics are taken from Vegetation Classification for Connecticut (Metzler and Barrett, 2006)

## Mixed Deciduous and Coniferous Wetland and Floodplain Forests

The forested wetland portion corresponds to the Forested Inland Wetland Habitat Key Habitat, Sub-habitats Floodplain Forest and Red Maple Forest Sub-habitats.

Wetland deciduous forests outside of the floodplain are typically dominated by red maple with pin oak (*Quercus palustris*) and American elm (*Ulmus americana*) often present. Winterberry and spicebush are common shrubs, with skunk cabbage, cinnamon fern and sensitive fern common herbaceous species. Sloping and discharge wetlands support associations similar to *Red Maple / Northern Spicebush* community and wetlands in kettle hole bottoms forests similar to the *Red Maple / Pin Oak* community. Both of these wetland forests may include eastern hemlock (*Tsuga canadensis*), white pine and pitch pine. Some of the kettle holes contain vernal pools which are special habitats described later in this section.

While Ketch Brook is a relatively small, high-gradient stream, parts of its floodplain are broad in southern reaches within the Project Site. Floodplain levees with moderately well drained alluvium support a forest association similar to the *American sycamore-Boxelder* community. Dominant trees include American sycamore (*Platanus occidentalis*), eastern cottonwood (*Populus deltoides*), American elm, red maple, and occasional silver maple (*Acer saccharinum*). The understory is largely colonized by the invasive winged euonymus (*Euonymus alatus*) with occasional spicebush and witch-hazel (*Hamamelis virginiana*). Well drained portions of the floodplain include Christmas fern (*Polystichum acrosticoides*) and round-leaved pyrola (*Pyrola americana*) in the herbaceous layer along with poison ivy (*Toxicodendron radicans*). A garter snake (*Thamnophis sirtalis*) was observed in this floodplain forest.

The very poorly drained floodplain includes red maple swamps and smaller areas with hemlock and white pine. These very poorly drained floodplain forests do not fit well into the floristic descriptions provided in by Metzler and Barrett (2006). The shrub layer is typically dominated by species such as winterberry (*Ilex verticillata*), arrowwood (*Viburnum dentatum*), and silky dogwood (*Cornus amomum*). Skunk cabbage (*Symplocarpus foetidus*), jewelweed (*Impatiens capensis*), and fowl mana (*Glyceria striata*) are common in the herbaceous stratum.

These wetland forests support several resident and neotropical migrant songbirds including common yellowthroat (*Geothlypis trichas*), yellow warbler, and warbling vireo (*Vireo gilvus*). ATV and dirt bike trails wind through the forested areas and create serious erosion on steep slopes and poorly drained floodplains (see photos in **Attachment C**). This degradation contributes to high turbidity within the brook.

### Ketch Brook

Ketch Brook corresponds to the Freshwater Aquatic Key Habitat with Cold Water Stream as the Sub-habitat type in the CWAP. Ketch Brook is a perennial watercourse and tributary to the Scantic River. It flows north to south through three of properties that make up the Project Site and forms the northwestern boundary of a fourth (see **Figure A-1**). The corridor associated with the brook is forested, generally with a closed canopy. The Brook has a stony bottom throughout most of the Project Site with a strong preponderance of shallow riffles and only a few quiet pools. Beaver have constructed several impoundments creating pools in the northern most reaches of the stream. Painted turtle (*Chrysemys picta*) were observed in a backwater impoundment near the Eversource electric transmission line crossing of Ketch Brook.

The southern reaches of the stream meander more and in places undercut floodplain banks and even terrace escarpments. Ketch Brook is thought to support a diverse collection of aquatic fauna, including brown trout (*Salmo trutta*), fallfish (*Semotilus corporalis*), beaver (*Castor canadensis*), and invertebrates such as mussels, stoneflies, caddisflies, and odonates (damselflies and dragonflies). VHB biologists observed sea lamprey spawning in lower reaches of Ketch Brook during wood turtle surveys. Red shouldered hawk and belted kingfisher were observed above the stream.

The high aquatic habitat values attributed to this stream are diminished by uncontrolled use of ATVs within its stream channel and floodplain. These illicit activities contribute to bank erosion and turbid water conditions in the brook.

### Vernal Pools

Six vernal pools were surveyed from mid-March to early May within the Project Site. All the pools were observed within the forested wetlands. These included classic vernal pools formed in kettle holes and cryptic pools within larger wetland systems. Obligate species identified within the pools included adult wood frogs (*Lithobates sylvaticus*), wood frog egg masses, wood frog larvae, spotted salamander (*Ambystoma maculatum*) egg masses, and fairy shrimp (*Eubranchipus sp.*). Vernal pools are critical habitat essential for obligate species to complete part of their life-cycle. They provide habitat to facultative species such as green frog (*Lithobates clamitans*), gray tree frog (*Dryophytes versicolor*), and spring peeper (*Pseudacris crucifer*) and invertebrates such as predacious diving beetles, water striders, and caddisfly. A separate vernal pool report is provided in **Exhibit K**.

### Manmade Features

Approximately 40.9 acres of the Project Site includes some pockets of land development related to agriculture, including tobacco barns that are likely still in use, greenhouses, and some laydown areas used to store agricultural equipment. This development falls under the Manmade designation of Key Habitat 10, Sub-habitat Urban and Man-made Features in the CWAP. These features may provide shelter and nesting areas for some wildlife including small rodents and bird species such as house sparrows and European starlings. Additionally, one pair of American Kestrel may use a tobacco barn south of Plantation Road as a nesting site based on repeated observations at the same barn.

### Cover Type Conversions

Site clearing and grading operations will be required in some portions of the Project Site to facilitate construction of the solar array. These activities will convert some of the existing cover types. **Table 2** above reports these changes which are depicted in **Figure A-4** in **Attachment A**. Approximately 209.7 acres of the agricultural fields will be converted to solar array panels and associated improvements with a permanent grassland cover type. Grass cover with legumes will be established under the array and along the perimeters of the arrays. The grassland cover will be mown approximately one to two times per year to prevent vegetation from overtopping the solar array panels. The active sand and gravel quarries on parcels 027-49-017C, 057-65-001, and 048-65-007 will be closed and brought to a grade of approximately eight feet above the water table. Approximately 43 acres of the newly graded sand and gravel pits and early successional shrubland will be converted to solar array panels. Additionally, approximately 76 acres of deciduous forest and 15.2 acres of coniferous forest will be cleared to accommodate the solar arrays and allow for an

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adequate perimeter around the array that will permit sufficient sun penetration and ensure that the panels are not shaded by the trees. These cleared areas will also be planted in grasses and legumes.

The project avoids work in or adjacent to the six vernal pools, Ketch Brook, and all of the forested wetlands. Best management practices will be employed during construction to prevent sedimentation and/or runoff from entering these sensitive resources.

## Wildlife and Plant Surveys

The following section provides an overview of the completed field investigation methods to detect State-listed species along with GCN species identified in the CWAP. It also addresses the survey findings and potential Project-related effects to observed state-listed and GCN species and mitigative measures to minimize negative effects. For state-listed species where suitable habitat is present, occupancy will be assumed and a protection plan is provided.

## Breeding Bird Surveys

Bird surveys were conducted by VHB wildlife scientists between 7:00 AM and 3:00 PM on April 28, 2020, between 6:45 AM and 10:00 AM on May 4, 2020, between 7:00 AM and 2:00 PM on May 21, 2020, between 7:00 AM and 3:00 PM on June 2, 2020 and between 6:00 AM and 1:30 PM on July 14. Incidental species observations were also recorded throughout the day and during other field investigations. VHB biologists conducted walking transect surveys intended to maximize opportunities to observe listed species (see **Figure A-5 in Attachment A**). Birds were identified based on visual observations and auditory identification of calls and songs. All birds within visual and auditory range were recorded. The surveys were conducted on clear days with low wind speeds that minimized interference with acoustic observations. Temperatures were seasonably appropriate during the survey windows with temperatures ranging between 40°F and 61°F<sup>2</sup> on April 28 and between 43°F and 59°F on May 5, between 46°F and 72°F on May 21, and between 48°F, 68°F on June 2, 2020, and between 68°F and 80°F on July 14.

State-listed bird species and their habitat preferences are provided in **Table 2**. The habitat types that were most closely monitored included the perimeters of the agricultural fields and the early successional scrub-shrub cover within the recovering sand and gravel quarries and the capped landfills adjacent to the Project Site boundary. Surveys were also conducted within the forested portions of the Project Site to target species that prefer this habitat cover. Call back surveys were conducted for most species using recordings from the Audubon Birds Application amplified with Bluetooth speakers. After each recording was played the biologists stopped to listen for return calls for approximately two to five-minute intervals.

VHB wildlife scientists separated to observe a pair of American kestrel south of Plantation Road and a second pair hunting over the southern gravel pit and off-site closed landfills simultaneously to confirm that two pairs. No other state-listed bird species were detected during the surveys.

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2 Weather station: Bradley International Airport Station, Windsor Locks, CT [https://www.wunderground.com/weather/us/ct/windsor-locks/KBDL?cm\\_ven=localwx\\_pwsdash](https://www.wunderground.com/weather/us/ct/windsor-locks/KBDL?cm_ven=localwx_pwsdash)

**Table 2 State-listed Bird Species Provided in the NDDB Preliminary Assessments**

Common Name	Scientific Name	State Status	Habitat Type(s) <sup>1</sup>
Sharp-shinned hawk	<i>Accipiter striatus</i>	Endangered	Forest and forest edges; require dense forest with closed canopy for breeding
Short-eared owl	<i>Asio flammeus</i>	Threatened	Winter habitat large open areas within woodlots, stubble fields, marshes, weedy fields, dumps, gravel pits, rock quarries, and shrub thickets. If food is plentiful, winter habitat may be used for breeding.
American kestrel	<i>Falco sparverius</i>	Special concern	Open areas with short ground vegetation and sparse trees, meadows, grasslands, parks, and farm fields. Require nesting cavity.
Savannah sparrow	<i>Passerculus sandwichensis</i>	Special concern	Grassy fields with low densities of shrubs and trees.
Red-headed woodpecker	<i>Melanerpes erythrocephalus</i>	Endangered	Deciduous woodlands with snags, recent clearings, beaver swamps, farmland, grasslands with scattered trees, forest edges, and roadsides.

<sup>1</sup> Habitat types based on descriptions from Bevier, ed. 1994, The Atlas of Breeding Birds of Connecticut and from the Cornell Lab of Ornithology (allaboutbirds.org).

An inventory of potential breeding birds provided in **Table B-1 in Attachment B** was developed based on information from field observations, the Atlas of Breeding Birds of Connecticut (Bevier ed. 1994), New England Wildlife (DeGraaf and Yamasaki 2001), and NDDB data. All observed species from the survey efforts have been indicated in **Table B-1**. A total of 54 bird species have been identified in the Project Site and seven of these species appear in the CWAP as species of GCN; GCN species that were observed are annotated in **Table B-1**. According to the USFWS IPaC tool, there are no federal-listed bird species within the Project Site (see **Attachment D** for IPaC Official Species Lists).

**State-Listed Species and Habitat within the Project Site**

The State-listed bird species include three species that prefer open, grassy and scrub-shrub habitats and edge habitat, including savannah sparrow, short-eared owl, and American kestrel and two species that prefer forest interiors and forest edges, the sharp-shinned hawk and red-headed woodpecker. Savannah sparrows nest on the ground and the reclaimed portions of gravel pits undergoing revegetation provide marginally suitable habitat for breeding, as do the capped landfills proximate to the Project Site boundary. The forested interiors and edges where snags are present provide potentially suitable nesting habitat for red-headed woodpecker and sharp-shinned hawk. At least two suspected breeding pairs of American kestrels were observed within the Project Site. There was no evidence of usage of the nest box along Plantation Road.

While dated and currently under revision, The Atlas of Breeding Birds of Connecticut (Atlas of BBC; Bevier ed., 1994) is the most comprehensive review to date of Connecticut’s breeding birds. The Atlas indicates that several of the State-listed species from the NDDB records are scarce within Hartford County during the five-year span (1982-1986) that the breeding bird surveys for the atlas were completed. Savannah sparrow had two confirmed breeding pairs and four probable pairs, one confirmed pair of red-headed woodpecker

which according to the Atlas of BBC is one of the rarest breeding birds in the state, three breeding pairs of sharp-shinned hawk, and there are no entries for short-eared owl in the Atlas of BBC; the small wintering population is considered threatened. The American kestrel has the most abundant breeding record in the Atlas of BBC with 12 confirmed breeding pairs.

The preferred habitat of short-eared owl is open country such as grasslands, marshes, and meadows. According to CTDEEP fact sheet, there are presently no confirmed breeding populations of short-eared owl in the state, though there is a small wintering population (CTDEEP, 1999). A review of the citizen-scientist reported eBird records hosted by the Cornell Lab of Ornithology indicates that there have been only 12 reported sightings of short-eared owl in Hartford County in the between 1990 and 2020 and all of these sighting were made between the months of October through April, indicating that wintering populations are relatively rare. Though the Project Site supports some habitat types that may be suited to the wintering habitat requirements of the short-eared owl, VHB wildlife scientists did not observethis species while conducting other field work in the winter and early spring months.

#### **Potential Impacts of Solar Arrays on Birds**

A literature review by Harrison et al. (2016) evaluated peer-reviewed publications concerning the impact of solar photovoltaic (PV) developments on birds found relatively little scientific evidence of a direct impact. The review concluded that it is likely that different avian species may be affected differently by solar developments, dependent on the habitat around a solar PV development, the spatial requirements of a given species and the foraging behavior of that species (Harrison et al., 2016). One potential effect considered the polarized light effect from the solar panels that may cause birds to mistake the solar panels for water and thus result in collisions (Bryant et al., 1984). However, the limited number of mortality studies that have been conducted suggests that the incidence of bird mortality associated with bird collisions with PV developments is very low (DeVault et al., 2014; Walston et al., 2016). According to the literature review, there is likely to be a higher risk of bird collision with infrastructure associated with solar PV developments such as overhead powerlines (Harrison et al., 2016).

Two other forms of direct impact are possible. The Project will result in the loss or conversion of some of the cover types utilized as habitat for some species and temporary disturbance during construction will displace some species. A summary of the areas of the existing cover types and proposed post-Project cover types is provided in **Table 1**.

The largest alteration will involve the conversion of agricultural fields to permanent grass and legume cover in the solar array fields. Although some species, such as European starling, mourning dove (*Zenaida macroura*) and American robin (*Turdus migratorius*) may prefer cultivated fields over grass fields, these species are common and are not limited by the availability of cultivated fields because they use other habitats readily. The management of the fields in permanent grass cover is unlikely to attract additional grassland bird species as the solar panels breakup the continuity of the cover in a similar way that trees and shrubs would. Species that utilize edge habitat are likely to continue to be attracted to the edges of the solar array development. Several of the generalist species observed within the agricultural fields are also likely to continue to forage in the grassland associated with the solar array.

Approximately 91.2 acres of forested upland will be cleared for the Project which will result in some habitat loss for forest-dwelling species. The latest Core Forest GIS coverage available (June 2019) shows that there is no Core Forest resource on or adjacent to the Project Site.

There will be no reduction in habitat area of the forested wetlands, vernal pools, and aquatic and riparian habitats associated with Ketch Brook, or the scrub-shrub cover within the powerline ROW.

### Mitigative Actions

To avoid the potential disturbance of birds during the breeding season, the Applicant proposes the following time-of-year schedule:

- If construction activities are to occur during the nesting period between early May through mid-August, vegetation removal work (forest tree removal and agricultural clearing) should be cleared before May 1<sup>st</sup> and after August 31<sup>st</sup>.
- Install up to five nest boxes for American kestrel outside the fenced perimeter of the solar arrays along the Project Site. Final locations for nest boxes will follow any guidance provided by the CT DEEP. The Applicant will monitor the boxes each year or seek to assist the successful Kestrel Nest Box Program of Northwest and North Central Connecticut operated by the Connecticut Audubon Society (CT Audubon Society, 2019).

## Herpetofauna

### Reptile Surveys

Observations of reptiles and amphibians were recorded during vernal pool surveys (see separate report in **Exhibit K**) and when incidentally encountered during other investigations. Correspondence from the NDDB reported the potential for wood turtle (*Glyptemys insculpta*), a state species of special concern, to occur within the Project Site. A dedicated wood turtle survey was performed from the late morning of May 5 and June 2, 2020 through the afternoon hours. VHB biologists used the survey methodology described within Flanagan et al. 2013: wood turtles are most likely to be observed within 10 meters (m) of waterways from spring through July 1 on warm days with temperatures within the 50-75°F range. On the May 5<sup>th</sup> three biologists walked the length of Ketch Brook upstream from the railroad crossing to the eastern limits of the Project Site: one biologist waded through the stream and paid particular attention to calm pools where turtles may have been resting and sandy and muddy banks; the two other biologists each walked within 10 m of opposite sides of the stream bank where topography allowed.<sup>3</sup> The southwestern reach of Ketch Brook was surveyed on June 2<sup>nd</sup> following similar protocols described above, however the western bank of Ketch Brook is off-site on private property, so it was not surveyed.

Painted turtles (*Chrysemys picta*) were encountered near the Eversource electric transmission lines in a beaver impoundment that flooded a backwater channel of Ketch Brook. During spring flows, the segment of

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<sup>3</sup> In some cases, the stream embankment bordered on steep escarpments that could not be surveyed, in such areas the survey methodology was modified.

Ketch Brook north of the railroad bridge largely consists of riffles with only a few sluggish pools greater than 18 inches in depth. However, the northern most reach of the stream within the Project Site includes a series of beaver dams that have trapped the fine river bedload. No wood turtles were observed in this series of beaver impoundments.

The southern reach of Ketch Brook which is within the Project Site was surveyed on June 2nd. There are a greater number of pools in this segment, but the stream remains high gradient with substantial velocity even through the pools and scour holes. No turtles were found in this reach of Ketch Brook, however, VHB biologists witnessed two groups of four-five sea lampreys preparing spawning sites. No further surveys are proposed as the Applicant will proceed under the assumption that wood turtle is present. The greatest risk to wood turtle at this time appears to be illicit ATV operation in and along Ketch Brook.

### **State-Listed Herpetofauna and Potential Project Impacts**

#### ***Wood turtle***

Wood turtles require riparian habitats bordered by floodplain, woodland, or meadow. They hibernate in the banks of the river in submerged tree roots and in summer move to adjacent old fields, woodlands and power line corridors (Klemens, 1993). Unlike box turtles, wood turtles have home ranges of several acres, throughout which they freely roam. Because of their extensive overland movements, roads traversing wood turtle habitat contribute significantly to mortality due to vehicle conflicts (Klemens, 1993). Suitable habitat for this species may be present within the riparian corridor of Ketch Brook. The powerline ROW crossing of Ketch Brook and the railroad ROW are potential nesting sites. There is no work proposed within Ketch Brook and buffer zones are proposed from the edge of the riparian wetlands.

Wood turtles have been negatively impacted by the loss of suitable habitat and can be displaced by soil disturbance during their hibernation period. Construction activities near riverbanks and wetlands containing hibernating wood turtle could potentially harm this species. Construction activities during the turtle's active period can result in mortality from interactions with clearing equipment, earth-moving equipment, and other vehicles.

#### **Mitigative Measures**

The Applicant will employ the following mitigative actions to prevent the incidental take or harm to the state-listed wood turtle. From the planning perspective the Project will:

- Avoid any work within Ketch Brook and its riparian floodplain. No work is proposed along the brook or in its floodplain.
- In addition, the Project maintains adequate undisturbed buffers to terrace escarpments bordering the Ketch Brook floodplain and avoids work within 90 m of the stream where practicable.
- The stream crossing for the electrical interconnection is proposed to be completed using directional drilling that will pass under Ketch Brook and its associated floodplain with jacking and receiving pits in uplands.

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Wethersfield, CT 06109-2377  
P 860.807.4300

- The Project will create and maintain cleared areas outside of the fenced solar arrays in early successional habitat potentially suitable for turtle foraging and nesting. These areas will not be mowed between April 30 and November 1.
- Maintain gaps under perimeter fencing to allow turtles to pass through the grassed solar arrays to avoid habitat fragmentation.
- The development will seek to curtail illicit ATV operation within the properties it will control with fencing and other barriers (e.g., boulders, bollards, Mafia block, etc.).
- Once construction is complete, the traffic levels within the site will be greatly reduced in comparison to existing gravel mining and farming operations.
- Stormwater management will focus on maintaining or reducing peak discharge rates and maintaining or increasing groundwater recharge through infiltration. No practices that could increase the temperature of the discharge to Ketch Brook (e.g., discharge from surface detention) will be proposed. Existing drainage patterns will be maintained to the greatest extent practicable.

Measures proposed to be employed to mitigate potential construction impacts include:

- The use of entrenched silt fence (EF) at least 20-inches tall to isolate any work area within 0.2 miles of Ketch Brook from potential wood turtle between April 1 and November 1 each construction season. Special pervious exclusionary fencing will be used periodically along silt fence lines to release entrapped stormwater and reduce the likelihood of EF failure
- This EF should be installed between November 1 and April 1 when turtles can be presumed to be within the brook. Tree clearing operations within potential habitat should also be undertaken during this period unless previously isolated by this exclusionary fencing.
- The EF shall be regularly maintained (at least bi-weekly and after rainfall events greater than 0.5 inches in 24/hours) to secure any gaps or openings at ground level that may let animal pass through. Debris collected at pervious sections of fencing shall be removed to ensure function during the next storm.
- Should the previous condition not be met, it is essential that all existing open sands, unvegetated soil areas and other early successional habitats in work areas within 0.2 miles of Ketch Brook be isolated with exclusionary fencing prior to May 15 to prevent female turtles from nesting in the work area. This will include the portion of the gravel access road to the Gravel Pit from Wapping Road.
- Because exclusionary measure can potentially fail, the Contractor must search the work areas within 0.2 miles of Ketch Brook each morning prior to beginning work.
- All construction personnel working within the turtle habitat must be apprised of the species description and the possible presence of a listed species.

100 Great Meadow Road  
Suite 200  
Wethersfield, CT 06109-2377  
P 860.807.4300

- Any turtles encountered within the work area shall be carefully moved to an adjacent area outside of the excluded area and fencing should be inspected to identify and eliminate the suspected access point. These animals are protected by law and no turtles should be relocated from the site.
- In areas where silt fence is used for exclusion, it shall be removed as soon as the area is stable to allow for reptile and amphibian passage to resume.
- No heavy machinery or vehicles may be parked in any turtle habitat not previously secured by EF.
- Special precautions must be taken to avoid degradation of wetland habitats including any wet meadows and seasonal pools.
- Encounters with any State-listed species encounters will be reported to the CTDEEP NDDB.

## Mammals

VHB wildlife scientists documented observations of mammals during the several field investigations performed within the Project Site between early March 2020 and early May 2020. Direct and indirect observations, along with species that may utilize the Project Site, are documented in **Table B-3** in **Attachment B**. Notable field observations include North American beaver (*Castor canadensis*) activity along the Ketch Brook riparian corridor in the form of several beaver dams and tree girdling, raccoon foraging along Ketch Brook (*Procyon lotor*), and white-tailed deer (*Odocoileus virginianus*).

Mammals within the Project Site rely on the forested areas to provide cover and breeding areas. Agricultural fields may be foraged at certain times of the year as when corn is ripening. The approximately 91.2 acres of forested area that will be cleared will not eliminate core forest blocks. Although the proposed solar array will be fenced for safety and security reasons, adequate corridors will be maintained to facilitate wildlife passage. Wildlife corridors are depicted in **Figure A-6** in **Attachment A**.

### Federal-Listed Mammals

The CTDEEP NDDB did not report the potential presence of any state-listed mammals. According to the USFWS IPaC-generated Official Species List, the only federally listed species with the potential to occur within the Project Site is the federally threatened northern long-eared bat (*Myotis septentrionalis*). The forested areas of the Project Site offer suitable summer roosting habitat this species.

### *Northern long-eared bat*

The northern long-eared bat was listed under the federal ESA as a federally threatened species on April 2, 2015 and USFWS issued the Final 4(d) rule to protect the species on January 14, 2016.<sup>4</sup> During the summer,

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<sup>4</sup> On January 28, 2020 there was a federal court ruling that determined that the USFWS's decision to list the NLEB as threatened rather than endangered was not supported by the best available scientific data and that the USFWS made procedural errors in finalizing the listing. The federal judge ruled that USFWS must reconsider the listing, but until the new rule is published the threatened designation and 4(d) rule remain in effect.

northern long-eared bats roost singly or in colonies underneath bark, in cavities or in crevices of both live trees and snags. Males and non-reproductive females may also roost in cooler places, like caves and mines. Northern long-eared bats seem to be flexible in selecting roosts, choosing roost trees based on suitability to retain bark or provide cavities or crevices. They sometimes roost in anthropogenic structures like barns and sheds (USFWS, 2015). Known northern long-eared bat hibernacula within Connecticut have been mapped by CTDEEP. There are no known hibernacula within East Windsor and at the time of the map's publication (February 2016) there were no known maternity roosting trees within the entire State.

### **Potential Effects of Solar Farms on Bats**

Based on a literature review that has evaluated peer-reviewed publications concerning the potential impact of solar PV developments on bats, there are currently no experimental observations or theoretical scientific literature on the effect that solar panels may have on bats (Harrison et al., 2016). Generalized risks that require further scientific investigation include proximate risk such as fatal collisions with solar panels and the associated infrastructure, indirect risks such as loss of habitat from the construction of solar array developments, and potential effects on feeding behavior as some bat prey (e.g. insects) may be attracted to the reflective properties of solar panels. An experimental study that evaluated the navigational capabilities of bats over smooth plates (the plates used in the experiment were wood, plastic, and metal) reported that bats were apparently able to use echolocation to differentiate between water bodies and smooth plates and no collision mortalities were recorded (Greif and Siemers, 2010). Although smooth plates are not the same as solar panels, the study suggests that at least some species of bats may be adept at avoiding collision with flat surfaces (Greif and Siemers, 2010).

### **Mitigative Measures**

Bat survey were not conducted to determine presence or potential absence of northern long-eared bat as part of the environmental review and so the Applicant will operate under the assumption that the northern long-eared bat may be present within the Project Site. To minimize the possibility of "incidental take" of roosting bat species, the Applicant will follow the guidance provided in the USFWS Final 4(d) Rule (USFWS, 2017). The Applicant will not perform any tree removal activities during the bat pupping season between June 1 and July 31 (USFWS, 2017), which coincides with the nesting period of birds between May 15 and August 31. If any bats are encountered during tree clearing activities outside of that window, then tree clearing will be immediately stopped and the Applicant will contact the Bat Program within the CTDEEP Wildlife Division to determine the proper next steps.

### **Invertebrates**

According to the CTDEEP NDDB correspondence there are three state-listed species of insect potentially occurring in the Project Site. Descriptions of each species are provided below.

#### ***Bog Copper***

The Bog Copper (*Lycaena epixanthe*), a State-Species of Special Concern, is a small butterfly that ranges in color from orange-red to brown (U.S. Forest Service, accessed 5-11-20). This species is restricted to acid fens and bogs where it nectars on its almost exclusive host cranberry (*Vaccinium macrocarpon* and *V. oxycoccos*). The bog substrate, usually *Sphagnum* moss, must be saturated or nearly so most or all of the year and the

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P 860.807.4300

area must be sunny. Fen or bog habitats are not present on the Project Site and neither species of cranberry have been observed. Surveys were not conducted for this species since it is very unlikely to occur within the Project Site.

### ***Big sand tiger beetle***

The big sand tiger beetle (*Cicindela formosa generosa*) is a State Species of Special Concern that inhabits exposed sandy substrates where its larvae are subterranean and trap insects in shallow pits they construct. Adults remain active until middle and late September before overwintering. Adults resume activity in late spring. Wagner (2015) notes this species has a strong affinity to areas mapped as Windsor sands. The parent material for these soils were originally deposited as paraglacial dunes. While the Windsor series in not mapped on the site, gravel mining can unintentionally create similar habitats.

The inactive areas of two gravel pits were surveyed on May 21<sup>st</sup>, 2020. At the time of survey, material was being hauled out of one of the gravel mines and grading was ongoing within the northern portion of the second gravel pit. These active areas were avoided. The floor of the southern part of the second gravel pit was observed to vary in textures from silty clays and silts at the fine end to sand and sand and gravel at the coarse extreme. The bronzed tiger beetle (*Cicindela repanda*) was observed in the eastern end of the pit near the process water ponds. Here the substrate was silty to clayey in texture. An estimated six adult bronzed tiger beetles were very active at this location. Two individuals of the six-spotted tiger beetle (*C. sexguttata*) were observed in the first gravel pit on a haul road leading to Plantation Road.

Additional surveys were completed in June and concluded on July 14<sup>th</sup>, 2020 and no observations of the big sand tiger beetle were observed.

### **Mitigative Measures**

There are no conservation strategies proposed for this species. If this species is found in the Project Site, the Applicant will coordinate with the CTDEEP NDDDB section to develop conservation measures.

### ***Scribbled sallow moth***

The scribbled sallow moth (*Sympistis perscripta*) is a state Species of Special Concern. It is an uncommon moth associated with infertile, droughty, open habitats such as those found within Eversource powerline ROW and open roadsides where its larval host plant, Canada toadflax (*Nuttallanthus canadensis*), is found (New York Natural Heritage Program, 2020). Scribbled sallow moth completes one generation per year in Connecticut. Flight season for adults occurs from late May into early June. Wagner et al. (2008) reports that the infrequently observed caterpillars have been seen mostly in late June while feeding on the host plant.

VHB biologists conducted a survey for Canada toadflax while searching for purple milkweed in June and July. Some small stations have been encountered at field edges and on gravel pit spoil piles, but none of these populations numbered more than 15 to 30 plants.

### **Mitigative Measures**

No conservation strategy is proposed for this species. The small clusters of the host plant are common but scattered around the edges of farm fields. The Applicant will negotiate a mitigation program which might

incorporate attempts to establish this annual/biennial host plant into perimeter seed mixes where conditions are suitable.

## Freshwater Mussels

The CTDEEP NDDDB correspondence included records for one State-listed freshwater mussel species. During wetland delineations along Ketch Brook and during wood turtle surveys, VHB biologists observed unidentified mussel shells within and along the banks of the brook. The shells were likely left over from depredation by raccoon.

VHB did not conduct further searches for freshwater mussels during the field investigations as no work is proposed that would impact Ketch Brook where the mussels would be found.

### *Eastern pearlshell*

The eastern pearlshell mussel (*Margaritifera margaritifera*) is a state Species of Special Concern. According to the CTDEEP, the eastern pearlshell does not have specific substrate requirements but is most often found in streams and small rivers that support trout or salmon populations (cold water fishery) (CTDEEP, 2003).

VHB biologists observed brown trout (*Salmo trutta*) and fallfish (*Semotilus corporalis*) in Ketch Brook confirming the presence of a cold water habitat. At present, the greatest risk to water quality in Ketch Brook is from the illicit operation of ATVs in the floodplain and stream crossings. VHB biologists witnessed a heavy rainfall event cause significant turbidity in the stream that was traced back to exposed soils along ATV tracks.

## Mitigative Measures

The Applicant will employ the following mitigative actions to prevent the incidental take or harm to the state-listed eastern pearlshell. From the planning perspective the Project will:

- Avoid any work within Ketch Brook and its riparian floodplain. No work is proposed along the brook or in its floodplain.
- The Project maintains adequate undisturbed buffers to terrace escarpments bordering the Ketch Brook floodplain and largely avoids work within 200 feet of the stream.
- The stream crossing for the electrical interconnection is proposed to be completed using horizontal directional drilling that will pass under Ketch Brook and its associated floodplain with jacking and receiving pits in uplands.
- The development will seek to curtail illicit ATV operation within the properties it will control with fencing and other barriers (e.g., boulders, bollards, Mafia block, etc.). VHB biologists witnessed turbid flows in Ketch Brook during fair weather and provided photographs of the damage associated with ATV operation (**Attachment C**).
- Once construction is complete, the traffic levels within the site will be greatly reduced in comparison to existing gravel mining and farming operations.

- Establishing grass meadows which will significantly reduce existing soil erosion rates in the proximate watershed of Ketch Brook from farming and gravel mining operations.
- Reduce inputs of nutrients including total ammonia nitrogen, fungicides and pesticides associated with tobacco farming in the Ketch Brook Watershed.
- Stormwater management will focus on maintaining or reducing peak discharge rates and maintaining or increasing groundwater recharge through infiltration. No practices that could increase the temperature of the discharge to Ketch Brook (e.g., discharge from surface detention) will be proposed. Existing drainage patterns will be maintained to the greatest extent practicable.

#### During construction:

- The Project will implement enhanced erosion and perimeter sediment control best management practices to control storm water runoff from this site both during construction and after construction. The proponent seeks to install perimeter sediment controls, and sediment traps during the fall preceding spring construction, if possible, so that these features will be mostly stabilized before construction. In addition, where possible fields slated for construction will be seeded in the fall so that array installation will occur in vegetated fields.
- Qualified Environmental Inspector(s) shall be on-site daily during the duration of construction, weekly during stabilization, and within 24 hours of storm events with 0.5 inches of precipitation or more to inspect sedimentation and erosion controls to ensure that they continue to function as intended.
- Stock-piling soils will be minimized and will always be situated at least 100 feet from wetlands or watercourses and will be protected by perimeter sediment protection.
- All chemicals and fuels will be maintained undercover with secondary containment and follow good housekeeping measures prescribed in the Connecticut General Permit for Stormwater Discharges from Construction Sites.
- The proponent will increase typical antitracking construction exits lengths to 75 feet to minimize tracking onto public roads.
- Water will be used to control dust along construction roads.
- Access to the worksite will be strictly controlled to eliminate illicit ATV operation and other vandalism.

#### Fish

The NDDDB PA included the potential for one State-listed fish species to occur within the Project Site. VHB biologists did not conduct aquatic surveys within Ketch Brook as the Project proposes no direct or proximate impacts to this resource. Casual observation of fish species during fieldwork identified brown trout, fallfish, and sea lamprey present in the brook.

### ***American brook lamprey***

The American brook lamprey is a State Endangered species that prefers cold, clear streams of small to medium size. Adults prefer gravel or sandy riffle areas, whereas ammocoetes are most often found in sandy areas. Ammocoetes transform into adults in the late summer to early fall and spawn the following spring, after which the adults die (Jacobs and O'Donnell, 2009). American brook lamprey populations have been found in a few streams of the Connecticut River drainage, typically above the first barrier to sea lamprey. The greatest existing risk to this species, if present within the Project Site, appears to be from previously described illicit ATV operations in and along Ketch Brook.

### **Mitigative Measures**

There is no work proposed that will impact Ketch Brook within the Project Site. If present, measures to protect Ketch Brook described for eastern pearlshell (see above) will also protect American brook lamprey.

## **Vascular Plants**

### **State-Listed Plant Species**

Correspondence with the CTDEEP NDDDB indicated that there are records for four state-listed vascular plants in the vicinity of the Project Site that are protected under the CT ESA. Descriptions of each species are provided below.

### ***Short-awned meadow foxtail***

Short-awned meadow foxtail is listed as State-Threatened. Barkworth, M.E. et al. (2007) describes this grass as native to the temperate zone of the northern hemisphere, noting that it is the most widespread and variable species of *Alopecurus* in North America. Haines (2011) describes its habitats as wet meadows, ditches, shorelines, wet sand of borrow pits, and other disturbed places. Fernald (1970) provides the flowering period as May through September.

With two active gravel pits, road and railroad ditches, and other disturbed places throughout the Project Site ample suitable habitat is present for this species. Reconnaissance of potentially suitable areas began in late May and was concluded July 14, 2020 without identifying any occurrences of this species or any of its congeners in the ditches along the railroad, gravel haul roads, along Ketch Brook, or in the sand and gravel pit in the northeastern reaches of the Project Site. The open floodplain of Ketch Brook at the Eversource utility crossing is colonized by reed canary grass (*Phalaris arundinacea*).

### **Mitigative Measures**

Since this species was not observed during field investigations the Applicant does not propose any conservation measures. If this species is encountered at a later date then a conservation strategy will be developed.

### ***Purple milkweed***

Purple milkweed is a State Species of Special Concern. Flora Conservanda (Brumback and Gerke, 2012) lists this plant as Division 2, a regionally rare taxa with 20 or fewer occurrences in New England over the 20-25-

year period before 2012. This species is found in habitats that range from semi-open margins of *Pinus-Quercus* woodlands, roadsides, utility corridors, and old-fields on soil substrates ranging from dry to quite moist with a noted preference for soils with calcareous parent materials (Farnsworth and DiGregorio, 2002). The red Triassic sedimentary rock parent rock of the Connecticut River Valley weathers to a soil with a marginally higher base saturation in comparison to the acid crystalline rock outside of the valley. However, VHB soil scientists found forest soils to be strongly acid based on soil tests results from the UConn Soil Lab (see Soil Scientist's Report in **Exhibit H**). Farmland soils have been periodically amended for years with limestone and were found to have circum-neutral pHs. The railroad grade used crushed basalt as ballast which can provide basic cations. Fernald provides a flowering period of late May to July, Farnsworth and DiGregorio note that the flowering period overlaps with other milkweed species but do not provide specific flowering dates.

Surveys for this plant were undertaken at woodland edges around fields, the Eversource electric transmission line right-of-way (ROW), and along the railroad grade in May and the first week of June and the first and second weeks of July 2020. The only plants in the *Apocynaceae* family identified within the Project Site were spreading dogbane (*Apocynum androsaemifolium*) and common milkweed (*Asclepias syriaca*).

#### **Mitigative Measures**

Since this species was not observed during field investigations, the Applicant does not propose any conservation measures. If this species is encountered at a later date, then a conservation strategy will be developed.

#### ***Dwarf huckleberry***

Dwarf huckleberry is a State-Threatened species. This species is not listed in Flora Conservanda and is near its southern range in southern New England (continuing south along the Appalachians). Fernald describes its habitat as sphagnum bogs and wet peats and Haines (2011) indicates habitat types of bogs, acidic fens and heathlands. All these habitats share a common substrate of sphagnum moss. If present in the wider area surrounding the Project Site, this species is most likely to occur in the Morris Road Poor Fen, which is off-site on private property, or perhaps another wetland with a fen-like aerial signature more than 500 ft west of the northern extent of the Project Site. The delineation and description of all the wetland areas within the Project Site did not encounter any suitable habitat for this species. Wetland substrates within the Project Site consist of mineral soils or well decomposed organic mucks (sapric materials) (see **Exhibit H** for the Soil Scientist's Report which includes descriptions about Wetlands within the Project Site). Surveys were not conducted for this species because suitable habitat is not present within the Project Site.

#### **Mitigative Measures**

Mitigative measures are not proposed since this species is very unlikely to be present within the Project Site.

#### ***Climbing fern***

Climbing fern is a state Species of Special Concern. This species is not listed in Flora Conservanda and it is distributed widely in the eastern United States. This plant species is a wintergreen low climber entwining itself over other plants. This species is often found in the transition between wetland and uplands. Haines

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P 860.807.4300

(2011) describes its habitat preferences as low forests, forest edges, swamp margins, mainly on peaty, acid soils overlying sand. Fernald provides moist, acid soils of thickets, marshes, and open woods. The Flora of New Jersey Project describes suitable habitat as wet acid swales and stream floodplains and requires constant moisture, high light levels and intensely acid soils to thrive (Flora of New Jersey Project, 2011).

Wetland delineations were conducted in the winter and early spring during leaf-off when this evergreen species is most conspicuous. Additional surveys were conducted within the floodplain of Ketch Brook, the Eversource electric transmission ROW, edges of the railroad clearing, and within woodlands focusing on edges from early March to April. No observation of this species was made.

### **Mitigative Measures**

No conservation strategy is proposed for climbing fern as it has not been found within the Project Site.

### **Pollinator Habitat Enhancement**

The Applicant will plant the Project Site's road-facing perimeter with a vegetative buffer that will feature native trees, shrubs, and pollinator seed mixes to provide a visual screen to abutters and as habitat for native pollinators, where possible. Pollinators are essential for food production. Research has shown that where habitat needs are met, wild native bees contribute substantially to crop pollination (Pollinator Health Task Force, 2016). With the serious decline and difficulty of procuring hives of European honey bees for crop pollination, protecting and restoring habitat for native pollinators has become ever more important. Pollinator habitat includes native flowering plants that support bees, birds, butterflies, bats, and other animals that provide pollination services essential to the survival of flowering plants (Pollinator Health Task Force, 2016).

Today, pollinators face a variety of challenges, including habitat loss due to development, altered land use patterns, and climate change, as well as exposure to pests, pathogens, pesticides, and other stressors (Pollinator Health Task Force, 2016). One of the overarching goals of the Pollinator Partnership Action Plan is the restoration or enhancement of seven million acres of land for pollinators over the next five years (from 2016 through 2021).

To address the challenges facing pollinators, the State of Connecticut passed Bill No. 231: An Act Concerning Pollinator Health on May 6, 2016 (State of Connecticut, 2016). The Act is intended to protect pollinator populations through restrictions on the use of the class of pesticides known as neonicotinoids and the increase and preservation of pollinator habitats.

The Applicant is evaluating different planting modules that will be applied to the road-side Project perimeters. Native plants under consideration include red oak (*Quercus rubra*), red maple, white spruce (*Picea glauca*), serviceberry (*Amelanchier canadensis*), eastern red cedar (*Juniperus virginiana*), arrowwood (*Viburnum dentatum*), northern bayberry (*Myrica pensylvanica*), red chokeberry (*Aronia arbutifolia*), and winged suman (*Rhus copallina*). Additionally, a pollinator seed mix would be applied between the tree/shrub line and the mowed area abutting the street shoulder where possible.

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## Attachment A – Figures

Figure A-1: Site Location Map

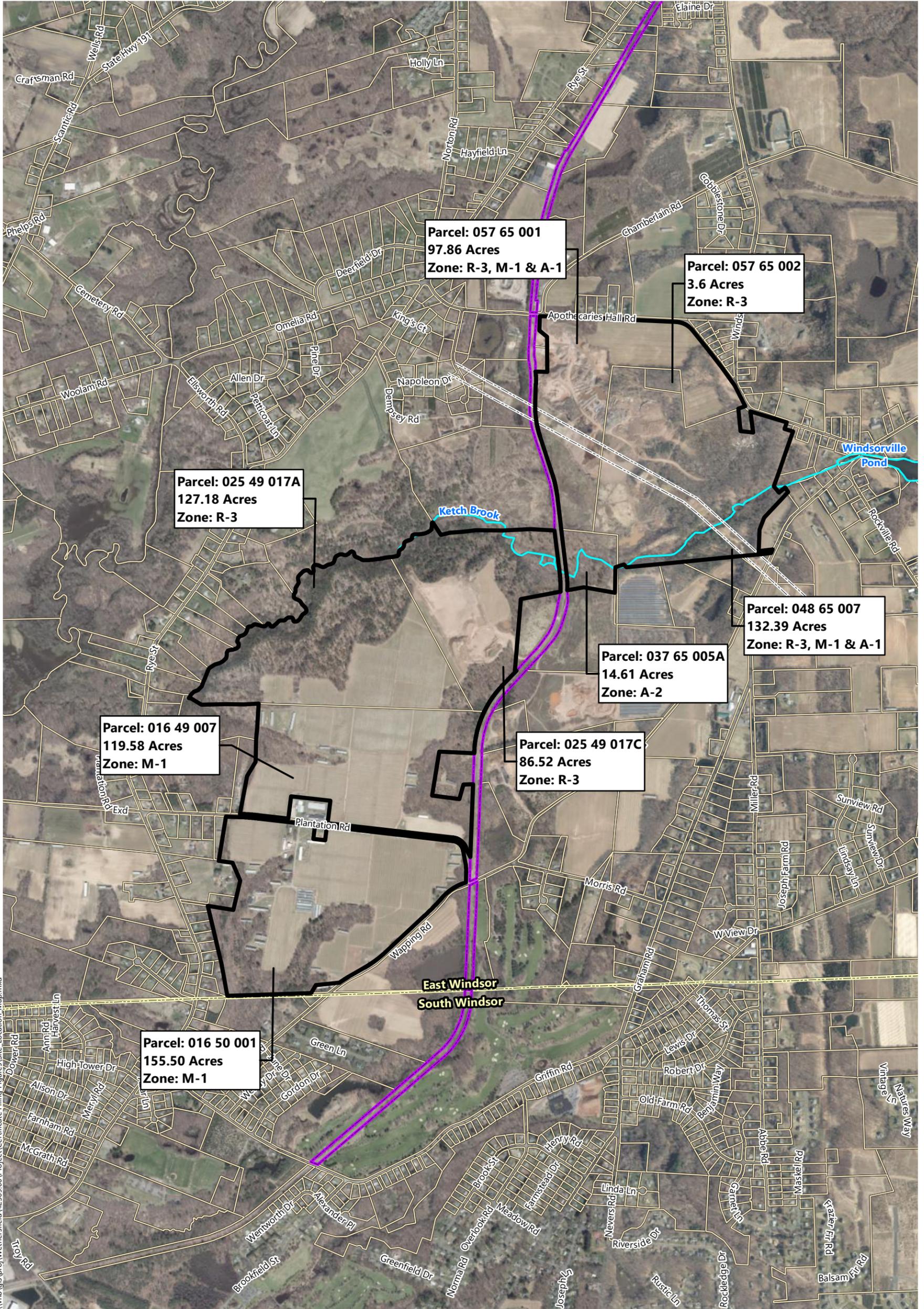
Figure A-2: Natural Diversity Data Base State-listed Species Coverage & CT Critical Habitats

Figure A-3: Habitat Cover Types

Figure A-4: Converted Habitat Cover Types

Figure A-5: Bird Survey Routes

Figure A-6: Wildlife Corridors



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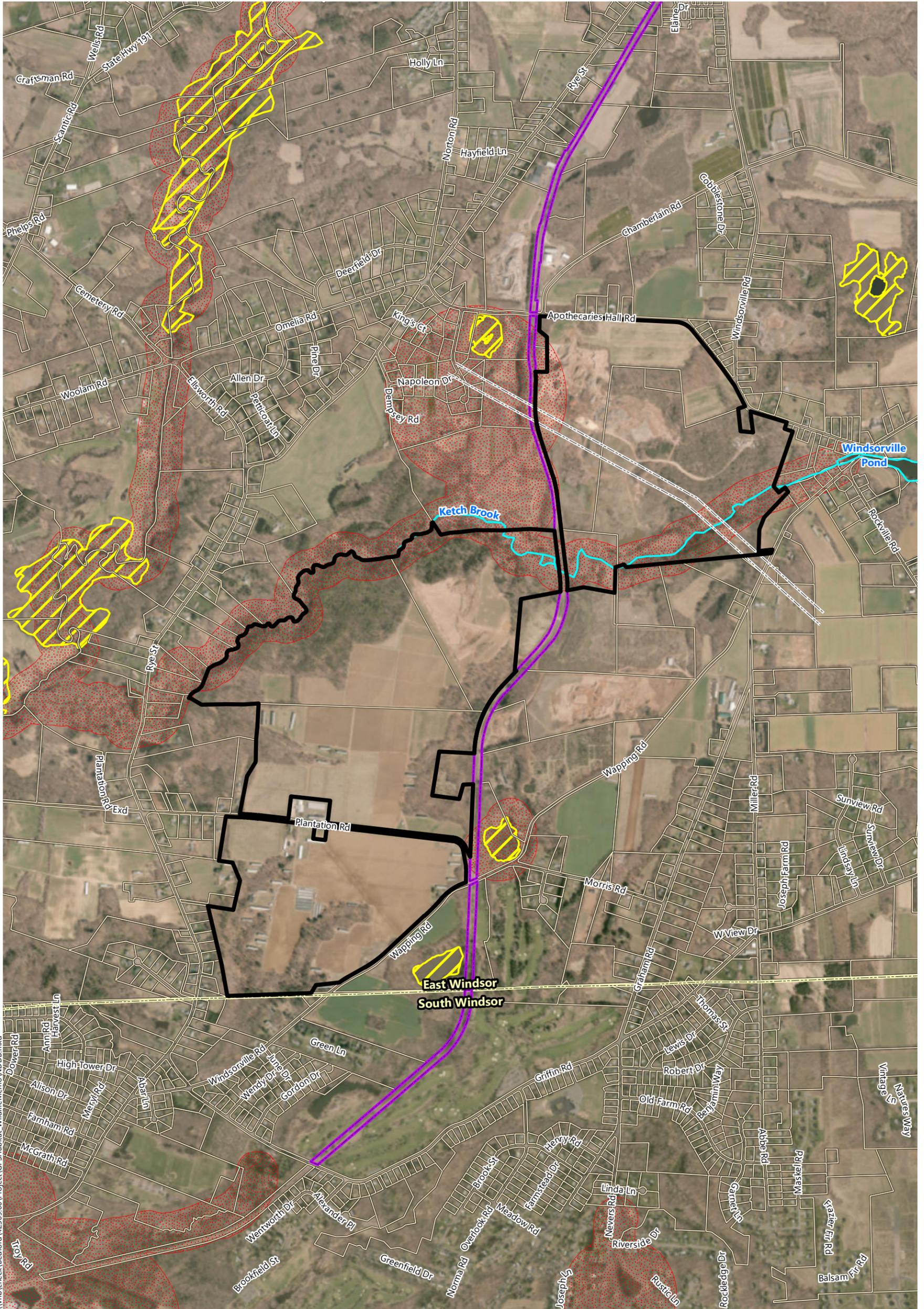
**Gravel Pit Solar**

East Windsor, Connecticut

- Property Boundary
- Adjacent Parcels
- Town Boundary
- Approximate Railroad Boundary
- Stream
- Approximate Eversource ROW

**Site Location Map**

Source: VHB, CTDEEP, ESRI



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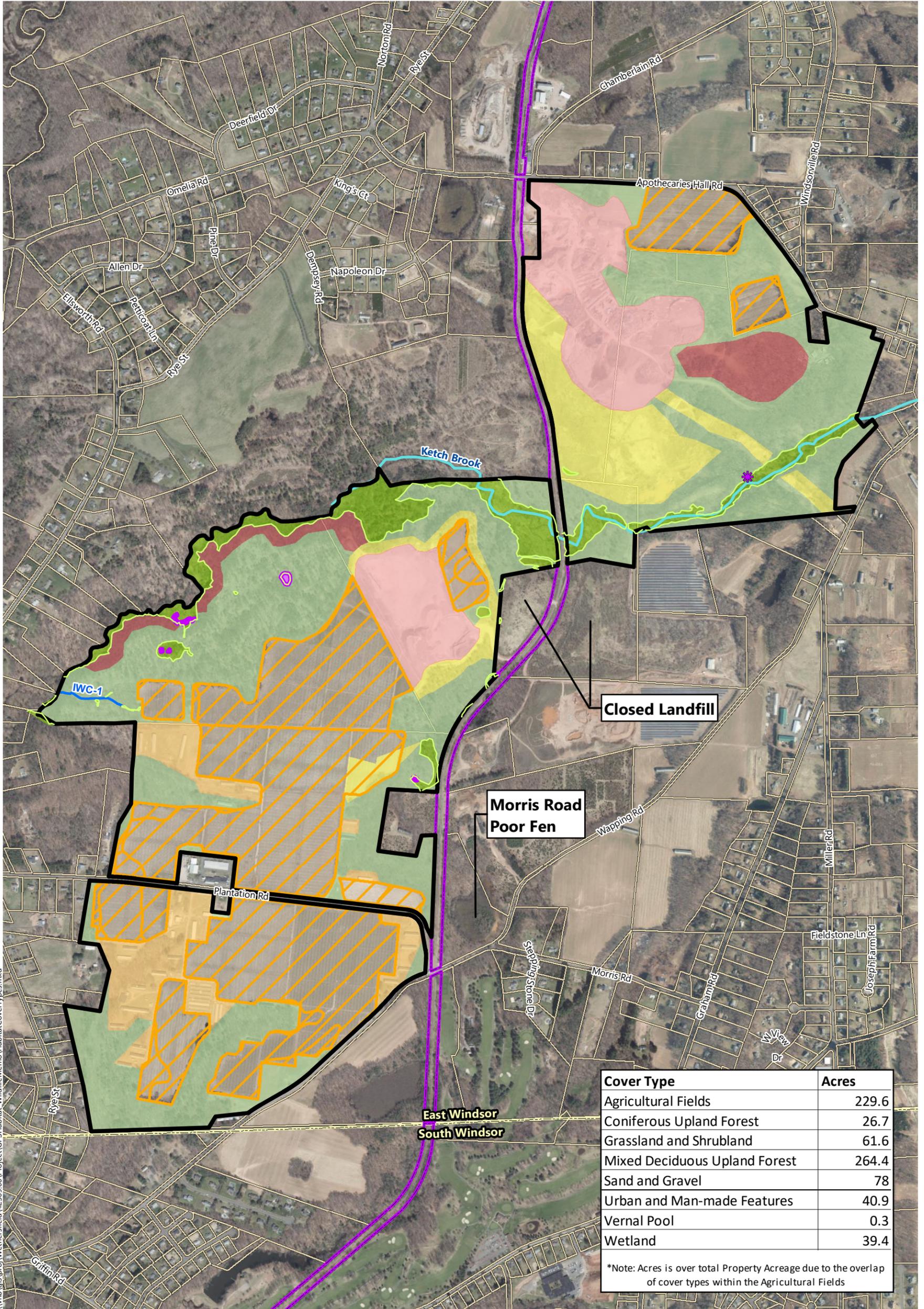
- Property Boundary
- Adjacent Parcels
- CT Critical Habitat
- Town Boundary
- Approximate Railroad Boundary
- Potential locations of state-listed species according to CT Natural Diversity Data Base
- Approximate Eversource ROW
- Stream

**Gravel Pit Solar**

**East Windsor, Connecticut**

**Figure A-2**  
**Natural Diversity Data Base**  
**State-listed Species Coverage**

Source: VHB, CTDEEP, ESRI



Cover Type	Acres
Agricultural Fields	229.6
Coniferous Upland Forest	26.7
Grassland and Shrubland	61.6
Mixed Deciduous Upland Forest	264.4
Sand and Gravel	78
Urban and Man-made Features	40.9
Vernal Pool	0.3
Wetland	39.4

\*Note: Acres is over total Property Acreage due to the overlap of cover types within the Agricultural Fields

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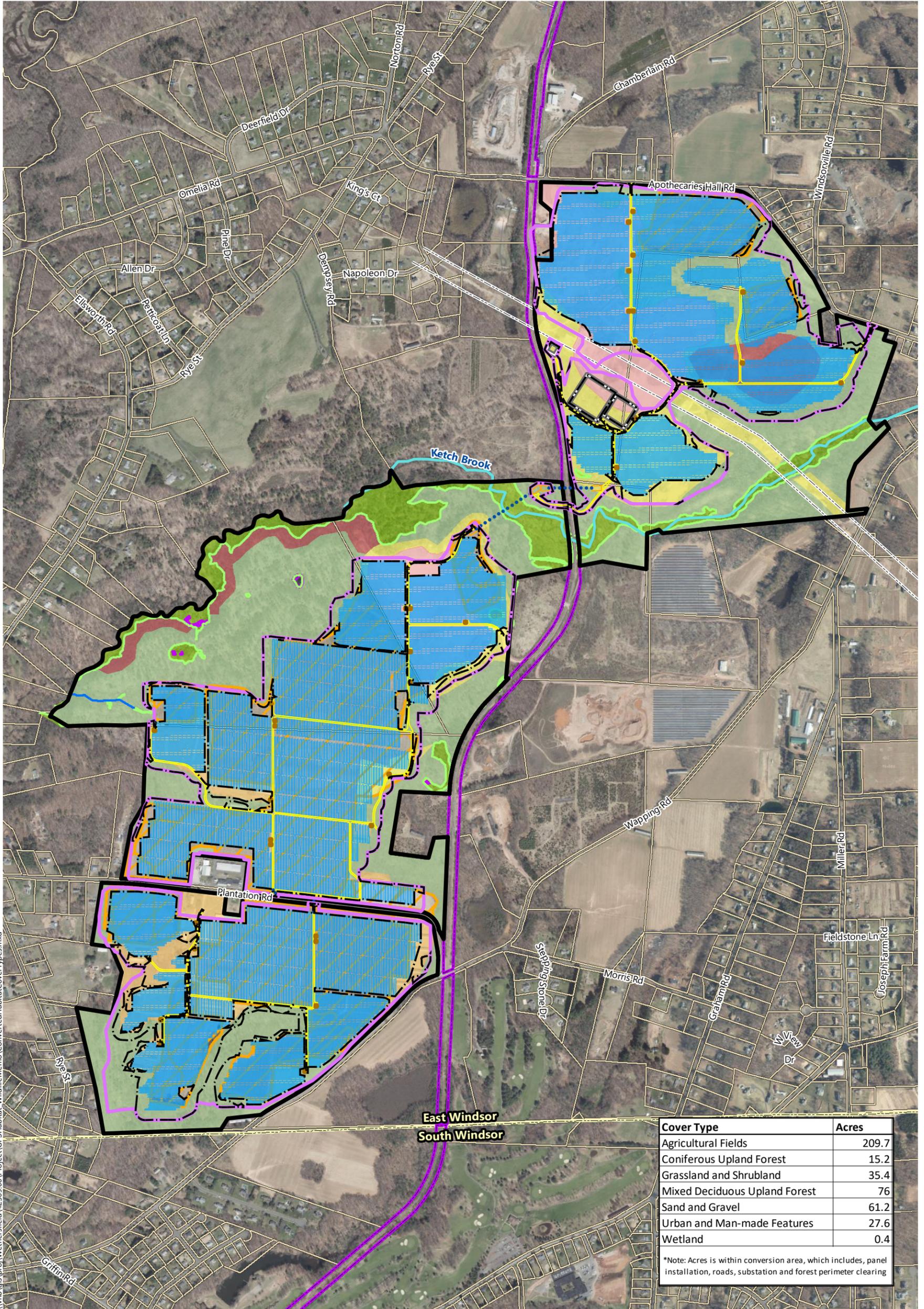
**Gravel Pit Solar**

**East Windsor, Connecticut**

- Property Boundary
- Connecticut Inland Wetlands
- Agricultural Fields
- Adjacent Parcels
- Delineated Wetland Edge
- Sand and Gravel Quarries
- Town Boundary
- Vernal Pool
- Early Successional Grassland and Shrubland
- Approximate Railroad ROW
- Stream/River
- Urban and Man-Made Features
- Delineated Intermittent Watercourse
- Coniferous Upland Forest
- Beaver Impoundment Pool
- Mixed Deciduous Upland Forest

**Figure A-3  
Habitat Cover Types**

Source: VHB, CTDEEP, ESRI



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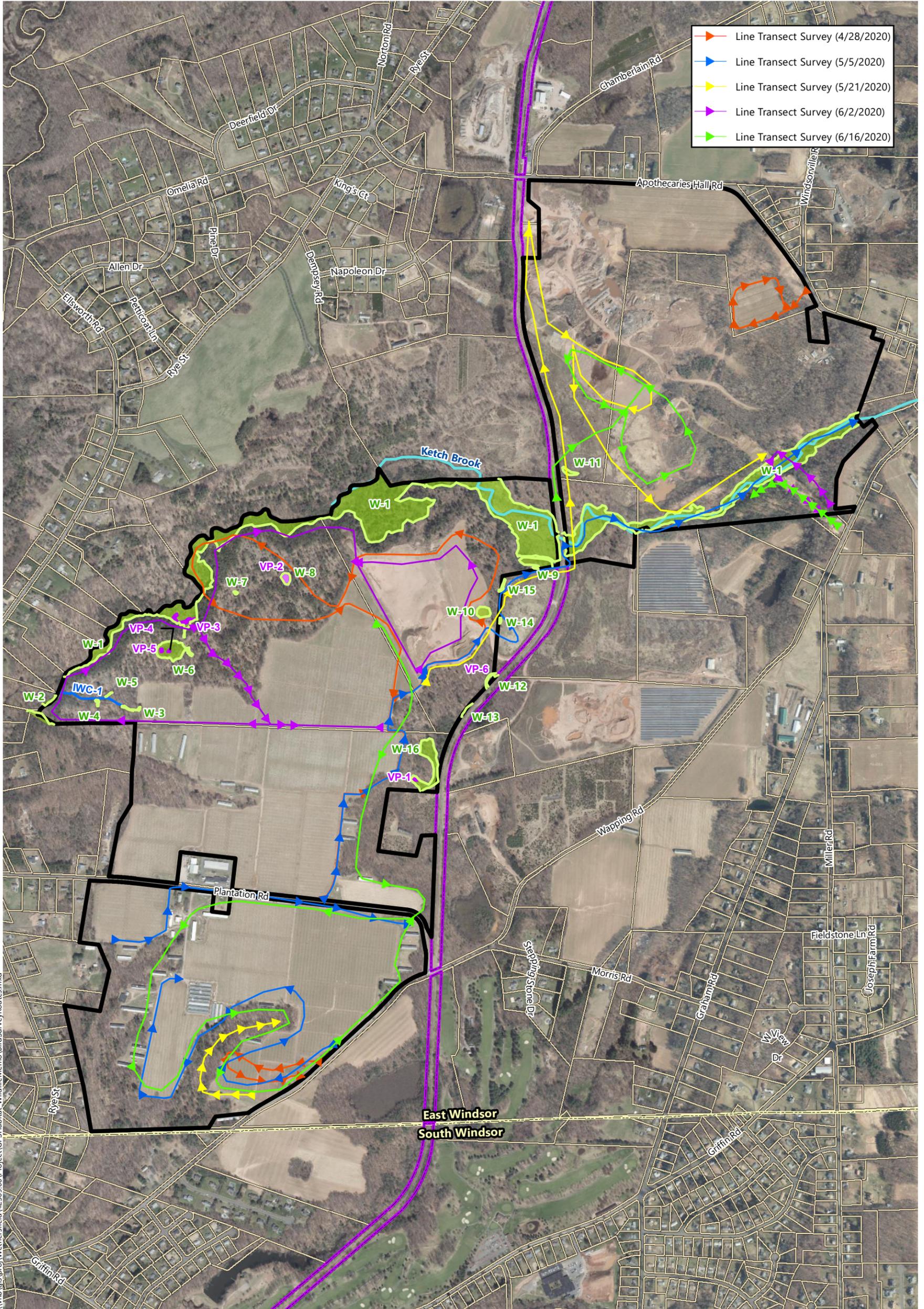
**Gravel Pit Solar**

**East Windsor, Connecticut**

- Property Boundary
- Wetland Resource Areas
- Agricultural Fields
- Solar Array
- Adjacent Parcels
- Delineated Wetland Edge
- Sand and Gravel Quarries
- Equipment Pad
- Habitat Conversion Area
- Vernal Pool
- Early Successional Grassland and Shrubland
- Substation
- Limit of Work
- Stream/River
- Urban and Man-Made Features
- Boring Pit
- Town Boundary
- Delineated Intermittent Watercourse
- Coniferous Upland Forest
- Proposed Road
- Approximate Railroad Boundary
- Mixed Deciduous Upland Forest
- Approximate Eversource ROW
- Potential Cable Route

**Figure A-4**  
**Converted Habitat Cover Types**

Source: VHB, CTDEEP, ESRI



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- Line Transect Survey (4/28/2020)
- Line Transect Survey (5/5/2020)
- Line Transect Survey (5/21/2020)
- Line Transect Survey (6/2/2020)
- Line Transect Survey (6/16/2020)



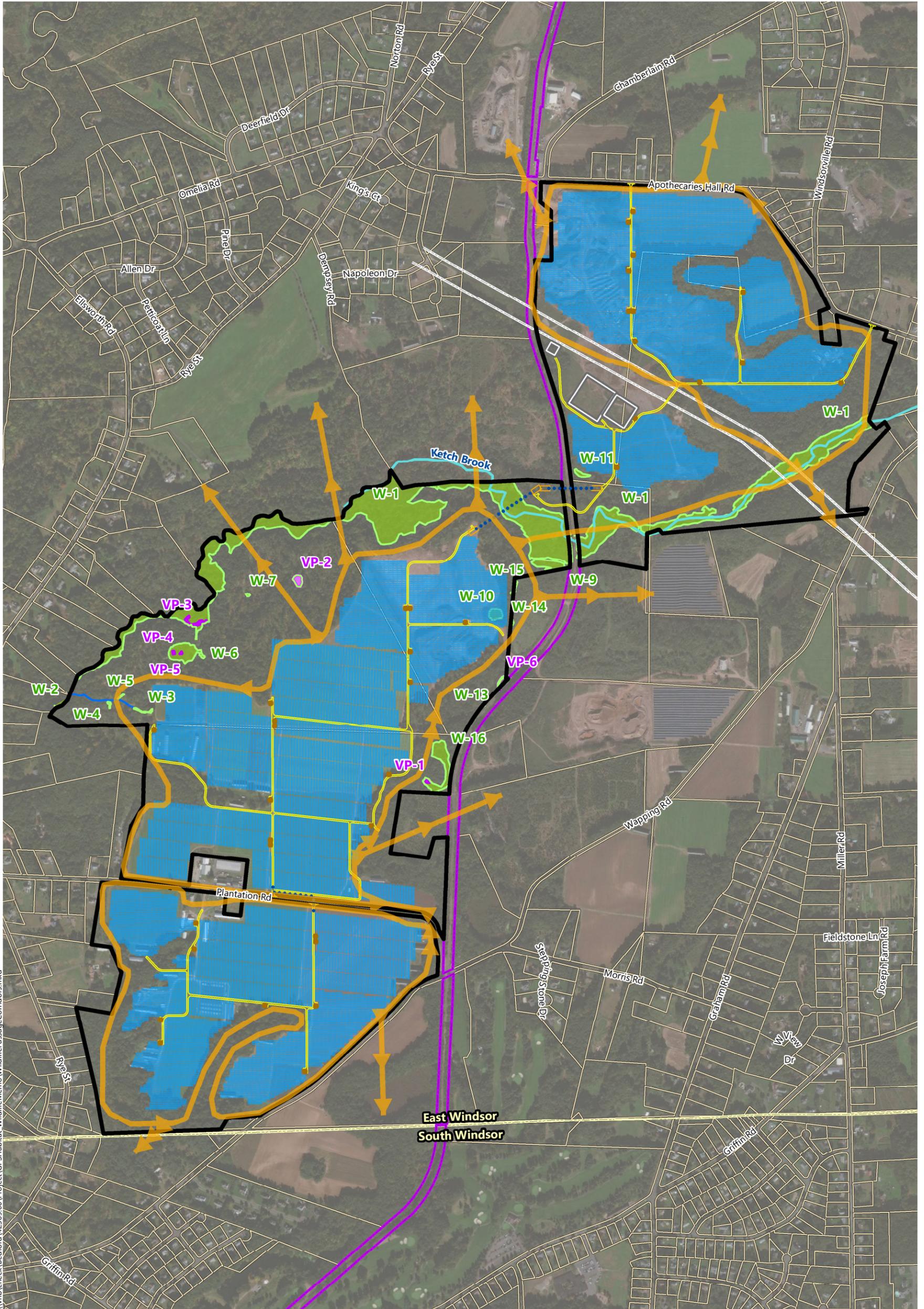
Gravel Pit Solar

East Windsor, Connecticut

- Property Boundary
- Connecticut Inland Wetlands
- Adjacent Parcels
- Delineated Wetland Edge
- Town Boundary
- Vernal Pool
- Approximate Railroad ROW
- Stream/River
- Delineated Intermittent Watercourse

**Figure A-5**  
**Bird Survey Routes**

Source: VHB, CTDEEP, ESRI



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**Gravel Pit Solar**

East Windsor, Connecticut

- |  |                               |  |                                     |  |                            |
|--|-------------------------------|--|-------------------------------------|--|----------------------------|
|  | Property Boundary             |  | Wetland Resource Areas              |  | Solar Array                |
|  | Adjacent Parcels              |  | Delineated Wetland Edge             |  | Equipment Pad              |
|  | Town Boundary                 |  | Vernal Pool                         |  | Substation                 |
|  | Approximate Railroad Boundary |  | Stream/River                        |  | Boring Pit                 |
|  | Approximate Eversource ROW    |  | Delineated Intermittent Watercourse |  | Proposed Road              |
|  |                               |  |                                     |  | Wildlife Passage Corridors |
|  |                               |  |                                     |  | Potential Cable Route      |

**Figure A-6  
Wildlife Passage Corridors**

Source: VHB, CTDEEP, ESRI

Ref: 42569.00  
July 20, 2020

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## Attachment B – Species Observation and Potential Occurrence Tables

**Table B-1 Observed and Potential Bird Species**

	Terrestrial Habitats						Aquatic Habitats		Other
	Agricultural Field	Sand and Gravel Quarries	Early Successional	Mixed Deciduous & Coniferous Upland Forest	Mixed Deciduous & Coniferous Wetland Forest	Edge	Ketch Brook	Vernal Pools	Manmade Features
Least Bittern <sup>B (S-T)</sup>									
Great Blue Heron <sup>B</sup>							P	O	
Green Heron <sup>B</sup>		P					P	O	
Turkey Vulture <sup>B</sup>		P	P	P	P	P			
Canada Goose <sup>B</sup>	O								
Wood Duck <sup>B</sup>							P	O	
Hooded Merganser <sup>B</sup>							P	O	
Mallard <sup>B</sup>					P		P	P	
Sharp-shinned Hawk <sup>M (S-E)</sup>	P	P	P						
Cooper's Hawk <sup>B</sup>	P	P	P	P	P	P			
Northern Goshawk <sup>B (S-T)</sup>	P	P	P			P			
Red-shouldered Hawk <sup>B</sup>	P		O	O			O		

P = Potential to occur O = observed by VHB from Sept. 2019 to July 2020 O = GCN Species in the 2015 CWAP. B = breeding in Connecticut M = migrant/visitor  
 S-E = State-endangered S-T= State-threatened S-SC = State-Special Concern  
 Source: DeGraaf, Richard M. and Mariko Yamasaki. 2001. New England Wildlife: Habitat, Natural History and Distribution, University Press of New England, Hanover, New Hampshire, 2001.  
 CTDEEP. 2015. Connecticut Wildlife Action Plan. [http://www.ct.gov/deep/cwp/view.asp?a=2723&q=329520&deepNav\\_GID=1719#Revision](http://www.ct.gov/deep/cwp/view.asp?a=2723&q=329520&deepNav_GID=1719#Revision)

	Terrestrial Habitats						Aquatic Habitats		Other
	Agricultural Field	Sand and Gravel Quarries	Early Successional	Mixed Deciduous & Coniferous Upland Forest	Mixed Deciduous & Coniferous Wetland Forest	Edge	Ketch Brook	Vernal Pools	Manmade Features
Broad-winged Hawk <sup>B (S-SC)</sup>	P	P			P	P			
Red-tailed Hawk <sup>B</sup>	P	O	O	P	P	O	P		
Rough-legged Hawk <sup>M</sup>			P	P	P	P	P		
American Kestrel <sup>B (S-SC)</sup>		P	<b>O</b>	<b>O</b>	P	P			
Ring-necked Pheasant <sup>B</sup>			P						
Ruffed Grouse <sup>B</sup>									
Wild Turkey <sup>B</sup>	P	P	P	P	P	P			
Northern Bobwhite <sup>B</sup>									
Killdeer <sup>B</sup>	O	P							
Spotted Sandpiper <sup>B</sup>		O							
Wilson's (Common) Snipe <sup>M</sup>			P				P		
American Woodcock <sup>B</sup>			P	P	P				
Rock Dove <sup>B</sup>	O								P
Mourning Dove <sup>B</sup>	O	P	O	O	P	O			
Black-billed Cuckoo <sup>B</sup>			P	P					

P = Potential to occur O = observed by VHB from Sept. 2019 to July 2020 **O** = GCN Species in the 2015 CWAP. B = breeding in Connecticut M = migrant/visitor  
 S-E = State-endangered S-T= State-threatened S-SC = State-Special Concern  
 Source: DeGraaf, Richard M. and Mariko Yamasaki. 2001. New England Wildlife: Habitat, Natural History and Distribution, University Press of New England, Hanover, New Hampshire, 2001.  
 CTDEEP. 2015. Connecticut Wildlife Action Plan. [http://www.ct.gov/deep/cwp/view.asp?a=2723&q=329520&deepNav\\_GID=1719#Revision](http://www.ct.gov/deep/cwp/view.asp?a=2723&q=329520&deepNav_GID=1719#Revision)

	Terrestrial Habitats						Aquatic Habitats		Other
	Agricultural Field	Sand and Gravel Quarries	Early Successional	Mixed Deciduous & Coniferous Upland Forest	Mixed Deciduous & Coniferous Wetland Forest	Edge	Ketch Brook	Vernal Pools	Manmade Features
Yellow-billed Cuckoo <sup>B</sup>			P						
Eastern Screech-Owl <sup>B</sup>			P	P	P				
Great Horned Owl <sup>B</sup>		P	P	P	P	P			
Barred Owl <sup>B</sup>	P	P	P	P	P	P			
Northern Saw-whet Owl <sup>B (S-SC)</sup>	P	P	P	P	P				
Common Nighthawk <sup>B (S-E)</sup>									
Whip-poor-will <sup>B (S-SC)</sup>									
Chimney Swift <sup>B</sup>									P
Ruby-throated Hummingbird <sup>B</sup>			P						P
Belted Kingfisher <sup>B</sup>					O		O		
Red-bellied Woodpecker <sup>B</sup>				O	O				
Pileated Woodpecker <sup>B</sup>				O	O				
Yellow-bellied Sapsucker <sup>B</sup>									

P = Potential to occur O = observed by VHB from Sept. 2019 to July 2020 ● = GCN Species in the 2015 CWAP. B = breeding in Connecticut M = migrant/visitor  
 S-E = State-endangered S-T= State-threatened S-SC = State-Special Concern  
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	Terrestrial Habitats					Aquatic Habitats		Other	
	Agricultural Field	Sand and Gravel Quarries	Early Successional	Mixed Deciduous & Coniferous Upland Forest	Mixed Deciduous & Coniferous Wetland Forest	Edge	Ketch Brook	Vernal Pools	Manmade Features
Downy Woodpecker <sup>B</sup>				O	O				
Hairy Woodpecker <sup>B</sup>				O	O				
Northern Flicker <sup>B</sup>	P	P	O	O	P	O			P
Eastern Wood-Pewee <sup>B</sup>				O	O				
Acadian Flycatcher <sup>B</sup>									
Willow Flycatcher <sup>B</sup>			O	O					
Least Flycatcher <sup>B</sup>									
Eastern Phoebe <sup>B</sup>			O		O	O	O		O
Great Crested Flycatcher <sup>B</sup>				O	O	P			
Eastern Kingbird <sup>B</sup>			P	P	P	P			
Northern Shrike <sup>M</sup>									
White-eyed Vireo <sup>B</sup>									
Yellow-throated Vireo <sup>B</sup>			P	O					
Warbling Vireo <sup>B</sup>				O	O	O			
Red-eyed Vireo <sup>B</sup>				O	O				
Blue Jay <sup>B</sup>	O		P	O	O	O			
American Crow <sup>B</sup>	P		O	O	P	P			O

P = Potential to occur O = observed by VHB from Sept. 2019 to July 2020 ● = GCN Species in the 2015 CWAP. B = breeding in Connecticut M = migrant/visitor  
 S-E = State-endangered S-T= State-threatened S-SC = State-Special Concern  
 Source: DeGraaf, Richard M. and Mariko Yamasaki. 2001. New England Wildlife: Habitat, Natural History and Distribution, University Press of New England, Hanover, New Hampshire, 2001.

	Terrestrial Habitats					Aquatic Habitats		Other	
	Agricultural Field	Sand and Gravel Quarries	Early Successional	Mixed Deciduous & Coniferous Upland Forest	Mixed Deciduous & Coniferous Wetland Forest	Edge	Ketch Brook	Vernal Pools	Manmade Features
Fish Crow <sup>B</sup>			P	P	P				
Horned Lark <sup>B (S-E)</sup>		P							
Purple Martin <sup>B (S-SC)</sup>									
Tree Swallow <sup>B</sup>	O	O	O			O			
Northern Rough-winged Swallow <sup>B</sup>									
Bank Swallow <sup>B</sup>		O							
Barn Swallow <sup>B</sup>	O	O							O
Black-capped Chickadee <sup>B</sup>			P	O	O				
Tufted Titmouse <sup>B</sup>			O	O	O				
Red-breasted Nuthatch <sup>B</sup>									
White-breasted Nuthatch <sup>B</sup>			O	O	O				
Brown Creeper <sup>B</sup>				P	P				
Carolina Wren <sup>B</sup>			O	O	O				
House Wren <sup>B</sup>						P			P
Winter Wren <sup>B</sup>									
Golden-crowned Kinglet <sup>B</sup>									

P = Potential to occur O = observed by VHB from Sept. 2019 to July 2020 ● = GCN Species in the 2015 CWAP. B = breeding in Connecticut M = migrant/visitor  
 S-E = State-endangered S-T= State-threatened S-SC = State-Special Concern  
 Source: DeGraaf, Richard M. and Mariko Yamasaki. 2001. New England Wildlife: Habitat, Natural History and Distribution, University Press of New England, Hanover, New Hampshire, 2001.  
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	Terrestrial Habitats					Aquatic Habitats		Other	
	Agricultural Field	Sand and Gravel Quarries	Early Successional	Mixed Deciduous & Coniferous Upland Forest	Mixed Deciduous & Coniferous Wetland Forest	Edge	Ketch Brook	Vernal Pools	Manmade Features
Ruby-crowned Kinglet <sup>M</sup>									
Blue-gray Gnatcatcher <sup>B</sup>				O	O				
Eastern Bluebird <sup>B</sup>	O		O						
Veery <sup>B</sup>				O	O				
Hermit Thrush <sup>B</sup>				P	P				
Wood Thrush <sup>B</sup>				O	O				
American Robin <sup>B</sup>	O		O	O	P	O			
Gray Catbird <sup>B</sup>	O		O	O		O			
Northern Mockingbird <sup>B</sup>		O	O						
Brown Thrasher <sup>B (S-SC)</sup>			P						
European Starling <sup>B</sup>	O		O			O			P
Cedar Waxwing <sup>B</sup>			P	P	P	P	P		
Blue-winged Warbler <sup>B</sup>	O		O			P			
Golden-winged Warbler <sup>B (S-E)</sup>									
Nashville Warbler <sup>B</sup>							P		
Yellow Warbler <sup>B</sup>		P	O				O		

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 S-E = State-endangered S-T= State-threatened S-SC = State-Special Concern  
 Source: DeGraaf, Richard M. and Mariko Yamasaki. 2001. New England Wildlife: Habitat, Natural History and Distribution, University Press of New England, Hanover, New Hampshire, 2001.

	Terrestrial Habitats						Aquatic Habitats		Other
	Agricultural Field	Sand and Gravel Quarries	Early Successional	Mixed Deciduous & Coniferous Upland Forest	Mixed Deciduous & Coniferous Wetland Forest	Edge	Ketch Brook	Vernal Pools	Manmade Features
Yellow-rumped warbler <sup>M</sup>					O				
Chestnut-sided Warbler <sup>B</sup>			P	P	P	P			
Blackpoll Warbler <sup>M</sup>				O	O				
Black-throated Green Warbler <sup>B</sup>				P	P				
Pine Warbler <sup>B</sup>				O	P				
Prairie Warbler <sup>B</sup>			O						
Black-and-white Warbler <sup>B</sup>			P	P	P				
American Redstart <sup>B</sup>			P	P	P	P			
Worm-eating Warbler <sup>B</sup>				O	P	O			
Ovenbird <sup>B</sup>				O					
Northern Waterthrush <sup>B</sup>					O				
Louisiana Waterthrush <sup>B</sup>					P				
Common Yellowthroat <sup>B</sup>			O			P			

P = Potential to occur O = observed by VHB from Sept. 2019 to July 2020 ● = GCN Species in the 2015 CWAP. B = breeding in Connecticut M = migrant/visitor  
 S-E = State-endangered S-T= State-threatened S-SC = State-Special Concern  
 Source: DeGraaf, Richard M. and Mariko Yamasaki. 2001. New England Wildlife: Habitat, Natural History and Distribution, University Press of New England, Hanover, New Hampshire, 2001.  
 CTDEEP. 2015. Connecticut Wildlife Action Plan. [http://www.ct.gov/deep/cwp/view.asp?a=2723&q=329520&deepNav\\_GID=1719#Revision](http://www.ct.gov/deep/cwp/view.asp?a=2723&q=329520&deepNav_GID=1719#Revision)

	Terrestrial Habitats					Aquatic Habitats		Other	
	Agricultural Field	Sand and Gravel Quarries	Early Successional	Mixed Deciduous & Coniferous Upland Forest	Mixed Deciduous & Coniferous Wetland Forest	Edge	Ketch Brook	Vernal Pools	Manmade Features
Hooded Warbler <sup>B</sup>									
Canada Warbler <sup>B</sup>									
Scarlet Tanager <sup>B</sup>				O	P				
Eastern Towhee <sup>B</sup>			O	O		P			
American Tree Sparrow <sup>M</sup>			P						
Chipping Sparrow <sup>B</sup>	O		O			O			
Field Sparrow <sup>B</sup>			O						
Savannah Sparrow <sup>B</sup> (S-SC)			P						
Grasshopper Sparrow <sup>B</sup> (S-E)									
Vesper Sparrow <sup>B</sup> (S-E)									
Fox Sparrow <sup>M</sup>									
Song Sparrow <sup>B</sup>	P	O	O			O			
Swamp Sparrow <sup>B</sup>									
White-throated Sparrow <sup>M</sup>	P		O			P			
Dark-eyed Junco <sup>B</sup>	P		O			O			
Lapland Longspur <sup>M</sup>									
Snow Bunting <sup>M</sup>	P		P						

P = Potential to occur O = observed by VHB from Sept. 2019 to July 2020 ● = GCN Species in the 2015 CWAP. B = breeding in Connecticut M = migrant/visitor  
 S-E = State-endangered S-T= State-threatened S-SC = State-Special Concern  
 Source: DeGraaf, Richard M. and Mariko Yamasaki. 2001. New England Wildlife: Habitat, Natural History and Distribution, University Press of New England, Hanover, New Hampshire, 2001.

	Terrestrial Habitats						Aquatic Habitats		Other
	Agricultural Field	Sand and Gravel Quarries	Early Successional	Mixed Deciduous & Coniferous Upland Forest	Mixed Deciduous & Coniferous Wetland Forest	Edge	Ketch Brook	Vernal Pools	Manmade Features
Northern Cardinal <sup>B</sup>			O	O	O	O			
Rose-breasted Grosbeak <sup>B</sup>	P	P		O		O			
Indigo Bunting <sup>B</sup>			O			O			
Bobolink <sup>B (S-SC)</sup>			P						
Red-winged Blackbird <sup>B</sup>	O		O		P	P			
Eastern Meadowlark <sup>B (S-T)</sup>		P	P						
Common Grackle <sup>B</sup>	O	P	O	O	P	P			
Brown-headed Cowbird <sup>B</sup>	O	O	O	O	P	O			
Orchard Oriole <sup>B</sup>									
Baltimore Oriole <sup>B</sup>			O	O					
Pine Grosbeak <sup>M</sup>									
Purple Finch <sup>B</sup>									
House Finch <sup>B</sup>									P
Common Redpoll <sup>M</sup>									
Pine Siskin <sup>M</sup>				P	P				
American Goldfinch <sup>B</sup>	P		O	O	P	O			
Evening Grosbeak <sup>B</sup>									

P = Potential to occur O = observed by VHB from Sept. 2019 to July 2020 ● = GCN Species in the 2015 CWAP. B = breeding in Connecticut M = migrant/visitor  
 S-E = State-endangered S-T= State-threatened S-SC = State-Special Concern  
 Source: DeGraaf, Richard M. and Mariko Yamasaki. 2001. New England Wildlife: Habitat, Natural History and Distribution, University Press of New England, Hanover, New Hampshire, 2001.

	Terrestrial Habitats					Aquatic Habitats		Other	
	Agricultural Field	Sand and Gravel Quarries	Early Successional	Mixed Deciduous & Coniferous Upland Forest	Mixed Deciduous & Coniferous Wetland Forest	Edge	Ketch Brook	Vernal Pools	Manmade Features
House Sparrow <sup>P</sup>	P					P			O

P = Potential to occur O = observed by VHB from Sept. 2019 to July 2020 ● = GCN Species in the 2015 CWAP. B = breeding in Connecticut M = migrant/visitor  
 S-E = State-endangered S-T= State-threatened S-SC = State-Special Concern  
 Source: DeGraaf, Richard M. and Mariko Yamasaki. 2001. New England Wildlife: Habitat, Natural History and Distribution, University Press of New England, Hanover, New Hampshire, 2001.  
 CTDEEP. 2015. Connecticut Wildlife Action Plan. [http://www.ct.gov/deep/cwp/view.asp?a=2723&q=329520&deepNav\\_GID=1719#Revision](http://www.ct.gov/deep/cwp/view.asp?a=2723&q=329520&deepNav_GID=1719#Revision)

**Table B-2 Observed and Potential Amphibian and Reptile Species**

	Terrestrial Habitats						Aquatic Habitats		Other
	Agricultural Field	Sand and Gravel Quarries	Early Successional	Mixed Deciduous & Coniferous Upland Forest	Mixed Deciduous & Coniferous Wetland Forest	Edge	Vernal Pool	Ketch Brook	Manmade Features
<b>AMPHIBIANS AND REPTILES</b>									
Marbled Salamander <sup>B</sup>	P	P			P		P		
Spotted Salamander <sup>B</sup>	P	P					O		
Red Spotted Newt <sup>B</sup>	P	P			P		P	P	
Northern Dusky Salamander <sup>B</sup>	P	P					P	P	
Northern Redback Salamander <sup>B</sup>	P	P							
Four-toed Salamander <sup>B</sup>									
Northern Two-Lined Salamander <sup>B</sup>	P	P						P	
American Toad <sup>B</sup>	P	P	P		P	P	P		

P = Potential to occur O = observed by VHB from Sept. 2019 to July 2020 ● = GCN Species in the 2015 CWAP. B = breeding in Connecticut M = migrant/visitor  
 S-E = State-endangered S-T= State-threatened S-SC = State-Special Concern  
 Source: DeGraaf, Richard M. and Mariko Yamasaki. 2001. New England Wildlife: Habitat, Natural History and Distribution, University Press of New England, Hanover, New Hampshire, 2001.

	Terrestrial Habitats					Aquatic Habitats		Other	
	Agricultural Field	Sand and Gravel Quarries	Early Successional	Mixed Deciduous & Coniferous Upland Forest	Mixed Deciduous & Coniferous Wetland Forest	Edge	Vernal Pool	Ketch Brook	Manmade Features
Fowler's Toad <sup>B</sup>		P	P		P	P	P		
Northern Spring Peeper <sup>B</sup>	P	P			O		O		
Gray Treefrog <sup>B</sup>		O			P		O		
American Bullfrog <sup>B</sup>									
Green Frog <sup>B</sup>					O		O	O	
Wood Frog <sup>B</sup>	P	P			P		O		
Pickerel Frog <sup>B</sup>		P				P	P	P	
Common Snapping Turtle <sup>B</sup>		P	P	P	P	P	P	P	
Painted Turtle <sup>B</sup>								O	
Spotted Turtle <sup>B (S-SC)</sup>	P	P	P	P	P	P	P	P	
Wood Turtle <sup>B (S-SC)</sup>	P	P	P	P	P	P	P	P	
Eastern Box Turtle <sup>B (S-SC)</sup>	P	P	P		P	P		P	
Common Musk Turtle <sup>B</sup>								P	
Northern Water Snake <sup>B</sup>							P	P	P

P = Potential to occur O = observed by VHB from Sept. 2019 to July 2020 ● = GCN Species in the 2015 CWAP. B = breeding in Connecticut M = migrant/visitor  
 S-E = State-endangered S-T= State-threatened S-SC = State-Special Concern  
 Source: DeGraaf, Richard M. and Mariko Yamasaki. 2001. New England Wildlife: Habitat, Natural History and Distribution, University Press of New England, Hanover, New Hampshire, 2001.  
 CTDEEP. 2015. Connecticut Wildlife Action Plan. [http://www.ct.gov/deep/cwp/view.asp?a=2723&q=329520&deepNav\\_GID=1719#Revision](http://www.ct.gov/deep/cwp/view.asp?a=2723&q=329520&deepNav_GID=1719#Revision)

	Terrestrial Habitats						Aquatic Habitats		Other
	Agricultural Field	Sand and Gravel Quarries	Early Successional	Mixed Deciduous & Coniferous Upland Forest	Mixed Deciduous & Coniferous Wetland Forest	Edge	Vernal Pool	Ketch Brook	Manmade Features
Northern Red-bellied Snake <sup>B</sup>	P	P	P						P
Common Garter Snake <sup>B</sup>	P	P	P	O	O	P	P	P	P
Eastern Ribbon Snake <sup>B (S-SC)</sup>		P					P	P	P
Eastern Hognose Snake <sup>B (S-SC)</sup>		P	P			P			
Northern Ringneck Snake <sup>B</sup>	P	P							
Eastern Worm Snake <sup>B</sup>	P	P	P	P					
Northern Black Racer <sup>B</sup>		P	P		P	P			P
Eastern Smooth Green Snake <sup>B (S-SC)</sup>		P	P		P	P			
Black Rat Snake <sup>B</sup>		P	P		P	P			P
Eastern Milk Snake <sup>B</sup>		P	P		P	P			P

P = Potential to occur O = observed by VHB from Sept. 2019 to July 2020 ● = GCN Species in the 2015 CWAP. B = breeding in Connecticut M = migrant/visitor  
 S-E = State-endangered S-T= State-threatened S-SC = State-Special Concern  
 Source: DeGraaf, Richard M. and Mariko Yamasaki. 2001. New England Wildlife: Habitat, Natural History and Distribution, University Press of New England, Hanover, New Hampshire, 2001.  
 CTDEEP. 2015. Connecticut Wildlife Action Plan. [http://www.ct.gov/deep/cwp/view.asp?a=2723&q=329520&deepNav\\_GID=1719#Revision](http://www.ct.gov/deep/cwp/view.asp?a=2723&q=329520&deepNav_GID=1719#Revision)

**Table B-3 Observed and Potential Mammal Species**

	Terrestrial Habitats						Aquatic Habitats		Other
	Agricultural Field	Sand and Gravel Quarries	Early Successional	Mixed Deciduous & Coniferous Upland Forest	Mixed Deciduous & Coniferous Wetland Forest	Edge	Vernal Pool	Ketch Brook	Manmade Features
Virginia Opossum <sup>B</sup>		P	P	P	P	P			
Masked Shrew <sup>B</sup>	P	P	P		P	P			
Water Shrew <sup>B</sup>	P	P				P	P	P	
Northern Short-tailed Shrew <sup>B</sup>	P	P	P		P	P			
Star-nosed Mole <sup>B</sup>					P	P	P	P	
Little Brown Bat <sup>B (S-E)</sup>	P	P	P	P	P	P	P	P	P
Silver-haired Bat <sup>M (S-SC)</sup>	P	P	P	P	P	P	P	P	
Eastern Pipistrelle <sup>B</sup>	P	P	P	P	P	P	P	P	P
Big Brown Bat <sup>B</sup>	P	P	P	P	P	P	P	P	P
Red Bat <sup>B (S-SC)</sup>	P	P	P	P	P	P	P	P	
Hoary Bat <sup>M (S-SC)</sup>	P	P	P	P	P	P	P	P	
Northern Long-eared Bat <sup>B (S-E and federally Threatened)</sup>	P	P	P	P	P	P	P	P	P
Eastern Cottontail <sup>B</sup>	P	P	P		P	P			

P = Potential to occur O = observed by VHB from Sept. 2019 to July 2020 ● = GCN Species in the 2015 CWAP. B = breeding in Connecticut M = migrant/visitor  
 S-E = State-endangered S-T= State-threatened S-SC = State-Special Concern  
 Source: DeGraaf, Richard M. and Mariko Yamasaki. 2001. New England Wildlife: Habitat, Natural History and Distribution, University Press of New England, Hanover, New Hampshire, 2001.  
 CTDEEP. 2015. Connecticut Wildlife Action Plan. [http://www.ct.gov/deep/cwp/view.asp?a=2723&q=329520&deepNav\\_GID=1719#Revision](http://www.ct.gov/deep/cwp/view.asp?a=2723&q=329520&deepNav_GID=1719#Revision)

	Terrestrial Habitats					Aquatic Habitats		Other	
	Agricultural Field	Sand and Gravel Quarries	Early Successional	Mixed Deciduous & Coniferous Upland Forest	Mixed Deciduous & Coniferous Wetland Forest	Edge	Vernal Pool	Ketch Brook	Manmade Features
New England Cottontail <sup>B</sup>		P	P		P	P			
Snowshoe Hare <sup>B</sup>	P	P	P			P			
Eastern Chipmunk <sup>B</sup>	P	P	O		P				
Woodchuck <sup>B</sup>	P	P	P	P	P				
Gray Squirrel <sup>B</sup>	O	O				O			
Red Squirrel <sup>B</sup>	P	P							
Southern Flying Squirrel <sup>B</sup>		P							
Beaver <sup>B</sup>								O	
White-footed Mouse <sup>B</sup>	P	P	P		P				P
Southern Red-backed Vole <sup>B</sup>	P	P	P	P	P				
Meadow Vole <sup>B</sup>	P	P	P		P	P			
Woodland Vole <sup>B</sup>		P	P		P				
Muskrat <sup>B</sup>						P	P	P	
Southern Bog Lemming <sup>B (S-SC)</sup>		P	P		P	P			
Norway Rat <sup>B</sup>			P	P	P				P

P = Potential to occur O = observed by VHB from Sept. 2019 to July 2020 ● = GCN Species in the 2015 CWAP. B = breeding in Connecticut M = migrant/visitor  
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 CTDEEP. 2015. Connecticut Wildlife Action Plan. [http://www.ct.gov/deep/cwp/view.asp?a=2723&q=329520&deepNav\\_GID=1719#Revision](http://www.ct.gov/deep/cwp/view.asp?a=2723&q=329520&deepNav_GID=1719#Revision)

	Terrestrial Habitats						Aquatic Habitats		Other
	Agricultural Field	Sand and Gravel Quarries	Early Successional	Mixed Deciduous & Coniferous Upland Forest	Mixed Deciduous & Coniferous Wetland Forest	Edge	Vernal Pool	Ketch Brook	Manmade Features
House Mouse			P	P	P				P
Meadow Jumping Mouse <sup>B</sup>	P	P	P		P	P			
Coyote <sup>B</sup>	P	P	P		P	P			
Red Fox <sup>B</sup>	P	P	P	P	P	P			
Gray Fox <sup>B</sup>		P	P			P			
Raccoon <sup>B</sup>	P	P	P	P	P	P	O	O	
Ermine <sup>B</sup>	P	P	P	P	P	P			P
Fisher <sup>B</sup>	P	P	P						
Long-tailed Weasel <sup>B</sup>	P	P	P	P	P	P			P
Mink <sup>B</sup>	P	P		P		P	P	P	
Striped Skunk <sup>B</sup>	P	P	P	P	P	P			P
River Otter <sup>B</sup>	P	P		P		P	P	P	
White-tailed Deer <sup>B</sup>	P	O	O	P	P	P			
Black Bear <sup>B</sup>	P	P	P	P	P	P	P	P	
Bobcat <sup>B</sup>	P	P	P	P	P	P	P	P	

P = Potential to occur O = observed by VHB from Sept. 2019 to July 2020 ● = GCN Species in the 2015 CWAP. B = breeding in Connecticut M = migrant/visitor  
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Ref: 42569.00  
July 20, 2020

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## Attachment C – Project Site Photos

**Client Name:** Gravel Pit Solar I, LLC

**Site Location:** East Windsor, CT

**Project No:** 42569.00

**Photo No.** 1 **Date:** 11/6/19

**Description:** View of Ketch Brook during high flow late fall period.



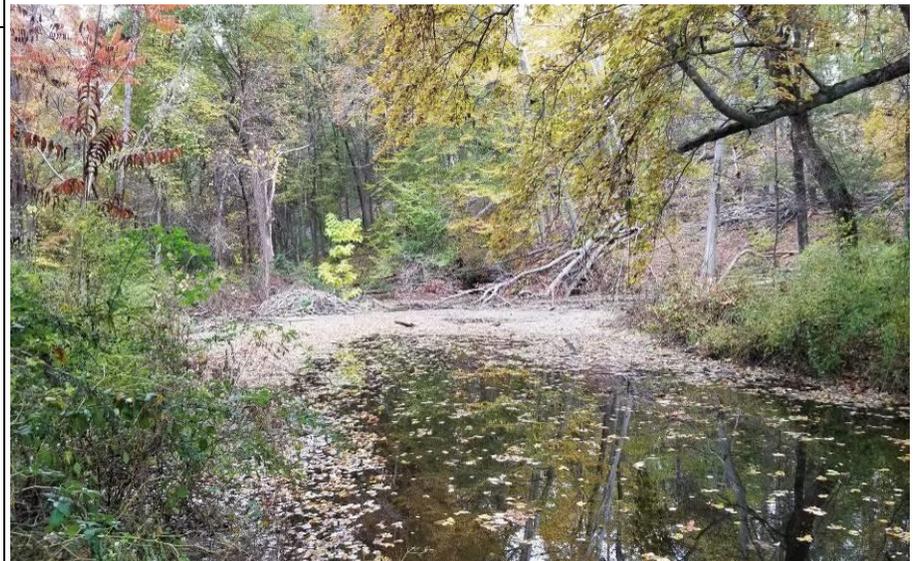
**Client Name:** Gravel Pit Solar I, LLC

**Site Location:** East Windsor, CT

**Project No:** 42569.00

**Photo No.** 2 **Date:** 10/16/19

**Description:** View of beaver lodge and impounded backwater in the where Ketch Brook enters Northeast corner of the Project Site. Beavers have felled or girdled most of a stand of American beech on the escarpment above the western bank (right side) of the brook.



**Client Name:** Gravel Pit Solar I, LLC

**Site Location:** East Windsor, CT

**Project No:** 42569.00

**Photo No.** 3 **Date:** 03/05/20

**Description:** South of the railroad bridge, the Ketch Brook floodplain transitions to Alluvial Swamp. The Illicit operation of all-terrain vehicles has caused significant damage to vegetation and turbidity levels in Ketch Brook.



**Client Name:** Gravel Pit Solar I, LLC

**Site Location:** East Windsor, CT

**Project No:** 42569.00

**Photo No.** 4 **Date:** 04/30/20

**Description:** View of tobacco fields with annual rye cover crop looking south towards Plantation Road. The silt loam soils are susceptible to compaction and puddling along dirt farm roads.



**Client Name:** Gravel Pit Solar I, LLC

**Site Location:** East Windsor, CT

**Project No:** 42569.00

**Photo No.** 5 **Date:** 3/30/20

**Description:** View of Vernal Pool 2, the largest and most diverse pool within the Project Site. It is situated in ice contact stratified drift east of Ketch Brook. The higher terrace positions and kames in this area support dry acid oak forest.



**Client Name:** Gravel Pit Solar I, LLC

**Site Location:** East Windsor, CT

**Project No:** 42569.00

**Photo No.** 6 **Date:** 06/02/20

**Description:** Sea lamprey were observed preparing spawning nests in gravel bottom segments of Ketch Brook.



## PHOTOGRAPHIC LOG

**Client Name:** Gravel Pit Solar I, LLC

**Site Location:** East Windsor, CT

**Project No:** 42569.00

**Photo No.** 7 **Date:** 3/24/20

**Description:** Vernal Pool 3 occupies an abandoned meander channel at the base of a steep terrace escarpment. The terrace face is forested with white pine, eastern hemlock, red oak and black birch with evergreen woodfern common. The floristics of the floodplain forest is described in the Conservation Measures Memorandum.



## PHOTOGRAPHIC LOG

**Client Name:** Gravel Pit Solar I, LLC

**Site Location:** East Windsor, CT

**Project No:** 42569.00

**Photo No.** 8 **Date:** 11/5/19

**Description:** Portions of the Project Site are underlain by silty clay glaciolacustral deposits of glacial Lake Hitchcock. Across much of the Project Site these deposits underlay outwash sand and gravels and aeolian mantles of silt loam or fine sandy loam. Where exposed, these lakebed deposits are highly erodible and sources of sediment for Ketch Brook. This feature begins at the bottom of a farm field north of Plantation Road.



 <b>vhb</b> Engineers   Scientists   Planners   Designers		<b>PHOTOGRAPHIC LOG</b>	
<b>Client Name:</b> Gravel Pit Solar I, LLC		<b>Site Location:</b> East Windsor, CT	
<b>Project No:</b> 42569.00			
<b>Photo No.</b> 9	<b>Date:</b> 3/3/20		
<p><b>Description:</b> Glacial meltwater valley south of Plantation Road are fill with sediment derived from decades of farm operations on the adjacent terraces. These forests are dominated by sugar maple, black birch, and red oak with large white pine scattered throughout. These forested groves were searched for red-headed woodpecker including thought the use of call back surveys, but no detections were made anywhere on or off the Project Site.</p>			

 <b>vhb</b> Engineers   Scientists   Planners   Designers		<b>PHOTOGRAPHIC LOG</b>	
<b>Client Name:</b> Gravel Pit Solar I, LLC		<b>Site Location:</b> East Windsor, CT	
<b>Project No:</b> 42569.00			
<b>Photo No.</b> 10	<b>Date:</b> 11/5/19		
<p><b>Description:</b> View of the Gravel Pit northeast of Plantation Road looking east. This pit is still operating, and big sand tiger beetle was not observed. This pit also attracts illicit ATV recreationists.</p>			

**Client Name:** Gravel Pit Solar I, LLC

**Site Location:** East Windsor, CT

**Project No:** 42569.00

**Photo No.** 11      **Date:** 6/3/20

**Description:** Early successional habitat within the Sand & Gravel Pit south of Apothecaries Hall Road. Surveys for savannah sparrow, including call backs, did not lead to detection. Field sparrow, song sparrow, and willow flycatcher were among the songbirds utilizing this area. Despite being a S&G pit, the substrate in the pit floor was mostly sandy loam or silt loam and was unsuitable for big sands tiger beetle.



**Client Name:** Gravel Pit Solar I, LLC

**Site Location:** East Windsor, CT

**Project No:** 42569.00

**Photo No.** 12      **Date:** 6/3/20

**Description:** A suspected American kestrel nest next under a tobacco barn roof eave south of Plantation Road. A mated pair of kestrel were observed flying up to the eave in May and later this nest was found in the same location in early June. It is not known if this nest is being utilized.



**Client Name:** Gravel Pit Solar IV, LLC

**Site Location:** East Windsor, CT

**Project No:** 42569.00

**Photo No.** 13     **Date:** 6/3/20

**Description:** Turbidity in Ketch Brook can be elevated during fair weather if ATVs are operating in upstream parts of the floodplain and brook.



**Client Name:** Gravel Pit Solar IV, LLC

**Site Location:** East Windsor, CT

**Project No:** 42569.01

**Photo No.** 14     **Date:** 3/3/20

**Description:** Some abandoned farmland soil on the northern face of the Sand & Gravel Pit northeast of Plantation Road have been subject to severe erosion. The steep head cut into the gully is in the process of advancing south. These existing problems will be addressed during the initial deployment of erosion and sediment controls.



Ref: 42569.00  
July 20, 2020

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## Attachment D – USFWS Official Species List



# United States Department of the Interior



FISH AND WILDLIFE SERVICE  
New England Ecological Services Field Office  
70 Commercial Street, Suite 300  
Concord, NH 03301-5094  
Phone: (603) 223-2541 Fax: (603) 223-0104  
<http://www.fws.gov/newengland>

In Reply Refer To:

May 08, 2020

Consultation Code: 05E1NE00-2020-SLI-2503

Event Code: 05E1NE00-2020-E-07489

Project Name: Gravel Pit Solar

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan ([http://www.fws.gov/windenergy/eagle\\_guidance.html](http://www.fws.gov/windenergy/eagle_guidance.html)). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
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# Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

**New England Ecological Services Field Office**

70 Commercial Street, Suite 300

Concord, NH 03301-5094

(603) 223-2541

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## Project Summary

Consultation Code: 05E1NE00-2020-SLI-2503

Event Code: 05E1NE00-2020-E-07489

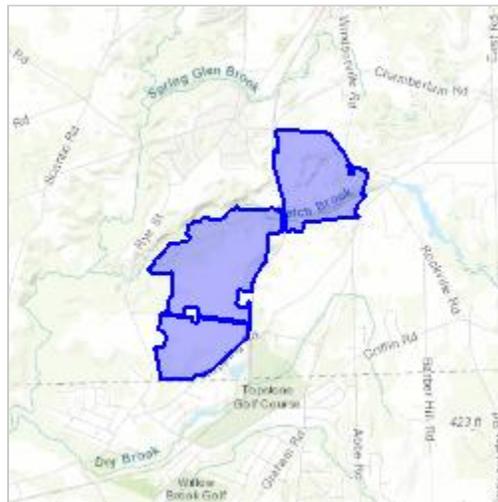
Project Name: Gravel Pit Solar

Project Type: \*\* OTHER \*\*

Project Description: Development of a solar panel array in East Granby, CT.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/41.88112151152117N72.56331645640603W>



Counties: Hartford, CT

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## Endangered Species Act Species

There is a total of 1 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries<sup>1</sup>, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

## Mammals

NAME	STATUS
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/9045">https://ecos.fws.gov/ecp/species/9045</a>	Threatened

## Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

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