Critical habitats that lie within your project area

There are no critical habitats within your project area.

Connecticut Department of

ENERGY &
ENVIRONMENTAL
PROTECTION

July 8, 2015

Dean Gustafson
All-Points Technology Corporation, P.C.
3 Saddlebrook Dr
Killingworth, CT 06419
dgustafson@allpointstech.com

Project: Proposed Construction of a Solar Powered Electrical Generation Installation Utilizing Photovoltaic Module Technology for Fusion Solar Center on Potash Hill Road in Sprague (Nothing on site but some species in the area)
NDDB Determination No.: 201504279

Dear Dean Gustafson,

I have reviewed Natural Diversity Data Base (NDDB) maps and files regarding the area delineated on the map provided for the proposed Proposed Construction of a Solar Powered Electrical Generation Installation Utilizing Photovoltaic Module Technology for Fusion Solar Center on Potash Hill Road in Sprague (Nothing on site but some species in the area), Connecticut. According to our records we have Federal and State Threatened *Myotis septentrionalis* (long-eared bats), State Threatened *Carex cumulata* (clustered sedge) and State Special Concern *Glyptemys insculpta* (wood turtle) in the vicinity of this property. We also have State Threatened Bald eagles nesting at the adjacent Quinebaug River. I would recommend a site survey of this property to be sure none of these species are impacted by this project. This determination is good for one year. Please re-submit an NDDB Request for Review if the scope of work changes or if work has not begun on this project by July 8, 2016.

Natural Diversity Data Base information includes all information regarding critical biological resources available to us at the time of the request. This information is a compilation of data collected over the years by the Department of Energy and Environmental Protection's Natural History Survey and cooperating units of DEEP, private conservation groups and the scientific community. This information is not necessarily the result of comprehensive or site-specific field investigations. Consultations with the Data Base should not be substitutes for on-site surveys required for environmental assessments. Current research projects and new contributors continue to identify additional populations of species and locations of habitats of concern, as well as, enhance existing data. Such new information is incorporated into the Data Base as it becomes available.

Please contact me if you have further questions at (860) 424-3592, or dawn.mckay@ct.gov . Thank you for consulting the Natural Diversity Data Base.

Sincerely,

Dawn M. McKay

Dawn M. McKay
Environmental Analyst 3

Attachment 2
Environmental Assessment Report

ENVIRONMENTAL ASSESSMENT

SOLAR FACILITY INSTALLATION

FUSION SOLAR CENTER

POTASH HILL ROAD

SPRAGUE, CONNECTICUT

NEW LONDON COUNTY

Prepared for:

Fusion Solar Center, LLC
PO Box 2055
Charlottesville, VA 22902

Prepared by:

All-Points Technology Corporation, P.C.
3 Saddlebrook Drive
Killingworth, CT 06419

July 2015

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Project Introduction

Fusion Solar Center, LLC ("Fusion") retained All-Points Technology Corporation, P.C. ("APT") to prepare this Environmental Assessment ("EA") for the proposed installation of a 20 megawatt AC ("MWac") solar-based electric generating facility in Town of Sprague, Connecticut (the "Project"). Figure 1, *Project Location Map*, depicts the Project location and surrounding area.

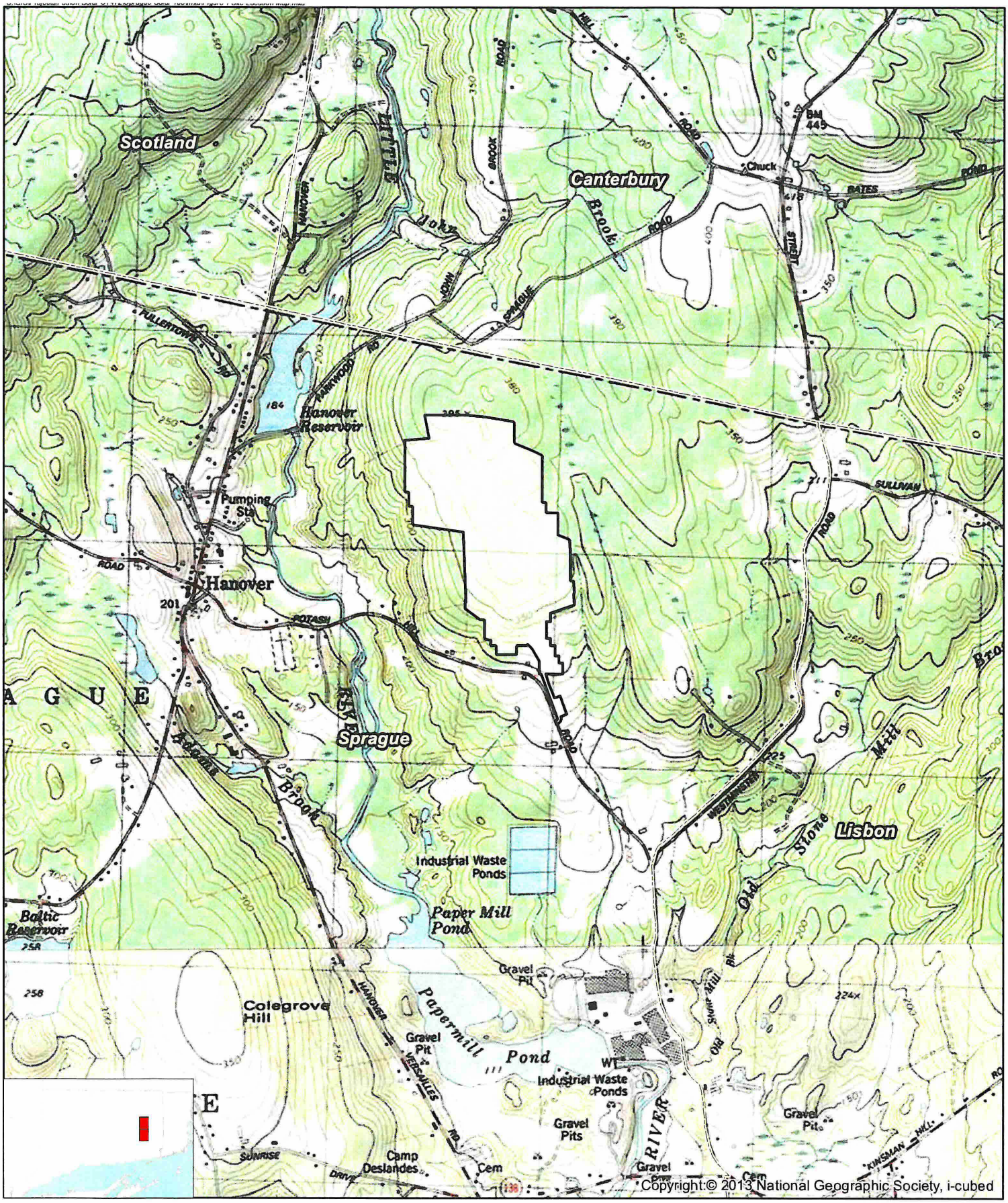
This EA has been completed to support Fusion's submission of a petition for declaratory ruling that no Certificate of Environmental Compatibility and Public Need is required for the construction, maintenance, and operation of the Project.

The "Site", as defined herein, consists of two separate and abutting parcels north of Potash Hill Road, totaling 225± acres (identified in Sprague Assessor records as Map 16, Block 6, Lot 18 and Map 21, Block 2, Lot 2. The Site is bounded by undeveloped woods to the north, east and west; and a cleared agricultural field, residence and Potash Hill Road to the south. Of the 225 acres, Fusion has approximately 170 acres under control for development of the Project.

The proposed solar facility will include the following:

- Approximately 97,000 polycrystalline silicon solar modules or similar photovoltaic ("PV") technology.
- Approximately 10 to 12 utility scale inverters and transformers mounted on concrete equipment pads measuring approximately 20 feet by 40 feet.
- Ground screw or pile-driven foundations and aluminum or steel fixed–tilt racking for solar module mounting.

In totality, the "Project Area" would encompass approximately 144 acres to accommodate the solar arrays, associated equipment, access and tree-free zones (to mitigate shading effects). This will require clearing of approximately 134 acres of existing upland forest. A portion of an adjacent, cleared hayfield (approximately 10 acres in size) is also to be utilized. Upon completion, the solar field will be surrounded by a fence enclosure (comprising approximately 118 acres).



Legend

- Project Area
- Municipal Boundary

Figure 1
Project Location Map

Proposed Fusion Solar Center Facility
Potash Hill Rd
Sprague, CT

Map Notes:
Base Map Source: USGS 7.5 Minute Topographic Quadrangle Maps, Scotland and Norwich, CT (1983)
Site located on the Scotland Quadrangle.
Map Scale: 1:24,000
Map Date: July 2015

N W E S

1,000 500 0 1,000 Feet

CORONAL
ALL-POINTS

Existing Conditions

Figure 2, *Existing Conditions Map*, depicts current conditions on the Site, its access, abutting properties, and several key features discussed herein. The purpose of this section is to describe current conditions on the Site. A detailed discussion of the proposed Project's effects on the environment is provided in the following section of this document.

Project Location

The ±225-acre Site is located northeast of Potash Hill Road in Sprague, New London County, Connecticut. The Site[1] is identified by the Sprague Tax Assessor as two separate and abutting parcels, including:

- #57 Potash Hill Road (Map 16, Block 6, Lot 18); and,
- #111 Potash Hill Road (Map 21, Block 2, Lot 2).

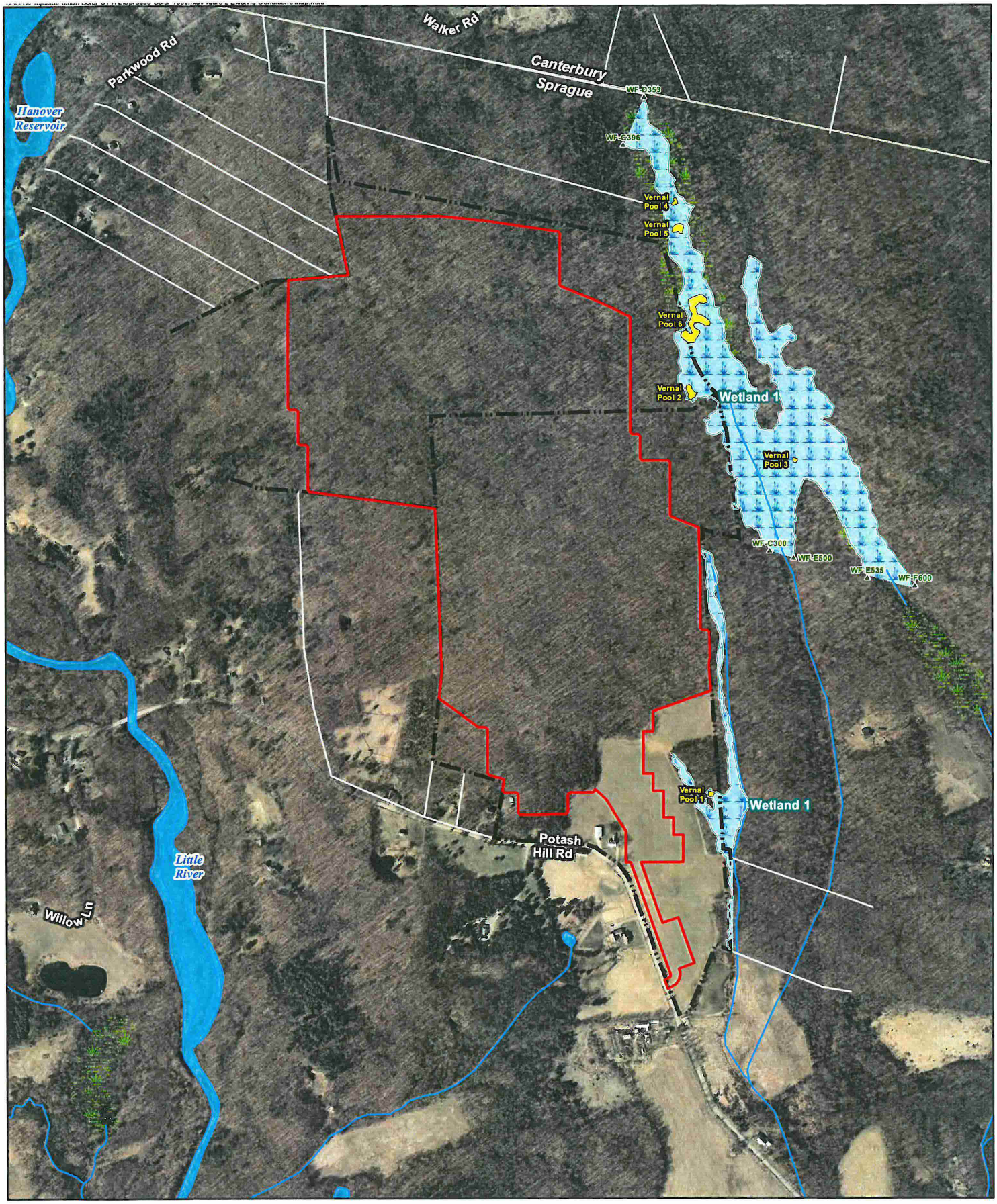
The majority of the Site is undeveloped, wooded land. The southern portion of the Site is developed with a residence and barn adjacent to Potash Hill Road. A large, open agricultural field is located in this area as well. Land use in the area of the Site consists of large wooded tracts, sparse residential development, and agricultural fields.

Site topography in the area proposed for development slopes down generally north to south from a height of approximately 370 feet above mean sea level ("AMSL") to 260 feet AMSL.

Site Access

Existing access can be gained via driveways originating off Potash Hill Road in the southern portion of the Site.

[1] Fusion Solar Center, LLC currently has approximately 170 acres under control from the property owner for development of the Project. The current design would utilize approximately 144 acres.



Legend

- Site Boundary
- Abutting Property Boundary Line
- Project Area
- Start/End Wetland Flag
- Delineated Wetland Boundary Line
- Wetland Area
- Vernal Pool
- Hydrography
  - Marsh
  - Water
  - Watercourse

N W E S

800 400 0 800 Feet

Map Notes:
Base Map Source: 2012 Aerial Photograph (CTECO)
Map Scale: 1 in = 800 ft Map Date: July 16, 2015

Figure 2
Existing Conditions Map

Proposed Fusion Solar Center Facility
Potash Hill Rd
Sprague, CT

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Wetlands and Watercourses

One (1) large wetland complex is located within and bordering the east side of the Site. This resource (referred to herein as Wetland 1) consists primarily of a broad bordering wetland system with diffuse seasonal intermittent stream channels that eventually focus to a perennial stream system (formed in gently to moderately sloping, dense glacial till) and feeder hillside seep wetland systems. The vast majority of the Site is comprised of upland areas.

Matthew Gustafson, a Connecticut-registered Soil Scientists with APT, conducted inspections of the Site on May 28, 2015 to review and confirm wetland boundaries identified during an initial inland wetlands delineation performed by Josh Wilson of Fuss & O'Neill ("F&O").[2]

A copy of the APT *Wetland Inspection Report* prepared by Mr. Gustafson is included as Appendix A. Wetland 1 is summarized below and depicted on the *Existing Conditions Map* provided as Figure 2.

Wetland 1 is a large complex wetland system consisting of broad forested wetlands with hummock hollow topography. Generally, the system drains north to south with interior focused and diffuse intermittent stream channels transitioning to perennial stream systems in the southern reaches. Wetland 1 is focused along the eastern side of the Site, originating off-Site to the north, and draining south off-Site. Numerous flow paths and areas of standing water were observed in Wetland 1 during Mr. Gustafson's May 2015 inspection.

Interior to the wetland system are a number of cryptic vernal pool habitats. In total, six (6) vernal pool habitats were identified within Wetland 1. Dominant wetland species include red maple (*Acer rubrum*), yellow birch (*Betula alleghaniensis*), spicebush (*Lindera benzoin*), pepperbush (*Clethra alnifolia*) skunk cabbage (*Symplocarpus foetidus*), Japanese barberry (*Berberis thunbergii*), sensitive fern (*Onoclea sensibilis*), and sphagnum species (*Sphagnum sp.*). Wetland 1 eventually drains into the Little River system to the south.

Soils encompassing the Site were field classified predominantly as upland soil units consisting of the following: Canton and Charlton soils, Sutton fine sandy loam, Paxton and Montauk fine sandy loams, and Woodbridge fine sandy loam. Wetland soils identified within the wetland resources

[2] A review of Mr. Wilson's delineation was found to be substantially correct.

consist of Ridgebury, Leicester, and Whitman soils. Identified soils are generally consistent with digitally available soil survey information obtained from the Natural Resources Conservation Service ("NRCS")[3].

Vernal Pools

During the wetland investigation, APT also conducted surveys to identify and assess vernal pools within Wetland 1. Calhoun and Klemens (2002) provides the following operational definition of vernal pools:

> *Vernal pools are seasonal bodies of water that attain maximum depths in the spring or fall, and lack permanent surface water connections with other wetlands or water bodies. Pools fill with snowmelt or runoff in the spring, although some may be fed primarily by groundwater sources. The duration of surface flooding, known as hydroperiod, varies depending upon the pool and the year; vernal pool hydroperiods range along a continuum from less than 30 days to more than one year. Pools are generally small in size (<2 acres), with the extent of vegetation varying widely. They lack established fish populations, usually as a result of periodic drying, and support communities dominated by animals adapted to living in temporary, fishless pools. In the region, they provide essential breeding habitat for one or more wildlife species including Ambystomid salamanders (Ambystoma spp., called "mole salamanders" because they live in burrows), wood frogs (Rana sylvatica), and fairy shrimp (Eubranchipus spp.).*

Vernal pool physical characteristics can vary widely while still providing habitat for indicator species. "Classic" vernal pools are natural depressions in a wooded upland with no hydrologic connection to other wetland systems. Manmade depressions such as quarry holes, old farm ponds and borrow pits can also provide similar habitat. Often, vernal pools are depressions or impoundments within larger wetland systems. These vernal pool habitats are commonly referred to as "cryptic" vernal pools.

Several species of amphibians depend on vernal pools for reproduction and development. These species are referred to as indicator vernal pool species and their presence in a wetland during the breeding season helps to identify that area as a vernal pool.

---

[3] NRCS Web Soil Survey, http://websoilsurvey.nrcs.usda.gov/app/, accessed on July 6, 2015.

This vernal pool assessment makes an important distinction between wetlands in which indicator species may breed and those wetlands where they breed *and* successfully develop. A common phenomena is for breeding (i.e., mating and egg laying) to occur in bodies of water such as road ruts or temporary puddles where development and metamorphosis of larvae is unsuccessful. Such areas are referred to as "decoy vernal pools" as reproductive efforts are unsuccessful. In their guidance on best development practices for conserving pool breeding amphibians, Calhoun and Klemens (2002) specifically note the negative impact associated with ruts: "*Site clearing can cause water-filled ruts. These ruts intercept amphibians moving toward the vernal pool and may induce egg deposition. Often these ruts do not hold water long enough to allow development of amphibians and therefore acts as "sinks" that result in populations declines.*"

Vernal pool surveys were conducted on June 3rd, 5th and 18th by APT in cooperation with Davison Environmental, LLC. Additionally, APT was provided egg mass survey data collected by F&O on April 7th and 22nd, 2015[4].

A total of six (6) vernal pools were identified in Wetland 1. All pools are cryptic vernal pools. Several of the pools are anthropogenic in nature.

Pool 1 consists of an old farm pond. The pond consists of an historic excavation with water retained by an earthen berm on the downslope side. The maximum water depth is approximately two (2) feet. Pool 1 was the most productive pool for spotted salamander, with a total of 143 egg masses observed.

Pool 2 also appears to have originated through historic excavation, likely for agricultural purposes. Pool 2 had a maximum depth of approximately 1.5 feet. Pool 2 had the highest species diversity of any pool, as it supported three indicator species: wood frog, spotted salamander and marbled salamander. Pool 2 was also the most productive pool for wood frog, with 42 egg masses observed.

Pool 3 is a small pool situated close to the headwater stream embedded within Wetland 1. The maximum depth was less than eight inches. F&O recorded 19 wood frog egg masses and two

[4] Egg mass count data was provided by F&O for Pools 1 through 4. The F&O survey data did not include information on Pools 5, 6 or 7.

spotted salamander egg masses in Pool 3 on April 22nd. During APT's dip-net surveys, no larval indicator species were encountered in Pool 3.

Pool 4 is likely anthropogenic in origin. Based on the depth and shape of the pool it appears to have formed in an historic logging road rut. The maximum depth is approximately 15 inches. The pool contained high densities of wood frog larvae. No spotted salamander larvae were found during dip-netting; however F&O's investigations in April noted three egg masses.

Pool 5 is a larger shallow pool in-line with and fed by the diffuse headwater stream which drains from this larger wetland system. The pool is gently sloping with a maximum depth of approximately 10 inches. Larvae of wood frog and spotted salamander were observed as well as several hatched spotted salamander egg masses.

Pool 6 is the largest pool in total surface area. However the pool is shallow throughout (eight inches or less), with most of the activity restricted to several large tree throws. The pool is fed directly by the headwater stream which flows through the pool. Although no egg mass inventory was conducted in this pool, based on the low density of larvae present during dip-netting it is likely that the pool has relatively low productivity. The pool also contained spring peeper tadpoles.

Other wildlife observed within vernal pools included green frog (*Rana clamitans*). The four-toed salamander, a vernal pool facultative species, was observed near Vernal Pool 6. See Tables 1 and 2 for an inventory of observations within the vernal pools.

Table 1 Amphibians and Reptiles Observed During Vernal Pool Survey

Common Name	Scientific Name	Status
Amphibians		
fowlers toad	*Bufo americanus*	
Marbled Salamander	*Ambystoma opacum*	IM, IS
four-toed salamander	*Hemidactylium scutatum*	FS
green frog	*Rana clamitans*	
wood frog	*Rana sylvatica*	IM, IS
pickerel frog	*Rana palustris*	
redback salamander	*Plethodon cinereus*	
spotted salamander	*Ambystoma maculatum*	IM, IS
spring peeper	*Pseudacris crucifer*	
two-lined salamander	*Eurycea bislineata*	
Reptiles		
garter snake	*Thamnophis sirtalis*	

Status
IS – vernal pool indicator species; FS – vernal pool facultative species
Wildlife Action Plan Conservation Status (CS):
VI – very important; MI – most important; IM – important

Table 2 Egg Mass and Larval Survey Results for Vernal Pool Indicator Species

Pool	Total Egg Masses		Larvae Observed		
	Wood Frog	Spotted Salamander	Wood Frog	Spotted Salamander	Marbled Salamander
1	25*	143	Y	Y	N
2	42*	46	Y	Y	Y
3	19*	2*	N	N	N
4	11*	3*	Y	N	N
5	NO	NO	Y	Y	N
6	NO	NO	Y	Y	N

KEY:
"Y"- yes; "N" – no
"NO" – not observed. Note that the timing of our initial survey was near the end the egg mass development stage for wood frog and spotted salamander.
*Indicates egg mass count data collected by Fuss & O'Neill on April 7th & 22nd 2015

Vegetation and Wildlife

The Site contains three (3) plant community types (a.k.a. habitats): (1) forested wetlands; (2) upland forest, (3) cool-season grass hayfield. Two (2) of these habitat types are classified as *key habitats* in the 2015 Connecticut Wildlife Action Plan[5] (WAP, hereinafter). WAP key habitat types include: (1) Upland Forest; and (2) Upland Herbaceous (sub-habitat cool-season grassland). These habitat types are depicted on Figure 3, *Habitat Cover Map*. Forested wetland (Wetland 1) was discussed in the previous section. The remaining vegetative communities are described below:

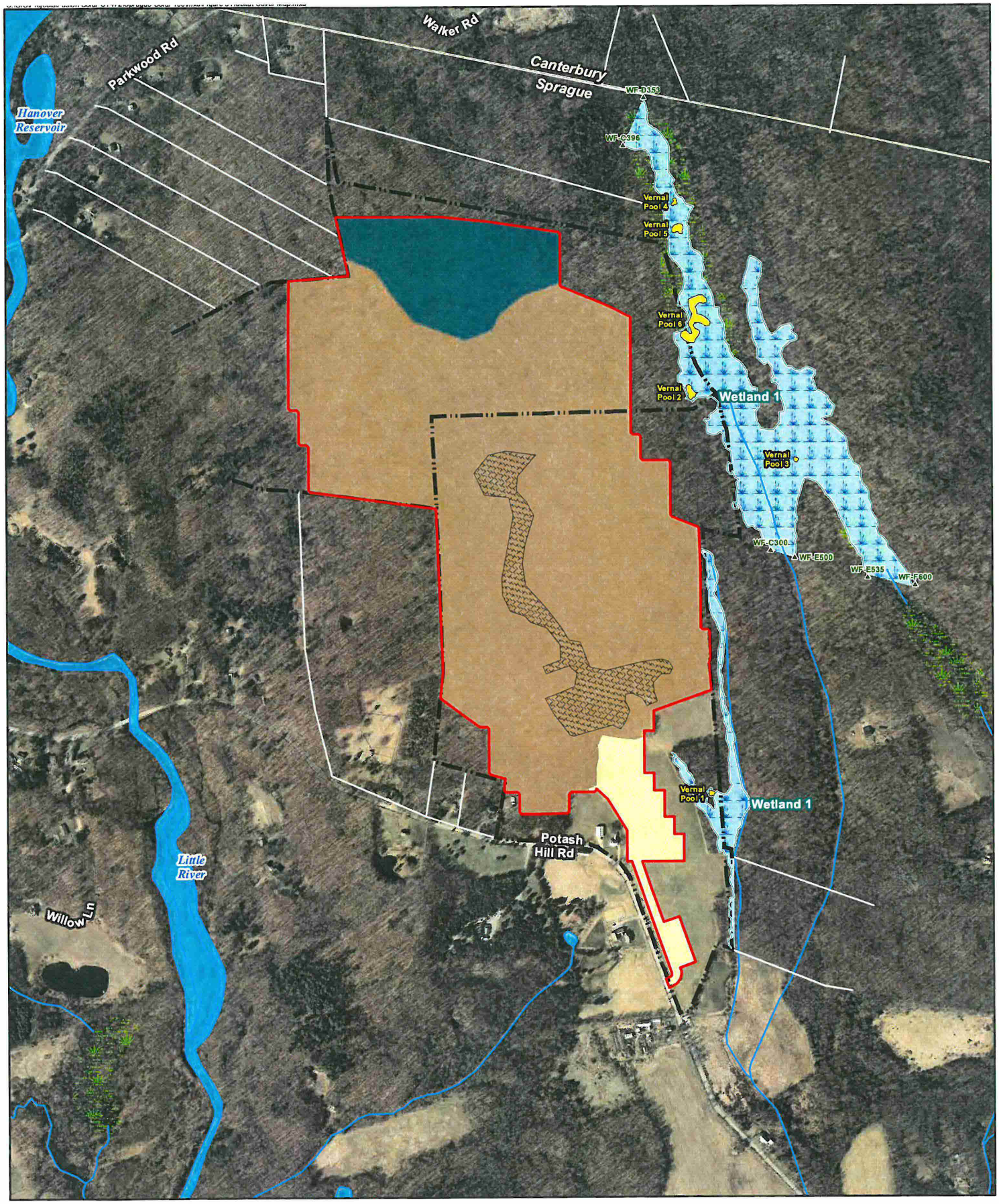
Upland Forest: This habitat type comprises the largest percentage of the Site and occupies a majority of its northern portion. It extends off-Site nearly in all directions. This forest block encompasses approximately 608 acres before being fragmented by agricultural lands and residential properties that lie along Main Street, Potash Hill Road, Woodland Lane, Westminster Road, and Walker Road. The total acreage of forested area associated with the Project Area is approximately 134 acres, of which approximately 10 acres has experienced some level of recent logging activity. Forest metric data was collected for both cover types, including average tree height, species diversity, and trees per acre. Average tree height was recorded at 85 to 95 feet. The number of trees per acre was calculated at 80 trees per acre within managed areas, and 166 trees per acre within intact areas.[6] The recent logging has primarily involved the removal of high value timber species while maintaining some overstory trees and a majority of the understory.

The Upland Forest habitat is generally separated into two distinct cover types which include Northern Red Oak-Yellow Birch and Northern Red Oak – Black Oak – Blue Ridge Blueberry.

---

[5] The Wildlife Action Plan, formerly Connecticut's Comprehensive Wildlife Conservation Strategy (2005) is currently in preparation by DEEP for release in 2015. The WAP identifies 10 key habitat types that support all of the State's GCN species.

[6] Trees per acre based on specimens 6 inches or greater in diameter at breast height.



Legend

- Site Boundary
- Abutting Property Boundary Line
- Project Area
- Start/End Wetland Flag
- Delineated Wetland Boundary Line
- Wetland Area
- Vernal Pool

Hydrography
- Marsh
- Water
- Watercourse

Habitat Type
- Northern Red Oak - Black Oak - Blue Ridge Blueberry Forest
- Northern Red Oak - Yellow Birch Forest
- Cool-Season Grass Hayfield
- Approximate Areas Logged

N W E S

800 400 0 800 Feet

Map Notes:
Base Map Source: 2012 Aerial Photograph (CTECO)
Map Scale: 1 in = 800 ft *Map Date: July 16, 2015*

Figure 3
Habitat Cover Map

Proposed Fusion Solar Center Facility
Potash Hill Rd
Sprague, CT

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Northern Red Oak - Yellow Birch Forest Cover Type

The Northern Red Oak – Yellow Birch forested cover type dominates a majority of the Project Area (approximately 118 of the 134 forested acres) typical of somewhat poorly drained mineral soil. As introduced above, centrally-located portions of this forest cover type have experienced various degrees of logging activity (extending over approximately 10 acres) primarily consisting of high grading cuts (a selective type of timber harvesting that removes the highest grade/most merchantable timber). While Northern red oak (*Quercus rubra*) and yellow birch (*Betula alleghaniensis*) comprise a majority of the dominant overstory, sugar maple (*Acer saccharum*) forms a significant overstory component for most of the cover type. Black oak (*Quercus velutina*), black birch (*Betula lenta*), and American beech (*Fagus grandifolia*) also form elements of the dominant and suppressed overstory and advanced regeneration understory. Other components of the shrub and herbaceous understory include high-bush blueberry, low-bush blueberry, huckleberry, wood fern, and mountain laurel. Unmanaged forested areas are classified as even-aged forest in a stem exclusionary successional phase. As such, the canopy is primarily closed with sparse understory vegetation. Topography is primarily flat to very gently sloping.

Northern Red Oak – Black Oak – Blue Ridge Blueberry Forest Cover Type

The Northern Red Oak – Black Oak – Blue Ridge Blueberry forested cover type occurs along the northern edge of the Project Area (encompassing approximately 16 acres) and is typical of well drained soils on middle slopes. This forest cover type area has not experienced any recent logging activity. While Northern red oak (*Quercus rubra*) and Black oak (*Quercus veluntina*) comprise a majority of the dominant overstory, pignut hickory (*Carya glabra*) and shagbark hickory (*Carya ovata*) form significant overstory components for most of the cover type. Other components of the shrub and herbaceous understory include low-bush blueberry, huckleberry, and various unidentified warm season, forest sedges. This forested cover type area is classified as even-aged forest in a stem exclusionary successional phase. However, as a result of the drainage condition and somewhat infertile soils, the canopy is characterized by intermixed open gaps. Forest groundcover is well established with dense aerial coverage. Topography is primarily flat to very gently sloping.

Cool Season Grass Hayfield: Encompassing a total of 19 acres, this habitat cover type is primarily located along Potash Hill Road in the southern portion of the Site. The Project Area

includes approximately 10 acres of this hayfield which is bi-annually cut to harvest the grass for hay. First cutting typically occurs during the month of June. For the 2015 cutting season, due to the climate regime the field remained intact until the first week of July with the exception of a 30-foot swath cut within the northern portions of the field. This cool season grass hayfield is composed primarily of timothy grass (*Phleum pretense*), orchard grass (*Dactylis glomerata*), and quackgrass (*Elymus repens*) with a small component of red clover. The field is densely vegetated, with no bare ground present.

Breeding Bird Inventory

An inventory of breeding birds was developed by wildlife biologist Eric Davison of Davison Environmental, LLC based on field work conducted on June 3rd, 5th and 18th and July 3, 2015. The inventory includes all breeding birds observed on the Site as well as those that are reasonably expected to occur based on the presence of suitable habitat.

All birds observed on the Site are listed in Table 3. It should be noted that while this inventory does not constitute a detailed breeding bird survey (such a survey was not possible due to the timing of the project initiation), surveys were conducted during the mid-late portion of the prime breeding period for the majority of migratory birds. Therefore, the list of observed birds is considered fairly robust and likely represents the majority of breeding birds present on the Site.

In order to account for the late timing of our study initiation, a separate list of *Potential* (but not observed) breeding birds was developed. Potential breeding birds are listed in Table 4. This list was compiled primarily by reviewing published data on the breeding birds of the State. These sources were analyzed in order to develop the list of birds which were not observed but could potentially breed on the Site.

The primary source utilized was *The Atlas of Breeding Birds of Connecticut* [7] *(Atlas)*, which is the result of a five-year study (1982-1986) of all bird species known to breed in the State. The study is the most comprehensive review to date of Connecticut's breeding birds. Additional resources utilized include DeGraaf and Yamasaki (2001) and others listed in the References section of this report. The initial inventory of potential breeding birds was generated solely based on the presence of suitable habitat. That list was then refined by considering such factors as bio-

[7] Bevier, L. R. (Ed.). *Atlas of Breeding Birds of Connecticut*. 1994. Bulletin 113. State Geological and Natural History Survey of Connecticut. 461 p.

geographical distribution, the presence or absence of critical habitat features and minimum patch size requirements. The inventory is subdivided by habitat type. A species is listed under the habitat which represents its primary breeding type. However, a species should be considered to be potentially present within the ecotones associated with their primary habitat at any given time.

This report focuses on species considered to be of high conservation priority in Connecticut as designated in the 2015 Connecticut Wildlife Action Plan. The WAP was created to establish a framework for proactively conserving Connecticut's fish and wildlife, including their habitats. The WAP identifies species of "Greatest Conservation Need", or GCN species that fall into three categories in descending order of significance from "most important to "very important" and finally "important". The WAP also identifies 10 key habitat types that support all of the State's GCN species.

A total of 64 birds are identified in the breeding bird inventory (see Tables 3 and 4), with 49 confirmed and another 15 listed as potential breeders based on the presence of suitable habitat. This list includes nine (9) *important* species (6 observed, 3 potential); eight (8) *very important* species (6 observed, 2 potential); and two (2) *most important* species (both observed).

The majority of birds are associated with the Site's upland forest habitat. The hayfield itself supports a smaller number of breeding species, while numerous species utilize the forest/hayfield edge.

Table 3 Observed Birds

Common Name	Scientific Name	CS	Habitat Type
American crow	*Corvus brachyrhynchos*		MHF, FW, HY, OF
American goldfinch	*Carduelis tristis*		HY, OF
American robin	*Turdus migratorius*		MHF
barn swallow	*Hirundo rustica*		HY
Bobolink	*Dolichonyx oryzivorus*	SC, VI	HY
black and white warbler	*Mniotilta varia*	IM	MHF
black-billed cuckoo (OS)	*Coccyzus erythropthalmus*	VI	MHF/OF
black-capped chickadee	*Parus atricapillus*		MHF
blue-gray gnatcatcher (OS)	*Polioptila caerulea*		HY, MHF, OF
blue Jay	*Cyanocitta cristata*		MHF
brown-headed cowbird	*Molothrus ater*		HY, OF, MHF
chipping sparrow	*Spizella passerina*		MHF, OF
common grackle	*Quiscalus quiscula*		MHF, HY, OF
common raven	*Corvus corax*		MHF
common yellowthroat (OS)	*Geothlypis trichas*		OF, HY
downy woodpecker	*Picoides pubescens*		MHF
eastern towhee	*Pipilo erythrophthalmus*	VI	MHF, OF
eastern wood pewee	*Contopus virens*	IM	MHF
European starling	*Sturnus vulgaris*		HY
field sparrow (OS)	*Spizella pusilla*	VI	OF
gray catbird	*Dumetella carolinensis*		MHF, OF
great-crested flycatcher	*Myiarchus crinitus*		MHF, OF
northern waterthrush	*Seiurus noveboracensis*	IM	FW
red-winged blackbird	*Agelaius phoeniceus*		HY
northern flicker	*Colaptes auratus*	VI	MHF, OF
northern oriole	*Icterus galbula*	IM	MHF, OF
house sparrow	*Passer domesticus*		HY
house wren	*Troglodytes aedon*		HY
mourning dove	*Zenaida macroura*		HY, MHF, OF
northern cardinal	*Cardinalis cardinalis*		MHF
Ovenbird	*Seiurus aurocapillus*	IM	MHF
pileated woodpecker	*Dryocopus pileatus*		MHF
red-bellied woodpecker	*Melanerpes carolinus*		MHF
red-eyed vireo	*Vireo olivaceus*		MHF
red-shouldered hawk	*Buteo lineatus*		MHF
ruby-throated hummingbird	*Archilochus colubris*		HY, OF
scarlet tanager	*Piranga olivacea*	VI	MHF
song sparrow	*Melospiza Melodia*		OF, HY
tree swallow	*Tachycineta bicolor*		HY

Common Name	Scientific Name	CS	Habitat Type
tufted titmouse	*Parus bicolor*		MHF
turkey vulture	*Cathartes aura*		HY, OF
veery	*Catharus fuscescens*	IM	MHF
white-breasted nuthatch	*Sitta carolinensis*		MHF
wild turkey	*Meleagris gallopavo*		MHF, FW, HY, OF
wood thrush	*Hylocichla mustelina*	MI	MHF
Woodcock	*Scolopax minor*	MI	OF, FW
yellow warbler	*Dendroica petechia*		HY, OF
yellow-throated vireo	*Vireo flavifrons*		MHF

KEY
OS – species was heard or seen during field surveys but was observed offsite only
WAP Conservation Status: IM – Important; VI – Very Important; MI – Most Important
SC – State-listed species of special concern
Habitat Types (observed and potential use): MHF – mixed hardwood forest;
FW – forested wetland; HY – hayfield; OF – old field (old field habitat is located offsite to the east)

Table 4 Potential Birds (Not Observed) Based on Suitable Habitat

Common Name	Scientific Name	CS	Habitat Type
American Redstart	*Setophaga ruticilla*		MHF
barred Owl	*Strix varia*		MHF
broad-winged hawk	*Buteo platypterus*	SC, VI	MHF, FW
brown creeper	*Certhia americana*	IM	FW
cooper's Hawk	*Accipiter cooperii*		HY
eastern bluebird	*Sialia sialis*		HY
eastern kingbird	*Tyrannus tyrannus*	IM	HY
great Horned owl	*Bubo virginianus*		MHF, HY
hairy woodpecker	*Picoides villosus*		MHF
hermit thrush	*Catharus guttatus*		MHF
hooded warbler	*Wilsonia citrina*		MHF
red-tailed hawk	*Buteo jamaicensis*		MHF, HY
rose-breasted grosbeak	*Pheucticus ludovicianus*	IM	MHF
wood duck	*Aix sponsa*		FW
worm-eating warbler	*Helmitheros vermivorus*	VI	MHF

KEY
WAP Conservation Status: IM – Important; VI – Very Important; MI – Most Important
SC – State-listed species of special concern
Habitat Types: MHF – mixed hardwood forest; FW – forested wetland; HY – hayfield

Rare Species

The Connecticut Department of Energy and Environmental Protection ("CTDEEP") Natural Diversity Data Base ("NDDB") program performs hundreds of environmental reviews each year to determine the impact of proposed development projects on state listed species and to help landowners conserve the state's biodiversity. State agencies are required to ensure that any activity authorized, funded or performed by a state agency does not threaten the continued existence of endangered or threatened species. Maps have been developed to serve as a pre-screening tool to help applicants determine if there is a potential impact to state listed species.

The NDDB maps represent approximate locations of endangered, threatened and special concern species and significant natural communities in Connecticut. The locations of species and natural communities depicted on the maps are based on data collected over the years by CTDEEP staff, scientists, conservation groups, and landowners. In some cases an occurrence represents a location derived from literature, museum records and/or specimens. These data are compiled and maintained in the NDDB. The general locations of species and communities are symbolized as shaded (or cross-hatched) areas on the maps. Exact locations have been masked to protect sensitive species from collection and disturbance and to protect landowner's rights whenever species occur on private property.

APT reviewed the most recent CTDEEP NDDB mapping (December 2014) to determine if any such species or habitats occur within the vicinity of the Site. Based on the NDDB mapping, no Threatened, Endangered, or Special Concern species or critical habitats are known to occur at or abutting the Site. The nearest shaded areas on the NDDB mapping occurs over 1,500 feet to the northwest, around the Hanover Reservoir.

APT also submitted a review request to the CTDEEP NDDB on June 12, 2015 with respect to this Project to confirm no Threatened, Endangered, or Special Concern species or critical habitats exist at the Site. The CTDEEP responded in a letter dated July 8, 2015 that records exist in the vicinity of the project for three listed species, including one plant and two animals:

- State listed Threatened species clustered sedge (*Carex cumulata*);
- Federal and State listed Threatened species long-eared bat (*Myotis septentrionalis*); and,
- State listed species of Special Concern wood turtle (*Glyptemys insculpta*).

A copy of the *CTDEEP NDDB Letter* is provided in Appendix B.

State listed Threatened species bald eagle was also noted as nesting along the Quinebaug River. A discussion of these species follows below.

Clustered Sedge

Clustered sedge is an uncommon medium-sized sedge species typical of dry and sandy soils. This plant is identified by its spikes aggregated into a dense seed head with broad, obovate and nearly beakless perigynia. The habitat it typically colonizes consists of open and dry habitats with sand or gravelly soils. Occasionally this species has been reported as occurring in bogs and saturated sandy substrates[8].

Northern Long-Eared Bat

The northern long-eared bat's range encompasses the entire State of Connecticut. Loss or degradation of summer (forest) habitat is one of several management concerns for this rare species with the principal concern being loss from white-nose syndrome.

The northern long-eared bat is a medium-sized bat with a body length of 3 to 3.7 inches but a wingspan of 9 to 10 inches. Their fur color can be medium to dark brown on the back and tawny to pale-brown on the underside. As its name suggests, this bat is distinguished by its long ears, particularly as compared to other bats in its genus, Myotis. During the summer, northern long-eared bats roost singly or in colonies underneath bark, in cavities or in crevices of both live trees and snags (dead trees). 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. Suitable northern long-eared bat roosts are trees (live, dying, dead, or snag) with a diameter at breast height ("DBH") of three inches or greater that exhibits any of the following characteristics: exfoliating bark, crevices, cavity, or cracks.[9] Isolated trees are considered suitable habitat when they exhibit the characteristics of a suitable roost tree and are less than 1,000 feet from the next nearest suitable

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[8] Field Guide to Carex of New England, Lisa A. Stanley, Number 71, Page 68, Copyright 2011.

[9] US Fish and Wildlife Service. Northern Long-Eared Bat Interim Conference and Planning Guides, USFWS Regions 2, 3, 4, 5, & 6. January 6, 2014. 67 pp.

roost tree within a woodlot, or wooded fencerow. This bat has also been found rarely roosting in structures, like barns and sheds.

NDDB records indicate that the documented occurrence of northern long-eared bat was associated with a historic acoustic survey. No records exist for known northern long-eared bat hibernaculum or breeding/roosting habitat in the vicinity of the Site.

Wood Turtle

The wood turtle is a characterized as having a deeply sculptured carapace (top shell) with dark brown or black with faint yellow lines radiating from the center of each segment coloration. The carapace is relatively flat and keeled, with a noticeable ridge running from the front to back. Wood turtle is known to be associated with both aquatic and terrestrial habitats depending on the time of year. During warm weather, turtles will become active migrating from aquatic habitats in search of food and mates. Terrestrial habitat is usually within 1,000 feet of suitable aquatic habitat. During seasonal temperature drops, wood turtles return to riverine habitats to hibernate[10].

Bald Eagle

Bald Eagle migration patterns are complex, dependent on age of the individual, climate (particularly during the winter) and availability of food.[11] Adult birds typically migrate alone and generally as needed when food becomes unavailable, although concentrations of migrants can occur at communal feeding and roost sites. Migration typically occurs during the middle of day (10:30–17:00) as thermals provide for opportunities to soar up with limited energetic expense; Bald Eagle migration altitudes are estimated to average 1,500–3,050 m by ground observers. [12]

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[10] Information provided by CT DEEP Wood Turtle (*Glyptemis insculpta*) Fact Sheet, accessed on July 9, 2015.

[11] Buehler, David A. 2000. Bald Eagle (*Haliaeetus leucocephalus*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/506 [Accessed 09/09/13].

[12] Harmata, A. R. 1984. Bald Eagles of the San Luis valley, Colorado: their winter ecology and spring migration. Ph.D. Thesis. Montana State Univ. Bozeman.

Four adults tracked by fixed-wing aircraft in Montana averaged 98 km/d during spring migration and migrated at 200–600 m above ground (McClelland et al. 1996).[13]

Two (2) additional state-listed species of special concern were identified in the breeding bird inventory, including the bobolink and broad-winged hawk. The bobolink was observed at the Site while the broad-winged hawk is considered a potential Site breeder.

Bobolink

The bobolink is the most common grassland species in the state, although the species has been steadily declining throughout the region (Comins, et. al. 2001). Conventional haying techniques which include mechanical harvesting in June often do not allow for full maturation and fledging of young prior to hay harvesting, and as a result nestlings are often destroyed during the process.

Bobolink generally inhabit mesic to wet (as opposed to dry) meadows, particularly hayfields. Small to moderate sized hayfields are utilized for nesting, with 50% incidence of occurrence in fields that are a minimum of 25 acres in size and minimum area requirement of 5 to 10 acres (Comins, et. al. 2001). Preferred breeding sites are older mixed grass hayfields (>8 years) that include a mosaic of grasses, sedges and broad-leaved forbs.

Males typically arrive on the breeding grounds (in May) before the females, with the females arriving several days later. Pair bonding and mating occur quickly, with the primary egg development period occurring from mid-May to mid-June. The primary nesting period occurs from mid to late June but can extend into late July (Martin, et. al. 1995).

Bobolink were observed within the hayfield on all Site visits. Activity was focused within the central and southern portions of the field. A maximum of three males were observed on a given visit and these males all exhibited territorial behavior including counter-singing. Based on these observations, it is possible that as many as three pairs may have bred in the field this year. However, no more than two females were observed at any time. As cooperative breeding is known to occur with this species (Martin, et. al. 1995), it is possible that two males were attending a single nesting female. This would be consistent with Site observations which included the regular observation of two males active around a single female.

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[13] Mcclelland, B. R., P. T. McClelland, R. E. Yates, E. L. Caton, and M. E. McFadden. 1996. Fledging and migration of juvenile Bald Eagles from Glacier National Park, Montana. J. Raptor Res. 30:79-89.

The renter of the Site's farmhouse indicated that the field is typically hayed in early June. Such an early haying would undoubtedly destroy any active nests, and is not compatible with a field that supports successful breeding. However, on the final survey on July 7th, the field remained uncut, with bobolink still present. Observations on July 7th indicated that the nests were active and likely in the fledging stage, as the males have ceased singing and the activity of both males and females was generally cryptic, consistent with birds tending to active nests.

Broad-winged Hawk

The broad-winged hawk is not considered a habitat specialist but rather a generalist that requires habitat considered common throughout Connecticut. The Broad-winged Hawk inhabits deciduous or mixed forest types often near a lake, pond or wetland. Bevier (1994:102) noted that "the Broad-winged Hawk exhibits a diversified nest Site habitat selection". The forest edges, or openings within the forested areas created by logging, represent suitable habitat for the broad-winged hawk, particularly in the vicinity of Wetland 1

Conservation threats to broad-winged hawk are largely associated with actions that occur during migration and on wintering grounds, where common threats include being shot (raptors are widely viewed as pests in Mexico and South America) as well as ongoing deforestation. In the Florida Keys, the species is often killed while hunting along highways during migration. Suitable habitat throughout New England has steadily increased over the past decades as total regional forest cover has increased (Goodrich et. al., 2014).

Water Supply Areas

There are no public water supply wells proximate to the Site. The subject parcel is not located within an Aquifer Protection Area. The residence at the Site is served by a private water supply well.

Water Quality

Groundwater beneath the Site and within the majority of the subject parcel is classified by CTDEEP as "GA". A "GA" classification indicates groundwater within the area is presumed to be suitable for human consumption without treatment. Designated uses in GA-classified areas include existing private and potential public or private supplies of drinking water and base flow for hydraulically-connected surface water bodies.

The Site is located within the Thames River Major Drainage Basin, the Shetucket River Regional Basin and the Little River Sub regional Basin. The Little River flows north to south approximately 2,200 feet west of the Site, through a series of ponds, and discharges to the Shetucket River.

The Site straddles two (2) separate local drainage basins including:

- The majority of the Site is associated with portions of the Little River and the Hanover Reservoir. This area drains generally to the west via overland flow, eventually flowing off-Site to the west/southwest by overland sheet flow.
- The eastern side of the Site is bordered by an unnamed brook (within Wetland 1) which flows north to south, crossing off-Site beneath Potash Hill Road and ultimately outletting into Papermill Pond. This area of the Site drains generally to the south via the brook and by overland sheet flow from either side of the watercourse.

The Little River and the small unnamed brook are classified by the CTDEEP as Class A surface water bodies. Designated uses for Class A surface water bodies include habitat for fish and other aquatic life and wildlife; potential drinking water supplies; recreation; and water supply for industry and agriculture.

Scenic Areas

No State or locally-designated scenic roads are located within the Town of Sprague or proximate to the Site. No recognized scenic areas or outlooks are present within 2 miles of the Site. Further, no public hiking paths or other potential public non-vehicular trails were found to be present in the vicinity that would provide potential observation points of the Project.

Historic and Archaeological Resources

Archaeological Consulting Services (ACS) prepared a Phase I Archaeological Reconnaissance Survey Interim Report at the Site on behalf of Fusion. The purpose of the survey was to determine whether the Site holds potential cultural, historic and/or architectural significance. No significant archaeological resources were identified on the Site.

An architectural review identified two structures that may be eligible for listing on the National Register of Historic Places, including structures at 85 Potash Hill Road and 111 Potash Hill Road.

A copy of the Phase I Archaeological Reconnaissance Survey Interim Report was submitted to the State Historic Preservation Office (SHPO) for its review and opinion regarding potential effects of the Project on archaeological and historic resources.

Geology and Soils

Bedrock geology beneath the Site is identified as the Tatnic Hill Formation of the Upper and Middle Ordovician. The Tatnic Hill Formation is described as a medium to dark-gray, medium-grained gneiss or schist composed of quartz, andesine, biotite, garnet, and sillimanite, locally kyanite, muscovite, or K-feldspar, interlayered with locally mappable units and thinner layers of rusty-weathering graphitic pyrrhotitic two-mica schist, amphibolite, and calc-silicate rock.

Surficial materials on the majority of the Site are comprised of deposits of thin glacial till. A thick glacial till deposit is mapped in the northcentral portion of the Site. Soils vary across the Site, with the largest areas identified as Paxton and Montauk fine sandy loams, Canton and Charlton soils, and Woodbridge fine sandy loam.

Floodplain Areas

APT reviewed the United States Federal Emergency Management Agency ("FEMA") Flood Insurance Rate Map ("FIRM") for the Site. A FIRM is the official map of a community on which FEMA has delineated both the special hazard areas and risk premium zones applicable to the community. The area of the Site is mapped on FIRM PANEL #09011 C0068 G, dated July 18, 2011. Based upon the reviewed FIRM Map, the Site is designated as Zone X which is defined as an area of minimal flooding.

Recreational Areas

The nearest recreational area is the Salt Rock State Campground, located approximately 1.7 miles to the northwest.

Noise

No background noise levels have been measured at the Site. The Site and vicinity is a rural, agricultural area with sparse residential development.

Lighting

The residence and barn have electricity and lighting.

Coastal Zone Management Areas

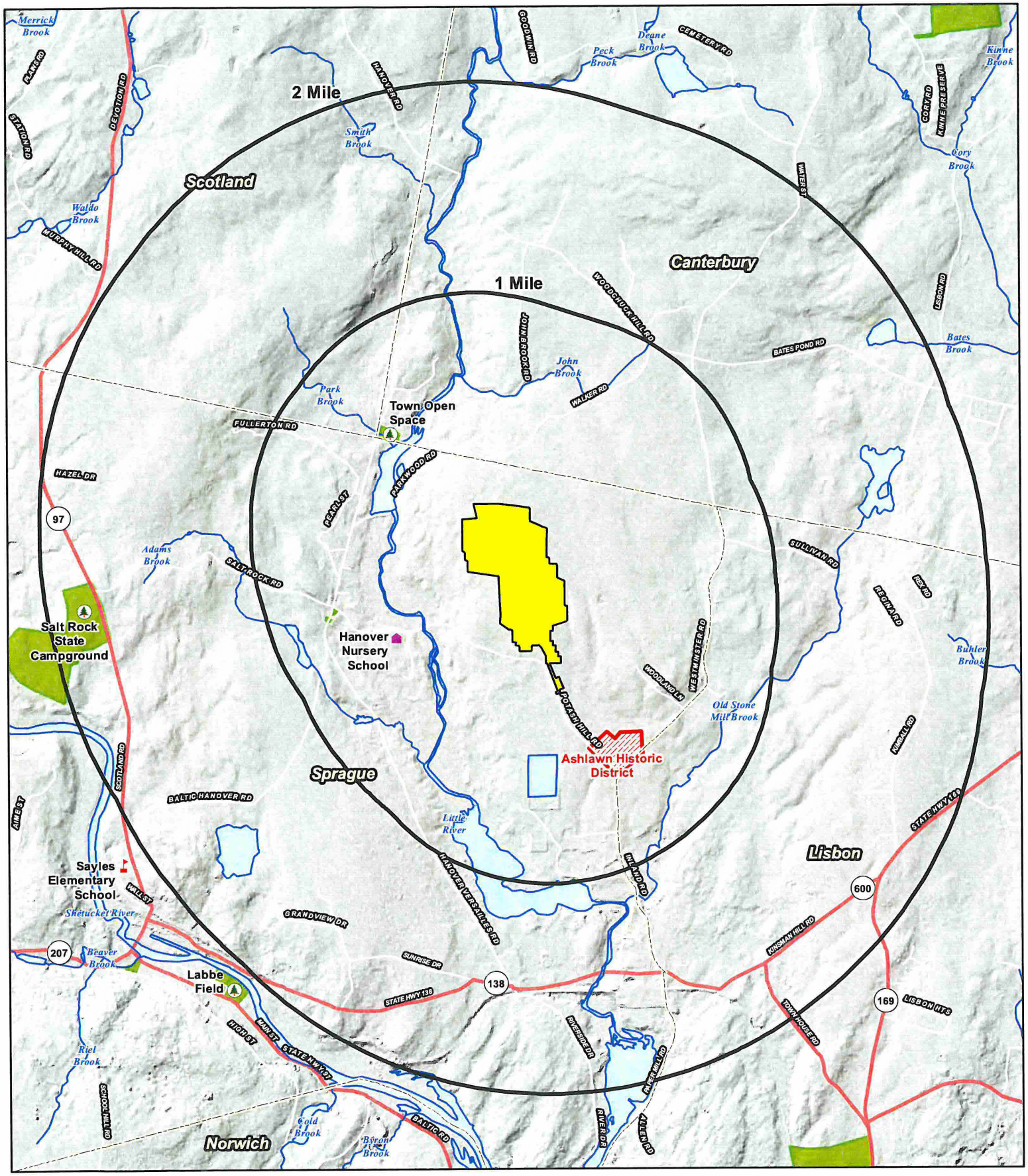
The Town of Sprague is not located within the Coastal Area or Coastal Boundary, as defined by the Coastal Management Act, CGS § 22a-94(a).

Other Surrounding Features

The locations of non-residential development and other resources within two miles of the Site are listed in Table 5 below. Figure 4, *Surrounding Features Map* depicts these locations relative to the Site.

Table 5 Non-Residential Features within Two Miles of the Site

Type	Name	Address	Town	Distance to Site
Open Space	Town Open Space	Hanover Road	Sprague	0.5 mile
Park	Salt Rock State Campground	173 Scotland Rd	Sprague	1.7 miles
Youth Camp	None within 2 miles of the Site			
Hospital	None within 2 miles of the Site			
Child Day Care	Hanover Nursery School	40 Potash Hill Rd	Sprague	0.64 mile
Community Center	None within 2 miles of the Site			
Senior Center	None within 2 miles of the Site			
Public School	None within 2 miles of the Site			
Playground	None within 2 miles of the Site			
Historic	Ashlawn Historic District	Westminster and Potash Hill Road	Sprague	0.3 mile



Legend

- Project Area
- 1-2-Mile Radii

Surrounding Features

- Licensed Child Day Care
- Park
- School
- Municipal and Private Open Space
- National Register of Historic Places Historic District*
- Open Water

N W E S

3,200 1,600 0 3,200 Feet

*Approximate Location
Base Map Source: ESRI & CTECO Shaded Relief
Map Scale: 1 inch = 3,200 feet Map Date: July

Figure 4
Surrounding Features Map

Proposed Fusion Solar Center Facility
Potash Hill Rd
Sprague, CT

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Effects on the Environment

The Project would not have any significant adverse effects on the existing environment and ecology, nor would it affect the scenic, historic and recreational resources of the vicinity. A *Proposed Conditions Map* is included as Figure 5.

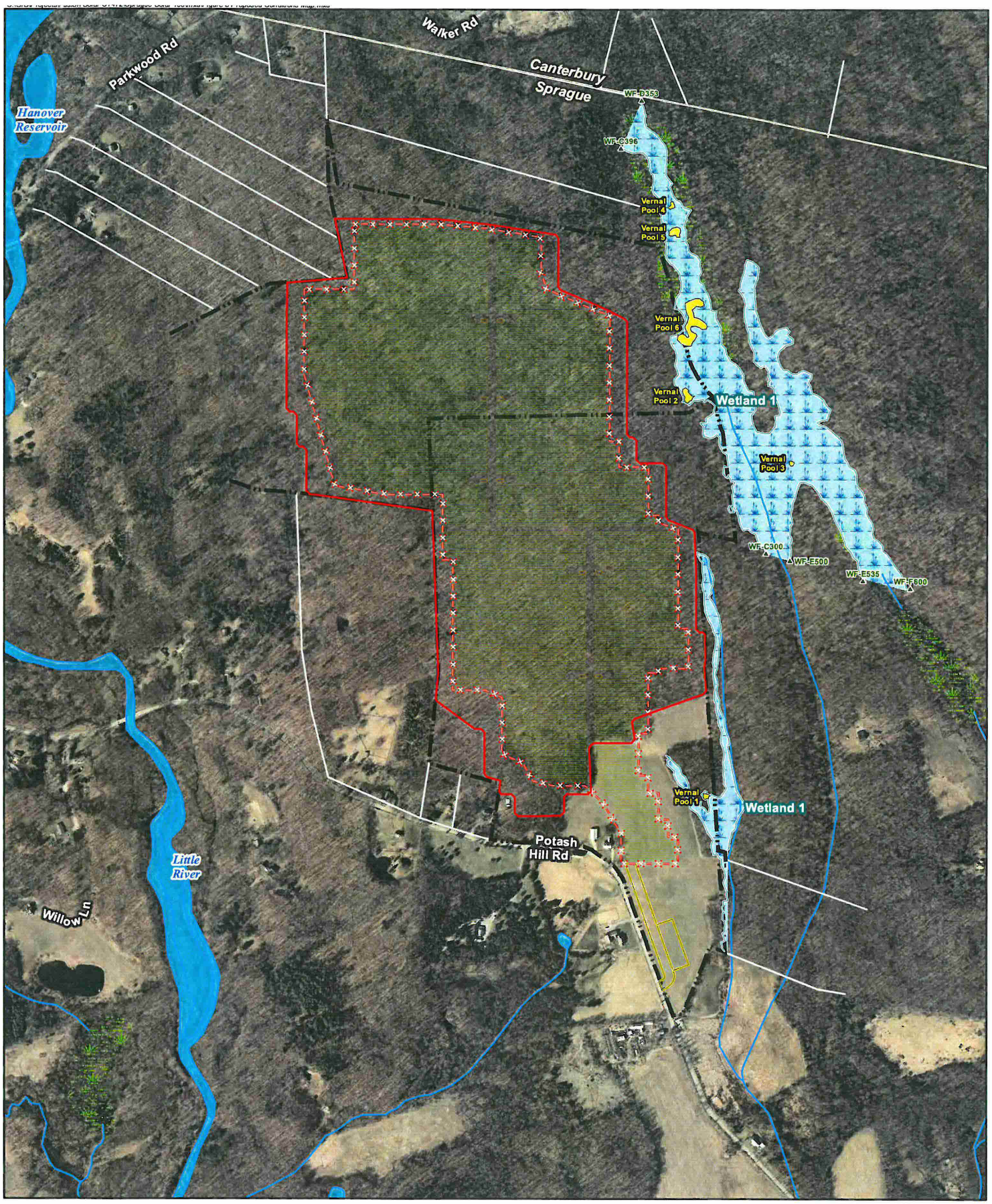
Proposed Project Development

Functional portions of the Project would be enclosed within a fenced area encompassing 118± acres. The development footprint associated with the Project, including the fenced facility and associated exterior clearing, includes a total of 144 acres. To facilitate the installation of the solar arrays, associated equipment, and access, and to minimize shading of the arrays, approximately 134 acres of upland forest requires clearing[14] and minor grading. Upon completion, the fenced solar facility will occupy about 118 acres. The Project Area includes moderate slopes and areas where regrading can be generally accomplished without significant cuts and fills.

The solar array ("facility") would be comprised of approximately 97,000 polycrystalline silicon solar modules similar PV technology and approximately 10 to 12 utility scale inverters and transformers. The facility would utilize ground-screw or pile-driven foundations directly embedded into the soil (no concrete footers) and an aluminum or steel, fixed–tilt racking system for solar module mounting. The racking system would require approximately 15,000 foundation locations. All wiring inside the facility would be routed underground.

Tree stumps would be removed from those areas within the fenced facility as well as an approximate 30-foot buffer around the exterior of the fence line. These disturbed areas will be regraded with existing or imported soil/topsoil and vegetated using native grasses and maintained (occasional mowing) to suppress tree growth. A gravel access drive will originate off Potash Hill Road in the southern portion of the Site and extend northward into the facility. The facility would be surrounded by a six-foot tall chain link fence topped with one foot of barbed wire.

[14] Approximately 10 additional acres are currently cleared fields.



Legend

- Site Boundary
- Abutting Property Boundary Line
- Proposed Limit of Tree Clearing
- Proposed Chain Link Fence
- Proposed Solar Modules
- Proposed Inverters
- Proposed Access/Utility Route
- Start/End Wetland Flag
- Delineated Wetland Boundary Line
- Wetland Area
- Vernal Pool

Hydrography
- Marsh
- Water
- Watercourse

N W E S

800 400 0 800 Feet

Map Notes:
Base Map Source: 2012 Aerial Photograph (CTECO)
Map Scale: 1 in = 800 ft *Map Date: July 16, 2015*

Figure 5
Proposed Conditions Map

Proposed Fusion Solar Center Facility
Potash Hill Rd
Sprague, CT

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Public Health and Safety

The Project would be designed to applicable industry, State, and local codes and standards and would not pose a safety concern or create undue hazard to the general public. The facility would not consume any raw materials, would not produce any by-products and would be unstaffed during normal operating conditions. The facility would be enclosed by a six-foot tall chain link fence topped with one foot of barbed wire. There are no plans to store fuels or hazardous materials at the facility.

Overall, the Project will meet or exceed all health and safety requirements applicable to electric power generation. Each employee working on Site will:

- Receive required general and Site specific health and safety training;
- Comply with all health and safety controls as directed by local and state requirements;
- Understand and employ the Site health and safety plan while on the Site;
- Know the location of local emergency care facilities, travel times, ingress and egress routes; and
- Report all unsafe conditions to the construction manager.

During construction, heavy equipment will be required to access the Site during normal working hours, and it is anticipated that 35 - 40 construction vehicles (average size light-duty) will make daily trips onto the Site. After construction is complete and the unstaffed facility is operable, traffic at the Site will be minimal, consisting of one trip per month on average for periodic maintenance activities.

The solar modules are designed to absorb incoming solar radiation and minimize reflectivity, such that only a small percentage of incidental light will be reflected off the panels. This incidental light is significantly less reflective than common building materials, such as steel, or the surface of smooth water. In addition, a large portion of the Project will be shielded from view due to existing vegetation, proposed landscaping and topographical conditions. The panels will be tilted up toward the southern sky at an approximate angle of 25 degrees, further reducing reflectivity.

Local, State and Federal Land Use Plans

The Project is consistent with local, State, and Federal land use plans, including the Southeast Connecticut Council of Government's 2007 Regional Plan of Conservation and Development, which outlines the need for utility infrastructure to support the region's development. The Project also supports the State's energy policy by developing a renewable energy resource while not having a substantial adverse environmental effect. Although local land use jurisdiction over the Project is preempted by the Siting Council, the Project has been designed to meet the intent of local land use regulations to the extent feasible.

Existing and Future Development

The Project would benefit the community by improving electrical service for existing and future development in the Town through enhanced capacity. Other than this Project, APT is not aware of any current or future plans to develop the Site.

Roads

A gravel access drive will originate off Potash Hill Road in the southern portion of the Site and extend northward into and through the facility. A gravel parking/temporary equipment staging area will be located in the southern field on the east side of the access drive.

Wetlands

No wetlands or watercourses will be directly impacted by the Project. The Project's clearing limits extend within nine (9) feet of Wetland 1, but no clearing will occur in this resource. The fence line would be located within approximately 115 feet of this wetland's westernmost point. The nearest point of the proposed solar arrays is located 140 feet west of Wetland 1.

Short term, temporary impacts will be associated with the Project's construction activities due its proximity to the wetland resource. Provided sedimentation and erosion controls are designed, installed and maintained during construction activities in accordance with the 2002 *Connecticut Guidelines for Soil Erosion and Sediment Control*, temporary impacts will be minimized. However, due to the close proximity of the proposed development to nearby wetlands, Fusion is committed to implementing a wetland protection plan during construction to provide additional measures to avoid temporary wetland impacts.

A proposed *Wetland Protection Plan* is included in Appendix C. Long term secondary impacts to wetland resources possibly associated with the operation of this facility are minimized by the fact the development is unstaffed, it minimizes the creation of impervious surfaces with the use of a gravel access drive with the majority of the surface treatment around the solar installation consisting of native grass/vegetation and it generates minimal traffic. Based on a review of the referenced plans and engineering documents, the stormwater generated by the proposed development will be properly handled and treated in accordance with the 2004 *Connecticut Stormwater Quality Manual*. APT understands that details of the erosion control and stormwater management plans would be included in the Development and Management ("D&M") Plan, if required as part of a Siting Council approval. Provided the protective measures discussed herein are implemented, the Project will not result in an adverse impact to wetland or intermittent watercourse resources.

Vernal Pool

In order to assess these pools qualitatively, the methodology described in *Best Development Practices, Conserving Pool-Breeding Amphibians in Residential and Commercial Developments in the Northeastern United States* (Calhoun and Klemens, 2002, a.k.a. the BDP) was used. This assessment methodology utilizes a three-tiered rating system, with the tier designation determined by examining the biological value of the pool in conjunction with the condition of the habitat surrounding the pool, which is the area used by vernal pool amphibians during the non-breeding season. The higher the species diversity and abundance coupled with an undeveloped and forested landscape surrounding the pool, the higher the tier rating. Tier 1 pools are considered the highest quality pools, while Tier 3 are the lowest.

All six (6) vernal pools associated with Wetland 1 are Tier 1 pools[15] due to the fact that all these pools had two indicator species present; wood frog and spotted salamander.

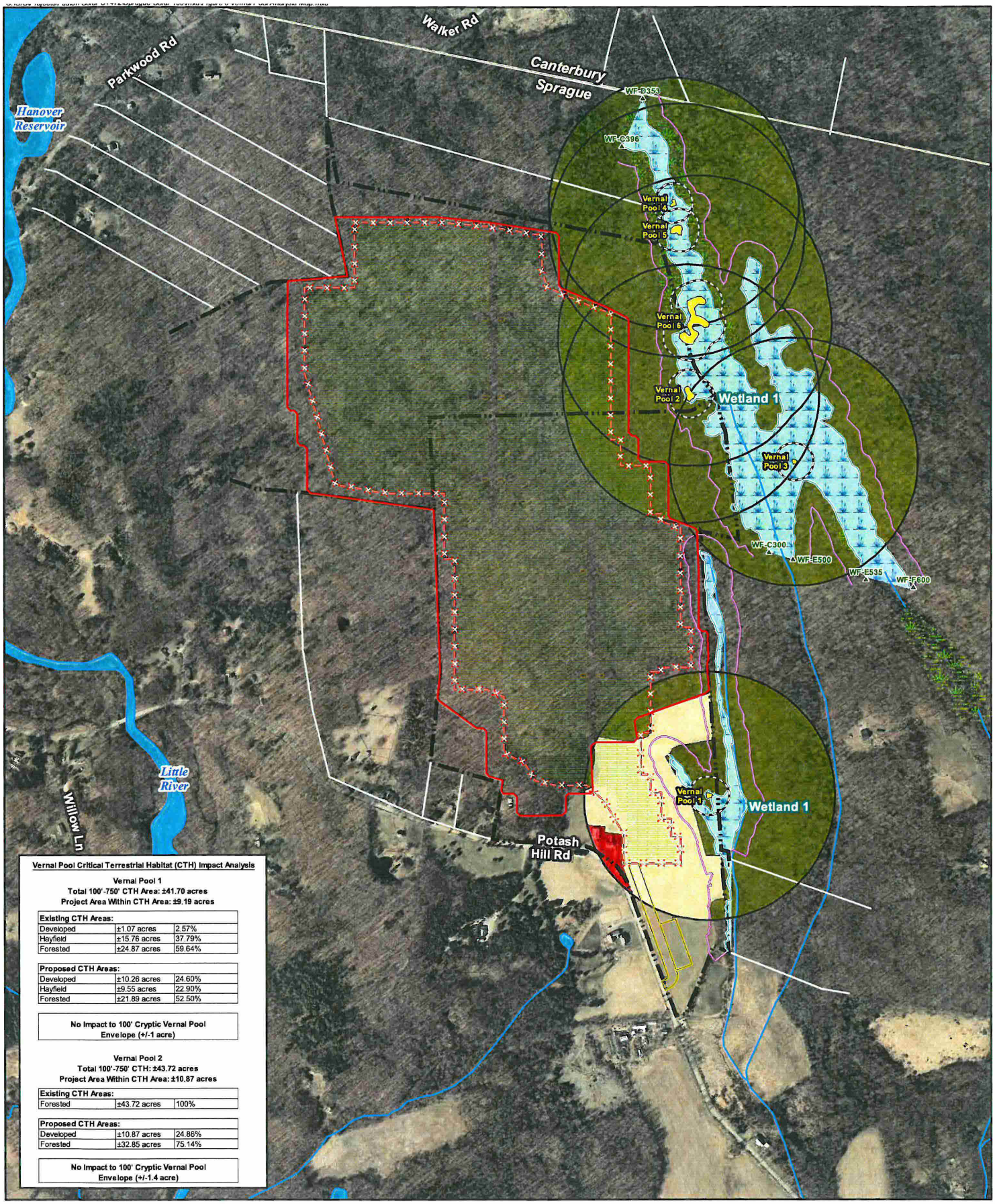
With respect to the condition of the *Vernal Pool Envelope* (VPE, 0 to 100 feet) and the *Critical Terrestrial Habitat* (100 to 750 feet) conservation zones surrounding the pools, all pools met the landscape criteria for Tier 1 pools as they had less than 25% development in the VPE and less

[15] Although Vernal Pool 7 is not located on the Site or proximate to the Project, it was also categorized conservatively as a Tier 1 pool. This conservative ranking is based on survey limitations due to the late timing inspections, which did not allow for full egg mass counts.

than 50% development within the CTH. Specifically, there is no development present within any of the VPE zones and only one pool (Pool 1) has development within its CTH zone (4%). Also of note is the landscape connectivity between the pools which is free of roads, development or habitat fragmentation of any kind. This represents optimal conditions for genetic exchange between the biota of these pools at a meta-population scale.

An analysis of the post-development conditions using the BDP methodology was conducted and is illustrated on Figure 6, *Vernal Pool Analysis Map*. No direct impact to any vernal pool is proposed and no activity is proposed within any VPE conservation zone.

The proposed development predominately lies within the CTH of Pools 1 and 2, but will also affect a small portion of the CTH of Pools 5 and 6. The post-development BDP analysis was conducted for Pools 1 and 2, and determined that Pool 1 will have an increase in developed land from 2.57% (pre-development) to 24.6% (post-development). However, the majority of this increase will occur as a result of development within the hayfield which offers sub-optimal terrestrial habitat for vernal pool wildlife. The loss of forest habitat within the CTH of Vernal Pool 1 will total only 2.98 acres or 7.1% of the CTH. The nearest proposed activity to Vernal Pool 1 is approximately 280 feet.



Vernal Pool Critical Terrestrial Habitat (CTH) Impact Analysis

Vernal Pool 1
Total 100'-750' CTH Area: ±41.70 acres
Project Area Within CTH Area: ±9.19 acres

Existing CTH Areas:		
Developed	±1.07 acres	2.57%
Hayfield	±15.76 acres	37.79%
Forested	±24.87 acres	59.64%

Proposed CTH Areas:		
Developed	±10.26 acres	24.60%
Hayfield	±9.55 acres	22.90%
Forested	±21.89 acres	52.50%

No Impact to 100' Cryptic Vernal Pool Envelope (+/-1 acre)

Vernal Pool 2
Total 100'-750' CTH: ±43.72 acres
Project Area Within CTH Area: ±10.87 acres

Existing CTH Areas:		
Forested	±43.72 acres	100%

Proposed CTH Areas:		
Developed	±10.87 acres	24.86%
Forested	±32.85 acres	75.14%

No Impact to 100' Cryptic Vernal Pool Envelope (+/-1.4 acre)

Legend

- Site Boundary
- Abutting Property Boundary Line
- Proposed Limit of Tree Clearing
- Proposed Chain Link Fence
- Proposed Solar Modules
- Proposed Inverters
- Proposed Access/Utility Route
- Start/End Wetland Flag
- Delineated Wetland Boundary Line
- 100' Wetland Buffer
- Wetland Area
- Vernal Pool
- 100' Vernal Pool Envelope
- 100'-750' Critical Terrestrial Habitat Area

Critical Terrestrial Habitat (CTH) Type

Developed
- Developed - Residential
- Cool-Season Grass Hayfield
- Old Field/Shrubland

Undeveloped
- Forested

Hydrography
- Marsh
- Water
- Watercourse

Map Notes:
Base Map Source: 2012 Aerial Photograph (CTECO)
Map Scale: 1 in = 800 ft *Map Date: July 16, 2015*

800 400 0 800 Feet

N W E S

Figure 6
Vernal Pool Analysis Map

Proposed Fusion Solar Center Facility
Potash Hill Rd
Sprague, CT

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The most significant loss of forest within the CTH zone will occur for Pool 2, which at present is 100% forested and will be reduced to 75.14% post-development. However, the nearest proposed activity from Pool 2 is approximately 340 feet.

Both pools are compliant with the BDP guidelines, as no development is proposed within the VPE zone of any pools, and development will not exceed 25% of the CTH for any pools. Furthermore, the landscape connectivity between pools will not be impacted by roads, development or other fragmentary features.

Vegetation and Wildlife

The Project will consist of approximately 144 acres of total ground disturbance. The resulting gravel and grass surfaces associated with the construction of the Project will alter the habitat types present on the Site. Provided below is an analysis of impact to the Site's two (2) WAP key habitat types: upland forest and cool-season grassland (an Upland Herbaceous sub-habitat).

Upland Forest Habitat Impact Analysis

The forest within and adjacent to the Site was evaluated using the methodology described in the Center for Land Use Education and Research's (CLEAR) Forest Fragmentation Study[16]. The goal was to analyze the level of forest fragmentation present to determine whether the Site's forest would be considered valuable to forest-interior birds and what impact the proposed project might have on forest habitat. Forest-interior birds favor the interior of the forest away from non-forested "edge" habitat. Such conditions are optimized in forests with a low level of habitat fragmentation. The literature suggests that total forest cover within the landscape, as well as forest patch size, are significant and therefore both factors were assessed (Lee *et al.* 2002; Mortberg, 2001; Villard *et al.* 1999; Andren 1996).

The CLEAR study utilizes findings from The Environment Canada report (2004) which suggests that 250 acres should be considered the *absolute minimum* forest patch size needed to support area-sensitive edge-intolerant species, with a recommended minimum forest patch size of 500 acres. At that scale, a forest is presumed to provide enough suitable habitat to support more diversity of interior forest species.

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[16]CLEAR's Forest Fragmentation Study can be found at:
http://clear.uconn.edu/projects/landscape/forestfrag/forestfrag_public%20summary.pdf

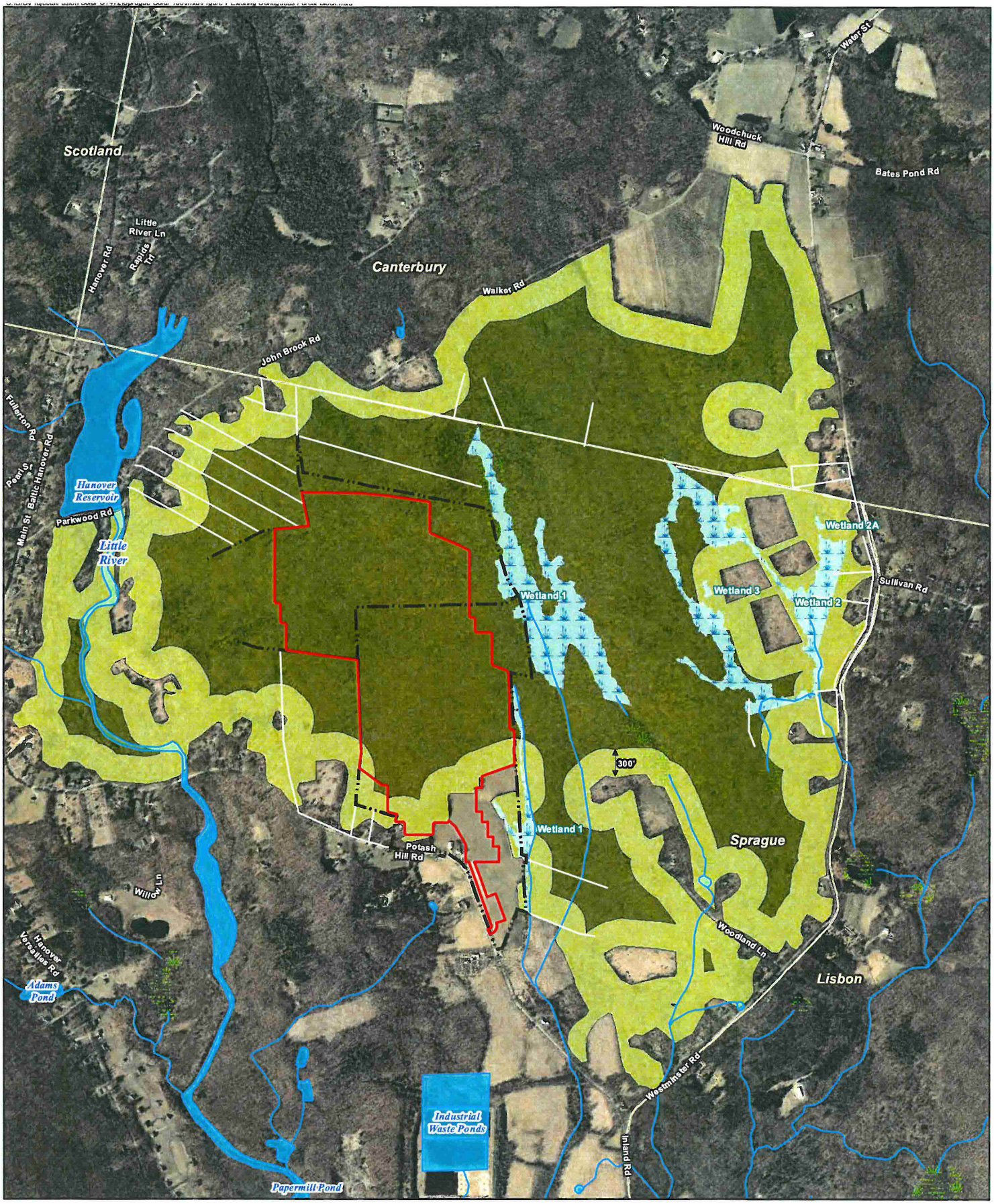
The CLEAR study has developed statewide town-by-town forest fragmentation maps in which forests are divided into three categories to indicate the viability of the core patches with respect to the size of the patch. These three categories are small (< 250 acres), medium (250-500 acres), and large (>500 acres). Forest areas designated as "core" are greater than 300 feet away from non-forested areas and represent optimal breeding habitat for forest-interior birds. This 300 foot zone is referred to as the "edge width" and represents sub-optimal breeding habitat for forest-interior birds.

Using Geographic Information System (GIS) software to analyze the most recent aerial photography available (2012, source USDA) APT calculated approximately 1,040 acres of contiguous forest on and adjacent to the Site (see Figure 7, *Existing Contiguous Forest Map*). Of the 1,040 acres, 431 acres is classified as "edge forest" (within 300 feet of non-forested habitat) while 609 acres is considered interior forest.

The results of this analysis indicate that the Site is part of a large forest block (i.e., >500 acres). This analysis is consistent with the CLEAR's mapping for the Town of Sprague which shows the Site situated within a large forest. Based on the presence of a large contiguous forest block, the Site's forest represents high-quality habitat for forest interior birds. This was consistent with the species observed at the Site, which included a number of forest-interior species such as the scarlet tanager, eastern wood pewee and the Wood Thrush.

The Project will result in the net loss of approximately 134 acres of forest[17] which would reduce the total size of the forest block from 1,040 acres to 906 acres (see Figure 8, *Proposed Contiguous Forest Map*). Additionally, 59 acres of former interior forest will be converted to edge forest. This edge forest, while suitable for a variety of forest edge species post-development, will be less productive for forest-interior species due to factors such as increased nest predation and brood parasitism. In total, the Project will require the removal of approximately 21,130 trees (6-inch DBH or greater).

[17] The Project will encompass approximately 144 acres of land, of which 10 acres is currently cleared. The balance (134± acres) of forest requires clearing.



Legend

Site Boundary

Abutting Property Boundary Line

Project Area*

*The Project Area contains +/-134 Acres of Forest Block (+/-121 Acres of Interior Forest type and +/-13 Acres of Edge Forest type)

Existing Forest Block (+/-1,040 Acres)

Type:

Interior Forest (+/-609 Acres)

Edge Forest (+/-431 Acres)

Hydrography

Marsh

Water

Watercourse

Delineated Wetland Area

Figure 7
Existing Contiguous Forest Map

Proposed Fusion Solar Center Facility
Potash Hill Rd
Sprague, CT

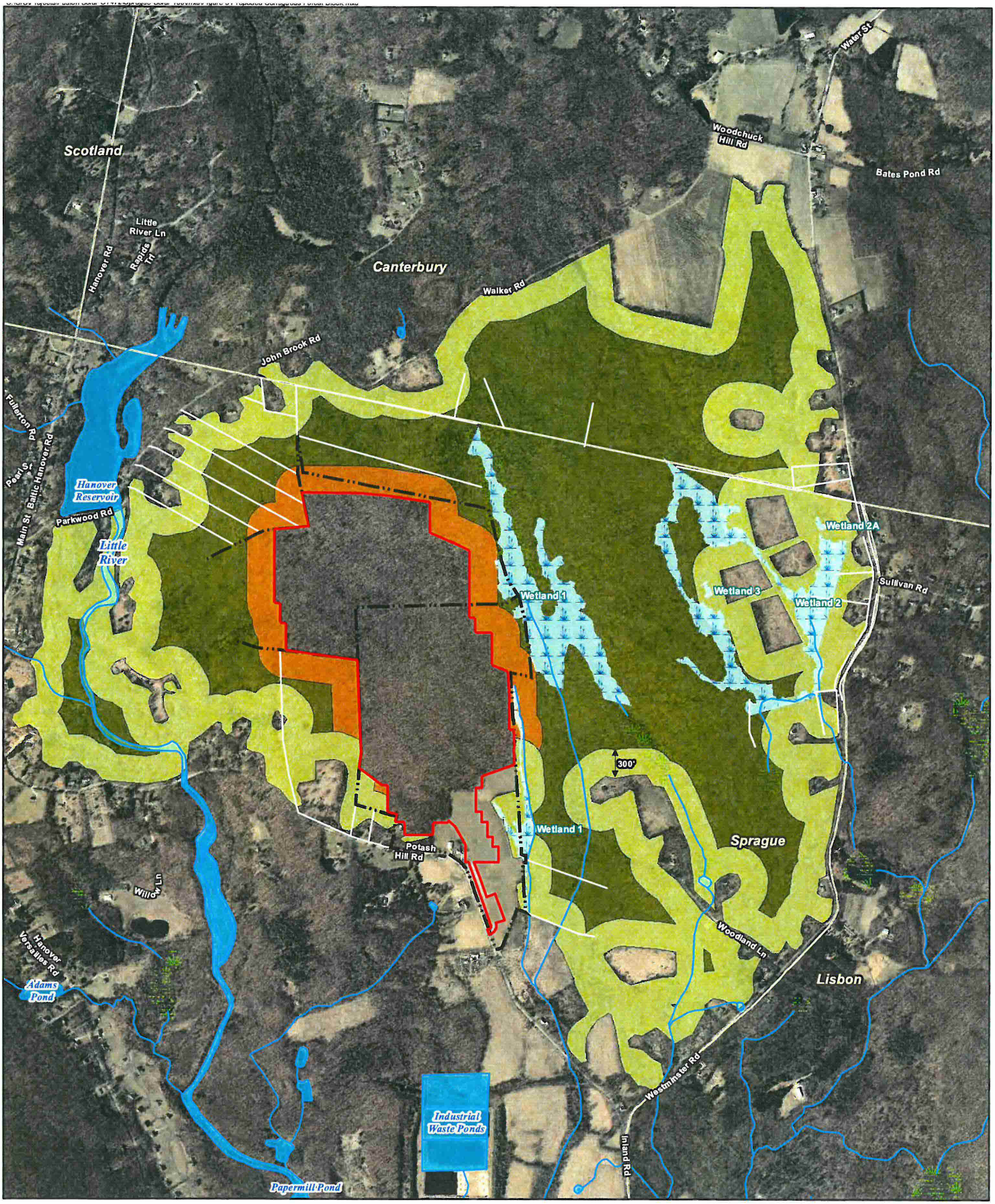
CORONAL

ALL-POINTS

Map Notes:
Base Map Source: 2012 Aerial Photograph (CTECO)
Map Scale: 1 in = 1,400 ft Map Date: July 16, 2015

1,400 700 0 1,400 Feet

N W E S



Legend

- Site Boundary
- Abutting Property Boundary Line
- Project Area

Proposed Forest Block (+/-906 Acres)

Type:

- Interior Forest (+/-430 Acres)
- Edge Forest (+/-417 Acres)
- Proposed Addition to Forest Edge (+/-59 Acres)

Hydrography

- Marsh
- Water
- Watercourse
- Delineated Wetland Area

Figure 8
Proposed Contiguous Forest Map

Proposed Fusion Solar Center Facility
Potash Hill Rd
Sprague, CT

CORONAL
ALL-POINTS

Map Notes:
Base Map Source: 2012 Aerial Photograph (CTECO)
Map Scale: 1 in = 1,400 ft *Map Date: July 16, 2015*

1,400 700 0 1,400 Feet

N W E S

Cool-Season Grassland Habitat Impact Analysis

The Site contains a single contiguous managed hayfield in its southern portion. This habitat type is classified as a WAP *key habitat* in the *Upland Herbaceous* category, sub-habitat *cool-season grassland*. Hayfield habitat totals approximately 19 acres (of which 10 acres is proposed as part of the Project), but is distributed in a narrow and irregular pattern which minimizes interior grassland (which is favored for nesting by grassland specialists) and maximizes grassland edge. Patch size is a critical limiting factor for grassland birds, many of which require a minimum patch size of 25 acres or more. Given the small size of this hayfield, it is capable of supporting species with a smaller minimum area requirement. Due to the size and configuration of the hayfield at this Site, it is not capable of supporting abundant or diverse populations of grassland birds.

A single grassland specialist, the bobolink, was observed nesting in the hayfield. Although only a portion of the hayfield is proposed for development, the remaining hayfield will likely be too small and narrow to support bobolink post-development. Other open country birds observed nesting in this field included the tree swallow and red-winged blackbird. It is likely that these species will still be present in the remaining hayfield post-development.

Wildlife Impact Mitigation Measures

Habitat Enhancement Measures

Once the perimeter fence has been installed, a narrow strip of land (generally 30 feet in most areas) between the perimeter fence and the newly-created forest edge will need to remain clear (non-forested) to prevent shading of the solar arrays. This area can be managed for wildlife by restricting mowing on a rotation basis every 4 to 7 years. This will allow the area to revert to late old field and create a "soft" ecotone that will provide cover and habitat for a number of forest-dwelling wildlife and edge nesting birds. Periodic monitoring of this area from April through June would be beneficial to assess wildlife usage and better inform management of this area for wildlife.

General Breeding Bird Protection Measures

The proposed construction activities will result in the clearing of trees and mature vegetation that has the potential to support breeding birds. Once a construction schedule is determined, Fusion will evaluate whether the potential exists for nest disturbance and plan accordingly. To avoid

potential disturbance during periods of high bird activity, Fusion will use the following schedule as a general guideline. If construction activities should occur during the peak nesting period of May 1st through August 15th, efforts would be taken to complete tree clearing work prior to May 1st; or, if tree clearing has not been completed by May 1st, an avian survey may be conducted to determine if breeding birds would be disturbed. If the avian survey concludes that breeding birds would be disturbed, tree clearing activities may be restricted through the peak nesting period (or a modified time frame based on the specific findings of the survey).

These Protection Measures should also adequately protect any broad-winged hawks or bald eagles potentially utilizing the Site.

Rare Species

Clustered Sedge

The habitat favored by this sedge typically consists of open and dry habitats with sand or gravelly soils and, occasionally, bogs and saturated sandy substrates. As the Site entirely consists of dense forest (with the exception of recently logged areas) and the cool season grass hayfield, suitable habitat does not appear to exist within the Project Area.

Northern Long-Eared Bat

Although no hibernaculum or breeding/roosting habitat is known to exist in the vicinity of the Site, depending on the type and timing of forest management activities there is potential for mortality and temporarily removal or degradation of roosting and foraging habitat. To avoid killing or injuring northern long-eared bat, the following conservation measures are to be adhered to under Interim 4(d) Rule (April 2, 2015) of the federal Endangered Species Act for this species:

I. No activities are to occur within 0.25 mile of a known, occupied hibernacula[18]
II. Avoid cutting or destroying of known, occupied roost trees during the pup season of June 1st to July 31st
III. Avoid clear-cutting (or similar harvesting methods) within 0.25 mile of known, occupied roost trees during the pup season of June 1st to July 31st

[18] Locations of hibernacula are identified by CTDEEP NDDB during the state rare species consultation process. No hibernacula are known to exist in the Site vicinity.

Wood Turtle

Wood turtle are known to occur in the Little River riparian corridor, located approximately 2,200 feet west of the Site. Although not explicitly stated in the CTDEEP's letter, the potential exists for wood turtle to use portions of Wetland 1 and the unnamed brook. Although it is unlikely dispersing wood turtles would be utilizing the Project Area, additional protective measures can be incorporated into the Wetland Protection Plan to promote avoidance of unintentional injury or mortality during construction.

Bald Eagle

No adverse impacts to migrating Bald Eagle are anticipated with development of the Project, based on its distance separating the Site from the Quinebaug River and eagle migrate patterns during the daytime under favorable weather conditions when thermals form.

Bobolink

While the Site's hayfield is not likely to support bobolink post-construction, measures should be taken to avoid incidental take of bobolink during construction. Ideally, the hayfield vegetation should be removed during the non-breeding season (September to April) in order to prevent attraction of bobolink during spring migration. If this is not feasible, hay mowing activities should be delayed until mid-July or early August to allow grassland birds to complete most nesting activities. If delayed mowing is not feasible and construction activities must be conducted during the breeding season, the following measures can be taken to minimize impacts on nesting bobolink (NRCS, 1999):

1. Hayfields should be mowed from the field center outward to allow birds to escape to adjacent habitats.
2. Fields can be broken into sub-units and mowed on a rotational basis to allow for some useable habitat to be available at all times.
3. Adult nesting birds and roosting individuals are less likely to flush from cover during the night. Therefore, night mowing should be avoided to prevent adult bird mortality.
4. Flushing bars should be mounted on harvesting equipment to minimize bird mortality during mowing operations.

Water Supply Areas

There are no public water supply wells located in the vicinity of the Site. No liquid fuels are associated with the operations of the Project. Therefore, the Project would have no adverse environmental effect on water resources.

Water Quality

The facility will be unstaffed and no potable water uses or sanitary discharges are planned.

The facility and areas generally within 30 feet of the fence line will be regraded with existing or imported soil covered with native grasses and vegetation. Because the solar arrays will be installed on driven or screwed foundations (i.e., I-beams), impervious areas are substantially minimized.

It is anticipated that a stormwater management system design will be completed as part of the D&M Plan, should it be required by the Siting Council, in conformance with the guidelines set forth in the 2004 Connecticut Stormwater Quality Manual.

Air Quality

Overall, the Project will have minor emissions of regulated air pollutants and greenhouse gases during construction and no air permit will be required. During construction of the Project, any air emission effects will be temporary and will be controlled by enacting appropriate mitigation measures (e.g., water for dust control, avoid mass early morning vehicle startups, etc.). Accordingly, any potential air effects as a result of the Project construction activities will be de-minimus.

During operation, the Project will not produce air emissions of regulated air pollutants or greenhouse gases (e.g., PM10, PM2.5, VOCs, GHG or Ozone). Thus, no air permit will be required. Moreover, over 20 years, the Project will result in the elimination of approximately 523,000 metric tons of CO2 equivalent, which is equal to taking 110,000 vehicles off the road and the amount of carbon sequestered by 429,000 acres of U.S. forests in one year.[19]

Scenic Areas

[19] U.S. EPA Greenhouse Gas Equivalencies Calculator

No scenic areas would be physically or visually impacted by development of the solar Project. With the exception of select southern locations along Potash Hill Road, the Project would not be highly visible because of the dense forest surrounding the Site in most directions. Fusion will maintain sufficient vegetative buffer and install landscaping along currently exposed areas of Potash Hill Road to further screen any potential views.

Historic and Archaeological Resources

Historical research, previous investigations literature review, and pedestrian survey and revealed no significant archaeological associations at the Site, which was confirmed through the excavation of nearly 500 shovel test locations.

Historic features at the Site are limited to stone walls and stone piles. Two structures proximate to the Project were identified as potentially being eligible for listing on the National Register of Historic Places (at 85 and 111 Potash Hill Road, respectively).

Fusion consulted with the SHPO and provided a copy of the ACS Phase I Archaeological Reconnaissance Survey Interim Report for concurrence that no historic or archaeological resources would be affected by the Project. The SHPO responded in a letter (dated May 21, 2015) that the findings of the survey do not merit archaeological site status for status on the National Register of Historic Places. Further, the SHPO concluded that no historic resources will be affected by the Project.

The SHPO letter is provided under separate cover.

Geology and Soils

No adverse effects are anticipated on natural resources occurring at and/or nearby the subject parcel. Vegetative clearing and earthwork is required for construction of the Project. However, no impacts to wetlands, water courses or significant habitat would occur.

Floodplain Areas

The Site is located entirely outside of the 100-year and 500-year floodplains. Therefore, no special design elements are necessary with respect to flooding concerns. In addition, no impacts to floodplains are associated with the proposed Project.

Recreational Areas

No recreational areas would be impacted by the Project.

Noise

The only equipment proposed for the Project that would generate noise consists of the inverters, all to be centrally located within the interior portion of the Project Area. The inverters are inactive at night. While operative during the day, the sound pressure level at a distance of 32.8 feet is 60 dBA. The closest inverter to the fence line is approximately 290 feet. After the Project is constructed and in service, the noise levels at the fence line are anticipated to be 42 dBA, which is well below the most conservative criteria of 45 dBA for nighttime and 55 dBA for daytime, as established by the State of Connecticut Noise Control regulations (CGS *22a/22a-69-1 through 7*). During those times the inverters are operative, noise levels at nearby property lines and/or residences would be well below 42 dBA.

Lighting

No lighting is planned for the facility.

Coastal Zone Management Areas

No Coastal Zone Management Areas would be affected by the Project.

Other Surrounding Features

No adverse effects are anticipated to the facilities identified in Figure 4, primarily because of their sufficient distance from the Project.

Conclusion

As demonstrated in this EA, the Project will comply with CTDEEP air and water quality standards and will not have a substantial adverse effect on the environment.

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APPENDIX A Wetland Inspection Report

ALL-POINTS TECHNOLOGY CORPORATION

WETLAND DELINEATION

July 9, 2015 **APT Project No.: CT472100**

Prepared For: Fusion Solar Center, LLC
P.O. Box 2055
Charlottesville, VA 22902

Project Name: Fusion Solar Center

Project Address: Potash Hill Road and Westminster Road
Sprague, Connecticut

Date(s) of Investigation: May 28, 2015; June 3-5, 2015

Field Conditions: **Weather:** partly cloudy, mid 70's to 80s
Soil Moisture: moist

Wetland/Watercourse Delineation Methodology[1]:

☒Connecticut Inland Wetlands and Watercourses
☐Connecticut Tidal Wetlands
☐U.S. Army Corps of Engineers

The wetlands inspection was performed by[2]:

Matthew Gustafson, Registered Soil Scientist

Enclosures: Wetland Delineation Discussion, Wetland Delineation Field Forms & Wetland Inspection Map

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[1] *Wetlands and watercourses were delineated in accordance with applicable local, state and federal statutes, regulations and guidance.*
2 All established wetlands boundary lines are subject to change until officially adopted by local, state, or federal regulatory agencies.

Attachments

- Wetland Delineation Discussion
- Wetland Delineation Field Forms
- Wetland Inspection Map

Wetlands Discussion

At the request of Fusion Solar Center, LLC ("Fusion"), All-Points Technology Corporation, P.C. ("APT") completed wetland delineation services on property north of Potash Hill Road in Sprague, Connecticut. The Project Area included three separate and abutting parcels totaling approximately 418± acres. These parcels are identified in Sprague Assessor records as:

- #57 Potash Hill Road (Map 16, Block 6, Lot 18);
- #111 Potash Hill Road (Map 21, Block 2, Lot 2); and,
- Westminster Road (Map 22, Block 1, Lot 10).

We understand that of the 418± acres, Fusion has approximately 362 acres under control for evaluating development opportunities.

Matthew Gustafson, a Connecticut-registered Soil Scientists with APT, conducted inspections of the Project Area on May 28, 2015 and June 3, 4, and 5, 2015. The May 28th inspection involved a review and confirmation of wetland boundaries previously identified during an initial inland wetlands delineation on the Potash Hill Road parcels performed by Josh Wilson of Fuss & O'Neil. A review of Mr. Wilson's delineation was found to be substantially correct.

Subsequent inspections included field delineation of additional wetland resources located on the Westminster Road parcel. Wetlands were delineated (identified, classified, and flagged with consecutively numbered survey tape at approximately 25-foot intervals) in accordance with State of Connecticut Inland Wetlands and Watercourse regulations. APT located the wetland flags using Trimble® GPS GeoXT Geoexplorer 6000 Series survey equipment (with sub-meter accuracy).

Wetlands and Watercourses

The wetland resources are summarized below and depicted on the *Wetland Inspection Map* provided as Figure 1.

Wetland 1 is a large complex wetland system consisting of broad forested wetlands with hummock hollow topography. Generally, the system drains north to south with interior focused and diffuse intermittent stream channels transitioning to perennial stream systems in the southern reaches. Wetland 1 is focused along the eastern sides of the Potash Hill Road parcels,

originating to the north, and draining south off the properties. Interior to the wetland system are a number of cryptic vernal pool habitats. In total, six (6) vernal pool habitats were identified within Wetland 1. Dominant wetland species include red maple (*Acer rubrum*), yellow birch (*Betula alleghaniensis*), spicebush (*Lindera benzoin*), pepperbush (*Clethra alnifolia*) skunk cabbage (*Symplocarpus foetidus*), Japanese barberry (*Berberis thunbergii*), sensitive fern (*Onoclea sensibilis*), and sphagnum species (*Sphagnum sp.*). Wetland 1 eventually drains into the Little River system to the south.

Wetland 2 is located on the Westminster Road parcel and consists of a series of intermittent and perennial stream systems with bordering vegetated wetland systems. The cover type of the wetland areas are primarily forested dominated by red maple (*Acer rubrum*). This wetland system drains north to south and is not physically associated with Wetland 1. A large upland 'island' was identified interior to Wetland 2 with contiguous wetland areas surrounding the north and south sides of the upland 'island'. The western drainage component of this wetland consists of a confined seep system eventually focusing to an intermittent watercourse with diffuse flows. This western drainage component also contains a single cryptic vernal pool. The eastern drainage component consists of a perennial stream system with a well-defined bank and channel. A small pocket wetland system identified as Wetland 2A is located north of an existing access road and north of the eastern drainage component of Wetland 2. While evidence of wetland or watercourse connectivity was not present with Wetland 2, Wetland 2A demonstrated evidence of seasonal sheet flow across the existing access road draining into Wetland 2. Due to the drainage and proximity nexus, Wetland 2A was grouped as a subset of Wetland 2. Wetland 2 has experienced various degrees of impact from logging activities including temporary access road crossings and tree clearing. Dominant wetland vegetation is consistent with Wetland 1.

Wetland 3 is located generally within the upland island created by Wetland 2 and consists of a small, shallow depressional wetland pocket formed in dense glacial till. This wetland is partially forested with some of the overstory canopy removed from historic logging activity. An access road along the northern extent of the wetland has been subject to some rutting resulting in approximately 1 to 2 foot depressions with standing water. No evidence of vernal pool indicator species was observed within these isolated pools. No other standing water was observed within Wetland 2 outside these isolated tire ruts. Dominant wetland vegetation is consistent with Wetland 1 and 2.

Soils encompassing the Project Area were field classified predominantly as upland soil units consisting of the following: Canton and Charlton soils, Sutton fine sandy loam, Paxton and Montauk fine sandy loams, and Woodbridge fine sandy loam. Wetland soils identified within the wetland resources consist of Ridgebury, Leicester, and Whitman soils. Identified soils are generally consistent with digitally available soil survey information obtained from the Natural Resources Conservation Service ("NRCS")*.

Vernal Pools

Calhoun and Klemens (2002) provides the following operational definition of vernal pools:

Vernal pools are seasonal bodies of water that attain maximum depths in the spring or fall, and lack permanent surface water connections with other wetlands or water bodies. Pools fill with snowmelt or runoff in the spring, although some may be fed primarily by groundwater sources. The duration of surface flooding, known as hydroperiod, varies depending upon the pool and the year; vernal pool hydroperiods range along a continuum from less than 30 days to more than one year. Pools are generally small in size (<2 acres), with the extent of vegetation varying widely. They lack established fish populations, usually as a result of periodic drying, and support communities dominated by animals adapted to living in temporary, fishless pools. In the region, they provide essential breeding habitat for one or more wildlife species including Ambystomid salamanders (Ambystoma spp., called "mole salamanders" because they live in burrows), wood frogs (Rana sylvatica), and fairy shrimp (Eubranchipus spp.).

Vernal pool physical characteristics can vary widely while still providing habitat for indicator species. "Classic" vernal pools are natural depressions in a wooded upland with no hydrologic connection to other wetland systems. Manmade depressions such as quarry holes, old farm ponds and borrow pits can also provide similar habitat. Often, vernal pools are depressions or impoundments within larger wetland systems. These vernal pool habitats are commonly referred to as "cryptic" vernal pools.

Several species of amphibians depend on vernal pools for reproduction and development. These species are referred to as indicator vernal pool species and their presence in a wetland during the breeding season helps to identify that area as a vernal pool.

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* NRCS Web Soil Survey, http://websoilsurvey.nrcs.usda.gov/app/, accessed on July 6, 2015.

This vernal pool assessment makes an important distinction between wetlands in which indicator species may breed and those wetlands where they breed *and* successfully develop. A common phenomena is for breeding (i.e., mating and egg laying) to occur in bodies of water such as road ruts or temporary puddles where development and metamorphosis of larvae is unsuccessful. Such areas are referred to as "decoy vernal pools" as reproductive efforts are unsuccessful. In their guidance on best development practices for conserving pool breeding amphibians, Calhoun and Klemens (2002) specifically note the negative impact associated with ruts: "*Site clearing can cause water-filled ruts. These ruts intercept amphibians moving toward the vernal pool and may induce egg deposition. Often these ruts do not hold water long enough to allow development of amphibians and therefore acts as "sinks" that result in populations declines.*"

Vernal pool surveys were conducted on June 3, 5 and 18 by APT in cooperation with Davison Environmental, LLC. Additionally, APT was provided egg mass survey data collected by Josh Wilson of Fuss & O'Neill, Inc. on April 7 and 22, 2015[†].

A total of six (6) vernal pools were identified in Wetland 1 and a seventh (7th) in Wetland 2. All pools are cryptic vernal pools. Several of the pools are anthropogenic in nature.

Pool 1 consists of an old farm pond. The pond consists of an historic excavation with water retained by an earthen berm on the downslope side. The maximum water depth is approximately two (2) feet. Pool 1 was the most productive pool for spotted salamander, with a total of 143 egg masses observed.

Pool 2 also appears to have originated through historic excavation, likely for agricultural purposes. Pool 2 had a maximum depth of approximately 1.5 feet. Pool 2 had the highest species diversity of any pool, as it supported three indicator species: wood frog, spotted salamander and marbled salamander. Pool 3 was also the most productive pool for wood frog, with 42 egg masses observed.

[†] Egg mass count data was provided by F&O for Pools 1 through 4. The F&O survey data did not include information on Pools 5, 6 or 7.

Pool 3 is a small pool situated close to the headwater stream embedded within Wetland 1. The maximum depth was less than eight inches. F&O recorded 19 wood frog egg masses and two spotted salamander egg masses in Pool 3 on April 22nd. During APT's dip-net surveys, no larval indicator species were encountered in Pool 3.

Pool 4 is likely anthropogenic in origin. Based on the depth and shape of the pool it appears to have formed in an historic logging road rut. The maximum depth is approximately 15 inches. The pool contained high densities of wood frog larvae. No spotted salamander larvae were found during dip-netting, however F&O's investigations in April noted three egg masses.

Pool 5 is a larger shallow pool in-line with and fed by the diffuse headwater stream which drains from this larger wetland system. The pool is gently sloping with a maximum depth of approximately 10 inches. Larvae of wood frog and spotted salamander were observed as well as several hatched spotted salamander egg masses.

Pool 6 is the largest pool in total surface area. However the pool is shallow throughout (eight inches or less), with most of the activity restricted to several large tree throws. The pool is fed directly by the headwater stream which flows through the pool. Although no egg mass inventory was conducted in this pool, based on the low density of larvae present during dip-netting it is likely that the pool has relatively low productivity. The pool also contained spring peeper tadpoles.

Pool 7 is embedded within Wetland 2. The pool is an historic impoundment adjacent to a logging road. The pool is long, narrow and shallow, with a maximum depth of approximately eight inches. The pool contained spotted salamander larvae, but no wood frog larvae were observed.

In addition to the seven (7) vernal pools, three (3) decoy pools were observed, all within and adjacent to the eastern portions of the Wetland 3. All three pools consisted of small and shallow road ruts in skid roads associated with recent logging activities. Species present in these decoy pools included wood frog (larvae), spotted salamander (egg masses and larvae) and *Bufo* egg masses.

Other wildlife observed within vernal pools included green frog (*Rana clamitans*). The four-toed salamander, a vernal pool facultative species, was observed near Vernal Pool 6. See Tables 1 and 2 for an inventory of observations within the vernal pools.

Table 1: Amphibians and reptiles observed during vernal pool survey, Potash Hill Road, Sprague

Common Name	Scientific Name	Status
Amphibians		
fowlers toad	*Bufo americanus*	
Marbled Salamander	*Ambystoma opacum*	IM, IS
four-toed salamander	*Hemidactylium scutatum*	FS
green frog	*Rana clamitans*	
wood frog	*Rana sylvatica*	IM, IS
pickerel frog	*Rana palustris*	
redback salamander	*Plethodon cinereus*	
spotted salamander	*Ambystoma maculatum*	IM, IS
spring peeper	*Pseudacris crucifer*	
two-lined salamander	*Eurycea bislineata*	
Reptiles		
garter snake	*Thamnophis sirtalis*	

Status
IS – vernal pool indicator species; FS – vernal pool facultative species
Wildlife Action Plan Conservation Status (CS):
VI – very important; MI – most important; IM – important

Table 2: Egg mass and larval survey results for vernal pool indicator species, Potash Hill Road, Sprague

Pool	Total Egg Masses		Larvae Observed		
	Wood Frog	Spotted Salamander	Wood Frog	Spotted Salamander	Marbled Salamander
1	25*	143	Y	Y	N
2	42*	46	Y	Y	Y
3	19*	2*	N	N	N
4	11*	3*	Y	N	N
5	NO	NO	Y	Y	N
6	NO	NO	Y	Y	N
7	NO	NO	N	Y	N

KEY:
Y- yes; N – no
NO – not observed. Note that the timing of our initial survey was near the end the egg mass development stage for wood frog and spotted salamander.
*Indicates egg mass count data collected by Fuss & O'Neill on April 7 & 22, 2015

Wetland Delineation Field Forms

Wetland Delineation Field Form

Wetland I.D.:	Wetland 1	
Flag #'s:	WF A100 to A229, C300 to C396, D353 to F600, E500 to E535	
Flag Location Method:	Site Sketch ☒	GPS (sub-meter) located ☒

WETLAND HYDROLOGY:

NONTIDAL ☐

Intermittently Flooded ☐	Artificially Flooded ☐	Permanently Flooded ☐
Semipermanently Flooded ☐	Seasonally Flooded ☒	Temporarily Flooded ☐
Permanently Saturated ☐	Seasonally Saturated – seepage ☐	Seasonally Saturated - perched ☒
Comments: Choose an item.		

TIDAL ☐

Subtidal ☐	Regularly Flooded ☐	Irregularly Flooded ☐
Irregularly Flooded ☐		
Comments: Choose an item.		

WETLAND TYPE:

SYSTEM:

Estuarine ☐	Riverine ☐	Palustrine ☒
Lacustrine ☐	Marine ☐	
Comments: Choose an item.		

CLASS:

Emergent ☐	Scrub-shrub ☐	Forested ☒
Open Water ☐	Disturbed ☐	Wet Meadow ☐
Comments: Choose an item.		

WATERCOURSE TYPE:

Perennial ☒	Intermittent ☒	Tidal ☐
Watercourse Name: Unnamed		
Comments: Feeder to Little River		

Wetland Delineation Field Form (Cont.)

SPECIAL AQUATIC HABITAT:

Vernal Pool Yes ☒ No ☐ Potential ☐	Other ☐
Vernal Pool Habitat Type: 'Cryptic' & 'Classic'	
Comments: A total of six vernal pools were identified within Wetland 1, all being classified as Tier 1 pools. Each pool contained both spotted salamander (*Ambystoma maculatum*) and wood frog (*Rana sylvatica*) larva and egg masses of varying quantities. Further discussion of these vernal pool resources will be provided under separate cover.	

SOILS:

Are field identified soils consistent with NRCS mapped soils?	Yes ☒	No ☐
If no, describe field identified soils		

DOMINANT PLANTS:

Red Maple (Acer rubrum)	Spicebush (Lindera benzoin)
Skunk Cabbage (Symplocarpus foetidus)	Yellow Birch (Betula alleghaniensis)
Sweet Pepperbush (Clethera alnifolia)	Japanese Barberry* (Berberis thunbergii)
Sensitive Fern (Onoclea sensibilis)	Sphagnum Sp.
Cinnamon Fern (Osmunda cinnamomea)	Choose an item.
Choose an item.	Choose an item.
Choose an item.	Choose an item.
Choose an item.	Choose an item.

* denotes Connecticut Invasive Species Council invasive plant species

GENERAL COMMENTS:

Wetland 1 is a large complex wetland system consisting of broad forested wetlands with hummock hollow topography. Generally, the system drains north to south with interior focused and diffuse intermittent stream channels transitioning to perennial stream systems in the southern reaches. Wetland 1 is focused along the eastern side of the Site, originating off-Site to the north, and draining south off-Site. Interior to the wetland system are a number of cryptic vernal pool habitats. In total, six (6) vernal pool habitats were identified within Wetland 1. Wetland 1 eventually drains into the Little River system to the south.

Wetland Delineation Field Form

Wetland I.D.:	Wetland 2	
Flag #'s:	WF G700 to G865, G900/G1274, H1300 to H1459, H1500 to H1511, H1550 to H1571	
Flag Location Method:	Site Sketch ☒	GPS (sub-meter) located ☒

WETLAND HYDROLOGY:

NONTIDAL ☐

Intermittently Flooded ☐	Artificially Flooded ☐	Permanently Flooded ☐
Semipermanently Flooded ☐	Seasonally Flooded ☒	Temporarily Flooded ☐
Permanently Saturated ☐	Seasonally Saturated – seepage ☐	Seasonally Saturated - perched ☒
Comments: Choose an item.		

TIDAL ☐

Subtidal ☐	Regularly Flooded ☐	Irregularly Flooded ☐
Irregularly Flooded ☐		
Comments: Choose an item.		

WETLAND TYPE:

SYSTEM:

Estuarine ☐	Riverine ☐	Palustrine ☒
Lacustrine ☐	Marine ☐	
Comments: Choose an item.		

CLASS:

Emergent ☐	Scrub-shrub ☒	Forested ☒
Open Water ☐	Disturbed ☒	Wet Meadow ☐
Comments: Choose an item.		

WATERCOURSE TYPE:

Perennial ☒	Intermittent ☒	Tidal ☐
Watercourse Name: Unnamed		
Comments: Feeder to Little River		

Wetland Delineation Field Form (Cont.)

SPECIAL AQUATIC HABITAT:

Vernal Pool Yes ☒ No ☐ Potential ☐	Other ☐
Vernal Pool Habitat Type: 'Cryptic'	
Comments: A single vernal pools was identified within Wetland 2, classified as Tier 1 pool. This pool contained both spotted salamander (*Ambystoma maculatum*) and wood frog (*Rana sylvatica*) larva and egg masses of varying quantities. Decoy vernal pools in the form of inundated tire ruts were found in several locations within this wetland. Further discussion of these vernal pool resources will be provided under separate cover.	

SOILS:

Are field identified soils consistent with NRCS mapped soils?	Yes ☒	No ☐
If no, describe field identified soils		

DOMINANT PLANTS:

Red Maple (Acer rubrum)	Spicebush (Lindera benzoin)
Skunk Cabbage (Symplocarpus foetidus)	Yellow Birch (Betula alleghaniensis)
Sweet Pepperbush (Clethera alnifolia)	Japanese Barberry* (Berberis thunbergii)
Sensitive Fern (Onoclea sensibilis)	Sphagnum Sp.
Cinnamon Fern (Osmunda cinnamomea)	Choose an item.
Choose an item.	Choose an item.
Choose an item.	Choose an item.
Choose an item.	Choose an item.

* denotes Connecticut Invasive Species Council invasive plant species

GENERAL COMMENTS:

Wetland 2 is located off-Site to the east and consists of a series of intermittent and perennial stream systems with bordering vegetated wetland systems. The cover type of this wetland area is primarily forested dominated by red maple (Acer rubrum). This wetland system drains north to south off-Site and is not physically associated with Wetland 1. A large upland 'island' was identified interior to Wetland 2 with contiguous wetland areas surrounding the north and south sides of the upland 'island'. The western drainage component of this wetland consists of a confined seep system eventually focusing to an intermittent watercourse with diffuse flows. This western drainage component also contains a single cryptic vernal pool. The eastern drainage component consists of a perennial stream system with a well-defined bank and channel. A small pocket wetland system identified as Wetland 2A is located north of an existing access road and north of the eastern drainage component of Wetland 2. While evidence of wetland or watercourse connectivity was not present with Wetland 2, Wetland 2A demonstrated evidence of seasonal sheet flow across the existing access road draining into Wetland 2. Due to the drainage and proximity nexus, Wetland 2A was grouped as a subset of Wetland 2. Wetland 2 has experienced various degrees of impact from logging activities including temporary access road crossings and tree clearing.

Wetland Delineation Field Form

Wetland I.D.:	Wetland 3	
Flag #'s:	WF I1601 to I1619	
Flag Location Method:	Site Sketch ☒	GPS (sub-meter) located ☒

WETLAND HYDROLOGY:

NONTIDAL ☐

Intermittently Flooded ☐	Artificially Flooded ☐	Permanently Flooded ☐
Semipermanently Flooded ☐	Seasonally Flooded ☐	Temporarily Flooded ☐
Permanently Saturated ☐	Seasonally Saturated – seepage ☐	Seasonally Saturated - perched ☒
Comments: Choose an item.		

TIDAL ☐

Subtidal ☐	Regularly Flooded ☐	Irregularly Flooded ☐
Irregularly Flooded ☐		
Comments: Choose an item.		

WETLAND TYPE:

SYSTEM:

Estuarine ☐	Riverine ☐	Palustrine ☒
Lacustrine ☐	Marine ☐	
Comments: Choose an item.		

CLASS:

Emergent ☐	Scrub-shrub ☒	Forested ☒
Open Water ☐	Disturbed ☒	Wet Meadow ☐
Comments: Choose an item.		

WATERCOURSE TYPE:

Perennial ☐	Intermittent ☐	Tidal ☐
Watercourse Name: None		
Comments: None		

Wetland Delineation Field Form (Cont.)

SPECIAL AQUATIC HABITAT:

Vernal Pool Yes ☐ No ☒ Potential ☐	Other ☐
Vernal Pool Habitat Type: None	
Comments: None	

SOILS:

Are field identified soils consistent with NRCS mapped soils?	Yes ☒	No ☐
If no, describe field identified soils		

DOMINANT PLANTS:

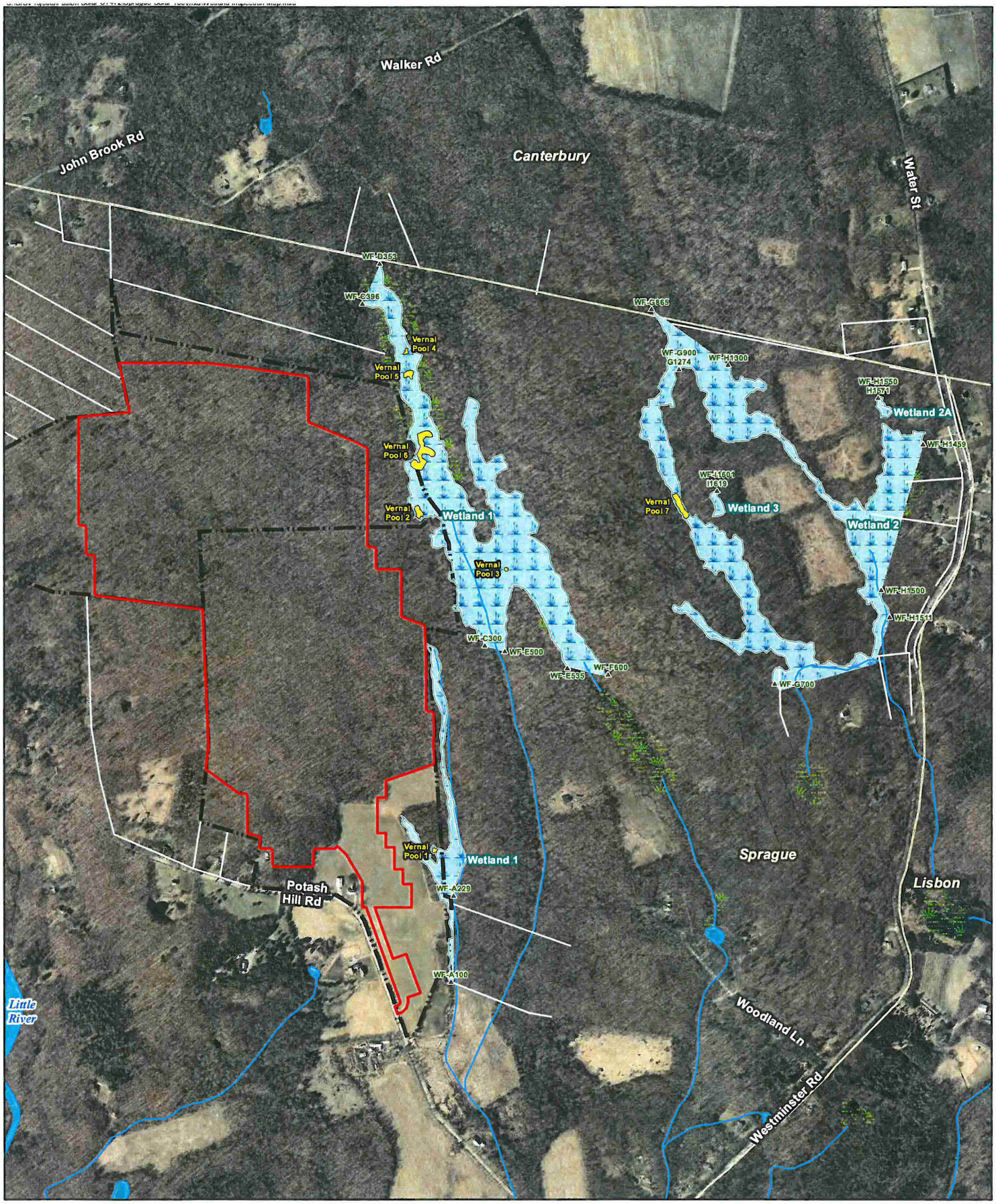
Red Maple (Acer rubrum)	Spicebush (Lindera benzoin)
Cinnamon Fern (Osmunda cinnamomea)	Yellow Birch (Betula alleghaniensis)
Sweet Pepperbush (Clethera alnifolia)	Japanese Barberry* (Berberis thunbergii)
	Sphagnum Sp.

* denotes Connecticut Invasive Species Council invasive plant species

GENERAL COMMENTS:

Wetland 3 is located generally within the upland island created by Wetland 2 and consists of a small, shallow depressional wetland pocket formed in dense glacial till. This wetland is partially forested with some of the overstory canopy removed from historic logging activity. An access road along the northern extent of the wetland has been subject to some rutting resulting in approximately 1 to 2 foot depressions with standing water. No evidence of vernal pool indicator species was observed within these isolated pools. No other standing water was observed within Wetland 2 outside these isolated tire ruts. Dominant wetland vegetation is consistent with Wetland 1 and 2.

Wetland Inspection Map



Legend

- Subject Property Boundary Line
- Abutting Property Boundary Line
- Project Area
- Start/End Wetland Flag
- Delineated Wetland Boundary Line
- Wetland Area
- Vernal Pool
- Hydrography
  - Marsh
  - Water
  - Watercourse

N W E S

950 475 0 950 Feet

Wetland Inspection Map

Proposed Fusion Solar Center Facility
Potash Hill Rd
Sprague, CT

CORONAL
ALL-POINTS

Map Notes:
Base Map Source: 2012 Aerial Photograph (CTECO)
Map Scale: 1 in = 950 ft *Map Date: July 13, 2015*

APPENDIX B CTDEEP NDDB Letter

Connecticut Department of

ENERGY &
ENVIRONMENTAL
PROTECTION

July 8, 2015

Dean Gustafson
All-Points Technology Corporation, P.C.
3 Saddlebrook Dr
Killingworth, CT 06419
dgustafson@allpointstech.com

Project: Proposed Construction of a Solar Powered Electrical Generation Installation Utilizing Photovoltaic Module Technology for Fusion Solar Center on Potash Hill Road in Sprague (Nothing on site but some species in the area)
NDDB Determination No.: 201504279

Dear Dean Gustafson,

I have reviewed Natural Diversity Data Base (NDDB) maps and files regarding the area delineated on the map provided for the proposed Proposed Construction of a Solar Powered Electrical Generation Installation Utilizing Photovoltaic Module Technology for Fusion Solar Center on Potash Hill Road in Sprague (Nothing on site but some species in the area), Connecticut. According to our records we have Federal and State Threatened *Myotis septentrionalis* (long-eared bats), State Threatened *Carex cumulata* (clustered sedge) and State Special Concern *Glyptemys insculpta* (wood turtle) in the vicinity of this property. We also have State Threatened Bald eagles nesting at the adjacent Quinebaug River. I would recommend a site survey of this property to be sure none of these species are impacted by this project. This determination is good for one year. Please re-submit an NDDB Request for Review if the scope of work changes or if work has not begun on this project by July 8, 2016.

Natural Diversity Data Base information includes all information regarding critical biological resources available to us at the time of the request. This information is a compilation of data collected over the years by the Department of Energy and Environmental Protection's Natural History Survey and cooperating units of DEEP, private conservation groups and the scientific community. This information is not necessarily the result of comprehensive or site-specific field investigations. Consultations with the Data Base should not be substitutes for on-site surveys required for environmental assessments. Current research projects and new contributors continue to identify additional populations of species and locations of habitats of concern, as well as, enhance existing data. Such new information is incorporated into the Data Base as it becomes available.

Please contact me if you have further questions at (860) 424-3592, or dawn.mckay@ct.gov . Thank you for consulting the Natural Diversity Data Base.

Sincerely,

Dawn M. McKay

Dawn M. McKay
Environmental Analyst 3

APPENDIX C Wetland Protection Plan

WETLAND PROTECTION PROGRAM

Portions of the proposed Project are located in close proximity to wetlands. As a result, the following protective measures shall be followed to help avoid degradation of the nearby wetland system.

It is of the utmost importance that the Contractor complies with the requirement for the installation of protective measures and the education of its employees and subcontractors performing work on the project site. These measures will also provide protection to a nearby wetland system. This protection program shall be implemented regardless of time of year the construction activities occur. All-Points Technology Corporation, P.C. ("APT") will serve as the Environmental Monitor for this project to ensure that wetland protection measures are implemented properly. The Contractor shall contact Dean Gustafson, Senior Environmental Scientist at APT, at least 5 business days prior to the pre-construction meeting. Mr. Gustafson can be reached by telephone at (860) 663-1697 ext. 201 or via email at dgustafson@allpointstech.com.

The wetland protection program consists of several components: use of appropriate erosion control measures to control and contain erosion while avoiding/minimizing wildlife entanglement; periodic inspection and maintenance of isolation structures and erosion control measures; education of all contractors and sub-contractors prior to initiation of work on the site; protective measures; and, reporting.

1. **Erosion and Sedimentation Controls**

    a. Plastic netting used in a variety of erosion control products (i.e., erosion control blankets, fiber rolls [wattles], reinforced silt fence) has been found to entangle wildlife, including reptiles, amphibians, birds and small mammals. No permanent erosion control products or reinforced silt fence will be used on the project. Temporary Erosion control products will use either erosion control blankets and fiber rolls composed of processed fibers mechanically bound together to form a continuous matrix (net less) or netting composed of planar woven natural biodegradable fiber to avoid/minimize wildlife entanglement.

    b. Installation of erosion control measures shall be performed by the Contractor prior to any earthwork. The Environmental Monitor will inspect the work zone area prior to and following barrier installation to ensure erosion controls are properly installed.

    c. In addition to required daily inspection by the Contractor, the fencing will be inspected for tears or breeches in the fabric following installation periodically by the Environmental Monitor throughout the course of the construction project.

    d. The extent of the erosion controls will be as shown on the site plans. The Contractor shall have additional erosion control materials should field conditions warrant extending the fencing as directed by the Environmental Monitor.

    e. All silt fencing and other erosion control devices shall be removed within 30 days of completion of work and permanent stabilization of site soils. If fiber rolls/wattles, straw bales, or other natural material erosion control products are used, such devices will not be left in place to biodegrade and shall be promptly removed after soils are stable so as not to create a barrier to migrating wildlife. Seed from seeding of soils should not spread over fiber rolls/wattles as it makes them harder to remove once soils are stabilized by vegetation.

ALL-POINTS TECHNOLOGY CORPORATION, P.C.
☒ 3 SADDLEBROOK DRIVE · KILLINGWORTH, CT 06419 · PHONE 860-663-1697 · FAX 860-663-0935
☐ P.O. BOX 504 · 116 GRANDVIEW ROAD · CONWAY, NH 03818 · PHONE 603-496-5853 · FAX 603-447-2124

2. **Contractor Education**

   a. Prior to work on site, the Contractor shall attend an educational session at the pre-construction meeting with the Environmental Monitor. This orientation and educational session will consist of an introductory meeting with the Environmental Monitor to understand the environmentally sensitive nature of the development site and the need to follow these protective measures.

3. **Petroleum Materials Storage and Spill Prevention**

   a. Certain precautions are necessary to store petroleum materials, refuel and contain and properly clean up any inadvertent fuel or petroleum (i.e., oil, hydraulic fluid, etc.) spill due to the project's location in proximity to sensitive wetlands.

   b. A spill containment kit consisting of a sufficient supply of absorbent pads and absorbent material will be maintained by the Contractor at the construction site throughout the duration of the project. In addition, a waste drum will be kept on site to contain any used absorbent pads/material for proper and timely disposal off site in accordance with applicable local, state and federal laws.

   c. The following petroleum and hazardous materials storage and refueling restrictions and spill response procedures will be adhered to by the Contractor.

      i. Petroleum and Hazardous Materials Storage and Refueling

         1. Refueling of vehicles or machinery shall occur a minimum of 100 feet from wetlands or watercourses and shall take place on an impervious pad with secondary containment designed to contain fuels.

         2. Any fuel or hazardous materials that must be kept on site shall be stored on an impervious surface utilizing secondary containment a minimum of 100 feet from wetlands or watercourses.

      ii. Initial Spill Response Procedures

         1. Stop operations and shut off equipment.

         2. Remove any sources of spark or flame.

         3. Contain the source of the spill.

         4. Determine the approximate volume of the spill.

         5. Identify the location of natural flow paths to prevent the release of the spill to sensitive nearby waterways or wetlands.

         6. Ensure that fellow workers are notified of the spill.

      iii. Spill Clean Up & Containment

         1. Obtain spill response materials from the on-site spill response kit. Place absorbent materials directly on the release area.

         2. Limit the spread of the spill by placing absorbent materials around the perimeter of the spill.

         3. Isolate and eliminate the spill source.

4. Contact appropriate local, state and/or federal agencies, as necessary.

5. Contact a disposal company to properly dispose of contaminated materials.

iv. Reporting

1. Complete an incident report.

2. Submit a completed incident report to appropriate local, state and/or federal agencies, as necessary.

4. Herbicide and Pesticide Restrictions

a. In the event herbicides and/or pesticides are required at the proposed facility, their use will be used in accordance with Integrated Pest Management ("IPM") principles with particular attention to minimize applications within 100 feet of wetland or watercourse resources. No applications of herbicides or pesticides are allowed within actual wetland or watercourse resources.

5. Reporting

a. Any incidents of sediment release into the nearby wetland will be reported to the Connecticut Siting Council.

Attachment 3
Project Site Plans

AREA TABLE:

ACREAGE UNDER SITE CONTROL: ~362 ACRES

FENCED AREA: ~ 118 ACRES

LIMIT OF CLEARING: ~ 134 ACRES

TOTAL PROJECT AREA: ~ 144 ACRES

LEGEND:

- BOUNDARY LINE
- CHAIN LINK FENCE
- CLEARING LIMIT
- WETLAND BUFFER
- VERNAL POOL
- LIMIT OF EXISTING CLEARING

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
1			XX/XX	XX

SCALE: HORZ.: 1"=300'
VERT.:
DATUM: HORZ.:
VERT.:
300 150 0 300
GRAPHIC SCALE

FUSS & O'NEILL
146 HARTFORD ROAD
MANCHESTER, CONNECTICUT 06040
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www.fuss&o.com

FUSION SOLAR CENTER, LLC

FUSION SOLAR CENTER

POTASH HILL ROAD, SPRAGUE CONNECTICUT

PROJ. No.: 20140978 A20
DATE: 06/12/2015

CS-101

File Path: J:\DWG\P2014\0978\A20\Civil\Plan\20140978A20_STP01.dwg Layout: CS-101 Plotted: Thu, July 16, 2015 - 11:56 AM User: saffred
MS VIEW: Plotter: PDF-XCHANGE 2012 (MERGE).PC3 CTB File: FO.STB
LAYER STATE: