ENVIRONMENTAL EVALUATIONS
1.99 MW SOLAR ARRAY
PLATT HILL ROAD
WINCHESTER – CONNECTICUT
PREPARED FOR LODESTAR ENERGY
MARCH 20, 2020

LOW IMPACT SUSTAINABLE
LISD
DEVELOPMENT
TRINKAUS ENGINEERING

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Property Description

The subject property is located on the east side of Platt Hill Road in Winchester, Connecticut, north of Taylor Brook Road and south of Dayton Road/Reaching Hill Road. The original site contained 104.5 acres and a 24-lot Conservation Subdivision was designed and approved on the 104.5 acre site back in 2005. The current owners are selling all the land except for three approved building lots which front on Platt Hill road. There an Eversource Easement containing utility poles located in the northeast corner of the site.

Vegetative Conditions

The majority of site is wooded. There are some former meadow areas found in the western portion of the site which are going through the Early Succession process to become a forested area. The dominant tree species on the site are a mixture of Black Oak, Red Oak, Sugar Maple, Red Maple, Black Cherry and American Beech. There are clusters of White Pines in the southern portion of the site. A selective timber harvest was conducted a portion of the property (area of proposed building lots) in 2006 and roughly 700 trees were removed. In these areas, herbaceous and shrub layers have become re-established on the forest floor.

Wetland/Watercourses

There are numerous wetland/watercourses systems on the subject property. The original wetland delineation was done in 2003 and confirmed in 2019. See document entitled "Wetlands Soil Evaluation" – 100 acres – Platt Hill Road – Winchester, Connecticut; dated: March 11, 2020 by this office for a detailed discussion of the wetland/watercourses on this site.

Wetland and watercourse systems are highlighted in Figure 1.

Environmental Evaluations

At the time of the subdivision application, two environmental assessments of the wetland/watercourse systems were performed by Matt Popp, Professional Wetland Scientist of Environmental Land Solutions and Penelope Sharp, Environmental Consultant.

A request was filed with the CT DEEP Natural Diversity Database in October 2019 and two species were identified: Bridle shiner (State Special Concern) and Eastern pondmussel (State Special Concern).

Matt Popp of Environmental Land Solutions has prepared a response to the CT DEEP Natural Diversity Database report. All of these reports are found in Appendix "A" of this document.

Non-Wetland Soil Types

The upland soils on the site were field delineated by Mr. Beroz. They consist of Charlton, Paxton and Woodbridge. Additionally, deep test holes were excavated for the subdivision throughout the site to a depth of 7' to 8'. Reference is made to document entitled "Supporting Documentation – 1.99 MW Solar Array; Platt Hill Road; Winchester – Connecticut; Prepared for Lodestar Energy; dated: March 11, 2020 for more information on the upland soils on this site.

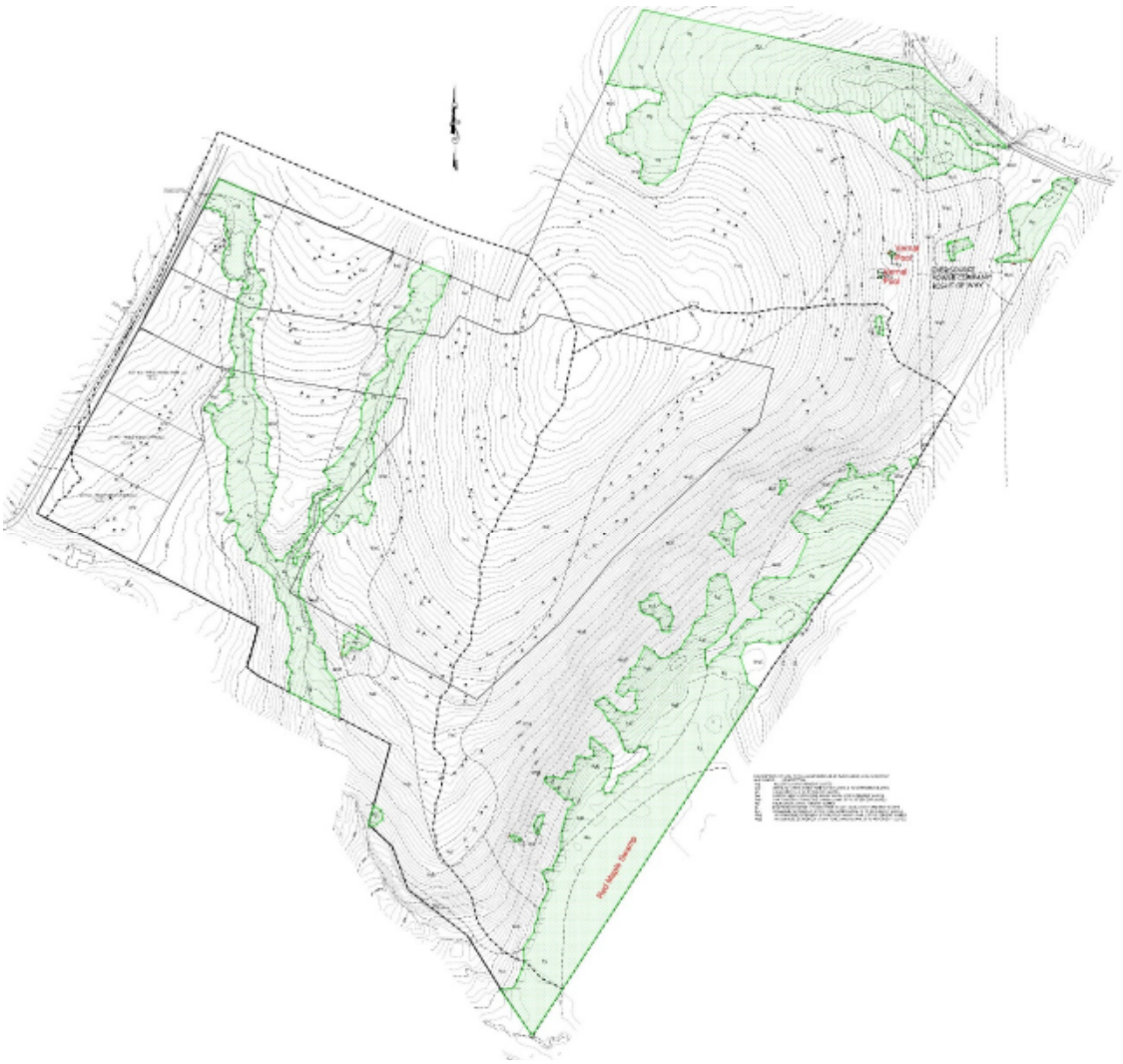


Figure 1 – Wetland/Watercourse/Vernal Pool Mapping

Topographic Conditions

The topography of the site is variable. From Platt Hill Road, it slopes gently down in an easterly direction to the two intermittent watercourse/wetland corridors. There is an upland area in the northern area between the two intermittent watercourse/wetland corridor. From this wetland corridor the land slopes up to the east where there is a north/south ridge line. The high point of the site is located in the central portion of this area and from here the land slopes moderately to the north toward Dayton Road, it slopes to the east down moderate then steep slopes to the wetland system located along the bottom of the slope. The land slopes to the south on mild and moderate slopes in the general direction of Taylor Road. The topography of the site is clearly visible in Figure 1.

APPENDIX "A"

1. **Environmental Assessment Report by Environmental Land Solutions, August 1, 2002 and revised to July 21, 2005**
2. **Report by Penelope Sharp, Environmental Consultant, July 5, 2003**
3. **Letter from CT DEEP Natural Diversity Database, February 28, 2020**
4. **Report by Environmental Land Solutions on the Species of Special Concern identified in the Natural Diversity Database, March 17, 2020**

Environmental Assessment Report

Trade Winds Farm - Open Space Subdivision

Platt Hill Road, Winchester, CT

prepared by:

Environmental Land Solutions
8 Knight Street, Suite 203
Norwalk, CT 06851

dated:

August 1, 2003
Revised June 29, 2004
Revised July 21, 2005

Introduction:

The applicants, Steven Trinkaus, Donald and James Sturges, propose the subdivision and subsequent development of land located at Platt Hill Road in Winchester, CT. Regulated areas on the site consist of inland wetland and watercourse bodies of varying size, located within low-lying areas of the northern, eastern and western portions of the site. The proposed development plan seeks to create twenty-six (26) residential lots under the Open Space regulations of the Town of Winchester, with associated houses, drives, septic systems, wells, utilities, landscaping and both passive and active open space areas. The majority of the site development activities will take place outside regulated areas and their associated setbacks. However, there is a limited amount of proposed activities that will involve encroachments within wetland-watercourse areas and/or their upland review areas that will consequently require a permit from the Winchester Inland Wetlands and Watercourses Commission.

Environmental Land Solutions, LLC (ELS) has been retained by Steven Trinkaus to prepare an environmental assessment report with respect to the existing condition of the natural resources on the site and assess the potential impacts of the proposed development activities on these resources. This evaluation was based on review of the site plans, professional experience and two site visits on July 23 and 29, 2003.

Existing Conditions:

This 104.5± acre parcel is located on the easterly side of Platt Hill Road and is currently maintained as a mixture of old growth meadow and forested uplands and wetlands. The property was previously developed for farming practices and apparently maintained for this purpose until the early to mid part of the last century. Generally speaking, the property is bordered to the north and south by residential development, to the east by woodlands and west by Platt Hill Rd. Historic farmer's stone walls are also present throughout the site and there is a cleared power line right-of-way in the northeastern corner.

The site sits on a glacial drumlin, with the ridge line running down the approximate middle of the property. General topography of the site runs to the east and west, with moderate to steep slopes in some areas, particularly along the eastern side of the site.

Site soils were field-inspected and the wetland boundaries identified and flagged by Mark Beroe, Professional Soil Scientist. The boundary was subsequently located and placed on the survey by Dabble Associates, Land Surveyors and then used by Trances Engineering, LLC in preparing the site development plan. The wetland soils were classified as *(Aq) Accents, (Lc) Leicester, Ridgebury and Whitman very stony fine sandy loams, (Pm) Mucks, shallow,* and *(Rd)Ridgebury stony fine sandy loam*. These areas are located within low lying portions of the site and are characterized as watercourse corridors with associated fringe wetlands, forested wetland complexes, hillside seeps and isolated wetland pockets. The wetlands and

watercourses consist of approximately 21.66± acres of the total site acreage. Refer to the soil report prepared by Mr. Beroz, dated June 7, 2003, for specific soil information.

Hydrology of the site is derived from precipitation, ground water and overland flow. The site falls within the Connecticut major drainage basin and Farmington regional drainage basins and Mad River sub-regional drainage basin.

CTDEP Water Quality maps indicate that the surface water of the site is classified as A. Designated uses for this classification include habitat for fish and other aquatic life and wildlife; potential drinking water supplies; recreation; navigation; and water supply for industry and agriculture. Ground water for the majority of the site was classified as GA. This classification is typically designated for ground water within the area of existing private water supply wells or an area with the potential to provide water to public or private water supply wells. The Department presumes that ground water in such an area is, at a minimum, suitable for drinking or other domestic uses without treatment.

Wildlife

The site's wildlife usage will generally be by those species associated with rural areas of large woodland tracts of over 100 acres. Wildlife species which were noted to utilize the site were based on the following observations during site visits: calls, visual observations, tracks, droppings or other specific habitat indicators.

Birds: Those species observed on or adjacent to the site include American goldfinch, black-capped chickadee, black-throated green warbler, blue jay, common raven, common yellowthroat, downy woodpecker, eastern towhee, grey catbird, red-eyed vireo, red-tailed hawk, scarlet tanager, tufted titmouse, white-breasted nuthatch, wild turkey and wood thrush.

Mammals: Observations consisted of eastern chipmunk, eastern grey squirrel, racoon, white-tailed deer and woodland vole.

Reptiles & Amphibians: Observed reptiles and amphibians included red-backed salamander and wood frog.

Insects: Those specimens observed within the meadow areas included American copper, cabbage butterfly, red admiral, tiger swallowtail, dragonfly, damselfly, and bumblebee.

Vegetation

Forested Upland:

As previously stated, this property was formerly cleared for agricultural purposes and although now almost fully forested, is relatively young, secondary growth. Judging by the size and

composition of the trees, it is estimated that the majority of the forest is approximately 50± years old. The forest is characterized as an eastern deciduous type hardwood forest. The canopy is dominated by deciduous broad-leaved species interspersed with conifers. Under this fairly dense canopy is a well-developed understory layer of shrubs and herbaceous species.

Trees - Species observed within these forested upland portions of the site include American beech, black birch, black cherry, eastern hemlock, grey birch, red maple, red oak, sugar maple, tuliptree poplar, white oak and white pine.

Shrubs - Understory growth ranges from moderate to dense and includes high & lowbush blueberry, mountain laurel, partridgeberry, spicebush, striped maple and witch hazel.

Groundcover - Typical for a woodland setting includes such species as Canada mayflower, Christmas fern, Indian pipe, interrupted fern, New York fern, ostrich fern, princess pine, squawroot, Virginia creeper, etc.

Upland Meadow:

Based on the observed floral composition, most un-forested areas of the site can be characterized as old growth meadow, which were cleared within the past 5± years and are in the early stages of succession. These areas are dominated by herbaceous perennial species and interspersed with woody saplings and canes.

Species observed within the meadow include the following: aster spp., barren strawberry, beggar-ticks, bluets, chicory, common blackberry, common blue violet, common buttercup, common chickweed, common cinquefoil, common dandelion, common ragweed, crown vetch, daisy fleabane, goldenrod, grasses spp., Japanese barberry, oriental bittersweet, milkweed, mother's wort, mouse-ear chickweed, ox-eye daisy, Queen Anne's Lace, rubus spp., true forget-me-not, white pine, wild raspberry and wild strawberry.

Although more recently cleared and periodically re-cut to suppress woody growth, the Connecticut Light & Power utility line right-of-way located in the northeastern corner of the site can also be characterized as upland meadow. Vegetation noted within this area included blue eyed grass, bracken fern, goldenrod, hay-scented fern, heal all, highbush blueberry, milkweed, mountain laurel, multiflora rose, etc.

Wetland/Watercourse Corridors:

There are two separate wetland-watercourse corridors located in the western portion of the site which merge into one system near the southern property boundary. The western most of these corridors contains an old farm pond. These watercourses and associated fringe wetlands are characterized as forested Palustrine wetland systems. They have a well-developed three tiered floral strata consisting of trees, shrubs and herbaceous materials. Although there is evidence

of erosion along the embankments of the eastern corridor, it appears to have been historic and potentially occurred when the land was cleared for agricultural purposes. There are no recent signs of erosion and the embankments are stabilized with moderate to dense vegetation.

Trees - Species observed include ash, red maple, hemlock and yellow birch.

Shrubs - Woody understory growth in and around the watercourses includes Japanese barberry, multiflora rose, spicebush, winterberry, etc.

Groundcover - Predominantly herbaceous in nature, these species included cinnamon fern, sensitive fern and skunk cabbage.

Forested Wetlands:

These wetland areas located in the northern and eastern portions of the site are characterized as Palustrine forested wetlands and include hillside seeps, isolated pockets and wooded wetland complexes. Vegetation within these areas ranges from moderate to dense and includes developed tree, shrub and groundcover layers. For the most part, many of the small isolated wetlands were dry during site visits, while the larger complexes and hillside seeps retained varying amounts of groundwater. One of the isolated wetlands that still contained some standing water was located to the east of Lot #16. This particular wetland is a vernal pool. For more information, refer to letter from Penelope Sharp to Steven Trinkaus of July 5, 2005.

Trees - Species observed include elm, red maple, hemlock and yellow birch.

Shrubs - Woody understory growth in and around the wetlands includes highbush blueberry, mountain laurel, poison ivy, riverbank grape, spicebush, winterberry, etc.

Groundcover - Predominantly herbaceous in nature, these species included cinnamon fern, jewelweed, sensitive fern, sphagnum moss and royal fern.

Wetland Functions:

The functional evaluation of the wetlands is based on professional experience and the suggested criteria cited in the publication entitled The Highway Methodology Workbook

Supplement, Wetland Functions and Values, *A Descriptive Approach*, prepared by the US Army Corps of Engineers, NEDEP-360-1-30a, September 1999. Using this publication, the primary functions of the wetland-watercourse areas were identified as follows:

1. Retention of sediments, toxicants and/or pathogens - The physical characteristics of the wetlands and their location within the landscape lends themselves well to accumulating

sediments and other pollutants transported in runoff from off-site and the surrounding uplands.

2. Nutrient removal/retention/transformation - As with the retention of sediments, the size, location and configuration of the wetlands allow these areas to act as natural "sumps" for nutrients suspended within storm water from upland areas within the watershed and filter the water prior to being discharged into the adjacent systems. Their well developed vegetative cover also allows these areas to retain these nutrients through biological uptake and then transform them through bio-chemical processes.

3. Groundwater Recharge/Discharge - Based on the location of the site within the landscape, as well as the underlying soils and depth to groundwater, the site's wetland and watercourse systems lend themselves well to being a groundwater recharge/discharge location.

4. Floodflow Alteration (Storage & Desynchronization) - Due to their size and position within the watershed act in a limited capacity of collecting and temporarily detaining storm water runoff from the surrounding localized watersheds.

5. Wildlife Habitat - Due to the undeveloped nature of the wetland areas of the site and surrounding properties, these areas provide valuable wildlife habitat. They are characterized by a diversity of plant species and structural features that provide feeding, breeding, nesting, over-wintering and migration habitat for a variety of wildlife. The developed tree, shrub and herbaceous strata provide feeding and nesting substrates for different avian species as well as sources for foraging. Additionally, the presence of snags of various shapes and sizes serve as food sources and den/nest sites for both mammals and birds respectively.

6. Fish Habitat - The farm pond does afford some potential for finfish habitat. However, the relatively shallow depths and presumably low dissolved oxygen content and high summer temperatures, limits the potential for a wide variety of species.

Other functions listed within the noted publication, consisting of production export and sediment/shoreline stabilization, are not applicable to these wetland areas. In addition to the above described functions, these wetland areas also provide certain values. Values are defined as the benefits that are derived from one or more functions and/or the physical characteristics of a wetland. The value of a particular wetland function or combination thereof, is based on human judgment of the worth, merit, quality, or importance attributed to those functions. With this in mind, these wetlands have been noted to provide the values of water quality, visual quality/aesthetics, recreational usage, general wildlife habitat and educational/scientific study. Other assessment values listed in publication such as uniqueness and threatened or endangered species habitat are not provided by these particular wetlands.

Proposed Conditions:

The applicant proposes to develop the central and westerly portions of the site with 26 residential homes on minimum 40,000 square foot (sf) lots with associated drives, septic systems, wells, utilities, landscaping and both passive and active open space areas. The majority of development activities will occur within previously undeveloped wooded upland areas of the site. According to the owner, this site was an active farm up until the 1950's. The proposed development is located within areas of the prior farming operation.

Regulated Activities

The Town of Winchester regulates those activities occurring within 50 feet from all wetlands and watercourses. Additionally, the setback for installation of on-site sewage disposal systems is 150 feet to watercourses. The Torrington Area Health District requires a 75' setback from a sewage disposal system to a delineated wetland. As previously stated, the majority of the site development activities will take place outside regulated areas and their associated setbacks. However, the following activities will involve encroachments within wetland-watercourse areas and/or their upland review areas:

1. In order to facilitate construction of the subdivision as well as providing post construction access, it will be necessary to construct a site roadway which will cross both narrow watercourse corridors in the westerly portion of the site. To accomplish these crossings, it is proposed that bottomless arch culverts and poured in-place concrete headwalls be installed to accommodate the intermittent watercourse channel and fill placed within the wetland soil areas on either side of the culverts to raise the grade. These activities will result in approximately 5000 sf, or .12± acres, of direct wetland disturbance. Additional filling and grading activities associated with the construction of the site road and associated drainage swales will result in an additional permanent disturbance of 16,000 sf, or .37± acres, of the associated 50' upland review area.

2. Construction of vegetated swales, a water quality basin and associated rip rap outlets will occur within 50 of delineated wetland area. Approximately 10,900 sf, or .25± acres, of upland area will be impacted by the construction of these drainage features. There are no direct wetland impacts associated with this activity.

These activities will result in approximately 0.12± acres of temporary and permanent disturbance within wetland-watercourse areas and an additional 0.62± acres of disturbance within the 75' upland review area. This amounts to the disturbance of approximately 0.55% of the total wetland area of 21.66 acres.

Anticipated Resource Impacts

As with any development, there will be a visual change to the overall landscape of the property caused by the removal of a portion of a woodland, re-grading and construction. The wildlife usage of the wooded uplands proposed to be disturbed may shift to more suburban tolerant species. With regard to those wildlife species for which wetlands and watercourses are primary or critical habitats, i.e. aquatic insects, waterfowl, aquatic mammals, reptiles and amphibians, their habitats will be preserved to the greatest extent possible as will a large majority of the adjoining uplands - except where necessary to accomplish the proposed development plan.

Although some work is proposed within wetland/watercourse areas and the associated upland review area, it is not expected that these activities will have a significant adverse impact on these resources or significantly alter their functional and/or value. Additionally, over 64 acres of the site is proposed to be set-aside as dedicated Open Space as part of this project.

Summary:

The proposed development appears to be a reasonable use of this property. Development activities utilize existing grades and minimize encroachments into regulated areas to the greatest extent possible. Additionally, large areas have been designated as passive and active open space which will insure that significant portions of the site will remain preserved in an undisturbed, natural state in perpetuity. As stated above, it is not expected that the proposed activities will have any cumulative negative impact on the function and/or value of the wetland areas.

Direct wetland impacts have been minimized in accordance with the goals of the Inland Wetlands Regulations for the Town of Winchester. Also, with the exception of the storm drainage facilities noted above, all other construction on this site is located beyond the defined 50' upland review area as stated in the Town of Winchester Inland Wetlands Regulations. Additionally, the applicant proposes that several additional measures be implemented on this site to further protect both the upland and wetland environments on this property. These measures include the following; the installation of a wildflower/meadow filter strip with a 3" deep "micro-berm", to be located below the development area on every building lot, the creation of a homeowners association to retain one duly licensed individual to be responsible for the application of fertilizer and pesticides on any residential lawn in the development and lastly, a plan showing the percentage of clearing on each lot will be adhered to in the field. These measures, in addition to the Open Space concept will provide ample protection for the wetland resources on the site over the long term.

Matthew J. Popp
Professional Wetland Scientist #1322
Landscape Architect #630
Platt Hill-EA2

Penelope C. Sharp
ENVIRONMENTAL CONSULTANT
225 Reeds Gap Road East ~ Northford, CT 06472
Telephone/Facsimile (203) 484-0134

July 5, 2005

Steven D. Trinkaus, P.E.
Civil Engineer
437 Bucks Hill Road
Southbury, CT 06488

Re: Trade Winds Farm, Winchester, Connecticut

Dear Mr. Trinkaus:

At your request, I have conducted two field investigations of the above-referenced property on April 14, 2005 and June 20, 2005. During these investigations, I examined the seepage wetlands on the eastern slope and the Red Maple swamp at the toe of the sloping hillside. The purpose of these investigations was to examine three small isolated wetlands (to the east of Lots #16, #17, & #18) to determine whether or not these wetlands function as vernal pools and to inventory vegetation within the Red Maple swamp

During the April investigation, of the three isolated wetlands, only one was observed to have egg masses. This was the wetland delineated by wetland flags #556 through #563 and it contained one spotted salamander egg cluster and one wood frog egg cluster. One of the other isolated wetlands was completely dry and the other contained little standing water. Neither of these two wetlands contained sufficient water for successful amphibian breeding due to the fact that one was totally dry and the other had little water and would become dry within a few weeks following the optimal breeding period.

With respect to the pool that contained the two egg clusters, both the spotted salamander (*Ambystoma maculatum*) and the wood frog (*Rana sylvatica*) are obligate vernal pool species. The fact that the pool contained only one egg mass of each species means that the wetland does not qualify as an exemplary pool. It is more likely that this wetland serves as a satellite pool for larger breeding areas likely contained within the Red Maple Swamp. Because the land between the small isolated wetland area and the Red Maple Swamp will remain undeveloped and because there will be considerable uplands remaining in the area (no development occurring within a minimum of 150' of the small vernal pool), there will be ample habitat for the terrestrial phases of the amphibians that complete their larval stages in the pool.

The isolated hillside seepage wetlands did not contain any ponded water. These wetland areas are defined by the following wetland flag numbers; 614-618, 600-613, 619-632, 660-665, and 655-659. Furthermore, I did not observe any other wetland areas on the eastern slope. I did not see evidence of any rare spring ephemeral vegetation species within the Red Maple Swamp on the April 14, 2005 inspection. A second inspection was performed latter in the growing season.

During the June 20, 2005 inspection, I conducted a thorough search of the wetlands at the toe of the steep slope. A portion of this wetland lies within the Trade Winds Farm property and much of the wetlands are situated on off-site property. According to the USGS map (Winsted Quadrangle), the wetlands are approximately 16 acres in size. The wetland feeds into Taylor Brook, which flows into Highland Lake.

Wetland resources on the property belong to the palustrine ecological system, which is one of five systems recognized by the U.S. Fish and Wildlife Service's wetland classification system described in *Classification of Wetlands and Deepwater Habitats of the United States,* Cowardin et al. 1979. This classification system is used to describe wetland cover types. The wetland is best classified as a palustrine forested wetland, broad-leaved deciduous and permanently saturated.

The wetland contains a high diversity of wetland plant species. Dominant trees are red maple and yellow birch. (Please see species list attached to letter report). Hemlock, speckled alder, white pine and ash are also present in the canopy layer. Shrub species include mountain laurel, spicebush, winterberry, highbush blueberry, and elderberry. There are numerous herbaceous species and the dominant plants within this layer include cinnamon fern, sensitive fern, jewelweed, and swamp saxifrage. During the site investigation, the wetland was noted to be saturated with small pockets of standing water. There are a number of dead trees that have fallen over within the swamp. These are twisted and fallen over and appear to have resulted from a violent storm or from ice damage. In some areas, the fallen trees impeded movement through the wetland.

During the site inspection, no plant species that are state listed as Endangered, Threatened, or Special Concern were observed; however, as previously indicated, the wetland flora is rich and diverse. The CT DEP Natural Diversity Database has previously been contacted by Environmental Land Solutions regarding this site and no state listed species were reported. In any event, the development is well-removed (in excess of 200' from the western edge of the Red Maple Swamp) from the wetland and the wetland itself well-buffered by dense vegetation.

With respect to the possibility of other vernal pools on the site, the large wetland contains many pockets of standing water and does not support fish populations. Amphibians are probably breeding within cryptic vernal pools within the large wetland, although no amphibian species were directly observed. Due to the fact that the steep slope north and west of the wetland will be largely undeveloped and in its natural condition, there will be adequate habitat for terrestrial phases of amphibian species. Additionally, there is undisturbed connectivity between the large swamp and the isolated vernal pool wetland delineated by wetland flags 556 through 563.

To ensure that the proposed project will not adversely impact wetlands on the site you have agreed to implement the following recommendations from my October 19, 2004 and November 7, 2004 and the letter of Robert Jontos, Jr. of Land-Tech Consultants of October 26, 2004:

- The installation of a wildflower/meadow filter strip with a 3" "micro-berm", to be located below the development area on every building lot,
- The creation of a homeowner's association to retain one duly licensed individual to be responsible for the application of fertilizer and pesticides on any residential lawn in the development,
- The adherence to a clearing limits plan for all building lots, which specifies the percentage of clearing permitted on each lot.

The adoption of these measures will provide an additional level of protection for all of the wetlands on this site, not only the wetlands located at the toe of the steep hillside. By the observation of these areas during the growing season, I am able to confirm the findings of no significant impact on the Red Maple Swamp, the vernal pool, or any of the other hillside seepage wetlands as discussed in my letters of October 19, 2004 and November 7, 2004 to the Inland Wetlands Commission from the proposed 26 lot Open Space subdivision.

I hope that this letter will address any outstanding concerns regarding the proposed project. Please contact me if you have any questions regarding my comments.

Sincerely,

Penelope C. Sharp

Penelope C. Sharp

WETLAND PLANT SPECIES LIST
for
TRADE WINDS FARM
PLATT HILL ROAD
WINCHESTER, CONNECTICUT

Scientific Name	Common Name	Abundance	Indicator Status
TREES			
Acer rubrum	Red maple	A	FAC
Alnus incana	Speckled alder	C	FACW+
Betula alleghaniensis	Yellow birch	C	FAC
Fraxinus sp.	Ash	C	---
Pinus strobus	White pine	M	FACU
Tsuga canadensis	Eastern hemlock	U	FACU
SHRUBS and VINES			
Ilex verticillata	Winterberry	C	FACW
Kalmia latifolia	Mountain laurel	C	FACU
Lindera benzoin	Spicebush	M	FACW-
Rubus hispidus	Dewberry	U	FACW
Sambucus canadensis	Elderberry	U	FACW-
Spiraea latifolia	Meadowsweet	M	FAC+
Spiraea tomentosa	Steeplebush	M	FACW
Toxicodendron radicans	Poison ivy	U	FAC
Vaccinium corymbosum	Highbush blueberry	C	FACW-
Vitis sp.	Grape	U	---
HERBACEOUS SPECIES			
Amphicarpa bracteata	Hog peanut	P	FAC
Aralia nudicaulis	Wild sarsaparilla	P	FACU
Arisaema triphyllum	Jack-in-the-pulpit	U	FACW-
Calamagrostis canadensis	Blue joint grass	U	FACW
Cardamine pensylvanica	Pennsylvania bittercress	U	OBL
Carex brunnescens	Brownish sedge	U	FACW
Carex spp.	Sedges	M	----
Carex stricta	Tussock sedge	A	OBL
Catha palustris	Marsh marigold	U	OBL
Chelone glabra	Turtlehead	P	OBL
Chrysosplenium americanum	Golden saxifrage	C	OBL
Cicuta bulbifera	Bulb-bearing water hemlock	P	OBL
Cinna latifolia	Wood reedgrass	P	FACW
Coptis trifolia	Goldthread	C	FACW
Dryopteris cristata	Crested woodfern	U	FACW+
Dryopteris intermedia	Evergreen woodfern	U	FACU
Equisetum arvense	Field horsetail	U	FAC
Eupatorium maculatum	Joe Pye weed	U	FACW
Eupatorium perfoliatum	Boneset	P	FACW+
Eupatorium rugosum	White snakeroot	U	UPL
Eurybia divaricata	White wood aster	P	UPL
Galium palustre	Marsh bedstraw	P	OBL

Galium aparine	Cleavers	P	FACU
Galium asprellum	Rough bedstraw	P	OBL
Geum laciniatum	Rough avens	P	FAC+
Geum rivale	Purple avens	P	OBL
Glyceria striata	Fowl manna grass	P	OBL
Impatiens capensis	Jewelweed	C	FACW
Juncus effusus	Soft rush	M	FACW+
Ludwigia palustris	Water purslane	P	OBL
Maianthemum canadense	Canada mayflower	U	FAC-
Onoclea sensibilis	Sensitive fern	A	FACW
Osmunda cinnamomea	Cinnamon fern	A	FACW
Osmunda claytoniana	Interrupted fern	C	FAC
Osmunda regalis	Royal fern	C	OBL
Polygonum arifolium	Halberd-leaved tearthumb	U	OBL
Polystichum acrostichoides	Christmas fern	U	FACU-
Prenanthes sp.	Rattlesnake root	P	---
Ranunculus sp.	Crowfoot	P	---
Saxifraga pensylvanica	Swamp saxifrage	C	OBL
Scirpus cyperinus	woolgrass	M	FACW+
Senecio aureus	Golden ragwort	U	FACW
Solidago altissima	Tall goldenrod	M	FACU
Solidago rugosa	Wrinkled goldenrod	U	FAC
Solidago spp.	Goldenrods	U	---
Symphyotrichum spp.	Asters	U	---
Symplocarpus foetidus	Skunk cabbage	P	OBL
Thalictrum pubescens	Tall meadow rue	P	FACW+
Tiarella cordifolia	Foamflower	P	FAC-
Trientalis borealis	Starflower	P	FAC
Veratrum viride	False hellebore	P	OBL

Abundance Codes: A = abundant (>65%); C = common (40-64%); M = Moderate (20-39%)
U = uncommon (5-19%), P = Present (<5%)

Please Note: Species list comprehensive, but not all-inclusive

Indicator Status Key

OBL	Obligate Wetland:	Occurs with estimated 90% probability in wetlands
FACW	Facultative Wetland:	Estimated 67%-99% probability of occurrence in wetlands
FAC	Facultative:	Equally likely to occur in wetlands and non-wetlands, 34%-66% Probability
UPL	Obligate Upland:	Occurs in non-wetlands > 99% in this region
NI	No Indicator:	Insufficient information available to determine an indicator status

Positive or negative signs indicate a frequency toward higher (+) or lower (-) frequency of occurrence within a category

Connecticut Department of Energy & Environmental Protection
Bureau of Natural Resources
Wildlife Division

CPPU USE ONLY
App #:
Doc #:
Check #: No fee required
Program: Natural Diversity Database Endangered Species
Hardcopy _____ Electronic _____

Request for Natural Diversity Data Base (NDDB) State Listed Species Review

Please complete this form in accordance with the instructions (DEEP-INST-007) to ensure proper handling of your request.
There are no fees associated with NDDB Reviews.

Part I: Preliminary Screening & Request Type

Before submitting this request, you must review the most current Natural Diversity Data Base "State and Federal Listed Species and Significant Natural Communities Maps" found on the DEEP website. These maps are updated twice a year, usually in June and December.

Does your site, including all affected areas, fall in an NDDB Area according to the map instructions:

☒ Yes ☐ No **Enter the date** of the map reviewed for pre-screening: **June 2019**

This form is being submitted for a :

☒ *New* NDDB request ☐ *Renewal/Extension* of a NDDB Request, ***without*** *modifications and within* ***two years*** *of issued NDDB determination* (no attachments required) [*CPPU Use Only - NDDB-Listed Species Determination* # 1736]	☐ *New* **Safe Harbor Determination** (optional) must be associated with an application for a GP for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities ☐ *Renewal/Extension* of an existing Safe Harbor Determination ☐ With modifications ☐ Without modifications (no attachments required) [*CPPU Use Only - NDDB-Safe Harbor Determination* # 1736]
Enter NDDB Determination Number for Renewal/Extension:	Enter Safe Harbor Determination Number for Renewal/Extension:

Part II: Requester Information

If the requester is a corporation, limited liability company, limited partnership, limited liability partnership, or a statutory trust, it must be registered with the Secretary of State. If applicable, the name shall be stated **exactly as it is registered with the Secretary of State. Please note, for those entities registered with the Secretary of State, the registered name will be the name used by DEEP. This information can be accessed at the Secretary of the State's database CONCORD.* (www.concord-sots.ct.gov/CONCORD/index.jsp)

If the requester is an individual, provide the legal name (include suffix) in the following format: First Name; Middle Initial; Last Name; Suffix (Jr, Sr., II, III, etc.).

If there are any changes or corrections to your company/facility or individual mailing or billing address or contact information, please complete and submit the Request to Change company/Individual Information to the address indicated on the form.

1. Requester*

Company Name: **Trinkaus Engineering, LLC**

Contact Name: **Steven Trinkaus, PE**

Address: **114 Hunters Ridge Road**

City/Town: **Southbury** State: **CT** Zip Code: **06488**

Business Phone: **203-264-4558** ext.

E-mail: **strinkaus@earthlink.net

**By providing this email address you are agreeing to receive official correspondence from the department, at this electronic address, concerning this request. Please remember to check your security settings to be sure you can receive emails from "ct.gov" addresses. Also, please notify the department if your e-mail address changes

a) Requester can best be described as:

☐ Individual ☐ Federal Agency ☐ State agency ☐ Municipality ☐ Tribal

☒ *business entity (* if a business entity complete i through iii):

i) Check type ☐ corporation ☒ limited liability company ☐ limited partnership ☐ limited liability partnership ☐ statutory trust ☐ Other:

ii) Provide Secretary of the State Business ID #: 0732768 This information can be accessed at the Secretary of the State's database (CONCORD). (www.concord-sots.ct.gov/CONCORD/index.jsp)

iii) ☐ Check here if your business is **NOT** registered with the Secretary of State's office.

b) Acting as (Affiliation), pick one:

☐ Property owner ☒ Consultant ☐ Engineer ☐ Facility owner ☐ Applicant

☐ Biologist ☐ Pesticide Applicator ☐ Other representative:

2. List Primary Contact to receive Natural Diversity Data Base correspondence and inquiries, if different from requester.

Company Name:

Contact Person: Title:

Mailing Address:

City/Town: State: Zip Code:

Business Phone: ext.

**E-mail:

Part III: Site Information

This request can only be completed for one site. A separate request must be filed for each additional site.

1. SITE NAME AND LOCATION

Site Name or Project Name: **Platt Hill Road**

Town(s): **Winchester**

Street Address or Location Description:

Size in acres, or site dimensions: **104.5**

Latitude and longitude of the center of the site in decimal degrees (e.g., 41.23456 -71.68574):

Latitude: **41-53-25.57** Longitude: **73-06-47.25**

Method of coordinate determination (check one):

☐ GPS ☐ Photo interpolation using CTECO map viewer ☒ Other (specify): **google earth**

2a. Describe the current land use and land cover of the site.

Vacant, young mixed northern hardwood forest

b. Check all that apply and enter the size in acres or % of area in the space after each checked category.

☐ Industrial/Commercial _____	☐ Residential _____	☐ Forest 94.3
☐ Wetland _____	☐ Field/grassland 3.8	☐ Agricultural _____
☐ Water _____	☐ Utility Right-of-way 1.9	
☐ Transportation Right-of-way _____	☐ Other (specify): _____	

Part IV: Project Information

1. PROJECT TYPE:

Choose Project Type: Stormwater/waste/water discharge , If other describe: _____

2. Is the subject activity limited to the maintenance, repair, or improvement of an existing structure within the existing footprint? ☐ Yes ☒ No If yes, explain.

Part IV: Project Information (continued)

3. Give a detailed description of the activity which is the subject of this request and describe the methods and equipment that will be used. Include a description of steps that will be taken to minimize impacts to any known listed species.

   small scale solar array (12 acres) with balance of site in conservation easement, stormwater management to address water quality and runoff volumes from solar array construction

4. If this is a renewal or extension of an existing Safe Harbor request *with* modifications, explain what about the project has changed.

5. Provide a contact for questions about the project details if different from Part II primary contact.

   Name:

   Phone:

   E-mail:

Part V: Request Requirements and Associated Application Types

Check *one* box from either Group 1, Group 2 *or* Group 3, indicating the appropriate category for this request.

Group 1. If you check one of these boxes, complete Parts I – VII of this form and submit the required attachments A and B.

- ☐ Preliminary screening was negative but an NDDB review is still requested
- ☐ Request regards a municipally regulated or unregulated activity (no state permit/certificate needed)
- ☐ Request regards a preliminary site assessment or project feasibility study
- ☐ Request relates to land acquisition or protection
- ☐ Request is associated with a *renewal* of an existing permit or authorization, with no modifications

Group 2. If you check one of these boxes, complete Parts I – VII of this form and submit required attachments A, B, *and* C.

- ☒ Request is associated with a *new* state or federal permit or authorization application or registration
- ☐ Request is associated with modification of an existing permit or other authorization
- ☐ Request is associated with a permit enforcement action
- ☐ Request regards site management or planning, requiring detailed species recommendations
- ☐ Request regards a state funded project, state agency activity, or CEPA request

☐ **Group 3.** If you are requesting a **Safe Harbor Determination**, complete Parts I-VII and submit required attachments A, B, and D. Safe Harbor determinations can only be requested if you are applying for a GP for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities

If you are filing this request as part of a state or federal permit application(s) enter the application information below.

Permitting Agency and Application Name(s): _____

Related State DEEP Permit Number(s), if applicable: _____

State DEEP Enforcement Action Number, if applicable: _____

State DEEP Permit Analyst(s)/Engineer(s), if known: _____

Is this request related to a previously submitted NDDB request? ☐ Yes ☒ No

If yes, provide the previous NDDB Determination Number(s), if known: _____

Part VI: Supporting Documents

Check each attachment submitted as verification that *all* applicable attachments have been supplied with this request form. Label each attachment as indicated in this part (e.g., Attachment A, etc.) and be sure to include the requester's name, site name and the date. **Please note that Attachments A and B are required for all new requests and Safe Harbor renewals/extensions with modifications.** Renewals/Extensions with no modifications do not need to submit any attachments. Attachments C and D are supplied at the end of this form.

☒ Attachment A:	**Overview Map:** an 8 1/2" X 11" print/copy of the relevant portion of a USGS Topographic Quadrangle Map clearly indicating the exact location of the site.
☒ Attachment B:	**Detailed Site Map:** fine scaled map showing site boundary and area of work details on aerial imagery with relevant landmarks labeled. (Site and work boundaries in GIS [ESRI ArcView shapefile, in NAD83, State Plane, feet] format can be substituted for detailed maps, see instruction document)
☐ Attachment C:	**Supplemental Information, Group 2 requirement (attached, DEEP-APP-007C)** ☒ Section i: Supplemental Site Information and supporting documents ☐ Section ii: Supplemental Project Information and supporting documents
☐ Attachment D:	**Safe Harbor Report Requirements, Group 3 (attached, DEEP-APP-007D)**

Part VII: Requester Certification

The requester *and* the individual(s) responsible for actually preparing the request must sign this part. A request will be considered incomplete unless all required signatures are provided.

"I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify that based on reasonable investigation, including my inquiry of the individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief."

	10/13/19
Signature of Requester (a typed name will substitute for a handwritten signature)	Date
Steven D. Trinkaus	**Civil Engineer**
Name of Requester (print or type)	Title (if applicable)
Signature of Preparer (if different than above)	Date
Name of Preparer (print or type)	Title (if applicable)

Note: Please submit the completed Request Form and all Supporting Documents to:

CENTRAL PERMIT PROCESSING UNIT
DEPARTMENT OF ENERGY & ENVIRONMENTAL PROTECTION
79 ELM STREET
HARTFORD, CT 06106-5127

Or email request to: **deep.nddbrequest@ct.gov**

Attachment C: Supplemental Information, Group 2 requirement

Section i: Supplemental Site Information

1. Existing Conditions

Describe all natural and man-made features including wetlands, watercourses, fish and wildlife habitat, floodplains and any existing structures potentially affected by the subject activity. Such features should be depicted and labeled on the site plan that must be submitted. Photographs of current site conditions may be helpful to reviewers.

There are delineated inland wetlands/watercourses by Certified Soil Scientist. Site is predominately wooded with a mixuture of hardwood and some softwood trees. Overgrown meadow areas exist in western portion of site near Platt Hill Road

☐ **Site Photographs (optional) attached**

☒ **Site Plan/sketch of existing conditions attached**

2. Biological Surveys

Has a biologist visited the site and conducted a biological survey to determine the presence of any endangered, threatened or special concern species ☐ Yes ☒ No

If yes, complete the following questions and submit any reports of biological surveys, documentation of the biologist's qualifications, and any NDDB survey forms.

Biologist(s) name: _____

Habitat and/or species targeted by survey: _____

Dates when surveys were conducted: _____

☐ **Reports of biological surveys attached**

☐ **Documentation of biologist's qualifications attached**

☐ **NDDB Survey forms for any listed species observations attached**

Section ii: Supplemental Project Information

1. Provide a schedule for all phases of the project including the year, the month and/or season that the proposed activity will be initiated and the duration of the activity.

   Permitting and construction phasing has not been defined at this time

2. Describe and quantify the proposed changes to existing conditions and describe any on-site or off-site impacts. In addition, provide an annotated site plan detailing the areas of impact and proposed changes to existing conditions.

   Only 12 acres plus or minus in the southern portion of the site is to be used for the solar array including access from Platt Hill Road

☒ **Annotated Site Plan attached**

Attachment D: Safe Harbor Report Requirements

Submit a report, as Attachment D, that synthesizes and analyzes the information listed below. Those providing synthesis and analysis need appropriate qualifications and experience. A request for a safe harbor determination shall include:

1. **Habitat Description and Map(s), including GIS mapping overlays, of a scale appropriate for the site, identifying:**

   - wetlands, including wetland cover types;
   - plant community types;
   - topography;
   - soils;
   - bedrock geology;
   - floodplains, if any;
   - land use history; and
   - water quality classifications/criteria.

2. **Photographs** - The report should include photographs of the site taken from the ground and also all reasonably available aerial or satellite photographs and an analysis of such photographs.

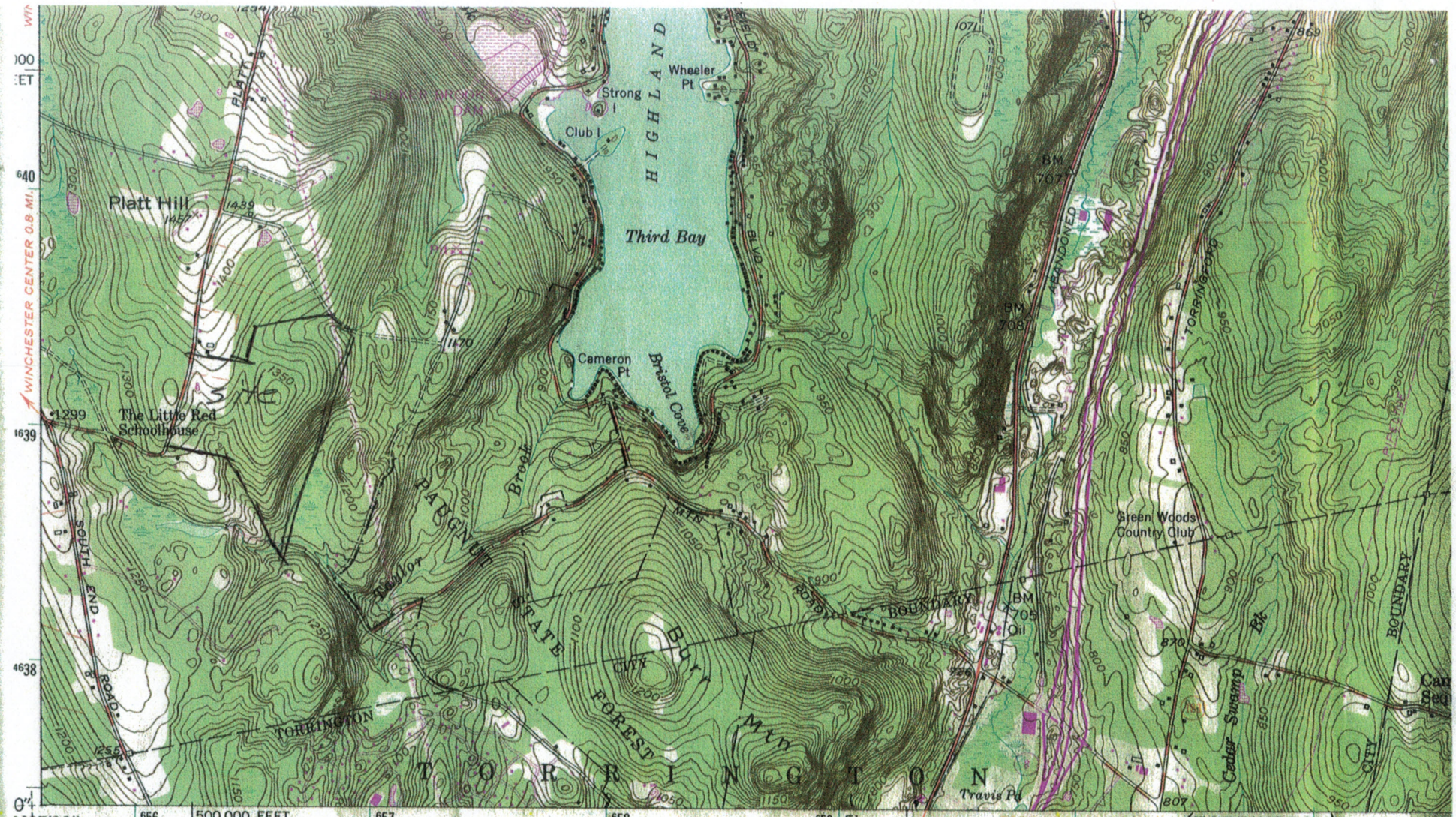
3. **Inspection** - A visual inspection(s) of the site should be conducted, preferably when the ground is visible, and described in the report. This inspection can be helpful in confirming or further evaluating the items noted above.

4. **Biological Surveys** - The report should include all biological surveys of the site where construction activity will take place that are reasonably available to a registrant. A registrant shall notify the Department's Wildlife Division of biological studies of the site where construction activity will take place that a registrant is aware of but are not reasonably available to the registrant.

5. **Based on items #1 through 4 above, the report shall include a Natural Resources Inventory of the site of the construction activity.** This inventory should also include a review of reasonably available scientific literature and any recommendations for minimizing adverse impacts from the proposed construction activity on listed species or their associated habitat.

6. **In addition, to the extent the following is available at the time a safe harbor determination is requested, a request for a safe harbor determination shall include and assess:**

   - Information on Site Disturbance Estimates/Site Alteration information
   - Vehicular Use
   - Construction Activity Phasing Schedules, if any; and
   - Alteration of Drainage Patterns



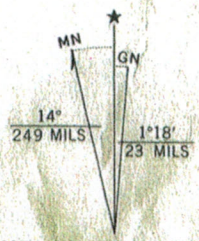
Mapped, edited, and published by the Geological Survey

Control by USGS, NOS/NOAA, and Connecticut Geodetic Survey

Topography by photogrammetric methods from aerial photographs taken 1944. Field checked 1948. Revised 1956

Polyconic projection. 10,000-foot grid ticks based on Connecticut coordinate system
1000-meter Universal Transverse Mercator grid ticks, zone 18, shown in blue
1927 North American Datum
To place on the predicted North American Datum 1983 move the projection lines 5 meters south and 37 meters west as shown by dashed corner ticks

Fine red dashed lines indicate selected fence and field lines where generally visible on aerial photographs. This information is unchecked



UTM GRID AND 1984 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

SCALE 1:24000

1 0 1 2 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 .5 0 1 KILOMETER

CONTOUR INTERVAL 10 FEET

NATIONAL GEODETIC VERTICAL DATUM OF 1929

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANI

FOR SALE BY U.S. GEOLOGICAL SURVEY

Connecticut Department of
ENERGY &
ENVIRONMENTAL
PROTECTION

79 Elm Street • Hartford, CT 06106-5127 www.ct.gov/deep Affirmative Action/Equal Opportunity Employer

February 28, 2020

Steven Trinkaus
Trinkaus Engineering LLC
114 Hunters Ridge Rd
Southbury, CT 06488
STRINKAUS@EARTHLINK.NET

NDDB DETERMINATION NUMBER: 201912629

Project: Solar Array Construction with Storm Water Management to Address Run-Off from Construction; Platt Hill Rd in Winchester, CT

Expiration: February 28, 2022

I have reviewed Natural Diversity Data Base (NDDB) maps and files regarding this project. According to our records, the following State-listed species (RCSA Sec. 26-306) are documented in the watershed and downstream from your project area.

- **Bridle shiner (*Notropis bifrenatus*) State Special Concern**
- **Eastern pondmussel (*Ligumia nasuta*) State Special Concern**

Freshwater Mussel recommendations:
Eastern pond mussel (*Ligumia nasuta*)
Inhabits wide variety of habitats including small to large rivers and lakes. No distinct preference for substrate, depth, or flow conditions. Fertilization occurs in late summer, glochidia released following spring.

Freshwater mussels are aquatic animals that play an important role in our environment. These sedentary organisms live in sediments on the bottom of streams and rivers and provide a service to all by filtering water and removing bacteria and phytoplankton. It is because they are filter-feeding animals that they are very susceptible to sediments and pollutants in the water in which they live. The greatest diversity of freshwater mussels in the world is found in Eastern North America. Freshwater mussels are one of the most endangered groups of animals with almost three-quarters of the native mussels in North America imperiled. The disappearance of freshwater mussels is a reliable indicator of chronic water pollution. The following considerations will help protect and benefit these species.

- Adhere strictly to water quality standards at your project site.
- Pay special attention and address specific monitoring targets for sediment, water temperature, copper, and ammonia (TAN).
- No vegetation should be removed from the 100ft buffer of waterways.
- Turf grass and impervious surface should be minimized in the surrounding watershed.
- Reconnect waterways that are disconnected by perched, undersized, or shallow stream culverts.
- Ensure precautions are taken to avoid direct kill of freshwater mussels during any instream construction or modification.
- Employ precautions to prevent the introduction and spread of invasive plants and bivalves.
- Take action to reduce non-point source pollution and educate the surrounding community about how to reduce non-point source pollution. More information can be found in our resources for Low Impact Development here:
    - www.ct.gov/deep/cwp/view.asp?a=2719&q=464958&deepNav_GID=1654

Fish Recommendations:

DEEP Fisheries Biologists review permit applications submitted to DEEP regulatory programs to determine whether projects might adversely affect listed species. DEEP Fisheries Biologists are routinely involved in pre-application consultations with regulatory staff and applicants in order to identify potential fisheries issues, and to work with applicants to mitigate negative effects, including those to listed species. If you have not already spoken with a Fisheries Biologist about your project, contact the Permit Analyst assigned to your application to obtain the contact information of the Fisheries Biologist assigned to review your application.

This is determination is valid for two years.

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 Bureau of Natural Resources and cooperating units of DEEP, independent conservation groups, and the scientific community. This information is not necessarily the result of comprehensive or site-specific field investigations. Consultations with the NDDB should not be substituted 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 in the NDDB as it becomes available.

Please contact me if you have any questions (shannon.kearney@ct.gov). Thank you for consulting with the Natural Diversity Data Base and continuing to work with us to protect State-listed species.

Sincerely,

/s/ Shannon B. Kearney
Wildlife Biologist

Environmental Land Solutions, LLC
Environmental Analysis, Landscape Architecture & Planning

March 17, 2020

Stephen Trinkaus
Trinkaus Engineering, LLC
114 Hunters Ridge Road
Southbury, CT 06488

Re: Review of Natural Diversity Data Base (NDDB Determination #201912629)
Proposed Solar Array Construction, Platt Hill Road, Winchester, CT

Dear Mr. Trinkaus:

I have reviewed the NDDB response letter, dated February 28, 2020, prepared by Shannon B. Kearney, Wildlife Biologist with the Connecticut Department of Energy & Environmental Protection (DEEP). The NDDB letter states that Bridle Shiner (*Notropis bifrenatus*) and Eastern Pondmussel (*Ligumia nasuta*), both State listed as Species of Special Concern, are documented within the watershed and downstream of the subject property.

Project Description

The 104.5 acre site is currently approved as a 24-lot subdivision with onsite septic systems. A solar array field is now currently proposed in the south central portion of the property. Three of the residential lots located along Platt Hill Road will be retained by the current owner. The solar array field will occupy approximately 25± acres of the site. The solar array itself will occupy 8 acres, the area to be cleared of trees, but not disturbed to provide optimum solar exposure is 5.4 acres. Approximately 1.5 acres will be used for access and stormwater management, the remainder of the 25 acres will not be disturbed. The remaining 75± acres will be designated as Open Space that will remain as undeveloped land and will be conveyed to the Winchester Land Trust. The solar array field drains southward to a constructed wetland for treating stormwater runoff. Two intermittent watercourse crossings are proposed along the new 12' wide curbless access drive to the solar array field. The curbless drive will allow for wildlife crossing of the new roadway. Disturbed under and surrounding the solar arrays will be seeded with a native meadow mixture.

Impacts to Listed Species

Bridle Shiners and Eastern Pondmussels, are found within the watercourses downslope of the site, and likely not within the intermittent watercourses. These two listed species are susceptible to adverse water quality impact which could occur during construction if erosion

8 Knight Street, Suite 203, Norwalk, Connecticut 06851 Tel. (203) 855-7879 Fax. (203) 855-7836

and sedimentation controls are not properly installed and maintained throughout the construction period. Once the site development is constructed and the soils are vegetated and stable, the project is not anticipated to have any adverse water quality impacts, especially since only 3 septic systems are now proposed on the site. Specifically, the project conforms to the following management practices:

a. Except for the two intermittent watercourse crossings, no removal of vegetation is proposed within 100' of a watercourse, except for the proposed constructed wetland stormwater practice.

b. The development minimizing turf grass and impervious surfaces within the surround watershed. The disturbed areas surrounding the solar arrays will be maintained as meadow habitat. Turf grass is only proposed on the 3 residential lots. New impervious surfaces are minimized by the development type (the solar field is considered impervious land).

c. No crossing of perennial streams that might provide habitat for Eastern Pondmussel or Bridle Shiner is proposed.

d. The project adheres to water quality standards. The project will collect, treat and detain stormwater runoff from the site.

e. The nature of the development is not a significant source of non-point pollutants.

Summary

In addition to the development recommendations listed within the NDDB letter, the development will retain an erosion control site monitor to ensure that erosion and sedimentation control measures are properly installed and that additional erosion controls are installed as needed. A comprehensive erosion control plan, developed by the project civil engineer, limits potential site disturbance to less than five acres per phase and requires that a disturbed area have 75% vegetative cover established prior to moving on to the subsequent phase. If the project is constructed in accordance with the plans and NDDB recommendations, no adverse impact to Eastern Pondmussel or Bridle Shiner is anticipated.

Please feel free to call me with any questions.

Sincerely,

Matthew J. Popp
Professional Wetland Scientist, Landscape Architect
platt hill road-winchester-NDDB response-2020 ltr.wpd