December 8, 2021

Email [fstanley@grotonma.gov]

Ms. Becky Pine, Chair
Affordable Housing Trust
Town of Groton
173 Main Street
Groton, MA 01450

Re: Rare Species Habitat Assessment Report [LEC File #: GAHT\21-528.02]
NHESP #21-40636
Cow Pond Brook Road (Map 249, Lots 51 & 57)
Groton, Massachusetts

Dear Ms. Pine:

LEC Environmental Consultants, Inc., (LEC) is submitting this Rare Species Habitat Assessment Report associated with potential development of the above-referenced subject Town-owned parcels (Attachment A: Figure 1). Based on a letter from NHESP dated November 23, 2021 (Attachment C), the site is mapped for two species protected under the *Massachusetts Endangered Species Act* (MESA, M.G.L. c. 131A) and its implementing *Regulations* (321 CMR 10.00). The listed species include the Blanding's Turtle (*Emydoidea blandingii*), a "Threatened" species and a "Data Sensitive" plant species listed as "Endangered." Note that NHESP has not provided the name of the listed plant species due to concerns of the plant being harmed or collected; therefore, this report focuses on assessing the existing habitat of and potential impacts to the Blanding's turtle from future development of the properties.

LEC Senior Wildlife Scientist, Dan Wells, conducted the *Assessment* on November 19, 2021. The following report provides a description of Existing Land Cover, Potential Blanding's Turtle Habitats, and an Impact Assessment. Representative site photographs are provided in Attachment B.

General Site Description (See Figure 1)

The 34.0± acre site is composed of two parcels: PID 249-51 to the south (10.4± acres) and PID 249-57 to the north (23.6± acres). An existing roadway in the northern parcel leads westward off Cow Pond Brook Road to a parking area and ballfields. The southern parcel is undeveloped. A variety of wetland types are present throughout the site, including the eastern bank of Cow Pond Brook, intermittent streams, shrub swamp, deep emergent marsh, shallow emergent marsh and three Certified Vernal Pools. The western half of the property is within the Petapawag Area of Critical Environmental Concern (ACEC).

Existing Land Cover Types (See Attachment A - Figure 2)

Note that the wetland boundary had not been delineated as of the date of the site inspection and preparation of this report. Therefore, the locations and extent of all upland and wetland land cover types and potential Blanding's Turtle habitats described in this report and depicted on Figures 2 and 3 were estimated by LEC based on a combination of observed conditions and interpretation of available GIS mapping resources from MassGIS[1], including the "MassDEP Wetlands (2005)" and "Land Cover/Land Use (2016)" Data Layers. An existing conditions survey of the property, including topography and wetland boundaries, may be necessary to determine the actual extent of existing rare species habitats.

The site is composed of eight land cover types[2] including four upland and four wetland types. White Pine – Oak Forest is the dominant upland cover type on the property, comprising ±20.8 of the 34 total acres. Deep Emergent Marsh, which covers ±4.7 acres of the site, is the dominant wetland cover type. Representative photographs of the different land cover types were taken at different points throughout the property (see photo locations and orientation on Attachment A – Figure 2).

White Pine – Oak Forest (±20.76 acres)

See Photos 1-8

White Pine – Oak Forest habitat is the dominant cover type at this property, encompassing almost 21 of the 34 acres. In most areas, white pine trees (*Pinus strobus*) dominate the vegetative cover, ranging from tall mature trees to densely spaced younger saplings. Portions of the forest have a mostly deciduous mixture, in which cases northern red oak (*Quercus rubra*), white oak (*Quercus alba*) and red maple (*Acer rubrum*) dominate the canopy. In some dense white pine areas, there is little ground cover other than pine needles. The groundcover in deciduous and mixed portions of the forest includes patches of partridge berry (*Mitchella repens*), striped pipsissewa (*Chimaphila maculata*), and tree-club moss (*Dendrolycopodium obscurum*), while other areas contain Pennsylvania sedge (*Carex pensylvanica*) and dewberry (*Rubus flagellaris*).

Grassland (±1.12 acres)

See Photos 9-10

This cover type consists of a mosaic of open sandy soils, with patches of herbaceous vegetation dominated by little bluestem (*Schizachyrium scoparium*). Photo 10 shows a close up view of the soil substrate with remnant turtle eggs, demonstrating this habitat's suitability for turtle nesting.

Bare Land (±2.52 acres)

See Photo 11

This cover type consists of the majority of the roadway leading from Cow Pond Brook Road to an unpaved parking area south of the athletic fields. This cover type lacks vegetative cover other than some scattered weeds.

[1] "Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services."
[2] Swain, P.C. 2020. Classification of the Natural Communities of Massachusetts. Natural Heritage & Endangered Species Program, Massachusetts Division of Fisheries & Wildlife. Westborough, MA.

Impervious (±0.05 acres)

The easternmost portions of the roadway off Cow Pond Brook Road contain an impervious surface.

Deep Emergent Marsh Wetland (±4.65 acres)

See Photos 12-15

Dominant species include sedges (*Carex spp.*), rushes (*Juncus spp.*), and broad-leaved cattail (*Typha latifolia*). In some shallower areas of the marshes, shrubs including winterberry (*Ilex verticillala*), buttonbush (*Cephalanthus occidentalis*), and highbush blueberry (*Vaccinium corymbosum*) are present.

Shrub Swamp Wetland (±2.08 acres)

See Photos 16-19

This large wetland contains a variety of microhabitat types, ranging from open water with red maples growing on hummocks along the periphery, dense shrub patches (primarily buttonbush) and an area of meadowsweet shrubs (*Spirea sp.*). Vegetation within the forested wetland bordering on the shrub swamp includes a canopy of red maple, patches of sweet pepperbush (*Clethra alnifolia*), and entanglements of green briar (*Smilax rotundifolila*). The groundcover along the edges of the swamp contains patches of cinnamon fern (*Osmunda cinnamomea*), sensitive fern (*Onoclea sensiblis*), sphagnum moss (*Sphagnum* sp.), and skunk cabbage (*Symplocarpus foetidus*).

Shallow Emergent Marsh Wetland (±2.80 acres)

See Photos 20-24

This cover type is dominated by sedges and rushes, similar in composition to portions of the Deep Emergent Marsh but growing on a shallower substrate.

Intermittent Stream (±636 linear feet)

See Photos 25-26

Intermittent stream channels flow among and within the Shallow Emergent Marsh habitats in the southeastern portions of the property. The streams had well-defined banks and flowing water during the inspection.

Existing Blanding's Turtle Habitats (See Attachment A - Figure 3)

Potential Blanding's turtle habitat is abundant at this property, including both aquatic wetland habitats and upland terrestrial habitats. Nearly all the Grassland cover type (±1.1 acres) is suitable turtle nesting habitat. This habitat contains a sandy substrate, with small stones and sparse vegetation and remnant turtle eggs were documented at multiple locations in this area (see Photo 10).

The White Pine - Oak Forested portions of the site are not suitable as nesting habitat; however, they may function as potential Blanding's turtle migratory or aestivation habitat. Portions of the forest dominated by dense young white pines have a sparse or pine needle-dominated understory, which would provide poor-quality cover for the species, but the deciduous-dominated sections contain thick leaf litter and woody debris which can provide cover for turtles when migrating between aquatic habitats, or pre-and-post nesting.

The highest-quality aquatic habitat for *E. blandingii* at this property is located in the Deep Emergent Marsh and Shrub Swamp cover types. These habitats have pockets of fairly deep water and are expansive enough to get direct sun exposure, so the species could find foraging, sheltering, and over-wintering habitat.

The Shallow Emergent Marsh habitats contain standing water and receive sun exposure for basking, sheltering and foraging, but they are not likely deep enough during the winter months to provide over-wintering habitat for Blanding's turtles.

The intermittent streams likely flow for most of the year and lack vegetative cover, so are likely used by *E. blandingii* solely as migratory conduits between other habitat types.

Other Important Wildlife Species

Wetland Habitats

Due to the time of year of the site inspection, vernal pool activity could not be observed or documented. Spotted salamanders (*Ambystoma maculutum*) and wood frogs (*Lithobates sylvaticus*) are likely breeders within the three Certified Vernal Pools. One additional vernal pool-breeding species could potentially use these vernal pools for breeding – the State-listed, blue-spotted salamander (*Ambystoma laterale*), which is listed as a Species of Special Concern by NHESP and is known to breed elsewhere in Groton. Another State-listed species, the wood turtle (*Glyptemys insculpta*), is not known from the project vicinity but is associated with perennial streams and small rivers similar to the portion of Cow Pond Brook at this site. Wood turtles are typically found in landscapes where early successional fields and scrub-shrub thickets are near the rivers and streams, which is not the case at the subject property. Therefore, the only rare wetland-associated wildlife species other than Blanding's turtles that has a reasonable likelihood of existing within the property is the blue-spotted salamander.

Two of the Shallow Emergent Marsh habitat areas shown on Figure 2 appear to have the suitable conditions for breeding by the aforementioned vernal pool amphibians: just east of Photo 23 and ~100 west of Photo 24. These areas should be inspected during spring vernal pool activity periods to assess the presence of any additional vernal pool habitat onsite.

Outside of the breeding season, spotted salamanders and wood frogs require forested upland habitat for foraging, sheltering, and over-wintering. Therefore, the onsite White Pine – Oak Forest adjacent to flooded wetlands may provide non-breeding habitat for numerous individual spotted salamanders, wood frogs or other vernal pool-breeding amphibians (these species avoid non-forested habitat, such as the Bare Land, Impervious and Grassland habitat types). A likely common non-vernal-pool-breeding amphibian in the upland forested portions of the site is the eastern red-backed salamander (*Plethodon cinereus*), which lives and breeds in terrestrial, upland habitat such as leaf litter and under rotting logs. American toad (*Anaxyrus americanus*) and spring peeper (*Pseudacris crucifer*) are additional amphibian species that may breed within portions of the Deep and Shallow Emergent Marsh and Shrub Swamp habitat types and utilize upland forest for their primary habitat outside of the breeding season. Green frogs (*Lithobates clamitans*) and gray treefrogs (*Hyla versicolor*) could potentially breed in the ponded portions of Shrub

Swamp habitat. Many of the onsite wetland microhabitats could support foraging, sheltering, and possibly over-wintering by snapping turtles (*Chelydra serpentina*) and painted turtles (*Chrysemys picta*).

Northern water snakes (*Nerodia sipedon*) are likely to utilize the sunny, open wetlands onsite for foraging and sheltering. Beaver (*Castor canadensis*) and muskrat (*Ondatra zibethicus*) could make use of the Deep Emergent Marsh habitats. Common bird species likely to find foraging habitat within the Shrub Swamp and marsh habitats include great blue heron (*Ardea herodias*), green heron (*Butorides virescens*), belted kingfisher (*Megaceryle alcyon*), Canada goose (*Branta canadensis*), wood duck (*Aix sponsa*), hooded merganser (*Lophodytes cucullatus*), and mallard (*Anas platyrhynchos*).

Upland Habitats

The Upland Forest portions of the property contains habitat suitable for use by a variety of common mammalian, avian, reptile, amphibian, and invertebrate wildlife species, but there are no wildlife habitat features that are unique to the overall surrounding landscape. The most notable habitat features observed include numerous large living oak trees, which are important due to their expansive canopy and structural diversity, which may provide foraging, sheltering, and nesting habitat for birds and arboreal mammals, and their ability to produce large quantities of acorns, which are an important food source for a variety of birds and mammals. A few dead standing trees are present, which provide sheltering for woodpeckers and other cavity-nesting birds, plus foraging and shelter for arboreal mammals. Existing rock piles and large woody debris contain numerous crevices that could provide sheltering habitat for Eastern garter snakes (*Thamnophis sirtalis*) and small mammals such as chipmunks (*Tamias striatus*).

A wide variety of mammals likely find foraging, sheltering, and migratory habitat within Upland Forest habitat including eastern coyote (*Canis latrans*), red fox (*Vulpes vulpes*), white-tailed deer (*Odocoileus virginianus*), porcupine (*Erithizon dorsatum*), gray squirrel (*Sciurus carolinensis*), red squirrel (*Tamaisciurus hudsonicus*), moles (*Scalopus* sp.), deer mice (*Peromyscus* spp.), raccoon (*Procyon lotor*), skunk (*Mephitis mephitis*), fisher (*Martes pennanti*), and common bat species.

The White Pine - Oak Forest cover type is likely utilized by a variety of bird species for foraging, sheltering, and nesting, including but not limited to blue jay (*Cyanocitta cristata*), tufted titmouse (*Baeolophus bicolor*), black-capped chickadee (*Poecile atricapillus*), red-eyed vireo (*Vireo olivaceus*), eastern wood-pewee (*Contopus virens*), brown creeper (*Certhia americana*), wild turkey (*Meleagris gallopavo*), American robin (*Turdus migratorius*), American crow (*Corvus brachyrhynchos*), downy woodpecker (*Dryobates pubescens*), hairy woodpecker (*Dryobates villosus*), white-breasted nuthatch (*Sitta carolinensis*), red-breasted nuthatch (*Sitta canadensis*), barred owl (*Strix varia*), blue-headed vireo (*Vireo solitarius*), pine warbler (*Setophaga pinus*), blackburnian warbler (*Setophaga fusca*), hermit thrush (*Catharus guttatus*), and wood thrush (*Hylocichla mustelina*).

Federally Listed Species

A request was made to the United States Fish & Wildlife Service (FWS) via the IPaC Website, on October 27, 2021. The FWS identified two species that may occur in the project vicinity: the northern

long-eared bat (*Myotis septentrionalis*) and a rare plant (NAME REDACTED[3]), both of which are "Threatened" species. Note that the monarch butterfly (*Danaus plexippus*) is identified as a Candidate for Listing but is not presently subject to the Endangered Species Act (ESA). The site does not contain suitable habitat for monarch butterflies (expansive wildflower meadows with flowers for nectaring and milkweed for breeding).

Impact Assessment

The proposed development of the site is in early due diligence phase as of the writing of this report, so no project scope or potential limit of work has been determined. Because Blanding's turtle habitat spanning their entire range of life history functions and requirements, including foraging, sheltering, migration, over-wintering, and nesting is abundant throughout the property, any future development of the property has the potential to interrupt one or more of these life history functions. Introduction of new roadways or increased vehicle traffic through existing roadway has the potential to cause road mortality to migrating turtles. Alteration of the grassland habitat may reduce the ability of the species to nest successfully. Alteration of upland forest adjacent to wetlands may impede or alter existing migratory routes. The assessment of potential impacts to the rare plant species will require direct consultation with NHESP and the US Fish & Wildlife Service for guidance as to the species' habitat requirements, and possibly actual plant surveys during the spring/summer growing season to determine actual presence/absence and/or abundance of the species. Impacts to the Northern Long-eared Bat (NLEB) could occur if any maternal roosting trees or other trees within 150 feet of such trees are removed during the pup rearing period for this species (June 1 through July 31). A consultation with the US Fish & Wildlife Service regarding potential impacts to NLEB is recommended during the design of any development project at the site.

Thank you for consideration of this report. Should you have any questions or require additional information, please do not hesitate to contact me at our Wakefield office at 781.245.2500, or by email at dwells@lecenvironmental.com.

Sincerely,

LEC Environmental Consultants, Inc.

Dan Wells
Senior Wildlife/Wetland Scientist

[3] See 11/23/21 NHESP letter for explanation of why rare plant species name is withheld.

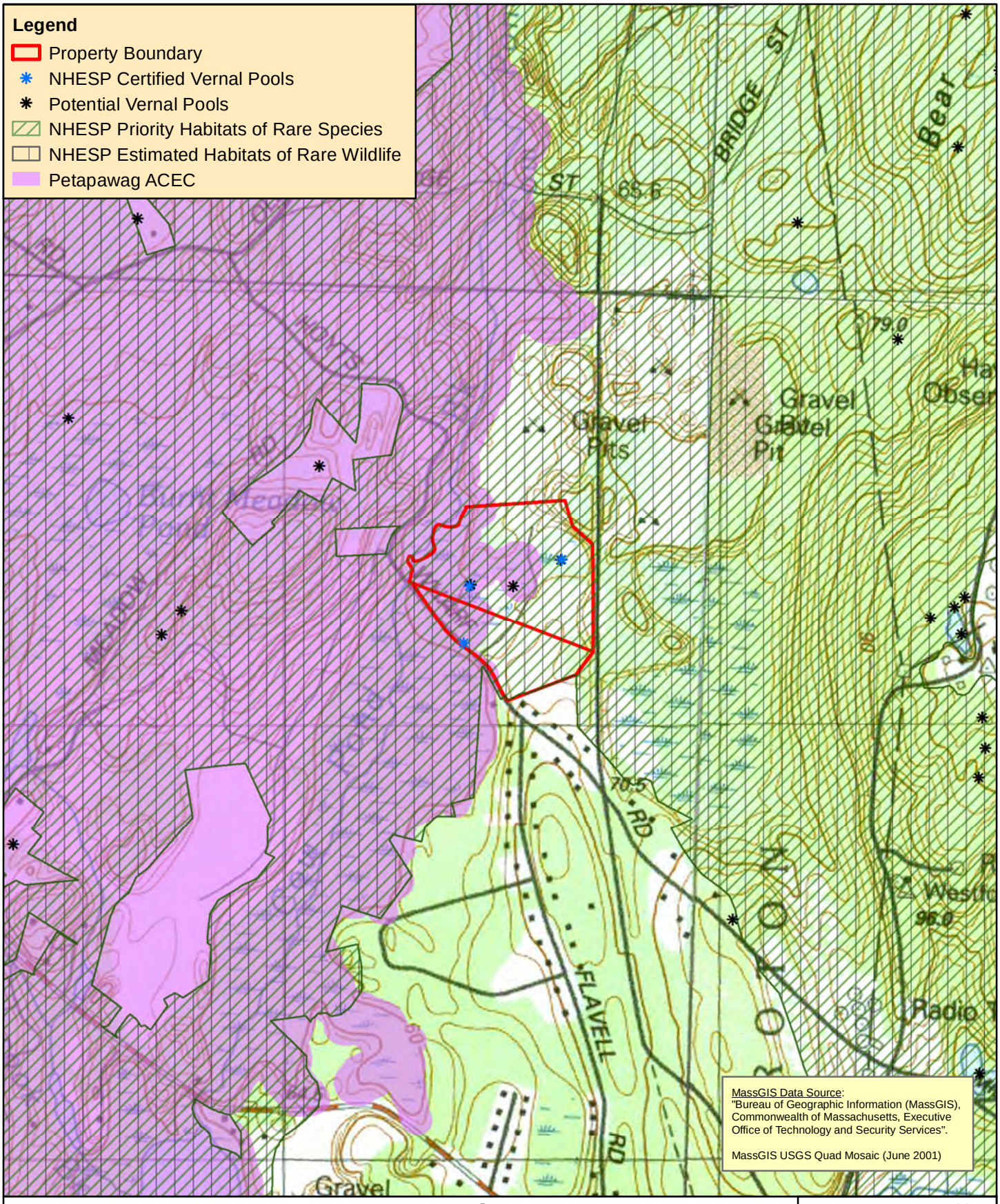
Attachment A

Locus Maps:

Figure 1: USGS Topographic Map

Figure 2: Land Cover and Photopoint Map

Figure 3: Potential Blanding's Turtle Habitats Map



LEC Environmental Consultants, Inc.
Wakefield, MA 781.245.2500
www.lecenvironmental.com

Figure 1
Site Locus with NHESP Overlay

Cow Pond Brook Road (Map 249, Lots 51 and 57)
Groton, MA

Date: 11/15/2021

N

1 inch = 1,000 feet

0 250 500 1,000 Feet

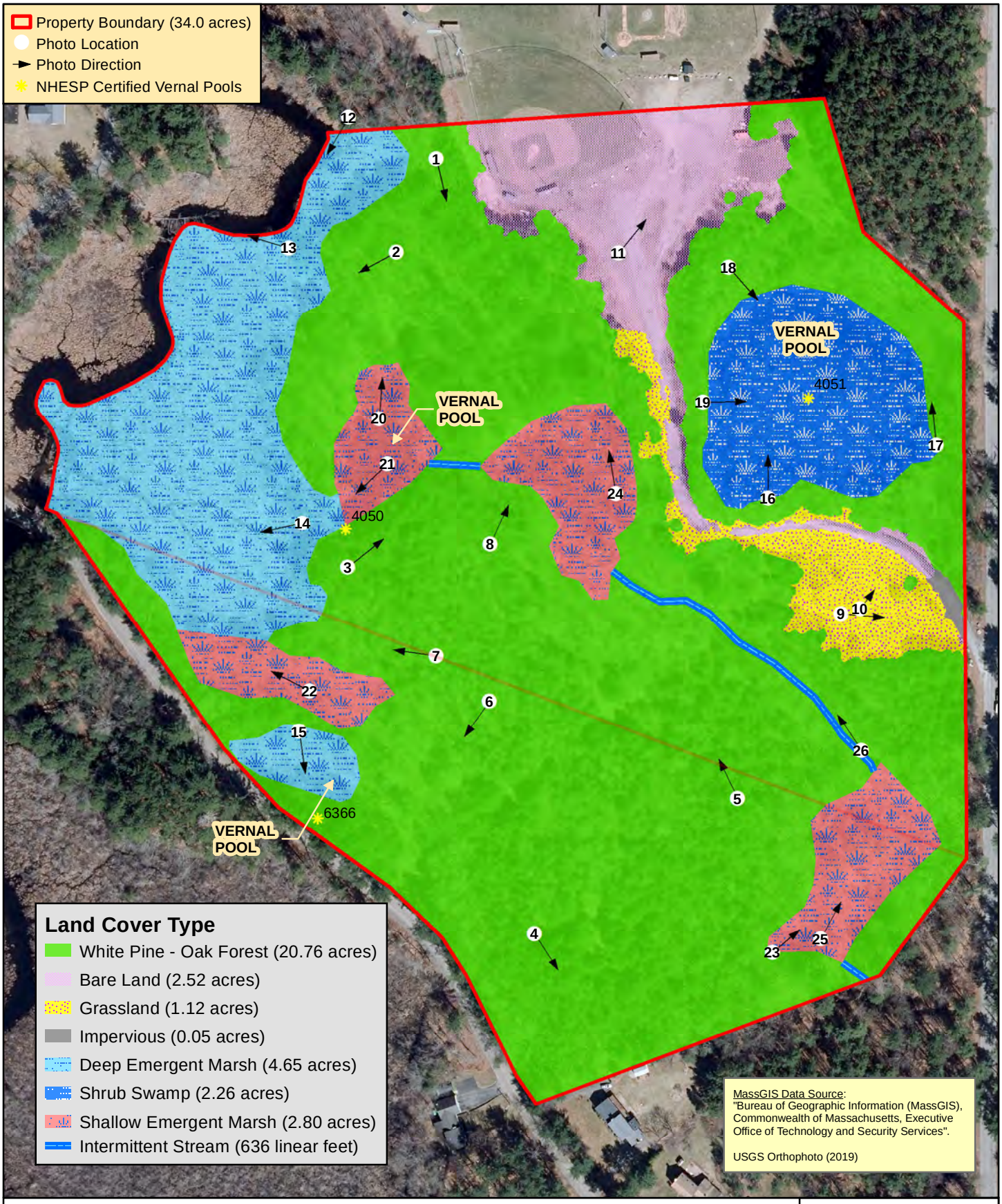


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Figure 2
Land Cover and Photopoint Map

Cow Pond Brook Road (Map 249, Lots 51 and 57)
Groton, MA

Date: 12/2/2021

N

1 inch = 200 feet

0 50 100 200 Feet

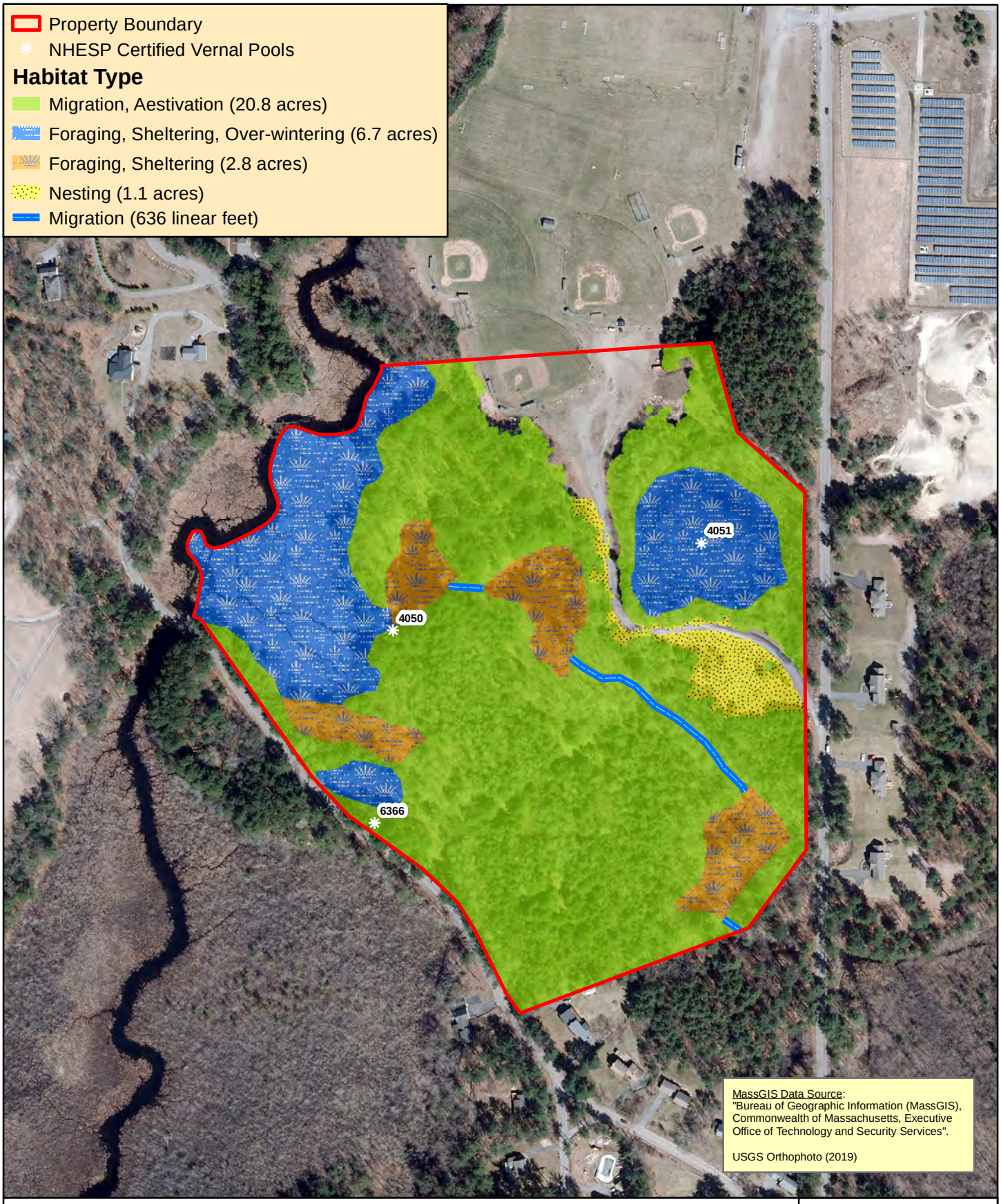

Figure 3
Potential Blanding's Turtle Habitat

Cow Pond Brook Road (Map 249, Lots 51 and 57)
Groton, MA

Date: 12/2/2021

N

1 inch = 300 feet

0 75 150 300 Feet

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Attachment B

Site Photographs

Photograph 1 – White Pine – Oak Forest, facing south.

Photograph 2 – White Pine – Oak Forest, facing southwest.

Photograph 3 – White Pine – Oak Forest, facing northeast.

Photograph 4 – White Pine – Oak Forest, facing southeast.

Photograph 5 – White Pine – Oak Forest, facing northwest.

Photograph 6 – White Pine – Oak Forest, facing southwest.

Photograph 7 – White Pine – Oak Forest, facing west.

Photograph 8 – White Pine – Oak Forest, facing north.

Photograph 9 – Grassland cover type, facing east toward Cow Pond Brook Road.

Photograph 10 – Turtle egg shells observed in the center of Grassland habitat.

Photograph 11 – Bare Land cover type (parking area for athletic fields).

Photograph 12 – Cow Pond Brook and adjacent Deep Marsh habitat, facing downstream.

Photograph 13 – Deep Marsh east of Cow Pond Brook, facing west.

Photograph 14 – Deep Marsh habitat east of Cow Pond Brook, facing west.

Photograph 15 – Deep Marsh cover type within a vernal pool (CVP #6366), facing south.

Photograph 16 – Southwestern corner of large Shrub Swamp vernal pool (CVP #4051).

Photograph 17 – Southeastern corner of large Shrub Swamp vernal pool (CVP #4051).

Photograph 18 – Northwestern corner of large Shrub Swamp vernal pool (CVP #4051).

Photograph 19 – Western edge of large Shrub Swamp vernal pool (CVP #4051).

Photograph 20 – Shallow Marsh cover type within vernal pool (CVP #4050), facing north.

Photograph 21 – Shallow Marsh cover type within vernal pool (CVP #4050), facing southwest.

Photograph 22 – Shallow Marsh cover type, facing northwest.

Photograph 23 – Shallow Marsh cover type, facing northeast.

Photograph 24 – Shallow Marsh cover type, facing north.

Photograph 25 – Intermittent stream, facing north.

Photograph 26 – Intermittent stream, facing northwest.

Attachment C

NHESP Species Information Letter

November 23, 2021

MASSWILDLIFE

DIVISION OF
FISHERIES & WILDLIFE

1 Rabbit Hill Road, Westborough, MA 01581
p: (508) 389-6300 | f: (508) 389-7890
MASS.GOV/MASSWILDLIFE

November 23, 2021

Dan Wells
LEC Environmental Consultants, Inc.
380 Lowell Street, Suite 101
Wakefield MA 01880

RE: Project Location: Cow Pond Brook Road
Town: GROTON
NHESP Tracking No.: 21-40636

To Whom It May Concern:

Thank you for contacting the Natural Heritage and Endangered Species Program of the MA Division of Fisheries & Wildlife (the "Division") for information regarding state-listed rare species in the vicinity of the above referenced site. Based on the information provided, this project site, or a portion thereof, is located **within** *Priority Habitat 2043* (PH 2043) and *Estimated Habitat 1306* (EH 1306) as indicated in the *Massachusetts Natural Heritage Atlas* (15th Edition) for the following state-listed rare species:

Scientific name	Common Name	Taxonomic Group	State Status
*Data Sensitive Species**		Plant	Endangered
Emydoidea blandingii	Blanding's Turtle	Reptile	Threatened

The species listed above are protected under the Massachusetts Endangered Species Act (MESA) (M.G.L. c. 131A) and its implementing regulations (321 CMR 10.00). State-listed wildlife are also protected under the state's Wetlands Protection Act (WPA) (M.G.L. c. 131, s. 40) and its implementing regulations (310 CMR 10.00). Fact sheets for most state-listed rare species can be found on our website (www.mass.gov/nhesp).

*This species is considered a "Sensitive Species". This species is highly susceptible to collection and is therefore of high concern to Natural Heritage. Information about this species (including presence/absence) cannot be released to anyone (especially including release to third parties or published) unless such release is agreed to in writing by the Natural Heritage Program (See Massachusetts Public Records law: M.G.L. chapter 66 section 17D).

Please note that projects and activities located within Priority and/or Estimated Habitat **must** be reviewed by the Division for compliance with the state-listed rare species protection provisions of MESA (321 CMR 10.00) and/or the WPA (310 CMR 10.00).

Wetlands Protection Act (WPA)
If the project site is within Estimated Habitat and a Notice of Intent (NOI) is required, then a copy of the NOI must be submitted to the Division so that it is received at the same time as the local conservation commission. If the Division determines that the proposed project will adversely affect the actual

Resource Area habitat of state-protected wildlife, then the proposed project may not be permitted (310 CMR 10.37, 10.58(4)(b) & 10.59). In such a case, the project proponent may request a consultation with the Division to discuss potential project design modifications that would avoid adverse effects to rare wildlife habitat.

A streamlined joint MESA/WPA review process is available. When filing a Notice of Intent (NOI), the applicant may file concurrently under the MESA on the same NOI form and qualify for a 30-day streamlined joint review. For a copy of the NOI form, please visit the MA Department of Environmental Protection's website: https://www.mass.gov/how-to/wpa-form-3-wetlands-notice-of-intent.

MA Endangered Species Act (MESA)

If the proposed project is located within Priority Habitat and is not exempt from review (see 321 CMR 10.14), then project plans, a fee, and other required materials must be sent to Natural Heritage Regulatory Review to determine whether a probable Take under the MA Endangered Species Act would occur (321 CMR 10.18). Please note that all proposed and anticipated development must be disclosed, as MESA does not allow project segmentation (321 CMR 10.16). For a MESA filing checklist and additional information please see our website: https://www.mass.gov/regulatory-review.

We recommend that rare species habitat concerns be addressed during the project design phase prior to submission of a formal MESA filing, as avoidance and minimization of impacts to rare species and their habitats is likely to expedite endangered species regulatory review.

This evaluation is based on the most recent information available in the Natural Heritage database, which is constantly being expanded and updated through ongoing research and inventory. If the purpose of your inquiry is to generate a species list to fulfill the federal Endangered Species Act (16 U.S.C. 1531 et seq.) information requirements for a permit, proposal, or authorization of any kind from a federal agency, we recommend that you contact the National Marine Fisheries Service at (978)281-9328 and use the U.S. Fish and Wildlife Service's Information for Planning and Conservation website (https://ecos.fws.gov/ipac). If you have any questions regarding this letter please contact Melany Cheeseman, Endangered Species Review Assistant, at (508) 389-6357.

Sincerely,

Everose Schlüter

Everose Schlüter, Ph.D.
Assistant Director