

GOVE ENVIRONMENTAL SERVICES, INC.
Wetlands and Soil Mapping

WILDLIFE HABITAT ASSESSMENT

for a

Commercial Development
Hudson, New Hampshire

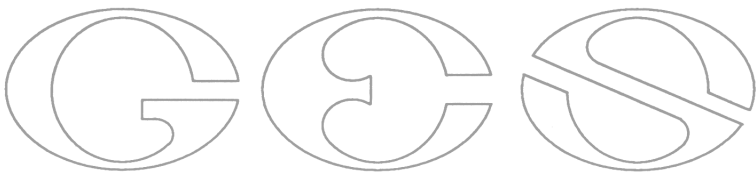
Bluebird Self Storage
Hudson, NH
December 13, 2021

8 Continental Dr Bldg 2 Unit H, Exeter, NH 03833-7526

Phone (603) 778 0644 / Fax (603) 778 0654

www.gesinc.biz

info@gesinc.biz



Index:

Part 1: Findings and Summary

Part 2: NHB21-2966 Datacheck Results Letter, Figures, Site Photographs

Part 3: Detailed Evaluation

Proposed Project

Project Site and Surrounding Land Use Description

Threatened and Endangered Species and Wildlife Habitat Evaluation

Potential Impacts and proposed Conservation Measures

Part 4: Appendices

Aerial Photo

USGS Topo Map

WAP Habitat Cover Map

WAP Highest Ranked Wildlife Habitat Map

Conservation Parcels Map

NRCS Soils

NHB21-2966



PART 1: SUMMARY AND FINDINGS

Wildlife Biologist: Luke Hurley	NHB21-2966
Gove Environmental Services, Inc.	Commercial Development
8 Continental Drive, Exeter, NH 03833	196-202 Central Street, Hudson
lhurley@gesinc.biz	Bluebird Self Storage, LLC
603-770-5114	AOT Application

PROPOSED PROJECT:

The proposed project is for a single building for Bluebird Self Storage, with associated driveways, parking areas and stormwater basins. **The project will be on Town sewer and water.**

PHASE I Threatened and Endangered Wildlife and Habitat Assessment Findings:

Check one

No threatened and endangered wildlife and habitat present, no threatened or endangered wildlife, habitat, or wildlife corridors likely to be impacted by project activities.

Threatened and endangered wildlife and habitat present; **HOWEVER, NO** threatened or endangered wildlife, habitat, or wildlife corridors likely to be impacted by project activities.

No conservation measures are proposed.

Threatened and endangered wildlife and habitat present or wildlife corridors present.

Proposed actions have the potential for impacts. Conservation measures incorporated into the proposed project or project design.



THREATENED AND ENDANGERED WILDLIFE AND HABITAT:

NHB21-2966 identified the following in the vicinity of the project:

Blanding's Turtle E, SGCN

Eastern Box Turtle E, SGCN

Spotted Turtle T, SGCN

Additional species potentially on site based on the existing Appalachian-Oak Pine cover type:

Big Brown Bat SC, SGCN

Silver-haired bat SC, SGCN

Tri-colored bat SE, SGCN

Eastern red bat SC, SGCN

Hoary bat SGCN

Little brown myotis SE, SGCN

PROPOSED CONSERVATION MEASURES:

No specific conservation measures are proposed; however a 50-foot buffer is proposed to the wetlands.

Ideal methods for erosion control around the perimeter of the work areas is mulch berms. These are natural and often readily available for development sites. These are easy to install and do not need to be removed once the project is complete. The use of mulch berms does not act as a barrier to wildlife as they are able to easily walk over the berms with no issues. The use of welded plastic or 'biodegradable plastic' netting or thread in erosion control matting should be avoided. There are numerous documented cases of snakes and other wildlife being trapped and killed in erosion control matting with synthetic netting and thread. The use of erosion control berm, white Filtrexx Degradable Woven Silt Sock, or several 'wildlife friendly' options such as woven organic material (e.g. coco or jute matting such as North American Green SC150BN or equivalent) are readily available.



PART 1: SUMMARY AND FINDINGS

NHB21-2966
Commercial Development
196-202 Central Street, Hudson
Bluebird Self Storage, LLC
AOT Application

Printed name, date and signature of Individual that conducted the Phase I Threatened and Endangered Wildlife and Habitat Assessment. Note: By signing this document, the qualified wildlife biologist (Env. Wq. 1503.19(h)) is assuming responsibility for the wildlife assessment. Credentials need to be included in Part 4: Appendices.

Luke Hurley
Name – printed

December 13, 2021
Date

Signature

Check Applicable Requested Action

- Request for NHFG Concurrence with Findings in compliance with Env. Wq. 1503.19(h)(1)a
- Request for NHFG Concurrence with Findings and Proposed Conservation Measures in compliance with Env. Wq. 1503.19(h)(1)b*
- Requests further coordination with NHFG to discuss proposed conservation measures and/or, potential focused survey needs (Phase II) *

*New Hampshire Fish and Game’s review and recommendations are based on the information provided in this assessment. Changes to project scope may affect NHFG and/or NHDES determination on potential impacts and whether conservation measures and project design modifications proposed are still applicable or sufficient.

Other:



*Wildlife Habitat Assessment for Bluebird Self Storage,
196-202 Central Street,
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December 13, 2021*

PART 2: NHB21-2966 Datacheck Results Letter, Figures, Site Photographs

Include in order presented below:

NHB21-2966 Datacheck Results Letter

Aerial Figure

Topographic Figure

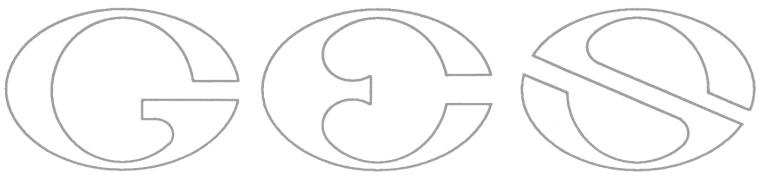
NH Wildlife Action Plan - Land Cover Figure

NH Wildlife Action Plan - Habitat Rankings and Conservation Parcels Figure

Conservation Parcels

NRCS Soils

Site photographs with photograph location plan



*Wildlife Habitat Assessment for Bluebird Self Storage,
196-202 Central Street,
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December 13, 2021*

NHB21-2966

Memo

NH Natural Heritage Bureau NHB DataCheck Results Letter

Please note: portions of this document are confidential.

Maps and NHB record pages are confidential and should be redacted from public documents.

To: Bridget Souza, Keach-Nordstrom Associates, Inc.
10 Commerce Park North
Suite 3
Bedford, NH 03110

From: Jessica Bouchard, NH Natural Heritage Bureau

Date: 9/29/2021 (valid until 09/29/2022)

Re: Review by NH Natural Heritage Bureau

Permits: MUNICIPAL POR - Hudson, NHDES - Alteration of Terrain Permit

NHB ID: NHB21-2966 Town: Hudson Location: 196-202 Central Street
Description: Remove two abandoned residential homes and construction 39,000 +/- s.f. footprint storage facility with associated drainage, utilities, parking, and landscaping.

cc: Kim Tuttle

As requested, I have searched our database for records of rare species and exemplary natural communities, with the following results.

Comments NHB: No Comments At This Time

F&G: Please submit AoT-related documents for NHFG review, AoT review inquiries or wildlife biologist questions to NHFGreview@wildlife.nh.gov. If project related: Include the NHB datacheck results letter number (i.e. NHB21-2966) in the email subject line at a minimum. Not including this number will affect our response time and delays of our review. Please include the NHB number in the title of the assessment along with a date (year,month,day).

Vertebrate species	State ¹	Federal	Notes
Blanding's Turtle (<i>Emydoidea blandingii</i>)	E	--	Contact the NH Fish & Game Dept (see below).
Eastern Box Turtle (<i>Terrapene carolina</i>)	E	--	Contact the NH Fish & Game Dept (see below).
Spotted Turtle (<i>Clemmys guttata</i>)	T	--	Contact the NH Fish & Game Dept (see below).

¹Codes: "E" = Endangered, "T" = Threatened, "SC" = Special Concern, "--" = an exemplary natural community, or a rare species tracked by NH Natural Heritage that has not yet been added to the official state list. An asterisk (*) indicates that the most recent report for that occurrence was more than 20 years ago.

Contact for all animal reviews: Kim Tuttle, NH F&G, (603) 271-6544.

Memo

NH Natural Heritage Bureau NHB DataCheck Results Letter

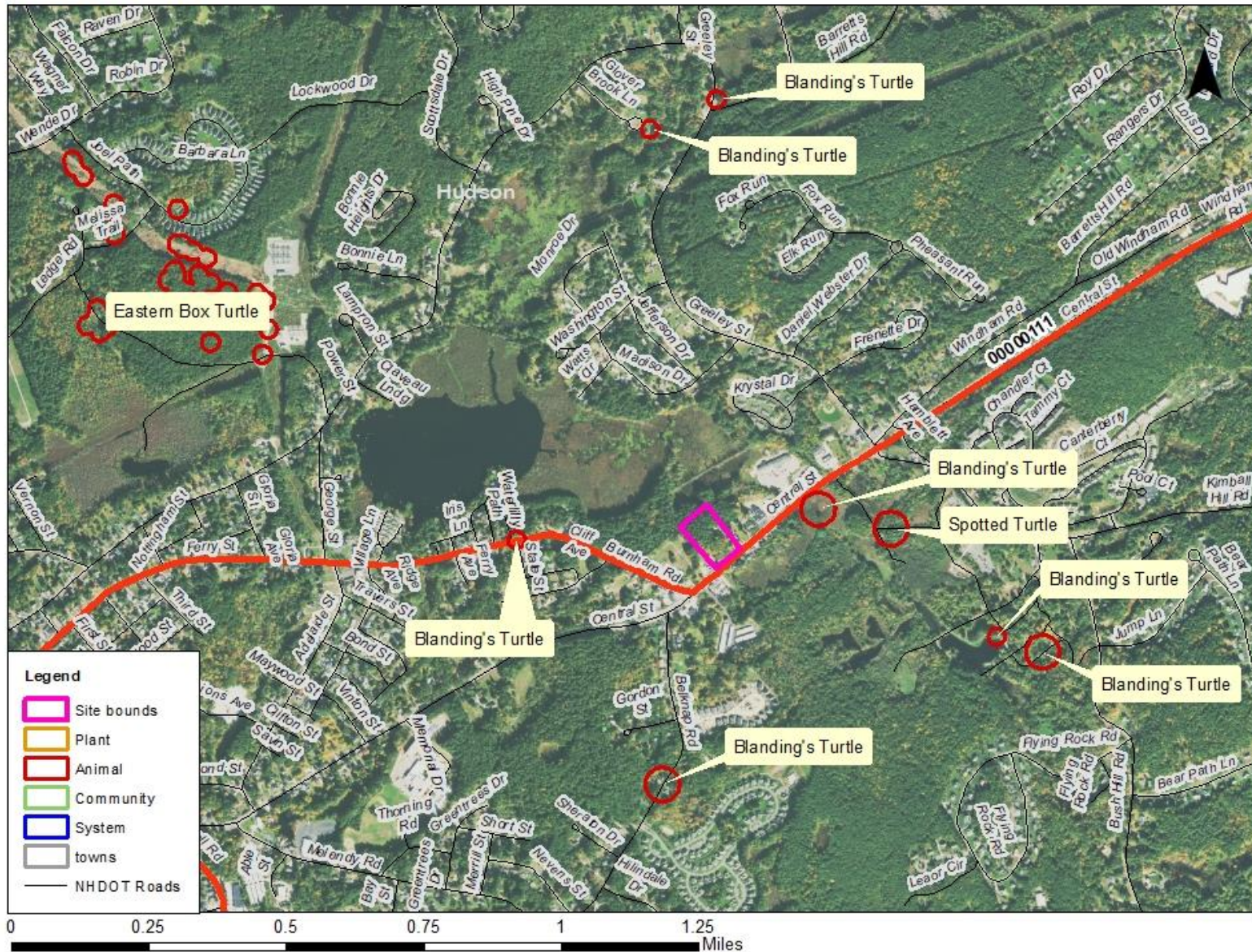
Please note: portions of this document are confidential.

Maps and NHB record pages are confidential and should be redacted from public documents.

A negative result (no record in our database) does not mean that a sensitive species is not present. Our data can only tell you of known occurrences, based on information gathered by qualified biologists and reported to our office. However, many areas have never been surveyed, or have only been surveyed for certain species. An on-site survey would provide better information on what species and communities are indeed present.

CONFIDENTIAL – NH Dept. of Environmental Services review

NHB21-2966



New Hampshire Natural Heritage Bureau - Animal Record

Blanding's Turtle (*Emydoidea blandingii*)

Legal Status

Federal: Not listed
 State: Listed Endangered

Conservation Status

Global: Apparently secure but with cause for concern
 State: Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
 Comments on Rank: --

Detailed Description: 2014: Area 13895: 1 adult observed, sex unknown.
 General Area: 2014: Area 13895: Pond in municipal park.
 General Comments: --
 Management: --
 Comments:

Location

Survey Site Name: Second Brook
 Managed By:

County: Hillsborough
 Town(s): Hudson
 Size: .4 acres

Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2014: Area 13895: Near pond in Benson Park, Hudson (42.76663, -71.40373).

Dates documented

First reported: 2014-07-17 Last reported: 2014-07-17

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

New Hampshire Natural Heritage Bureau - Animal Record

Blanding's Turtle (*Emydoidea blandingii*)

Legal Status

Federal: Not listed
State: Listed Endangered

Conservation Status

Global: Apparently secure but with cause for concern
State: Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 2016: Area 14397: 1 adult female observed, injured on road. Turtle was brought to rehabber, and released on 6/27.

General Area: Area 14397: Roadside.

General Comments: --

Management: --

Comments:

Location

Survey Site Name: Robins on Pond

Managed By:

County: Hillsborough

Town(s): Hudson

Size: .4 acres

Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2016: Area 14397: Near junction of Route 111, State Street, and Marshmallow Path, Hudson.

Dates documented

First reported: 2016-06-15

Last reported: 2016-06-15

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

New Hampshire Natural Heritage Bureau - Animal Record

Spotted Turtle (*Clemmys guttata*)

Legal Status

Federal: Not listed
 State: Listed Threatened

Conservation Status

Global: Demonstrably widespread, abundant, and secure
 State: Imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
 Comments on Rank: --

Detailed Description: 2013: Area 13521: 1 adult observed, sex unknown.

General Area: 2013: Area 13521: Shrubland.

General Comments: --

Management: --

Comments:

Location

Survey Site Name: Merrill Brook

Managed By:

County: Hillsborough

Town(s): Hudson

Size: 1.9 acres

Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

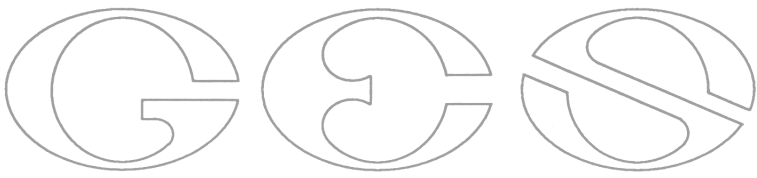
Directions: 2013: Area 13521: Benson's Park, Hudson. Along Meadow View Trail approximately 100 feet west of intersection with Haselton Farm Trail.

Dates documented

First reported: 2013-06-03

Last reported: 2013-06-03

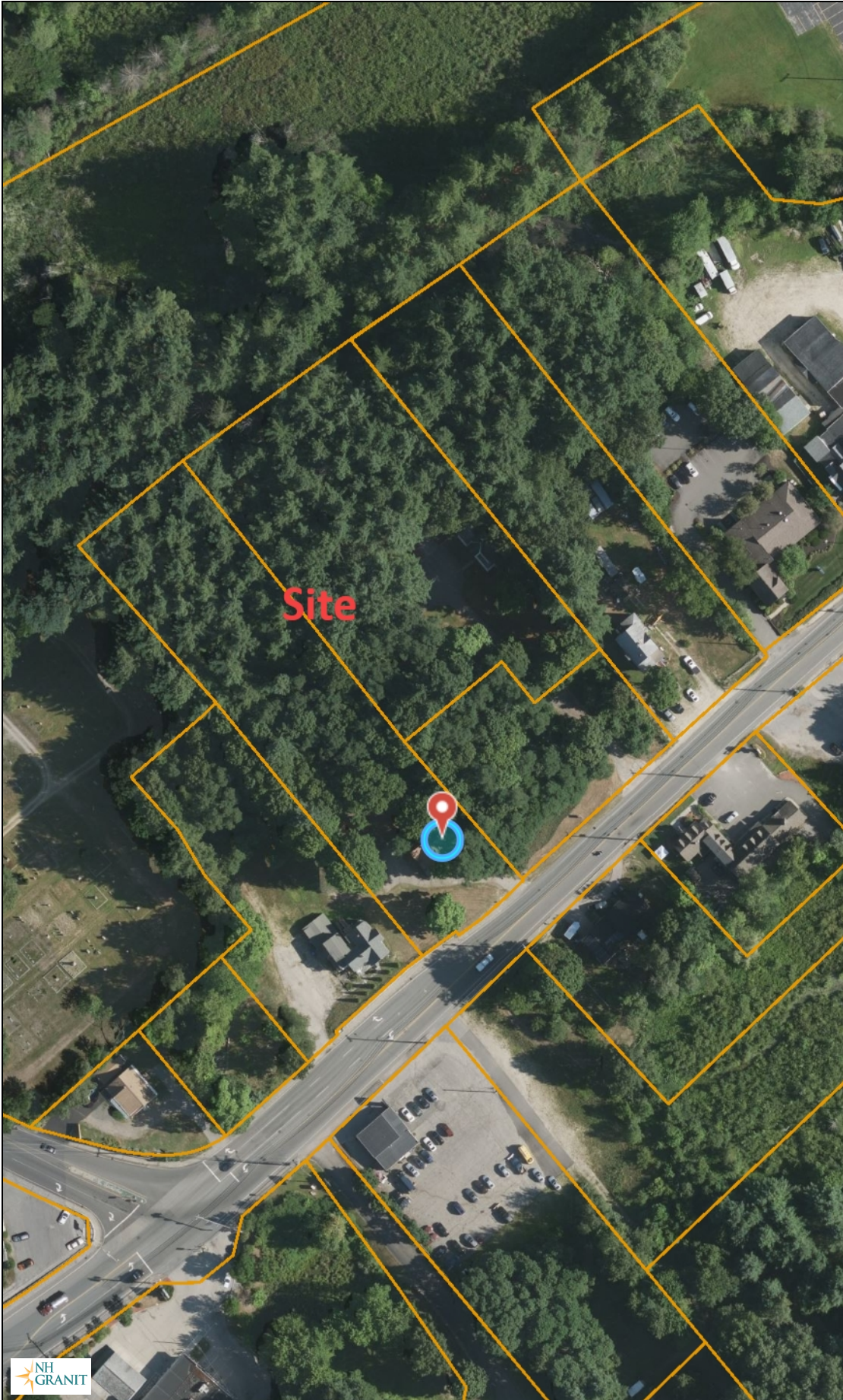
The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.



*Wildlife Habitat Assessment for Bluebird Self Storage,
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Aerial Photo

Aerial



Legend

- Parcels
 - Parcel Polygons
 - Attributes for Additional Lines
- State
- County
- City/Town

Map Scale

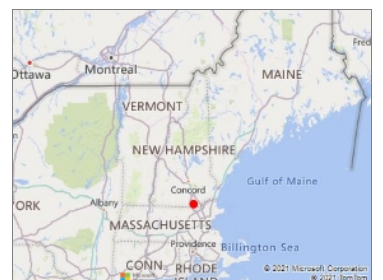
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Map Generated: 12/13/2021



Notes

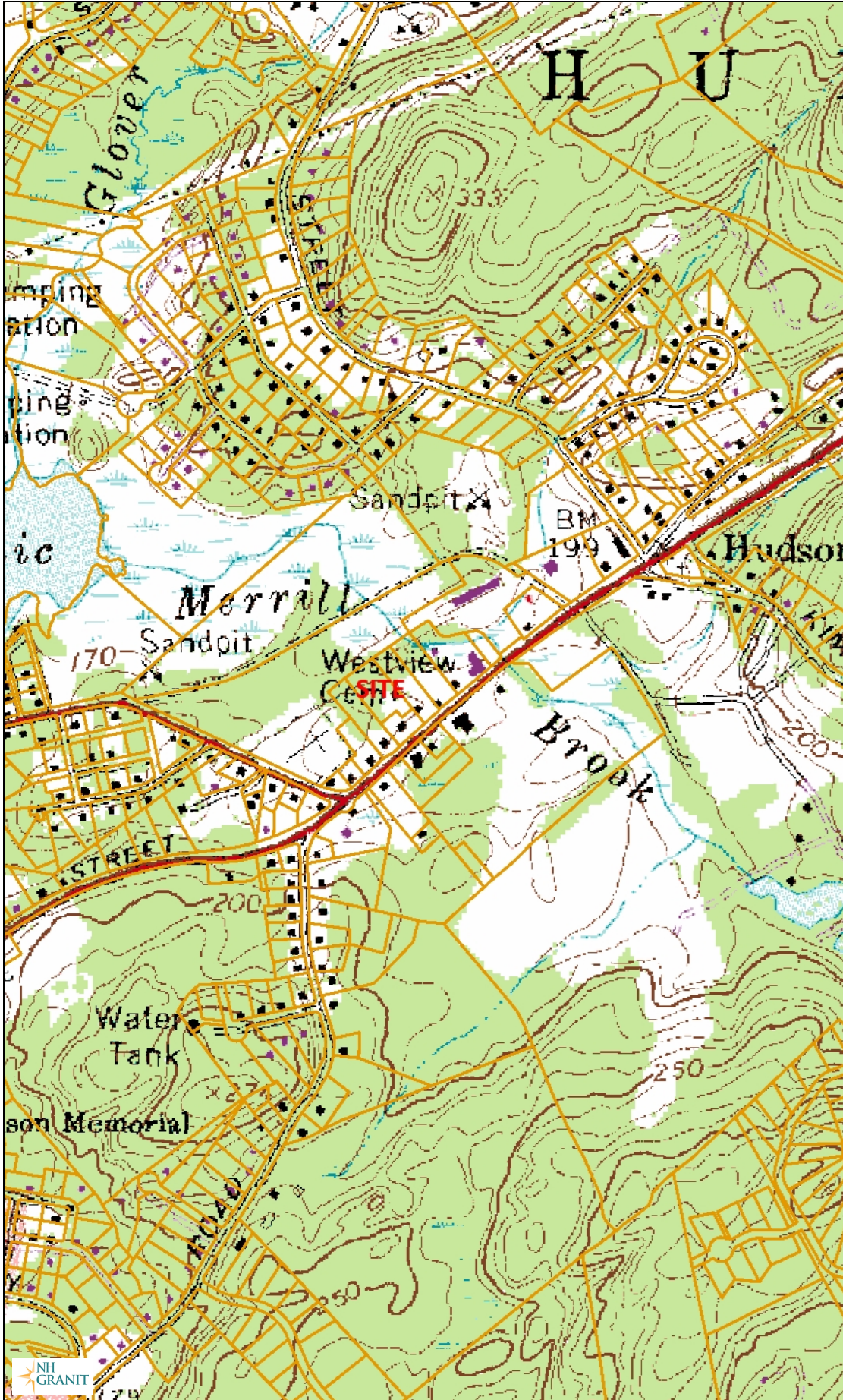




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December 13, 2021*

USGS Topo Map

USGS



Legend

- Parcels
 - Parcel Polygons
 - Attributes for Additional Lines
- State
- County
- City/Town

Map Scale

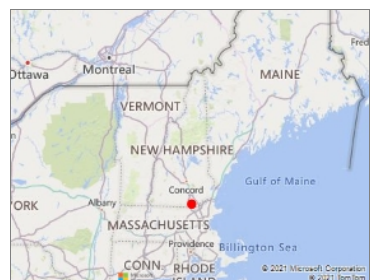
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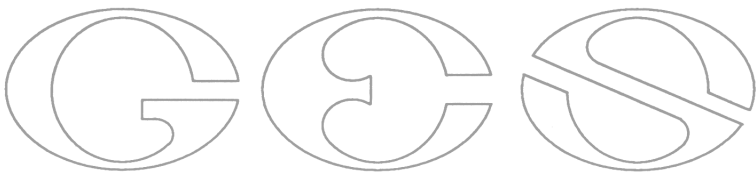
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Map Generated: 12/16/2021



Notes

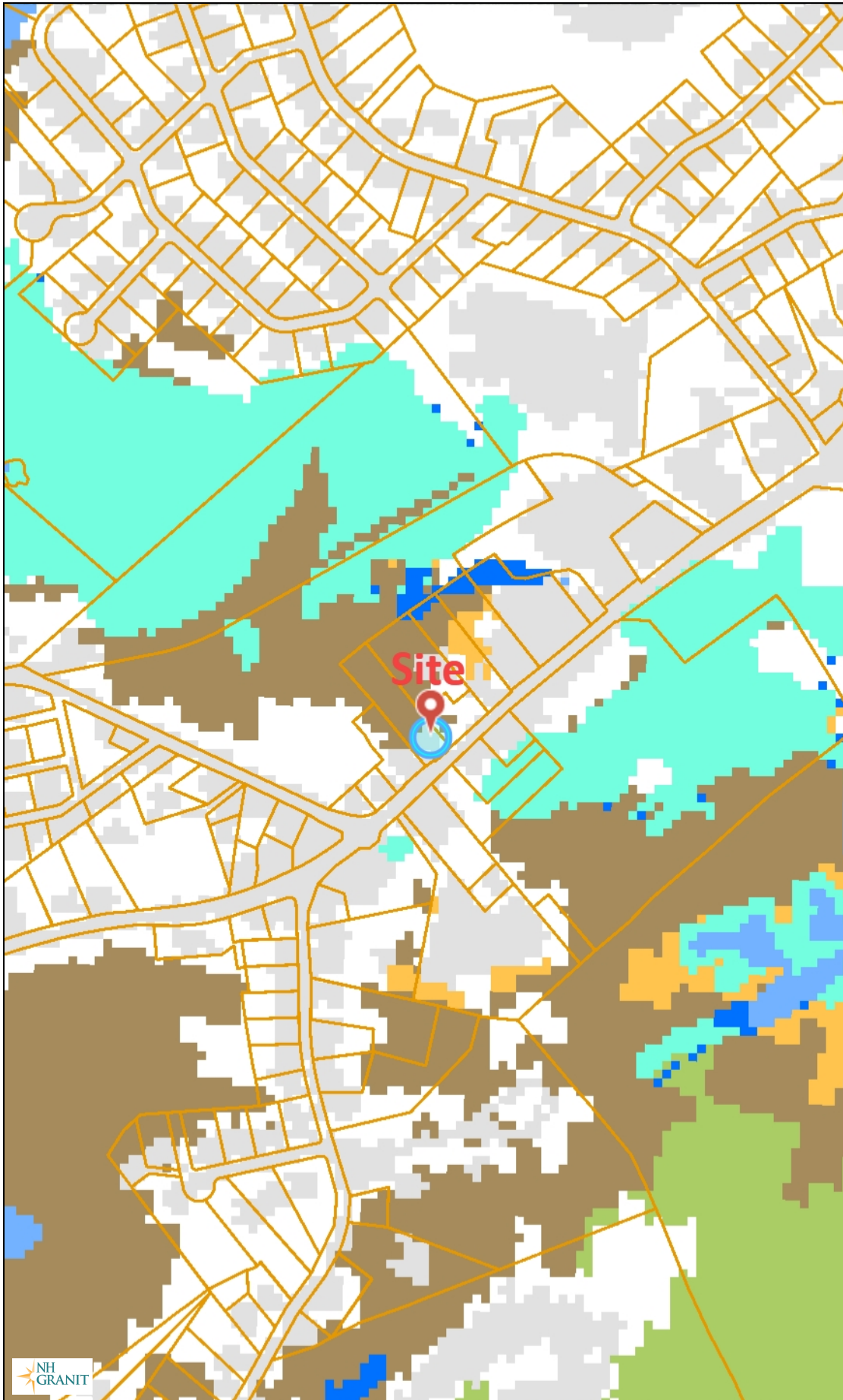




*Wildlife Habitat Assessment for Bluebird Self Storage,
196-202 Central Street,
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December 13, 2021*

**NH Wildlife Action Plan
Land Cover Figure**

WAP 2020: Wildlife Habitat Land Cover



Legend

- Parcels**
 - Parcel Polygons
 - Attributes for Additional Lines
- State
- County
- City/Town
- WAP 2020: Wildlife Habitat I Cover**
 - Alpine
 - Appalachian oak-pine
 - Cliff and Talus slope
 - Coastal island and Rocky coast
 - Developed Impervious
 - Developed or Barren land
 - Dune
 - Floodplain forest
 - Grassland
 - Hemlock-hardwood-pine
 - High-elevation spruce-fir
 - Lowland spruce-fir
 - Northern hardwood-conifer
 - Northern swamp
 - Open water
 - Peatland
 - Pine barren
 - Rocky ridge
 - Salt marsh
 - Sand/Gravel
 - Temperate swamp
 - Marsh and shrub wetland

Map Scale

1: 6,494

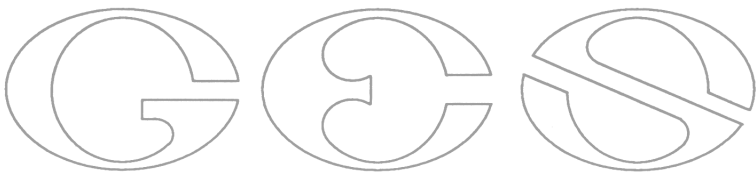


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Map Generated: 12/13/2021

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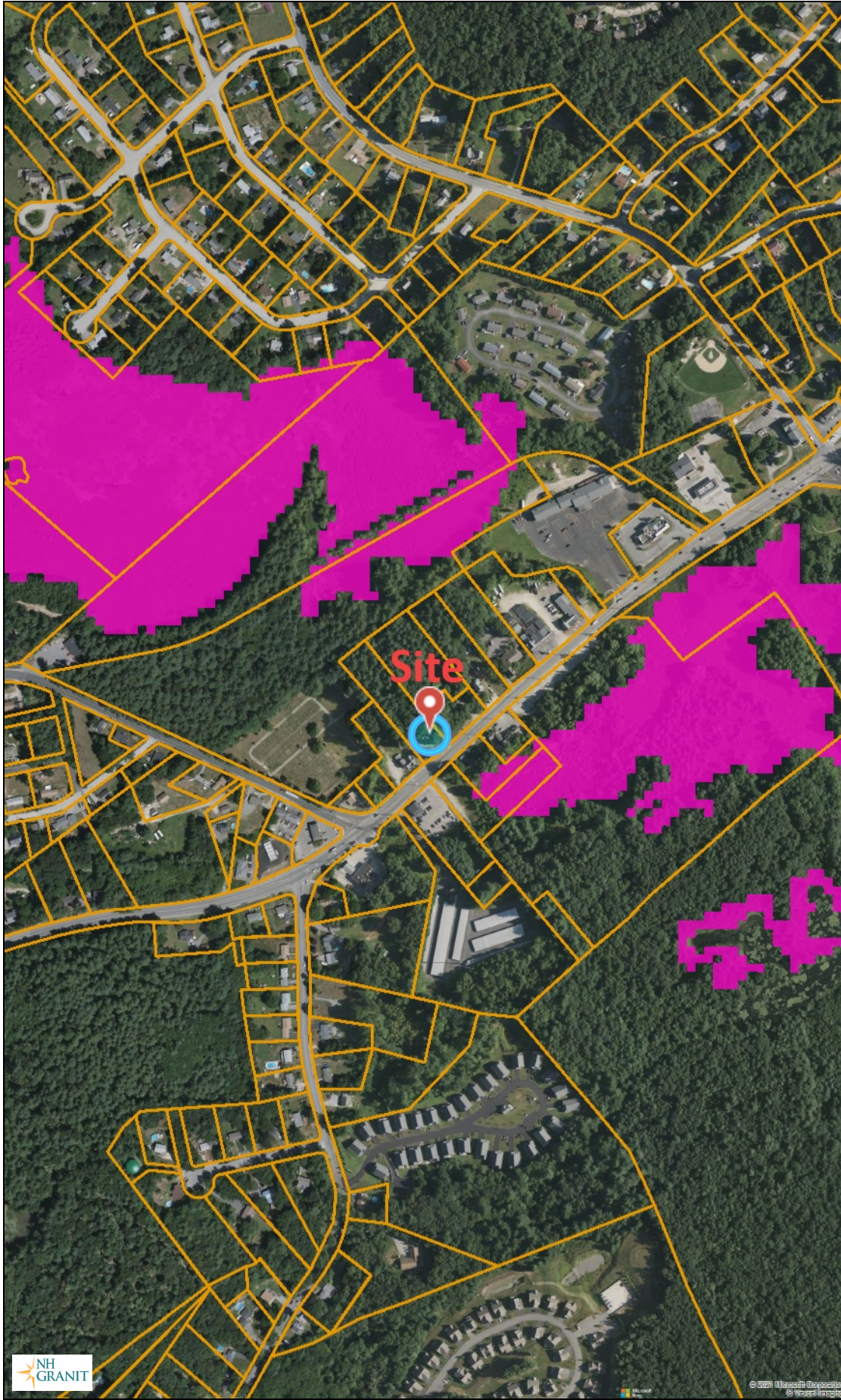




*Wildlife Habitat Assessment for Bluebird Self Storage,
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**NH Wildlife Action Plan
Habitat Rankings**

WAP 2020: Highest Ranked Wildlife Habitat



Legend

- Parcels
 - Parcel Polygons
 - Attributes for Additional Lines
- State
- County
- City/Town
- WAP 2020: Highest Ranked Wildlife Habitat
 - 1 Highest Ranked Habitat in NH
 - 2 Highest Ranked Habitat in Region
 - 3 Supporting Landscape

Map Scale

1: 6,494

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Map Generated: 12/13/2021



Notes

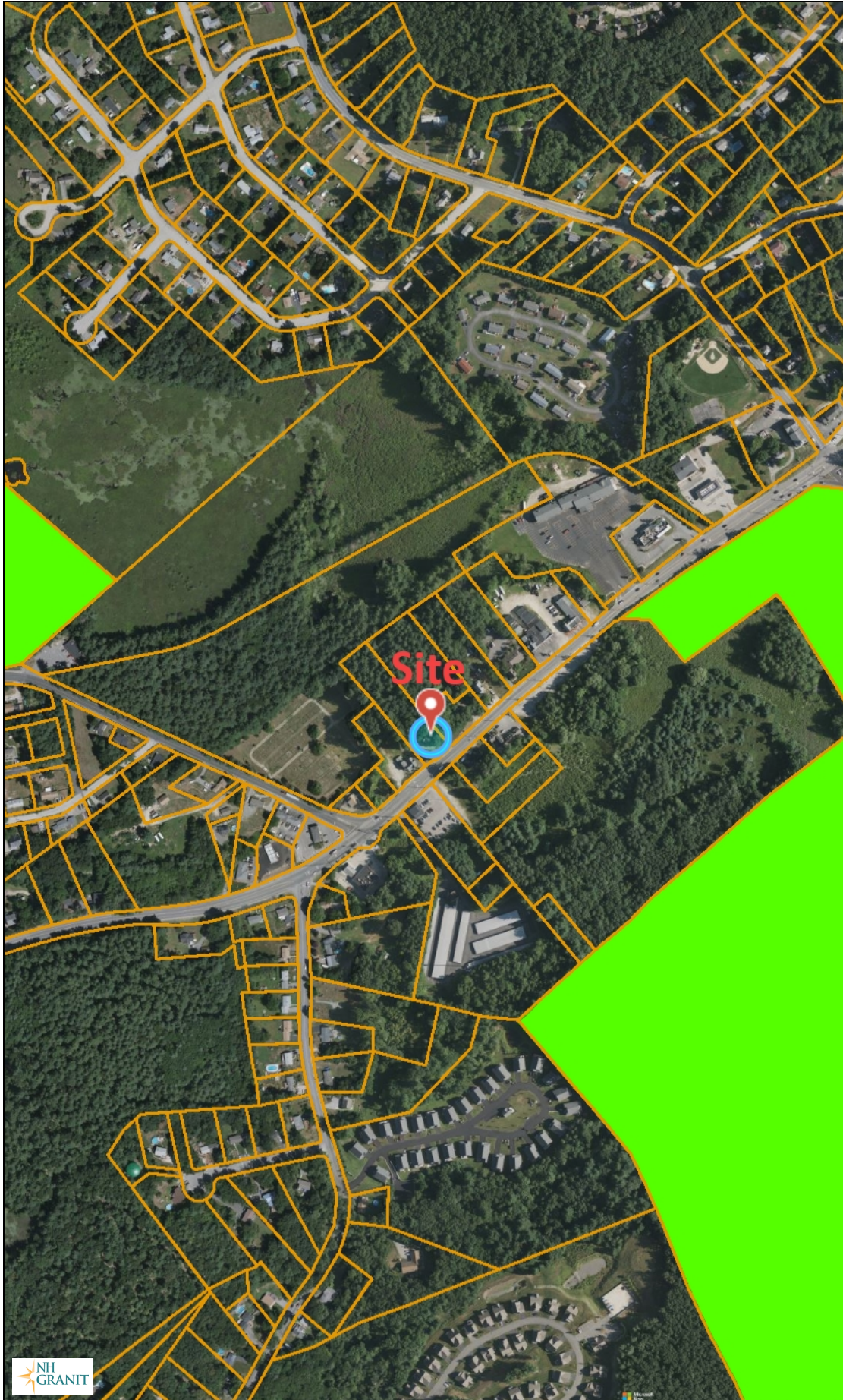




*Wildlife Habitat Assessment for Bluebird Self Storage,
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December 13, 2021*

Conservation Parcels

Conservation Lands



Legend

- Parcels
 - Parcel Polygons
 - Attributes for Additional Lines
- State
- County
- City/Town
- Conservation and Public Land

Map Scale

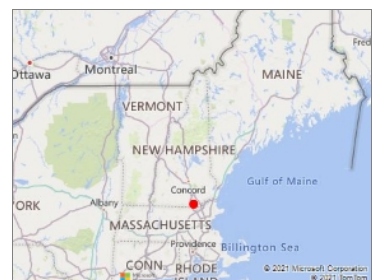
1: 6,494

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Map Generated: 12/13/2021



Notes





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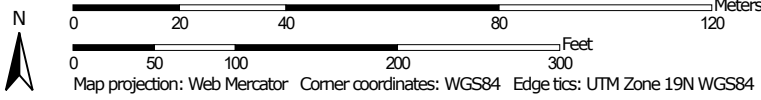
NRCS Soils

Soil Map—Hillsborough County, New Hampshire, Eastern Part



Soil Map may not be valid at this scale.

Map Scale: 1:1,420 if printed on A landscape (11" x 8.5") sheet.



MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

Water Features



Streams and Canals

Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

Background



Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Hillsborough County, New Hampshire, Eastern Part

Survey Area Data: Version 24, Aug 31, 2021

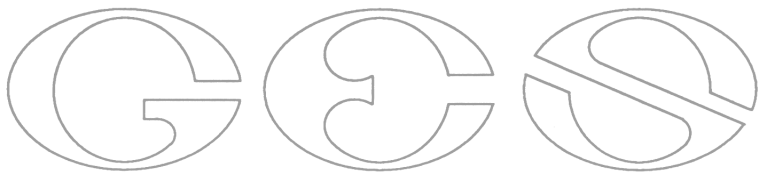
Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 19, 2020—Aug 6, 2020

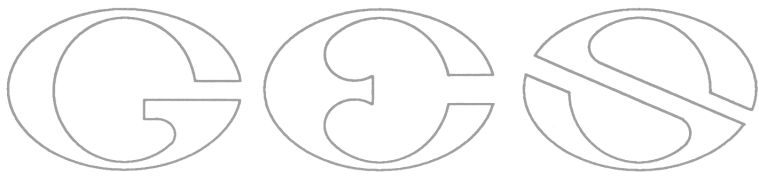
The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

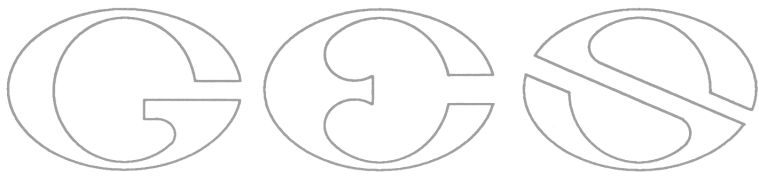
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
WdB	Windsor loamy sand, 3 to 8 percent slopes	1.6	47.8%
WdC	Windsor loamy sand, 8 to 15 percent slopes	1.7	52.2%
Totals for Area of Interest		3.3	100.0%



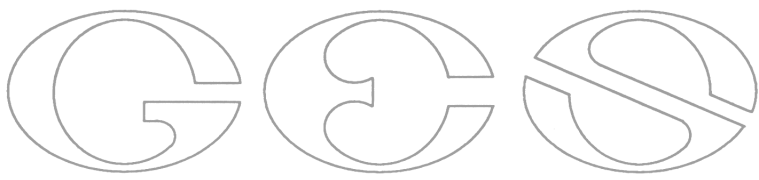
1. Looking west along Route 111.



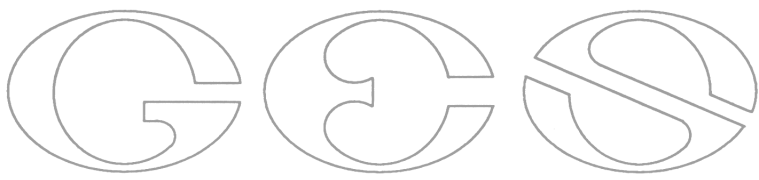
2. Looking up driveway.



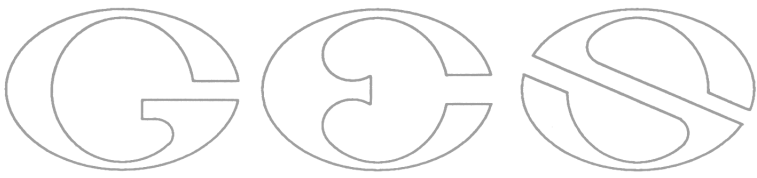
3. View of existing house.



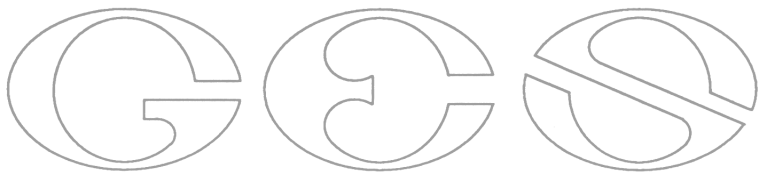
4. Upland area rear of homes.



5. View over wetland.



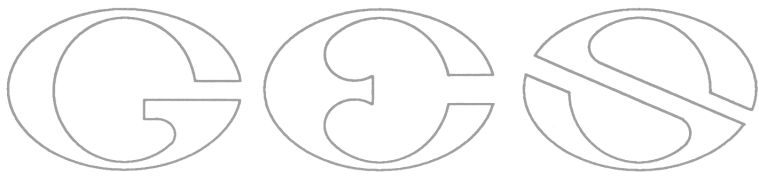
6. Cover type adjacent to rail trail.



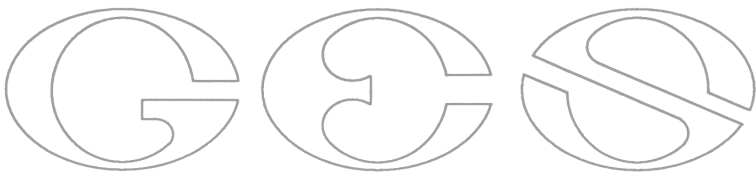
7. View along rail trail.



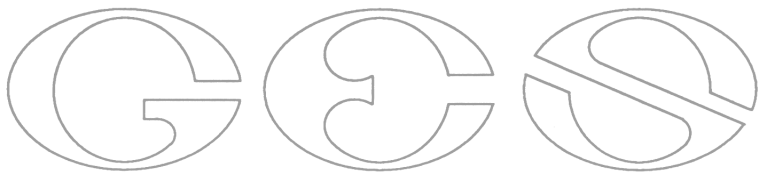
8. Open woods behind homes.



9. View of other home on the site.



10. View looking east down Rt 111.



11. Additional view of home from Rt 111.



PROPOSED PROJECT:

The proposed project is for a single building for Bluebird Self Storage, with associated driveways, parking areas and stormwater basins. **The project will be on Town sewer and water.**

Stormwater will discharge to the same two points of analysis identified in the pre-development scenario. The improvements, however, also provide stormwater treatment for the new impervious areas created for the proposed development.

Sub catchment areas, times of concentration and analysis points have been provided showing how the pre-development and post-development areas best match to have a proper comparison.

A Pocket Pond (Wet Pond) is being proposed at the rear (northern portion) of the property to provide detention and treatment. The system has been designed to maintain the required permanent pool while providing treatment and has been sized to withstand a 50-year storm event.

A series of three additional pond areas is proposed at the front (southern portion) of the property. A Bioretention Pond is proposed to capture a portion of runoff, providing detention and treatment. This stormwater pond will be underdrained. Run-off will be treated first by a sediment forebay, and then the stormwater will infiltrate through the filter media before finally reaching the underdrain and flowing to an outlet structure. The system has been sized to withstand a 50-year storm event.

Two Infiltration Ponds are proposed to capture the remaining stormwater flow. This stormwater pond will treat run-off first by sediment forebays and then recharged back into the ground. The ponds have been sized to provide the required groundwater recharge volume, as well as withstand a 50-year storm event.

PROJECT SITE AND SURROUNDING LAND USE DESCRIPTION:

The project site consists of approximately 3.7 acres of residential land. Currently there are two separate single-family homes on two of the 3 individual lots. These include homes, driveways, walkways, separate garages and sheds. Some areas of trash are present on the site. The area is fairly disturbed and has an open understory, as well as some areas of tangled vines in the front portion of the parcels. Busy, Central Street (NH route 111) borders the site to the south, an under-construction facility to the immediate west, residential homes and small business to the east and a rail trail to the north.

One small non vernal pool wetland is present in the northeast corner of the site and drains off site.

FIELD ANALYSIS

The site was visited on November 4, 2021, and potential for TE species and potential habitat, as well as overall site conditions were assessed and documented. The field work was conducted over 2 hours under sunny skies and 45 degrees (F). Field work was performed by slowly walking the parcel. Resources used: NH Wildlife Action Plan, Wildlife Action Plan – Community Maps (Habitat, Scoring, and SGCN by Town), NHRG Endangered and Threatened



Wildlife of NH, Rare Animals, and Exemplary Natural Communities in New Hampshire Towns, Taking Action for Wildlife, NH GRANIT GIS clearinghouse, USDA Web Soil Survey. NH F&G WAP Maps indicate no priority habitat.

Upland Cover Type

The uplands on site are dominated by Appalachian-Oak-Pine community. These areas are open in the understory, with some small areas of regenerating saplings or invasives in the front of the lots. Mature tree cover is that of white pine, red and white oak, poplar, and American beech. These trees are between 18-24" DBH. The understory herbaceous layer is composed of some ground ivy, partridge berry and tree club moss.

Wetland Cover type

One small wetland is located in the north east corner of the site. This wetland is not a vernal pool and drains off site to the northeast. Dominant vegetation is red maple and highbush blueberry, cinnamon and sensitive fern.

SOILS AND GEOLOGY

NRCS soil maps show this area as Windsor, loamy sands throughout, with no ledge or shallow water tables. These are typical soils found in alluvial soils on washout plains. The site is a hill where it slopes up from Central Street to a level area, then back down to the rear.

CONSERVATION LANDS

No conservation lands are present on or adjacent to the site or in the vicinity.

WILDLIFE TRAVEL CORRIDOR

No wildlife corridor is present through the site. Some travel may be happening along the rear of the parcels along the rail trail, but as this area is busy with vehicles and sopping areas no travel from one parcel to another exists for movement. Some open land is present across Central Street to the south, however under the current or proposed conditions would not change any travel corridor use.



THREATENED AND ENDANGERED WILDLIFE AND HABITAT EVALUATION:
NHB21-2966 identified the following in the vicinity of the project:

Blanding's Turtle E, SGCN

Found in wetland habitats with permanent shallow water and emergent vegetation such as marshes, swamps, bogs, and ponds. Use vernal pools extensively in spring and while traveling through the landscape. May use slow rivers and streams as mechanisms for dispersal between wetlands. Extensive use of terrestrial habitats for nesting and travel among wetlands. There is however upland area on site that may be used during travel. Impacts would be from loss of upland area for travel between areas. A large undeveloped tract of land exists to the north of the subject parcel. No impact is expected.

Eastern Box Turtle E, SGCN

Found in terrestrial areas such as dry and moist woodlands, old fields, pastures, power-line corridors, and edges of marshes, bogs, and shallow streams. During hot weather, may rest in water or burrow under logs and moist vegetation. Impacts to this species would be from the loss of habitat on site. With the large area of open land to the north, no impact is expected.

Spotted Turtle T, SGCN

Wetlands with shallow, permanent water bodies and emergent vegetation. Marshes, vernal pools, wet meadows, swamps, ponds, and slow-moving streams and rivers all provide suitable habitats for spotted turtles. Terrestrial habitat used extensively while searching for suitable nesting sites, traveling among wetland habitats, and periods of inactivity during high temperatures. No significant habitat is present on site. The large area of land including extensive wetlands to the north should limit any impacts to the species.

Additional species potentially on site based on the existing Appalachian-Oak Pine cover type:

Big Brown Bat SC, SGCN

Silver-haired bat SC, SGCN

Tri-colored bat SE, SGCN

Eastern red bat SC, SGCN

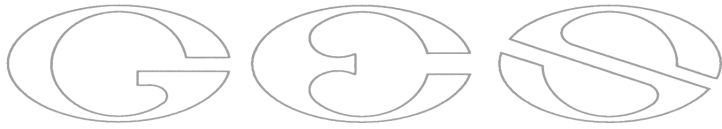
Hoary bat SGCN

Little brown myotis SE, SGCN

Any of the above species of bats could be expected to be present on site based on the mixed age and some mature tree species within the forest canopy. Timing any cutting to the time of year when these species are not on site will minimize impacts.

PROPOSED CONSERVATION MEASURES:

No specific conservation measures are proposed; however a 50-foot buffer is proposed to the wetlands.



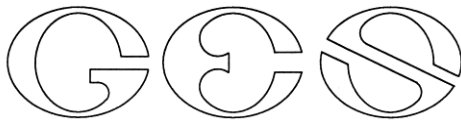
Erosion Control

Ideal methods for erosion control around the perimeter of the work areas is mulch berms. These are natural and often readily available for development sites. These are easy to install and do not need to be removed once the project is complete. The use of mulch berms does not act as a barrier to wildlife as they are able to easily walk over the berms with no issues. The use of welded plastic or 'biodegradable plastic' netting or thread in erosion control matting should be avoided. There are numerous documented cases of snakes and other wildlife being trapped and killed in erosion control matting with synthetic netting and thread. The use of erosion control berm, white Filtrexx Degradable Woven Silt Sock, or several 'wildlife friendly' options such as woven organic material (e.g. coco or jute matting such as North American Green SC150BN or equivalent) are readily available.



*Wildlife Habitat Assessment for Bluebird Self Storage,
196-202 Central Street,
Hudson, NH
December 13, 2021*

PART 4: Appendices
Resume of qualified wildlife biologist.



LUKE D. HURLEY
CSS, CWS, CESWII,
Vice President

Senior Wetland Scientist, Soil Scientist, Ecologist, and Project Field Coordinator

EXPERIENCE

2001–Present Vice President *Gove Environmental Services, Inc., Exeter, NH*
2000–2001 Environmental/Wetland Scientist, *Acton Survey & Engineering, Acton, MA*
1999–2000 Staff Naturalist, *Massachusetts Audubon Society, Lincoln, MA*
1998–1999 Environmental Inorganic Chemist, *Severn Trent Laboratories, Billerica,*

MA

EDUCATION

B.S. in Environmental Biology, University of Massachusetts, 1996. Concentration in Ornithology, Field Ecology & Biology, Entomology, Invertebrate Zoology, Botany, Wetland Ecology and Limnology.

CERTIFICATIONS

Certified Wetland Scientist, State of New Hampshire (*No 232*)
Certified Soil Scientist, State of New Hampshire (*No. 095*)
Certified Erosion, Sediment, and Storm Water Inspector

PROFESSIONAL SOCIETIES

Association of Massachusetts Wetland Scientists (AMWS)
International Erosion Control Association (IECA)
Massachusetts Association of Conservation Commissions (MACC)
New Hampshire Association of Natural Resource Scientists (NHANRS)

PROFESSIONAL EXPERIENCE SYNOPSIS

Luke Hurley has worked in the field of wetland science and ecology since 1999. As a Senior Wetland and Soil Scientist and Ecologist and Project Manager at GES, he is responsible for over-seeing and implementing all phases of large-scale commercial retail and residential development including preliminary land evaluations, permitting and alternatives analysis under all aspects of local, state and federal regulations. Mr. Hurley is also responsible for coordinating and performing field wetland and soil analyses, delineating wetlands, wetland functions and values and project environmental impact assessments, vernal pool certification, wetland mitigation and restoration design and monitoring, wildlife habitat assessments, threatened and endangered species assessments, inventories and permitting documents. He specializes in permitting under the NH DES Wetlands Bureau and NH DES Shoreland Protection Act, as well as the US Army Corps of Engineers and US Environmental Protection Agency, ME DEP Natural Resource Protection, and Massachusetts Wetlands Protection Act, through Notice's of Intent, as well as additional wetland related permitting through Notice of Resource area Delineations (NRAD) and Abbreviated NRAD (ANRAD), Determination of Applicability and represents clients at hearings with local conservation

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commissions and other state and federal agencies. Mr. Hurley has a Bachelor of Science Degree in Environmental Biology from the University of Massachusetts. He is certified as Wetland Scientist and Soil Scientist by the State of New Hampshire.

PROFESSIONAL SPECIALIZATION

New Hampshire Department of Environmental Services

- Dredge and Fill Applications
- Shoreland Protection Act
- Wildlife Habitat Assessments
- Threatened and Endangered Species Assessments

Massachusetts Wetlands Protection Act (MWPA) & Massachusetts Environmental Policy Act (MEPA) Permitting including:

- NOI (Notice of Intent)
- ANOI (Abbreviated Notice of Intent)
- NRAD (Notice of Resource Area Delineation)
- ANRAD (Abbreviated Notice of Resource Area Delineation)
- RDA (Request of the Determination of Applicability)
- Water Quality Certification
- Ecological Impact Assessments
- Critical Habitat Evaluation in Terrestrial Aquatic Ecosystems; Wildlife Ecology

Massachusetts Endangered Species Act (MESA) Regulations and Massachusetts Natural Heritage & Endangered Species Program including:

- Priority/Estimated Habitat Certification
- Vernal Pool Assessment and Certification
- Rare, Threatened & Endangered Species Inventories
- Natural Communities & Habitat Classification
- Qualified Biologist for Rare, Threatened and Endangered Species Collection

ME DEP Natural Resource Protection

- Ch 305 Permit by Rule
- Ch 310 Wetlands
- Ch 315 Assessing and Mitigating Impacts to Scenic and Aesthetic Uses
- Ch 335 Significant Wildlife Habitat

Wildlife Habitat Assessments and Threatened & Endangered Species Assessments

Threatened and endangered plant transplant projects for State: threatened sweet goldenrod and yellow star grass.

Extensive Wildlife Habitat Assessments, Environmental Impact Assessments and threatened and endangered species assessments, following protocols set forth by UNH Cooperative Extension and EPA EcoBox.

Typical protocols are based on: *Natural Resource Inventories: A Guide for New Hampshire Communities*. Durham, NH: University of New Hampshire Cooperative Extension. This method

is primarily focused on for overall habitat assessment with varying micro habitats to document the existing conditions, as well as directly observed and potential species using that habitat based on desk top analysis and field work.

- 1.0 Introduction; site location, proposed project, existing conditions, and surrounding area land use, i.e. residential, urban, agriculture
- 2.0 Water resources; wetlands, vernal pools, lakes/ponds, rivers/streams, aquifers, etc.
- 3.0 Wildlife and Habitats known and potential species, TE, NHB Habitats
- 4.0 NRCS and Site-Specific Soils
- 5.0 Slopes and Rock Outcrops
- 6.0 Scenic Resources
- 7.0 Historic and Cultural resources, i.e., stone walls, cellar holes, stone foundations, etc.
- 8.0 Conservation lands
- 9.0 Potential threats and conservation measures

Additional protocols are created for individual TE, species, i.e., spotted turtles, Blanding's turtles, wood turtles, hognose snake, black racer, NE Cottontail, woodcock, and vernal pool Assessments. These species-specific assessments focus on individual species and their habitats. These assessments focus on overall habitat, and whether the specific habitat is onsite to support the various needs, for nesting/denning, feeding, and breeding, rearing, and fledging of juveniles. Protocol creation is like the outline through the EPA EcoBox ERA including:

1. Planning and problem formulation
2. Identifying stressors, most often physical through development
3. Identifying receptors of endangered species or critical habitat
4. Identifying potential ecological effects
5. Proposing minimization and/or mitigation of potential impacts

SAMPLE PROJECTS:

2001- Exeter, NH-Wildlife habitat assessment on 62 acres for a proposed commercial retail development. Included documentation of onsite existing conditions of forest habitat cover, existing species occurring on site and potential wildlife species occurring on site. Assessment for TE species was also performed.

2004- Windham, NH-Wildlife habitat assessment on 126 acres for a proposed development. Included documentation of onsite existing conditions of forest habitat cover, existing species occurring on site and potential wildlife species occurring on site. Assessment for TE species was also performed. Specific assessment for Eastern box turtle and Dry- Appalachian Oak-Hickory Forest State of NH Exemplary Community.

2005-Nashua, NH-Wildlife habitat assessment on 50 acres for a proposed commercial retail development. Included documentation of onsite existing conditions of forest habitat cover, existing species occurring on site and potential wildlife species occurring on site. Assessment for TE species was also performed. Specific assessment was done for the bald eagle.

2005-Hooksett, NH-Woodcock habitat assessment and species assessment and management plan for protected land as part of 24.5 acre proposed commercial project.

2006-Pelham, NH-Wildlife habitat assessment on 305 acres as part of a proposed residential subdivision. Documentation was made of existing conditions on site of habitat type and vegetation cover, as well as wildlife species occurring on site and those potentially occurring on site based on habitat type. Specific focus was on the presence of the State listed Blanding's and spotted turtle for occurrence and habitat.

2011-Salem, NH-Wildlife habitat assessment on 70 acres for a proposed residential development. Assessment and assessment were for habitat and cover type, as well as existing and potential wildlife species on site based on the cover type and specific focus was on the swamp white oak flood plain forest and State listed spotted turtle.

2011-Hudson, NH, -Wildlife Habitat and upland community analysis on 290 acres for the presence of dry-Appalachian oak hickory forest and the potential for the State listed New England Cottontail.

2012-North Hampton, NH-Wildlife habitat assessment on 55 acres for a proposed residential development. Assessment and assessment were for habitat and cover type, as well as existing and potential wildlife species on site based on the cover type.

2013-Epping, NH-Wildlife habitat assessment on 198 acres for a proposed development. Focus was on the existing conditions of the site through assessment and documentation of the upland and wetland habitat, as well as existing and potential wildlife species on site.

2013-Newmarket, NH-Wildlife habitat assessment on 105 acres for a proposed development. Focus was on the existing conditions of the site through assessment and documentation of the upland and wetland habitat, and cover type, as well as existing and potential wildlife species on site. Specific attention was paid to the presence of Low-gradient silty-sandy riverbank system and specific species Assessment of State listed Blanding's and spotted turtles.

2014- Newmarket, NH-Wildlife habitat assessment on 25 acres for a proposed development. Focus was on the existing conditions of the site through assessment and documentation of the upland and wetland habitat, and cover type, as well as existing and potential species on site.

2016-Exeter-NH-Wildlife habitat assessment on 62 acres for a proposed development. Focus was on the existing conditions of the site through assessment and documentation of the upland and wetland habitat, and cover type, as well as existing and potential wildlife species on site.

2018-Phillips Exeter Academy, NH-Wildlife habitat assessment on 15 acres for assessment of existing community types and existing and potential wildlife use as part of a management plan and wildlife habitat improvement project.

2018-Alpine habitat survey in Rangeley Maine on a 10 acre portion of alpine land to assess for Bicknell thrush and habitat and specific habitats of Alpine Cliff, Bilberry - Mountain-heath Alpine Snowbank, Cotton-grass - Heath Alpine Bog, Crowberry - Bilberry Summit Bald, Diapensia Alpine Ridge, Dwarf Heath - Graminoid Alpine Ridge, Heath - Lichen Subalpine Slope Bog, Mountain Alder - Bush-honeysuckle Subalpine Meadow, Spruce - Fir - Birch Krummholz

2019- Portsmouth, NH-Wildlife habitat assessment on 66 acres for a proposed development. Focus was on the existing conditions of the site through assessment and documentation of the upland and wetland habitat, and cover type, as well as existing and potential species on site.

2020- York, Maine-Wildlife habitat assessment on 85 acres for a proposed development. Focus was on the existing conditions of the site through assessment and documentation of the upland and wetland habitat, and cover type, as well as existing and potential species on site. Specific assessment was for Blanding's and spotted turtles.

2020-Nottingham, NH-Wildlife habitat assessment 20 acres for a proposed development. Focus was on the existing conditions of the site through assessment and documentation of the upland and wetland habitat, and cover type, as well as existing and potential species on site. Specific assessment was for Blanding's and spotted turtles, Jefferson/Blue Spotted Salamander Complex, and black racer.

SUMMARY OF WILDLIFE ASSESSMENTS:

Mr. Hurley has performed wildlife habitat assessments and threatened and endangered plant Assessments on thousands of acres of land throughout the states of NH, MA, and ME. Additional individual assessments for state listed threatened and endangered plants and habits throughout MA and northern New England. All assessments habitat assessments, or individual plant or animal species were at the request of MA Natural Heritage Program, Vermont Nongame and Natural Heritage Program, New Hampshire Fish and Game and NH Natural Heritage Bureau and various local land use boards as part of the project review and conducted per the above two protocols.