

April 23, 2020

Goshen Lane LLC
148 Park St
North Reading, MA 01854

Re: Wetland Border Report
Goshen Lane, Stow

Dear Goshen Lane LLC:

During the month of March and April 2020 during no snow and un-frozen ground conditions the wetland resources were delineated on land located at the above referenced site (refer to enclosed locus maps). The wetland border was flagged using the criteria in the most recent edition of MA Wetland Protection Act (WPA) and Regulations 310 CMR 10.00 et al and the local Wetland Protection Bylaw. Hydric soil indicators, vegetation changes, hydrological indicators, and topography were all considered for delineation purposes.

The resources located on/near the site consist of one Bordering Vegetated Wetland (BVW) and one Isolated Vegetated Wetland (IVW). The BVW is dominant in red maple, yellow birch, buckthorn, brier, sweet pepperbush and highbush blueberry. The adjacent upland is dominant in oak, white pine, rose, cherry, witch hazel, Canada Mayflower and poison ivy. Department of Environmental Protection BVW field data forms were documented at wetland flag # A21 and C13 (see attached forms).

A mapped perennial stream is shown on the USGS map flowing through the "A/C" delineated wetland. This entire wetland is now flooded due to beaver activity. Water was observed flowing through the center of this ponded wetland however was not flagged since no pronounced Bank channel is present.

The IVW, which could be located off-site to the northwest, was flagged with series W1-14. This wetland is dominant in sedges, rushes, buttonbush and red maple. During the site inspection no vernal pool species were observed. This area may be large and deep enough to qualify as the state protected resource area Isolated Land Subject to Flooding (ILSF is an area able to hold ¼ acer foot of water at a minimum depth of 6-inches).

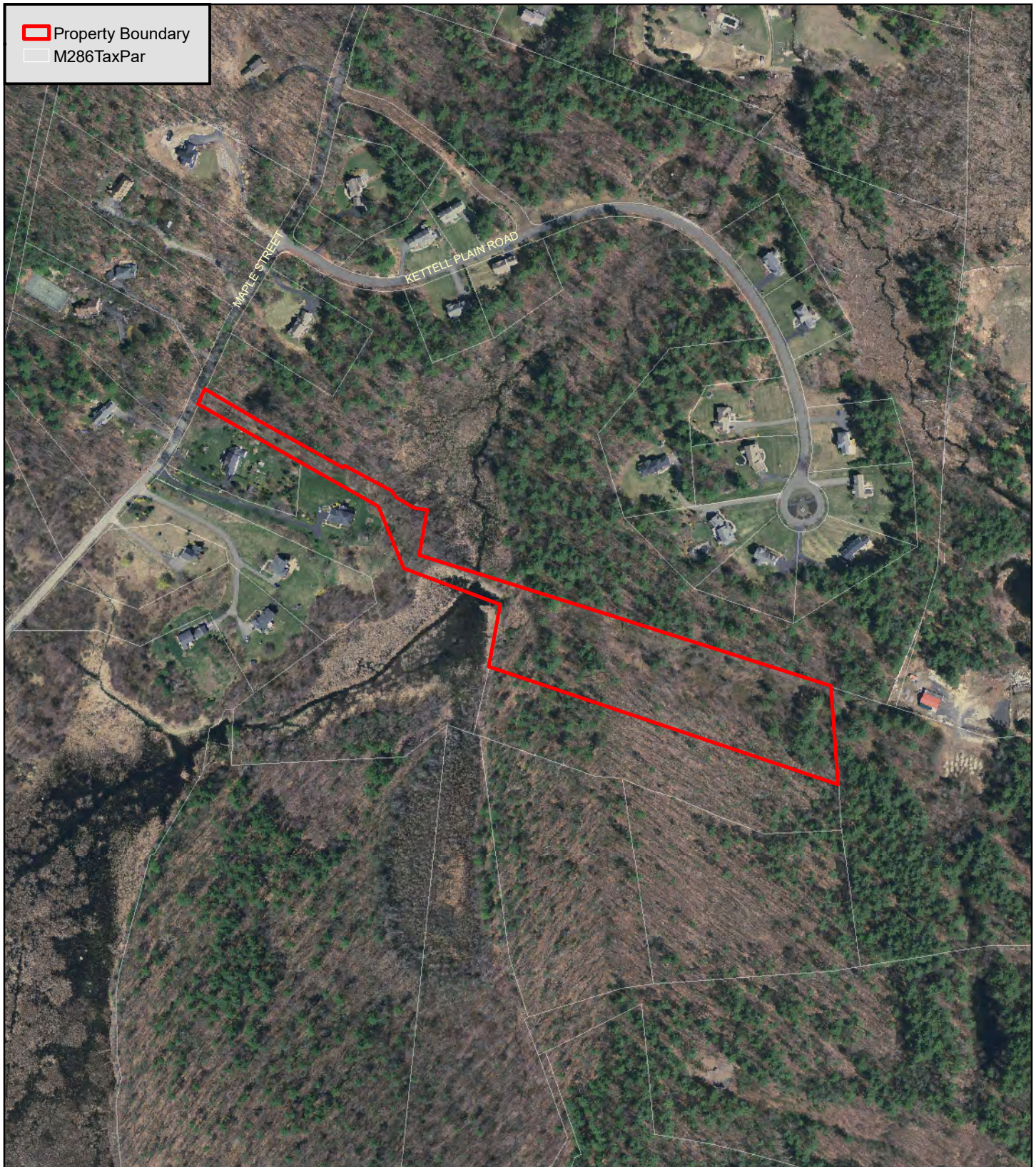
According to the Mass GIS data layers for NHESP, this site is not located within Estimated and/or Priority Habitat of Rare Wildlife and has no mapped certified or potential vernal pools. The site is not located in an ACEC or zone II or jurisdictional FEMA Flood Zone.

The Stow Wetland Protection Bylaw and the MA Wetlands Protection Act takes jurisdiction over BVW resources. In addition, these resource areas have a jurisdictional 100-foot Buffer Zone. Any work within the resource areas (BVW and the 200-ft Riverfront Area requires a Request for Determination (RDA) or Notice of Intent (NOI) be filed with the Conservation Commission.

Very truly yours,
GODDARD CONSULTING, LLC

A handwritten signature in black ink, appearing to read "Scott Goddard", written in a cursive style.

Scott Goddard,
Principal & PWS



Orthophoto View of Site

Goshen Lane - Stow, MA

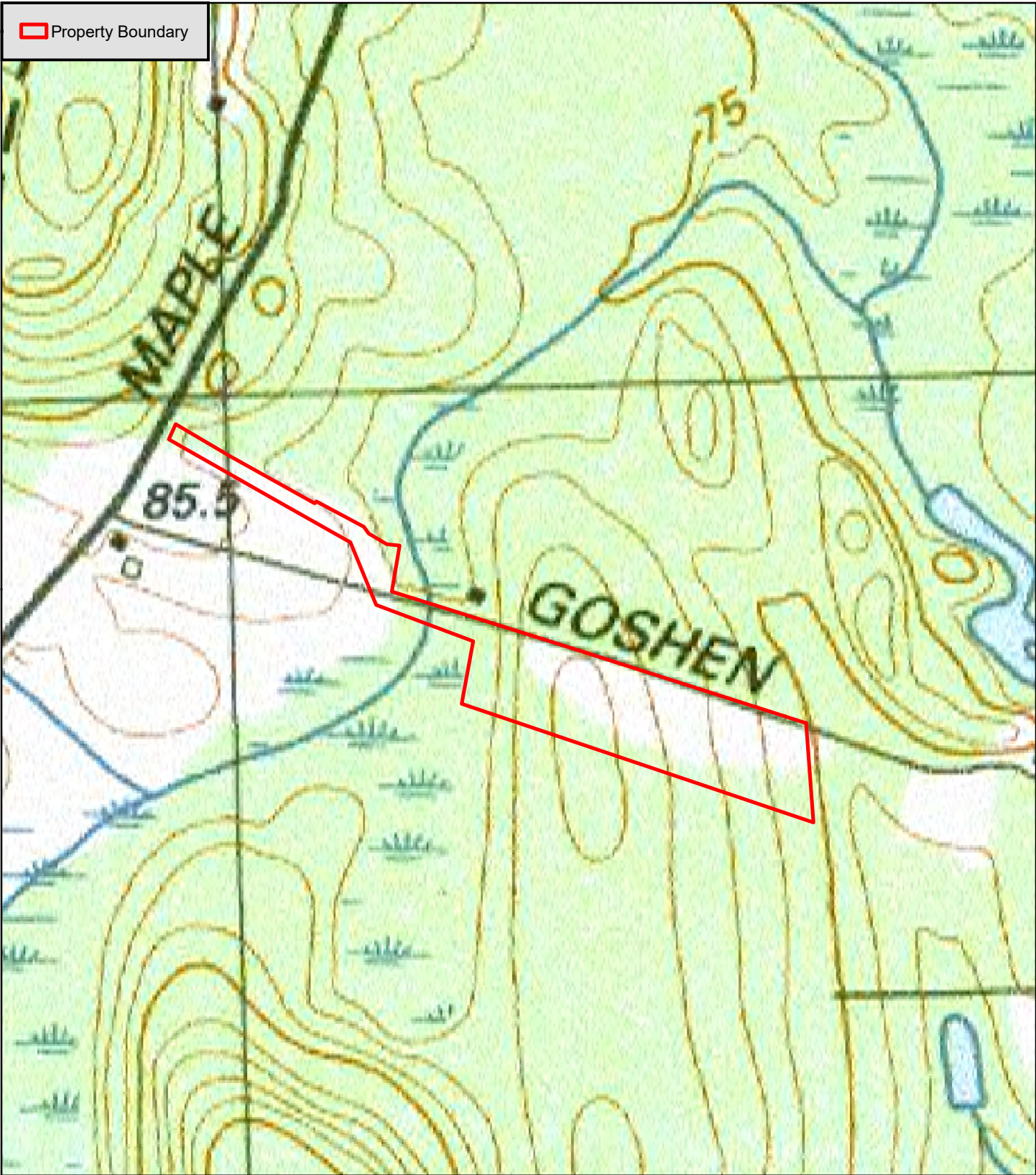


0 100 200 400
Feet

1 inch = 400 feet
Date: 5/21/2015

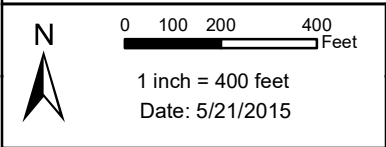
GIS Data Source: "Office of Geographic Information
(MassGIS), Commonwealth of Massachusetts Information
Technology Division"





USGS Site Locus

Goshen Lane - Stow, MA



GIS Data Source: "Office of Geographic Information
(MassGIS), Commonwealth of Massachusetts Information
Technology Division"



DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant:
Prepared by: Goddard Consulting LLC
Project location: Goshen Lane, Stow
DEP File #:

Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only
☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II
☐ Method other than dominance test used (attach additional information)

Section I. Vegetation		Observation Plot Number: A21	Transect Number: Upgradient	Date of Delineation: 3-Apr-20	
Sample Layer and Plant Species	Scientific name	% Cover	% Dominance	Dominant Plant (yes or no)	Wetland Indicator Category*
<u>Tree Layer</u>					
White pine	<i>Pinus strobus</i>	3%	3.8%	No	FACU
Red Oak	<i>Quercus rubra</i>	36%	45.6%	Yes	FACU
White ash	<i>Fraxinus americana</i>	20%	25.3%	Yes	FACU
Red maple	<i>Acer rubrum</i>	20%	25.3%	Yes	FAC*
<u>Sapling Layer</u>					
<u>Shrub Layer</u>					
Rambler rose	<i>Rosa multiflora</i>	63%	75.9%	Yes	FACU
Honeysuckle	<i>Lonicera sp.</i>	20%	24.1%	Yes	FACU
<u>Climbing Woody Vine</u>					
American bittersweet	<i>Celastrus scandens</i>	20%	100.0%	Yes	FACU
<u>Ground Cover</u>					
Princess-pine	<i>Dendrolycopodium obscurum</i>	3%	50.0%	Yes	FACU
Canada mayflower	<i>Maianthemum canadense</i>	3%	50.0%	Yes	FACU
Remarks: * An asterisk after common plant name indicates stunted growth; ** indicates extremely stunted growth					
Morphological Adaptations: 0		Description:			
* An asterisk after indicator status denotes wetlands plants: plants listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus Sphagnum; or plants listed as FAC, FACW, or OBL.					
Vegetation conclusion: Number of dominant wetland indicator plants: 1 Number of dominant non-wetland indicator plants: 7 Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants? no					

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Is there a published soil survey for this site? ☒ yes ☐ no

title/date: Soil Survey of Bristol County, Northern Part - 1978

map number: _____

soil type mapped: Hinkley fine sandy loam

hydric soil inclusions: _____

Are field observations consistent with soil survey? ☒ yes ☐ no

Remarks: _____

2. Soil Description

<u>Horizon</u>	<u>Depth (inches)</u>	<u>Matrix Color</u>	<u>Mottles Color or Texture</u>
A	0-6"	10YR2/2	
B	6-20	10YR5/4	

Remarks: _____

3. Other: _____

Conclusion: Is soil hydric? ☐ yes ☒ no

Other Indicators of Hydrology: (check all that apply and describe)

☐ Site inundated: _____

☐ Depth to free water in observation hole: _____

☐ Depth to soil saturation in observation hole: _____

☐ Water marks: _____

☐ Drift Lines: _____

☐ Sediment deposits: _____

☐ Drainage patterns in BVW: _____

☐ Oxidized rhizospheres: _____

☐ Water-stained leaves: _____

☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other): _____

☐ Other: _____

Vegetation and Hydrology Conclusion for Upgradient of A21		
	<u>yes</u>	<u>no</u>
Number of wetland indicator plants >= number of non-wetland plants		X
Wetland hydrology present:		
hydric soils present		X
other indicators of hydrology present		X
Sample location is in a BVW		X

Submit this form with the Request for Determination of Applicability or Notice of Intent

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: _____ Prepared by: Goddard Consulting LLC Project location: Goshen Lane, Stow DEP File #: _____

Check all that apply:

<input type="checkbox"/>	Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only
<input checked="" type="checkbox"/>	Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II
<input type="checkbox"/>	Method other than dominance test used (attach additional information)

Section I. Vegetation		Observation Plot Number: A21	Transect Number: Downgradient	Date of Delineation: 3-Apr-20	
Sample Layer and Plant Species	Scientific name	% Cover	% Dominance	Dominant Plant (yes or no)	Wetland Indicator Category*
<u>Tree Layer</u>					
Red Maple	<i>Acer rubrum</i>	36%	78.3%	Yes	FAC*
American elm	<i>Ulmus americana</i>	10%	21.7%	Yes	FACW*
<u>Sapling Layer</u>					
Red Maple	<i>Acer rubrum</i>	10%	100.0%	Yes	FAC*
<u>Shrub Layer</u>					
highbush blueberry	<i>Vaccinium corymbosum</i>	3%	23.1%	Yes	FACW*
Spicebush	<i>Lindera benzoin</i>	10%	76.9%	Yes	FACW*
<u>Climbing Woody Vine</u>					
Horsebrier	<i>Smilax rotundifolia</i>	3%	23.1%	Yes	FAC*
Eastern poison ivy	<i>Toxicodendron radicans</i>	10%	76.9%	Yes	FAC*
<u>Ground Cover</u>					
Skunk cabbage	<i>Symplocarpus foetidus</i>	10%	33.3%	Yes	OBL*
Sensitive fern	<i>Onoclea sensibilis</i>	20%	66.7%	Yes	FACW*
Remarks: * An asterisk after common plant name indicates stunted growth; ** indicates extremely stunted growth Morphological Adaptations: 0 Description: _____ * An asterisk after indicator status denotes wetlands plants: plants listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus Sphagnum; or plants listed as FAC, FACW, or OBL.					
Vegetation conclusion: Number of dominant wetland indicator plants: 9 Number of dominant non-wetland indicator plants: 0 Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants? yes					

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Is there a published soil survey for this site? ☒ yes ☐ no

title/date: Soil Survey of Bristol County, Northern Part - 1978

map number: _____

soil type mapped: Freetown muck

hydric soil inclusions: _____

Are field observations consistent with soil survey? ☒ yes ☐ no

Remarks: _____

2. Soil Description

<u>Horizon</u>	<u>Depth (inches)</u>	<u>Matrix Color</u>	<u>Mottles Color or Texture</u>
O	0-10"	10YR2/1	
C	10-19	10YR6/1	

Remarks: _____

3. Other: _____

Conclusion: Is soil hydric? ☒ yes ☐ no

Other Indicators of Hydrology: (check all that apply and describe)

☐ Site inundated: _____

☐ Depth to free water in observation hole: _____

☐ Depth to soil saturation in observation hole: _____

☐ Water marks: _____

☐ Drift Lines: _____

☐ Sediment deposits: _____

☒ Drainage patterns in BVW: _____

☒ Oxidized rhizospheres: _____

☒ Water-stained leaves: _____

☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other): _____

☐ Other: _____

Vegetation and Hydrology Conclusion for Downgradient of A21		
	<u>yes</u>	<u>no</u>
Number of wetland indicator plants >= number of non-wetland plants	X	
Wetland hydrology present:		
hydric soils present	X	
other indicators of hydrology present	X	
Sample location is in a BVW	X	

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DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: _____
Prepared by: Goddard Consulting LLC
Project location: Goshen Lane, Stow
DEP File #: _____

Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only
☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II
☐ Method other than dominance test used (attach additional information)

Section I. Vegetation		Observation Plot Number: C13	Transect Number: Upgradient		Date of Delineation: 4-Apr-20
Sample Layer and Plant Species	Scientific name	% Cover	% Dominance	Dominant Plant (yes or no)	Wetland Indicator Category*
<u>Tree Layer</u>					
White pine	<i>Pinus strobus</i>	3%	6.1%	No	FACU
Red Oak	<i>Quercus rubra</i>	36%	73.5%	Yes	FACU
Red maple	<i>Acer rubrum</i>	10%	20.4%	Yes	FAC*
<u>Sapling Layer</u>					
White pine	<i>Pinus strobus</i>	20%	100.0%	Yes	FACU
<u>Shrub Layer</u>					
White pine	<i>Pinus strobus</i>	20%	100.0%	Yes	FACU
<u>Climbing Woody Vine</u>					
American bittersweet	<i>Celastrus scandens</i>	20%	100.0%	Yes	FACU
<u>Ground Cover</u>					
Princess-pine	<i>Dendrolycopodium obscurum</i>	3%	13.0%	No	FACU
Cinnamon fern	<i>Osmundastrum cinnamomeum</i>	20%	87.0%	Yes	FACW*
Remarks: * An asterisk after common plant name indicates stunted growth; ** indicates extremely stunted growth					
Morphological Adaptations: 0		Description: _____			
* An asterisk after indicator status denotes wetlands plants: plants listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus Sphagnum; or plants listed as FAC, FACW, or OBL.					
Vegetation conclusion:					
Number of dominant wetland indicator plants: 2			Number of dominant non-wetland indicator plants: 4		
Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants? no					

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Is there a published soil survey for this site? ☒ yes ☐ no
title/date: Soil Survey of Bristol County, Northern Part - 1978
map number: _____
soil type mapped: Paxton
hydric soil inclusions: _____

Are field observations consistent with soil survey? ☒ yes ☐ no
Remarks: _____

2. Soil Description

<u>Horizon</u>	<u>Depth (inches)</u>	<u>Matrix Color</u>	<u>Mottles Color or Texture</u>
A	0-8"	10YR2/2	
B	8-20	10YR5/4	

Remarks: _____

3. Other: _____

Conclusion: Is soil hydric? ☐ yes ☒ no

Other Indicators of Hydrology: (check all that apply and describe)

☐ Site inundated: _____

☐ Depth to free water in observation hole: _____

☐ Depth to soil saturation in observation hole: _____

☐ Water marks: _____

☐ Drift Lines: _____

☐ Sediment deposits: _____

☐ Drainage patterns in BVW: _____

☐ Oxidized rhizospheres: _____

☐ Water-stained leaves: _____

☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):

☐ Other: _____

Vegetation and Hydrology Conclusion for Upgradient of C13		
	<u>yes</u>	<u>no</u>
Number of wetland indicator plants >= number of non-wetland plants		X
Wetland hydrology present:		
hydric soils present		X
other indicators of hydrology present		X
Sample location is in a BVW		X

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DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: _____ Prepared by: Goddard Consulting LLC Project location: Goshen Lane, Stow DEP File #: _____

Check all that apply:

<input type="checkbox"/>	Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only
<input checked="" type="checkbox"/>	Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II
<input type="checkbox"/>	Method other than dominance test used (attach additional information)

Section I. Vegetation		Observation Plot Number: C13	Transect Number: Downgradient	Date of Delineation: 4-Apr-20	
Sample Layer and Plant Species	Scientific name	% Cover	% Dominance	Dominant Plant (yes or no)	Wetland Indicator Category*
<u>Tree Layer</u>					
Red Maple	<i>Acer rubrum</i>	36%	100.0%	Yes	FAC*
<u>Sapling Layer</u>					
Red Maple	<i>Acer rubrum</i>	10%	100.0%	Yes	FAC*
<u>Shrub Layer</u>					
highbush blueberry	<i>Vaccinium corymbosum</i>	10%	33.3%	Yes	FACW*
Northern arrowwood	<i>Viburnum recognitum</i>	20%	66.7%	Yes	FAC*
<u>Climbing Woody Vine</u>					
Horsebrier	<i>Smilax rotundifolia</i>	3%	23.1%	Yes	FAC*
Eastern poison ivy	<i>Toxicodendron radicans</i>	10%	76.9%	Yes	FAC*
<u>Ground Cover</u>					
Cinnamon fern	<i>Osmundastrum cinnamomeum</i>	36%	78.3%	Yes	FACW*
Sensitive fern	<i>Onoclea sensibilis</i>	10%	21.7%	Yes	FACW*
Remarks: * An asterisk after common plant name indicates stunted growth; ** indicates extremely stunted growth					
Morphological Adaptations: 0		Description:			
* An asterisk after indicator status denotes wetlands plants: plants listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus Sphagnum; or plants listed as FAC, FACW, or OBL.					
Vegetation conclusion:					
Number of dominant wetland indicator plants: 8			Number of dominant non-wetland indicator plants: 0		
Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants? yes					

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Is there a published soil survey for this site? ☒ yes ☐ no

title/date: Soil Survey of Bristol County, Northern Part - 1978

map number: _____

soil type mapped: Freetown muck

hydric soil inclusions: _____

Are field observations consistent with soil survey? ☒ yes ☐ no

Remarks: _____

2. Soil Description

<u>Horizon</u>	<u>Depth (inches)</u>	<u>Matrix Color</u>	<u>Mottles Color or Texture</u>
O	0-8"	10YR2/1	
C	8-20	10YR6/1	

Remarks: _____

3. Other: _____

Conclusion: Is soil hydric? ☒ yes ☐ no

Other Indicators of Hydrology: (check all that apply and describe)

☐ Site inundated: _____

☐ Depth to free water in observation hole: _____

☐ Depth to soil saturation in observation hole: _____

☐ Water marks: _____

☐ Drift Lines: _____

☐ Sediment deposits: _____

☒ Drainage patterns in BVW: _____

☒ Oxidized rhizospheres: _____

☒ Water-stained leaves: _____

☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other): _____

☐ Other: _____

Vegetation and Hydrology Conclusion for Downgradient of C13		
	<u>yes</u>	<u>no</u>
Number of wetland indicator plants >= number of non-wetland plants	X	
Wetland hydrology present:		
hydric soils present	X	
other indicators of hydrology present	X	
Sample location is in a BVW	X	

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**Resource Area Delineation Plan by
Stamski and McNary, Inc.,**