6 Green Tree Drive
South Burlington, VT 05403
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TECHNICAL MEMORANDUM

Date: December 16, 2021

To: Louis Hodgetts, P.E., Project File

From: Aimee N. Rutledge, PWS, CPESC, CPSWQ

Subject: IC Enosburg Natural Resources/Habitat Review

Project No.: 427611

This memorandum summarizes the natural resources review performed for a proposed telecommunications tower on the subject property located on Bordoville Road in Enosburg, VT.

Desktop Review

Prior to the field review, aerial photographs and various available mapping resources including Vermont Agency of Natural Resources (VTANR) Natural Resource Atlas and VT Center for Geographic Information (VCGI) Interactive Map viewer were reviewed. Available data reviewed included, but was not limited to the following: VSWI Wetlands Advisory Layer; VSWI Wetlands Class Layer; VT Significant Wetlands Inventory; Habitat Blocks and Wildlife Corridors; Deer Wintering Areas; Invasive Plant Atlas; Rare, Threatened, Endangered Species and Significant Communities; United States Fish & Wildlife (USFWS) National Wetlands Inventory; Federal Emergency Management Agency (FEMA) National Flood Hazard data; Natural Resources Conservation Service (NRCS) soils; and contours (1ft).

Field Review

The natural resources field review was conducted on November 4 and 8, 2021. The field review study area consisted of a 100-foot buffer from the approximate project area as shown on the attached Wetland Exhibit. In addition to the study area, a windshield survey for natural resources along both sides of Bordoville Road to approximately 300 feet west of the intersection with Route 108 was conducted.

The wetland delineation was completed in accordance with the 1987 US Army Corps of Engineers Wetland Delineation Manual and the 2012 Regional Supplement to the Corps Wetland Delineation Manual: Northcentral and Northeast Region.

Wetland boundaries and the ordinary high water mark (OHWM) of surface waters were demarcated in the field using pink flagging, tied to vegetation and labeled with a unique identifier and sequentially numbered. The wetland and OHWM flags were located with a Trimble Geo7X GPS unit with sub-meter accuracy. The delineation was conducted outside of the growing season and therefore a field review by

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VTDEC was not conducted. Three wetland areas and one stream were identified. Photographs of the delineated wetlands and stream are attached.

Site Description

The study area is located on the west side of Bordoville Road, approximately 1,400 feet west of the intersection with Route 108 in the town of Enosburg, Franklin County, VT. The study area is mostly disturbed as a result of forestry practices and syrup production. The study area slopes from the south to the north toward Bordoville Road. A cleared field is located on the southern portion of the study area and a small cabin is situated on the western portion of the study area.

Wetlands

Review of available mapping resources did not indicate the presence of state or federally mapped wetlands (see attached Wetlands, Waterways, and Soils Map). However, three wetland areas connected hydrologically by drainage channels were identified during the field review. The wetlands are labeled as Wetlands A through C, as shown on the attached Wetland Exhibit. In addition, the United State Army Corps of Engineers (USACE) Determination Data Forms are attached.

Wetland A

Wetland A is a palustrine forested (PFO) wetland, flagged as A1 through A12. The wetland is located in the northern portion of the study area, adjacent to a perennial stream. Wetland A is situated between the stream and a steep slope which receives drainage from Wetlands B and C to the south. The wetland is sparsely vegetated and is dominated by eastern hemlock (Tsuga canadensis) and sensitive fern (Onoclea sensibilis). The wetland is small and its principal values and functions include stormwater runoff and flood storage. Wetland A is Class II due to its connectivity with the stream.

Wetland B

Wetland B is a palustrine emergent (PEM)/scrub-shrub (PSS) slope wetland located in the western portion of the study area. It receives stormwater runoff from a drainage channel located along the forest access road to the south. The wetland is dominated by sensitive fern, tall goldenrod (Solidago altissima), and reed canary grass (Phalaris arundinacea). The wetland connects to Wetland A via a poorly defined channel on the northern portion of the wetland. Wetland B is presumed to be Class II due to its connectivity with Wetland A.

Wetland C

Wetland C is also a palustrine emergent (PEM) wetland. It is essentially a continuation of Wetland B. Wetland B and C are connected via an approximate 12-inch CMP under an overgrown driveway that accesses the small cabin mentioned above. The wetland is also dominated by sensitive fern, tall

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goldenrod, and reed canary grass. Wetland C also connects to Wetland A via a poorly defined channel. Wetland B is presumed to be Class II due to its connectivity with Wetland A.

The Wetland B/C complex does not exhibit significant functions and values. The wetland's principal values and functions include wildlife habitat. The overall width of the Wetland B/C complex is narrow, influenced by microtopography, and continues to the west for a short distance maintaining the narrow slope wetland characteristic.

Work in any wetland would require an Army Corps of Engineers 404 Wetlands Permit. Work in any Class II wetland or in the 50ft jurisdictional buffer of any Class II wetland would require a VT Wetlands Permit. Wetland classifications have not been verified by the district VT DEC Ecologist.

Waterways

A perennial stream flows along the northern portion of the study area in an easterly direction under Bordoville Road and ultimately to the Branch River located northeast approximately 1,500 feet (as the crow flies). The OHWM on the southern side of the stream was flagged as ST-100 through ST-112. The stream averages approximately 10 feet in width throughout the study area. The VTANR Natural Resource Atlas indicates that the stream has a drainage area of approximately 0.5 to 2 square miles and therefore has a 50-foot riparian setback.

The stream and the study area are not located within a VT regulated River Corridor.

Rare, Threatened and Endangered Species and Exemplary Natural Communities

The VTANR Natural Resources Atlas mapper shows no known elements of concern (rare, threatened, or endangered species or significant natural communities) in the immediate project area, and none were observed during the course of field work (see attached Habitat Map). As mentioned above, the project area is mostly disturbed due to forestry practices, sugaring, and field mowing.

Non-Native Invasive Species

The proposed tower site itself is located in an area previously disturbed by forestry practices, sugaring, and field mowing practices. The site includes non-native species such as, English plantain (Plantago lanceolate), hairy vetch (Vicia villosa), reed canary grass, and bedstraw (Galium mollugo). Though these non-native plants were identified, no infestations of noxious invasive species were observed in the immediate project area.

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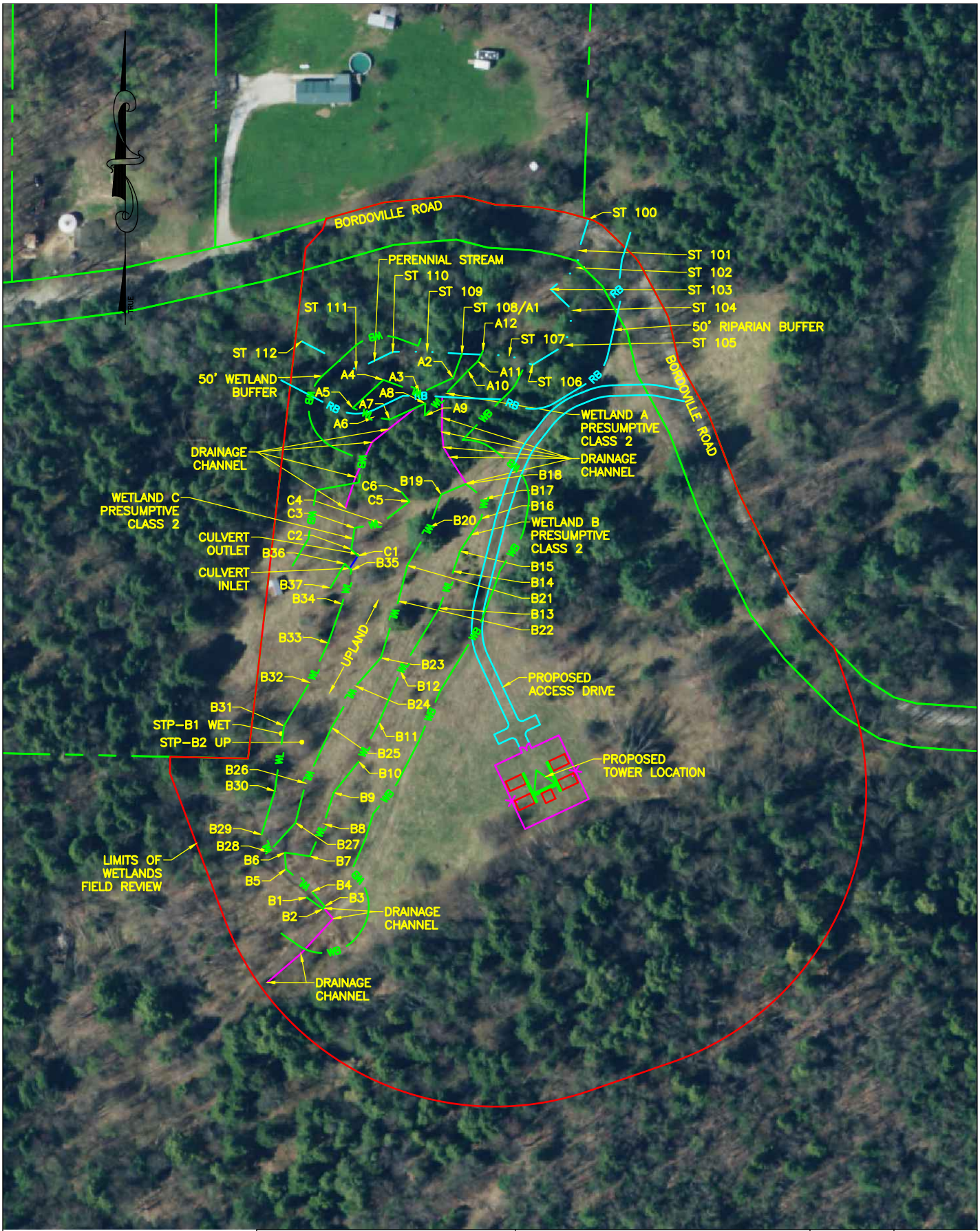
Other Habitat Features

A majority of the proposed tower site is located within a moderate priority habitat block as shown on the attached Habitat Map. The VTANR Atlas did not indicate the presence of deer wintering areas on or in the vicinity of the study area.

The open field and surrounding forested area provides suitable habitat for deer year round. The tower site was surveyed for potential bat roosting trees and none were found. However, the forested area surrounding the site has suitable habitat consisting of white pine (Pinus strobus), eastern hemlock, and grey birch (Betula populifolia). No other notable habitat features were observed during the site visit.

Attachments:
Wetlands Exhibit
Photolog
USACE Determination Data Forms
VTANR Atlas Wetlands, Waterways, and Soils Map
VTANR Atlas Habitat Map



GRAPHIC SCALE
0 75 150
1 inch = 150 ft.

DuBois & King inc.
engineering planning management development

INDUSTRIAL COMMUNICATIONS
ENOSBURG, VERMONT

WETLAND EXHIBIT

DRAWN BY: JWP	DATE: DEC. 2021
CHECKED BY:	PROJ. NO.: 427611L
PROJ. ENG.: ANR	DRAW. NO.:

Photograph 1: Wetland A, view looking west.

Photograph 2: Wetland A, view looking east.

Photograph 3: View of drainage channel near wetland flag B3, view looking northeast.

Photograph 4: View of Wetland B, view looking north.

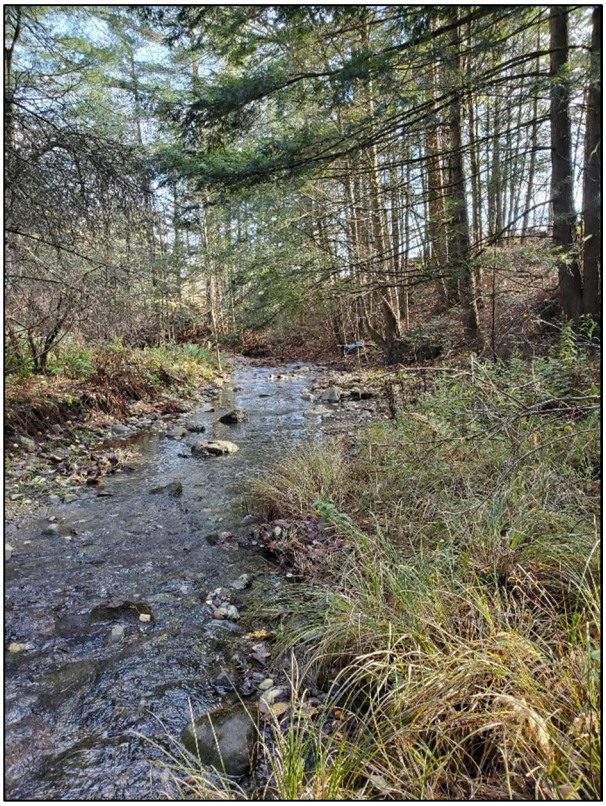
Photograph 5: View of culvert between Wetlands B and C with Wetland C in the background, view looking north.

Photograph 6: View of culvert between Wetlands B and C with Wetland B on left side of photograph and cabin in the background, view looking west.

Photograph 7: View of northern edge of Wetland B on right side of photograph, view looking southeast.

Photograph 8: View of southern portion of drainage channel between Wetland B and Wetland A, view looking north.

Photograph 9: View of southern portion of drainage channel between Wetland C and Wetland A, view looking north.



Photograph 10: View of perennial stream with steep bank in the background, view looking northeast.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: IC Enosburg Tower City/County: Enosburg Sampling Date: 11/4/21

Applicant/Owner: Industrial Communications State: VT Sampling Point: A1

Investigator(s): Aimee Rutledge, PWS, Dubois & King Section, Township, Range:

Landform (hillside, terrace, etc.): floodplain Local relief (concave, convex, none): concave Slope %: 0

Subregion (LRR or MLRA): LRR R Lat: 44.84216842175529 Long: -72.81122163656237 Datum: State Plane

Soil Map Unit Name: Westbury stony fine sandy loam, 8 to 15 percent slopes - WrC NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No ____	Depth (inches): ____
Water Table Present?	Yes ____	No ____	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 10

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: A1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Tsuga canadensis*	30	Yes	FACU
2. *Fraxinus pennsylvanica*	5	No	FACW
3.			
4.			
5.			
6.			
7.			
	35	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Fraxinus pennsylvanica*	5	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	5	=Total Cover	
Herb Stratum (Plot size: 10)			
1. *Onoclea sensibilis*	25	Yes	FACW
2. *Athyrium angustum*	10	Yes	FAC
3. *Polystichum acrostichoides*	5	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	40	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	35	x 2 =	70
FAC species	10	x 3 =	30
FACU species	35	x 4 =	140
UPL species	0	x 5 =	0
Column Totals:	80 (A)		240 (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)
Wetland area sparsely vegetated.

SOIL

Sampling Point A1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	2.5YR 2.5/1	100					Loamy/Clayey	
8-20	2.5YR 3/1	80	10YR 5/4	20	C	M	Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: IC Enosburg Tower City/County: Enosburg Sampling Date: 11/4/21

Applicant/Owner: Industrial Communications State: VT Sampling Point: A2

Investigator(s): Aimee Rutledge, PWS, Dubois & King Section, Township, Range:

Landform (hillside, terrace, etc.): hillside Local relief (concave, convex, none): none Slope %: 6

Subregion (LRR or MLRA): LRR R Lat: 44.84214952236098 Long: -72.81135842922212 Datum: State Plane

Soil Map Unit Name: Westbury stony fine sandy loam, 8 to 15 percent slopes - WrC NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Sample point B2 is also representative of the upland area in the vicinity of Wetland C which is hydrologically connected to Wetland B.

VEGETATION – Use scientific names of plants. Sampling Point: A2

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Tsuga canadensis*	30	Yes	FACU
2. *Pinus strobus*	10	Yes	FACU
3. *Betula alleghaniensis*	10	Yes	FAC
4.			
5.			
6.			
7.			
	50	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Fagus grandifolia*	10	Yes	FACU
2. *Pinus strobus*	10	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	20	=Total Cover	
Herb Stratum (Plot size: 10)			
1. *Polystichum acrostichoides*	10	Yes	FACU
2. *Onoclea sensibilis*	10	Yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	20	=Total Cover	
Woody Vine Stratum (Plot size:)			
1. *Rubus idaeus*	5	Yes	FACU
2.			
3.			
4.			
	5	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	10	x 3 =	30
FACU species	75	x 4 =	300
UPL species	0	x 5 =	0
Column Totals:	95 (A)		350 (B)

Prevalence Index = B/A = 3.68

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point A2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 2/2	100					Loamy/Clayey	
								encountered large stones

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: stone

Depth (inches): 10

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: IC Enosburg Tower City/County: Enosburg Sampling Date: 11/4/21

Applicant/Owner: Industrial Communications State: VT Sampling Point: B1

Investigator(s): Aimee Rutledge, PWS, Dubois & King Section, Township, Range:

Landform (hillside, terrace, etc.): hillside Local relief (concave, convex, none): none Slope %: 6

Subregion (LRR or MLRA): LRR R Lat: 44.84116020767429 Long: -72.81195656183245 Datum: State Plane

Soil Map Unit Name: Peru fine sandy loam, 6-15% slopes (PeC) NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- X Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes X	No ____	Depth (inches): 4
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Sample point B2 is also representative of Wetland C which is hydrologically connected to Wetland B.

VEGETATION – Use scientific names of plants. Sampling Point: B1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Tsuga canadensis*	10	Yes	FACU
2. *Populus tremuloides*	10	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	20	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Betula populifolia*	10	Yes	FAC
2. *Populus tremuloides*	10	Yes	FACU
3. *Spiraea alba*	10	Yes	FACW
4.			
5.			
6.			
7.			
	30	=Total Cover	
Herb Stratum (Plot size: 10)			
1. *Onoclea sensibilis*	50	Yes	FACW
2. *Solidago rugosa*	15	No	FAC
3. *Phalaris arundinacea*	10	No	FACW
4. *Juncus effusus*	10	No	OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	85	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10	x 1 =	10
FACW species	70	x 2 =	140
FAC species	25	x 3 =	75
FACU species	30	x 4 =	120
UPL species	0	x 5 =	0
Column Totals:	135 (A)		345 (B)

Prevalence Index = B/A = 2.56

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ___ 2 - Dominance Test is >50%
- X 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point B1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	2.5YR 2.5/1	80	7.5YR 3/3	20	C	M	Loamy/Clayey	Prominent redox concentrations
12-16								encountered large stones

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: stone/bedrock

Depth (inches): 16

Hydric Soil Present? **Yes** X **No** ___

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: IC Enosburg Tower City/County: Enosburg Sampling Date: 11/4/21

Applicant/Owner: Industrial Communications State: VT Sampling Point: B2

Investigator(s): Aimee Rutledge, PWS, Dubois & King Section, Township, Range:

Landform (hillside, terrace, etc.): hillside Local relief (concave, convex, none): none Slope %: 6

Subregion (LRR or MLRA): LRR R Lat: 44.8411184856315 Long: -72.81186804893495 Datum: State Plane

Soil Map Unit Name: Peru fine sandy loam, 6-15% slopes (PeC) NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Sample point B2 is also representative of the upland area in the vicinity of Wetland C which is hydrologically connected to Wetland B.

VEGETATION – Use scientific names of plants. Sampling Point: B2

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Betula populifolia*	10	Yes	FAC
2. *Pinus strobus*	10	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	20	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Betula populifolia*	10	Yes	FAC
2. *Pinus strobus*	10	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	20	=Total Cover	
Herb Stratum (Plot size: 10)			
1. *Plantago lanceolata*	15	Yes	FACU
2. *Solidago rugosa*	15	Yes	FAC
3. *Vicia villosa*	10	Yes	UPL
4. *Ambrosia artemisiifolia*	10	Yes	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	50	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 37.5% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	35	x 3 =	105
FACU species	45	x 4 =	180
UPL species	10	x 5 =	50
Column Totals:	90 (A)		335 (B)

Prevalence Index = B/A = 3.72

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point B2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 2/2	100					Loamy/Clayey	
12-16								encountered large stones

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: stone/bedrock

Depth (inches): 16

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

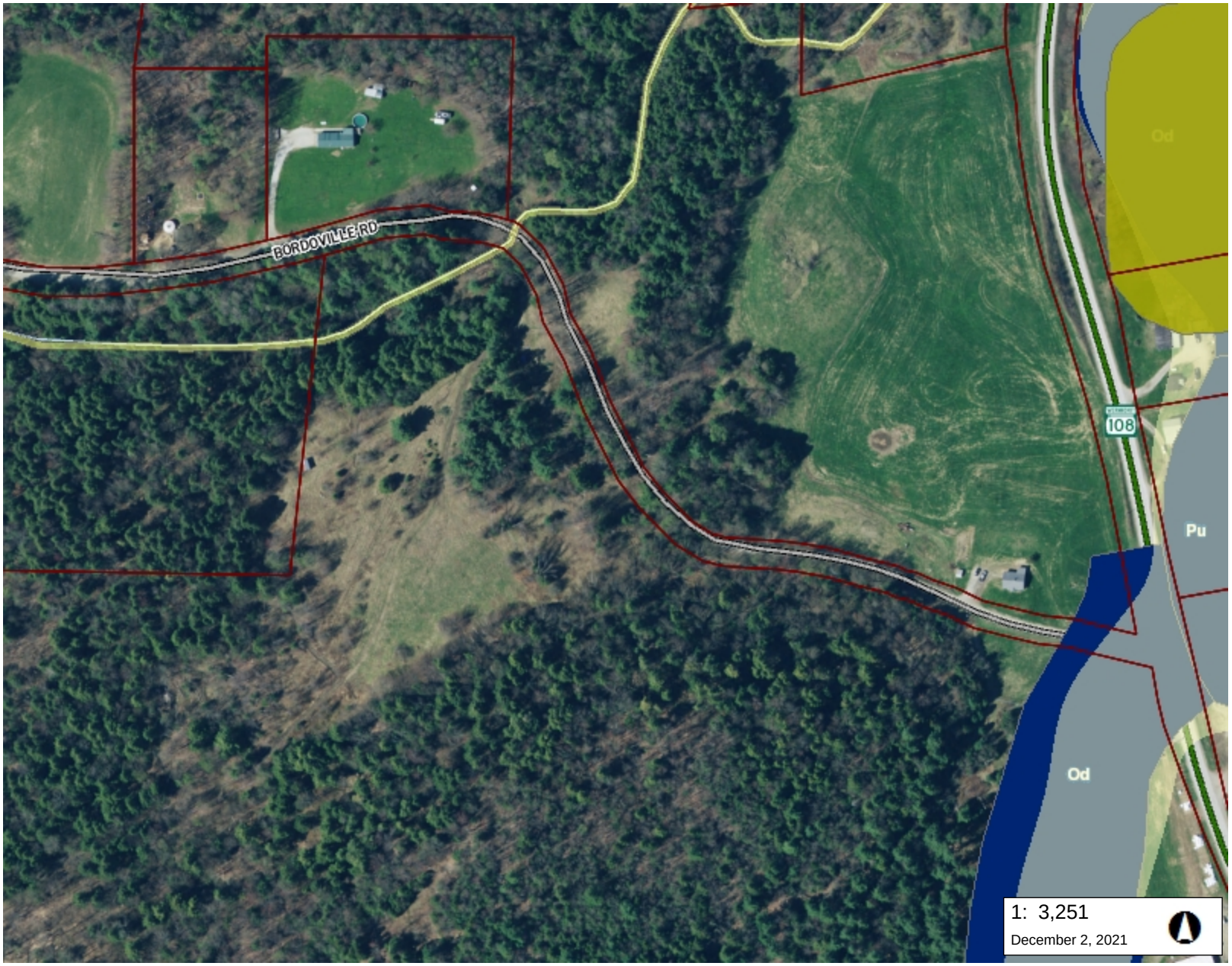
This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

VERMONT

Enosburg - Wetlands, Waterways & Soils Map

Vermont Agency of Natural Resources

vermont.gov



LEGEND

- Wetland - VSWI
  - Class 1 Wetland
  - Class 2 Wetland
  - Buffer
- River Corridors (Aug 27, 2019)
  - .5 - 2 sqmi.
  - .25-.5 sqmi.
- Soils - Hydric
- Soils - Floodable Soils
  - Frequent
  - Occasional
  - Rare
  - Very Rare
- Parcels (standardized)
- Roads
  - Interstate
  - US Highway; 1
  - State Highway
  - Town Highway (Class 1)
  - Town Highway (Class 2,3)
  - Town Highway (Class 4)
  - State Forest Trail
  - National Forest Trail
  - Legal Trail
  - Private Road/Driveway
  - Proposed Roads
- Stream/River

NOTES

Map created using ANR's Natural Resources Atlas

165.0 0 82.00 165.0 Meters

WGS_1984_Web_Mercator_Auxiliary_Sphere 1" = 271 Ft. 1cm = 33 Meters

THIS MAP IS NOT TO BE USED FOR NAVIGATION

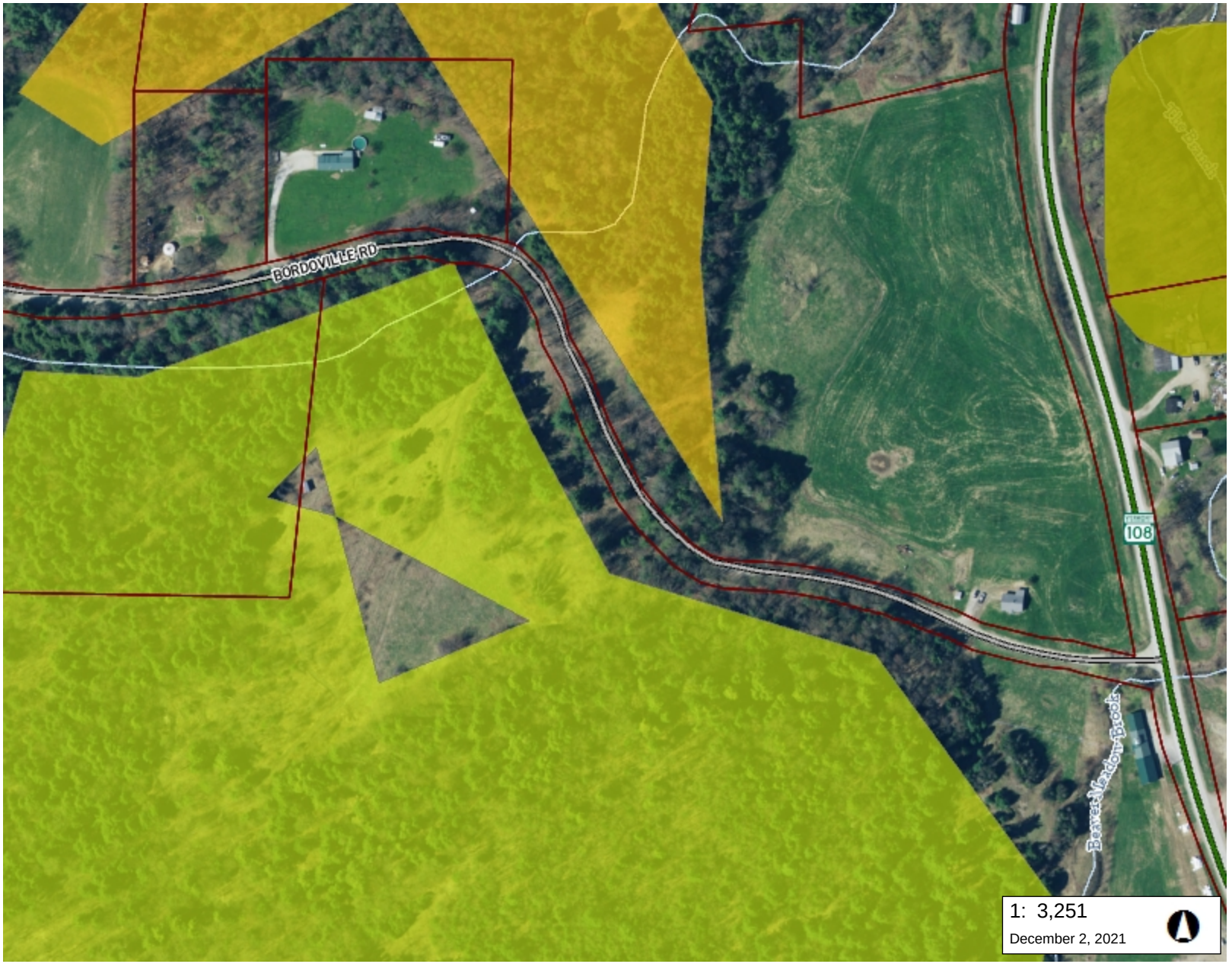
DISCLAIMER: This map is for general reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable. ANR and the State of Vermont make no representations of any kind, including but not limited to, the warranties of merchantability, or fitness for a particular use, nor are any such warranties to be implied with respect to the data on this map.

VERMONT

Enosburg - Habitat Map

Vermont Agency of Natural Resources

vermont.gov



LEGEND

Invasive Plant Atlas
- Acer platanoides
- Berberis thunbergii
- Euonymus alatus

Trail Corridor

Rare Threatened Endangered
- Threatened or Endangered
- Rare

Significant Natural Community

Uncommon Species and Other
- Animal
- Plant
- Natural Community

Deer Wintering Areas

Habitat Blocks
- 10 - Higher Priority
- 9
- 8
- 7
- 6
- 5
- 4
- 3
- 2
- 1 - Lower Priority
- 0

Wetland - VSWI

NOTES

Map created using ANR's Natural Resources Atlas

165.0 0 82.00 165.0 Meters

WGS_1984_Web_Mercator_Auxiliary_Sphere 1" = 271 Ft. 1cm = 33 Meters

THIS MAP IS NOT TO BE USED FOR NAVIGATION