Attachment B:

Cross Sections



EXISTING R.O.W. CONFIGURATION DOUBLE CIRCUIT WOOD H-FRAME DESIGN LOOKING FROM STOCKHOUSE ROAD SUBSTATION TO CARD SUBSTATION IN THE TOWN OF LEBANON, CT STR. #7752



PROPOSED R.O.W. CONFIGURATION DOUBLE CIRCUIT STEEL H-FRAME DESIGN LOOKING FROM STOCKHOUSE ROAD SUBSTATION TO CARD SUBSTATION IN THE TOWN OF LEBANON, CT STR. #7752

Note: Line Arresters to be Added as required





EXISTING R.O.W. CONFIGURATION SINGLE CIRCUIT WOOD H-FRAME DESIGN LOOKING FROM STOCKHOUSE ROAD SUBSTATION TO CARD SUBSTATION IN THE TOWN OF LEBANON, CT STRS. #7806A & #7806B



PROPOSED R.O.W. CONFIGURATION SINGLE CIRCUIT STEEL H-FRAME DESIGN LOOKING FROM STOCKHOUSE ROAD SUBSTATION TO CARD SUBSTATION IN THE TOWN OF LEBANON, CT STRS. #7806A & #7806B

ES VER: 05/201







EXISTING R.O.W. CONFIGURATION SINGLE CIRCUIT WOOD & STEEL POLE DESIGN LOOKING FROM WAWECUS JUNCTION TO STOCKHOUSE ROAD SUBSTATION IN THE TOWN OF BOZRAH, CT STRS. #7711A & #7711B



PROPOSED R.O.W. CONFIGURATION SINGLE CIRCUIT STEEL POLE DESIGN LOOKING FROM WAWECUS JUNCTION TO STOCKHOUSE ROAD SUBSTATION IN THE TOWN OF BOZRAH, CT STRS. #7711A & #7711B

NOTE:

LINE ARRESTERS TO BE ADDED AS REQUIRED

							0-0
WLE	Card Sub	ostatio 115	n to Wawe -kV Cross Lebanon,	cus Ju Sectio Conn	nction U on (Typic lecticut	pgrade cal)	Project
W	GJG	CHIO	JFAP	APP .	JFAP	189	
DØR.	03/22/23	DOR	03/22/23	902	03/22/23	68	
H-COLE	N.T.S.	SE	D		k & PHES	•	
A-GDITE	N.T.S.	×5.		8£ 080			
re fro	L INNER	8005371	7 / 80053827	086 110.			XS-3

XS-3

Attachment C:

List of Structure Replacements

	Structure #	Exist	ing	Proposed			
Line #		Structure Type	Above Ground Height (ft)	Structure Type	Above Ground Height (ft)	Structure Height Change Above Ground (ft)	
		Card	Substation to Sto	ockhouse Road Substation			
1080	7806B	Single-Circuit Wood H-Frame	52	Single-Circuit Weathering Steel H-Frame	52	0	
	7815		56.5		65.5	9	
	7812		56.5		61	4.5	
	7811		70		74.5	4.5	
	7793		56.5		65.5	9	
	7792		56.5		/9 FC F	22.5	
	//88 רפרר		56.5		56.5	0	
	7762		70		70	4.5	
	7758		56.5		65.5	9	
	7754		61		65.5	4.5	
	7753		56.5		61	4.5	
	7752		56.5		65.5	9	
	7750		56.5		65.5	9	
	7745		56.5		65.5	9	
	7744		56.5	Double-Circuit	65.5	9	
1080/1490	7743	Double-Circuit	56.5	Weathering Steel H-Frame	65.5	9	
1000, 1150	7742	Wood H-Frame	56.5		65.5	9	
	7741		56.5		65.5	9	
	7740		56.5		70	13.5	
	7739		56.5		70	13.5	
	7725		56.5		61 74 F	4.5	
	7734		56.5		56.5	10	
	7732		56.5		56.5	0	
	7731		56.5		61	4.5	
	7729		56.5		56.5	0	
	7726		56.5		65.5	9	
	7725		56.5		61	4.5	
	7722		56.5		70	13.5	
	7719		74.5		97	22.5	
	7718		56.5		61	4.5	
	7713		56.5		65.5	9	
	-	Stockn	iouse Road Subst	ation to Wawecus Junction	F		
1070	7711A	Single-Circuit Wood Three-Pole	61	Single-Circuit Weathering Steel Three-Pole	56.5	-4.5	
1070	7701A	Single-Circuit Wood H-Frame	56.5	Single-Circuit Weathering Steel H-Frame	56.5	0	
	7710	Double-Circuit Wood H-Frame	56.5	Double-Circuit Weathering Steel H-Frame	70	13.5	
1080/1070	7706	Double-Circuit Wood H-Frame	61	Double-Circuit Weathering Steel H-Frame	65.5	4.5	
1080	7693.5	Single-Circuit Wood H-Frame	56.5	Single-Circuit Weathering Steel H-Frame	52	-4.5	

Attachment D:

Wetlands and Watercourses Report



Biodiversity Studies • Wetland Delineation & Assessment • Habitat Management • GIS Mapping • Permitting • Forestry

Wetlands and Watercourses Delineation Report Card Substation to Wawecus Junction Upgrade Project

Prepared For: Eversource Energy 56 Prospect Street Hartford, CT 06103 Attn: Mark Pappalardo

Project Location: Lebanon, Franklin, Bozrah, and Norwich, Connecticut

Date(s) of Investigations: November and December, 2022

Wetland/Watercourse Delineation Methodology:

Connecticut Inland Wetlands and Watercourses
Connecticut Tidal Wetlands
Massachusetts Wetlands
U.S. Army Corps of Engineers

The wetlands inspection was performed by:

Davison Environmental, LLC

Matthew Davison Professional Soil Scientist Professional Wetland Scientist

ATTACHMENTS

- 1. Wetland Characteristics Summary Forms
- 2. Representative Wetland Photographs

Introduction

Davison Environmental Connecticut Registered Soil Scientists and a Professional Wetland Scientists Eric Davison and Matthew Davison delineated the Connecticut and Federal jurisdictional wetlands throughout November and December of 2022. The limits of the delineation area consisted of the Transmission Line right-of-way (ROW), referred to hereafter as the "Project area". The Project area is in the Towns of Lebanon, Franklin, Bozrah and Norwich, Connecticut. The Project originates at the Card Street Substation in Lebanon and runs southeast to Wawecus Junction in Norwich.

From a biogeographical perspective, the Project area is located within the southern limits of the *Southern New England Coastal Plains and Hills* Ecoregion, just north of the transition from the *Long Island Sound Coastal Lowlands* Ecoregion (source: U.S. Environmental Protection Agency). The *Southern New England Coastal Plains and Hills* ecoregion covers much of Connecticut, Rhode Island, and southeastern Massachusetts, and is diverse in its characteristics and habitats. The landforms of the ecoregion are irregular plains with low hills and some open high hills with relief of about 100 to 400 feet. Elevations range up to about 1000 feet, with the highest elevations found in western Connecticut. Bedrock types are mostly granites, schist, and gneiss, although some soft marble occurs in western Connecticut. Surface materials are mostly glacial till, with some stratified deposits in valleys. Soil patterns are complex and heterogeneous where the numerous, small, till-covered bedrock hills rise above the valleys and general level of outwash. Coarse-loamy and sandy, mesic Inceptisols and some Entisols are typical.

Regulatory Requirements

The regulations governing the delineation of wetlands and watercourses at the site include Connecticut inland wetlands and Federal wetlands regulated by the U.S. Army Corp of Engineers (USACE). A summary of the regulatory language for each jurisdictional body are described below:

The Connecticut jurisdictional wetlands and watercourses delineation was conducted by a soil scientist according to the requirements of the Connecticut Inland Wetlands and Watercourses Act (P.A. 155). Inland wetlands include soil types designated as poorly drained, very poorly drained, alluvial, and floodplain by the National Cooperative Soils Survey as may be amended from time to time, of the National Resources Conservation Service (NRCS). Watercourses means rivers, streams, brooks, waterways, lakes, ponds, marshes, swamps, bogs and all other bodies of water,

natural or artificial, vernal or intermittent. Intermittent watercourses shall be delineated by a defined permanent channel and bank and the occurrence of two or more of the following characteristics: (A) Evidence of scour or deposits of recent alluvium or detritus, (B) the presence of standing or flowing water for a duration longer than a particular storm incident, and (C) the presence of hydrophytic vegetation.

Federal wetlands were delineated in accordance with the <u>Regional Supplement to the Corps of</u> <u>Engineers Wetland Delineation Manual: Northcentral and Northeast Region</u> (Version 2.0, January 2012). According to this method, three parameters must be satisfied for an area to be mapped as a wetland. These are wetland soils, hydrophytic vegetation, and wetland hydrology.

Methods

Soils, vegetation and hydrology were examined per the aforementioned regulatory requirements. Along each wetland boundary, a hand auger was used to investigate the soil profiles to a minimum depth of 20 inches. This was necessary to determine the U.S. Department of Agriculture drainage class (per State requirements) as well as the presence of hydric soil indicators per the USACE requirements (e.g., reduced matrix, redoximorphic features). Soil profiles were reviewed approximately every 15-30 feet along the boundary, typically digging one hole on either side of the defining boundary to confirm the wetland limit. This information was coupled with observed hydrology (or the presence of hydrologic indicators) as well as the presence of hydrophytic vegetation to determine the final location of the placement of each wetland flag. As is typically the case with most Connecticut wetlands, the boundary of State and Federal jurisdictional wetlands was identical. Wetland boundaries were field demarcated with pink plastic flagging tape labeled "Wetland Delineation". The wetland flag locations were field located using a Trimble R1 GNSS Receiver capable of sub-meter accuracy. Those locations are plotted on the Map Set prepared by All Points Technology Corporation dated January 26, 2023.

Results and Wetland Descriptions

In total, 42 wetlands and 28 watercourses were delineated in the Project area as summarized in Table 1 and illustrated on the Project mapping. Table 1 indicates the Map Sheet location, as well as the wetland vegetation type and hydrology observed.

Aerial Map Sheet No.	Wetland No. ¹	Dominant NWI Class ²	Other NWI Classes	Dominant Water Regime	Associated Watercourse ³	Associated Potential Vernal Pool ⁴		
1	1	PSS	PEM	Permanently Flooded				
1	2	PSS	PEM	Seasonally Saturated- seepage				
1 and 2	3	PSS	PEM	Permanently Flooded		VP1		
2	4	PSS	PEM	Seasonally Saturated- seepage		VP2		
3	5	PSS	PEM	Seasonally Flooded	S1 (Intermittent)			
3	6	PEM	PEM	Seasonally Saturated- seepage				
4	7	PSS	PEM	Seasonally Flooded	S2 (Susquetonscut Brook)	VP3		
5	8	PSS	PEM	Permanently Flooded		VP4, VP5 and VP6		
6	9	PSS	PEM	Seasonally Saturated- seepage				
6	10	PSS	PFO	Permanently Flooded	S3 (Susquetonscut Brook)			
7	11	PSS	PEM	Permanently Flooded	S4 (Intermittent)			
7	12	PSS	PEM	Seasonally Saturated- seepage				
8	13	PEM	PSS	Seasonally Saturated- seepage				

Table 1: Delineated Wetlands and Watercourses within the

¹Wetland No. refers to the number generated during the 2022 field surveys. This Wetland No. is keyed to those depicted on the 200

Aerial Map Sheet No.	Wetland No. ¹	Dominant NWI Class ²	Other NWI Classes	Dominant Water Regime	Associated Watercourse ³	Associated Potential Vernal Pool ⁴
8	14	PEM	PSS	Permanently Flooded		
8	15	PEM	PSS	Seasonally Flooded	S5 (Intermittent)	
8	16	PEM		Seasonally Saturated- seepage		
8	17	PSS	PEM	Seasonally Saturated- seepage		
8	18	PSS	PEM	Seasonally Flooded		
9 and 10	19	PSS	PEM	Seasonally Flooded	S6 and S7 (Intermittent)	
10	20	PFO	PEM	Permanently Flooded		
12	21	PSS	PEM	Permanently Flooded	S8 (Susquetonscut Brook) and S9 (Intermittent)	
15	22	PSS	PEM	Seasonally Saturated- seepage		
15	23	PSS	PEM	Seasonally Saturated- seepage		
16	24	PSS	PEM	Seasonally Flooded	S10 (Intermittent)	
16	25	PSS	PEM	Seasonally Flooded	S11 (Intermittent)	
16				Seasonally Flooded	S12 (Intermittent)	
16				Seasonally Flooded	S13 (intermittent)	
16				Seasonally Flooded	S14 (Intermittent)	
16	26	PSS	PEM	Seasonally Saturated- seepage		

Aerial Map Sheet No.	Wetland No. ¹	Dominant NWI Class ²	Other NWI Classes	Dominant Water Regime	Associated Watercourse ³	Associated Potential Vernal Pool ⁴
17				Seasonally Flooded	S15 (Intermittent)	
17	27	PSS	PEM	Permanently Flooded	S16 and S17 (Intermittent)	
18	28	PSS	PEM	Seasonally Saturated- seepage		
18	29	PSS	PEM	Seasonally Flooded	S18 (Intermittent)	
18	30	PSS	PEM	Seasonally flooded	S19 (Intermittent)	
18	31	PSS	PEM	Seasonally Saturated- seepage		
18 and 19				Seasonally Flooded	S20 (Intermittent)	
19	32	PSS	PEM	Seasonally Flooded		
19	33	PSS	PEM	Seasonally Saturated- seepage		
19	34	PSS	PEM	Seasonally Saturated- seepage		
20	35	PSS	PEM	Permanently Flooded	S21 (Intermittent)	
20	36	PSS	PEM	Seasonally Flooded		
21	37	PSS	PEM	Seasonally Flooded	S22 (Driscoll Brook)	
21	38	PSS	PEM	Permanently Flooded		
22	39	PSS	PEM	Permanently Flooded	S23 (Yantic River)	
22				Intermittently Flooded	S24 (Intermittent)	
23				Intermittently Flooded	S25 (intermittent)	

Aerial Map Sheet No.	Wetland No. ¹	Dominant NWI Class ²	Other NWI Classes	Dominant Water Regime	Associated Watercourse ³	Associated Potential Vernal Pool ⁴
23	40	PSS	PEM	Seasonally Flooded	S26 (Bentley Brook)	
24	41	PSS	PEM	Seasonally Flooded		
24	42	PSS	PEM	Seasonally Flooded	S27 and S28 (Intermittent)	

²Wetlands classified according to Cowardin et al 1979; PEM = Palustrine Emergent Wetland; PFO = Palustrine Forested Wetland; PSS = Palustrine Scrub-Shrub Wetland; POW = Palustrine Open Water.

³Associated Watercourse refers to the identification number assigned during the 2021 field surveys to identify watercourses.

⁴ Vernal pools were identified in spring of 2022 by Davison Environmental

Wetlands consist predominantly of *groundwater slope wetlands* and *groundwater depression wetlands* situated in glacial till. The predominate wetland hydrology observed was *seasonally saturated*. Wetlands with a *seasonally saturated* hydrology have a substrate that is saturated for extended periods during the growing season, but standing water is rarely present. Wetlands with vernal pools have a *seasonally flooded* hydrology. Wetlands with a *seasonally flooded* hydrology are flooded for extended periods during the growing the growing season, but usually no surface water by the end of the growing season. Floodplain wetlands (i.e., alluvial soils) are present along the shores of Susquetonscut Brook and the Yantic River, and are subject to seasonal flooding.

The dominant vegetative cover type is *palustrine scrub-shrub* (PSS), due to the fact that the ROW is maintained to exclude trees in favor of low woody shrubs and herbaceous vegetation. Most wetlands continue beyond the maintained ROW, where they are typically *palustrine forested* (PFO) communities. Due to the biogeography of the Project area along the northerly limits of the *Coastal Zone*, wetlands are predominantly headwater wetlands, many of which include 1st order perennial streams draining to coastal streams and rivers. The remainder of the wetlands are small locally isolated *groundwater depression* wetlands.

Wetland soil types observed consist of the Ridgebury, Leicester, and Whitman complex, the Timakwa and Natchaug complex, the Rippowam series and Fluvaquents-Udifluvents. The Ridgebury, Leicester and Whitman complex, is an undifferentiated mapping unit consisting of two poorly drained (Ridgebury and Leicester) and one very poorly drained (Whitman) soil developed on glacial till in depressions and drainageways in uplands and valleys. Their use interpretations are very similar, and they typically are so intermingled on the landscape that separation is not practical. The Ridgebury and Leicester series have a seasonal high water table at or near the

surface (0-6") from fall through spring. They differ in that the Leicester soil has a more friable compact layer or hardpan, while the Ridgebury soils have a dense to very dense compact layer. The Whitman soil has a high water table for much of the year and may frequently be ponded.

The Timakwa series consists of very deep, very poorly drained soils formed in woody and herbaceous organic materials over sandy deposits in depressions on lake plains, outwash plains, till plains, moraines, and flood plains. These soils have moderate to very rapid permeability in the organic material and rapid to very rapid permeability in the sandy material.

The Natchaug series consists of very deep, very poorly drained soils formed in woody and herbaceous organic materials overlying loamy deposits in depressions on lake plains, outwash plains, till plains, moraines, and flood plains. These soils have moderate to very rapid permeability in the organic material and moderately slow to moderately rapid permeability in the loamy material.

The Rippowam series consists of very deep, poorly drained loamy soils formed in alluvial sediments. They are nearly level soils on flood plains subject to frequent flooding. Permeability is moderate or moderately rapid in the loamy layers and rapid or very rapid in the underlying sandy materials.

Fluvaquents-Udifluvents consist primarily of poorly and very poorly drained, alluvial soils. These very deep soils are formed in recently deposited alluvial sediments on floodplains. Fluvaquents have a seasonal watertable at a depth of 0 to 1.5 feet. These soils are subject to flooding.





Photo 1: Wetland 1



Photo 2: Wetland 2.





Photo 3: Wetland 3.



Photo 4: Wetland 4.





Photo 5: Wetland 5.



Photo 6: Wetland 6.





Photo 7: Wetland 7.



Photo 8: Wetland 8.





Photo 9: Wetland 9.



Photo 10: Wetland 10.





Photo 11: Wetland 12.



Photo 12: Wetland 13.





Photo 13: Wetland 14.



Photo 14: Wetland 15.





Photo 15: Wetland 16.



Photo 16: Wetland 17.





Photo 17: Wetland 18.



Photo 18: Wetland 19.





Photo 19: Wetland 20.



Photo 20: Wetland 21.





Photo 21: Wetland 22.



Photo 22: Wetland 23.





Photo 23: Wetland 24.



Photo 24: Wetland 25.





Photo 25: Wetland 26.



Photo 26: Wetland 27.




Photo 27: Wetland 28.



Photo 28: Wetland 29.





Photo 29: Wetland 30.



Photo 30: Wetland 31.





Photo 31: Wetland 32.



Photo 32: Wetland 33.





Photo 33: Wetland 34.



Photo 34: Wetland 35.





Photo 35: Wetland 36.



Photo 36: Wetland 38.





Photo 37: Wetland 39.



Photo 38: Wetland 40.

Wetland I.D.: 1

WETLAND HYDROLOGY:

Intermittently Flooded	Artificially Flooded	Permanently Flooded \Box
Semipermanently Flooded	Seasonally Flooded \Box	Temporarily Flooded □
Permanently Saturated 🛛	Seasonally Saturated/seepage \Box	Seasonally Saturated/perched \Box
Comments: None		

WETLAND TYPE:

Emergent 🖂	Scrub-shrub 🖂	Forested 🖂
Open Water □	Disturbed	Wet Meadow 🗆
Comments:		

WATERCOURSE TYPE:

Perennial 🗆	Intermittent	Ephemeral 🗆
Watercourse Name:		
Comments:		

SPECIAL AQUATIC HABITAT:

Vernal Pool : Yes 🗆 No 🗵 Potential 🗆	Other 🗆
Vernal Pool Habitat Type: None	
Comments:	

WETLAND SOIL TYPE (s):

Soil Types: Timakwa and Natchaug

DOMINANT PLANTS:

Common Reed* (Phragmites australis)	
Red Maple (Acer rubrum)	
Multiflora Rose* (Rosa multiflora)	
Tussock Sedge (Carex stricta)	
Sensitive Fern (Onoclea sensibilis)	

* denotes Connecticut Invasive Species Council invasive plant species

Wetland I.D.: 2

WETLAND HYDROLOGY:

Intermittently Flooded	Artificially Flooded	Permanently Flooded \Box
Semipermanently Flooded	Seasonally Flooded \Box	Temporarily Flooded □
Permanently Saturated	Seasonally Saturated/seepage	Seasonally Saturated/perched □
Comments: None		

WETLAND TYPE:

Emergent 🖂	Scrub-shrub 🖂	Forested
Open Water □	Disturbed	Wet Meadow
Comments:		

WATERCOURSE TYPE:

Perennial 🗆	Intermittent	Ephemeral 🗆
Watercourse Name:		
Comments:		

SPECIAL AQUATIC HABITAT:

Vernal Pool : Yes 🗆 No 🗵 Potential 🗆	Other 🗆
Vernal Pool Habitat Type: None	
Comments:	

WETLAND SOIL TYPE (s):

Soil Types: Timakwa and Natchaug

DOMINANT PLANTS:

Common Reed* (Phragmites australis)	
Broad-Leaf Cattail (Typha latifolia)	
Multiflora Rose* (Rosa multiflora)	
Greenbrier (Smilax rotundifolia)	
Sensitive Fern (Onoclea sensibilis)	

* denotes Connecticut Invasive Species Council invasive plant species

Wetland I.D.:	3

WETLAND HYDROLOGY:

Intermittently Flooded	Artificially Flooded	Permanently Flooded \Box
Semipermanently Flooded	Seasonally Flooded \boxtimes	Temporarily Flooded □
Permanently Saturated	Seasonally Saturated/seepage	Seasonally Saturated/perched \Box
Comments: None		

WETLAND TYPE:

Emergent 🖂	Scrub-shrub 🖂	Forested
Open Water □	Disturbed	Wet Meadow
Comments:		

WATERCOURSE TYPE:

Perennial 🗆	Intermittent 🗆	Ephemeral 🗆
Watercourse Name:		
Comments:		

SPECIAL AQUATIC HABITAT:

Vernal Pool : Yes 🛛 No 🗆 Potential 🗆	Other 🗆	
Vernal Pool Habitat Type: 'Cryptic'		
Comments: VP1		

WETLAND SOIL TYPE (s):

Soil Types: Timakwa and Natchaug

DOMINANT PLANTS:

Common Reed* (Phragmites australis)	
Broad-Leaf Cattail (Typha latifolia)	
Multiflora Rose* (Rosa multiflora)	
Reed Canarygrass* (Phalaris arundinacea)	
Soft Rush (Juncus effuses)	

* denotes Connecticut Invasive Species Council invasive plant species

Wetland I.D.: 4

WETLAND HYDROLOGY:

Intermittently Flooded	Artificially Flooded	Permanently Flooded \Box
Semipermanently Flooded	Seasonally Flooded \boxtimes	Temporarily Flooded □
Permanently Saturated \Box	Seasonally Saturated/seepage \Box	Seasonally Saturated/perched \Box
Comments: None		

WETLAND TYPE:

Emergent 🖂	Scrub-shrub 🖂	Forested
Open Water □	Disturbed	Wet Meadow
Comments:		

WATERCOURSE TYPE:

Perennial 🗆	Intermittent 🗆	Ephemeral 🗆
Watercourse Name:		
Comments:		

SPECIAL AQUATIC HABITAT:

Vernal Pool : Yes 🛛 No 🗆 Potential 🗆	Other 🗆	
Vernal Pool Habitat Type: 'Cryptic'		
Comments: VP2		

WETLAND SOIL TYPE (s):

Soil Types: Ridgebury, Leicester, and Whitman

DOMINANT PLANTS:

Common Reed* (Phragmites australis)	
Soft Rush (Juncus effuses)	
Multiflora Rose* (Rosa multiflora)	
Reed Canarygrass* (Phalaris arundinacea)	
Buttonbush (Cephalanthus occidentalis)	

* denotes Connecticut Invasive Species Council invasive plant species

Wetland I.D.: 5

WETLAND HYDROLOGY:

Intermittently Flooded	Artificially Flooded	Permanently Flooded \Box
Semipermanently Flooded \Box	Seasonally Flooded \Box	Temporarily Flooded □
Permanently Saturated \Box	Seasonally Saturated/seepage \boxtimes	Seasonally Saturated/perched \Box
Comments: None		

WETLAND TYPE:

Emergent 🖂	Scrub-shrub 🖂	Forested
Open Water □	Disturbed	Wet Meadow 🗆
Comments:		

WATERCOURSE TYPE:

Perennial 🗆	Intermittent 🛛	Ephemeral 🗆
Watercourse Name:		
Comments: S1		

SPECIAL AQUATIC HABITAT:

Vernal Pool : Yes 🗆 No 🛛 Potential 🗆	Other 🗆
Vernal Pool Habitat Type: None	
Comments: None	

WETLAND SOIL TYPE (s):

Soil Types: Ridgebury, Leicester, and Whitman

DOMINANT PLANTS:

Sensitive Fern (Onoclea sensibilis)	
Broad-Leaf Cattail (Typha latifolia)	
Multiflora Rose* (Rosa multiflora)	
Reed Canarygrass* (Phalaris arundinacea)	
Silky Dogwood (Cornus amomum)	

* denotes Connecticut Invasive Species Council invasive plant species

Wetland I.D.:	6

WETLAND HYDROLOGY:

Intermittently Flooded	Artificially Flooded	Permanently Flooded \Box
Semipermanently Flooded	Seasonally Flooded \Box	Temporarily Flooded □
Permanently Saturated	Seasonally Saturated/seepage	Seasonally Saturated/perched \Box
Comments: None		

WETLAND TYPE:

Emergent 🖂	Scrub-shrub 🖂	Forested
Open Water □	Disturbed	Wet Meadow
Comments:		

WATERCOURSE TYPE:

Perennial 🗆	Intermittent	Ephemeral 🗆
Watercourse Name:		
Comments:		

SPECIAL AQUATIC HABITAT:

Vernal Pool : Yes 🗆 No 🗵 Potential 🗆	Other 🗆
Vernal Pool Habitat Type: None	
Comments: None	

WETLAND SOIL TYPE (s):

DOMINANT PLANTS:

Sensitive Fern (Onoclea sensibilis)	
Multiflora Rose* (Rosa multiflora)	
Joe Pye Weed (Eupatorium maculatum)	
Soft Rush (Juncus effuses)	
Meadowsweet (Spiraea latifolia)	

* denotes Connecticut Invasive Species Council invasive plant species

Wetland I.D.: 7

WETLAND HYDROLOGY:

Intermittently Flooded	Artificially Flooded	Permanently Flooded \Box
Semipermanently Flooded	Seasonally Flooded \boxtimes	Temporarily Flooded □
Permanently Saturated	Seasonally Saturated/seepage \Box	Seasonally Saturated/perched \Box
Comments: None		

WETLAND TYPE:

Emergent 🖂	Scrub-shrub 🖂	Forested
Open Water □	Disturbed	Wet Meadow
Comments:		

WATERCOURSE TYPE:

Perennial 🖂	Intermittent	Ephemeral 🗆
Watercourse Name: Susquetonscut Brook		
Comments: S2		

SPECIAL AQUATIC HABITAT:

Vernal Pool : Yes 🛛 No 🗆 Potential 🗆	Other 🗆
Vernal Pool Habitat Type: 'Cryptic'	
Comments: VP3	

WETLAND SOIL TYPE (s):

Soil Types: Ridgebury, Leicester, and Whitman

DOMINANT PLANTS:

Common Reed* (Phragmites australis)	
Multiflora Rose* (Rosa multiflora)	
Broad-Leaf Cattail (Typha latifolia)	
Reed Canarygrass* (Phalaris arundinacea)	
Red Maple (Acer rubrum)	

* denotes Connecticut Invasive Species Council invasive plant species

Wetland I.D.:	8

WETLAND HYDROLOGY:

Intermittently Flooded	Artificially Flooded	Permanently Flooded \Box
Semipermanently Flooded	Seasonally Flooded \boxtimes	Temporarily Flooded □
Permanently Saturated 🛛	Seasonally Saturated/seepage \Box	Seasonally Saturated/perched \Box
Comments: None		

WETLAND TYPE:

Emergent 🖂	Scrub-shrub 🖂	Forested
Open Water □	Disturbed	Wet Meadow 🗆
Comments:		

WATERCOURSE TYPE:

Perennial 🗆	Intermittent	Ephemeral 🗆
Watercourse Name: None		
Comments: None		

SPECIAL AQUATIC HABITAT:

Vernal Pool : Yes 🛛 No 🗆 Potential 🗆	Other 🗆	
Vernal Pool Habitat Type: 'Cryptic'		
Comments: VP4, VP5 and VP6		

WETLAND SOIL TYPE (s):

Soil Types: Timakwa and Natchaug

DOMINANT PLANTS:

Common Reed* (Phragmites australis)	
Multiflora Rose* (Rosa multiflora)	
Broad-Leaf Cattail (Typha latifolia)	
Reed Canarygrass* (Phalaris arundinacea)	
Soft Rush (Juncus effuses)	

* denotes Connecticut Invasive Species Council invasive plant species

Wetland I.D.:	9

WETLAND HYDROLOGY:

Intermittently Flooded	Artificially Flooded	Permanently Flooded \Box
Semipermanently Flooded	Seasonally Flooded \Box	Temporarily Flooded □
Permanently Saturated	Seasonally Saturated/seepage	Seasonally Saturated/perched \Box
Comments: None		

WETLAND TYPE:

Emergent	Scrub-shrub 🖂	Forested
Open Water □	Disturbed	Wet Meadow
Comments:		

WATERCOURSE TYPE:

Perennial 🗆	Intermittent	Ephemeral 🗆
Watercourse Name: None		
Comments: None		

SPECIAL AQUATIC HABITAT:

Vernal Pool : Yes 🗆 No 🛛 Potential 🗆	Other 🗆
Vernal Pool Habitat Type: None	
Comments: None	

WETLAND SOIL TYPE (s):

Soil Types: Ridgebury, Leicester, Whitman

DOMINANT PLANTS:

Reed Canarygrass* (Phalaris arundinacea)	
Multiflora Rose* (Rosa multiflora)	
Silky Dogwood (Cornus amomum)	
Greenbrier (Smilax rotundifolia)	
Meadowsweet (Spiraea latifolia)	

* denotes Connecticut Invasive Species Council invasive plant species

Wetland I.D.:	10

WETLAND HYDROLOGY:

Intermittently Flooded	Artificially Flooded	Permanently Flooded \Box
Semipermanently Flooded	Seasonally Flooded \Box	Temporarily Flooded □
Permanently Saturated 🛛	Seasonally Saturated/seepage	Seasonally Saturated/perched \Box
Comments: None		

WETLAND TYPE:

Emergent 🖂	Scrub-shrub 🖂	Forested
Open Water 🗆	Disturbed	Wet Meadow
Comments:		

WATERCOURSE TYPE:

Perennial 🖂	Intermittent	Ephemeral 🗆
Watercourse Name: Susquetonscut Brook		
Comments: S3		

SPECIAL AQUATIC HABITAT:

Vernal Pool : Yes □ No ⊠ Potential □ Other □		
Vernal Pool Habitat Type: None		
Comments: None		

WETLAND SOIL TYPE (s):

Soil Types: Rippowam

DOMINANT PLANTS:

Broad-Leaf Cattail (Typha latifolia)	
Multiflora Rose* (Rosa multiflora)	
Soft Rush (Juncus effuses)	
Greenbrier (Smilax rotundifolia)	
Reed Canarygrass* (Phalaris arundinacea)	

* denotes Connecticut Invasive Species Council invasive plant species

Wetland I.D.: 11		
	Wetland I.D.:	11

WETLAND HYDROLOGY:

Intermittently Flooded	Artificially Flooded	Permanently Flooded \Box
Semipermanently Flooded	Seasonally Flooded \Box	Temporarily Flooded □
Permanently Saturated	Seasonally Saturated/seepage	Seasonally Saturated/perched \Box
Comments: None		

WETLAND TYPE:

Emergent 🖂	Scrub-shrub 🖂	Forested
Open Water □	Disturbed	Wet Meadow 🗆
Comments:		

WATERCOURSE TYPE:

Perennial 🗆	Intermittent 🛛	Ephemeral 🗆
Watercourse Name: None		
Comments: S4		

SPECIAL AQUATIC HABITAT:

Vernal Pool : Yes 🗆 No 🛛 Potential 🗆	Other 🗆
Vernal Pool Habitat Type: None	
Comments: None	

WETLAND SOIL TYPE (s):

Soil Types: Ridgebury, Leicester, Whitman

DOMINANT PLANTS:

Common Buckthorn* (Rhamnus cathartica)	
Multiflora Rose* (Rosa multiflora)	
Red Maple (Acer rubrum)	
Greenbrier (Smilax rotundifolia)	
Reed Canarygrass* (Phalaris arundinacea)	

* denotes Connecticut Invasive Species Council invasive plant species

Wetland I.D.:	12
	114

WETLAND HYDROLOGY:

Intermittently Flooded	Artificially Flooded	Permanently Flooded \Box
Semipermanently Flooded	Seasonally Flooded \Box	Temporarily Flooded □
Permanently Saturated	Seasonally Saturated/seepage \boxtimes	Seasonally Saturated/perched \Box
Comments: None		

WETLAND TYPE:

Emergent 🖂	Scrub-shrub 🖂	Forested
Open Water □	Disturbed	Wet Meadow
Comments:		

WATERCOURSE TYPE:

Perennial 🗆	Intermittent	Ephemeral 🗆
Watercourse Name: None		
Comments: None		

SPECIAL AQUATIC HABITAT:

Vernal Pool : Yes 🗆 No 🛛 Potential 🗆	Other 🗆
Vernal Pool Habitat Type: None	
Comments: None	

WETLAND SOIL TYPE (s):

Soil Types: Ridgebury, Leicester, Whitman

DOMINANT PLANTS:

Common Buckthorn* (Rhamnus cathartica)	
Multiflora Rose* (Rosa multiflora)	
Red Maple (Acer rubrum)	
Skunk Cabbage (Symplocarpus foetidus)	
Reed Canarygrass* (Phalaris arundinacea)	
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* denotes Connecticut Invasive Species Council invasive plant species

Wetland I.D.: 13

WETLAND HYDROLOGY:

Intermittently Flooded	Artificially Flooded	Permanently Flooded \Box
Semipermanently Flooded	Seasonally Flooded \Box	Temporarily Flooded □
Permanently Saturated	Seasonally Saturated/seepage \boxtimes	Seasonally Saturated/perched \Box
Comments: None		

WETLAND TYPE:

Emergent 🖂	Scrub-shrub 🖂	Forested
Open Water □	Disturbed	Wet Meadow
Comments:		

WATERCOURSE TYPE:

Perennial 🗆	Intermittent	Ephemeral 🗆
Watercourse Name: None		
Comments: None		

SPECIAL AQUATIC HABITAT:

Vernal Pool : Yes 🗆 No 🛛 Potential 🗆	Other 🗆
Vernal Pool Habitat Type: None	
Comments: None	

WETLAND SOIL TYPE (s):

Soil Types: Ridgebury, Leicester, Whitman

DOMINANT PLANTS:

Common Buckthorn* (Rhamnus cathartica)	
Multiflora Rose* (Rosa multiflora)	
Red Maple (Acer rubrum)	
Asiatic Bittersweet* (Celastrus orbiculatus)	
Reed Canarygrass* (Phalaris arundinacea)	

* denotes Connecticut Invasive Species Council invasive plant species

Watland I D :	11
vvetland I.D.:	14

WETLAND HYDROLOGY:

Intermittently Flooded	Artificially Flooded	Permanently Flooded \Box
Semipermanently Flooded	Seasonally Flooded \Box	Temporarily Flooded □
Permanently Saturated 🛛	Seasonally Saturated/seepage \Box	Seasonally Saturated/perched \Box
Comments: None		

WETLAND TYPE:

Emergent 🖂	Scrub-shrub 🖂	Forested
Open Water □	Disturbed	Wet Meadow
Comments:		

WATERCOURSE TYPE:

Perennial 🗆	Intermittent	Ephemeral 🗆
Watercourse Name: None		
Comments: None		

SPECIAL AQUATIC HABITAT:

Vernal Pool : Yes 🗆 No 🛛 Potential 🗆	Other 🗆
Vernal Pool Habitat Type: None	
Comments: None	

WETLAND SOIL TYPE (s):

Soil Types: Ridgebury, Leicester, and Whitman

DOMINANT PLANTS:

Broad-Leaf Cattail (Typha latifolia)	
Multiflora Rose* (Rosa multiflora)	
Greenbrier (Smilax rotundifolia)	
Red Maple (Acer rubrum)	
Reed Canarygrass* (Phalaris arundinacea)	

* denotes Connecticut Invasive Species Council invasive plant species

Watland I D ·	15	
	10	

WETLAND HYDROLOGY:

Intermittently Flooded	Artificially Flooded	Permanently Flooded \Box
Semipermanently Flooded	Seasonally Flooded \Box	Temporarily Flooded □
Permanently Saturated 🛛	Seasonally Saturated/seepage \Box	Seasonally Saturated/perched \Box
Comments: None		

WETLAND TYPE:

Emergent 🖂	Scrub-shrub 🖂	Forested
Open Water □	Disturbed	Wet Meadow 🗆
Comments:		

WATERCOURSE TYPE:

Perennial 🗆	Intermittent 🛛	Ephemeral 🗆
Watercourse Name: None		
Comments: S5		

SPECIAL AQUATIC HABITAT:

Vernal Pool : Yes 🗆 No 🛛 Potential 🗆	Other 🗆
Vernal Pool Habitat Type: None	
Comments: None	

WETLAND SOIL TYPE (s):

DOMINANT PLANTS:

Broad-Leaf Cattail (Typha latifolia)	
Soft Rush (Juncus effuses)	
Greenbrier (Smilax rotundifolia)	
Silky Dogwood (Cornus amomum)	
Reed Canarygrass* (Phalaris arundinacea)	
Multiflora Rose* (Rosa multiflora)	

* denotes Connecticut Invasive Species Council invasive plant species

Watland I D ·	16	
	10	

WETLAND HYDROLOGY:

Intermittently Flooded	Artificially Flooded	Permanently Flooded \Box
Semipermanently Flooded	Seasonally Flooded \Box	Temporarily Flooded □
Permanently Saturated	Seasonally Saturated/seepage \boxtimes	Seasonally Saturated/perched \Box
Comments: None		

WETLAND TYPE:

Emergent 🖂	Scrub-shrub 🖂	Forested
Open Water □	Disturbed	Wet Meadow
Comments:		

WATERCOURSE TYPE:

Perennial 🗆	Intermittent	Ephemeral 🗆
Watercourse Name: None		
Comments: None		

SPECIAL AQUATIC HABITAT:

Vernal Pool : Yes 🗆 No 🛛 Potential 🗆	Other 🗆
Vernal Pool Habitat Type: None	
Comments: None	

WETLAND SOIL TYPE (s):

DOMINANT PLANTS:

Reed Canarygrass* (Phalaris arundinacea)	
Soft Rush (Juncus effuses)	
Greenbrier (Smilax rotundifolia)	
Silky Dogwood (Cornus amomum)	
Multiflora Rose* (Rosa multiflora)	

* denotes Connecticut Invasive Species Council invasive plant species

Wetland I D ·	17

WETLAND HYDROLOGY:

Intermittently Flooded	Artificially Flooded	Permanently Flooded \Box
Semipermanently Flooded	Seasonally Flooded \Box	Temporarily Flooded □
Permanently Saturated	Seasonally Saturated/seepage \boxtimes	Seasonally Saturated/perched \Box
Comments: None		

WETLAND TYPE:

Emergent 🖂	Scrub-shrub 🖂	Forested
Open Water □	Disturbed	Wet Meadow
Comments:		

WATERCOURSE TYPE:

Perennial 🗆	Intermittent	Ephemeral 🗆
Watercourse Name: None		
Comments: None		

SPECIAL AQUATIC HABITAT:

Vernal Pool : Yes 🗆 No 🛛 Potential 🗆	Other 🗆
Vernal Pool Habitat Type: None	
Comments: None	

WETLAND SOIL TYPE (s):

DOMINANT PLANTS:

Reed Canarygrass* (Phalaris arundinacea)	
Soft Rush (Juncus effuses)	
Greenbrier (Smilax rotundifolia)	
Silky Dogwood (Cornus amomum)	
Multiflora Rose* (Rosa multiflora)	

* denotes Connecticut Invasive Species Council invasive plant species

Wetland I D ·	18
	10

WETLAND HYDROLOGY:

Intermittently Flooded	Artificially Flooded	Permanently Flooded \Box
Semipermanently Flooded	Seasonally Flooded \Box	Temporarily Flooded □
Permanently Saturated 🛛	Seasonally Saturated/seepage \Box	Seasonally Saturated/perched \Box
Comments: None		

WETLAND TYPE:

Emergent 🖂	Scrub-shrub 🖂	Forested
Open Water □	Disturbed	Wet Meadow
Comments:		

WATERCOURSE TYPE:

Perennial 🗆	Intermittent	Ephemeral 🗆
Watercourse Name: None		
Comments: None		

SPECIAL AQUATIC HABITAT:

Vernal Pool : Yes 🗆 No 🛛 Potential 🗆	Other 🗆
Vernal Pool Habitat Type: None	
Comments: None	

WETLAND SOIL TYPE (s):

DOMINANT PLANTS:

Reed Canarygrass* (Phalaris arundinacea)	
Soft Rush (Juncus effuses)	
Broad-Leaf Cattail (Typha latifolia)	
Silky Dogwood (Cornus amomum)	
Multiflora Rose* (Rosa multiflora)	
Winterberry (Ilex verticillata)	

* denotes Connecticut Invasive Species Council invasive plant species

Wetland I D ·	10
wellahu I.D	19

WETLAND HYDROLOGY:

Intermittently Flooded	Artificially Flooded	Permanently Flooded \Box
Semipermanently Flooded	Seasonally Flooded \Box	Temporarily Flooded □
Permanently Saturated 🛛	Seasonally Saturated/seepage \Box	Seasonally Saturated/perched \Box
Comments: None		

WETLAND TYPE:

Emergent 🖂	Scrub-shrub 🖂	Forested
Open Water □	Disturbed	Wet Meadow
Comments:		

WATERCOURSE TYPE:

Perennial 🗆	Intermittent	Ephemeral 🗆
Watercourse Name: None		
Comments: S6 and S7, both intermittent		

SPECIAL AQUATIC HABITAT:

Vernal Pool : Yes 🗆 No 🛛 Potential 🗆	Other 🗆
Vernal Pool Habitat Type: None	
Comments: None	

WETLAND SOIL TYPE (s):

Soil Types: Ridgebury, Leicester, and Whitman

DOMINANT PLANTS:

Reed Canarygrass* (Phalaris arundinacea)	
Soft Rush (Juncus effuses)	
Common Buckthorn* (Rhamnus cathartica)	
Silky Dogwood (Cornus amomum)	
Greenbrier (Smilax rotundifolia)	

* denotes Connecticut Invasive Species Council invasive plant species

Wetland I.D.:	20

WETLAND HYDROLOGY:

Intermittently Flooded	Artificially Flooded	Permanently Flooded
Semipermanently Flooded	Seasonally Flooded \Box	Temporarily Flooded □
Permanently Saturated \Box	Seasonally Saturated/seepage \Box	Seasonally Saturated/perched \Box
Comments: None		

WETLAND TYPE:

Emergent 🖂	Scrub-shrub 🗆	Forested 🖂
Open Water □	Disturbed	Wet Meadow
Comments:		

WATERCOURSE TYPE:

Perennial 🗆	Intermittent	Ephemeral 🗆
Watercourse Name: None		
Comments:		

SPECIAL AQUATIC HABITAT:

Vernal Pool : Yes 🗆 No 🛛 Potential 🗆	Other 🗆
Vernal Pool Habitat Type: None	
Comments: None	

WETLAND SOIL TYPE (s):

Soil Types: Ridgebury, Leicester, and Whitman

DOMINANT PLANTS:

Red Maple (Acer rubrum)	
Silver Maple (Acer saccharinium)	
Common Buckthorn* (Rhamnus cathartica)	
Silky Dogwood (Cornus amomum)	
Multiflora Rose* (Rosa multiflora)	

* denotes Connecticut Invasive Species Council invasive plant species

Wetland I D: 21		
	Wetland I.D.:	21

WETLAND HYDROLOGY:

Intermittently Flooded	Artificially Flooded	Permanently Flooded \Box
Semipermanently Flooded	Seasonally Flooded \Box	Temporarily Flooded □
Permanently Saturated 🛛	Seasonally Saturated/seepage	Seasonally Saturated/perched \Box
Comments: None		

WETLAND TYPE:

Emergent 🖂	Scrub-shrub 🖂	Forested
Open Water □	Disturbed	Wet Meadow 🗆
Comments:		

WATERCOURSE TYPE:

Perennial 🖂	Intermittent	Ephemeral 🗆
Watercourse Name:		
Comments: S8 is Susquetonscut Brook and S9 is intermittent		

SPECIAL AQUATIC HABITAT:

Vernal Pool : Yes 🗆 No 🛛 Potential 🗆	Other 🗆
Vernal Pool Habitat Type: None	
Comments: None	

WETLAND SOIL TYPE (s):

Soil Types: Rippowam

DOMINANT PLANTS:

Common Reed* (Phragmites australis)	
Reed Canarygrass* (Phalaris arundinacea)	
Soft Rush (Juncus effuses)	
Silky Dogwood (Cornus amomum)	
Multiflora Rose* (Rosa multiflora)	

* denotes Connecticut Invasive Species Council invasive plant species

Wetland I.D.:	22

WETLAND HYDROLOGY:

Intermittently Flooded	Artificially Flooded	Permanently Flooded \Box
Semipermanently Flooded	Seasonally Flooded \Box	Temporarily Flooded □
Permanently Saturated	Seasonally Saturated/seepage	Seasonally Saturated/perched \Box
Comments: None		

WETLAND TYPE:

Emergent 🖂	Scrub-shrub 🖂	Forested
Open Water 🗆	Disturbed	Wet Meadow
Comments:		

WATERCOURSE TYPE:

Perennial 🗆	Intermittent	Ephemeral 🗆
Watercourse Name: None		
Comments: None		

SPECIAL AQUATIC HABITAT:

Vernal Pool : Yes 🗆 No 🗵 Potential 🗆	Other 🗆
Vernal Pool Habitat Type: None	
Comments: None	

WETLAND SOIL TYPE (s):

Soil Types: Timakwa and Natchaug

DOMINANT PLANTS:

Sensitive Fern (Onoclea sensibilis)	
Reed Canarygrass* (Phalaris arundinacea)	
Soft Rush (Juncus effuses)	
Mugwort* (Artemisia vulgaris)	
Multiflora Rose* (Rosa multiflora)	

* denotes Connecticut Invasive Species Council invasive plant species

Wetland I.D.: 23

WETLAND HYDROLOGY:

Intermittently Flooded	Artificially Flooded	Permanently Flooded \Box
Semipermanently Flooded	Seasonally Flooded \Box	Temporarily Flooded □
Permanently Saturated	Seasonally Saturated/seepage \boxtimes	Seasonally Saturated/perched \Box
Comments: None		

WETLAND TYPE:

Emergent 🖂	Scrub-shrub 🖂	Forested
Open Water □	Disturbed	Wet Meadow
Comments:		

WATERCOURSE TYPE:

Perennial 🗆	Intermittent	Ephemeral 🗆
Watercourse Name: None		
Comments: None		

SPECIAL AQUATIC HABITAT:

Vernal Pool : Yes 🗆 No 🛛 Potential 🗆	Other 🗆
Vernal Pool Habitat Type: None	
Comments: None	

WETLAND SOIL TYPE (s):

DOMINANT PLANTS:

Sensitive Fern (Onoclea sensibilis)	
Reed Canarygrass* (Phalaris arundinacea)	
Soft Rush (Juncus effuses)	
Broad-Leaf Cattail (Typha latifolia)	
Multiflora Rose* (Rosa multiflora)	
Common Reed* (Phragmites australis)	

* denotes Connecticut Invasive Species Council invasive plant species

Wetland I.D.:	24

WETLAND HYDROLOGY:

Intermittently Flooded	Artificially Flooded	Permanently Flooded \Box
Semipermanently Flooded	Seasonally Flooded \Box	Temporarily Flooded □
Permanently Saturated 🛛	Seasonally Saturated/seepage	Seasonally Saturated/perched \Box
Comments: None		

WETLAND TYPE:

Emergent 🖂	Scrub-shrub 🖂	Forested
Open Water 🗆	Disturbed	Wet Meadow
Comments:		

WATERCOURSE TYPE:

Perennial 🗆	Intermittent 🖂	Ephemeral 🗆
Watercourse Name: None		
Comments: S10		

SPECIAL AQUATIC HABITAT:

Vernal Pool : Yes 🗆 No 🗵 Potential 🗆	Other 🗆
Vernal Pool Habitat Type: None	
Comments: None	

WETLAND SOIL TYPE (s):

Soil Types:

DOMINANT PLANTS:

Skunk Cabbage (Symplocarpus foetidus)	
Reed Canarygrass* (Phalaris arundinacea)	
Soft Rush (Juncus effuses)	
Mugwort* (Artemisia vulgaris)	
Multiflora Rose* (Rosa multiflora)	
Silky Dogwood (Cornus amomum)	

* denotes Connecticut Invasive Species Council invasive plant species

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	Wetland I.D.:	25

WETLAND HYDROLOGY:

Intermittently Flooded	Artificially Flooded	Permanently Flooded \Box
Semipermanently Flooded	Seasonally Flooded \Box	Temporarily Flooded □
Permanently Saturated 🛛	Seasonally Saturated/seepage	Seasonally Saturated/perched \Box
Comments: None		

WETLAND TYPE:

Emergent 🖂	Scrub-shrub 🖂	Forested
Open Water □	Disturbed	Wet Meadow 🗆
Comments:		

WATERCOURSE TYPE:

Perennial 🗆	Intermittent 🛛	Ephemeral 🗆
Watercourse Name: None		
Comments: S11		

SPECIAL AQUATIC HABITAT:

Vernal Pool : Yes 🗆 No 🛛 Potential 🗆	Other 🗆	
Vernal Pool Habitat Type: None		
Comments: None		

WETLAND SOIL TYPE (s):

DOMINANT PLANTS:

Skunk Cabbage (Symplocarpus foetidus)	
Reed Canarygrass* (Phalaris arundinacea)	
Soft Rush (Juncus effuses)	
Mugwort* (Artemisia vulgaris)	
Multiflora Rose* (Rosa multiflora)	
Silky Dogwood (Cornus amomum)	

* denotes Connecticut Invasive Species Council invasive plant species

Wetland I.D.:	26

WETLAND HYDROLOGY:

Intermittently Flooded	Artificially Flooded	Permanently Flooded \Box
Semipermanently Flooded	Seasonally Flooded \Box	Temporarily Flooded □
Permanently Saturated 🛛	Seasonally Saturated/seepage	Seasonally Saturated/perched \Box
Comments: None		

WETLAND TYPE:

Emergent 🖂	Scrub-shrub 🖂	Forested
Open Water □	Disturbed	Wet Meadow 🗆
Comments:		

WATERCOURSE TYPE:

Perennial 🗆	Intermittent	Ephemeral 🗆
Watercourse Name: None		
Comments:		

SPECIAL AQUATIC HABITAT:

Vernal Pool : Yes 🗆 No 🛛 Potential 🗆	Other 🗆	
Vernal Pool Habitat Type: None		
Comments: None		

WETLAND SOIL TYPE (s):

DOMINANT PLANTS:

Common Reed* (Phragmites australis)	
Reed Canarygrass* (Phalaris arundinacea)	
Fox Grape (Vitis labrusca)	
Mugwort* (Artemisia vulgaris)	
Multiflora Rose* (Rosa multiflora)	
Silky Dogwood (Cornus amomum)	

* denotes Connecticut Invasive Species Council invasive plant species

Wetland I.D.:	27

WETLAND HYDROLOGY:

Intermittently Flooded	Artificially Flooded	Permanently Flooded \boxtimes
Semipermanently Flooded	Seasonally Flooded \Box	Temporarily Flooded □
Permanently Saturated 🛛	Seasonally Saturated/seepage \Box	Seasonally Saturated/perched \Box
Comments: None		

WETLAND TYPE:

Emergent 🖂	Scrub-shrub 🖂	Forested
Open Water □	Disturbed	Wet Meadow 🗆
Comments:		

WATERCOURSE TYPE:

Perennial 🗆	Intermittent 🛛	Ephemeral 🗆
Watercourse Name: None		
Comments: S16 and S17		

SPECIAL AQUATIC HABITAT:

Vernal Pool : Yes 🗆 No 🛛 Potential 🗆	Other 🗆
Vernal Pool Habitat Type: None	
Comments: None	

WETLAND SOIL TYPE (s):

Soil Types:	Rippowam.	Ridaeburv.	Leicester.	and Whitman
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DOMINANT PLANTS:

Common Reed* (Phragmites australis)	
Reed Canarygrass* (Phalaris arundinacea)	
Broad-Leaf Cattail (Typha latifolia)	
Soft Rush (Juncus effuses)	
Multiflora Rose* (Rosa multiflora)	

* denotes Connecticut Invasive Species Council invasive plant species

Wetland I.D.:	28

WETLAND HYDROLOGY:

Intermittently Flooded	Artificially Flooded	Permanently Flooded \Box
Semipermanently Flooded	Seasonally Flooded \Box	Temporarily Flooded □
Permanently Saturated	Seasonally Saturated/seepage \boxtimes	Seasonally Saturated/perched \Box
Comments: None		

WETLAND TYPE:

Emergent 🖂	Scrub-shrub 🖂	Forested
Open Water □	Disturbed	Wet Meadow
Comments:		

WATERCOURSE TYPE:

Perennial 🗆	Intermittent	Ephemeral 🗆
Watercourse Name: None		
Comments: None		

SPECIAL AQUATIC HABITAT:

Vernal Pool : Yes 🗆 No 🗵 Potential 🗆	Other 🗆
Vernal Pool Habitat Type: None	
Comments: None	

WETLAND SOIL TYPE (s):

Soil Types: Timakwa and Natchaug

DOMINANT PLANTS:

Sweet Pepperbush (Clethera alnifolia)	
Reed Canarygrass* (Phalaris arundinacea)	
Broad-Leaf Cattail (Typha latifolia)	
Soft Rush (Juncus effuses)	
Multiflora Rose* (Rosa multiflora)	

* denotes Connecticut Invasive Species Council invasive plant species

Wetland I.D.:	29

WETLAND HYDROLOGY:

Intermittently Flooded	Artificially Flooded	Permanently Flooded \Box
Semipermanently Flooded	Seasonally Flooded \Box	Temporarily Flooded □
Permanently Saturated 🛛	Seasonally Saturated/seepage	Seasonally Saturated/perched \Box
Comments: None		

WETLAND TYPE:

Emergent 🖂	Scrub-shrub 🖂	Forested
Open Water □	Disturbed	Wet Meadow 🗆
Comments:		

WATERCOURSE TYPE:

Perennial 🗆	Intermittent 🛛	Ephemeral 🗆
Watercourse Name: None		
Comments: S18		

SPECIAL AQUATIC HABITAT:

Vernal Pool : Yes 🗆 No 🛛 Potential 🗆	Other 🗆
Vernal Pool Habitat Type: None	
Comments: None	

WETLAND SOIL TYPE (s):

DOMINANT PLANTS:

Sweet Pepperbush (Clethera alnifolia)	
Reed Canarygrass* (Phalaris arundinacea)	
Sensitive Fern (Onoclea sensibilis)	
Red Maple (Acer rubrum)	
Multiflora Rose* (Rosa multiflora)	

* denotes Connecticut Invasive Species Council invasive plant species
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WETLAND HYDROLOGY:

Intermittently Flooded	Artificially Flooded	Permanently Flooded \Box
Semipermanently Flooded	Seasonally Flooded \Box	Temporarily Flooded □
Permanently Saturated	Seasonally Saturated/seepage \boxtimes	Seasonally Saturated/perched \Box
Comments: None		

WETLAND TYPE:

Emergent 🖂	Scrub-shrub 🖂	Forested
Open Water □	Disturbed	Wet Meadow
Comments:		

WATERCOURSE TYPE:

Perennial 🗆	Intermittent 🛛	Ephemeral 🗆
Watercourse Name: None		
Comments: S19		

SPECIAL AQUATIC HABITAT:

Vernal Pool : Yes 🗆 No 🛛 Potential 🗆	Other 🗆
Vernal Pool Habitat Type: None	
Comments: None	

WETLAND SOIL TYPE (s):

Soil Types: Ridgebury, Leicester, and Whitman

DOMINANT PLANTS:

Sweet Pepperbush (Clethera alnifolia)	
Greenbrier (Smilax rotundifolia)	
Japanese Stiltgrass (Microstegium vimineum)	
Silky Dogwood (Cornus amomum)	
Multiflora Rose* (Rosa multiflora)	

* denotes Connecticut Invasive Species Council invasive plant species

Wetland I.D.:	31

WETLAND HYDROLOGY:

Intermittently Flooded	Artificially Flooded	Permanently Flooded \Box
Semipermanently Flooded	Seasonally Flooded \Box	Temporarily Flooded □
Permanently Saturated	Seasonally Saturated/seepage	Seasonally Saturated/perched \Box
Comments: None		

WETLAND TYPE:

Emergent 🖂	Scrub-shrub 🖂	Forested
Open Water □	Disturbed	Wet Meadow
Comments:		

WATERCOURSE TYPE:

Perennial 🗆	Intermittent	Ephemeral 🗆
Watercourse Name: None		
Comments:		

SPECIAL AQUATIC HABITAT:

Vernal Pool : Yes 🗆 No 🛛 Potential 🗆	Other 🗆
Vernal Pool Habitat Type: None	
Comments: None	

WETLAND SOIL TYPE (s):

DOMINANT PLANTS:

Sweet Pepperbush (Clethera alnifolia)	
Greenbrier (Smilax rotundifolia)	
Japanese Stiltgrass (Microstegium vimineum)	
Silky Dogwood (Cornus amomum)	
Multiflora Rose* (Rosa multiflora)	

* denotes Connecticut Invasive Species Council invasive plant species

Wetland I.D.: 32

WETLAND HYDROLOGY:

Intermittently Flooded	Artificially Flooded	Permanently Flooded \Box
Semipermanently Flooded	Seasonally Flooded \Box	Temporarily Flooded □
Permanently Saturated 🛛	Seasonally Saturated/seepage	Seasonally Saturated/perched \Box
Comments: None		

WETLAND TYPE:

Emergent 🖂	Scrub-shrub 🗆	Forested 🖂
Open Water □	Disturbed	Wet Meadow 🗆
Comments:		

WATERCOURSE TYPE:

Perennial 🗆	Intermittent	Ephemeral 🗆
Watercourse Name: None		
Comments:		

SPECIAL AQUATIC HABITAT:

Vernal Pool : Yes 🗆 No 🛛 Potential 🗆	Other 🗆
Vernal Pool Habitat Type: None	
Comments: None	

WETLAND SOIL TYPE (s):

DOMINANT PLANTS:

Red Maple (Acer rubrum)	
Silky Dogwood (Cornus amomum)	
Skunk Cabbage (Symplocarpus foetidus)	
Greenbrier (Smilax rotundifolia)	
Multiflora Rose* (Rosa multiflora)	

* denotes Connecticut Invasive Species Council invasive plant species

Wetland I.D.: 33

WETLAND HYDROLOGY:

Intermittently Flooded	Artificially Flooded	Permanently Flooded \Box
Semipermanently Flooded	Seasonally Flooded \Box	Temporarily Flooded □
Permanently Saturated	Seasonally Saturated/seepage \boxtimes	Seasonally Saturated/perched \Box
Comments: None		

WETLAND TYPE:

Emergent 🖂	Scrub-shrub 🖂	Forested
Open Water □	Disturbed	Wet Meadow
Comments:		

WATERCOURSE TYPE:

Perennial 🗆	Intermittent	Ephemeral 🗆
Watercourse Name: None		
Comments:		

SPECIAL AQUATIC HABITAT:

Vernal Pool : Yes 🗆 No 🛛 Potential 🗆	Other 🗆
Vernal Pool Habitat Type: None	
Comments: None	

WETLAND SOIL TYPE (s):

DOMINANT PLANTS:

Soft Rush (Juncus effuses)	
Sweet Pepperbush (Clethera alnifolia)	
Skunk Cabbage (Symplocarpus foetidus)	
Silky Dogwood (Cornus amomum)	
Multiflora Rose* (Rosa multiflora)	
Red Maple (Acer rubrum)	

* denotes Connecticut Invasive Species Council invasive plant species

Wetland I.D.: 34

WETLAND HYDROLOGY:

Intermittently Flooded	Artificially Flooded	Permanently Flooded \Box
Semipermanently Flooded	Seasonally Flooded \Box	Temporarily Flooded □
Permanently Saturated	Seasonally Saturated/seepage \boxtimes	Seasonally Saturated/perched \Box
Comments: None		

WETLAND TYPE:

Emergent 🖂	Scrub-shrub 🖂	Forested
Open Water □	Disturbed	Wet Meadow
Comments:		

WATERCOURSE TYPE:

Perennial 🗆	Intermittent	Ephemeral 🗆
Watercourse Name: None		
Comments:		

SPECIAL AQUATIC HABITAT:

Vernal Pool : Yes 🗆 No 🛛 Potential 🗆	Other 🗆
Vernal Pool Habitat Type: None	
Comments: None	

WETLAND SOIL TYPE (s):

DOMINANT PLANTS:

Tussock Sedge (Carex stricta)	
Wool Grass (Scirpus cyperinus)	
Reed Canarygrass* (Phalaris arundinacea)	
Mugwort* (Artemisia vulgaris)	
Multiflora Rose* (Rosa multiflora)	
Red Maple (Acer rubrum)	

* denotes Connecticut Invasive Species Council invasive plant species

Watland D	25
	55

WETLAND HYDROLOGY:

Intermittently Flooded	Artificially Flooded	Permanently Flooded \Box
Semipermanently Flooded	Seasonally Flooded \Box	Temporarily Flooded □
Permanently Saturated 🛛	Seasonally Saturated/seepage \Box	Seasonally Saturated/perched \Box
Comments: None		

WETLAND TYPE:

Emergent 🖂	Scrub-shrub 🖂	Forested 🖂
Open Water 🗆	Disturbed	Wet Meadow
Comments:		

WATERCOURSE TYPE:

Perennial 🗆	Intermittent	Ephemeral 🗆
Watercourse Name: None		
Comments: S21		

SPECIAL AQUATIC HABITAT:

Vernal Pool : Yes 🗆 No 🛛 Potential 🗆	Other 🗆
Vernal Pool Habitat Type: None	
Comments: None	

WETLAND SOIL TYPE (s):

DOMINANT PLANTS:

Broad-Leaf Cattail (Typha latifolia)	
Tussock Sedge (Carex stricta)	
Reed Canarygrass* (Phalaris arundinacea)	
Buttonbush (Cephalanthus occidentalis)	
Multiflora Rose* (Rosa multiflora)	
Red Maple (Acer rubrum)	

* denotes Connecticut Invasive Species Council invasive plant species

Wetland I.D.:	36

WETLAND HYDROLOGY:

Intermittently Flooded	Artificially Flooded	Permanently Flooded \Box
Semipermanently Flooded	Seasonally Flooded \Box	Temporarily Flooded □
Permanently Saturated 🛛	Seasonally Saturated/seepage	Seasonally Saturated/perched \Box
Comments: None		

WETLAND TYPE:

Emergent 🖂	Scrub-shrub 🖂	Forested
Open Water □	Disturbed	Wet Meadow
Comments:		

WATERCOURSE TYPE:

Perennial 🗆	Intermittent	Ephemeral 🗆
Watercourse Name: None		
Comments:		

SPECIAL AQUATIC HABITAT:

Vernal Pool : Yes 🗆 No 🛛 Potential 🗆	Other 🗆
Vernal Pool Habitat Type: None	
Comments: None	

WETLAND SOIL TYPE (s):

DOMINANT PLANTS:

Silky Dogwood (Cornus amomum)	
Wool Grass (Scirpus cyperinus)	
Skunk Cabbage (Symplocarpus foetidus)	
Mugwort* (Artemisia vulgaris)	
Multiflora Rose* (Rosa multiflora)	
Red Maple (Acer rubrum)	

* denotes Connecticut Invasive Species Council invasive plant species

Watland I D ·	27
	57

WETLAND HYDROLOGY:

Intermittently Flooded	Artificially Flooded	Permanently Flooded \Box
Semipermanently Flooded	Seasonally Flooded \Box	Temporarily Flooded □
Permanently Saturated	Seasonally Saturated/seepage \boxtimes	Seasonally Saturated/perched \Box
Comments: None		

WETLAND TYPE:

Emergent 🖂	Scrub-shrub 🖂	Forested
Open Water □	Disturbed	Wet Meadow
Comments:		

WATERCOURSE TYPE:

Perennial 🗆	Intermittent	Ephemeral 🗆
Watercourse Name: Driscoll Brook		
Comments: S22		

SPECIAL AQUATIC HABITAT:

Vernal Pool : Yes 🗆 No 🛛 Potential 🗆	Other 🗆
Vernal Pool Habitat Type: None	
Comments: None	

WETLAND SOIL TYPE (s):

Soil Types: Ridgebury, Leicester, and Whitman

DOMINANT PLANTS:

Silky Dogwood (Cornus amomum)	
Reed Canarygrass* (Phalaris arundinacea)	
Skunk Cabbage (Symplocarpus foetidus)	
Mugwort* (Artemisia vulgaris)	
Multiflora Rose* (Rosa multiflora)	
Red Maple (Acer rubrum)	

* denotes Connecticut Invasive Species Council invasive plant species

Wetland I.D.:	38

WETLAND HYDROLOGY:

Intermittently Flooded	Artificially Flooded	Permanently Flooded \boxtimes
Semipermanently Flooded	Seasonally Flooded \Box	Temporarily Flooded □
Permanently Saturated 🛛	Seasonally Saturated/seepage \Box	Seasonally Saturated/perched □
Comments: None		

WETLAND TYPE:

Emergent 🖂	Scrub-shrub 🖂	Forested
Open Water □	Disturbed	Wet Meadow
Comments:		

WATERCOURSE TYPE:

Perennial 🗆	Intermittent	Ephemeral 🗆
Watercourse Name: None		
Comments:		

SPECIAL AQUATIC HABITAT:

Vernal Pool : Yes 🗆 No 🛛 Potential 🗆	Other 🗆
Vernal Pool Habitat Type: None	
Comments: None	

WETLAND SOIL TYPE (s):

Soil Types: Timakwa and Natchaug

DOMINANT PLANTS:

Buttonbush (Cephalanthus occidentalis)	
Reed Canarygrass* (Phalaris arundinacea)	
Broad-Leaf Cattail (Typha latifolia)	
Common Reed* (Phragmites australis)	
Multiflora Rose* (Rosa multiflora)	
Soft Rush (Juncus effuses)	

* denotes Connecticut Invasive Species Council invasive plant species

Wetland I D ·	30
	39

WETLAND HYDROLOGY:

Intermittently Flooded	Artificially Flooded	Permanently Flooded \Box
Semipermanently Flooded	Seasonally Flooded \Box	Temporarily Flooded ⊠
Permanently Saturated	Seasonally Saturated/seepage	Seasonally Saturated/perched \Box
Comments: None		

WETLAND TYPE:

Emergent 🖂	Scrub-shrub 🖂	Forested
Open Water □	Disturbed	Wet Meadow 🗆
Comments:		

WATERCOURSE TYPE:

Perennial 🖂	Intermittent	Ephemeral 🗆
Watercourse Name: Yantic River		
Comments: S23		

SPECIAL AQUATIC HABITAT:

Vernal Pool : Yes □ No ⊠ Potential □ Other □	
Vernal Pool Habitat Type: None	
Comments: None	

WETLAND SOIL TYPE (s):

Soil Types: Rippowam

DOMINANT PLANTS:

Common Reed* (Phragmites australis)	
Reed Canarygrass* (Phalaris arundinacea)	
Red Maple (Acer rubrum)	
Sweet Pepperbush (Clethera alnifolia)	
Multiflora Rose* (Rosa multiflora)	
Fox Grape (Vitis labrusca)	

* denotes Connecticut Invasive Species Council invasive plant species

Matle a d L D .	10
wetland I.D.:	40

WETLAND HYDROLOGY:

Intermittently Flooded	Artificially Flooded	Permanently Flooded \Box
Semipermanently Flooded \Box	Seasonally Flooded \Box	Temporarily Flooded □
Permanently Saturated 🛛	Seasonally Saturated/seepage \Box	Seasonally Saturated/perched \Box
Comments: None		

WETLAND TYPE:

Emergent 🖂	Scrub-shrub 🖂	Forested
Open Water □	Disturbed	Wet Meadow
Comments:		

WATERCOURSE TYPE:

Perennial 🖂	Intermittent	Ephemeral 🗆
Watercourse Name: Bentley Brook		
Comments: S26		

SPECIAL AQUATIC HABITAT:

Vernal Pool : Yes □ No ⊠ Potential □ Other □	
Vernal Pool Habitat Type: None	
Comments: None	

WETLAND SOIL TYPE (s):

Soil Types: Ridgebury, Leicester, and Whitman, Fluvaquents-Udifluvents

DOMINANT PLANTS:

Broad-Leaf Cattail (Typha latifolia)	
Wool Grass (Scirpus cyperinus)	
Red Maple (Acer rubrum)	
Sweet Pepperbush (Clethera alnifolia)	
Multiflora Rose* (Rosa multiflora)	
Buttonbush (Cephalanthus occidentalis)	

* denotes Connecticut Invasive Species Council invasive plant species

Wetland I.D.: 41		
	Wetland I.D.:	41

WETLAND HYDROLOGY:

Intermittently Flooded	Artificially Flooded	Permanently Flooded \Box
Semipermanently Flooded	Seasonally Flooded \Box	Temporarily Flooded □
Permanently Saturated	Seasonally Saturated/seepage	Seasonally Saturated/perched \Box
Comments: None		

WETLAND TYPE:

Emergent 🖂	Scrub-shrub 🖂	Forested 🖂
Open Water □	Disturbed	Wet Meadow 🗆
Comments:		

WATERCOURSE TYPE:

Perennial 🗆	Intermittent	Ephemeral 🗆			
Watercourse Name:					
Comments:					

SPECIAL AQUATIC HABITAT:

Vernal Pool : Yes 🗆 No 🗆 Potential 🗆	Other 🗆
Vernal Pool Habitat Type: None	
Comments:	

WETLAND SOIL TYPE (s):

DOMINANT PLANTS:

Fox Grape (Vitis labrusca)	
Goldenrod (Solidago)	
Multiflora Rose* (Rosa multiflora)	
Tussock Sedge (Carex stricta)	
Skunk Cabbage (Symplocarpus foetidus)	
Sensitive Fern (Onoclea sensibilis)	

* denotes Connecticut Invasive Species Council invasive plant species

Wetland I.D.:	42
	42

WETLAND HYDROLOGY:

Intermittently Flooded	Artificially Flooded	Permanently Flooded
Semipermanently Flooded	Seasonally Flooded \Box	Temporarily Flooded □
Permanently Saturated	Seasonally Saturated/seepage	Seasonally Saturated/perched
Comments: None		

WETLAND TYPE:

Emergent 🖂	Scrub-shrub 🖂	Forested 🖂			
Open Water □ Disturbed □		Wet Meadow			
Comments:					

WATERCOURSE TYPE:

Perennial 🗆	Intermittent 🛛	Ephemeral 🗆			
Watercourse Name: None					
Comments: S27 and S28					

SPECIAL AQUATIC HABITAT:

Vernal Pool : Yes 🗆 No 🗆 Potential 🗆	Other 🗆
Vernal Pool Habitat Type: None	
Comments:	

WETLAND SOIL TYPE (s):

Soil Types: Ridgebury, Leicester, and Whitman

DOMINANT PLANTS:

Fox Grape (Vitis labrusca)	
Goldenrod (Solidago)	
Multiflora Rose* (Rosa multiflora)	
Tussock Sedge (Carex stricta)	
Skunk Cabbage (Symplocarpus foetidus)	
Sensitive Fern (Onoclea sensibilis)	

* denotes Connecticut Invasive Species Council invasive plant species

Attachment E:

Vernal Pool Survey



Wetland Delineation • Wetland Assessment & Permitting • Wildlife Surveys • Fisheries & Aquatics • GIS Mapping • Forestry

Vernal Pool Survey Results

Card Substation to Wawecus Junction Upgrade Project

Prepared For: Eversource Energy 56 Prospect Street Hartford, CT 06103 Attn: Mark Pappalardo

Project Location: Lebanon, Franklin, Bozrah, and Norwich, Connecticut

Prepared By: auren

Eric Davison Wildlife Biologist, Wetland Scientist eric@davisonenvironmental.com www.davisonenvironmental.com

Date: 3-6-23

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	INTRODUCTION

Appendix A: Vernal Pool Photographs

1.0 INTRODUCTION

On Behalf of Eversource Energy Company, Davison Environmental LLC conducted vernal pool surveys on the Card Substation to Wawecus Junction Upgrade Project ("the Project"). The Project limits are depicted on the Map Set dated March 2, 2023 prepared by All Points Technology Corporation. Field surveys were conducted across all wetlands in the Project area in March and April of 2017 and 2022 by Biologists Eric Davison and Alex Malvezzi.

2.0 GEOGRAPHICAL SETTING

The Project area is in the Towns of Lebanon, Franklin, Bozrah and Norwich, Connecticut. The Project originates at the Card Street Substation in Lebanon and runs southeast to Wawecus Junction in Norwich.

From a biogeographical perspective, the Project area is located within the southern limits of the *Southern New England Coastal Plains and Hills* Ecoregion, just north of the transition from the *Long Island Sound Coastal Lowlands* Ecoregion (source: U.S. Environmental Protection Agency). The *Southern New England Coastal Plains and Hills* ecoregion covers much of Connecticut, Rhode Island, and southeastern Massachusetts, and is diverse in its characteristics and habitats. The landforms of the ecoregion are irregular plains with low hills and some open high hills with relief of about 100 to 400 feet. Elevations range up to about 1000 feet, with the highest elevations found in western Connecticut. Bedrock types are mostly granites, schist, and gneiss, although some soft marble occurs in western Connecticut. Surface materials are mostly glacial till, with some stratified deposits in valleys. Soil patterns are complex and heterogeneous where the numerous, small, till-covered bedrock hills rise above the valleys and general level of outwash. Coarse-loamy and sandy, mesic Inceptisols and some Entisols are typical.

3.0 VERNAL POOLS DEFINED

Vernal pools are ephemeral waterbodies that provide critical breeding habitat for forest-dwelling amphibians, particularly mole salamanders (*Ambystoma spp.*) and wood frog (*Lithobates sylvaticus*) as well as a variety of aquatic insects.

Many vernal pool definitions have been developed by both regulatory agencies as well as conservation organizations. While these definitions vary slightly, they all include the same common critical characteristics.

In Northeastern U.S., a recognized source utilized by both the Connecticut Department of Energy and Environmental Protection, as well as the U.S. Army Corp of Engineers New England District (ACOE) regarding the classification and protection of vernal pools is a document developed by Calhoun and Klemens (2002), entitled: *Best development practices*: *Conserving pool-breeding amphibians in residential and commercial developments in the northeastern United States* (the "BDP Manual", hereinafter). The BDP Manual provides the following operational definition of vernal pools:

"Vernal pools are seasonal bodies of water that attain maximum depths in the spring or fall, and lack permanent surface water connections with other wetlands or water bodies. Pools fill with snowmelt or runoff in the spring, although some may be fed primarily by groundwater sources. The duration of surface flooding, known as hydroperiod, caries depending upon the pool and the year; vernal pool hydroperiods range along a continuum from less than 30 days to more than one year. Pools are generally small in size (<2 acres), with the extent of vegetation varying widely. They lack established fish populations, usually as a result of periodic drying, and support communities dominated by animals adapted to living in temporary, fishless pools. In the region, they provide essential breeding habitat for one or more wildlife species including Ambystomid salamanders (Ambystoma spp.), called "mole salamanders" because they live in burrows), wood frogs (Rana sylvatica), and fairy shrimp (Eubranchipus spp.)."

The ACOE Connecticut General Permit (effective December 15, 2021) defines vernal pools as follows: Vernal pools are depressional wetland basins that typically go dry in most years and may contain inlets or outlets, typically of intermittent flow. Vernal pools range in both size and depth depending upon landscape position and parent material(s). In most years, Vernal pools support one or more of the following obligate indicator species: wood frog, spotted salamander, blue-spotted salamander, marbled salamander, Jefferson's salamander and fairy shrimp. However, they should preclude sustainable populations of predatory fish.

The physical characteristics of a vernal pool (e.g., landform, hydrology, vegetation) can vary widely, but can generally be classified into two types - "classic" or "cryptic". Classic vernal pools are natural isolated depressions in forested uplands with no hydrologic connection to other wetland systems. They are generally well-defined (i.e., have an abrupt wetland-upland boundary) and are typically concentric or oblong in shape.

Cryptic vernal pools are depressions or impoundments embedded within larger wetlands. Cryptic vernal pools are the most common type of pool in Connecticut, and often occur within seasonally flooded portions of red maple (*Acer rubrum*) dominated forested wetlands.

4.0 VERNAL POOL INDICATOR SPECIES

Several species of amphibians depend on vernal pools for reproduction and development. These species are referred to as "indicator species" (Calhoun and Klemens, 2002). In Connecticut, indicator species include:

Mole Salamanders

- Blue-spotted salamander (*Ambystoma laterale*)
- Spotted salamander (Ambystoma maculatum)
- Jefferson salamander (Ambystoma jeffersonianum)
- Marbled salamander (*Ambystoma opacum*)

<u>Frogs</u>

• Wood frog (*Lithobates sylvaticus*)

Invertebrates

• Fairy shrimp (*Branchiopoda anostraca*)

The wood frog and the spotted salamander are the two most common indicator species in Connecticut, occurring statewide. Fairy shrimp also occur statewide but are relatively uncommon.

The marbled salamander is relatively common statewide but is rare or absent from higher elevation areas of the state found within the northwest uplands and highlands as well as the northeast hills ecoregions. Marbled salamander are known to occur in the vicinity of the Project area (Klemens, et. al. 2021).

Less common indicator species include three State-listed species: the blue-spotted salamander (complex and pure diploid) and Jefferson salamander. These species are habitat specialists that have a more limited distribution in the State than other mole salamanders as described in Klemens et. al. 2021. These species do not occur in the vicinity Project area.

In addition to indicator species, vernal pools also support what are referred to as "facultative vernal pool species". These are species that utilize but do not necessarily require vernal pools for reproductive success. Examples of facultative species include spotted turtle (*Clemmys guttata*) and four-toed salamander (*Hemidactylium scutatum*). These species may breed or feed in vernal pools but are also capable of carrying out all phases of their life cycle in other types of wetlands or waterbodies. Evidence of breeding by facultative species alone is not considered indicative of a vernal pool.

5.0 SEASONAL ACTIVITY PERIODS OF INDICATOR SPECIES

Table 1 summarizes the seasonal activity of vernal pool amphibian indicator species. Most vernal pool indicator species breed in the late winter or early spring (March-April), with newly metamorphosed amphibians emerging from pools in June-July, with dispersal into the adjacent forest continuing into October. The exception to this is the marbled salamander which breeds in late summer and early fall (August-September), with metamorph emergence occurring from May – July. Table 1 also notes the seasonal periods in which vernal pools and vernal pool wildlife are particularly susceptible to impact from construction related activities that occur within or near (i.e., within approximately 100') vernal pools. These seasonal periods, noted as periods of "high sensitivity", include the migration/breeding period and the metamorph emergence/early dispersal periods. During these times, amphibians occur at higher density within or immediately adjacent to the pool. Thus, the risk of impact either via direct mortality or disruption of migration and breeding is greater during the high sensitivity periods.

Table 1:	Seasonal	activity	periods	for	vernal	pool	indicator	species
		· · · · ·						

	SPRING BREEDERS Wood Frog, Spotted Salamander, Jefferson Salamander, and Blue-spotted Salamander Complex					
	NOVEMBER - FEBRUARY	Pools are dormant				
	MARCH - APRIL	Migration, breeding and egg deposition				
	APRIL - JUNE	Egg hatching and larval development				
	JUNE - OCTOBER	Metamorphosis and juvenile dispersal				
HSENSITIVITY	MARCH – APRIL	High densities of adults migrating to and from breeding pools				
RIOD 0-100FT	JUNE - JULY	High densities of metamorphs disperse from breeding pools into the adjacent forest				

	FALL BREEDERS Marbled Salamander			
	AUGUST – SEPTEMBER	Migration, breeding and egg deposition		
	NOVEMBER - MAY	Egg hatching and larval development		
	MAY - JULY	Metamorphosis and juvenile dispersal		
HIGH SENSITIVITY	AUGUST-SEPTEMBER	Adults migrate to breeding pools		
PERIOD 0-100FT	MAY - JULY	High densities of metamorphs disperse from breeding pools into the adjacent forest		

6.0 TERRESTRIAL (NON-BREEDING) HABITAT

HIG Pl

Vernal pool wildlife favor terrestrial forested habitat adjacent to vernal pools during the nonbreeding period (Colburn, 2004). These habitats are where they shelter and feed beneath surficial cover objects (e.g., rocks, logs) or in fossorial small mammal burrows. Forests not only provide habitat, but the trees adjacent to vernal pools are critical to vernal pool ecology as they contribute to the food web (via detritus inputs), help maintain cool water temperatures, and affect pool hydrology (Colburn, 2004).

Vernal pool amphibians disperse a significant distance into terrestrial forests surrounding the pool. A number of studies have documented dispersal distances of indicator species (Colburn 2004, Windmiller 1996, Semlitsch 1998). The BDP Manual utilized data from these and other sources to develop a two-zoned management area extending a total distance of 750' surrounding from the vernal pool. These zones are illustrated on Figure 1. The first zone, referred to as the Vernal Pool Envelope includes lands within 100' of the pool's spring high water mark. The spring high water mark is the limit of peak flooding during the late winter or early spring. The second zone, referred to as the Critical Terrestrial Habitat encompasses an area 100'-750' from the pool's spring high water mark.

These management zones provide several ecosystem support functions for vernal pools as illustrated on Figure 1. These include:

- Terrestrial habitat for amphibians
- Juvenile (i.e., newly metamorphosed) dispersal and staging habitat
- Migration and dispersal corridor
- Tree cover which provides
 - Leaf litter inputs as a source for detritus-based food web
 - Shading and hydroperiod influence
 - Contributing watershed (groundwater and surface water input)





7.0 SURVEY METHODS

Survey methods were designed to document breeding by amphibian indicator species. The simplest method to accomplish this is to locate and inventory egg masses in the case of spring breeders (e.g., wood frog), and larvae for the fall breeding marbled salamander. This work was done via visual and audial observations, and inventory of organisms inhabiting the water column and benthic habitat using a fine mesh (<1/4 inch) dipnet. Work was conducting under sunny skies wearing polarized sunglasses to maximize detection of egg masses and larvae. The critical aspect of this work is identifying the proper survey timing, based on seasonal weather patterns that trigger breeding migration. The appropriate timing is informed by Davison Environmental's two decades of vernal pool survey experience, as well as ongoing observations of vernal pools in the region and across the State during late February-early March. Capture and identification of breeding adults was not deemed necessary at this Site, as definitive identification of the breeding species

by egg mass was straightforward based on the species that are known to occur in this region. Physical capture of breeding adults is a critical survey method for certain regions of the State where the potential exists for the presence of blue-spotted salamander complex or Jefferson salamander complex, as differentiation of egg masses of these species from the common spotted salamander is not definitive. At such sites, the capture of breeding adults is warranted.

Examine of the physical characteristics of the pools included mapping the extent of the pool, characterizing pool hydrology (maximum depth and hydroperiod) and documenting the vegetative characteristics. The extent of the pool, or vernal pool basin boundary, is determined in the late winter-early spring during maximum flooding. This is determined by field locating the "spring high water mark" (Calhoun and Klemens 2002), which consists of demarcated the seasonally flooded portions of the wetland that are directly connected to observed egg masses. This boundary is mapped in the field using a Trimble GPS Unit capable of sub-meter accuracy, then plotted in ArcGIS as illustrated on the Map Set.

8.0 RESULTS

All wetlands were inspected for their potential to provide vernal pool habitat. Wetlands with a hydrology ranging from seasonally flooded to semi-permanently flooded were the focus of detailed investigation, as they would have the potential to support full development of amphibian larvae.

In total, six vernal pools were observed within the Project area. Vernal pool physical and biological characteristics are summarized in Table 2. Two vernal pool indicator species were observed in total, the spotted salamander (*Amybystoma maculuatum*) and wood frog (*Lithobates sylvaticus*). Spotted salamander were confirmed in five of the six pools; wood frog were observed in four of the six pools. The biogeography was suitable for the marbled salamander, but none were observed during the survey.

Other amphibian and reptile species observed during survey work included spring peeper (*Pseudacris cruficer*) adults, green frog (*Rana clamitans*) adults and larvae, bullfrog adults (*Lithobates catesbeianus*), gray treefrog (*Hyla versicolor*) adult, spotted turtle (*Clemmys guttata*) and painted turtle (*Chrysemys picta*).

Pool #	Map Sheet	Physical Characteristics		Indicator Species			Facultative/ Non-Indicator Species	Cover Type
		Maximum Depth (in)	Туре	Total Egg Masses Ta		Tadpole/		
				Amac	Lsyl	Larvae		
1	1	24	cr	13	4		Pcru, Lcla	PEM, PSS
2	2	16	cl	73	1		Lcla, Lcat	PSS
3	4	36	cr	9	-			PSS
4	5	12	cr	-	10		Lcla	PSS
5	5	15	cr	14	3		Lcla	PSS
6	5	12	cr	3			Lcla	PSS
KEY								

Table 2: Summary of vernal pool physical and biological characteristics

Type: cryptic (cr), classic (cl), anthropogenic (an)

Species: Ambystoma maculatum (Amac); Lithobates sylvaticus (Lsyl); Pseudacris crucifer (Pcru); Lithobates clamitans (Lcla); Notopthalmus viridescens (Nvir)

Vegetation: palustrine scrub-shrub (PSS); palustrine forested (PFO); palustrine emergent (PEM); aquatic beds present (AQ)

Notes: Vernal Pool 6 contained very dense buttonbush and thick algae growth therefore the egg mass count is considered an underestimate; Vernal Pool 2 contained a large communal raft of wood frog egg masses so the total count is approximate.

Vernal pool hydrology was largely seasonally flooded. The dominant vegetative cover type is scrub-shrub. Typical component shrub species included buttonbush (*Cephalanthus occidentalis*), winterberry (*Ilex verticillata*) and highbush blueberry (*Vaccinium corymbosum*). Component herbaceous plant species included tussock sedge (*Carex stricta*), skunk cabbage (*Symplocarpus foetidus*) and sensitive fern (*Onoclea sensibilis*). Due to ongoing vegetation management, trees were largely absent from the portions of the pools located within the maintained right-of-way but, where present, were predominately red maple (*Acer rubrum*).

9.0 RECOMMENDED PROTECTION MEASURES

Based on the Project activities proposed in proximity to vernal pools, the following measures are recommended to avoid or minimize impacts on vernal pools during construction:

A. Avoidance and/or minimization of construction activities in vernal pools where feasible.

B. Matted access within Vernal Pool 2 should be elevated as illustrated on Figure 2 to allow animals to move beneath the matting whilst remaining above the waterline.



Figure 2: Illustration of elevated matting

- C. Permanent alteration of habitat should be avoided within vernal pool envelopes. Temporary matting should be utilized for access roads and work pads where feasible.
- D. If possible, no tree cutting should occur within vernal pool envelopes. If vegetation must be removed, to the maximum extent practicable it should be done selectively either by hand or with equipment that can reach in and cut and remove it. Non-selective mowing of vegetation shall only be used if it is absolutely necessary.
- E. Removal of shrub cover associated with work pad and access road construction within 25' of vernal pools should be minimized to the extent practicable. Cut woody debris (slash) should be left in place to provide amphibian cover and promote the development of coarse woody debris and detritus.

- F. If necessary, erosion and sedimentation controls should be installed and maintained along existing access roads and work pads near vernal pools as necessary to protect water quality and to limit the potential for soil deposition into vernal pools. Erosion control measures should be designed in a manner that allows unencumbered amphibian access to the vernal pool. Such measures may include, but not be limited to; straw wattles, and aligning erosion and sedimentation controls to avoid bifurcating vernal pool habitat.
- G. Plastic netting, which may be found in a variety of erosion control products (e.g., erosion control blankets, straw wattles, and reinforced silt fence), should not be used. Erosion and sedimentation control devices should be promptly removed upon final revegetation and stabilization of the ROW.

10.0 REFERENCES

Calhoun, A.J.K. and M.W. Klemens. 2002. Best development practices: Conserving pool-breeding amphibians in residential and commercial developments in the northeastern United States. MCA Technical Paper No. 5, Metropolitan Conservation Alliance, Wildlife Conservation Society, Bronx, New York.

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Windmiller, B.S. 1996. The pond, the forest, and the city: Spotted salamander ecology and conservation in a human-dominated landscape. Ph.D dissertation, Tufts, University, Medford, MA.

U.S. Environmental Protection Agency Ecoregions GIS Data. Web link: https://www.epa.gov/eco-research/ecoregion-download-files-state-region-1#pane-27

VERNAL POOL PHOTOGRAPHS



Vernal Pool Photo Documentation Card Substation to Wawecus Junction Upgrade Project Photos taken March-April 2022



Photo 1: Vernal Pool 1



Photo 2: Vernal Pool 2.



Vernal Pool Photo Documentation Card Substation to Wawecus Junction Upgrade Project Photos taken in 2022



Photo 3: Vernal Pool 3



Photo 4: Vernal Pool 4.



Vernal Pool Photo Documentation Card Substation to Wawecus Junction Upgrade Project Photos taken in 2022



Photo 5: Vernal Pool 5



Photo 6: Vernal Pool 6.

Attachment F:

Letter to Abutters and Affidavit of Service



P.O.Box 270 Hartford, CT 06141-0270

April 11, 2023

Dear Neighbor,

At Eversource, we're always working to serve you better. We are submitting a petition to the Connecticut Siting Council (CSC) for a proposed structure replacement project in your area.

Proposed Project Information

The Project, called Card Substation to Wawecus Junction Upgrade Project, will be taking place within the right of way on or near your property between the Card Substation in Lebanon and Wawecus Junction in Norwich for approximately 13 miles. The Proposed modifications include:

- Replacement of 38 existing wood structures with new steel structures, with a finish that "weathers" or darkens over time. Most of the structure replacements are due to the age and condition of these structures and some structures will be replaced to comply with National Electrical Safety Code (NESC) clearance requirements. The existing structure heights range from 52 feet to 74.5 feet above ground level ("AGL") and the new structures will range in height from 52 feet to 97 feet AGL. The average height increase is approximately nine feet AGL.
- Select tree and vegetation trimming within the right of way to comply with updated electrical standards.

In addition, we will replace the shield wire on the structures with communication wire called Optical Ground Wire (OPGW). With these improvements, Eversource will improve electric reliability by enabling communication between substations.

What You Can Expect

Pending all necessary approvals for this proposed work, construction is expected to begin in the third quarter of 2023. We anticipate completing construction, including restoration of affected areas, by summer 2024.

For More Information

Eversource is committed to being a good neighbor and doing our work with respect for you and your property. For more information, please call our projects hotline at 1-800-793-2202 or send an email to ProjectInfo@eversource.com.

If you would like to send comments regarding Eversource's petition to the CSC, please send them via email to siting.council@ct.gov or send a letter to the following address: Melanie Bachman, Executive Director, Connecticut Siting Council, Ten Franklin Square, New Britain, CT 06051.

Sincerely,

Heather Hayes

Heather Hayes Project Manager on Behalf of Eversource Energy Transmission

AFFIDAVIT OF SERVICE OF NOTICE

STATE OF CONNECTICUT

) ss. Hartford

COUNTY OF HARTFORD

Sec. 16-50j-40 of the Regulations of Connecticut State Agencies ("RCSA") provides that proof of notice to the affected municipalities, property owners and abutters shall be submitted with a petition for declaratory ruling to the Connecticut Siting Council ("Council"). In accordance with that RCSA section, I hereby certify that I caused notice of proposed facility modifications by The Connecticut Light and Power Company doing business as Eversource Energy to be served by mail or courier upon the following municipal officials:

Kevin Cwikla	Glenn S. Pianka
First Selectman	First Selectman
Lebanon Town Hall	Bozrah Town Hall
579 Exeter Road	1 River Road
Lebanon, CT 06249	Bozrah, CT 06334
Charles Grant	Peter Albert Nystrom
First Selectman	Mayor

Franklin Town Hall 7 Meetinghouse Hill Road Franklin, CT 06254

Norwich City Hall 100 Broadway

Norwich, CT 06360

I also certify that I caused notice of the proposed modifications to be served by mail or courier upon 103 owners of direct or abutting properties shown on the maps in Attachment A in the Card Substation to Montville Junction Upgrade Project Petition.

Deborah Neufeld

Deborah S. Denfeld Siting – Team Lead

On this the 11th day of April 2023, before me, the undersigned representative, personally appeared, Deborah S. Denfeld known to me (or satisfactorily proven) to be the person whose name is subscribed to the foregoing instrument and acknowledged that she executed the same for the purposes therein contained.

In witness whereof, I hereunto set my hand and official seal.

Notary Public/My Commission expires:
Attachment G:

Sample Photos

Structure #7758



Structure #7732



Structure #7722

