Appendix F

NHDES Wetland Permit Application, July 10, 2015

Merrimack Valley Reliability Project

Pelham, Windham, Hudson & Londonderry, New Hampshire

PREPARED FOR

New England Power Company d/b/a National Grid 40 Sylvan Road Waltham, Massachusetts, 02451 781.907.3648



Public Service Company of New Hampshire d/b/a Eversource Energy 13 Legends Drive Hooksett, New Hampshire 03106 603.634.2906

PREPARED BY



2 Bedford Farms Drive Suite 200 Bedford, NH 03110 603.391.3900

July 2015



Table of Contents

Table of Contents

Wetlands Permit Application Forms

USACE PGP – Appendix B - Secondary Impacts Checklist

Review Criteria Administrative Rule [Env-Wt 302.04(a)]

Application Narrative

1.0	Introduction	1
2.0	Site Description and Existing Conditions	3
3.0	Proposed Project Description	5
4.0	Project Wetlands and Vernal Pools	9
5.0	Proposed Wetland and Vernal Pool Impacts	.20
6.0	Surface Waters & Drainage Patterns	.23
7.0	Proposed Stream Impacts	.25
8.0	Floodplains and Floodways	.29
9.0	Rare, Threatened and Endangered Species	30
10.0	Cultural Resources	.32
11.0	Alternatives Analysis	.33
12.0	Mitigation Measures	.34
13.0	Shoreland Water Quality Protection Act	.36



Figures

Figure 1	USGS Project Location Map
Figure 2	NRCS Mapped Soils
Figure 3	FEMA Floodplain Map
Figure 4	NHF&G Wildlife Action Plan

Attachments

Attachment A	Wetland Permitting Plans
Attachment B	Wetland and Stream Impact Summary Tables
Attachment C	Representative Site Photographs
Attachment D	Natural Resource Agency Correspondence
Attachment E	Cultural Resource Agency Correspondence
Attachment F	Abutter/Town Tax Maps
Attachment G	USACE Functions and Values Forms
Attachment H	Vernal Pool Summary Table & Photographs
Attachment I	Preliminary Project Mitigation Agreement



Wetlands Permit Application Forms

NHDES-W-06-012



WETLANDS PERMIT APPLICATION

Water Division/ Wetlands Bureau Land Resources Management

Check the status of your application: http://des.nh.gov/onestop



RSA/Rule: Env-Wq 100-900

Administrative Use	Ac	lministrative Use	Adm	ninistrative Use	Check No.:	
Only		Only		Only	Amount:	
					Initials:	
1. REVIEW TIME:						
Indicate your Review Time belo	ow. Refer to Guid	ance Document A for	instructions.			
Standard Review (N	linimum, Minor o	r Major Impact)		Expedited Revi	iew (Minimum Impact	only)
2. PROJECT LOCATION: Separate applications must be	filed with each m	unicipality that jurisdic	ctional impacts	will occur in.		
ADDRESS: Existing Electric	Transmission	Right-of-Way (RO	W)	то	OWN/CITY: Pelham	
TAX MAP: N/A	BLOCK: N/A	LOT: N/A		T		UNIT: N/A
USGS TOPO MAP WATERBODY	NAME:		⊠ NA	STREAM WATER	RSHED SIZE:	⊠ NA
LOCATION COORDINATES (If kn			existing elec	tric transmiss	ion ROW in Pelha	ım
3. PROJECT DESCRIPTION:						
Provide a brief description of the of your project. DO NOT reply				al sheets as need	ded to provide a deta	iled explanation
The Merrimack Valley Reliability Project (MVRP) involves the construction of a new overhead 345 kV electric transmission line within an existing electric transmission ROW between the New England Power d/b/a National Grid (NEP) owned Tewksbury 22A Substation in Tewksbury, Massachusetts and the Public Service Company of New Hampshire d/b/a Eversource Energy (PSNH) owned Scobie Pond 345 kV Substation in Londonderry, New Hampshire. The portion of the MVRP located within New Hampshire that is the subject of this permit application is referred to herein as the "Project". The Project extends from the Massachusetts border in Pelham, New Hampshire to the PSNH-owned Scobie Pond 345 kV Substation in Londonderry, New Hampshire. The Project proposes approximately 17.9 miles of new transmission line (which will be known as "3124 Line") within the Towns of Pelham, Windham, Hudson, and Londonderry as well as relocation of 7.6 miles of an existing NEP-owned 115 kV transmission line (known as "Y-151 line") within the Towns of Pelham, Windham, and Hudson.						
The MVRP has been divide (6.5 miles in length) is loc in New Hampshire to be ownorth within an existing NEF town of Hudson where the properated by PSNH.	ated in Massac ned and operate PROW for 8.1 n project shifts fro	chusetts and is not ed by NEP. Segmen niles through the To m the existing NEP	t discussed I nt 2 runs from wns of Pelha ROW to an e	nerein. Segme the Massachum, Windham ar xisting PSNH R	ent 2 is the portion of setts/New Hampsh and Hudson to a located ROW. Segments 3 a	of the Project ire continuing ation in the and 4 account
To incorporate the new 312 transmission line) will need installed in the original Y-15 existing PSNH ROW. In Set Refer to the Attached App	to be relocated 1 alignment. In gment 4, the ne	within the western of Segment 3, the new w 3124 Line will be	edge of the ex v 3124 Line w installed with	tisting NEP RO rill be installed v in the center of	W and the new 312 within the eastern e the existing PSNH	24 Line will be edge of the

4. RELATED PERMITS, ENFORCEMENT, EMERGENCY AU	THORI	ZATION, S	HORELAND, ALTERATI	ON OF TERRAIN, ETC		
 NHSEC Joint Application for a Certificate of Site and F NHDES Shoreland Permit Application (being submitted NHDES 401 Water Quality Certification (being submitted NHDES Alteration of Terrain Permit Application (being NHDES Wetlands Permits for Geotechnical Boring Wo NHDES Shoreland Permit By Notification for Geotechnical 	d conc ed cor subm ork Ass	urrently wincurrently winted concustred concustred with the concus	with this application); urrently with this application th the MVRP (#2015-0	1230; #2015-01231);		
5. NATURAL HERITAGE BUREAU & DESIGNATED RIVERS See the Instructions & Required Attachments document for inst		s to comple	te a & b below.			
a. Natural Heritage Bureau File ID: NHB <u>14</u> - <u>4809.</u>						
 b. ☐ Designated River the project is in ¼ miles of:			e: Month: Day: `	Year:		
6. APPLICANT INFORMATION (Desired permit holder)						
LAST NAME, FIRST NAME, M.I.: Holden, Joshua						
TRUST / COMPANY NAME: New England Power Company (NEP) MAILING ADDRESS: 40 Sylvan Road, 3 rd Floor, East Wing						
TOWN/CITY: Waltham	STATE: MA			ZIP CODE: 02451-1120		
EMAIL or FAX: joshua.holden@nationalgrid.com	PHONE: 781-907-3648					
ELECTRONIC COMMUNICATION: By initialing here:, I here	by auth	orize DES to	communicate all matters rela	ative to this application electronically		
7. PROPERTY OWNER INFORMATION (If different than ap	plicant)				
LAST NAME, FIRST NAME, M.I.: ROW consists of existing e	aseme	ents and f	ee ownerships			
TRUST / COMPANY NAME:	MAILIN	NG ADDRES	S:			
TOWN/CITY:	STATE	Ē:		ZIP CODE:		
EMAIL or FAX:			PHONE:			
ELECTRONIC COMMUNICATION: By initialing here, I herel	by autho	orize DES to	communicate all matters rela	tive to this application electronically		
8. AUTHORIZED AGENT INFORMATION						
LAST NAME, FIRST NAME, M.I.: Trefry, Sherrie L. COMPANY NAME: Vanasse Hangen Brustlin, Inc.						
MAILING ADDRESS: 2 Bedford Farms Drive, Suite 200						
TOWN/CITY: Bedford	STATE	: NH		ZIP CODE: 03110		
EMAIL or FAX: strefry@vhb.com	MAIL or FAX: strefry@vhb.com PHONE: 603-391-3900					
ELECTRONIC COMMUNICATION: By initialing here, I herel	by autho	orize DES to	communicate all matters rela	tive to this application electronically		

shoreland@des.nh.gov or (603) 271-2147
NHDES Wetlands Bureau, Concord, NH 03303-0095
www.des.nh.gov

9. PROPERTY OWNER SIGNATURE:

See the Instructions & Required Attachments document for clarification of the below statements

By signing the application, I am certifying that:

- 1. I authorize the applicant and/or agent indicated on this form to act in my behalf in the processing of this application, and to furnish upon request, supplemental information in support of this permit application.
- 2. I have reviewed and submitted information & attachments outlined in the Instructions and Required Attachment document.
- All abutters have been identified in accordance with RSA 482-A:3, I and Env-Wt 100-900.
- I have read and provided the required information outlined in Env-Wt 302.04 for the applicable project type.
- 5. I have read and understand Env-Wt 302.03 and have chosen the least impacting alternative.
- Any structure that I am proposing to repair/replace was either previously permitted by the Wetlands Bureau or would be considered grandfathered per Env-Wt 101.47.
- 7. I have submitted a Request for Project Review (RPR) Form (www.nh.gov/nhdhr/review) to the NH State Historic Preservation Officer (SHPO) at the NH Division of Historical Resources to be reviewed for the presence of historical/ archeological resources.
- 8. I authorize DES and the municipal conservation commission to inspect the site of the proposed project.
- 9. I have reviewed the information being submitted and that to the best of my knowledge the information is true and accurate.
- 10. I understand that the willful submission of falsified or misrepresented information to the New Hampshire Department of Environmental Services is a criminal act, which may result in legal action.
- 11. I am aware that the work I am proposing may require additional state, local or federal permits which I am responsible for obtaining.
- 12. The mailing addresses I have provided are up to date and appropriate for receipt of DES correspondence. DES will not forward returned mail.

Joshu Hover for NEP	Joshua Holden	6 / 23 /2015
Property Owner Signature	Print name legibly	Date



MUNICIPAL SIGNATURES

10. CONSERVATION COMMISSION SIGNATURE

The signature below certifies that the municipal conservation commission has reviewed this application, and:

- 1. Waives its right to intervene per RSA 482-A:11;
- 2. Believes that the application and submitted plans accurately represent the proposed project; and
- 3. Has no objection to permitting the proposed work.

Print name legibly

Date

DIRECTIONS FOR CONSERVATION COMMISSION

- 1. Expedited review ONLY requires that the conservation commission's signature is obtained in the space above.
- 2. The Conservation Commission signature should be obtained **prior** to the submittal of the original application and four copies to the town/city clerk for mailing to the DES.
- 3. The Conservation Commission may refuse to sign. If the Conservation Commission does not sign this statement for any reason, the application is not eligible for expedited review and the application will reviewed in the standard review time frame.

11. TOWN / CITY CLERK SIGNATURE

As required by Chapter 482-A:3 (amended 2014), I hereby certify that the applicant has filed four application forms, four detailed plans, and four USGS location maps with the town/city indicated below.

Town/City Clerk Signature

Donothy A. MARSDES
Print name legibly

PELHAM Town/City 7/10/2015

DIRECTIONS FOR TOWN/CITY CLERK:

Per RSA 482-A:3,I

- 1. For applications where "Expedited Review" is checked on page 1, sign and accept the applications **only** if the Conservation Commission signature has been received;
- 2. IMMEDIATELY sign the original application form and four copies in the signature space provided above;
- 3. Return the signed original application form and attachments to the applicant so that the applicant may submit the application form and attachments to NHDES by mail or hand delivery.
- 4. IMMEDIATELY distribute a copy of the application with one complete set of attachments to each of the following bodies: the municipal Conservation Commission, the local governing body (Board of Selectmen or Town/City Council), and the Planning Board; and
- 5. Retain one copy of the application form and one complete set of attachments and make them reasonably accessible for public review.

DIRECTIONS FOR APPLICANT:

1. Submit the original permit application form bearing the signature of the Town/ City Clerk, additional materials, and the application fee to NHDES by mail or hand delivery.

12. IMPACT AREA: For each jurisdictional area that will b	pe/has been impacted, provide sq	uare feet and,	if applicable, linear feet of impact	
Permanent: impacts that will remain a	after the project is complete.			
JURISDICTIONAL AREA	remain (and will be restored to pre PERMANENT	2-construction	conditions) after the project is complete. TEMPORARY	
	Sq. Ft. / Lin. Ft.		Sq. Ft. / Lin. Ft.	
Forested wetland		∐ ATF	4,209	☐ ATF
Scrub-shrub wetland	2,016	∐ ATF	82,170	☐ ATF
Emergent wetland	1,106	☐ ATF	38,035	
Wet meadow Intermittent stream		☐ ATF	1	ATF
Perennial Stream / River		∐ ATF	,	L ATF
Lake / Pond		ATF	/	ATF
Bank - Intermittent stream	1	ATF	390 / 195 (Bed Impact)	ATF
Bank - Perennial stream / River	/	ATF	/	ATF
Bank - Lake / Pond		ATF	/	ATF
Tidal water		ATF	1	ATF
Salt marsh		ATF		ATF
Sand dune		ATF		ATF
Prime wetland	628	☐ ATF	35,622	ATF
Prime wetland buffer		☐ ATF		ATF
Undeveloped Tidal Buffer Zone (TBZ)		ATF		ATF
Previously-developed upland in TBZ		ATF		ATF
Docking - Lake / Pond		ATF		ATF
Docking - River		ATF		ATF
Docking - Tidal Water		ATF		ATF
TOTAL	3,750 /		160,426 / 195	
13. APPLICATION FEE: See the Ins	structions & Required Attachment	s document for	r further instruction	
☐ Minimum Impact Fee: Flat fee of				
Minor or Major Impact Fee: Calc	<u> </u>		# V #0.20	
	and Temporary (non-docking)		sq. ft. X \$0.20 = \$32,835.20	
Temporary	sq. ft. X \$1.00 =\$			
	sq. ft. X \$2.00 =\$			
Project	ts proposing shoreline structur	res (including	docks) add \$200 = _ \$	
			Total = _ \$ 32,835.20	
The Applicati	ion Fee is the above calculated T	otal or \$200 w	hichever is greater = \$ 32 835 20	

NHDES-W-06-012



WETLANDS PERMIT APPLICATION

Water Division/ Wetlands Bureau Land Resources Management

Check the status of your application: http://des.nh.gov/onestop



RSA/Rule: Env-Wq 100-900

					File No.:	
Administrative	Ac	dministrative	Adm	inistrative	Check No.:	
Use Only		Use Only		Use Only	Amount:	
					Initials:	
1. REVIEW TIME:						
Indicate your Review Time below	v. Refer to Guid	lance Document A for	instructions.			
Standard Review (Mi	nimum, Minor o	r Major Impact)		Expedited R	eview (Minimum Impa	act only)
2. PROJECT LOCATION: Separate applications must be fi	led with each m	nunicipality that iurisdic	ctional impacts	will occur in.		
ADDRESS: Existing Electric					TOWN/CITY: Windh	am
TAX MAP: N/A	LOCK: N/A	LOT: N/A				UNIT: N/A
USGS TOPO MAP WATERBODY N	AME:		⊠ NA	STREAM WAT	TERSHED SIZE:	⊠ NA
LOCATION COORDINATES (If known Latitude/Longitude UT	vn): Multiple I M □ State Plan	ocations along an	existing elec	tric transmi	ssion ROW in Win	dham
3. PROJECT DESCRIPTION: Provide a brief description of the of your project. DO NOT reply "				al sheets as n	eeded to provide a de	tailed explanation
The Merrimack Valley Reliability Project (MVRP) involves the construction of a new overhead 345 kV electric transmission line within an existing electric transmission ROW between the New England Power d/b/a National Grid (NEP) owned Tewksbury 22A Substation in Tewksbury, Massachusetts and the Public Service Company of New Hampshire d/b/a Eversource Energy (PSNH) owned Scobie Pond 345 kV Substation in Londonderry, New Hampshire. The portion of the MVRP located within New Hampshire that is the subject of this permit application is referred to herein as the "Project". The Project extends from the Massachusetts border in Pelham, New Hampshire to the PSNH-owned Scobie Pond 345 kV Substation in Londonderry, New Hampshire. The Project proposes approximately 17.9 miles of new transmission line (which will be known as "3124 Line") within the Towns of Pelham, Windham, Hudson, and Londonderry as well as relocation of 7.6 miles of an existing NEP-owned 115 kV transmission line (known as "Y-151 line") within the Towns of Pelham, Windham, and Hudson.						
The MVRP has been divided into four segments delineated by state, ownership, and line alignment. Segment 1 of MVRP (6.5 miles in length) is located in Massachusetts and is not discussed herein. Segment 2 is the portion of the Project in New Hampshire to be owned and operated by NEP. Segment 2 runs from the Massachusetts/New Hampshire continuing north within an existing NEP ROW for 8.1 miles through the Towns of Pelham, Windham and Hudson to a location in the town of Hudson where the project shifts from the existing NEP ROW to an existing PSNH ROW. Segments 3 and 4 account for the remaining 9.8 miles of the Project in the Towns of Hudson and Londonderry to be owned and operated by PSNH. To incorporate the new 3124 Line in the majority of Segment 2, the existing NEP-owned Y-151 line (overhead 115 kV transmission line) will need to be relocated within the western edge of the existing NEP ROW and the new 3124 Line will be installed in the original Y-151 alignment. In Segment 3, the new 3124 Line will be installed within the eastern edge of the						
existing PSNH ROW. In Segi Refer to the Attached Appli	ment 4, the ne	w 3124 Line will be	installed withi	n the center	of the existing PSN	

4. RELATED PERMITS, ENFORCEMENT, EMERGENCY AU	THOR	IZATION, S	HORELAND, ALTERA	TION OF TERRAIN, ETC
 NHSEC Joint Application for a Certificate of Site and F NHDES Shoreland Permit Application (being submitted). NHDES 401 Water Quality Certification (being submitted). NHDES Alteration of Terrain Permit Application (being). NHDES Wetlands Permits for Geotechnical Boring Wolf. NHDES Shoreland Permit By Notification for Geotechnical 	d cond ed cor subm ork Ass	currently wincurrently witted concurrently witted concurrences	with this application); urrently with this appli ith the MVRP (#2015 -	·01230; #2015-01231);
5. NATURAL HERITAGE BUREAU & DESIGNATED RIVERS See the Instructions & Required Attachments document for inst		s to comple	ete a & b below.	
a. Natural Heritage Bureau File ID: NHB <u>14</u> - <u>4809.</u>				
 b. ☐ Designated River the project is in ¼ miles of:			e: Month: Day:	Year:
6. APPLICANT INFORMATION (Desired permit holder)				
LAST NAME, FIRST NAME, M.I.: Holden, Joshua				
TRUST / COMPANY NAME: New England Power Company (NEP) MAILING ADDRESS: 40 Sylvan Road, 3 rd Floor, East Wing				rd Floor, East Wing
TOWN/CITY: Waltham	STATE	≣: MA		ZIP CODE: 02451-1120
EMAIL or FAX: joshua.holden@nationalgrid.com	PHONE: 781-907-3648			
ELECTRONIC COMMUNICATION: By initialing here:, I here	eby auth	orize DES to	communicate all matters re	elative to this application electronically
7. PROPERTY OWNER INFORMATION (If different than ap	plicant	t)		
LAST NAME, FIRST NAME, M.I.: ROW consists of existing e	aseme	ents and f	ee ownerships	
TRUST / COMPANY NAME:	MAILIN	NG ADDRES	S:	
TOWN/CITY:	STATE	≣:		ZIP CODE:
EMAIL or FAX:			PHONE:	
ELECTRONIC COMMUNICATION: By initialing here, I here	by autho	orize DES to	communicate all matters re	elative to this application electronically
8. AUTHORIZED AGENT INFORMATION				
LAST NAME, FIRST NAME, M.I.: Trefry, Sherrie L.			COMPANY NAME: Vana	asse Hangen Brustlin, Inc.
MAILING ADDRESS: 2 Bedford Farms Drive, Suite 200				
TOWN/CITY: Bedford	STATE	≣: NH		ZIP CODE: 03110
EMAIL or FAX: strefry@vhb.com PHONE: 603-391-3900				
ELECTRONIC COMMUNICATION: By initialing here, I here	by autho	orize DES to	communicate all matters re	elative to this application electronically

9. PROPERTY OWNER SIGNATURE:

See the Instructions & Required Attachments document for clarification of the below statements

By signing the application, I am certifying that:

- 1. I authorize the applicant and/or agent indicated on this form to act in my behalf in the processing of this application, and to furnish upon request, supplemental information in support of this permit application.
- 2. I have reviewed and submitted information & attachments outlined in the Instructions and Required Attachment document,
- All abutters have been identified in accordance with RSA 482-A:3, I and Env-Wt 100-900.
- 4. I have read and provided the required information outlined in Env-Wt 302.04 for the applicable project type.
- 5. I have read and understand Env-Wt 302.03 and have chosen the least impacting alternative.
- Any structure that I am proposing to repair/replace was either previously permitted by the Wetlands Bureau or would be considered grandfathered per Env-Wt 101.47.
- 7. I have submitted a Request for Project Review (RPR) Form (www.nh.gov/nhdhr/review) to the NH State Historic Preservation Officer (SHPO) at the NH Division of Historical Resources to be reviewed for the presence of historical/ archeological resources.
- 8. I authorize DES and the municipal conservation commission to inspect the site of the proposed project.
- 9. I have reviewed the information being submitted and that to the best of my knowledge the information is true and accurate.
- 10. I understand that the willful submission of falsified or misrepresented information to the New Hampshire Department of Environmental Services is a criminal act, which may result in legal action.
- 11. I am aware that the work I am proposing may require additional state, local or federal permits which I am responsible for obtaining.
- 12. The mailing addresses I have provided are up to date and appropriate for receipt of DES correspondence. DES will not forward returned mail.

John Welle For MEP	Joshua Holden	6 / 23 / 2015
Property Owner Signature	Print name legibly	Date

MUNICIPAL SIGNATURES

10. CONSERVATION COMMISSION SIGNATURE

The signature below certifies that the municipal conservation commission has reviewed this application, and:

- 1. Waives its right to intervene per RSA 482-A:11;
- 2. Believes that the application and submitted plans accurately represent the proposed project; and
- 3. Has no objection to permitting the proposed work.

Print name legibly

Date

DIRECTIONS FOR CONSERVATION COMMISSION

- 1. Expedited review ONLY requires that the conservation commission's signature is obtained in the space above.
- 2. The Conservation Commission signature should be obtained **prior** to the submittal of the original application and four copies to the town/city clerk for mailing to the DES.
- 3. The Conservation Commission may refuse to sign. If the Conservation Commission does not sign this statement for any reason, the application is not eligible for expedited review and the application will reviewed in the standard review time frame.

11. TOWN / CITY CLERK SIGNATURE

As required by Chapter 482-A:3 (amended 2014), I hereby certify that the applicant has filed four application forms, four detailed plans, and four USGS location maps with the town/city indicated below.

Deput Trun Charles
Town/City Clerk-Dignature

Print name legibly

Whatam

Town/City

7 | 10 | (Date

DIRECTIONS FOR TOWN/CITY CLERK:

Per RSA 482-A:3,I

- 1. For applications where "Expedited Review" is checked on page 1, sign and accept the applications **only** if the Conservation Commission signature has been received;
- 2. IMMEDIATELY sign the original application form and four copies in the signature space provided above;
- 3. Return the signed original application form and attachments to the applicant so that the applicant may submit the application form and attachments to NHDES by mail or hand delivery.
- 4. IMMEDIATELY distribute a copy of the application with one complete set of attachments to each of the following bodies: the municipal Conservation Commission, the local governing body (Board of Selectmen or Town/City Council), and the Planning Board; and
- 5. Retain one copy of the application form and one complete set of attachments and make them reasonably accessible for public review.

DIRECTIONS FOR APPLICANT:

1. Submit the original permit application form bearing the signature of the Town/ City Clerk, additional materials, and the application fee to NHDES by mail or hand delivery.

12. IMPACT AREA: For each jurisdictional area that will I	ne/has heen impacted, provide so	lare feet and	if applicable, linear feet of impact	
Permanent: impacts that will remain	after the project is complete.			
	remain (and will be restored to pre PERMANENT	e-construction	conditions) after the project is complete. TEMPORARY	
JURISDICTIONAL AREA	Sq. Ft. / Lin. Ft.		Sq. Ft. / Lin. Ft.	
Forested wetland		ATF		ATF
Scrub-shrub wetland	250	ATF	7,027	ATF
Emergent wetland		ATF		ATF
Wet meadow		ATF		ATF
Intermittent stream		ATF		ATF
Perennial Stream / River	1	ATF	1	ATF
Lake / Pond	1	☐ ATF	1	ATF
Bank - Intermittent stream	1	☐ ATF	1	ATF
Bank - Perennial stream / River	1	ATF	1	ATF
Bank - Lake / Pond	1	ATF	1	ATF
Tidal water	1	☐ ATF	1	ATF
Salt marsh		☐ ATF		ATF
Sand dune		☐ ATF		ATF
Prime wetland		☐ ATF		ATF
Prime wetland buffer		☐ ATF		ATF
Undeveloped Tidal Buffer Zone (TBZ)		ATF		ATF
Previously-developed upland in TBZ		ATF		ATF
Docking - Lake / Pond		ATF		ATF
Docking - River		ATF		ATF
Docking - Tidal Water		ATF		ATF
TOTAL	250 /		7,027/	
13. APPLICATION FEE: See the In	structions & Required Attachments	s document fo	r further instruction	
☐ Minimum Impact Fee: Flat fee o				
Minor or Major Impact Fee: Calo	_		(;)(00.00	
			sq. ft. X \$0.20 = \$1,455.40	
Temporar	sq. ft. X \$1.00 =\$			
	sq. ft. X \$2.00 = _\$			
Projec	ets proposing shoreline structur	es (including	docks) add \$200 =\$	
			Total = \$ 1,455.40	
The Applicat	ion Fee is the above calculated To	otal or \$200 w	hichever is greater = \$ 1 455 40	

NHDES-W-06-012



WETLANDS PERMIT APPLICATION

Water Division/ Wetlands Bureau Land Resources Management

Check the status of your application: http://des.nh.gov/onestop



RSA/Rule: Env-Wq 100-900

					File No.:	
Administrative Administrative			Administrative		Check No.:	
Use Only		Use Only	Use Only		Amount:	
					Initials:	
REVIEW TIME: Indicate your Review Time bel	ow. Refer to Guida	ance Document A for instru	ıctions.			
	linimum, Minor or	Major Impact)		Expedited R	eview (Minimum Impa	act only)
2. PROJECT LOCATION: Separate applications must be	filed with each mu	unicipality that jurisdictiona	l impacts	will occur in.		
ADDRESS: Existing Electric	Transmission	Right-of-Way (ROW)			TOWN/CITY: Hudso	on
TAX MAP: N/A	BLOCK: N/A	LOT: N/A		1		UNIT: N/A
USGS TOPO MAP WATERBODY	NAME:		⊠ NA	STREAM WAT	ERSHED SIZE:	⊠ NA
LOCATION COORDINATES (If kn			ting elec	tric transmi	ssion ROW in Hu	dson
3. PROJECT DESCRIPTION: Provide a brief description of the of your project. DO NOT reply				al sheets as no	eeded to provide a de	etailed explanation
The Merrimack Valley Reliability Project (MVRP) involves the construction of a new overhead 345 kV electric transmission line within an existing electric transmission ROW between the New England Power d/b/a National Grid (NEP) owned Tewksbury 22A Substation in Tewksbury, Massachusetts and the Public Service Company of New Hampshire d/b/a Eversource Energy (PSNH) owned Scobie Pond 345 kV Substation in Londonderry, New Hampshire. The portion of the MVRP located within New Hampshire that is the subject of this permit application is referred to herein as the "Project". The Project extends from the Massachusetts border in Pelham, New Hampshire to the PSNH-owned Scobie Pond 345 kV Substation in Londonderry, New Hampshire. The Project proposes approximately 17.9 miles of new transmission line (which will be known as "3124 Line") within the Towns of Pelham, Windham, Hudson, and Londonderry as well as relocation of 7.6 miles of an existing NEP-owned 115 kV transmission line (known as "Y-151 line") within the Towns of Pelham, Windham, and Hudson.						
The MVRP has been divided into four segments delineated by state, ownership, and line alignment. Segment 1 of MVRP (6.5 miles in length) is located in Massachusetts and is not discussed herein. Segment 2 is the portion of the Project in New Hampshire to be owned and operated by NEP. Segment 2 runs from the Massachusetts/New Hampshire continuing north within an existing NEP ROW for 8.1 miles through the Towns of Pelham, Windham and Hudson to a location in the town of Hudson where the project shifts from the existing NEP ROW to an existing PSNH ROW. Segments 3 and 4 account for the remaining 9.8 miles of the Project in the Towns of Hudson and Londonderry to be owned and operated by PSNH. To incorporate the new 3124 Line in the majority of Segment 2, the existing NEP-owned Y-151 line (overhead 115 kV transmission line) will need to be relocated within the western edge of the existing NEP ROW and the new 3124 Line will be						
installed in the original Y-15 existing PSNH ROW. In Se Refer to the Attached App	1 alignment. In S gment 4, the nev	Segment 3, the new 312 w 3124 Line will be insta	24 Line w lled with	vill be installe in the center	d within the eastern of the existing PSN	n edge of the

4. RELATED PERMITS, ENFORCEMENT, EMERGENCY AU	THORI	ZATION, S	HORELAND, ALTERATI	ON OF TERRAIN, ETC
 NHSEC Joint Application for a Certificate of Site and Facility; NHDES Shoreland Permit Application (being submitted concurrently with this application); NHDES 401 Water Quality Certification (being submitted concurrently with this application); NHDES Alteration of Terrain Permit Application (being submitted concurrently with this application); NHDES Wetlands Permits for Geotechnical Boring Work Associated with the MVRP (#2015-01230; #2015-01231); NHDES Shoreland Permit By Notification for Geotechnical Boring Work Associated with the MVRP (#2015-01272). 				
5. NATURAL HERITAGE BUREAU & DESIGNATED RIVERS See the Instructions & Required Attachments document for inst		s to comple	te a & b below.	
a. Natural Heritage Bureau File ID: NHB 14- 4809.				
 b. ☐ Designated River the project is in ¼ miles of:			e: Month: Day:	Year:
6. APPLICANT INFORMATION (Desired permit holder)				
LAST NAME, FIRST NAME, M.I.: Holden, Joshua (NEP); Gan	nes, La	aura (PSN	H)	
TRUST / COMPANY NAME: New England Power Company (NEP); Public Service of New Hampshire (PSNH)			s: 40 Sylvan Road, 3 ^{rc} ive (PSNH)	^t Floor, East Wing (NEP);
TOWN/CITY: Waltham (NEP); Hooksett (PSNH)	STATE: MA (NEP); NH (PSNH) ZIP CODE: 02451-1120(NEP 03106 (PSNH)		ZIP CODE: 02451-1120(NEP) ; 03106 (PSNH)	
EMAIL or FAX: joshua.holden@nationalgrid.com (NEP); laura.games@nu.com (PSNH)	PHON	E: 781-90 7	7-3648 (NEP); 603-634	I-2906 (PSNH)
ELECTRONIC COMMUNICATION: By initialing here:, I here	by auth	orize DES to	communicate all matters rel	ative to this application electronically
7. PROPERTY OWNER INFORMATION (If different than ap	plicant)		
LAST NAME, FIRST NAME, M.I.: ROW consists of existing e	aseme	ents and f	ee ownerships	
TRUST / COMPANY NAME:	MAILIN	IG ADDRES	S:	
TOWN/CITY:	STATE	i:		ZIP CODE:
EMAIL or FAX:			PHONE:	
ELECTRONIC COMMUNICATION: By initialing here, I here	by autho	orize DES to	communicate all matters rela	ative to this application electronically
8. AUTHORIZED AGENT INFORMATION				
LAST NAME, FIRST NAME, M.I.: Trefry, Sherrie L.			COMPANY NAME: Vanas	sse Hangen Brustlin, Inc.
MAILING ADDRESS: 2 Bedford Farms Drive, Suite 200				
TOWN/CITY: Bedford	STATE	: NH		ZIP CODE: 03110
EMAIL or FAX: strefry@vhb.com		PHONE: 6	03-391-3900	
ELECTRONIC COMMUNICATION: By initialing here, I here	by autho	orize DES to	communicate all matters rela	ative to this application electronically

9. PROPERTY OWNER SIGNATURE:

See the Instructions & Required Attachments document for clarification of the below statements

By signing the application, I am certifying that:

- I authorize the applicant and/or agent indicated on this form to act in my behalf in the processing of this application, and to furnish upon request, supplemental information in support of this permit application.
- 2. I have reviewed and submitted information & attachments outlined in the Instructions and Required Attachment document.
- 3. All abutters have been identified in accordance with RSA 482-A:3, I and Env-Wt 100-900.
- 4. I have read and provided the required information outlined in Env-Wt 302.04 for the applicable project type.
- I have read and understand Env-Wt 302.03 and have chosen the least impacting alternative. 5.
- Any structure that I am proposing to repair/replace was either previously permitted by the Wetlands Bureau or would be considered grandfathered per Env-Wt 101.47.
- 7. I have submitted a Request for Project Review (RPR) Form (www.nh.gov/nhdhr/review) to the NH State Historic Preservation Officer (SHPO) at the NH Division of Historical Resources to be reviewed for the presence of historical/ archeological resources.
- I authorize DES and the municipal conservation commission to inspect the site of the proposed project. 8.
- I have reviewed the information being submitted and that to the best of my knowledge the information is true and accurate.
- 10. I understand that the willful submission of falsified or misrepresented information to the New Hampshire Department of Environmental Services is a criminal act, which may result in legal action.
- 11. I am aware that the work I am proposing may require additional state, local or federal permits which I am responsible for obtaining.
- The mailing addresses I have provided are up to date and appropriate for receipt of DES correspondence. DES will not forward returned mail.

Property Owner Signature	Print name legibly	Date
Chanada Cumas Cianatum		Date
John Tolder for NEP	Joshan Holder	6 /23 / 15
dama Vissames for PSM+	Laura V. Games	6/23/15

ALIENT WORLD AND A

Permit Application - Valid until 12/31/15on - Valid until 1:Page 3 of 5

MUNICIPAL SIGNATURES

10. CONSERVATION COMMISSION SIGNATURE

The signature below certifies that the municipal conservation commission has reviewed this application, and:

- 1. Waives its right to intervene per RSA 482-A:11;
- 2. Believes that the application and submitted plans accurately represent the proposed project; and
- 3. Has no objection to permitting the proposed work.

Print name legibly

Date

DIRECTIONS FOR CONSERVATION COMMISSION

- 1. Expedited review ONLY requires that the conservation commission's signature is obtained in the space above.
- 2. The Conservation Commission signature should be obtained **prior** to the submittal of the original application and four copies to the town/city clerk for mailing to the DES.
- 3. The Conservation Commission may refuse to sign. If the Conservation Commission does not sign this statement for any reason, the application is not eligible for expedited review and the application will reviewed in the standard review time frame.

11. TOWN / CITY CLERK SIGNATURE

As required by Chapter 482-A:3 (amended 2014), I hereby certify that the applicant has filed four application forms, four detailed plans, and four USGS location maps with the town/city indicated below.

DONNA A MELANSON

Town/City Clerk Signature

Print name legibly

HUDSON

Town/City

7-10-15

DIRECTIONS FOR TOWN/CITY CLERK:

Per RSA 482-A:3,I

- 1. For applications where "Expedited Review" is checked on page 1, sign and accept the applications **only** if the Conservation Commission signature has been received;
- 2. IMMEDIATELY sign the original application form and four copies in the signature space provided above;
- 3. Return the signed original application form and attachments to the applicant so that the applicant may submit the application form and attachments to NHDES by mail or hand delivery.
- 4. IMMEDIATELY distribute a copy of the application with one complete set of attachments to each of the following bodies: the municipal Conservation Commission, the local governing body (Board of Selectmen or Town/City Council), and the Planning Board; and
- Retain one copy of the application form and one complete set of attachments and make them reasonably accessible for public review.

DIRECTIONS FOR APPLICANT:

1. Submit the original permit application form bearing the signature of the Town/ City Clerk, additional materials, and the application fee to NHDES by mail or hand delivery.

12. IMPACT AREA: For each jurisdictional area that will I	be/has been impacted, provide squ	uare feet and.	if applicable, linear feet of impact	
Permanent: impacts that will remain	after the project is complete.			
	remain (and will be restored to pre PERMANENT	e-construction	conditions) after the project is complete. TEMPORARY	
JURISDICTIONAL AREA	Sq. Ft. / Lin. Ft.		Sq. Ft. / Lin. Ft.	
Forested wetland	112	ATF	4,944	ATF
Scrub-shrub wetland	13	ATF	21,817	ATF
Emergent wetland		ATF	4,013	ATF
Wet meadow		ATF		ATF
Intermittent stream		ATF		ATF
Perennial Stream / River	1	ATF	5,053 /	ATF
Lake / Pond	/	☐ ATF	1	ATF
Bank - Intermittent stream	/	ATF	1	ATF
Bank - Perennial stream / River	1	ATF	1	ATF
Bank - Lake / Pond	/	ATF	1	ATF
Tidal water	/	☐ ATF	1	ATF
Salt marsh		ATF		ATF
Sand dune		ATF		ATF
Prime wetland		ATF		ATF
Prime wetland buffer		ATF		ATF
Undeveloped Tidal Buffer Zone (TBZ)		ATF		ATF
Previously-developed upland in TBZ		ATF		ATF
Docking - Lake / Pond		ATF		ATF
Docking - River		ATF		ATF
Docking - Tidal Water		ATF		ATF
TOTAL	125 /		35,827/	
13. APPLICATION FEE: See the In	structions & Required Attachment	s document fo	r further instruction	
☐ Minimum Impact Fee: Flat fee o	of \$ 200			
Minor or Major Impact Fee: Cal	_		, v	
Permanent	and Temporary (non-docking)	35,952	sq. ft. X \$0.20 = \$7,190.40	
Temporar	y (seasonal) docking structure:	5	sq. ft. X \$1.00 =\$	
	Permanent docking structure:		sq. ft. X \$2.00 =\$	
Projec	cts proposing shoreline structur	es (including	docks) add \$200 =\$	
			Total = \$7,190.40	
The Applica	tion Fee is the above calculated To	otal or \$200 w	hichever is greater = \$ 7 190 40	

NHDES-W-06-012



WETLANDS PERMIT APPLICATION

Water Division/ Wetlands Bureau Land Resources Management

Check the status of your application: http://des.nh.gov/onestop



RSA/Rule: Env-Wq 100-900

					File No.:	
Administrative	Adi	ministrative	Administrative		Check No.:	
Use Only		Use Only		Use Only	Amount:	
					Initials:	
1. REVIEW TIME: Indicate your Review Time bel	ow. Refer to Guida	ance Document A for instru	ictions.			
	Minimum, Minor or	Major Impact)		Expedited R	eview (Minimum Im	pact only)
2. PROJECT LOCATION: Separate applications must be	filed with each mu	unicipality that jurisdictiona	l impacts	will occur in.		
ADDRESS: Existing Electric	Transmission	Right-of-Way (ROW)			TOWN/CITY: Lond	londerry
TAX MAP: N/A	BLOCK: N/A	LOT: N/A		T		UNIT: N/A
USGS TOPO MAP WATERBODY	NAME:		⊠ NA	STREAM WAT	ERSHED SIZE:	⊠ NA
LOCATION COORDINATES (If kn	own): Multiple Ic JTM ☐ State Plane	ocations along an exist	ing elec	tric transmi	ssion ROW in Lo	ondonderry
3. PROJECT DESCRIPTION: Provide a brief description of the of your project. DO NOT reply	ne project outlining			al sheets as no	eeded to provide a	detailed explanation
The Merrimack Valley Relia line within an existing electr Tewksbury 22A Substation Eversource Energy (PSNH) MVRP located within New F Project extends from the Ms Substation in Londonderry, will be known as "3124 Line miles of an existing 115 kV Hudson.	ic transmission I in Tewksbury, M owned Scobie I Hampshire that is assachusetts bo New Hampshire ") within the tow	ROW between the New lassachusetts and the P Pond 345 kV Substation is the subject of this pernorder in Pelham, New Has. The Project proposes ans of Pelham, Windham	England ublic Ser in Londonit applic mpshire approxim, Hudsor	Power d/b/a rvice Compar onderry, New ation is refer to the PSNH nately 17.9 mn, and Londo	National Grid (NE ny of New Hamps y Hampshire. The red to herein as the -owned Scobie Poliles of new transminderry as well as	EP) owned shire d/b/a portion of the ne "Project". The ond 345 kV mission line (which relocation of 7.6
The MVRP has been divided into four segments delineated by state, ownership, and line alignment. Segment 1 of MVRP (6.5 miles in length) is located in Massachusetts and is not discussed herein. Segment 2 is the portion of the Project in New Hampshire to be owned and operated by NEP. Segment 2 runs from the Massachusetts/New Hampshire continuing north within an existing NEP ROW for 8.1 miles through the Towns of Pelham, Windham and Hudson to a location in the town of Hudson where the project shifts from the existing NEP ROW to an existing PSNH ROW. Segments 3 and 4 account for the remaining 9.8 miles of the Project in the Towns of Hudson and Londonderry to be owned and operated by PSNH.						
To incorporate the new 312 transmission line) will need installed in the original Y-15 existing PSNH ROW. In Se Refer to the Attached App	to be relocated of alignment. In signer.	within the western edge Segment 3, the new 312 v 3124 Line will be insta	of the ex 4 Line w lled with	kisting NEP R vill be installe in the center	ROW and the new d within the easte of the existing PS	3124 Line will be ern edge of the

4. RELATED PERMITS, ENFORCEMENT, EMERGENCY AUTHORIZATION, SHORELAND, ALTERATION OF TERRAIN, ETC			
 NHSEC Joint Application for a Certificate of Site and Facility; NHDES Shoreland Permit Application (being submitted concurrently with this application); NHDES 401 Water Quality Certification (being submitted concurrently with this application); NHDES Alteration of Terrain Permit Application (being submitted concurrently with this application); NHDES Wetlands Permits for Geotechnical Boring Work Associated with the MVRP (#2015-01230; #2015-01231); NHDES Shoreland Permit By Notification for Geotechnical Boring Work Associated with the MVRP (#2015-01272). 			
5. NATURAL HERITAGE BUREAU & DESIGNATED RIVERS: See the Instructions & Required Attachments document for instru	ctions to comple	ete a & b below.	
a. Natural Heritage Bureau File ID: NHB <u>14</u> - <u>4809</u> .			
 b. ☐ Designated River the project is in ¼ miles of:		e: Month: Day:	Year:
6. APPLICANT INFORMATION (Desired permit holder)			
LAST NAME, FIRST NAME, M.I.: Games, Laura			
TRUST / COMPANY NAME: Public Service of New Hampshire (PSNH)	MAILING ADDRE	ESS: 13 Legends Dri	ve
TOWN/CITY: Hooksett	STATE: NH		ZIP CODE: 03106
EMAIL or FAX: laura.games@nu.com	PHONE: 603-6	34-2906	
ELECTRONIC COMMUNICATION: By initialing here:, I hereby	authorize DES to	communicate all matters re	elative to this application electronically
7. PROPERTY OWNER INFORMATION (If different than appli	cant)		
LAST NAME, FIRST NAME, M.I.: ROW consists of existing eas	sements and f	ee ownerships	
TRUST / COMPANY NAME:	MAILING ADDRE	ESS:	
TOWN/CITY:	STATE:		ZIP CODE:
EMAIL or FAX:		PHONE:	
ELECTRONIC COMMUNICATION: By initialing here, I hereby	authorize DES to	communicate all matters re	elative to this application electronically
8. AUTHORIZED AGENT INFORMATION			
LAST NAME, FIRST NAME, M.I.: Trefry, Sherrie L.		COMPANY NAME: Vana	asse Hangen Brustlin, Inc.
MAILING ADDRESS: 2 Bedford Farms Drive, Suite 200			
TOWN/CITY: Bedford	STATE: NH		ZIP CODE: 03110
EMAIL or FAX: strefry@vhb.com	PHONE: 60	03-391-3900	
ELECTRONIC COMMUNICATION: By initialing here, I hereby	authorize DES to	communicate all matters re	elative to this application electronically

shoreland@des.nh.gov or (603) 271-2147 NHDES Wetlands Bureau, Concord, NH 03303-0095 www.des.nh.gov

9. PROPERTY OWNER SIGNATURE:

See the Instructions & Required Attachments document for clarification of the below statements

By signing the application, I am certifying that:

- 1. I authorize the applicant and/or agent indicated on this form to act in my behalf in the processing of this application, and to furnish upon request, supplemental information in support of this permit application.
- 2. I have reviewed and submitted information & attachments outlined in the Instructions and Required Attachment document.
- 3. All abutters have been identified in accordance with RSA 482-A:3, I and Env-Wt 100-900.
- 4. I have read and provided the required information outlined in Env-Wt 302.04 for the applicable project type.
- 5. I have read and understand Env-Wt 302.03 and have chosen the least impacting alternative.
- 6. Any structure that I am proposing to repair/replace was either previously permitted by the Wetlands Bureau or would be considered grandfathered per Env-Wt 101.47.
- 7. I have submitted a Request for Project Review (RPR) Form (www.nh.gov/nhdhr/review) to the NH State Historic Preservation Officer (SHPO) at the NH Division of Historical Resources to be reviewed for the presence of historical/ archeological resources.
- 8. I authorize DES and the municipal conservation commission to inspect the site of the proposed project.
- 9. I have reviewed the information being submitted and that to the best of my knowledge the information is true and accurate.
- 10. I understand that the willful submission of falsified or misrepresented information to the New Hampshire Department of Environmental Services is a criminal act, which may result in legal action.
- 11. I am aware that the work I am proposing may require additional state, local or federal permits which I am responsible for obtaining.
- 12. The mailing addresses I have provided are up to date and appropriate for receipt of DES correspondence. DES will not forward returned mail.

□ James for psmj	Laura V. Cames	6123115
Property Owner Signature	Print name legibly	Date

MUNICIPAL SIGNATURES

10. CONSERVATION COMMISSION SIGNATURE

The signature below certifies that the municipal conservation commission has reviewed this application, and:

- 1. Waives its right to intervene per RSA 482-A:11;
- 2. Believes that the application and submitted plans accurately represent the proposed project; and
- 3. Has no objection to permitting the proposed work.

Print name legibly

Date

DIRECTIONS FOR CONSERVATION COMMISSION

- 1. Expedited review ONLY requires that the conservation commission's signature is obtained in the space above.
- 2. The Conservation Commission signature should be obtained prior to the submittal of the original application and four copies to the town/city clerk for mailing to the DES.
- 3. The Conservation Commission may refuse to sign. If the Conservation Commission does not sign this statement for any reason, the application is not eligible for expedited review and the application will reviewed in the standard review time frame.

11. TOWN / CITY CLERK SIGNATURE

As required by Chapter 482-A:3 (amended 2014), I hereby certify that the applicant has filed four application forms, four detailed plans, and four USGS location maps with the town/city indicated below.

Sharon A Farrell Londonderry

7.14.2015

DIRECTIONS FOR TOWN/CITY CLERK:

Per RSA 482-A:3,1

- 1. For applications where "Expedited Review" is checked on page 1, sign and accept the applications only if the Conservation Commission signature has been received;
- 2. IMMEDIATELY sign the original application form and four copies in the signature space provided above;
- 3. Return the signed original application form and attachments to the applicant so that the applicant may submit the application form and attachments to NHDES by mail or hand delivery.
- 4. IMMEDIATELY distribute a copy of the application with one complete set of attachments to each of the following bodies: the municipal Conservation Commission, the local governing body (Board of Selectmen or Town/City Council), and the Planning Board; and
- 5. Retain one copy of the application form and one complete set of attachments and make them reasonably accessible for public review.

DIRECTIONS FOR APPLICANT:

1. Submit the original permit application form bearing the signature of the Town/ City Clerk, additional materials, and the application fee to NHDES by mail or hand delivery.

12. IMPACT AREA: For each jurisdictional area that will Permanent: impacts that will remain Temporary: impacts not intended to	after the project is complete.			
JURISDICTIONAL AREA	PERMANENT Sq. Ft. / Lin. Ft.		TEMPOR Sq. Ft. / L	RARY
Forested wetland	13	ATF	25,010	ATF
Scrub-shrub wetland	132	ATF	51,952	ATF
Emergent wetland	158	ATF	114,096	ATF
Wet meadow		ATF		ATF
Intermittent stream		ATF		ATF
Perennial Stream / River	1	☐ ATF	/	ATF
Lake / Pond	/	☐ ATF	/	Д АТБ
Bank - Intermittent stream	80 / 17 (Bed Impact)	☐ ATF	922 / 415 (Bed Im	pact) ATF
Bank - Perennial stream / River	1	☐ ATF	1	ATF
Bank - Lake / Pond	1	ATF	/	ATF
Tidal water	/	ATF	/	ATF
Salt marsh		ATF		ATF
Sand dune		ATF		ATF
Prime wetland		ATF		П АТГ
Prime wetland buffer		ATF		ATF
Undeveloped Tidal Buffer Zone (TBZ)		ATF		ATF
Previously-developed upland in TBZ		ATF		ATF
Docking - Lake / Pond		☐ ATF		ATF
Docking - River		ATF		ATF
Docking - Tidal Water		ATF		ATF
TOTAL	383 / 17		191,980 / 41	5
13. APPLICATION FEE: See the Ir	nstructions & Required Attachment	s document for	further instruction	
☐ Minimum Impact Fee: Flat fee o				
Minor or Major Impact Fee: Cal	•		# V #0.20 # 20	472.00
	t and Temporary (non-docking)		sq. ft. X \$0.20 = \$38	,472.60
Temporar	ry (seasonal) docking structure:	S	sq. ft. X \$1.00 = \$	<u> </u>
	Permanent docking structure:	S	sq. ft. X \$2.00 = \$	
Proje	cts proposing shoreline structu	res (including	docks) add \$200 =\$	
			Total = \$38	,472.60
The Applica	tion Fee is the above calculated T	otal or \$200 w	hichever is greater = \$38	472 60



USACE PGP – Appendix B Secondary Impacts Checklist



New Hampshire Programmatic General Permit (PGP) Appendix B - Corps Secondary Impacts Checklist (for inland wetland/waterway fill projects in New Hampshire)

- 1. Attach any explanations to this checklist. Lack of information could delay a Corps permit determination.
- 2. All references to "work" include all work associated with the project construction and operation. Work includes filling, clearing, flooding, draining, excavation, dozing, stumping, etc.
- 3. See PGP, GC 5, regarding single and complete projects.
- 4. Contact the Corps at (978) 318-8832 with any questions.

1. Impaired Waters	Yes	No
1.1 Will any work occur within 1 mile upstream in the watershed of an impaired water? See	1	
http://des.nh.gov/organization/divisions/water/wmb/section401/impaired_waters.htm	X ¹	
to determine if there is an impaired water in the vicinity of your work area.*		
2. Wetlands	Yes	No
2.1 Are there are streams, brooks, rivers, ponds, or lakes within 200 feet of any proposed work?	X2	
2.2 Are there proposed impacts to SAS, shellfish beds, special wetlands and vernal pools (see		
PGP, GC 26 and Appendix A)? Applicants may obtain information from the NH Department of	2	
Resources and Economic Development Natural Heritage Bureau (NHB) website,	X ³	
www.nhnaturalheritage.org, specifically the book Natural Community Systems of New		
<u>Hampshire</u> .		
2.3 If wetland crossings are proposed, are they adequately designed to maintain hydrology,	x ⁴	
sediment transport & wildlife passage?		
2.4 Would the project remove part or all of a riparian buffer? (Riparian buffers are lands adjacent		
to streams where vegetation is strongly influenced by the presence of water. They are often thin	χ5	
lines of vegetation containing native grasses, flowers, shrubs and/or trees that line the stream		
banks. They are also called vegetated buffer zones.)		
2.5 The overall project site is more than 40 acres.		Χ
2.6 What is the size of the existing impervious surface area?	N	I/A
2.7 What is the size of the proposed impervious surface area?	N	I/A
2.8 What is the % of the impervious area (new and existing) to the overall project site?	N	I/A
3. Wildlife	Yes	No
3.1 Has the NHB determined that there are known occurrences of rare species, exemplary natural	6	
communities, Federal and State threatened and endangered species and habitat, in the vicinity of	х ⁶	
the proposed project? (All projects require a NHB determination.)		
3.2 Would work occur in any area identified as either "Highest Ranked Habitat in N.H." or		
"Highest Ranked Habitat in Ecological Region"? (These areas are colored magenta and green,		
respectively, on NH Fish and Game's map, "2010 Highest Ranked Wildlife Habitat by Ecological	7	
Condition.") Map information can be found at:	x ⁷	
• PDF: <u>www.wildlife.state.nh.us/Wildlife/Wildlife_Plan/highest_ranking_habitat.htm</u> .		
• Data Mapper: <u>www.granit.unh.edu</u> .		
GIS: www.granit.unh.edu/data/downloadfreedata/category/databycategory.html.		

3.3 Would the project impact more than 20 acres of an undeveloped land block (upland, wetland/waterway) on the entire project site and/or on an adjoining property(s)?		Х
3.4 Does the project propose more than a 10-lot residential subdivision, or a commercial or industrial development?		Х
3.5 Are stream crossings designed in accordance with the PGP, GC 21?	N/A	
4. Flooding/Floodplain Values	Yes	No
4.1 Is the proposed project within the 100-year floodplain of an adjacent river or stream?	Χ8	
4.2 If 4.1 is yes, will compensatory flood storage be provided if the project results in a loss of flood storage?	Х	
5. Historic/Archaeological Resources		
For a minor or major impact project - a copy of the Request for Project Review (RPR) Form (www.nh.gov/nhdhr/review) shall be sent to the NH Division of Historical Resources as required on Page 5 of the PGP**	Х	

- *Although this checklist utilizes state information, its submittal to the Corps is a Federal requirement.
- ** If project is not within Federal jurisdiction, coordination with NH DHR is not required under Federal law...
- 1. The upper section of Beaver Brook in Derry and Londonderry is listed as impaired for aquatic life uses due to elevated chloride levels. Tonys Brook, located to the west of the Project ROW in Pelham is listed as impaired for both aquatic life and primary recreation uses. Lastly, Nesenkeag Brook, which intersects the Project ROW in Londonderry is listed as impaired for aquatic life uses due to previously observed low dissolved oxygen levels and low biotic index values derived from previous benthic macroinvertebrate assessments. The source(s) for the low dissolved oxygen levels and low biotic values are listed as unknown according to the New Hampshire Department of Environmental Services' (NHDES) 303(d) list. The target date for completing a Total Maximum Daily Load (TMDL) study is 2016.
- 2. There are a total of 13 perennial stream crossings and 20 intermittent stream crossings along the Project ROW in Pelham, Windham, Hudson and Londonderry. Refer to Section 6.0 of the NHDES Wetlands Permit Application Narrative for more information.
- 3. Vernal Pool habitat along Segments 3 and 4 of the Project ROW was identified and mapped by Normandeau in April of 2012 in support of a previous PSNH project. During September and October 2014, VHB Wetland Scientists reviewed all areas previously mapped as vernal pools by Normandeau as well as identified new areas along all three segments of the Project ROW which displayed characteristics indicating viable vernal pool habitat. VHB revisited all previously identified pools and areas previously noted as displaying potential habitat during the peak breeding season of the indicator amphibian species in late April 2015. A total of seventeen (17) vernal pools were identified along the Project ROW. No permanent or temporary fill will be placed within areas identified as vernal pools along the Project ROW. Approximately 31,791 (0.7 ac.) square feet of vegetative clearing is proposed within vernal pool boundaries and 332,335 (7.6 ac.) square feet within 250-foot buffers located along the Project ROW to construct the new 3124 Line. Refer to Sections 4.4 and 5.0 of the NHDES Wetlands Applications Narrative for more information.
- 4. The majority of wetland crossings proposed are temporary and will involve the use of construction swamp mats. Permanent crossings are proposed along existing ROW access roads at four wetland crossing locations. Permanent crossings are being designed as stone fords to maintain hydrology, sediment transport and wildlife passage.
- 5. Tree clearing associated with the Project ROW is proposed within 100-feet and 50-feet of perennial and intermittent stream channels, respectively. The amount of tree clearing within these riparian buffers was estimated using available GIS data and aerial imagery. Of the total 4.5 acres of tree clearing estimated to occur within the designated buffers of 22 streams, approximately 2.2 acres is associated with perennial streams and the remaining 2.3 acres of tree clearing is associated with intermittent streams. Refer to Section 6.0 and 7.2 of the NHDES Wetlands Permit Application Narrative for more information.
- 6. The New Hampshire Natural Heritage Bureau (NHNHB) was consulted regarding the occurrence of rare plant, animal or natural communities within vicinity of the proposed Project. NHNHB indicated historical records of rare plants, exemplary natural communities and invertebrate and vertebrate species in a response memo dated December 17, 2014. Invertebrate and vertebrate species identified by NHNHB, NHF&G and USFWS which intersect the Project ROW include the brook floater, northern black racer, Blanding's turtle, and spotted turtle. Other species noted in the NHNHB report within proximity to the Project ROW include the grasshopper sparrow, and wood turtle. Additionally, exemplary natural communities identified in the NHNHB report within proximity to the Project ROW include medium level fen system, and swamp white oak floodplain forest. NHNHB identified records of four plant species that intersect the Project ROW, with an additional six plant species identified nearby. Consultation with NHNHB, NHF&G and USFWS remains ongoing at this time. Refer to Section 9.0 of the NHDES Wetlands Permit Application Narrative for more information.
- 7. The Project ROW in Pelham, Windham and Londonderry intersects areas identified as "Highest Ranked Habitat in NH" and "Highest Ranked Habitat in Ecological Region". The Project ROW in Hudson does not intersect any of these areas.
- 8. According to Federal Emergency Management Agency (FEMA) National Flood Insurance Rate Maps (FIRM), produced for Hillsborough and Rockingham Counties, portions of the proposed Project ROW intersect the 100-year floodplains of several named perennial streams. However, the proposed Project has been designed to avoid structure installation within 100-year floodplain boundaries to the maximum extent practicable. Only three structures proposed along the relocated Y-151 line in Pelham will be located within the 100-year floodplain of Golden Brook. Two structures proposed along the new 3124 line in Pelham will also be installed within the 100-year floodplain of Golden Brook, however two existing structures are to be removed, negating these impacts. Lastly, one structure along the new 3124 line in Londonderry will be installed within the 100-year floodplain of Beaver Brook located just south of the Scobie Pond Substation. The amount of new fill associated with installation of each new structure is negligible. Access to these structures will traverse temporary matting across wetland areas which will be removed upon completion of work in each area.



Review Criteria Administrative Rule Env-Wt 302.04(a)

\Mawordata\projects\12650.00\report s\NH SEC\Wetlands App\FINAL DRAFT 06_19_15\02022 Application_narrative_MVRP_DRAFT 06-19-15.docx



Review Criteria Administrative Rule Env-Wt 302.04(a)

Documentation that the New Hampshire (NH) portion of the Merrimack Valley Reliability Project (MVRP), referred to herein as the "Project" complies with the requirements contained in Env-Wt 302.04(a) of the New Hampshire Code of Administrative Rules is provided below. The Project is being proposed by New England Power Company d/b/a National Grid (NEP) and Public Service Company of New Hampshire d/b/a Eversource Energy (PSNH) and involves approximately 17.9 miles of new 345 kV transmission line (which will be known as "3124 Line") within the Towns of Pelham, Windham, Hudson, and Londonderry and relocation of 7.6 miles of an existing overhead 115 kV transmission line (known as the "Y-151 line") in Pelham, Windham and Hudson.

(1) The need for the proposed impact.

The MVRP is part of a suite of projects identified in the Greater Boston Area Update Transmission Needs Assessment ('Updated Needs Assessment') published by Independent System Operator – New England, Inc. (ISO-NE) in 2014. The Updated Needs Assessment found that under certain contingencies, key elements of the transmission system in the Merrimack Valley would be overloaded or vulnerable to overloads. MVRP has been specifically designed to address reliability needs associated with the transmission lines connecting northeastern Massachusetts and southern New Hampshire by providing an additional 345 kV transmission path between the two states. This new transmission path will alleviate overloads of 345 kV and 115 kV transmission circuits terminating at New Hampshire substations. It will also address voltage issues in the southern New Hampshire area. In doing so, it ensures continued compliance with applicable federal and regional transmission system reliability standards and criteria, and maintains reliable electric service to New Hampshire and Massachusetts electric customers.

Refer to **Section 1.1** of the Application Narrative for more information.

(2) The alternative proposed by the applicant is the one with the least impact to wetlands or surface waters on site.

The Applicants considered a number of possible alternate means to connect the existing Tewksbury 22A Substation in Tewksbury, MA to the Scobie Pond 345 kV Substation in Londonderry, NH with a new 345 kV transmission line. As the terminal locations of the line are fixed, the Applicants performed an in-depth review of three alternative routes along existing infrastructure corridors during the selection process. The overhead portions for all of the overhead alternatives are located adjacent to existing lines utilizing the available ROW to



the greatest extent possible. As part of the routing analysis, the Applicants also considered the potential for an underground route along existing linear corridors (e.g., roadways, transmission line corridors). Underground construction was rejected due to: significantly higher costs; the potential for greater environmental impacts; the lack of underground land rights to bury transmission lines; safety concerns; and the likelihood of encountering large amounts of rock, some of which would have required blasting to be removed.

The preferred route, which has been selected and is the current route, is 24.4 miles in length, 17.9 miles of which are in New Hampshire. The first alternative (Western Alternative) would have been approximately 45.5 miles in length with approximately 18.3 miles in New Hampshire and would have required 88 acres of additional ROW (85 feet wide) to be purchased. The second alternative (Eastern Alternative) would have been approximately 58 miles in length with approximately 26.7 miles in New Hampshire and would also have required the expansion of the existing ROW for virtually the entire 26.7 mile length (286 acres) in New Hampshire.

Due to the significantly longer traverses and the need to acquire additional ROW for the Western and Eastern Alternatives, many more wetlands and surface water impacts were anticipated in order to construct a new 345 kV transmission line along these alternate routes. In addition, estimated costs of a longer transmission line combined with costs associated with additional property rights acquisition increase the cost differential between the two alternatives and the preferred route. Lastly, more and longer outages would be required to reconfigure circuits for construction of the alternatives in Massachusetts versus the preferred route.

The ISO New England Planning Advisory Committee (PAC) published the "Greater Boston Preferred Solution" in February 2015, which outlined a preferred suite of projects. MVRP is included in the solution because it is consistent with good utility practice and it will result in the fewest impacts to communities and resources in the region, while ensuring increased reliability and improvements to the system in the most cost-effective manner.

Refer to **Sections 3.2 and 3.3** of the Application Narrative for a discussion on specific avoidance and minimization methods reviewed and selected as part of the preferred route.

(3) The type and classification of the wetlands involved.

Project wetlands to be temporarily and permanently impacted are located along an existing electric utility ROW owned in fee or held as easement by NEP and PSNH. The ROW passes through residential, commercial and rural landscape environments and several abandoned sand and gravel pits. Wetlands to be impacted have common wetland characteristics typically associated with this ROW environment. A majority of these wetlands have been previously disturbed by fill and removal activities associated with previous construction of the existing transmission lines located within the ROW and/or residential and agricultural activities intersecting and surrounding the Project corridor. A number of invasive species, including purple loosestrife and glossy buckthorn, are present both within delineated wetland boundaries and in adjacent upland areas. Only common wetland and upland plant species



were observed along the Project area, however, an in depth Rare, Threatened, and Endangered (RTE) species survey will be conducted during the 2015 growing season. Survey results will be used to develop an appropriate avoidance and protection plan for sensitive plant species which may be located along the ROW within close proximity to proposed work areas (Refer to **Question 7** below).

Wetlands along Segment 2 of the Project ROW were delineated by VHB Wetland Scientists in April of 2014. Wetlands along Segments 3 and 4 of the Project ROW were previously delineated in the fall of 2012 by Normandeau Associates, Inc. (Normandeau) in support of a previous PSNH project. During September and October 2014, and April 2015, VHB Wetland Scientists reviewed and confirmed previously delineated wetland areas and extended boundaries as needed to include the entire Project area. VHB also delineated a number of wetlands, not previously delineated by Normandeau, that were outside the study area for the previous PSNH project. Wetlands and surface waters within the Project ROW have been classified following *Wetlands and Deepwater Habitats Classification* (Cowardin et al., 1979) and are listed in Table 1 below.

Table 1: Classifications of Wetlands and Surface Waters along the Project ROW

Wetlands and Deepwater Habitats Classification	Mapping Code
Palustrine, Forested, Broad-leaved Deciduous, Saturated	PFO1B
Palustrine, Forested, Broad-leaved Deciduous, Seasonally Flooded	PFO1C
Palustrine, Forested, Broad-leaved Deciduous, Seasonally Flooded/Saturated	PFO1E
Palustrine, Forested, Dead, Seasonally Flooded/Saturated	PFO5E
Palustrine, Forested, Dead, Intermittently Exposed	PFO5G
Palustrine, Scrub-shrub, Broad-leaved Deciduous, Temporarily Flooded	PSS1A
Palustrine, Scrub-shrub, Broad-leaved Deciduous, Saturated	PSS1B
Palustrine, Scrub-shrub, Broad-leaved Deciduous, Seasonally Flooded	PSS1C
Palustrine, Scrub-shrub, Broad-leaved Deciduous, Seasonally Flooded/Saturated	PSS1E
Palustrine, Emergent, Persistent, Temporarily Flooded	PEM1A
Palustrine, Emergent, Persistent, Seasonally Flooded	PEM1C
Palustrine, Emergent, Persistent, Seasonally Flooded/Saturated	PEM1E
Palustrine, Emergent, Persistent, Semi-permanently Flooded	PEM1F
Palustrine, Emergent, Persistent, Intermittently Exposed	PEM1G
Palustrine, Emergent, Persistent, Permanently Flooded	PEM1H
Palustrine, Aquatic Bed, Rooted Vascular, Intermittently Exposed	PAB3G
Palustrine, Aquatic Bed, Rooted Vascular, Permanently Flooded	PAB3H
Palustrine, Unconsolidated Bottom, Permanently Flooded	PUBH
Riverine, Lower Perennial, Streambed, Mud	R2SB5



Riverine, Lower Perennial, Unconsolidated Bottom, Cobble-Gravel	R2UB1
Riverine, Lower Perennial, Unconsolidated Bottom, Sand	
Riverine, Lower Perennial, Unconsolidated Bottom, Cobble-Gravel	R2UB3
Riverine, Intermittent, Streambed, Cobble-Gravel	R4SB3
Riverine, Intermittent, Streambed, Sand	R4SB4
Riverine, Intermittent, Streambed, Mud	R4SB5
Riverine, Intermittent, Streambed, Organic	R4SB6

Refer to **Section 4.0** of the Application Narrative for a discussion of existing wetlands intersecting the Project ROW. Additionally, **Attachment B** contains a Wetland Impact Table that includes detailed information specific to each wetland to be impacted.

(4) The relationship of the proposed wetlands to be impacted relative to nearby wetlands and surface waters.

The wetlands to be impacted by the Project vary from isolated pockets entirely within the existing Project ROW to larger complexes that weave inside and outside of the Project ROW for various lengths. A number of perennial and intermittent stream channels also intersect the Project ROW in Pelham, Windham, Hudson, and Londonderry. Wetlands border a majority of these stream channels which generally drain north to south eventually outletting into the Merrimack River, well outside the Project area. Most notably, Beaver Brook intersects the ROW twice, once at the Windham/Hudson town line and once in Londonderry just west of the Scobie Pond 345 kV Substation. Beaver Brook also comes within close proximity to the western limits of the Project ROW to south of Mammoth Road (Route 128) in Windham.

Refer to **Question 13** and **Sections 4.0** and **6.0** of the Application Narrative for more information.

(5) The rarity of the wetland, surface water, sand dunes, or tidal buffer zone area.

Wetlands and surface waters intersecting the Project ROW are not considered rare or unusual and were found to exhibit common plant species, including a number of invasive species, during wetland and surface water delineation field work conducted over the 2014 and 2015 growing season. Plant species observed are characteristic of the landscape typically associated with partially cleared and maintained electric transmission ROWs in New Hampshire. Many of these wetlands have been previously disturbed by fill and removal activities associated with previous construction of the existing transmission lines within the Project ROW and other adjacent land use activities.

A single wetland intersecting the Project ROW in Pelham, New Hampshire has been designated as "prime wetland" by the Town of Pelham under *RSA 482-A:15* and *NH Administrative Rules Env-Wt 700*. Individual municipalities in New Hampshire may elect to designate wetlands as "prime-wetlands" if, after thorough analysis, it is determined that the



wetland is of high-quality based on number of characteristics such as size, unspoiled character and ability to sustain populations of rare or threatened plant and animal species. The prime wetland, identified as "Lower Golden Brook" resembles a typical emergent wetland system commonly found within electric utility ROWs in New Hampshire where it intersects the Project area. The Project will result in the installation of two new utility structures and relocation of one utility structure within the wetland, however, permanent impacts are small relative to the size of this wetland. The Project will not alter the appearance or characteristics of the wetland at this location as it already contains electric utility structures and is crossed by overhead lines. Refer to **Section 5.1** of the Application Narrative for more information.

The New Hampshire Natural Heritage Bureau (NHNHB) was consulted regarding the occurrence of rare, threatened and endangered (RTE) plants and animals or exemplary natural communities within the vicinity of the Project. NHNHB indicated historical records of RTE species and exemplary natural communities occur in the Project vicinity in a response memo dated December 17, 2014, prompting additional consultation with the agency as well as New Hampshire Fish and Game (NHF&G) and the U.S. Fish and Wildlife Service (USFWS). Refer to **Question 7** below for further information on RTE species.

(6) The surface area of the wetlands that will be impacted.

Through careful project design impacts to wetlands have been minimized to the maximum extent practicable. Modifications to the design to avoid and minimize impacts included adjusting locations of new structures, accessways, and temporary access matting, as well as the size and locations of construction work pads, and pull pad sites. The Project design will result in approximately **4,428** total square feet (sq. ft.) (.10 acres) of unavoidable permanent impact to jurisdictional wetlands in the Towns of Pelham, Windham, Hudson and Londonderry. Permanent impacts result from the installation of new structures associated with construction of the new 3124 Line and relocation of the Y-151 line, as well as improvements to existing ROW accessways at four locations (three in Pelham and one in Windham) and grading associated with partial realignment of a single intermittent stream channel (identified as SA-41). Permanent wetland impacts associated with structure installation comprises a total of 405 sq. ft. of the permanent wetland impact. Permanent impacts associated with grading to complete the partial realignment of intermittent stream SA-41 comprises a total of **140** sq. ft. The majority of the permanent impacts (3,883 sq. ft.) will result from accessway improvements which have been designed to maintain existing wetland hydrology and drainage patterns.

In addition to permanent wetland impacts, up to a total of **388,895** sq. ft. (8.93 acres) of temporary wetland impacts, associated with accessing and removing existing structures and accessing and installing new structures, will result from the Project. Temporary impacts are a result of the placement of matting within wetlands in order to access and remove existing structures, access and install new structures, and to set up pulling/tensioner and guard protection sites which will be staged along the Project ROW. Work pads comprised of matting allow room for construction equipment and work crews to access and work in wetland areas at structure locations. If some of the work within wetlands occurs during frozen or dry ground conditions, than the use of mats may not be necessary. A designated



Environmental Monitor acting on behalf of the Applicants will evaluate field conditions on a case by case basis during construction to determine if mats are necessary.

See **Table 2** below for proposed temporary and permanent impacts listed by town. Impacts are further described in **Section 5.0** of the Application Narrative and broken out by wetland in **Attachment B**.

Table 2: Proposed Temporary and Permanent Impacts by Town

Town	Proposed Temporary Impacts (sq. ft.)	Proposed Permanent Impacts (sq. ft.)
Pelham	160,036	3,750
Windham	7,027	250
Hudson	30,774	125
Londonderry	191,058	303
Total	388,895	4,428

Some tree clearing will be required within wetlands and along intermittent and perennial streams and their associated buffers intersecting the Project ROW in order to accommodate the new 3124 Line and relocated Y-151 line. Since the western edge of the NEP ROW has been nearly cleared to its full extent previously, clearing impacts along this edge will be limited to selective tree cutting and side trimming in order to obtain required line clearance standards. Tree clearing along the PSNH ROW will be more substantial. Portions of the eastern edge of the ROW in Hudson and Londonderry and portions of the middle of the ROW in Londonderry have not been cleared to the full extent of the existing ROW boundary. The proposed clearing is limited to a minor portion of the overall width of the existing cleared ROW. Refer to **Sections 5.2** and **7.2** of the Application Narrative for a detailed discussion of clearing proposed.

(7) The impact on plants, fish, and wildlife including: rare, special concern species; state and federally listed threatened and endangered species; species at the extremities of their ranges; migratory fish and wildlife; and exemplary natural communities identified by the New Hampshire natural heritage program.

Only common plant species were observed along the Project ROW during the course of wetland delineations by Vanasse Hangen Brustlin, Inc. (VHB) Wetland Scientists during the 2014 growing season. The NHNHB was consulted on December 12, 2014 regarding the occurrence of rare plant, animal or natural communities within vicinity of the Project. NHNHB indicated historical records of rare plants, exemplary natural communities and invertebrate and vertebrate species in a response memo dated December 17, 2014, prompting additional consultation with the agency as well as NHF&G and USFWS. Invertebrate and vertebrate species which intersect the Project ROW include the brook floater, northern black racer, Blanding's turtle, and spotted turtle. Other species noted in the within proximity to the Project ROW include the grasshopper sparrow and wood turtle. NHNHB identified records of four plant species that intersect the Project ROW, with an additional six plant species and two



exemplary natural communities identified nearby. Exemplary natural communities identified within proximity to the Project ROW include medium level fen system, and swamp white oak floodplain forest.

Invertebrate and Vertebrate Species

Each of the identified species were addressed during a meeting with NHF&G on February 17, 2015 (refer to **Attachment D**). Since there is no work proposed within the bed or along the banks of Beaver Brook, there will be no impacts to the brook floater and no additional survey or mitigating action is required for this species. Winter construction could result in adverse impacts to the northern black racer, if hibernacula occur in Project impact areas. In order to identify hibernacula of northern black racers along the Project ROW, surveys were conducted along the Project ROW by VHB with assistance from Mike Marchand of NHF&G in April and May of 2015 in accordance with protocols developed through consultation with NHF&G (dated May 22, 2015 and provided in **Attachment D**). VHB did not identify any individuals or hibernacula during this survey work. At this time, NHF&G recommends additional surveys for this species during the spring of 2016. To avoid and minimize impacts to Blanding's, spotted and wood turtles that may result during Project construction, Turtle nesting surveys will occur in specific areas along the Project ROW during late spring/early summer of 2015 in accordance with NHF&G approved field protocols. Should nests be found, they will be mapped, flagged and avoided during construction. Additionally, a training session will be held in the field with the Project contractor.

The New England cottontail has been added to the Project species list at the recommendation of NHF&G since it is listed as endangered in New Hampshire with known occurrences in Londonderry. Impacts to New England cottontail are not anticipated as the Project will not impact existing upland shrub habitat. Additionally, the Project will create new upland shrub habitat as a result of the clearing that is proposed. Field surveys will occur during the early part of the 2015 winter season to determine the presence of absence of this species within the Project ROW in accordance with NHF&G approved protocols.

Additionally, the USFWS has recently designated the northern long-eared bat as a threatened species under the Endangered Species Act 16 U.S.C. § 1531 et seq. (ESA) effective May 4, 2015. Since the Project is located within the range of this species and involves tree clearing, potential impacts to this species were considered. Approximately 71.2 acres of trees within the existing right of way need to be cleared to construct the Project. No known hibernacula or roost trees occur near the Project (John Reichard, USFWS pers comm.) The NHNHB also does not have any known occurrences of northern long-eared bat occurring near the Project. Coordination with the USFWS is ongoing at this time, however the Applicants expect to reach an agreement.

Plant Species

NHNHB identified records of four plant species that intersect the Project ROW, with an additional six plant species and two exemplary natural communities identified nearby. A formal plant and natural community survey is scheduled to be conducted during the 2015 growing season based on flowering times provided by NHNHB and in accordance with protocols outlined in the "MVRP Rare Plant Species Survey Memorandum," dated May 8,



2015, as approved by NHNHB (Refer to **Attachment D**). Surveys will identify and map current locations and extent of the listed species within the Project ROW in order to avoid impacts to the species during construction to the greatest extent feasible.

The Project was also reviewed for the presence of federally-listed or proposed, threatened or endangered species, designated critical habitat or other natural resources of concern through the USFWS's Information Planning and Conservation (IPaC) System. A result letter dated May 15, 2015 indicated no listed species or critical habitats are located within the Project area.

Refer to **Section 9.0** of the Application Narrative for more information and **Attachment D** for NHNHB, USFWS, and NHF&G correspondence.

Exemplary Natural Communities

Exemplary natural communities identified within proximity to the Project ROW include a medium level fen system and a swamp white oak floodplain forest. The medium level fen system is co-located with a pond that occurs northwest of the terminus of the Project at the Scobie Pond 345 kV Substation. The swamp white oak floodplain forest is associated with Beaver Brook located west of the Project ROW in Pelham. The Project does not require impacts to either natural community identified. In addition, field surveys that occurred in 2014 and 2015 did not identify any exemplary natural communities within the Project ROW.

Wildlife Habitat

Wildlife habitat is provided by the forested, scrub-shrub, emergent and open water components of the Project ROW's wetland complexes. However, forested components of the Project ROW where the majority of the Project impacts would occur are not significantly different in their general habitat characteristics relative to adjacent forested uplands. Forested habitat is also ubiquitous within the Project vicinity. Therefore, the modest amount of forested habitat conversion along the length of Project area will not significantly affect the existing wildlife habitat conditions.

The Project ROW includes wildlife habitat identified as "Highest Ranked Habitat in New Hampshire", "Highest Ranked Habitat in Biological Region", and "Supporting Landscapes" as identified by the NHF&G in the *Wildlife Action Plan*. A map series depicting these habitat types in relation to the Project ROW is included as **Figure 4**. The Project is not expected to affect or change the ranking of habitat. The Project has been sited within an existing maintained utility corridor that contains multiple transmission lines. Under the current assignment of habitat ranking, the existing cleared utility corridor is not distinguished from the surrounding landscape types. Therefore, additional clearing and construction of a new transmission line should not have an impact on ranking of wildlife habitat.

The most valuable wildlife habitat functions are provided by the emergent marsh/aquatic bed/open water habitat components of several large wetlands within the Project ROW. These wetlands provide habitat that may be used by waterfowl and wading birds, a habitat type that is less common within the Project vicinity. Impacts to this habitat component of the wetlands



by the Project are limited. The majority of these systems have been avoided and will not be crossed during Project construction.

Fish and Shellfish

Fish and shellfish habitat is limited to the perennial streams within the Project area, including Golden Brook, Beaver Brook, Chase Stream, Nesenkeag Brook, and several unnamed perennial tributaries to Beaver Brook. These perennial streams have the potential to provide cold-water fishery habitat. The open water components of the streams formed by beaver activity may provide warm water fish habitat. However, the small size of the open water area is not likely to support a significant population of fish. The perennial streams or the open water habitat will not be permanently impacted by the Project. Therefore, no impacts to fish, shellfish, or supporting habitats is expected to result from the Project.

Vernal Pools

Vernal pool habitat along the PSNH ROW was identified and mapped by Normandeau in April of 2012 in support of a previous PSNH project. During September and October of 2014, VHB Wetland Scientists reviewed areas previously mapped as vernal pools by Normandeau as well as identified new areas along the Project ROW which displayed characteristics indicating viable vernal pool habitat. VHB revisited previously identified pools and areas displaying potential habitat during the peak breeding season of the vernal pool indicator species in late April of 2015. A total of 17 vernal pools were identified along the Project ROW. No direct impacts are proposed to the documented breeding habitat of any of the vernal pools. However, varying levels of vegetative clearing associated with Project construction will occur within the 250-foot buffer of 16 out of the 17 identified vernal pools. Vegetative clearing is also proposed within the boundaries of 11 vernal pools.

Refer to **Section 5.2** and **Attachment H** for more information regarding vernal pools within the Project ROW.

(8) The impact of the proposed project on public commerce, navigation and recreation.

MVRP will impact public commerce by increasing the reliability of the power supply in the region, providing an increase to the local and State tax base, and by creating job opportunities during the construction phase of the Project. MVRP is needed to support the reliable delivery of electric power to meet the region's current and future economic demand.

Direct negative impacts on public navigation resulting from the Project are not anticipated. Public Utility Commission License Applications will be filed to request licenses to construct new overhead lines across State lands and public waterways including Beaver Brook. In addition, New Hampshire Department of Transportation (NHDOT) applications will be filed to request permits to construct new overhead lines across State roadways and railbed. Driveway permit applications and traffic management plans will be filed to request permission from the NHDOT to access the Project ROW from State roads during construction. In coordination with landowners, locked gates will be maintained or placed at various locations along the ROW to restrict access.



The Project ROW traverses 11 parcels designated as conservation land in Pelham, one designated parcel in Windham, three designated parcels in Hudson, and five designated parcels in Londonderry. The majority of the parcels are municipally owned with a small fraction being held under private ownership. Some of these conservation parcels provide a network of hiking trails and other recreational opportunities to the public which intersect portions of the Project ROW. The Musquash Swamp Conservation Area located in Londonderry is the largest parcel that borders the Project ROW, accounting for 545 acres. A segment of the Granite State Rail Trail (aka Londonderry Bike Path) also crosses the Project ROW in Londonderry as the ROW approaches the Scobie Pond 345 kV Substation. The Project will not negatively impact recreational uses of these conservation lands. The proposed structures and access are located within the limits of the existing ROW outside of existing accessways.

Given the scope and location of the Project (within the limits of an existing electric utility ROW), the Project will not result in any unreasonably adverse impacts to existing community resources pertaining to access or recreational opportunities. Access or recreational opportunities may be temporarily restricted during Project construction periods, but will be restored upon Project completion.

(9) The extent to which a project interferes with the aesthetic interests of the general public.

NEP and PSNH retained Environmental Design & Research, Landscape Architecture, Engineering & Environmental Services, D.P.C. (EDR) to conduct a Visual Impact Assessment (VIA) for the Project. A two-mile corridor centered on the center line of the proposed 3124 Line was defined as the visual study area. The study area totaled approximately 77 square miles, and included portions of the Towns of Pelham, Windham, Hudson, Londonderry, Litchfield and Derry. Within this area EDR described existing landscape character, viewer groups, and scenic resources. Potential Project visibility and visual impact were evaluated through viewshed analysis, field review, preparation of visual simulations, and evaluation of visual contrast by a panel of registered landscape architects.

The visual setting of the Project is an existing, well-established transmission corridor. Land use adjacent to the transmission corridor, and within the visual study area, is dominated by suburban residential development and remnant forest land. Farms and agricultural land within the study area occur primarily in the western portion of Londonderry, with two smaller agricultural areas occurring in the northern and southern portions of Pelham. Higher density residential and commercial development is concentrated in the village/downtown areas of Derry, Londonderry, and Pelham. Review of existing data bases revealed that there are no National or State Parks, National Forests, National Heritage Areas, National Wildlife Refuges or State Wildlife Management Areas, National Natural Landmarks, or National/State Designated Wild, Scenic or Recreational Rivers, or other sites that would be typically considered scenic resources of statewide or national significance within the visual study area. An inventory of potentially scenic public resources within the study area identified one state forest, four scenic byways/drives, 18 town-designated scenic areas, four recreational trails, numerous local parks and conservation areas, four golf courses, and a number of surface water resources. It should be noted that while compiling the inventory, resources were



identified as "potentially scenic" rather than "scenic," because they may actually lack scenic qualities or public access.

Based on the results of the VIA, EDR concluded that:

- The Project will have very limited visibility from most locations within the visual study area (including the majority of scenic resources);
- Scenic resources located beyond 500 feet, or at most 0.5 mile, from the proposed center line will generally not have views of the Project;
- Open views from scenic resources will generally present limited contrast with the
 existing landscape and will have minimal impact on scenic quality and viewer
 expectations, due to the location of the Project within an existing transmission
 corridor:
- Even where presenting appreciable visual contrast, the Project would not be a
 dominant feature of a landscape in which existing human development is not already
 a prominent feature;
- The Project would not offend the sensibilities of a reasonable person or violate a clear written community standard intended to preserve scenic resources; and
- The Project Sponsors have committed to feasible and appropriate impact avoidance, minimization, and mitigation measures in the design of the facility that improve the harmony of the Project with its surroundings.

Based on these determinations, EDR concluded that the Project will not have an unreasonable adverse effect on aesthetics.

(10) The extent to which a project interferes with or obstructs public rights of passage or access.

As previously mentioned, the Project will be located within the limits of an existing electric utility ROW that is currently utilized for the transmission of high voltage electricity with limited access to the general public. Currently, locked gates are present at various locations along existing ROW accessways adjacent to public roadways.

Several networks of recreational trails associated with municipally and privately owned conservation land intersect the Project ROW in the Towns of Pelham, Windham, Hudson and Londonderry. Additionally, the Granite State Rail Trail crosses the Project ROW in Londonderry. The Project will not permanently interfere or obstruct public access to these community resources. During Project construction, it is anticipated that temporary restrictions to some of these resources which are located directly under the Project ROW will be required when work crews reach those locations. Any accessway that becomes temporarily restricted during Project construction will be restored upon completion of construction in the restricted area.

The Project will have a nominal impact to the traveling public. Impacts will be isolated to roadways where the proposed utility lines will cross public highways, streets and sidewalks. The impacts will occur during the construction phase of the Project and will be mitigated



through temporary traffic controls to maintain traffic mobility through the work zones. Traffic controls for this Project will be in accordance with the 2009 edition of the *Manual on Uniform Traffic Control Devices* (MUTCD)¹ and NHDOT policies.

When construction is taking place adjacent to public highways, streets and sidewalks, police or flaggers will temporarily slow or divert traffic down to one lane. Traffic will be temporarily stopped while overhead lines are spanned across the roadway. Necessary permits from NHDOT will be obtained prior to Project construction.

(11) The impact upon abutting owners pursuant to RSA 482-A:11, II.

The Project work will occur within the limits of an existing electric utility ROW owned in fee or held as easement by NEP and PSNH. Due to the nature of the Project (entirely within the limits of an existing electric utility ROW), this Project is exempt from abutter notification in accordance with New Hampshire Department of Environmental Services (NHDES) Rule *Env-Wt. 501.01(c)*. However as a courtesy, NEP and PSNH has sent notifications to landowners and abutters along the Project ROW. Town tax maps identifying the Project corridor and associated abutters have been provided in **Attachment F**.

For purposes of this permit application, the MVRP has been divided into four segments. The four segments are delineated by state, line ownership, and line alignment. Segment 1 of MVRP (6.5 miles in length) is located in Massachusetts and is not discussed herein.

Segment 2 includes that portion of the Project ROW to be owned and operated by NEP that runs from the Massachusetts/New Hampshire border continuing north for 8.1 miles through the Towns of Pelham, Windham and Hudson to a location in the Town of Hudson where the Project transitions to an existing PSNH ROW which runs parallel to the NEP ROW. Segment 2 is already occupied by three existing transmission lines (two overhead 230 kV transmission line and one overhead 115 kV transmission line) for a majority (7.6 miles) of the length. In most locations, the ROW is currently cleared to nearly its full extent. To incorporate the new 3124 Line in the majority of Segment 2, the Y-151 line (existing overhead 115 kV transmission line owned by NEP) will need to be relocated within the western edge of the existing NEP ROW and the new 3124 Line will be installed in the original Y-151 alignment. Some clearing will be required along the western edge of the ROW to accommodate the relocated Y-151 line, but it will be confined to isolated areas and primarily will consist of selective tree cutting and side trimming.

Segment 3 includes that portion of the Project ROW where ownership and operation of the new 3124 Line transitions from NEP to PSNH, beginning north of Griffin Road in Hudson and running northwesterly within the existing PSNH ROW for approximately 3.9 miles. For this distance, the NEP ROW runs parallel to the PSNH ROW. The PSNH ROW in Segment 3 contains one existing 345 kV overhead 345 kV transmission line and the parallel NEP ROW contains two 230 kV lines and one 450 kV DC line. Approximately 90 feet of forested land

[▼]

¹ Manual on Uniform Traffic Control Devices (MUTCD), published by Federal Highway Administration (FHWA), 2009 Edition



along the eastern edge of the ROW will need to be cleared to accommodate the new 3124 Line

Segment 4, utilizes that portion of the PSNH ROW that diverges from the NEP ROW. It extends 5.9 miles northeasterly towards PSNH's Scobie Pond 345 kV Substation located on Brewster Road in Londonderry. The ROW in this Segment contains up to five existing overhead transmission lines; at some locations, the ROW also contains a distribution circuit. The number and arrangement of the existing facilities within the ROW varies over its total length. The ROW varies in width and is cleared except for an approximately 50-foot strip of forested land within the middle of the ROW. This forested strip will need to be cleared to accommodate the new 3124 Line.

The Project is not expected to result in direct adverse impacts to project abutters. Indirect (visual) impacts to abutters will vary along the Project ROW depending on the location and extent of clearing proposed as described above. Relocation of the Y-151 line along Segment 2 will result in some minor widening of the existing cleared ROW and is not expected to change the character of the current view.

Some visual impacts to abutters will occur along portions of Segment 3 as a result of tree clearing along the 90-foot wide un-cleared eastern edge of the Project ROW. In some locations, residential homes are located within close proximity to the proposed clearing. However, the Project is occurring on an existing, well established ROW with compromised scenic quality which minimizes its impact on viewer activities, perceived land use, and aesthetic expectations at these locations.

Tree clearing along Segment 4 will be confined to the center of the Project ROW which is surrounded by cleared ROW on both sides and is of significant distance (several hundred feet) from adjacent residential homes. Clearing along this Segment will result in a shift from an interspersion of shrubland and trees to an expansive open area.

Aesthetic impacts were addressed in detail through a VIA which was completed by EDR as previously summarized in **Question 9** above.

(12) The benefit of a project to the health, safety, and well-being of the general public.

The MVRP will improve the health, safety and well-being of the general public, by enhancing the reliability of electrical transmission services to the Merrimack Valley Region. The MVRP will eliminate potential overloads on several components of the current transmission system that could be experienced under certain contingency conditions. The MVRP will provide resiliency and increased system flexibility to the region's transmission infrastructure in order to deliver reliable electric service to customers in the area. In doing so, the MVRP will ensure continued compliance with applicable federal and regional transmission system reliability standards.



(13) The impact of a proposed project on quantity or quality of surface and ground water.

The Project is located within the boundaries of the Merrimack River Watershed. There are a total of 13 perennial stream crossings and 20 intermittent stream crossings along the Project ROW in Pelham, Windham, Hudson, and Londonderry. In addition, the Project ROW is largely comprised of densely vegetated scrub-shrub and emergent wetland systems. Refer to **Sections 4.0 and 6.0** of the Application Narrative for a description of these resources.

The Project is not expected to impact the quantity or quality of surface and ground water. The Project involves primarily temporary impacts associated with the use of matting during Project construction and a relatively small amount of permanent wetland impact proposed from the installation of new utility structures, improvements to existing ROW accessways at four locations, and grading associated with the partial realignment of a single intermittent stream channel (approximately 4,428 sq. ft.). The Project has been designed to avoid structure installation within wetlands to the maximum extent practicable. No structures are proposed within the banks or beds of any surface water located along the Project ROW and no culverts will be used to enclose streams. Of the 13 perennial stream crossings located along the Project ROW, three may be spanned with mats (resulting in no disturbance) during Project construction where historic ROW accessways exist and have since been flooded due to beaver activity. One other perennial stream may be crossed where an established ROW accessways and culvert exists. Of the 20 intermittent stream crossings located along the Project ROW, four may be crossed during project construction where established accessways and culverts exist, while five may be spanned with mats (resulting in no disturbance) at locations where historic ROW accessways once existed. Project construction may result in a total of 6,365 sq. ft. of temporary bed impacts to streams located along the Project ROW as a result of the placement of construction work pads or pull pads over channels located within close proximity to proposed structure installations or where mat spans are not feasible (significant linear distances). Refer to Section 7.0 of the Application Narrative for further details on temporary stream impacts.

In order to accommodate the installation of proposed 3-pole Structure 253 along the 3124 Line in Londonderry, the Project will involve realignment of the western portion of a single intermittent stream channel, identified as SA-41 on Sheet 87 of the Wetland Permitting Plans (Attachment A). The proposed channel realignment ("the Site") is located within the PSNH ROW approximately 1,200 feet east of High Range Road. Channel realignment is necessary at this location, as it has been determined by project engineers that the stream could interfere with the central support footing and/or the designated guy anchors of proposed Structure 253, thus compromising its long-term stability. The proposed location of Structure 253 cannot be moved as its location represents a critical turning point in the ROW where the 3124 Line changes direction to the south. Based on several site visits, hydrologic and hydraulic modeling, and estimated run-off calculations performed by VHB, the Project proposes to realign the western end of the channel to the north around the center pole of Structure 253. Realignment of the SA-41 will result in approximately 80 sq. ft., and 17 linear feet of permanent stream bed impact. Upon completion of the channel realignment and installation of structure 253, temporary erosion control blankets will be installed along the channel and



around the structure in order to allow for vegetation to become established. Refer to **Section 7.1** and the Channel Realignment Plan included in **Attachment A** for more information.

Permanent improvements to ROW accessways at four wetland crossing are proposed, but do not intersect a stream channel. Stone fords have been designed at these crossings. Stone fords allow for vegetation to grow between the stone and allow water to seasonally flow over the stone maintaining existing wetland hydrology and allowing for wildlife passage. Refer to **Attachment A** for Stone Ford Standard Design Typical.

The principal water quality concern associated with the Project relates to the potential for increased sediment erosion and movement during the construction period. As discussed in **Sections 3.0 and 12.0** of the Application Narrative, various Best Management Practices (BMPs) will be used during the construction period to minimize the erosion potential and sediment migration from the Project area. No new impervious surfaces or petroleum liquid storage facilities are proposed as part of the Project. The Project requires 401 Water Quality Certification because the Project will have temporary and permanent wetland impacts that will require authorization from the US Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act. The Project qualifies for a NH Statewide Programmatic General Permit (PGP), and it is assumed that the project would be authorized by NHDES under the general Water Quality Certificate #2012-404P-002 for PGP activities. A 401 Water Quality Certificate Application has been compiled and submitted to NHDES for the Project.

The Project will require approximately 71.2 acres of upland and wetland tree clearing in New Hampshire, of which 10.9 acres are located within wetlands. Some clearing will also occur within the riparian buffers of perennial and intermittent stream channels. As indirect measure of the potential impact that the Project may have on streams, the amount of tree clearing within 100-feet and 50-feet of a perennial and intermittent stream channel, respectively, was estimated using available GIS data and aerial imagery. Of the total 4.5 acres of tree clearing along riparian buffers estimated to occur within the designated buffers of 22 streams in New Hampshire, approximately 2.2 acres is associated with perennial streams and the remaining 2.3 acres of tree clearing is associated with intermittent streams. Although the Project will require tree clearing in close proximity to many of the streams intersected by or adjacent to the Project ROW, the proposed clearing will be limited to only a minor portion of the overall width of the existing ROW, which is already cleared. Given that much of the existing ROW width is already cleared, the added clearing is not expected to result in any discernable effect on water quality or water temperatures in the intermittent or perennial streams. Refer to Section 7.2 for a detailed description of clearing within riparian stream buffers by Project Segment.

Since the Project ROW is largely comprised of densely vegetated wetlands, the capacity of this environment to perform water quality and hydrologic functions such as groundwater discharge or recharge, flood flow alteration, sediment/toxicant/ pathogen retention, and nutrient removal exists. The large PEM/PSS wetland systems and/or wetlands containing open water or aquatic bed components located along the Project ROW may contribute to floodflow alteration by detaining surface runoff from surrounding slopes during precipitation events and excess floodwaters if they contain a contributing perennial or intermittent



watercourse. Pollutant retention or removal functions may also occur within these types of wetlands along the Project ROW, but a general lack of erosion, sediment, pollution, or excess nutrient sources within the drainage area limits water quality functions. The small amount of permanent impact proposed by the Project will not adversely impact water quality and hydrologic functions performed by the wetlands found within the Project ROW.

(14) The potential of a proposed project to cause or increase flooding, erosion, or sedimentation.

Portions of the Project intersect the 100-year floodplains of several named perennial streams according to Federal Emergency Management Agency (FEMA) National Flood Insurance Rate Maps (FIRM), produced for Hillsborough and Rockingham Counties (Refer to **Figure 3**). However, the Project has been designed to avoid structure installation within 100-year floodplain boundaries to the maximum extent practicable. A total of six structures are proposed within a 100-year floodplain. Three structures along the relocated Y-151 line and two structures along the new 3124 Line are proposed within the 100-year floodplain of Golden Brook in Pelham. Two existing structures are to be removed from the floodplain for a net gain of three structures. Also, one structure along the new 3124 Line will be installed within the 100-year floodplain of Beaver Brook in Londonderry located just south of the Scobie Pond 345 kV Substation. The amount of new fill associated with installation of each new structure is minimal and access to these structures will traverse temporary matting across wetland areas. Therefore, the Project does not have the potential to cause or increase flooding.

Appropriate temporary sediment and erosion controls will be installed as depicted on the Wetland Permitting Plans, **Attachment A**, to minimize the potential of the Project to cause or increase erosion and sedimentation during construction. In addition, permanent access has been designed with appropriate BMPs to manage stormwater following construction completion. Examples of BMPs include roadside ditches, level spreaders, stone check dams, and water bars. As discussed in more detail in **Section 12.0**, various BMPs will be used during the construction period to minimize the erosion potential and sediment migration from the Project area.

(15) The extent to which a project that is located in surface waters reflects or redirects current or wave energy which might cause damage or hazards.

This criterion typically applies to projects involving shoreline alterations of which none are being proposed. Installation of the proposed 3124 Line and relocation of existing Y-151 line will not redirect current or wave energy because there is no work being proposed within large open bodies of water or flowing streams.

(16) The cumulative impact that would result if all parties owning or abutting a portion of the affected wetland or wetland complex were also permitted alterations to the wetland proportional to the extent of their property rights.



This Project serves the public, including the local landowners, and is, therefore, not directly comparable to an individual land-owner's desire to fill wetlands for private use. Additionally, it is difficult to predict further development or alterations of abutting properties and their current relationship to the subject wetlands beyond the boundaries delineated in relation to the Project (i.e., Project ROW). However, permanent wetland impacts associated with this Project have been limited to the greatest extent practicable. Proposed structure locations in wetlands are necessary in order to maintain the structural integrity of the proposed 3124 Line and relocated Y-151 line. Permanent wetland crossings are necessary in order to provide safe and reliable travel for work crews conducting future maintenance and repair within the ROW. Based on the small amount of permanent impact proposed (4,428 sq. ft.), the Project would not significantly contribute to any future cumulative impacts.

(17) The impact of the proposed project on the values and functions of the total wetland or wetland complex.

Some of the larger wetland complexes found within the Project ROW, including Lower Golden Brook Prime Wetland, Beaver Brook Floodplain wetland, and other large emergent/scrub-shrub systems associated with open water components offer riparian storage of meltwater, floodwater, and stormwater. Due to their vegetative structure, with dense, erect emergent and scrub-shrub vegetation, these wetlands are important for trapping sediments and nutrients within the system, for reducing flow velocities, and for erosion control. These wetlands may also play a role in groundwater discharge or recharge dependent upon soil composition, landscape position, and their proximity to underlying aquifers. In addition, these wetlands may provide productive wildlife habitat (especially for invertebrates), and may be valuable in production export functions related to the ability of the wetland to provide food sources to wildlife. Therefore, these larger wetland complexes likely support wildlife in greater capacity than other systems that are isolated, smaller in size, and/or contain a less diverse structure of wetland classes and interspersion of vegetation. Due to their relationship with perennial streams and waterbodies, they may also contribute to valuable fisheries habitat and recreational opportunities such as canoeing and kayaking, although recreational opportunities would be limited to areas outside of the Project ROW.

The majority of the other Project ROW wetlands are currently maintained as either scrubshrub or emergent habitat. Scrub-shrub wetlands in general have functions similar to forested wetlands. When associated with a stream, they often receive over bank flooding and are significant in flood alteration and often protect stream banks from erosion. Scrub-shrub wetlands are very productive in terms of food resources where they support berried varieties of shrubs. These wetlands tend to be more structurally diverse, and therefore tend to support more diverse wildlife species than forested wetlands. This is especially true because they are commonly associated with streams that can act as wildlife corridors or that offer a wider range of local habitat conditions. However, when not associated with a stream, hydrologically isolated and small in size, these wetlands tend to exhibit limited functions and values.

None of the Project impacts are expected to alter the hydrology of wetlands (i.e., no inflow/outflow restrictions) along the Project ROW. Therefore, the Project will not permanently impact water quality and hydrologic functions (groundwater recharge/discharge, floodflow alteration, or sediment and nutrient trapping) which are performed by these



wetlands, specifically the larger emergent/scrub-shrub complexes which are present. Some temporary impacts to the wildlife habitat value of Project ROW wetlands are anticipated during the construction period as a result of noise and the presence of work crews and equipment, but these impacts will be short-term.

Tree clearing is proposed along certain portions of each of the three segments of the Project ROW in New Hampshire which will result in the conversion of forested wetland cover types to scrub-shrub/emergent cover types. It is expected that some of this tree clearing will alter wildlife habitat. However, the forested communities where clearing impacts will occur are not significantly different in their general habitat characteristics relative to adjacent forested uplands. The most valuable wildlife habitat functions of the Project ROW wetlands are provided by the emergent-open water wetland classes currently present within the interior of the Project ROW. These wetland classes will not be impacted by clearing activities.

See **Section 4.3** of the Application Narrative for greater detail.

(18) The impact upon the value of the sites included in the latest published edition of the National Register of Natural Landmarks, or sites eligible for such publication.

There would be no impact to Registered Landmarks as none are located on or within the vicinity of the Project. The closest Registered Landmark is Spruce Hole Bog located over 24-miles to the northeast.

(19) The impact upon the value of areas named in acts of congress or presidential proclamations as national rivers, national wilderness areas, national lakeshores, and such areas as may be established under federal, state, or municipal laws for similar and related purposes such as estuarine and marine sanctuaries.

There are no national rivers, national wilderness areas, national lakeshores, or intertidal waters within the Project corridor. There are also no New Hampshire State Parks within the Project corridor.

Beaver Brook (classified as a fourth order stream) is on the NHDES Consolidated List of Waterbodies subject to the Shoreland Water Quality Protection Act (SWQPA) *RSA 483-B*. Beaver Brook and its associated Protected Shoreland Zone intersect the Project ROW in two locations; once in Pelham and once at the Windham/Hudson town line. Beaver Brook does intersect the Project ROW a third time to the south of the Scobie Pond 345 kV Substation in Londonderry. In this location, it is classified as a 2nd order stream and, therefore, is not subject to SWQPA jurisdiction. A Shoreland Permit Application has been prepared and submitted to NHDES Shoreland Program to address proposed impacts within the protected shoreland of Beaver Brook (Refer to **Section 13.0** of the Application Narrative).

(20) The degree to which a project redirects water from one watershed to another.

No alterations of surface waters or drainage patterns are proposed. Therefore, no water will be redirected from one watershed to another as a result of the Project.



Application Narrative

- **▶** Introduction
- ➤ Site Description and Existing Conditions
- Proposed Project Description
- Project Wetlands and Vernal Pools
- ➤ Proposed Wetland and Vernal Pool Impacts
- ➤ Surface Waters & Drainage Patterns
- ➤ Proposed Stream Impacts
- ➤ Floodplains and Floodways
- ➤ Rare, Threatened, and Endangered Species
- ➤ Cultural Resources
- ➤ Alternatives Analysis
- Mitigation Measures
- ➤ Shoreland Water Quality Protection Act



Application Narrative

The NH portion of the proposed MVRP will be reviewed by the NH Site Evaluation Committee (NHSEC) under NH RSA 162-H, relative to energy facility siting because the Project involves construction of a new electric transmission line that exceeds 200kV. In preparation of filing an application with the NHSEC, Vanasse Hangen Brustlin, Inc. (VHB) is submitting a Standard Dredge and Fill Permit Application on behalf of NEP and PSNH in accordance with New Hampshire Revised Statutes Annotated (RSA) Chapter 482-A, Fill and Dredge in Wetlands, and Wetland Bureau Code of Administrative Rules, Chapters Env-Wt 100 through Env-Wt 900.

Proposed permanent wetland impacts total **4,428** sq. ft. from the installation of new electric transmission utility structures and associated guy anchors and proposed improvements to existing ROW accessways in four locations. Temporary wetland impacts totaling up to **388,895** sq. ft. may result from the use of matting to access structure locations and to create a stable work platform surrounding each structure. Proposed permanent stream impacts total **80** sq. ft. (17 linear feet) from the partial realignment of an intermittent stream channel and associated grading. Temporary stream impacts totaling up to **6,365** sq. ft. (610 linear feet) may result from accessing and installing new poles and guy wires. The Project is classified as a Major Project under NHDES Wetland Rules (Env-Wt 303.02) because total wetland impacts exceed 20,000 sq. ft.

The Application Narrative describes current site conditions (including adjacent regulated wetland resources), the proposed electric utility work and subsequent impacts to jurisdictional wetlands and streams. Attachments include: Wetland Permitting Plans showing existing conditions and the proposed construction activities, evidence of agency coordination, and representative site photographs. Additionally, demonstration that the Project complies with the provisions contained in the NHDES Wetland Rules is documented in further detail within this narrative.

1.0 Introduction

The MVRP involves the construction of a new overhead 345 kV electric transmission line within an existing ROW between the NEP-owned Tewksbury 22A Substation in Tewksbury, Massachusetts and the PSNH-owned Scobie Pond 345 kV Substation in Londonderry, New Hampshire. The NH portion of the MVRP (Project) is the subject of this permit application. The Project extends from the Massachusetts border in Pelham, New Hampshire to the PSNH-owned Scobie Pond 345 kV Substation in Londonderry, New Hampshire. The Project proposes approximately 17.9 miles of new 345 kV transmission line (which will be known as "3124 Line") within the Towns of Pelham, Windham, Hudson, and Londonderry as well as



relocation of 7.6 miles an existing NEP-owned 115 kV transmission line (known as "Y-151 line").

For purposes of discussion, the MVRP has been divided into four segments (Refer to **Figure 1**). The four segments are delineated by state, line ownership, and line alignment. *Segment 1 of MVRP (6.5 miles in length) is located in Massachusetts and is not discussed herein.*Segment 2 is the portion of the Project in New Hampshire to be owned and operated by NEP. Segments 3 and 4 are the portions of the Project in New Hampshire to be owned and operated by PSNH.

1.1 Project Purpose and Need

The MVRP has been designed to address reliability needs associated with the transmission lines connecting northeastern Massachusetts and southern New Hampshire. The NEP and PSNH transmission systems are integral parts of the regional power system delivering electricity to customers throughout New England. The Companies must maintain their respective systems consistent with the reliability standards and criteria developed by the North American Electric Reliability Corporation (NERC), the Northeast Power Coordinating Council (NPCC) and ISO-NE, as well as their own reliability standards and criteria. These standards and criteria expressly require the Applicants to design their systems to withstand representative contingencies under stressed conditions (e.g., summer peak or minimum load levels, generator unavailability). If the area transmission system does not have the capacity to reliably serve forecasted load under these conditions, the Companies must plan and implement system additions and upgrades to address the identified performance issues.

In 2008, transmission system planners from ISO-NE, Northeast Utilities, National Grid, and NSTAR formed a Working Group to assess transmission system reliability in northeastern Massachusetts and southern New Hampshire, to identify needs within the study area, and to develop back-stop transmission solutions to address any identified needs. Results of the Updated Needs Assessment, published by ISO-NE in 2014, found that under certain contingencies, key elements of the transmission system in the Merrimack Valley would be overloaded or vulnerable to overloads. It found that at times of peak load, the 115 kV, 230 kV and 345 kV transmission paths between New Hampshire and Massachusetts would overload under certain contingencies, as would some connecting 115 kV and 230 kV lines in both states. The Updated Needs Assessment also found the potential for unacceptably high voltages at certain area substations under minimum load or off-peak contingency conditions. Thus, the existing transmission system does not have sufficient capacity to reliably serve southern New Hampshire and northeastern Massachusetts either at peak or off-peak load under reasonably stressed conditions.

A separate study focusing on New Hampshire and Vermont also identified potential overloads on 345 kV transmission lines between New Hampshire and Massachusetts. ISO-NE's "New Hampshire/Vermont Transmission System 2023 Needs Assessment Report" ('New Hampshire/Vermont Needs Assessment') documented potential thermal violations on the 326 345 kV line between PSNH's Scobie Pond 345 kV Substation in Londonderry, NH and



NEP's Sandy Pond Substation in Ayer, MA, as well as on the 394 345 kV line between New Hampshire Transmission's Seabrook Station in Seabrook, NH and NEP's Ward Hill Substation in Haverhill, MA. This report also found that several 345 kV buses in southern New Hampshire could have unacceptably high voltages under certain contingencies during light load conditions with minimal generation on line.

The Project addresses all of these needs by providing an additional 345 kV transmission path between Massachusetts and New Hampshire. This new transmission path will alleviate overloads of 345 kV and 115 kV transmission circuits terminating at New Hampshire substations. It will also address voltage issues in the southern New Hampshire area. In doing so, it ensures continued compliance with applicable federal and regional transmission system reliability standards and criteria and maintains reliable electric service to New Hampshire and Massachusetts electric customers.

The Updated Needs Assessment and the New Hampshire/Vermont Needs Assessment both focused on the ability of the existing transmission system to reliably serve regional electric customers. The Project has been designed to address the specific needs identified in these reports, and not to support the delivery of new generation into the region.

2.0 Site Description and Existing Conditions

Existing conditions along the Project ROW are discussed herein by segment in New Hampshire.

Segment 2 (NEP)

Segment 2 includes that portion of the Project that runs from the Massachusetts/ New Hampshire border continuing north within an existing NEP ROW for 8.1 miles through the Towns of Pelham, Windham and Hudson to a location in the Town of Hudson where the Project shifts from the existing NEP ROW to an existing PSNH ROW. Segment 2 is occupied by three existing transmission lines (two overhead 230 kV transmission line and one overhead 115 kV transmission line) for a majority (7.6 miles) of the length of the NEP-owned ROW.

The ROW width along Segment 2 varies from 350 to 566.5 feet wide. In most locations, the ROW is currently cleared to nearly its full extent. Segment 2 is typical of an existing utility ROW, with both upland and wetland areas maintained in accordance with National Grid's Vegetation Management Plan. Wetlands within the ROW generally consist of scrub-shrub and emergent vegetative cover types, with a relatively small area of forested wetlands along uncleared borders of the ROW boundary. Golden Brook, Beaver Brook, three other unnamed perennial streams and nine intermittent streams intersect the Project ROW along Segment 2. In addition to the ROW crossing, Beaver Brook also comes within close proximity to the western edge of the Project ROW in one location in Windham. Additionally, the Project ROW crosses Golden Brook Prime Wetland and is adjacent to (west of) Little Island Pond



Prime Wetland. The NHNHB has identified records of four threatened or endangered plant species, two threatened or endangered vertebrate species, and one endangered invertebrate species intersecting Segment 2.

Land use adjacent to Segment 2 consists of predominantly residential areas, as well as forested areas, wetlands, and open fields. The ROW crosses four state maintained highways (Route 38, Route 111A, Route 128 & Route 111) and multiple local roadways.

Segment 3 (PSNH)

Segment 3 includes that portion of the Project where ownership of the new 3124 Line transitions from NEP to PSNH, beginning north of Griffin Road in Hudson and running northwesterly within the existing PSNH ROW for approximately 3.9 miles. For this distance, the NEP ROW runs parallel to the PSNH ROW. In some locations, the NEP ROW will be utilized to gain construction access to the PSNH ROW. The PSNH ROW in Segment 3 is approximately 220 feet wide and contains one existing 345 kV overhead transmission line.

Approximately 130 feet of the 220-foot wide ROW has been cleared and is maintained for the existing 345 kV transmission line. The active portion of the ROW consists of maintained scrub-shrub upland communities with scrub-shrub and emergent wetlands scattered throughout. PSNH conducts vegetation maintenance along Segment 3 in accordance with *Best Management Practices Manual for Utility Maintenance in and Adjacent to Wetlands and Waterbodies in New Hampshire*. Several forested wetlands exist within the un-cleared eastern edge of the ROW.

The ROW intersects Howard Brook, Chase Brook, Nesenkeag Brook and two other unnamed perennial streams as well as five intermittent streams. Additionally, several large emergent wetland systems are present along this segment. The NHNHB has identified records of one endangered vertebrate species in Londonderry at the transition from Segment 3 to Segment 4. Land use surrounding the ROW consists of predominantly residential areas with some forested and agricultural areas interspersed throughout. The ROW crosses one state maintained highway (NH Route 102) and multiple local roadways.

Segment 4 (PSNH)

Segment 4, utilizes that portion of the PSNH ROW that diverges from the NEP ROW. It extends 5.9 miles northeasterly towards PSNH's Scobie Pond 345 kV Substation located at 6 Brewster Road in Londonderry, New Hampshire. The ROW in this Segment contains up to five existing overhead transmission lines and, in some locations, additional overhead distribution circuits. The number and arrangement of the existing facilities within the ROW varies over its total length. The ROW varies in width from 460 feet to 635 feet and is cleared except for an approximately 50-foot strip of forested land running down the center of the ROW.

The ROW intersects one unnamed perennial stream and Beaver Brook (classified as 2nd order in this Segment), and six intermittent streams that are tributaries to either Nesenkeag Brook or



Beaver Brook, as well as several large emergent wetland systems. The NHNHB has identified records of two threatened or endangered vertebrate species intersecting this segment of the ROW.

Land use adjacent to this Segment of the ROW consists of predominantly residential areas, as well as forested areas and wetlands. The ROW crosses Interstate 93, two other state maintained highways (Route 28 and Route 128) and multiple local roadways.

3.0 Proposed Project Description

The Project involves construction of a new overhead 345 kV transmission line, which will be known as the 3124 Line, and will be located within an existing electric transmission ROW that connects NEP's Tewksbury 22A Substation in Tewksbury, Massachusetts to PSNH's Scobie Pond 345 kV Substation in Londonderry, New Hampshire. For purposes of this filing, the Project is defined as beginning at the Massachusetts/New Hampshire border and continuing to Scobie Pond 345 kV Substation. The 3124 Line is approximately 17.9 miles in length in New Hampshire and will be located in the Towns of Pelham, Windham, Hudson, and Londonderry. NEP will own 8.1 miles of the new line in Pelham, Windham, and Hudson (Segment 2). PSNH will own 9.8 miles of the new line in Hudson and Londonderry (Segments 3 and 4).

To incorporate the new 3124 Line in the majority of Segment 2, the existing NEP-owned Y-151 line (overhead 115 kV transmission line) will need to be relocated within the western edge of the existing NEP ROW and the new 3124 Line will be installed in the original Y-151 alignment. In Segment 3, the new 3124 Line will be installed within the eastern edge of the existing PSNH ROW. In Segment 4, the new 3124 Line will be installed within the center of the existing PSNH ROW. The following describes the Project in greater detail broken out by segment.

Segment 2 (NEP)

Segment 2 of the Project extends from the Massachusetts/New Hampshire border for 8.1 miles to a location in the Town of Hudson where the Project transitions from NEP to PSNH ownership (Refer to Sheets 30 to 64 of **Attachment A**). The new 3124 Line will be installed within an existing NEP-owned ROW located within the Towns of Pelham, Windham, and Hudson.

Currently, 7.6 miles of this Segment contains three existing overhead transmission lines designated as the O-215, Y-151 and N-214, respectively from west to east. The proposed new configuration for this section of Segment 2 from west to east is: Y-151, O-215, 3124, and N-214. To incorporate the new 3124 Line, a series of 115 kV delta davit arm structures will be erected approximately 28.5 feet from the western edge of the ROW. Once completed, the Y-151 line would be relocated onto this new alignment. The existing Y-151 assets will then be removed from the ROW, creating space for a series of new 345 kV steel H-Frame structures



intended to support the new 3124 Line. The new 3124 Line will be located on the centerline of the existing ROW, approximately 91.5 feet to the east of the existing O-215 line and approximately 91.5 feet to the west of the existing N-214 line. At a point north of Bockes Road in Hudson, the Y-151 line diverges from the Project ROW and relocation of this line is no longer part of the Project. The new 3124 Line will maintain its alignment within the center of the ROW, between the O-215 and N-214 lines, for the remaining 0.6 miles of Segment 2 until the Project transitions to PSNH ownership.

Currently, 173 new structures associated with the new 3124 Line and relocated Y-151 line are proposed in this Segment. Depending on the structure type, structures will be either direct embedded or constructed on a caisson foundation. The average height of the 3124 Line structures is approximately 80 feet above grade. The average height of the relocated Y-151 line structures is approximately 75 feet above grade.

In addition to structure installation and relocation, improvements to existing ROW accessways are proposed at four separate wetland crossings in order to provide a safe and stable means of travel for work crews during construction of the project and for future maintenance and repair activities.

Segment 3 (PSNH)

Segment 3 of the Project is 3.9 miles long and spans from the point of ownership transition in Hudson to a point in Londonderry where the new 3124 Line will change direction (Refer to Sheets 64 to 79 of **Attachment A**). The 3124 Line will be installed within the un-cleared eastern edge of an existing PSNH ROW.

As noted previously, there is one existing overhead 345 kV transmission line that currently occupies this portion of the ROW along this entire Segment. The new 3124 Line will run parallel to this existing transmission line. In some locations along this Segment, the adjacent NEP ROW will be utilized to gain construction access to the PSNH ROW. The Project design for this Segment consists of 37 new 345 kV steel H-frame structures. Structures will be either direct embedded or constructed on a caisson foundation. The average structure height of the 3124 Line structures is approximately 90 feet above grade. No permanent wetland crossings for accessways are currently proposed along this Segment.

Segment 4 (PSNH)

Segment 4 of the Project begins from the point that the PSNH ROW diverges from running parallel with the NEP ROW and continues to PSNH's Scobie Pond 345 kV Substation (Refer to Sheets 79 to 102 of **Attachment A**). This Segment of the Project is 5.9 miles long and located entirely within the Town of Londonderry. In this Segment, the new 3124 Line will be installed down the center of the existing ROW which has not been previously cleared.

As noted previously, this Segment contains several existing overhead transmission lines and, in some locations, additional overhead distribution circuits. No reconfiguration of the existing transmission or distribution lines is required in this Segment. The Project design for



this Segment consists of 51 new 345 kV steel H-frame structures. Structures will be either direct embedded or constructed on a caisson foundation. The average structure height of the 3124 Line structures is approximately 90 feet above grade. No permanent wetland crossings for accessways are currently proposed along this Segment.

3.2 Proposed Access to ROW

Proposed accessways to and within the existing Project ROW were selected over the course of several field visits by VHB, project engineers and construction and forestry personnel. To minimize the impact to private property, access points to the Project ROW originate from public roadways which run parallel to or perpendicularly intersect the ROW in various locations along the 17.9-mile corridor. Access points and exact accessways within the limits of the Project ROW were designed to avoid and minimize wetland and stream crossings to the maximum extent practical. As described in **Section 3.3** below, wooden swamp mats may be used at unavoidable wetland and stream crossings depending on field conditions (frozen/dry) and surrounding new structure installations that are within or in close proximity to wetlands and/or streams.

Of the 13 perennial stream crossings located along the Project ROW, three may be spanned with mats during project construction where historic ROW accessways exist and have since been flooded due to beaver activity. One other perennial stream may be crossed where an established ROW accessway and culvert exists. Of the 20 intermittent stream crossings located along the Project ROW, four may be crossed during Project construction where established accessways and culverts exist, while five may be spanned with mats at locations where historic ROW accessways once existed. Significant perennial streams including Beaver Brook (where it is designated 4th order), Chase Brook and Golden Brook will not be crossed during Project construction.

Beaver dams which are found along the Project ROW will be assessed in the field prior to Project construction to determine the level of obstruction and impact to ROW access. Existing dams may need to be breached to lower water levels during Project construction. Additionally, if the contractor determines that the dam is permanently obstructing an accessway that is vital to maintenance and repair or emergency outage activities or if the dam threatens the stability of existing or proposed structures, the NHDES Water Division will be contacted for approval to remove the dam.

Permanent improvements to existing ROW accessways will be required at four wetland crossing locations to provide a safe and stable travel way during Project construction and for future maintenance and repair activities. Stone fords will be installed at these crossings. Stone fords allow for vegetation to grow between the stone and allow water to seasonally flow over the stone maintaining existing wetland hydrology and allowing for wildlife passage. Refer to **Attachment A** for Stone Ford Standard Design Typical.



3.3 Proposed Construction Methods

Tree clearing in select locations along the Project ROW will occur prior to the mobilization of utility construction crews. Tree clearing impacts will be minimized within Project wetlands to the extent practicable to accommodate new structures and standard safety clearances. Tree clearing is proposed at the following locations (as shown on the Wetland Permitting Plans included as **Attachment A**):

- Segment 2 Clearing is required along select portions of the western edge of the existing NEP-owned ROW in order to accommodate the relocated Y-151 line.
- Segment 3 Clearing is required along the approximately 90-foot wide uncleared eastern edge of the PSNH-owned ROW to accommodate the new 3124 Line.
- Segment 4 Clearing is required along the approximately 50-foot wide section of forested land down the center of the existing PSNH-owned ROW to accommodate the new 3124 Line.

Upon completion of clearing activities and prior to accessing the Project ROW with construction equipment, crews will install erosion and sediment control barriers in accordance with NHDES, NHDRED, and NEP and/or PSNH guidance manuals and as dictated by site conditions. Selected BMPs may include straw wattles, silt fence, wood chip/compost berms/tubes and/or other approved BMPs.

Ground-based crews will approach each new structure location along the proposed 3124 Line and relocated Y-151 line utilizing the proposed access as indicated on the Wetland Permitting Plans (**Attachment A**). Construction timber mats, also called swamp mats, typically with dimensions of 16 feet wide by 4 feet long, will be used as necessary in areas where wetlands will be crossed to gain access to each structure location, depending on seasonal ground conditions. Smaller perennial or intermittent stream channels located along the Project ROW that cannot be avoided may be spanned (from beyond its jurisdictional banks) using mats.

Construction work pads (100'x100') comprised of temporary matting will be centered on each new structure or removal location proposed within wetland areas to accommodate necessary equipment. Additionally, larger pulling/tensioning platforms (100'x300') will be staged at various locations along the Project ROW to accommodate conductor reel trailers, tensioner machines, and bucket trucks during the stringing of overhead transmission lines onto newly installed structures. Matting will be used where pulling/tensioner sites intersect wetland boundaries. Finally, guard protection areas (50'x50') will be staged at road crossings and at other locations where smaller existing electrical distribution lines intersect the Project ROW to eliminate the possibility of the new transmission lines from falling onto existing roads or electrical lines when work crews are stringing the new lines. Matting will be used, depending on seasonal ground conditions, at locations where guard protection areas intersect wetland boundaries.



Once access is gained to each new structure location, poles will be installed either through direct embedment or constructed on a caisson foundation. Traditional auguring and installation procedures will be used. No structures are proposed to be installed within the bed and/or banks of any stream or river along the Project ROW. Additionally, no structures are proposed to be installed within areas identified as vernal pools. Contingent upon permit approval, work is proposed to commence in December of 2016.

Construction laydown areas used to store structure and line components and equipment will be located in upland areas outside the boundaries of Project ROW wetlands. During Project construction, control of the spread of invasive species that are currently found within the ROW will be managed in accordance with NHDES, NEP, and PSNH guidance manuals. Refer to **Section 12.3** for further details on invasive species present within the Project ROW and specific management methods proposed.

Matting and other construction debris will be removed upon completion of the proposed work. Stabilization of the surrounding Project area and restoration of disturbed areas will be completed as soon as possible. It is anticipated that minimal restoration will be needed and that natural re-colonization of wetlands within the Project will occur during the next vegetative growth period. VHB will revisit the ROW during this time period to assure restoration.

Refer to **Attachment A** for the location of existing wetlands and surface waters and utility structures, proposed new structure and removal locations, proposed accessways, proposed pulling/tensioning sites, guard protection areas, construction work pads and laydown areas, and temporary wetland and stream crossings.

3.4 Property Ownership and Abutters

Project work will occur within the limits of an existing electric utility ROW that is either owned in fee or maintained as an easement by NEP or PSNH. Due to the nature of the Project (within the limits of an existing utility ROW), this Project is exempt from abutter notification in accordance with NHDES Rule Env-Wt. 501.01(c). However as a courtesy, NEP and PSNH has sent notifications to landowners and abutters along the Project ROW. Town tax maps depicting the Project ROW and associated abutters, as well as a list identifying parcels intersecting the Project corridor have been provided as **Attachment F**.

4.0 Project Wetlands and Vernal Pools

The following section provides a summary of the wetland delineation methodology used as well as a general description of wetlands identified along the Project ROW.



4.1 Wetlands Delineation and Assessment

Wetlands along Segment 2 of the Project ROW were delineated by VHB Wetland Scientists in April of 2014. Wetlands along Segments 3 and 4 of the Project ROW were previously delineated in the fall of 2012 by Normandeau in support of a previous PSNH project. During September and October 2014, and April 2015, VHB Wetland Scientists reviewed and confirmed previously delineated wetland areas and extended boundaries as needed to include the entire Project area. VHB also delineated a number of wetlands, not previously delineated by Normandeau, that were outside the study area for the previous PSNH project. Wetlands were delineated using alpha-numerically coded pink flagging tape.

Wetland delineations were performed in accordance with the *Corps of Engineers Wetland Delineation Manual* and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region, Version 2.0* (January 2012). The *Corps of Engineers Wetland Delineation Manual* presents a three parameter approach involving indicators of hydrophytic vegetation, hydric soils, and hydrology. The Regional Supplement presents wetland indicators, delineation guidance and other information that is specific to the Northcentral and Northeast region of the United States.

The Northcentral-Northeast 2014 Regional Wetland Plant List published by the U.S. Army Corps of Engineers, the Field Indicators of Hydric Soils in the United States, Version 7.0 published by the Natural Resources Conservation Service ("NRCS"), and the Field Indicators for Identifying Hydric Soils in New England, Version 3 published by the New England Interstate Water Pollution Control Commission were also used as technical references during the wetland field investigations. Soils were evaluated using a Dutch style auger. Wetlands were classified following the Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al., 1979, revised 1985.) Functions and values were assessed using the Highway Methodology Workbook Supplement (USACE, 1999).

4.2 Wetlands Description

A general description of Project wetlands, including key resources such as prime wetlands, floodplain wetlands, large emergent/scrub-shrub complexes, and wetlands containing open water habitat, are described below by Project ROW Segment. Greater details specific to each wetland resource to be impacted including Cowardin Classification, functions and values and other wetland characteristics are listed in the Wetland Impact Table included in **Attachment B**. Additionally, photographs of each wetland resource can be found in **Attachment C** and USACE Function-Value Evaluation Forms are included as **Attachment G**, respectively.

Segment 2

The regional topography of Segment 2 is characterized by a rolling landscape with areas of shallow and exposed bedrock. One area of active agricultural land intersects Segment 2 to the south of Tallant Road in Pelham. North of Tallant Road, several abandoned sand and gravel pits exist along the Project ROW.



Lower Golden Brook Prime Wetland - Wetland WA 46

Wetland WA 46 is a named wetland, known as Lower Golden Brook Prime Wetland (as designated by the Town of Pelham) and intersects the Project ROW between Bridge Street (Route 38) and Windham Road (Route 111A) in Pelham. Wetland WA 46 is a large wetland complex comprised of multiple wetland classification cover types including PEM1H, PUBH, and PSS1E. The wetland contains Golden Brook, a 3rd order perennial stream classified as R2UB. Wetland WA 46 and associated Golden Brook drain from north to south across the Project ROW. The wetland is associated with the FEMA 100-year floodplain of Golden Brook and is recognized as a seasonally flooding cattail marsh natural community by the NHNHB.

The vegetation is generally dominated by emergent plant species including broadleaf cattail (*Typha latifolia*) and bluejoint grass (*Calamagrostis canadensis*), with shrub species such as glossy buckthorn (*Frangula alnus*) located along the upper wetland edge within the Project ROW. Surrounding land use within the Project ROW includes sand and gravel pit operations, while surrounding land use outside of the ROW is primarily undeveloped forested land. According to soil survey information available on the United States Department of Agriculture ("USDA"), NRCS Web Soil Survey website, Borohemists, ponded soils are underlying the wetland which are very poorly drained and consist of a mucky surface layer. Evidence of wetland hydrology found at the time of the field survey included water stained leaves, a water table found at the soil surface, and soil saturation. Principal wetland functions include floodflow alteration, fish and shellfish habitat, sediment/toxicant retention, nutrient removal, and wildlife habitat.

Beaver Brook Floodplain - Wetland WA 72

Wetland WA 72 intersects the Project ROW between Bridge Street and Windham Road at the Windham/Hudson town line. Wetland WA 72 is classified as a combination of wetland cover type classes including PEM1C and PSS1C. Wetland WA 72 borders Beaver Brook which is a 4th order perennial stream classified as R2UB2/3. Beaver Brook drains from northeast to southwest across the Project ROW. The wetland is associated with the FEMA 100-year floodplain of Beaver Brook and recognized as a seasonally flooding cattail marsh natural community by the NHNHB.

Vegetation within Wetland WA 72 is generally dominated by dense woody vegetation including common winterberry (*Ilex verticillata*), species of willow (*Salix* spp.), maleberry (*Lyonia ligustrina*) and species of honeysuckle (*Lonicera* spp.). Surrounding land within the Project ROW is primarily maintained as shrubby upland vegetation while surrounding land outside of the ROW is undeveloped forest. According to soil survey information available on the USDA, NRCS Web Soil Survey website, Rippowam fine sandy loam soils are underlying the wetland which are characterized as floodplain soils. Evidence of wetland hydrology found at the time of the field survey included a water table observed at 14 inches under the soil surface, saturation observed at 11 inches under the soil surface, and drift deposits. Principal wetland functions include floodflow alteration, fish and shellfish habitat, sediment/toxicant retention, and wildlife habitat.



Wetlands with a PUB component associated with Sand/Gravel Pits

Nearly all wetland complexes located within the Project ROW between Tallant Road and the newly constructed Ryan Farm Road have been impacted by historic sand and gravel extraction. These areas are primarily dominated by PSS1E wetland communities, but also contain a PUB component where the aggregate extraction has occurred below the regional groundwater table. In some instances, streams have formed where the groundwater is able to flow downslope. Shrubby vegetation in these wetlands is dominated by common winterberry, speckled alder (*Alnus incana*), and glossy buckthorn. According to soil survey information available on the USDA, NRCS Web Soil Survey website, Hinckley loamy sands, Chatfield-Hollis-Rock outcrop complexes, and Deerfield loamy fine sand soil map units are underlying these wetlands. Evidence of hydrology found within these wetlands at the time of the field survey included surface water, a high water table, soil saturation, and water stained leaves. The principal function and value in these wetlands was determined to be groundwater recharge and discharge due to their intersection with the groundwater table.

Agricultural/Hayfield Wetlands

Four wetlands, identified as WA 52, WA 53, WA 54, and WA54A, located within the Project ROW to the south of Tallant Road and east of Simpson Road, are associated with agricultural fields, currently utilized for hay production. These wetlands are classified as PEM1E wetlands and are located along a flat landscape. The vegetation is subject to regular mowing and, therefore, restricts the dominant vegetation principally to reed canary grass (Phalaris arundinacea), soft rush (Juncus effusus), woolgrass (Scirpus cyperinus) and timothy grass (Phleum pratense). Some areas of these fields appear to have been left fallow for a year or two and are beginning to be reclaimed by woody shrub vegetation such as glossy buckthorn, speckled alder, meadowsweet (Spiraea alba latifolia), and common winterberry. The surrounding land is primarily agricultural land with a small undeveloped forested stand to the west of the existing ROW. According to soil survey information available on the USDA, NRCS Web Soil Survey website, Woodbridge loams and Pipestone loamy sands are underlying these wetlands. Evidence of wetland hydrology found at the time of the field survey included a water table found within 10 inches of the soil surface and saturation at the soil surface. Principal wetland functions and values for these wetlands include nutrient removal and production export.

PSS1E wetlands with a PFO component to be cleared for construction

Several wetland complexes located within the Project ROW extend into un-cleared forested portions of the Project ROW's western edge. Most of these wetlands consist of a PSS1E and/or PEM1E wetland classification which transitions into a PFO1E classification along the western side. These wetlands occur throughout Segment 2. The PSS1E/PEM1E portions of these wetlands are further described below. The forested portions of these wetlands along the western ROW edge are typically dominated by tree species such as red maple (*Acer rubrum*), eastern white pine (*Pinus strobus*), gray birch (*Betula populifolia*), green ash (*Fraxinus pennsylvanica*), and in some areas American elm (*Ulmus americana*). Soils series within these wetlands vary greatly, but typically consist of stony glacial tills. Evidence of wetland hydrology found at the time of the field survey included drainage patterns, saturated soils, water stained leaves, and a water table observed within 10 inches of the soils surface. Some of these wetlands are associated with intermittent and small perennial streams. Principal



functions and values characteristic of these wetlands include floodflow alteration and wildlife habitat.

PSS1E wetlands within the Project ROW

A majority of the wetlands within Segment 2 are PSS1E wetlands, sometimes associated with a PEM1E component and are generally found in narrow drainages. The vegetation in these wetlands is periodically sprayed with herbicides or mechanically cut to maintain a safe distance from the existing transmission lines. Species typically found in these wetlands may include tree species, which are not permitted to grow beyond a sapling growth stage, including red maple and gray birch. Common dominant shrub species found within these wetlands include glossy buckthorn, common winterberry, arrowwood (Viburnum recognitum), species of dogwood (Cornus spp.), maleberry, meadowsweet, steeplebush (Spiraea tomentosa), and speckled alder. PEM1E portions of these wetlands are typically dominated by rough stemmed goldenrod (Solidago rugosa), bluejoint grass, soft rush, purple loosestrife (Lythrum salicaria), joe-pye weed (Eutrochium purpureum) and beggars tick (Bidens frondosa). Active ATV trails are commonly found crossing throughout these wetlands. Soils series within these wetlands vary greatly, but typically consist of stony glacial tills. Evidence of wetland hydrology found at the time of the field survey included drainage patterns, saturated soils, water stained leaves, and a water table observed within 10 inches of the soils surface. Some of these wetlands are associated with intermittent and small perennial streams. Several of these wetlands do not provide any significant functions and values due to their size and isolated nature, but when present, floodflow alteration and wildlife habitat are most common.

Segment 3

The regional topography of Segment 3 changes noticeably near Nashua Road in Londonderry. South of Nashua Road, Segment 3 is characterized by a rolling landscape with areas of shallow and exposed bedrock and a few ponded areas. North of Nashua Road, Segment 3 is much flatter in topography with deeper soils.

Chase Brook Floodplain - Wetland WA 89

Wetland WA 89 intersects the Project ROW between Boyd Road and Nashua Road (Route 102) in Londonderry. Wetland WA 89 borders Chase Brook which flows from east to west across the Project ROW. Wetland WA 89 is classified as a PUB2H wetland within a ponded area along the eastern side of the Project ROW and transitions to a PEM1G wetland within the western half of the Project ROW. Chase Brook is a 2nd order stream and is classified as R2UB2H within the Project ROW. Along the western portion of the ROW, Wetland WA 89 intersects the FEMA 100-year floodplain of Chase Brook.

Vegetation within Wetland WA 89 is dominated by emergent herbaceous species including narrow-leaf cattail (*Typha angustifolia*) and various grasses and sedges. Surrounding land within the Project ROW is primarily maintained as shrubby upland vegetation while surrounding land outside of the ROW is undeveloped forest. According to soil survey information available on the USDA, NRCS Web Soil Survey website, Greenwood and Ossipee ponded soils are underlying the wetland which are characterized as organic matter



over glacial till. Evidence of wetland hydrology found at the time of the field survey included surface water at a depth over 3 feet, soil saturation, drift deposits, and geomorphic position. Signs of beaver activity were present within Wetland WA 89 at the time of observation likely contributing to the ponded hydrology of the wetland along the eastern side of the ROW. Principal wetland functions include groundwater recharge/discharge, floodflow alteration, and wildlife habitat.

Nesenkeag Brook Floodplain - Wetland WA 97

Wetland WA 97 intersects the Project ROW between Nashua Road (Route 102) and Dan Hill Road in Londonderry. Wetland WA 97 borders Nesenkeag Brook which flows from east to west across the Project ROW. Wetland WA 97 is located within the FEMA 100-year floodplain of the brook. Nesenkeag Brook is a 2nd order stream at this location and is classified as R2UB3H within the Project ROW. Wetland WA 97 is classified as a combination of PEM1F and PSS1F cover types along the western side of the Project ROW and is classified as PEM1H along the eastern side of the ROW.

Wetland vegetation is generally dominated by emergent herbaceous species such as narrow-leaf cattail, reed canary grass, joe-pye weed and purple loosestrife, and woody shrub species including speckled alder and species of dogwood. Surrounding land within the ROW is primarily composed of old sand/gravel pits now maintained as shrubby upland vegetation while surrounding land outside of the ROW is undeveloped forest. According to soil survey information available on the USDA, NRCS Web Soil Survey website, the Pits, sand and gravel map unit is predominant throughout the wetland area. Evidence of wetland hydrology found at the time of the field survey included up to two feet of standing water, saturated soils, and drainage patterns. Principal wetland functions include groundwater recharge/discharge, floodflow alteration, and wildlife habitat.

Large PEM Wetland complexes

Two large PEM wetland complexes are located within Segment 3. Wetland WA 77B is located to the north of David Drive in Hudson and is associated with an unnamed perennial stream identified as a tributary to Robinson Pond. Wetland WA 93 is located to the north of Nashua Road (Route 102) in Londonderry. Both wetlands have semi-permanently flooded hydrological regimes and extend well outside of the maintained Project ROW both to the east and west with forested wetland cover types present along the ROW's eastern edge. Dominant emergent herbaceous vegetation includes cattails, woolgrass, soft rush, and purple loosestrife. In the forested portions of the wetlands, red maple trees are dominant, with common winterberry and cattails present in the understory. According to soil survey information available on the USDA, NRCS Web Soil Survey website, Greenwood mucky peat is predominant within both wetlands. Evidence of wetland hydrology found at the time of the field survey included surface water, soil saturation, water stained leaves, water marks, and stunted or stressed plants (specific to forested portion of wetland). Principal functions and values exhibited by these wetlands include groundwater recharge/discharge, floodflow alteration, sediment/toxicant retention, and wildlife habitat.



PSS/PEM wetlands with a PFO component to be cleared for construction

Multiple scrub-shrub and emergent wetlands located along Segment 3 of the Project ROW extend into the currently un-cleared forested eastern side of the ROW. Most of these wetlands consist of PSS1E and/or PEM1E cover types which transition into a PFO1 classification with varying hydrological regimes from saturated to seasonally-flooded. The PSS/PEM portions of the wetlands are further described below. The forested portions are typically dominated by tree species such as red maple, swamp white oak (*Quercus bicolor*), American elm, gray birch, green ash, and in some areas eastern white pine and eastern hemlock (*Tsuga canadensis*). Soils series within these wetlands vary greatly, but typically consist of stony glacial tills and areas of shallow bedrock. Evidence of wetland hydrology found at the time of the field survey included drainage patterns, saturated soils, water stained leaves, and a water table observed within 10 inches of the soil's surface. Some of these wetlands are associated with intermittent and small perennial streams generally flowing east to west. Principal functions and values characteristic of these wetlands include floodflow alteration and wildlife habitat.

PSS/PEM wetlands within the ROW

A majority of the wetlands within Segment 3 are PSS wetlands, sometimes interspersed with PEM cover types. The vegetation in these wetlands is periodically sprayed with herbicides or mechanically cut to maintain a safe distance from the existing transmission lines. Species typically found in these wetlands may include tree species, which are not permitted to grow beyond a sapling growth stage, including red maple, eastern white pine, and species of birch. Common dominant shrub species found within these wetlands include species of willow, common winterberry, witch hazel (Hamamelis virginiana), meadowsweet, steeplebush, and speckled alder. PEM portions of these wetlands are typically dominated by species of goldenrod (Solidago spp.), New England aster (Symphyotrichum novae-angliae), flat-topped white aster (Doellingeria umbellate), cattails, sensitive fern (Onoclea sensibilis), bristly dewberry (*Rubis hispidus*), purple loosestrife, joe-pye weed, woolgrass and various sedges. Active ATV trails are commonly found crossing throughout these wetlands. Soils series within these wetlands vary greatly, but typically consist of shallow stony glacial tills. Evidence of wetland hydrology found at the time of the field survey included drainage patterns, saturated soils, water stained leaves, geomorphic position, and a water table observed within 10 inches of the soils surface. Some of these wetlands are associated with intermittent and small perennial streams. Several of these wetlands do not provide any significant functions and values due to their size and isolated nature, but when present, floodflow alteration and wildlife habitat are most common.

Segment 4

The regional topography of Segment 4 is generally flat with a greater presence of large emergent wetland complexes throughout its length. An area of shallow bedrock is located between Bancroft Road and Hovey Road, west of Interstate 93, and is comprised predominantly of upland communities.



Beaver Brook Floodplain Wetland - Wetland WA 165

Wetland WA 165 is a large wetland complex associated with Beaver Brook intersecting the Project ROW between Rockingham Road (Route 28) and the Scobie Pond 345 kV Substation (Project end point) in Londonderry. Wetland WA 165 is comprised of multiple wetland classifications including PFO1F, PFO1E, PUB2H, PSS/EM1G, and PEM1H and intersects the FEMA 100-year floodplain of Beaver Brook. Beaver Brook is classified as a 2nd order stream in this location and flows across the Project ROW from west to east.

Wetland WA 165 is dominated by emergent herbaceous vegetation where it intersects the floodplain associated with Beaver Brook, scrub-shrub vegetation within the cleared/maintained portion Project ROW, and various tree species in the un-cleared forested portion of the Project area to the southwest of the Scobie Pond 345 kV Substation. Additionally, ponded surface water encompassing the PUB cover type is present within the cleared/maintained portion of the Project ROW to the north of Beaver Brook. Hydrological regimes vary from seasonally flooded/saturated to permanently flooded. Evidence of beaver activity was present at the time of the field studies, undoubtedly influencing the flooded hydrology of the wetland.

The emergent portions of Wetland WA 165 are dominated by plant species such as cattail, woolgrass, dark green bulrush (*Scirpus atrovirens*), New England aster, purple loosestrife, royal fern (*Osmunda regalis*), sphagnum (*Sphagnum* spp.), and various sedges. The scrubshrub portions of the wetland are dominated by species of willow, red maple saplings, steeplebush, and common winterberry, while the forested portion is dominated by red maple, species of birch, eastern white pine, cinnamon fern (*Osmunda cinnamomea*), high-bush blueberry (*Vaccinium corymbosum*), and jewelweed (*Impatiens capensis*). Surrounding land is made up of several overhead transmission line ROWs which converge at the Scobie Pond 345 kV Substation as well as a number of other electric transmission substation sites. According to soil survey information available on the USDA, NRCS Web Soil Survey website, Greenwood and Ossipee ponded soils are underlying the wetland which are characterized as organic matter over glacial till. Evidence of wetland hydrology found at the time of the field survey included surface water, saturation, drainage patterns, and water marks. Principal wetland functions include groundwater recharge/discharge, floodflow alteration, sediment/toxicant retention, nutrient removal, and wildlife habitat.

Large PEM Wetland complexes

Nine large PEM wetland complexes intersect the Project ROW along Segment 4, including Wetlands WA 110, WA 111, WA 117, WA 128, WA 137, WA 144, WA 146A, WA 149 and WA 149A. The emergent portions of these wetlands span the entire width of the existing Project ROW and most extend well outside the maintained ROW limits. Dominant emergent vegetation within these wetland systems include cattails, woolgrass, meadowsweet, dark green bulrush, joe-pye weed, soft rush, fowl managrass (*Glyceria striata*), blue flag iris, purple loosestrife and various sedges. A narrow un-cleared forested strip exists within several of these wetlands in the center of the ROW and is generally dominated by tree species such as red maple, yellow birch, and white pine in the overstory with species such as common winterberry, speckled alder, high bush blueberry, steeplebush, royal fern, bristly dewberry, and New England aster found in the understory. Evidence of wetland hydrology found at the



time of the field survey included surface water, a water table within 10 inches of the soil surface, soil saturation, geomorphic position, and drainage patterns. Principal functions and values exhibited by these wetlands include groundwater recharge/discharge, floodflow alteration, sediment/toxicant retention, nutrient removal, and wildlife habitat. **Table 3** below describes the soil survey information found within these wetland systems as available on the USDA, NRCS Web Soil Survey website.

Table 3: NRCS Mapped Soils of Large PEM Wetlands along Segment 4

Wetland ID	NRCS Soil Series	Brief Soil Description
WA 110	Chocorua mucky peat	25" mucky peat over coarse sand
WA 111	Greenwood mucky peat	60" mucky peat
WA 117	Greenwood mucky peat	60" mucky peat
WA 128	Greenwood mucky peat	60" mucky peat
WA 137	Chocorua mucky peat	25" mucky peat over coarse sand
WA 144	Greenwood mucky peat	60" mucky peat
WA 146A	Chocorua mucky peat	25" mucky peat over coarse sand
WA 149	Ossipee mucky peat	26" mucky peat over clay loam
WA 149A	Ossipee mucky peat	26" mucky peat over clay loam

PSS/PEM wetlands with a PFO component to be cleared for construction

Segment 4 has an approximate 50-foot wide un-cleared area of trees running down the center of the Project ROW. Several wetland complexes located within the Project ROW are partially located within this narrow strip and are otherwise dominated by scrub-shrub and emergent vegetation throughout the maintained portion of the ROW. Characteristics of the PSS/PEM portions of these wetlands are further described below. The un-cleared forested portions of these systems located within the center of the Project ROW are typically dominated by tree species such as red maple, green ash, yellow birch, and white pine. Soils series within these wetlands vary greatly, but typically consist of deep, stony fine loamy sand tills. Wetland hydrology ranges between seasonally saturated to seasonally flooded/saturated. Evidence of wetland hydrology found at the time of the field survey included drainage patterns, soil saturation, water stained leaves, and a water table observed within 10 inches of the soils surface. Principal functions and values associated with the forested portions of these wetlands include floodflow alteration and wildlife habitat.

PSS/PEM wetlands within the ROW

A majority of the wetlands within Segment 4 are PSS wetlands, sometimes interspersed with PEM cover types. The vegetation in these wetlands is periodically sprayed with herbicides or mechanically cut to maintain a safe distance from the existing transmission lines. Species typically found in these wetlands may include tree species, which are not permitted to grow beyond a sapling growth stage, including red maple, white pine, and species of birch. Common dominant shrub species found within these wetlands include meadowsweet, maleberry, winterberry, speckled alder, and species of willow. PEM portions of these wetlands are typically dominated by New England aster, woolgrass, interrupted fern, purple loosestrife, flat-top white aster, soft rush, species of goldenrod, and joe-pye weed. Active ATV trails are commonly found crossing throughout these wetlands. Soils series within these



wetlands vary greatly, but typically consist of stony glacial tills. Evidence of hydrology observed during field studies included drainage patterns, saturated soils, geomorphic position, water stained leaves, and a water table observed within 10 inches of the soil surface. Several of these wetlands do not provide any significant functions and values due to their size and isolated nature, but when present, floodflow alteration and wildlife habitat are most common.

4.3 Wetland Function and Values

Section 4.2 lists the principal functions and values exhibited by common wetland types found along each Segment of the Project ROW. The following provides the general methodology and approach used to determine these principal functions and values and a brief discussion on certain wetland characteristics (i.e., cover types, landscape position, composition of surrounding environment, etc.) which lead to one function and/or value being present within a wetland over another. Additionally, the Project's impact on wetland functions and values is discussed.

Functions and values presented below are based on a descriptive, best professional judgment approach, with reference to the methodology recommended by the U.S. Army Corps of Engineers New England District - *The Highway Methodology Workbook Supplement:* Wetland Functions and Values - A Descriptive Approach. Thirteen wetland functions and values are recognized under the USACE methodology:

- ➤ Groundwater Recharge/Discharge;
- ➤ Floodflow Alteration (Storage & Desynchronization);
- ➤ Fish and Shellfish Habitat;
- ➤ Sediment/Toxicant Pathogen Retention;
- ➤ Nutrient Removal/Retention/Transformation;
- ➤ Production Export (Nutrient);
- > Sediment/Shoreline Stabilization:
- ➤ Wildlife Habitat:
- ➤ Recreation (Consumptive & Non-Consumptive);
- ➤ Educational/Scientific Value;
- ➤ Uniqueness/Heritage:
- ➤ Visual Quality/Aesthetics; and
- ➤ Threatened or Endangered Species Habitat.

The USACE Highway Methodology provides a list of considerations and qualifiers that are used to assess the occurrence of each function or value, followed by a subjective determination of Principal Functions and Values, with documentation of supporting rationale on standard forms (included as **Attachment G**).

Some of the larger wetland complexes found within the Project ROW, including Lower Golden Brook Prime Wetland, Beaver Brook Floodplain wetland, and other large emergent/scrub-shrub systems associated with open water components offer riparian storage of meltwater, floodwater, and stormwater. Due to their vegetative structure, with dense, erect



emergent and scrub-shrub vegetation, these wetlands are important for trapping sediments and nutrients within the system, for reducing flow velocities, and for erosion control. These wetlands may also play a role in groundwater discharge or recharge dependent upon soil composition, landscape position, and their proximity to underlying aquifers. In addition, these wetlands may provide productive wildlife habitat (especially for invertebrates), and may be valuable in production export functions related to the ability of the wetland to provide food sources to wildlife. Therefore, these larger wetland complexes likely support wildlife in greater capacity than other systems that are isolated, smaller in size, and/or contain a less diverse structure of wetland classes and interspersion of vegetation. Due to their relationship with perennial streams and waterbodies, they may also contribute to valuable fisheries habitat and recreational opportunities such as canoeing and kayaking, although recreational opportunities would be limited to areas outside of the Project ROW.

The majority of the other Project ROW wetlands are currently maintained as either scrubshrub or emergent habitat. Scrub-shrub wetlands in general have functions similar to forested wetlands. When associated with a stream, they often receive over bank flooding and are significant in flood alteration and often protect stream banks from erosion. Scrub-shrub wetlands are very productive in terms of food resources where they support berried varieties of shrubs. These wetlands tend to be more structurally diverse, and therefore tend to support more diverse wildlife species than forested wetlands. This is especially true because they are commonly associated with streams that can act as wildlife corridors or that offer a wider range of local habitat conditions. However, when not associated with a stream, hydrologically isolated and small in size, these wetlands tend to exhibit limited functions and values.

None of the Project impacts are expected to permanently alter the hydrology of wetlands (i.e., no inflow/outflow restrictions) along the Project ROW. Therefore, the Project will not permanently impact water quality and hydrologic functions. These functions include groundwater recharge/discharge, floodflow alteration, or sediment and nutrient trapping, which are performed by wetlands within the Project area, specifically the larger emergent/scrub-shrub complexes which are present. Some temporary impacts to the wildlife habitat value of Project ROW wetlands are anticipated during the construction period as a result of noise and the presence of work crews and equipment, but these impacts will be short-term.

Tree clearing is proposed along certain portions of each of the three Segments of the Project ROW in New Hampshire which will result in the conversion of forested wetland cover types to scrub-shrub/emergent cover types. It is expected that some of this tree clearing will impact wildlife habitat, however the forested communities where clearing impacts will occur are not significantly different in their general habitat characteristics relative to adjacent forested uplands. The most valuable wildlife habitat functions of the Project ROW wetlands are provided by the emergent-open water wetland classes currently present within the interior of the Project ROW, which will not be impacted by clearing activities.



4.4 Vernal Pools

Vernal Pool habitat along Segments 3 and 4 of the Project ROW was identified and mapped by Normandeau in April of 2012 in support of a previous PSNH project. During September and October 2014, VHB Wetland Scientists reviewed all areas previously mapped as vernal pools by Normandeau as well as identified new areas along all three Segments of the Project ROW which displayed characteristics indicating viable vernal pool habitat. VHB revisited previously identified pools and areas previously noted as displaying potential habitat during the peak breeding season of the indicator amphibian species in late April 2015. A total of 17 vernal pools were identified along the Project ROW. Refer to **Attachment A** for the location of each pool, and **Attachment H** for pool photographs and a Vernal Pool Summary Table providing greater detail on each pool identified.

5.0 Proposed Wetland and Vernal Pool Impacts

Proposed direct temporary and permanent wetland impacts subject to RSA 482-A as well as indirect wetland impacts subject to Section 404 of the Clean Water Act are discussed in detail below.

5.1 Wetland and Vernal Pool Impacts Subject to RSA 482-A

Wetlands

As previously stated, the Project has been carefully designed to avoid and minimize impacts to jurisdictional resource areas to the maximum extent practical. A total of **4,428** sq. ft. of wetlands will be permanently filled to install utility structures, complete proposed improvements to existing ROW accessways in four locations and conduct required grading associated with the partial realignment of intermittent stream channel SA-41. Additionally, up to a total of **388,895** sq. ft. of temporary wetland impact will result from the use of matting to access each new structure and removal location and to create a stable work platform. Temporary impacts are also a result of pulling/tensioner pads, and guard protection pads which will be located along the Project ROW.

Refer to **Attachment A** for proposed locations of temporary and permanent wetland impacts and **Attachment B** for a breakdown of impacts by wetland.

Vernal Pools

Through careful project design (adjusting locations of new structures, as well as proposed accessways, temporary matting, construction work pads, and pull pad sites), permanent and/or temporary fill impacts to vernal pools have been entirely avoided.

Impacts to Lower Golden Brook Prime Wetland



Of the total permanent and temporary wetland impacts described above, the Project will result in approximately **35,622** sq. ft. of temporary impact and **628** sq. ft. of permanent impact to Lower Golden Brook Prime Wetland (identified as WA 46) located in Pelham. Temporary wetland impacts are the result of construction work pads and access matting associated with the installation of proposed Structures 98 and 99 along the new 3124 Line and Structure 34 along the relocated Y-151 line. Of the total permanent impacts proposed, approximately 52.5 sq. ft. accounts for direct permanent fill within the prime wetland resulting from these structure installations, while the remaining 575.5 sq. ft. is associated with proposed permanent improvements to an existing ROW accessway where it crosses WA 46. Refer to Sheets 42 and 43 of **Attachment A** for the location of temporary and permanent impacts. Documentation that the proposed work within Lower Golden Brook Prime Wetland complies with the requirements contained under RSA 482-A:11, IV is provided below.

(1) There will be no significant net loss of values set forth in RSA 482-A:1;

Principal wetland functions and values provided by WA 46 include floodflow alteration, fish and shellfish habitat, sediment/toxicant retention, nutrient removal, and wildlife habitat (Refer to the Function and Value Assessment Form for WA 46 found in **Attachment G**).

Proposed installation of Structures 98 and 99 and the relocation of Structure 34 is not expected to permanently alter the hydrology of WA 46 (i.e., no inflow/outflow restrictions) and, therefore, will not significantly impact water quality and hydrologic functions including floodflow alteration or sediment and nutrient trapping, which are performed by WA 46. Additionally, no impacts to fish and shellfish habitat will result from the proposed structure installations since the proposed work is located outside of the bed and banks of Golden Brook located within WA 46 to the south of the Project work. Some temporary impacts to other wildlife species that may inhabit WA 46 or utilize the wetland as a food source is anticipated during the construction period as a result of noise and the presence of work crews and equipment, but these impacts will be short-term.

Proposed accessway improvements will involve installation of a stone ford. Stone fords allow for vegetation to grow between the stone and allow water to seasonally flow over the stone maintaining existing wetland hydrology and allowing for wildlife passage. Therefore, this improvement is not expected to impact the functions and values of WA 46.

(2) The project is consistent with the purpose specified in RSA 482-A:1;

Where Lower Golden Brook Prime wetland intersects the Project ROW, the wetland resembles a typical emergent wetland system commonly found within electric utility ROWs in New Hampshire. Surrounding land use within the Project ROW includes sand and gravel pit operations, while surrounding land use outside of the ROW is primarily undeveloped forested land. Currently, there are three existing overhead electric utility lines and associated structures crossing through the prime wetland within the Project ROW. The Project work within the prime wetland will not alter the appearance or characteristics of the wetland at this location and none of the functions and values of the wetland are expected to be impacted.



(3) The project could not be relocated to avoid impacts on prime wetlands without either reducing the public value of the project, or negatively affecting the public health or safety;

The Project has been designed to be contained within the limits of an existing electric utility ROW. The prime wetland cannot be avoided within the limits of the Project ROW due to its width which is greater than 1,000 feet. This significant linear distance eliminates the possibility of spanning the wetland from one end to the other without compromising the structural integrity of the new and relocated lines.

Lower Golden Brook Prime Wetland extends well outside the limits of the existing Project ROW to the north and south. Avoiding the prime wetland would require significant design changes, land acquisition, higher costs and likely greater environmental impacts.

(4) The project's impacts on prime wetlands are the minimum practical without either reducing the public value of the project, or negatively affecting the public health or safety; and

The majority of the impacts proposed are temporary, while proposed permanent impacts are small relative to the size of the wetland. In addition, Project work at this location has been designed to avoid impacts to the bed and banks of Golden Brook located within the wetland to the south.

(5) The project incorporates appropriate and practicable compensatory mitigation for each of the wetland functions and values of RSA 482-A:1, and each of the functions and values ranked by the municipality, that are impacted by the project. The mitigation proposed will be appropriate in terms of matching the proposed benefit given the relative harm of the project. The mitigation will be practicable given the technology available at the time of the application to the department.

Since the Project work within Golden Brook Prime Wetland will not result in the loss of wetland functions and values, compensatory mitigation as described in Env-Wt 703.02 is not required.

5.2 Wetland and Vernal Pool Impacts Subject to Section 404 of the Clean Water Act

Wetlands

In addition to the direct wetland impacts under the jurisdiction of RSA 482-A, conversion of forested wetlands to scrub-shrub wetlands is necessary to construct the Project. Up to **10.9** acres (**473,725** sq. ft.) of forested wetlands will be cleared. Clearing is required in the following locations:



- Segment 2 Clearing is required along select portions of the eastern edge of the existing NEP-owned ROW in order to accommodate the relocated Y-151 line.
- Segment 3 Clearing is required along the approximately 90-foot wide uncleared eastern edge of the PSNH-owned ROW to accommodate the new 3124 Line.
- Segment 4 Clearing is required along the approximately 50-foot wide portion of forested land down the center of the existing PSNH-owned ROW to accommodate the new 3124 Line.

Clearing will allow for the installation of the utility structures, and is also required to meet the vegetation and vertical clearance requirements. Note that clearing will be conducted in a manner as to not disturb the soil surface. Clearing in wetlands will be done by hand. There will be limited grubbing or grading, and proper BMPs will be used during clearing activities to prevent excess rutting. Grubbing will only be required at the proposed new structure locations and to obtain level work pad surfaces.

See **Attachment A** for proposed locations of wetland clearing impacts and **Attachment B** for a breakdown of clearing impacts by wetland.

Vernal Pools

Vegetative clearing associated with Project construction will occur directly within the boundaries of 11 vernal pools and within the 250-foot buffer of 16 out of the 17 vernal pools identified along the Project ROW. Direct clearing impacts total approximately **31,791** sq. ft. (**0.7** acres). Clearing impacts proposed within the 250 feet of vernal pools total approximately **332,335** sq. ft. (**7.6** acres). Refer to **Attachment A** for proposed locations of vernal pool clearing impacts and **Attachment H** for a breakdown of clearing impacts by pool.

6.0 Surface Waters & Drainage Patterns

There are a total of 13 perennial stream crossings and 20 intermittent stream crossings along the Project ROW in Pelham, Windham, Hudson and Londonderry. In addition, the Project ROW is largely comprised of densely vegetated scrub-shrub and emergent wetland systems. The hydrology of these wetlands was discussed in **Section 4.0.** The following provides a general description of the principal rivers and streams intersecting the Project ROW and the impacts to these surface waters proposed by the Project. Detailed information specific to each stream channel is included in the Stream Table found in **Attachment B**.

6.1 Principal Streams Intersecting the Project ROW



Beaver Brook

Beaver Brook is the only fourth order stream intersecting the Project ROW in New Hampshire. Beaver Brook comes within close proximity to the western edge of the Project ROW in Pelham, crosses the Project ROW at the Windham/Hudson town line, and intersects the Project ROW just south of the Scobie Pond 345 kV Substation in Londonderry. As a second order stream, Beaver Brook flows from the outlet of Beaver Lake in Derry west and then, as a fourth order stream, south through Pelham and then into Dracut, Massachusetts. It eventually flows into the Merrimack River in the City of Lowell. The upper section of Beaver Brook in Derry and Londonderry is listed as impaired for aquatic life uses due to elevated chloride levels. The lower sections of Beaver Brook in Windham and Pelham are not listed as impaired. The Protected Shoreland Zone of Beaver Brook intersects the Project corridor in Pelham and at the Windham/Hudson town line. Beaver Brook is classified as a 2nd order stream at the location where it crosses the Project ROW to the south of the Scobie Pond 345 kV Substation. Therefore, this location is not subject to jurisdiction under the Shoreland Water Quality Protection Act (SWQPA) RSA 483-B. A Shoreland Permit Application has been prepared and submitted to the NHDES Shoreland Program to address proposed impacts within the protected shoreland of Beaver Brook as further discussed in Section 12.0 of the Application Narrative.

The new 3124 Line will require two crossings over Beaver Brook, one at the Windham/Hudson town Line, and one in Londonderry just west of the Scobie Pond 345 kV Substation. Beaver Brook is identified as a "Public Water" by the State of New Hampshire where it crosses the Project ROW at the Windham/Hudson town line. Since the Beaver Brook crossing to the west of the Scobie Pond 345 kV Substation in Londonderry does not fall under the jurisdiction of the SWQPA, it is not recognized as a Public Water. A petition filed with Public Utilities Commission (PUC) is required to span electrical utility lines over a Public Waterbody and will be submitted to the PUC simultaneously with this application. As the crossing currently contains three existing overhead electric transmission lines owned by NEP, it is expected that there will be no impacts to waterway commerce or navigation, as the proposed Line 3124 has been designed in a similar configuration to the other existing 115 kV and 230 kV lines.

Other Significant Stream Crossings

Other significant streams located near or within the Project ROW in Pelham or Windham include a tributary to Tonys Brook, Golden Brook, and several unnamed tributaries to Beaver Brook. Tonys Brook, located outside of the Project ROW, is the only stream listed as impaired for both aquatic life and primary recreation uses.

Significant stream crossings in Hudson include a number of tributaries to Robinson Pond including Howard Brook, and Chase Brook, which intersects the Project ROW near the Londonderry/Hudson town line. Chase Brook is a tributary to the Merrimack River, and flows into the river approximately four miles west of the ROW. None of the stream crossings in Hudson are listed on the NHDES' 303(d) list of impaired water bodies.

Farther north in Londonderry, the Project ROW crosses several tributaries as well as the main stem of Nesenkeag Brook, which flows into the Merrimack River approximately two miles to



the west of the ROW. This stream is listed as impaired for aquatic life uses due to previously observed low dissolved oxygen levels and low biotic index values derived from previous benthic macroinvertebrate assessments. The source(s) for the low dissolved oxygen levels and low biotic values are listed as unknown according to the NHDES' 303(d) list. The target date for completing a Total Maximum Daily Load (TMDL) study is 2016.

7.0 Proposed Stream Impacts

Proposed direct temporary and permanent stream impacts subject to RSA 482-A as well as indirect wetland impacts subject to compensatory mitigation in accordance with USACE Section 404 permitting is discussed in detail below.

7.1 Stream Impacts Subject to RSA 482-A

Of the 13 perennial stream crossings located along the Project ROW, three may be spanned with mats (resulting in no impact) during project construction where historic ROW accessways exist and have since been flooded due to beaver activity. One other perennial stream may be crossed where an established ROW accessway and culvert exists. Of the 20 intermittent stream crossings located along the Project ROW, four may be crossed where established accessways and culverts exist, while five may be spanned with mats (resulting in no impact) during Project construction at locations where historic ROW accessways once existed.

Project construction may result in a total of **6,365** sq. ft. of temporary bed impact to streams located along the Project ROW as a result of the placement of construction work pads or pull pads over channels located within close proximity to proposed structure installations or where mat spans are not feasible (significant linear crossings). Refer to the Stream Table found in **Attachment B** for additional information regarding these proposed temporary impacts.

Beaver dams which are found along the Project ROW will be assessed in the field prior to Project construction to determine the level of obstruction and impact to ROW access. Existing dams may need to be breached to lower water levels during Project construction. Additionally, if the contractor determines that the dam is permanently obstructing an accessway that is vital to maintenance and repair or emergency outage activities or if the dam threatens the stability of existing or proposed structures, the NHDES Water Division will be contacted for approval to remove the dam. The removal or breaching of an existing beaver dam would result in lower water levels within the associated stream channel, but at the same time would restore historic flow regimes.

The principal water quality concern associated with the Project relates to the potential for increased sediment erosion and movement during the construction period. As discussed in **Section 11.0**, various BMPs will be used during the construction period to minimize the erosion potential and sediment migration from the Project area. No new impervious surfaces or petroleum liquid storage facilities are proposed as part of the Project.



Stream SA-41 Partial Realignment

In order to accommodate the installation of proposed 3-pole Structure 253 along the 3124 Line in Londonderry, the Project will involve realignment of the western portion of a single intermittent stream channel, identified as SA-41 on Sheet 87 of the Wetland Permitting Plans (Attachment A). The proposed channel realignment ("the Site") is located within the PSNH ROW approximately 1,200 feet east of High Range Road. Channel realignment is necessary at this location, as it has been determined by project engineers that the stream could interfere with the central support footing and/or the designated guy anchors of proposed Structure 253, thus compromising its long-term stability. The proposed location of Structure 253 cannot be moved as its location represents a critical turning point in the ROW where the 3124 Line changes direction to the south. Proposed realignment of the western portion of SA-41 will result in approximately 80 sq. ft. and 17 linear feet of permanent stream bed impact.

The watershed to the Site is approximately 19.2-acres with a majority of the drainage area (17.1-acres) located to the east of High Range Road flowing overland into a roadside ditch. The ditch conveys runoff to the south into an 18-inch corrugated metal pipe culvert under High Range Road. Discharge from the culvert enters a partially forested wetland (identified as WA 128A) and is then conveyed in a small channel approximately 5-feet wide and less than 0.5-ft deep. The channel then becomes braided as it continues down a 4(h):1(v) slope. Channel widths for this reach vary from 1 to 4-feet with depths approximately 1- to 2-inches. From there, the stream channel broadens and becomes undefined as flow extends into a large scrub-shrub/emergent wetland system (identified as WA 128) which Structure 253 will be partially located within.

VHB completed a site visit on April 21, 2015 with a stream specialist, NH Certified Wetland Scientist, and a survey crew. Rain from the previous night continued into the morning resulting in approximately 1-inch of rainfall as recorded by a weather station in Londonderry (KNHLOND01). Flow depths downstream from the culvert were typically 2-inches or less during the visit. Any concentrated flow dispersed as it entered the wetland systems present. The channel bed material consists mostly of forest litter and various scrub/forest vegetation. The bed material along the 4:1 slope contained some gravel/cobble material with the occasional boulder or ledge outcropping but was still predominately vegetated. The observed bed material is indicative of a system which does not frequently experiences high velocities. The primary site constraints for the channel relocation is an abutting property boundary located immediately to the south of the proposed channel alignment. VHB completed a topographic and boundary survey of the Site and roadway crossing to support hydrologic and hydraulic modeling of the conveyance system.

VHB created a hydrologic and hydraulic model using HydroCAD V.10.0 modeling software to determine peak runoff rates, flow depths, and velocities for the 1-, 2-, 10-, 25- and 100-year 24-hour design storms using Natural Resources Conservation Service (NRCS) TR-20/TR-55 rainfall-runoff methodology. VHB collected rainfall depths and distributions for each design storm from the Northeast Regional Climate Center (NRCC) located at Cornell University. The NRCC contains a comprehensive collection of historical climate data which is continually



updated based on National Weather Service (NWS) observations. Rainfall totals are shown below in **Table 4**.

Table 4: Rainfall Totals

Recurrence Interval	Rainfall Total (inches)
1-year	2.46
2-year	2.94
10-year	4.45
25-year	5.64
100-year	8.08

VHB delineated watershed boundaries based on the topographic survey and LiDAR data. To determine watershed characteristics, VHB created a custom land cover layer using Geographic Information System (GIS) software. Land cover was determined based on the site survey and aerial imagery. VHB used the land cover data layer along with hydrologic soil group information from the NRCS SSURGO database to calculate runoff curve numbers (CNs) for each land cover/soil group. Area weighted CNs were calculated for each watershed. In addition, VHB delineated time of concentration flow paths for each watershed using TR-55 methodology.

VHB entered the hydraulic data for the conveyance channels, roadway overtopping, and culvert based on the field survey and LiDAR data. The hydraulic model begins at the roadside ditch to the east of High Range Road and continues to the design point just downstream from the proposed structure location. The model includes the proposed channel realignment and geometry as shown in the design plan. The channel will be shifted to the north and has been designed to fit in between the northern two structure foundations. VHB used this hydrologic and hydraulic model to evaluate peak flows, depths and velocities at site; summarized in **Table 5** below.

Table 5: Model Results

Recurrence Interval	Q (cfs)	D (ft)	V (fps)
1-year	0.7	0.27	1.0
2-year	2.3	0.42	1.5
10-year	9.8	0.67	1.7
25-year	18.5	0.72	1.7
100-year	42.9	0.95	1.7

The results predict that that a channel approximately 5-feet wide and 0.27-feet deep will contain the predicted 1-year flood flow from the upstream watershed. The proposed channel geometry is similar to that observed in the portions of the upstream channel. The proposed channel side slopes will extend up to the existing grade at a 2(h):1(v) slope where necessary.

While this model predicts fairly shallow flow depth within the channel it does not take into account other discharges into this wetland system from streams and drainages which could



result in standing water at the proposed structure location. The model assumes free discharge from the channel into the wetland from the proposed channel. This assumption will provide the highest velocities for evaluations of potential scour and erosion. The model predicts velocities less than 2 fps within the proposed channel. Permissible velocities for channels lined with vegetation are typically 5 fps or less.

The Project proposes to realign the western end of the channel to the north around the center pole of structure 253 with the channel geometry shown on Channel Realignment Design Plan included in **Attachment A**. The model predicts velocities in the channel and approaching the structure will be less than two feet per second (fps) which fall within the acceptable range for a vegetation lined channel. Temporary erosion control blankets or similar measures will be installed within the realigned channel and around the structure upon completion of the work to allow vegetation to become established.

7.2 Stream Impacts Subject to Section 404 of the Clean Water Act

The Project will require a total of approximately **71.2** acres of upland and wetland tree clearing in New Hampshire. Some of this clearing will occur within the riparian buffers of perennial and intermittent stream channels. As an indirect measure of the potential impact that the Project may have on streams, the amount of tree clearing within 100-feet and 50-feet of a perennial and intermittent stream channel, respectively, was estimated using available GIS data and aerial imagery. Of the total **4.5** acres of tree clearing estimated to occur within the designated buffers of 22 streams in New Hampshire, approximately **2.2** acres is associated with perennial streams and the remaining **2.3** acres of tree clearing is associated with intermittent streams.

Although the Project will require tree clearing in close proximity to many of the streams intersected by or adjacent to the Project ROW, the proposed clearing will be limited to only a minor portion of the overall width of the existing ROW, which is already cleared. Given that much of the existing ROW width is already cleared, the additional clearing is not expected to result in any discernable effect on water quality or water temperatures in the intermittent or perennial streams.

Tree clearing within riparian buffers is further discussed below by Project ROW Segment. Also refer to the Stream Table included in **Attachment B** for clearing impacts broken out by stream channel.

Segment 2

Segment 2 has the least amount of proposed tree clearing within the designated stream buffer areas with a total of approximately **15,832** sq. ft. or **0.36** acres of tree clearing. The largest amount of tree clearing consists of **4,796** sq. ft. (**0.11** acres) within the riparian buffer of an intermittent tributary to Tonys Brook at the southernmost end of the Segment. For perennial streams, the largest amount of potential tree clearing consists of approximately **2,759** sq. ft. (**0.06** acres) associated with Beaver Brook (SA-21) near Winter Street and Glance Road in



Windham. The Project ROW does not actually cross the river in this location, but the river flows within close proximity to the western edge of the Project ROW.

Farther north, the existing ROW does cross over Beaver Brook near the Windham/Hudson town boundary (SA-24). The amount of tree clearing estimated to occur within 100 feet of the stream channel is **1,658** sq. ft. (**0.04** acres). This estimated amount of tree clearing is considered to be relatively minor in comparison to the overall width of the ROW (350-565 feet) and the size of the watershed area.

Segment 3

Relative to the other Segments, Segment 3 has the largest amount of proposed tree clearing within the identified stream buffer areas with a total of approximately **129,146** sq. ft. (**2.96** acres). The largest area of proposed tree clearing is associated with a small intermittent tributary to Robinson Pond (SA-28) with approximately **28,901** sq. ft. (**0.66** acres) of clearing. Approximately **16,890** sq. ft. (**0.39** acres) of tree clearing is proposed within the stream buffer associated with Chase Brook, while **10,845** sq. ft. (**0.25** acres) of tree clearing is proposed within the stream buffer associated with Nesenkeag Brook. Additionally, a total of approximately **26,151** sq. ft. (**0.60** acres) of clearing is proposed along Howard Brook.

Segment 4

The total amount of stream buffer clearing in Segment 4 is estimated to be approximately **51,988** sq. ft. (**1.19** acres). The majority of which is associated with the intermittent streams. The only tree clearing associated with a perennial stream buffer consists of approximately **4,410** sq. ft. (**0.10** acres) of clearing around the Beaver Brook crossing near the Scobie Pond 345 kV Substation. This is a relatively minor amount of tree clearing as compared to the rest of the ROW.

8.0 Floodplains and Floodways

According to FEMA FIRM, produced for Hillsborough and Rockingham Counties, portions of the Project intersect the 100-year floodplains of several named perennial streams (Refer to **Figure 3**). However, the Project has been designed to avoid structure installation within 100-year floodplain boundaries to the maximum extent practicable. A total of six (6) structures are proposed within a 100-year floodplain. Three (3) structures along the relocated Y-151 line and two (2) structures along the new 3124 Line are proposed within the 100-year floodplain of Golden Brook in Pelham. Two (2) existing structures are to be removed from the floodplain for a net gain of three structures. Also, one (1) structure along the new 3124 Line will be installed within the 100-year floodplain of Beaver Brook in Londonderry located just south of the Scobie Pond 345 kV Substation. The amount of new fill associated with installation of each new structure is minimal and access to these structures will traverse temporary matting across wetland areas. Therefore, the Project does not have the potential to cause or increase flooding.



9.0 Rare, Threatened and Endangered Species

Only common plant species were observed along the Project ROW during the course of wetland delineations by VHB Certified Wetland Scientists during the 2014 growing season. The NHNHB was consulted regarding the occurrence of rare plant, animal or natural communities within vicinity of the Project. NHNHB indicated historical records of rare plants, exemplary natural communities and invertebrate and vertebrate species in a response memo dated December 17, 2014, prompting additional consultation with the agency as well as NHF&G and USFWS (refer to **Attachment D**). Plant, invertebrate and vertebrate species identified by NHNHB, NHF&G and USFWS which intersect the Project ROW are included in **Table 6** below. Other species identified in the NHNHB report within proximity to the Project ROW include the grasshopper sparrow and wood turtle. Additionally, exemplary natural communities identified in the NHNHB report within proximity to the Project ROW include medium level fen system and swamp white oak floodplain forest.

Table 6: Records of RTE Species Intersecting the Project ROW

RTE Species		State Rank	
Scientific Name	Common Name	State Rain	
Alasmidonta varicosa	brook floater	Е	
Coluber constrictor constrictor	northern black racer	Т	
Emydoidea blandingii	Blandings turtle	E	
Clemmys guttata	spotted turtle	Т	
Hypoxis hirsuta	common star grass	Т	
Desmodium rotundifolium	round-leaved trailing tick-trefoil	Т	
Vulpia octoflora var. tenella	eight- flowered six-weeks grass	E	
Paronychia canadensis	smooth forked whitlow wort	Е	

Each of the identified species were addressed during a meeting with NHF&G on February 17, 2015 (refer to **Attachment D**). Since there is no work proposed within the bed or along the banks of Beaver Brook, there will be no impacts to the brook floater and no additional survey or mitigating action is required for this species. Winter construction could result in adverse impacts to the northern black racer, if hibernacula occur in Project impact areas. Surveys for the northern black racer were conducted along the Project ROW by VHB with assistance from



Michael Marchand of NHF&G in April and May 2015 in accordance with protocols developed in consultation with NHF&G (refer to **Attachment D**) in an attempt to discover hibernacula and dispersal along the Project ROW. VHB did not find any individuals or hibernacula during this survey work. At this time, NHF&G recommends additional surveys for this species during the spring of 2016. To avoid and minimize impacts to Blanding's, spotted, and wood turtles that may result during Project construction, turtle nesting surveys will occur in specific areas along the Project ROW during late spring/early summer of 2015 in accordance with NHF&G approved field protocols. Should nests be found, they will be mapped, flagged, and avoided during construction. Additionally, a training session will be held in the field with the Project contractor.

The New England cottontail has been added to the Project species list at the recommendation of NHF&G since it is listed as endangered in New Hampshire with known occurrences in Londonderry. Impacts to New England cottontail are not anticipated as the Project will allow existing shrub habitat to remain. Additionally, the Project will create new shrub habitat as a result of the clearing that is proposed. Field surveys will occur during the early part of the 2015 winter season in accordance to protocols developed in consultation with NHF&G and USFWS (Attachment D) in order to determine the presence of absence of this species within the Project ROW.

The USFWS has recently designated the northern long-eared bat as a threatened species under the Endangered Species Act 16 U.S.C. § 1531 et seq. (ESA) effective May 4, 2015. Since the Project is located within the range of this species and involves tree clearing, potential impacts to this species were considered. Approximately 71.2 acres of trees within the existing right of way needs to be cleared to construct the Project. No known hibernacula or roost trees occur near the Project (John Reichard, USFWS pers comm.) The NHNHB also does not have any known occurrences of northern long-eared bat occurring near the Project. Coordination with the USFWS is ongoing at this time. However, the Applicants expect to reach an agreement.

NHNHB identified records of four plant species that intersect the Project ROW, with an additional six plant species and two exemplary natural communities identified nearby. A formal plant and natural community survey is scheduled to be conducted during the 2015 growing season based on flowering times provided by NHNHB and in accordance with protocols outlined in the "MVRP Rare Plant Species Survey Memorandum," dated May 8, 2015, as approved by NHNHB (refer to **Attachment D**). Surveys will identify and map current locations and extent of the listed species within the Project ROW in order to avoid impacts to the species during construction to the greatest extent feasible.

The Project was also reviewed for the presence of federally-listed or proposed, threatened or endangered species, designated critical habitat or other natural resources of concern through the USFWS's IPaC System. A result letter dated May 15, 2015 indicated no listed species or critical habitats are located within the Project area.



10.0 Cultural Resources

10.1 Above-ground Historic Resources

Public Archaeology Laboratory (PAL) conducted a file review in March 2014 to identify properties within or adjacent to the Project area. The study areas established for the due diligence effort were broadly defined to provide information about the types of resources located within the vicinity of the Project. The Project study area does not include any properties listed in the National Register of Historic Places

(National Register). There are four previously surveyed properties within the Project Area. Three properties, located northwest from the end of the Project ROW on the east side of Route 28 in Londonderry, were evaluated in 2002 as not eligible for listing on the National Register due to either a lack of significance or architectural integrity. One historic resource (Castle Hill Road Bridge) located in a residential area in Pelham was evaluated in 2008 as eligible for individual listing on the State/National Register, however, the bridge has since been replaced and is, therefore, no longer eligible.

One potentially significant historic property was identified during a field survey conducted by PAL on January 22, 2014. The historic property consists of a historic farmstead located on a hill at the north side of a curve on Elwood Road in Londonderry. The main house faces northeast and is a two-and-a-half-story, two-by-five-bay, gable-front Italianate-style residence with field stone and concrete foundation, wood siding, and a standing seam metal roof with end returns that was likely constructed about 1870. A two-story, cross-gable ell with asphalt roof is located on the east side of the north elevation. The property includes about eight associated outbuildings, most of which appear to date to the mid- to late- twentieth century with the exception of a west-facing, two-story, gable-front slight-bank barn with manure basement that is likely contemporary to the main house. The farmstead is surrounded on all sides by fields with a corn maze situated on the west and an orchard on the south and east. The Project ROW passes southeast to northwest through the associated orchard and fields to the east of the property.

The inventory file review revealed that there are no properties that have been previously listed or determined eligible for listing within the study area. In evaluating the potential effects of the Project on the farmstead at Ellwood Orchard, PAL concluded that the Project would have no adverse effect because the view to and from the Project, which could be considered an element of the farm's historic setting, have already been compromised by the transmission line structures that already exist in the adjacent transmission ROW. Because the same conclusion would likely be reached for other potentially significant historic properties that have views of the project, if any exist, PAL recommended that no further historic architectural investigations are necessary to arrive at finding that the Project will not cause any effect on historic architectural resources. In a letter dated June 2, 2015 (Attachment E), Director and State Historic Preservation Officer Elizabeth Muzzey wrote to Frank Delguidice of the Regulatory Branch of the N.H. Division of the U.S. Army Corps of Engineers, that the



NHDHR concurred with PAL's conclusion that the Project has no potential to affect historic architectural resources.

10.2 Archaeological Resources

The existing PSNH ROW to be impacted by the Project previously underwent a Phase IA archaeological survey and New Hampshire Division of Historical Resources (NHDHR) project review for the PSNH 326 Line Thermal Uprate Project (Bunker and Charles 2011). On the basis of field observations and research results, no further archaeological survey was recommended and the project received a determination of no effect from NHDHR (R&C #4356).

A Request for Project Review for this Project was submitted to NHDHR on March 04, 2015. In response, NHDHR indicated that additional information was needed on the portion of the Project ROW that had not been previously surveyed. In addition, NHDHR indicated that there are previously identified archeological sites along portions of the Project ROW.

A combined Phase 1A-1B sensitivity assessment and intensive archeological investigation is planned along the Project ROW. Results of this survey will be provided to NHDHR in support of their final determination.

Refer to **Attachment E** for agency correspondence.

11.0 Alternatives Analysis

The Applicants considered a number of possible alternate means to connect the existing Tewksbury 22A Substation in Tewksbury, MA to the Scobie Pond 345 kV Substation in Londonderry, NH with a new 345 kV transmission line. As the terminal locations of the line are fixed, the Applicants performed an in-depth review of three alternative routes along existing infrastructure corridors during the selection process. The overhead portions for all of the alternatives are located adjacent to existing lines utilizing the available ROW to the greatest extent possible. As part of the routing analysis, the Applicants also considered the potential for an underground route along existing linear corridors (e.g., roadways, transmission line corridors). Underground construction was rejected due to: significantly higher costs; the potential for greater environmental impacts; the lack of underground land rights to bury transmission lines; safety concerns; and the likelihood of encountering large amounts of rock, some of which would have required blasting to be removed.

11.1 Technical and Economic Considerations

The preferred route, which has been selected and is the current route, is 24.4 miles in length, 17.9 miles of which are in New Hampshire. The first alternative (Western Alternative) would have been approximately 45.5 miles in length with approximately 18.3 miles in New Hampshire and would have required 88 acres of additional ROW (85 feet wide) to be



purchased. The second alternative (Eastern Alternative) would have been approximately 58 miles in length with approximately 26.7 miles in New Hampshire and would also have required the expansion of the existing ROW for virtually the entire 26.7 mile length in New Hampshire.

11.2 Environmental Considerations

Due to the significantly longer traverses and the need to acquire additional ROW for the Western and Eastern Alternatives, many more wetlands and surface water impacts were anticipated in order to construct a new 345 kV transmission line along these alternate routes. In addition, estimated costs of a longer transmission line combined with costs associated with additional property rights acquisition increased the cost differential between the two alternatives and the preferred route. Lastly, more and longer outages would be required to reconfigure circuits for construction of the alternatives in Massachusetts versus the preferred route.

The ISO New England Planning Advisory Committee (PAC) published the "Greater Boston Preferred Solution" in February 2015, which outlined a preferred suite of projects. MVRP is included in the solution because it is consistent with good utility practice and it will result in the fewest impacts to communities and resources in the region, while ensuring increased reliability and improvements to the system in the most cost-effective manner.

In summary, when environmental impacts and technical and economic considerations are considered together, the preferred route presents the least environmentally impacting practicable alternative for meeting the Project purpose and need.

12.0 Mitigation Measures

The Project has avoided and minimized permanent and temporary wetland impacts to the greatest extent feasible through design and construction methodology. The Project proposes **4,428** sq. ft. of direct permanent wetland impact and therefore no compensatory mitigation is required under Env-Wt 302.03. However direct and secondary impacts to wetlands, streams, riparian buffers and vernal pool buffers require mitigation. Mitigation ratios were applied in accordance with the *New England Army Corps of Engineers Mitigation Guidance* document and in coordination with the USEPA, USACE, and NHDES. A summary of Project impacts and mitigation burden are displayed in **Table 7** below.



Table 7: Summary of Total Project Jurisdictional Impact and Mitigation Burden

Town	Permanent Wetland/ Stream Impacts (ac)	Temporary Wetland/ Stream Impacts (ac)	Secondary Wetland Impacts (ac)	Vernal Pool Buffer Impacts (ac)	Riparian Buffer Impacts (ac)	Total Impacts (ac)	Mitigated Impacts (ac)
Pelham	0.086	3.674	0.422	0.211	0.143	4.536	0.387
Windham	0.006	0.161	0.042	0.061	0.183	0.453	0.057
Hudson	0.003	0.706	2.795	2.090	2.130	7.724	1.097
Londonderry	0.007	4.386	7.617	5.267	2.066	19.343	2.472
Total:	0.102	8.927	10.876	7.629	4.522	32.056	4.013

The Project proposes mitigation in the form of in-kind mitigation and/or an In-Lieu Fee contribution to the NHDES Aquatic Resource Mitigation Fund. Requests for potential in-kind mitigation projects have been made to each of the impacted towns as well as regional land trusts and conservation groups. To date, Pelham and Londonderry have requested upland buffer mitigation projects that are being evaluated by the Applicants. Windham has responded that they were unable to identify a suitable in-kind mitigation projects. Hudson did not respond to requests for potential in-kind mitigation projects. NEP and PSNH will continue to develop a mitigation package that will be acceptable to NHDES, USEPA, and USACE. A Preliminary Mitigation Agreement is included as **Attachment I**.

Apart from in-kind mitigation discussed above, general BMPs will be implemented during Project construction including the use of established accessways and temporary construction matting, use of erosion and sediment controls, restoration of temporarily disturbed wetlands, and invasive species management. Each of these are discussed below.

12.1 Use of Existing Accessways and Construction Mats

Construction and forestry crews will use public roads intersecting the Project ROW and other established access points to enter the transmission corridor. Proposed accessways within the ROW follow existing accessways as much as possible. The use of existing dirt and gravel accessways that have previously impacted wetlands will minimize impacts associated with equipment travel through wetlands.

Where wetlands and/or streams must be crossed to gain access to an existing or proposed structure location, wooden swamp mats may be installed to create a solid travelling surface. Mats will be positioned in the narrow portion of the wetlands or across previously disturbed portions of wetland areas. Smaller perennial or intermittent stream channels located along the Project ROW that cannot be avoided may be spanned (from beyond its jurisdictional banks) using mats. The use of swamp mats reduces the impact of driving heavy equipment through saturated wetland soils by dispersing the equipment weight, preventing the formation of ruts, and preventing conditions that are conducive to soil erosion. If frozen, snow-covered, or dry ground conditions are present, mats may not be necessary.



12.2 Erosion and Sediment Control and Wetland Restoration

Erosion and sediment controls will be used during construction. Prior to accessing the Project ROW, crews will install erosion and sediment control barriers in accordance with NHDES, NHDRED, and NEP and/or PSNH guidance manuals and as dictated by site conditions. Selected BMPs may include straw wattles, silt fence, wood chip/compost berms/tubes and/or other approved BMPs. A sufficient supply of these materials will be kept nearby to facilitate repair or replacement of barriers. Erosion controls will be inspected and maintained throughout the duration of Project activities and will not be removed until Project work is complete and the Project Area is stabilized in accordance with NHDES *Chapter Wt 303.04 (af)*.

Due to the timing of the Project and measures being taken to minimize impacts, it is anticipated that minimal restoration will be needed and that natural re-colonization of wetlands within the Project ROW will occur during spring/summer vegetative growth periods. VHB will revisit the ROW during this time period to assure restoration. If necessary, an approved wetland seed mix outlined in NHDES guidance manuals, such as New England Wet-Mix or New England Erosion Control/Restoration Mix for Detention Basins and Moist Sites or equivalent/readily available seed mixes), will be applied to any areas where cover is slow to develop. Additionally, straw or weed-free hay will be applied in conjunction with seed.

12.3 Invasive Species Management Plan

At present, existing invasive species within the Project ROW include purple loosestrife, glossy buckthorn, and Japanese Honeysuckle (*Lonicera japonica*). During construction, contractors will be required to deliver clean equipment to the Project ROW. Machinery entering and leaving any area containing invasive plants along the Project ROW will be inspected for foreign plant matter (stems, flowers, roots, etc.) and soil embedded in the tracks or wheels. If foreign plant matter/soil is present, the operator will remove the plant material and soil from the machine using hand tools.

Mats will also be cleaned before transporting them on-site or relocating them from one area of the ROW to another. Compressed air or water is typically used as a cleaning agent to remove seeds or root matter from mats.

13.0 Shoreland Water Quality Protection Act

Shoreland Permits are required by NHDES for projects within the protected shoreland (250 feet from the reference line of a jurisdictional river or stream) that involve new construction or construction that modifies the footprint of existing impervious surfaces using mechanized

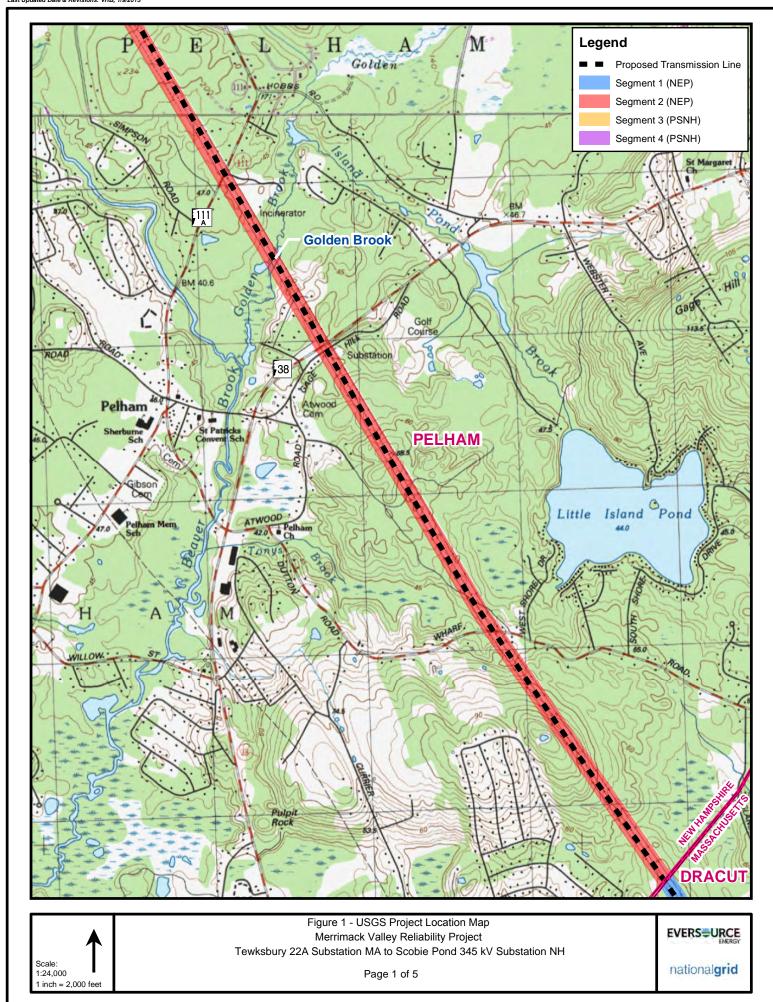


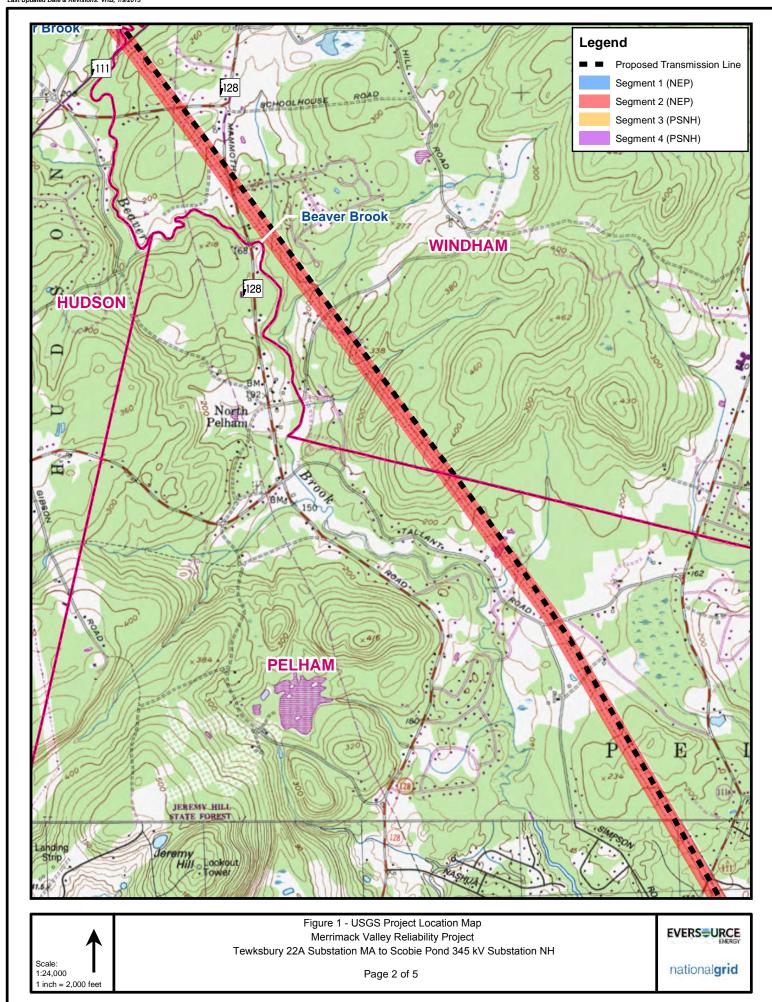
equipment to either excavate or fill the ground. Beaver Brook is the only surface water jurisdictional under the SWQPA RSA 483-B along the Project ROW. The Protected Shoreland Zone of Beaver Brook intersects the Project ROW in two locations; once in Pelham and once at the Windham/Hudson town line. Beaver Brook does intersect the Project ROW a third time to the south of the Scobie Pond 345 kV Substation in Londonderry. At this location the brook is classified as a 2nd order stream and is not subject to SWQPA jurisdiction. A Shoreland Permit Application has been prepared and submitted to NHDES Shoreland Program to address proposed impacts within the protected shoreland of Beaver Brook.

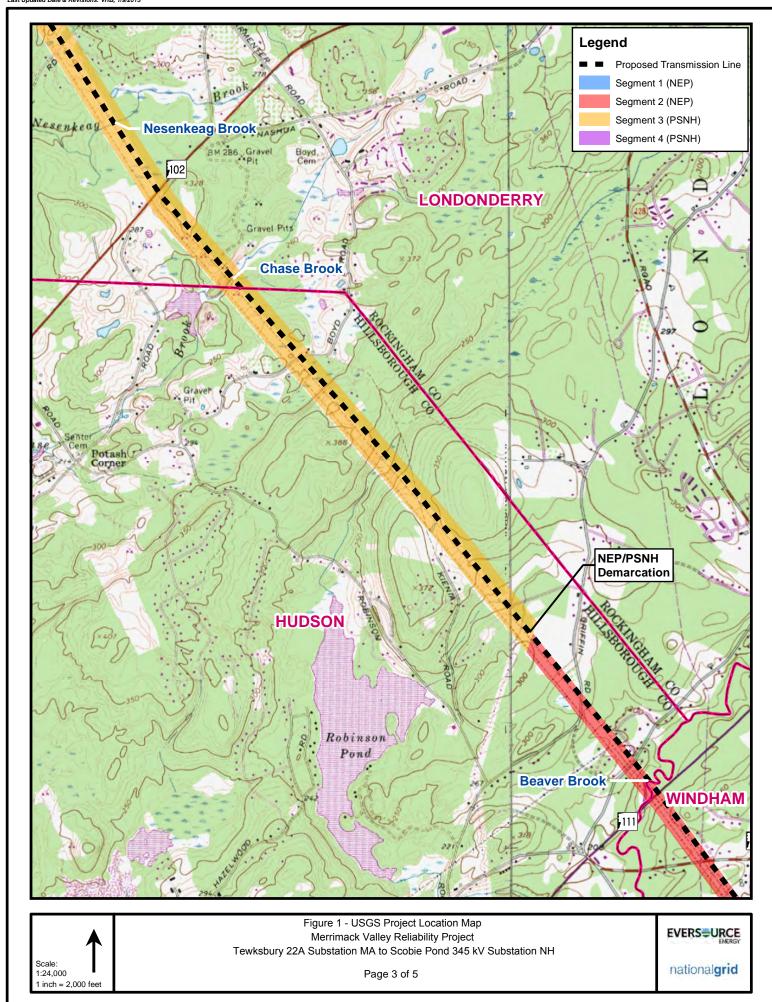


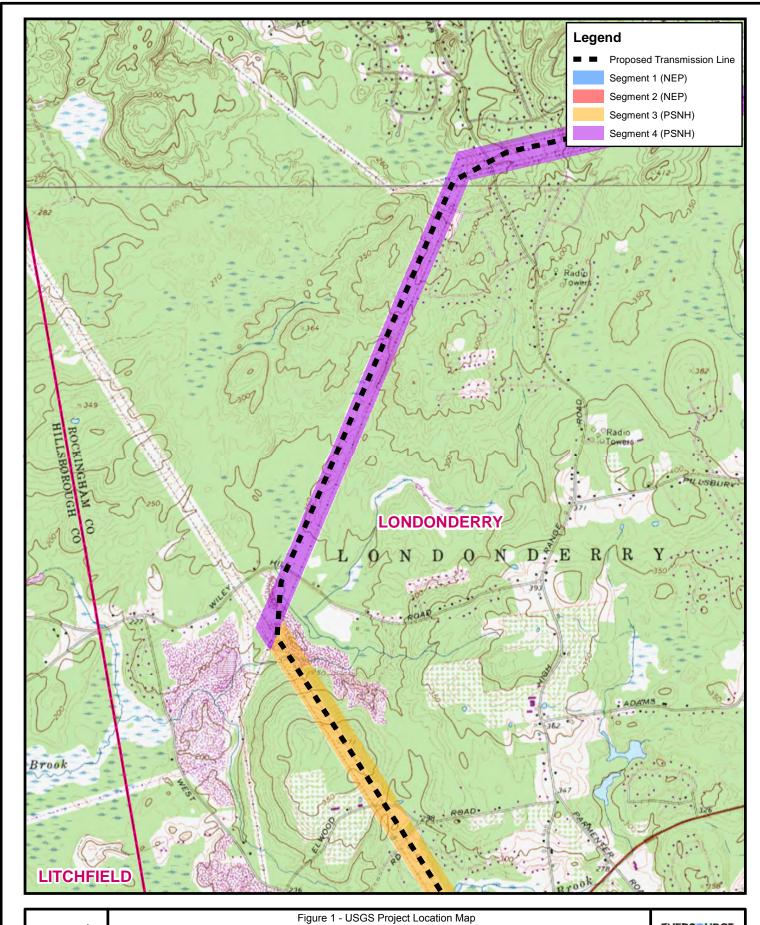
Figures

Figure 1	USGS Project Location Map
Figure 2	NRCS Mapped Soils
Figure 3	FEMA Floodplain Map
Figure 4	NHF&G Wildlife Action Plan









Scale: 1:24,000 1 inch = 2,000 feet Merrimack Valley Reliability Project
Tewksbury 22A Substation MA to Scobie Pond 345 kV Substation NH

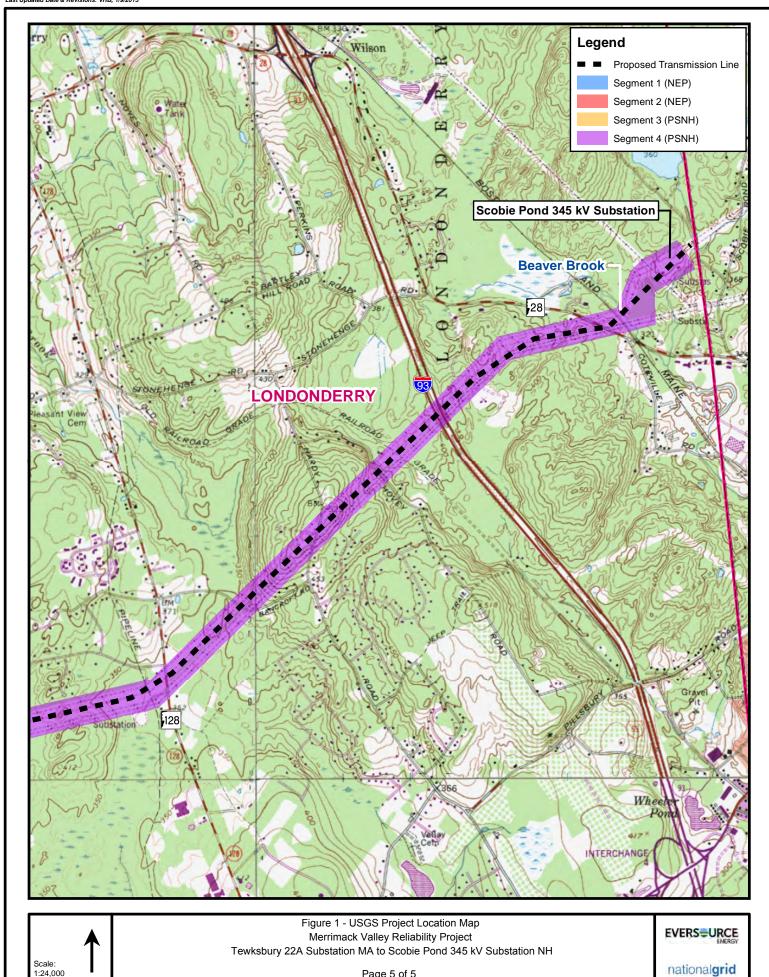
Page 4 of 5

national**grid**

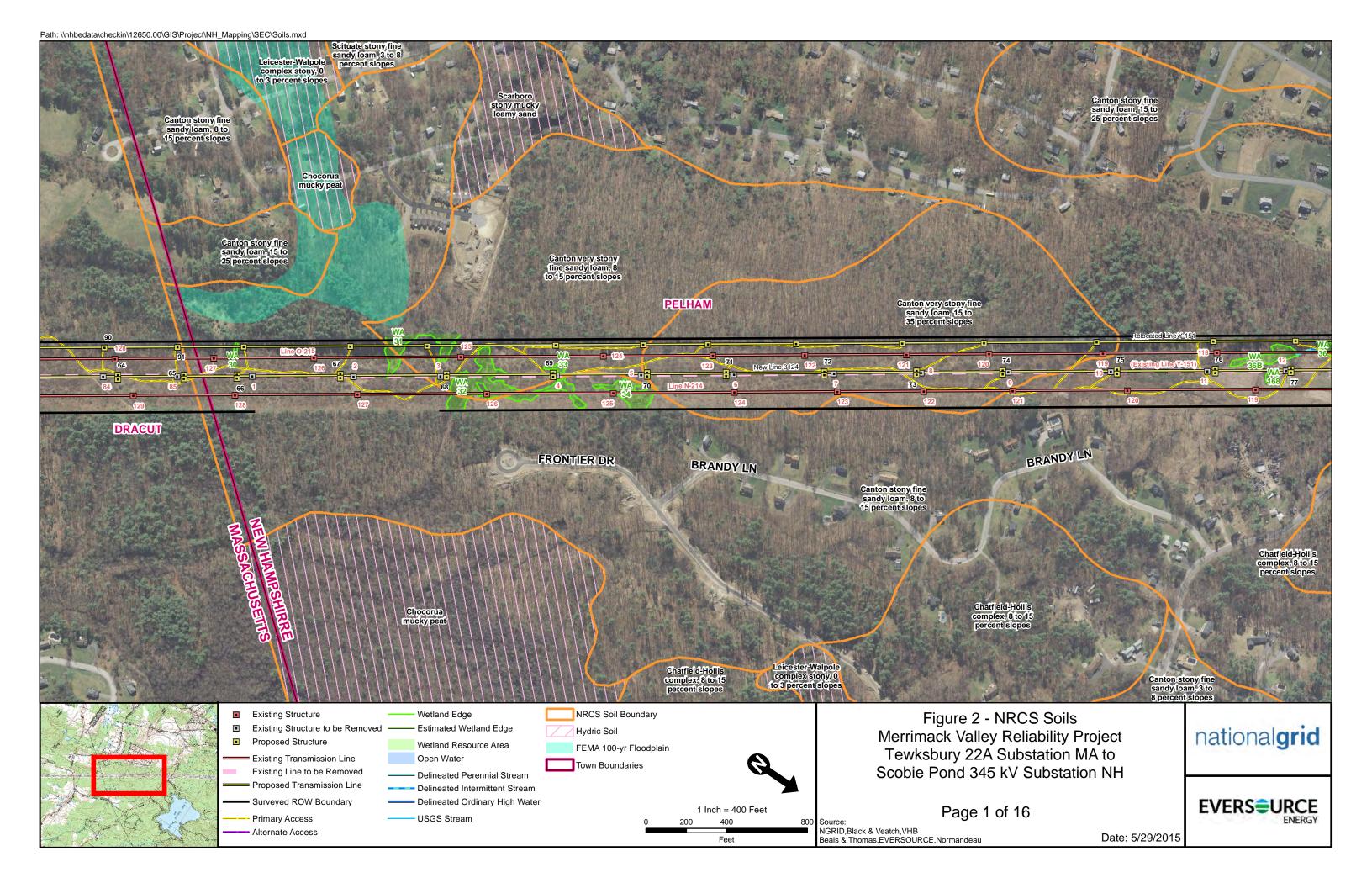
EVERS=URCE

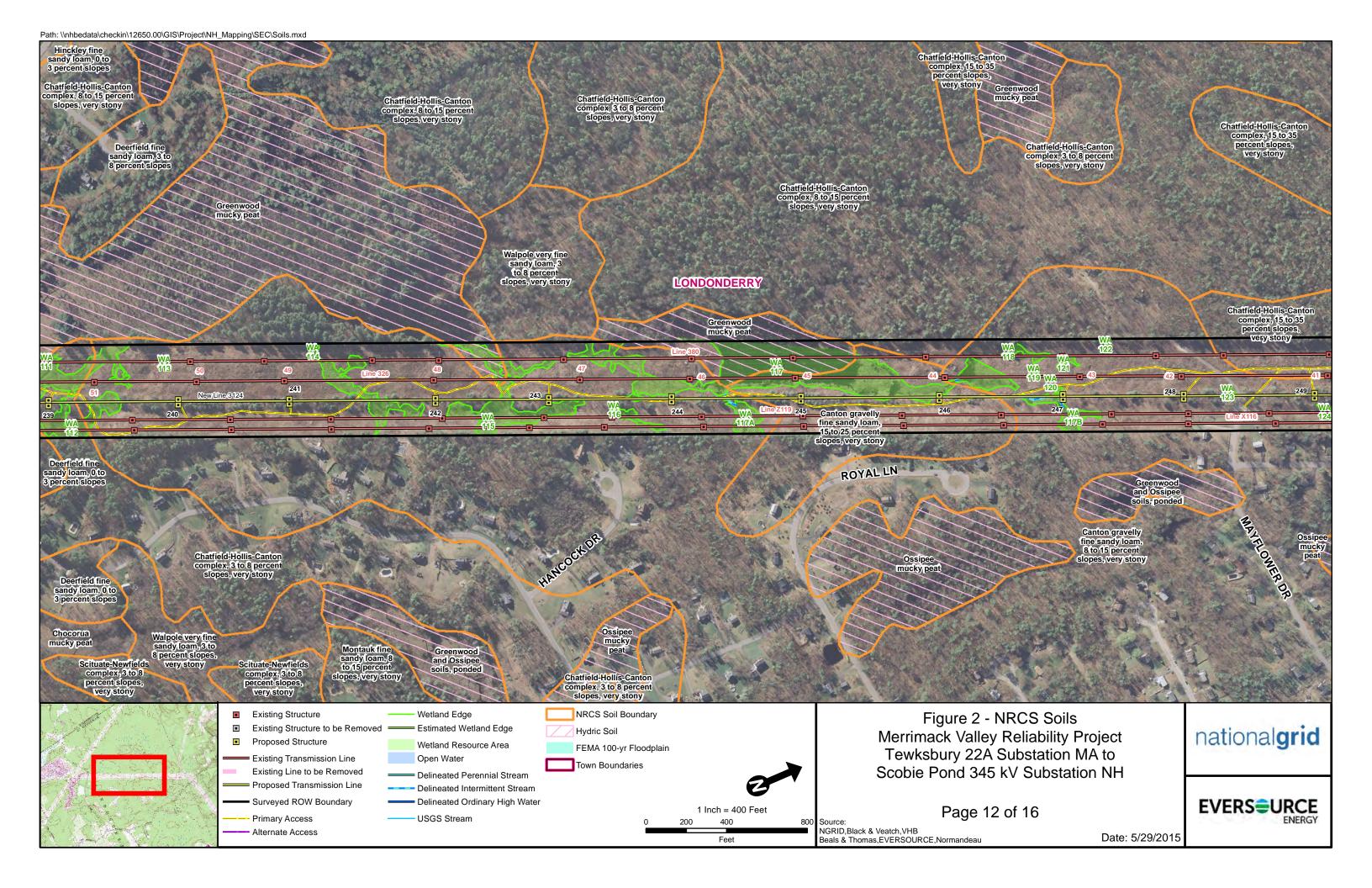
1:24,000

1 inch = 2,000 feet



Page 5 of 5







Attachments A through I

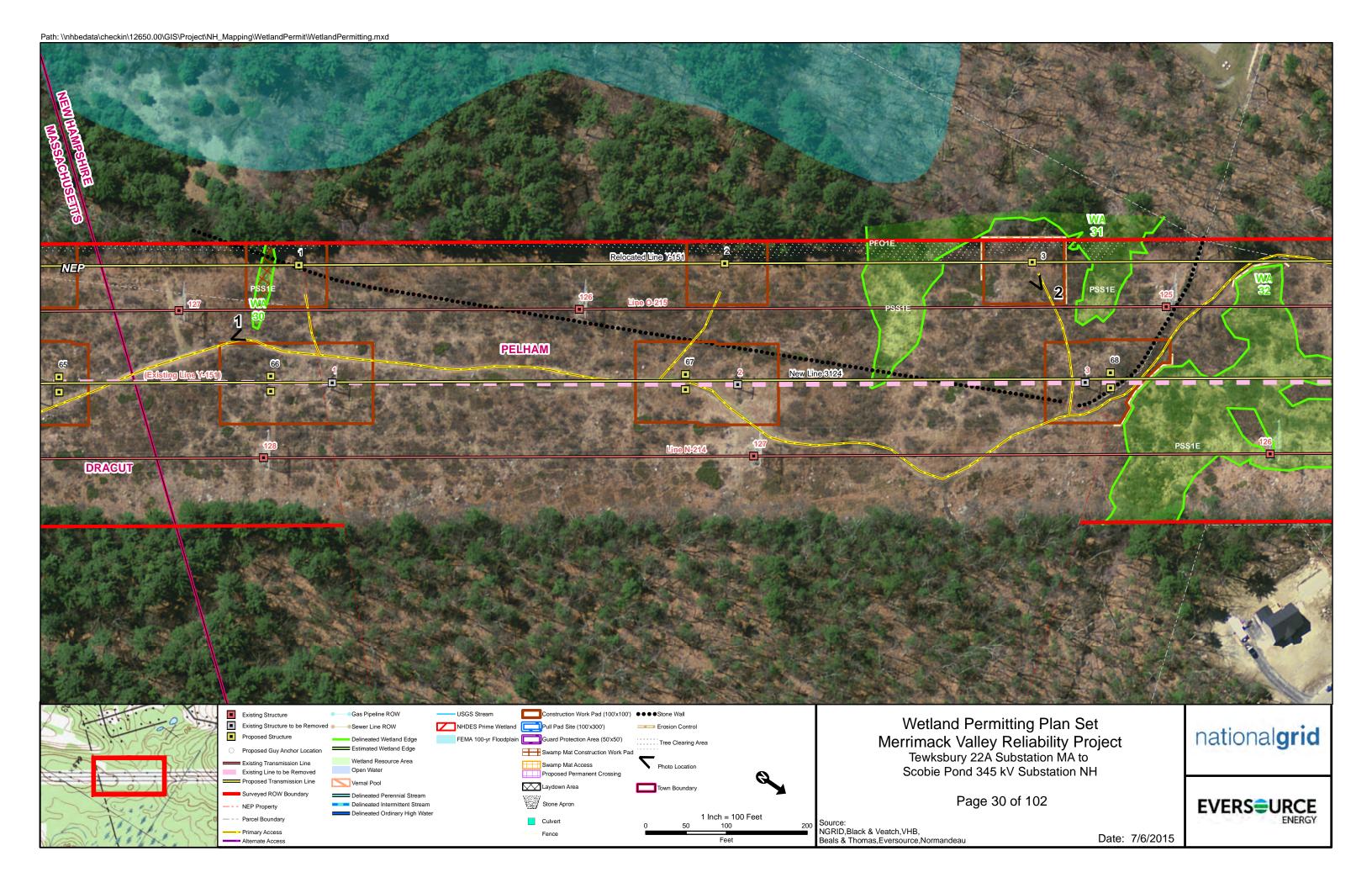
- ➤ Attachment A Wetland Permitting Plans
- ➤ Attachment B Wetland and Stream Impact Summary Tables
- ➤ Attachment C Representative Site Photographs
- ➤ Attachment D Natural Resource Agency Correspondence
- ➤ Attachment E Cultural Resource Agency Correspondence
- > Attachment F Abutter/Town Tax Maps
- ➤ Attachment G USACE Functions and Values Form
- ➤ Attachment H Vernal Pool Summary Table & Photographs
- > Attachment I Preliminary Project Mitigation Agreement

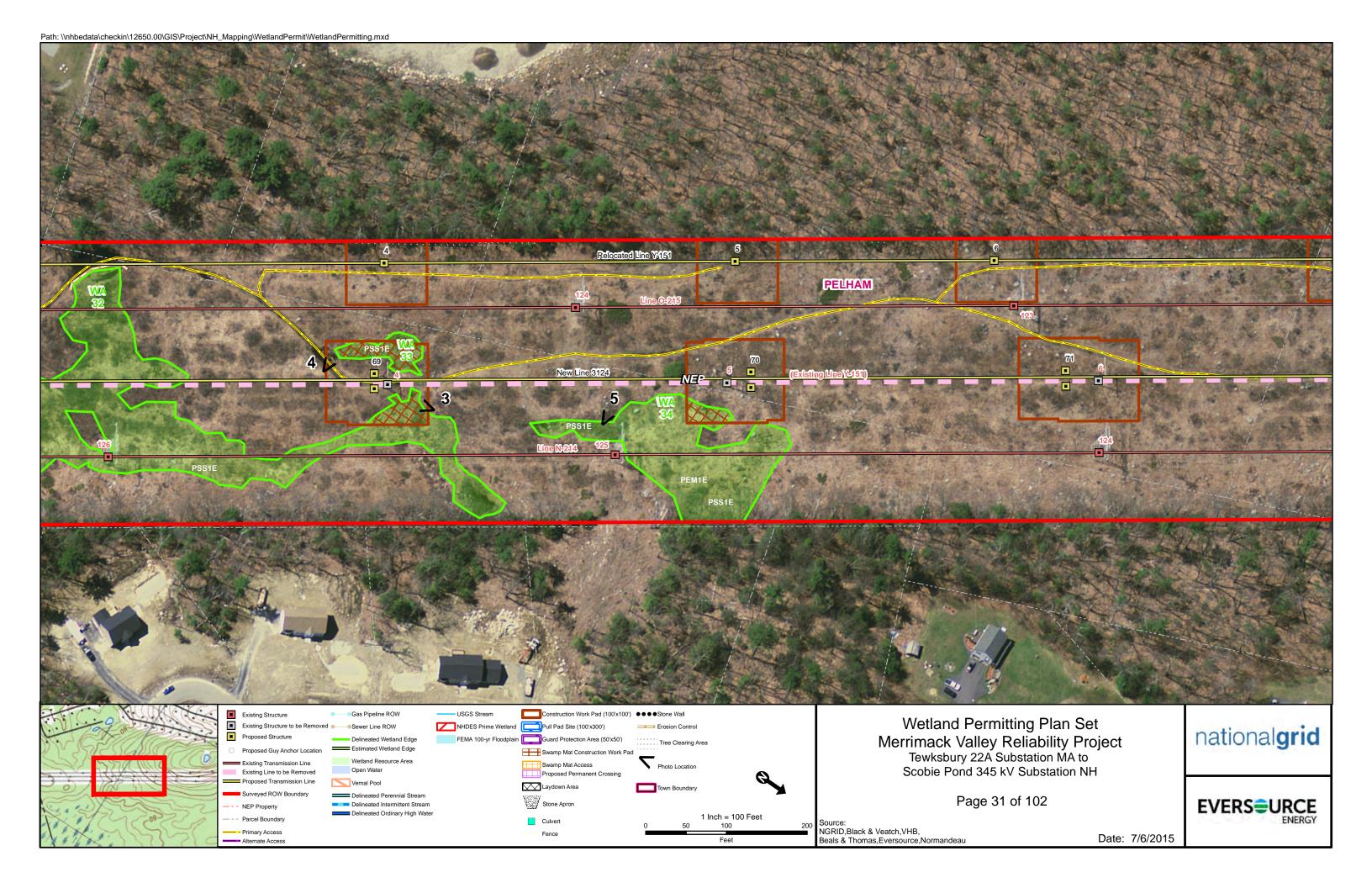


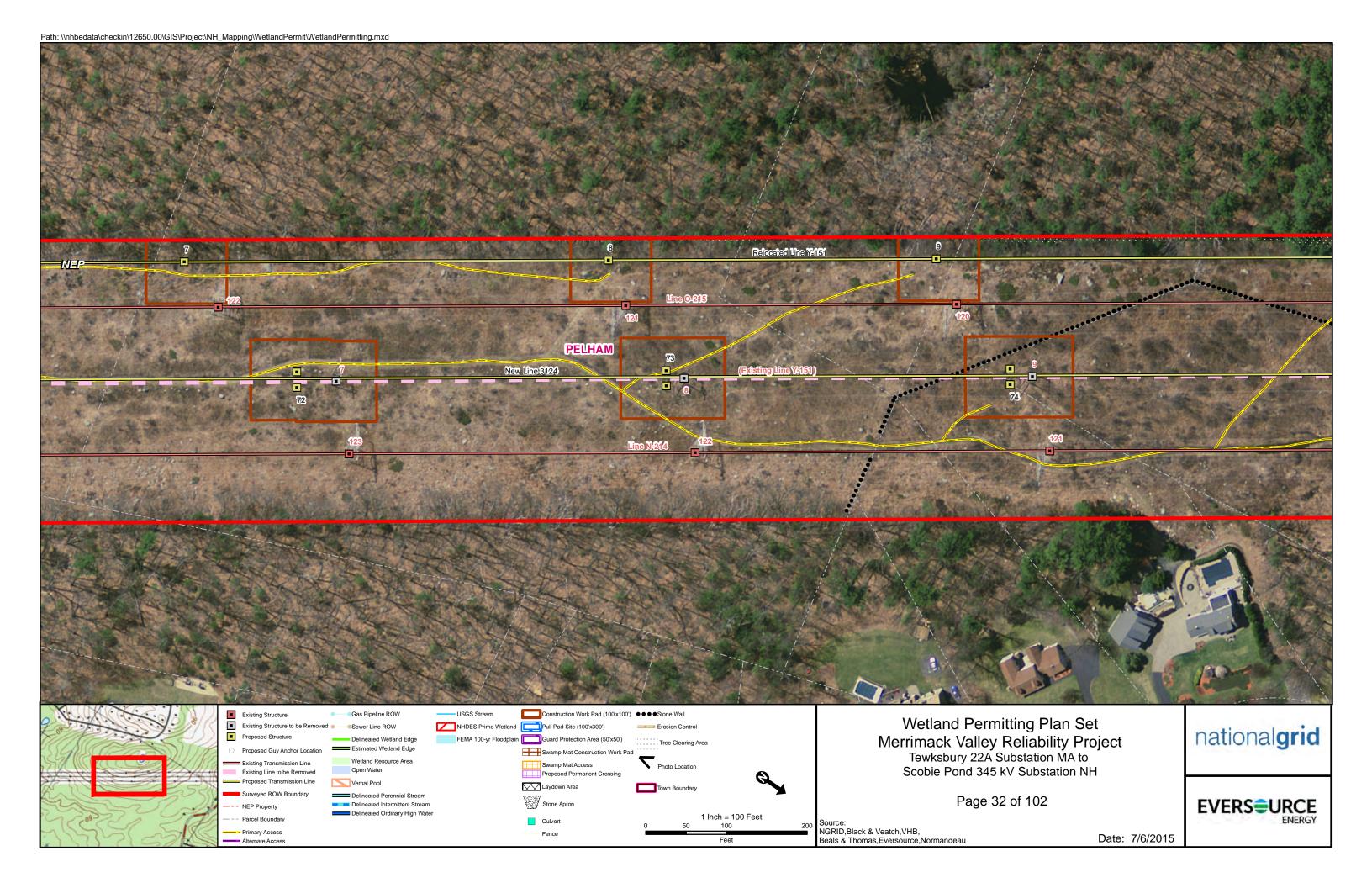
Attachment A

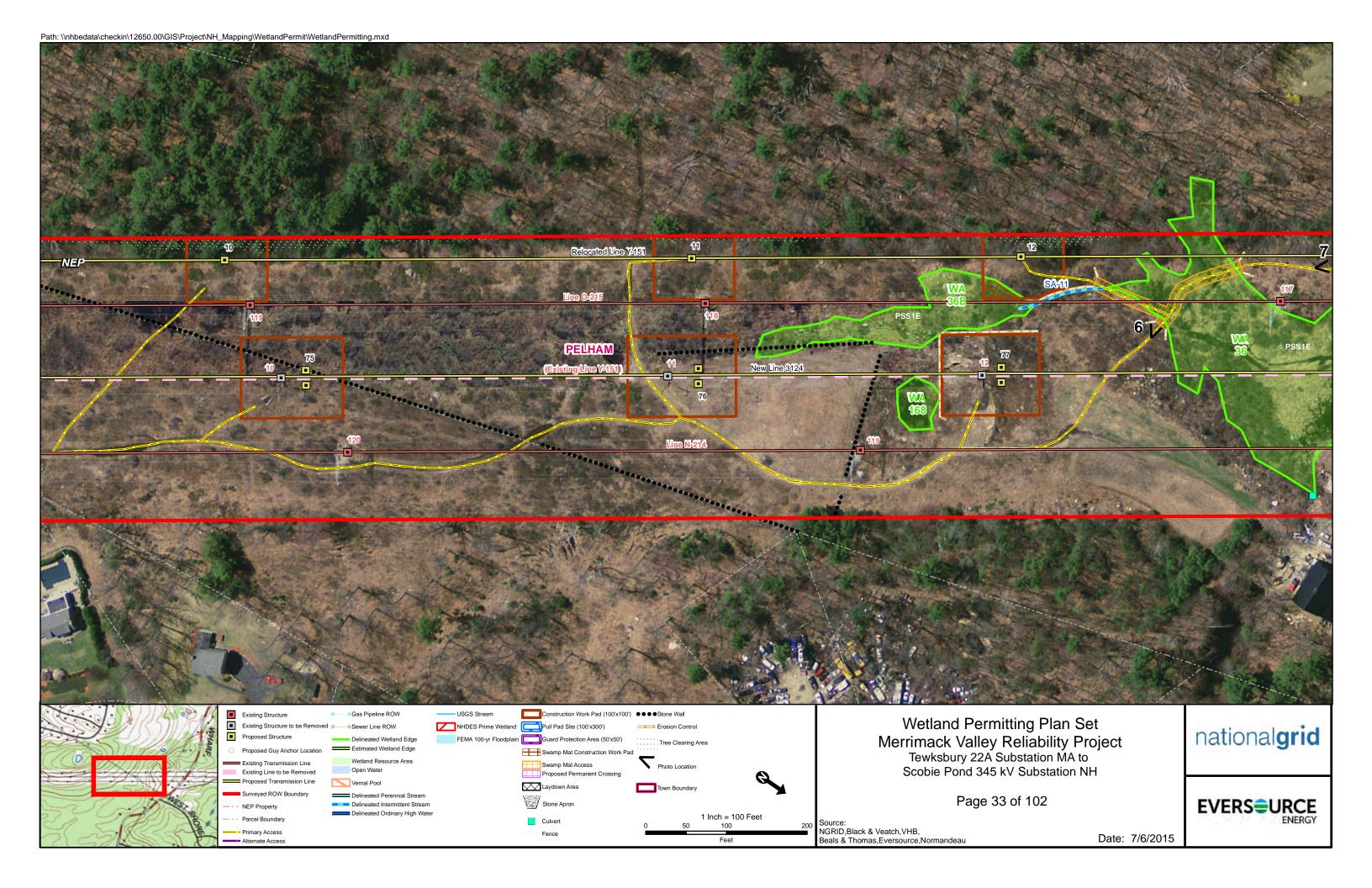
Wetland Permitting Plans

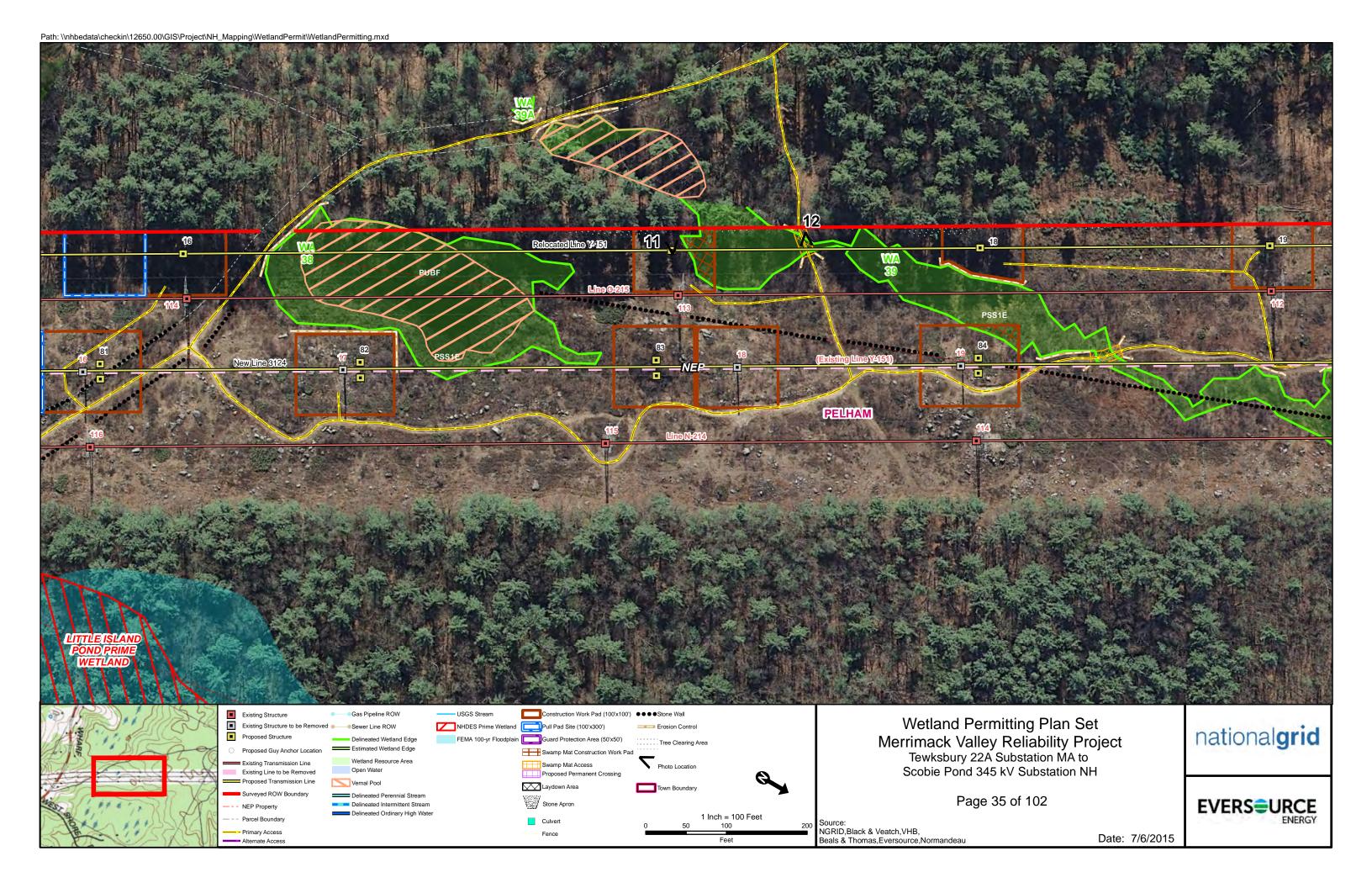
- > Project Wetland Permitting Plans
- > SA-41 Realignment Design Plan
- > Stone Ford Standard Design Typical

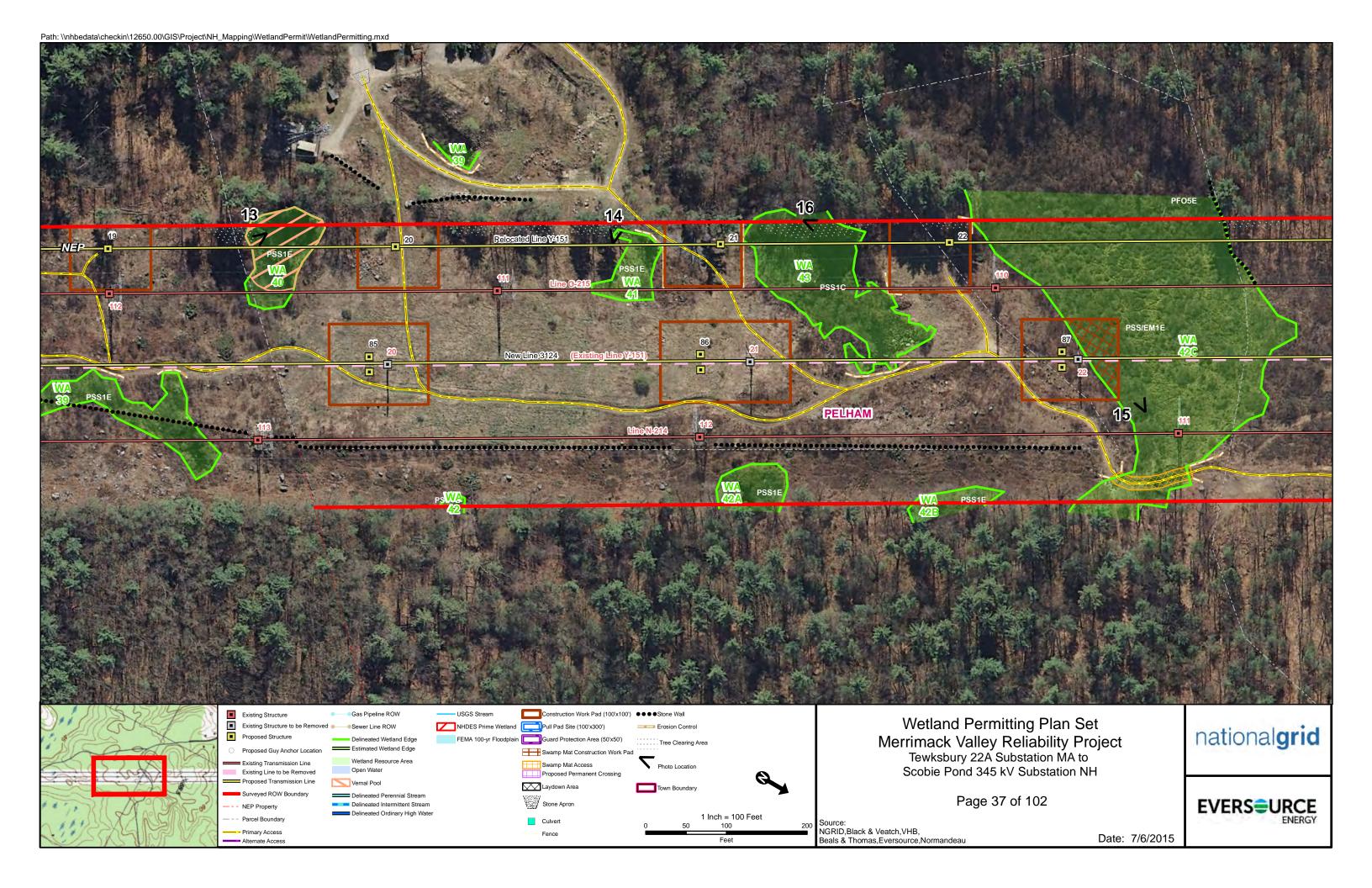


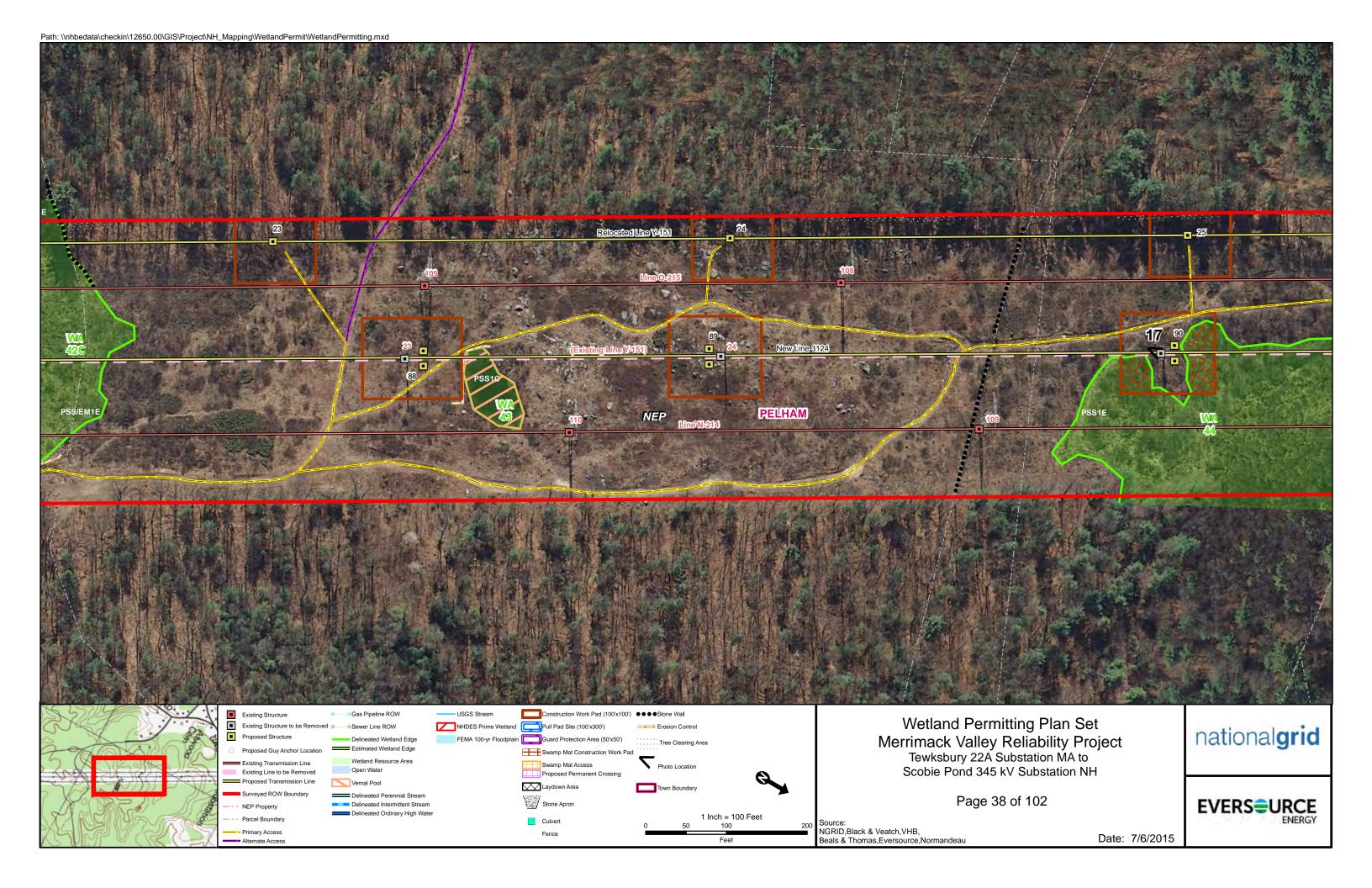


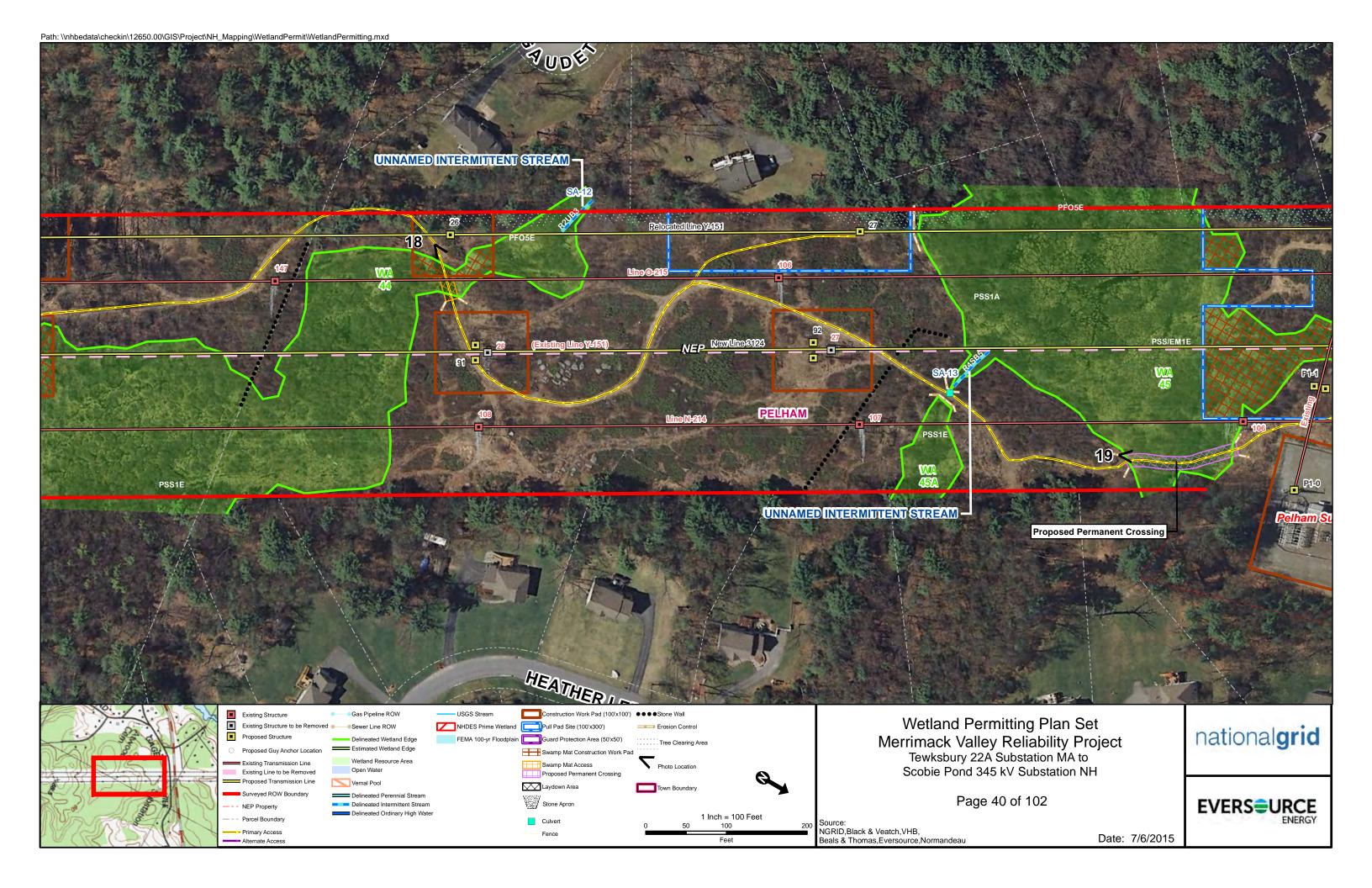


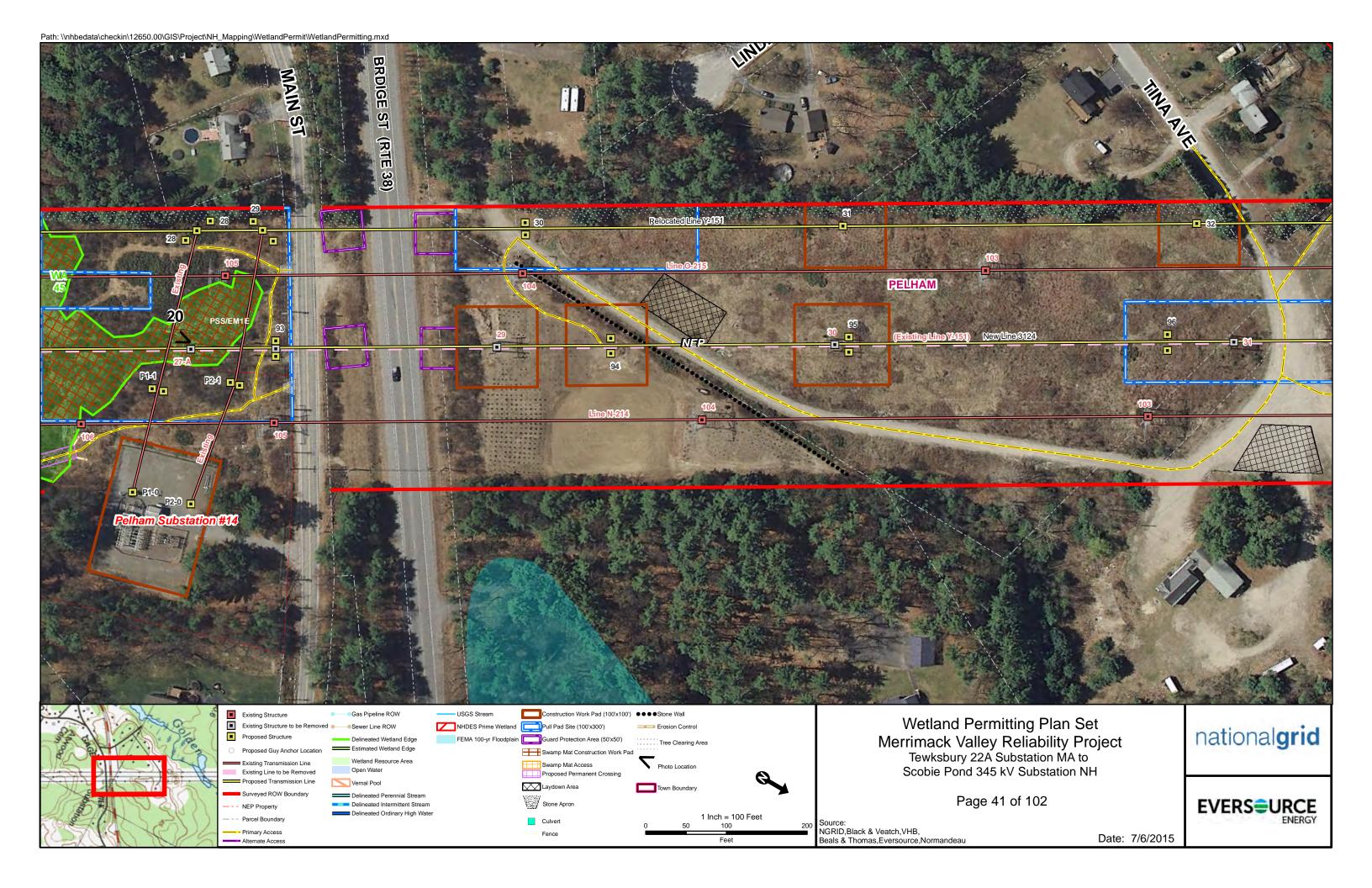


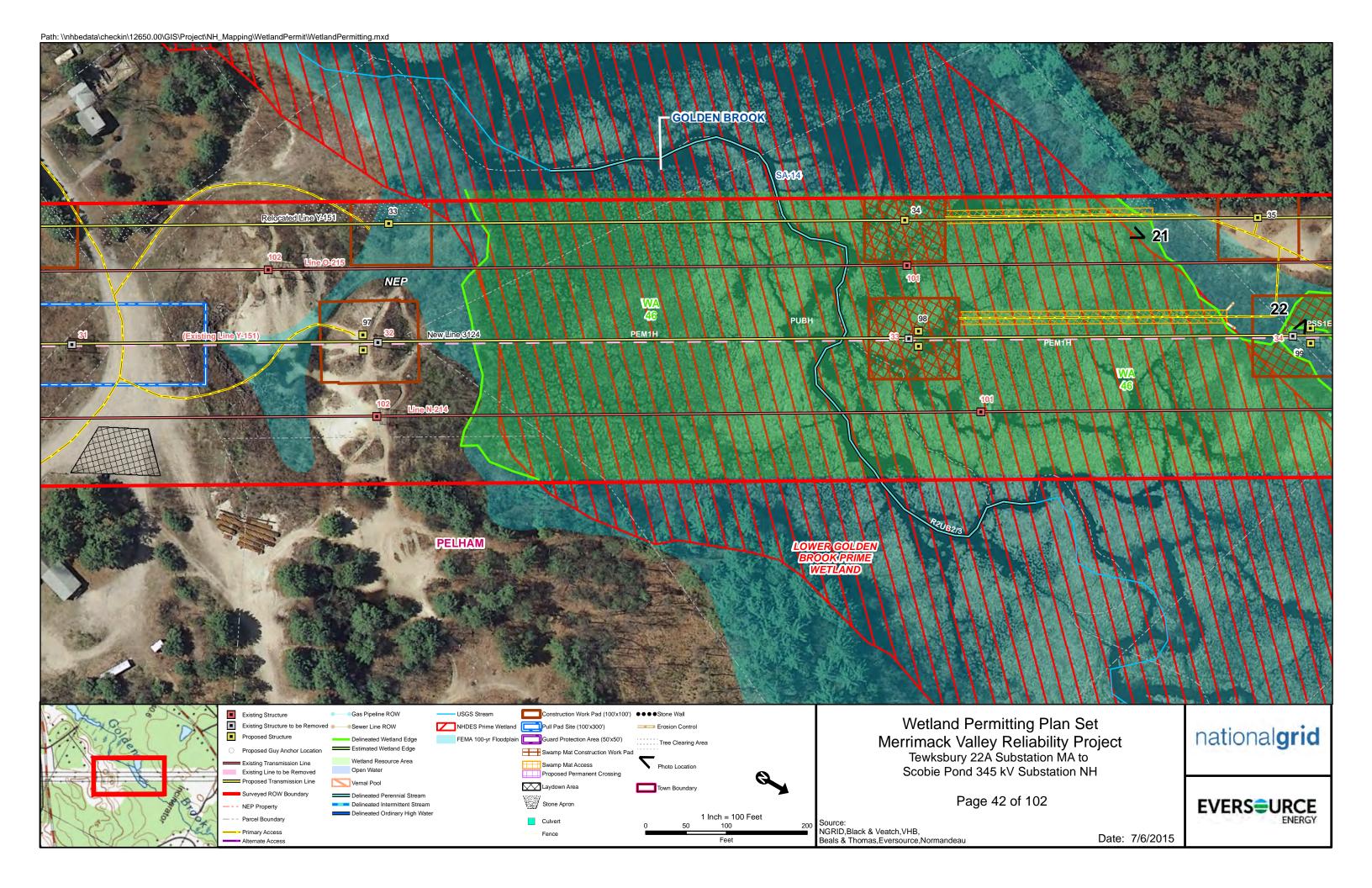


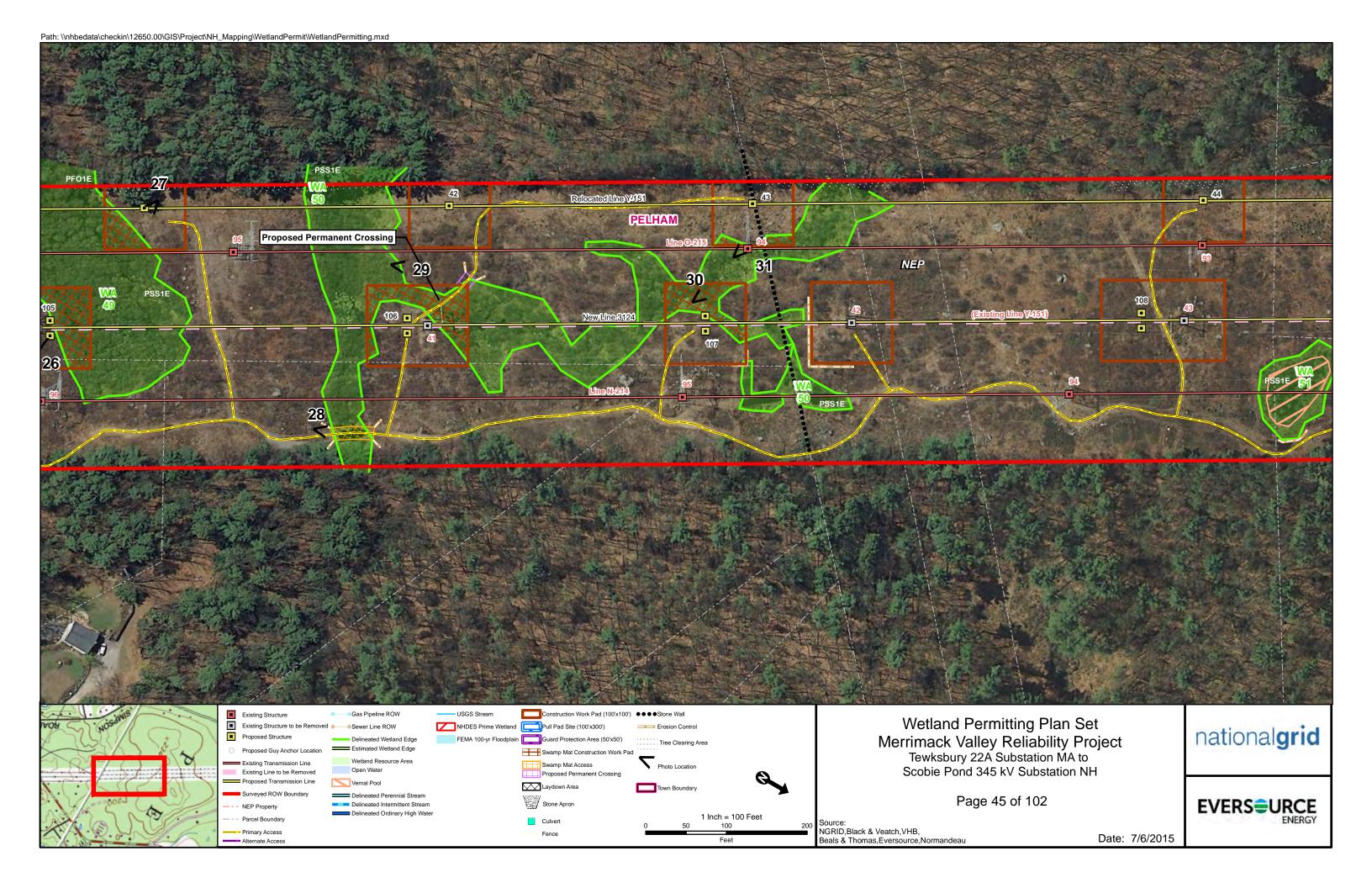


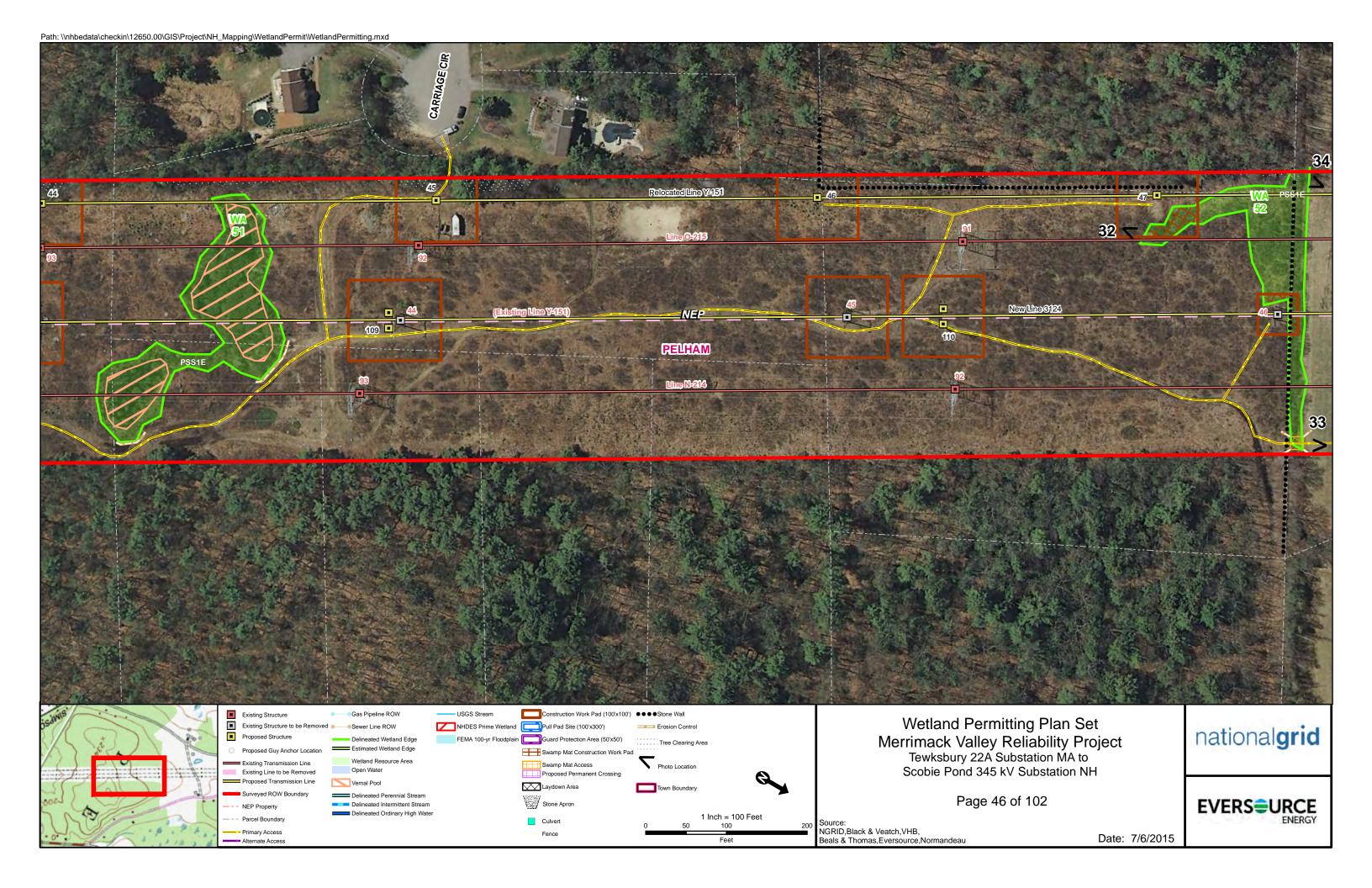


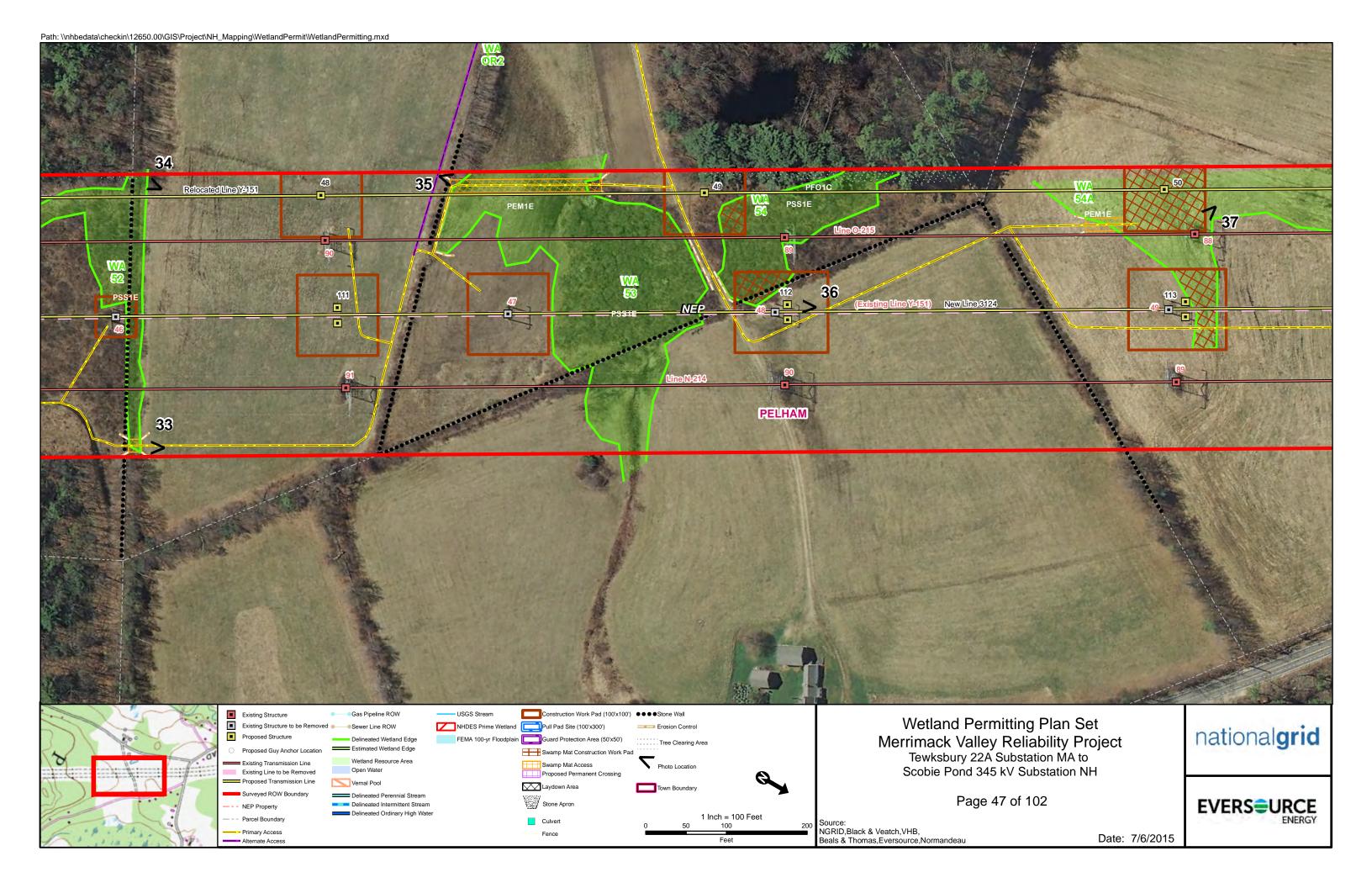


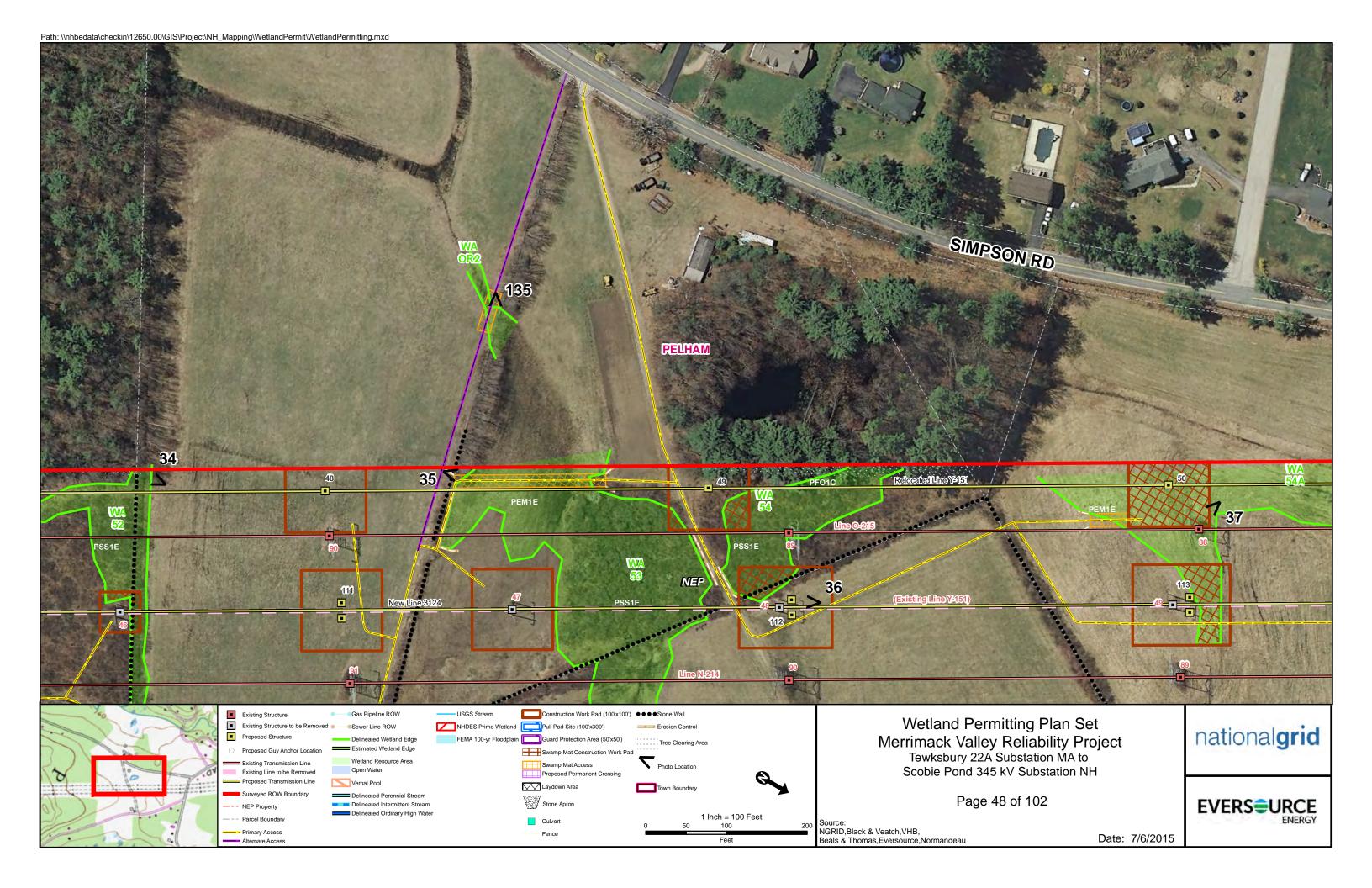


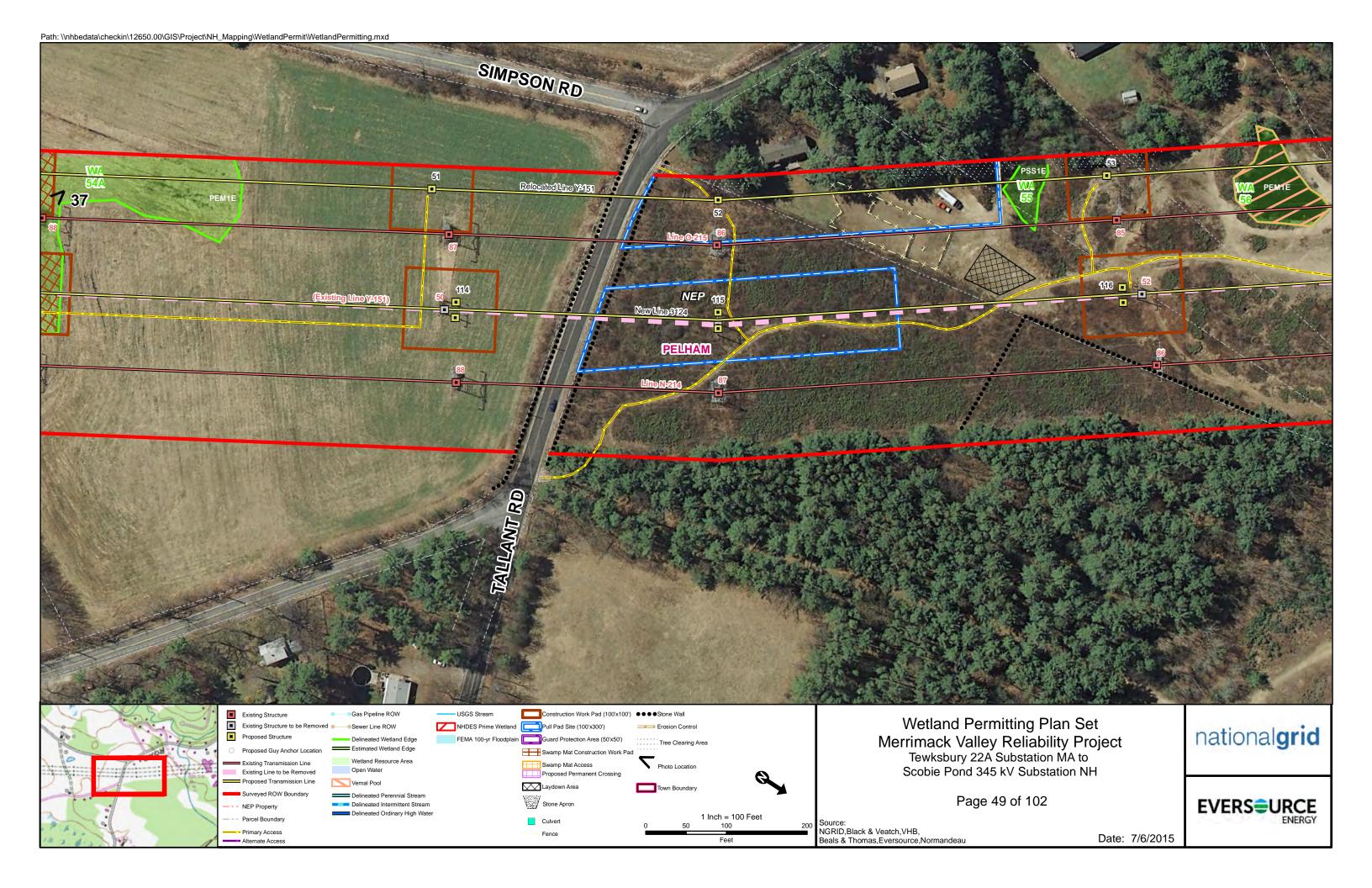




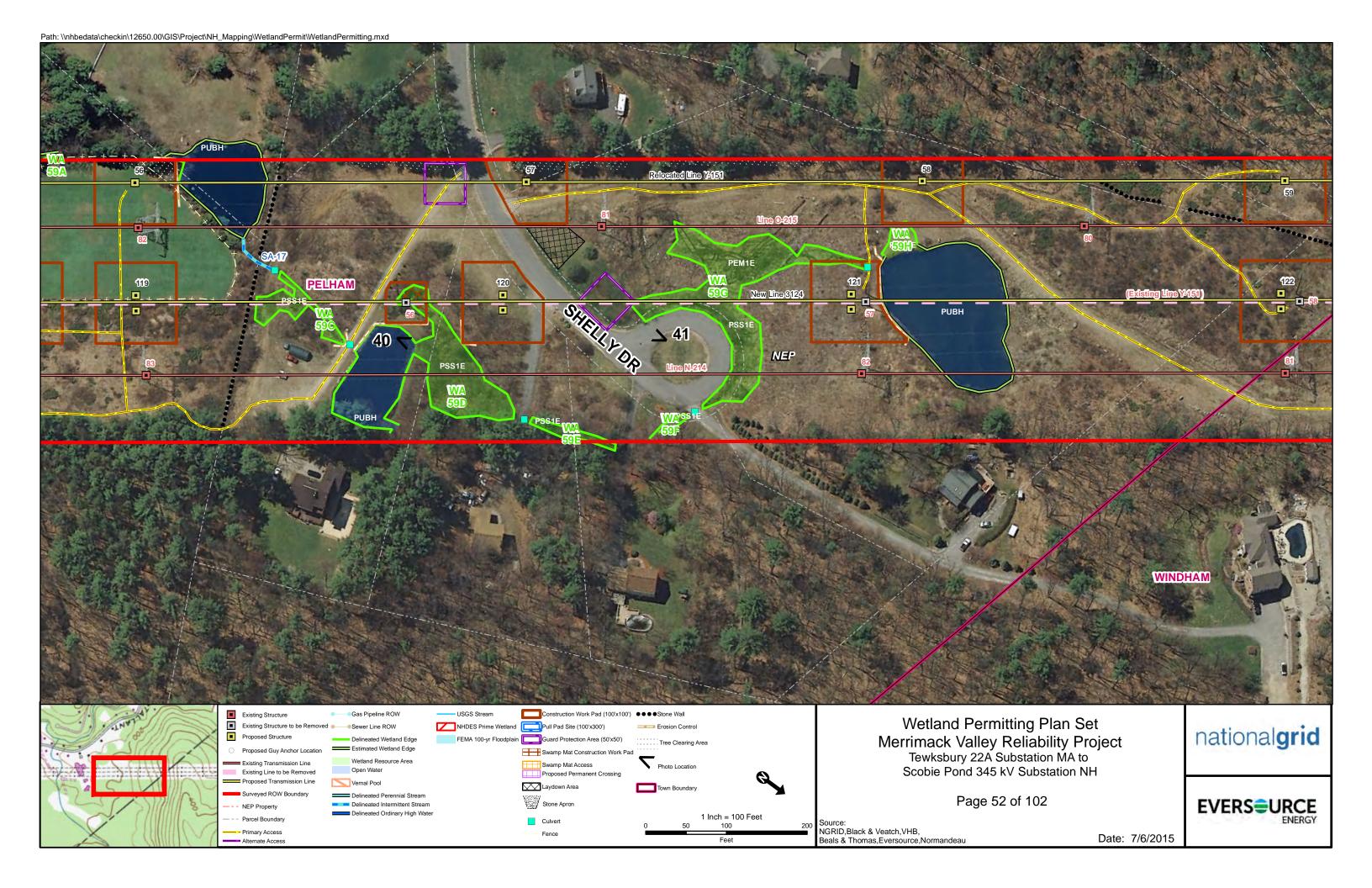


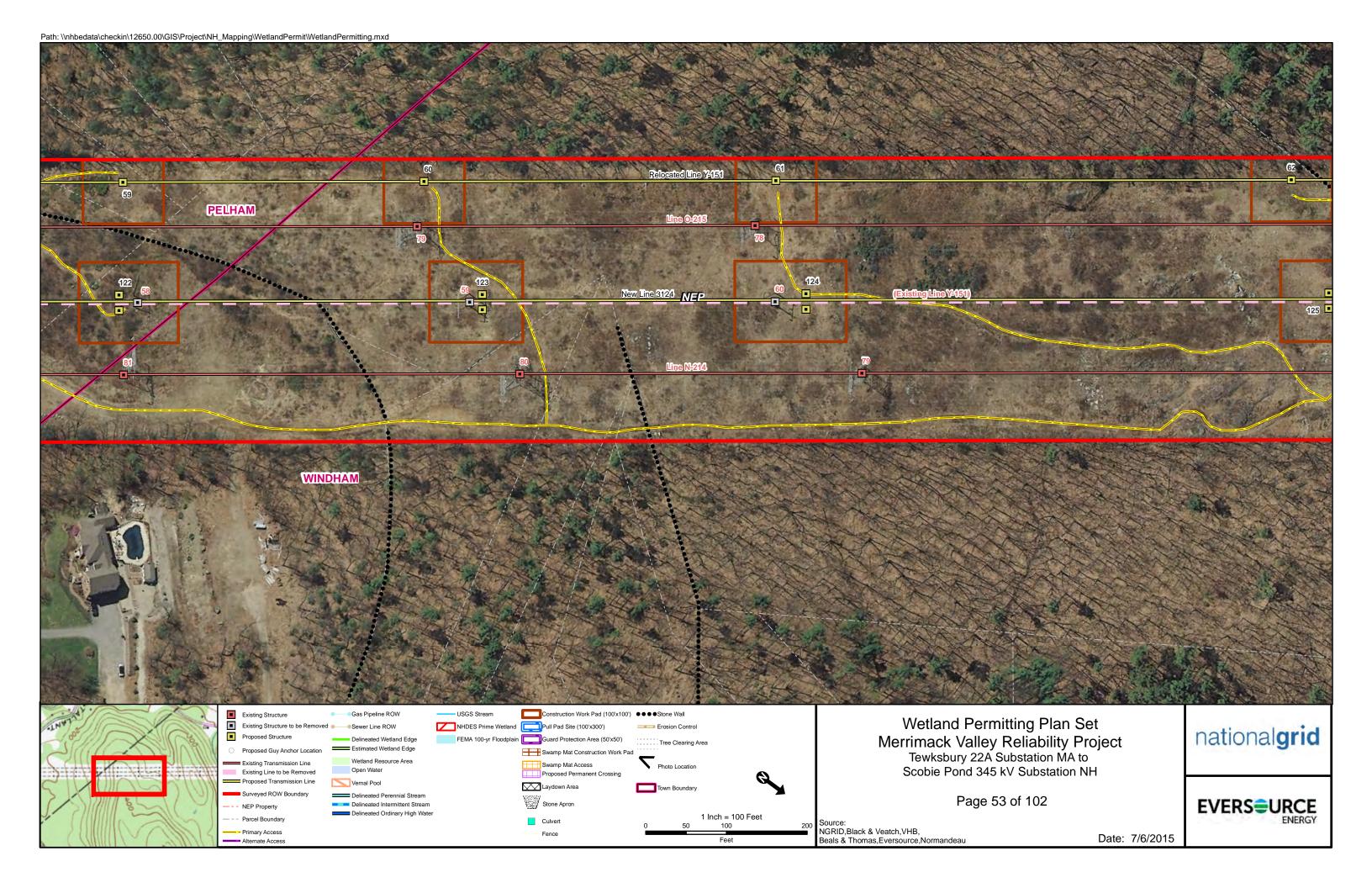


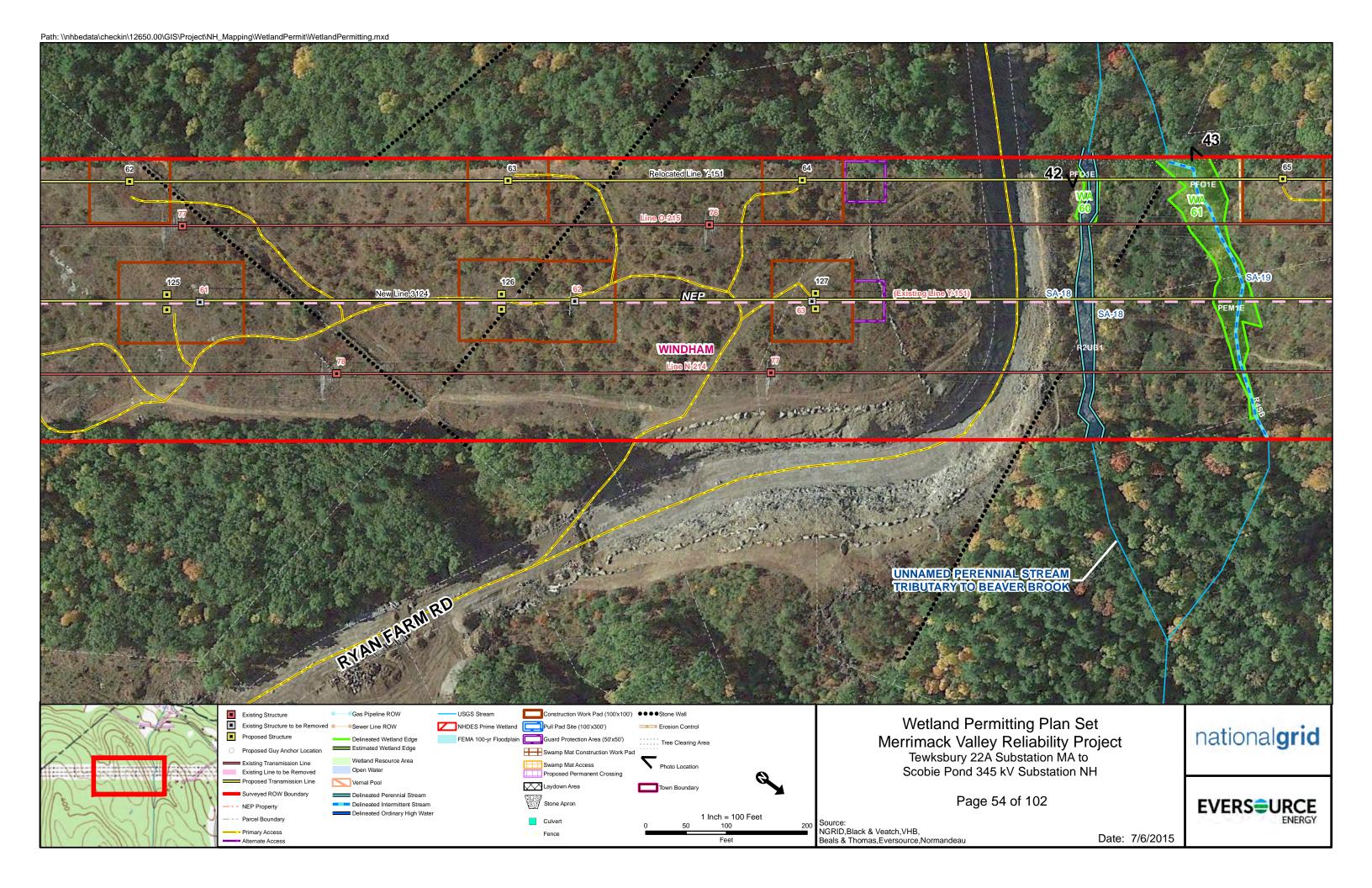


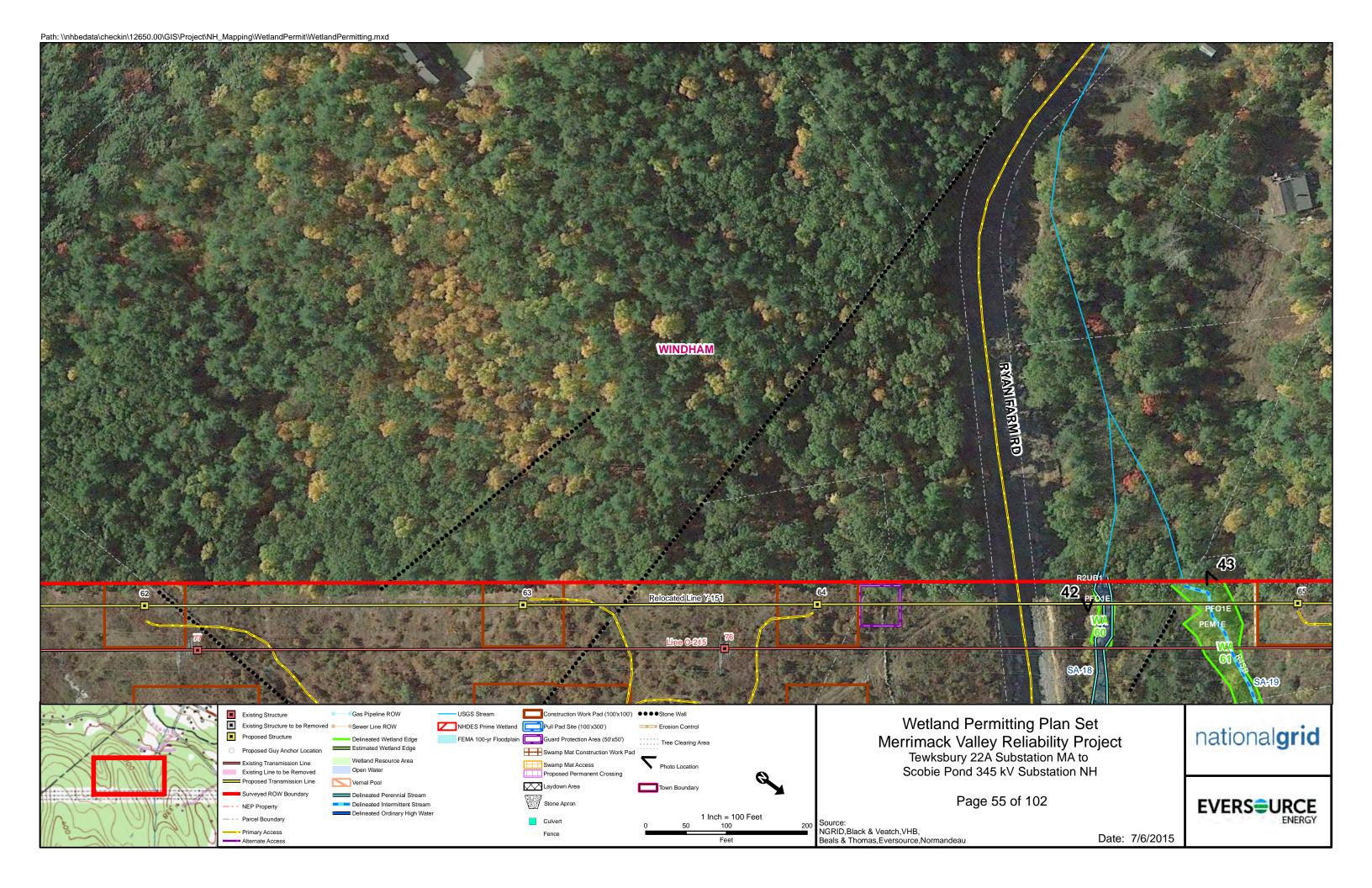


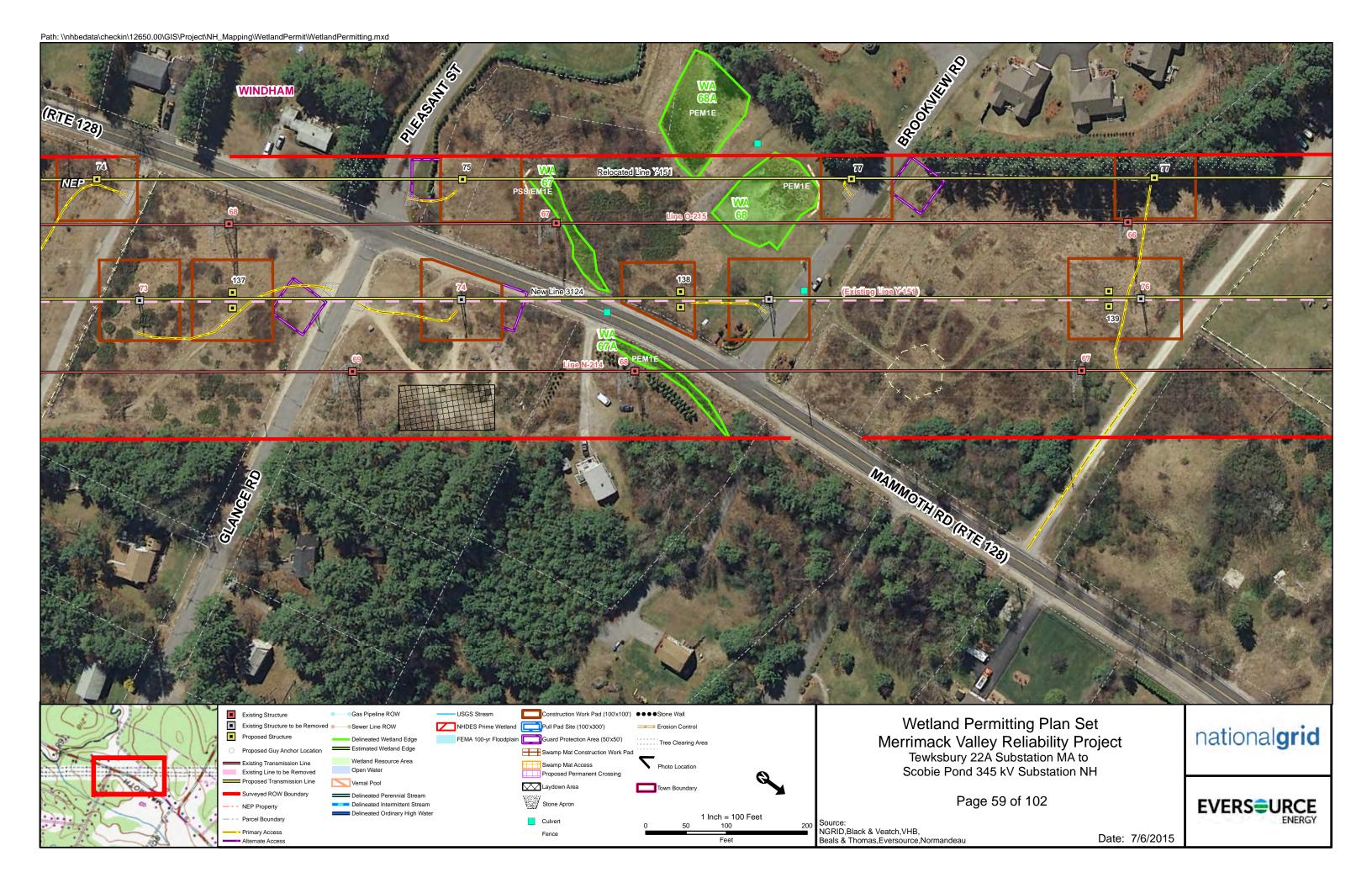


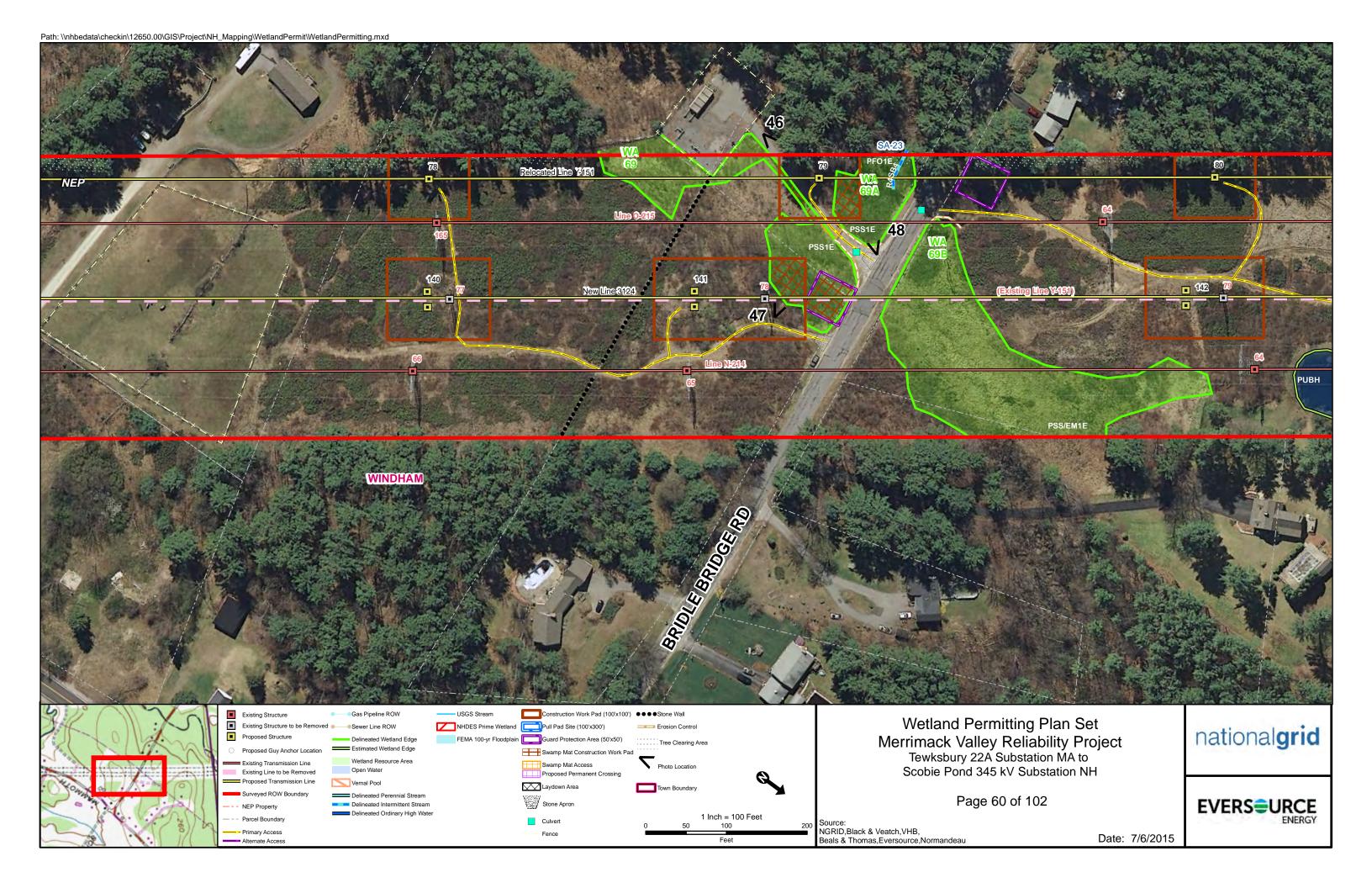


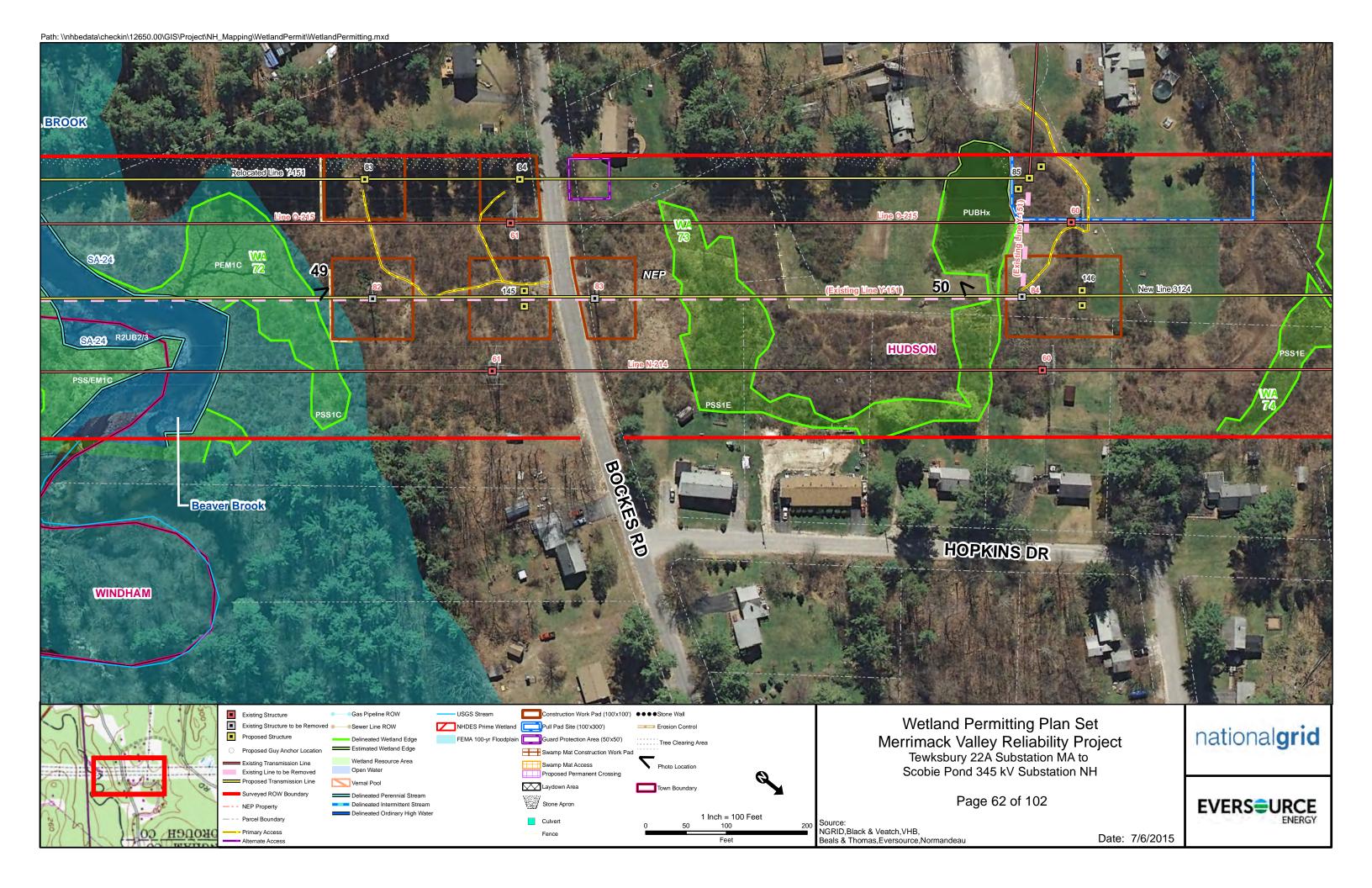


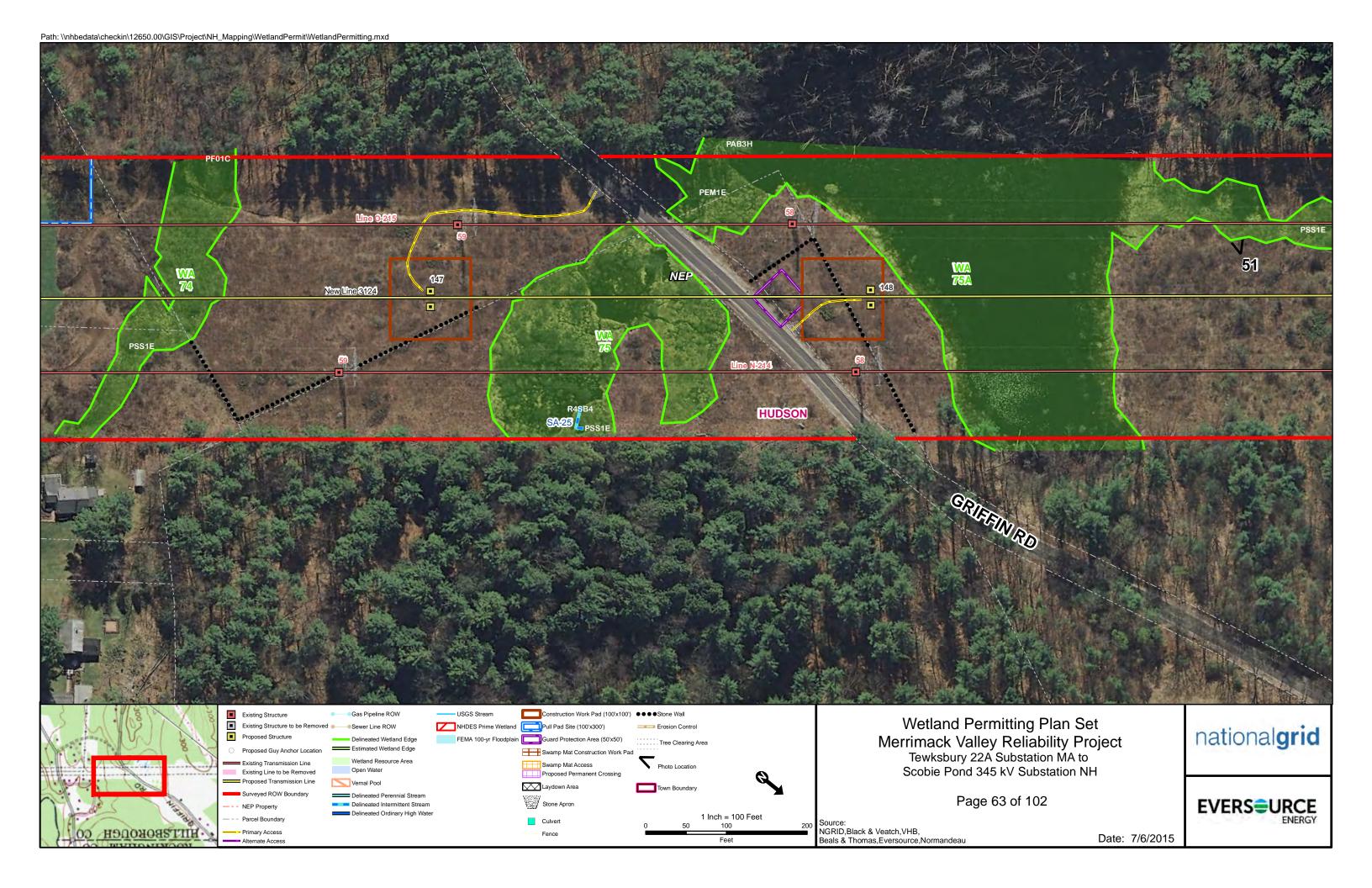


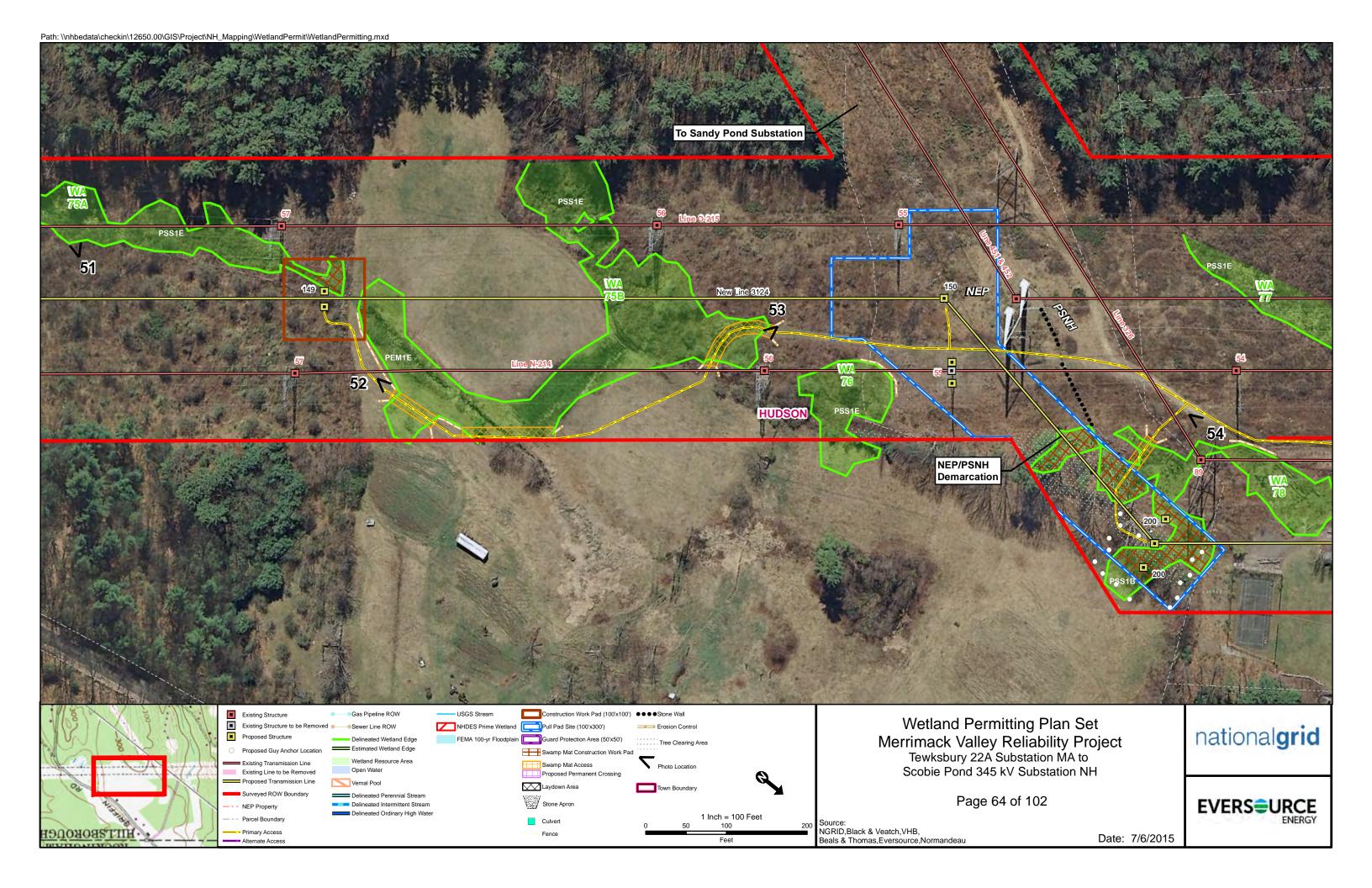


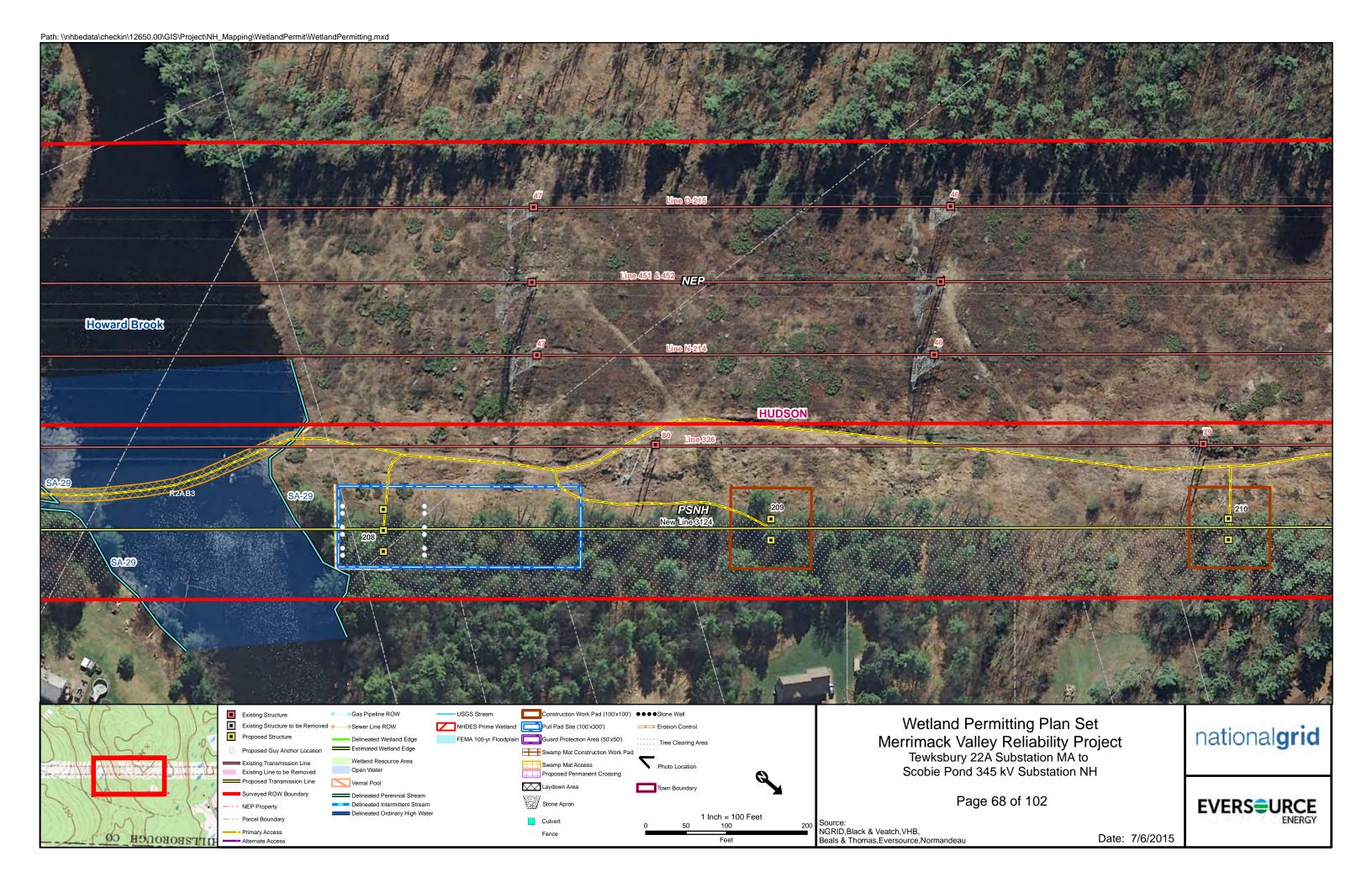


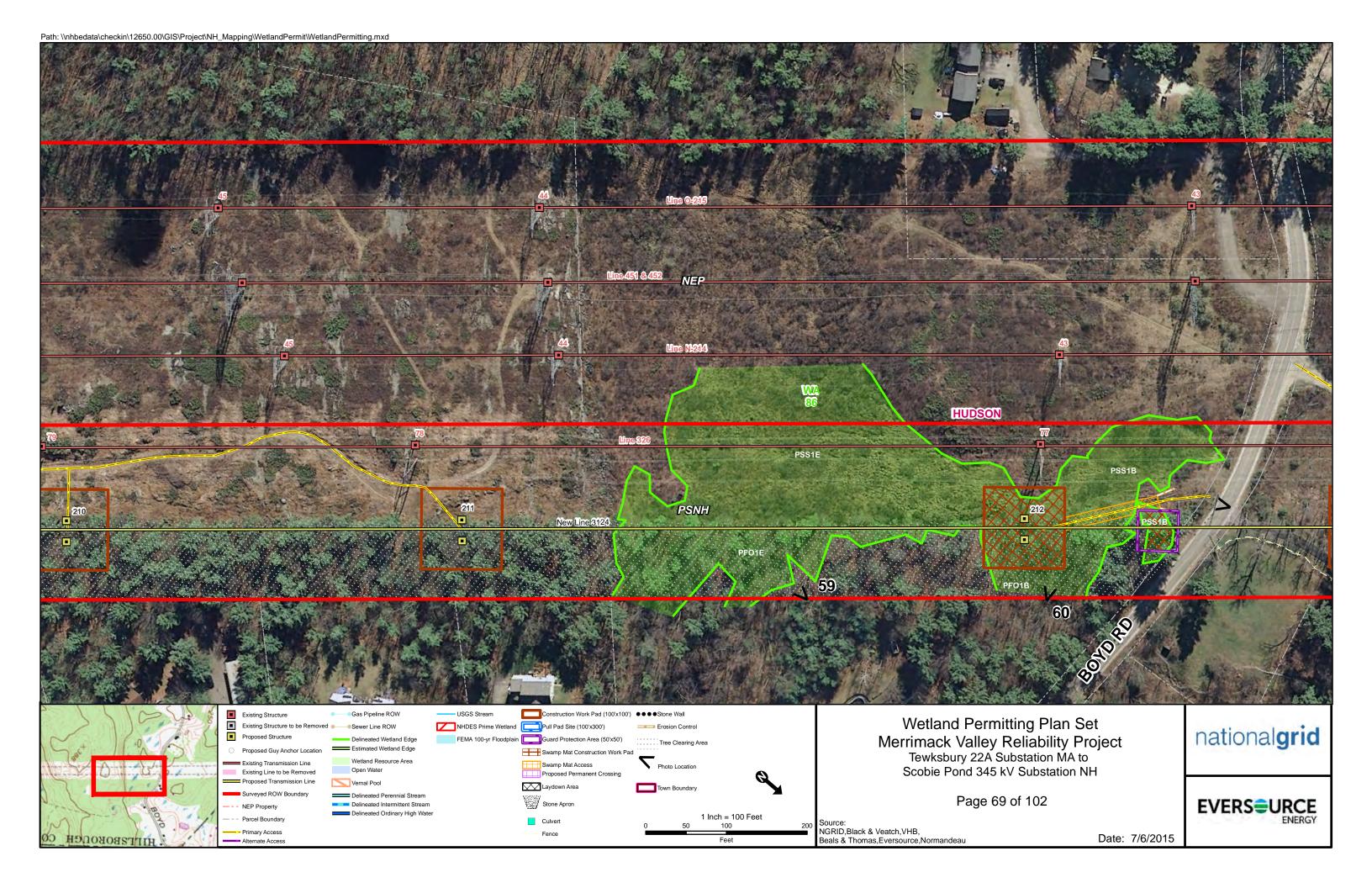


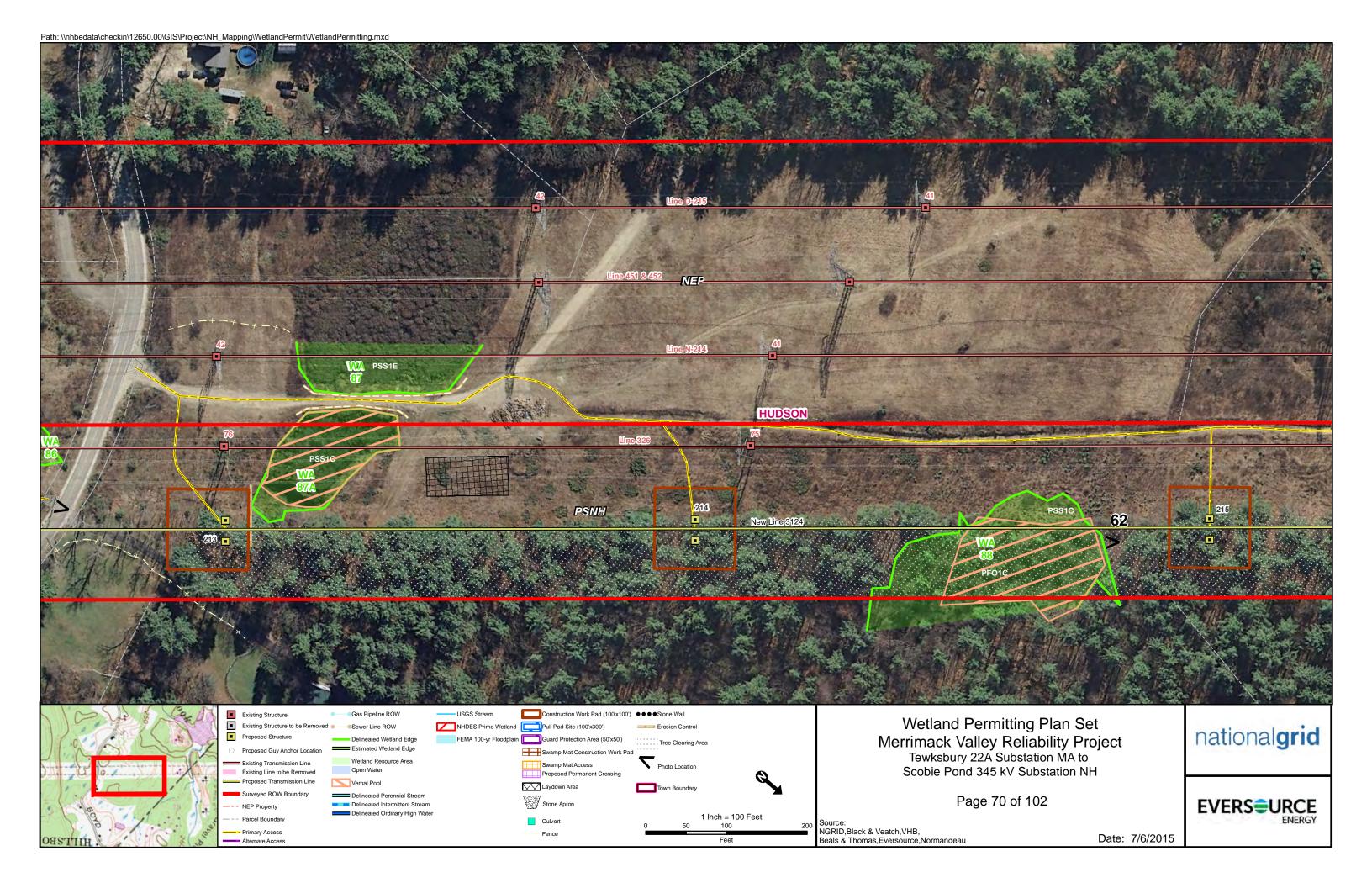


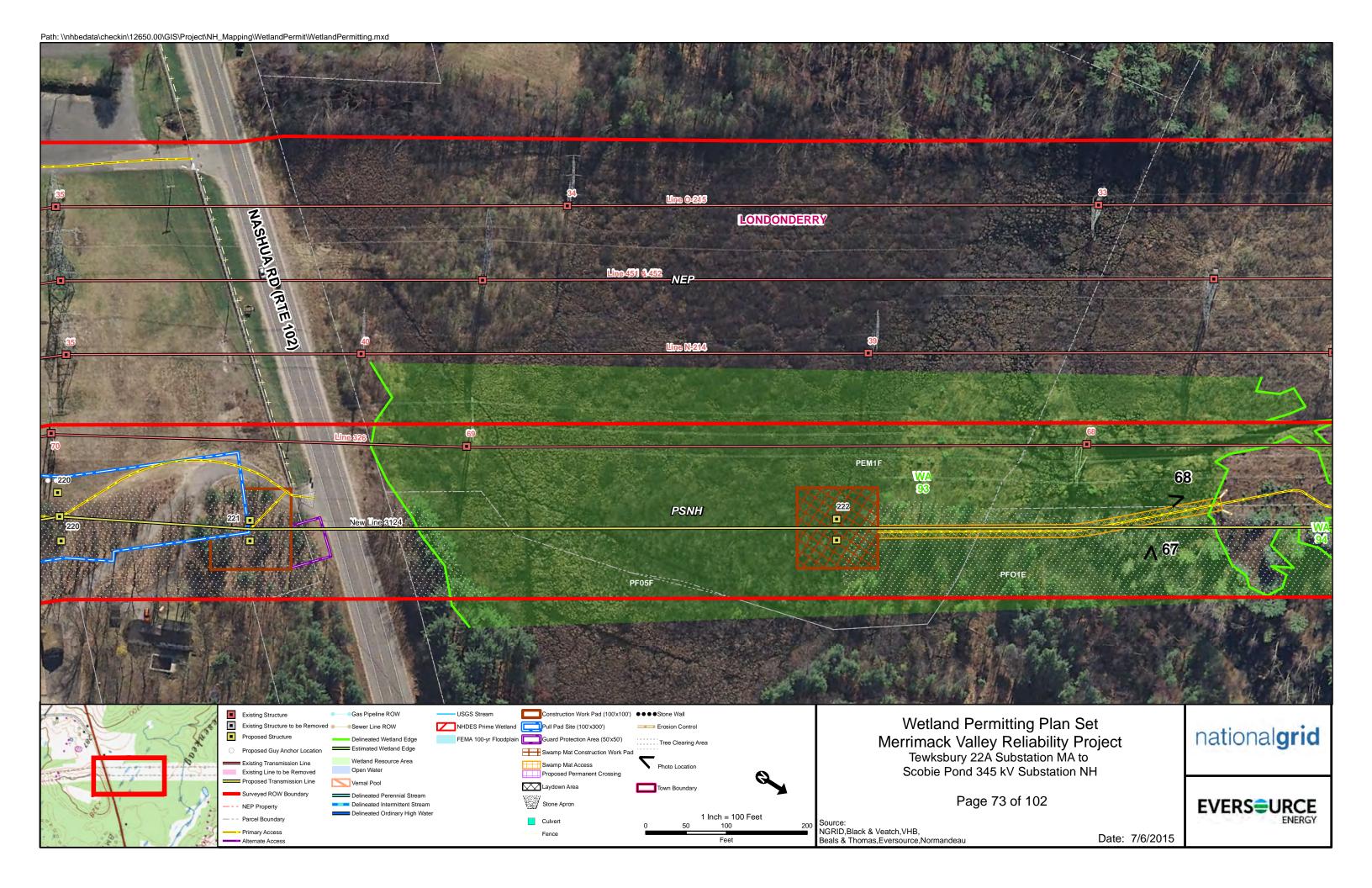


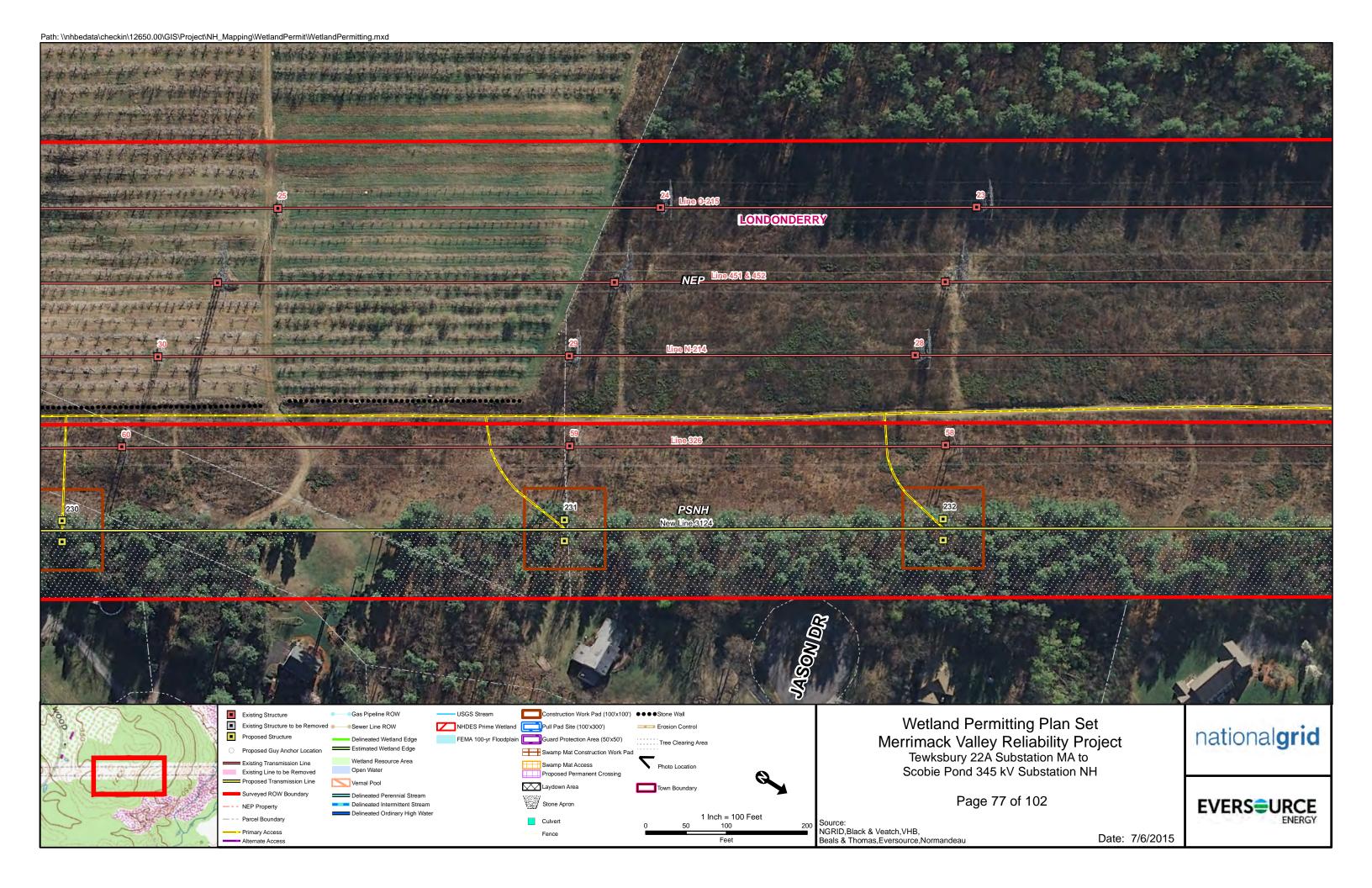


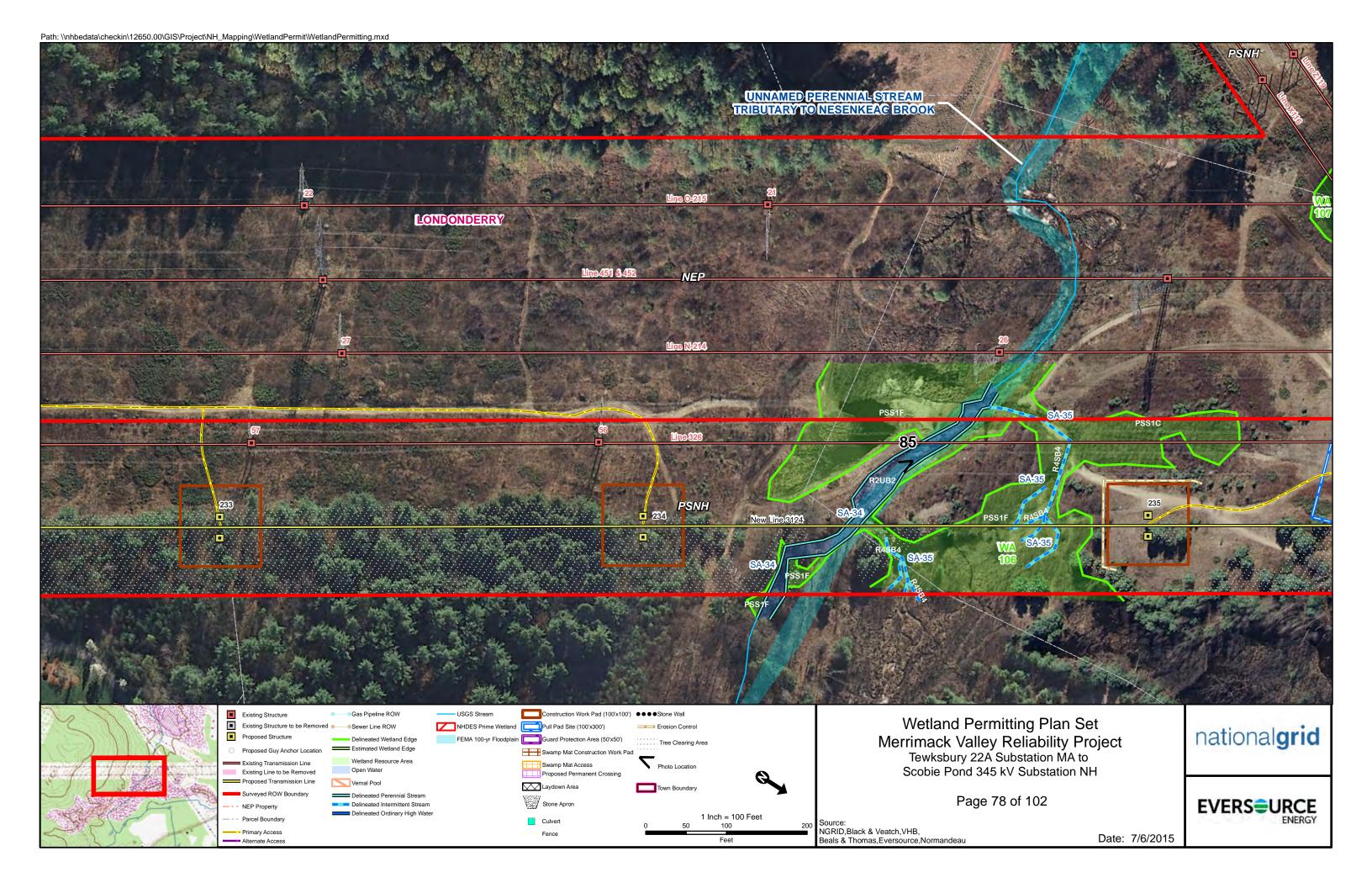


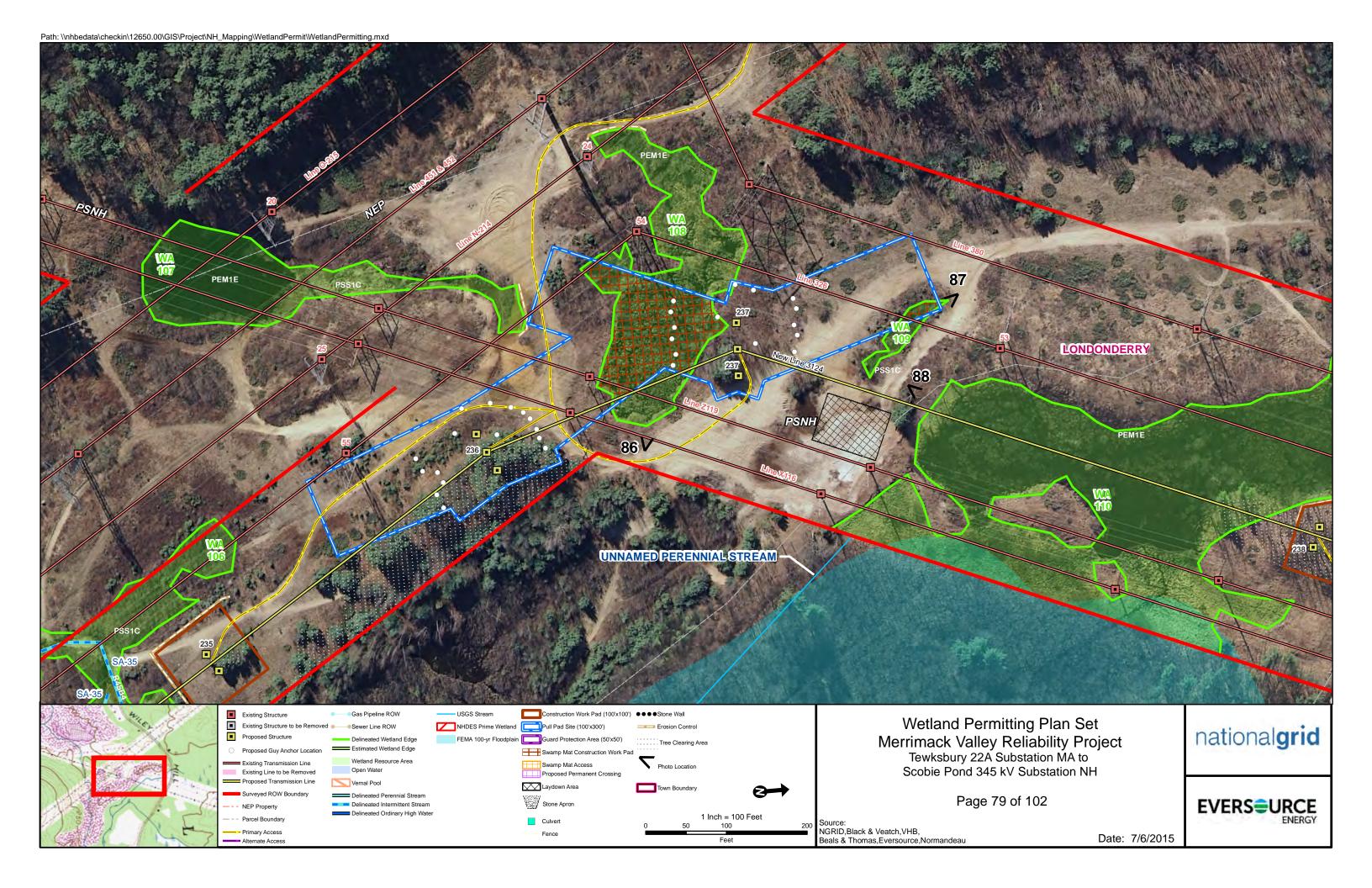


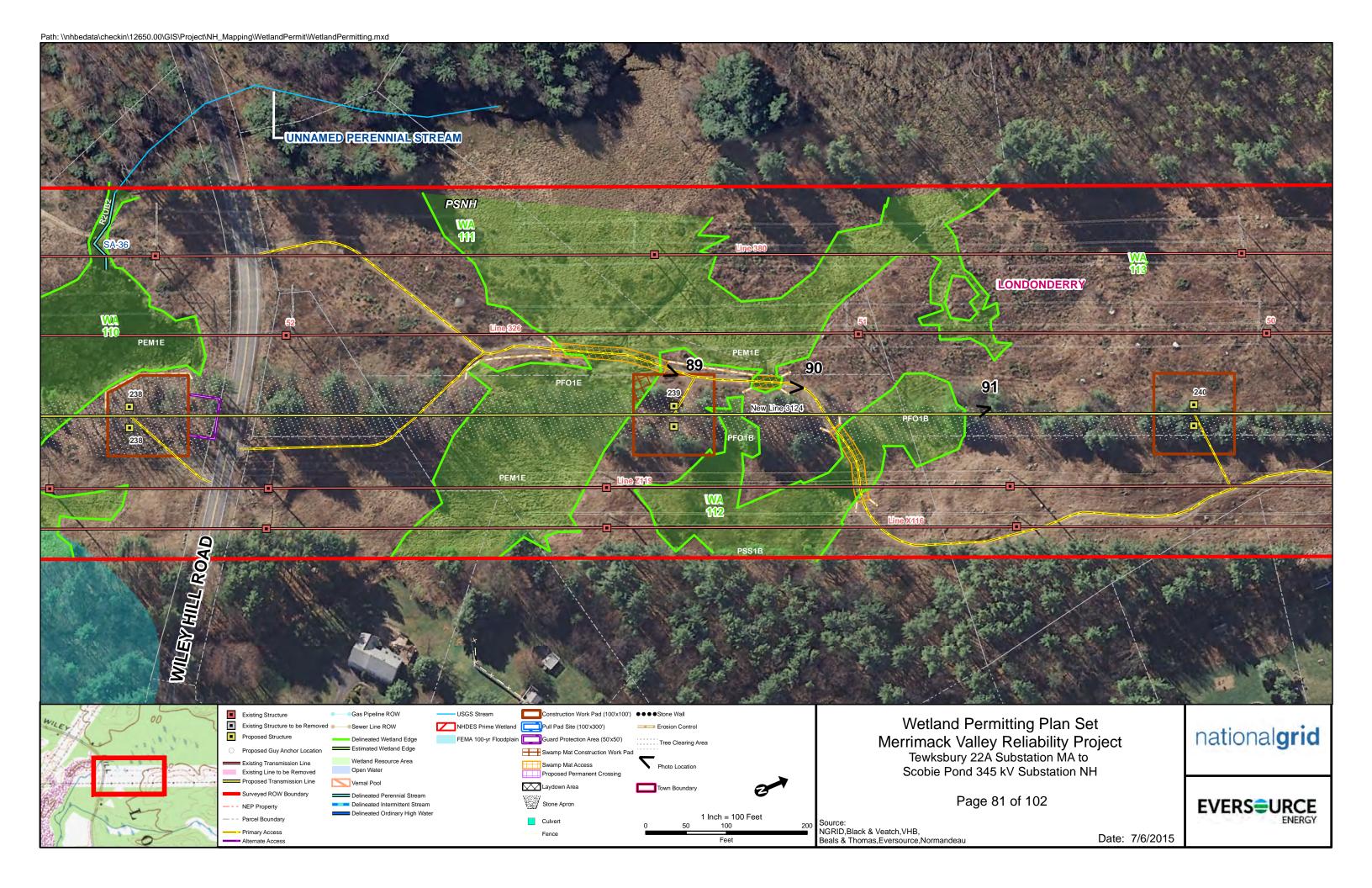


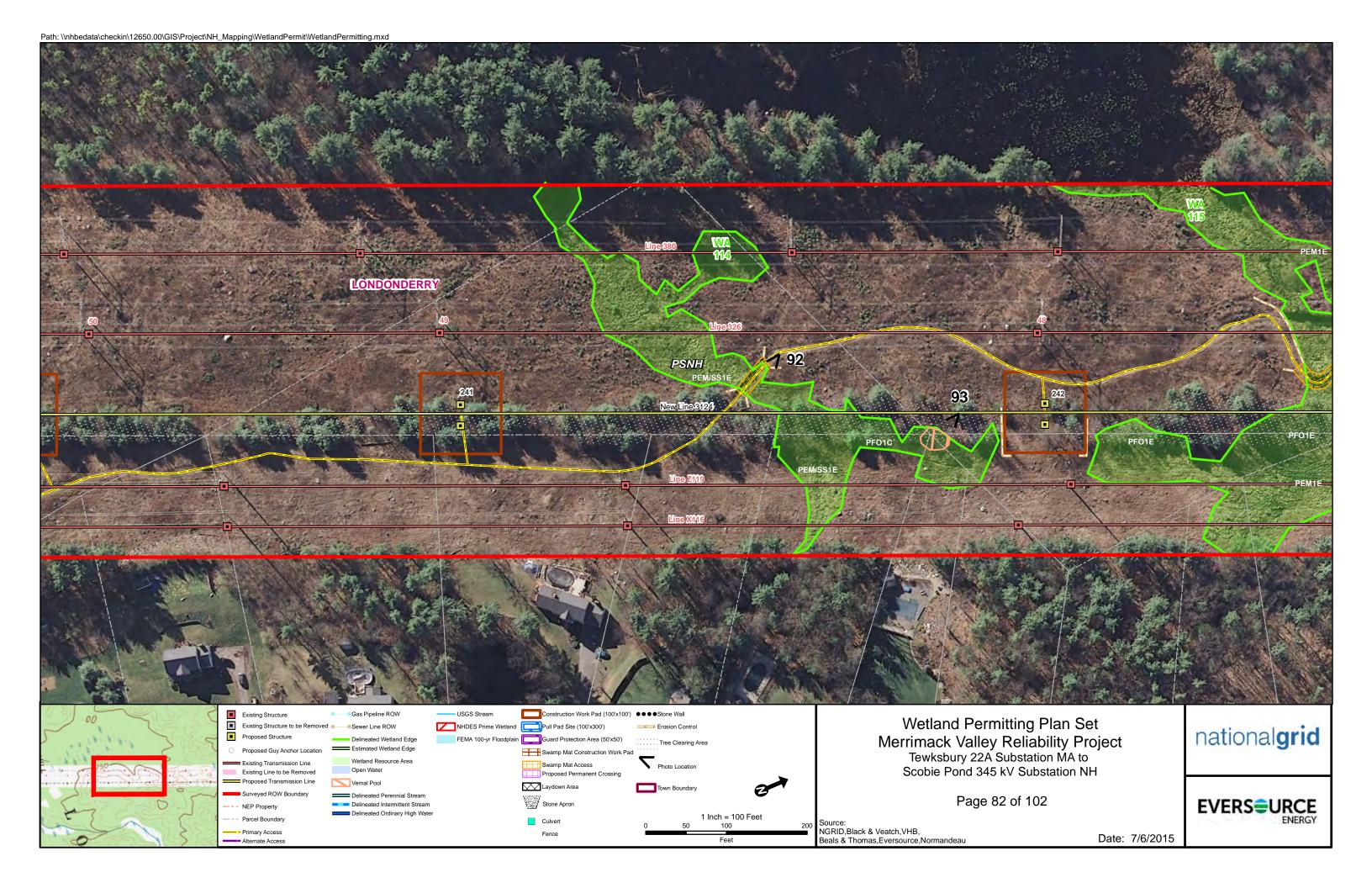


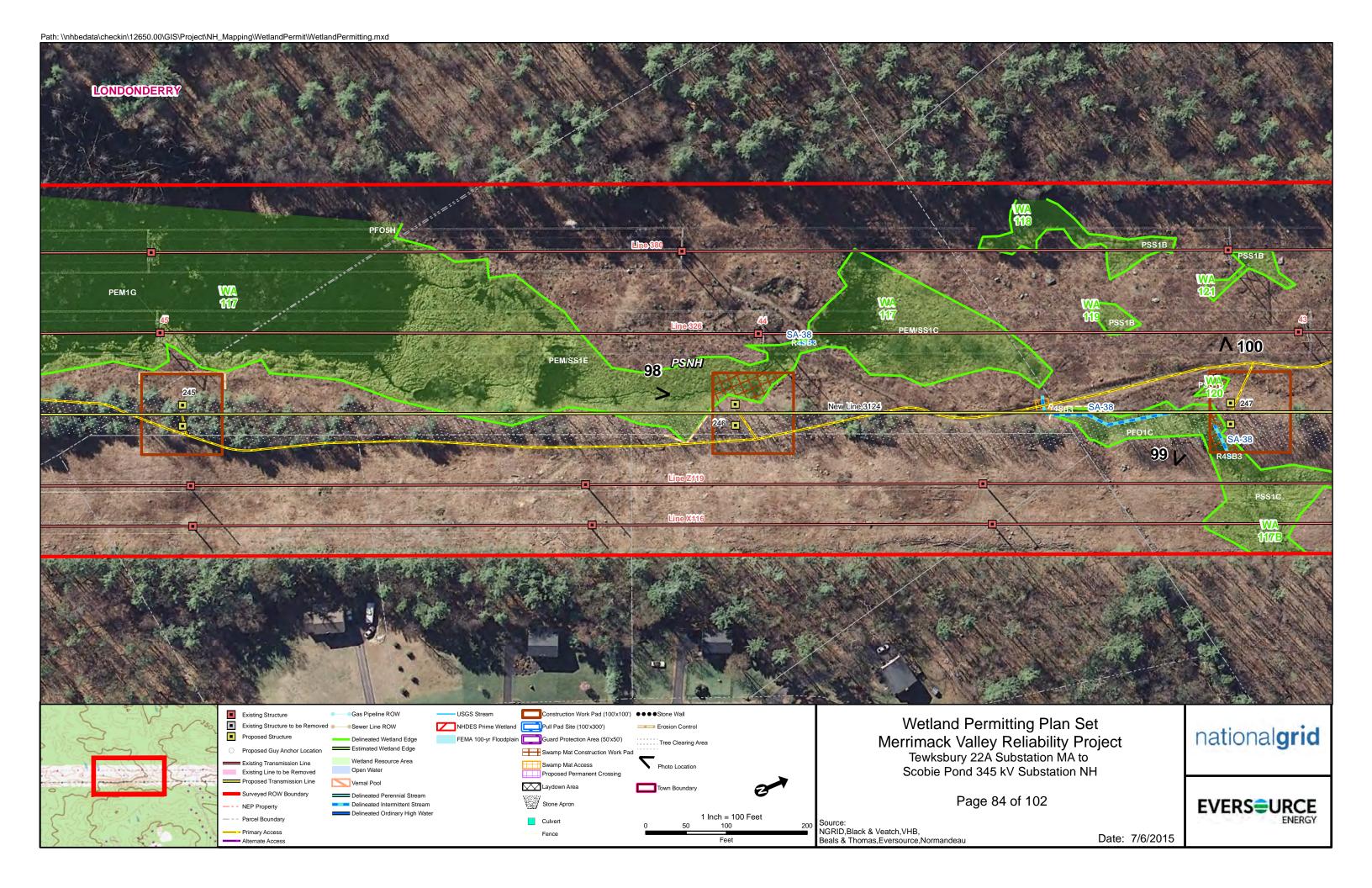


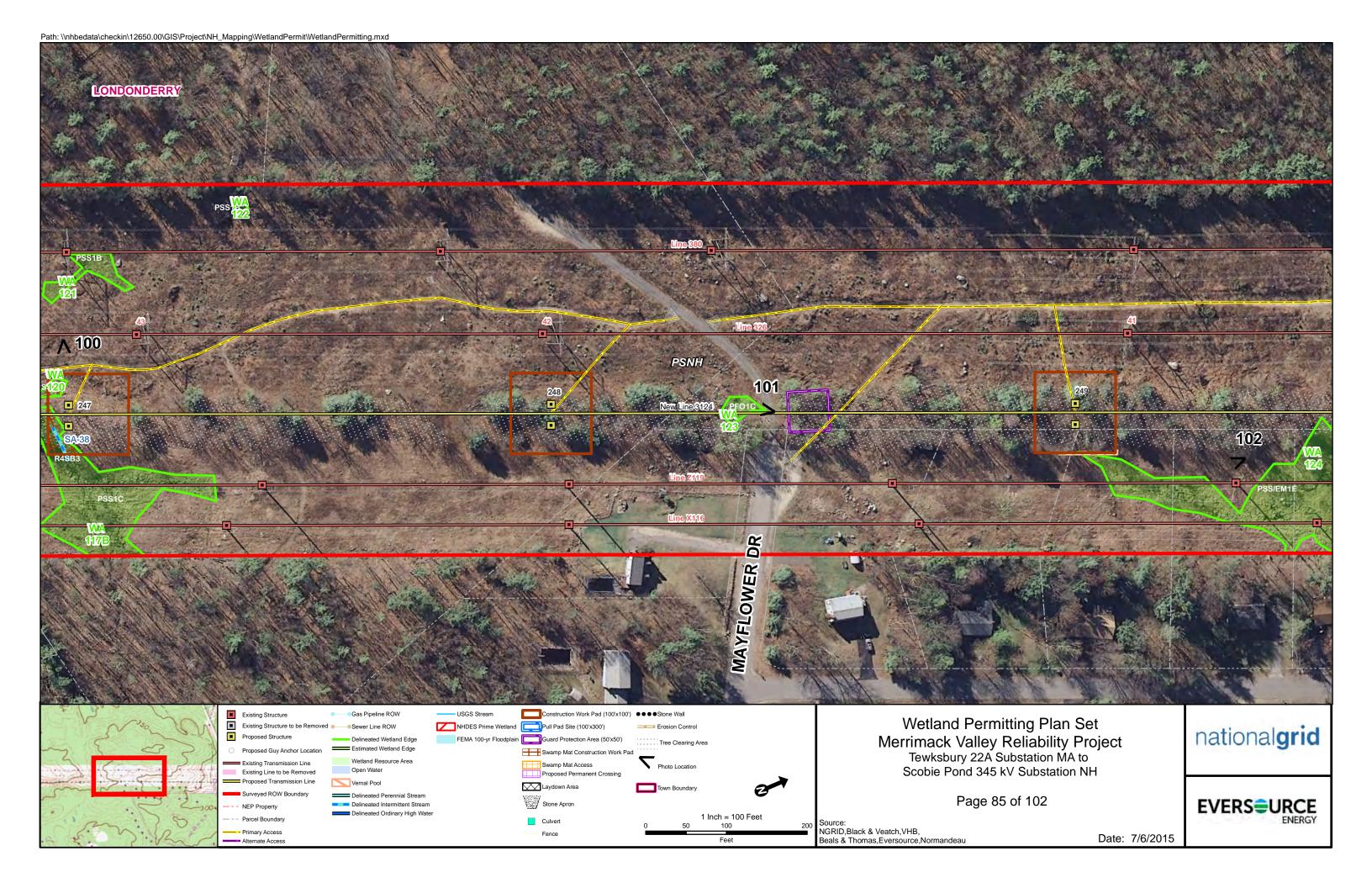


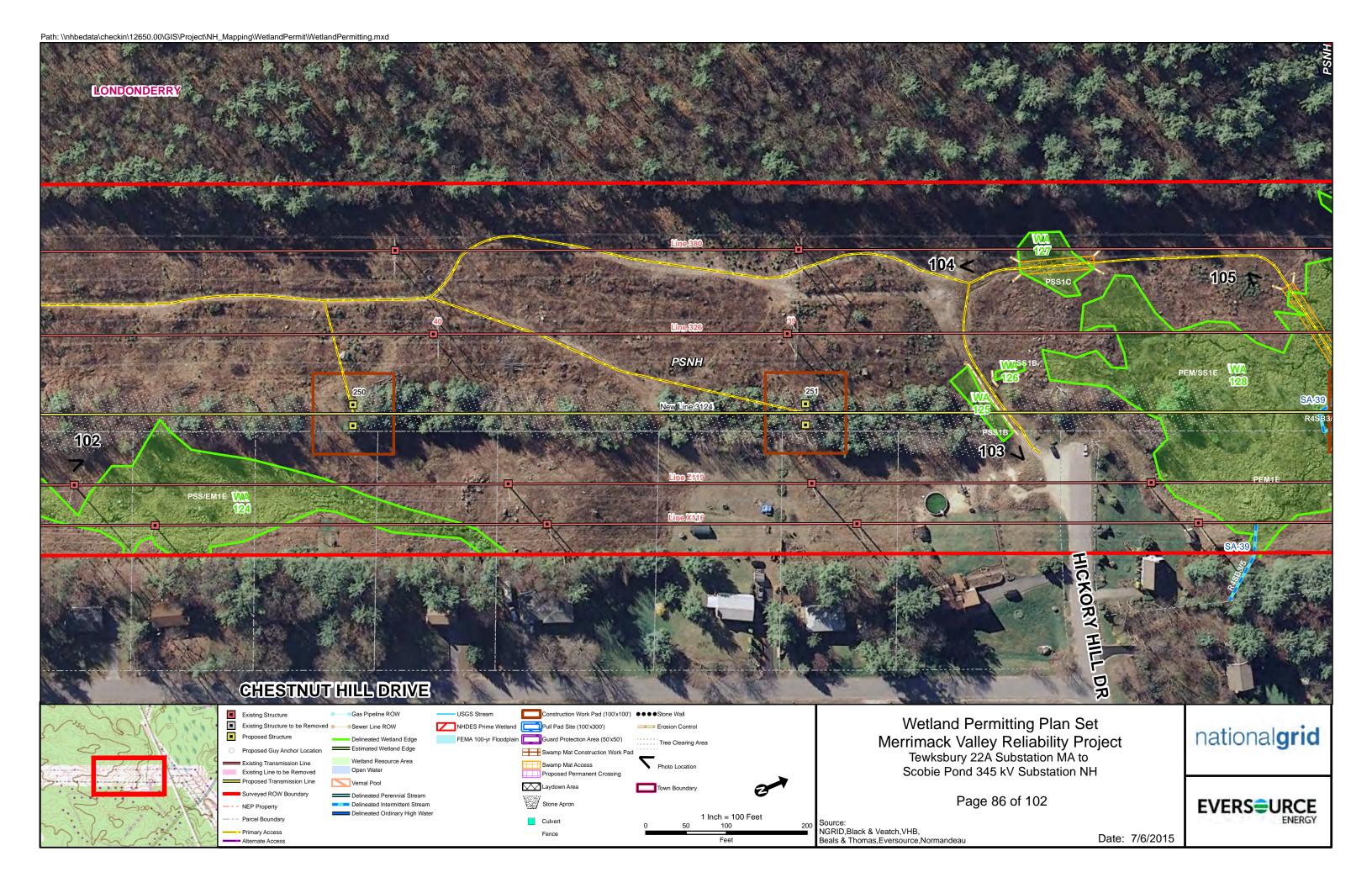


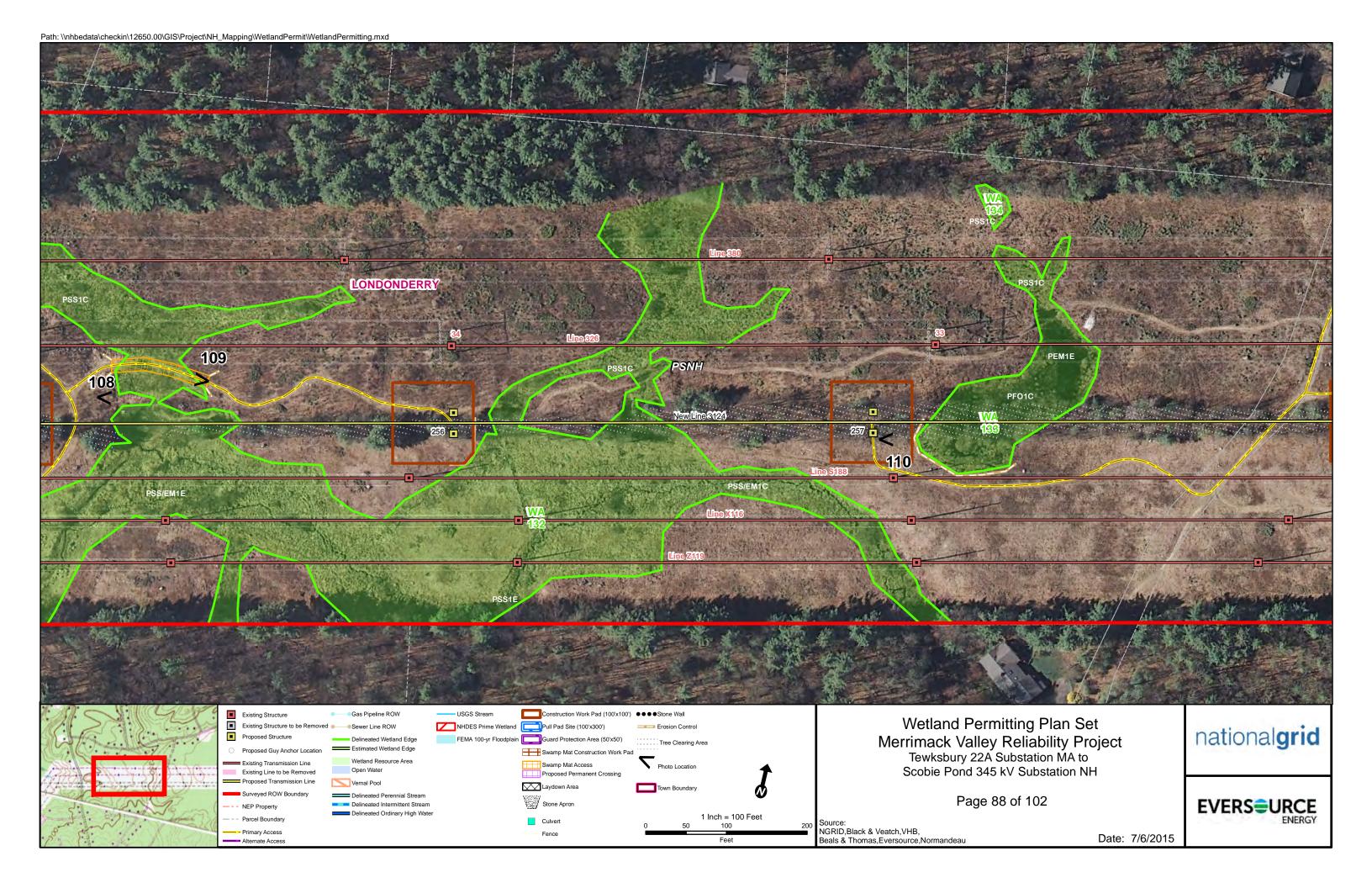


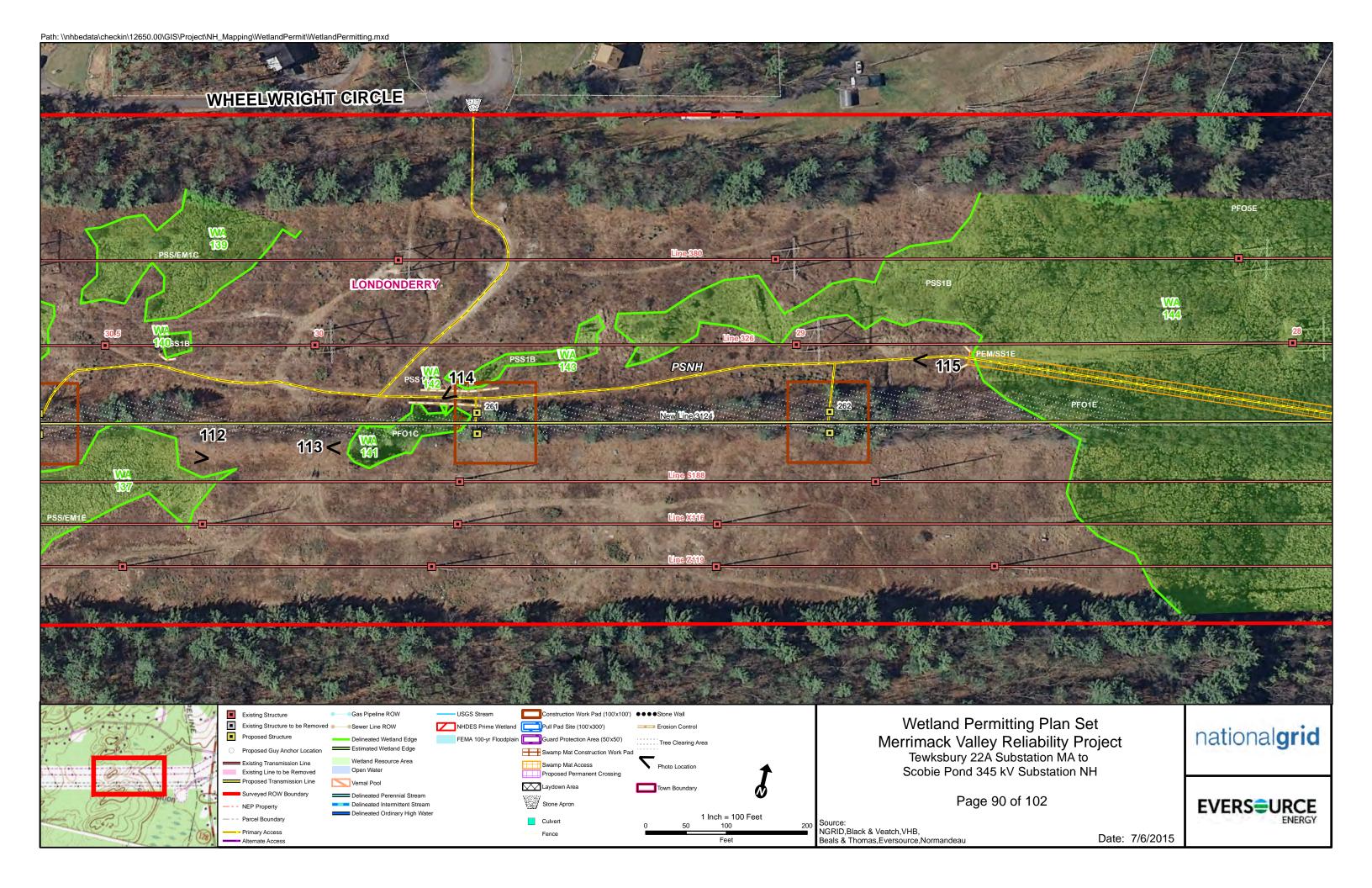


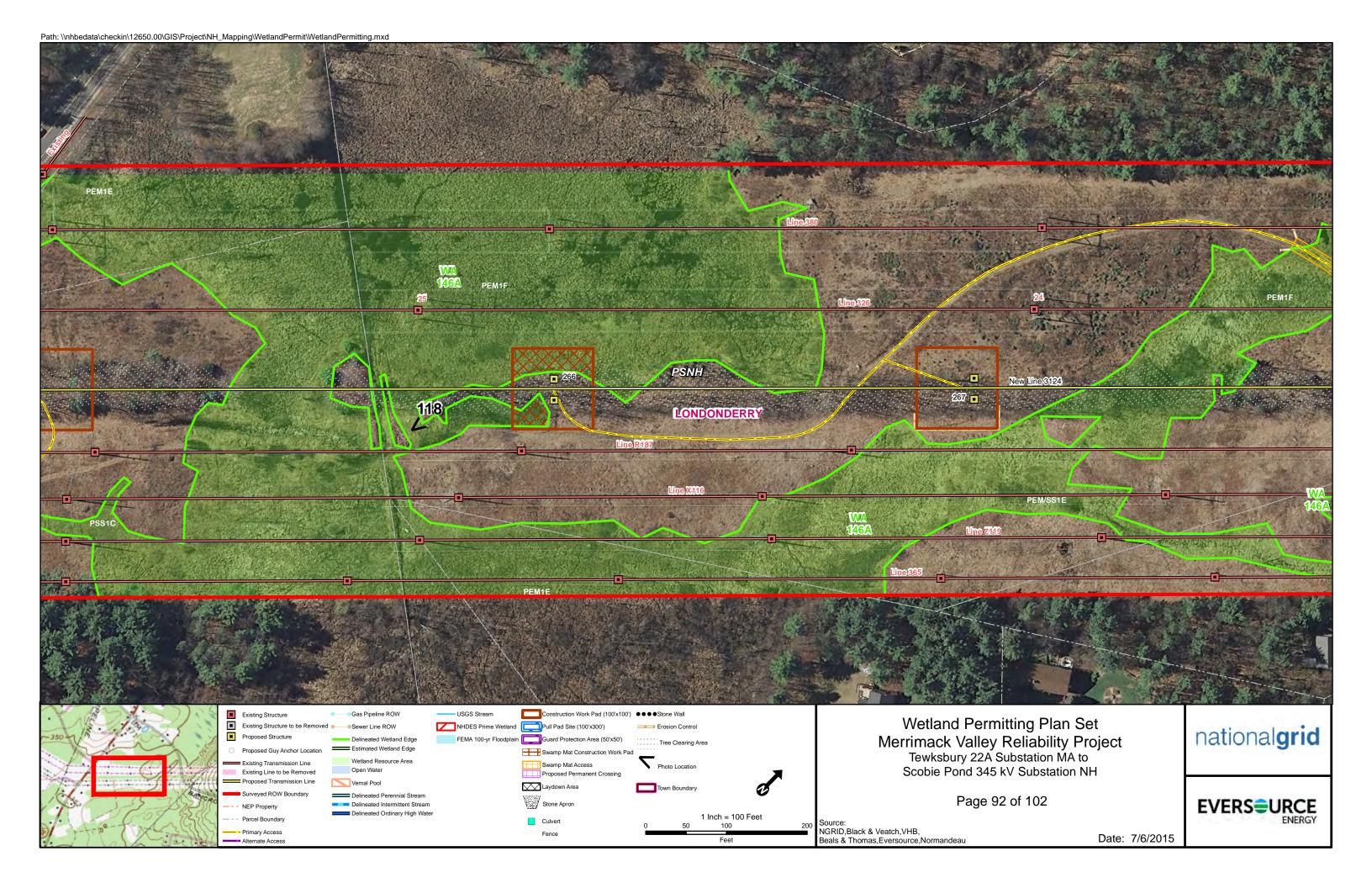


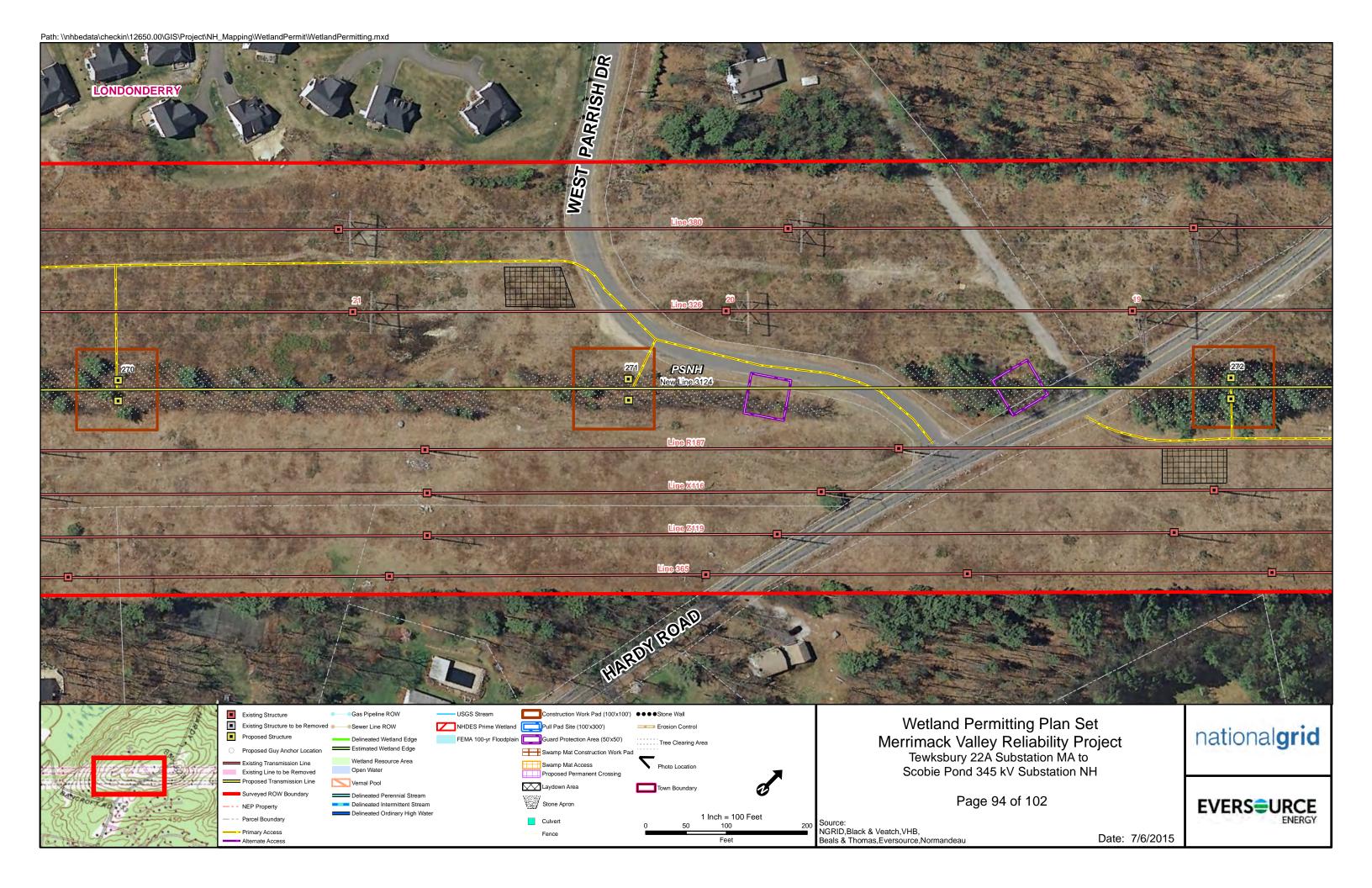


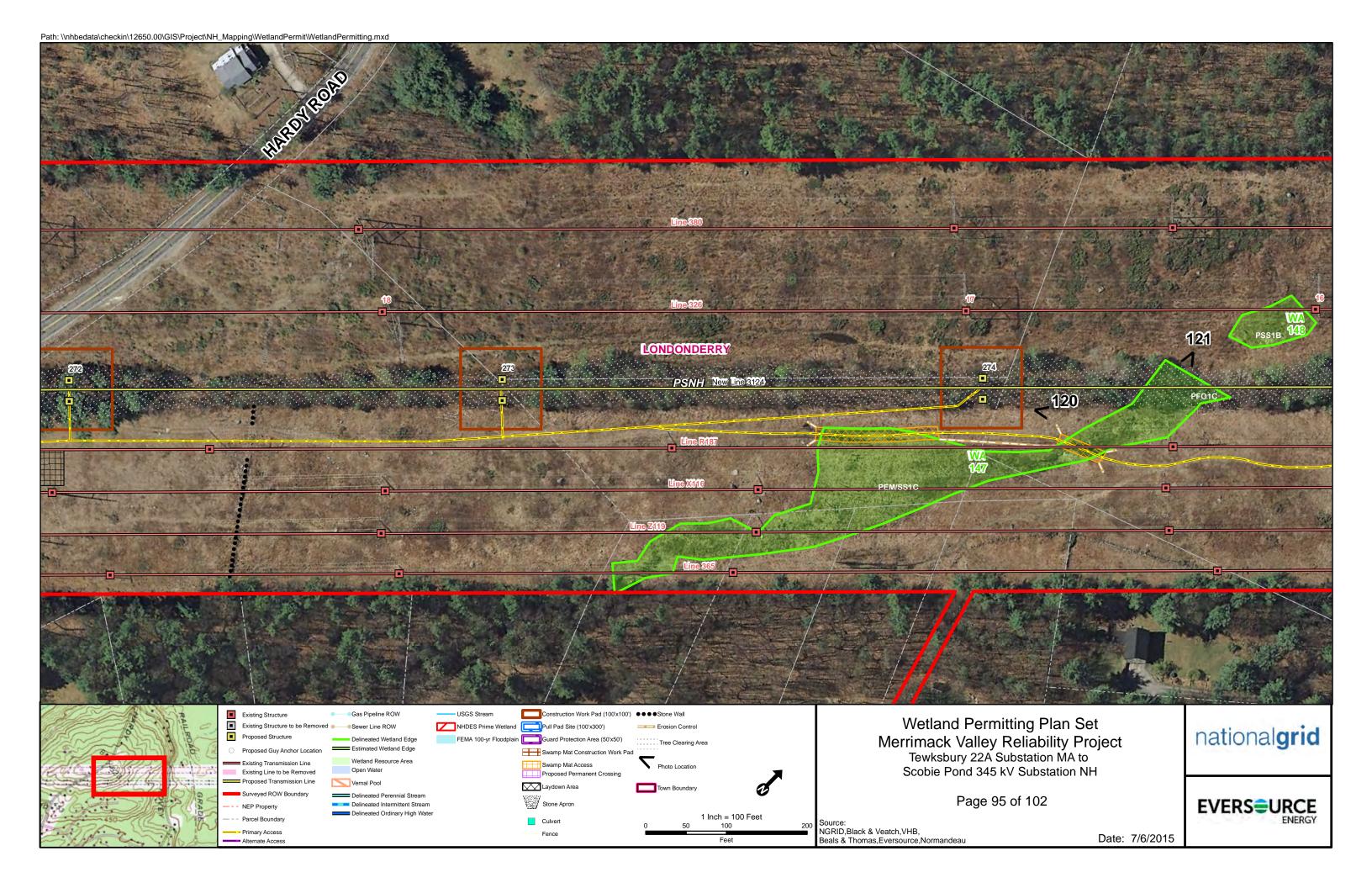


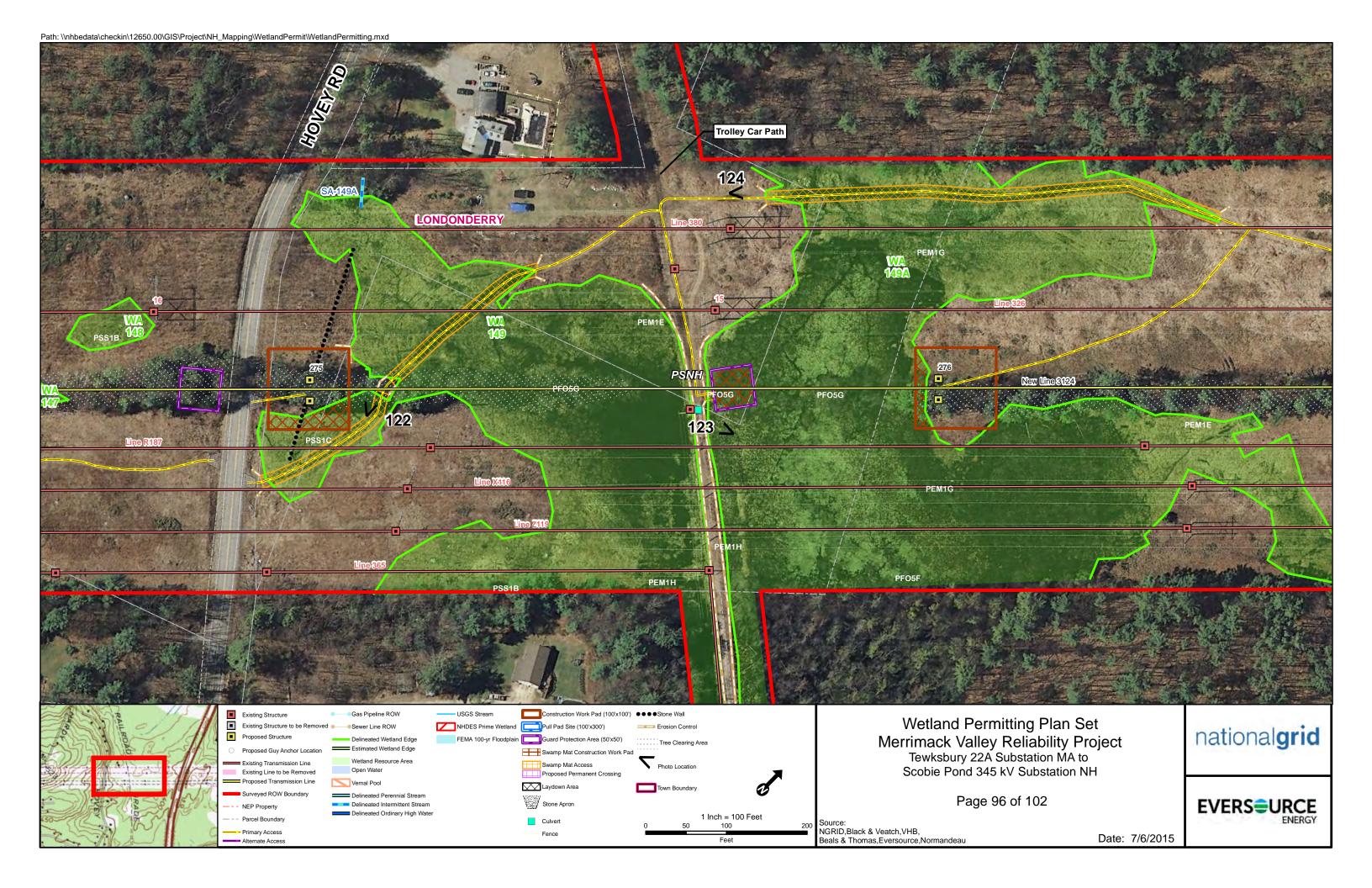


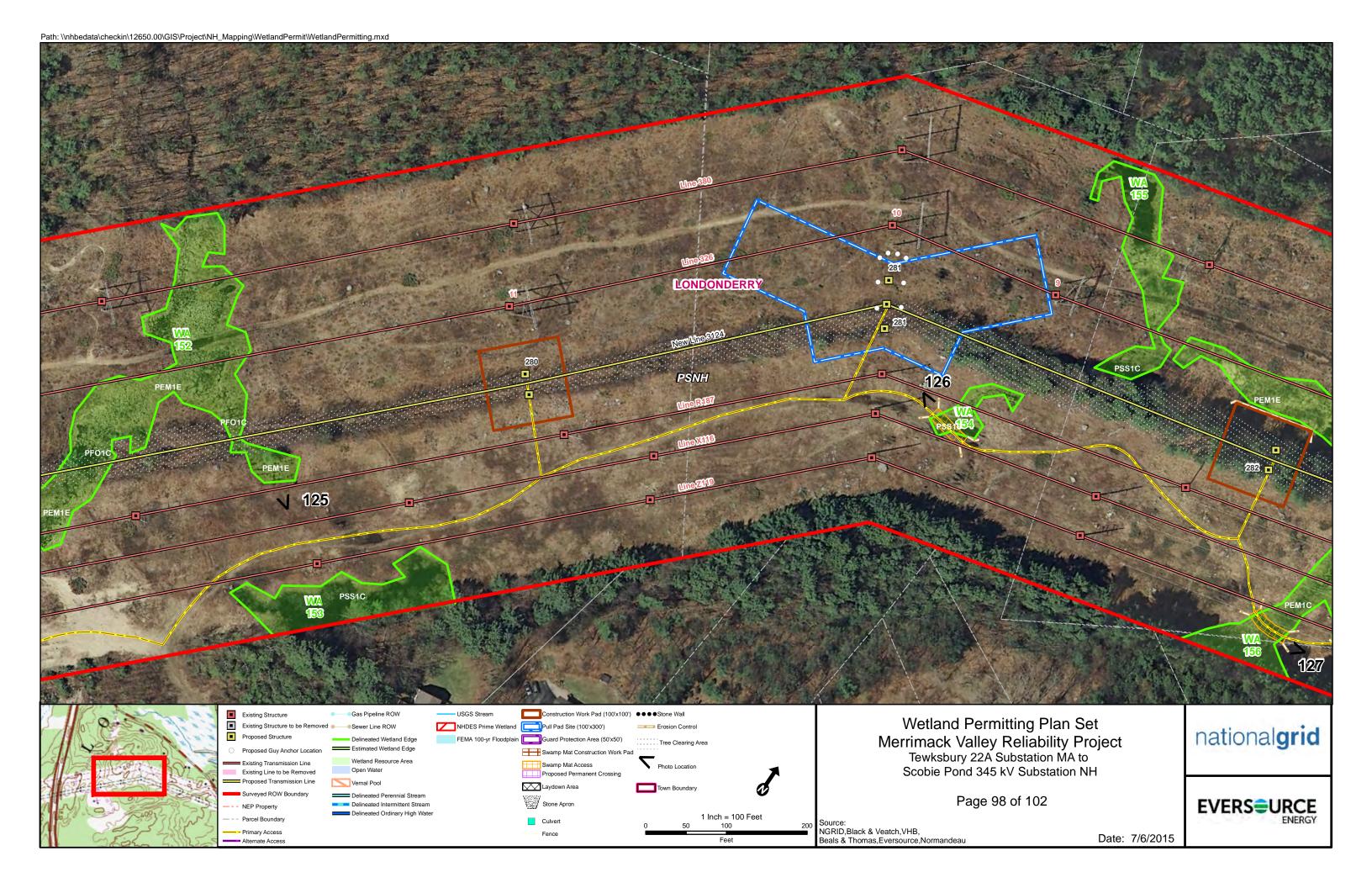


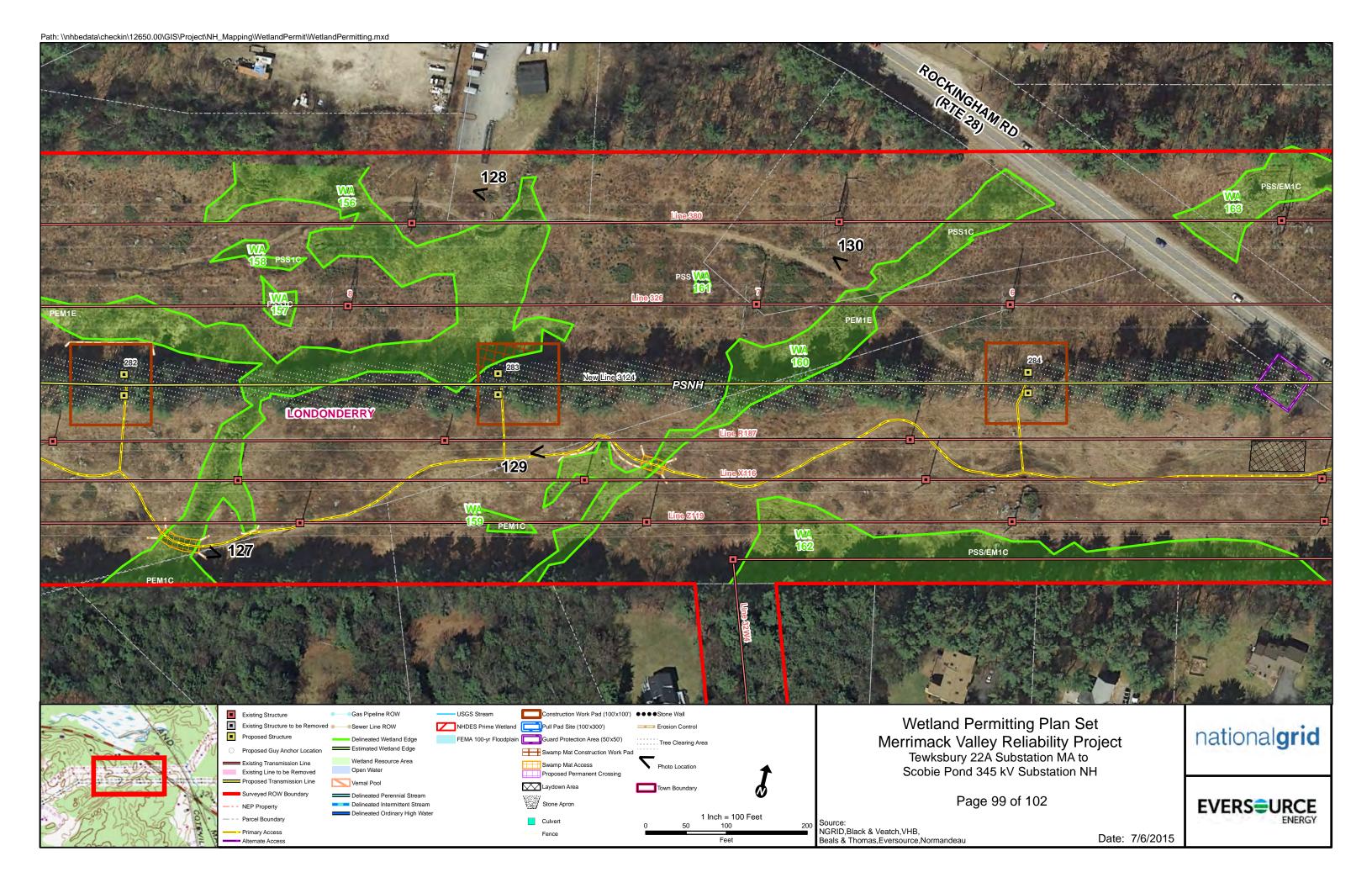


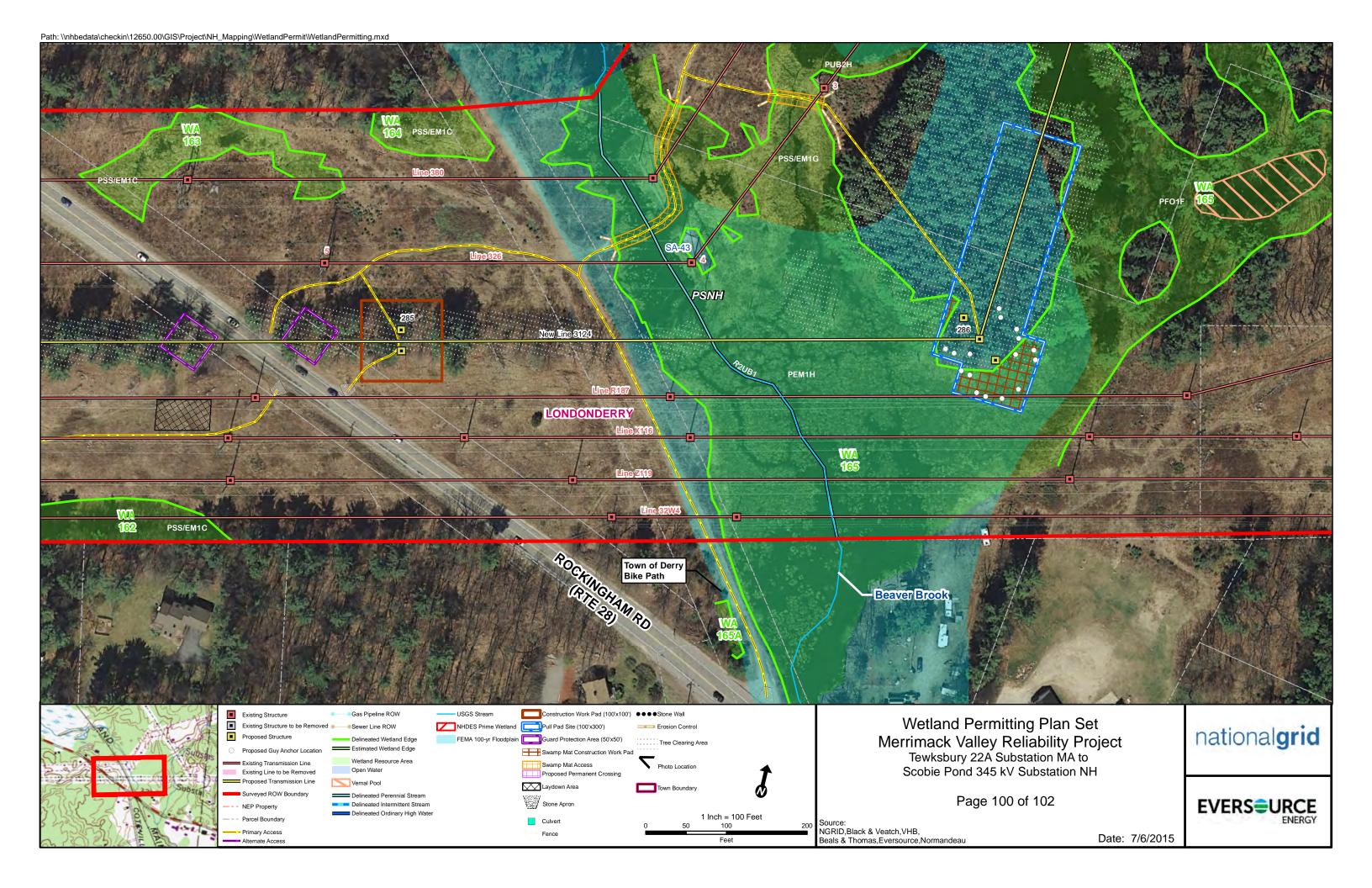


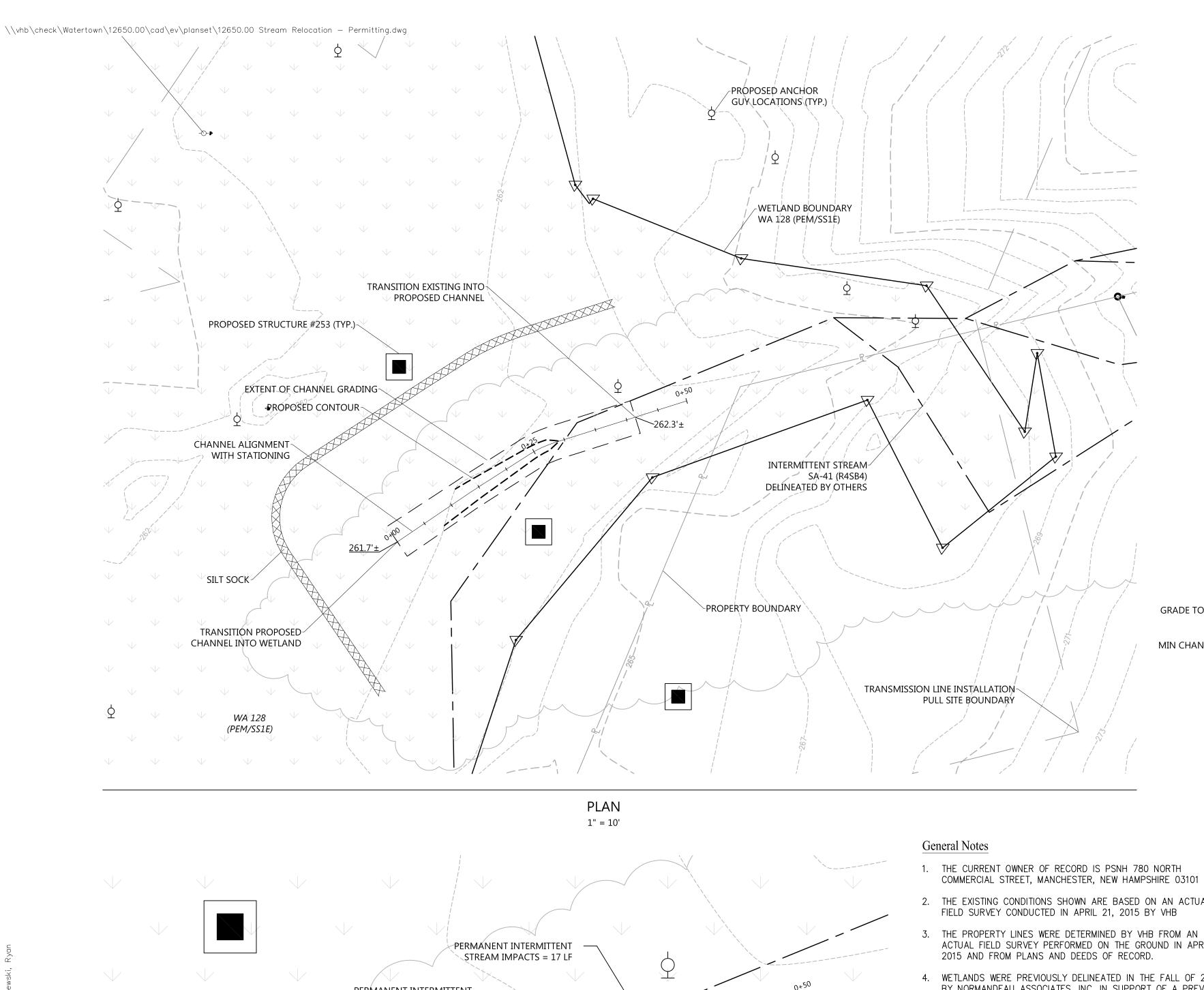












263-EXISTING GRADE-~PROPOSED CHANNEL PROFILE STATION (FT)

> PROFILE H: 1" = 10' V: 1" = 1'

WORK AREA -3.25'-2.50'0.00' 0.00 +2.50' +0.255 +3.25' +0.50 GRADE TO EXISTING 2'(H):1'(V) MIN CHANNEL DEPTH 0.25'

> CROSS SECTION DETAIL SCALE: 1" = 2'

PLACED 10' O.C. COMPOST FILLED SILTSOCK (12" TYP.) BIODEGRADABLE FLOW INSTALL SUPPLEMENTAL

2"x 2" WOOD STAKE,

1. SILTSOCK SHALL BE FILTREXX SILTSOXX, OR APPROVED EQUAL.

SILTSOCKS SHALL OVERLAP A MINIMUM OF 12 INCHES

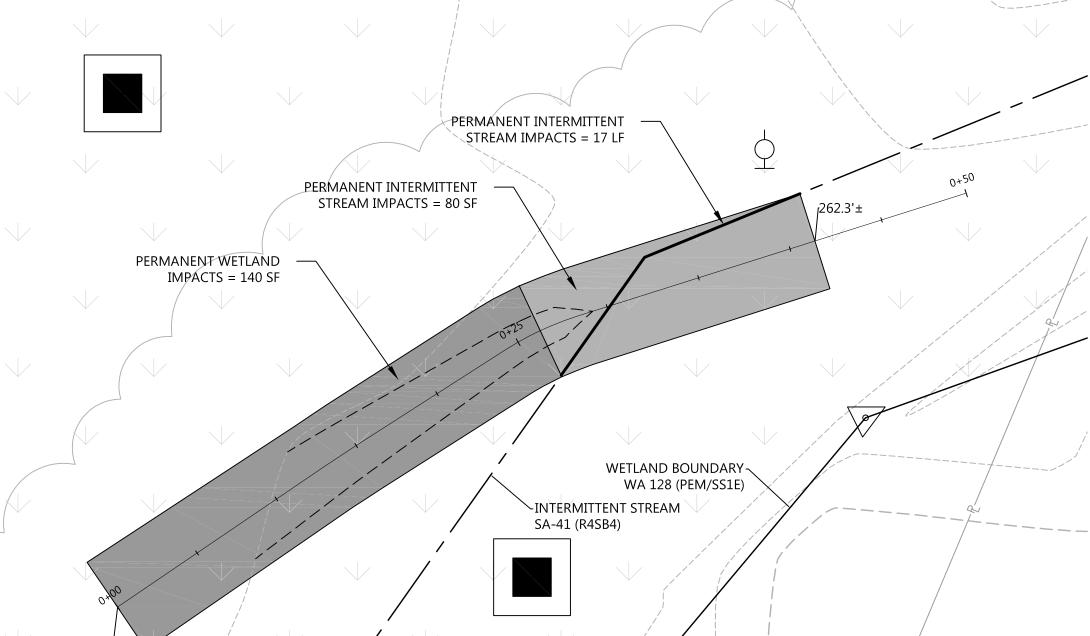
SILTSOCK SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS, AND REPAIR OR REPLACEMENT SHALL BE PERFORMED PROMPTLY AS NEEDED.

4. COMPOST MATERIAL SHALL BE DISPERSED ON SITE, AS DETERMINED BY THE ENGINEER.

5. IF NON BIODEGRADABLE NETTING IS USED THE NETTING SHALL BE COLLECTED AND DISPOSED OF OFFSITE.

Source: VHB

Siltsock - Erosion Control Barrier



WETLAND AND STREAM IMPACT PLAN

<u>261.7'±</u>

SCALE: 1" = 5'

- 2. THE EXISTING CONDITIONS SHOWN ARE BASED ON AN ACTUAL
- ACTUAL FIELD SURVEY PERFORMED ON THE GROUND IN APRIL
- WETLANDS WERE PREVIOUSLY DELINEATED IN THE FALL OF 2012 BY NORMANDEAU ASSOCIATES, INC. IN SUPPORT OF A PREVIOUS PSNH PROJECT. DURING SEPTEMBER AND OCTOBER 2014, AND 4. CONTRACTOR SHALL BE FULLY RESPONSIBLE TO CONTROL APRIL 2015, VHB WETLAND SCIENTISTS REVIEWED AND CONFIRMED PREVIOUSLY DELINEATED WETLAND AREAS AND EXTENDED BOUNDARIES AS NEEDED TO INCLUDE THE ENTIRE PROJECT AREA

Construction Sequence

- 1. COMPLETE INSTALLATION OF PROPOSED TRANSMISSION STRUCTURE #253 AND ASSOCIATED DISTRIBUTION LINE WORK AT THE SITE.
- MAINTAIN EXISTING EROSION CONTROL BARRIERS UNTIL COMPLETION OF STREAM GRADING AND ESTABLISHMENT OF PERMANENT GROUND COVER.
- REMOVE TIMBER MATS WITHIN THE PULL SITE EXCEPT THOSE REQUIRED TO COMPETE CHANNEL GRADING.
- 4. GRADE CHANNEL AS SHOWN ON PLANS.
- 5. RESTORE AND STABILIZE DISTURBED AREAS.
- 6. REMOVE TEMPORARY EROSION CONTROL MEASURES UPON COMPLETION OF CONSTRUCTION AND ESTABLISHMENT OF PERMANENT GROUND COVER.

Erosion Control

- 1. PRIOR TO STARTING ANY OTHER WORK ON THE SITE, THE CONTRACTOR SHALL NOTIFY APPROPRIATE AGENCIES AND SHALL INSTALL EROSION CONTROL MEASURES AS SHOWN ON THE PLANS AND AS IDENTIFIED IN FEDERAL, STATE, AND LOCAL APPROVAL 11. CONTRACTOR SHALL PROVIDE NECESSARY EROSION CONTROL DOCUMENTS PERTAINING TO THIS PROJECT.
- 2. CONSTRUCTION ACTIVITIES SHALL BE IN CONFORMANCE WITH THE

<u>NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3 - EROSION</u> AND SEDIMENT CONTROLS DURING CONSTRUCTION, DECEMBER 2008, AND THE BEST MANAGEMENT PRACTICES MANUAL FOR UTILITY MAINTENANCE IN AND ADJACENT TO WETLANDS AND WATERBODIES IN NEW HAMPSHIRE, PUBLISHED BY THE NH DEPT

- CONTRACTOR SHALL INSPECT AND MAINTAIN EROSION CONTROL MEASURES, AND REMOVE SEDIMENT THEREFROM ON A WEEKLY BASIS AND WITHIN TWELVE HOURS AFTER EACH STORM EVENT (0.5" OF RAINFALL OR GREATER) AND DISPOSE OF SEDIMENTS IN AN UPLAND AREA SUCH THAT THEY DO NOT ENCUMBER OTHER DRAINAGE STRUCTURES AND PROTECTED AREAS.
- CONSTRUCTION SUCH THAT SEDIMENTATION SHALL NOT AFFECT REGULATORY PROTECTED AREAS, WHETHER SUCH SEDIMENTATION IS CAUSED BY WATER, WIND, OR DIRECT DEPOSIT.
- 5. CONTRACTOR SHALL PERFORM CONSTRUCTION SEQUENCING SUCH THAT EARTH MATERIALS ARE EXPOSED FOR A MINIMUM OF TIME BEFORE THEY ARE COVERED, SEEDED, OR OTHERWISE STABILIZED 14. SOIL GENERATED AS PART OF POLE INSTALLATION SHALL BE TO PREVENT EROSION.
- UPON COMPLETION OF CONSTRUCTION AND ESTABLISHMENT OF PERMANENT GROUND COVER, CONTRACTOR SHALL REMOVE AND 15. ALL CUT AND FILL SLOPES SHALL BE LOAMED AND SEEDED DISPOSE OF EROSION CONTROL MEASURES AND CLEAN SEDIMENT AND DEBRIS.
- AREAS REMAINING UNSTABILIZED FOR A PERIOD OF MORE THAN 30 DAYS SHALL BE TEMPORARILY SEEDED AND MULCHED. STRAW MULCH SHALL BE APPLIED AT A MINIMUM RATE OF 1-1/2 TONS/ACRE.
- 8. PERMANENT SEEDING SHALL OCCUR BETWEEN APRIL 1 AND JUNE , AND/OR BETWEEN AUGUST 15 AND OCTOBER 15. ALL SEEDING FROM SEPTEMBER 15 SHALL BE STRAW MULCHED.
- 9. DUST SHALL BE CONTROLLED THROUGH THE USE OF WATER.
- 10. SOILS TO BE STOCKPILED FOR A PERIOD OF MORE THAN 30 DAYS SHALL BE TEMPORARILY SEEDED AND MULCHED. CONTRACTOR SHALL INSTALL SILT FENCING ALONG DOWNHILL SIDE OF STOCKPILES.
- MEASURES TO INSURE THAT SURFACE WATER RUN-OFF FROM UNSTABILIZED AREAS DOES NOT CARRY SILT, SEDIMENT, AND OTHER DEBRIS OUTSIDE OF THE LIMITS OF WORK.

OF RESOURCES AND ECONOMIC DEVELOPMENT (JANUARY 2010). 12. AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:

- A. BASE COURSE GRAVELS HAVE BEEN INSTALLED AND COMPACTED;
- B. A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN
- ESTABLISHED; C. A MINIMUM OF 3-IN OF NON-EROSIVE MATERIAL, SUCH AS
- STONE OR RIPRAP, HAS BEEN INSTALLED; D. EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.
- 13. THE SMALLEST PRACTICAL AREA SHALL BE DISTURBED DURING CONSTRUCTION, BUT IN NO CASE SHALL EXCEED 5 ACRES AT ANY ONE TIME BEFORE DISTURBED AREAS ARE STABILIZED.
- DISPERSED IN AN UPLAND AREA SUCH THAT THEY DO NOT ENCUMBER PROTECTED AREAS.
- WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
- 16. ALL SEEDING SHALL BE AS FOLLOWS (UNLESS OTHERWISE

UPLAND PLANTING MIX

N.T.S.

"NEW ENGLAND CONSERVATION WILDLIFE MIX' AS MANUFACTURED BY NEW ENGLAND WETLAND PLANTS, INC.

WETLAND RESTORATION PLANTING MIX

"NEW ENGLAND EROSION-CONTROL / RESTORATION MIX (FOR DETENTION BASINS AND MOIST SITES) AS MANUFACTURED BY NEW ENGLAND WETLAND PLANTS, INC., AMHERST, MA. (413) 256-1752

17. EROSION CONTROL BLANKETS SHALL BE INSTALLED ON ALL SLOPES THAT ARE STEEPER THAN 3-FT HORIZONTAL AND 1-FT VERTICAL (3:1). EROSION CONTROL BLANKETS SHALL BE NORTH AMERICAN GRÉEN SC150BN, OR APPROVED EQUAL.

Merrimack Valley **Reliability Project**

101 Walnut Street Watertown, Massachusetts

No.	Revision	Date	Appv
Design	ed by	Checked by	

2 Bedford Farms Drive

Bedford, NH 03110

Suite 200

EVERSQURCE

603.391.3900

f 603.518.7495

Not Approved for Construction

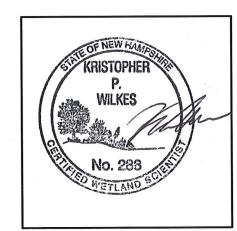
Channel Realignment Londonderry, NH

May 2015

12650

Wetland Delineation Notes:

- 1. Wetlands were delineated along the PSNH ROW in the Fall of 2012 by Normandeau Associates in support of a previous PSNH project.
- During September and October 2014, and April 2015, VHB Wetlands Scientists reviewed and confirmed previously delineated wetland areas and extended boundaries as needed to include the entire Project area. VHB also delineated a number of wetlands, not previously delineated by Normandeau, that were outside the study area for the previous PSNH project. Wetlands were delineated using alpha-numerically coded pink flagging tape.
- 2. Wetland delineation was performed to the standards in the Corps of Engineers Wetland Delineation Manual and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region, Version 2.0 (January 2012).
- 3. Wetlands were GPS-located in the field using a Trimble GeoXT and Trimble GeoXH handheld GPS units with submeter accuracy.
- 4. Hydric soils were determined in accordance with *Field Indicators for Identifying Hydric Soils in the United States, Version 7.0* published by the Natural Resources Conservation Service, and the *Field Indicators for Identifying Hydric Soils in New England, Version 3.0* published by the New England Interstate Water Pollution Control Commission.
- 5. Dominance of wetland vegetation was assessed using the *Northcentral and Northeast 2014 Final Regional Wetland Plant List* published by the U.S. Army Corps of Engineers.
- 6. Wetland were classified using the USFWS methodology Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al. 1979, revised 1985).
- 7. Wetland function and values were assessed using the Highway Methodology Workbook Supplement (USACE, 1999).



Wetland Permitting Plan Set
Merrimack Valley Reliablity Project
Tewksbury 22A Substation MA to
Scobie Pond 345 kV Substation NH

nationalgrid

EVERS URCE

Source: National Gri

General Construction Notes:

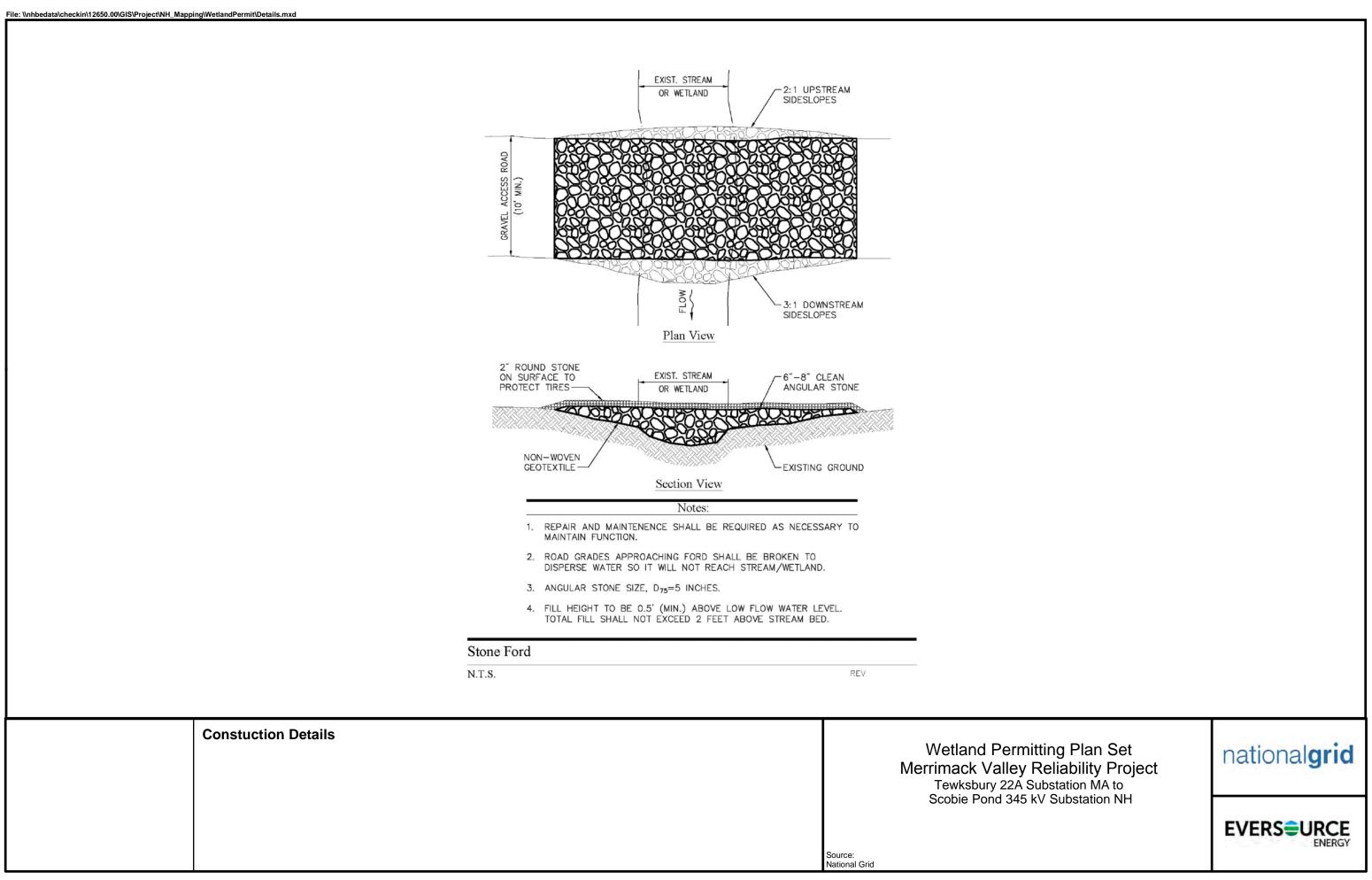
- 1. This plan set is provided to show jurisdictional impacts and required environmental controls only. Engineering documents should be consulted to determine the scope and location of all other construction activities. Proposed construction limits of disturbance are approximate. Contractor is responsible for minimizing earth disturbance, as practicable.
- 2. Erosion and sedimentation control measures shall be installed prior to start of work, shall be maintained, and shall remain in place during construction until all disturbed surfaces are stabilized. Following stabilization, erosion and sedimentation control measures shall be removed off-site and properly disposed.
- 3. Erosion and sedimentation controls shall be appropriate to the size and nature of the project and to the physical characteristics of the site, including slope, soil type, vegetative cover, and proximity to wetlands or surface waters. The type and installation of sediment and erosion controls shall be in accordance with National Grid's EG303NE (EG-303NE) or the BMP Manual for Utility Maintenance in and adjacent to Wetlands and Waterbodies in New Hampshire (BMP Manual) (NHDRED, 2010).
- 4. The environmental controls shown on these plans may need to be supplemented due to season of work, work methods proposed, and additional requirements of outstanding permits. Refer to BMP manuals and additional guidance documents, as needed.
- 5. Temporary stone construction entrances will be used at all points of construction ingress/egress from public and private roadways in accordance with EG303NE and BMP Manual.
- 6. The selected contractor is responsible for street sweeping, as required, at points of ingress/egress from public and private roadways in accordance with the NPDES Construction General Permit.
- 7. Selected contractor will be responsible for certifying that all equipment on the project is clean of invasive species prior to arriving onsite. The contractor will also be responsible for cleaning equipment as it is moved within the project to reduce the risk of spreading invasive plant seeds and fragments.
- 8. Swamp matting shown on the plans represents the square footage and alignment of matting which is required and has been approved by the regulators. Additional layers of mats may be required at certain locations. Any increase in the number, change in alignment, or decision not to use swamp mats must be approved by an authorized representative of the Permittee(s) and , as appropriate, regulators.
- 9. Span streams or drainage swales with temporary bridge or swamp mats that are free of soil and debris. Protect all existing culverts encountered along access roads within the ROW.
- 10. Proposed construction limits of disturbance as shown are approximate. The selected contractor is responsible for minimizing earth disturbance as practicable.
- 11. The selected contractor is responsible for installing waterbars and other similar measures to prevent concentrated run-off.
- 12. Any excavated material shall be placed outside of jurisdictional areas or removed from the site.
- 13. If dewatering is required, dewatering basins shall be placed in uplands areas and discharge water into upland areas.
- 14. Areas of soil disturbance shall be stabilized following construction in accordance with EG-303NE or BMP Manual.

Wetland Permitting Plan Set
Merrimack Valley Reliability Project
Tewksbury 22A Substation MA to
Scobie Pond 345 kV Substation NH

national**grid**

EVERS URCE ENERGY

Source:





Attachment B

Wetland and Stream Impact Summary Tables



Wetland Impact Summary Table

				Merrimack '	Valley Reliabil	ity Project Imp	acted Wetlan	ids in NH			
						Project Impac	ts				
		PRINCIPAL		Tem	porary	Perm	anent	Clearing	Vernal Pool Present? /	Associated Stream Channel?	
WETLAND ID	COWARDIN CLASS	FUNCTION&VALUES	PHOTOS	Type Impact		Туре	Impact (Sq Ft)	(Sq Ft)	ID	Name/Type/Cowardin Class	Other Comments
					SI	EGMENT 2 (NEP)					
30	PSS1E	Wetland provides no significant functions/values	1	Work Pad	1,221	None	0	98	No	No	Narrow swale dominated by glossy buckthorn, drains west into forested landscape.
31	PSS1E, PFO1E	Wetland provides no significant functions/values	2	None	0	None	0	3669	No	No	Wetland dominated by glossy buckthorn.
32	PSS1E	Production Export	3	Work Pad	1,918	None	0	0	No	No	Wetland contains purple loosestrife and glossy buckthorn. Drains in a southerly direction.
33	PSS1E	Wetland provides no significant functions/values	4	Work Pad	2,508	None	0	0	No	No	Wetland dominated by purple loosestrife. Shows signs of heavy historic disturbance from ROW development.
34	PSS1E, PEM1E	Wetland provides no significant functions/values	5	Work Pad	1,156	None	0	0	No	No	Isolated wetland, contains purple loosestrife and glossy buckthorn.
36	PSS/EM1E, PSS1E	Wildlife Habitat	6, 7, 8	Access Matting, Work Pad	6,295	None	0	136	No	SA-11/Intermittent/R4SB5/6	Highly disturbed by ATV activity.
36A	PFO1E, PSS1E	Sediment/Toxicant Retention	9	Pull Pad	12,851	Structure Installation	50	5161	No	SA-11/Intermittent/R4SB5	Primarily forested with intermittent stream draining to the south towards Dutton Road.
36B	PSS1E	Floodflow alteration, sediment/Toxicant Retention	No Photo	Work Pad	792	None	0	0	No	SA-11/Intermittent/R4SB5	Receives drainage from intermittent stream.
37	PSS1E	Wetland provides no significant functions/values	10	Access Matting	149	None	0	0	No	No	Densely vegetated isolated wetland dranins across existing ATV trail.
39	PSS1E, PFO1E	Wildlife Habitat	11, 12	Work Pad, Access Matting	3,364	None	0	356	Yes/ VP-39	No	Densely vegetated wetland swale within ROW drains in a southerly direction.
40	PSS1E	Groundwater recharge/Wildlife Habitat	13	None	0	None	0	279	Yes/ VP-40	No	Potential Vernal Pool appears to be located in a previously excavated area.
41	PSS1E	Groundwater recharge/discharge	14	None	0	None	0	189	No	No	Wetland is an old borrow pit, partially filled with boulders/construction debris. Dominated by glossy buckthorn.
42C	PSS/EM1E, PFO5E	Wildlife Habitat	15	Work Pad, Access Matting	5,107	None	0	211	No	No	Large scrub-shrub/emergent wetland extending/draining off ROW to the west. ATV trail crosses wetland on eastern side of the ROW.
43	PSS1C	Wetland provides no significant functions/values	16	None	0	None	0	2034	Yes/ VP-43	No	Dominated by glossy buckthorn, drains west off ROW.
44	PSS1E, PFO5E	Wildlife Habitat	17, 18	Work Pad, Access Matting	7,647	None	0	554	No	SA-12/Intermittent/R2UB3	Large PSS complex drains westerly to small intermittent stream.
45	PSS/EM1E, PSS1E, PFO5E	Groundwater recharge	19, 20	Pull Pad	25,574	ROW Access Road Improvements	2103	2336	No	SA-13/Intermittent/R4SB5	
46	PUBH, PEM1H, PSS1E	Floodflow Alteration, Fish Habitat, Sediment/Toxicant Retention, Nutrient Removal, Wildlife Habitat	21, 22, 23	Work Pad, Access Matting	35,622	Structure Installation, ROW Access Road Improvements	628	59	No	SA-14/Golden Brook/Perennial/R2UB2/3	Designated Prime Wetland (Lower Golden Brook Prime Wetland).
48	PSS1E	Wildlife Habitat	24, 25	Work Pad, Access Matting	4,791	None	0	62	No	No	Wetland crossed multiple times by ATV trail. Wetland drains to the west off-ROW.
49	PSS1E, PFO1E	Production/Export	26, 27	Work Pad	6,850	None	0	1069	No	No	
50	PSS1E	Wildlife Habitat	28, 29, 30, 31	Work Pad, Access Matting	9,351	ROW Access Road Improvements	954	1029	No	No	Large scrub-shrub wetland with undulating topography and pits with sphagnum moss. Deer beds abundant.
52	PSS1E	Nutrient Removal	32, 33, 34	Work Pad, Access Matting	2,542	None	0	109	No	No	Scrub-shrub wetland swale along the edge of a hayfield.

				Merrimack	Valley Reliabili	ty Project Imp	acted Wetlar	nds in NH			
						Project Impac	ts				
		PRINCIPAL		Tem	porary	Perm	anent	Clearing	Vernal Pool Present? /	Associated Stream Channel?	
WETLAND ID	COWARDIN CLASS	FUNCTION&VALUES	PHOTOS	Туре	Impact (Sq Ft)	Туре	Impact (Sq Ft)	(Sq Ft)	ID .	Name/Type/Cowardin Class	Other Comments
53	PSS1E, PEM1E	Nutrient Removal	35	Work Pad, Access Matting	2,974	None	0	0	No	No	Wetland located within old farm field with shrubs starting to populate area.
OR2	PEM1E	Nutrient Removal	135	Access Matting	348	None	0	0	No	No	Wetland swale through active hayfeild
54	PFO1C, PSS1E	Nutrient Removal	36	Work Pad	3,433	None	0	923	No	No	Thickly vegetated reclaimed farm field.
54A	PEM1E	Nutrient Removal, Production Export	37	Work Pad, Access Matting	10,828	Structure Installation	15	0	No	No	Wetland located within active hayfield.
59	PSS/EM1E, PUBH	Groundwater discharge	38, 39	Work Pad, Access Matting	13,586	None	0	121	No	SA-16/Perennial /R4SB4/5	Wetland appears to be located within a series of naturalized gravel pits.
59D	PUBH, PSS1E	Groundwater recharge	40	Work Pad	845	None	0	0	No	No	Wetland drains into excavated pond next to residential driveway.
59G	PSS1E, PEM1E	Wetland provides no significant functions/values	41	Work Pad	284	None	0	0	No	No	Narrow drainage from excavated pond.
60	PFO1E	Sediment/Shoreline Stabilization, Wildlife Habitat	42	None	0	None	0	134	No	SA-18/Perennial/R2UB1	
61	PEM1E, PFO1E	Sediment/Shoreline Stabilization, Wildlife Habitat	43	None	0	None	0	537	No	SA-19/Intermittent/R4SB3	
62	PSS1E	Wetland provides no significant functions/values	44	None	0	ROW Access Road Improvements	250	94	No	No	Densely vegetated narrow PSS wetland swale draining westerly.
65	PSS1E	Sediment/Shoreline Stabilization	45	None	0	None	0	605	No	SA-22/Intermittent/R4SB3/4	Wetland borders intermittent channel, drains east to west across ROW.
69	PSS1E	Floodflow Alteration, Sediment/Toxicant Retention, Nutrient Removal	46, 47	Work Pad, Access Matting, Guard Protection	5,285	None	0	0	No	No	Wetland located directly adjacent to substation and entrance driveway.
69A	PSS1E, PFO1E	Floodflow Alteration, Sediment/Toxicant Retention, Nutrient Removal	48	Work Pad	1,742	None	0	452	No	SA-23/Intermittent/R4SB4	Wetland associated with intermittent stream channel.
73	PUBHx, PSS1E	Floodflow Alteration, Sediment/Toxicant Retention, Nutrient Removal	50	None	0	None	0	198	No	No	Ponded area located in wetland, appears to be man-made.
75A	PAB3H, PEM1E, PSS1E	Floodflow Alteration, Sediment/Toxicant Retention, Nutrient Removal	51	Work Pad	1,402	None	0	0	No	No	Large densely vegetated wetland system with open water (flooded area) present, extends outside of ROW.
75B	PSS1E, PEM1E	Floodflow Alteration, Nutrient Removal	52, 53	Work Pad, Access Matting	4,013	None	0	0	No	No	Wetland located adjacent to active farmland.
77B	PEM1F, PFO1E	Wildlife Habitat, Sediment/Toxicant Retention, Floodflow Alteration	55	None	0	None	0	39527	No	SA-26/Intermittent/R4SB4 SA-27/Perennial/R2UB2	Hydrologically connected to Robinson Pond south of the ROW
77C	PSS1C, PFO1C	Sediment/Toxicant Retention, Floodflow Alteration	56, 57	Access Matting	392	None	0	15175	No	SA-28/Intermittent/R4SB3	Wetland associated with intermittent channel, flows east to west.
77D	PSS1C	Sediment/Toxicant Retention, Floodflow Alteration	58	Access Matting	1,333	None	0	0	No	SA-28/Intermittent/R4SB3	Wetland associated with intermittent channel, flows east to west.
					SEG	GMENT 3 (PSNH)					
78	PSS1B	Wetland provides no significant functions/values	54	Pull Pad, Access Matting	11,014	Structure Installation	100	5105	No	No	Start of Eversource ROW.

Merrimack Valley Reliability Project Impacted Wetlands in NH

				Project Impacts							
		PRINCIPAL		Tem	porary	Perma	anent	Clearing	Vernal Pool Present?	Associated Stream Channel?	
WETLAND ID	COWARDIN CLASS	FUNCTION&VALUES	PHOTOS	Туре	Impact (Sq Ft)	Туре	Impact (Sq Ft)	(Sq Ft)	ID	Name/Type/Cowardin Class	Other Comments
86	PSS1E, PSS1B, PFO1E, PFO1B	Floodflow Alteration, Sediment/Toxicant Retention	59, 60, 61	Work Pad, Access Matting	12,620	Structure Installation	25	39988	No	No	Wetland located at base of steep rocky slope/outcrop that extends across ROW.
88	PFO1C, PSS1C	Wildlife Habitat	62	None	0	None	0	21737	Yes/ VP-88	No	
89	PUB2Hb, PEM1G	Wildlife Habitat, Floodflow Alteration, Groundwater Recharge/Discharge	63	None	0	None	0	3390	No	SA-30/Chase Brook/Perennial/R2UB2Hb	Beaver activity - dam present.
90	PEM1Gx, PSS1C	Wildlife Habitat, Floodflow Alteration, Groundwater Recharge/Discharge	64	None	0	None	0	475	Yes/ VP-90	No	PEM/VP portion of wetland appears to be not natural, likely excavated.
91	PFO1C	Flodflow Alteration, Sediment/Toxicant Retention, Wildlife Habitat	65	None	0	None	0	8	No	No	Wetland mostly outside project area.
92	PAB4E,PEM1E	Wildlife Habitat, Floodflow Alteration	66	None	0	None	0	3753	Yes/ VP-92	SA-31/Intermittent/R4SB	Wetland drains west to intermittent channel. Signs of variable water levels present.
93	PEM1F, PFO5F, PFO1E	Wildlife Habitat, Floodflow Alteration, Groundwater Recharge/Discharge, Sediment/Toxicant Retention	67, 68	Work Pad, Access Matting	16,678	Structure Installation	37.5	58790	No	No	Large emergent complex located downslope of Nashua Road (Route 102).
94	PSS1C	Wetland provides no significant functions/values	69	None	0	None	0	254	No	No	Small isolated wetland.
95	PSS1C	Floodflow Alteration, Wildlife Habitat	70	Work Pad	838	None	0	0	No	No	
97	PEM1H, PEM/SS1F	Groundwater Recharge/Discharge, Floodflow Alteration, Wildlife Habitat	71, 72	Access Matting	2,574	None	0	1410	No	SA-32/Nesenkeag Brook/Perennial/R2UB2	Flooded/ponded area associated with Nesenkeag Brook.
98	PFO1C, PEM/SS1E	Wildlife Habitat	73	None	0	None	0	3963	Yes/ VP-98	No	Vernal Pool present within wetland, vegetation densisty high.
99	PFO1B	Floodflow Alteration, Wildlife Habitat	74	None	0	None	0	70	No	No	Wetland mostly outside project area.
101	PFO1E, PAB3G	Floodflow Alteration, Wildlife Habitat	75, 76	Work Pad	3,298	None	0	17957	Yes/ VP-101	No	Northern portion of wetland contains aquatic bed habitat/ponded water.
102	PFO1C, PEM/SS1C	Wildlife Habitat, Groundwater Recharge/Discharge, Nutrient Removal, Sediment/Toxicant Retention	78, 79	Work Pad	692	None	0	20423	Yes/ VP-102	No	Forested wetland transitions into scrub- shrub/emergent wetland within cleared ROW.
102A	PFO1C	Same as 102.	77	None	0	None	0	2344	No	No	
102C	PFO1C	Same as 102.	80	None	0	None	0	1210	No	No	
104	PEM1F	Floodflow Alteration	81	None	0	None	0	731	No	SA-33/Intermittent/R4SB3	Intermittent channel feeds wetland from the east (culvert under Elwood Road).
105	PFO1B	Nurient Removal, Sediment/Toxicant Retention, Floodflow Alteration	82	None	0	None	0	13747	No	No	
105A	PFO1B	Same as 105.	83	None	0	None	0	1072	No	No	
105B	PUB2Hx	Same as 105.	84	None	0	None	0	949	No	No	Appears to be a man-made pond.
106	PSS1C, PSS1F	Floodflow Alteration, Sediment/Toxicant Retention, Nurient Removal, Wildlife Habitat, Sediment/Shoreline Stabilization.	85	None	0	None	0	2217	No	SA-34/Perennial/R2UB2 SA-35/Intermittent/R4SB4	Beaver Activity - dam - flooded. Several intermittent channels feed into perennial stream.

				Merrimack	Valley Reliabili	ty Project Imp	acted Wetla	nds in NH			
						Project Impac	ts				
		PRINCIPAL		Temporary Permanent Clearing		Vormal Dool Brosont2 /	Associated Stream Channel?				
WETLAND ID	COWARDIN CLASS	FUNCTION&VALUES	PHOTOS	Type Impact (Sq Ft)		Туре	Impact (Sq Ft)	(Sq Ft)	-	Name/Type/Cowardin Class	Other Comments
108	PEM1E	Groundwater Recharge, Floodflow	86	Pull Pad	16,392	None	0	0	No	No	Emergent wetland located in depresisonal
109	PSS1C	Alteration Wetland provides no significant functions/values	87	Pull Pad	768	None	0	0	No	No	area. Small isolated wetland in between ROW access roads.
OR3	PSS1C	Wetland provides no significant functions/values	No Photo	Access Matting	448	None	0	0	No	No	Small previously disturbed wetland, drains over existing ROW access road.
110	PEM1E	Groundwater Recharge, Floodflow Alteration, Sediment/Toxicant Retention, Nutrient Removal	88	None	0	None	0	2140	No	SA-36/Perennial/R2UB2	Stream not well defined within wetland, inlets and outlets at limits of ROW.
111	PEM1E, PFO1E	Groundwater Recharge, Floodflow Alteration, Sediment/Toxicant Retention, Nutrient Removal	89, 90	Work Pad, Access Matting	3,179	None	0	12151	No	No	Large complex comprised mostly of emergent and scrub-shrub vegetation. Extends outside of ROW.
112	PSS1B, PFO1B	Floodflow Alteration	91	Work Pad, Access Matting	1,378	None	0	8536	No	No	
114	PEM/SS1E, PFO1C	Floodflow Alteration, Wildlife Habitat	92, 93	Access Matting	625	None	0	6600	Yes/ VP-114	No	PVP Identified within PFO portion of wetland. Wetland appears to be fed by drainage from neighboring residential properties to the east.
115	PFO1B, PEM1E, PFO1E	Groundwater Recharge, Floodflow Alteration, Wildlife Habitat	94, 95	Work Pad, Access Matting	2,302	None	0	12436	No	No	Wetland associated with large flooded complex outside of ROW.
117	PEM/SS1C, PEM/SS1E, PFO5H, PEM1G, PEM1E	Floodflow Alteration, Wildlife Habitat	96, 98	Work Pad, Access Matting	6,326	None	0	6531	No	SA-37/Intermittent/R4SB4 SA-38/Intermittent/R4SB3	Intermittent channel SA-38 flows NE to SW, over portion of access trail. Large flooded wetland complex extedns west out of ROW.
117A	PEM1E	Same as 117.	97	None	0	None	0	1051	No	SA-37/Intermittent/R4SB4	Wetland hydroliogcally connected to WA 117 via itnermittent stream channel SA-37.
117B	PFO1C, PSS1C	Same as 117.	99	Work Pad	1,163	None	0	5730	No	SA-38/Intermittent/R4SB3	Wetland hydrologically connected to WA 117 via intermittent stream channel SA-38.
120	PSS1B	Wetland provides no significant functions/values	100	Work Pad	396	None	0	0	No	No	Small isolated wetland within ROW.
123	PFO1C	Wetland provides no significant functions/values	101	None	0	None	0	542	No	No	Small isolated wetland along residential driveway shoulder.
124	PSS/EM1E	Floodflow Alteration, Wildlife Habitat	102	None	0	None	0	341	No	No	
125	PSS1B	Wetland provides no significant functions/values	103	None	0	None	0	437	No	No	Narrow isolated scrub-shrub wetland swale.
127	PSS1C	Groundwater Discharge	104	Access Matting	1,320	None	0	0	No	No	
128	PEM/SS1E, PEM1F, PEM1E	Groundwater Recharge, Floodflow Alteration, Sediment/Toxicant Retention, Nutrient Removal, Wildlife Habitat	105, 106	Work Pad, Pull Pad, Access Matting, Guard Protection	43,219	Structure Installation/ Grading for stream SA-41 realignment	240	8813	No	SA-39/Intermittent/R4SB3/5 SA-40/Intermittent/R4SB3/5 SA-41/Intermittent/R4SB4	Several intermittent stream channels associated with large wetland complex that extends outside of ROW. Wetland located within Musquash Conservation Area.
128A	PFO1C, PSS/EM1C	Same as 128.	107	Work Pad	1,984	None	0	6039	No	SA-41/Intermittent/R4SB4	Wetland located along intermittent channel SA-41.
132	PSS1C, PSS1E, PSS/EM1C, PSS/EM1E	Floodflow Alteration, Sediment/Toxicant Retention, Nutrient Removal.	108, 109	Acces Matting	1,528	None	0	3561	No	No	Wetland is hydrologically connected to 128 via culvert underneath High Range Road.
133	PFO1C, PEM1E, PSS1C	Floodflow Alteration	110	None	0	None	0	6509	No	No	

				Project Impacts							
		PRINCIPAL		Tem	porary	Perma	anent	Clearing	Vornal Pool Procent?	Associated Stream Channel?	
WETLAND ID	COWARDIN CLASS	FUNCTION&VALUES	PHOTOS	Туре	Impact (Sq Ft)	Туре	Impact (Sq Ft)	(Sq Ft)	ID	Name/Type/Cowardin Class	Other Comments
137	PEM1G, PSS1E, PSS/EM1E, PFO1E	Groundwater Recharge, Floodflow Alteration, Sediment/Toxicant Retention, Nutrient Removal, Wildlife Habitat	111, 112	Work Pad	2,904	None	0	11911	No	No	Large emergent wetland complex with interspersed braided/diffuse channels. Densely vegetated.
141	PFO1C	Wetland provides no significant functions/values	113	Work Pad	358	None	0	2723	No	No	
143	PSS1B	Wetland provides no significant functions/values	114	Work Pad	205	None	0	0	No	No	Narrow scrub-shrub swale within ROW.
144	PEM/SS1E, PFO5E, PSS1B, PFO1E	Groundwater Recharge, Floodflow Alteration, Sediment/Toxicant Retention, Nutrient Removal, Wildlife Habitat	115, 116	Work Pad, Access Matting, Pull Pad	18,815	Structure Installation	25	5908	No	No	Large complex primarily comprised of dense emergent/scrub vegetation, extends north outside of ROW. Adjacent to Mammoth Road Substation.
146A	PEM1F, PEM/SS1E, PEM1E, PSS1C	Groundwater Recharge/Discharge, Floodflow Alteration, Sediment/Toxicant Retention, Nutrient Removal, Wildlife Habitat	117, 118, 119	Work Pad, Access Matting	8,463	None	0	20589	No	No	Large srub-shrub/emergent complex extend west out of ROW, portions flooded.
147	PFO1C, PEM/SS1C	Groundwater Discharge	120, 121	Access Matting	2,638	None	0	3705	No	No	Wetland located along gradual slope, drains northeast to southwest.
149	PEM1H, PSS1B, PEM1E, PSS1C, PFO5G	Floodflow Alteration, Sediment/Toxicant Retention, Nutrient Removal, Wildlife Habitat	122, 123	Work Pad, Access Matting	8,694	None	0	12212	No	None	Portions of wetland flooded. Hydrologically connected to WA 149A via culvert under old access path.
149A	PEM1E, PEM1G, PFO5G, PFO5F	Same as 149.	124	Work Pad, Pull Pad, Access Matting, Guard Protection	12,570	None	0	2662	No	None	Portions of wetland flooded. Hydrologically connected to WA 149 via culvert under old access path.
152	PEM1E, PFO1C	Floodflow Alteration, Sediment/Toxicant Retention	125	Work Pad	682	None	0	4138	No	No	
154	PSS1B	Wetland provides no significant functions/values.	126	Access Matting	499	None	0	0	No	No	Small isolated wetland within ROW.
156	PEM1E, PEM1C	Floodflow Alterataion, Sediment/Toxicant Retention.	127, 128	Work Pad, Access Matting	2,228	None	0	6653	No	No	Wetland located downslope of developed industrial property. Dense emergent and scrub-shrub vegetation exists.
160	PEM1E, PSS1C	Floodflow Alteration, Sediment/Toxicant Retention	129, 130	Access Matting	237	None	0	2551	No	No	Wetland abuts Rockingham Road (NH Route 28).
165	PFO1F, PFO1E, PUB2H, PSS/EM1G, PEM1H	Groundwater Recharge, Floodflow Alteration, Sediment/Toxicant Retention, Nutrient Removal, Wildlife Habitat.	131, 132	Pull Pad, Access Matting	19,099	None	0	44547	Yes/ VP-165	SA-43/Beaver Brook/Perennial/R2UB1	Beaver activity present, portions of wetland flooded.
166	PSS1B	Same as 167.	133	Pull Pad	802	None	0	0	No	No	Wetland located downslope of developed substation site (Scobie Substation). Appear to receive substation drianage.
167	PEM/SS1E	Floodflow Alteration, Sediment/Toxicant Retention	134	Pull Pad	7,756	None	0	0	No	No	Wetland located downslope of developed substation site (Scobie Substation). Appear to receive substation drianage.
167	PEM/SS1E			Pull Pad		None	0 4,428/.10	0 473,725/10.88	No	No	



Stream Impact Summary Table

	Streams Intersecting the MVRP ROW in New Hampshire												
STREAM ID	STREAM TYPE	NAME	COWARDIN CLASS	TOWN	PERMIT SHEET #	ROW OWNERSHIP	ASSOCIATED	BUFFER WIDTH	Tree Clearing	Temporary Impacts** (sq ft/In ft)	Permanent Impacts (sq ft/In ft)	PHOTOS	NOTES
Segment 2 (NEP)													
SA-11	Intermittent	Trib. to Tonys Brook	R4SB5/6	Pelham	34	NEP	WA36. WA36A	50	4,796	0	0	1, 2	Two intermittent channels on western edge of ROW.
SA-12	Intermittent	Unnamed	R2UB3	Pelham	40	NEP	WA44	100	1,402	0	0	3	Channel 1-2ft wide, cobble substrate, dry at the time of delineation, Verticle banks. Unnamed trib to Beaver Brook
SA-13	Intermittent	Unnamed	R4SB5	Pelham	40	NEP	WA45, WA45A	50	0	0	0	N/A	Stream Segment at culvert outfall, Channel 1-2ft wide, cobble substrate, dry at the time of delineation, Verticle banks.
SA-14	Perennial	Golden Brook	R2UB2/3	Pelham	42	NEP	WA46	100	0	0	0	4	Channel 10-20ft wide, water 2-4 feet in depth, mud substrate, verticle banks, multiple side channgels, within NHDES Prime Wetland.
SA-15	Perennial	Unnamed	R2UB2	Pelham	50	NEP	WA58, WA58A	100	0	0	0	N/A	Channel 2ft wide, sand substrate, dry at the time of delineation, historically ditched, Beaver Brook tributary.
SA-16	Intermittent	Unnamed	R4SB4/5	Pelham	50	NEP	WA59	50	10	390 / 195 (Work Pads)	0	5,6	Channel 1-2ft wide, sand substrate, dry at the time of delineation, steep banks, drains out of large pond in ROW.
SA-17	Intermittent	Unnamed	R4SB4	Pelham	52	NEP	WA59C	50	0	0	0	N/A	Channel 1-2ft wide, sand substrate, dry at the time of delineation, steep banks, connects two ponds in ROW.
SA-18	Perennial	Unnamed	R2UB1	Windham	54	NEP	WA60	100	1,146	0	0	7	Channel 10-20ft wide, dry at the time of delineation, cobble/boulder, gradual banks, steep.
SA-19	Intermittent	Unnamed	R4SB3	Windham	54	NEP	WA61	50	967	0	0	8	Channel 1-2ft wide, cobble substrate, dry at the time of delineation, Verticle banks.
SA-20	Perennial	Trib. To Beaver Brk	R2UB1	Windham	57	NEP	WA64	100	1,198	0	0	9	Channel 2-4ft wide, cobble substrate. Dry at time of delineation. Flows across access road. Channel is tributary to Beaver Brook.
SA-21*	Perennial	Beaver Brook	R2UB1	Windham	58	NEP	N/A	100	2,759	0	0	10	Channel 30-50ft wide, minimum depth 6-8 inches. Sand, cobble substrate. Bank moderately sloped, vegetated with mature trees. This portion of Beaver is off the western edge of ROW- no crossing.
SA-22	Intermittent	Trib. To Beaver Brk	R4SB3/4	Windham	58	NEP	WA65	50	1,261	0	0	11	Flows south to Beaver Brook. Channel 2-3ft wide, cobble substrate. Channel surrounded by dense scrub-shrub vegetation. Existing bridge not suitable for vehicles.
SA-23	Intermittent	Trib. To Beaver Brk	R4SB4	Windham	60	NEP	WA69A	50	635	0	0	12	Small trib along western edge near Bridle Bridge Road.
SA-24*	Perennial	Beaver Brook	R2UB2/3	Windham/Hudson	61, 62	NEP	WA72	100	1,658	0	0	13	Flows E to W. Channel width 50-75ft. Slow moving meandering channel through densely vegetated emergent/scrub-shrub wetland within ROW. Beaver Brook Crossing at town line - 4th order stream
SA-25	Intermittent	Trib. to Beaver Brk	R4SB4	Hudson	63	NEP	WA75	50	0	0	0	N/A	Small trib on eastern edge of ROW
							Segment 3 (I	PSNH)					
SA-26	Intermittent	Trib. to Robinson Pond	R4SB4	Hudson	65	NEP	WA77, WA77B	50	0	0	0	N/A	Connected via culvert under David Drive.
SA-27	Perennial	Trib. to Robinson Pond	R2UB2	Hudson	65	PSNH	WA77B	100	19,199	0	0	14	Small trib drains to Robinson Pond off ROW. Channel diffuse through large dense emergent wetland within the ROW.

Streams Intersecting the MVRP ROW in New Hampshire													
STREAM ID	STREAM TYPE	NAME	COWARDIN CLASS	TOWN	PERMIT SHEET#	ROW OWNERSHIP	ASSOCIATED WETLAND	BUFFER WIDTH	Tree Clearing Impacts (sq ft)	Temporary Impacts** (sq ft/In ft)	Permanent Impacts (sq ft/In ft)	PHOTOS	NOTES
SA-28	Intermittent	Trib. to Robinson Pond	R4SB3	Hudson	65	PSNH	WA77C, 77D	50	28,901	0	0	15, 16	Small trib drains to Robinson Pond. 2-4ft wide, cobble substrate, 1ft bank height.
SA-29	Perennial	Howard Brook	R2AB3	Hudson	68	PSNH	WA85	100	26,151	5,053 / N/A **** (Access Matting)	0	17	Hydrologically connected to Robinson Pond, ponded in the ROW, contains aquatic vegetation and dead trees.
SA-30	Perennial	Chase Brook	R2UB2Hb	Hudson/ Londonderry	71	PSNH	WA89	100	16,890	0	0	18	Channel 1-4ft wide, low flow, weakly defined, silt/cobble substrate. Associated downstream pond 3-4f deep, contains aquatic vegetation. Impounded by beaver dam.
SA-31	Intermittent	Unnamed	R4SB	Londonderry	72	PSNH	WA92	50	0	0	0	N/A	Intermittent trib to Chase Brook
SA-32	Perennial	Nesenkeag Brook	R2UB2	Londonderry	74	PSNH	WA97	100	10,845	0	0	19	Channel diffuse/densely vegetated within limits of ROW. Nesenkeag Brook considered Impaired for low dissolved oxygen
SA-33	Intermittent	Unnamed	R4SB3	Londonderry	75	PSNH	WA104	50	10,772	0	0	20	Channel 2-4ft wide, cobble/boulder substrate. Bank height 1-2ft. Dry at time of delineation. Fed by 12" CMP culvert under Elwood Rd.
SA-34	Perennial	Trib. To Nesenkeag Brook	R2UB2	Londonderry	78	PSNH	WA106	100	12,373	0	0	21	Channel 4-15ft wide, blocked by beaver dam. 2-3ft bank height, silt/cobble substrate. Densely vegetated banks. Channel crosses old acccess road, crushed/damaged/exposed CMP present.
SA-35	Intermittent	Trib. to Nesenkeag Brook	R4SB4	Londonderry	78	PSNH	WA106	50	4,015	0	0	22	Channel 3-10ft wide, runs down old access road. Flow appears to be impounded/blocked by beaver activity. Sandy substrate.
Segment 4 (PSNH)													
SA-36	Perennial	Unnamed	R2UB2	Londonderry	79, 81	PSNH	WA110	100	0	0	0	N/A	Channel 3-4ft wide, stagnant/flooded and vegetated. Flows over access road. Bank height is <1ft.
SA-37	Intermittent	Unnamed	R4SB4	Londonderry	83	PSNH	WA117A	50	6,324	0	0	23	Flows NE to SW, over portion of access trail. Not well defined. Dry at time of delineation.
SA-38	Intermittent	Unnamed	R4SB3	Londonderry	84	PSNH	WA117, WA117B	50	18,195	75 / 37 (Work Pad)	0	24, 25	Channel 1-2ft wide, cobble/silt substrate. Bank height <1ft.
SA-39	Intermittent	Trib. to Nesenkeag	R4SB3/5	Londonderry	86, 87	PSNH	WA128	50	0	271 / 90 (Work Pad)	0	26	Two int. channels on western side of wetland. Channel along southern edge of ROW: 2-4ft wide, cobble/silt substrate. Flow S to N.
SA-40	Intermittent	Trib. to Nesenkeag	R4SB3/5	Londonderry	87	PSNH	WA128	50	0	0	0	N/A	Channel 1-4ft wide, 1ft bank height, silt substrate in ROW, cobble/silt off ROW. USGS shows as perennial. Flow S to N. Exposed 36" CMP present at ROW edge.
SA-41	Intermittent	Trib. to Nesenkeag	R4SB4	Londonderry	87	PSNH	WA128, WA128A	50	23,059	576 / 288 (Work Pad, Pull Pad)	80/17***	27, 28, 29	Channel 1-2ft wide, vegetated. Bank height <1ft. Not well defined, dry at time of delineation. Fed by culvert under High Range Road.
SA-149A	Intermittent	Unnamed	R4SB4	Londonderry	96	PSNH	WA149	50	0	0	0	30	Small intermittent channel drains to wetland WA 149. Channel 2ft wide, sand. Bank height <1ft.
SA-43	Perennial	Beaver Brook	R2UB1	Londonderry	101	PSNH	WA165	100	4,410	0	0	31, 32	N to S flow. Channel 8-10ft wide, bank height 1-2ft, depth 6-24 inches. Vegetated bottom. Beaver activity present.Located just west of Scobie Substation.
	Overall Total Impacts Square Feet/Acres:										80 sq ft/17 In ft		

Notes: *Beaver Brook is a 4th order stream at SA-21 and SA-24, and is therefore subject to permitting under the Shoreland Water Quality Protection Act (RSA 483-B).

^{**} The majority of the streams intersecting the ROW that require crossing will be spanned from beyond their jurisdictional banks using timber mats resulting in no impacts.

However, temporary impacts indicate where mats spans are not likely feasible, and where mats will be temporarily placed across the channel during project construction.

^{***} Permanent bed impacts are the result of proposed partial realignment of SA-41 in order to ensure the long-term stability of proposed Structure 253.

^{****} Access matting will be placed perpendicular to the channel, therefore linear feet along the channel reach is not applicable. The length of the crossing eliminates the possibility of spanning the channel with mats from bank to bank.



Attachment C

Representative Site Photographs



Representative Wetland Photographs

_



Photo 1: View northwest toward WA 30. Construction work pad is planned in this area for pole installation outside of wetland. Limited tree clearing proposed along edge of ROW. 10/07/2014.



Photo 2: View southwest toward WA 31. General location of planned tree clearing. Construction work pad planned just outside of wetland. 10/07/2014.



Photo 3: View south toward WA 32. Construction work pad is planned in this area for pole installation and removal outside of wetland. 10/07/2014.



Photo 4: View west toward WA 33. Construction work pad is planned in this area for pole installation and removal outside of wetland. 10/07/2014.

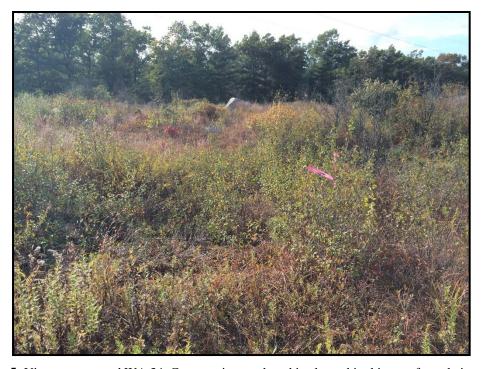


Photo 5: View west toward WA 34. Construction work pad is planned in this area for pole installation and removal outside of wetland. 10/07/2014.



Photo 6: View west of access road along edge of WA 36. 04/20/2015.



Photo 7: View northwest toward access road along the edge of WA 36. 04/20/2015.



Photo 8: View south of WA 36. Construction work pad planned to extend into wetland. 04/20/2015.



Photo 9: View northwest toward WA 36A. Construction work pad for pole installation in wetland to extend into this section of the wetland. Tree clearing proposed in wetland along ROW. 10/08/2014.



Photo 10: View southeast of access road through WA 37 where timber access matting is planned. Construction work pad for pole installation is planned just outside of wetland. 10/08/2014.



Photo 11: View west toward WA 39. Construction work pad is planned in this area for pole installation outside of wetland. 10/08/2014.



Photo 12: View east toward WA 39. Timber access matting is planned in this area. 10/08/2014.



Photo 13: View southeast toward WA 40. Limited tree clearing planned along edge of ROW. 10/08/2014.



Photo 14: View west toward WA 41. Limited tree clearing planned along edge of ROW. 10/08/2014.



Photo 15: View southwest toward WA 42C. Construction work pad planned to extend into this wetland for pole installation and removal outside of wetland. Timber access matting is planned along access road through eastern section of wetland. Limited tree clearing planned along edge of ROW. 10/07/2014.



Photo 16: View north toward WA 43 where limited tree clearing is planned. 10/07/2014.



Photo 17: View north toward WA 44. Construction work pad for pole installation in upland to extend into this section of the wetland. 10/08/2014.



Photo 18: View northeast toward WA 44. Construction work pad for pole installation in upland to extend into this section of the wetland. Timber access matting is planned along access road through eastern section of wetland. Tree clearing proposed in wetland along ROW. 10/08/2014.



Photo 19: View north toward WA 45. Timber access matting is planned in this area. 10/08/2014.



Photo 20: View south toward WA 45. Construction work pad for pole installation in upland to extend into this section of the wetland. Tree clearing proposed in wetland along ROW. 10/08/2014.



Photo 21: View south toward WA 46. Construction work pad for pole installation in upland to extend into this section of the wetland. Timber access matting is planned along access road through eastern section of wetland. Tree clearing proposed in wetland along ROW. 10/08/2014.



Photo 22: View east toward WA 46. Construction work pad for pole installation in upland to extend into this section of the wetland. 10/08/2014.



Photo 23: View north toward WA 46. Timber access matting is planned in this area. 10/08/2014.



Photo 24: View north of access road through WA 48 where timber access matting is planned. 10/09/2014.



Photo 25: View north of access road through WA 48 where timber access matting is planned. Construction work pad also planned in this general area for pole installation and removal outside of wetland. 10/09/2014.



Photo 26: View west toward WA 49. Construction work pad planned to extend into a section of this wetland for pole installation and removal outside of wetland. Limited tree clearing planned along edge of ROW. 10/09/2014.



Photo 27: View southeast toward WA 49 where a construction work pad is planned to extend into a section of the wetland for pole installation outside of wetland. 10/09/2014.



Photo 28: View north of NEP access road through toward WA 50 where timber access matting is planned. Tree clearing planned within wetland along edge of ROW. 10/09/2014.



Photo 29: View north of WA 50 where construction work pad is planned for pole installation and removal outside of wetland. General location of proposed permanent road crossing. 10/09/2014.



Photo 30: View northwest toward WA 50 where construction work pad is planned for pole installation outside of wetland. 10/09/2014.



Photo 31: View northwest toward WA 50 where construction work pad is planned to extend into a section of the wetland for pole installation outside of wetland. Tree clearing planned along edge of wetland. 10/09/2014.



Photo 32: View north toward WA 52. Construction work pad is planned in this area for pole installation outside of wetland. 10/09/2014.



Photo 33: View south toward WA 52 where timber access matting is planned to cross wetland. 10/09/2014.



Photo 34: View south toward WA 52. A construction work pad is planned to cross the wetland east of photo for pole removal just outside of wetland. Tree clearing proposed within wetland along edge of ROW. 10/09/2014.



Photo 35: View north toward WA 53. Timber access matting planned for access road through this wetland. Construction work pad for pole installation will extend into the wetland. 10/09/2014.



Photo 36: View south toward WA 54. A construction work pad for pole installation will extend into the wetland to the left of photo. Tree clearing proposed in wetland along edge of ROW. 10/09/2014.



Photo 37: View southeast toward WA 54A. Two construction work pads planned near this area, one for pole installation outside wetland and one to install Structure 51 within wetland. Timber access matting planned along NEP access road into wetland. 10/09/2014.



Photo 38: View west toward WA 59. Construction work pad for pole installation and removal outside of wetland planned in this area. 10/09/2014.



Photo 39: View east toward WA 59. Construction work pad for pole installation and removal outside of wetland planned in this section of the wetland. Timber access matting also planned along NEP access road along edge of wetland. 10/09/2014.



Photo 40: View west toward WA 59D. Construction work pad for pole installation planned in this section of the wetland. 10/09/2014.



Photo 41: View south toward WA 59G. Guard protection area proposed to extend into wetland in this area. 05/15/2015.



Photo 42: View southwest toward WA 60 and SA-18. Tree clearing planned along edge of ROW along the edge of wetland. 04/21/2015.



Photo 43: View north of WA 61. Tree clearing proposed along edge of ROW within this wetland. 04/21/2015.



Photo 44: View north of NEP access road through WA 62 where timber access matting and stone ford installation is planned. 10/09/2014.



Photo 45: View west of unnamed intermittent stream in WA 65. Tree clearing planned nearby. 10/09/2014.



Photo 46: View north toward WA 69. Construction work pad for pole installation outside of wetland to extend into this section of this wetland. Timber access matting planned along access road adjacent to WA 69A. 10/09/2014.



Photo 47: View west toward WA 69. Construction work pad for pole installation and removal outside of wetland and guard protection area. 10/09/2014.



Photo 48: View southwest toward WA 69A. Construction work pad for pole installation outside of wetland to extend into a section of this wetland. Timber access matting planned along access road adjacent to WA 69. 10/09/2014.



Photo 49: View southeast toward WA 72. Construction work pad for pole installation proposed northwest of photo. 10/08/2014.



Photo 50: View north toward WA 73. Construction work pad for pole installation outside of wetland to extend into this section of the wetland. Tree clearing proposed in wetland along ROW. 10/08/2014.



Photo 51: View south toward WA 75A. Construction work pad planned to extend into wetland for pole installation outside of wetland. 10/08/2014.



Photo 52: View north toward WA 75B. NEP access road where timber access matting is planned to right of photo. 10/08/2014.



Photo 53: View east toward second NEP access road through WA 75B where timber access matting is planned. 10/08/2014.



Photo 54: View north of WA 78. Tree clearing planned along visible tree-line. Construction work pad for pull pad site to extend into part of this wetland to right of photo. Timber access matting planned along access road through wetland. Guy anchor installation also proposed within this wetland. 10/08/2014.



Photo 55: View southeast of WA 77B. Tree clearing planned to the right of photo. 10/08/2014.



Photo 56: View west of Eversource access road through WA 77C where timber access matting is planned. Tree clearing planned within wetland along edge of ROW. 10/08/2014.



Photo 57: View north toward WA 77C. Tree clearing planned in this general area. 10/08/2014.



Photo 58: View south of Eversource access road through WA 77D where timber access matting is planned. 10/07/2014.



Photo 59: View south of WA 86 where tree clearing is planned. 10/06/2014.



Photo 60: View west of WA 86. Tree clearing planned to the west of photo. Construction work pad for installing Structure 212 within wetland to the left of photo. 10/06/2014.



Photo 61: View southeast of Eversource access road through WA 86 where timber access matting is planned. Proposed tree clearing to the left of photo. 10/06/2014.



Photo 62: View southeast of vernal pool within WA 88. Proposed tree clearing planned to the right of photo. 10/06/2014.



Photo 63: View southeast toward WA 89. Tree clearing proposed along the edges of this wetland. 10/06/2014.



Photo 64: View south toward vernal pool within WA 90. Limited tree clearing planned along the edges of the wetland within the general visible area. 10/06/2014.



Photo 65: View east of WA 91 where limited tree clearing is planned. 10/05/2014.



Photo 66: View southwest of WA 92. Proposed tree clearing planned northeast of photo. 10/05/2014.



Photo 67: View northeast of WA 93. Tree clearing proposed southwest of photo. 10/03/2014.



Photo 68: View east of WA 93. Timber access matting is planned along access road through the wetland (to left of photo). Further southeast of photo a construction work pad is planned to install Structure 222 within the wetland. Tree clearing planned to the left of photo. 10/03/2014.



Photo 69: View southeast toward WA 94. Tree clearing is planned along part of this wetland. 05/15/2015.



Photo 70: View east toward WA 95. Construction work pad for pole installation to extend into wetland area. Pole to be installed just outside of wetland. 10/03/2014.



Photo 71: View northwest along Eversource access road through WA 97 where timber access matting is planned. 10/03/2014.



Photo 72: View northeast toward WA 97 and Nesenkeag Brook. Limited tree clearing proposed along visible tree-line. 10/03/2014.



Photo 73: View west toward WA 98, tree clearing planned to right of photo. Vernal pool located in this wetland north of photo. 10/03/2014.



Photo 74: View east toward WA 99. Tree clearing is planned along the edge of this wetland. 05/15/2015.



Photo 75: View east toward WA 101 near the edge of proposed construction work pad area for nearby pole installation just outside of wetland. Tree clearing planned nearby. 10/03/2014.



Photo 76: View north toward WA 101. Tree clearing planned south of photo. 10/03/2014.



Photo 77: View west of the edge of WA 102A where tree clearing is planned. 10/03/2014.



Photo 78: View west toward vernal pool within WA 102. Tree clearing planned nearby. 10/03/2014.



Photo 79: View south of WA 102 near location of construction work pad for pole installation outside of wetland. Tree clearing planned nearby. 10/03/2014.



Photo 80: View northeast toward WA 102C. Proposed tree clearing is planned nearby. 10/03/2014.



Photo 81: View east toward intermittent stream in WA 104 where limited tree clearing is proposed. 10/03/2014.



Photo 82: View east of WA 105. Tree clearing planned to the west of photo. 10/02/2014.



Photo 83: View northeast toward WA 105A. Tree clearing planned within this wetland. 05/15/2015.



Photo 84: View east toward WA 105B where tree clearing is planned. 05/15/2015.



Photo 85: View east of unnamed perennial stream in WA 106 where limited tree clearing is planned. 10/02/2014.



Photo 86: View west toward WA 108. Construction work pad to extend into edge of wetland as part of a large pull pad site. Guy anchor installation also proposed within this wetland. 10/02/2014.



Photo 87: View east of WA 109 where construction work pad is planned along the edge of the wetland as part of a large pull pad site. 10/02/2014.



Photo 88: View northeast toward WA 110. Tree clearing planned in this area. 10/02/2014.



Photo 89: View south of the Eversource access road through first section of WA 111 where timber access matting is planned. Construction work pad site and proposed tree clearing left of photo. 10/02/2014.



Photo 90: View south of Eversource access road through second section of WA 111 where timber access matting is planned. Further south a construction work pad is planned for pole installation. 10/02/2014.



Photo 91: View south of WA 112. Further south is the Eversource access road where timber access matting is planned. Tree clearing planned nearby. Construction work pad for pole installation also planned nearby. 10/02/2014.



Photo 92: View south of Eversource access road through WA 114 where timber access matting is planned. Narrow strip of trees visible is proposed to be cleared. 10/01/2014.



Photo 93: View north, location of vernal pool within WA 114. Planned tree clearing nearby. 10/01/2014.



Photo 94: View south of Eversource access road through WA 115 where timber access matting is planned. 10/01/2014.



Photo 95: View northeast of WA 115. Tree clearing and construction work pad for pole installation planned to the left of photo. 10/01/2014.



Photo 96: View southwest of Eversource access road through WA 117 where timber access matting is planned. Northeast of photo is location for construction work pad and pole installation. Pad to extend into wetland, pole to be installed just outside of wetland. 10/01/2014.



Photo 97: View northeast toward WA 117A where tree clearing is planned. 05/15/2015.



Photo 98: View southwest toward WA 117. Northeast of photo is the location of proposed construction work pad for pole installation. Tree clearing is planned to the left of photo. 10/01/2014.



Photo 99: View northwest of WA 117B where an intermittent stream runs through the wetland. Location of construction work pad for pole installation to right of photo. Tree clearing also planned. 10/01/2014.



Photo 100: View east toward WA 120 where construction work pad is planned. 05/15/2015.



Photo 101: View south toward WA 123 where tree clearing is planned. 05/15/2015.



Photo 102: View south toward WA 124. Construction work pad proposed along the edge of this wetland. Tree clearing proposed within this wetland.



Photo 103: View west toward WA 125 where tree clearing is planned. 05/15/2015.



Photo 104: View north of Eversource access road through WA 127 where timber access matting is planned. 10/01/2014.



Photo 105: View east toward Eversource access road through WA 128 where timber access matting is planned. Construction work pad planned for area further east for pole installation in an upland area within wetland WA 128. Tree clearing is also planned for this area. 10/01/2014.



Photo 106: View west toward WA 128. Planned location of a large construction work pad area for pull pad and guard protection area. Structure 253 proposed to be installed just inside this wetland. Tree clearing proposed to right of photo. Guy anchor installation also proposed in this area. 09/30/2014.



Photo 107: View southeast toward WA 128A of area where clearing is planned. General location of construction work pad for pole installation just outside of wetland. 09/30/2014.



Photo 108: View east toward WA 132. Tree clearing is planned to right of photo. 09/30/2014.



Photo 109: View west along Eversource access road through WA 132 where timber access matting is planned. Tree clearing also planned within this wetland. 09/30/2014.



Photo 110: View east toward WA 133. Location of planned tree clearing. 09/30/2014.



Photo 111: View east toward WA 137. Tree clearing proposed within wetland along edge of ROW. 09/30/2014.



Photo 112: View west toward WA 137. To the west is the location of a construction work pad for pole installation just outside of wetland. 09/30/2014.



Photo 113: View east toward WA 141. Tree clearing is planned to the left of photo. A construction work pad for pole installation is to cross a corner of the wetland. 09/29/2014.



Photo 114: View northeast toward WA 143 where construction work pad is proposed to extend into wetland. 05/15/2015.



Photo 115: View east toward WA 144 along Eversource access road where timber access matting is planned. Clearing planned to right of photo. 09/30/2014.



Photo 116: View west of WA 144. Location of construction work pad to install Structure 263. Access road nearby. East of photo is location of proposed construction work pad for pull pad site. 09/29/2014.



Photo 117: View northeast toward WA 146A along Eversource access road where timber access matting is planned. 09/26/2014.



Photo 118: View north towards WA 146A. Near proposed structure where construction work pad is planned. Tree clearing planned to the left of photo. Access road just outside of wetland. 09/26/2014.



Photo 119: View west toward Eversource access road crossing WA 146A where timber access matting is planned. Tree clearing also planned within this wetland. 09/26/2014.



Photo 120: View west of WA 147 where tree clearing is planned. 09/26/2014.



Photo 121: View southeast of WA 147. Timber access matting planned where Eversource access road crosses wetland. 09/26/2014.



Photo 122: View northeast toward WA 149. Tree clearing is planned is to the right of the photo. Construction work pad planned on edge of wetland in general location of photo. 09/25/2014.



Photo 123: View west toward wetland WA 149 from access road between WA 149 and WA 149A. Tree clearing planned for strip of trees in the middle of ROW. 09/25/2014.



Photo 124: View northeast along Eversource access road toward WA 149A where timber access matting is planned. Construction work pad for pole installation and guard protection area proposed east of photo. Tree clearing also planned within this wetland. 09/25/2014.



Photo 125: View west of WA 152 toward the strip of trees proposed to be removed. Construction work pad and tree clearing planned within wetland. 09/25/2014.



Photo 126: View east toward WA 154 where access matting is planned. 05/15/2015.



Photo 127: View west toward southern end of WA 156 along access road. Location of timber mat access. Tree clearing planned to right of photo. 09/25/2014.



Photo 128: View east toward Eversource access road through WA 156 where timber access matting is planned. 09/25/2014.



Photo 129: View east toward southern end of WA 160 along access road. Access matting is planned to the east. Tree clearing planned to right of photo. To the north of photo is the proposed location for a construction work pad for pole installation. 09/25/2014.



Photo 130: View east of Eversource access road through WA 160. Timber access matting proposed along access road through wetland. Tree clearing planned within wetland. 09/25/2014.



Photo 131: View south along Eversource access road through WA 165 where timber access matting is proposed. Clearing planned within wetland along ROW edges.09/25/2014.



Photo 132: View west of WA 165 in wooded area; general location of where a construction work pad is to be placed for pole installation and pull pad site. General location for guy anchor installation. 09/25/2014.



Photo 133: View southwest of Eversource access road next to WA 166. A construction work pad is to be placed over part of this wetland for a pull pad site. General location for guy wire installation. 09/24/2014.



Photo 134: View south toward WA 167 near the Scobie Pond Substation. A construction work pad is to be placed over part of this wetland for a pull pad site. 09/24/2014.



Photo 135: View northeast to OR2 at location of proposed permanent crossing. 04/21/2015.



Representative Stream Photographs



Photo 1: View west of intermittent stream SA-11 to the south of Dutton Road. Limited tree clearing is proposed along western edge of the ROW in this location. 10/08/2014.



Photo 2: View east of intermittent stream SA-11 where limited tree clearing is planned along the western edge of the ROW to the north of Dutton Road within WA36A .04/21/2015.



Photo 3: View east of intermittent stream SA-12 where limited tree clearing is planned along the western edge of the ROW. 04/21/2015.



Photo 4: View of Golden Brook (SA-14), a perennial stream located within Lower Golden Brook Prime Wetland. Minimal tree clearing, as well as construction work pads are planned along the edge of the brook. Structure 34 and 98 are planned to be installed adjacent to (north of) the brook. 04/21/2015.



Photo 5: View northwest where timber mat access is planned along NEP access road across perennial stream SA-16. 10/09/2014.



Photo 6: View northeast of SA-16 where construction work pads are planned for pole installation and removal. 04/21/2015.



Photo 7: View west of perennial stream SA-18 where limited tree clearing is planned. 04/24/2015.



Photo 8: View southwest of intermittent stream SA-19 where limited tree clearing is planned. 04/21/2015.



Photo 9: View west of perennial stream SA-20. Limited tree clearing is planned along the western edge of the ROW adjacent to this channel. 10/09/2014.



Photo 10: View of Beaver Brook (SA-21) looking east toward NEP ROW. Limited tree clearing is planned along the edge of the ROW. 10/09/2014.



Photo 11: View west of intermittent stream SA-22 towards proposed tree clearing along western edge of NEP ROW. 10/09/2014.



Photo 12: View of perennial stream SA-23 where limited tree clearing is planned. 04/21/2015.



Photo 13: View southeast of Beaver Brook (SA-24) to the north NH Route 111. Limited tree clearing is proposed adjacent to the brook along the western edge of the ROW. 10/08/2014.



Photo 14: View southeast to the start of perennial stream SA-27 where it flows west out of WA77B. Tree clearing is planned in this area. 10/08/2014.



Photo 15: View west of PSNH access road crossing intermittent stream SA-28 where timber access matting is planned. 10/08/2014.



Photo 16: View southeast of intermittent stream SA-28 where tree clearing is planned. 10/08/2014.



Photo 17: View southeast of SA-29 (Howard Brook) where timber access matting is planned. Additionally, limited tree clearing is proposed along the eastern edge of the ROW. 10/06/2014.



Photo 18: View northeast of Chase Brook (SA-30) where tree clearing is planned along the eastern edge of the ROW. 10/06/2014.



Photo 19: View southeast of access road where timber access matting is planned across Nesenkeag Brook (SA-32). Limited tree clearing is planned along the eastern edge of the ROW (photo left). 4/22/2015.



Photo 20: View south of SA-33 looking toward ROW where tree clearing is planned. 10/02/2014.



Photo 21: View east of perennial stream SA-34 along the eastern edge of the ROW where tree clearing is planned. 10/02/2014.



Photo 22: View northeast of intermittent stream SA-35along the eastern edge of the ROW where tree clearing is planned. 10/02/2014.



Photo 23: View south of ROW access road crossing intermittent stream SA-37 where timber access matting is planned. Tree clearing is also planned down the center of the ROW in this location. 10/01/2014.



Photo 24: View west of intermittent stream SA-38 where tree clearing is planned down the center of the ROW. 10/1/2014.



Photo 25: View south of ROW access road crossing intermittent stream SA-38 where timber access matting is planned. 04/22/2015.



Photo 26: View north of intermittent stream SA-39. Construction work pad for pole installation to extend across stream. Timber access matting planned where ROW access road crosses stream. 04/22/2015.



Photo 27: View west of intermittent stream SA-41 where construction work pad and tree clearing is planned. 04/21/2015.



Photo 28: View west of intermittent stream SA-41 where construction work pad is planned for pull pad site. Also location of planned tree clearing. South of photo is where Structure 253 is proposed to be installed adjacent to channel. 04/21/2015.



Photo 29: View east to proposed location of outlet of realigned western end of stream SA-41 within wetland WA 128. 04/21/2015.



Photo 30: View west of SA-149A which flows into wetland WA 149. 04/22/2015.



Photo 31: View northeast of ROW access road crossing perennial stream SA-43 where access matting is planned. 09/25/2014.



Photo 32: View northwest of SA-43. Access matting across stream planned nearby. Tree clearing also planned southern side ROW adjacent to this stream. 09/25/2014.



Attachment D

Natural Resource Agency Correspondence

NHNHB Correspondence

Memo



To: Kristopher Wilkes, Vanasse Hangen Brustlin, Inc.

2 Bedford Farms Dr., Suite 200

Bedford, NH 03110

From: Melissa Coppola, NH Natural Heritage Bureau Date: 12/17/2014 (valid for one year from this date)

Re: Review by NH Natural Heritage Bureau

NHB File ID: NHB14-4809 Town: Pelham, Windham, Hudson, Derry Location: Tax Maps: Existing Electric
Transmission Line Right-of-Way

Description: On behalf of New England Power Company d/b/a National Grid ("NEP") and Public Service Company of New Hampshire ("PSNH") (the "Proponents"), Vanasse

Hangen Brustlin, Inc. is submitting the enclosed request for project review for the Merrimack Valley Reliability Project ("MVRP"), a new 345kV electric transmission line ("Line 3124") within an existing right-of-way ("ROW") between NEP's Tewksbury 22A Substation in Tewksbury, Massachusetts and PSNH's Scobie Pond Substation in Londonderry, New Hampshire. The installation of this new line would relieve potential overloads under various conditions on several elements of the area transmission system. In doing so, the MVRP ensures continued compliance with all applicable federal and regional transmission system

reliability standards and criteria, and maintains reliable electric service to customers in the area.

The portion of the MVRP located within New Hampshire that is the subject of this project review request is referred to herein as "the Project". The Project proposes approximately 18 miles of new 345-kV transmission line on existing ROW within the Towns of Pelham, Windham, Hudson, and Derry. NEP will own approximately 8.1 miles of the new line in Pelham, Windham, and Hudson. PSNH will own approximately 9.7 miles of the new line in Londonderry and Hudson. No new ROW is anticipated, however, portions of existing ROW that have not been cleared previously will require removal of trees to accommodate portions of the new transmission line and relocated existing lines. The Project requires approval from the NH Site Evaluation Committee (SEC).

There are several existing transmission lines located within the Project ROW. Line 3124 has been designed within the ROW to minimize, to the greatest extent practicable, disruption to existing transmission line alignments. Line 3124 will be constructed within previously uncleared portions of the 10-mile PSNH ROW. Line 3124 will be constructed in the current location of the Y151 transmission line (115kV) within the 8.1-mile NEP ROW. The existing Y151 line will be relocated to the western side of the NEP ROW. New or relocated structures will include wooden H-frame, steel lattice tower and single pole structures. Depending on the structure type, structures will be direct embedded or constructed on a caisson foundation.

Environmental impacts associated with the Project will be limited in nature because the Project will be contained within the existing ROW. Swamp mats will be used to minimize disturbance within wetland resource areas where vehicle access is necessary. To the extent possible, the structures will be accessed directly from existing roads within the ROW corridor. Crews will use public roads intersecting the ROW and other established access points to enter the transmission corridor.

cc: Kim Tuttle

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

Comments: This site is within an area flagged for possible impacts on the state-listed *Alasmidonta varicosa* (brook floater) in the Golden Brook. There will need to be a pre-application meeting to discuss impacts to plants, natural communities, and wildlife.

Invertebrate Species State¹ Federal Notes

Brook Floater (Alasmidonta varicosa) E -- Contact the NH Fish & Game Dept (see below).

Memo



Natural Community	State ¹	Federal	Notes
Medium level fen system*			Level fens are stagnant, and as such are characterized by low nutrient levels, relatively high acidity levels, and accumulations of peat. The primary threats to this community are changes to its hydrology (especially that which causes pooling), increased nutrient input from stormwater runoff, and sedimentation from nearby disturbance.
Swamp white oak floodplain forest		-	Threats are primarily changes to the hydrology of the river, land conversion and fragmentation, introduction of invasive species, and increased input of nutrients and pollutants.
Plant species	State ¹	Federal	Notes
bird-foot violet (Viola pedata)	Т	7	This species occurs in sandplains, disturbed openings, dry forests, and thin woods. Threats would include direct destruction of the plants or major alterations in their habitat.
bulbous bitter-cress (Cardamine bulbosa)*	Е	7 -/.,	This species occurs in forested swamps, low floodplain forest, and moist thickets Threats to the plants include canopy removal and destruction (draining) of its habitat.
common star-grass (Hypoxis hirsuta)	T	ij	This species occurs in sandplains, disturbed openings, dry forests, and thin woods. Threats would include direct destruction of the plants or major alterations in their habitat.
Eight-flowered Six-weeks Grass (Vulpia octoflora var. tenella)*	Е	f	This species occurs in sandplains, disturbed openings, dry forests, and thin woods. Threats would include direct destruction of the plants or major alterations in their habitat.
meadow garlic (Allium canadense)	Е		Threats are primarily those that would affect this plant's habitat (river or streambanks, forested swamps, low floodplain forest/moist thickets, wet meadows), including changes to local hydrology.
Palmate Violet (Viola palmata)	E		**Recommended for delisting due to taxonomic issues (hybrid)
Perfoliate Bellwort (<i>Uvularia perfoliata</i>)	E		The habitat of this species is mesic forests, which would be threatened by fragmentation or canopy reduction that led to drying out of the soils.
River Birch (Betula nigra)	T		The population could be deleteriously affected by any project activities that alter the hydrology of its habitat, by increased sedimentation, and by increased nutrients/pollutants in stormwater runoff.
round-leaved trailing tick-trefoil (Desmodium rotundifolium)	T		This species occurs in sandplains, disturbed openings, dry forests, and thin woods. Threats would include direct destruction of the plants or major alterations in their

Memo



	•
hal	oitat.
mai	mu.

smooth forked whitlow-wort (Paronychia	Е	 Threats include any major changes to its habitat, which includes dry forests and thin
canadensis)*		woods.

Vertebrate species	State ¹	Federal	Notes
Blanding's Turtle (Emydoidea blandingii)	E		Contact the NH Fish & Game Dept (see below).
Grasshopper Sparrow (Ammodramus savannarum)*	T		Contact the NH Fish & Game Dept (see below).
Northern Black Racer (Coluber constrictor constrictor)	T		Contact the NH Fish & Game Dept (see below).
Spotted Turtle (Clemmys guttata)	T		Contact the NH Fish & Game Dept (see below).
Wood Turtle (Glyptemys insculpta)	SC	,	Contact the NH Fish & Game Dept (see below).

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

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

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



To: Melissa Coppola and Amy Lamb, Natural Heritage Bureau Date: May 8, 2015

Memorandum

Project #: 12650.01

From: Darrell Oakley Re: Merrimack Valley Reliability Project Rare Plant Surveys

Introduction

Eversource and National Grid have teamed up to implement the construction of a new transmission line between Londonderry, New Hampshire, and Tewksbury, Massachusetts. This proposed project is called the Merrimack Valley Reliability Project, and is one of the suite of projects for the Greater Boston and New Hampshire Solution being undertaken by Eversource and National Grid.

The Merrimack Valley Reliability Project will consist of installing a new 345-kilovolt (kV) overhead line along 24.6 miles of an existing power line corridor. Approximately 18 miles of the line will pass through Londonderry, Hudson, Windham and Pelham in New Hampshire, and 6.5 miles through Dracut, Andover and Tewksbury in Massachusetts. Data provided by the Natural Heritage Bureau database has identified rare plant species known to occur near the planned project in Windham and Pelham. Please see the attached permitting plans that show the Natural Heritage Bureau rare plant mapping on the project right of way. Table 1 below is a listing of these species and their status.

Table 1 Listed Plants Known to Occur near the MVRP Project

Scientific Name	Common Name	Listing Status
Desmodium rotundifolium	Round-leaved trailing tick trefoil	Threatened
Hypoxis hirsuta	Yellow Star Grass	Threatened
Paronychia canadensis	Smooth forked Whitlow-wort	Endangered
Vulpia octoflora	Eight –flowered six weeks grass	Endangered

As part of the early planning stages of the new transmission line project, National Grid and Eversource plan to identify the locations of rare plants that may occur near the proposed project. The following information is a field survey protocol that will be implemented to identify the locations of any such rare plant species that may occur on the right of way.

Study Area

The attached permitting sheets illustrates the mapped polygons where rare plant surveys are planned. Table 2 (attached) lists typical habitat types where the listed plants identified in Table 1 area known to occur.

Survey Approach

During each visit, two field scientists will systematically walk segments of the project right of way in search of listed plant species in areas where listed plants have previously been recorded. In general, the field scientists will walk along and across the width of the right of way in overlapping zigzag patterns searching for listed plant species. In the event

Union Station, Suite 219 2 Washington Square Worcester, MA 01604 P 508.752.1001 Ref: 12650.01 May 8, 2015 Page 2

that any rare plants are found, they will be counted and their location(s) recorded with GPS. Important diagnostic features to identify each of the listed plants known to occur near the project area are provided in Table 2.

If large numbers of a listed plant species are found in a given location, the field scientists will walk the area and temporarily mark the location of each individual plant (including genet or ramet as appropriate) with wire staked survey flags. The field scientists will continue to do so until no new plants are found. After completing this task the outer perimeter of the plant concentration will be recorded as an area feature (polygon) with the GPS units. Simultaneously with recording the location of the listed species polygon, the numbers of plants will be counted in the polygon and the wire survey stakes removed.

In the event that the plants are too numerous to count in a given location, numbers will be estimated. To estimate large numbers of listed plants, the perimeter of where the plants are concentrated will be marked in the field using the same wire staked survey flags and recorded with the GPS units as described above. This information will be used to calculate the overall surface area of the listed plant concentration. Within the listed plant concentration area, plants will be counted within a number of round sample plots (of appropriated size based on the overall size of the polygon), the locations of which will be determined randomly in the field. The number of plots to be sampled will be determined in the field based on the size of the rare plant concentration area. Based on this information, estimates of rare plant density and numbers will be calculated.

Representative photographs will be taken of selected individual plants and of the area where they are located. Notes will also be taken describing site conditions, the occurrence of other vascular plant species and any apparent threats to the area including the presence of invasive species.

Schedule and Search Effort

Phenology information for each of the listed plant species is provided in Table 2. Taking into considerations the overlap of optimum viewing times to see important diagnostic features, Table 2 identifies widows of opportunity for optimum field survey efforts. Based on this information, searches for rare plants within each of the study areas will be made on at least three occasions during June and July. During each of the three survey windows, two-field scientist will search for rare plants within the study area.

Report Preparation

Following completion of field survey efforts, a report will be submitted to the NHB. The report will include survey protocols and any changes to protocols required by unforeseen conditions, descriptions of the study area, a list of plant species found within areas searched, specific locations of rare plants if found, densities and estimates of rare plant population sizes, photographs of general habitat conditions and representative rare plants that are found. In addition, included within the report will be figures that delineate the study area and specific locations of rare plants.

Ref: 12650.01 May 8, 2015 Page 3

Avoidance and Minimization

There are two phases of the project. The first phase is geotechnical borings slated for summer 2015; the second phase is project construction the following year. Geotechnical borings are proposed at each structure. Rare plant areas will be flagged in the field and cordoned off from the geotechnical borings. At this time, we anticipate that the boring locations can be flexible so that borings will be able to avoid rare plant locations. Once rare plant mapping is completed in June and July 2015, we will assess the project design to determine if the project can be redesigned to avoid impacts.

Rare plant areas will be checked again in 2016 prior to construction and reflagged in the field. Rare plant areas would be cordoned off again and protected prior to project construction. If redesign cannot completely avoid rare plant areas, then Eversource and National Grid would seek to mitigate impacts.

Table 2 Rare Plant Phenology, Important Diagnostic Features and Habitat

			NH		Phenology																				
Common Name	Scientific Name	Family	Status		APRIL		MAY			J	JUN			JUL			AUG		SEPT		ОСТ	Distinguishing Diagnostic Features	Habitat/Phenology		
Round-leaved trailing tick trefoil	Desmodium rotundifolium	Fabaceae	Т										Δ	Δ	Δ	Δ	ΔΟ ΔΟ	ΔΟ	ΔΟ	ΔΟ	ΔΟ	ΔΟ ΔΟ		FNA (579) Stems prostrate: inflorescences primarily axillary; terminal leaflet mostly 0.8- 1.2 times as long as wide; Leaves and growth form distinduishing	FNA (581) Dry-mesic forests and woodlands, commonly associated with rocky slopes; MVP (295) Dry woods especially in sandy soil July - August; FNe (680) Rich or dry, often rocky woods (August - September)
Yellow Star Grass	Hypoxis hirsuta	Hypoxidaceae	Т	Δ	ΔΔ	Δ	ΔΟ ΔΟ	ΔΟ ΔΟ	Ο ΔΟ	ΔΟ	ΔΟ	ΔΟ	ΔΟ	ΔΟ Δ	.Ο Δ	70								MVP (841) Leaves linear and pilose, 2-10 mm wide, 6 dm a anthesis, bearing an irregular unbel of 2-6 flowers on long pedicels, flowers yellow, irregular in size, 1-2,5 cm wide.	t FNA (178) Woodlands, forest edges, sandy fields; MVP (841) dry open woods, Aprilg July; Fne (330) Fields and open woods May-July:
Smooth forked Whitlow-wort	Paronychia canadensis	Caryophyllace ae	E						ΔΟ	ΔΟ	ΔΟ	ΔΟ	ΔΟ	ΔΟ Δ	Δ.Ο.Δ	7O	ΔΟ ΔΟ	ΔΟ	ΔΟ	ΔΟ	ΔΟ	ΔΟ ΔΟ			e FNA (515) Woodlands, rocky forests, balds, trail edges; MVP (122) Sandy soil and topen places June - September; FNe (483) Dry rocky, sandy, or rich deciduous woods l and Openings June - September:
	Vulpia octoflora var. tenella (FNA 288)	Poaceae	Е						O	0	0	0	0	o	0	O								FNA (288) Spikelets 4-5.5 mm long, awn of lowest lemm 2.5-6 (-9) mm long	a MGNA (105) Grasslands, sagebrush, and open woodlands, as well as disturbed habitats and areas of secondary succession, such as old fields, roadsides, and ditches; FNA (288) Sandy roadsides, edges of parking lots, aand fields, open ledges; MVP Dry sterile soil; FNe (174) Dry sandy soil June-July):
Field Survey Window									FS		F	:S		FS											

Flowering		
FS	Field Survey Window (2 man days / field survey window)	
FNA	Haines, Arthur, Elizabeth Farnsworth, and Gordon Morrison. 2011. New England Wildflower Society's flora Novae Angliae: a manual for the identification of native and naturalized higher vascular plants of New England. [Framingham, Mass.]: New England Wild Flower Society.	Phenology Key
FNe	Magee, Dennis W., and Harry E. Ahles. 2007. Flora of the Northeast: a manual of the vascular flora of New England and adjacent New York. Amherst: University of Massachusetts Press.	0
MGNA	Mary E. Barkworth, Laurel K. Anderton, Kathleen M. Capels, Sandy Long, and Michael B. Piep (eds.). 2007. Manual of Grasses for North America, Utah State University Pres	
MVP	Gleason, Henry A. and Arthur Cronquist. 1991. Manual of vascular Plants of Northeastern United States and Adjacent Canada. Second Edition. The New York Botanical Garden.	Δ

Trefry, Sherrie

From: Oakley, Darrell

Sent: Wednesday, May 27, 2015 2:51 PM

To: Trefry, Sherrie
Cc: Bergeron, Marc

Subject: Fwd: MVRP Plant Survey Protocol

Attachments: image001.png

Follow Up Flag: Follow up Flag Status: Flagged

Here's the NHB survey approval.

Sent from my iPhone

Begin forwarded message:

From: "Lamb, Amy" < Amy.Lamb@dred.nh.gov>

Date: May 27, 2015 at 12:31:44 PM EDT **To:** "Oakley, Darrell" < <u>DOakley@VHB.com</u>>

Cc: "Coppola, Melissa" < Melissa. Coppola@dred.nh.gov >

Subject: RE: MVRP Plant Survey Protocol

Hi Darrell,

Thanks for your reply. To address your comments:

NHB is not suggesting that surveys be conducted over the entire 20 miles of right of way. We only recommend that additional areas of suitable habitat (as described in the table of the plant survey protocol document).

Thank you for addressing my questions. I have no further questions about the approach and survey protocol. I look forward to seeing the results of the plant survey.

Amy

Amy Lamb Ecological Information Specialist (603) 271-2215 ext. 323

NH Natural Heritage Bureau DRED - Forests & Lands 172 Pembroke Rd Concord, NH 03301

From: Oakley, Darrell [mailto:DOakley@VHB.com]

Sent: Tuesday, May 26, 2015 10:36 AM

To: Lamb, Amy

Cc: Coppola, Melissa; Laura V. Games/NUS; Holden, Joshua B.; Bergeron, Marc; Trefry, Sherrie

Subject: RE: MVRP Plant Survey Protocol

Amy,

Thank you for your comments. Please see the responses in orange below. If you are ok with the approach and survey protocol, please respond. We are trying to finalize MVRP's SEC application this week and need to include correspondence and approvals from Natural Heritage Bureau and Fish and Game Department.

Regards, Darrell

From: Lamb, Amy [mailto:Amy.Lamb@dred.nh.gov]

Sent: Thursday, May 21, 2015 10:33 AM

To: Oakley, Darrell **Cc:** Coppola, Melissa

Subject: RE: MVRP Plant Survey Protocol

Hello Darrell,

I apologize for taking so long to get back to you. I wanted to ask a few questions about the rare plant survey plan and the boring plan.

In the survey plan, I was wondering why the survey stakes would be removed after flagging the locations of rare plants. It seems that leaving the flags would assist in protecting the populations. Also, your current plan only includes looking for known occurrences of rare plants, but we suggest that you also survey in areas with suitable habitat, if possible.

Permanent stakes would cause unwanted attraction to rare plant areas. State agencies typically do not want us to advertise where rare plants occur since unscrupulous collectors have been known to damage remaining plant locations. During construction and if needed geotech borings, rare plants areas would be protected with a barrier and suitable buffer. In regards to extending the survey area beyond the general vicinity of known rare plant locations, National Grid and Eversource will not offer rare plant surveys over 20 miles of right of way unless required by Natural Heritage Bureau.

In the boring plan, it states that boring locations (and the associated 25'x25' geoboring work pad) will be flexible and can be moved to avoid rare plants. If plants cannot be completely avoided, we request that the impacted areas be mitigated.

Because the boring locations can be flexible, we do not anticipate the need for mitigation at this time; however, if needed National Grid and Eversource would develop a mitigation plan with the Natural Heritage Bureau.

During the construction phase, 100'x100' construction work pad areas are included around the proposed structure. Can these areas also be resized/modified/relocated if they are in the vicinity of a rare plant? Again, if rare plants are found, please show that you have worked to minimize impacts to rare plants, including relocating construction work pads and, if possible, leaving buffers around the rare plants.

Once rare plants are mapped, project engineers will assess whether construction work pad areas can be modified to avoid or minimize impacts. National Grid and Eversource are committed to minimizing impacts to rare plants to the greatest extent practicable.

Thank you for the opportunity to comment.

Best, Amy Amy Lamb Ecological Information Specialist (603) 271-2215 ext. 323

NH Natural Heritage Bureau DRED - Forests & Lands 172 Pembroke Rd Concord, NH 03301

Darrell Oakley

Senior Ecologist

P 508.513.2723 www.vhb.com

From: Lamb, Amy [mailto:Amy.Lamb@dred.nh.gov]

Sent: Thursday, May 21, 2015 10:33 AM

To: Oakley, Darrell **Cc:** Coppola, Melissa

Subject: RE: MVRP Plant Survey Protocol

Hello Darrell,

I apologize for taking so long to get back to you. I wanted to ask a few questions about the rare plant survey plan and the boring plan.

In the survey plan, I was wondering why the survey stakes would be removed after flagging the locations of rare plants. It seems that leaving the flags would assist in protecting the populations. Also, your current plan only includes looking for known occurrences of rare plants, but we suggest that you also survey in areas with suitable habitat, if possible.

In the boring plan, it states that boring locations (and the associated 25'x25' geoboring work pad) will be flexible and can be moved to avoid rare plants. If plants cannot be completely avoided, we request that the impacted areas be mitigated.

During the construction phase, 100'x100' construction work pad areas are included around the proposed structure. Can these areas also be resized/modified/relocated if they are in the vicinity of a rare plant? Again, if rare plants are found, please show that you have worked to minimize impacts to rare plants, including relocating construction work pads and, if possible, leaving buffers around the rare plants.

Thank you for the opportunity to comment.

Best, Amy

Amy Lamb Ecological Information Specialist (603) 271-2215 ext. 323

NH Natural Heritage Bureau DRED - Forests & Lands

172 Pembroke Rd Concord, NH 03301

From: Oakley, Darrell [mailto:DOakley@VHB.com]

Sent: Friday, May 08, 2015 11:12 AM **To:** Coppola, Melissa; Lamb, Amy

Cc: Bergeron, Marc; Trefry, Sherrie; Laura V. Games/NUS; Holden, Joshua B.

Subject: RE: MVRP Plant Survey Protocol

Melissa and Amy,

I've updated the protocol to include avoidance and minimization. Please review and approve the survey plan.

Regards, Darrell

Darrell Oakley

Senior Ecologist

P 508.513.2723 www.vhb.com

From: Coppola, Melissa [mailto:Melissa.Coppola@dred.nh.gov]

Sent: Friday, May 01, 2015 2:09 PM

To: Oakley, Darrell

Cc: Bergeron, Marc; Trefry, Sherrie; Laura V. Games/NUS; Holden, Joshua B.; Lamb, Amy

Subject: RE: MVRP Plant Survey Protocol

This looks good, except it is missing one detail: how impacts will be avoided or minimized once the plants are located.

This detail should be included in the protocol and could be as simple as leaving the flags out, or putting them back out once the project is moving forward so that the sensitive areas can be avoided.

FYI. Amy Lamb started today in my old full-time positon. I'm cc-ing her on this email so that you have her contact information. I will still be working part-time for a bit longer to help with the transition.

Best, Melissa

From: Oakley, Darrell [mailto:DOakley@VHB.com] i

Sent: Tuesday, April 21, 2015 2:44 AM

To: Coppola, Melissa

Cc: Bergeron, Marc; Trefry, Sherrie; Laura V. Games/NUS; Holden, Joshua B.

Subject: MVRP Plant Survey Protocol

Melissa,

Attached is a survey protocol and mapping for the Merrimack Valley Reliability Project. Please review and provide any comments.

NHF&G Correspondence



To: Michael Marchand New Hampshire Fish & Game Date: June 2, 2015

Memorandum

Project #: 126500

From: Darrell Oakley MVRP Rare Species Field Protocols and Construction Avoidance

Rare species field protocols for the MVRP were developed over a series of meetings and correspondence with the New Hampshire Fish and Game and the New Hampshire Natural Heritage Bureau. An information request for MVRP project review was sent to the Natural Heritage Bureau on December 12, 2014. Response for project review was released on December 17, 2014. Dale Abbot of VHB entered into a Data Sharing Agreement for NH Heritage Bureau Environmental Review Data on January 8, 2015 in order to plot known occurrences of rare, threatened, and endangered species on project plans. The applicants and consultants had a pre application meeting with the SEC on January 22, 2015 where representatives from the New Hampshire Fish and Game and the Natural Heritage Bureau were present. Ms. Sherrie Trefry of VHB corresponded with the Natural Heritage Bureau regarding rare plant surveys. Rare plant survey protocols are covered in separate correspondence with the Natural Heritage Bureau.

National Grid, Eversource and VHB met with New Hampshire Fish and Game on February 17, 2015 to discuss the results of the mapped rare species along the project ROW and potential surveys. Laura Games of Eversource, Joshua Holden of National Grid, and I had an additional meeting with New Hampshire Fish and Game on March 26, 2015 to further develop surveys and discuss avoidance techniques. We have had follow-up emails and telephone calls with New Hampshire Fish and Game and Natural Heritage Bureau to facilitate survey plans.

Boring plans regarding rare species were sent to the Fish and Game on May 8 with map revisions on May 19, 2015. Boring plans were sent to the Natural Heritage Bureau on April 20 with revisions on May 8 and May 22. Final approval on rare plant surveys and avoidance are still being negotiated with Natural Heritage Bureau and New Hampshire Fish and Game.

I discussed the project with Ms. Susi vonOettingen of US Fish and Wildlife Service on February 10, 2015. The topic concerned surveys with the expected listing of the northern long-eared bat. The applicants filed a review with the US Fish and Wildlife Service Information, Planning, and Conservation System web site on March 3, 2015. The review resulted in no listed threatened or endangered species or critical habitats. The northern long-eared bat (*Myotis septranlis*) became listed as threatened on April 4, 2015. I discussed the applicability of the 4(d) rule for transmission line projects with Maria Tur and Susi vonOettingen on May 5 and May 6, 2015. The IPaC system was updated in May and I updated the IPaC report on May 15, 2015. Once again, the report resulted in no listed species or critical habitats near the project area. Because the northern long-eared bat is listed as occurring statewide in New Hampshire, National Grid and Eversource will continue to coordinate with the US Fish and Wildlife Service.

Survey Protocols Developed Through Consultation with New Hampshire Fish and Game

Black Racer-National Grid ROW Sheet 39 and Eversource ROW Sheet 103

The following protocol has been accepted by New Hampshire Fish and Game and a Collector permit was issued on April 15, 2015.

Currently, the black racer (*Coluber constrictor*) is locally sparse through southeast New Hampshire (NHF&G 2015). Black racers occur across a broad range of habitat types, including deciduous and coniferous forests, fields,

Union Station, Suite 219 2 Washington Square Worcester, MA 01604 P 508.752.1001

woodlands, swamps, and marshes, although the preferred habitat in southern New Hampshire are dry, brushy pastures, power line corridors, rocky ledges, and woodlands (NHF&G 2015).

Favored black racer nesting sites include mammal burrows, rotting logs and stumps, and sawdust piles. Most frequently, females will seek out small mammal burrows in which to deposit their eggs. The mammal burrows typically are found in old fields and meadows, especially near stonewalls, abandoned buildings and brush piles. Females also will deposit their eggs in depressions under logs or stones, or within leaf litter. After an incubation period of 43-65 days, temperature dependent hatching will occur in late July to September. Winter hibernation sites include mammal burrows, caves, rock crevices, and gravel banks, in addition to rotting logs and stumps. Winter hibernation sites on transmission lines may include rock crevices near tower foundations (Marchand pers. comm. February 17, 2015).

The size of the home ranges of the black racer can vary greatly, owing to the size or productivity of the habitat. Low productivity habitats could consist of small, fragmented (developed) areas that would support large home ranges while large, unfragmented habitats would support smaller home ranges. Cited home ranges average 30 acres for Maine populations (MDIFW 2003), although home ranges as small as seven acres and in some instances, 0.2 acres, have also been cited (Tyning 1990). Furthermore, snakes may be predisposed to long distance migratory movements between potentially disjunct winter hibernacula and summer nesting and foraging habitats, complicating conservation efforts within fragmented habitats.

Survey Objective

The survey objective is to locate black racers near a known location on the Merrimack Valley Reliability Project (MVRP) right of way in Pelham, New Hampshire. If black racers are caught and appropriately sized, racers will be tagged with a radio transmitter for relocating with radio telemetry. With radio telemetry, it may be possible to locate black racer nesting locations in summer or hibernacula in fall. The goal in locating nesting areas and hibernacula is to avoid these important areas and prevent black racer take during construction of the MVRP.

Snake Handling and Relocation Procedures

Prior to initiating on-site surveys, a scientific collection permit will be acquired and a NHF&G contact person will be established for notification purposes. Tarpaper sections will be placed in sunny locations to attract snakes in the known black racer location in Pelham, MA. Biologists will conduct meander surveys using binoculars to aid in locating black racers. Snakes will be captured by hand or with the use of tongs. Racers will be temporarily held within a cloth bag and then transferred to a container. These temporary holding containers will be placed within a shaded area to prevent undue temperature stress. Snakes will be held onsite until the scheduled surveys has been completed for that day.

Captured snakes will be transported to Russell Animal Hospital in Concord, New Hampshire or Weare Animal Hospital in Weare, New Hampshire. If snakes are healthy and of the appropriate weight, a Holohill SI-2, 9 gram transmitter will be inserted into a snake. It is anticipated that the animal hospitals will be able to implant the transmitters and release can occur on the same day. If needed, snakes may stay at the hospital overnight to recover prior to release. The release location will be at the capture site.

All survey data and detailed field notes will be collected and recorded on project-specific data sheets and a photograph record will be kept. Global positioning system data of snake locations and sightings will also be collected.

Snakes are anticipated to be tagged in mid- to late April post emergence and pre-dispersal. Snakes would be monitored at least two times a week until snakes disperse in late April or May. This period will likely last one to three weeks.

Following dispersal, snakes will be monitored every other week until June. If females were caught, females would be tracked twice a week in June to determine egg laying locations. If only males are tagged, then the males would be tracked every other week in June. In July and August, tagged racers would be monitored every other week. In September, monitoring will increase to twice a week to help locate hibernacula. At the end of the survey and if females are tagged, we will attempt to relocate and remove the tag at Russell Animal Hospital. If no snakes are located and tagged in spring 2015, then another survey effort will occur in spring 2016.

Reporting

The Applicants will document field survey efforts and report to the New Hampshire Fish and Game by January 31, 2016. The report will include the following items as required by the Scientific Collection Permit.

- (1) The name and address to which the scientific permit was issued
- (2) The purpose and objective of the study
- (3) Species and number wildlife taken
- (4) Age and sex, if known, of wildlife taken
- (5) Location(s) where species were taken or collected, including a map for those wildlife species tracked under this license
- (6) Date received or collected
- (7) Disposition of the wildlife
- (8) Location where specimens are held, if applicable

Construction-related Avoidance and Minimization Measures for Black Racer

- Additional pre-construction surveys in 2016 (potentially using transmitters and radio tracking)
- Observers during construction in documented black racer area
- Contractor education and brochures
- Avoidance of hibernaculas if located

Blanding's Turtle–National Grid ROW Sheet 66 and Eversource ROW Sheets 85–88 Spotted Turtle-Eversource ROW Sheets 81–83 and 102

Blanding's (NH-endangered) and spotted turtles (NH-threatened) are known to occur along the northern portion of the ROW. Blanding's generally hibernate in vegetated wetlands, whereas spotted turtles hibernate in the mud of shallow or in muskrat burrows or lodges (Ernst et al. 1994). Female Blanding's and spotted turtles seek terrestrial habitats to nest, typically in open sandy areas.

Based on discussions with New Hampshire Fish and Game, the primary area of concern for turtles is on Sheets 81-83. In this area there appears to be suitable nesting habitat adjacent to streams and wetlands. In addition, there is a pull site proposed on Sheet 102, which raises some concerns due to its location within a wetland documented for spotted turtle. This pull site has been moved to eliminate direct impacts to this wetland.

Survey Objective

Survey for suitable nesting areas and active nesting on Sheets 81-83. Blanding's turtle surveys should take place in the evening after 18:00 between May 25 and July 1, and earlier or later based on reports of nesting Blanding's turtle observations. Spotted turtles have a similar timeframe for nesting surveys, but may nest earlier in May, depending on seasonal conditions. We are planning three field days with two field scientists for this effort.

Construction-Related Avoidance and Minimization Measures for Blanding's Turtle and Spotted Turtle

- Additional pre-construction surveys (similar to current recommended approach)
- Observers during construction in documented turtle areas
- Contractor education and brochures
- Sweeping construction areas and then installing turtle barriers (silt fencing) in the project footprint near turtle habitat may be prudent during upland construction. This technique may not be applicable in all areas and will be dependent on nesting areas in relation to work areas.

New England Cottontail—Eversource ROW Sheets 90-95; 97

New England cottontail (*Sylvilagus transitionalis*) is listed as endangered in NH and is a candidate species for federal listing. New England cottontails inhabit dense shrubs, which generally are found in old fields, regenerating clear cuts, shrub-dominated wetlands, power lines, or other areas with thicket vegetation. New England cottontails are not known to occur along the MVRP ROW. NH Fish and Game has requested surveys that would be concentrated within the ROW between Mammoth Road and Interstate 93. Prior to field investigation, VHB in coordination with New Hampshire Fish and Game will perform a desktop review of suitable habitat between Mammoth Road and Interstate 93.

Survey Objective

Field surveys will be conducted in accordance with the USFWS New England Cottontail Tracking Field Protocol. Appropriate habitat will be searched by systematically meandering through thickets to cover most of the target area. At least 20% of suitable habitat patches will be surveyed. Suitable habitat will include areas consisting of dense vegetative cover and especially directed toward favored browse species (e.g. blackberry, raspberry, dewberry, blueberry, willows, aspen, maples, viburnums).

Surveys will be conducted during the day, when there is fresh snow on the ground. Searches will occur at least 36 hours, but preferably no more than four days, after the most recent snowfall to maximize accumulation of fresh tracks and fecal pellets. Also, if there have been high winds (>25 mph), rabbit sign may be obscured. An additional 36 hours with low winds will elapse prior to conducting surveys again. Reliable occupancy determination with 95% confidence of detection has been demonstrated with 2-3 surveys conducted with snowpack <12 inches and two to four days after a snowfall without high winds (Brubaker et al. 2014). At least four surveys would be required by NH Fish and Game in appropriate habitat patches in early winter 2015/2016 when conditions are appropriate. We are estimating eight field days with two field scientists to cover the potential New England Cottontail areas between Mammoth Road and Interstate 93.

Cottontail tracks will be photographed with a scale ruler. Cottontail fecal pellets will be located with GPS and samples collected with latex gloves. They will be placed into sterile vials and stored in a cooler with snow or ice to keep samples frozen until they can be placed in a freezer or delivered to a laboratory. Fecal samples will be delivered to the University of New Hampshire Molecular Ecology lab for DNA analysis. A report will be generated using the collected data and sent to the project team for review prior to submission to the SEC and USFWS. Conducting surveys would be used to demonstrate that the applicant has taken the appropriate measures to identify endangered wildlife species within the project area.

Construction-related Avoidance and Minimization Measures for New England Cottontail

- None required—assume surveys would show project will have no adverse effect on this species.
- Maintenance of ROW will be done in consultation with NHF&G to benefit cottontail habitat.

References:

Brubaker, D. R. Kovach, A. I. Ducey, M. J. Jakubas, W. J. and K.M. O'brien. 2014. Factors influencing detection in occupancy surveys of a threatened lagomorph. Wildlife Society Bulletin, Vol. 28, Issue 3, pages 513-523.

Ernst, C.H., J.E. Lovich, and R.W. Barbour. 1994. Turtles of the United States and Canada. Smithsonian Inst. Press, Washington, D.C. 578 pp.

Maine Department of Inland Fisheries & Wildlife (MDIFW) 2003. Black Racer (*Coluber constrictor*) - Maine's Endangered and Threatened Wildlife. 2003.

https://www1.maine.gov/ifw/wildlife/endangered/pdfs/blackracer 82 83.pdf (accessed April 13, 2015).

New Hampshire Fish and Game (NHF&G) 2015. http://www.wildlife.state.nh.us/Wildlife/Nongame/snakes/profile_black_racer.htm

Tyning, T.F. 1990. A Guide to Amphibian and Reptiles. Little, Brown, and Company.

USFWS. 2015. New England Cottontail Field Tracking Protocol. http://www.fws.gov/gomcp/NEC/MNECWG Surveys Protocol.pdf

Trefry, Sherrie

From: Marchand, Michael < Michael.Marchand@wildlife.nh.gov>

Sent: Monday, June 08, 2015 11:51 AM

To: Oakley, Darrell

Cc: Laura V. Games/NUS; Holden, Joshua B.; Trefry, Sherrie; Bergeron, Marc

Subject: RE: MVRP Field Protocols

Follow Up Flag: Follow up Flag Status: Flagged

Thanks Darrell,

The protocols are consistent with our discussions to date.

Mike

Michael Marchand

Certified Wildlife Biologist Nongame & Endangered Wildlife Program NH Fish & Game Department 11 Hazen Drive Concord NH 03301 Phone: 603-271-3016

Check out reptiles and amphibians of NH!!:

http://www.wildlife.state.nh.us/nongame/reptiles-amphibians.html

Report your sightings of reptiles and amphibians in 3 ways:

- 1) Email details of observation or completed form to RAARP@wildlife.nh.gov or
- 2) Enter your observation online at http://nhwildlifesightings.unh.edu.
- 3) Mail your reporting slip

http://www.wildlife.state.nh.us/nongame/documents/raarp-report-form.pdf

Northeast Partners of Amphibian and Reptile Conservation: http://www.northeastparc.org/

From: Oakley, Darrell [mailto:DOakley@VHB.com]

Sent: Tuesday, June 02, 2015 9:40 AM

To: Marchand, Michael

Cc: Laura V. Games/NUS; Holden, Joshua B.; Trefry, Sherrie; Bergeron, Marc

Subject: MVRP Field Protocols

Mike,

Attached please find the MVRP field protocols for your review. We would like to get your concurrence by email and put it into the SEC filing. Can you review it by the end of this week?

Thanks, Darrell

Darrell Oakley

Senior Ecologist

USFWS Correspondence



United States Department of the Interior

FISH AND WILDLIFE SERVICE

New England Ecological Services Field Office 70 COMMERCIAL STREET, SUITE 300 CONCORD, NH 3301

PHONE: (603)223-2541 FAX: (603)223-0104 URL: www.fws.gov/newengland



Consultation Code: 05E1NE00-2015-SLI-0298 March 03, 2015

Event Code: 05E1NE00-2015-E-00481

Project Name: MVRP

Subject: List of threatened and endangered species that may occur in your proposed project

location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan

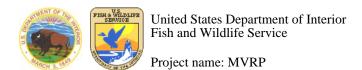
(http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and

http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment



Official Species List

Provided by:

New England Ecological Services Field Office 70 COMMERCIAL STREET, SUITE 300 CONCORD, NH 3301 (603) 223-2541

http://www.fws.gov/newengland

Consultation Code: 05E1NE00-2015-SLI-0298

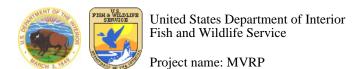
Event Code: 05E1NE00-2015-E-00481

Project Type: Transmission Line

Project Name: MVRP

Project Description: Eversource and National Grid have teamed up to implement the construction of a new transmission line between Londonderry, New Hampshire, and Tewksbury, Massachusetts. The Merrimack Valley Reliability Project will consist of installing a new 345-kilovolt (kV) overhead line along 24.6 miles of an existing power line corridor that runs between Londonderry, New Hampshire, and Tewksbury, Massachusetts.

Please Note: The FWS office may have modified the Project Name and/or Project Description, so it may be different from what was submitted in your previous request. If the Consultation Code matches, the FWS considers this to be the same project. Contact the office in the 'Provided by' section of your previous Official Species list if you have any questions or concerns.



Project Location Map:



Project Coordinates: MULTIPOLYGON (((-71.3766518 42.883135, -71.382035 42.8792434, -71.3829066 42.8790672, -71.3830279 42.8788685, -71.3828897 42.8782228, -71.3836339 42.8780957, -71.3841052 42.8784708, -71.3842194 42.878857, -71.4040665 42.8754502, -71.4186006 42.8503224, -71.4003344 42.8291391, -71.3779134 42.8097936, -71.3724214 42.8047253, -71.3727366 42.8040636, -71.3625184 42.794664, -71.3302196 42.7621377, -71.3205306 42.7499057, -71.3193263 42.7483423, -71.2982929 42.7218326, -71.2694535 42.6908572, -71.269317 42.69081, -71.2687184 42.6902346, -71.2688537 42.6902125, -71.2512896 42.6713313, -71.2513039 42.6714914, -71.2505321 42.6707659, -71.2507015 42.6706989, -71.2405235 42.6613199, -71.2390246 42.6513907, -71.2388438 42.6514322, -71.2384731 42.6489757, -71.2380621 42.648783, -71.237225 42.6431831, -71.2371136 42.6432484, -71.2372107 42.6428616, -71.2373387 42.6428622, -71.2390279 42.6385163, -71.2390713 42.638495, -71.2392365 42.6380794, -71.239617 42.6379009, -71.2410049 42.6343293, -71.2408795 42.6344033, -71.2415365 42.6327125, -71.2419268 42.6317083, -71.2419921 42.6317889, -71.2441129 42.6263317, -71.2414732 42.6232929, -71.2415801





United States Department of Interior Fish and Wildlife Service

Project name: MVRP

42.6227708, -71.2421917 42.622268, -71.2434216 42.6225221, -71.2424261 42.6232877, -71.2423551 42.6234357, -71.2424163 42.6235524, -71.2442816 42.6258857, -71.244453 42.6254547, -71.2443846 42.625106, -71.2451383 42.6239126, -71.2454302 42.6223057, -71.2475923 42.6225519, -71.2485943 42.6235757, -71.2484907 42.6243092, -71.2468333 42.6252842, -71.2462362 42.6258396, -71.241676 42.6375768, -71.2412362 42.6378083, -71.2391092 42.6432813, -71.2400428 42.6494644, -71.2405491 42.6497211, -71.2418693 42.6584658, -71.2431354 42.6615338, -71.2462394 42.6643583, -71.2525158 42.6699827, -71.2534066 42.6709407, -71.2530126 42.6714869, -71.2994011 42.7213287, -71.3313003 42.7616239. -71.3635422 42.7940836. -71.3668586 42.7971335. -71.3670131 42.7970495. -71.3672468 42.7972644, -71.3732461 42.802994, -71.379542 42.8088042, -71.4020376 42.8282136, -71.4026833 42.8289264, -71.4038774 42.830348, -71.4202849 42.8493744, -71.4201004 42.8509526, -71.4049879 42.877081, -71.3832083 42.8808161, -71.3828494 42.8810761, -71.3828785 42.8808628, -71.3827046 42.8808927, -71.3827032 42.8808187, -71.3555599 42.900433, -71.34707 42.9018984, -71.3463895 42.9020592, -71.3453083 42.9041445, -71.3443003 42.9048407, -71.3416664 42.9059313, -71.3413824 42.9057916, -71.3407635 42.9048343, -71.3402814 42.9042371, -71.3397983 42.903837, -71.3386657 42.9018342, -71.3399849 42.901662, -71.345587 42.9006465, -71.3545593 42.8990979, -71.3766518 42.883135)))

Project Counties: Essex, MA | Middlesex, MA | Hillsborough, NH | Rockingham, NH



Endangered Species Act Species List

There are a total of 0 threatened or endangered species on your species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Critical habitats listed under the **Has Critical Habitat** column may or may not lie within your project area. See the **Critical habitats within your project area** section further below for critical habitat that lies within your project. Please contact the designated FWS office if you have questions.

There are no listed species identified for the vicinity of your project.



Critical habitats that lie within your project area

There are no critical habitats within your project area.



Attachment E

Cultural Resource Agency Correspondence

Please mail the completed form and required material to:

New Hampshire Division of Historical Resources State Historic Preservation Office Attention: Review & Compliance 19 Pillsbury Street, Concord, NH 03301-3570 RECEIVED
NOV 2 7 2012

Request for Project Review by the New Hampshire Division of Historical Resources

\boxtimes	This	is	a	new	sub	$_{ m mi}$	ttal
		2					-

☐ This is additional information relating to DHR Review & Compliance (R&C) #:

GENERAL PROJECT INFORMATION

Project Title PSNH 326 Transmission Line Uprate Project

Project Location Scobie Pond Substation to NH/MA state line

City/Town Londonderry, Pelham, Hudson

Tax Map Multiple Lot # Multiple

NH State Plane - Feet Geographic Coordinates: Easting

Northing

(See RPR Instructions and R&C FAQs for guidance.)

Lead Federal Agency and Contact (if applicable) ACOE

(Agency providing funds, licenses, or permits)

Permit Type and Permit or Job Reference # PGP expected

State Agency and Contact (if applicable) NH DES - Frank Richardson

Permit Type and Permit or Job Reference # Standard - Major

APPLICANT INFORMATION

Applicant Name PSNH - c/o Laura Games

Mailing Address PSNH Energy Park 780 North Commercial St

Phone Number 603 634-2906

City Manchester

State NH

Zip 03101

Email Laura.Games@nu.com

CONTACT PERSON TO RECEIVE RESPONSE

Name/Company Lee Carbonneau/Normandeau Associates, Inc.

Mailing Address 25 Nashua Road

Phone Number -6036371150

City Bedford

State NH

Zip 03110

Email lcarbonneau@normandeau.com

This form is updated periodically. Please download the current form at http://www.nh.gov/ DHR/review. Please refer to the Request for Project Review Instructions for direction on completing this form. Submit one copy of this project review form for each project for which review is requested. Include a self-addressed stamped envelope to expedite review response. Project submissions will not be accepted via facsimile or e-mail. This form is required. Review request form must be complete for review to begin. Incomplete forms will be sent back to the applicant without comment. Please be aware that this form may only initiate consultation. For some projects, additional information will be needed to complete the Section 106 review. All items and supporting documentation submitted with a review request, including photographs and publications, will be retained by the DHR as part of its review records. Items to be kept confidential should be clearly identified. For questions regarding the DHR review process and the DHR's role in it, please visit our website at: http://www.nh.gov/ DHR/review or contact the R&C Specialist at http://www.nh.gov/ DHR/review or contact the R&C Specialist at http://www.nh.gov/ DHR/review or contact the

PROJECTS CANNOT BE PROCESSED WITHOUT THIS INFORMATION
Project Boundaries and Description
Attach the relevant portion of a 7.5' USGS Map (photocopied or computer-generated) indicating the defined project boundary. (See RPR Instructions and R&C FAQs for guidance.) Attach a detailed narrative description of the proposed project. Attach a site plan. The site plan should include the project boundaries and areas of proposed excavation. Attach photos of the project area (overview of project location and area adjacent to project location, and specific areas of proposed impacts and disturbances.) (Informative photo captions are requested.) A DHR file review must be conducted to identify properties within or adjacent to the project area. Provide file review results in Table 1 or within project narrative description. (Blank table forms are available on the DHR website.) File review conducted on 10/14/2011.
$\underline{Architecture}$
Are there any buildings, structures (bridges, walls, culverts, etc.) objects, districts or landscapes within the project area? Yes No If no, skip to Archaeology section. If yes, submit all of the following information:
Approximate age(s):
Photographs of <i>each</i> resource or streetscape located within the project area, with captions, along with a photo key. (Digital photographs are accepted. All photographs must be clear, crisp and focused.) If the project involves rehabilitation, demolition, additions, or alterations to existing buildings or structures, provide additional photographs showing detailed project work locations. (i.e. Detail photo of windows if window replacement is proposed.)
$\underline{Archaeology}$
Does the proposed undertaking involve ground-disturbing activity? X Yes No If yes, submit all of the following information:
Description of current and previous land use and disturbances. Available information concerning known or suspected archaeological resources within the project area (such as cellar holes, wells, foundations, dams, etc.)
Please note that for many projects an architectural and/or archaeological survey or other additional information may be needed to complete the Section 106 process.
DHR Comment/Finding Recommendation This Space for Division of Historical Resources Use Only
☐ Insufficient information to initiate review. ☐ Additional information is needed in order to complete review. ☐ No Potential to cause Effects ☐ No Historic Properties Affected ☐ No Adverse Effect ☐ Adverse Effect ☐ Comments: ☐
If plans change or resources are discovered in the course of this project, you must contact the Division of Historical Resources as required by federal law and regulation.

Please mail the completed form and required material to:

New Hampshire Division of Historical Resources State Historic Preservation Office Attention: Review & Compliance 19 Pillsbury Street, Concord, NH 03301-3570

🔀 This is a new submittal



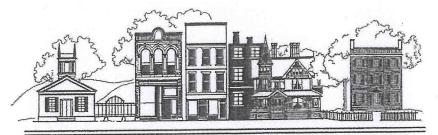
DHR Use Only	10	0
R&C#	651	7_
Log In Date	/_	_/
Response Date	/	_/
Sent Date	1	_/

Request for Project Review by the New Hampshire Division of Historical Resources

Project Title Merrimack Valley Reliability Project ("MVRP") Project Location Existing Overhead Utility Right of Way (ROW) City/Town Pelham, Windham, Hudson and Londonderry Tax Map N/A NH State Plane - Feet Geographic Coordinates: Easting 587179 (See RPR Instructions and R&C FAQs for guidance.) Lead Federal Agency and Contact (if applicable) Army Corps of Engineers, David Keddell (Agency providing funds, licenses, or permits) Permit Type and Permit or Job Reference # Section 404 Permit State Agency and Contact (if applicable) NH DES					
Project Location Existing Overhead Utility Right of Way (ROW) City/Town Pelham, Windham, Hudson and Londonderry Tax Map N/A Northing 146605 (See RPR Instructions and R&C FAQs for guidance.) Lead Federal Agency and Contact (if applicable) Army Corps of Engineers, David Keddell (Agency providing funds, licenses, or permits) Permit Type and Permit or Job Reference # Section 404 Permit					
Project Location Existing Overhead Utility Right of Way (ROW) City/Town Pelham, Windham, Hudson and Londonderry Tax Map N/A Northing 146605 (See RPR Instructions and R&C FAQs for guidance.) Lead Federal Agency and Contact (if applicable) Army Corps of Engineers, David Keddell (Agency providing funds, licenses, or permits) Permit Type and Permit or Job Reference # Section 404 Permit					
City/Town Pelham, Windham, Hudson and Londonderry Tax Map N/A NH State Plane - Feet Geographic Coordinates: Easting 587179 (See RPR Instructions and R&C FAQs for guidance.) Lead Federal Agency and Contact (if applicable) Army Corps of Engineers, David Keddell (Agency providing funds, licenses, or permits) Permit Type and Permit or Job Reference # Section 404 Permit					
City/Town Pelham, Windham, Hudson and Londonderry Tax Map N/A NH State Plane - Feet Geographic Coordinates: Easting 587179 (See RPR Instructions and R&C FAQs for guidance.) Lead Federal Agency and Contact (if applicable) Army Corps of Engineers, David Keddell (Agency providing funds, licenses, or permits) Permit Type and Permit or Job Reference # Section 404 Permit					
NH State Plane - Feet Geographic Coordinates: Easting 587179 Northing 146605 (See RPR Instructions and R&C FAQs for guidance.) 1050485 Northing 146605 (L 7803) Lead Federal Agency and Contact (if applicable) Army Corps of Engineers, David Keddell (Agency providing funds, licenses, or permits) Permit Type and Permit or Job Reference # Section 404 Permit					
(See RPR Instructions and R&C FAQs for guidance.) Lead Federal Agency and Contact (if applicable) Army Corps of Engineers, David Keddell (Agency providing funds, licenses, or permits) Permit Type and Permit or Job Reference # Section 404 Permit					
(See RPR Instructions and R&C FAQs for guidance.) Lead Federal Agency and Contact (if applicable) Army Corps of Engineers, David Keddell (Agency providing funds, licenses, or permits) Permit Type and Permit or Job Reference # Section 404 Permit					
Lead Federal Agency and Contact (if applicable) Army Corps of Engineers, David Keddell (Agency providing funds, licenses, or permits) Permit Type and Permit or Job Reference # Section 404 Permit					
(Agency providing funds, licenses, or permits) Permit Type and Permit or Job Reference # Section 404 Permit					
Permit Type and Permit or Job Reference # Section 404 Permit					
State Agency and Contact (if applied bla) NH DES					
GLALE AVENCY AND CONTACT OF CONTROL OF THE DESC					
Permit Type and Permit or Job Reference # Various permits					
APPLICANT INFORMATION					
Applicant Name PSNH d/b/a Eversource and New England Power d/b/a National Grid					
Mailing Address 13 Legends Drive, Hooksett, NH and 40 Slyvan Road, Waltham, MA Phone Number					
City Hooksett, NH and Waltham, MA State Zip Email					
CONTACT PERSON TO RECEIVE RESPONSE					
Name/Company Laura Games, Eversource					
Humo company Baara Games, Brotesards					
Mailing Address 13 Legends Drive Phone Number 603-634-2906					
C' II de la Chata NII Z'in 0010C Empillante games@estergespree					
City Hooksett State NH Zip 03106 Email laura.games@eversource.com					

This form is updated periodically. Please download the current form at www.nh.gov/nhdhr/review. Please refer to the Request for Project Review Instructions for direction on completing this form. Submit one copy of this project review form for each project for which review is requested. Include a self-addressed stamped envelope to expedite review response. Project submissions will not be accepted via facsimile or e-mail. This form is required. Review request form must be complete for review to begin. Incomplete forms will be sent back to the applicant without comment. Please be aware that this form may only initiate consultation. For some projects, additional information will be needed to complete the Section 106 review. All items and supporting documentation submitted with a review request, including photographs and publications, will be retained by the DHR as part of its review records. Items to be kept confidential should be clearly identified. For questions regarding the DHR review process and the DHR's role in it, please visit our website at: www.nh.gov/nhdhr/review or contact the R&C Specialist at christina.st.louis@dcr.nh.gov or 603.271.3558.

	PROJECTS CANNOT BE PROCESSED WITHOUT THIS INFORMATION
Project Bo	oundaries and Description
At At Sp At Pr	ttach the relevant portion of a 7.5' USGS Map (photocopied or computer-generated) indicating the efined project boundary. (See RPR Instructions and R&C FAQs for guidance.) ttach a detailed narrative description of the proposed project. ttach a site plan. The site plan should include the project boundaries and areas of proposed excavation. ttach photos of the project area (overview of project location and area adjacent to project location, and becific areas of proposed impacts and disturbances.) (Informative photo captions are requested.) DHR file review must be conducted to identify properties within or adjacent to the project area. revide file review results in Table 1. (Blank table forms are available on the DHR website.) ille review conducted on March/2014/
Archite	<u>veture</u>
\mathbf{pr}	ere any buildings, structures (bridges, walls, culverts, etc.) objects, districts or landscapes within the roject area? \square Yes \square No no, skip to Archaeology section. If yes, submit all of the following information:
Approx	timate age(s): ca 1870
☐ If	hotographs of each resource or streetscape located within the project area, with captions, along with a apped photo key. (Digital photographs are accepted. All photographs must be clear, crisp and focused.) the project involves rehabilitation, demolition, additions, or alterations to existing buildings or ructures, provide additional photographs showing detailed project work locations. (i.e. Detail photo of indows if window replacement is proposed.)
Archae	ology
	ne proposed undertaking involve ground-disturbing activity? 🛛 Yes 🗌 No yes, submit all of the following information:
⊠ Av	escription of current and previous land use and disturbances. vailable information concerning known or suspected archaeological resources within the project area uch as cellar holes, wells, foundations, dams, etc.)
Ple	ease note that for many projects an architectural and/or archaeological survey or other additional information may be needed to complete the Section 106 process.
DHR	Comment/Finding Recommendation This Space for Division of Historical Resources Use Only
Insuffi	cient information to initiate review. Additional information is needed in order to complete review.
No Pot	tential to cause Effects No Historic Properties Affected No Adverse Effect Adverse Effect
Comment	
line and the	hat have not been surveyed and appear that have not been surveyed and appear that have been sites find. I find Freurously about some sections of this find. On informed comment cannot be made at time time antil surveys have been completed.
Resources	hange or resources are discovered in the course of this project, you must contact the Division of Historical as required by federal law and regulation. Date: 3/6/15



New Hampshire Division of Historical Resources

State of New Hampshire, Department of Cultural Resources
19 Pillsbury Street, Concord, NH 03301-3570
603-271-3558
TDD Access Relay NH 1-800-735-2964
FAX 603-271-3433
www.nh.gov/nhdhr
preservation@dcr.nh.gov

June 2, 2015

Frank Delguidice Regulatory Branch NH Division of Corps of Engineers Department of the Army 696 Virginia Road Concord, MH 01742-2751

Re:

Merrimack Valley Reliability Project (MVRP or 3124 Line)

Londonderry to Pelham, NH (RPR 6519)

Dear Mr. Delguidice:

In accordance with the National Historic Preservation Act of 1966 (P.L. 89-655), as amended, and as implemented by regulations of the Federal Advisory Council on Historic Preservation ("36 CFR Part 800: Protection of Historic Properties"), the New Hampshire Division of Historical Resources/State Historic Preservation Office (DHR) has reviewed the Due-Diligence report for above-ground resources associated with the undertaking referenced above to identify potential effects to historic resources listed, or eligible for listing, in the National Register of Historic Places. The DHR concurs that there is no potential to affect above-ground historic properties within Segments 2, 3, and 4 and that no additional above-ground studies are required.

Sincerely,

Elizabeth H. Muzzey

Director and State Historic Preservation Officer

& Muzza

EMF:nmp

cc:

John Eddins, ACHP

Laura Games, Eversource Stephen Olausen, PAL, Inc. Josh Holden, National Grid





Attachment F

Abutter/Town Tax Maps



Pelham Tax Maps

Owner/Abutter List (Pelham, New Hampshire)

All of the project work will occur within an existing utility right-of-way, thus abutters do not need to be notified. Below is a list of all properties within and directly adjacent to the project right-of-way. Notifications were sent to the property owners listed below. Properties located outside of the right-of-way are *italicized*.

Owner/Abutter	Tax Map Number (map/map cut-	Mailing Address			
block/block cut) Tax Map 3					
The Fox Family	3/5-169/16	34 Dogwood Circle Pelham, NH 03076			
Curtis Bonnell	3/5-169/17	24 Dogwood Circle Pelham, NH 03076			
The Ham Family	3/5-169/18	18 Dogwood Circle Pelham, NH 03076			
John Forsythe	3/5-169/19	89 Overlook Circle Hudson, NH 03051			
The Regan Family	3/5-173/5	6 Shelly Drive Pelham, NH 03076			
Philip McAdam & Theresa Hill	3/5-173/6	5 Shelly Drive Pelham, NH 03076			
James & Alyson Gendreau	3/5-173/7	8 Shelly Drive Pelham, NH 03076			
Philip & Suzette McColgan	3/5-173/8	7 Shelly Drive Pelham, NH 03076			
Cindy Ringer	3/5-173/9	10 Shelly Drive Pelham, NH 03076			
The Hedglin Family	3/5-173/10	12 Shelly Drive Pelham, NH 03076			
The Altieri Family	3/5-175	46 Tallant Road Pelham, NH 03076			
Gary & Linda Mendes	3/5-176	44 Tallant Road Pelham, NH 03076-2234			
Black Grape LLC	3/5-177A	PO Box 1030 Londonderry, NH 03053			
Black Grape LLC	3/5-177B	PO Box 1030 Londonderry, NH 03053			
Jason & Katherine Dionne	3/5-178	40 Tallant Road Pelham, NH 03076-2234			

Salvatore & Glynnis Perruccio	3/5-179	36-38 Tallant Road Pelham, NH 03076-2233			
Salvatore & Glynnis Perruccio	3/5-179/1	36-38 Tallant Road Pelham, NH 03076-2233			
Jessica Theriault and Pamela Hayward	3/5-180A	32 Tallant Road Pelham, NH 03076-2233			
The Polcari Family	3/5-180B	34 Tallant Road Pelham, NH 03076-2233			
	Tax Map 4				
Priscilla C. Currier Revocable Trust	4-9-137	PO Box 306 Pelham, NH 03076			
Tax Map 7					
Christopher Laffey	7/5-180/1	28-30 Tallant Road Pelham, NH 03076			
Angela Zouvelos Trust	7/5-181	26 Tallant Road Pelham, NH 03076			
Carol Ann Mccarthy and Scott A. Ardizzoni	7/5-182	24 Tallant Road Pelham, NH 03076-2233			
David A. Mendes	7/9-94	54 Jericho Road Pelham, NH 03076			
David A. Mendes	7/9-135	54 Jericho Road Pelham, NH 03076			
David A. Mendes	7/9-135/1	54 Jericho Road Pelham, NH 03076			
David A. Mendes	7/9-135/2	54 Jericho Road Pelham, NH 03076			
David A. Mendes	7/9-135/5	54 Jericho Road Pelham, NH 03076			
The Wilson Family	7/9-96/11	3 Carriage Circle Pelham, NH 03076			
Tax Map 8					
David A. Mendes	8/9-135/3	54 Jericho Road Pelham, NH 03076			
Langan Family Nominee Trust	8/9-95	19 Hayden Road Pelham, NH 03076			
Hayden Road Condominium	8/9-96/1A	13 Hayden Road Pelham, NH 03076			

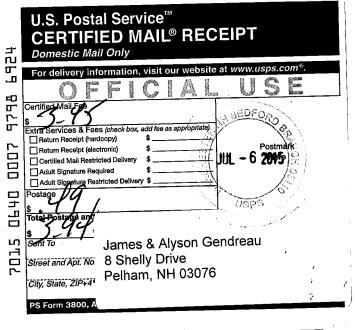
Hayden Road Condominium	8/9-96/1B	15 Hayden Road Pelham, NH 03076
The Burne Family	8/9-96/9	6 Carriage Circle Pelham, NH 03076
Shawn Buckley	8/9-96/10	9 Carriage Circle Pelham, NH 03076-2243
Kerry Johnson	8/9-97	11 Hayden Road Pelham, NH 03076
Eugene & Dorothy Carter	8/9-98	15 Katie Lane Pelham, NH 03076-2244
	Tax Map 15	
Brookwood Realty Group, LLC	15/8-86	PO Box 725 Pelham, NH 03076
Adele & Robert Lichtenberg	15/8-208	9 Kestral Lane Hudson, NH 03051
Brookwood Realty Group, LLC	15/8-208/1	PO Box 725 Pelham, NH 03076
Adele & Robert Lichtenberg	15/8-208/3	9 Kestral Lane Hudson, NH 03051
Town of Pelham	15/8-209	6 Village Green Pelham, NH 03076
Town of Pelham	15/8-210	6 Village Green Pelham, NH 03076
Town of Pelham	15/8-212	6 Village Green Pelham, NH 03076
Matthew Holter	15/8-213	208 A Windham Road Pelham, NH 03076
Andrew & Linda Vanti and Dennis Tedder	15/8-214/1	216 A Windham Road Pelham, NH 03076
The Batcheller Family	15/8-215	217 Windham Road Pelham, NH 03076
Edward W. Magiera, Jr.	15/8-216	3 Eugenie Terrace Chelmsford, MA 01824
Johnathan & Roseann Cares	15/8-217/1	228 Windham Road Pelham, NH 03076
Francis & Lise Fortier	15/8-217/3	5 Lemere Drive Pelham, NH 03076-2241
Mark & Debra Getty	15/8-217/5	7 Lemere Drive Pelham, NH 03076-2241

The Mucci Family	15/8-217/7	17 Twin Street Pelham, NH 03076
Christine M. McCarron	15/8-222	265 Windham Road Pelham, NH 03076
Richard Donnelly	15/8-223	285 Windham Road Pelham, NH 03076
	Tax Map 22	
Carolyn L. Law Irrevocable Trust	22/7-1	PO Box 46 Pelham, NH 03076
Town of Pelham	22/7-1/1	6 Village Green Pelham, NH 03076
The Picard Family	22/7-3/1	9 Old Lawrence Road Pelham, NH 03076-3721
Donald H. & Diane M. Brunelle	22/7-3/2	11 Old Lawrence Road Pelham, NH 03076-3721
Jonathan Law	22/7-3/3	7 Old Lawrence Road Pelham, NH 03076
Patrick & Diane Fournier	22/8-20/2	12 Heather Lee Lane Pelham, NH 03076-3742
Eric & Pamela Frank	22/8-20/3	18 Heather Lee Lane Pelham, NH 03076-3742
Steven & Lindsey Sargent	22/8-20/4	36 Heather Lee Lane Pelham, NH 03076
Michael & Megan Larson	22/8-20/5	42 Heather Lee Lane Pelham, NH 03076-3742
Michael & Cheryl Benson	22/8-20/6	48 Heather Lee Lane Pelham, NH 03076-3742
Gregory & Michelle Paquin	22/8-20/7	56 Heather Lee Lane Pelham, NH 03076-3742
New England Power Co.	22/8-21	Property Tax Dept. 40 Sylvan Road Waltham, MA 02451
Gina McManus	22/8-22/5	37 Gaudet Lane Pelham, NH 03076
Mateus & Islida Martins	22/8-22/6	27 Gaudet Lane Pelham, NH 03076
Panagiotis Ravaris	22/8-22/8	11 Gaudet Lane Pelham, NH 03076
Town of Pelham	22/8-22/9	6 Village Green Pelham, NH 03076

The Slattery Family	22/8-23	172 Main Street Pelham, NH 03076			
Patrick & Kim Gendron Family Trust	22/8-85	579 Bridge Street Pelham, NH 03076-5709			
Brookwood Realty Group LLC	22/8-87	PO Box 725 Pelham, NH 03076			
Brookwood Realty Group LLC	22/8-88	PO Box 725 Pelham, NH 03076			
Brookwood Realty Group LLC	22/8-89	PO Box 725 Pelham, NH 03076			
Susan Hurley and Phillip R. Giacoppo	22/8-91	2 Rita Avenue Pelham, NH 03076-2720			
Mark A. & Doreen J. Crandall	22/8-96	1 Linda Avenue Pelham, NH 03076-2719			
Jon & Melissa Rickards	22/8-98	8 Tina Avenue Pelham, NH 03076-2725			
Richard & Kathleen Kres	22/8-99	9 Tina Avenue Pelham, NH 03076-2724			
The Atwood Family	22/8-206	47 Jamesway Dr Litchfield, NH 03052			
Tax Map 29					
Town of Pelham	29/7-3	6 Village Green Pelham, NH 03076			
Old Lawrence Road, LLC	29/7-10	PO Box 43 Pelham, NH 03076			
Rush Lorelei	29/7-10/1	25 Old Lawrence Road Pelham, NH 03076			
Tax Map 30					
Town of Pelham	30/7-4	6 Village Green Pelham, NH 03076			
New England Power Co.	30/7-11	Property Tax Dept. 40 Sylvan Road Waltham, MA 02451			
Town of Pelham	30/7-12	6 Village Green Pelham, NH 03076			
Julie Breck	30/10-362/1A	66A Dutton Road Pelham, NH 03076			
Aline D. Brouillette	30/10-362/1B	29 Glen Drive Hudson, NH 03051			

Alice Symonovit David Hennessey	30/11-100	71 Dutton Road Pelham, NH 03076-3561
Salvatore Seminara Claudette Bisson	30/11-101	65 Dutton Road Pelham, NH 03076-3560
The Tellier Family	30/11-102	17 Timber Lane Road Pelham, NH 03076
	Tax Map 36	
Town of Pelham	36/10-10	6 Village Green Pelham, NH 03076
DHB Homes, LLC	36/10-10/17	25 Buttrick Rd. Bld. A Unit 1 Londonderry, NH 03053
DHB Homes, LLC	36/10-10/18	25 Buttrick Rd. Bld. A Unit 1 Londonderry, NH 03053
DHB Homes, LLC	36/10-10/19	25 Buttrick Rd. Bld. A Unit 1 Londonderry, NH 03053
Nigel & Kerrijo Sampson	36/10-10/20	122 Frontier Drive Pelham, NH 03076-3580
The Eno Family	36/10-10/21	126 Frontier Drive Pelham, NH 03076
Frederick Lane	36/10-12	23 Lantern Lane Unit 7 Dracut, MA 01826
Susan Richardson	36/10-13	170 Water Street Boscawen, NH 03303
Mawson Living Trust	36/10-14	17 So. Shore Drive Pelham, NH 03076
Town of Pelham	36/10-15	6 Village Green Pelham, NH 03076
Brian McGowan	36/10-16	PO Box 895 Dracut, MA 01826
Brian McGowan	3610-17	PO Box 895 Dracut, MA 01826
Mark & Dori Ducharme	36/10-361/12	17 Deer Hill Circle Pelham, NH 03076-5503
Kathryn Sorenson and Joseph F. Dehney	36/10-362	70 Dutton Road Pelham, NH 03076-3555
John Mansur	36/10-364	76 Dutton Road Pelham, NH 03076
John Mansur	36/10-365	76 Dutton Road Pelham, NH 03076

Desjardins Realty Trust	36/10-367	13 River Road Pelham, NH 03076			
Michael & Sarah Comeau	36/10-368/3	8 Brandy Lane Pelham, NH 03076			
Harry L. Betty Jr. Irrevocable Trust	36/10-368/5	10 Brandy Lane Pelham, NH 03076			
Walter L. Nickerson Family Trust	36-10-368/7	12 Brandy Lane Pelham, NH 03076			
The Diprizio Family	36/10-368/9	14 Brandy Lane Pelham, NH 03076-3566			
Tax Map 42					
The Dalphond Family	42/10-8	81 Brigham Ave Pelham, NH 03076			
New England Power Company	42/10-9	Property Tax Dept. 40 Sylvan Road Waltham, MA 02451			
Town of Pelham	42/10-9	6 Village Green Pelham, NH 03076			
Boulder Hills Condominium	42/10-18	31 Hillcrest Lane Pelham, NH 03076			
Deborah Moylan	42/10-19	70 Foster Road Ashby, MA 01431			



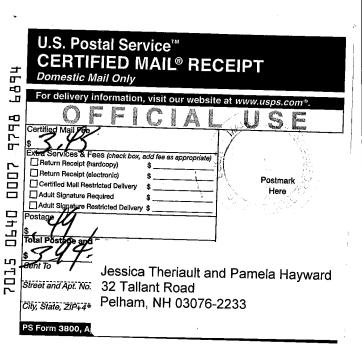


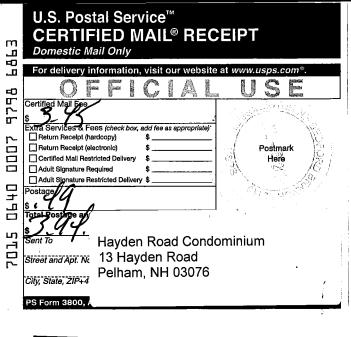


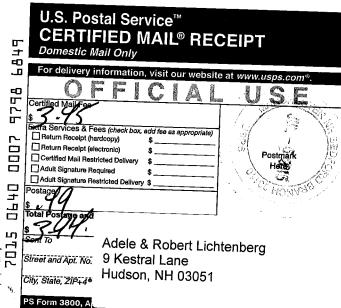
日子	CERTIFIED MAIL® RECEIPT Domestic Mail Only
5	For delivery information, visit our website at www.usps.com®.
=0	OFFICIAL USE
979	Certified Mail/fee
2000	Extra Services & Fees (check box, add fee as appropriate) Return Receipt (lectronic) \$ Certified Mail Restricted Delivery \$ Adult Signature Required \$
	Adult Signature Required Adult Signature Restricted Delivery \$ Postage (SPS)
ر ب	Total Postage and
_ <u>.</u> ⊒	The Fox Family
L	Street and Apt. No. 34 Dogwood Circle City, State, ZIP-14* Pelham, NH 03076
:	PS Form 3800, A

IIS Postal Service™





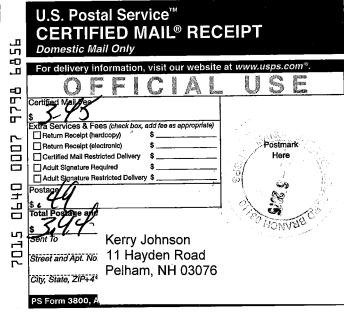




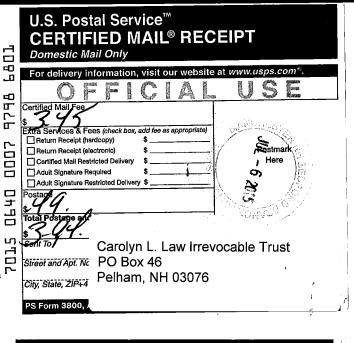


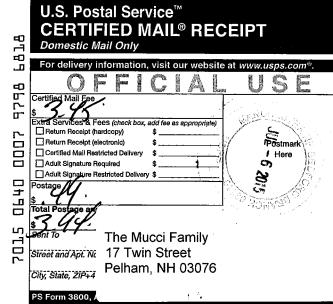
70	CERTIFIED MAIL® REC	EIPT
9798 68	For delivery information, visit our website	W 40 400 mmm
2000	S Extra Services & Fees (check box, add fee as appropriate) Return Receipt (hardcopy) \$ Return Receipt (electronic) \$ Certified Mail Restricted Delivery \$ Adult Signature Required Adult Signature Restricted Delivery \$	Postmark Here
7015 0640	Postage Total Postage and Sincert and Apr. No. 54 Jericho Road City, State, ZiP+41 Postage David A. Mendes 54 Jericho Road Pelham, NH 03076	
	PS Form 3800, A	

II S Postal Service™

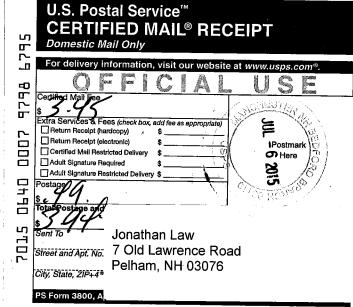


끪	CERTIFIED MAIL® RECEIPT Domestic Mail Only
<u> </u>	For delivery information, visit our website at www.usps.com®.
98	Certified Mail Pee
979	\$ 7 95 · · · · · · · · · · · · · · · · · ·
r-	EXTra Services & Fees (check box, add fee as appropriate) Return Receipt (hardcopy) \$
0007	Return Receipt (electronic) \$ Postmatk Certified Mail Restricted Delivery \$ Here
	☐ Adult Signature Required \$ ☐ Adult Signature Restricted Delivery \$
0640	Postage
0F	Total Postage and F
5	Andrew & Linda Vanti and Dennis
7015	Street and Apt. No., Tedder
'`	216 A Windham Road City, State, ZIP+4* Pelham, NH 03076
	PS Form 3800, Ap



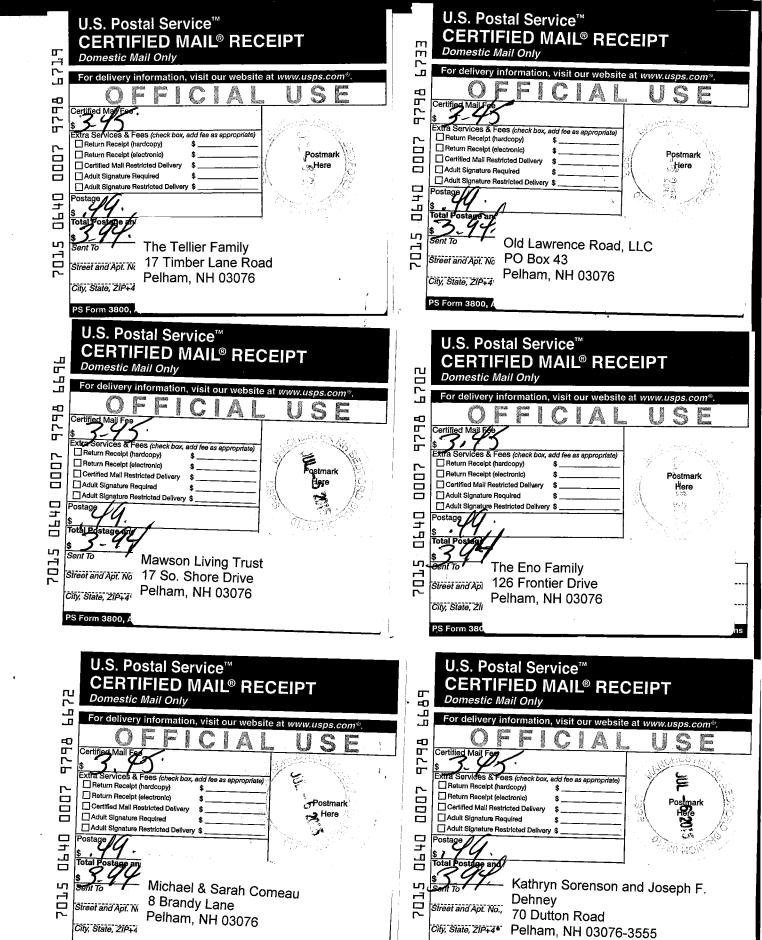






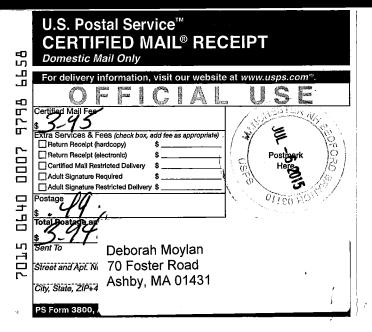
U.S. Postal Service™ CERTIFIED MAIL® RECEIPT Domestic Mail Only . o Ф rvices & Fees (check box, add fee as appropriate) Return Receipt (hardcopy) Return Receipt (electronic) Postmark Certified Mall Restricted Delivery Here Adult Signature Required Adult Signature Restricted Delivery ъ Mateus & Islida Martins 27 Gaudet Lane Street and Apt. No.. Pelham, NH 03076 City, State, ZIP+4® PS Form 3800, Ap

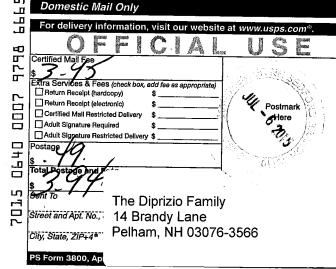
, <u>7</u> 7,	O.S. Postal Service™ CERTIFIED MAIL® RECEIPT Domestic Mail Only
7	For delivery information, visit our website at www.usps.com®.
9798	Certified Mai Fig. \$
7015 O640 0007	Extra Services & Fees (check box, add fee as appropriate) Return Receipt (nardcopy)
	PS Form 3800 A



PS Form 3800, Ap

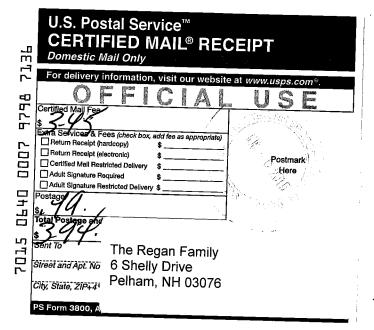
PS Form 3800, April 2013 FSN 7

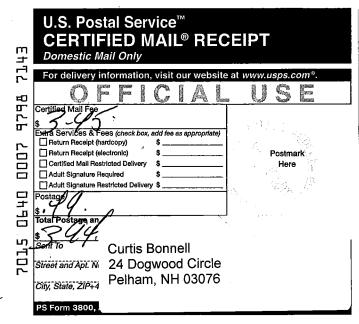




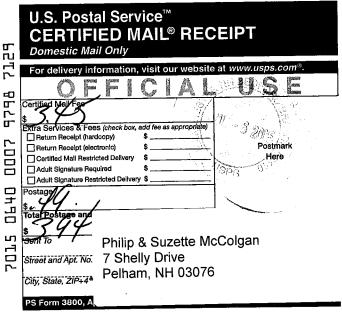
CERTIFIED MAIL® RECEIPT

U.S. Postal Service™

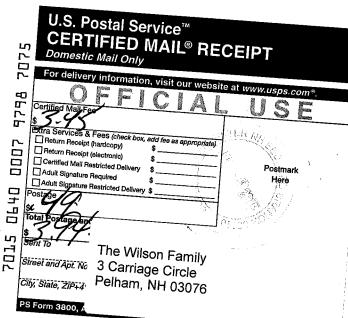


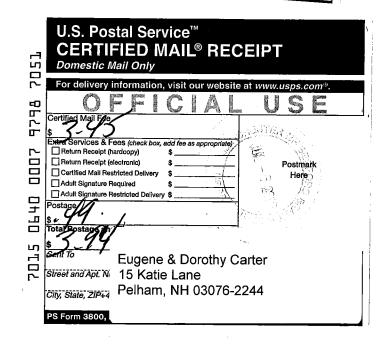




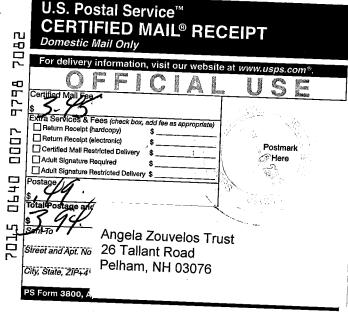


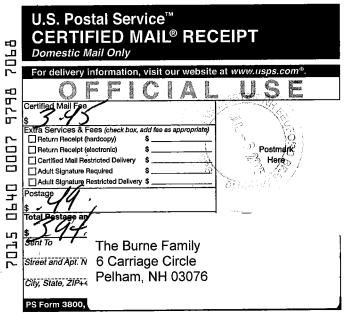


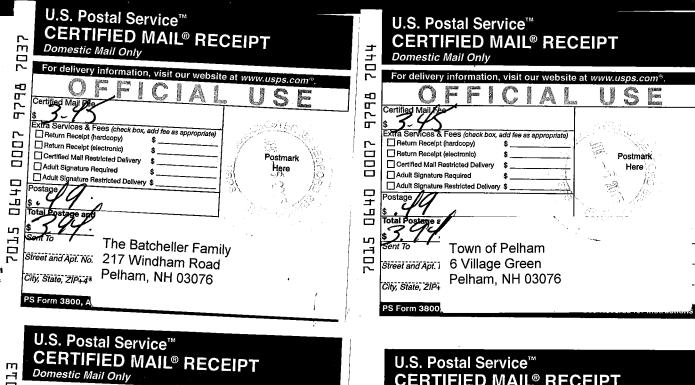


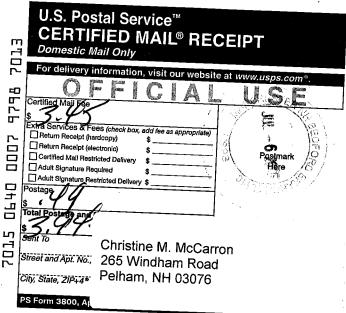


73.05	U.S. Postal Service™ CERTIFIED MAIL® RECEIPT Domestic Mail Only End delivery information
7 8626	website at www.usps.com®.
40 0007	Edita Services & Fees (check box, add fee as appropriate) Return Receipt (hardcopy) \$ Return Receipt (electronic) \$ Certified Mail Restricted Delivery \$ Addult Signature Required Addult Signature Restricted Delivery \$ Postage
701.5	Jason & Katherine Dionne 40 Tallant Road City, State, ZIP-4
	PS Form 3800, A







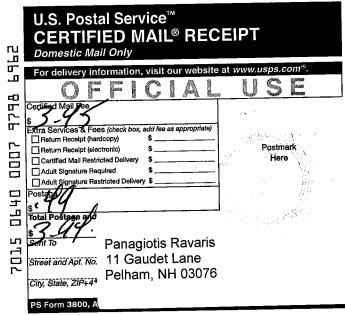










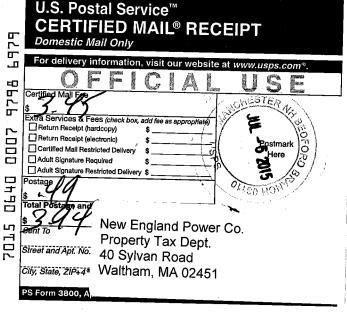


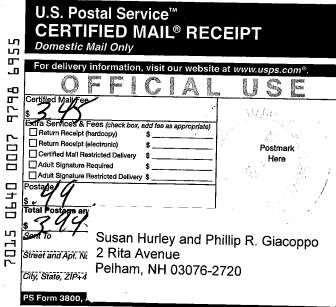


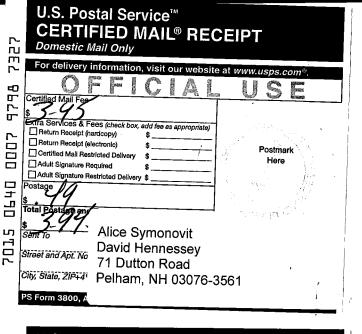
ப்	Domestic Mail Only
7	For delivery information visit
Д	For delivery information, visit our website at www.usps.com®.
=0	OFFICIAL USE
9798	Certifles Mail Tee \$ Extra Services & Fees (check box, add fee as appropriate)
~	Return Receipt (hardcopy) \$
	Return Receipt (electronic) \$ Postmark
2000	Certified Mail Restricted Delivery \$ Here
	Adult Signature Required \$
	Adult Signature Restricted Delivery \$
0640	Postagg//
	\$. 79. //
	Total Postage and
	$<< \cdot < < \cdot < < \cdot < < < > < < < <$
ω,	Gent To Detwiels 9 King Conducts Formily Truck
701	Patrick & Kim Gendron Family Trust
	Street and Apt. No 579 Bridge Street
1-	Dolham NH 02076 5700
	City, State, ZiP+4 Pelliam, Nn 03070-3709
	<u> </u>
	PS Form 3800, A
_	

U.S. Postal Service™

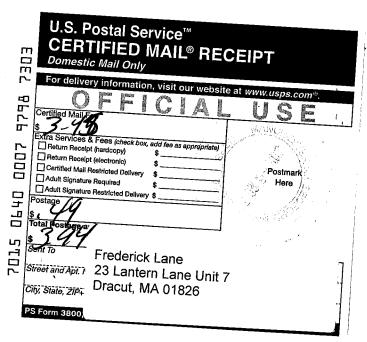
CERTIFIED MAIL® RECEIPT







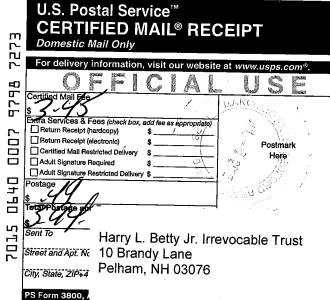
,26 <u>6</u>	U.S. Postal Service [™] CERTIFIED MAIL® RECEIPT Domestic Mail Only
Γ-	For delivery information, visit our website at www.usps.com®.
묘	OFFICIAL USE
979	s S
~	Extra Services & Fees (check box, add fee as appropriate) Return Receipt (hardcopy) \$
	Return Receipt (electronic) \$ Postmark
	Certified Mail Restricted Delivery \$ Here
	Adult Signature Required \$
0640	Adult Signature Restricted Delivery \$ Postage
701,5	The Dalphond Family Siriest and Apt. No. 81 Brigham Ave
~	City, State, ZIP+4* Pelham, NH 03076
	PS Form 3800, A

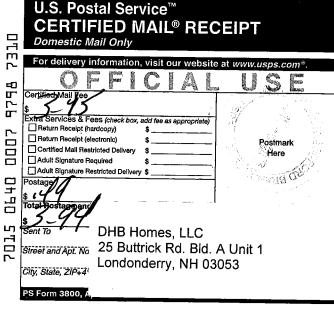


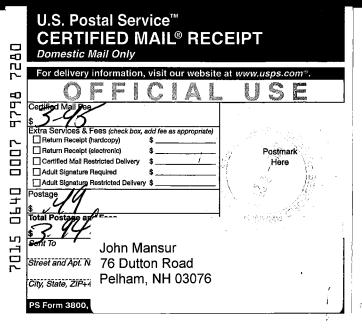
m	Domestic Mail Only
Z E	For delivery information, visit our website at www.usps.com®.
L~	Tor derivery information, visit our website at www.usps.com*.
₽	OFFICIAL USE
929	Certified Mail Fee
п.	Extra Services & Fees (check box, add fee as appropriate)
η_	Return Receipt (hardcopy) \$
<u>—</u>	Return Receipt (electronic) \$ Postmark
2000	Certified Mail Restricted Delivery \$ Here
	Adult Signature Required \$
	Adult Signature Restricted Delivery \$
	Postage ///
0640	s. 47
-	Total Postage and
_	R 44
மு	Set 70 Puch Loroloi
H)	sefit To * * Rush Lorelei
7015	Street and Apt. No. 25 Old Lawrence Road
~	Pelham, NH 03076
	City, State, ZIP+44
	PS Form 3800, A
	1-3 Form 3800, A

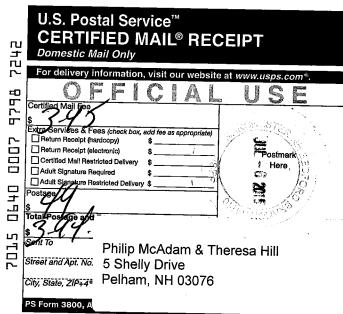
U.S. Postal Service™

CERTIFIED MAIL® RECEIPT

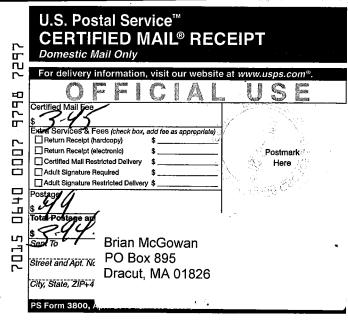


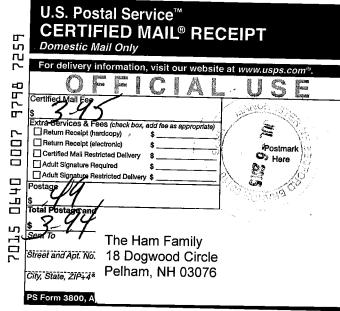


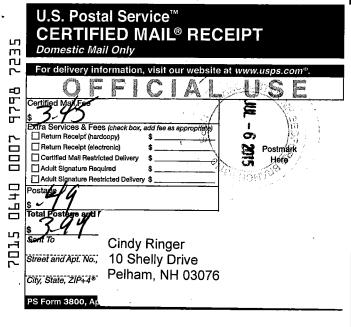


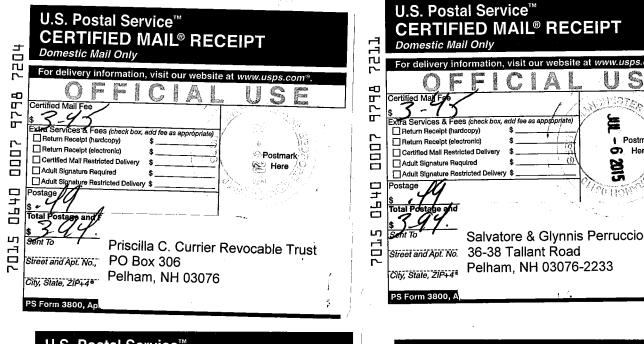




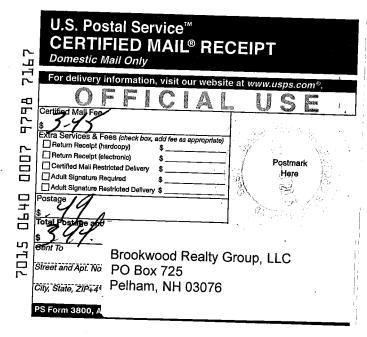


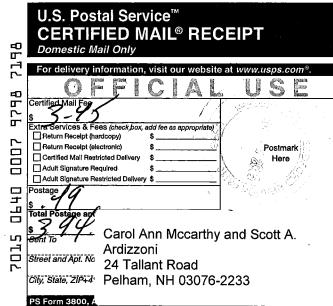








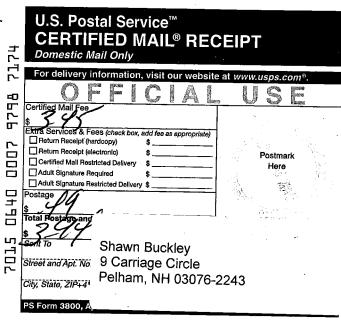


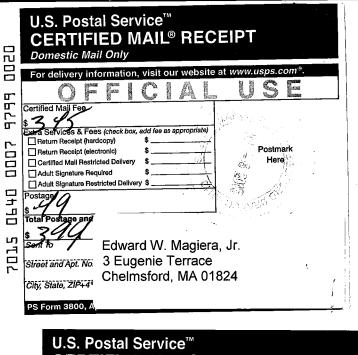


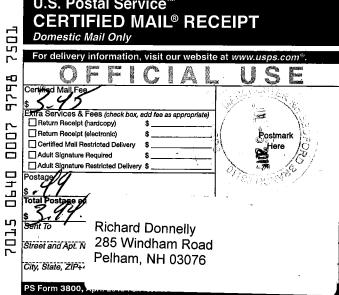
Postmark

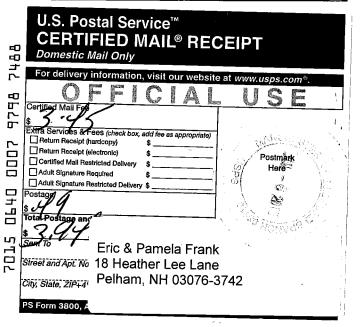
മ

Here









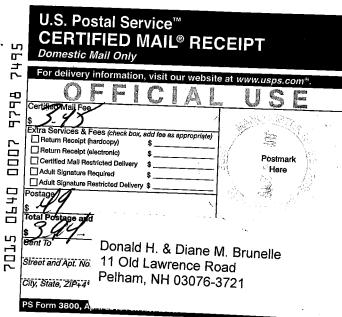
47	
7	For delivery information, visit our website at www.usps.com®.
_	OFFICIAL USE
40	300 M 10 M
Г	Certified Mally Fee
9798	ls 3.43
П.,	Extra Services & Fees (check box, add fee as appropriate)
ъ.	Return Receipt (hardcopy) \$
<u> </u>	Return Receipt (electronic) \$ Postmark
7000	Gertified Mail Restricted Delivery \$ Here
=	Adult Signature Required \$
	Adult Signature Restricted Delivery \$
0640	Postage ///
ጟ	s 97 ,
4	Total Postage And '
ш	. Y 44
L	Matthew Holter
Ä	Iviaturew rotter
7015	street and Apt. No., 208 A Windham Road
Γ	Pelham, NH 03076
	City, State, ZIP+4®
	PS Form 3800, A

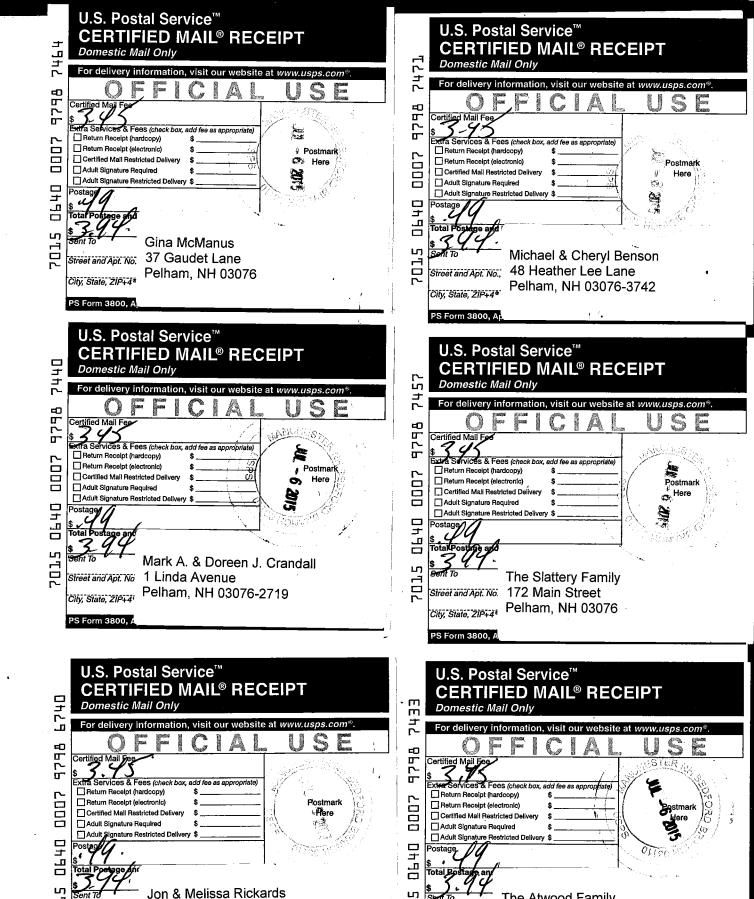
U.S. Postal Service™

Domestic Mail Only

CERTIFIED MAIL® RECEIPT







8 Tina Avenue

Pelham, NH 03076-2725

Street and Apt. No

City, State, ZIP+4

PS Form 3800,

The Atwood Family

Litchfield, NH 03052

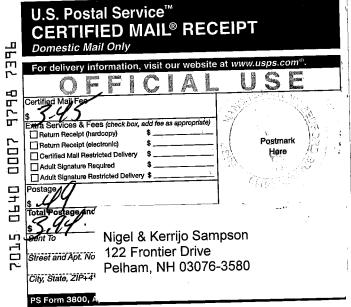
47 Jamesway Dr

Street and Apt. No

City, State, ZIP+4

PS Form 3800, A





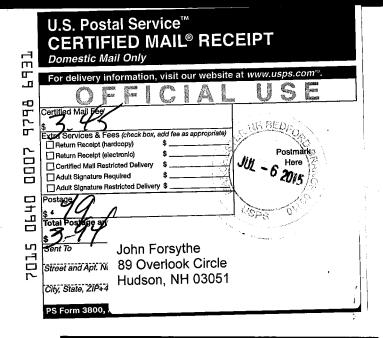
U.S. Postal Service™ **CERTIFIED MAIL® RECEIPT** Domestic Mail Only 迈 m 中 Services & Fees (check box, add fee as appropriate) Return Receipt (hardcopy) Return Receipt (electronic) Postmark Certified Mall Restricted Delivery Here Adult Signature Required Adult Signature Restricted D 무 ostage Total Po ப Walter L. Nickerson Family Trust 12 Brandy Lane Street and Apt. No Pelham, NH 03076 City, State, ZIP+4 PS Form 3800,

Postmark 6

Here/\$

Postmark

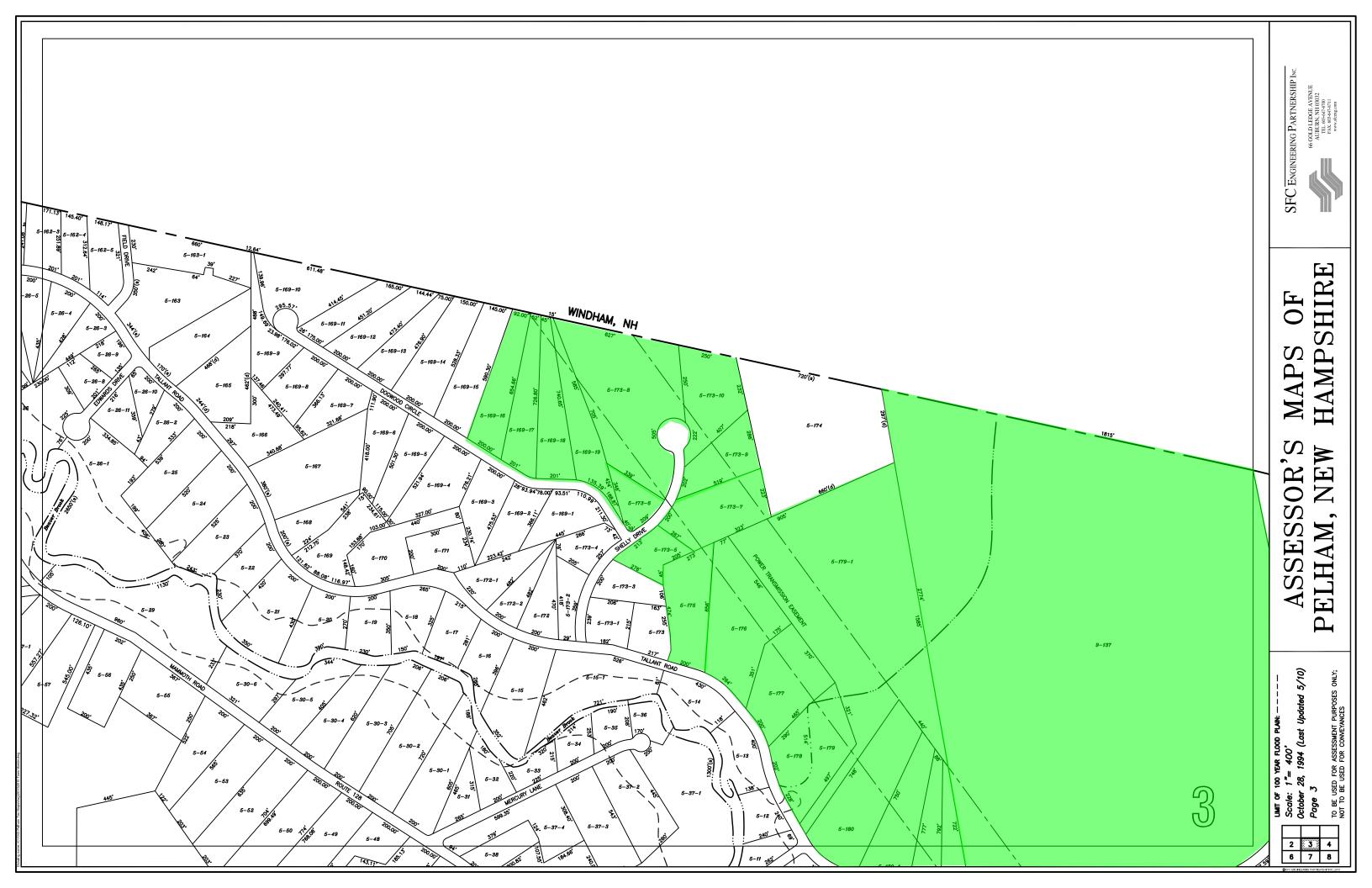
Here

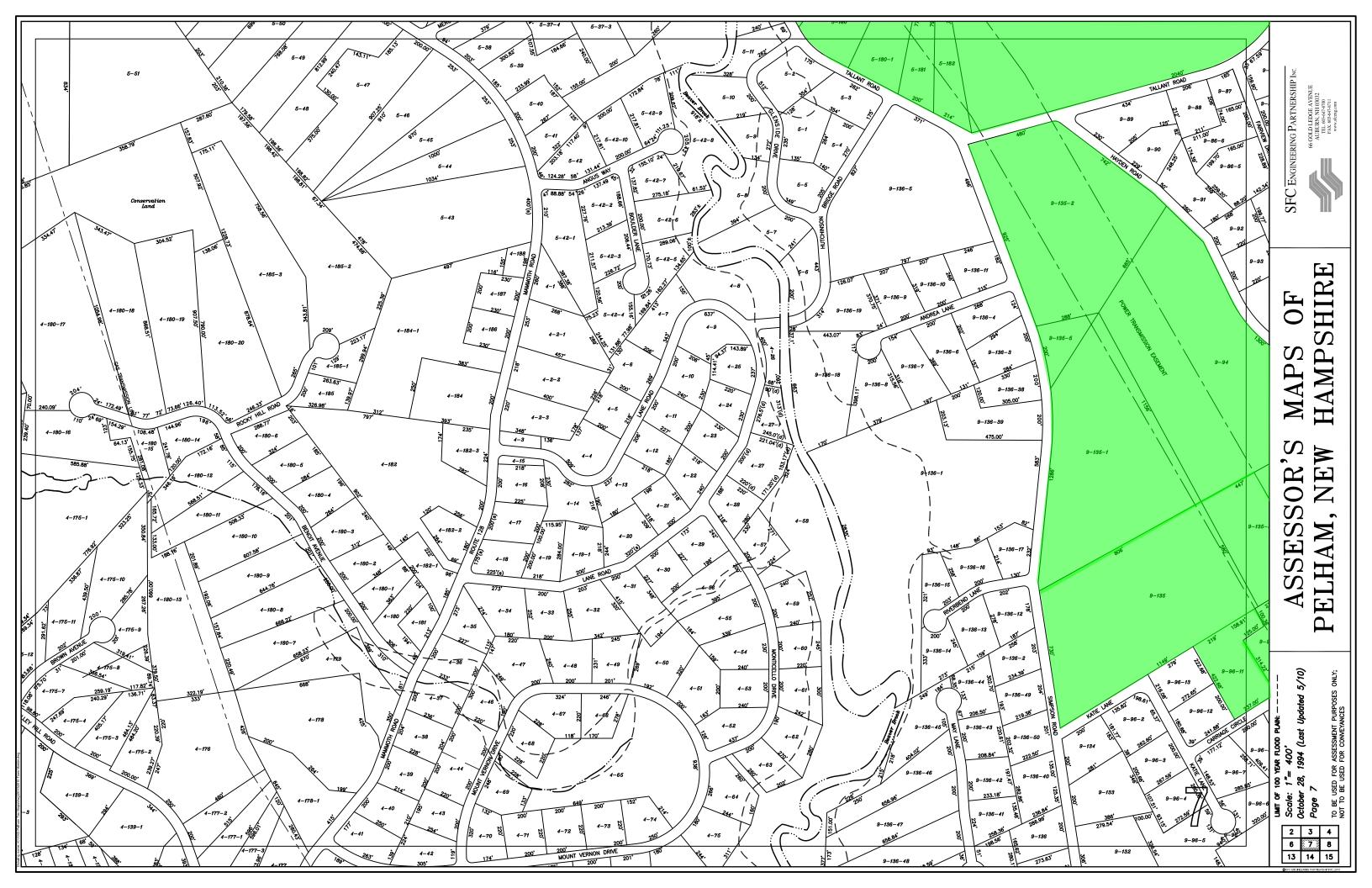


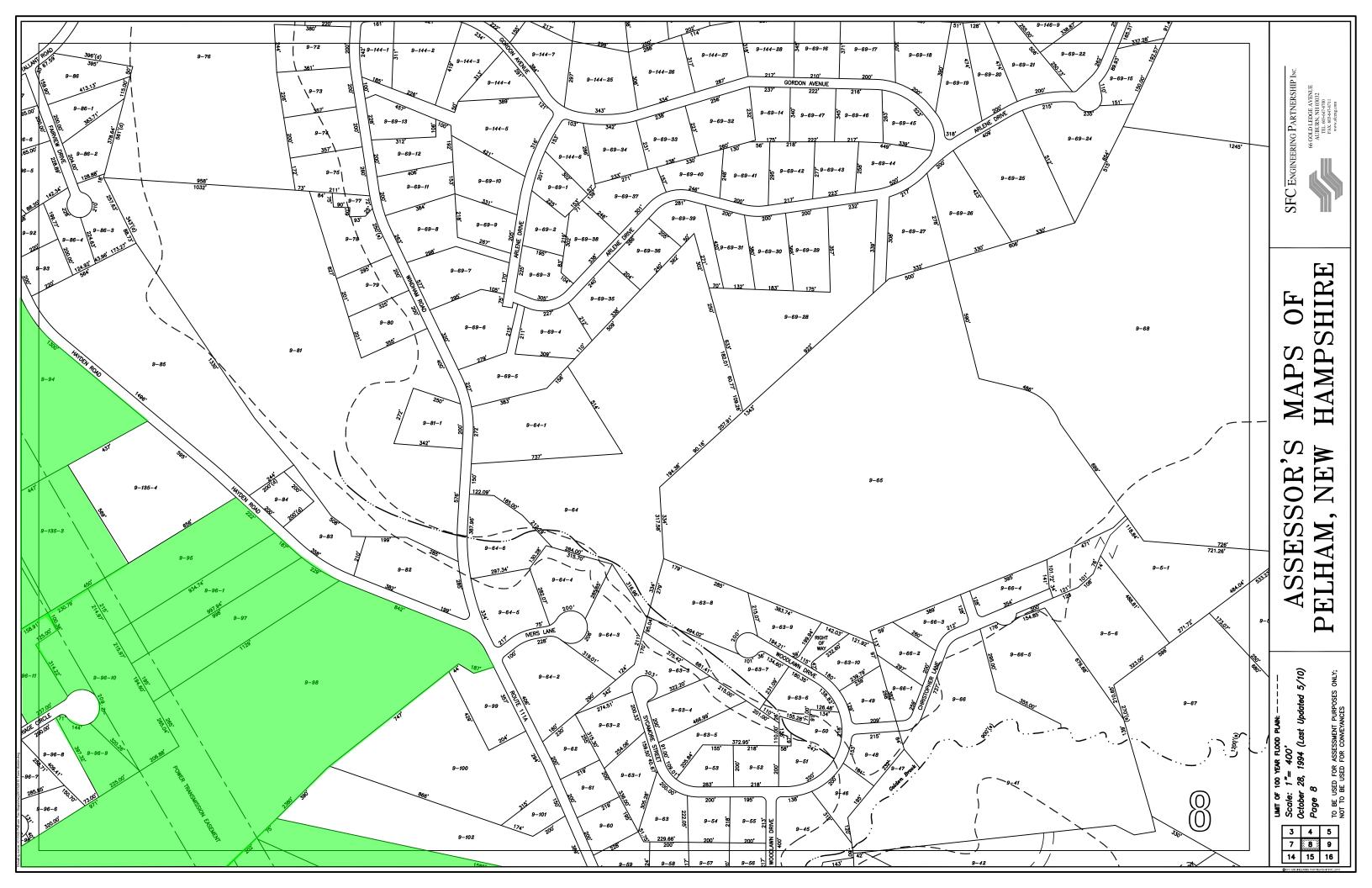
2 6	U.S. Postal Service [™] CERTIFIED MAIL® RECEIPT Domestic Mail Only				
67	For delivery information, visit our website at www.usps.com®.				
	OFFICIAL USE				
9798	Certified Mail See				
2000	Extra Services & Fees (check box, add fee as appropriate) Return Receipt (hardcopy) \$ Return Receipt (electronic) \$ Certified Mail Restricted Delivery \$ Adult Signature Required \$				
0640	Adult Signature Restricted Delivery \$				
7015	Aline D. Brouillette Street and Apt. No. 29 Glen Drive City, State, ZIP+4* Aline D. Brouillette 29 Glen Drive Hudson, NH 03051				
	PS Form 3800, A				

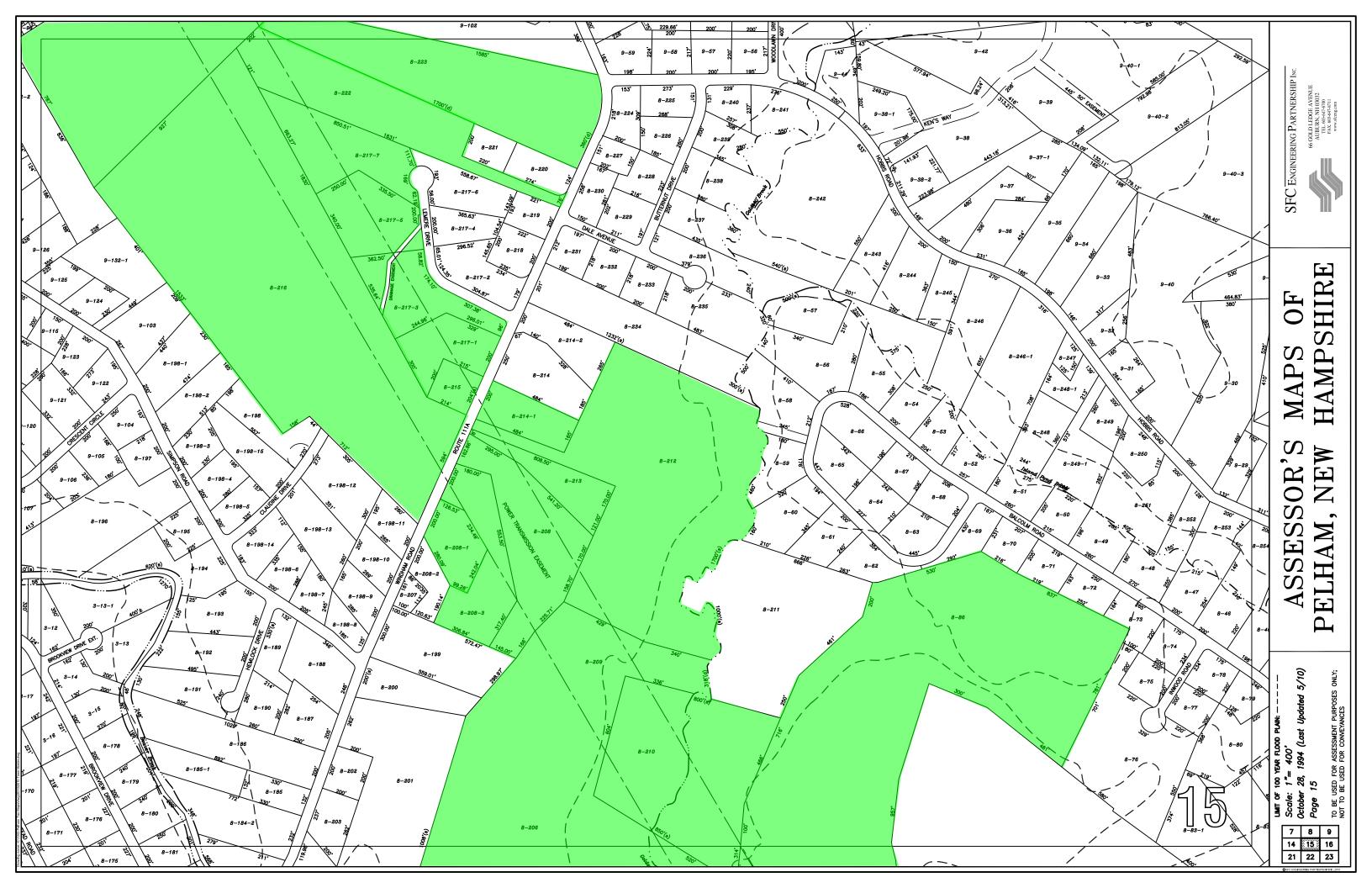
먑	U.S. Postal Service [™] CERTIFIED MAIL [®] RECEIPT Domestic Mail Only
17	For delivery information, visit our website at www.usps.com*.
	OFFICIAL USE
긤	Certified Mail Fee
979	
0	Extra Services & Fees (check box, add fee as appropriate)
Γ~	Return Receipt (hardcopy) Return Receipt (electronic) Return Receipt (electronic)
0007	Return Receipt (electronic)
	Adult Signature Required \$
	Adult Signature Restricted Delivery \$
0640	Postage
	\$ 9
<u></u>	Total Postage and
	s 3.47 Salvatore Seminara
7015	Sent To Claudette Bisson
	Street and Apt. No., 65 Dutton Road
r-	City, State, 219-44* Pelham, NH 03076-3560
	City, State, ZIP+4* Pelham, NH 03070-3300
•	PS Form 3800, At
	PS Form 3000; AR

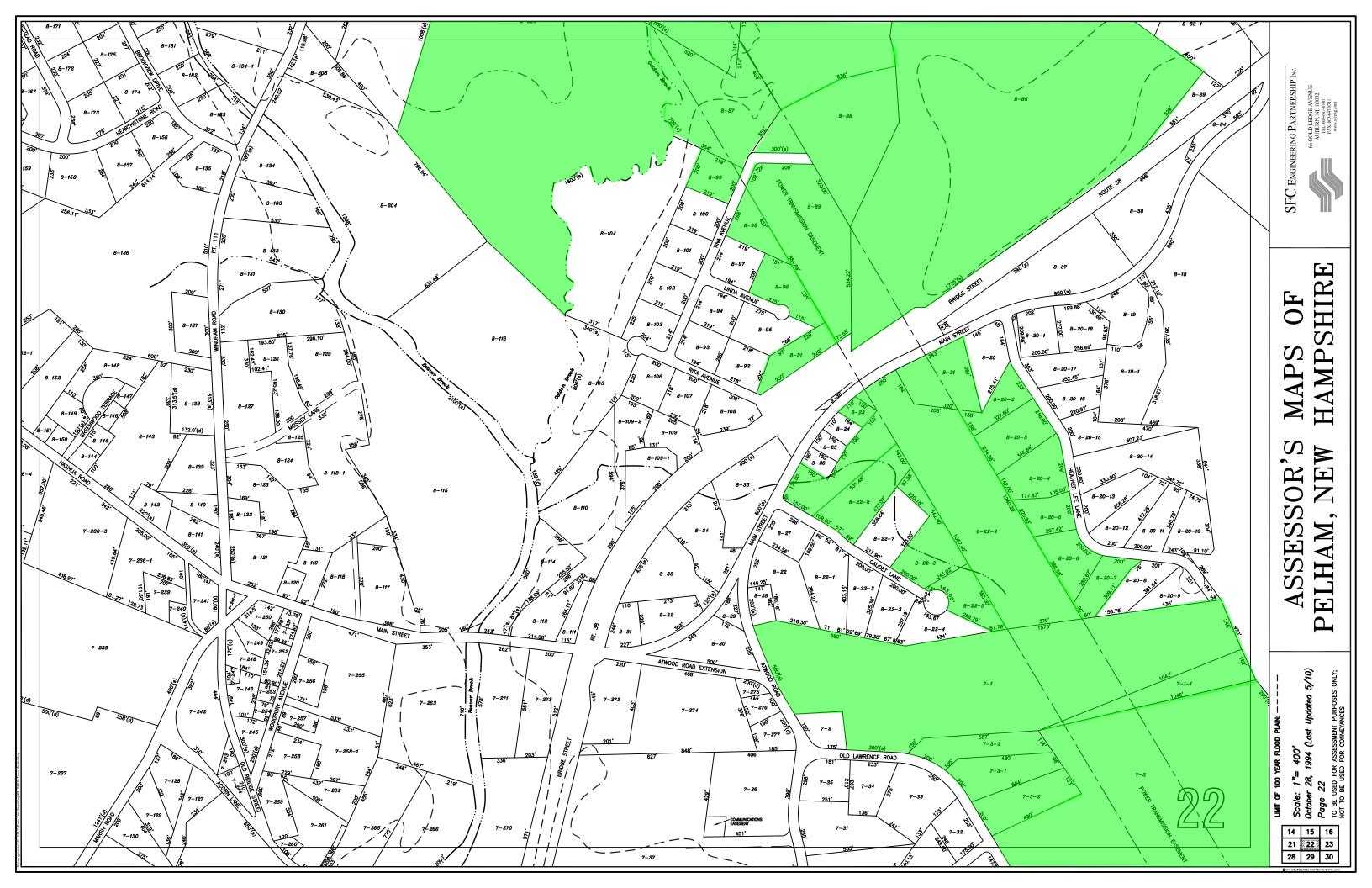
7419	U.S. Postal Service [™] CERTIFIED MAIL® RECEIPT Domestic Mail Only For delivery information, visit our website at www.usps.com®.
~	colors, evidente compase em como. Me com con
-0	OFFICIAL USE
979	Certified Mail Fee
- -	
	Extra Selvices & Fees (check box, add fee as appropriate) Return Receipt (hardcopy)
0007	Return Receipt (electronic) \$ Postmark
<u>-</u>	Certified Mali Restricted Delivery \$Here
	Adult Signature Required \$
_ d	Postage//
0640	0,109
7	Total Postage And
·	394
77	Susan Richardson
7015	Street and Apt. No 170 Water Street
	City, State, ZIP+4 ¹ Boscawen, NH 03303
	PS Form 3800, A

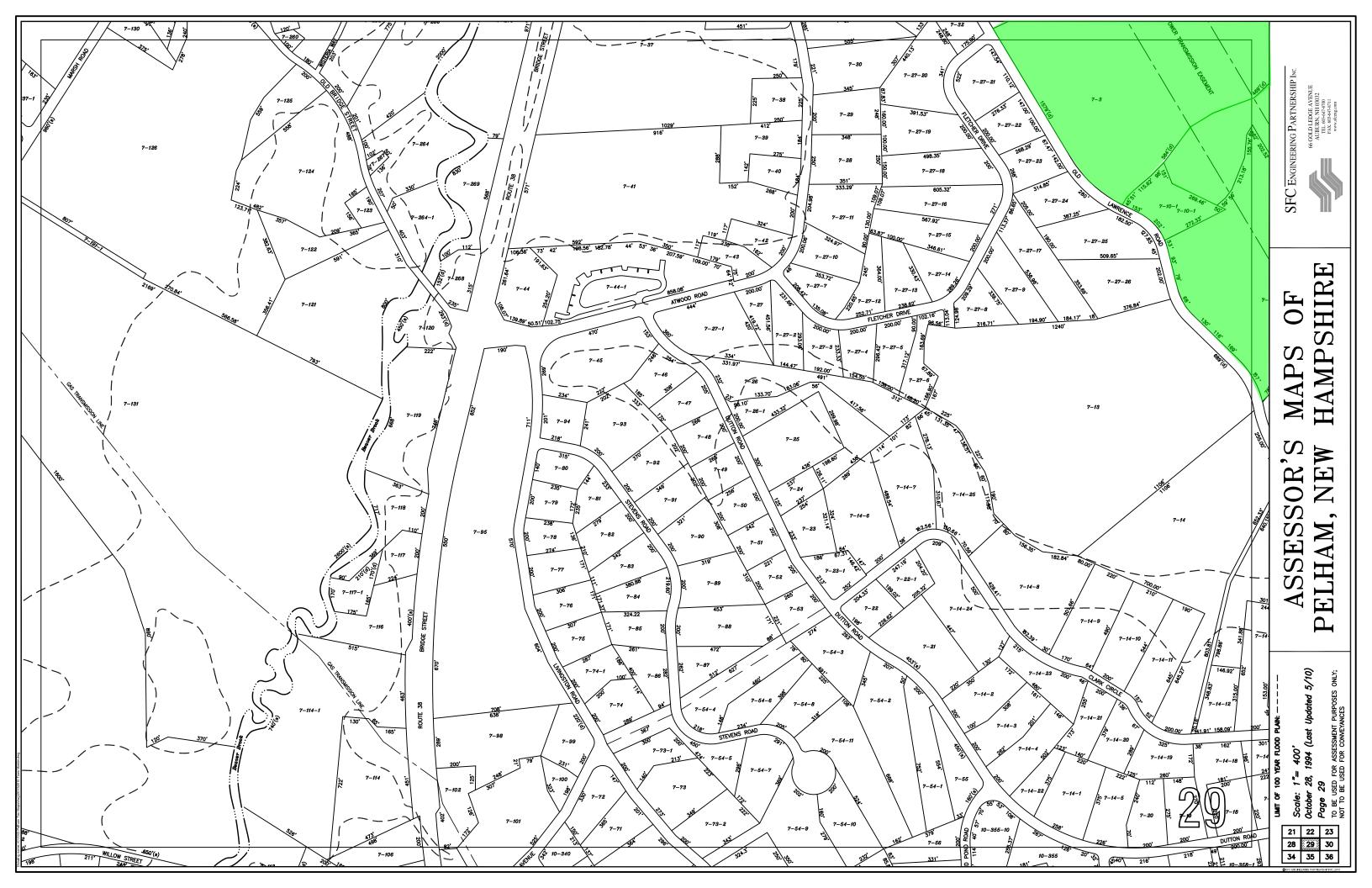


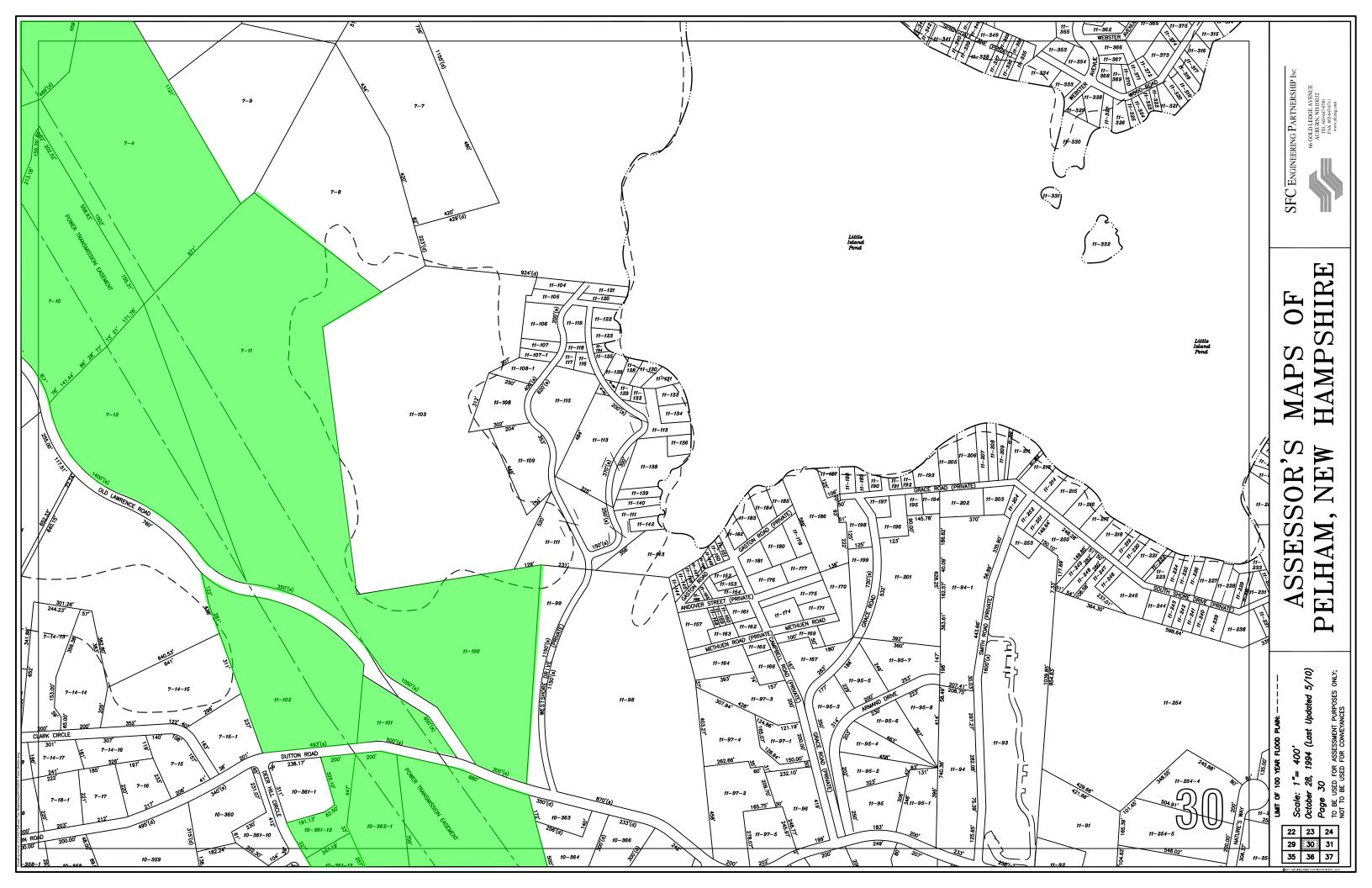


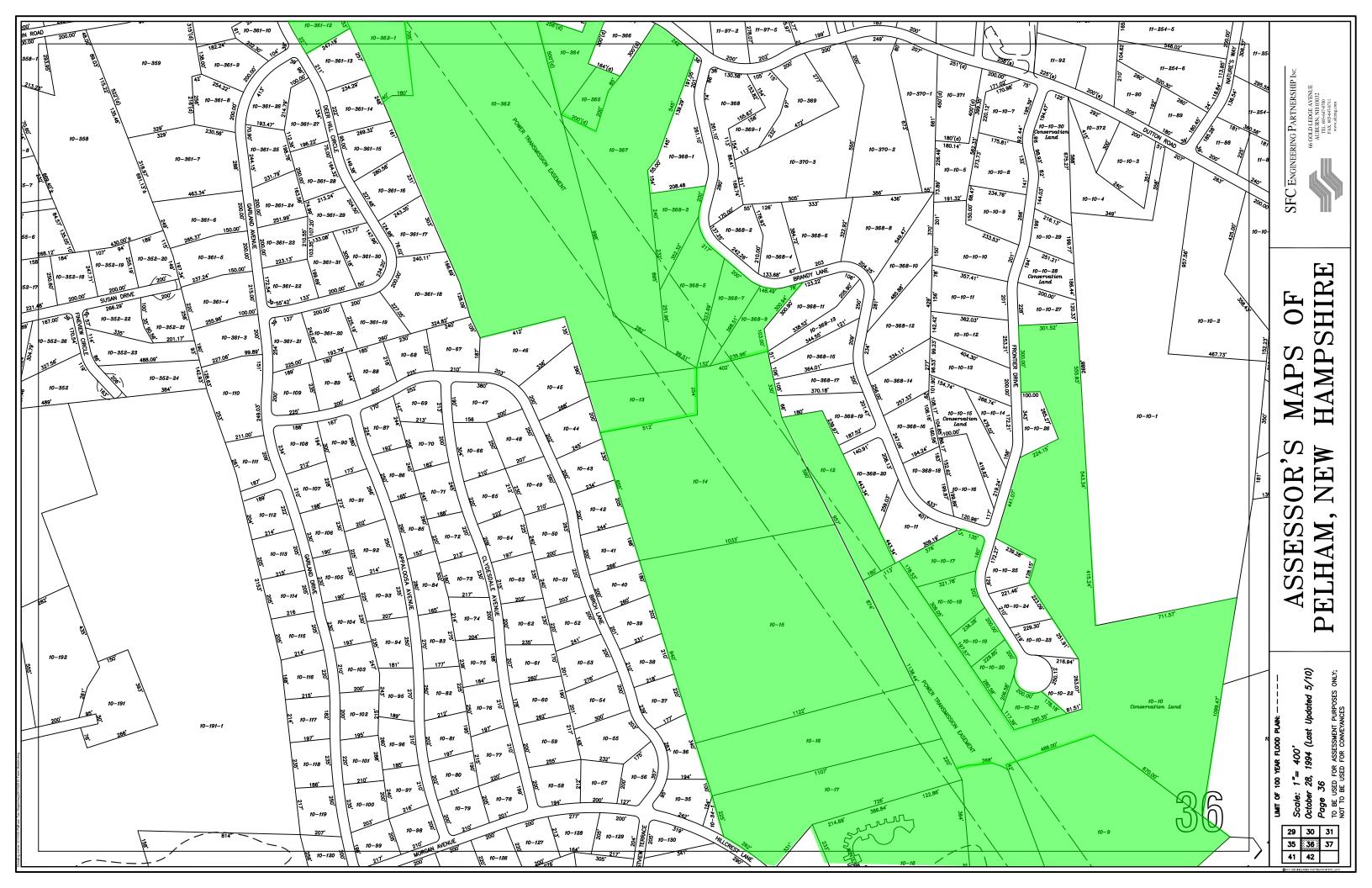


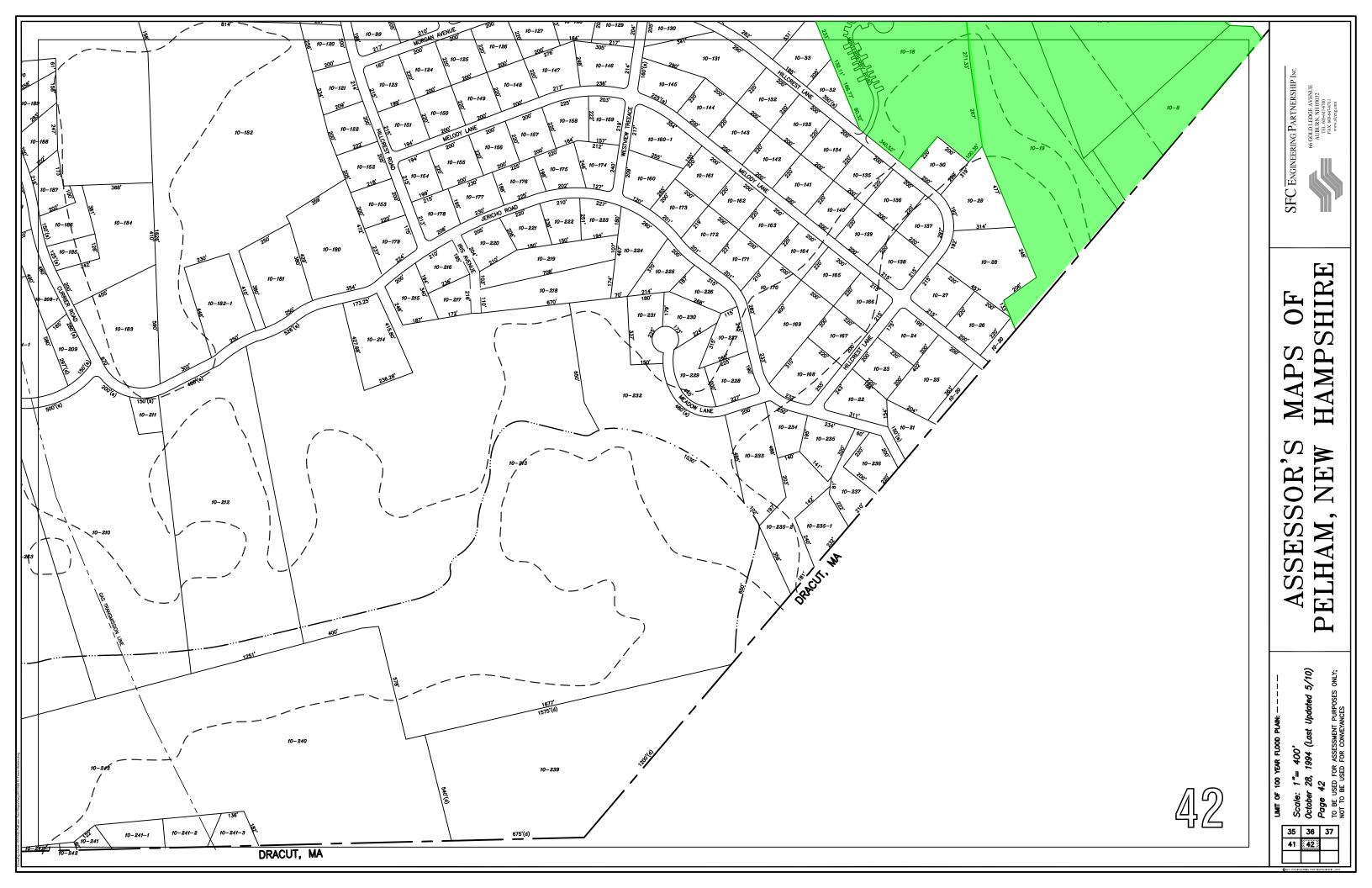














Windham Tax Maps

Owner/Abutter List (Windham, New Hampshire)

All of the project work will occur within an existing utility right-of-way, thus abutters do not need to be notified. Below is a list of all properties within and directly adjacent to the project right-of-way. Notifications were sent to the property owners listed below. Properties located outside of the right-of-way are *italicized*.

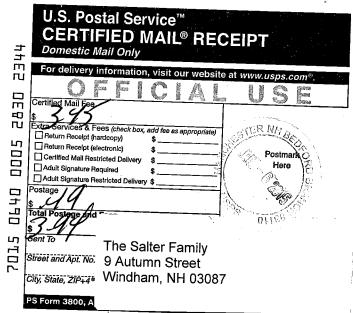
Owner/Abutter	Tax Map Number (map – block – lot)	Mailing Address
	Tax Map 26	
Town of Windham	14-A-230	3 No. Lowell Road Windham, NH 03087
James Gendron	14-A-300	16 Bridle Bridge Road Windham, NH 03087
State of New Hampshire Department of Transportation	14-A-300A	PO Box 483 Concord, NH 03301-0483
Dorothy, William, & Carolyn E. Quigley	14-A-350	14 Bridle Bridge Road Windham, NH 03087-1728
Michael A. Bisson	14-A-400	10 Bridle Bridge Road Windham, NH 03087
Michael A. Bisson	14-A-450	10 Bridle Bridge Road Windham, NH 03087
Thomas G. Crocker & Lenore Crocker	19-A-101	3 Bridle Bridge Road Windham, NH 03087
Maryland & Theophil Glance	19-A-200	64 Mammoth Road Windham, NH 03087
Sun Coast Properties LLC	19-A-300	c/o Phil Lochiatto PO Box 4084 Windham, NH 03087
Frederick and Roberta Ford	19-A-400	70 Mammoth Road Windham, NH 03087-1707
Maryland & Theophil Glance	19-A-500	64 Mammoth Road Windham, NH 03087
Windham Meadows Development, LLC	19-A-801	c/o Jean Osborne 24 Brookview Road Windham, NH 03087
Windham Meadows PH 2, Condo	19-A-802	c/o Alan Kirkman 12 Brookview Road Windham, NH 03087
Tennessee Gas Pipeline Company	19-A-850	PO Box 7372 Houston, TX 77210-4372
Dawn M. Wentworth & Edward C. Gay	19-A-1000	91 Mammoth Road Windham, NH 03087

David F. Johns	19-B-501	77 Mammoth Road Windham, NH 03087-1708
The Kelly Family	19-B-506	73 Mammoth Road Windham, NH 03087
Town of Windham	19-B-701	3 No. Lowell Road Windham, NH 03087
The Webman Family	19-B-714	4 Glance Road Windham, NH 03087
Town of Windham	19-B-715	3 No. Lowell Road Windham, NH 03087
	Tax Map 31	
Whispering Winds Adult Community Condominium	19-A-800	c/o Leroy Waks 1 Pleasant Street Windham, NH 03087
Mark F. Thompson	19-B-900	87 Mammoth Road Windham, NH 03087
Andrew W. Fuller	19-B-903	11 Autumn Street Windham, NH 03087
Gail S. Gumbel Revocable Trust	19-B-904	13 Autumn Street Windham, NH 03087
Homer Shannon	19-B-905	15 Autumn Street Windham, NH 03087
The Trudel Family	19-B-906	17 Autumn Street Windham, NH 03087
The Lundquist Family	19-B-912	2 Winter Street Windham, NH 03087
Gail L. Bennett	19-B-913	1 Winter Street Windham, NH 03087
Jason Wing & Jennifer Sugerman	19-B-914	3 Winter Street Windham, NH 03087
The Sullivan Family	19-B-919	3 Autumn Street Windham, NH 03087
The Johnson Family	19-B-920	5 Autumn Street Windham, NH 03087
William Whittemore	19-B-921	7 Autumn Street Windham, NH 03087
The Salter Family	19-B-922	9 Autumn Street Windham, NH 03087
Dawn M. Wentworth & Edward C. Gay	19-B-1000	91 Mammoth Road Windham, NH 03087

The Carney Family	19-B-3007	140 Castle Hill Road Windham, NH 03087
	Tax Map 32	
The Cronin Family	24-F-101	149 Castle Hill Road Windham, NH 03087
George J. Grenier Revocable Trust	24-F-102	8R Indian Hill Road Derry, NH 03038
John G. Caldwell & Betty W. Caldwell	24-F-103	145 Castle Hill Road Windham, NH 03087
Mekdes A. Yacob	24-F-104	PO Box 4074 Windham, NH 03087
Garrett Mccarron and Janet & Richard Florino	24-F-105	139 Castle Hill Road Windham, NH 03087
The Smith Family	24-F-106	143 Castle Hill Road Windham, NH 03087
The Levesque Family	24-F-139	135 Castle Hill Road Windham, NH 03087
Great Mountain View Estates, LLC	24-F-602	PO Box 732 Pelham, NH 03076
Great Mountain View Estates, LLC	24-F-625	PO Box 732 Pelham, NH 03076
Great Mountain View Estates, LLC	24-F-626	PO Box 732 Pelham, NH 03076
The Goodman Family	19-B-3006	138 Castle Hill Road Windham, NH 03087
	Tax Map 36	
Jay S. Koutavas	24-F-5	15 Field Road Windham, NH 03087
Great Mountain View Estates, LLC	24-F-627	PO Box 732 Pelham, NH 03076
Great Mountain View Estates, LLC	24-F-631	PO Box 732 Pelham, NH 03076
Brian Fillion and Kelly Decollibus	24-F-632	51 Ryan Farm Road Windham, NH 03087
John & Lisa Tarabocchia	24-F-633	49 Ryan Farm Road Windham, NH 03087-1849
Peter E. Root & Kelly J. Root	24-F-634	47 Ryan Farm Road Windham, NH 03087
Dennis & Sandra Chedraui	24-F-635	45 Ryan Farm Road Windham, NH 03087-1849
Robert J. Peterson, Trustee of K. M. Realty Trust	24-F-825	9 Shelly Drive Pelham, NH 03076
Town of Windham	24-F-900	3 No. Lowell Road Windham, NH 03087





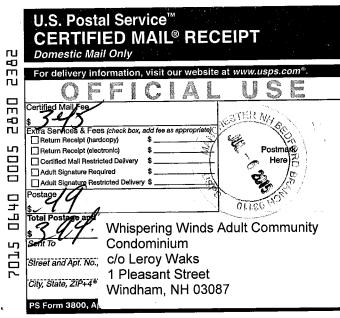


	U.S. Postal Service [™]
	CERTIFIED MAIL® RECEIPT
-	Domestic Mail Only
504	
7	For delivery information, visit our website at www.usps.com®.
П	AEEIAI IICE
믬	Certified Mail Fee
ū	1.7.16
LD LD	STER AV.
	Return Receipt (hardcopy)
]5	Return Receipt (electronic) \$ Postmark
000	Certified Mail Restricted Delivery \$ Here
⊟	Adult Signature Required Adult Signature Restricted Delivery \$
_	Postace /
0640	399
<u>_</u>	Total Postage and -
	e 299
S	State of New Hampshire
7015	Department of Transportation
Ŭ	PO Box 483
1~	L
ŝ	City, State, ZIP+4* Concord, NH 03301-0483
	PS Form 3800, A

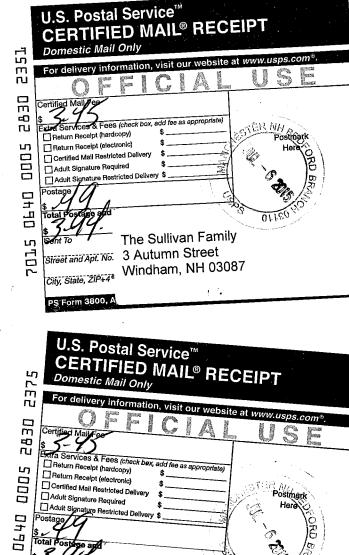










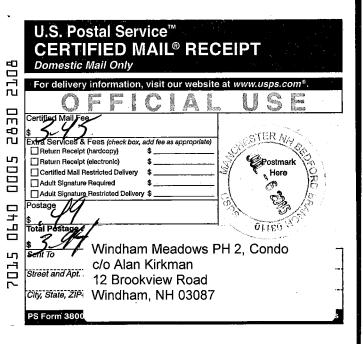


Iotal Post

Street and Apt. No.,

City, State, ZIP+4.

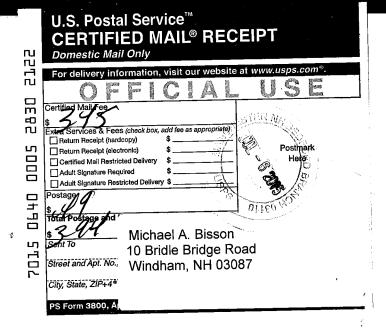
PS Form 3800, A



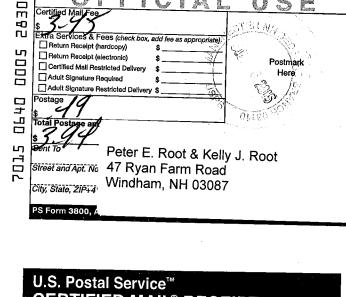
Gail S. Gumbel Revocable Trust

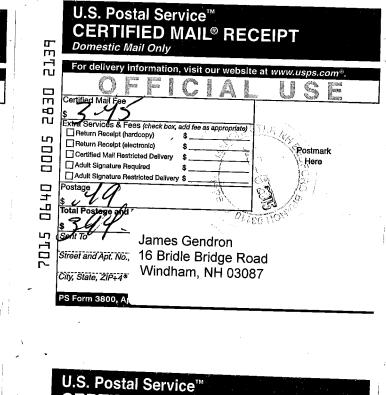
13 Autumn Street

Windham, NH 03087









U.S. Postal Service™

Domestic Mail Only

Return Receipt (hardcopy)

Return Receipt (electronic)

Adult Signature Required

Street and Apt. No.,

S Form 3800, Ap

Certified Mail Restricted Delivery

Adult Signature Restricted Delivery

ᆱ

540

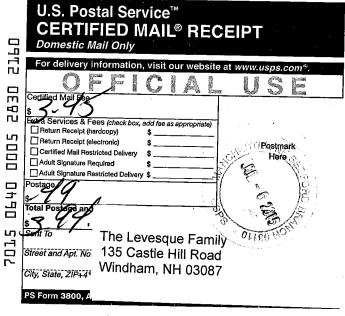
ப

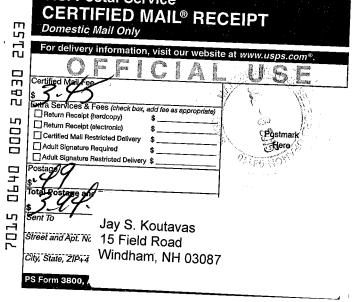
CERTIFIED MAIL® RECEIPT

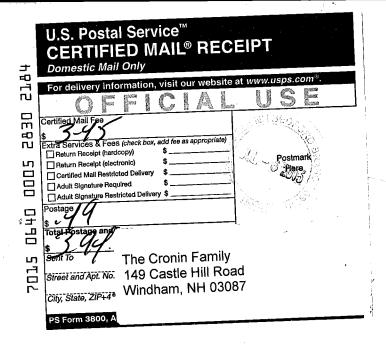
Sun Coast Properties LLC

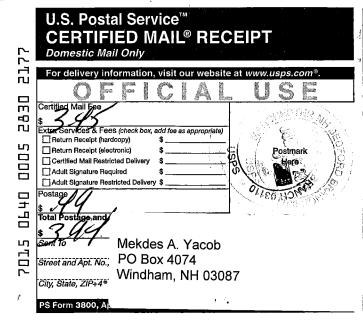
c/o Phil Lochiatto

PO Box 4084 City, State, ZIP+4* Windham, NH 03087







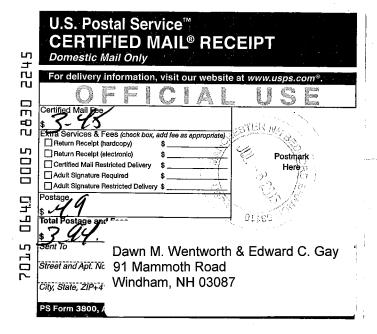




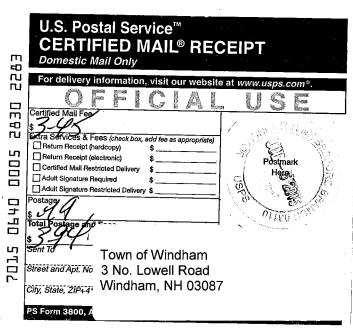
	191	U.S. Postal Service™ CERTIFIED MAIL® RECEIPT Domestic Mail Only For delivery information, visit our website at www.usps.com®.
	12	OFFICIAL USE
	0005 2830	Certified Mail bes Extra Services & Fees (check box, add fee as appropriate) Return Receipt (hardcopy) Return Receipt (electronic) Certified Mail Restricted Delivery Adult Signature Required Adult Signature Restricted Delivery \$
	-	Postage 4
	0140	Total Postage and
	ப	Sent To William Whittemore
	, 7015	Street and Apt. No., 7 Autumn Street
:	· ~	City, State, ZiP+4* Windham, NH 03087
		PS Form 3800, Al

	For delivery information, visit average in	
2830 2	Certified Mail Eee \$ 3 - 7 - 7	
2000	Extra Services & Fees (check box, add fee as appropriate) Return Receipt (hardcopy) \$ Return Receipt (electronic) \$ Certified Mail Restricted Delivery \$ Adult Signature Required \$ Adult Signature Restricted Delivery \$	*
0190	Postage St Total Bostage and St St St St St St St S	
7015	Andrew W. Fuller Street and Apr. No 11 Autumn Street City, State, ZiP+4* Windham, NH 03087	:
	PS Form 3800, A	



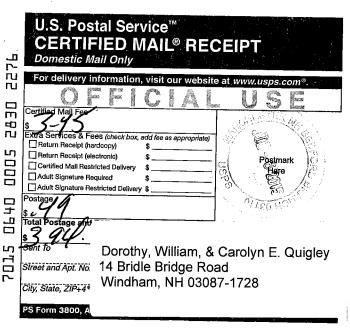




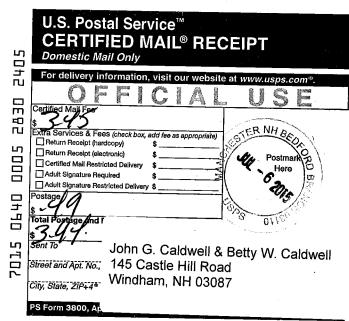


	U.S. Postal Service [™] CERTIFIED MAIL [®] RECEIPT
-0	Domestic Mail Only
EU	For delivery information, visit our website at www.usps.com ⁶ .
ru	OFFICIAL USE
830	Certified Mail Fee
ш	Extra Services & Fees (check box, add fee as appropriate)
Щ	Return Receipt (hardcopy) Postmark Return Receipt (electronic) Return Receipt (electroni
===	Certified Mail Restricted Delivery \$ Here
000	Adult Signature Required \$ 40.5.75
	Adult Signature Restricted Delivery \$
0640	Postage 4
	Total Postage
	s 244.
LO	The Webman Family
금	4 Clares Bood
	Windham, NH 03087
7015	City, State, ZIP+
	PS Form 3800,

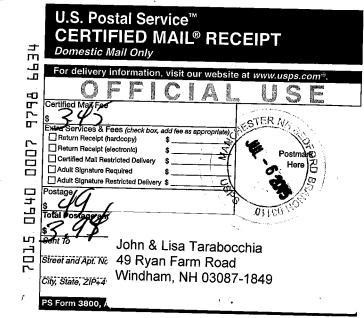


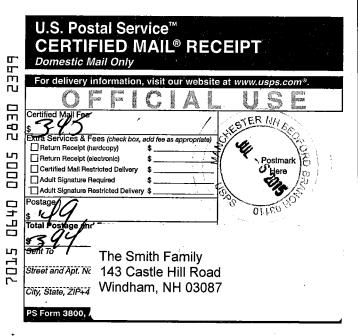




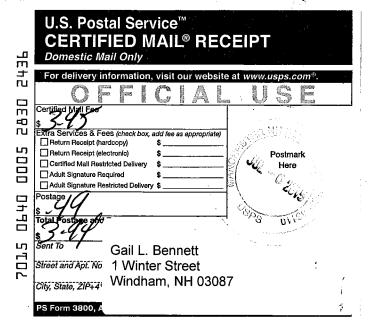


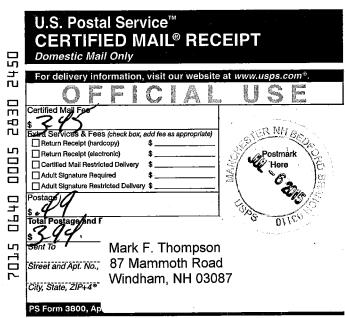




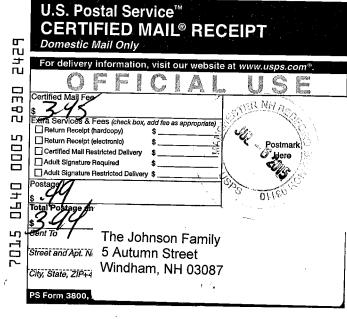


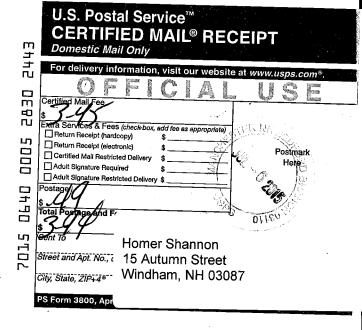


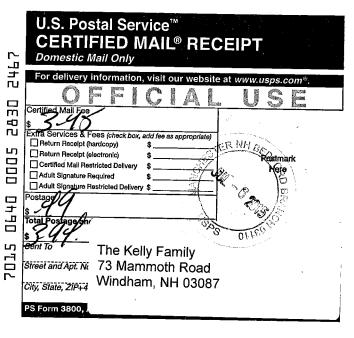


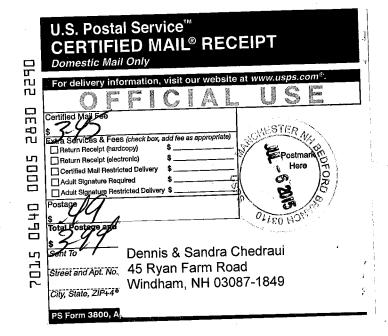






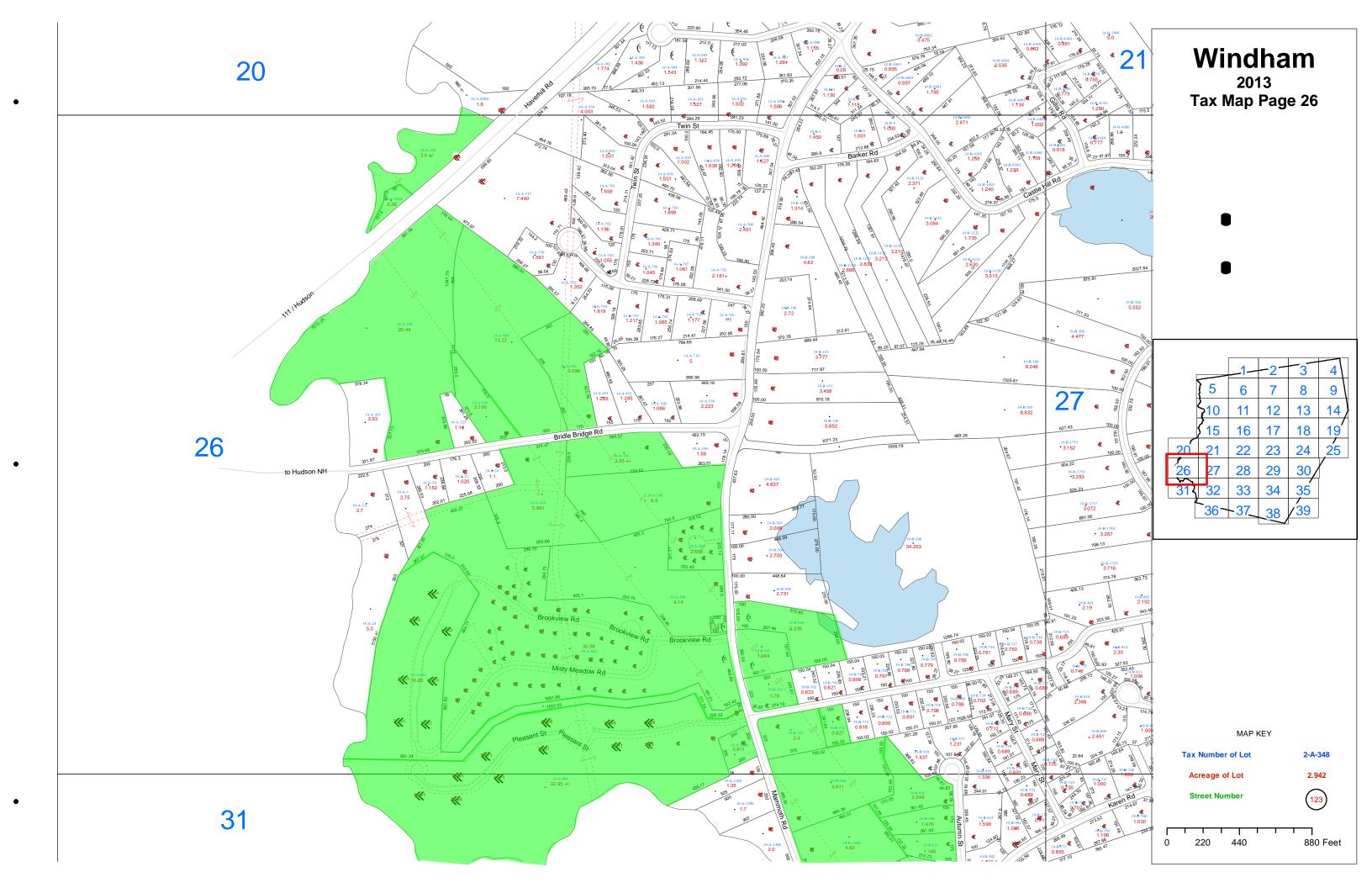


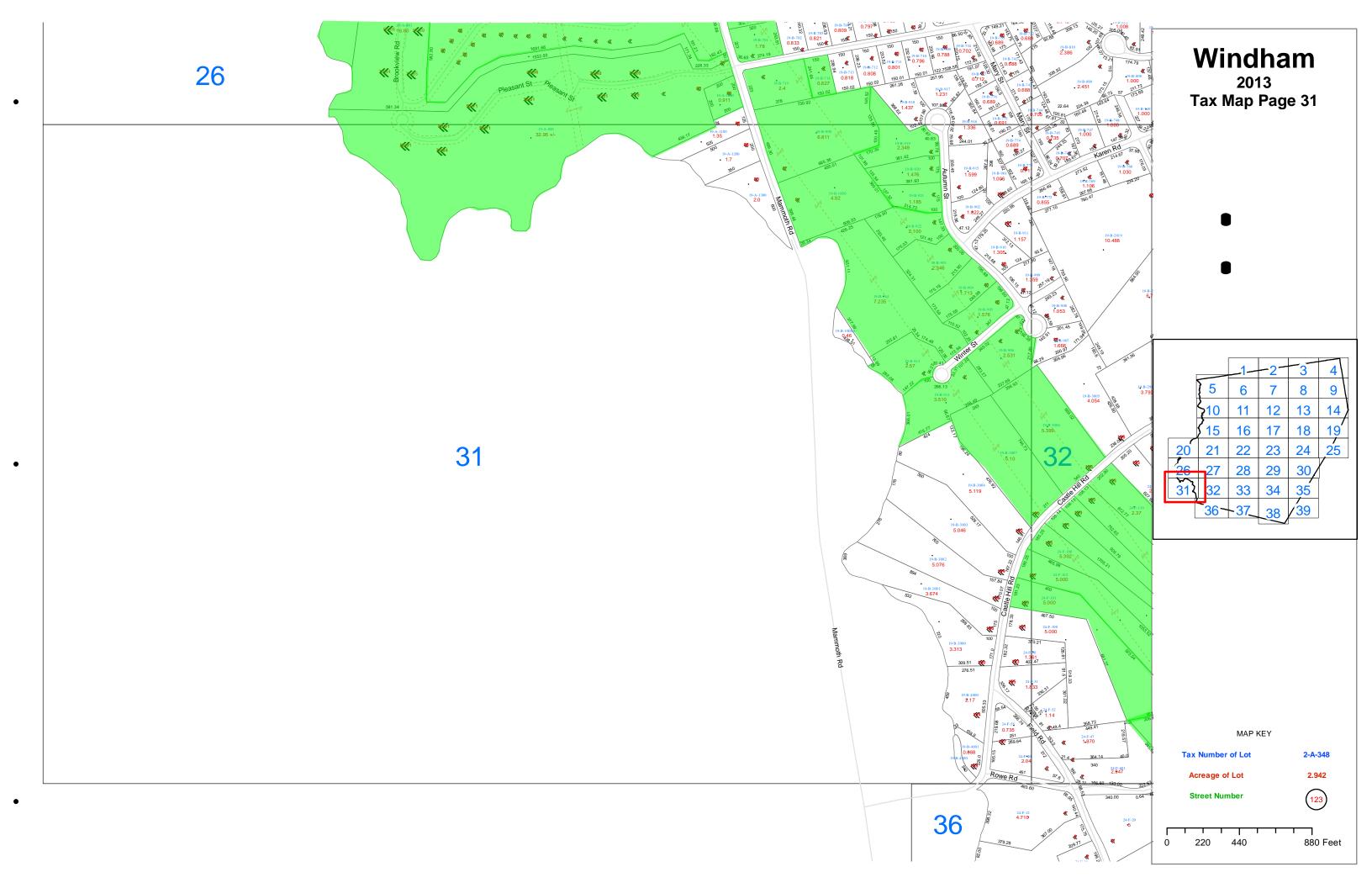


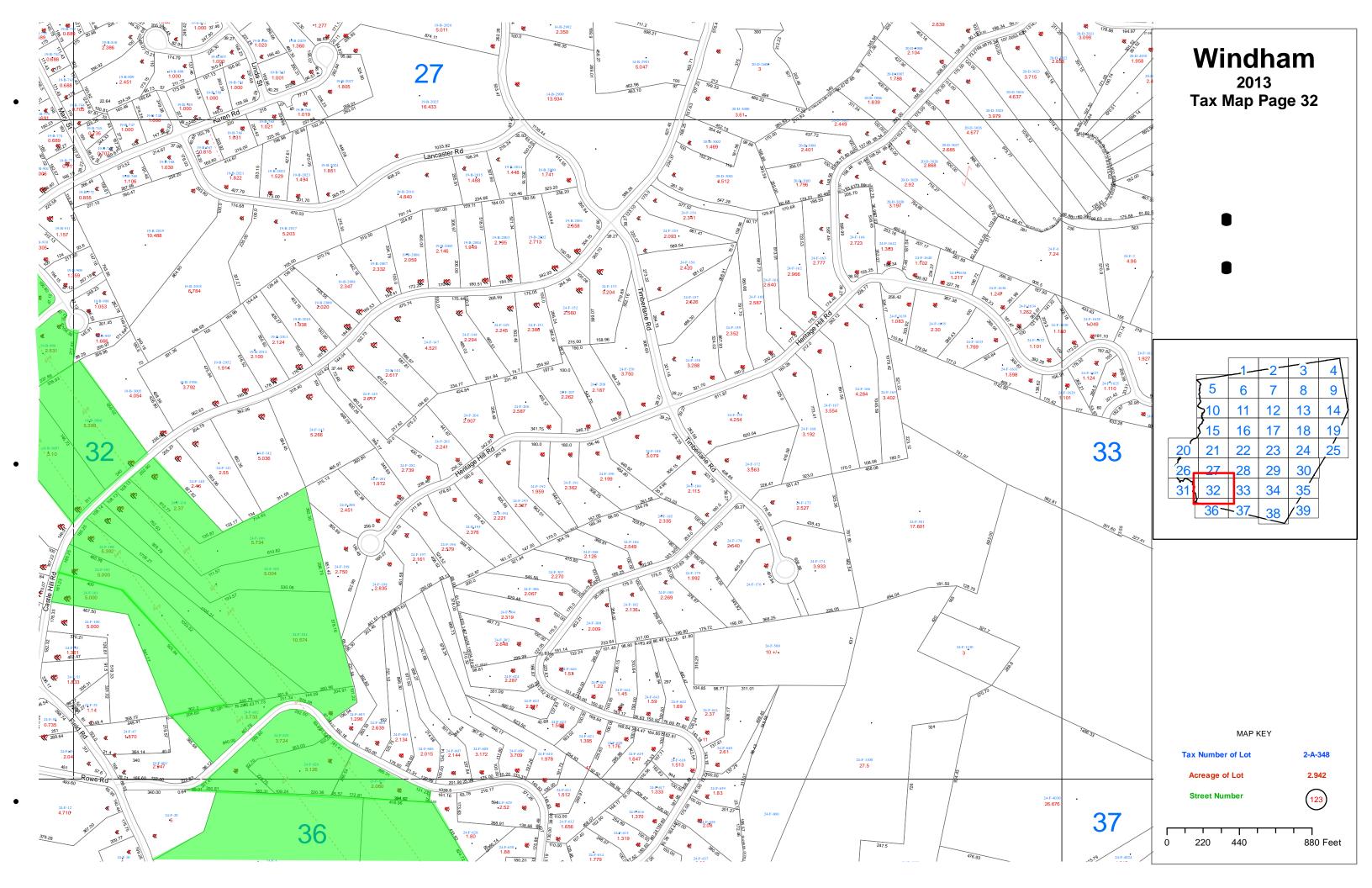


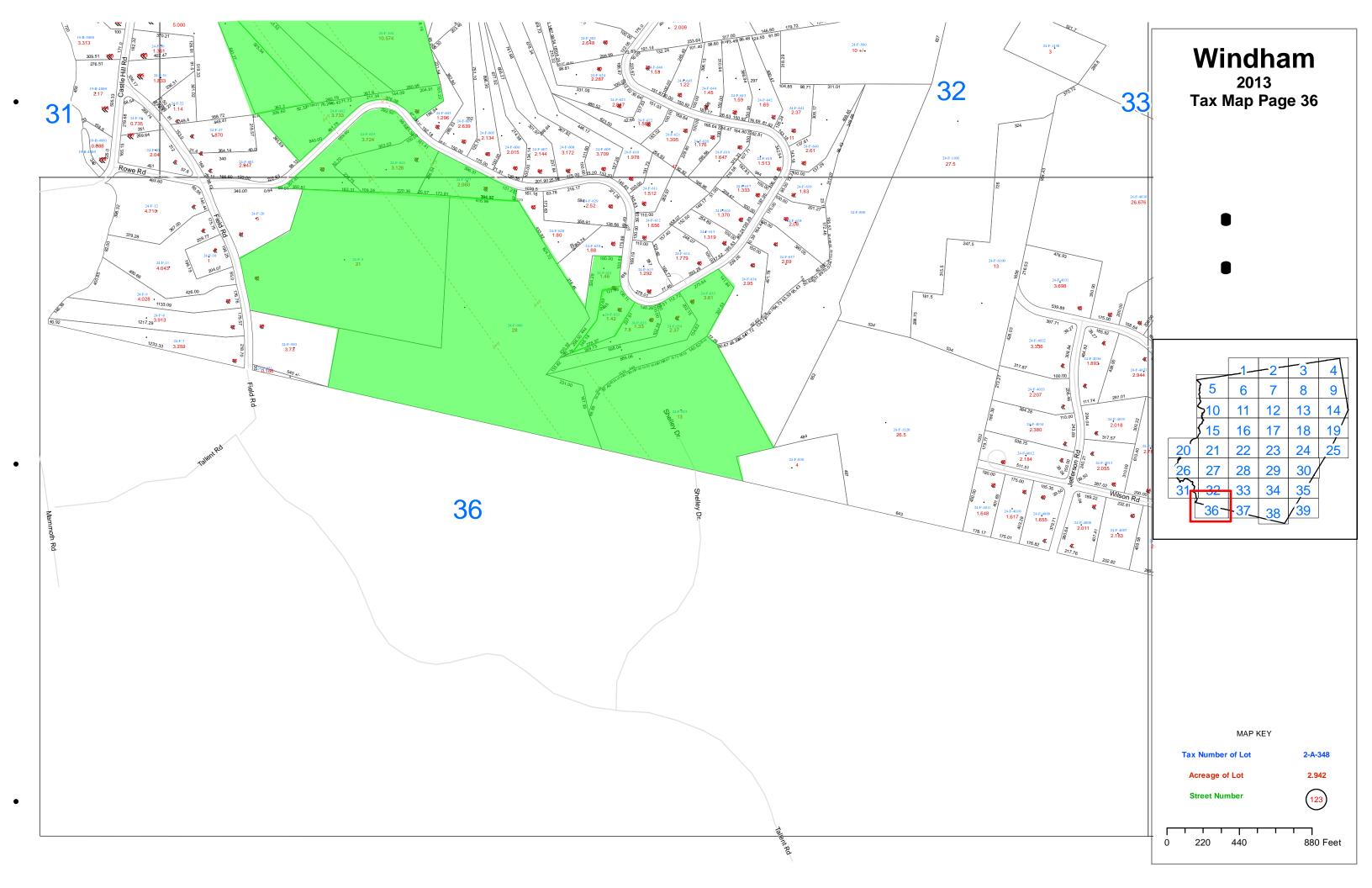


O.E.	U.S. Postal Service [™] CERTIFIED MAIL® RECEIPT Domestic Mail Only
ш	For delivery information, visit our website at www.usps.com®.
. L	OFFICIAL USE
2830	Certified Mail Fee \$ Extra Services & Fees (check box, add fee as appropriate)
000	Return Receipt (hardcopy) \$ Return Receipt (electronic) \$ Certified Mail Restricted Delivery \$ Adult Signature Required \$ Adult Signature Restricted Delivery \$
0640	Postage Total Postage and S Total Postage and
7015	Brian Fillion and Kelly Decollibus Street and Apr. No. 51 Ryan Farm Road
٠ اب	City, State, ZIP+4* Windham, NH 03087
	PS Form 3800, A











Hudson Tax Maps

Owner/Abutter List (Hudson, New Hampshire)

All of the project work will occur within an existing utility right-of-way, thus abutters do not need to be notified. Below is a list of all properties within and directly adjacent to the project right-of-way. Notifications were sent to the property owners listed below. Properties located outside of the right-of-way are *italicized*.

Owner/Abutter	Tax Map Number (map – block – lot)	Mailing Address
	Tax Map 102	
Douglas C. Harvey, Jr. & Linda K. Harvey	102-8	PO Box 639 Londonderry, NH 03053
Sophie and Stanley Alukonis	102-10	123 Central Street Hudson, NH 03051
Town of Hudson	102-11	12 School Street Hudson, NH 03051
	Tax Map 107	
Ralph W. Esburnett	107-1	34 Boyd Road Hudson, NH 03051
Katherine Guilbeault and Lynwood Gilcreast	107-2	42 Boyd Road Hudson, NH 03051
Public Service Company of NH C/O Tax Accounting	107-3	PO Box 330 Manchester, NH 03105-0330
Public Service Company of NH C/O Tax Accounting	107-3-1	PO Box 330 Manchester, NH 03105-0330
Katherine Guilbeault and Lynwood Gilcreast	107-4	42 Boyd Road Hudson, NH 03051
Ernest R. Dupras, III	107-19	31 Breakneck Road Hudson, NH 03051
Kyle & Melissa Labrecque	107-20	29 Breakneck Road Hudson, NH 03051
Jeffrey & Vicky Eaton	107-21	27 Breakneck Road Hudson, NH 03051
Aaron & Kari Brace	107-22	25 Breakneck Road Hudson, NH 03051
Jerry & Bonnie Gage-Anderson	107-23	23 Breakneck Road Hudson, NH 03051
David Connors & Lynn M. Ministeri	107-24	21 Breakneck Road Hudson, NH 03051

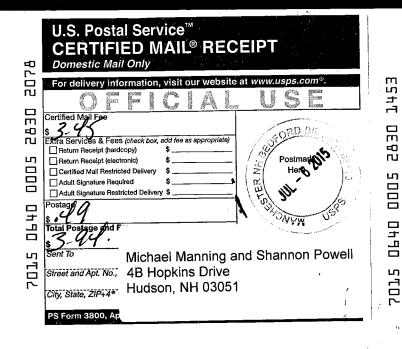
Chris C. Cowen	107-25	19 Breakneck Road Hudson, NH 03051	
Mario & Denyse Plante	107-26	9 Old Derry Road Hudson, NH 03051	
Robert Panciocco	107-27	392 Spofford Road Auburn, NH 03032	
Christopher & Tierney Chadwick	107-28	9 Breakneck Road Hudson, NH 03051	
Hector & Deborah Nault	107-29	45 Boyd Road Hudson, NH 03051	
Public Service Company of NH C/O Tax Accounting	107-30	PO Box 330 Manchester, NH 03105-0330	
Mario & Denyse Plante	107-31	9 Old Derry Road Hudson, NH 03051	
Anthony Yergeau	107-32	39A Boyd Road Hudson, NH 03051	
Mark Tello	107-33-1	37A Boyd Road Hudson, NH 03051	
Kellie M. Carlin	107-33-2	37B Boyd Road Hudson, NH 03051	
Town of Hudson	107-34	12 School Street Hudson, NH 03051	
Tax Map 112			
	1 ax Map 112		
Ben-Lu, LLC	112-3	5 Bailey Road Salem, NH 03079	
Ben-Lu, LLC Christina M. Cates	<u> </u>	•	
	112-3	Salem, NH 03079 66A Kienia Road	
Christina M. Cates	112-3 112-4-1	Salem, NH 03079 66A Kienia Road Hudson, NH 03051 66B Kienia Road	
Christina M. Cates John M. Reis & Robin L. Reis Leonard A. Vigeant, Trustee Jane M. Vigeant, Trustee	112-3 112-4-1 112-4-2	Salem, NH 03079 66A Kienia Road Hudson, NH 03051 66B Kienia Road Hudson, NH 03051 5 Mockingbird Lane	
Christina M. Cates John M. Reis & Robin L. Reis Leonard A. Vigeant, Trustee Jane M. Vigeant, Trustee Vigeant Revocable Trust	112-3 112-4-1 112-4-2 112-5-1	Salem, NH 03079 66A Kienia Road Hudson, NH 03051 66B Kienia Road Hudson, NH 03051 5 Mockingbird Lane Hudson, NH 03051 23 Glennon Avenue	
Christina M. Cates John M. Reis & Robin L. Reis Leonard A. Vigeant, Trustee Jane M. Vigeant, Trustee Vigeant Revocable Trust John Tamvaklis & Christine Tamvaklis	112-3 112-4-1 112-4-2 112-5-1 112-5-2	Salem, NH 03079 66A Kienia Road Hudson, NH 03051 66B Kienia Road Hudson, NH 03051 5 Mockingbird Lane Hudson, NH 03051 23 Glennon Avenue Dracut, MA 01826-4406 1 Marie Lane	
Christina M. Cates John M. Reis & Robin L. Reis Leonard A. Vigeant, Trustee Jane M. Vigeant, Trustee Vigeant Revocable Trust John Tamvaklis & Christine Tamvaklis Daniel & Janet Devlin	112-3 112-4-1 112-4-2 112-5-1 112-5-2 112-6	Salem, NH 03079 66A Kienia Road Hudson, NH 03051 66B Kienia Road Hudson, NH 03051 5 Mockingbird Lane Hudson, NH 03051 23 Glennon Avenue Dracut, MA 01826-4406 1 Marie Lane Hudson, NH 03051 3 Marie Lane	

Dawn M. Pilat & Louis A. Pilat	112-11	2 Marie Lane Hudson, NH 03051	
James & Janice Martin	112-12	52 Kienia Road Hudson, NH 03051	
Gregory & Kimberly Gush	112-13	50 Kienia Road Hudson, NH 03051	
Gerald & Betty Ann Jourdain	112-14	48 Kienia Road Hudson, NH 03051	
Mark D. Livingston	112-15	31 Gail Road Merrimack, NH 03054-4555	
Richard E. Ventola	112-16-1	49A Kienia Road Hudson, NH 03051	
William Jobin & Joyce Jobin	112-16-2	49B Kienia Road Hudson, NH 03051	
William D. Martin & Kathleen E. Martin	112-17	25 Empire Street Chelmsford, MA 01824	
William D. Martin & Kathleen E. Martin	112-18	25 Empire Street Chelmsford, MA 01824	
Shawn P. Murray & Dorothy G. Murray	112-19	55 Kienia Road Hudson, NH 03051	
Derek S. Lloyd & Caitlin M. Bulmer	112-20	57 Kienia Road Hudson, NH 03051	
Paul D. Albert & Brenda M. King	112-21-1	59A Kienia Road Hudson, NH 03051	
Stephen R. Peebles & Danielle R. Peebles	112-21-2	59B Kienia Road Hudson, NH 03051	
Carlos A. Medieros & Barbara M. Medieros	112-22	61 Kienia Road Hudson, NH 03051	
Tax Map 118			
Kevin W. Susi	118-10-1	2A Lenny Lane Hudson, NH 03051	
Marlene Y. Dionne & Duane M. Dionne	118-10-2	4 Hudson Park Drive Hudson, NH 03051	
Rene F. Darisse	118-11	4 Lenny Lane Hudson, NH 03051	
Mary Thibodeau	118-12-1	6A Lenny Lane Hudson, NH 03051	
Joseph E. Pietrowski & Denise Pietrowski	118-12-2	6B Lenny Lane Hudson, NH 03051	

Paul Miller	118-13-1	24 Cutler Road Litchfield, NH 03052
Victor M. Moniz & Debi A. Moniz	118-13-2	8B Lenny Lane Hudson, NH 03051
Michael S. Carbonneau & Sherry M. Carbonneau	118-21	21 Lenny Lane Hudson, NH 03051
David W. Wendt, Trustee Wendt Living Trust	118-22	4 Melissa Drive Nashua, NH 03062-3642
Debora Covino	118-23	15B Lenny Lane Hudson, NH 03051
Terrance Martin	118-24-1	15A Lenny Lane Hudson, NH 03051
Debora Covino	118-24-2	15B Lenny Lane Hudson, NH 03051
Leonard A. Vigeant, Trustee & Jane M. Vigeant, Trustee Vigeant Revocable Trust	118-25-1	5 Mockingbird Lane Hudson, NH 03051
Susan Vallier	118-25-2	13B Lenny Lane Hudson, NH 03051
Angela L. Halliday & David R. Halliday	118-26-1	11A Lenny Lane Hudson, NH 03051
Douglas Hall & Sheila Hall	118-26-2	11B Lenny Lane Hudson, NH 03051
Seth R. Lambert, Trustee & Ryan J. Lambert, Trustee Lambert 2014 Family Trust	118-27	45 Kienia Road Hudson, NH 03051
Beverly D. Gagnon, Trustee	118-28	41 Kienia Road Hudson, NH 03051
Steven D. Jacques & Nancy C. M. Jacques	118-29	39 Kienia Road Hudson, NH 03051
Michael A. Michaud & Marie F. Beaulieau	118-30	37 Kienia Road Hudson, NH 03051
Dana A. Carson & Maria Carson	118-31	33 Kienia Road Hudson, NH 03051
Stephen D. Morrill	118-32	31 Kienia Road Hudson, NH 03051
Curtis Ouellette & Milly Ouellette	118-36	18 David Drive Hudson, NH 03051
Jacques Savoie & Deborah A. H. Savoie	118-37	24 David Drive Hudson, NH 03051
Christopher W. Floyd, Sr.	118-57	25 David Drive Hudson, NH 03051

Marc R. Derosiers & Mona T. Derosiers	118-58	24 Lenny Lane Hudson, NH 03051	
	Tax Map 126		
William & Gail Dion	126-19	19 David Drive Hudson, NH 03051	
Sophie and Stanley Alukonis	126-29	123 Central Street Hudson, NH 03051	
Lavinia Miller	126-32	50 Griffin Road Hudson, NH 03051	
Society for the Protection of New Hampshire Forests	126-35	54 Portsmouth St. Concord, NH 03301	
	Tax Map 135		
Lavinia Miller	135-17	50 Griffin Road Hudson, NH 03051	
	Tax Map 136		
John & Jeanne Quigley, and Kathryn Gallan	136-7	4 McCrady Drive Hudson, NH 03051	
Dana Ordway	136-8	5 McCrady Drive Hudson, NH 03051	
Gerald & Melissa Talty	136-13	26 Bockes Road Hudson, NH 03051	
Daniel and Lindsey Delorenzo	136-14-1	88 Litchfield Road Hudson, NH 03051	
Dennis Messier	136-14-2	2B Hopkins Drive Hudson, NH 03051	
Andrew and Faith Renzullo	136-14-3	2 Heritage Circle Hudson, NH 03051	
Heather Newell	136-14-4	6 Lee Joy Lane Hudson, NH 03051	
Caroline Grandy	136-15-1	4A Hopkins Drive Hudson, NH 03051	
Michael Manning and Shannon Powell	136-15-2	4B Hopkins Drive Hudson, NH 03051	
Tracy Kehoe	136-16	6 Hopkins Drive Hudson, NH 03051	
Carmen Hardman	136-17	10 Hopkins Drive Hudson, NH 03051	

Frank Martinelli Sandra N. Martinelli	136-18	12 Hopkins Drive Hudson, NH 03051
Richard & Eleanor Stephens	136-33	31 Bockes Road Hudson, NH 03051
Kenneth & Kim Cushman	136-34	23 Bockes Road Hudson, NH 03051
Robert Roystand	136-35	PO Box 119 Hudson, NH 03051



۲ 5	U.S. Postal Service™ CERTIFIED MAIL® RECEIPT Domestic Mail Only
13	For delivery information, visit our website at www.usps.com®.
E	Certified Mail Fee
	\$ Extra Services & Fees (check box, add fee as appropriate).
105	Gertified Mall Restricted Delivery
	Adult Signature Required Adult Signature Restricted Delivery \$
7	Postage 9.
	Total Postage and Form
7015	Robert Roystand
20	Street and Apt. No., PO Box 119
. ,	City, State, ZIP+4* Hudson, NH 03051
	PS Form 3800, A

	CERTIFIED MAIL® RECEIPT
47	Domestic Mail Only
13	For delivery information, visit our website at www.usps.com®.
30	Certified Mail Fee
80	\$ 3.45 Extra Services & Fees (check box, add fee as appropriate)
Ŋ	Return Receipt (electronic) \$ Compared to the set of the set o
	☐ Certified Mail Restricted Delivery \$ Postmark ☐ Adult Signature Required \$ Here
	Adult Signature Restricted Delivery \$
]6 4 D	Total Postageyand Farm
_	\$ 3.99. Sent To
701.5	Robert Roystand Street and Apr. No., PO Box 119
· - [City, State, ZiF+4* Hudson, NH 03051
	PS Form 3800, A ₁

	PS Form 3800, A
. 25	U.S. Postal Service™ CERTIFIED MAIL® RECEIL Domestic Mail Only
7	For delivery information, visit our website at w
	OFFICIAL
30	Certified Mail Fee
ㅁ	\$ Extra Services & Fees (check box, add fee as appropriate)
10	☐ Return Receipt (hardcopy) \$
	Return Receipt (electronic) \$
000	Adult Signature Required \$
	Adult Signature Restricted Delivery \$ Postage/, /
0640	\$ 49
	Total Postage and
L)	Sent To Carmen Hardman
7015	Street and Apt. No 10 Hopkins Drive
7	'
	City, State, ZIP+41 Hudson, NH 03051

PS Form 3800, A

ги —	OFFICIAL USE
283	Certified Mail/Fee \$ 3
гO	Return Receipt (nardcopy) \$ Return Receipt (electronic) \$ Postcark Certified Mall Restricted Delivery \$
000	Adult Signature Required Adult Signature Restricted Delivery \$
0640	Postage of Total Postage and T
7015	Sent To Frank Martinelli Sandra N. Martinelli Street and Apt. No. 12 Hopkins Drive
-	City, State, 21P+4* Hudson, NH 03051 PS Form 3800, A
P	
	•

U.S. Postal Service™

Certified Mail Fee \$ Extra Services & Fees (check box, add fee as appropriate)

Harvey

U.S. Postal Service™

Domestic Mail Only

PO Box 639 City, State, ZIP+4* Londonderry, NH-03053

CERTIFIED MAIL® RECEIPT

For delivery information, visit our website at www.usps.com®

Domestic Mail Only

Return Receipt (hardcopy)

Return Receipt (electronic)

Adult Signature Required

Postage/

\$ U U
Total Postage/and

Street and Apt. No.

PS Form 3800, A

Certified Mail Restricted Delivery

Adult Signature Restricted Delivery \$

CERTIFIED MAIL® RECEIPT

Postmark

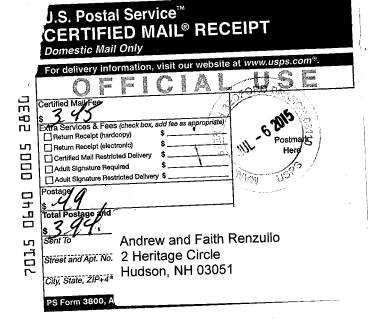
- 6 50%

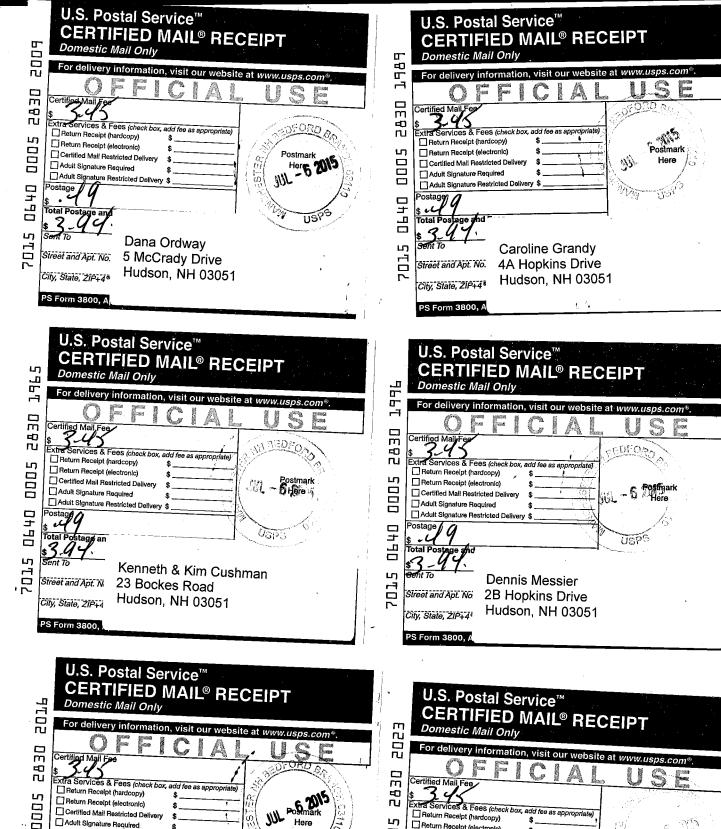
731

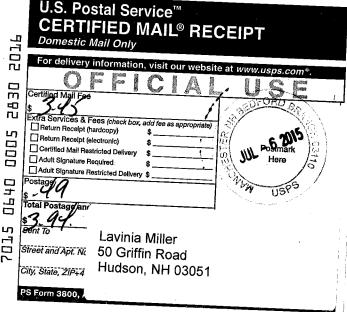
Here

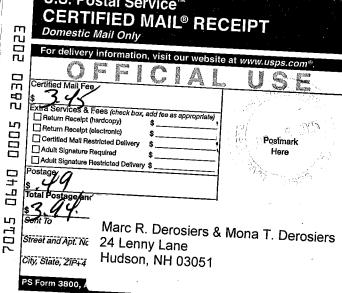
Here

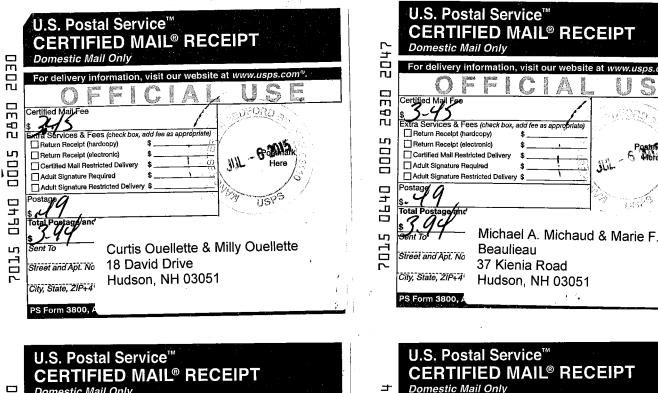
Douglas C. Harvey, Jr. & Linda K.

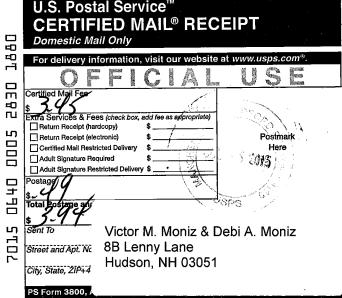








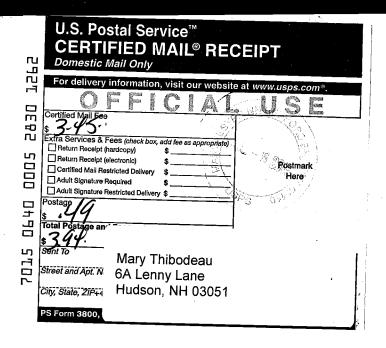




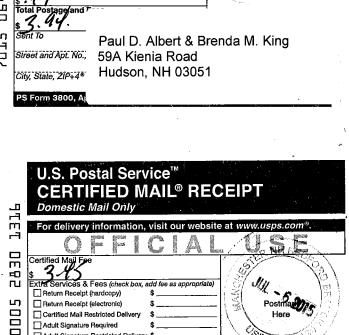


	U.S. Postal Service [™]		
	CERTIFIED MAIL® RECEIPT		
ᆂ	Domestic Mail Only		
ы			
밉	For delivery information, visit our website at www.usps.com®.		
	OFFICIAL USE		
30	Certified Mail Fee		
ĖΟ	s 3-45		
ш	Extra Services & Fees (check box, add fee as appropriate)		
	Return Receipt (hardcopy) \$		
000	Return Receipt (electronic) \$Postmark		
품	Certified Mail Restricted Delivery \$ Here		
吕			
	Adult Signature Restricted Delivery \$		
0640	Postage		
<i>⊐</i> <u>+</u>	Total Postage aut/		
프	100 00/10 0/7		
ш	s 2 44 Seth R. Lambert, Trustee &		
ഥ	Sent To Ryan J. Lambert, Trustee		
7015			
	sireet and Apt. No.; Lambert 2014 Family Trust		
L~	Lancia Road		
	Hudson, NH 03051		
	PS Form 3800 An		





8F	U.S. Postal Service™ CERTIFIED MAIL® RECEIPT Domestic Mail Only
띰	For delivery information, visit our website at www.usps.com®.
	OFFICIAL USE
830	Certified Mail Fee
П	Extra Services & Fees (check box, add fee as appropriate) Return Receipt (hardcopy) \$
Ŋ	Return Receipt (lelectronic)
0005	☐ Certified Mail Restricted Delivery \$ Here
H	Adult Signature Required \$
	Adult Signature Restricted Delivery \$
0640	Postage \$.49
	Total Postage and F
ា	Paul D. Albert & Brenda M. King
707	Street and Apt. No., 59A Kienia Road
7	oo, trionia roda
	City, State, 21P+4* Hudson, NH 03051
	PS Form 3800, A



James & Janice Martin

52 Kienia Road

Hudson, NH 03051

Adult Signature Restricted Delivery \$

Total Po

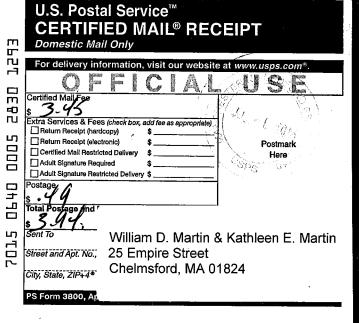
Street and Apt. No

City, State, ZIP+4

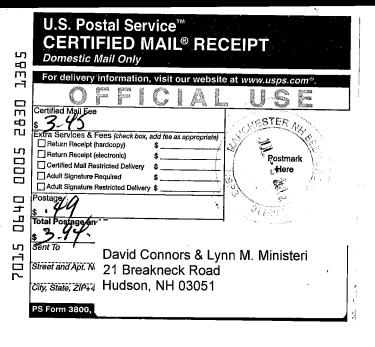
PS Form 3800,

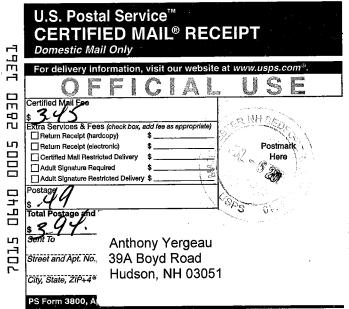
S

1279	U.S. Postal Service™ CERTIFIED MAIL® RECEIPT Domestic Mail Only
ا يَت	For delivery information, visit our website at www.usps.com®.
	OFFICIAL USE
830	Certified May Fee
П	Extra Services & Fees (check box, add fee as appropriate)
L)	□ Return Receipt (hardcopy) \$ Postmark Postmark
	Certified Mail Restricted Delivery \$ Here
	Adult Signature Required \$
ш	Adult Signature Restricted Delivery \$
0640	Postage
므	Total Postage and F
	s 3.44.
Ŋ	Sent To Kevin W. Susi
707	
	City, State, ZIP+4* Hudson, NH 03051
	PS Form 3800, Ap



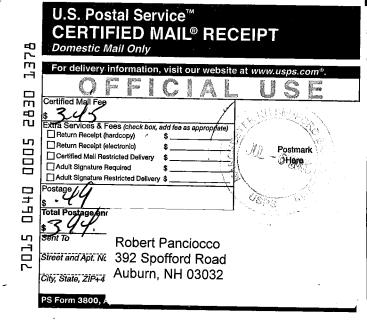




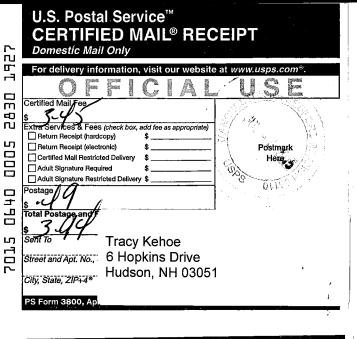


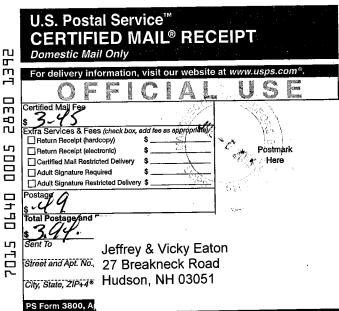


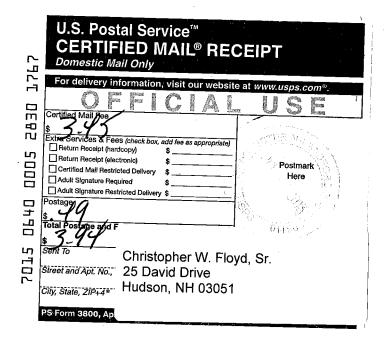
60	U.S. Postal Service [™] CERTIFIED MAIL [®] RECEIPT Domestic Mail Only
JE T	For delivery information, visit our website at www.usps.com®.
2830	Certified Mail Fee \$ Extra Services & Fees (check box, add fee as appropriate) Return Receipt (hardcopy)
0005	Return Receipt (electronic)
0640	Postage 9 Total Postage and s 3 4 4
7015	Street and Apt. No. Street
,*	PS Form 3800, A



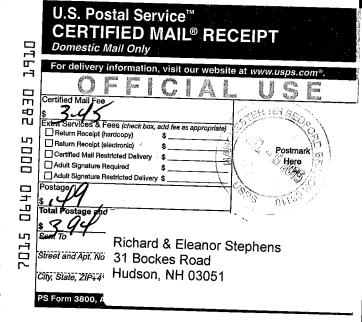


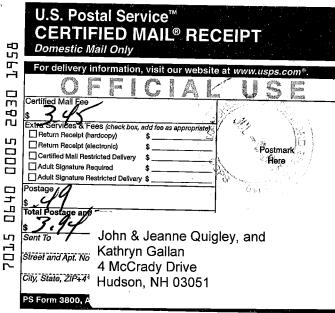




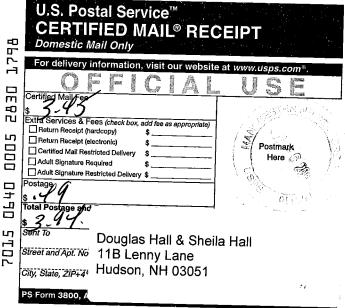


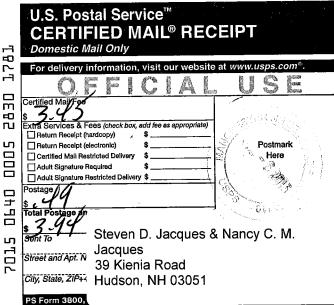
7	CERTIFIED MAIL® RECEIPT Domestic Mail Only
7	For delivery information, visit our website at www.usps.com®.
	OFFICIAL USE
ח	Certified Mail Fee
10 Tu	s
ш	Extra Services & Fees (check box, add fee as appropriate)
_	Return Receipt (hardcopy)
5000	Return Receipt (electronic) \$ Postmark
=	Certified Mail Restricted Delivery \$Here
<u> </u>	Adult Signature Required \$
	Adult Signature Restricted Delivery \$
	Postage //
	\$. 97
4	Total Postage and
_	s 5.79
ŋ	Sent To Heather Newell
-	rication rewell
ムゴコイ	<u>street and Apt. No.</u> 6 Lee Joy Lane
~	Hudson, NH 03051
	City, State, ZIP+4®
	(· · ·
	PS Form 3800, A

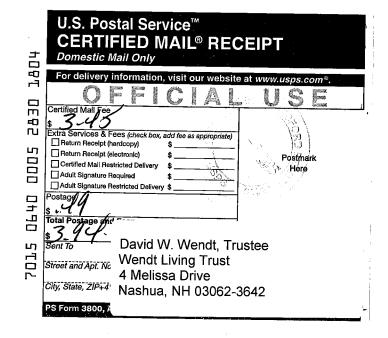






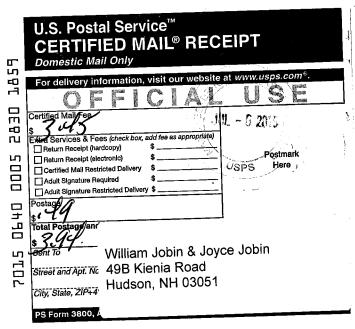


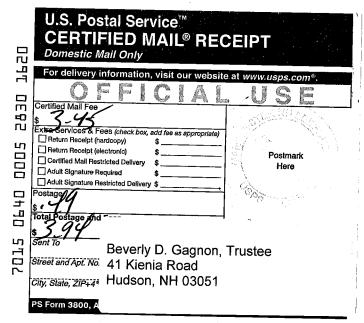




	U.S. Postal Service [™] CERTIFIED MAIL [®] RECEIPT		
1.1	Domestic Mail Only		
30 1811	For delivery information, visit our website at www.usps.com®.		
	\$ 3-45 [Extra Services & Fees (check box, add fee as appropriate)]		
0005	Return Receipt (hardcopy)		
0640	Postage () \$ Total Postage and F		
7015	Paul Miller Street and Apt. No., 24 Cutler Road City, State, 2/9-48* Litchfield, NH 03052		
	PS Form 3800, Ap		

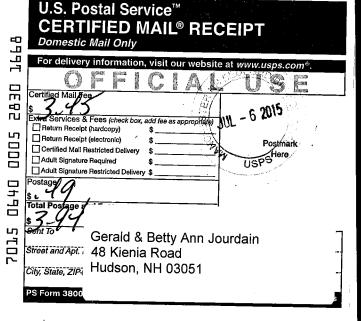


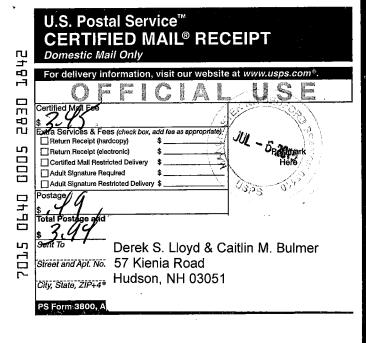




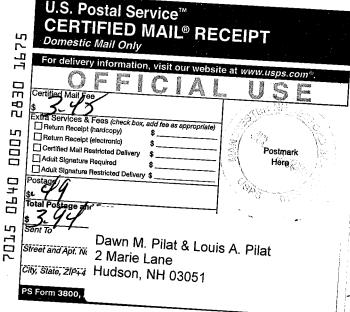
	CERTIFIED MAIL® RECEIPT
ᅜ	Domestic Mail Only
83	For delivery information, visit our website at www.usps.com®.
7.8	OFFICIAL USE
30	Certified Mail Fee
ㅁ	Extra Services & Fees (check box, add fee as appropriate)
5	Return Receipt (hardcopy) \$ Return Receipt (electronic) \$ Postitude:
000	Certified Mail Restricted Delivery \$ Here Adult Signature Required \$
	Adult Signature Restricted Delivery \$
0640	\$.49 /
	Total Postage and
ъ	Sent To Carlos A. Medieros & Barbara M.
7015	Medieros ^{Street and Apt. No} 61 Kienia Road
· ~	City, State, ZIP+4' Hudson, NH 03051
	PS Form 3800, A

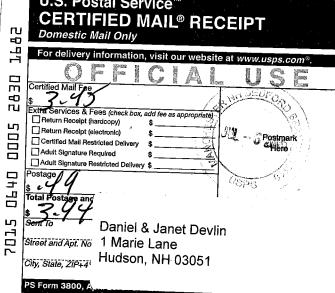
II C Postal Service™



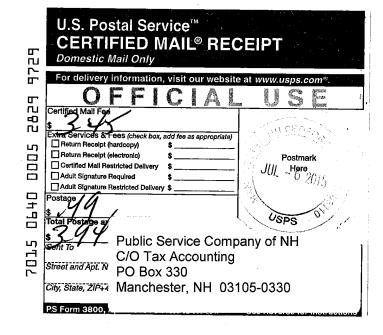




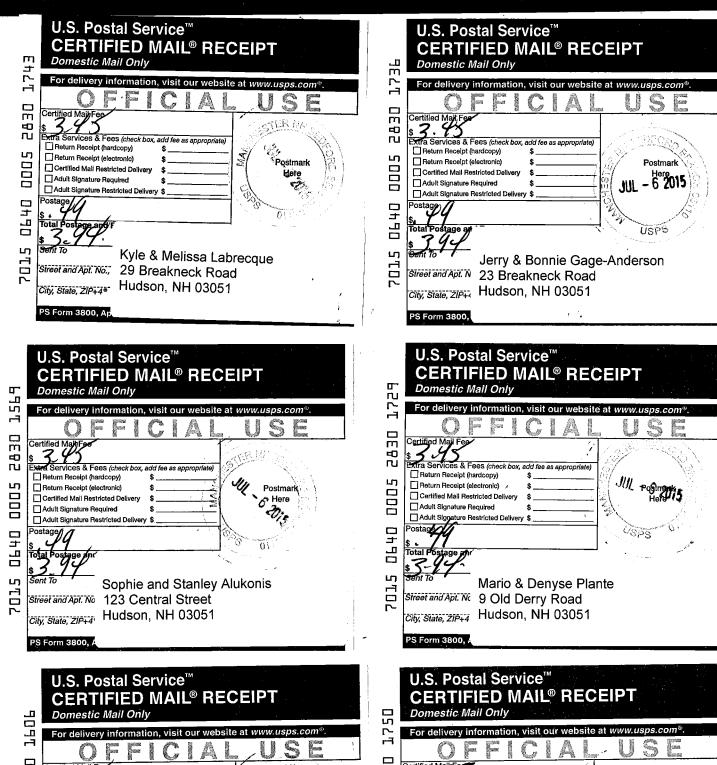


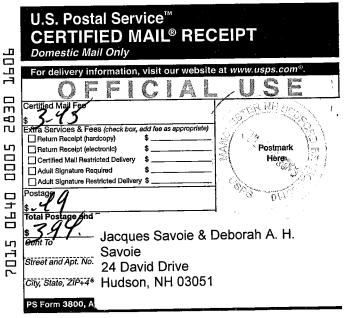


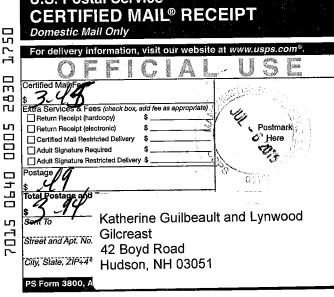
Here

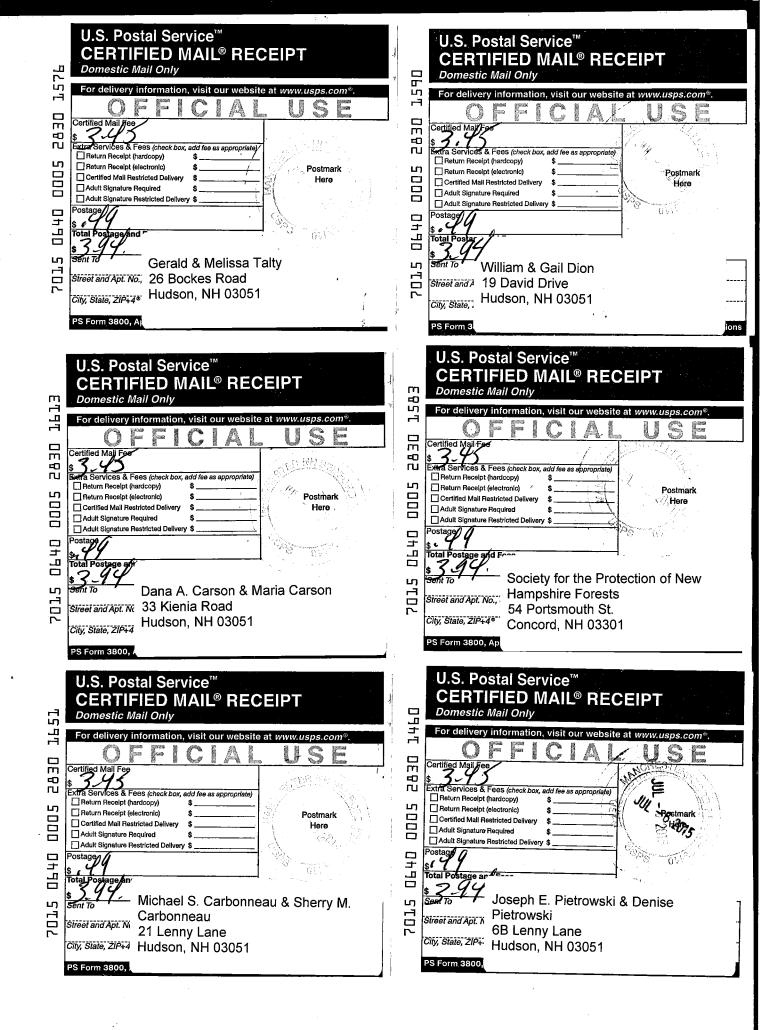


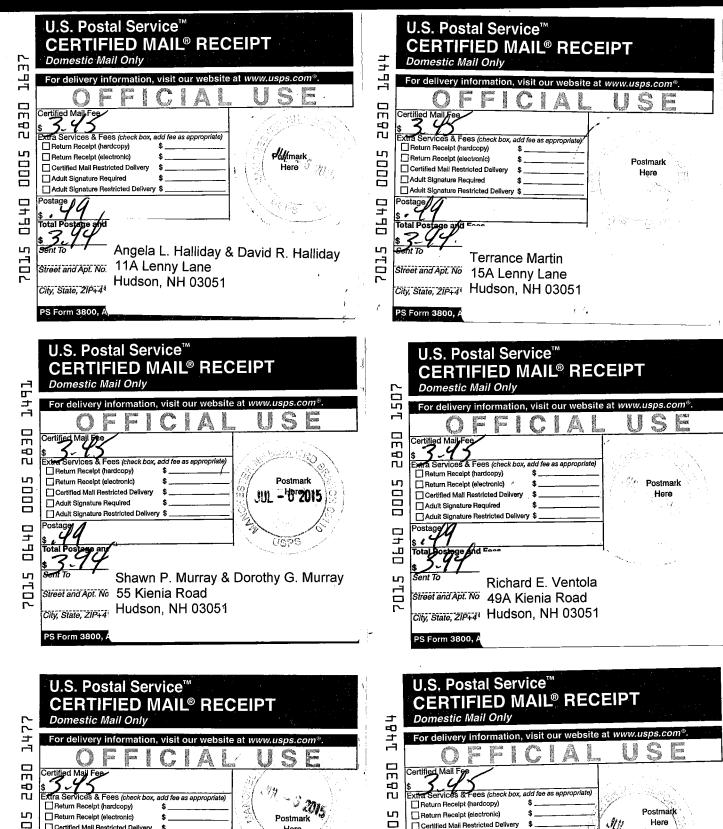
LJ	U.S. Postal Service™ CERTIFIED MAIL® RECEIPT Domestic Mail Only
712	For delivery information, visit our website at www.usps.com®.
77	For delivery information, visit our website at www.aspercom
	OFFICIAL USE
2830	Certified Mail Fee
=0	\$ Extra Services & Fees (check box, add fee as appropriate)
14	Extra Services & Fees (check box, add ree as appropriate) Return Receipt (hardcopy) \$
ы	Return Receipt (electronic) \$ Postmark
000	Certified Mail Restricted Delivery \$ Here
	Adult Signature Required \$
	Adult Signature Restricted Delivery \$
	Postage C
0490	49
	Total Postage An
	1. P.44.
	Sent To Hector & Deborah Nault
15	Hector & Deporari Nadir
\Box	Street and Apt. No. 45 Boyd Road
707	Hudson, NH 03051
	City, State, ZIP+4
	PS Form 3800, .

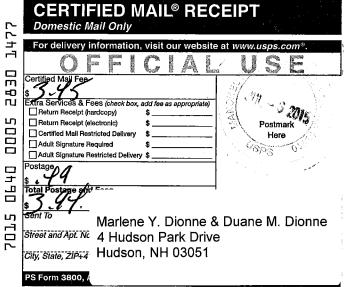












U.S. Postal Service
CERTIFIED MAIL® RECEIPT

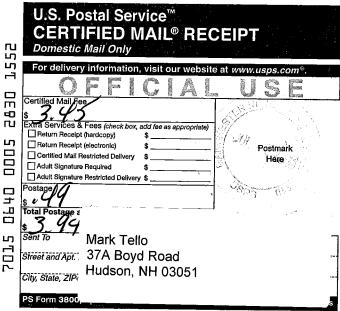
Domestic Mail Only

For delivery information, visit our website at www.usps.com®

Certified Mail Fee

Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (nardcopy)
Return Receipt (nardc



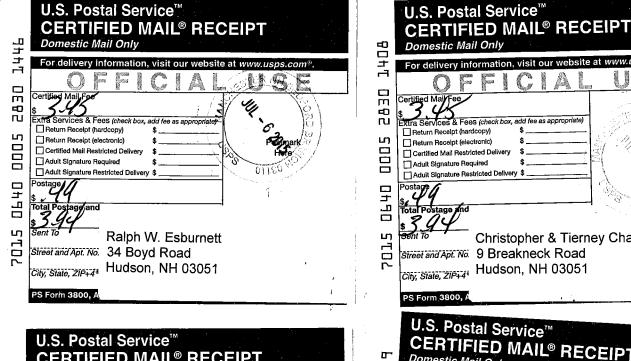




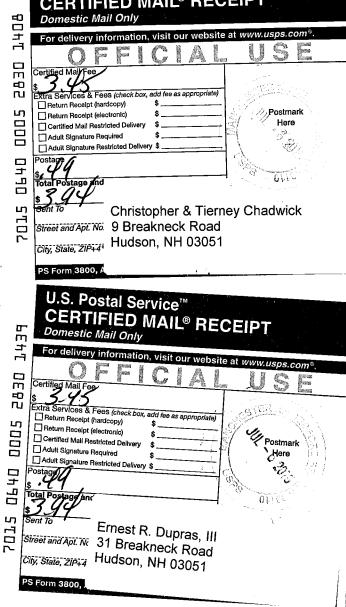
† -	U.S. Postal Service [™] CERTIFIED MAIL [®] REC Domestic Mail Only	EIPT
~	For delivery information, visit our website Certified Mail Fee \$ Extra Services & Fees (check box, add fee as appropriate) Return Receipt (hardcopy) Return Receipt (electronic) Certified Mail Restricted Delivery Adult Signature Required Adult Signature Restricted Delivery \$ Postage Total Postage and \$ Sent 10 Gregory & Kimberly Street and Apt. No. 50 Kienia Road Hudson, NH 03051	Postmark Here
ı	PS Form 3800, A	

38	U.S. Postal Service™ CERTIFIED MAIL® RECEIPT Domestic Mail Only
15	For delivery information, visit our website at www.usps.com®.
30.	OFFICIAL USE
	<u>\$ 3.43</u>
2000	Extfa Services & Fees (check box, add fee as appropriate) Return Receipt (hardcopy) \$ Return Receipt (electronic) \$ Certified Mail Restricted Delivery \$ Adult Signature Restricted Delivery \$ Adult Signature Restricted Delivery \$
0640	Postage / Total Postage / Pri
7015	John Tamvaklis & Christine Tamvaklis Street and Apt. No. 23 Glennon Avenue City, State, ZiP+4 Dracut, MA 01826-4406
	PS Form 3800,

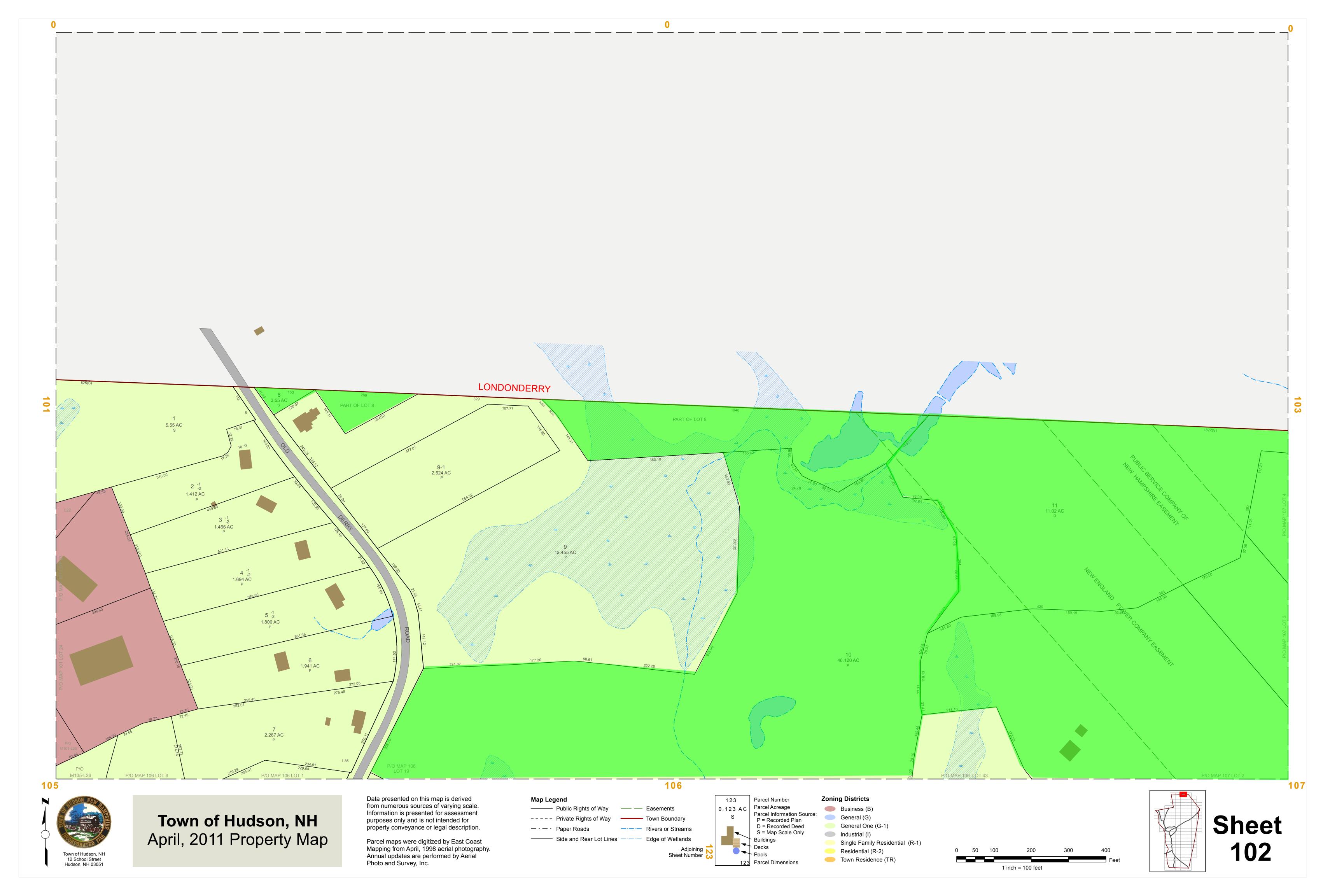
<u>.</u>	U.S. Postal Service™ CERTIFIED MAIL® REC Domestic Mail Only	EIPT
ה ה ה	For delivery information, visit our website OFFORAL Certified Mail Tee	at www.usps.com®.
, , , , , , , , , , , , , , , , , , ,	Extra Services & Fees (check box, add fee as eppropriate) Return Receipt (hardcopy) Return Receipt (electronic) Certified Mail Restricted Delivery Adult Signature Required Postage	Postmark Here
	Christina M. Cates Sireet and Apt. No. 66A Kienia Road City, State, 21P448 Hudson, NH 03051 PS Form 3800, A	

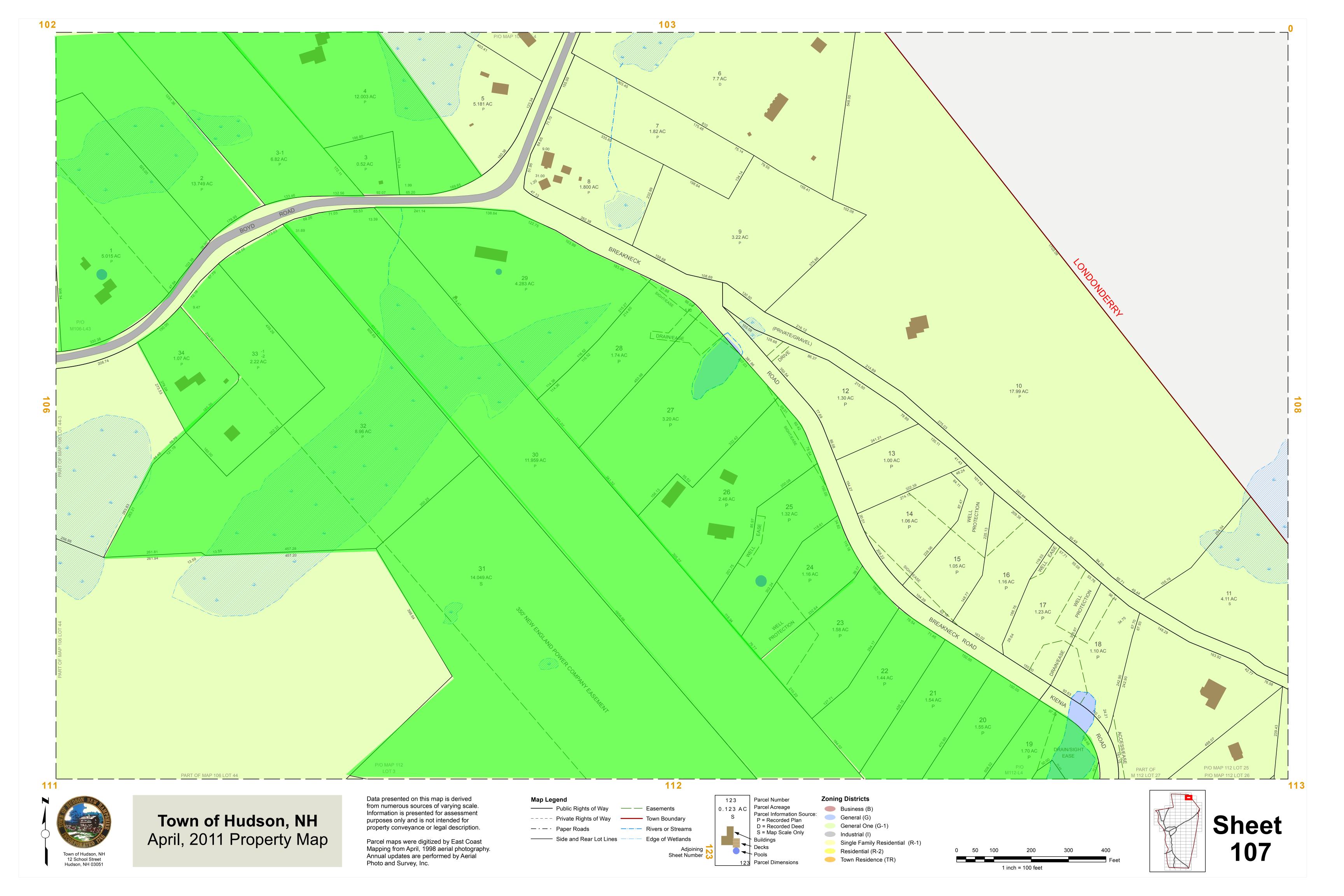


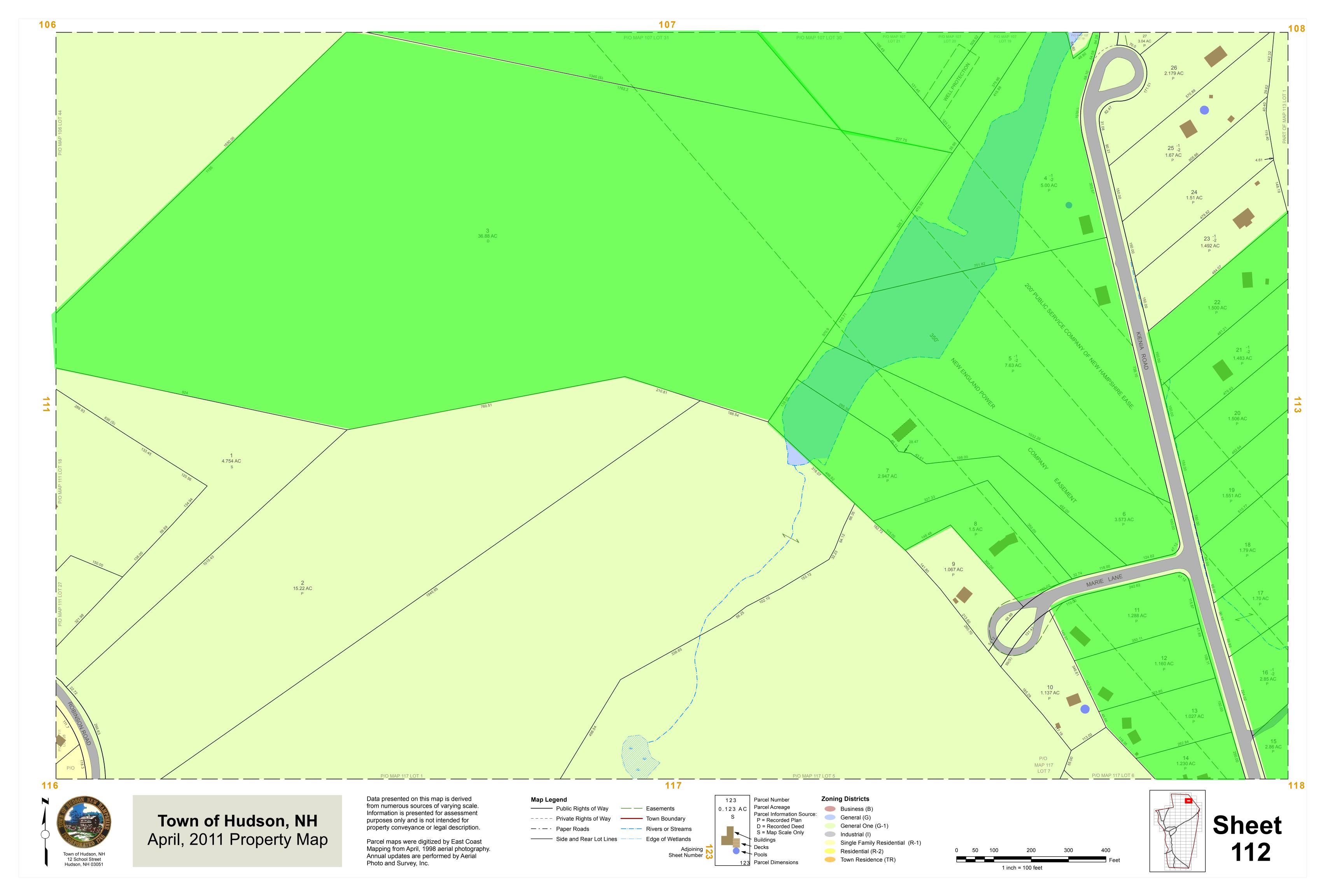


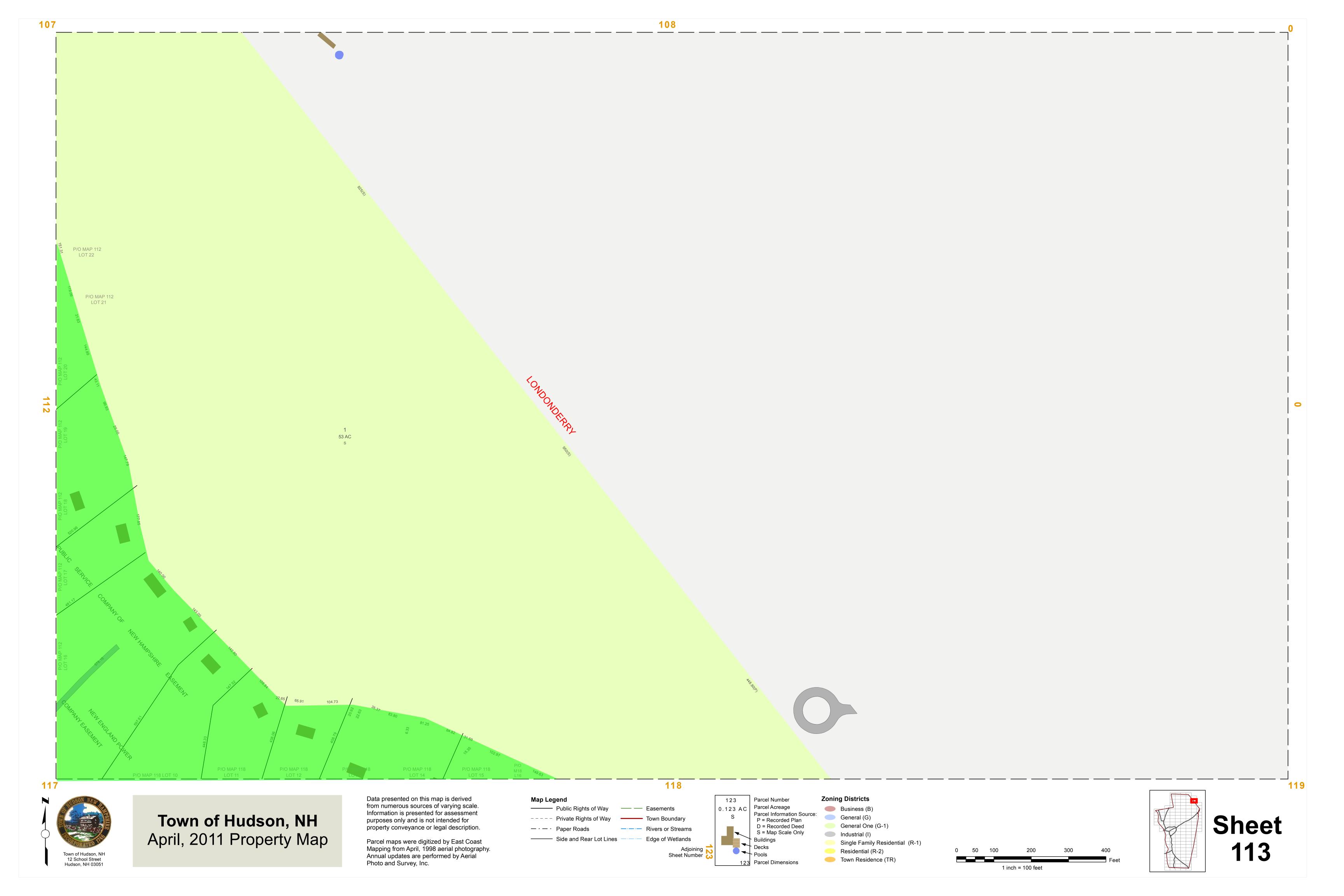


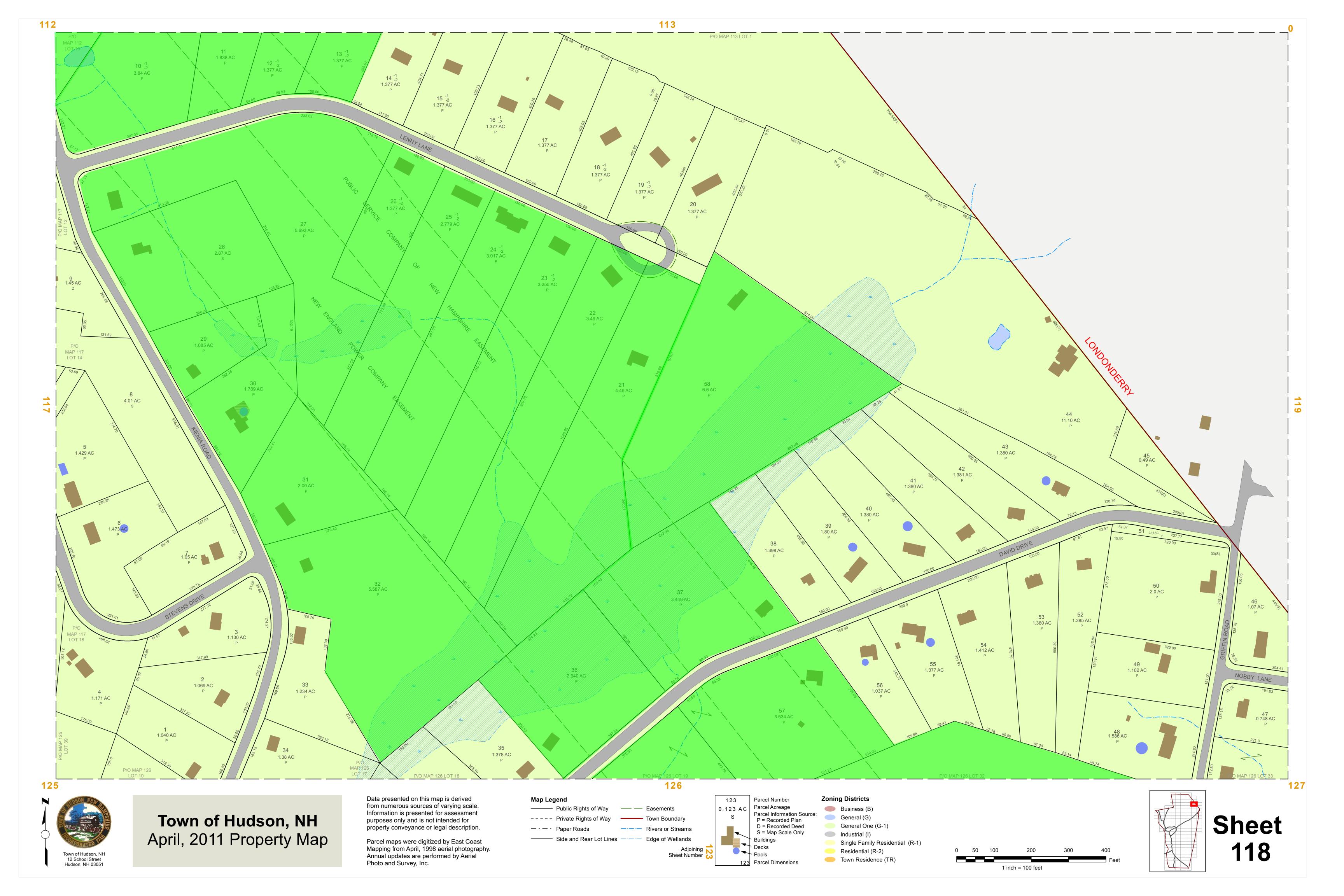


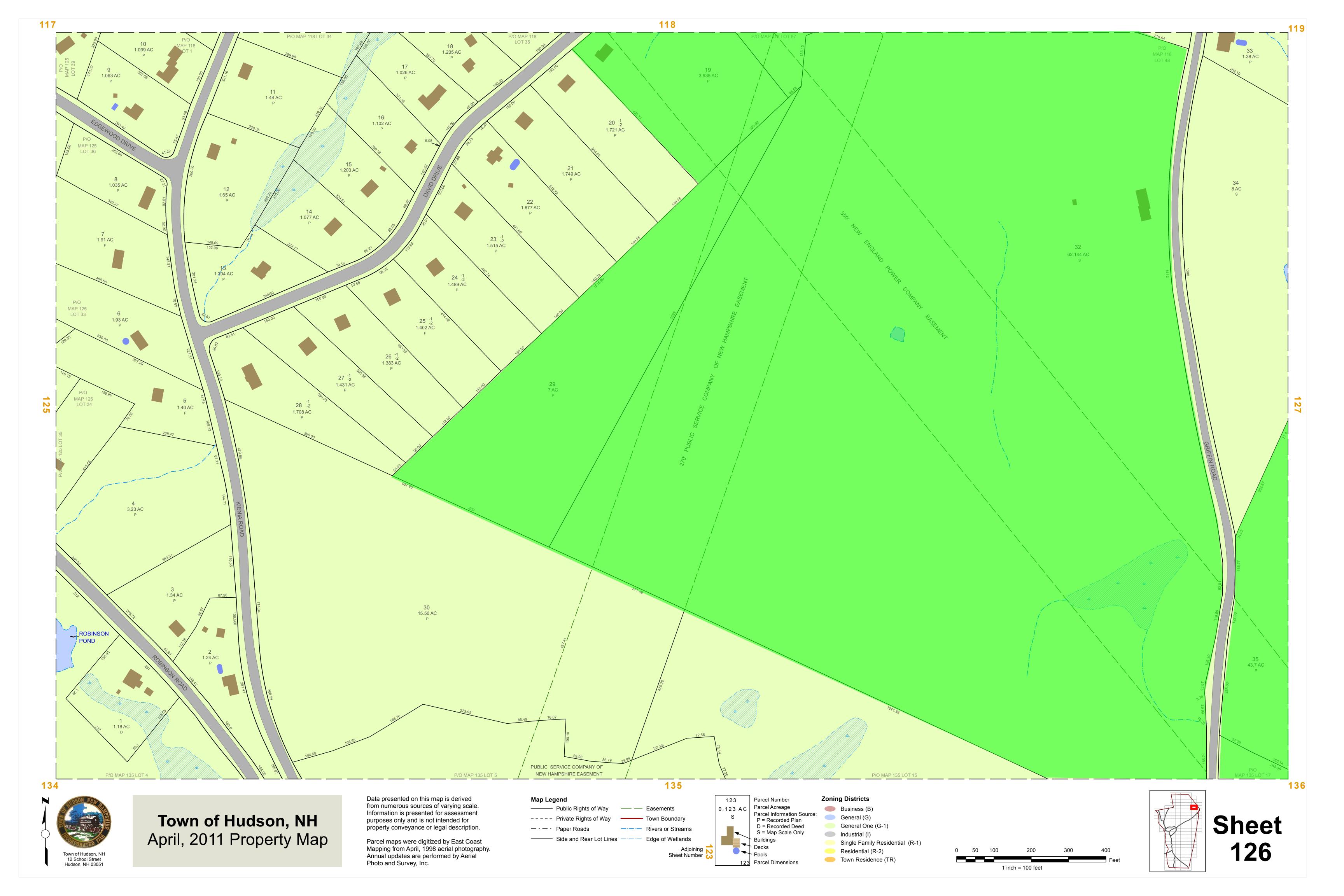


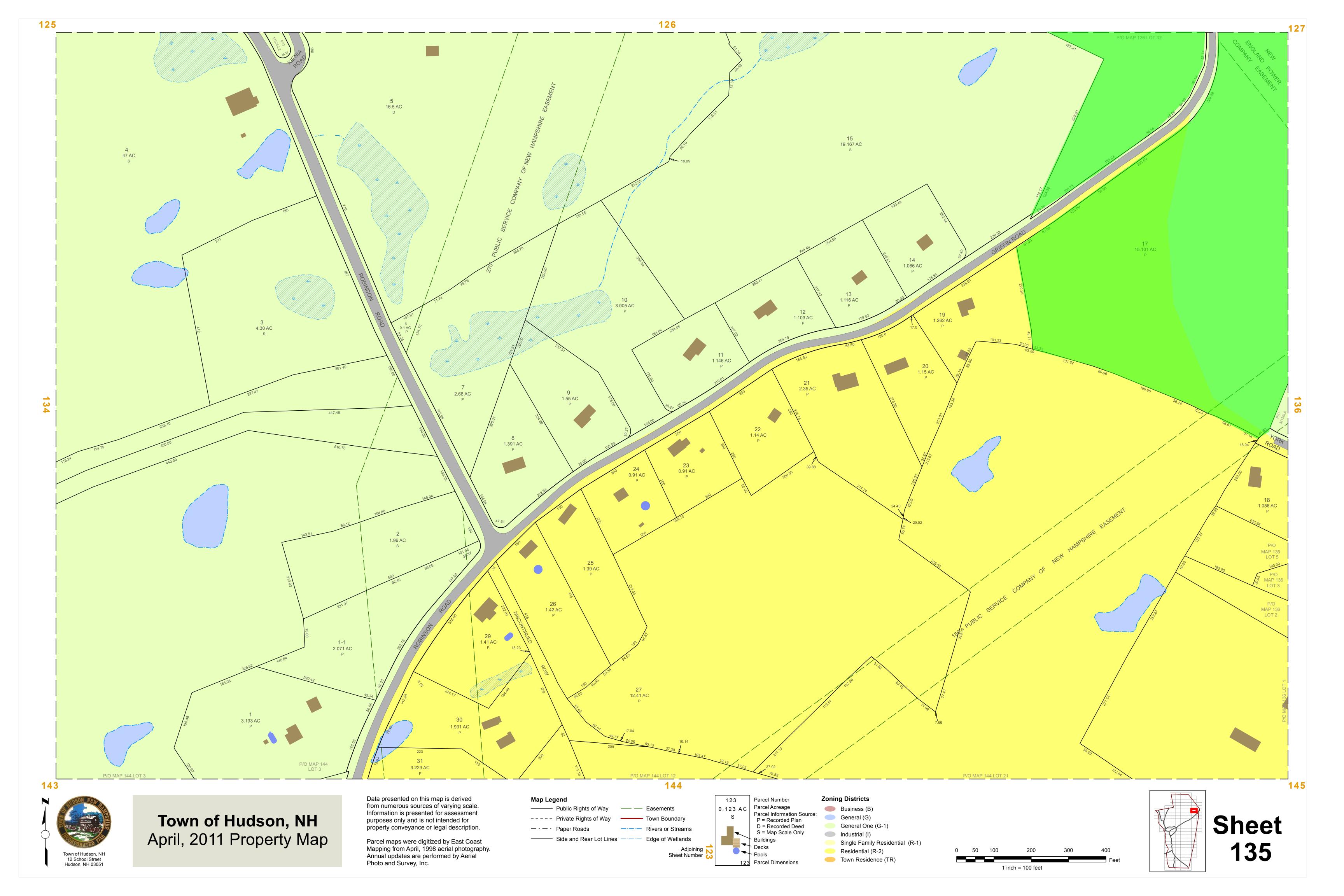


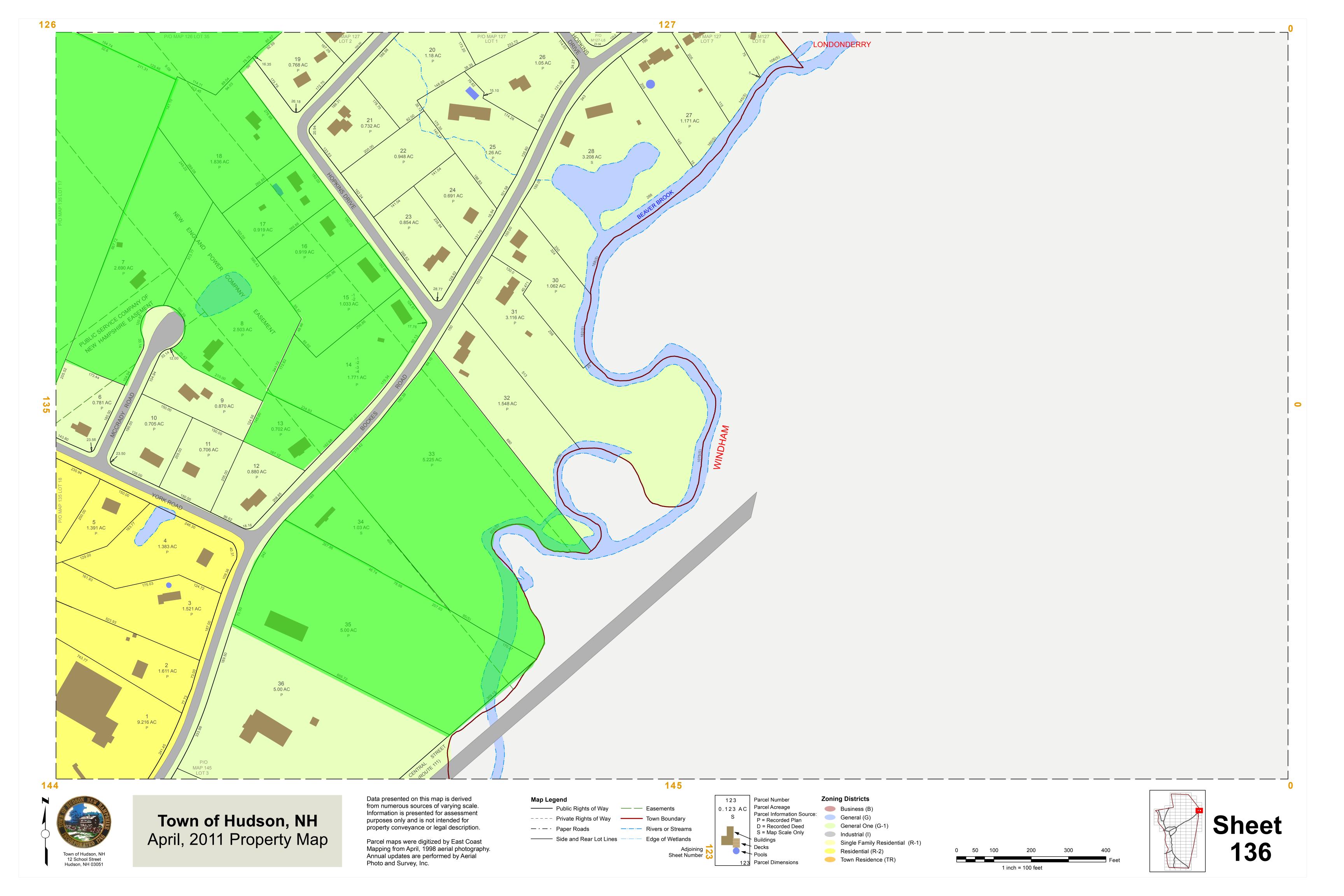














Londonderry Tax Maps

Owner/Abutter List (Londonderry, New Hampshire)

All of the project work will occur within an existing utility right-of-way, thus abutters do not need to be notified. Below is a list of all properties within and directly adjacent to the project right-of-way. Notifications were sent to the property owners listed below. Properties located outside of the right-of-way are *italicized*.

Owner/Abutter	Tax Map Number (map-block-lot)	Mailing Address		
	Tax Map 002			
Paul W. Schacht & Eileen M. Schacht	2-4	5 Dan Hill Road Londonderry, NH 03053		
Public Service Company of NH C/O Tax Accounting	2-4A	PO Box 330 Manchester, NH 03105-0330		
Robert A. Decola & Myrna Lee Decola	2-4-34	27 Severance Drive Londonderry, NH 03053		
Bonnie Edgerly	2-4-35	29 Severance Drive Londonderry, NH 03053-3119		
Danielle E. Desmarais & Ryan N. Desmarais	2-4-36	31 Severance Drive Londonderry, NH 03053-3119		
Glen J. Guilmet & Debra J. Guilmet	2-4-37	33 Severance Drive Londonderry, NH 03053		
Peter J. Saile Revocable Trust Peter J. Saile, Grantor & Trustee	2-4-38	25 Severance Drive Londonderry, NH 03053		
Wayland H. Elwood Amy Hills Ronald E. Lawrence	2-22	54 Elwood Road Londonderry, NH 03053		
Public Service Company of NH C/O Tax Accounting	2-22A	PO Box 330 Manchester, NH 03105-0330		
Wayland H. Elwood Amy Hills Ronald E. Lawrence	2-22B	54 Elwood Road Londonderry, NY 03053		
Vigeant Family Properties LLC	2-25	5 Mockingbird Lane Hudson, NH 03051		
Leonard A. Vigeant Revocable Trust Leonard A. & Jane M. Vigeant, Trustees	2-26	5 Mockingbird Lane Hudson, NH 03051		
Hickory Woods LLC	2-27	15 Dartmouth Dr. Suite 102 Auburn, NH 03032		
Peter J. Sapatis	2-28	5 Avery Road Londonderry, NH 03053		
Public Service Company of NH C/O Tax Accounting	2-28A	PO Box 330 Manchester, NH 03105-0330		

William Tate	2-28-10	76 Old Derry Road Hudson, NH 03051
William Tate	2-28-10-1	76 Old Derry Road Hudson, NH 03051
Zane Dylan Sundquist	2-28-11	275 Nashua Road Londonderry, NH 03053
Linda K. & Douglass C. Harvey, Jr.	2-29	PO Box 639 Londonderry, NH 03053
Public Service Company of NH C/O Tax Accounting	2-29A	PO Box 330 Manchester, NH 03105-0330
Stanley Realty Trust	2-29B-8	7-E Taggart Drive Nashua, NH 03060
Town of Londonderry	2-30	268B Mammoth Road Londonderry, NH 03053
Public Service Company of NH C/O Tax Accounting	2-30A	PO Box 330 Manchester, NH 03105-0330
Bruce Guttman & Filda R. Guttman	2-47	10 Dan Hill Road Londonderry, NH 03053
Dennis E. Amnott & Helen J. Amnott	2-48A	7 Dan Hill Road Londonderry, NH 03053
Ramon I. Hernandez & Marizel L. Quitongan	2-48-2	9 Dan Hill Road Londonderry, NH 03053
New England Power Company C/O Property Tax Division	2-50	40 Sylvan Road Waltham, MA 02451-2286
	Tax Map 003	
Brian J. Goodchild & Jennifer D. Goodchild	3-181-13	24 Ridgemont Drive Londonderry, NH 03053
Town of Londonderry	3-181-24	268B Mammoth Road Londonderry, NH 03053
Tax Map 005		
Patrick E. Muse & Lisa A. Muse	5-15-4	6 Watercrest Drive Londonderry, NH 03053
Eric J. Plummer	5-16	200 Pillsbury Road Londonderry, NH 03053
Eric J. Plummer	5-16A	200 Pillsbury Road Londonderry, NH 03053
Public Service Company of NH C/O Tax Accounting	5-16B	PO Box 330 Manchester, NH 03105-0330

Town of Londonderry	5-17	268B Mammoth Road Londonderry, NH 03053
Public Service Company of NH C/O Tax Accounting	5-17A	PO Box 330 Manchester, NH 03105-0330
Robert L. McIntosh & Jill M. McIntosh	5-18-1	1 Colonial Drive Londonderry, NH 03053-2564
Owen D. Finnegan & Karen M. Finnegan	5-18-2	3 Colonial Drive Londonderry, NH 03053
Public Service Company of NH C/O Tax Accounting	5-19A	PO Box 330 Manchester, NH 03105-0330
Roland Flores & Aline J. Flores	5-19-1	13 Colonial Drive Londonderry, NH 03053
Alan D. Schirch & Jane M. Schirch	5-19-2	15 Colonial Drive Londonderry, NH 03053
Mark A. Leach & Colleen C. Leach	5-19-3	17 Colonial Drive Londonderry, NH 03053
Lawrence P. Moffett & Debbie A. Moffett	5-19-4	19 Colonial Drive Londonderry, NH 03053
Robert S. & Marcia L. Feldmann	5-19-5	21 Colonial Drive Londonderry, NH 03053
Patrick G. Botz & Kimberly M. Botz	5-19-6	23 Colonial Drive Londonderry, NH 03053
M & P Murphy Family Revocable Trust Martin J. & Patricia I. Murphy, Successors, Trustees	5-19-7	25 Colonial Drive Londonderry, NH 03053
Carbone Family Trust Kim A. Carbone, Trustee	5-19-8	27 Colonial Drive Londonderry, NH 03053
Daniel J. Hurley Jr. & Annette Hurley	5-19-9	29 Colonial Drive Londonderry, NH 03053
John J. Briere & Debra L. Briere	5-19-10	31 Colonial Drive Londonderry, NH 03053
John J. Burke & Barbara A. Burke	5-19-11	33 Colonial Drive Londonderry, NH 03053
Gregory R. Sorrell & Ann T. Sorrell	5-19-12	35 Colonial Drive Londonderry, NH 03053
Bart N. Quirinale	5-19-14	5 Hancock Drive Londonderry, NH 03053
Nicolas Sabino	5-19-15	10 Hancock Drive Londonderry, NH 03053
Wayland H. Elwood & Pauline D. Elwood	5-39	54 Elwood Road Londonderry, NH 03053

Wayland H. Elwood & Pauline D. Elwood	5-40	54 Elwood Road Londonderry, NH 03053
Charles J. Fuller, Jr. & Cherie A. Fuller	5-40-6	42 Elwood Road Londonderry, NH 03053
Thomas D. Agrella & Michelle E. Agrella	5-40-13	46 Elwood Road Londonderry, NH 03053
Paul W. Schacht, Jr. & Maria S. Schacht	5-40-14	PO Box 588 Londonderry, NH 03053
Sunnycrest Farm, Incorporated	5-41	59 High Range Road Londonderry, NH 03053
Public Service Company of NH C/O Tax Accounting	5-41A	PO Box 330 Manchester, NH 03105-0330
Public Service Company of NH C/O Tax Accounting	5-42	PO Box 330 Manchester, NH 03105-0330
Public Service Company of NH C/O Tax Accounting	5-49-4	PO Box 330 Manchester, NH 03105-0330
Steven C. Sanders & Sheila A. Sanders	5-49-23	4 Cedar Lane Londonderry, NH 03053
Scott T. Miller & Maureen A. Miller	5-49-24	3 Cedar Lane Londonderry, NH 03053
Marie A. Parker & Benjamin E. Parker	5-49-26	26 Anthony Drive Londonderry, NH 03053
Properties Inc. c/o Public Service Co. of NH	5-52	PO Box 330 Manchester, NH 03105-0330
David Wl. Barthelmes & Barbara E. Barthelmes	5-52-28	10 Jason Drive Londonderry, NH 03053
Wang Family Trust Pat Y. Wang & Cynthia V. Wang, Trustees	5-52-34	7 Jason Drive Londonderry, NH 03053
Joshua D. Dion & Amy E. Dion	5-52-36	5 Shadow Ridge Road Londonderry, NH 03053
Public Service Company of NH C/O Tax Accounting	5-55	PO Box 330 Manchester, NH 03105-0330
Town of Londonderry	5-71	268B Mammoth Road Londonderry, NH 03053
	Tax Map 008	
Public Service Company of NH C/O Tax Accounting	8-6A	PO Box 330 Manchester, NH 03105-0330
Angela M. Jehlicka	8-6-8	225 High Range Road Londonderry, NH 03053

George F. Butler & Charlotte C. Butler	8-6-9	217 High Range Road Londonderry, NH 03053
Leo J. Roy & Karen L. Roy	8-6-40	31 Mayflower Drive Londonderry, NH 03053
Angela Hughes Ruth & Bruce Hughes	8-6-41	1 Chestnut Hill Drive Londonderry, NH 03053
Scott A. Parisi & Tara J. Parisi	8-6-42	3 Chestnut Hill Drive Londonderry, NH 03053
Robert Reynolds Revocable Trust 2013 RE., K. Lownds-Reynolds Revocable Trust 2013 L.	8-6-43	5 Chestnut Hill Drive Londonderry, NH 03053
Robert G. Breithaupt & Bonnie V. Breithaupt	8-6-44	7 Chestnut Hill Drive Londonderry, NH 03053
Bruce Leavitt & Sherry B. Leavitt	8-6-45	9 Chestnut Hill Drive Londonderry, NH 03053
Richard G. Kenny & Silvia L. Kenny	8-6-46	11 Chestnut Hill Drive Londonderry, NH 03053
Sara E. Blanch	8-6-47	13 Chestnut Hill Drive Londonderry, NH 03053
Kenneth H. Birdsall & Brenda N. Birdsall	8-6-48	15 Chestnut Hill Drive Londonderry, NH 03053
Albert W. Sheldon & Hazel L. Sheldon	8-6-49	17 Chestnut Hill Drive Londonderry, NH 03053
Rodney B. Wright & Julia Wright	8-6-50	19 Chestnut Hill Drive Londonderry, NH 03053
Brian J. Pinelle & Jody A. Pinelle	8-6-51	21 Chestnut Hill Road Londonderry, NH 03053
Dona E. Solmon	8-6-52	12 Hickory Hill Drive Londonderry, NH 03053
Andrew J. McSpiritt & Bonnie J. McSpiritt	8-6-94	215 High Range Road Londonderry, NH 03053
Public Service Company of NH C/O Tax Accounting	8-17-B	PO Box 330 Manchester, NH 03105-0330
Public Service Company of NH C/O Tax Accounting	8-17-C	PO Box 330 Manchester, NH 03105-0330
Public Service Company of NH C/O Tax Accounting	8-17-D	PO Box 330 Manchester, NH 03105-0330
Town of Londonderry	8-22	268B Mammoth Road Londonderry, NH 03053
Etal Miller, c/o Barbara Ann Miller	8-23	6991 Allen Road Parkdale, OR 97041

Kurt W. Hinxman & Cynthia A. Hinxman	8-23A	48 Mayflower Drive Londonderry, NH 03053
Mark A. Brockelman & Rebecca F.E. Brockelman	8-23A-1	46 Mayflower Drive Londonderry, NH 03053
Public Service Company of NH C/O Tax Accounting	8-23B	PO Box 330 Manchester, NH 03105-0330
Public Service Company of NH C/O Tax Accounting	8-23C	PO Box 330 Manchester, NH 03105-0330
Hayford Kimball Lumber Co.	8-23D	46 Raintree Drive Londonderry, NH 03053
Patricia B. Hamann Revocable Trust Patricia B. Hamann, Grantor & Trustee	8-23-5	35 Royal Lane Londonderry, NH 03053
Destry Ward & Marie Ward	8-23-6	37 Royal Lane Londonderry, NH 03053
Robert D. Steibing	8-23-7	39 Royal Lane Londonderry, NH 03053
James J. Dimare & Rosanne M. Dimare	8-23-8	41 Royal Lane Londonderry, NH 03053
June L. McNeil	8-23-9	43 Royal Lane Londonderry, NH 03053
Town of Londonderry	8-24	268B Mammoth Road Londonderry, NH 03053
	Tax Map 009	
Michael S. Noone, Jr.	9-1-15	208 High Range Road Londonderry, NH 03053
David R. Trenner	9-1-16	4 Shasta Drive Londonderry, NH 03053
Robert S. & Cheryl A. White	9-1-17	6 Shasta Drive Londonderry, NH 03053
Glenn E. & Jeananne McCaffrey	9-1-18	8 Shasta Drive Londonderry, NH 03053
Paul R. & Katherine O. Fanning	9-1-19	10 Shasta Drive Londonderry, NH 03053
Susan A. Bull Revocable Trust Susan A. Bull, Trustee	9-1-20	12 Shasta Drive Londonderry, NH 03053
Christopher L. & Antoinette Hand		14 Shasta Drive
Officiophor L. a functionate frama	9-1-21	Londonderry, NH 03053-3009
Jonathan R. & Kristin R. Mullen	9-1-21 9-1-22	Londonderry, NH 03053-3009 16 Shasta Drive Londonderry, NH 03053

Lee S. Rogers	9-1-23	18 Shasta Drive Londonderry, NH 03053
John A. & Andrea E. Tejada	9-1-24	20 Shasta Drive Londonderry, NH 03053
David A. & Judith A. Larochelle	9-1-25	22 Shasta Drive Londonderry, NH 03053-3009
Joseph N. Naso & Cheryl A. Naso	9-1-46	206 High Range Road Londonderry, NH 03053
Gary R. Kimball & Pamela G. Kimball	9-1-56	35 Heritage Lane Londonderry, NH 03053
Richard McLaughlin	9-1-57	34 Heritage Lane Londonderry, NH 03053
James G. & Delia M. Carter	9-1-58	1301 Redmore Ct. Severn, MD 21144
Town of Londonderry	9-8A	268B Mammoth Road Londonderry, NH 03053
Kenneth S. Bell & Sue E. Bell	9-8-1	3613 Baird Drive Edmond, OK 73013-6332
Lyons Family Trust David S. & Karen S. Lyons, Trustees	9-8-2	23 Davis Drive Londonderry, NH 03053
Public Service Company of NH C/O Tax Accounting	9-12A	PO Box 330 Manchester, NH 03105-0330
Kevin J. Flaherty Jr., & Allison B. Flaherty	9-12-38	10 Wheelwright Cir. Londonderry, NH 03053
Matthew & Krista A. Fitzgerald	9-12-39	9 Wheelwright Cir. Londonderry, NH 03053
Matthew St. Gelais & Faith Isabelle	9-12-48	6 Danbury Ct Londonderry, NH 03053-2447
William F. & Barbara A. Mee	9-12-49	62 Shasta Drive Londonderry, NH 03053
Michelle M. Meuse	9-12-50	68 Shasta Drive Londonderry, NH 03053
John J. & Deana M. Delvecchio	9-12-60	11 Wheelwright Cr Londonderry, NH 03053
Karen M. Rines & Michael T. Casey	9-12-61	12 Wheelwright Cr Londonderry, NH 03053
Town of Londonderry	9-12-62	268B Mammoth Road Londonderry, NH 03052
Shasta Realty LLC	9-17-1	8 Raven Terrace Londonderry, NH 03053

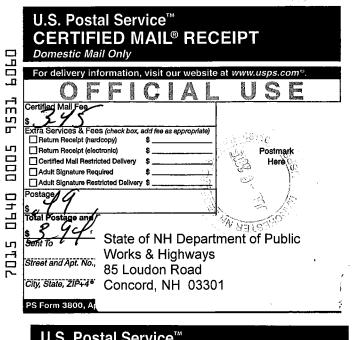
Tara K. Muise	9-23	346 Mammoth Road Londonderry, NH 03053
Public Service Company of NH C/O Tax Accounting	9-23A	PO Box 330 Manchester, NH 03105-0330
Public Service Company of NH C/O Tax Accounting	9-24	PO Box 330 Manchester, NH 03105-0330
Michael A. Bolis & Densil Bolis	9-25	332 Mammoth Road Londonderry, NH 03053
Thomas J. Pajak & Sandra L. Pajak	9-26	333 Mammoth Road Londonderry, NH 03053
David W. Fletcher & Susan E. Fletcher	9-77-8	13 Darrow Way Londonderry, NH 03053
MaryAnne T. Peikert	9-77-11	28 Otterson Road Londonderry, NH 03053
Alfred H. Elliott & Pauline Elliott	9-80	61 Hardy Road Londonderry, NH 03053
Jimmy Lebel & Jennifer L. Lebel	9-81	39 Bancroft Road Londonderry, NH 03053
Joshua K. Massi & Lesvia R. Massi	9-81A	37 Bancroft Road Londonderry, NH 03053
Francis McCann & Cynthia E. McCann	9-82	28 Bancroft Road Londonderry, NH 03053
CSR Realty Trust Linda J. Price, Trustee	9-83-1	12 Bancroft Road Londonderry, NH 03053
Maryann Ryan Revocable Trust Maryann Ryan, Trustee	9-83-17	24 King Henry Drive Londonderry, NH 03053
Daniel B. Crane & Emily H. Crane	9-83-18	25 King Henry Drive Londonderry, NH 03053-2845
Jean Theresa Meyers	9-84	31 Bancroft Road Londonderry, NH 03053
	Tax Map 012	
Phillip R. Spitalere	12-48	17 Bancroft Road Londonderry, NH 03053
Diamond Edge Realty & Development LLC	12-138	12 Murphy Drive Nashua, NH 03062
John A. Morrison Revocable Trust John A. Morrison, Trustee	12-139	94 Hardy Road Londonderry, NH 03053
Public Service Company of NH C/O Tax Accounting	12-139A	PO Box 330 Manchester, NH 03105-0330

Town of Londonderry	12-139B	268B Mammoth Road Londonderry, NH 03053
Ralph A. Fogarty Margaret M. Marrigan	12-140	81 Hardy Road Londonderry, NH 03053
Public Service Company of NH C/O Tax Accounting	12-140-1	PO Box 330 Manchester, NH 03105-0330
Public Service Company of NH C/O Tax Accounting	12-141	PO Box 330 Manchester, NH 03105-0330
Parish Hills Condo Association c/o Pater Real Estate	12-143C	82 West Broadway Derry, NH 03038
Alfred H. Elliott & Pauline Elliott	12-143-1	61 Hardy Road Londonderry, NH 03053
Stephen R. Lievens Revocable Trust Stephen R. Lievens, Trustee	12-143-2	2 West Parish Drive Londonderry, NH 03053
	Tax Map 013	
Michael Tager & Denise Tager	13-7-1	91 Hovey Road Londonderry, NH 03053
Candice E. McGrath Paul Palazzolo	13-7-6	27 Judy Drive Londonderry, NH 03053
Maley-Roy Family Revocable Trust Joseph R. Roy & Andrea L. Maley, Trustees	13-7-8	25 Judy Drive Londonderry, NH 03053
Mark D. Young & Linda A. Young	13-7-10	23 Judy Drive Londonderry, NH 03053
Debra M. Durning	13-7-12	21 Judy Drive Londonderry, NH 03053
Brenton E. Clark & Kathleen Clark	13-8-1	94 Hovey Road Londonderry, NH 03053
Public Service Company of NH C/O Tax Accounting	13-10	PO Box 330 Manchester, NH 03105-0330
Public Service Company of NH C/O Tax Accounting	13-11	PO Box 330 Manchester, NH 03105-0330
Ronald P. Chapdelaine & Cynthia L. Chapdelaine	13-11-1	106 Hovey Road Londonderry, NH 03053-2935
Public Service Company of NH C/O Tax Accounting	13-12	PO Box 330 Manchester, NH 03105-0330
Public Service Company of NH C/O Tax Accounting	13-13	PO Box 330 Manchester, NH 03105-0330
State of NH Department of Public Works & Highways	13-14	85 Loudon Road Concord, NH 03301

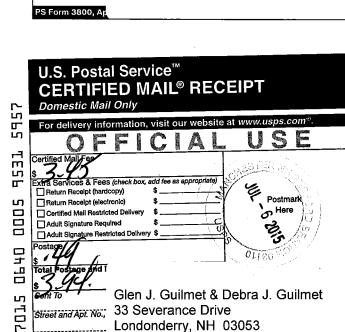
Public Service Company of NH C/O Tax Accounting	13-56	PO Box 330 Manchester, NH 03105-0330
State of NH Department of Public Works & Highways	13-57	85 Loudon Road Concord, NH 03301
Francis P. Rich	13-60	3 Parsons Avenue Saugus, MA 01906
Public Service Company of NH C/O Tax Accounting	13-60A	PO Box 330 Manchester, NH 03105-0330
James Stopherd & Irene T. Stopherd	13-63	55 Rockingham Road Londonderry, NH 03053-0424
Garett M. Liddell	13-64	62 Fox Hill Lane Norwell, MA 02061
Public Service Company of NH C/O Tax Accounting	13-64A	PO Box 330 Manchester, NH 03105-0330
Public Service Company of NH C/O Tax Accounting	13-65	PO Box 330 Manchester, NH 03105-0330
39 Rockingham Road LLC	13-65-1	39 Rockingham Road Londonderry, NH 03053
Public Service Company of NH C/O Tax Accounting	13-68	PO Box 330 Manchester, NH 03105-0330
Public Service Company of NH C/O Tax Accounting	13-69	PO Box 330 Manchester, NH 03105-0330
Public Service Company of NH C/O Tax Accounting	13-70	PO Box 330 Manchester, NH 03105-0330
Public Service Company of NH C/O Tax Accounting	13-70A	PO Box 330 Manchester, NH 03105-0330
Paul R. & Lisa Lind	13-71-1	2 Season Lane Londonderry, NH 03053
Carole A. Connolly Jamie E. Connolly Parker	13-71-3	6 Seasons Lane Londonderry, NH 03053
David Pike & Sharon A. Pike	13-71-7	8 Seasons Lane Londonderry, NH 03053
Richard C. Schillbach & Deborah L. Schillbach	13-71-9	10 Seasons Lane Londonderry, NH 03053
Sean H. Charles & Ivy Charles	13-71-11	12 Seasons Lane Londonderry, NH 03053
William M. Dufton Judith Ann McNeil	13-71-12	14 Seasons Lane Londonderry, NH 03053
William M. Prizer, III Jacqueline Prizer	13-71-13	378 Main Street Nashua, NH 03060

Shiv C. Tasker & Monisha S. Tasker	13-71-15	336 Boston Post Road Weston, MA 02493
Charles T. Wilkes	13-71-16	20 Seasons Lane Londonderry, NH 03053
Johnson Family Realty Revocable Trust Gary W. Johnson, Sr. & Sharon L. Johnson, Trustees	13-71-62	11 Snowflake Lane Londonderry, NH 03053
John M. Sturges & Mary L. Sturges	13-71-63	12 Snowflake Lane Londonderry, NH 03053
Nicholas C. Covatis & Kathleen L. Covatis	13-71-64	10 Snowflake Lane Londonderry, NH 03053
Scott E. Benson & Sarah J. Benson	13-71-65	8 Snowflake Lane Londonderry, NH 03053
Irving E. Taylor & Diane Waller	13-102	22 Rockingham Road Londonderry, NH 03053
PLH-Londonderry LLC	13-104-1	PO Box 498 Jaffrey, NH 03452
Gizmo Enterprises LLC	13-104-2	PO Box 1316 Londonderry, NH 03053-1316
B-Saini Group LLC	13-105	428 Main Street, Apt. 2 Haverhill, MA 01830
Public Service Company of NH C/O Tax Accounting	13-105A	PO Box 330 Manchester, NH 03105-0330
Patrick A. Mastrola & Lois A. Mastrola	13-106-1	95 Scobie Pond Road Derry, NH 03038
Highwood Cold Storage LLC	13-108	6 Rockingham Road Londonderry, NH 03053
Public Service Company of NH C/O Tax Accounting	13-110	PO Box 330 Manchester, NH 03105-0330
Public Service Company of NH C/O Tax Accounting	13-111	PO Box 330 Manchester, NH 03105-0330
Public Service Company of NH C/O Tax Accounting	13-111-1	PO Box 330 Manchester, NH 03105-0330
Andrew J. Schuman Virginia A. Mason-Schuman	13-142-8	PO Box 855 Londonderry, NH 03053
Brendan M. Fennessey & Erin M. Fennessey	13-142-11	13 Judy Drive Londonderry, NH 03053
Mark A. Berglund & Denise A. Berglund	13-142-12	15 Judy Drive Londonderry, NH 03053
David Thompson & Dorothy Thompson	13-142-13	17 Judy Drive Londonderry, NH 03053
		Londonderry, Nr r 03033

Ryan J. Guilfoyle	13-142-14	19 Judy Drive Londonderry, NH 03053
State of NH Department of Transportation	13-143	PO Box 483 Concord, NH 03301-0483



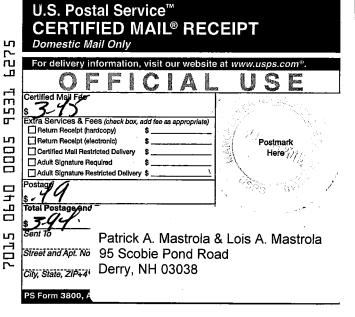
	U.S. Postal Service [™]
	CERTIFIED MAIL® RECEIPT
	Domestic Mail Only
민	Domestic Wall Only
ш	For delivery information, visit our website at www.usps.com [®] .
	OFFICIAL USE
537	Certified Mail Foe
Г	Extra Services & Fees (check box, add fee as appropriate) Return Receipt (hardcopy)
5	Return Receipt (electronic) \$ Postmark
000	Certified Mail Restricted Delivery \$ Here
	Adult Signature Restricted Delivery \$
	Postagg//
7	\$ 199
1490	Total Postage and F
ш	s3.49·
ഥ	PLH-Londonderry LLC
707	Street and Apt. No., PO Box 498
문	
-	City, State, ZIP+4* Jaffrey, NH 03452
	PS Form 3800, Ap

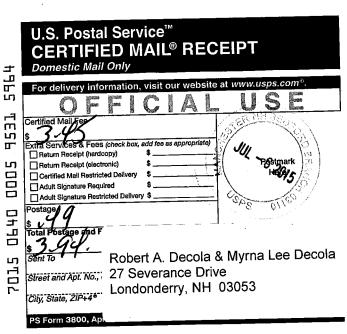


City, State, ZIP+4®

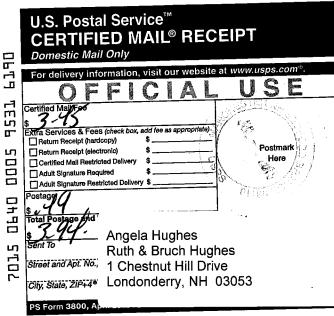
PS Form 3800, Ap

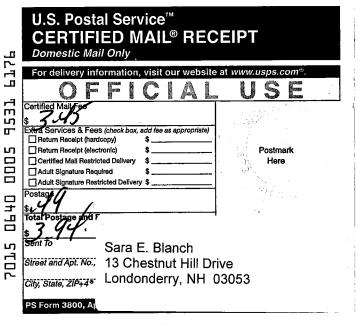
504	For delivery information, visit our website at www.usps.com®.
<u>г</u> п	OFFICIAL USE
30	Certified Mail Fee
- H	\$ 5-93
14	Extra Services & Fees (check box, add fee as appropriate) Return Receipt (hardcopy)
5	☐ Return Receipt (electronic) \$ ☐ ☐ Postmark
000	Certified Mall Restricted Delivery \$ Here
	Adult Signature Required \$
	Adult Signature Restricted Delivery \$
7	Postage 9
0640	Total Postage and - Olico HON
	244
5	State of New Hampshire
7	Department of Transportation
701	PO Box 483
n_	1 0 000 403
' -	City, State, 21P44 Concord, NH 03301-0483



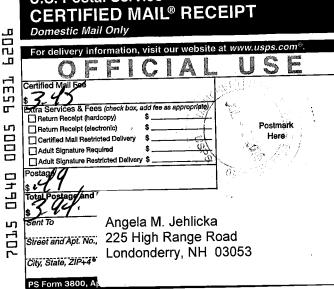




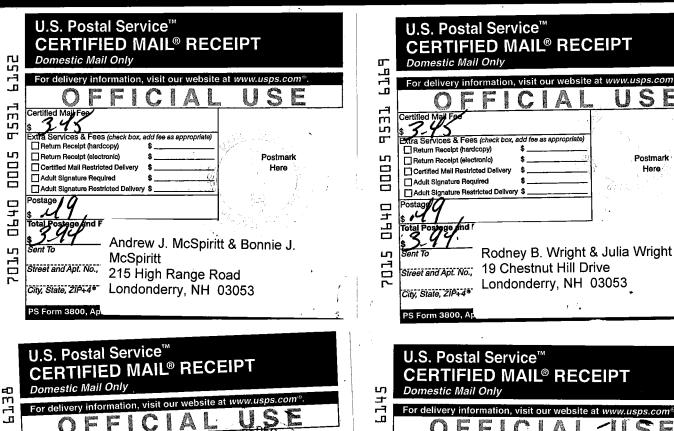


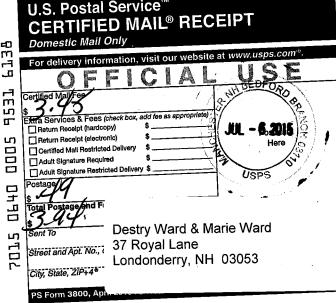


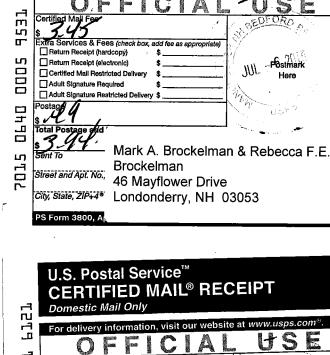
	딥	Domestic Mail Only
-	'n	For delivery information, visit our website at www.usps.com®.
		OFFICIAL USE
	531	Certified Mall Fee
İ	Ľ.	Extra Services & Fees (check box, add fee as appropriate) Return Receipt (hardcopy)
]5	Return Receipt (electronic)
- !	000	Adult Signature Required \$
		Adult Signature Restricted Delivery \$
1	0490	Postage 6
	-	Total Postage and F
	ц)	Steven C. Sanders & Sheila A. Sanders
	707	Street and Apt. No.; 4 Cedar Lane
	72	City, State, 2IP+4*. Londonderry, NH 03053
	ş*	PS Form 3800, Ap.
1		TM





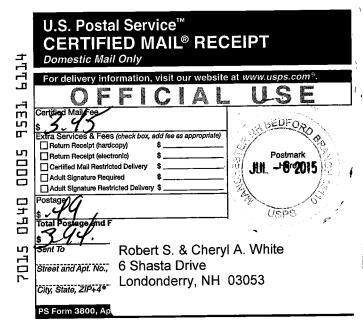






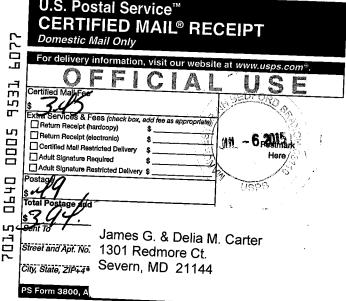
Postmark ⁴

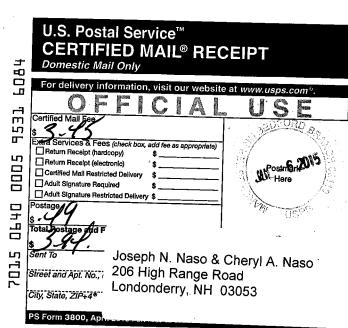
Here

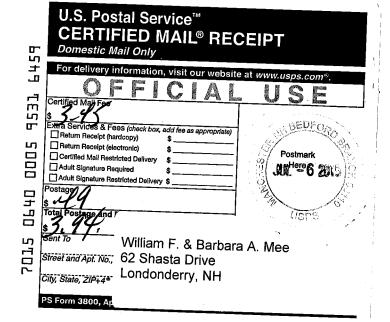


	U.S. Postal Service [™]
	CERTIFIED MAIL® RECEIPT
⊣	Domestic Mail Only
6121 -	For delivery information, visit our website at www.usps.com®.
긲ㅣ	For delivery information, visit our website at www.doper-
	OFFICIAL USE
37	Certified Mail/Fee
9	
п	Extra Services & Fees (check box, add fee as appropriate)
	Return Receipt (hardcopy)
\vec{a}	Return Receipt (electronic) Certified Mail Restricted Delivery
0002	Adult Signature Required \$
	Adult Signature Required Adult Signature Restricted Delivery \$
0490	USPS USPS
	Total Postage and F
\equiv	Total Postagovanu
	\$ <u>3 7 7 '</u>
7072	Sent To June L. McNeil
	Street and Apt. No., 43 Royal Lane
7	Sieet and Apr. No., 45 NOyal Earle
•	City, State, ZIP+4* Londonderry, NH 03053
	PS Form 3800, Ap

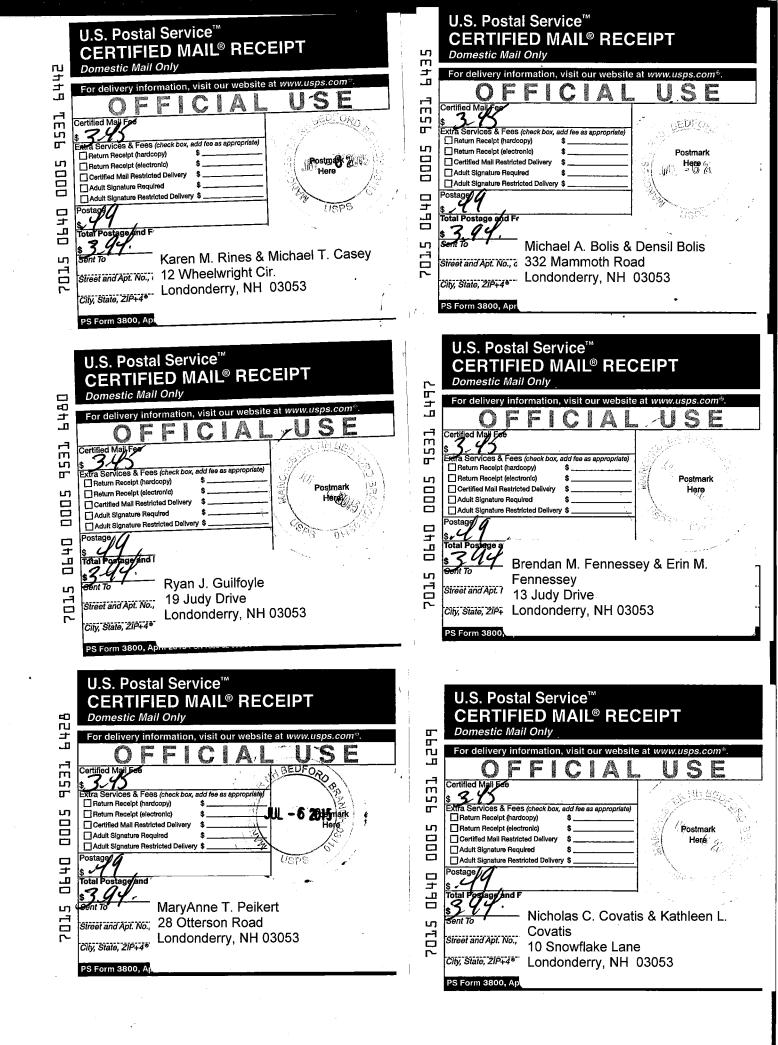


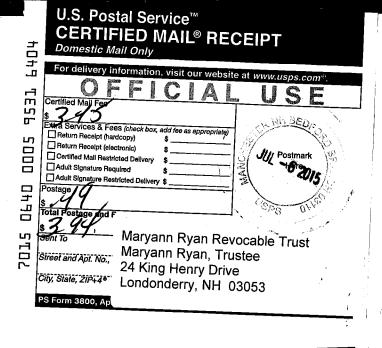




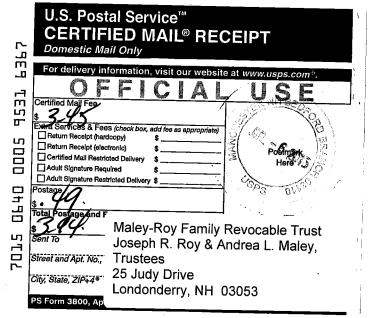




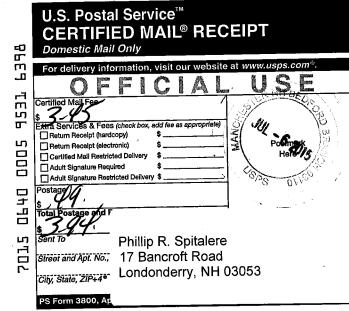


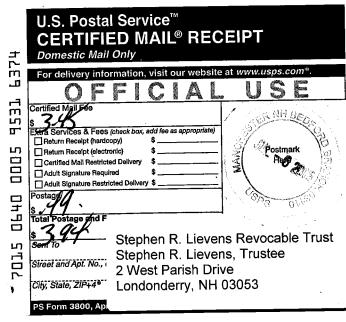


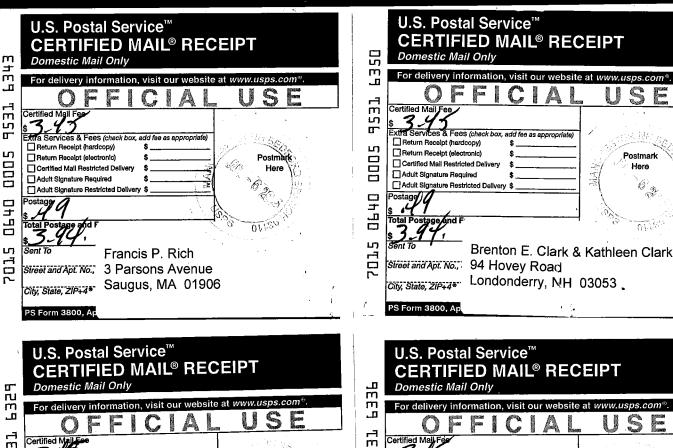




 	U.S. Postal Service [™] CERTIFIED MAIL® RECEIPT Domestic Mail Only
구 구 ナ	For delivery information, visit our website at www.usps.com®.
ָת ב	
	OFFICIAL USE
77	Certified Maly Fee
L J	Extra Services & Fees (check box, add fee as appropriate)
_	Extra Serfices & Fees (check box, add fee as appropriate) Return Receipt (inardcopy) \$ Power Receipt (inardcopy)
5000	Return Receipt (electronic) Posmark
=	Adult Signature Required \$
\Box	Adult Signature Restricted Delivery \$
_	Postage /
0.490	sul 9
	Total Postage and F
ш	s 3.94,
ப	Joshua K. Massi & Lesvia R. Massi
7015	Street and Apt. No., 37 Bancroft Road
문	Londonderry, NH 03053
	City, State, ZIP+4*
	PS Form 3800, Ap





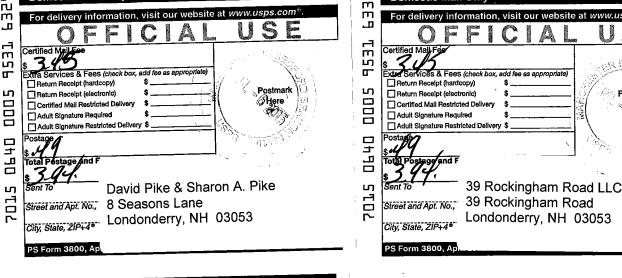


Here

Postmark

Postmark

Here

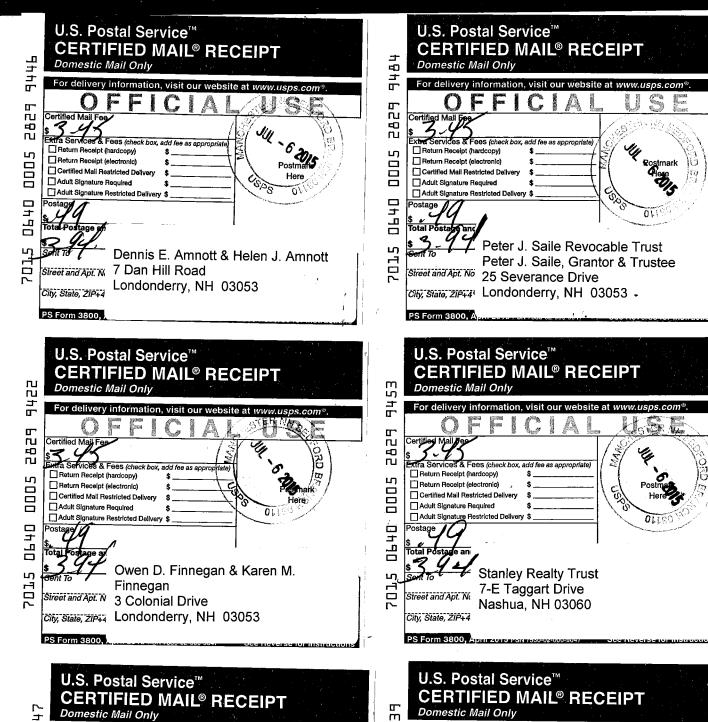


U.S. Postal Service™ CERTIFIED MAIL® RECEIPT U.S. Postal Service™ Domestic Mail Only **CERTIFIED MAIL® RECEIPT** 밆 Domestic Mail Only 0 핊 Certified Mall Fee

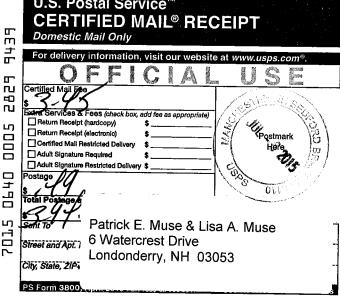
3 - 4

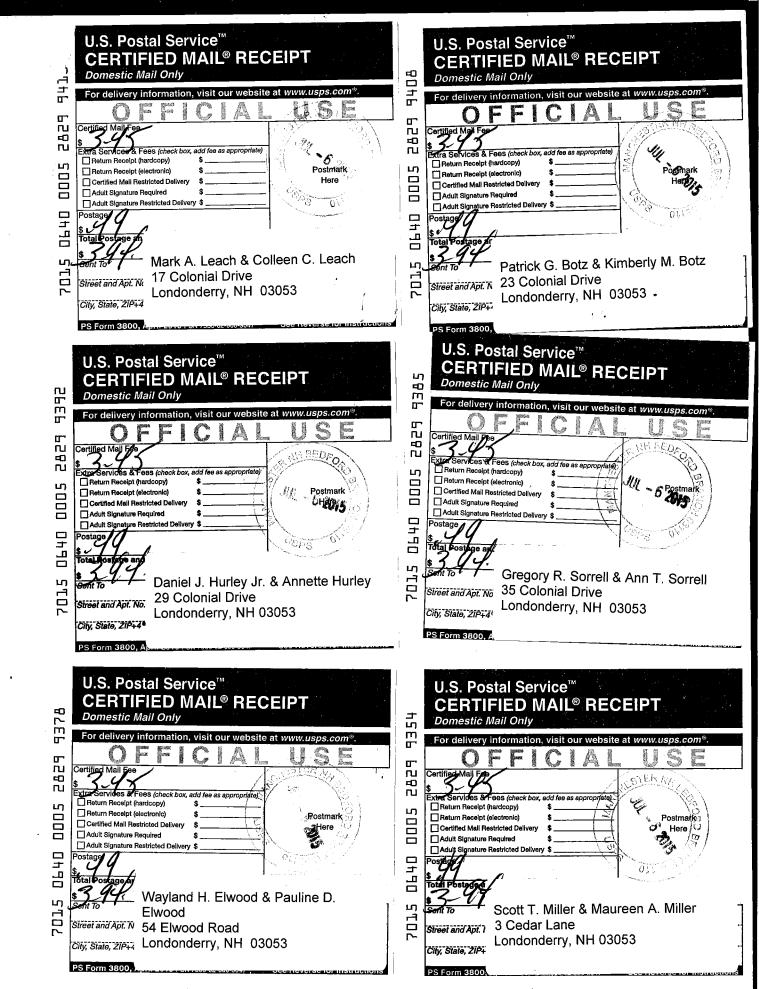
Extra Services & Fees (check box, add fee as appropriate) grating ۰. m Return Receipt (hardcopy) (ces & Fees (check box, add fee as appropriate) Postmark (Return Receipt (electronic) o Here Certified Mail Restricted De Return Receipt (hardcopy) Adult Signature Required Return Receipt (electronic) Adult Signature Restricted Delive Certified Mail Restricted Deliver ostage Adult Signature Required Adult Signature Restricted Delivery \$ ㅁ ostage and Д. Charles T. Wilkes Street and Apt. No.; 20 Seasons Lane William M. Dufton City, State, 219+4* Londonderry, NH 03053 ம Judith Ann McNeil Street and Apt. No., 14 Seasons Lane PS Form 3800, Ap city, state, ziP+48 Londonderry, NH 03053

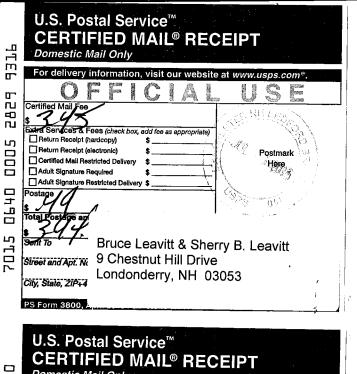
PS Form 3800, A

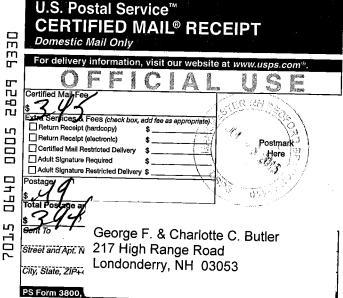










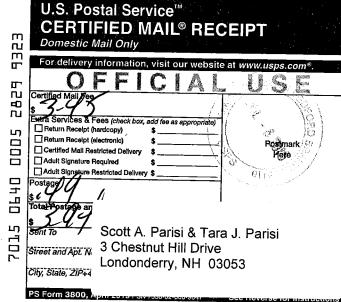


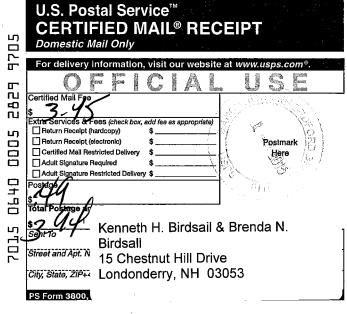


	Domestic Mail Only
E E	For delivery information, visit our website at www.usps.com®.
п.	A S S S S S S S S S S S S S S S S S S S
Г	OFFICIAL USE
I 9 I	Certifled Mail F
	6 2 UK
m	Extra Services & Fees (check box, add fee as appropriate)
	☐ Return Receipt (hardcopy) \$
]5	Return Receipt (electronic) \$ Postmark
000	Certified Mail Restricted Delivery \$ Here
	Adult Signature Required \$ \
	Adult Signature Restricted Delivery \$
0490	Postage//
그	s 09 9 11 S 0010
H	Total Postage and
	Paul W Schools In 9 Marino
பு	Paul W. Schacht, Jr. & Maria S.
7	Schacht Schacht
7015	Street and Apt. No PO Box 588
<u></u>	
	City, State, ZIP+4 Londonderry, NH 03053
	<u> </u>
	PS Form 3800. Annual State of the State of t

U.S. Postal Service™

CERTIFIED MAIL® RECEIPT







Ŋ

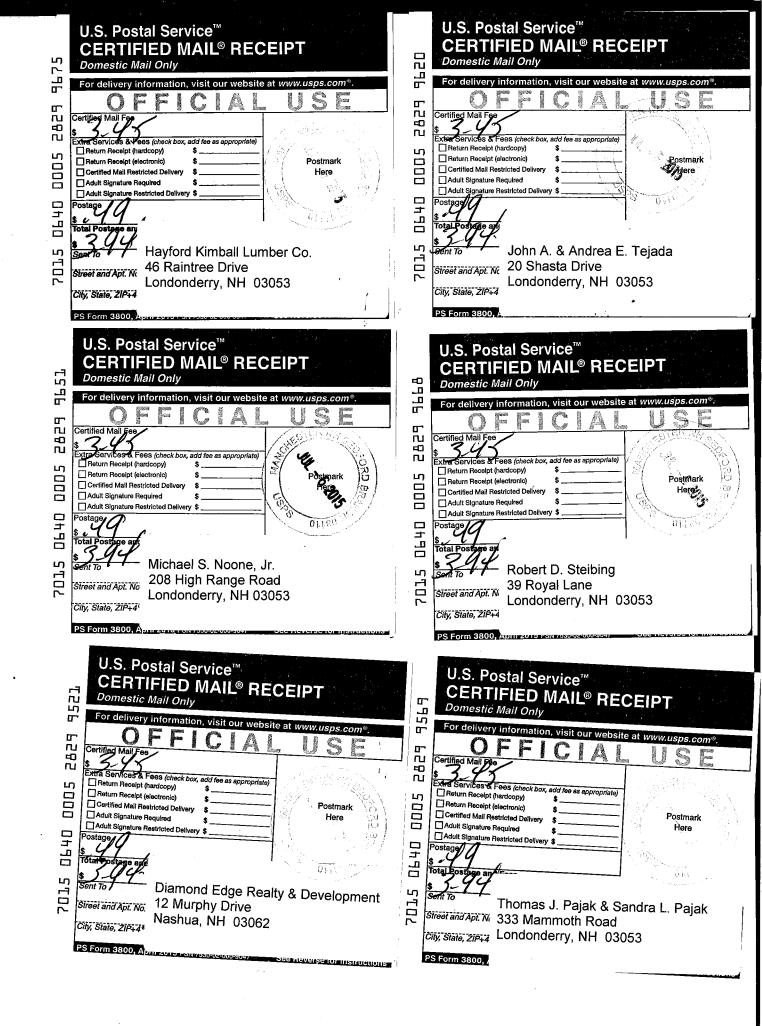
City, State, ZIP+4

Glenn E. & Jeananne McCaffrey

Londonderry, NH 03053

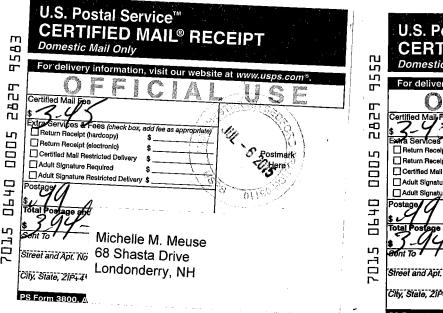
8 Shasta Drive

무 0 Christopher L. & Antoinette Hand 14 Shasta Drive Londonderry, NH 03053-3009 City, State, 2IP+4 PS Form 3800.





957



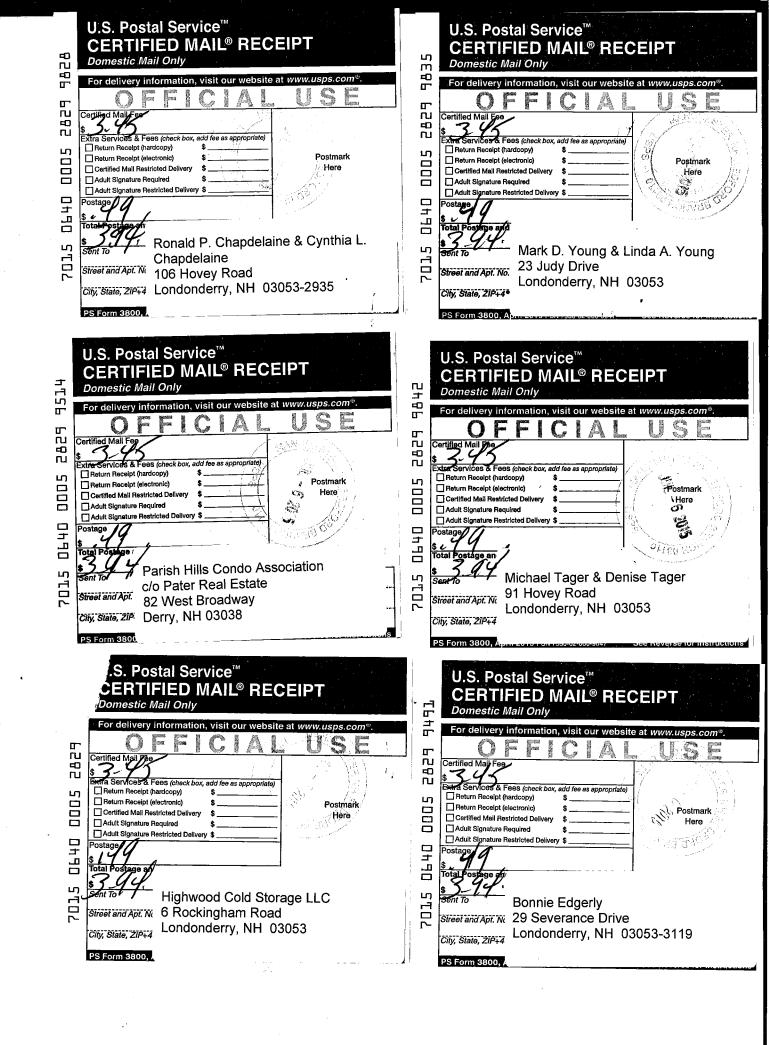
CERTIFIED MAIL® RECEIPT ☐ Return Receipt (hardcopy) Return Receipt (electronic) Postmark Certified Mail Restricted Delivery Adult Signature Required Alfred H. Elliott & Pauline Elliott 61 Hardy Road Londonderry, NH 03053 City, State, ZIP+4 PS Form 3800,

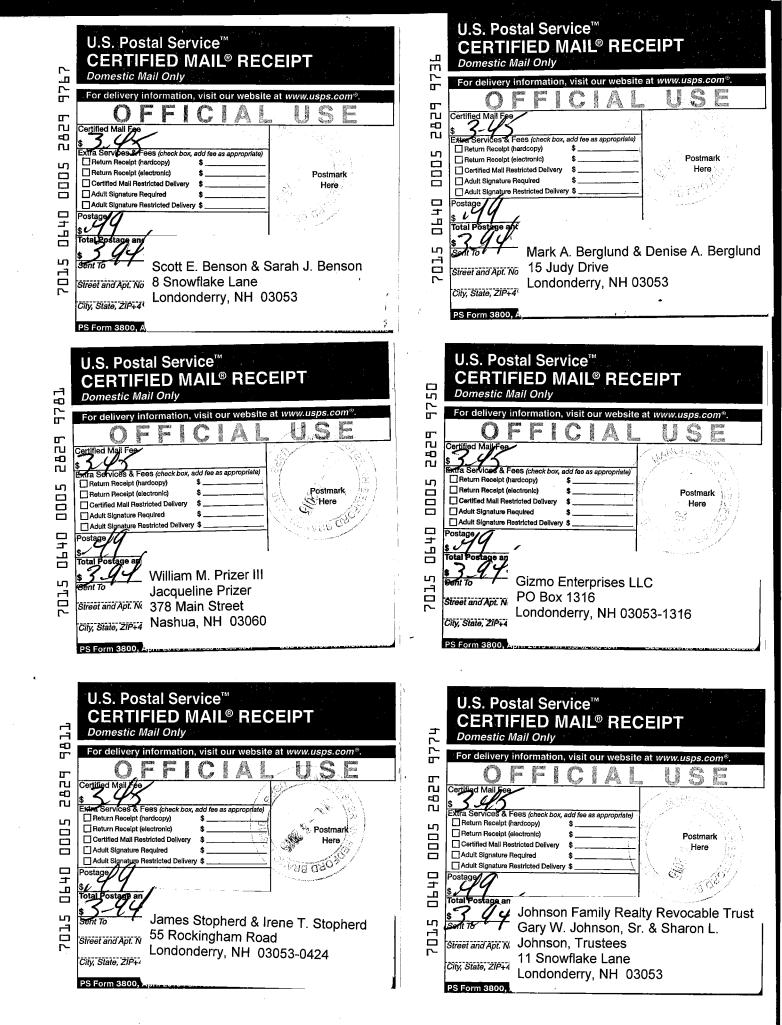
Postmark

Here

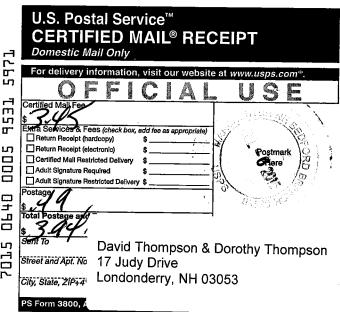
U.S. Postal Service™ CERTIFIED MAIL® RECEIPT Domestic Mail Only 4 Certified Mail Fee Services & Fees (check box, Return Receipt (hardcopy) Return Receipt (electronic) Postmark Certified Mail Restricted Delle Here Adult Signature Required Adult Signature Restricted Delh 8 Richard C. Schillback & Deborah L. 'n 701 Schillback Street and Apt. No 10 Seasons Lane City, State, ZIP141 Londonderry, NH 03053 PS Form 3800, A

957L	U.S. Postal Service™ CERTIFIED MAIL® RECEIPT Domestic Mail Only
ĹĹ	For delivery information, visit our website at www.usps.com®.
	OFFICIAL USE
7015 0640 0005 2829	Certified Mall Fee \$ Certified Mall Fee \$ Certified Mall Fee (check box, add fee as appropriate) Return Receipt (hardcopy)
<u></u>	City, State, ZIP+4 Londonderry, NH 03053
	PS Form 3800,



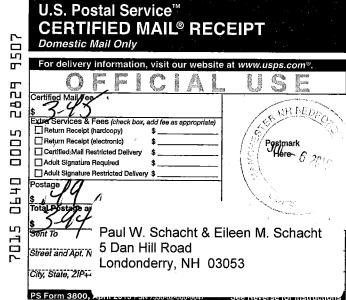


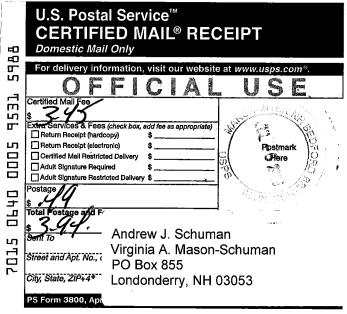


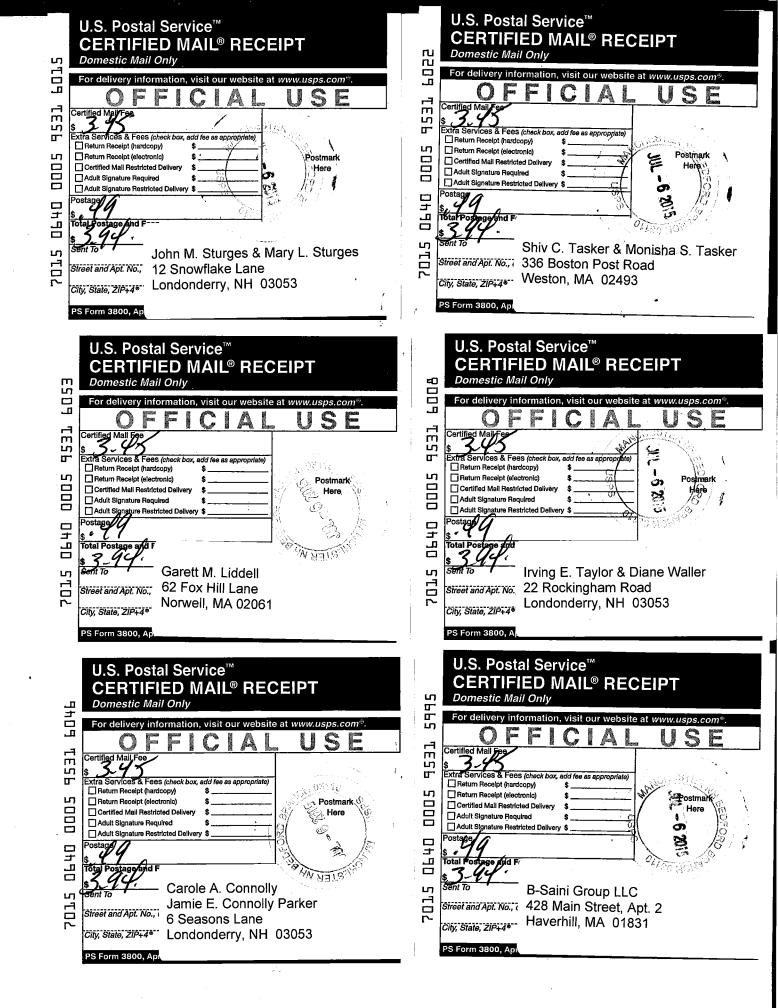




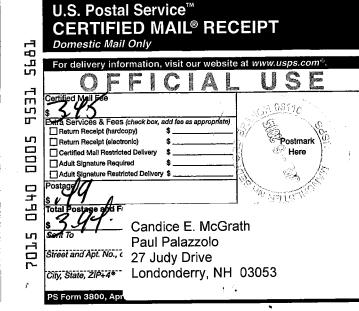
980 4	U.S. Postal Service CERTIFIED MAIL® RECEIPT Domestic Mail Only
5	For delivery information, visit our website at www.usps.com®.
<u></u>	OFFICIAL USE
7 7 7	Certified Mail Fee
	Extra Services & Fees (check box, add fee as appropriate) Return Receipt (hardcopy)
000	Return Receipt (electronic) \$ Postmark
	Certified Mail Restricted Delivery \$ Here
ш	Adult Signature Restricted Delivery \$
0640	Postage \$ Total Postage a
τŽ	Paul R. & Lisa Lind
7015	Street and Apt. 7 2 Seasons Lane Londonderry, NH 03053
e e	City, State, ZIP+
	PS Form 3800, April 2013 F3N 7330-02-000-3047

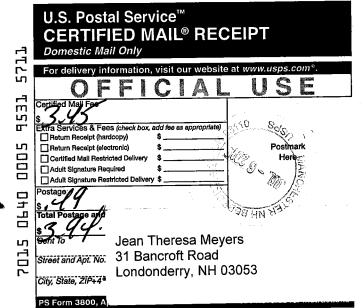




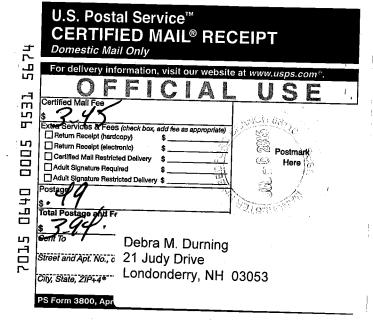


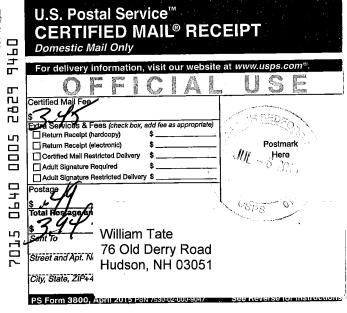


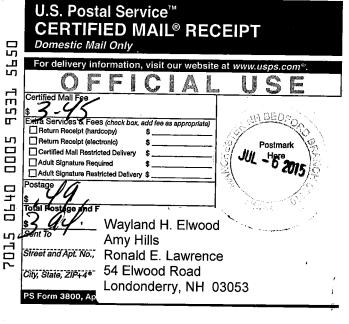


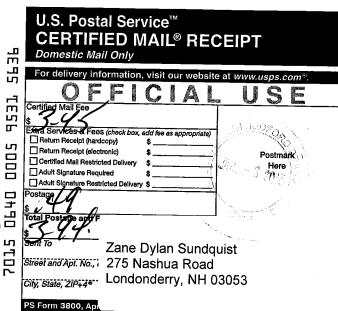






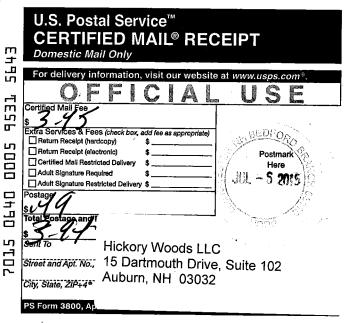




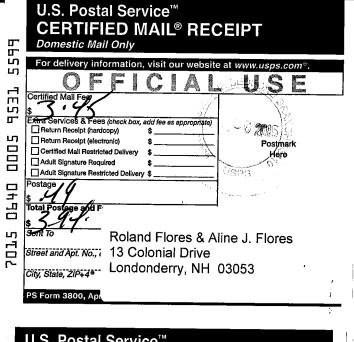


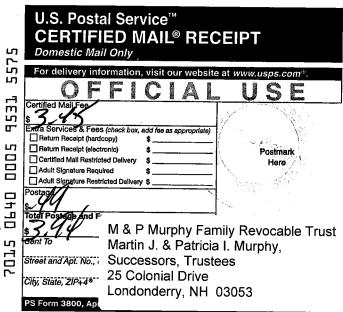


CERTIFIED MAIL® RECEIPT Domestic Mail Only For delivery information, visit our website at www.usps.com®. OFFICIAL USF	
Domestic Mail Only For delivery information, visit our website at www.usps.com*.	
Certified Mail Fee	
TI 55.12	
Certified Mail Ero S Extra Services & Fees (check box, end fee as engrephism)	
Extra Services & Fees (check box, add fee as appropriate) Return Receipt (hardcopy)	;
	į
Postmark Postmark	
Return Receipt (electronic) Certified Mail Restricted Delivery Adult Signature Required JUL - 6-12015	
Adult Signature Restricted Delivery \$	
Postage Postage	
Total Postage and Fe-	
Total Postage and Fe	
Danielle E. Desmarais & Ryan N.	
Desmarais Street and Apt. No., o 31 Severance Drive	
31 Severance Drive	
City, State, 21P+4* Londonderry, NH 03053-3119	
PS Form 3800, Apr	



U.S. Postal Service™ **CERTIFIED MAIL® RECEIPT** 딦 Domestic Mail Only 25 Services & Fees (check box, add fee as appropriate) Return Receipt (hardcopy) Return Receipt (electronic) Postmark Certified Mail Restricted Delivery Adult Signature Required Adult Signature Restricted Delivery \$ 무 பு Town of Londonderry street and Apt. No.;: 268B Mammoth Road Londonderry NH 03053 City, State, ZIP+4 PS Form 3800, Ap



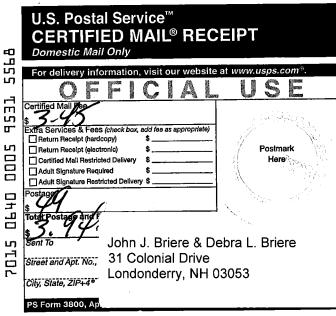


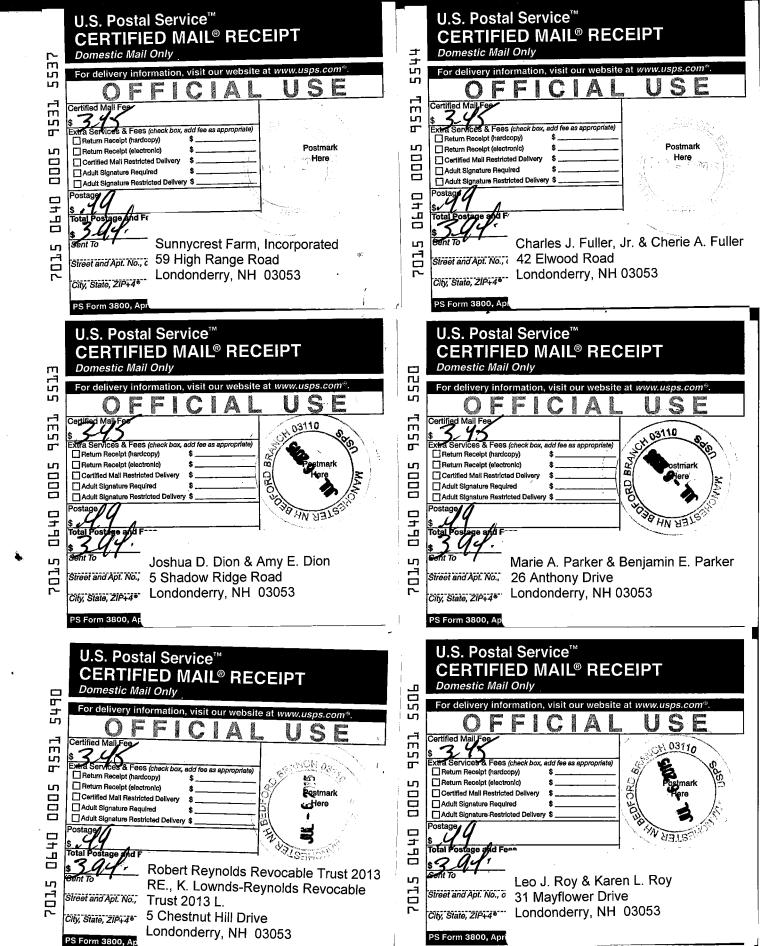


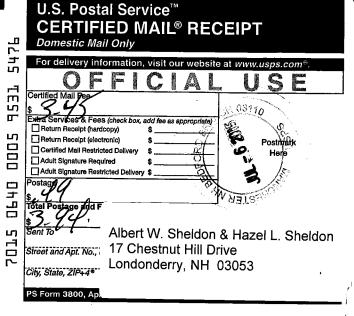
2	CERTIFIED MAIL® RECEIPT Domestic Mail Only
2 E1	For delivery information, visit our website at www.usps.com®.
Lη	O E C A A C A C A C A C A C A C A C A C A
- -7	
537	Certified Mall Fee
2	\$ 5.95
Г	Extra Services & Fees (check box, add fee as appropriate)
L)	Heturn Receipt (hardcopy) \$
000	☐ Return Receipt (electronic) \$ Postmark ☐ Certified Mall Restricted Delivery \$ Postmark
	Adult Signature Required \$ Here
	Adult Signature Restricted Delivery \$
_	Postage//
7	s 444
	Total Postage and Fr
	8 9 94.
n l	Eric J. Plummer
לעטי	Life 5. Flammer
⊃	Sireet and Apt. No.,र 200 Pillsbury Road
- 1	I Ondonderny NH 02052
ı	City, State, ZIP+4®
	PS Form 3800, Apr
•	то тотт 3300, дрт
	_

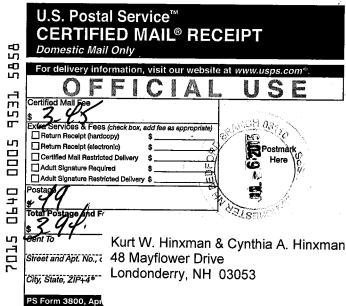
U.S. Postal Service™

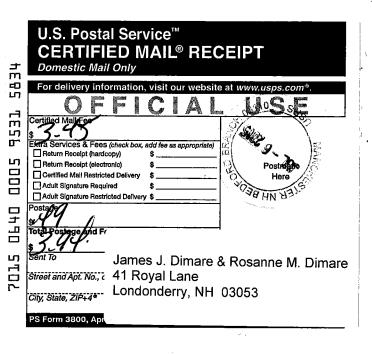








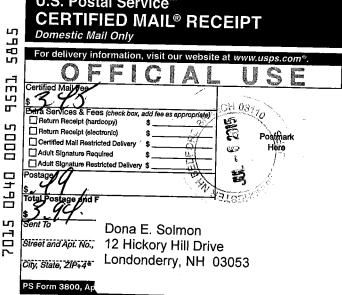


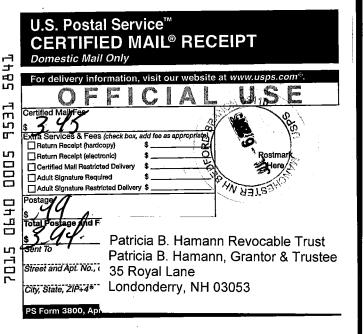


Domestic Mail Only
For delivery information, visit our website at www.usps.com [©] .
OFFICIAL USE
Certified Mail Fee
\$ 3 40
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy)
□ Return Receipt (hardcopy) □ Return Receipt (electronic) □ Certified Mail Restricted Delivery □ Certified Mail Restricted Delivery
Certified Mall Restricted Delivery \$ Here
Adult Signature Restricted Delivery \$
Postage A
9
Total Postage ang/Fr
Sent To Richard G. Kenny & Silvia L. Kenny
Street and Apt. No., c 11 Chestnut Hill Drive
Londonderry NH 03053
Street and Apt. No., 72 11 Chestnut Hill Drive Londonderry, NH 03053 City, State, 21P+4*
City, State, 2IP+4* Londonderry, NH 03053
Londonderry NH 03053
City, State, 2IP+4* Londonderry, NH 03053
City, State, 2IP+4* Londonderry, NH 03053

U.S. Postal Service™

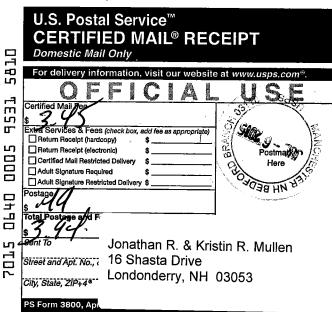
CERTIFIED MAIL® RECEIPT

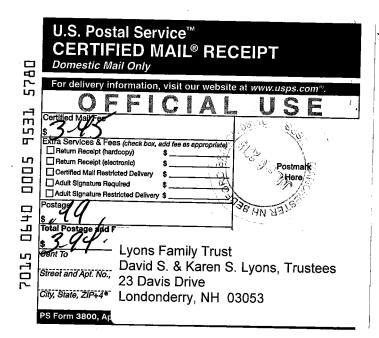


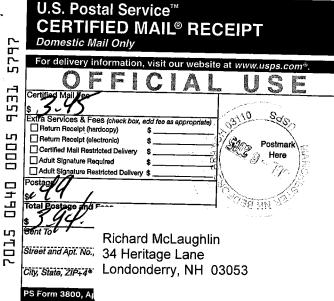










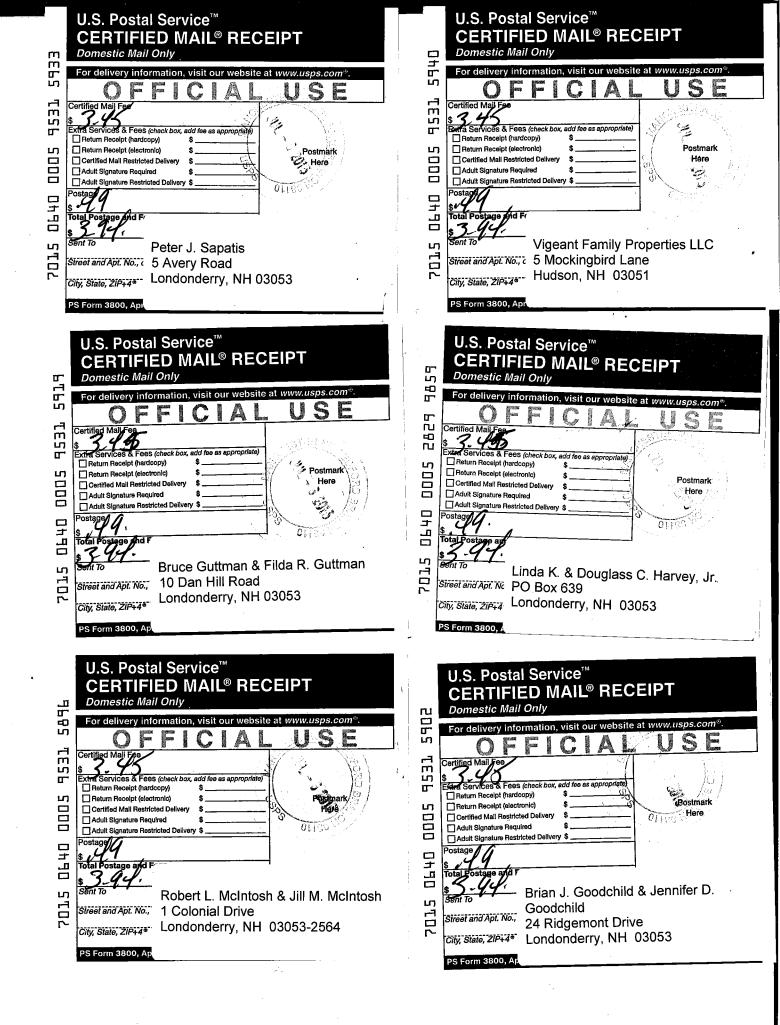


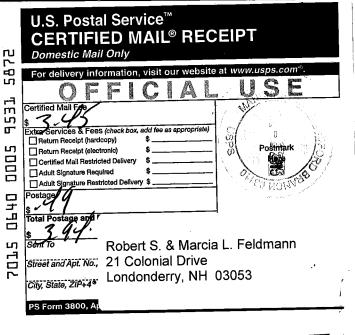


U.S. Postal Service™ CERTIFIED MAIL® RECEIPT Domestic Mail Only
CERTIFIED MAIL® RECEIPT Domestic Mail Only
ப Domestic Mail Only
П
For delivery information, visit our website at www.usps.com*.
Certified Mail Fee
Extra Services & Fees (check box, add fee as appropriate)
Return Receipt (hardcopy) \$
Return Receipt (electronic) \$
☐ ☐ Certified Mall Restricted Delivery \$ Here
Adult Signature Required \$
Adult Signature Restricted Delivery \$
Postage Total Postage and Fr
Total Postage and Fr
CSR Realty Trust
Linda J. Price, Trustee
Street and Apt. No., 12 Bancroft Road
City, State, ZIP+4* Londonderry, NH 03053
PS Form 3800, Apr

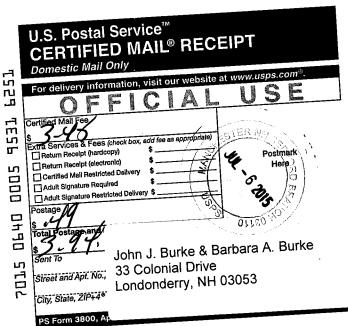
- 5000 1	Return Receipt (herck box, add fee as appropriate) Return Receipt (herctonic) Return Receipt (electronic) Return Recei
0740	Total Fostage who F
7015	Matthew St. Gelais & Faith Isabelle 6 Danby Ct. City, State, ZIP+4* Matthew St. Gelais & Faith Isabelle 6 Danby Ct. Londonderry, NH 03053-2447
,	PS Form 3800, Ap.
	U.S. Postal Service™
	CERTIFIED MAIL® RECEIPT
5 -	Domestic Mail Only
5759	
57	Por delivery information, visit our website at www.usps.com*.
31, 57	Domestic Mail Only For delivery information, visit our website at www.usps.com*. OFFICIAL USE Certified Mail Fee
9531 57	For delivery information, visit our website at www.usps.com*. Certified Mail Fee \$ Extra Services & Fees (check box, edd fee as appropriate)
0005 9531 57	For delivery information, visit our website at www.usps.com®. Certified Mail Fee
0005 9531 57	Certified Mail Fee Extra Services & Fees (check box, add fee as appropriate) Return Receipt (electronic) Certified Mail Restricted Delivery Adult Signature Required
0640 0005 9531 57	For delivery information, visit our website at www.usps.com*. Certified Mail Fee \$ Extra Services & Fees (check box, add fee as appropriate) Return Receipt (hardcopy) \$ Return Receipt (electronic) \$ Certified Mail Restricted Delivery \$ Adult Signature Required \$ Adult Signature Restricted Delivery \$ Total Postage and F \$
0005 9531 57	For delivery information, visit our website at www.usps.com*. Certified Mail Fee \$ Certified Mail Fee S Certified Mail Fee S Postmark Heye Adult Signature Required Adult Signature Restricted Delivery \$ Postag Postag Postag

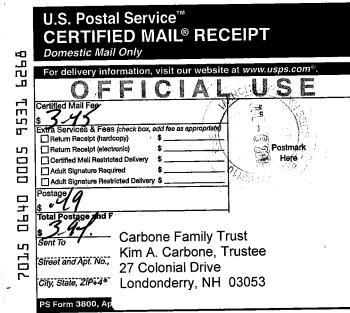












37	U.S. Postal Service [™] CERTIFIED MAIL [®] RECEIPT Domestic Mail Only
IJ	For delivery information, visit our website at www.usps.com®.
_0	OFFICIAL HSF
핊	Certified Mall Fee
53	243
Ē	Extra Services & Fees (check box, add fee as appropriate)
	Return Receipt (hardcopy)
2	☐ Return Receipt (electronic) \$ Postmark
000	Adult Signature Required \$
	Adult Signature Restricted Delivery \$
	Postage 9
0640	19 4 6 1 13 15 15 15 15 15 15 15 15 15 15 15 15 15
岩	Total Postage and F
	\$3.44°
ū	Thomas D. Agrella & Michelle E. Agrella
707	Street and Apt. No.,; 46 Elwood Road
~	Londonderry, NH 03053
	City, State, ZIP+4*
	PS Form 3800, Ap.

‡	CERTIFIED MAIL® RECEIPT Domestic Mail Only
ш	For delivery information, visit our website at www.usps.com®.
<u>п</u>	OFFICIAL USE
537	Certified Mail Foo
0	Extra Services & Fees (check box, add fee as appropriate) Return Receipt (hardcopy)
Ŋ	Return Receipt (electronic) \$ Bostmark
	Certified Mall Restricted Delivery \$
000	Adult Signature Required \$
0640	Adult Signature Restricted Delivery \$
	Total Postage and F
ក្ម	Nicolas Sabino
7015	Street and Apt. No., 10 Hancock Drive
ر ا	_{City, State, 219-44} Londonderry, NH 03053
l	PS Form 3800, Ap
	•

U.S. Postal Service

CERTIFIED MAIL® RECEIPT

Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

Certified Mail Fee

S

Extra Services & Fees (check box, add fee as appropriate)

Return Receipt (indrecopy)

Return Receipt (electronic)

Certified Mail Restricted Delivery \$

Adult Signature Restricted Delivery \$

Postage

Postage

Total Postage and

Sircel and Apt. No.

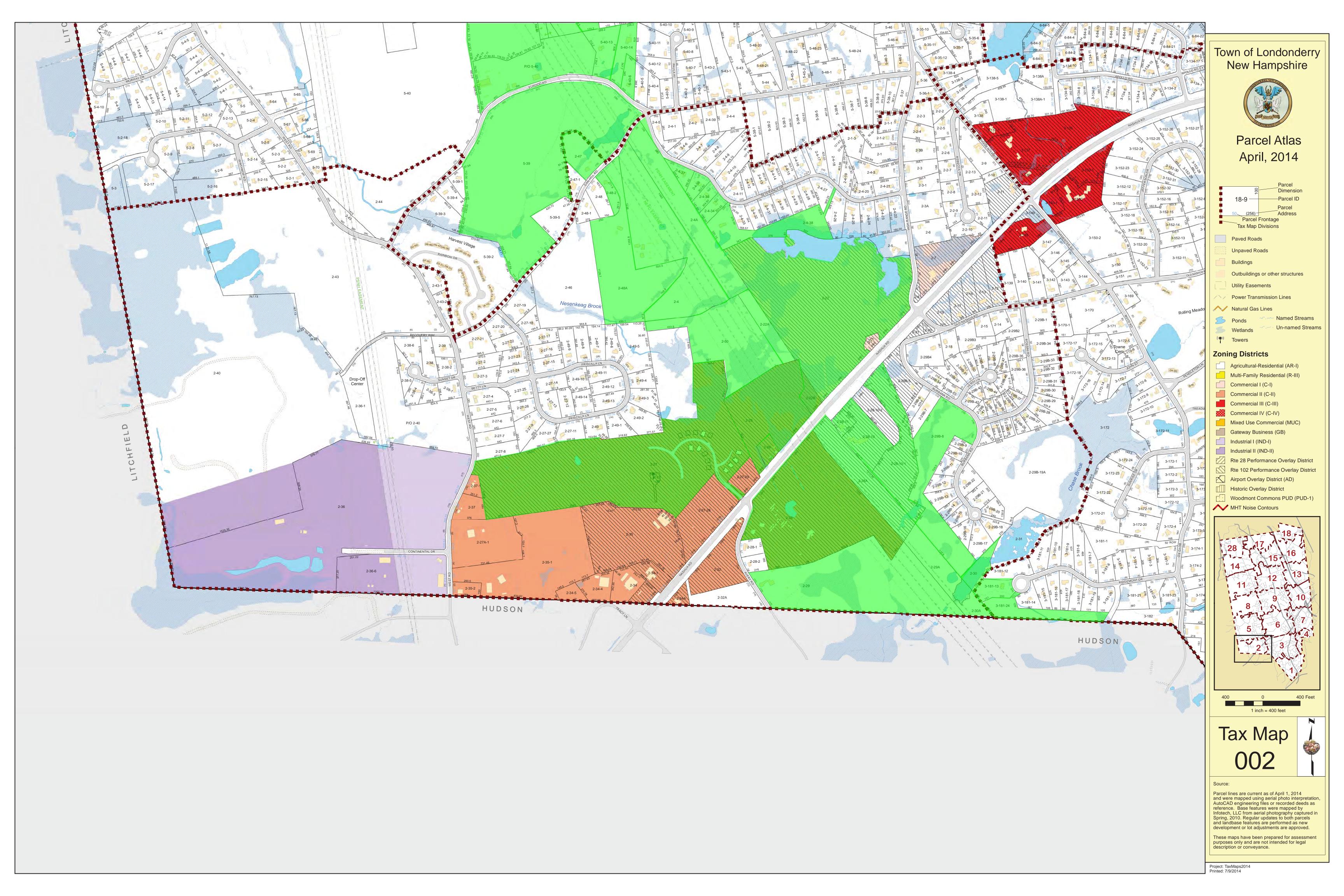
Public Service Company of NH

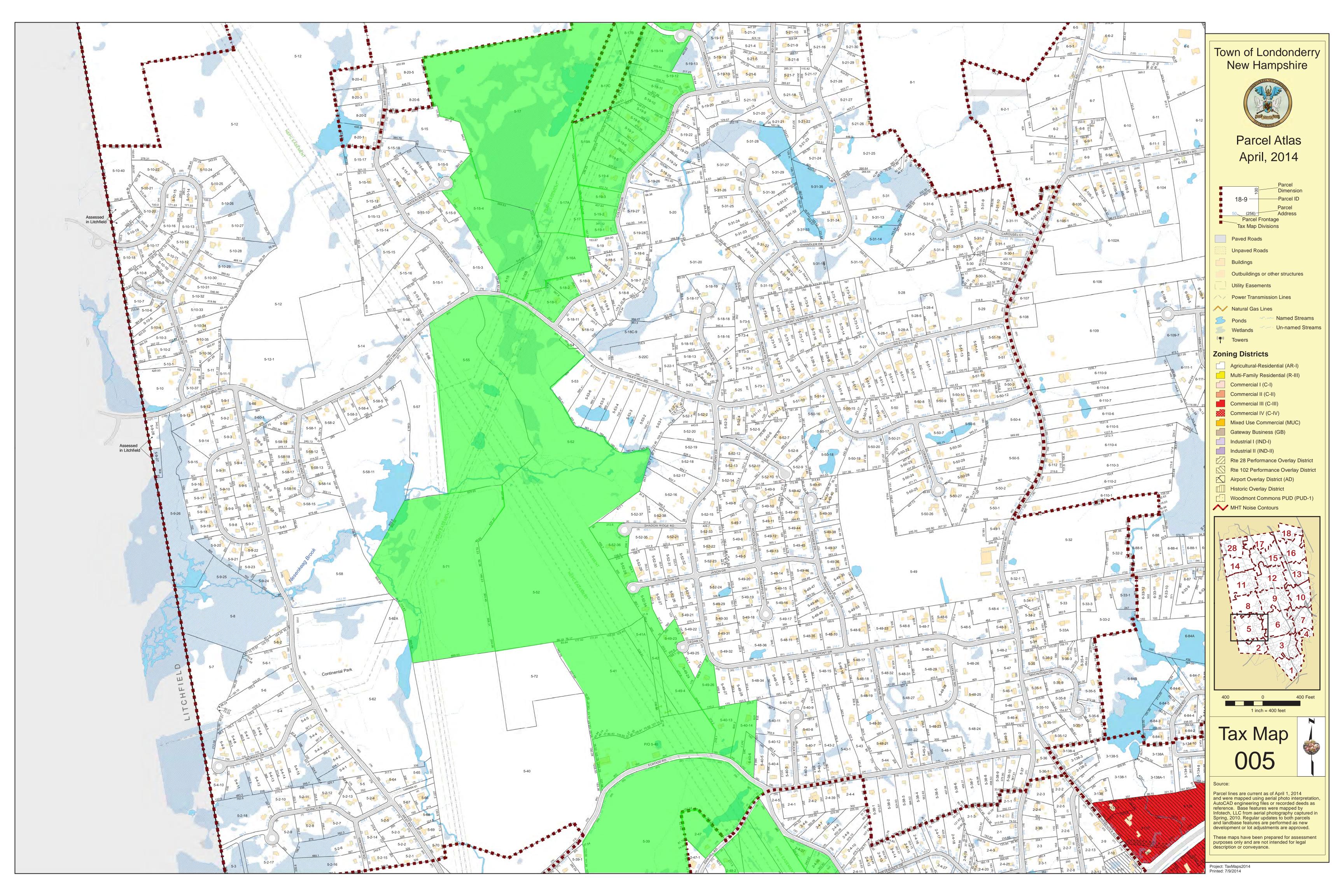
C/O Tax Accounting

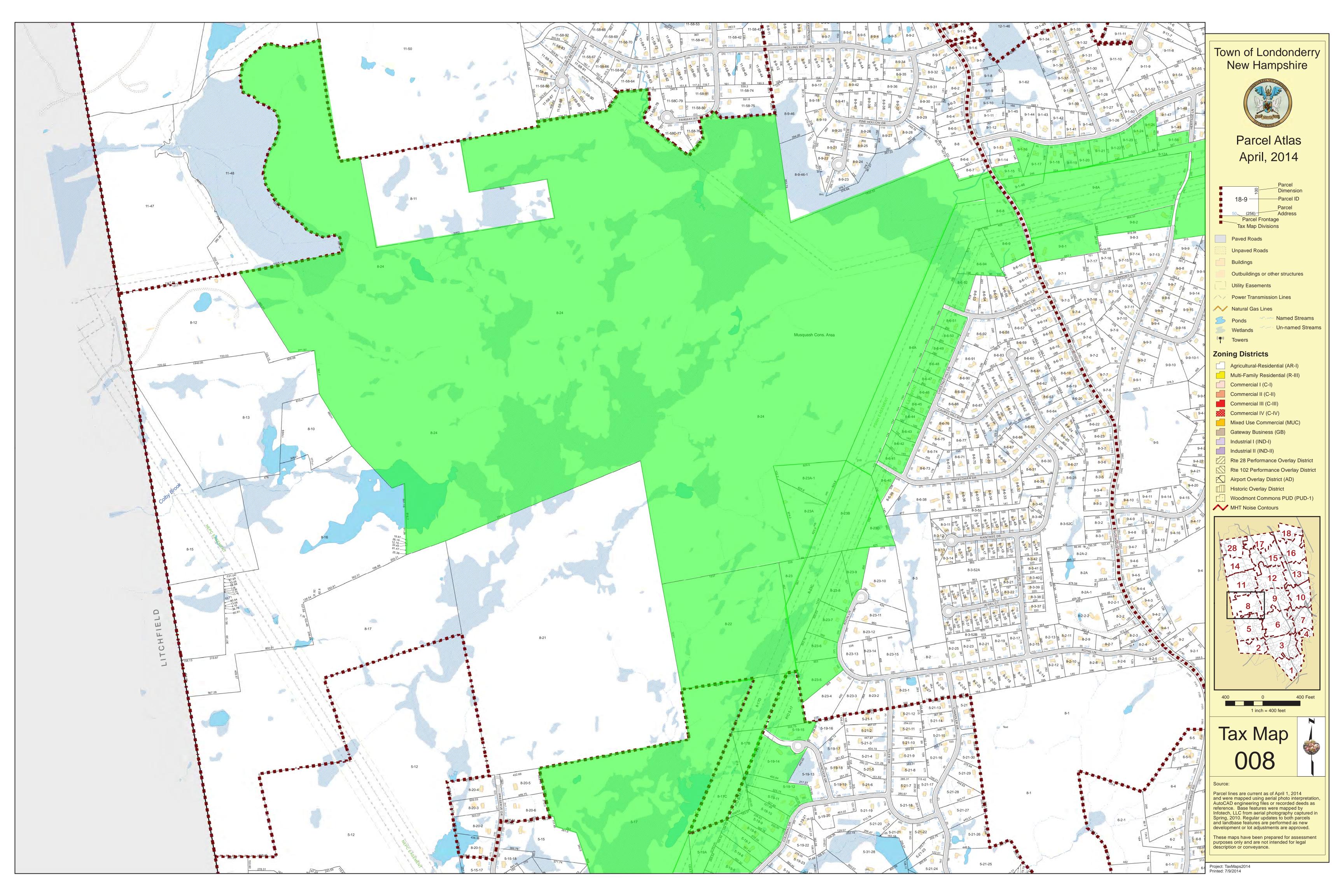
PO Box 330

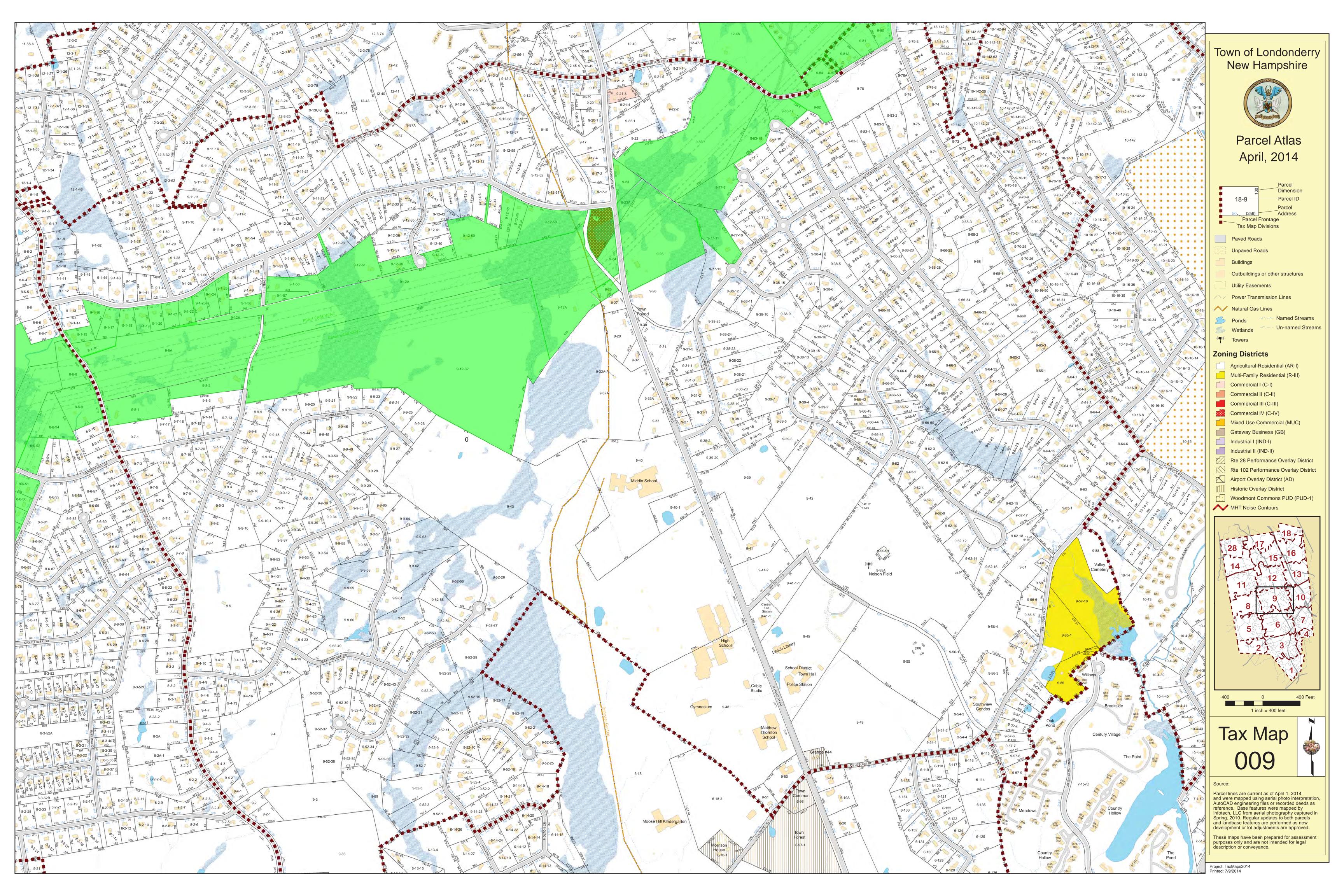
City State, ZiP+48

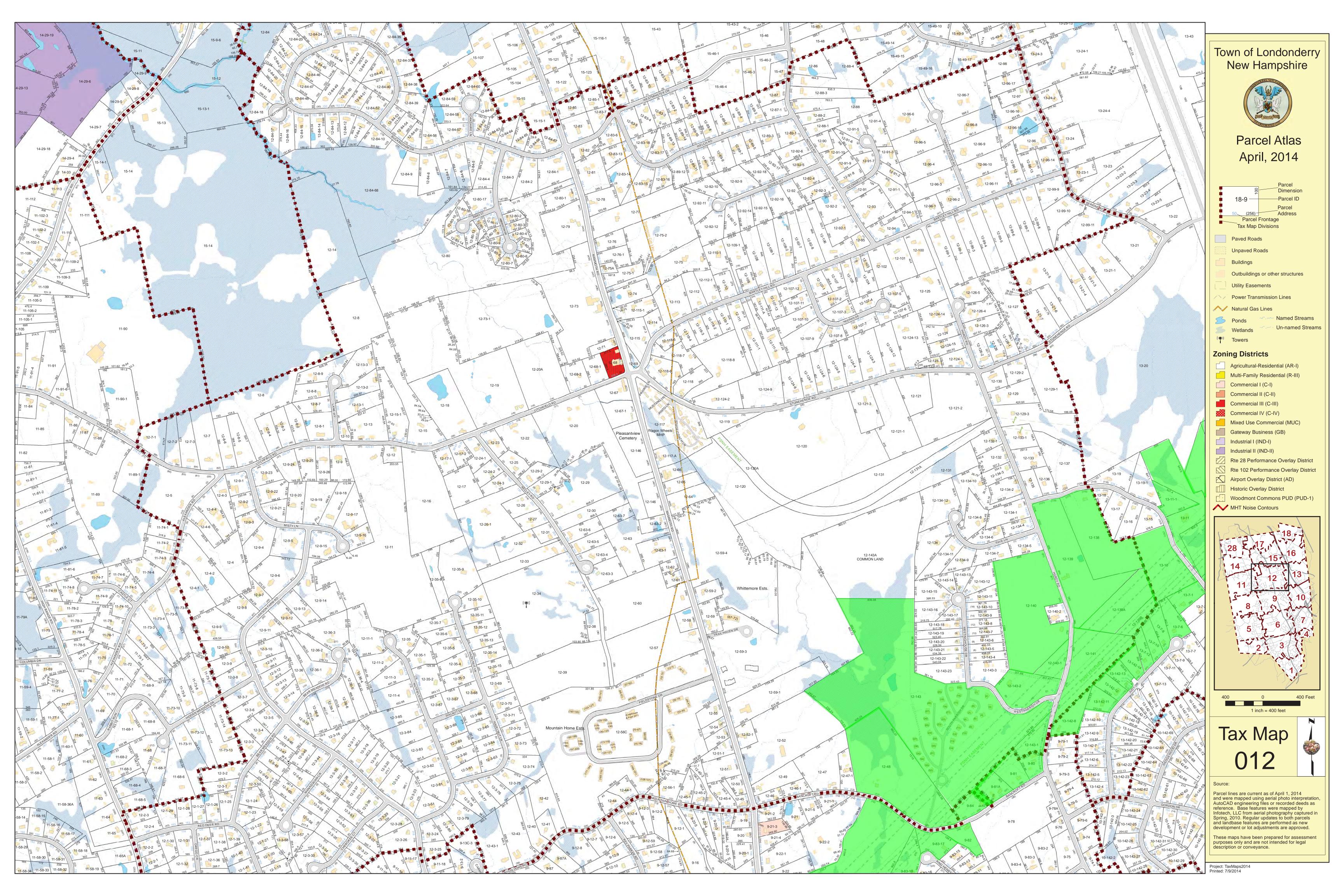
Manchester, NH 03105-0330

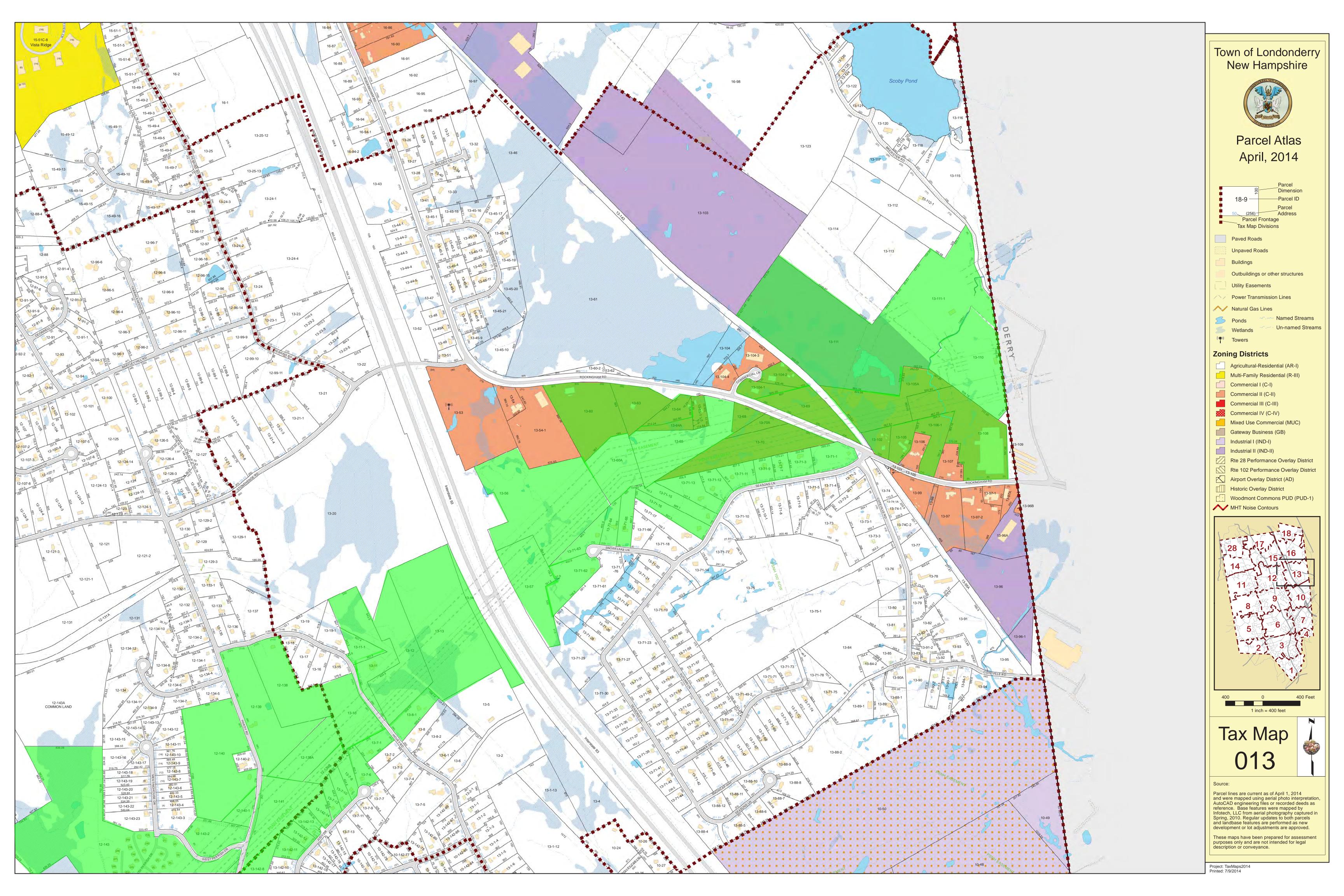














Attachment G

USACE Functions and Values Forms



Total area of wetland 0.04 Human made?		No_Is wetland	tland part of a wildlife corridor?_		Xora "habitat island"?	Wetland I.D. WA 30 atitude 42.706493 Iongitude -71.285359
orest			Distance to nearest	roadway or	Distance to nearest roadway or other development_~300'	
Dominant wetland systems present PSS1E			Contiguous unde	veloped bu	Contiguous undeveloped buffer zone present Yes	Wetland Impact: Type See Table Area See Table
s the wetland a separate hydraulic system? No		_ lf not,	If not, where does the wetland lie in the drainage basin?Upper_	lie in the d	ainage basin?_Upper	Evaluation based on:
How many tributaries contribute to the wetland?_	0	>	Wildlife & vegetation diversity/abundance (see attached list)	rsity/abund	ance (see attached list)	Office X Field X Corps manual wetland delineation
Function/Value	Suitabilitv Y N	bilitv N	Rationale (Reference #)*	Principal Functior	ı(s)/Value(s)	completed? Y_X_ NComments
Groundwater Recharge/Discharge	X		3,4,15	01	Sandy soils suggesting minor groundwater recharge	recharge
Floodflow Alteration		X	2,18		Temporary matting proposed, no waterbody	Α.
Fish and Shellfish Habitat		X	-		No waterbody	
Sediment/Toxicant Retention	X		1,4		ATV trail within wetland causing erosion	
Nutrient Removal		X	6'8		No sources of excess nutrients in the vicinity of the wetland, potential exists	of the wetland, potential exists
Production Export		X	7,8,12	4	Area dominated by glossy buckthorn	
Sediment/Shoreline Stabilization		X	-		no waterbody	
الله حسن Wildlife Habitat	X		4,7,11,13,20		Well established ATV trail may provided Amphibian Breeding Area	phibian Breeding Area
Recreation	X		1,11,12		Well established ATV trail	
Educational/Scientific Value		X			Access is restricted	
\chi Uniqueness/Heritage		X			Wetland within maintained ROW	
Visual Quality/Aesthetics		X			Disturbed wetland	
ES Endangered Species Habitat		×				
Other						

Notes: Narrow swale dominated by glossy buckthorn, drains west into forested landscape

* Refer to backup list of numbered considerations.

Adapted from: U.S.Army Corps of Engineers - New England District. 1999. The Highway Methodology Workbook: Supplement: Wetland Functions and Values - A Descriptive Approach. NAEEP-360-1-30a.



				Wetland I.D. WA 31
Total area of wetland 0.58 Human made?		NoIs wetland part of a wildlife corridor?_	ora "habitat island"?	ind"? Latitude_42.708482_ Longitude71.287292
Adjacent land useROW/Forest		Distance to nearest r	Distance to nearest roadway or other development $^\sim\!400^\circ$	
Dominant wetland systems present PSS1E, PFO1E	ш	Contiguous undev	Contiguous undeveloped buffer zone present Yes	Wetland Impact: Type_See TableArea_See Table
Is the wetland a separate hydraulic system? No	- J	not, where does the wetland	If not, where does the wetland lie in the drainage basin? Upper	Evaluation based on:
How many tributaries contribute to the wetland?_	0	Wildlife & vegetation diver	& vegetation diversity/abundance (see attached list)	Office X Field X Corps manual wetland delineation
Function/Value	Suitabilitv Y N	v Rationale (Reference #)*	Principal Function(s)/Value(s)	completed? Y X N
groundwater Recharge/Discharge	X	3,4,15	Sandy soils suggesting minor groundwater recharge	groundwater recharge
Floodflow Alteration	X	2,18	Temporary matting proposed, no waterbody	I, no waterbody
Fish and Shellfish Habitat	X	-	No waterbody	
Sediment/Toxicant Retention	X	1,4	Area surrounding wetland co	Area surrounding wetland consists of well vegetated forested and scrub-shrub communities
Nutrient Removal	×	6′8	No sources of excess nutrient	No sources of excess nutrients in the vicinity of the wetland, potential exists
• Production Export	×	7,8,12	Area dominated by glossy buckthorn	ckthorn
↓ Sediment/Shoreline Stabilization	X	-	no waterbody	
र्ी Wildlife Habitat	×	4,7,11,13,20	High vegetation density, connectivity to other wetlands	nectivity to other wetlands
Recreation	X		Access is restricted	
Educational/Scientific Value	X		Access is restricted	
🜟 Uniqueness/Heritage	X		Wetland within maintained ROW	МО
Visual Quality/Aesthetics	X		Disturbed wetland	
ES Endangered Species Habitat	×			
Other				

Notes: Wetland dominated by glossy buckthorn. Hydrology is seasonal in both forested and ROW settings.

* Refer to backup list of numbered considerations.

Adapted from: U.S.Army Corps of Engineers - New England District. 1999. The Highway Methodology Workbook: Supplement: Wetland Functions and Values - A Descriptive Approach. NAEEP-360-1-309.



New England District					Wetland I.D. WA 32
Total area of wetland 1.37 Human made?	8	_Is wetland part of a wildlife corridor?_	corridor?_	X or a "habitat island"?	Latitude 42.709679 Longitude -71.287539
Adjacent land use Forested/ROW		Distance to neare:	st roadway	Distance to nearest roadway or other development_200'+	Prepared by: AAF Date 10/9/14
Dominant wetland systems present_PSS1E		Contiguous und	eveloped k	Contiguous undeveloped buffer zone present Yes	Weddin Impact: Type_See TableArea_See Table
Is the wetland a separate hydraulic system? No	If no	t, where does the wetlar	ıd lie in the	If not, where does the wetland lie in the drainage basin? Upper	Evaluation based on:
How many tributaries contribute to the wetland?_	0	-Wildlife & vegetation div	rersity/abu	& vegetation diversity/abundance (see attached list)	Office Field
Function/Value	Suitabilitv Y N	Rationale (Reference #)*	Principal Function	(s)/Value(s)	Corps manual wetland delineation completed? Y_X_ N Comments
Groundwater Recharge/Discharge	X	5,15		Signs of variable water table, indicating possible recharge	sible recharge
Floodflow Alteration	X			No waterbody	
Fish and Shellfish Habitat	X	-		No watercourse present	
Sediment/Toxicant Retention	X	4		No sources of sediments/toxicants in the vicinity of the wetland	inity of the wetland
Nutrient Removal	X	1,8,9		No sources of excess nutrients in the vicinity of the wetland, potential exists	of the wetland, potential exists
• Production Export	X	1,2,4,7	×	Large winterberry and/or highbush blueberry density	y density
Sediment/Shoreline Stabilization	X			No large flowing waterbody associated with wetland	wetland
الله الله Wildlife Habitat	X	5,7,8,11,13,17		Abundant deer sign and songbirds	
Recreation	X			Access is restricted	
Educational/Scientific Value	X			Access is restricted	
🜟 Uniqueness/Heritage	X			Wetland within maintained ROW	
Visual Quality/Aesthetics	X	4		Thick vegetation with no primary viewing locations	cations
ES Endangered Species Habitat	X				
Other					

Notes: Wetland contains purple loosestrife and glossy buckthorn. Drains in a southerly direction.

* Refer to backup list of numbered considerations.

Adapted from: U.S.Army Corps of Engineers - New England District. 1999. The Highway Methodology Workbook: Supplement: Wetland Functions and Values - A Descriptive Approach. NAEEP-360-1-30a.



New Ligidia District						Wetland I.D. WA 33
Fotal area of wetland 0.07 Human made?	No	_ls wetland	and part of a wildlife corridor?	corridor?	or a "habitat island"?X	Latitude 42.710230 Longitude -71.288454
Adjacent land use_ROW			Distance to neares	t roadway or	Distance to nearest roadway or other development_200'+	Prepared by: AAF Date 10/9/14
Dominant wetland systems present_PSS1E			Contiguous unde	nd bedoleve	Contiguous undeveloped buffer zone present Yes	Wetland Impact: Type_See TableArea_See Table
Is the wetland a separate hydraulic system? Yes		lf not, ≀	If not, where does the wetland lie in the drainage basin?	d lie in the d	rainage basin?	Evaluation based on:
ا.,	0	M	Wildlife & vegetation div	ersity/abund	& vegetation diversity/abundance (see attached list)	Office X Field X Corps manual wetland delineation
Sı Function/Value	Suitabilitv Y N	<u>;</u>	Rationale (Reference #)*	Principal Functior	ı(s)/Value(s)	completed? Y_X_ N Comments
Groundwater Recharge/Discharge	×		5,15	01	Signs of variable water table, indicating possible recharge	ible recharge
Floodflow Alteration	X				No watercourse present	
Fish and Shellfish Habitat	X		-		No watercourse present	
Sediment/Toxicant Retention	X		4		No sources of sediments/toxicants in the vicinity of the wetland	nity of the wetland
Nutrient Removal	X		1,8,9		No sources of excess nutrients in the vicinity of the wetland, potential exists	of the wetland, potential exists
Production Export	×				Large winterberry and/or highbush blueberry density	y density
Sediment/Shoreline Stabilization	X				No large flowing waterbody associated with wetland	wetland
الله حكم Wildlife Habitat	X				High amount of human disturbance observed	p
Recreation	X			4	Access is restricted	
Educational/Scientific Value	X			4	Access is restricted	
\chi Uniqueness/Heritage	X				Wetland within maintained ROW	
Visual Quality/Aesthetics	X		4		Thick vegetation with no primary viewing locations	cations
ES Endangered Species Habitat	X	\ /				
Other						

Notes: Wetland dominated by purple loosestrife. Shows signs of heavy historic disturbance from ROW development

* Refer to backup list of numbered considerations.

Adapted from: U.S.Army Corps of Engineers - New England District. 1999. The Highway
Methodology Workbook: Supplement: Wetland Functions and Values - A Descriptive
Approach. NAEEP-360-1-30a.



otal area of wetland 0.52 Human made?	8	_ls wetland	tland part of a wildlife corridor?_	ĺ	X or a "habitat island"?	Wetland I.D. WA 34 Latitude 42.711271 Longitude -71.288841
Adjacent land use_Forested/ROW			Distance to nearest	roadway or	Distance to nearest roadway or other development 200'+	
Dominant wetland systems present_PSS1E, PEM1E	ш		Contiguous undev	reloped buf	Contiguous undeveloped buffer zone present Yes	Wetland Impact: Type See Table Area See Table
s the wetland a separate hydraulic system? Yes		_ If not,	If not, where does the wetland lie in the drainage basin? $\overline{\ \ \ \ \ \ \ \ }$	lie in the dr	ainage basin?	Evaluation based on:
How many tributaries contribute to the wetland?_	0	>	Wildlife & vegetation diversity/abundance (see attached list)	sity/abund	ance (see attached list)	Office FieldX Corps manual_wetland delineation
Function/Value	Suitabilitv Y N	bilitv N	Rationale (Reference #)*	Principal Functior	ı(s)/Value(s)	completed? Y_X_ NComments
g Groundwater Recharge/Discharge	X		5,15	S	Signs of variable water table, indicating possible recharge	sible recharge
Floodflow Alteration		X		2	No watercourse present	
Fish and Shellfish Habitat		X	—	2	No watercourse present	
Sediment/Toxicant Retention		X	4	2	No sources of sediments/toxicants in the vicinity of the wetland	inity of the wetland
Nutrient Removal		X	1,8,9	2	No sources of excess nutrients in the vicinity of the wetland, potential exists	of the wetland, potential exists
Production Export	, ,	×	1,2,4,7		Large winterberry and/or highbush blueberry density	ry density
Sediment/Shoreline Stabilization	, ,	X		2	No large flowing waterbody associated with wetland	wetland
⊘ Wildlife Habitat	X		5,7,8,11,13,17	4	Abundant deer sign and songbirds	
Recreation	, ,	X		4	Access is restricted	
Educational/Scientific Value		X		4	Access is restricted	
\chi Uniqueness/Heritage		X		>	Wetland within maintained ROW	
Visual Quality/Aesthetics	, ,	X	4		Thick vegetation with no primary viewing locations	ıcations
ES Endangered Species Habitat	, ,	\times				
Other						

Notes: Wetland contains purple loosestrife and glossy buckthorn. Isolated wetland.



New England District						Wetland I.D. MA 36
Total area of wetland 2.30 Human made?	8	ls wetland	tland part of a wildlife corridor? X	rridor? X	or a "habitat island"?	Latitude 42.719672 Longitude -71.297210
Adjacent land useROW/Forest/Residential			Distance to nearest r	oadway or oth	Distance to nearest roadway or other development_0'	Prepared by: AAF Date 10/9/14
Dominant wetland systems present_PSS1E, PSS/EM1E, R4SB5/6	EM1E,	R4SB5/6		eloped buffer	zone present_Yes	Wetland Impact: Type_See TableArea_See Table
Is the wetland a separate hydraulic system? No		lf not,	If not, where does the wetland lie in the drainage basin?Upper	ie in the drain	lage basin?_Upper	Evaluation based on:
How many tributaries contribute to the wetland?	-	>	Wildlife & vegetation diversity/abundance (see attached list)	ity/abundand	ce (see attached list)	Office X Field X Corps manual wetland delineation
Function/Value	Suitabi Y N	Suitabilitv Y N	Rationale (Reference #)*	Principal Function(s)/Value(s)		completed? Y X N
groundwater Recharge/Discharge	X		3,4,15	Sand	Sandy soils suggesting minor groundwater recharge	echarge
Floodflow Alteration	X		1,2,5,6,13,18	Tem	Temporary matting proposed, no waterbody	,
Fish and Shellfish Habitat		X	1	Wate	Waterbody is intermittent	
Sediment/Toxicant Retention	X		1,4	ATV	ATV trail within wetland causing erosion	
Nutrient Removal		X	6,8	No sc	No sources of excess nutrients in the vicinity of the wetland, potential exists	of the wetland, potential exists
• Production Export		X	7,8,12	Area	Area dominated by purple loosestrife and glossy buckthorn	ossy buckthorn
Sediment/Shoreline Stabilization		X	1	No N	No waterbody	
री Wildlife Habitat	X		4,7,11,13,20	Well	Well established ATV trail may provided Amphibian Breeding Area	phibian Breeding Area
Recreation	X		1,11,12	Well	Well established ATV trail	
Educational/Scientific Value		X		Acce	Access is restricted	

* Refer to backup list of numbered considerations.

Wetland within maintained ROW

 \times

 \times

ES Endangered Species Habitat

Other Notes:

Visual Quality/Aesthetics

Uniqueness/Heritage

Disturbed wetland

Adapted from: U.S.Army Corps of Engineers - New England District. 1999. The Highway Methodology Workbook: Supplement: Wetland Functions and Values - A Descriptive Approach. NAEEP-360-1-30a.



New Ligitaly District						Wetland I.D. WA 36A
Total area of wetland 0.93 Human made?	no	ls wetland	tland part of a wildlife corridor?_		Yes or a "habitat island"? No	Latitude 42.721325 Longitude -71.299385
Adjacent land use_Forested/ROW			Distance to nearest ro	adway c	Distance to nearest roadway or other development $\sim\!50^\circ$	Prepared by: AAF Date 10/8/14
Dominant wetland systems present_PFO1E, PSS1E, R4SB5	E, R4SI	85	Contiguous undeve	, loped bı	Contiguous undeveloped buffer zone present Yes	Wetland Impact: Type_See TableArea_See Table
is the wetland a separate hydraulic system? No		If not	If not, where does the wetland lie in the drainage basin?Upper	in the	drainage basin?Upper	Evaluation based on:
How many tributaries contribute to the wetland?_	-		Wildlife & vegetation diversity/abundance (see attached list)	ty/abun	dance (see attached list)	Office X Field X Corps manual wetland delineation
5 Function/Value	Suitabilitv Y N	bility N	Rationale (Reference #)*	Principal Function	ı(s)/Value(s)	completed? Y X N
Groundwater Recharge/Discharge	X		7,10,13,14		Forested seep along intermittent stream	
Floodflow Alteration	X		2,5,9,13,15,16,18		Narrow forested wetland bordering intermittent stream	tent stream
Fish and Shellfish Habitat		X	1,2,17		Waterbordy is intermittent	
Sediment/Toxicant Retention	X		4,7,10,11,13,16	X	Vegetated wetland adjacent to intermittent stream	stream
Nutrient Removal		X	8,12		Wetland has topographic gradient and nutrients are washed downstream	ents are washed downstream
Production Export		X	7,11		Diverse amounts of plant species; plant material flushing from wetland	erial flushing from wetland
↓ Sediment/Shoreline Stabilization		×	8,9,12		Not associated with perennial waterbody	
الله حمد Wildlife Habitat		X	1,14,16,17		Forested wetland surrounded by ROW and Residential land	(esidential land
Recreation		X			Access is restricted	
Educational/Scientific Value		X			Access is restricted	
🙏 Uniqueness/Heritage		X			Wetland within maintained ROW	
Visual Quality/Aesthetics		X			Obscured wetland	
ES Endangered Species Habitat		\times				
Other						

Notes: Forested wetland with an intermittent stream draining to the south towards Dutton Road



New Erigiaira District					Wetland I.D. WA 36B
otal area of wetland 0.33 Human made?	8	_Is wetland part of a wildlife corridor?_	orridor?_	Yes or a "habitat island"? No	Latitude 42.718159 Longitude -71.296004
djacent land use_ROW/Forest/Residential/Industrial	lustrial	Distance to nearest	roadway	Distance to nearest roadway or other development_~400'	Prepared by: AAF Date 10/9/14
ominant wetland systems present_PSS1E, R4SB5/6	9/9	Contiguous unde	veloped k	Contiguous undeveloped buffer zone present Yes	Wetland Impact: Type_See TableArea_See Table
the wetland a separate hydraulic system? No	If n	If not, where does the wetland	l lie in the	re does the wetland lie in the drainage basin?_Upper	Evaluation based on:
low many tributaries contribute to the wetland?_	-	_Wildlife & vegetation dive	ersity/abu	Wildlife & vegetation diversity/abundance (see attached list)	Office X Field X
Function/Value	Suitabilitv Y N	, Rationale (Reference #)*	Principal Function	ı(s)/Value(s)	Composition of the completed? V_X_ N N
Groundwater Recharge/Discharge	X	3,4,7,15		Sandy soils suggesting minor groundwater recharge	echarge
Floodflow Alteration	X	2,5,6,7,10,13,18	X	Wetland associated with intermittent water 36 and 36A to the north.	Wetland associated with intermittent watercourse, hydrologically connected to Wetland WA 36 and 36A to the north.
Fish and Shellfish Habitat	×	_		Waterbody is intermittent.	
Sediment/Toxicant Retention	X	1,4,10,16	X		
Nutrient Removal	×	6,8		No sources of excess nutrients in the vicinity of the wetland, potential exists	of the wetland, potential exists
• Production Export	×	7,8,12		Area dominated by purple loosestrife and glossy buckthorn	ossy buckthorn
↓ Sediment/Shoreline Stabilization	×	_		No waterbody	
Wildlife Habitat	×	7,13		Well established ATV trail may provided Amphibian Breeding Area	ohibian Breeding Area
Recreation	×			No recreational opportunity.	
Educational/Scientific Value	×			Access is restricted	
🖊 Uniqueness/Heritage	×			Wetland within maintained ROW	
Visual Quality/Aesthetics	×			Disturbed wetland	
ES Endangered Species Habitat	×				
Other					

Notes: Wetland associated with intermittent stream SA-11.



Total area of wetland 0.07 Human made?		No Is wetland	etland part of a wildlife corridor?	orridor?	or a "habitat island"? X	Wetland I.D. WA 37
			Distance to nearest	roadway or	Distance to nearest roadway or other development \sim 200'	
Dominant wetland systems present_PSS1E			Contiguous undev	reloped buf	Contiguous undeveloped buffer zone present Yes	Wetland Impact: _{Type} See Table _{Area} See Table
s the wetland a separate hydraulic system? Yes		lf no	If not, where does the wetland lie in the drainage basin? $\overline{\ \ \ \ \ \ \ \ }$	lie in the dr	ainage basin?	Evaluation based on:
How many tributaries contribute to the wetland?_	0		Wildlife & vegetation diversity/abundance (see attached list)	sity/abunda	ance (see attached list)	Office Kield K
Function/Value	Suita Y	Suitabilitv Y N	Rationale (Reference #)*	Principal Functior	ı(s)/Value(s)	Comments Comments
groundwater Recharge/Discharge		X	3,4,15	33	Sandy soils, but wetland is isolated and located on a slope	ted on a slope
Floodflow Alteration		X	2,18	12	Temporary matting proposed, no waterbody	
Fish and Shellfish Habitat		X	-	Z	No waterbody	
Sediment/Toxicant Retention	X		1,4	×	ATV trail within wetland causing erosion	
Nutrient Removal		X	6'8	Z	No sources of excess nutrients in the vicinity of the wetland, potential exists	of the wetland, potential exists
Production Export		X	7,8,12	Ā	Area dominated by purple loosestrife	
Sediment/Shoreline Stabilization		X	1	ou .	no waterbody	
الله حسن Wildlife Habitat	X		4,7,11,13,20	>	Well established ATV trail may provided Amphibian Breeding Area	phibian Breeding Area
Recreation	X		1,11,12	\$	Well established ATV trail	
Educational/Scientific Value		X		- A	Access is restricted	
\chi Uniqueness/Heritage		X		\$	Wetland within maintained ROW	
Visual Quality/Aesthetics		X		Ω	Densely vegetated with poor views	
ES Endangered Species Habitat		X				
Other						

Notes: Densely vegetated isolated wetland with ephemeral upland drainage to the west over an ATV trail



					Wetland I.D. WA 39
Total area of wetland 0.93 Human made?		NoIs wetland part of a wildlife corridor?_	corridor?_	X or a "habitat island"?	Latitude 42.725083 Longitude -71.301894
Adjacent land useROW/Forest		Distance to neares	t roadway	Distance to nearest roadway or other development	Prepared by: AAF Date 10/9/14
Dominant wetland systems present PSS1E/PFO1E	ш	Contiguous und	eveloped b	Contiguous undeveloped buffer zone present Yes	Wetland Impact: Type See Table Area See Table
Is the wetland a separate hydraulic system? No	<u> </u>	not, where does the wetlan	d lie in the	If not, where does the wetland lie in the drainage basin?Upper/Middle	Evaluation based on:
How many tributaries contribute to the wetland?_	0	Wildlife & vegetation div	ersity/abur	& vegetation diversity/abundance (see attached list)	Office X Field X
Function/Value	Suitabilitv Y N	.v Rationale (Reference #)*	Principal Functior	ı(s)/Value(s)	Corps manual wetland delineation $^{\circ}$ completed? Y $_{\sim}$ N $_{\sim}$ Comments
groundwater Recharge/Discharge	X	3,4,15		Sandy soils suggesting minor groundwater recharge	recharge
Floodflow Alteration	X	2,18		Temporary matting proposed, no waterbody	, Al
Fish and Shellfish Habitat	X	-		No waterbody	
Sediment/Toxicant Retention	X	1,4		ATV trail within wetland causing erosion	
Nutrient Removal	×	6'8		No sources of excess nutrients in the vicinity of the wetland, potential exists	y of the wetland, potential exists
• Production Export	X	7,8,12		Area dominated by purple loosestrife	
Sediment/Shoreline Stabilization	X	-		no waterbody	
र्ी Wildlife Habitat	X	4,7,11,13,20	X	Well established ATV trail may provided Amphibian Breeding Area	nphibian Breeding Area
Recreation	X	1,11,12		Well established ATV trail	
Educational/Scientific Value	X			Access is restricted	
🜟 Uniqueness/Heritage	X			Wetland within maintained ROW	
Visual Quality/Aesthetics	X			Disturbed wetland	
ES Endangered Species Habitat	X				
Other					

Notes: Densely vegetated narrow PSS wetland swale draining southerly. Hydrology is seasonally saturated.



New England District					Wetland I.D. WA 40
otal area of wetland 0.19 Human made?	no	_Is wetland part of a wildlife corridor?_	fe corridor?_	No or a "habitat island"? Yes	
djacent land useROW/Cell Tower		Distance to nea	rest roadway	Distance to nearest roadway or other development	Prepared by: AAF Date 10/8/14
Oominant wetland systems present_PSS1E		Contiguous u	ndeveloped	Contiguous undeveloped buffer zone present Yes	vetiand impact: See TableAreaSee Table
sthe wetland a separate hydraulic system? Yes	JI	If not, where does the wet	land lie in the	re does the wetland lie in the drainage basin?N/A	Evaluation based on:
low many tributaries contribute to the wetland?	0	Wildlife & vegetation	diversity/abu	Wildlife & vegetation diversity/abundance (see attached list)	Office X Field X Corps manual wetland delineation
Function/Value	Suitabilitv Y N	.v Rationale (Reference #)*	Principal Function	ı(s)/Value(s)	completed? Y X NComments
Groundwater Recharge/Discharge	X	3,4,6,8,15	×	Isolated basin with evidence of variable water table	vater table
Floodflow Alteration	X	18		Isolated wetland depression with no inlet or outlet	or outlet
Fish and Shellfish Habitat	X	-		No waterbody associated with wetland	
Sediment/Toxicant Retention	X	3,4,5,7,9		No sources of sediments	
Nutrient Removal	X	3,5,6,7,8,9,10,11		Long water retention time	
Production Export	X	2,4,5,7,8,14		Potential for large amphibian breeding population	opulation
	×			Not associated with waterbody	
Wildlife Habitat	X	3,5,7,11,13,15,16,17,19,2	× ₹,61,	Potential for large amphibian breeding population	opulation
Recreation	×			Access is restricted	
Educational/Scientific Value	X			Access is restricted	
🖊 Uniqueness/Heritage	X	27		Wetland within maintained ROW	
Visual Quality/Aesthetics	X			ROW wetland	
ES Endangered Species Habitat	×				
Other					

Notes: Potential Vernal Pool - *Potentially excavated in the past*



New England District						Wetland I.D. WA 41
otal area of wetland 0.09 Human made?	Yes	Yes_ls wetland	tland part of a wildlife corridor?	orridor?	or a "habitat island"?X	Latitude 42.728351 Longitude -71.303921
Adjacent land useROW/Cell Tower			Distance to neares	t roadway o	Distance to nearest roadway or other development_100'	Prepared by: AAF Date 10/9/14
Dominant wetland systems present_PSS1E			Contiguous unde	eveloped b	Contiguous undeveloped buffer zone present Yes	Wetland Impact: Type_See TableArea_See Table
s the wetland a separate hydraulic system? Yes		_ If not,	If not, where does the wetland lie in the drainage basin?	d lie in the	drainage basin?	Evaluation based on:
how many tributaries contribute to the wetland?	0	>	Vildlife & vegetation div	ersity/abur	Wildlife & vegetation diversity/abundance (see attached list)	Office \times Field \times Corps manual wetland delineation
5 Function/Value	Suitabilitv Y N	oility I	Rationale (Reference #)*	Principal Function	ı(s)/Value(s)	completed? Y_X_ N Comments
groundwater Recharge/Discharge	X		5,15	X	Signs of variable water table, indicating possible recharge	ible recharge
Floodflow Alteration		X			No watercourse present	
Fish and Shellfish Habitat		X	_		No watercourse present	
Sediment/Toxicant Retention		X	4		No sources of sediments/toxicants in the vicinity of the wetland	inity of the wetland
Nutrient Removal		X	1,8,9		No sources of excess nutrients in the vicinity of the wetland, potential exists	of the wetland, potential exists
Production Export		X			No watercourse associated with wetland for export	export
↓ Sediment/Shoreline Stabilization	/ \	×			No waterbody associated with wetland	
Wildlife Habitat	/ \	X			High amount of human disturbance observed	p:
Recreation	/ \	X			Access is restricted	
Educational/Scientific Value	/ \	X			Access is restricted	
\chi Uniqueness/Heritage		X			Wetland within maintained ROW	
Visual Quality/Aesthetics		X	4		Thick vegetation with no primary viewing locations	cations
ES Endangered Species Habitat		X				
Other						

Notes: Wetland is an old borrow pit, partially filled with boulders/construction debris. Dominated by glossy buckthorn



				-		\Box
Total area of wetland 1.33 Human made?		NOIs wetland	etland part of a wildlife corridor?	orridor?	X or a "habitat island"?	Latitude 42.728952 Longitude -71.304903
Adjacent land use_ROW/Forest			Distance to nearest	roadway	Distance to nearest roadway or other development \sim 300 $^{\prime}$	Prepared by_AAF_Date_10/9/14
Dominant wetland systems present PSS/EM1E			Contiguous unde	d badola/	Contiguous undeveloped buffer zone present Yes	Wetland Impact: - Type See Table Area See Table
s the wetland a separate hydraulic system? No		_ If not	If not, where does the wetland lie in the drainage basin?_Upper	lie in the	drainage basin?_Upper	:00
Chareltow odt of other distance and the Chareltown odt	0		Wildlife 8. versetion divacity of independent of the	nide/viis	one of the contraction (i.e.)	Office Field
OW MAIN WELIAMS COMMINGE TO THE WELIAMS.			wildlile & vegetation dive	sity/abur	ומפוורה (זהה פונפרווהם ווזנ)	vetland
Function/Value	Suitability Y N	bility N	Rationale (Reference #)*	Principal Function	ı(s)/Value(s)	completed? Y NComments
▼ Groundwater Recharge/Discharge	X		3,4,15		Sandy soils suggesting minor groundwater recharge	recharge
Floodflow Alteration		X	2,18		Temporary matting proposed, no waterbody	λλ
Fish and Shellfish Habitat		X	-		No waterbody	
Sediment/Toxicant Retention	X		1,4		ATV trail within wetland causing erosion	
Nutrient Removal		X	6'8		No sources of excess nutrients in the vicinity of the wetland, potential exists	y of the wetland, potential exists
Production Export		X	7,8,12		Area dominated by purple loosestrife	
Sediment/Shoreline Stabilization		X	1		no waterbody	
∾ Wildlife Habitat	X		4,7,11,13,20	X	Well established ATV trail may provided Amphibian Breeding Area	nphibian Breeding Area
Recreation	X		1,11,12		Well established ATV trail	
Educational/Scientific Value		X			Access is restricted	
🙏 Uniqueness/Heritage		X			Wetland within maintained ROW	
Visual Quality/Aesthetics		X			Disturbed wetland	
ES Endangered Species Habitat		X				
Other						

Notes: Large scrub-shrub/emergent wetland extending/draining off ROW to the west. ATV trail crosses wetland on eastern side of the ROW



						Wetland LD WA 43
Total area of wetland 0.59 Human made?		ls w	NoIs wetland part of a wildlife corridor?_	×	or a "habitat island"?	Latitude 42.728412 Longitude -71.304577
Adjacent land use_ROW/Forest/Cell Tower			Distance to nearest roadway or other development_	oadway or other de	evelopment_~150'	Prepared by: AAF Date 10/9/14
Dominant wetland systems present_PSS1C			Contiguous undeveloped buffer zone present Yes	eloped buffer zone	present_Yes	Wetland Impact: _{Type} See Table A _{rea} See Table
Is the wetland a separate hydraulic system? No		If no	If not, where does the wetland	does the wetland lie in the drainage basin?Upper_	asin?Upper	on:
How many tributaries contribute to the wetland?_	0		_Wildlife & vegetation diversity/abundance (see attached list)	ity/abundance (see	e attached list)	Office Kield K
Function/Value	Suita Y	Suitabilitv Y N	Rationale (Reference #)*	Principal Function(s)/Value(s)		completed? Y_X_ N
groundwater Recharge/Discharge	X		3,4,15	Sandy soils	Sandy soils suggesting minor groundwater recharge	echarge
Floodflow Alteration		X	2,18	Temporary	Temporary matting proposed, no waterbody	
Fish and Shellfish Habitat		X	-	No waterbody	bdy	
Sediment/Toxicant Retention	X		1,4	Area surrou	inding wetland consists of well ve	Area surrounding wetland consists of well vegetated forested and scrub-shrub communities
Nutrient Removal		X	6'8	No sources	No sources of excess nutrients in the vicinity of the wetland, potential exists	of the wetland, potential exists
Production Export		X	7,8,12	Area domin	Area dominated by glossy buckthorn	
Sediment/Shoreline Stabilization		X	1	No waterbody	уbо	
€ Wildlife Habitat		X	4,7,11,13,20	Well establi	Well established ATV trail may provided Amphibian Breeding Area	ohibian Breeding Area
Recreation		X		Access is restricted	stricted	
Educational/Scientific Value		X		Access is restricted	stricted	
\chi Uniqueness/Heritage		X		Wetland wi	Wetland within maintained ROW	
Visual Quality/Aesthetics		X		Disturbed wetland	vetland	
ES Endangered Species Habitat		X				
Other						

Notes: Wetland dominated by glossy buckthorn. Hydrology is seasonal in both forested and ROW settings. Wetland drains west off ROW.



New England District					Wetland I.D WA 44	
Total area of wetland 3.13 Human made?	8		_Is wetland part of a wildlife corridor?_	orridor?X or a "habitat island"?		1
Adjacent land useROW/Forest/ Residential			Distance to nearest	Distance to nearest roadway or other development \sim 100 $^\circ$		
Dominant wetland systems present PSS1E, PFO5E, R2UB3	E, R2U	JB3	Contiguous undev	Contiguous undeveloped buffer zone present Yes	wetland impact: Type_See Table_Area_See Table_	ı
Is the wetland a separate hydraulic system? No		If not	t, where does the wetland	If not, where does the wetland lie in the drainage basin? _Upper/Middle		
How many tributaries contribute to the wetland?_	-		Wildlife & vegetation diver	Wildlife & vegetation diversity/abundance (see attached list)		
Function/Value	Suitabi Y N	Suitabilitv Y N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments Comments	
▼ Groundwater Recharge/Discharge	X		3,4,15	Sandy soils suggesting minor groundwater recharge	or groundwater recharge	
Floodflow Alteration		X	2,18	Temporary matting proposed, no waterbody	ed, no waterbody	
Fish and Shellfish Habitat		X	-	Stream is on the edge of RC	Stream is on the edge of ROW and will not be impacted	
Sediment/Toxicant Retention	X		1,4	ATV trail within wetland causing erosion	using erosion	
Nutrient Removal		X	6′8	No sources of excess nutrie	No sources of excess nutrients in the vicinity of the wetland, potential exists	
• Production Export		×	7,8,12	Area dominated by purple loosestrife	oosestrife	
Sediment/Shoreline Stabilization		X	-	no waterbody		
الله الله Wildlife Habitat	X		4,7,11,13,20	Well established ATV trail m	Well established ATV trail may provided Amphibian Breeding Area	
Recreation	X		1,11,12	Well established ATV trail		
Educational/Scientific Value		X		Access is restricted		
🜟 Uniqueness/Heritage		X		Wetland within maintained ROW	ROW	
Visual Quality/Aesthetics		X		Disturbed wetland		1
ES Endangered Species Habitat		X				
Other						

Notes: Large PSS complex draining westerly into the headwaters of a small unnamed intermittent stream.



						Wetland I.D. WA 45
Fotal area of wetland 2./9 Human made? _		No Is wetland	tland part of a wildlife corridor?	ridor?	X or a "habitat island"?	Latitude 42.735758 Longitude -71.310247
Adjacent land use_Forested/ROW/Substation_			Distance to nearest ro	adway o	Distance to nearest roadway or other development_200'+	Prepared by: AAF Date 10/9/14
Dominant wetland systems present_PSS1A, PSS/EM1A, PFO5A	M1A,	PF05A	Contiguous undeve	loped bu	Contiguous undeveloped buffer zone present Yes	Type_See TableArea_See Table
s the wetland a separate hydraulic system? No		_ If not,	where does the wetland lie	e in the o	If not, where does the wetland lie in the drainage basin?Upper/Mid	Evaluation based on:
How many tributaries contribute to the wetland?	_	>	Wildlife & vegetation diversity/abundance (see attached list)	ty/abun	dance (see attached list)	Office Field X
	Suitabilitv	oilitv		Principal		completed? Y_X_ N
Function/Value	>	z	(Reference #)*	Functic	Function(s)/Value(s) Cor	Comments
星 Groundwater Recharge/Discharge	X		5,15	X	Signs of variable water table, indicating possible recharge	sible recharge
Floodflow Alteration	X		1,2,3,6,7,8,9,18		Evidence of standing water and microtopog of watershed	Evidence of standing water and microtopography, ability to hold stormwater in upper portion of watershed
Fish and Shellfish Habitat		X	-		No watercourse present	
Sediment/Toxicant Retention		X	4		No sources of sediments/toxicants in the vicinity of the wetland	inity of the wetland
Nutrient Removal		X	1,8,9		No sources of excess nutrients in the vicinity of the wetland, potential exists	of the wetland, potential exists
Production Export	X		1,2,4,7		Large winterberry density	
Sediment/Shoreline Stabilization		X			No large flowing waterbody associated with wetland	wetland
الله حالم Wildlife Habitat	X		5,7,8,11,13,17		Abundant deer sign and songbirds	
Recreation		X			Access is restricted	
Educational/Scientific Value		X			Access is restricted	
🜟 Uniqueness/Heritage		X			Wetland within maintained ROW	
Visual Quality/Aesthetics		X	4		Thick vegetation with no primary viewing locations	cations
ES Endangered Species Habitat		\times				
Other						

Notes: Large PSS wetland with evidence of variable water table, possible groundwater recharge.

* Refer to backup list of numbered considerations.

Adapted from: U.S.Army Corps of Engineers - New England District. 1999. The Highway Methodology Workbook: Supplement: Wetland Functions and Values - A Descriptive Approach. NAEEP-360-1-30a.



otal area of wetland 8.37 Human made?	n O		Is wetland part of a wildlife corridor?	or?	yes or a "habitat island"? no	Wetland I.D. WA 46
plO/pa	odplair			vay or	other development_~150'	Date 1
Dominant wetland systems present R2UB/PUBH, PEM1H, PSS1E	PEM1	H, PS	S1E Contiguous undeveloped buffer zone present_Yes	nd pa	ffer zone present Yes	Wetland Impact: Type_See TableArea_See Table
s the wetland a separate hydraulic system? No		_ fn	If not, where does the wetland lie in the drainage basin?_Middle	the d	rainage basin?	Evaluation based on:
How many tributaries contribute to the wetland?_	-		Wildlife & vegetation diversity/abundance (see attached list)	punq	lance (see attached list)	Office X Field X Corps manual wetland delineation
Function/Value	Suitabilitv Y N	bility N	Rationale (Reference #)*	Principal Functior	ı(s)/Value(s)	completed? Y_X_ NComments
groundwater Recharge/Discharge		X	7,12		Evidence of variable water table	
Floodflow Alteration	X		1,3,4,5,6,8,9,10,11,13,144	X	Large wetland associated with Lower Golden Brook	l Brook
Fish and Shellfish Habitat	X		1,2,3,4,8,14,16,17	X	Perennial stream - Lower Golden Brook	
Sediment/Toxicant Retention	X		3,10,11,12,13,14,15,16	X	PSS Floodplain allows for sedimentation	
Nutrient Removal	X		1,3,5,6,8,9,10,11,12,14	X	Densely vegetated floodplain allows for nutrient uptake	ient uptake
Production Export	X		2,4,5,8,9,10,11	ш	Export materials through Lower Golden Brook	ye
	X		8,9,12,14,15		Dense woody vegetation throughout floodplain	lain
ک Wildlife Habitat	X		1,4,5,6,7,9,11,13,16,19,21	X	Large undeveloped wetland corridor within developed area	developed area
Recreation		X	2	1	Access is restricted	
Educational/Scientific Value		X	25	1	Access is restricted	
\chi Uniqueness/Heritage	X		1,4,5,12,19,27		Wetland within maintained ROW and hayfield	p
Visual Quality/Aesthetics	X		1,6,7,8,12	_	Large open wetland	
ES Endangered Species Habitat		X				
Other						

Notes: Large floodplain wetland associated with Lower Golden Brook - Prime Wetland



New England District						Wetland ID WA 48
otal area of wetland 1.96 Human made?	8	ls wetland	tland part of a wildlife corridor?_	orridor?	X or a "habitat island"?	Latitude 42.747848 Longitude -71.319819
Adjacent land useROW/Forest			Distance to nearest	roadway	Distance to nearest roadway or other development_~300'	Prepared by: AAF Date 10/9/14
Dominant wetland systems present_PSS1E			Contiguous unde	veloped b	_ Contiguous undeveloped buffer zone present_Yes	Wetiand Impact: Type_See TableArea_See Table
s the wetland a separate hydraulic system? No		If not,	, where does the wetlanc	lie in the	If not, where does the wetland lie in the drainage basin? Upper/Middle	Evaluation based on:
How many tributaries contribute to the wetland?_	0		Wildlife & vegetation diversity/abundance (see attached list)	rsity/abur	dance (see attached list)	Office X Field X Corps manual wetland delineation
Function/Value	Suita Y I	Suitabilitv Y N	Rationale (Reference #)*	Principal Functior	ı(s)/Value(s)	completed? Y X N
Groundwater Recharge/Discharge	X		3,4,15		Sandy soils suggesting minor groundwater recharge	echarge
Floodflow Alteration		X	2,18		Temporary matting proposed, no waterbody	
Fish and Shellfish Habitat		X	-		No waterbody	
Sediment/Toxicant Retention	X		1,4		ATV trail within wetland causing erosion	
Nutrient Removal		X	6'8		No sources of excess nutrients in the vicinity of the wetland, potential exists	of the wetland, potential exists
Production Export		X	7,8,12		Area dominated by purple loosestrife	
Sediment/Shoreline Stabilization		X	-		no waterbody	
ે Wildlife Habitat	X		4,7,11,13,20	X	Well established ATV trail may provided Amphibian Breeding Area	ohibian Breeding Area
Recreation	X		1,11,12		Well established ATV trail	
Educational/Scientific Value		X			Access is restricted	
🙏 Uniqueness/Heritage		X			Wetland within maintained ROW	
Visual Quality/Aesthetics		X			Disturbed wetland	
ES Endangered Species Habitat		X				
Other						

Notes: Wetland crossed multiple times by ATV trail. Flows off site to the west.



Total area of wetland 1.51 Human made?		No Is wetland	tland part of a wildlife corridor?	rridor	X or a "habitat island"?	Wetland I.D. WA 49
ed/RO			Distance to nearest r	oadway.	ther	Prepared by: AAF Date 10/9/14
Dominant wetland systems present_PSS1E, PFO1E	ш		Contiguous undev	, eloped b	Contiguous undeveloped buffer zone present Yes	Wetland Impact: Type See Table Area See Table
s the wetland a separate hydraulic system? No		_ lf not,	, where does the wetland	ie in the	If not, where does the wetland lie in the drainage basin?Upper/Mid	on:
How many tributaries contribute to the wetland?_	0	>	Wildlife & vegetation diversity/abundance (see attached list)	sity/abur	idance (see attached list)	Office FieldCorps manual_wetland delineation
Function/Value	Suitabilitv Y N	bilitv N	Rationale (Reference #)*	Principal Functior	ı(s)/Value(s)	completed? Y X N
groundwater Recharge/Discharge	X		5,15		Signs of variable water table, indicating possible recharge	ssible recharge
Floodflow Alteration	X		1,2,3,6,7,8,9,18		Evidence of standing water and microtopography	graphy
Fish and Shellfish Habitat		X	_		No watercourse present	
Sediment/Toxicant Retention		X	4		No sources of sediments/toxicants in the vicinity of the wetland	cinity of the wetland
Nutrient Removal		X	1,8,9		No sources of excess nutrients in the vicinity of the wetland, potential exists	y of the wetland, potential exists
Production Export	X		1,2,4,7	×	Large winterberry and/or highbush blueberry density	rry density
Sediment/Shoreline Stabilization		×			No large flowing waterbody associated with wetland	h wetland
الله حسن Wildlife Habitat	X		5,7,8,11,13,17		Abundant deer sign and songbirds	
Recreation		X			Access is restricted	
Educational/Scientific Value		X			Access is restricted	
\chi Uniqueness/Heritage		X			Wetland within maintained ROW	
Visual Quality/Aesthetics		X	4		Thick vegetation with no primary viewing locations	ocations
ES Endangered Species Habitat		×				
Other						

Notes: PSS wetland drains off site to the west. Mineral soils



Total area of wetland 1.63 Human made?		No Is wetland	etland part of a wildlife corridor?	rridor?	X or a "habitat island"?	Wetland I.D. WA 50
oreste			Distance to nearest r	oadway c	Distance to nearest roadway or other development >300'	
Dominant wetland systems present PSS1E			Contiguous undev	oloped b	Contiguous undeveloped buffer zone present Yes	Wetland Impact: Type See Table Area See Table
Is the wetland a separate hydraulic system? Yes		lf not	If not, where does the wetland lie in the drainage basin? $\overline{\ \ \ \ \ \ \ \ }$	ie in the	drainage basin?	on:
How many tributaries contribute to the wetland?	0		Wildlife & vegetation diversity/abundance (see attached list)	itv/abun	dance (see attached list)	Office X Field X
	4		Rationale	Princina	e	Corps manual wetland delineation completed? $Y \times N$
Function/Value	Sulta Y I	Sultability Y N	(Reference #)*	Function	n(s)/Value(s)	Comments
groundwater Recharge/Discharge	X		3,5,15		Variable water table with sphagnum moss suggests recharge	uggests recharge
Floodflow Alteration	X		1,2,3,5,6,9,18		Large wetlands with dense vegetation may hold stormwater	hold stormwater
Fish and Shellfish Habitat		X	-		No waterbody present	
Sediment/Toxicant Retention		X	8		Wetland hydrology is seasonally intermittent with no known sources	nt with no known sources
Nutrient Removal	X		1,5,7,8,9,11		Potential for nutrient removal exists	
Production Export		X	4,5,7		Wetland used more for wildlife shelter than food	food
Sediment/Shoreline Stabilization		X			No large flowing waterbody associated with wetland	n wetland
∾ Wildlife Habitat	X		1,3,4,5,7,11,13,15,17	X	Large deer, redtail hawks, and a variety of songbirds observed	ongbirds observed
Recreation		X			Access is restricted	
Educational/Scientific Value		X			Access is restricted	
🙏 Uniqueness/Heritage		X			Wetland within maintained ROW and hayfield	ple
Visual Quality/Aesthetics		X			Thick vegetation with no good viewing locations	ttons
ES Endangered Species Habitat		X				
Other						

Notes: Large PSS with undulating topography and pits with sphagnum moss. Deer beds abundant.



New Ligiana District							Wetland LD WA 52
Total area of wetland_0.39 Human made? _	- 1	ls we	<u>yes</u> Is wetland part of a wildlife corridor?_	rridor?_	no	or a "habitat island"? <u>no</u>	Latitude 42.756575 Longitude -71.326857
Adjacent land use_ROW/hayfield/Forested			Distance to nearest roadway or other development	oadway	or other	development_~50'	Prepared by: AAF Date 10/9/14
Dominant wetland systems present_PSS1E			Contiguous undeveloped buffer zone present Yes	eloped	buffer zo	ne present Yes	Wetland Impact: Type_See TableArea_See Table
s the wetland a separate hydraulic system? No		If not	If not, where does the wetland lie in the drainage basin?Upper_	lie in the	e drainag	e basin?_Upper	Evaluation based on:
How many tributaries contribute to the wetland?_	0		Wildlife & vegetation diversity/abundance (see attached list)	sity/abu	ındance (see attached list)	Office Field X
Function/Value	Suitabilitv Y N	abilitv N	Rationale (Reference #)*	Principal Function	pal ion(s)/\	Principal Function(s)/Value(s) Con	Corps manual wetland delineation completed? Y_X N N
groundwater Recharge/Discharge		X					
Floodflow Alteration	X		2,3,6,8,9,18		hayfield	hayfield ditch adjacent to stone wall	
Fish and Shellfish Habitat		X	-		No wate	No waterbody present	
Sediment/Toxicant Retention		X	4		Wetland	Wetland hydrology is seasonally intermittent with no known sources	with no known sources
Nutrient Removal	X		4,7,8,9,11	X	Potentia	Potential for nutrient removal exists from hayfield fertilizer	field fertilizer
Production Export		X	1,4,7		Evidence	Evidence of wildlife use	
Sediment/Shoreline Stabilization		X			No wate	No waterbody present	
الله الله Wildlife Habitat	X		4,5,7,9,13,14,15		Fringe h	Fringe habitat along the edge of a hayfeild	
Recreation		X			Access is	Access is restricted	
Educational/Scientific Value		X			Access is	Access is restricted	
\chi Uniqueness/Heritage		X			Wetland	Wetland within maintained ROW and hayfield	
Visual Quality/Aesthetics		X	1,12		Thick ve	Thick vegetation with no good viewing locations	ons
ES Endangered Species Habitat		X					
Other							

Notes: Scrub-shrub wetland swale along the edge of a hayfield.



Total area of wetland 0.05 Human made?		NoIs wetland	etland part of a wildlife corridor?_	:orridor?_	X or a "habitat island"?	Wetland I.D. OK2 Latitude 42.758059 Ongitude -71.327892
Adjacent land use Hayfield			Distance to neares	roadway	Distance to nearest roadway or other development_~300'	
Dominant wetland systems present PEM1E			Contiguous unde	veloped k	Contiguous undeveloped buffer zone present Yes	Type_See TableArea_See Table
s the wetland a separate hydraulic system? No		_ If not	t, where does the wetland	l lie in the	If not, where does the wetland lie in the drainage basin?Upper	Evaluation based on:
How many tributaries contribute to the wetland?_	0		Wildlife & vegetation dive	ersity/abu	Wildlife & vegetation diversity/abundance (see attached list)	Office X Field X Corps manual wetland delineation
Function/Value	Suitabilitv Y N	oilitv I	Rationale (Reference #)*	Principal Function	Principal Function(s)/Value(s)	completed? Y × N
groundwater Recharge/Discharge		X	5			
Floodflow Alteration		X	1,2		No waterbody present	
Fish and Shellfish Habitat		X			No waterbody present	
Sediment/Toxicant Retention		X			Wetland hydrology is seasonally intermittent	nittent
Nutrient Removal	X		1,4,8,9,11	X	Removal of excess nutrients from application of fertilizer to feilds	ication of fertilizer to feilds
Production Export	X		3,7,12,13		high density of flowering plants and commercial use of hay	ommercial use of hay
Sediment/Shoreline Stabilization		X			No large flowing waterbody associated with wetland	d with wetland
Wildlife Habitat		X	5,7,19		Wetland is periodically mowed	
Recreation		X			Access is restricted	
Educational/Scientific Value		X			Access is restricted	
Vniqueness/Heritage		X			Wetland within maintained ROW and hayfield	nayfield
Visual Quality/Aesthetics	/ \	X	7,12		Wetland is periodically mowed and blends with surrounding feilds	ends with surrounding feilds
ES Endangered Species Habitat	/ \	X				
Other						

Notes: Narrow wetland swale through Active hayfield



New England District						Wetland ID WA 53
Fotal area of wetland 1.31 Human made?	2	ls wetland	tland part of a wildlife corridor?_	corridor?_	X or a "habitat island"?	Latitude 42.758059 Longitude -71.327892
Adjacent land useOld Field/Hayfield			Distance to neares	t roadway	Distance to nearest roadway or other development_~600′	Prepared by: AAF Date 10/9/14
Dominant wetland systems present_PEM1E, PEM1E	ш		Contiguous und	eveloped k	Contiguous undeveloped buffer zone present Yes	wetiand impact: Type_See TableArea_See Table
s the wetland a separate hydraulic system? No		_ If not,	where does the wetlan	d lie in the	If not, where does the wetland lie in the drainage basin? Upper	Evaluation based on:
How many tributaries contribute to the wetland?	0	>	Vildlife & vegetation div	ersity/abu	Wildlife & vegetation diversity/abundance (see attached list)	Office Field
S Function/Value	Suitabilitv Y N	oilit<	Rationale (Reference #)*	Principal Function	ı(s)/Value(s)	completed? $Y = X$ N.——Comments
groundwater Recharge/Discharge	, ,	×	5			
Floodflow Alteration		X	1,2		No waterbody present	
Fish and Shellfish Habitat		X			No waterbody present	
Sediment/Toxicant Retention	, ,	X			Wetland hydrology is seasonally intermittent	
Nutrient Removal	X		1,4,8,9,11	X	Removal of excess nutrients from application of fertilizer to feilds	of fertilizer to feilds
Production Export	X		3,7,12,13		high density of flowering plants and commercial use of hay	cial use of hay
↓ Sediment/Shoreline Stabilization	, \	X			No large flowing waterbody associated with wetland	wetland
الله الله Wildlife Habitat		X	5,7,19		Wetland is periodically mowed	
Recreation		X			Access is restricted	
Educational/Scientific Value	, ,	X			Access is restricted	
🙏 Uniqueness/Heritage	, ,	X			Wetland within maintained ROW and hayfield	
Visual Quality/Aesthetics	, ,	X	7,12		Wetland is periodically mowed and blends with surrounding feilds	ith surrounding feilds
ES Endangered Species Habitat		X				
Other						

Notes: Old field with shrubs starting to populate the area.



New Erigianu District					Wetland I.D. WA 54
otal area of wetland 0.39 Human made?	yes	_Is wetland part of a wildlife corridor?_	corridor?_	no or a "habitat island"? no	Latitude 42.758532 Longitude -71.328546
djacent land useROW/hayfield/Forested		Distance to neares	t roadway	Distance to nearest roadway or other development_~50'	Prepared by: AAF Date 10/9/14
ominant wetland systems present_PFO1C, PSS1E	<u> </u>	Contiguous unde	veloped b	_ Contiguous undeveloped buffer zone present Yes	Wetland Impact: Type_See TableArea_See Table
the wetland a separate hydraulic system? No	If n	If not, where does the wetland	d lie in the	re does the wetland lie in the drainage basin?_Upper	Evaluation based on:
low many tributaries contribute to the wetland?	0	_Wildlife & vegetation div	ersity/abur	Wildlife & vegetation diversity/abundance (see attached list)	Office X Field X Corps manual wetland delineation
Function/Value	Suitabilitv Y N	Rationale (Reference #)*	Principal Functior	ı(s)/Value(s)	completed? Y X N Comments
T Groundwater Recharge/Discharge	X				
Floodflow Alteration	×	2,3,6,8,9,18		hayfield ditch adjacent to stone wall	
Fish and Shellfish Habitat	×	-		No waterbody present	
Sediment/Toxicant Retention	×	4		Wetland hydrology is seasonally intermittent with no known sources	t with no known sources
Nutrient Removal	×	4,7,8,9,11	×	Potential for nutrient removal exists from hayfield fertilizer	yfield fertilizer
Production Export	×	1,4,7		Evidence of wildlife use	
↓ Sediment/Shoreline Stabilization	×			No waterbody present	
Wildlife Habitat	×	4,5,7,9,13,14,15		Fringe habitat along the edge of a hayfeild	
Recreation	×			Access is restricted	
Educational/Scientific Value	×			Access is restricted	
🖊 Uniqueness/Heritage	×			Wetland within maintained ROW and hayfield	p
Visual Quality/Aesthetics	X	1,12		Thick vegetation with no good viewing locations	ions
ES Endangered Species Habitat	X				
Other					

Notes: Thickly vegetated reclaimed farm field.



New England District						Wetland I.D. WA 54A
Fotal area of wetland 0.82 Human made?	8	_ls wetland	tland part of a wildlife corridor?_	:orridor?_	X or a "habitat island"?	- Latitude 42.759813 Longitude -71.329617
Adjacent land use_ Hayfield			Distance to neares	roadway	Distance to nearest roadway or other development_~350'	Prepared by: AAF Date 10/9/14
Dominant wetland systems present_PEM1E			Contiguous unde	veloped	Contiguous undeveloped buffer zone present Yes	Wetland Impact: Type_See Table_Area_See Table_
is the wetland a separate hydraulic system? No		_ lf not,	where does the wetlan	l lie in the	If not, where does the wetland lie in the drainage basin? Upper	Evaluation based on:
How many tributaries contribute to the wetland?_	0	>	Vildlife & vegetation div	ersity/abu	Wildlife & vegetation diversity/abundance (see attached list)	Office Field
Function/Value	Suitabilitv Y N	<u>≡</u> _	Rationale (Reference #)*	Principal Function	ı(s)/Value(s)	completed? Y X N
Groundwater Recharge/Discharge		×	5			
Floodflow Alteration		X	1,2		No waterbody present	
Fish and Shellfish Habitat		×			No waterbody present	
Sediment/Toxicant Retention		×			Wetland hydrology is seasonally intermittent	ent
Nutrient Removal	X		1,4,8,9,11	X	Removal of excess nutrients from application of fertilizer to feilds	tion of fertilizer to feilds
Production Export	X		3,7,12,13	X	high density of flowering plants and commercial use of hay	mercial use of hay
Sediment/Shoreline Stabilization		X			No large flowing waterbody associated with wetland	ith wetland
الله حمد Wildlife Habitat		X	5,7,19		Wetland is periodically mowed	
Recreation		X			Access is restricted	
Educational/Scientific Value		X			Access is restricted	
Vniqueness/Heritage		X			Wetland within maintained ROW and hayfield	field
Visual Quality/Aesthetics	/\	X	7,12		Wetland is periodically mowed and blends with surrounding feilds	is with surrounding feilds
ES Endangered Species Habitat	/\	X				
Other						

Notes: Active Hayfeild



Total area of weatland 1.68		3	Yes Is wat and not a suildlife corridor?		X X Subabitatic Subabitation	يرّ ا
		2	Distance to nearest roa	dway or	ther	Prepared by: AAF Date 10/9/14
Dominant wetland systems present_PSS/EM1E, PUBH	ЛВН		Contiguous undevelo	, ped bu	Contiguous undeveloped buffer zone present Yes	Wetland Impact: Type See Table Area See Table
s the wetland a separate hydraulic system? No		_ If no	If not, where does the wetland lie in the drainage basin?Upper_	in the d	rainage basin?_Upper	Evaluation based on:
How many tributaries contribute to the wetland?_	2		Wildlife & vegetation diversity/abundance (see attached list)	//abunc	lance (see attached list)	Office X Field X
Function/Value	Suitabilitv Y N	bilitv N	Rationale P (Reference #)* Fi	Principal Function	i(s)/Value(s)	Corps manual wetland delineation $V = V = V$
groundwater Recharge/Discharge	X		3,4,6,7,9,10,13,14	X	Evidence of variable water table, signs of discharge in the lower portion of the old pit	charge in the lower portion of the old pit
Floodflow Alteration	X		2,3,4,6,7,8,9,13,14,15		Ponded water with a restricted outlet	
Fish and Shellfish Habitat	, ,	X	-	01	Stream contains too low of flow to support fish	ish
Sediment/Toxicant Retention	X		1,3,5,7,10,14	01	Slow moving water within deep sandy soils	
Nutrient Removal	, ,	X	2,5		Ponded water, able to remove excess nutrients from nearby fields	nts from nearby fields
Production Export	, ,	X	4		Open water present, evidence of wildlife use	
↓ Sediment/Shoreline Stabilization	, ,	X	6		No large flowing waterbody associated with wetland	wetland
Wildlife Habitat	X		6,9,10,11,13,15,16,17		Abundant deer sign, crayfish, aquatic beetles, amphibian breeding area	is, amphibian breeding area
Recreation	, ,	X				
Educational/Scientific Value	, ,	X				
🖊 Uniqueness/Heritage	, ,	X	4,5,6		Within old gravel pit	
Visual Quality/Aesthetics	, ,	X			Thick vegetation with no primary viewing locations	cations
ES Endangered Species Habitat	, ,	X				
Other						

Notes: Naturalized gravel pits



otal area of wetland 0.21 Hilman made?		2	No Is wetland part of a wildlife corridor?	rridor2	X x or a "hahitat island"?	2
=d/RO		: ! 	Dietande of applean		t d	Prepared by: AAF Date 10/9/14
1			Claratic to iterate and iterat		A Carles according to	
Joniniant Wetland Systems present			contiguous undev	a padola	Colligations dildeveloped buller zone present	Type_ see rable Area_ see rable
s the wetland a separate hydraulic system? Yes		_ 	If not, where does the wetland lie in the drainage basin?	ie in the	drainage basin?	Evaluation based on:
How many tributaries contribute to the wetland?_	0		_Wildlife & vegetation diver	sity/abun	& vegetation diversity/abundance (see attached list)	Office FieldX
	Suitability	oilitv	Rati	Principal	al	Corps manual wetland delineation completed? Y_X_ N
Function/Value	>	Z		Function	Function(s)/Value(s) Cor	Comments
星 Groundwater Recharge/Discharge		X	5,15	X	Signs of variable water table, indicating possible recharge	sible recharge
Floodflow Alteration	X		1,2,3,6,7,8,9,18		Evidence of standing water and microtopography	raphy
Fish and Shellfish Habitat		X	-		No watercourse present	
Sediment/Toxicant Retention		X	4		No sources of sediments/toxicants in the vicinity of the wetland	inity of the wetland
Nutrient Removal		X	1,8,9		No sources of excess nutrients in the vicinity of the wetland, potential exists	of the wetland, potential exists
Production Export		X	1,2,4,7		High vegetation density and production	
Sediment/Shoreline Stabilization		X			No large flowing waterbody associated with wetland	wetland
⊘ Wildlife Habitat	X		5,7,8,11,13,17		Abundant deer sign and songbirds	
Recreation		X			Access is restricted	
Educational/Scientific Value		X			Access is restricted	
\chi Uniqueness/Heritage		X			Wetland within maintained ROW	
Visual Quality/Aesthetics		X	4		Thick vegetation with no primary viewing locations	ıcations
ES Endangered Species Habitat		X				
Other						

Notes: Drains into excavated pond next to driveway



			-		:	ق آ
otal area of wetland 0.38 Human made?		<u> </u> 8 ₩	NOIs wetland part of a wildlife corridor?_		X or a "habitat island"?	Latitude 42.768265 Longitude -71.337128
Adjacent land use Forested/ROW			Distance to nearest roadway or other development	oadway or	other development ~75'	Prepared by: Date 10/9/14
Oominant wetland systems present_PSS1E, PEM1E	ш		Contiguous undeve	nd bədol	Contiguous undeveloped buffer zone present. Yes	Wetland Impact: _{Type} See Table Area See Table
s the wetland a separate hydraulic system? No		_ If no	If not, where does the wetland lie in the drainage basin?Upper_	e in the dı	rainage basin?Upper	: :uo
Charley of the charles of the charle	O		الارتزام موناءهم ومورده وأزالوانها	bande/v#i	(+sil bod sette cos) con	Office Field
NOW IIIally tilbutailes collisibute to the Wetlailu?_				ıty/abund	« vegetation diversity/abunidance (see attached list)	Corps manual wetland delineation
Function/Value	Suitability Y N	bility N	Rationale (Reference #)*	Principal Function	ı(s)/Value(s)	Comments
groundwater Recharge/Discharge		X	5,15	05	Signs of variable water table, indicating possible recharge	ible recharge
Floodflow Alteration	X		1,2,3,6,7,8,9,18	ш	Evidence of standing water and microtopography	гарһу
Fish and Shellfish Habitat		X	-		No watercourse present	
Sediment/Toxicant Retention		X	4		No sources of sediments/toxicants in the vicinity of the wetland	nity of the wetland
Nutrient Removal		X	1,8,9	2	No sources of excess nutrients in the vicinity of the wetland, potential exists	of the wetland, potential exists
Production Export		X	1,2,4,7		High vegetation density and production	
Sediment/Shoreline Stabilization		X		2	No large flowing waterbody associated with wetland	wetland
Wildlife Habitat	X		5,7,8,11,13,17	4	Abundant deer sign and songbirds	
Recreation		X		4	Access is restricted	
Educational/Scientific Value		X		4	Access is restricted	
\chi Uniqueness/Heritage		X		>	Wetland within maintained ROW	
Visual Quality/Aesthetics		X	4	F	Thick vegetation with no primary viewing locations	cations
ES Endangered Species Habitat		X				
Other						

Notes: Narrow drainage from excavated pond



							Wetland I.D. 60	ı
Total area of wetland 0.01 Human made? _	8	ls wetland	etland part of a wildlife corridor?_	orridor?_	Yes	or a "habitat island"?No	Latitude_42.775417_ Longitude71.344786	
Adjacent land use_Roadway, ROW, Residential_			Distance to nearest roadway or other development_	roadway	or other de	velopment_50 ft	Prepared by: LGJ Date 04/09/2015	
Dominant wetland systems present_PF01E			Contiguous undeveloped buffer zone present No	veloped k	ouffer zone		Wetland Impact: _{Type_} See TableArea_ See Table	ı
Is the wetland a separate hydraulic system? No		_ If not	If not, where does the wetland lie in the drainage basin?Middle_	l lie in the	drainage b		Evaluation based on:	
How many tributaries contribute to the wetland?	—		Wildlife & venetation diversity/ahundance (see attached list)	rsitv/ahu	as) asuepu	attached list)	Office Field	
				1315	ימנו (יפר		al wetland	
	Suitability	oilitv	Rationale	Principal	oal		completed? Y_X_ N	
Function/ value	<u>~</u> ≻	z	(Kererence #)"	runci	runcuon(s)/ value(s)		Comments	
▼ Groundwater Recharge/Discharge	X		2, 4, 5, 7, 15		Wetland as: near an aqu	Wetland associated with an perennial stream leading to near an aquifer boundary and wellhead protection area	Wetland associated with an perennial stream leading to Beaver Brook watercourse. Located near an aquifer boundary and wellhead protection area.	
Floodflow Alteration		X	6'2		Receives ex	cess floodwaters from the surroun	Receives excess floodwaters from the surrounding uplands during large precipitation events.	
Fish and Shellfish Habitat		X			Wetland do	Wetland does not contain suitable fish or shellfish habitat.	lfish habitat.	
Sediment/Toxicant Retention		X	1, 2,10, 16		Wetland bo	Wetland borders perennial stream, dense scrub-shrub vegetation present.	ub-shrub vegetation present.	Ι
Nutrient Removal		X	4,8		Wetland bo	Wetland borders perennial stream, dense scrub-shrub vegetation present.	ub-shrub vegetation present.	
Production Export		\times	7		Wetland no	Wetland not effective in producing food or usable products.	able products.	
Sediment/Shoreline Stabilization	X		2, 3, 4, 12	X	Wetland bo	Wetland borders perennial stream. Dense vegetation present.	letation present.	ı
२० Wildlife Habitat	X		6, 7, 8, 13	X	Located in	Located in a NH F&G tier 3 habitat top-ranked in region.	I in region.	
Recreation		X			Wetland do	Wetland does not provide recreational opportunities.	tunities.	
Educational/Scientific Value		X			Wetland is 1	Wetland is not effective as a site for outdoor learning or research.	earning or research.	ı
🜟 Uniqueness/Heritage		X	-		Wetland is i	not unique; exhibits characteristics	Wetland is not unique; exhibits characteristics typical to a utility ROW environment.	
Visual Quality/Aesthetics		\times			Wetland do	Wetland does not hold aesthetic or visual qualities.	lities.	

Notes:

Other

ES Endangered Species Habitat



New England District					Wetland I.D. 61
otal area of wetland 0.26 Human made?	8	_Is wetland part of a wildlife corridor?_	- 1	Yes or a "habitat island"? No	Latitude 42.775891 Longitude -71.344928
djacent land use_Roadway, ROW, Residential		Distance to nearest	roadway	Distance to nearest roadway or other development_200 ft.	Prepared by: LGJ Date 04/09/2015
ominant wetland systems present_PFO1E, PEM1E	1E	Contiguous unde	veloped b	Contiguous undeveloped buffer zone present No	Wetland Impact: Type_See TableArea_See Table
s the wetland a separate hydraulic system? No	If no	If not, where does the wetland	lie in the	e does the wetland lie in the drainage basin? Middle	Evaluation based on:
low many tributaries contribute to the wetland?	-	Wildlife & vegetation diversity/abundance (see attached list)	rsitv/abur	ndance (see attached list)	Office FieldX
	Suitability	Rationale	Principal	oal	Corps manual wetland delineation completed? Y \times N
Function/Value	Z >	(Reference #)*	Functi	Function(s)/Value(s)	Comments
星 Groundwater Recharge/Discharge	×	2, 4, 5, 7, 15		Wetland associated with an intermittent stream leading near an aquifer boundary and wellhead protection area.	Wetland associated with an intermittent stream leading to Beaver Brook watercourse. Located near an aquifer boundary and wellhead protection area.
Floodflow Alteration	X	6'2		Receives excess floodwaters from the surrou	Receives excess floodwaters from the surrounding uplands during large precipitation events.
Fish and Shellfish Habitat	×			Wetland does not contain suitable fish or shellfish habitat.	ellfish habitat.
Sediment/Toxicant Retention	×	1, 2,10, 16		Wetland borders intermittent stream, dense scrub-shrub vegetation present.	scrub-shrub vegetation present.
Nutrient Removal	×	4,8		Wetland borders intermittent stream, dense scrub-shrub vegetation present.	e scrub-shrub vegetation present.
Production Export	×	7		Wetland not effective in producing food or usable products.	usable products.
↓ Sediment/Shoreline Stabilization	×	2, 3, 4, 12	X	Wetland borders intermittent stream. Dense vegetation present.	s vegetation present.
ک Wildlife Habitat	×	6, 7, 8, 13	X	Located in a NH F&G tier 3 habitat top-ranked in region.	ed in region.
Recreation	×			Wetland does not provide recreational opportunities.	ortunities.
Educational/Scientific Value	×			Wetland is not effective as a site for outdoor learning or research.	learning or research.
\chi Uniqueness/Heritage	×			Wetland is not unique; exhibits characteristics typical to a utility ROW environment.	cs typical to a utility ROW environment.
Visual Quality/Aesthetics	×			Wetland does not hold aesthetic or visual qualities.	ualities.
ES Endangered Species Habitat					
Other					

Notes:



Total area of wetland 0.167 Human made?		No Is wetland	tland part of a wildlife corridor?		X or a "habitat island"?	Wetland I.D. WA 62 Stinda 42.777623 Ondituda -71.346381
rest			Distance to nearest	roadway or	Distance to nearest roadway or other development >600'	
Dominant wetland systems present_PSS1E			Contiguous unde	veloped bu	Contiguous undeveloped buffer zone present Yes	Wetland Impact: Type See Table Area See Table
s the wetland a separate hydraulic system? No		_ If not,	, where does the wetland	lie in the d	If not, where does the wetland lie in the drainage basin?Upper/Middle	on:
How many tributaries contribute to the wetland?_	0		Wildlife & vegetation diversity/abundance (see attached list)	rsity/abunc	lance (see attached list)	Office X Field X Corps manual wetland delineation
Function/Value	Suitabilitv Y N	bilitv N	Rationale (Reference #)*	Principal Functior	ı(s)/Value(s)	completed? Y X N
Groundwater Recharge/Discharge	X		3,4,15	01	Sandy soils suggesting minor groundwater recharge	echarge
Floodflow Alteration		X	2,18		Temporary matting proposed, no waterbody	,
Fish and Shellfish Habitat		X	-		No waterbody	
Sediment/Toxicant Retention	X		1,4		ATV trail within wetland causing erosion	
Nutrient Removal		X	8,9		No sources of excess nutrients in the vicinity of the wetland, potential exists	of the wetland, potential exists
Production Export		X	7,8,12		Area dominated by purple loosestrife	
Sediment/Shoreline Stabilization		X	1	_	no waterbody	
ે Wildlife Habitat		X	4,7,11,13,20		Well established ATV trail may provided Amphibian Breeding Area	phibian Breeding Area
Recreation	X		1,11,12		Well established ATV trail	
Educational/Scientific Value		X			Access is restricted	
🙏 Uniqueness/Heritage		X			Wetland within maintained ROW	
Visual Quality/Aesthetics		X			Disturbed wetland	
ES Endangered Species Habitat		×				
Other						

Notes: Densely vegetated narrow PSS wetland swale draining westerly.



New England Mannet							Wetland I.D. 64	
otal area of wetland 0.27 Human made?	8	ls wetland	tland part of a wildlife corridor?_	- 1	Noora "habitat island"?No	1	.780615_Longitude_	-71.349642
Adjacent land use_Roadway, ROW, Residential			Distance to nearest r	oadwayo	Distance to nearest roadway or other development_ \sim 300 ft.	~300 ft.	JDate	12/19/2014
Dominant wetland systems present PSS1E			Contiguous undev	eloped b	Contiguous undeveloped buffer zone present No		Wetland Impact: _{Type_} See TableArea_ See T	See Table
s the wetland a separate hydraulic system? No		_ If not,	If not, where does the wetland lie in the drainage basin?Middle	ie in the	drainage basin? <u>Midd</u>	<u>e</u>	Evaluation based on:	
4ow many tributaries contribute to the wetland?_	-	>	Wildlife & vegetation diversity/abundance (see attached list)	sity/abun	dance (see attached lis	ţ)	Office Kield K	
Function/Value	Suitabilitv Y N		Rationale (Reference #)*	Principal Functior	Principal Function(s)/Value(s)		Corps manual wetland delineation completed? Y × N Comments	
▼ Groundwater Recharge/Discharge	X		2, 4, 5, 7, 15		Wetland associated with an perennial stream leading to B. within an aquifer boundary and wellhead protection area.	n perennial stream y and wellhead pro	Wetland associated with an perennial stream leading to Beaver Brook watercourse. Located within an aquifer boundary and wellhead protection area.	ted
Floodflow Alteration	X		5, 7, 9		May receive excess floodwaters from perennial str Function low due to size and sloping topography.	aters from perenni nd sloping topogra	May receive excess floodwaters from perennial stream during large precipitation events. Function low due to size and sloping topography.	
Fish and Shellfish Habitat		X			Wetland does not contain suitable fish or shellfish habitat.	suitable fish or she	ilfish habitat.	
Sediment/Toxicant Retention	X		1, 2, 4, 10, 16		Wetland borders perennia due to size.	l stream, dense scr	Wetland borders perennial stream, dense scrub-shrub vegetation present. Function limited due to size.	ted
Nutrient Removal	X		3, 4, 7, 8		Wetland borders perennia due to size.	l stream, dense scr	Wetland borders perennial stream, dense scrub-shrub vegetation present. Function limited due to size.	ted
Production Export		×	7		Wetland not effective in producing food or usable products.	oducing food or us	sable products.	
	X		2, 3, 4, 5, 12, 13	X	Wetland borders perennial stream. Dense vegetation present.	l stream. Dense veç	getation present.	
्र Wildlife Habitat	X		6, 7, 8, 13		Located in a NH F&G tier 2 habitat top-ranked in region.	habitat top-ranked	d in region.	
Recreation		X	1		Wetland does not provide recreational opportunities.	recreational oppor	rtunities.	
Educational/Scientific Value		X			Wetland is not effective as a site for outdoor learning or research.	a site for outdoor l	learning or research.	
\chi Uniqueness/Heritage		X			Wetland is not unique; exh	ibits characteristic	Wetland is not unique; exhibits characteristics typical to a utility ROW environment.	
Visual Quality/Aesthetics		X			Wetland does not hold aesthetic or visual qualities.	thetic or visual qua	alities.	
ES Endangered Species Habitat								
Other								

Notes:



New England District					Wetland I.D. 65
otal area of wetland 0.32 Human made?	9N	_Is wetland part of a wildlife corridor?_	corridor? No	or a "habitat island"? No	
diacent land use Roadway, ROW, Residential		Distance to neare:	Distance to nearest roadway or other development	development >500 feet	Prepared by: LGJ Date 12/19/2014
ominant wetland systems present R4SB3/4 / PSS1E	.S1E	Contiguous und	Contiguous undeveloped buffer zone present No	ne present_No	Wetland Impact: Type See Table Area See Table
s the wetland a separate hydraulic system? No		If not, where does the wetland lie in the drainage basin?Middle_	id lie in the drainage	basin?Middle	on:
Characters and the control distance of police and distance of the control of the	-	:	, () () () () () () () () () () () () ()	(*)	Office Field
dow many unbutanes continbute to the wetland:	-	wildille & vegetation div	α vegetation diversity/abundance (see attached list)	vee attached list)	al wetland
Finction//alie	Suitability V N	v Rationale (Reference #)*	Principal Function(s)//alue(s)		completed? Y N
ו מווכנוסוו/ עמומה	Z -	(#פופופווכם #)	י מווכנוסוו(ع)/ א		
星 Groundwater Recharge/Discharge	\times	2, 4, 5, 7, 15	Wetland within ar	Wetland associated with an intermittent stream leading to within an aquifer boundary and wellhead protection area.	Wetland associated with an intermittent stream leading to Beaver Brook watercourse. Located within an aquifer boundary and wellhead protection area.
Floodflow Alteration	×	6'2'9	May rece associate	ive excess floodwaters from interr d with Beaver Brook. Function lov	May receive excess floodwaters from intermittent stream. Located directly above floodplain associated with Beaver Brook. Function low due to size and sloping topography.
Fish and Shellfish Habitat	×		Wetland	Wetland does not contain suitable fish or shellfish habitat.	nellfish habitat.
Sediment/Toxicant Retention	×	1, 2, 4, 10, 16	Wetland bo	borders intermittent stream, den: ze.	Wetland borders intermittent stream, dense scrub-shrub vegetation present. Function low due to size.
Nutrient Removal	×	3, 4, 7, 8	Wetland bo	borders intermittent stream, den: ze.	Wetland borders intermittent stream, dense scrub-shrub vegetation present. Function low due to size.
Production Export	×	7	Wetland	Wetland not effective in producing food or usable products.	usable products.
↓ Sediment/Shoreline Stabilization	×	2, 3, 4, 5, 12, 13	Wetland	Wetland borders intermittent stream. Dense vegetation present.	e vegetation present.
Wildlife Habitat	X	6, 7, 8, 13	Located	Located in a NH F&G tier 2 habitat top-ranked in region.	ced in region.
Recreation	X	1	Wetland	Wetland does not provide recreational opportunities.	ortunities.
Educational/Scientific Value	X		Wetland	Wetland is not effective as a site for outdoor learning or research.	ır learning or research.
\chi Uniqueness/Heritage	×		Wetland	is not unique; exhibits characteris	Wetland is not unique; exhibits characteristics typical to a utility ROW environment.
Visual Quality/Aesthetics	X		Wetland	Wetland does not hold aesthetic or visual qualities.	lualities.
ES Endangered Species Habitat					
Other					

Notes:



IVEW Eligiatio District						Wetland LD 69
Fotal area of wetland 0.48 Human made?	2	ls wetland	tland part of a wildlife corridor?_	rridor?_	Noor a "habitat island"?No	Latitude 42.790490 Longitude -71.359599
Adjacent land use_ Roadway, ROW, Substation, Residential	Reside	ntial	Distance to nearest	oadway	Distance to nearest roadway or other development_10 feet	Prepared by: LGJ Date 12/19/2014
Dominant wetland systems present_PSS1E			Contiguous undev	eloped b	Contiguous undeveloped buffer zone present No	Wetland Impact: _{Type} See Table Area See Table
Is the wetland a separate hydraulic system? Yes		_ If not,	If not, where does the wetland lie in the drainage basin?	lie in the	drainage basin?	Evaluation based on:
How many tributaries contribute to the wetland?	None		Wildlife & vegetation diver	sity/abur	& vegetation diversity/abundance (see attached list)	Office X Field X Corps manual wetland delineation
S Function/Value	Suitabilitv Y N	bilitv N	Rationale (Reference #)*	Principal Functior	ı(s)/Value(s)	completed? Y × N
Groundwater Recharge/Discharge	X		2, 4, 5, 15		Wetland function low in groundwater recharge/discharge.	ge/discharge.
Floodflow Alteration	X		3, 5, 6, 7, 9, 18	X	Wetland receives storm water run-off from abutting substation. Residential areas also close proximity. Wetland drains under roadway to large system with storage capacity.	Wetland receives storm water run-off from abutting substation. Residential areas also within close proximity. Wetland drains under roadway to large system with storage capacity.
Fish and Shellfish Habitat		X	1		Wetland does not contain suitable fish or shellfish habitat.	llfish habitat.
Sediment/Toxicant Retention	X		1, 2, 4	X	Wetland receives storm water run-off from ak close proximity.	Wetland receives storm water run-off from abutting substation. Residential areas also within close proximity.
Nutrient Removal	X		3, 4, 8, 9	X	Wetland receives storm water run-off from alc close proximity.	Wetland receives storm water run-off from abutting substation. Residential areas also within close proximity.
Production Export		X	1,7		Wetland not effective in production export.	
Sediment/Shoreline Stabilization		X			Wetland is not located along the banks or shoreline of a waterbody.	oreline of a waterbody.
الله حكم Wildlife Habitat		×	13		Little to no function due to location (adjacent to substation, roadway and residential development).	t to substation, roadway and residential
Recreation		X			Wetland does not provide recreational opportunities.	tunities.
Educational/Scientific Value		X			Wetland is not effective as a site for outdoor learning or research.	earning or research.
\chi Uniqueness/Heritage		X			Wetland is not unique; exhibits characteristics typical to a utility ROW environment.	s typical to a utility ROW environment.
Visual Quality/Aesthetics		X	-		Wetland does not hold aesthetic or visual qualities.	alities.
ES Endangered Species Habitat						
Other						

Notes:



New England District							Wetland I.D. 69A	
Total area of wetland 0.19 Human made?	8	_ls wetland	tland part of a wildlife corridor?_	ridor?	Noor a "habitat island"?No	1	Latitude 42.790780 Longitude -71.360035	. 1
Adjacent land useRoadway, ROW, Substation, Residential	Resider	ntial	Distance to nearest ro	oadway (Distance to nearest roadway or other development 10 feet) feet	Prepared by: LGJ Date 12/19/2014 Wetland Impact:	1
Dominant wetland systems present_PSS1E, PFO1E, R4SB4	E, R4SB	4	Contiguous undeve	d bədol	Contiguous undeveloped buffer zone present_No		Type See Table Area See Table	
Is the wetland a separate hydraulic system? Yes		_ If not,	If not, where does the wetland lie in the drainage basin?	e in the	drainage basin?		Evaluation based on:	
How many tributaries contribute to the wetland? None	None		Wildlife & vegetation diversity/abundance (see attached list)	ity/abur	dance (see attached list)		Office Kield Koros manual wetland delineation	
	Suitability	ility.	Rationale	Principal	al	_	completed? Y_X_ N	
Function/Value	Z >		(Reference #)*	Functi	Function(s)/Value(s)	Con	Comments	
g Groundwater Recharge/Discharge	X		2, 4, 5, 15		Wetland function low in groundwater recharge/discharge.	ndwater recharg	ge/discharge.	
Floodflow Alteration	X		3, 5, 6, 7, 9, 18	×	Wetland receives storm water close proximity. Wetland drain	run-off from ak ns under roadw	Wetland receives storm water run-off from abutting substation. Residential areas also within close proximity. Wetland drains under roadway to large system with storage capacity.	
Fish and Shellfish Habitat		X			Wetland does not contain suitable fish or shellfish habitat.	able fish or she	ılfish habitat.	
Sediment/Toxicant Retention	X		1, 2, 4	X	Wetland receives storm water close proximity.	run-off from ak	Wetland receives storm water run-off from abutting substation. Residential areas also within close proximity.	
Nutrient Removal	X		3, 4, 8, 9	×	Wetland receives storm water close proximity.	run-off from ab	Wetland receives storm water run-off from abutting substation. Residential areas also within close proximity.	
Production Export		×	1,7		Wetland not effective in production export.	action export.		
Sediment/Shoreline Stabilization		×			Wetland is not located along the banks or shoreline of a waterbody.	he banks or sho	oreline of a waterbody.	
र्ी Wildlife Habitat		X	13		Little to no function due to loo development).	cation (adjacent	Little to no function due to location (adjacent to substation, roadway and residential development).	
Recreation		×			Wetland does not provide recreational opportunities.	reational oppor	tunities.	
Educational/Scientific Value		×			Wetland is not effective as a site for outdoor learning or research.	te for outdoor l	earning or research.	
🗡 Uniqueness/Heritage		X			Wetland is not unique; exhibit	s characteristic	Wetland is not unique; exhibits characteristics typical to a utility ROW environment.	
Visual Quality/Aesthetics		X			Wetland does not hold aesthetic or visual qualities.	tic or visual qua	alities.	

Notes:

Other

ES Endangered Species Habitat



New England District						Wetland I.D. 72
otal area of wetland 1.19 Human made?	8	ls wetland	:land part of a wildlife corridor?_	orridor?	No or a "habitat island"? No	
Adjacent land use_Roadway, ROW, Commercial, Residential	l, Resic	lential	Distance to nearest	roadway	Distance to nearest roadway or other development_50 feet	Prepared by: LGJ Date 04/09/2015
Dominant wetland systems present_PSS/EM1C, PEM1C, PSS1C	EM1C,	PSS1C	Contiguous unde	reloped b	Contiguous undeveloped buffer zone present_No	Wetland Impact: Type_See TableArea_See Table
s the wetland a separate hydraulic system? No		If not,	where does the wetland	lie in the	If not, where does the wetland lie in the drainage basin?	Evaluation based on:
How many tributaries contribute to the wetland?_	-	>	/ildlife & vegetation dive	sity/abur	Wildlife & vegetation diversity/abundance (see attached list)	Office Field
	Suitabilitv Y N		Rationale (Reference #)*	Principal Function	Principal Function(s)/Value(s)	Corps manual wetland delineation completed? Y_X_ N Comments
▼ Groundwater Recharge/Discharge	- X		2, 5, 7		Wetland located within an aquifer bo	Wetland located within an aquifer boundary. Wetland associated with the Beaver Brook
Floodflow Alteration	X		7,13,18		Receives excess run-off from surroun	water Course. Receives excess run-off from surrounding uplands during large precipitation events.
Fish and Shellfish Habitat		X			Wetland does not contain suitable fish or shellfish habitat.	n or shellfish habitat.
Sediment/Toxicant Retention		X	1, 2, 10		Wetland associated with the Beaver E	Wetland associated with the Beaver Brook watercourse. Dense scrub-shrub vegetation present.
Nutrient Removal	X		4, 8, 9		Wetland associated with the Beaver Eduring large precipitation events.	Wetland associated with the Beaver Brook watercourse. Wetland receives run-off from uplands during large precipitation events.
Production Export		X	-		Wetland not effective in producing food for living organisms.	od for living organisms.
	X		6, 9, 12	X	Wetland is located along the Beaver Brook watercourse	rook watercourse
्र Wildlife Habitat	X		6, 7, 8, 13	X	Located in a NH F&G tier 3 Supporting Landscape region.	l Landscape region.
Recreation		X			Wetland does not provide recreational opportunities.	l opportunities.
Educational/Scientific Value		X			Wetland is not effective as a site for outdoor learning or research.	utdoor learning or research.
Vniqueness/Heritage		X			Wetland is not unique; exhibits chara	Wetland is not unique; exhibits characteristics typical to a utility ROW environment.
Visual Quality/Aesthetics		X			Wetland does not hold aesthetic or visual qualities.	sual qualities.
ES Endangered Species Habitat						
Other						

Notes:



INOW ELIGIBILITY DISUITOR					Wetland I.D. 73
otal area of wetland 1.08 Human made?	8	_Is wetland part of a wildlife corridor?_	orridor?_	No or a "habitat island"? No	Latitude 42.797186 Longitude -71.3666027
djacent land use_Roadway, ROW, Residential		Distance to nearest	roadway	Distance to nearest roadway or other development_10 feet	Prepared by: LGJ Date 12/19/2014
ominant wetland systems present_PUBH, PSS1E		Contiguous unde	veloped l	Contiguous undeveloped buffer zone present_No	Wetland Impact: Type_See TableArea_See Table
the wetland a separate hydraulic system? $\overline{ ext{Yes}}$	lf n	If not, where does the wetland lie in the drainage basin?	l lie in the	: drainage basin?	Evaluation based on:
low many tributaries contribute to the wetland?_	None	_Wildlife & vegetation dive	rsity/abu	Wildlife & vegetation diversity/abundance (see attached list)	Office Field
Function/Value	Suitabilitv Y N	, Rationale (Reference #)*	Principal Functior	ı(s)/Value(s)	Corps manual wegania delineation completed? Y_X_ N Comments
Groundwater Recharge/Discharge	X	2, 5,15		Wetland function low in groundwater recharge/discharge.	ge/discharge.
Floodflow Alteration	×	3, 5, 6, 7, 9, 10, 18	X	Ponded area within wetland. Water holding of from surrounding developed residential area	Ponded area within wetland. Water holding capacity available. Receives and retains run-off from surrounding developed residential area.
Fish and Shellfish Habitat	X	1		Wetland does not contain suitable fish or shellfish habitat.	ellfish habitat.
Sediment/Toxicant Retention	×	1, 2, 4, 5	X	Ponded area within wetland. Wetland receives and retains run-off from surrounding developed residential area.	es and retains run-off from surrounding
Nutrient Removal	×	2, 3, 4, 5, 7, 8, 9	X	Ponded area within wetland. Wetland receives and retains run-off from surrounding developed residential area.	es and retains run-off from surrounding
Production Export	×	1		Wetland not effective in producing food for living organisms.	iving organisms.
↓ Sediment/Shoreline Stabilization	×			Wetland is not located along the banks or shoreline of a waterbody.	oreline of a waterbody.
> Wildlife Habitat	×	7, 8, 13		Ponded area within wetland provides some wildlife habitat.	wildlife habitat.
Recreation	×	1		Wetland does not provide recreational opportunities.	rtunities.
Educational/Scientific Value	×			Wetland is not effective as a site for outdoor learning or research.	learning or research.
🖊 Uniqueness/Heritage	×			Wetland is not unique; exhibits characteristics typical to a utility ROW environment.	s typical to a utility ROW environment.
Visual Quality/Aesthetics	X			Wetland does not hold aesthetic or visual qualities.	alities.
ES Endangered Species Habitat					
Other					

Notes:



					Wetland I.D. 74
otal area of wetland 0.56 Human made?	No_ls wetland	wetland part of a wildlife corridor?	orridor?	Noora "habitat island"?No	Latitude 42.798412 Longitude -71.367536
djacent land use Roadway, ROW, Residential, Forest	Forest	Distance to nearest	roadway	Distance to nearest roadway or other development 400 feet	Prepared by: LGJ Date 12/19/2014
Nominant wetland systems present PSS1E, PFO1C	U	Contianous under	, d badolay	Contiguous undeveloped buffer zone present No	Wetland Impact:
)))		Area
the wetland a separate hydraulic system? Yes	If r	If not, where does the wetland lie in the drainage basin?	lie in the	drainage basin?	Evaluation based on:
Specification to the tributes contribute to the wetland?	None	Wildlife & vanatation divarcity/ahındanca (saa attachad list)	city/ahır	and some settential list)	OfficeX FieldX
IOW IIIally tilbutalles collilibute to tile Wetlallus.	i		sity/abul	ומפוורפ (אפפ פנופרוופת וואנ)	Corps manual wetland delineation
Function/Value	Suitability Y N	/ Rationale (Reference #)*	Principal Functior	ı(s)/Value(s)	
Groundwater Recharge/Discharge	×	2, 4, 5, 15		Wetland function low in groundwater rechan	Wetland function low in groundwater recharge/discharge. Wetland located adjacent to an
1	/			aquiter boundary.	
Floodflow Alteration	×	5, 6, 7, 9, 18	×	Wetland located between developed residential areas. May receive and detain run-off. Function limited due to size.	ntial areas. May receive and detain run-off.
Fish and Shellfish Habitat	×			Wetland does not contain suitable fish or shellfish habitat.	ıellfish habitat.
Sediment/Toxicant Retention	X	1, 2, 4		Wetland located between developed resider	Wetland located between developed residential areas. May receive and detain some run-off.
Nutrient Removal	×	3, 4, 8		Wetland located between developed resider	Wetland located between developed residential areas. May receive and detain some run-off.
Production Export	X	1,7		Wetland is not effective in producing food.	
↓ Sediment/Shoreline Stabilization	X			Wetland is not located along the banks or shoreline of a waterbody.	noreline of a waterbody.
S Wildlife Habitat	×	7, 8, 13		Function limited due to location, adjacent to developed residential areas.	o developed residential areas.
Recreation	×			Wetland does not provide recreational opportunities.	ortunities.
Educational/Scientific Value	X			Wetland is not effective as a site for outdoor learning or research.	r learning or research.
\chi Uniqueness/Heritage	X			Wetland is not unique; exhibits characteristics typical to a utility ROW environment.	cs typical to a utility ROW environment.
Visual Quality/Aesthetics	X	-		Wetland does not hold aesthetic or visual qualities.	ualities.
ES Endangered Species Habitat					
Other					

Notes:



						Wetland I.D75A
Total area of wetland 3.15 Human made?	2	No_ls wetland	etland part of a wildlife corridor?	idor?	No or a "habitat island"? No	Latitude 42.800614 Longitude -71.370044
Adjacent land use_Roadway, ROW, Forest, Agricultural	ultura	_	Distance to nearest roa	dway o	Distance to nearest roadway or other development_10 feet	Prepared by: LGJ Date 12/19/2014
Dominant wetland systems present_PAB3H, PEM1E, PSS1E	IE, PSS	31E	Contiguous undevel	d bədo	Contiguous undeveloped buffer zone present_No	Wetland Impact: _{Type} See Table _{Area} See Table
s the wetland a separate hydraulic system? No		lf not	If not, where does the wetland lie in the drainage basin? Middle	in the	drainage basin? Middle	
	1					Office X Field X
How many tributaries contribute to the wetland?_		NC NC	10ff-KOW Wildlife & vegetation diversit	y/abur	& vegetation diversity/abundance (see attached list)	Corps manual wetland delineation
	Suitability	oilitv		Principal		completed? Y_X N
runction/value	<u>_</u>	Z	(Reference #)" F	uncri	runction(s)/value(s)	comments
星 Groundwater Recharge/Discharge	X		2, 5, 7, 15		Large wetland system with open water component, extends outside of ROW. Evidence of variable water levels present.	ponent, extends outside of ROW. Evidence of
Floodflow Alteration	X		5, 6, 7, 9, 10, 13, 16	X	Moderate flood storage capacity, open water components present. Hydrologically con to Robinson Pond to the west. Very poorly drained soils and dense vegetation present.	Moderate flood storage capacity, open water components present. Hydrologically connected to Robinson Pond to the west. Very poorly drained soils and dense vegetation present.
Fish and Shellfish Habitat		X			Wetland does not contain suitable fish or shellfish habitat.	ellfish habitat.
Sediment/Toxicant Retention	X		1, 3, 4, 5, 10, 11, 12, 16	X	Dense emergent/scrub shrub vegetation, very p water present with long-term storage capacity.	Dense emergent/scrub shrub vegetation, very poorly drained soils present. Large area of open water present with long-term storage capacity.
Nutrient Removal	X		2, 3, 4, 5, 7, 8, 9, 14	X	Dense emergent/scrub shrub vegetation, very I water present with long-term storage capacity.	Dense emergent/scrub shrub vegetation, very poorly drained soils present. Large area of open water present with long-term storage capacity.
Production Export		\times	1,7		Wetland function low in production export.	
Sediment/Shoreline Stabilization		X			Wetland is not located along the banks or shoreline of a waterbody.	oreline of a waterbody.
્રે Wildlife Habitat	X		6, 7, 8, 9,13		Open water component. Vegetation density high. Located near a within a NH F&G habitat ranked as tier 3 - Supporting Landscape.	Open water component. Vegetation density high. Located near an easement parcel. Wetland within a NH F&G habitat ranked as tier 3 - Supporting Landscape.
Recreation		X			Wetland does not provide recreational opportunities.	rtunities.
Educational/Scientific Value		X			Wetland is not effective as a site for outdoor learning or research.	learning or research.
\chi Uniqueness/Heritage		X			Wetland is not unique; exhibits characteristics typical to a utility ROW environment.	s typical to a utility ROW environment.
Visual Quality/Aesthetics		X			Wetland does not hold aesthetic or visual qualities.	ialities.
ES Endangered Species Habitat						
Other						

Notes: Appears to be hydrologically connected to Robinson Pond via a stream channel located outside of the ROW (study limits).



New England District					Wetland I.D. 75B
otal area of wetland 1.18 Human made?	8	_Is wetland part of a wildlife corridor?_	corridor?_	No or a "habitat island"? No	
djacent land useROW, Residential, Agricultural, Forest	ral, Forest	Distance to neares	t roadway	Distance to nearest roadway or other development > 1,000 feet	1
Oominant wetland systems present_PSS1E		Contiguous und	padolava	Contiguous undeveloped buffer zone present No	Wetland Impact: Type_ See TableArea_ See Table
s the wetland a separate hydraulic system? Yes	IĘ	If not, where does the wetland lie in the drainage basin?	d lie in the	e drainage basin?	Evaluation based on:
low many tributaries contribute to the wetland?	None	_Wildlife & vegetation div	ersity/abu	Wildlife & vegetation diversity/abundance (see attached list)	Office Keld Kellon Corps manual wetland delineation
Function/Value	Suitabilitv Y N	Rationale (Reference #)*	Principal Functior	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	×	2, 5, 7,15		Wetland is not a recharge/discharge site.	je site.
Floodflow Alteration	×	5, 6, 7, 9, 10, 18	X	Wetland may provide some flood may receive excess floodwaters fr	Wetland may provide some flood storage capacity for adjacent cleared agricultural land. Also may receive excess floodwaters from wetland 75A located to the east.
Fish and Shellfish Habitat	×			Wetland does not contain suitable fish or shellfish habitat.	fish or shellfish habitat.
Sediment/Toxicant Retention	×	1, 4, 16		Wetland contains emergent and scrub- run-off from adjacent agricultural land.	Wetland contains emergent and scrub-shrub vegetation. Wetland may receive sediment-laden run-off from adjacent agricultural land.
Nutrient Removal	×	3, 4, 5, 8, 9	X	Wetland contains emergent and scrub- run-off from adjacent agricultural land	Wetland contains emergent and scrub-shrub vegetation. Wetland may receive sediment-laden run-off from adjacent agricultural land.
Production Export	×	1,7		Wetland is not effective in producing food for organisms.	ng food for organisms.
	×	1		Wetland is not located along the banks or shoreline of a waterbody.	anks or shoreline of a waterbody.
ک Wildlife Habitat	×	7, 8, 13		Wetland located adjacent to active farmland. Located near an ease outside a NH F&G habitat ranked as tier 3 - Supporting Landscape.	Wetland located adjacent to active farmland. Located near an easement parcel. Wetland just outside a NH F&G habitat ranked as tier 3 - Supporting Landscape.
Recreation	×			Wetland does not provide recreational opportunities.	onal opportunities.
Educational/Scientific Value	×			Wetland is not effective as a site for outdoor learning or research.	r outdoor learning or research.
\chi Uniqueness/Heritage	×			Wetland is not unique; exhibits ch	Wetland is not unique; exhibits characteristics typical to a utility ROW environment.
Visual Quality/Aesthetics	×			Wetland does not hold aesthetic or visual qualities.	r visual qualities.
ES Endangered Species Habitat					
Other					

Notes:



New England District						Wetland In 77B
Total area of wetland 3.10 Human made?	8		_ls wetland part of a wildlife corridor?_	orridor?_	Yes or a "habitat island"? No	1 00
Adjacent land use_Roadway, ROW, Residential			Distance to nearest	roadway	Distance to nearest roadway or other development25 feet	Prepared by: LGJ Date 12/10/2014
Dominant wetland systems present_PEM, PFO			Contiguous under	eloped l	Contiguous undeveloped buffer zone present No	wetiand impact: Type_See TableArea_See Table
Is the wetland a separate hydraulic system? No		lf no	If not, where does the wetland lie in the drainage basin? Middle	lie in the	drainage basin?_Middle	Evaluation based on:
How many tributaries contribute to the wetland?_	2		.Wildlife & vegetation diversity/abundance (see attached list)	sity/abu	ndance (see attached list)	Office X Field X
Function/Value	Suita Y	Suitabilitv Y N	Rationale (Reference #)*	Principal Functior	l (s)/Value(s)	completed? Y_X_ N
groundwater Recharge/Discharge	X		2, 4, 5, 7, 9, 15		Wetland has two main inlets, one outlet into Robinson Pond	Robinson Pond.
Floodflow Alteration	X		6, 7, 9, 13, 14	X	Wetland detains water flow from directly entering Robinson Pond	ering Robinson Pond.
Fish and Shellfish Habitat		X			Wetland does not contain suitable fish or shellfish habitat.	ilfish habitat.
Sediment/Toxicant Retention	X		1, 2, 3, 4, 10, 15	X	Slow-moving waters of wetland and soil type (fine sandy loam/mucky peat) retain water before it reaches associated pond. Sed/tox potential from nearby road and residential ar	Slow-moving waters of wetland and soil type (fine sandy loam/mucky peat) retain water before it reaches associated pond. Sed/tox potential from nearby road and residential areas.
Nutrient Removal	X		3, 7, 14		Slow-moving waters of wetland and soil type remove nutrients effectively. Sed/nutrient ru	Slow-moving waters of wetland and soil type (fine sandy loam/mucky peat) allows wetland to remove nutrients effectively. Sed/nutrient runoff potential from nearby road and resid. areas.
Production Export		X	1,7		Wetland function low in producing food for organisms.	organisms.
Sediment/Shoreline Stabilization		X			Wetland is not located along the banks or shoreline of a waterbody.	oreline of a waterbody.
२० Wildlife Habitat	X		6, 8, 12, 13	X	Wetland surrounded by residential areas. Food sources exist, vegetation density ranked as tier 3, supporting landscape for NHF&G critical habitat designated area	Wetland surrounded by residential areas. Food sources exist, vegetation density high. Area ranked as tier 3, supporting landscape for NHF&G critical habitat designated area.
Recreation		X			Wetland does not provide recreational opportunities.	tunities.
Educational/Scientific Value		X			Wetland is not effective as a site for outdoor learning or research.	earning or research.
🜟 Uniqueness/Heritage		X			Wetland is not unique; exhibits characteristics typical to a utility ROW environment.	s typical to a utility ROW environment.
Visual Quality/Aesthetics		X			Wetland does not hold aesthetic or visual qualities.	alities.
ES Endangered Species Habitat						
Other						

Notes:



New England District					Wetland ID 77C
otal area of wetland 0.69 Human made?	8	_Is wetland part of a wildlife corridor?_	ife corridor?	Yes or a "habitat island"? No	
djacent land useROW, Residential		Distance to nea	ırest roadwa)	Distance to nearest roadway or other development 50 feet	Prepared by: LGJ Date 12/11/2014
ominant wetland systems present PSS1C, PFO1C	<u>U</u>	Contiguous	Indeveloped	Contiguous undeveloped buffer zone present No	Wetland Impact: Type_ See TableArea_ See Table
the wetland a separate hydraulic system? No		lf not, where does the we	land lie in th	If not, where does the wetland lie in the drainage basin? Beginning	Evaluation based on:
low many tributaries contribute to the wetland?_	-	Wildlife & vegetation	diversity/abu	& vegetation diversity/abundance (see attached list)	Office Field
Function/Value	Suitabilitv Y N	Rati (Ref	Principal Function	Principal Function(s)/Value(s)	Corps manual wetland delineation completed? Y_X_NNCOMMENTS
Groundwater Recharge/Discharge	X	2, 5, 7, 10, 15		Wetland outlets into associated wetland 77B.	and 77B.
Floodflow Alteration	X	2, 3, 6, 7, 9,	X	Receives water from surrounding whigh water storage capacity.	Receives water from surrounding watershed which travels to associated watershed that has a high water storage capacity.
Fish and Shellfish Habitat	X			Wetland does not contain suitable fish or shellfish habitat.	sh or shellfish habitat.
Sediment/Toxicant Retention	X	1, 3, 10, 15	X	Slow-moving waters of wetland retain water before it reaches ass Sediment/toxicant runoff potential from nearby residential areas.	Slow-moving waters of wetland retain water before it reaches associated wetland and pond. Sediment/toxicant runoff potential from nearby residential areas.
Nutrient Removal	X	3,4,8		Low function in nutrient trapping based on size and lo nutrient runoff potential from nearby residential areas.	Low function in nutrient trapping based on size and location within landscape. Sediment/ nutrient runoff potential from nearby residential areas.
Production Export	X	1,7		Low function in producing food for organisms.	organisms.
↓ Sediment/Shoreline Stabilization	X			Wetland is not located along the banks or shoreline of a waterbody.	nks or shoreline of a waterbody.
ک Wildlife Habitat	X	6, 8, 13		Wetland surrounded by residential wetland area ranked as tier 3, supp	Wetland surrounded by residential areas. Food sources exist, vegetation density high. Adjacent wetland area ranked as tier 3, supporting landscape for NHF&G critical habitat designated area.
Recreation	X			Wetland does not provide recreational opportunities.	nal opportunities.
Educational/Scientific Value	X			Wetland is not effective as a site for outdoor learning or research.	outdoor learning or research.
🖊 Uniqueness/Heritage	X			Wetland is not unique; exhibits cha	Wetland is not unique; exhibits characteristics typical to a utility ROW environment.
Visual Quality/Aesthetics	X			Wetland does not hold aesthetic or visual qualities.	isual qualities.
ES Endangered Species Habitat					
Other					

Notes:



New England District						Wetland I.D. 77D
otal area of wetland 0.31 Human made?		_ls we	NoIs wetland part of a wildlife corridor?_	rridor?_	Noor a "habitat island"?	Latitude 42.808187 Longitude -71.377155
Adjacent land use Roadway, ROW, Residential			Distance to nearest	oadway	Distance to nearest roadway or other development_200 feet	Prepared by: LGJ Date 12/11/2014
Oominant wetland systems present_PSS			Contiguous undev	eloped k		Wetland Impact: Type_See TableArea_See Table
s the wetland a separate hydraulic system? No		lf not,	, where does the wetland	lie in the	If not, where does the wetland lie in the drainage basin?	Evaluation based on:
how many tributaries contribute to the wetland?	None	>	Wildlife & vegetation diver	sity/abu	& vegetation diversity/abundance (see attached list)	Office Keld Keld Keld Corns manual workland delineation
S Function/Value	Suitabilitv Y N	litv	Rationale (Reference #)*	Principal Functior	ı(s)/Value(s)	Corps manual wetland delineation completed? Y_X_ N Comments
▼ Groundwater Recharge/Discharge	X		2, 5, 7, 10, 15		Wetland connects to wetland 77C, leading to associated wetland 77B.	associated wetland 77B.
Floodflow Alteration	X		2, 3, 6, 7, 9	X	Receives small amounts of water from surrounding watershed which travels along an intermittent channel to associated watersheds that have high water storage capacites.	nding watershed which travels along an Is that have high water storage capacites.
Fish and Shellfish Habitat	X				Wetland does not contain suitable fish or shellfish habitat.	llfish habitat.
Sediment/Toxicant Retention	X		1, 3, 10, 15	X	Slow-moving waters of wetland retain water Sediment/toxicant runoff potential from near	Slow-moving waters of wetland retain water before it reaches associated wetland and pond. Sediment/toxicant runoff potential from nearby residential areas.
Nutrient Removal			3,8		Low function in nutrient trapping based on size and location within landscape. Sediment nutrient runoff potential from nearby residential areas.	ze and location within landscape. Sediment/ tial areas.
Production Export	X		1,7		Low function in producing food for organisms.	ń
	X				Wetland is not located along the banks or shoreline of a waterbody.	oreline of a waterbody.
⊘ Wildlife Habitat	X		6, 8, 13		Wetland surrounded by residential areas. Food sources and veg. exist. Low wildlife habitat function. Adjacent wetland area ranked as tier 3, supporting landscape for critical habitat.	d sources and veg. exist. Low wildlife habitat r 3, supporting landscape for critical habitat.
Recreation					Wetland does not provide recreational opportunities.	tunities.
Educational/Scientific Value	X				Wetland is not effective as a site for outdoor learning or research.	earning or research.
\chi Uniqueness/Heritage	X				Wetland is not unique, exhibits characteristics typical to a utility ROW environment.	s typical to a utility ROW environment.
Visual Quality/Aesthetics	X				Wetland does not hold aesthetic or visual qualities.	lities.
ES Endangered Species Habitat						
Other						

Notes:



Total area of wetland 0.56 Human made?		No Is wetland	tland part of a wildlife corridor?		No or a "habitat island"?	Wetland I.D. /8
ural, F	lway		Distance to nearest ro	oadway oi	Distance to nearest roadway or other development_200 feet	
Dominant wetland systems present_PSS1B			Contiguous undeve	nq pədola	Contiguous undeveloped buffer zone present No	wetiand impact: Type_See TableArea_See Table
s the wetland a separate hydraulic system? Yes		_ If not,	If not, where does the wetland lie in the drainage basin?	e in the d	rainage basin?	Evaluation based on:
ا. ح	None		Wildlife & vegetation diversity/abundance (see attached list)	ity/abunc	lance (see attached list)	Office X Field X Corps manual wetland delineation
	Suitability	oilitv	Rationale	Principal		completed? Y \times N
Function/Value	Z >	_	(Keterence #)*	Functio	Function(s)/Value(s)	comments
T Groundwater Recharge/Discharge		X	2,4		Wetland is not a recharge/discharge site.	
Floodflow Alteration	, ,	X	5,9		Low flood storage capacity and lack of adjacency to watercourse.	ency to watercourse.
Fish and Shellfish Habitat		X			Wetland does not contain suitable fish or shellfish habitat.	ellfish habitat.
Sediment/Toxicant Retention		X	4		Wetland does not provide function due to location, size, vegetation composi nearby sources. Wetland does not retain water for extended periods of time.	Wetland does not provide function due to location, size, vegetation composition, and lack of nearby sources. Wetland does not retain water for extended periods of time.
Nutrient Removal	X		4,9		Vetland abuts agricultural/farmland; howeve composition, and lack of direct input. Wetlan	Wetland abuts agricultural/farmland; however function is minimal due to size, vegetation composition, and lack of direct input. Wetland also does not retain water for extended periods.
Production Export	, ,	X	1,7		Wetland is not effective in producing food for organisms.	or organisms.
Sediment/Shoreline Stabilization	, ,	X			Wetland is not located along the banks or shoreline of a waterbody.	oreline of a waterbody.
الله حالم Wildlife Habitat	X		5, 7, 8		Wetland borders upland wildlife habitat (acti directly adjacent to residential home.	Wetland borders upland wildlife habitat (active farmland); however wetland is also located directly adjacent to residential home.
Recreation	, \	X			Wetland does not provide recreational opportunities.	rtunities.
Educational/Scientific Value		X			Wetland is not effective as a site for outdoor learning or research.	learning or research.
🖊 Uniqueness/Heritage	, ,	X			Wetland is not unique; exhibits characteristics typical to a utility ROW environment.	s typical to a utility ROW environment.
Visual Quality/Aesthetics	, ,	X	1		Wetland does not hold aesthetic or visual qualities.	alities.
ES Endangered Species Habitat						
Other						

Notes:



New Ligitaly District						Wetland I.D. 85
otal area of wetland 2.32 Human made?	No		_Is wetland part of a wildlife corridor?_	ridor?	Noor a "habitat island"? No	Latitude 42.814270 Longitude -71.383746
Adjacent land use_Roadway, ROW, Residential			Distance to nearest ro	adway	Distance to nearest roadway or other development_300 feet	Prepared by: LGJ Date 12/11/2014
Dominant wetland systems present_PAB3H, PEM1F	11		Contiguous undeve	loped b	Contiguous undeveloped buffer zone present_No	Wetland Impact: Type_See TableArea_See Table
s the wetland a separate hydraulic system? No		_ If no	If not, where does the wetland lie in the drainage basin?Beginning	in the		Evaluation based on:
how many tributaries contribute to the wetland?_	None		_Wildlife & vegetation diversity/abundance (see attached list)	ty/abur		Office X Field X
Function/Value	Suitabilitv Y N	abilitv N	Rationale (Reference #)*	Principal Functior	ı(s)/Value(s) Con	completed? Y X N
groundwater Recharge/Discharge		X	2, 4, 5, 9, 10, 15		Wetland functions as holding area for water, slow discharge rate.	ow discharge rate.
Floodflow Alteration	X		2, 3, 5, 6, 7, 9, 13, 14	X	Wetland receives and slowly releases water traveling to Robinson Pond	veling to Robinson Pond.
Fish and Shellfish Habitat		X			Wetland does not contain suitable fish or shellfish habitat.	fish habitat.
Sediment/Toxicant Retention	X		1, 2, 3, 4, 5, 10, 11, 12, 14	X	High function in sediment/toxicant retention c soil type.	High function in sediment/toxicant retention due to slow-moving, deep waters of wetland and soil type.
Nutrient Removal	X		2, 3, 5, 6, 7, 11, 14	X	High function in nutrient removal due to wetland composition and soil type (organic/muck).	nd composition and soil type (organic/muck).
Production Export	X		1, 2, 8, 9		Wetland function moderate in producing food for organisms.	for organisms.
Sediment/Shoreline Stabilization		X			Wetland is not located along the banks or shoreline of a waterbody.	eline of a waterbody.
્રે Wildlife Habitat	X		8, 9, 11, 12, 15, 18, 20	X	Wetland composed of diverse habitat types and food sources. Adjacent to wetland area ranked as tier 3, supporting landscape for critical habitat.	d food sources. Adjacent to wetland area
Recreation		X			Wetland does not provide recreational opportunities.	unities.
Educational/Scientific Value		X			Wetland is not effective as a site for outdoor learning or research.	arning or research.
\chi Uniqueness/Heritage		X			Wetland is not unique; exhibits characteristics typical to a utility ROW environment.	typical to a utility ROW environment.
Visual Quality/Aesthetics		X			Wetland does not hold aesthetic or visual qualities.	ities.
ES Endangered Species Habitat						
Other						

Notes:



						Wetland I.D. 86	
otal area of wetland 2.89 Human made?		NoIs wetland part of a wildlife corridor?	corridor?	9	or a "habitat island"? No	Latitude 42.819039 Longitude -71.389294	94
diacent land use Roadway, ROW, Residential		Distance to nearest roadway or other development.	t roadway	y or other de	velopment 25 feet	Prepared by: LGJ Date 12/11/2014	4
ominant wetland systems present_PSS1E, PSS1B, PFO1E, PFO1B	B, PFO1E, P		, bedoleve	buffer zone	present No	Wetland Impact: _{Type} See Table A _{rea} See Table	Ф
sthe wetland a separate hydraulic system? Yes] - -	If not, where does the wetland lie in the drainage basin?	d lie in th	e drainage b	asin?	on:	
Change land and and and and and and and and and	None	Vilonity of the the second of the little			(+): To Can	OfficeField	
iow many tributaries contribute to the wetland:		Wildlife & Vegetation diversity/abundance (see attached list)	ersity/abl	ındance (see	s attached list)	10	
Function/Value	Suitability Y N	, Rationale (Reference #)*	Principal Function	Principal Function(s)/Value(s)		Comments	
Groundwater Recharge/Discharge	X	2, 4, 5, 7		Broad, flat w	retland, associated with similar w	Broad, flat wetland, associated with similar wetlands. Part of wetland made up of mucky/	
1	<i>′</i> \			loamy/sand	y/stony soils.		
Floodflow Alteration	×	2, 5, 6, 7, 8, 9, 14	\times	Saturated hy	ydric soils. Wetland broad, flat; id	Saturated hydric soils. Wetland broad, flat; ideal for high water storage capacity.	
Fish and Shellfish Habitat	×			Wetland do	Wetland does not contain suitable fish or shellfish habitat.	ıllfish habitat.	
Sediment/Toxicant Retention	×	1, 2, 3, 4, 5	X	Slow-movin it reaches as	g waters of wetland and soil type isociated wetlands. Sed/tox pote	Slow-moving waters of wetland and soil type (mucky/loamy/sandy/stony) retain water before it reaches associated wetlands. Sed/tox potential from nearby road and residential areas.	
Nutrient Removal	X	3, 4, 5, 7		Slow-movin remove nut	g waters of wetland and soil type rients effectively. Sed/nutrient ru	Slow-moving waters of wetland and soil type (mucky/loamy/sandy/stony) allows wetland to remove nutrients effectively. Sed/nutrient runoff potential from nearby road and resid. areas.	
Production Export	X	1,7		Wetland fun	Wetland function low in producing food for organisms.	organisms.	
↓ Sediment/Shoreline Stabilization	X			Wetland is n	Wetland is not located along the banks or shoreline of a waterbody.	oreline of a waterbody.	
ک Wildlife Habitat	×	6, 8, 13		Wetlandsur	rounded by residential areas. Foc	Wetland surrounded by residential areas. Food sources exist, vegetation density high.	
Recreation	×			Wetland do	Wetland does not provide recreational opportunities.	rtunities.	
Educational/Scientific Value	X			Wetland is n	Wetland is not effective as a site for outdoor learning or research.	learning or research.	
\chi Uniqueness/Heritage	X			Wetland is n	ot unique; exhibits characteristic	Wetland is not unique; exhibits characteristics typical to a utility ROW environment.	
Visual Quality/Aesthetics	×			Wetland do	Wetland does not hold aesthetic or visual qualities.	alities.	
ES Endangered Species Habitat							
Other							

Notes:



INOW ELIGIBILITY DISUITE					Wetland I.D. 87A
otal area of wetland 0.34 Human made?	8	_Is wetland part of a wildlife corridor?_	corridor?	No or a "habitat island"? No	Latitude 42.820560 Longitude -71.391251
djacent land use Roadway, ROW, Residential		Distance to neares	t roadwa	Distance to nearest roadway or other development 25 feet	Prepared by: LGJ Date 12/11/2014
ominant wetland systems present PSS		Contiguous und	eveloped	Contiguous undeveloped buffer zone present No	Wetland Impact: Type_See TableArea_See Table
the wetland a separate hydraulic system? No	lf.	not, where does the wetlan	d lie in th	If not, where does the wetland lie in the drainage basin?Beginning	Evaluation based on:
low many tributaries contribute to the wetland?	-	Wildlife & vegetation div	ersity/abı	& vegetation diversity/abundance (see attached list)	Office X Field X
Function/Value	Suitabilitv Y N	, Rationale (Reference #)*	Principal Functior	ı(s)/Value(s)	completed? $Y \times X$ N
Groundwater Recharge/Discharge	X	2, 4, 5, 7		Broad, flat wetland, associated with similar v loamy/sandy/stony soils.	Broad, flat wetland, associated with similar wetlands. Part of wetland made up of mucky/loamy/sandy/stony soils.
Floodflow Alteration	X	2, 5, 6, 7, 8, 9, 14	X	Saturated hydric soils. Wetland broad, flat; ideal for high water storage capacity.	leal for high water storage capacity.
Fish and Shellfish Habitat	X			Wetland does not contain suitable fish or shellfish habitat.	ellfish habitat.
Sediment/Toxicant Retention	×	1, 2, 3, 4, 5	X	Slow-moving waters of wetland and soil typ it reaches associated wetlands. Sed/tox pote	Slow-moving waters of wetland and soil type (mucky/loamy/sandy/stony) retain water before it reaches associated wetlands. Sed/tox potential from nearby road and residential areas.
Nutrient Removal	×	3, 4, 5, 7		Slow-moving waters of wetland and soil typ remove nutrients effectively. Sed/nutrient r	Slow-moving waters of wetland and soil type (mucky/loamy/sandy/stony) allows wetland to remove nutrients effectively. Sed/nutrient runoff potential from nearby road and resid. areas.
Production Export	×	1,7		Wetland function low in producing food for organisms.	organisms.
↓ Sediment/Shoreline Stabilization	×			Wetland is not located along the banks or shoreline of a waterbody.	oreline of a waterbody.
>> Wildlife Habitat	×	6, 8, 13	X	Wetland surrounded by residential areas. Food sources exist, vegetation density high.	od sources exist, vegetation density high.
Recreation	×			Wetland does not provide recreational opportunities.	rtunities.
Educational/Scientific Value	×			Wetland is not effective as a site for outdoor learning or research.	learning or research.
🖊 Uniqueness/Heritage	×			Wetland is not unique; exhibits characteristics typical to a utility ROW environment.	es typical to a utility ROW environment.
Visual Quality/Aesthetics	X			Wetland does not hold aesthetic or visual qualities	ialities.
ES Endangered Species Habitat					
Other					

Notes:



New Ligialia District					Wetland I.D. 88
Fotal area of wetland 0.76 Human made? _	8	_Is wetland part of a wildlife corridor?_	orridor?	Noora "habitat island"?N	No Latitude 42.822545 Longitude -71.392888
Adjacent land useROW, Residential		Distance to nearest	roadway o	Distance to nearest roadway or other development 500 feet	Prepared by: LGJ Date 12/11/2014
Dominant wetland systems present_PFO1C, PSS1C	2	Contiguous unde	veloped bu	Contiguous undeveloped buffer zone present_No	wetland Impact: Type_ See Table Area See Table
s the wetland a separate hydraulic system? No	If no	If not, where does the wetland lie in the drainage basin?_	l lie in the c	Irainage basin? Beginning	Evaluation based on:
How many tributaries contribute to the wetland?_	None	_Wildlife & vegetation diversity/abundance (see attached list)	rsity/abun	dance (see attached list)	Office FieldCorps manual wetland delineation
Function/Value	Suitabilitv Y N	Rationale (Reference #)*	Principa Functior	Principal Function(s)/Value(s)	completed? Y_X_ NComments
星 Groundwater Recharge/Discharge	X	2, 5, 15		Small, shallow wetland. Small role in gr wetland #87.	Small, shallow wetland. Small role in groundwater recharge/discharge into larger, associated wetland #87.
Floodflow Alteration	×	2, 3, 9		Small, shallow wetland associated with surrounding watershed.	Small, shallow wetland associated with wetland #87. Retains small amounts of runoff from surrounding watershed.
Fish and Shellfish Habitat	X			Wetland does not contain suitable fish or shellfish habitat.	or shellfish habitat.
Sediment/Toxicant Retention	×	1, 2, 3		Small, shallow wetland associated with	Small, shallow wetland associated with wetland #87. Small role in sediment/toxicant premoval.
Nutrient Removal	×	3,9		Small, shallow wetland associated with	Small, shallow wetland associated with wetland #87. Small role in nutrient removal.
Production Export	×	1,7		Wetland function low in producing food for organisms.	I for organisms.
↓ Sediment/Shoreline Stabilization	×			Wetland is not located along the banks or shoreline of a waterbody	or shoreline of a waterbody.
الله حمد Wildlife Habitat	×	8, 13, 14	X	Wetland contains vernal pool. Food sources exist, vegetation density high	rces exist, vegetation density high.
Recreation	×			Wetland does not provide recreational opportunities.	pportunities.
Educational/Scientific Value	×			Wetland is not effective as a site for outdoor learning or research.	door learning or research.
🙏 Uniqueness/Heritage	×			Wetland is not unique; exhibits charact	Wetland is not unique; exhibits characteristics typical to a utility ROW environment.
Visual Quality/Aesthetics	X			Wetland does not hold aesthetic or visual qualities.	al qualities.
ES Endangered Species Habitat					

Notes:

Other



New England District						Wetland ID 89
Total area of wetland 1.01 Human made?	2	ls wetland	tland part of a wildlife corridor?_	rridor?_	Noor a "habitat island"?No	- Latitude 42.8
Adjacent land useROW, Residential			Distance to nearest	oadway	Distance to nearest roadway or other development_50 feet	Prepared by: LGJ Date 12/11/2014
Dominant wetland systems present_PEM1G, PUB2Hb, R2UB2Hb	2Hb, F	32UB2Hb		eloped k	Contiguous undeveloped buffer zone present_No	Wetland Impact: Type_See TableArea_See Table
Is the wetland a separate hydraulic system? No		If not,	where does the wetland	ie in the	If not, where does the wetland lie in the drainage basin? Middle	 Evaluation based on:
How many tributaries contribute to the wetland?_	-	>	Wildlife & vegetation diversity/abundance (see attached list)	sity/abu	ndance (see attached list)	Office X Field X Corps manual wetland delineation
Function/Value	Suita Y	Suitabilitv Y N	Rationale (Reference #)*	Principal Functior	ı(s)/Value(s)	completed? Y X N
groundwater Recharge/Discharge	X		2, 5, 7, 9, 15	×	Wetland associated with Chase Brook waterway. Within wellhead polocated within wetland area. Constricted outlet to rest of waterway.	Wetland associated with Chase Brook waterway. Within wellhead protection areas and aquifer located within wetland area. Constricted outlet to rest of waterway.
Floodflow Alteration	X		5, 7, 8, 9, 10, 16	X	Saturated hydric soils (very poorly drained detains water from continuing along brook	Saturated hydric soils (very poorly drained). Ponded area within Chase Brook waterway; detains water from continuing along brook. Flood hazard area downstream on brook.
Fish and Shellfish Habitat		X			Wetland does not contain suitable fish or shellfish habitat.	shellfish habitat.
Sediment/Toxicant Retention	X		1, 2, 3, 4, 10, 12,		Slow-moving waters of wetland and soil tir reaches associated wetlands. Sed/tox p	Slow-moving waters of wetland and soil type (mucky/loamy/sandy/stony) retain water before it reaches associated wetlands. Sed/tox potential from nearby road and residential areas.
Nutrient Removal		X	2, 3, 4, 5, 7		Wetland function moderate in nutrient removal	moval.
Production Export		X	-		Wetland function low in producing food for organisms.	or organisms.
Sediment/Shoreline Stabilization		X			Wetland is not located along the banks or shoreline of a waterbody.	shoreline of a waterbody.
री Wildlife Habitat	X		6, 8, 12, 17	×	Wetland surrounded by residential areas. activity observed.	Wetland surrounded by residential areas. Food sources exist, vegetation density high. Beaver activity observed.
Recreation		X			Wetland does not provide recreational opportunities.	portunities.
Educational/Scientific Value		X			Wetland is not effective as a site for outdoor learning or research.	or learning or research.
Vniqueness/Heritage		X			Wetland is not unique; exhibits character	Wetland is not unique; exhibits characteristics typical to a utility ROW environment.
Visual Quality/Aesthetics		X	-		Wetland does not hold aesthetic or visual qualities.	qualities.
ES Endangered Species Habitat						
Other						

Notes:



New England District							Wetland ID 90
otal area of wetland 0.29 Human made?	Yes	Yes_ls wetland	etland part of a wildlife corridor?_	orridor?_	No	or a "habitat island"? <u>No</u>	Latitude 42.825106 Longitude -71.395949
Adjacent land useROW, Residential			Distance to nearest	roadway	or other d	Distance to nearest roadway or other development	Prepared by: LGJ Date 12/11/2014
Dominant wetland systems present_PEM1Gx, PSS1C	10		Contiguous undeveloped buffer zone present No	veloped b	ouffer zone	e present_No	wetiand impact: Type_See TableArea_See Table
s the wetland a separate hydraulic system? No		If not	If not, where does the wetland lie in the drainage basin? Middle	l lie in the	drainage	basin?Middle	Evaluation based on:
How many tributaries contribute to the wetland?	None		Wildlife & vegetation diversity/abundance (see attached list)	rsity/abur	ndance (se	ee attached list)	Office Field
5 Function/Value	Suital Y	Suitabilitv Y N	Rationale (Reference #)*	Principal Functior	Principal Function(s)/Value(s)		Copps manual wetland delineation completed? Y_X_ N Comments
groundwater Recharge/Discharge	X		2, 5, 7, 15	X	Wetland al aquifer loc	Wetland above Chase Brook waterway and w aquifer located within wetland area.	Wetland above Chase Brook waterway and wetland #89. Within wellhead protection areas and aquifer located within wetland area.
Floodflow Alteration	X		8, 9, 10	X	Small oper entering b	water area above Chase Brook wخ- rook. Water storage potential. Floo	Small open-water area above Chase Brook waterway; detains small amounts of water from entering brook. Water storage potential. Flood hazard area located downstream along brook.
Fish and Shellfish Habitat		X			Wetland d	Wetland does not contain suitable fish or shellfish habitat.	lfish habitat.
Sediment/Toxicant Retention		X	1, 2, 10, 12		Small role size. Small	in sediment/toxicant retention fror role in delaying or preventing sed/	Small role in sediment/toxicant retention from nearby road and residential areas due to small size. Small role in delaying or preventing sed/tox from entering associated brook.
Nutrient Removal		X	2, 3, 5		Wetland fu	Wetland function low in nutrient removal.	
Production Export		X	-		Wetland fu	Wetland function low in producing food for organisms.	rganisms.
		X			Wetlandis	Wetland is not located along the banks or shoreline of a waterbody.	reline of a waterbody.
Wildlife Habitat	X		6, 8, 17	X	Wetland su activity ob	Wetland surrounded by residential areas. Foo activity observed in adjacent ponded area.	Wetland surrounded by residential areas. Food sources exist, vegetation density high. Beaver activity observed in adjacent ponded area.
Recreation		X			Wetland d	Wetland does not provide recreational opportunities.	tunities.
Educational/Scientific Value		X			Wetland is	Wetland is not effective as a site for outdoor learning or research.	earning or research.
\chi Uniqueness/Heritage		X			Wetland is	not unique; exhibits characteristic	Wetland is not unique, exhibits characteristics typical to a utility ROW environment.
Visual Quality/Aesthetics		X			Wetland d	Wetland does not hold aesthetic or visual qualities.	lities.
ES Endangered Species Habitat							
Other							

Notes:



New England District						Wetland ID 91
Fotal area of wetland 0.16 Human made?		Yes_ls wetland	tland part of a wildlife corridor?_	orridor?_	Noor a "habitat island"?No	
Adjacent land useROW, Residential, Commercial	ial		Distance to nearest	roadway	Distance to nearest roadway or other development_500 feet	Prepared by: LGJ Date 04/09/2015
Dominant wetland systems present_PF01C			Contiguous unde	veloped k	Contiguous undeveloped buffer zone present_No	Wetland Impact: Type_See TableArea_See Table
s the wetland a separate hydraulic system? No		_ lf not,	; where does the wetland	l lie in the	If not, where does the wetland lie in the drainage basin?Middle	Evaluation based on:
How many tributaries contribute to the wetland?_	None		Wildlife & vegetation dive	rsity/abu	& vegetation diversity/abundance (see attached list)	Office Field
Function/Value	Suitabilitv Y N	bilitv N	Rationale (Reference #)*	Principal Function	ı(s)/Value(s)	completed? $Y_{}$ N
Groundwater Recharge/Discharge	X		2, 5, 15		Wetland above Chase Brook waterway an and aquifer located within wetland area.	Wetland above Chase Brook waterway and wetland WA 89 and 90. Wellhead protection areas and aquifer located within wetland area.
Floodflow Alteration	X		8, 9, 10, 18	X	Wetland receives and retains water from surrounding landscape. Water st Flood hazard area located downstream along Chase Brook, near wetland.	Wetland receives and retains water from surrounding landscape. Water storage potential. Flood hazard area located downstream along Chase Brook, near wetland.
Fish and Shellfish Habitat		X			Wetland does not contain suitable fish or shellfish habitat.	shellfish habitat.
Sediment/Toxicant Retention	X		1, 2, 10, 12, 15	X	Small role in sediment/toxicant retention from nearby road and delaying or preventing sed/tox from entering associated brook.	Small role in sediment/toxicant retention from nearby road and residential areas. Small role in delaying or preventing sed/tox from entering associated brook.
Nutrient Removal	X		3, 4, 5, 8		Small role in nutrient removal - slow motraps and stores nutrients.	Small role in nutrient removal - slow moving waters in wetland and high vegetation density traps and stores nutrients.
Production Export	, ,	X	1,7		Wetland function low in producing food for organisms.	for organisms.
Sediment/Shoreline Stabilization	, ,	X	!		Wetland is not located along the banks or shoreline of a waterbody.	r shoreline of a waterbody.
્ર Wildlife Habitat	X		7, 8, 11, 13, 17	X	Wetland surrounded by residential areas. activity observed in nearby ponded area.	Wetland surrounded by residential areas. Food sources exist, vegetation density high. Beaver activity observed in nearby ponded area.
Recreation	, ,	X			Wetland does not provide recreational opportunities.	pportunities.
Educational/Scientific Value		X	!		Wetland is not effective as a site for outdoor learning or research.	oor learning or research.
🙏 Uniqueness/Heritage	, ,	X			Wetland is not unique; exhibits characte	Wetland is not unique, exhibits characteristics typical to a utility ROW environment.
Visual Quality/Aesthetics		X			Wetland does not hold aesthetic or visual qualities.	l qualities.
ES Endangered Species Habitat						
Other						

Notes:



New England District						Wetland ID 92	
otal area of wetland 0.31 Human made?	8	_ls wetland part of a wildlife corridor?_	orridor?_	Noor a "habitat island"?No	1	Latitude 42.826763 Longitude -71.397836	,
djacent land useROW, Residential		Distance to nearest	roadway	Distance to nearest roadway or other development_50 feet		Prepared by: LGJ Date 12/11/2014	4
ominant wetland systems present_PAB4E, PEM1E	1E	Contiguous unde	veloped	Contiguous undeveloped buffer zone present No		Wetland Impact: Type_See TableArea_See Table	ا . ـ
s the wetland a separate hydraulic system? No	If	not, where does the wetlanc	l lie in the	If not, where does the wetland lie in the drainage basin?_Beginning		Evaluation based on:	
low many tributaries contribute to the wet land?	None	Wildlife & vegetation dive	rsitv/abu	Wildlife & vegetation diversity/abundance (see attached list)		Office Field	
	Suita		Principal	led	(Corps manual wetland delineation completed? Y_X_N	
Function/Value	z >	(Keterence #)*	Funct	Function(s)/Value(s)	Con	Comments	ĺ
星 Groundwater Recharge/Discharge	×	2, 5, 15		Small wetland within wellhead protection areas; aquifer located j proximity to residential areas. Saturation and water marks visible.	protection are	Small wetland within wellhead protection areas; aquifer located just below wetland. In close proximity to residential areas. Saturation and water marks visible.	
Floodflow Alteration	×	2, 3, 4, 5, 6, 7, 9, 10	X	Wetland in close proximity to wetland areas. Located at beginning of wate detains water from entering associated wetland. Very poorly drained soils.	etland areas. L ociated wetlar	Wetland in close proximity to wetland areas. Located at beginning of watershed; temporarily detains water from entering associated wetland. Very poorly drained soils.	
Fish and Shellfish Habitat	×			Wetland does not contain suitable fish or shellfish habitat.	ole fish or shel	llfish habitat.	
Sediment/Toxicant Retention	X	1, 2, 3		Small portion of wetland composed of very po function low in sediment/toxication retention.	sed of very po	Small portion of wetland composed of very poorly drained soils (mucky peat). Wetland function low in sediment/toxication retention.	
Nutrient Removal	×	3,4		Wetland function low in nutrient removal.	t removal.		
Production Export	×	1,8		Wetland function low in producing food for organisms.	ing food for o	organisms.	
↓ Sediment/Shoreline Stabilization	×			Wetland is not located along the banks or shoreline of a waterbody.	e banks or sho	oreline of a waterbody.	
ک Wildlife Habitat	×	7, 8, 14	X	Wetland in close proximity to wetland #89 Potential vernal pool identified in the field.	etland #89 and in the field.	Wetland in close proximity to wetland #89 and 90. Food sources exist, vegetation density high. Potential vernal pool identified in the field.	
Recreation	×			Wetland does not provide recreational opportunities.	ational opport	tunities.	
Educational/Scientific Value	X	-		Wetland is not effective as a site for outdoor learning or research.	for outdoor le	earning or research.	
\chi Uniqueness/Heritage	X			Wetland is not unique; exhibits	characteristics	Wetland is not unique; exhibits characteristics typical to a utility ROW environment.	
Visual Quality/Aesthetics	X			Wetland does not hold aesthetic or visual qualities.	c or visual qua	alities.	
ES Endangered Species Habitat							
Other							

Notes:



ivew Ligitalia District					_	Wetland I.D. 93
otal area of wetland 7.43 Human made?	8	_Is wetland part of a wildlife corridor?_	orridor?	No or a "habitat island"? No		Latitude_42.831118_ Longitude71.402641
djacent land use Roadway, ROW, Residential		Distance to nearest	roadway	Distance to nearest roadway or other development 50 feet		Prepared by: LGJ Date 12/12/2014
ominant wetland systems present PEM1F, PFOSF, PFO1E	5F, PF01E	Contiguous unde	, veloped	Contiguous undeveloped buffer zone present_No		Wetland Impact: _{Type} See Table _{Area} See Table
the wetland a separate hydraulic system? No	If n	If not, where does the wetland lie in the drainage basin?Middle_	l lie in th	e drainage basin? Middle	-	:uo
dow many tributaries contribute to the wetland?	None	Wildlife & vegetation dive	rsitv/abı	& vegetation diversity/abundance (see attached list)		OfficeX FieldX
		5 (Corps manual wetland delineation completed? \sqrt{X} N
Function/Value	Suitabilitv Y N	, Kationale (Reference #)*	Principal Function	Principal Function(s)/Value(s)	Con	
g Groundwater Recharge/Discharge	×	1, 5, 7, 9, 15	X	Wetland located at the beginning of an aquifer boundary. Effective in groun discharge due to broad, flat topography and soil composition (mucky peat).	g of an aquife graphy and s	Wetland located at the beginning of an aquifer boundary. Effective in groundwater recharge/discharge due to broad, flat topography and soil composition (mucky peat).
Floodflow Alteration	×	5, 6, 7, 8, 9, 10, 14	X	Wetland adjacent to Nesenkeag peat) present.	Brook. Role in	Wetland adjacent to Nesenkeag Brook. Role in detaining and storing water. Hydric soil (mucky peat) present.
Fish and Shellfish Habitat	×			Wetland does not contain suitable fish or shellfish habitat.	le fish or shel	lifish habitat.
Sediment/Toxicant Retention	×	1, 2, 3, 4, 5, 6, 10, 12	X	Wetland composed of very poorl nearby; located above aquifer bc	y drained soil oundary. Deta	Wetland composed of very poorly drained soils (mucky peat). Residential areas and roadway nearby; located above aquifer boundary. Detains water from nearby wetland areas.
Nutrient Removal	×	3, 4, 5, 7, 9, 12		Wetland function moderate in no composition (mucky peat).	utrient remov	Wetland function moderate in nutrient removal due to broad, flat topography and soil composition (mucky peat).
Production Export	×	1,8		Wetland function low in producing food for organisms.	ng food for oı	rganisms.
↓ Sediment/Shoreline Stabilization	×			Wetland is not located along the banks or shoreline of a waterbody.	banks or sho	oreline of a waterbody.
Wildlife Habitat	×	6, 7, 8, 15	X	Food sources exist, vegetation dand associated wetland areas.	ensity high. M	Food sources exist, vegetation density high. Wetland in close proximity to Nesenkeag Brook and associated wetland areas.
Recreation	×	-		Wetland does not provide recreational opportunities.	tional opport	tunities.
Educational/Scientific Value	×			Wetland is not effective as a site for outdoor learning or research.	for outdoor le	earning or research.
🖊 Uniqueness/Heritage	×			Wetland is not unique; exhibits c	haracteristics	Wetland is not unique; exhibits characteristics typical to a utility ROW environment.
Visual Quality/Aesthetics	×			Wetland does not hold aesthetic or visual qualities	or visual qua	lities.
ES Endangered Species Habitat						
Other						

Notes:



						Wetland I.D. 94		
Total area of wetland 0.01 Human made	? No Is v	Human made? No Is wetland part of a wildlife corridor? No	corridor?	Noor	or a "habitat island"? No Latitude 42.832648 Longitude -71.403769	O Latitude 42.8326	48_ Longitude_	-71.403769
Acrese Road ROW Forest		Č	-	-	1000 feet	Prepared by: LGJ	J Date 1/20/2015	/20/2015
Adjacent land use		Uistance to neares	t roadway or	otner de\	Distance to nearest roadway or other development	Wetland Impact:		
Dominant wetland systems present_PSS1C		Contiguous undeveloped buffer zone present_No	eveloped buf	fer zone p	oresent No	See Table	Area	See Table
Is the wetland a separate hydraulic system? No	If n	If not, where does the wetland lie in the drainage basin? Beginning	d lie in the dr	ainage ba	asin? Beginning	Evaluation based on:	on:	
	o CON	0 5.11 1.344				OfficeX Field	Field	ı
How many tributaries contribute to the wetland?	2010	_wildlire & vegetation diversity/abundance (see attached list)	ersity/abunda	ance (see	attached list)	Corps manual wetland delineation	etland delineat	ion
	Suitability	Rationale	Principal	=		completed? Y_X N	z	ı
Function/Value	z >	(Reference #)*	Function(s)/Value(s)	n(s)/Vali	ue(s)	Comments		

Function/Value	Suitability Y N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	X	2, 4, 5	Wetland does not contribute	Wetland does not contribute to gw recharge/discharge function.
	``	(011 1 cm 0 0 0 0 1 0 1 0 0 0 0 0 0 0 0 0 0 0 0	رياء الروسية والمرابع الروسية والمرابع الروسية والمرابع الروسية والمرابع الروسية والمرابع المرابع الم

T Groundwater Recharge/Discharge	X	2, 4, 5	Wetland does not contribute to gw recharge/discharge function.
Floodflow Alteration	X	5, 18	Little to no flood storage capacity due to small size.
Fish and Shellfish Habitat	X		Wetland does not contain suitable fish or shellfish habitat.
Sediment/Toxicant Retention	×	4	Wetland does not provide this function due to small size, confinement within ROW limits, and lack of potential sources nearby.
Nutrient Removal	×	8	Wetland does not provide this function due to small size, confinement within ROW limits, and lack of potential sources nearby.
Production Export	\times	1,7	Wetland is not effective in producing food for organisms.
Sediment/Shoreline Stabilization	\times		Wetland is not located along the banks or shoreline of a waterbody.
र्् Wildlife Habitat	\times	7	No suitable wetland habitat based on small size.
Recreation	×		Wetland does not provide recreational opportunities.
Educational/Scientific Value	×		Wetland is not effective as a site for outdoor learning or research.
\chi Uniqueness/Heritage	X		Wetland is not unique; exhibits characteristics typical to a utility ROW environment.
Visual Quality/Aesthetics	X	1	Wetland does not hold aesthetic or visual qualities.
ES Endangered Species Habitat			
Other			

Notes:



New England District							Wetland I.D. 95		
Total area of wetland 0.10 Human made? No Is wetland	e? No Is		of a wildlife cori	ridor? No	or a "habi	tat island"? No	Latitude 42.8329-0	part of a wildlife corridor? No or a "habitat island"? No Latitude 42.8329-0 Longitude =71.404245	
Adiacent land use ROW, Residential		Distan	Distance to nearest roadway or other development 600 feet	adwav or ot	her developm	ent 600 feet	Prepared by: LGJ	Date 12/12/2014	
Dominant wetland systems present_PSS1C		Cont	Contiguous undeveloped buffer zone present No	loped buffe	zone present	No	Wetland Impact: Type_See Table	Area_See Table_	
Is the wetland a separate hydraulic system? Yes		If not, where does the wetland lie in the drainage basin?	s the wetland lie	e in the draii	nage basin?		Evaluation based on:		
How many tributaries contribute to the wetland? None	None -	Wildlife & ve	Wildlife & vegetation diversity/abundance (see attached list)	ty/abundan	ce (see attache	ed list)	Office X Field X Corps manual wetland delineation	ildXand delineation	
Function/Value	Suitability Y N		*(#	Principal Function(Principal Function(s)/Value(s)	Ö	comments	Z	
	-								
	_			_				_	

	-	2			
Groundwater Recharge/Discharge		X	2, 5, 7, 15		Small wetland located between wetland #93 and 97. Aquifer boundary located nearby.
Floodflow Alteration	X		6, 7, 8, 9, 10	X	Wetland in close proximity to larger wetland areas. Temporarily detains water from entering associated wetland.
Fish and Shellfish Habitat		X			Wetland does not contain suitable fish or shellfish habitat.
Sediment/Toxicant Retention		X	1, 6, 10		Wetland function low in sediment/toxication retention.
Nutrient Removal		X	5, 12		Wetland function low in nutrient removal.
Production Export		X	1		Wetland function low in producing food for organisms.
Sediment/Shoreline Stabilization		X			Wetland is not located along the banks or shoreline of a waterbody.
ن Wildlife Habitat	X		6, 7, 8, 9	X	Food sources exist, vegetation density high.
Recreation		X			Wetland does not provide recreational opportunities.
Educational/Scientific Value		X			Wetland is not effective as a site for outdoor learning or research.
🜟 Uniqueness/Heritage		X			Wetland is not unique; exhibits characteristics typical to a utility ROW environment.
Visual Quality/Aesthetics		X			Wetland does not hold aesthetic or visual qualities.
ES Endangered Species Habitat					
Other					

Notes:



New England District					Wetland I.D. 97
otal area of wetland 0.88 Human made?	Yes_Is wetland	wetland part of a wildlife corridor?_	corridor?_	No or a "habitat island"? No	Latitude 42.833403 Longitude -71.404728
djacent land useROW, Residential		Distance to neare	t roadway	Distance to nearest roadway or other development_600 feet	Prepared by: LGJ Date 12/12/2014
ominant wetland systems present_PEM1H, PEM/SS1F	I/SS1F	Contiguous und	eveloped k	Contiguous undeveloped buffer zone present No	Wetland Impact: _{Type_} See TableArea_ See Table
s the wetland a separate hydraulic system? No	Ifr	If not, where does the wetland lie in the drainage basin?Middle	d lie in the	drainage basin?Middle	Evaluation based on:
dow many tributaries contribute to the wetland?_	_	Wildlife & vegetation div	ersity/abu	Wildlife & vegetation diversity/abundance (see attached list)	Office FieldX
	Suitabilitv		Principal		Corps manual wetland delineation completed? Y_X_ N
Function/Value	Z ≻	(Reference #)*	Funct	Function(s)/Value(s) Col	Comments
星 Groundwater Recharge/Discharge	X	2, 5, 7, 15	X	Wetland located within an aquifer boundary waterway.	Wetland located within an aquifer boundary. Ponded area located within the Nesenkeag Brook waterway.
Floodflow Alteration	×	7, 8, 9, 10, 13	X	Wetland adjacent to Nesenkeag Brook. Role	Wetland adjacent to Nesenkeag Brook. Role in detaining and storing water along waterway.
Fish and Shellfish Habitat	×			Wetland does not contain suitable fish or shellfish habitat.	ellfish habitat.
Sediment/Toxicant Retention	X	1, 3, 6, 10, 12		Moderate role in sediment/toxication reduction. Ponded area in brook continuing along waterway; wetland located within aquifer boundary.	Moderate role in sediment/toxication reduction. Ponded area in brook detains water from continuing along waterway; wetland located within aquifer boundary.
Nutrient Removal	×	2, 3, 5, 13		Wetland function moderate in nutrient remo	Wetland function moderate in nutrient removal; functions as ponded area within waterway.
Production Export	×	1, 8, 10		Wetland function low in producing food for organisms.	organisms.
Sediment/Shoreline Stabilization	×			Wetland is not located along the banks or shoreline of a waterbody.	ioreline of a waterbody.
ک Wildlife Habitat	×	6, 7, 8, 9, 14, 15	X	Food sources exist, vegetation density high. Ponded area within waterway offer diverse community structure to wildlife.	Ponded area within waterway offer diverse
Recreation	×			Wetland does not provide recreational opportunities.	ortunities.
Educational/Scientific Value	×			Wetland is not effective as a site for outdoor learning or research.	learning or research.
🖊 Uniqueness/Heritage	×			Wetland is not unique; exhibits characteristics typical to a utility ROW environment.	cs typical to a utility ROW environment.
Visual Quality/Aesthetics	×			Wetland does not hold aesthetic or visual qualities.	ıalities.
ES Endangered Species Habitat					
Other					

Notes:



New England District					Wetland I.D. 98		
Total area of wetland 0.24 Human made? No Is wetland	? No Is w	etland part of a wildlife corridor? No	- 1	or a "habitat island"? No Latitude 42.833915 Longitude -71.404916	lo_ Latitude_42.833915_	Longitude71.404916	
Adiacent land use ROW, Residential		Distance to neares	t roadway or other	Distance to nearest roadway or other development 500 feet	Prepared by: LGJ	Date 12/12/2014	
Dominant wetland systems present_PFO1C, PEM/SS1E	A/SS1E	Contiguous unde	Contiguous undeveloped buffer zone present_NO	one present No	Wetland Impact: Type_See Table	Area_See Table_	
Is the wetland a separate hydraulic system? No	If no	If not, where does the wetland lie in the drainage basin? Beginning	d lie in the drainag	ge basin?Beginning	Evaluation based on:		
How many tributaries contribute to the wetland? None	None	_Wildlife & vegetation diversity/abundance (see attached list)	ersity/abundance ((see attached list)	Office FieldXCorps manual wetland delineation	Id_ $ imes$ and delineation	
Function/Value	Suitabilitv Y N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Value(s)	completed? Y X N. Comments	z	

			,	•	
Groundwater Recharge/Discharge		X	2, 5, 15	15	Low function in groundwater recharge/discharge. Small wetland located within an aquifer boundary. Connected to wetland #97 and 101.
Floodflow Alteration		X	6, 7, 10	10	Wetland adjacent to Nesenkeag Brook. Small role in detaining and storing water along waterway due to its location in a broad, flat area.
Fish and Shellfish Habitat		X		1	Wetland does not contain suitable fish or shellfish habitat.
Sediment/Toxicant Retention		X	1, 12	2	Moderate role in sediment/toxication reduction. Ponded area in brook detains water from continuing along waterway; wetland located within aquifer boundary.
Nutrient Removal		X	3,1	2	Wetland function low in nutrient removal.
Production Export		X	1		Wetland function low in producing food for organisms.
Sediment/Shoreline Stabilization		X		1	Wetland is not located along the banks or shoreline of a waterbody.
२० Wildlife Habitat	X		6, 7, 8, 13	3, 13	Food sources exist, vegetation density high. Vernal Pool present within wetland. In close proximity to Nesenkeag Brook and other wetland areas.
Recreation		X		1	Wetland does not provide recreational opportunities.
Educational/Scientific Value		X		1	Wetland is not effective as a site for outdoor learning or research.
🜟 Uniqueness/Heritage		X		1	Wetland is not unique; exhibits characteristics typical to a utility ROW environment.
Visual Quality/Aesthetics		X			Wetland does not hold aesthetic or visual qualities.
ES Endangered Species Habitat					
Other					

Notes:



New England District					Wetland I.D. 99
otal area of wetland 0.06 Human made?	8	_Is wetland part of a wildlife corridor?_	orridor?_	Noora "habitat island"?_No	Latitude 42.834108 Longitude -71.404547
djacent land useROW, Residential		Distance to nearest	roadway	Distance to nearest roadway or other development_500 feet	Prepared by: LGJ Date 04/09/2015
ominant wetland systems present_PF01B		Contiguous unde	veloped b	Contiguous undeveloped buffer zone present No	Wetland Impact: Type_See TableArea_See Table
sthe wetland a separate hydraulic system? Yes	If no	If not, where does the wetlanc	l lie in the	re does the wetland lie in the drainage basin?	Evaluation based on:
low many tributaries contribute to the wetland?None	None	_Wildlife & vegetation diversity/abundance (see attached list)	ersity/abur	idance (see attached list)	Office X Field X Corps manual wetland delineation
Function/Value	Suitability Y N	Rationale (Reference #)*	Principa Functior	ו n(s)/Value(s)	completed? Y X NComments
Groundwater Recharge/Discharge	×	2, 5, 15		Small wetland located within an aquifer boundary. Connected to wetland #97 and 101.	ndary. Connected to wetland #97 and 101.
Floodflow Alteration	×	6, 7, 9, 10	X	Wetland adjacent to Nesenkeag Brook. Small role in detaining and storing water along waterway due to its location in a broad, flat area.	I role in detaining and storing water along area.
Fish and Shellfish Habitat	X			Wetland does not contain suitable fish or shellfish habitat.	ellfish habitat.
Sediment/Toxicant Retention	×	1, 2, 12		Moderate role in sediment/toxication reduction. Ponded area in brook continuing along waterway; wetland located within aquifer boundary.	Moderate role in sediment/toxication reduction. Ponded area in brook detains water from continuing along waterway; wetland located within aquifer boundary.
Nutrient Removal	X	3, 4, 8		Wetland function low in nutrient removal.	
Production Export	×	1,7		Wetland function low in producing food for organisms.	organisms.
	X			Wetland is not located along the banks or shoreline of a waterbody.	oreline of a waterbody.
∵ Wildlife Habitat	×	7, 8, 13	X	Food sources exist, vegetation density high. I wetland areas.	Food sources exist, vegetation density high. In close proximity to Nesenkeag Brook and other wetland areas.
Recreation	X			Wetland does not provide recreational opportunities.	ortunities.
Educational/Scientific Value	X			Wetland is not effective as a site for outdoor learning or research.	learning or research.
\chi Uniqueness/Heritage	×			Wetland is not unique; exhibits characteristics typical to a utility ROW environment.	cs typical to a utility ROW environment.
Visual Quality/Aesthetics	X			Wetland does not hold aesthetic or visual qualities.	ıalities.
ES Endangered Species Habitat					

Notes:

Other



New England District						Wetland I.D. 101
otal area of wetland 0.58 Human made?	2	I	_Is wetland part of a wildlife corridor?_	rridor?_	Noor a "habitat island"? No_	Latitude 42.834553 Longitude -71.405132
Adjacent land use Access Road, ROW, Residential	ial		Distance to nearest r	oadway	Distance to nearest roadway or other development_25 feet	Prepared by: LGJ Date 12/12/2014
Dominant wetland systems present_PFO1E, PAB3G	ي		Contiguous undev	loped b	Contiguous undeveloped buffer zone present_No	Wetland Impact: Type_See TableArea_See Table
s the wetland a separate hydraulic system? No		_ If no	ot, where does the wetland I	ie in the	If not, where does the wetland lie in the drainage basin?Beginning	Evaluation based on:
how many tributaries contribute to the wetland?	None	- 1	_Wildlife & vegetation diver	ity/abur		Office Field
Function/Value	Suitabilitv Y N	billitv	Rationale (Reference #)*	Principal Functior	ı(s)/Value(s)	completed? Y_X_ N
groundwater Recharge/Discharge	X		2, 5, 7, 10, 15		Ponded area that feeds into a small branch of boundary. Very poorly drained soils present.	Ponded area that feeds into a small branch off of the Nesenkeag Brook. Boarders an aquifer boundary. Very poorly drained soils present.
Floodflow Alteration	X		3, 5, 6, 7, 8, 9, 10, 13	X	Wetland detains water before entering Nesen storage capacity.	Wetland detains water before entering Nesenkeag Brook. Very poorly drained soils, high water storage capacity.
Fish and Shellfish Habitat		X			Wetland does not contain suitable fish or shellfish habitat.	lfish habitat.
Sediment/Toxicant Retention		X	1, 2, 3, 4, 6, 10, 12		Moderate role in sediment/toxication reduction. Ponded area detains water from continui along waterway to Nesenkeag Brook; wetland located along boarder of aquifer boundary.	Moderate role in sediment/toxication reduction. Ponded area detains water from continuing along waterway to Nesenkeag Brook; wetland located along boarder of aquifer boundary.
Nutrient Removal	X		3, 4, 5, 7		Wetland function moderate in nutrient removal. Very poorly drained soils present.	ral. Very poorly drained soils present.
Production Export		X	1		Wetland function low in producing food for organisms.	rganisms.
Sediment/Shoreline Stabilization		X			Wetland is not located along the banks or shoreline of a waterbody.	reline of a waterbody.
⊘ Wildlife Habitat	X		6, 7, 8, 13	X	Food sources exist, vegetation density high. In close proximity to Newetland areas. Wetland contains aquatic bed habitat/ponded water.	Food sources exist, vegetation density high. In close proximity to Nesenkeag Brook and other wetland areas. Wetland contains aquatic bed habitat/ponded water.
Recreation		X			Wetland does not provide recreational opportunities.	tunities.
Educational/Scientific Value		X			Wetland is not effective as a site for outdoor learning or research.	earning or research.
\chi Uniqueness/Heritage		X			Wetland is not unique; exhibits characteristics typical to a utility ROW environment.	typical to a utility ROW environment.
Visual Quality/Aesthetics		X			Wetland does not hold aesthetic or visual qualities.	lities.
ES Endangered Species Habitat						
Other						

Notes:



New England District							Wetland ID 102, 102A, 102C
Total area of wetland 0,8,0.6,0.3Human made?	2		_ls wetland part of a wildlife corridor?_	orridor?	No	or a "habitat island"? No	Latitude 42.835155 Longitude 71.405794
Adjacent land useAccess Road, ROW, Residential	<u>ia</u>		Distance to nearest roadway or other development_	roadwa)	or othe	development_25 feet	Prepared by: LGJ Date 12/12/2014
Dominant wetland systems present_PFO1C, PEM/SS1C	/SS1C		Contiguous undeveloped buffer zone present No	veloped	buffer zo	ne present_No	wetiand impact: Type_See TableArea_See Table
Is the wetland a separate hydraulic system? Yes		— If no	If not, where does the wetland lie in the drainage basin?	l lie in th	e drainag	le basin?	Evaluation based on:
How many tributaries contribute to the wetland?_	None	b	_Wildlife & vegetation diversity/abundance (see attached list)	ersity/abu	ındance	(see attached list)	OfficeX FieldX
	Suita Y	Suitabilitv Y N		Principal Function	ipal tion(s)/		Corps manual wetland delineation completed? Y $\stackrel{\times}{\times}$ N $\stackrel{\longrightarrow}{\sim}$ Comments
Groundwater Recharge/Discharge	X		2, 5, 15	X	Topograduifer	Topographically located above wetland #101 aquifer boundary.	Topographically located above wetland #101. Moderately well drained soils. Located within aquifer boundary.
Floodflow Alteration		X	6, 14		Wetland of water.	function low in floodflow alteration.	Wetland function low in floodflow alteration. Topography relatively flat, retains small amounts of water.
Fish and Shellfish Habitat		X			Wetland	Wetland does not contain suitable fish or shellfish habitat.	llfish habitat.
Sediment/Toxicant Retention	X		1, 2, 3	X	Modera	Moderate role in sediment/toxication reduction. Topography amounts of water. Located adjacent to active farm operation.	Moderate role in sediment/toxication reduction. Topography relatively flat, retains small amounts of water. Located adjacent to active farm operation.
Nutrient Removal	X		3, 4, 9	X	Wetland dense, v	Wetland function moderate in nutrient removal. Diverse plant sy dense, woody stems. Located adjacent to active farm operation.	Wetland function moderate in nutrient removal. Diverse plant species present, including dense, woody stems. Located adjacent to active farm operation.
Production Export		X	1,7		Wetland	Wetland function low in producing food for organisms.	rganisms.
↓ Sediment/Shoreline Stabilization		X			Wetland	Wetland is not located along the banks or shoreline of a waterbody.	oreline of a waterbody.
€ Wildlife Habitat	X		7, 8, 13, 15	X	Food so	Food sources exist, vegetation density high. Vernal pool identified within wetland	/ernal pool identified within wetland.
Recreation		X			Wetland	Wetland does not provide recreational opportunities.	tunities.
Educational/Scientific Value		X			Wetland	Wetland is not effective as a site for outdoor learning or research.	earning or research.
\chi Uniqueness/Heritage		X			Wetland	l is not unique; exhibits characteristic	Wetland is not unique; exhibits characteristics typical to a utility ROW environment.
Visual Quality/Aesthetics		X			Wetland	Wetland does not hold aesthetic or visual qualities.	alities.
ES Endangered Species Habitat							
Other							

Notes:



INEW ENGRAND DISTILLE					Wetland I.D. 104
otal area of wetland 0.56 Human made?	8	_Is wetland part of a wildlife corridor?_	No	or a "habitat island"? No	Latitude 42.838385 Longitude -71.409197
djacent land use Roadway, ROW, Residential, Agricultural	Agricultura		Distance to nearest roadway or other development 10 feet	relopment 10 feet	Prepared by: LGJ Date 12/12/2014
Ominant wetland systems present PEM1F		Contiguous unc	Contiguous undeveloped buffer zone present No	oresent_No	Wetland Impact: _{Type} See Table Area See Table
the wetland a separate hydraulic system? Yes	lf n	If not, where does the wetland lie in the drainage basin?	ıd lie in the drainage ba	ısin?	on:
low many tributaries contribute to the wetland?	None	Wildlife & vegetation div	& vegetation diversity/abundance (see attached list)	attached list)	Office $ imes$ Field $ imes$
		, :			Corps manual wetland delineation completed? Y $ imes$ N
Function/Value	Suitabilitv Y N	Rationale (Reference #)*	Principal Function(s)/Value(s)		
星 Groundwater Recharge/Discharge	×	2, 5, 15	Ponded wetl	Ponded wetland; saturation visible. Located within aquifer boundary.	within aquifer boundary.
Floodflow Alteration	X	3, 6, 7, 8, 9, 14	Wetland pon surrounding	ided during portions of the year. watershed. Receives run-off fror	Wetland ponded during portions of the year. Topography relatively flat and retains water from surrounding watershed. Receives run-off from intermittent channel to the east.
Fish and Shellfish Habitat	×		Wetland doe	Wetland does not contain suitable fish or shellfish habitat.	ellfish habitat.
Sediment/Toxicant Retention	×	1, 2, 3, 5, 6	Topography available. Rec	Topography relatively flat, retains water within ponded area. La available. Receives run-off from developed parcels to the east.	Topography relatively flat, retains water within ponded area. Long-term water storage available. Receives run-off from developed parcels to the east.
Nutrient Removal	×	2, 3, 4, 5	Wetland fund find fields possibl	Wetland function moderate in nutrient removal. Excess nutrient source fields possible. Ponded area provides possible excess storage location.	Wetland function moderate in nutrient removal. Excess nutrient sources from agricultural fields possible. Ponded area provides possible excess storage location.
Production Export	X	1	Wetland fund	Wetland function low in producing food for organisms.	organisms.
↓ Sediment/Shoreline Stabilization	X	-	Wetland is no	Wetland is not located along the banks or shoreline of a waterbody.	oreline of a waterbody.
Wildlife Habitat	×	8, 12	Food sources	s exist. Wetland contains surface	Food sources exist. Wetland contains surface water (flooded) throughout portions of the year.
Recreation	×		Wetland doe	Wetland does not provide recreational opportunities.	rtunities.
Educational/Scientific Value	×		Wetland is no	Wetland is not effective as a site for outdoor learning or research.	learning or research.
🖊 Uniqueness/Heritage	X		Wetland is no	ot unique; exhibits characteristic	Wetland is not unique, exhibits characteristics typical to a utility ROW environment.
Visual Quality/Aesthetics	×		Wetland doe	Wetland does not hold aesthetic or visual qualities.	alities.
ES Endangered Species Habitat					
Other					

Notes:



otal area of wetland 0.4,0.03,0.7 uman made?		<u> </u>	Yes Is wetland part of a wildlife corridor? No	orridor?	No or a "habitat island"? No	Wetland I.D. 105, 10
Adiacent land use Roadway, ROW, Residential, Agricultural	J	ltural	Distance to nearest	roadwav	Je	Prepared by: LGJ Date 13
Oominant wetland systems present_PFO1B, PUB2H	エ		Contiguous unde	veloped k	Contiguous undeveloped buffer zone present No	Wetland Impact: See Table Area See Table
s the wetland a separate hydraulic system? Yes		lf no	If not, where does the wetland lie in the drainage basin?	lie in the	drainage basin?	i-
	Q C		::- ::- ::- ::- ::- ::- ::- ::- ::- ::-		(+ : F - - + + + + + + + + + + + + + + + + +	Office X Field X
dow many tributaries contribute to the wetland?			_Wildlife & vegetation dive	rsity/abu	& vegetation diversity/abundance (see attached list)	Corps manual wetland delineation
	Suitability	oilitv	Rationale	Principal	bal	completed? Y_X_ N
Function/Value	>	Z	(Reference #)*	Funct	Function(s)/Value(s)	Comments
星 Groundwater Recharge/Discharge	X		2, 5, 15		Portion of wetland complex ponded	Portion of wetland complex ponded; saturation visible. Located within aquifer boundary.
Floodflow Alteration	X		3, 6, 7, 8, 9, 14	X	Portion of wetland complex ponded. Topo surrounding residential/agricultural areas.	Portion of wetland complex ponded. Topography relatively flat. Receives run-off from surrounding residential/agricultural areas.
Fish and Shellfish Habitat		X			Wetland does not contain suitable fish or shellfish habitat.	n or shellfish habitat.
Sediment/Toxicant Retention	X		1, 2, 3, 5, 6	X	Topography relatively flat, retains water within ponded area. Long-term wavailable. Receives run-off from surrounding residential/agricultural areas.	Topography relatively flat, retains water within ponded area. Long-term water storage available. Receives run-off from surrounding residential/agricultural areas.
Nutrient Removal	X		2, 3, 4, 5	X	Wetland function moderate in nutrient removal. Excess nutrient source fields possible. Ponded area provides possible excess storage location.	Wetland function moderate in nutrient removal. Excess nutrient sources from agricultural fields possible. Ponded area provides possible excess storage location.
Production Export		X	-		Wetland function low in producing food for organisms.	od for organisms.
Sediment/Shoreline Stabilization		X			Wetland is not located along the banks or shoreline of a waterbody.	cs or shoreline of a waterbody.
⊘ Wildlife Habitat	X		8, 12		Food sources exist, vegetation densi	Food sources exist, vegetation density high. Vernal pool identified within wetland.
Recreation		X			Wetland does not provide recreational opportunities.	ıl opportunities.
Educational/Scientific Value		X			Wetland is not effective as a site for outdoor learning or research.	utdoor learning or research.
\chi Uniqueness/Heritage		X			Wetland is not unique; exhibits chara	Wetland is not unique; exhibits characteristics typical to a utility ROW environment.
Visual Quality/Aesthetics		X			Wetland does not hold aesthetic or visual qualities	sual qualities.
ES Endangered Species Habitat						
Other						

Notes:



New England District						Wetland ID 106
Total area of wetland 1.70 Human made?	8	_Is wetland part of a wildlife corridor?_		Yesora "habitat island"?No	1	Latitude 42.848364 Longitude -71.417584
Adjacent land useROW, Residential, Athletic Fields	ields	Distance to nearest roac	dway o	Distance to nearest roadway or other development100 feet	00 feet	Prepared by: LGJ Date 12/12/2014
Dominant wetland systems present PSS1C, PSS1F	Щ	Contiguous undeveloped buffer zone present No	ped b	uffer zone present_No		Wetland Impact: Type_See TableArea_See Table
Is the wetland a separate hydraulic system? No	<u>H</u>	If not, where does the wetland lie i	n the	re does the wetland lie in the drainage basin?Middle_		Evaluation based on:
How many tributaries contribute to the wetland?	-	Wildlife & vegetation diversity/abundance (see attached list)	//abun	dance (see attached list)		Office X Field X
Function/Value	Suitabilitv Y N	Rationale (Reference #)*	Principal Functior	Principal Function(s)/Value(s)	Con	completed? Y X N
groundwater Recharge/Discharge	X	2, 5, 7, 15		Portions of wetland flooded; vintermittent streams. Located	wetland associal I within aquifer k	Portions of wetland flooded; wetland associated with perennial stream and several intermittent streams. Located within aquifer boundary. Soil composed of sand and gravel.
Floodflow Alteration	X	6, 7, 8, 9, 10, 13, 14, 16	X	Portions of the wetland detains and regular of sand and gravel. Beaver activity present.	ns and regulates tivity present.	Portions of the wetland detains and regulates flow of water within watercourse. Soil composed of sand and gravel. Beaver activity present.
Fish and Shellfish Habitat	×			Wetland does not contain suitable fish or shellfish habitat.	table fish or she	lífish habitat.
Sediment/Toxicant Retention	X	1, 2, 3, 5, 6, 10, 11, 12, 16	X	Water moves slowly through wetland comple flat. Some long-term water storage available.	wetland comple orage available.	Water moves slowly through wetland complex via braided channels. Topography relatively flat. Some long-term water storage available.
Nutrient Removal	X	3, 4, 5, 8, 9,12, 13, 14	X	Water moves slowly through flat. Some long-term water st	wetland comple orage available.	Water moves slowly through wetland complex via braided channels. Topography relatively flat. Some long-term water storage available. Source of excess nutrients unknown.
Production Export	X	1, 4, 7		Wetland function low in producing food for organisms.	ucing food for o	rganisms.
Sediment/Shoreline Stabilization	X	1, 3, 4, 5, 7, 12, 13	X	Wetland located along an unnamed perennial stream channel.	named perennia	ıl stream channel.
र्ी Wildlife Habitat	X	6, 7, 8, 9, 13, 17	X	Food sources exist. Beaver activity areas.	tivity observed.	Food sources exist. Beaver activity observed. Within tier 1 and 2 for top ranked critical habitat priority areas.
Recreation	X			Wetland does not provide recreational opportunities.	reational oppor	tunities.
Educational/Scientific Value	X			Wetland is not effective as a site for outdoor learning or research.	ite for outdoor l	earning or research.
🜟 Uniqueness/Heritage	X			Wetland is not unique; exhibi	ts characteristics	Wetland is not unique; exhibits characteristics typical to a utility ROW environment.
Visual Quality/Aesthetics	X			Wetland does not hold aesthetic or visual qualities.	etic or visual qua	alities.
ES Endangered Species Habitat						
Other						

Notes:



INOW ELIGIBILITY DISUITOR					Wetland I.D. 108
otal area of wetland 0.85 Human made?	8	_Is wetland part of a wildlife corridor?_	corridor?_	Yes or a "habitat island"? No	- Latitude 42.850591 Longitude -71.419350
diacent land use Roadway, ROW, Residential, Athletic Fields	Athletic Fie		st roadway	Distance to nearest roadway or other development 1200 feet	Prepared by: LGJ Date 12/12/2014
ominant wetland systems present_PEM1E		Contiguous und	, eveloped k	Contiguous undeveloped buffer zone present No	Wetland Impact: Type See Table Area See Table
the wetland a separate hydraulic system? Yes	lf n	If not, where does the wetlar	id lie in the	re does the wetland lie in the drainage basin?	Evaluation based on:
low many tributaries contribute to the wetland?	None	Wildlife & vegetation div	rersitv/abu	Wildlife & vegetation diversity/abundance (see attached list)	OfficeField
	Suitability		Principal	oal	Corps manual wetland delineation completed? Y_X_NN
Function/Value	N >		Funct	Function(s)/Value(s)	Comments
星 Groundwater Recharge/Discharge	×	2, 4, 5,15	X	GW Recharge. Located within aquifer bou contains mucky soils and emergent veget	GW Recharge. Located within aquifer boundary. Wetland located in depressional area, contains mucky soils and emergent vegetation. Wetland retains water, not outlet present.
Floodflow Alteration	×	5, 6, 9, 18	X	Wetland function limited due to size and lack of contributing watercourses.	ack of contributing watercourses.
Fish and Shellfish Habitat	×			Wetland does not contain suitable fish or shellfish habitat.	shellfish habitat.
Sediment/Toxicant Retention	×	1, 3, 5, 9		Topography relatively flat, wetland retain term water storage available.	Topography relatively flat, wetland retains water. Surrounded by sandy disturbed areas. Long-term water storage available.
Nutrient Removal	×	3, 5, 6, 8, 9		Topography relatively flat, wetland retain	Topography relatively flat, wetland retains water. Long-term water storage available.
Production Export	×	1		Wetland function low in producing food for organisms.	or organisms.
↓ Sediment/Shoreline Stabilization	×			Wetland is not located along the banks or shoreline of a waterbody.	shoreline of a waterbody.
ک Wildlife Habitat	×	7, 13		Wetland located within tier 1 and 2 for top r function/value low due to size and location.	Wetland located within tier 1 and 2 for top ranked critical habitat priority areas; however function/value low due to size and location.
Recreation	×			Wetland does not provide recreational opportunities.	portunities.
Educational/Scientific Value	×			Wetland is not effective as a site for outdoor learning or research.	oor learning or research.
\chi Uniqueness/Heritage	×			Wetland is not unique; exhibits characteri	Wetland is not unique, exhibits characteristics typical to a utility ROW environment.
Visual Quality/Aesthetics	×			Wetland does not hold aesthetic or visual qualities.	qualities.
ES Endangered Species Habitat					
Other					

Notes:



ootential is very low.	Wetland is small, gw recharge/discharge potential is very low.	4, 15	× arge	▼ Groundwater Recharge/Discharge
Comments	Function(s)/Value(s)	(Reference #)*	N ×	Function/Value
completed? Y_X_ N	Principal	Rationale	Suitability	
Corps manual wetland delineation	Wildlife & vegetation diversity/abundance (see attached list)	Wildlife & vegetation divers	land? None	How many tributaries contribute to the wetland?None_
Evaluation based on:	ie in the drainage basin?	If not, where does the wetland lie in the drainage basin?N/A		Is the wetland a separate hydraulic system? Yes
Type_See Table_Area_See Table_	Contiguous undeveloped buffer zone present No	Contiguous undeve		Dominant wetland systems present_PSS1C_
Wetland Impact:	Distance to nearest roadway or other development.	Distance to nearest ro		Adjacent land use
Prepared by: KPW Date 05/29/15				Boadway, ROW
part of a wildlife corridor? No or a "habitat island"? No Latitude 42.852133 Longitude -71.421754	rridor? No or a "habitat island"? No		Human made? No_Is wetland	Total area of wetland 0.12 Human r
Wetland I.D. OR3				New England District

Groundwater Recharge/Discharge		X	4, 15		Wetland is small, gw recharge/discharge potential is very low.
Floodflow Alteration		X	5,9		Wetland function absent due to size and lack of contributing watercourses.
Fish and Shellfish Habitat		X			Wetland does not contain suitable fish or shellfish habitat.
Sediment/Toxicant Retention	X		1,4		Topography relatively flat, receives surface run-off from adjacent roadway. Size limits function.
Nutrient Removal		X	6,8		Topography relatively flat, however lack of source of excess nutrients.
Production Export		X	-		Wetland function low in producing food for organisms.
Sediment/Shoreline Stabilization		X			Wetland is not located along the banks or shoreline of a waterbody.
्र Wildlife Habitat	X		7, 13	X	Wetland located within NHNHB occurrence area.
Recreation		X			Wetland does not provide recreational opportunities.
Educational/Scientific Value		X			Wetland is not effective as a site for outdoor learning or research.
🜟 Uniqueness/Heritage		X			Wetland is not unique; exhibits characteristics typical to a utility ROW environment.
Visual Quality/Aesthetics		\times			Wetland does not hold aesthetic or visual qualities.
ES Endangered Species Habitat					
Other					

Notes:



New Ligidita District							Wetland I.D. 109	
Fotal area of wetland 0.05 Human made?	8	ls wetland	etland part of a wildlife corridor?_	orridor?_	No or a "habitat island"? No		851384	Longitude71.419032
Adjacent land use ROW, Forest, Residential			Distance to neares'	t roadway	Distance to nearest roadway or other development	>500 ft.		Date 12/12/2014
Dominant wetland systems present PSS1C			Contiguous unde	eveloped k	Contiguous undeveloped buffer zone present No		Wetland Impact: _{Type_} See Table	Area_See Table_
s the wetland a separate hydraulic system? Yes		_ If not	If not, where does the wetland lie in the drainage basin? $\overline{{ m N/A}}$	d lie in the	drainage basin?N/A		Evaluation based on:	
How many tributaries contribute to the wetland?	None	- 1	Wildlife & vegetation dive	ersity/abuı	& vegetation diversity/abundance (see attached list)		Office Kield	X
5 Function/Value	Suitabilitv Y N	ıbilitv N	Rationale (Reference #)*	Principal Functior	Principal Function(s)/Value(s)	Con	completed? Y X N	
Groundwater Recharge/Discharge		X	4, 5,15	X	Wetland does not contribute to gw recharge/discharge function.	e to gw recharge/	/discharge function.	
Floodflow Alteration		X	7	X	Wetland does not provide fl	ood storage base	Wetland does not provide flood storage based on small size and location.	
Fish and Shellfish Habitat		X			Wetland does not contain suitable fish or shellfish habitat.	uitable fish or she	ilfish habitat.	
Sediment/Toxicant Retention	X		1,2		Wetland does not provide this function due to small size and location	nis function due t	o small size and location	
Nutrient Removal	X		4		Wetland does not provide this function due to small size and location	nis function due t	o small size and location	
Production Export		X	-		Wetland function low in producing food for organisms.	ducing food for c	organisms.	
↓ Sediment/Shoreline Stabilization		X			Wetland is not located along the banks or shoreline of a waterbody.	g the banks or sho	oreline of a waterbody.	
Wildlife Habitat	X		7		Wetland does not provide this function due to small size and location	nis function due t	o small size and location	
Recreation		X			Wetland does not provide recreational opportunities.	ecreational oppor	runities.	
Educational/Scientific Value		X			Wetland is not effective as a site for outdoor learning or research.	site for outdoor l	learning or research.	
Vniqueness/Heritage		X			Wetland is not unique; exhil	oits characteristic	Wetland is not unique; exhibits characteristics typical to a utility ROW environment.	onment.
Visual Quality/Aesthetics		X			Wetland does not hold aesthetic or visual qualities.	hetic or visual qua	alities.	
ES Endangered Species Habitat								
Other								

Notes:



New England District					Wetland LD 110
otal area of wetland 2.79 Human made?	S S	_Is wetland part of a wildlife corridor?_	idor?_	Yes or a "habitat island"? No	Latitude 42.852124 Longitude -71.418198
djacent land useRoadway, ROW, Residential		Distance to nearest roa	adway	Distance to nearest roadway or other development_50 feet	Prepared by: LGJ Date 12/12/2014
ominant wetland systems present_PEM1E		Contiguous undevel	oped b	Contiguous undeveloped buffer zone present No	Wetland Impact: Type_See TableArea_See Table
the wetland a separate hydraulic system? No	- J	If not, where does the wetland lie in the drainage basin? Middle	in the	drainage basin?Middle	Evaluation based on:
low many tributaries contribute to the wetland?	-	Wildlife & vegetation diversit	v/abur	& vegetation diversity/abundance (see attached list)	Office X Field X
	Suitability	Rati	Principal	led	Corps manual wetland delineation completed? Y_X_ N
Function/Value	N ×	(Reference #)*	uncti	ı(s)/Value(s)	Comments
星 Groundwater Recharge/Discharge	×	2, 4, 5, 7, 9, 15	X	Located within aquifer boundary. Large emergent system.	rgent system.
Floodflow Alteration	X	3, 5, 6, 7, 9, 10, 13, 14, 15	X	Large emergent wetland system within relatively flat area, associated with unnar stream. Channel is not well defined through wetland, constricted outlet present.	Large emergent wetland system within relatively flat area, associated with unnamed perennial stream. Channel is not well defined through wetland, constricted outlet present.
Fish and Shellfish Habitat	X			Wetland does not contain suitable fish or shellfish habitat.	llfish habitat.
Sediment/Toxicant Retention	X	1, 3, 4, 5, 6, 9,10, 11,14,16	X	Topography relatively flat, large emergent wetland system. Water flow diffuse through wetland. Located adjacent to roadway and residential parcels.	trland system. Water flow diffuse through sidential parcels.
Nutrient Removal	X	3, 5, 7, 8, 9,12, 13, 14	X	Wetland function moderate in nutrient remov location.	Wetland function moderate in nutrient removal. Ponded area provides possible excess storage location.
Production Export	X	-		Wetland function low in producing food for organisms.	rganisms.
↓ Sediment/Shoreline Stabilization	X	5, 7, 12, 13		Wetland is associated with unnamed perenni wetland.	Wetland is associated with unnamed perennial stream. Channel is not well defined through wetland.
ک Wildlife Habitat	×	6, 7, 8, 13		Food sources exist, vegetation density high. V priority areas.	Food sources exist, vegetation density high. Within tier 1 and 2 for top ranked critical habitat priority areas.
Recreation	X			Wetland does not provide recreational opportunities.	tunities.
Educational/Scientific Value	X			Wetland is not effective as a site for outdoor learning or research.	earning or research.
🖊 Uniqueness/Heritage	X			Wetland is not unique; exhibits characteristics typical to a utility ROW environment.	s typical to a utility ROW environment.
Visual Quality/Aesthetics	X	-		Wetland does not hold aesthetic or visual qualities.	lities.
ES Endangered Species Habitat					
Other					

Notes:



New England District					Wetland ID 111
otal area of wetland 2.99 Human made?	9	_ls wetland part of a wildlife corridor?_	orridor?_	Yes or a "habitat island"? No	Latitude 42.854397 Longitude -71.417326
djacent land use_Roadway, ROW, Residential		Distance to neares	t roadway	Distance to nearest roadway or other development_50 feet	Prepared by: LGJ Date 12/12/2014
ominant wetland systems present_PEM1E, PFO/PSS1E	/PSS1E	Contiguous unde	pedoled	Contiguous undeveloped buffer zone present No	Wetland Impact: Type_See TableArea_See Table
the wetland a separate hydraulic system? No		If not, where does the wetland lie in the drainage basin? Middle	d lie in the	e drainage basin?Middle	Evaluation based on:
low many tributaries contribute to the wetland?	None	Wildlife & vegetation div	ersity/abu	& vegetation diversity/abundance (see attached list)	Office X Field X
Finction//alue	Suitability	- Rati (Ref	Principal		Corps manual wetland delineation completed? Y_X_ N
		7 4 5 7 15		Located within aguifer boundary. Large wetl	Located within aquifer boundary. Large wetland complex comprised largely of emergent and
Groundwater Recnarge/Discharge	X	2, 4, 5, 7, 15	X	scrub-shrub vegetation.	
Floodflow Alteration	\times	5, 6, 7, 9, 10, 13, 18	X	Large wetland complex with flood storage poutside of study area.	Large wetland complex with flood storage potential. Associated with perennial stream located outside of study area.
Fish and Shellfish Habitat	×			Wetland does not contain suitable fish or shellfish habitat.	ilfish habitat.
Sediment/Toxicant Retention	×	1, 3, 4, 5, 6, 9, 10, 16	X	Large wetland complex comprised largely of emergent and scroutside of ROW. Adjacent to residential property and roadway.	Large wetland complex comprised largely of emergent and scrub-shrub vegetation. Extends outside of ROW. Adjacent to residential property and roadway.
Nutrient Removal	×	3, 5, 7, 8, 9	X	Large wetland complex comprised largely of emergent and scroutside of ROW. Adjacent to residential property and roadway.	Large wetland complex comprised largely of emergent and scrub-shrub vegetation. Extends outside of ROW. Adjacent to residential property and roadway.
Production Export	×	1,7		Wetland function low in producing food for organisms.	organisms.
↓ Sediment/Shoreline Stabilization	×			Wetland is not located along the banks or sh	Wetland is not located along the banks or shoreline of a waterbody within the study area.
ک Wildlife Habitat	×	6, 7, 8, 13		Food sources exist, vegetation density high. areas.	Food sources exist, vegetation density high. Within tier 1 for top ranked critical habitat priority areas.
Recreation	X			Wetland does not provide recreational opportunities.	rtunities.
Educational/Scientific Value	X			Wetland is not effective as a site for outdoor learning or research.	learning or research.
\chi Uniqueness/Heritage	×			Wetland is not unique; exhibits characteristics typical to a utility ROW environment.	s typical to a utility ROW environment.
Visual Quality/Aesthetics	×			Wetland does not hold aesthetic or visual qualities.	alities.
ES Endangered Species Habitat					
Other					

Notes:



New England District					Wetland I.D. 112	
Total area of wetland <u>0.89</u> Human made? <u>No</u> Is wetland	e? No		corridor? No	part of a wildlife corridor? No or a "habitat island"? No Latitude 42.854747 Longitude -71.416441	40_ Latitude 42.854747	Longitude -71.416441
Adiscent Island use Boadway, ROW, Residential	<u></u>	parent of another	+ vo solvestion	Distance to nearest roadway or other development 150 feet	Prepared by: LGJ	Date 12/12/2014
ישלאכרוני ומוס מזכ			t loadway of other		Wetland Impact:	
Dominant wetland systems present PSS1B, PFO1B	01B	Contiguous und	eveloped buffer z	Contiguous undeveloped buffer zone present No	Type_See Table	Area See Table
Is the wetland a separate hydraulic system? No		If not, where does the wetland lie in the drainage basin? Middle	d lie in the draina	age basin? Middle	Evaluation based on:	
How many triputation containing of the west respectively	None	Wildlife & vocastation divorcity/abundance (con attached lict)	yachande/vtiovo	(soc) setts chool liet)	Office Field	
now many unbaranes confindace to the wedance		wildlife & vegetation alv	eisity/abdiidaiict	e (see attaciled list)	Corps manual wetland delineation	and delineation
	Suitability	ity Rationale	Principal		completed? Y_X_ N	
Function/Value	Z ≻	(Reference #)*	Function(s)/Value(s)	//Value(s)	Comments	

	-	2			
▼ Groundwater Recharge/Discharge		\times	2, 4, 5, 15		Located within aquifer boundary.
Floodflow Alteration	X		6, 7, 9, 18	X	Wetland has some flood storage capacity.
Fish and Shellfish Habitat		X	-		Wetland does not contain suitable fish or shellfish habitat.
Sediment/Toxicant Retention		X	1,4		Wetland lacks of source of excess sediments/toxicants. Long duration water retention is limited.
Nutrient Removal		X	7,8		Wetland lacks source of excess nutrients. Long duration water retention is limited.
Production Export		X	1		Wetland function low in producing food for organisms.
Sediment/Shoreline Stabilization		\times			Wetland is not located along the banks or shoreline of a waterbody.
ن Wildlife Habitat	X		7, 8, 13		Food sources exist, vegetation density moderate. Located just outside tier 1 for top ranked critical habitat priority areas.
Recreation		\times			Wetland does not provide recreational opportunities.
Educational/Scientific Value		\times			Wetland is not effective as a site for outdoor learning or research.
🜟 Uniqueness/Heritage		X			Wetland is not unique; exhibits characteristics typical to a utility ROW environment.
Visual Quality/Aesthetics		\times			Wetland does not hold aesthetic or visual qualities.
ES Endangered Species Habitat					
Other					

Notes:



New England District							Wetland ID 114
otal area of wetland 1.04 Human made?	8		_ls wetland part of a wildlife corridor?_	ridor?	No or	or a "habitat island"? No	1 ∞ 1
Adjacent land useROW, Residential, Forest			Distance to nearest r	oadway o	or other dev	Distance to nearest roadway or other development_150 feet	Prepared by: LGJ Date 12/15/2014
Dominant wetland systems present_PEM/SS1E, PFO1C	F01C		Contiguous undeveloped buffer zone present No	d bədola	uffer zone p		Wetland Impact: Type_See TableArea_See Table
s the wetland a separate hydraulic system? No		If no	If not, where does the wetland lie in the drainage basin?Beginning	e in the	drainage ba		Evaluation based on:
How many tributaries contribute to the wetland?_	None		.Wildlife & vegetation diversity/abundance (see attached list)	ity/abur	dance (see		Office Kield K
5 Function/Value	Suitabilitv Y N		Rationale (Reference #)*	Principal Functior	Principal Function(s)/Value(s)	Con	Copps manual wetland delineation completed? $Y_{}$ N
g Groundwater Recharge/Discharge	X		2, 4, 5, 15		Wetland con	Wetland contains variable water levels, adjacent to larger flooutside of the ROW. Close proximity to an aquifer boundary.	Wetland contains variable water levels, adjacent to larger flooded wetland system located just outside of the ROW. Close proximity to an aquifer boundary.
Floodflow Alteration	X		2, 3, 5, 6, 7, 9, 10, 18	X	Wetland app Also may rec	Wetland appears to be fed by drainage from neighboring residenti Also may receive excess floodwater from large system to the west.	Wetland appears to be fed by drainage from neighboring residential properties to the east. Also may receive excess floodwater from large system to the west.
Fish and Shellfish Habitat		X			Wetland doe	Wetland does not contain suitable fish or shellfish habitat.	lfish habitat.
Sediment/Toxicant Retention		X	1, 4		Wetland fund	Wetland function low in sediment/toxication retention	retention.
Nutrient Removal		X	3, 4, 7, 8, 9		Wetland fund	Wetland function low in nutrient removal.	
Production Export		X	1,7		Wetland fund	Wetland function low in producing food for organisms.	rganisms.
		X			Wetland is no	Wetland is not located along the banks or shoreline of a waterbody.	reline of a waterbody.
ک Wildlife Habitat	X		7, 8, 13,18	×	Food sources exist, wetland boundary.	s exist, veg density high. Field ide ndary.	Food sources exist, veg density high. Field identified potential vernal pool located within wetland boundary.
Recreation		X			Wetland doe	Wetland does not provide recreational opportunities.	unities.
Educational/Scientific Value		X			Wetland is no	Wetland is not effective as a site for outdoor learning or research.	earning or research.
Vniqueness/Heritage		X			Wetland is no	ot unique; exhibits characteristics	Wetland is not unique; exhibits characteristics typical to a utility ROW environment.
Visual Quality/Aesthetics		X			Wetland doe	Wetland does not hold aesthetic or visual qualities.	lities.
ES Endangered Species Habitat							
Other							

Notes:



INEW ETIBLISHING DISHING						Wetland I.D. 115	
otal area of wetland 1.90 Human made?	8	_Is wetland part of a wildlife corridor?_	orridor?_	No or a "habitat island"? No		Latitude 42.860169 Longitude -71.413684	4
djacent land use_ROW, Residential, Forest		Distance to nearest	roadway	Distance to nearest roadway or other development 150 feet) feet	Prepared by: LGJ Date 12/15/2014	4
ominant wetland systems present PFO1B, PEM1E, PFO1E	1E, PFO1E	Contiguous under	veloped	Contiguous undeveloped buffer zone present_No		Wetland Impact: _{Type} See Table _{Area} See Table	ا به
the wetland a separate hydraulic system? No	If n	ot, where does the wetland	lie in the	If not, where does the wetland lie in the drainage basin?Beginning		Evaluation based on:	
low many tributaries contribute to the wetland?_	None	_Wildlife & vegetation diversity/abundance (see attached list)	rsity/abu	ndance (see attached list)		Office Kield K	
oule/Vacitoria	Suitability	Rationale	Principal	Principal Eunztion(s) (Value(s)	5	completed? Y X N	
י מורנוסוי אמומע	2	(וופופופורפ #)	- -	O (3) Valde(3)	<u> </u>	וווופוורא	Г
🚆 Groundwater Recharge/Discharge	×	2, 4, 5, 15	X	Recharge-Wetland associated v ROW. Wetland is within close p	vith large flood roximity to an	Recharge-Wetland associated with large flooded complex just outside (west of) the project ROW. Wetland is within close proximity to an aquifer boundary.	
Floodflow Alteration	×	2, 3, 5, 6, 7, 9, 10, 18	X	Small pockets of ponded water visible. Wetland associated with large water movement through wetland due to relatively flat topography.	visible. Wetlar and due to rela	Small pockets of ponded water visible. Wetland associated with large flooded complex. Slow water movement through wetland due to relatively flat topography.	
Fish and Shellfish Habitat	×			Wetland does not contain suitable fish or shellfish habitat.	ble fish or she	ilfish habitat.	
Sediment/Toxicant Retention	X	1, 3, 4, 5, 6		Slow water movement through wetland. Small pockets of ponto retain water. Wetland contains dense emergent vegetation.	n wetland. Sma ns dense emer	Slow water movement through wetland. Small pockets of ponded water visible. Wetland able to retain water. Wetland contains dense emergent vegetation.	
Nutrient Removal	×	3, 4, 5, 7, 8, 9		Wetland function moderate in nutrient removal.	nutrient remov	val.	
Production Export	×	1, 7, 8		Wetland function low in producing food for organisms.	cing food for o	organisms.	
↓ Sediment/Shoreline Stabilization	×			Wetland is not located along the banks or shoreline of a waterbody.	e banks or sho	oreline of a waterbody.	
Wildlife Habitat	X	6, 7, 8, 9	X	Food sources exist, vegetation d interspersion of wetland classes.	density high. C s.	Food sources exist, vegetation density high. Open water present. Wetland contains interspersion of wetland classes.	
Recreation	×			Wetland does not provide recreational opportunities.	eational oppor	rtunities.	
Educational/Scientific Value	×			Wetland is not effective as a site for outdoor learning or research.	e for outdoor l	learning or research.	
🖊 Uniqueness/Heritage	×			Wetland is not unique; exhibits	characteristics	Wetland is not unique; exhibits characteristics typical to a utility ROW environment.	
Visual Quality/Aesthetics	X			Wetland does not hold aesthetic or visual qualities	ic or visual qua	alities.	
ES Endangered Species Habitat							
Other							

Notes:



New England District						Wetland 10, 117, 1178, 1178
Total area of wetland 0.4, 0.4, 0.5Human made?	8	- 1	Is wetland part of a wildlife corridor? No	ridor?_	or a "habitat island"? No	Latitude 42.867044 Longitude -71.409324
Adjacent land use_ROW, Residential, Forest			Distance to nearest ro	adway	Distance to nearest roadway or other development	Prepared by: LGJ Date 12/15/2014
Dominant wetland systems present_PEM/SS1C,E, PFO5H,1C, PEM1E,	PF05	H,1C,	PEM1E, Contiguous undeve	loped l	Contiguous undeveloped buffer zone present_No	Wetland Impact: Type_See TableArea_See Table
Is the wetland a separate hydraulic system? No			If not, where does the wetland li	e in the	re does the wetland lie in the drainage basin?Beginning	Evaluation based on:
How many tributaries contribute to the wetland?	7		Wildlife & vegetation diversity/abundance (see attached list)	ty/abu	ndance (see attached list)	Office X Field X Corps manual wetland delineation
5 Function/Value	Suitabilitv Y N	abilit N	Rationale (Reference #)*	Principa Functior	ا ۱(s)/Value(s)	completed? Y X NComments
y Groundwater Recharge/Discharge	X		2, 4, 5, 7, 15		Intermittent channel associated with wetland complex to the west of the project ROW. Op	Intermittent channel associated with wetland complex. Wetland contiguous to large flooded complex to the west of the project ROW. Open-water area composed of mucky peat soils.
Floodflow Alteration	X		5, 6, 7, 9, 10, 13, 18	X	Large emergent wetland complex with open water component.	water component.
Fish and Shellfish Habitat		X	-		Wetland does not contain suitable fish or shellfish habitat.	ilfish habitat.
Sediment/Toxicant Retention	X		1, 3, 4, 5, 10, 12, 14, 15, 1		Water moves slow through wetland; wetland contains dense emergent and scrub-shrub vegetation. Wetland may receive run-off from residential properties to the east.	contains dense emergent and scrub-shrub n residential properties to the east.
Nutrient Removal	X		2, 3, 4, 5, 6, 7, 8, 9,14		Slow-moving waters of wetland and soil type create potential for nu Wetland may receive run-off from residential properties to the east.	Slow-moving waters of wetland and soil type create potential for nutrient removal function. Wetland may receive run-off from residential properties to the east.
Production Export		X	1,7		Wetland function low in producing food for organisms.	organisms.
Sediment/Shoreline Stabilization		X	-		Wetland is not located along the banks or shoreline of a waterbody.	oreline of a waterbody.
ك Wildlife Habitat	X		6, 7, 8, 9, 11, 12, 14, 15	X	Food sources exist, vegetation density high. I Large open-water area.	Food sources exist, vegetation density high. Plant species and community structure diverse. Large open-water area.
Recreation		X	-		Wetland does not provide recreational opportunities.	tunities.
Educational/Scientific Value		X	-		Wetland is not effective as a site for outdoor learning or research.	earning or research.
🜟 Uniqueness/Heritage		X			Wetland is not unique; exhibits characteristics typical to a utility ROW environment.	s typical to a utility ROW environment.
Visual Quality/Aesthetics		X			Wetland does not hold aesthetic or visual qualities.	alities.
ES Endangered Species Habitat						
Other						

Notes:



New England District					Wetland I.D. 120
otal area of wetland 0.01 Human made?	No Is v	_Is wetland part of a wildlife corridor?_	corridor? No	or a "habitat island"? No	Latitude 42.867110 Longitude -71.409726
Adjacent land use_Roadway, ROW, Residential_		Distance to nearest roadway or other development_	t roadway or othe	r development_500 feet	Prepared by: LGJ Date 1/20/2015
Dominant wetland systems present_PSS1B		Contiguous und	Contiguous undeveloped buffer zone present No	one present_No	Wetland Impact: Type_See TableArea_See Table
s the wetland a separate hydraulic system? Yes	lf n	If not, where does the wetland lie in the drainage basin? $\overline{\ \ \ \ \ \ \ \ \ }$	d lie in the draina	ge basin?N/A	Evaluation based on:
-low many tributaries contribute to the wetland?	None	_Wildlife & vegetation diversity/abundance (see attached list)	ersity/abundance	(see attached list)	Office Keld Keld Keld Keld Residual Adlinostion
Function/Value	Suitabilitv Y N	Rationale (Reference #)*	Principal Function(s)/Value(s)		Corps manual wetland delineation completed? Y_X_ N Comments
Groundwater Recharge/Discharge		4, 5, 15	Wetlar	ontribute to gw rech	/discharge function.
Floodflow Alteration	X	6	Wetlar	Wetland does not provide flood storage based on small size and location.	d on small size and location.
Fish and Shellfish Habitat	X	1	Wetlar	Wetland does not contain suitable fish or shellfish habitat.	llfish habitat.
Sediment/Toxicant Retention	X	1,2	Wetlar	Wetland does not provide this function due to small size and location.	o small size and location.
Nutrient Removal	X	4	Wetlar	Wetland does not provide this function due to small size and location.	o small size and location.
Production Export	X	-	Wetlar	Wetland function low in producing food for organisms.	organisms.
↓ Sediment/Shoreline Stabilization	×	!	Wetlar	Wetland is not located along the banks or shoreline of a waterbody.	oreline of a waterbody.
Wildlife Habitat	X	7	Wetlar	Wetland does not provide this function due to small size and location	o small size and location
Recreation	×	!	Wetlar	Wetland does not provide recreational opportunities.	tunities.
Educational/Scientific Value	X		Wetlar	Wetland is not effective as a site for outdoor learning or research.	earning or research.
Vniqueness/Heritage	X		Wetlar	nd is not unique; exhibits characteristic	Wetland is not unique; exhibits characteristics typical to a utility ROW environment.
Visual Quality/Aesthetics	X		Wetlar	Wetland does not hold aesthetic or visual qualities.	alities.
ES Endangered Species Habitat					
Other					

Notes: Very small isolated wetland confined within ROW limits.



	ON ON		CN C. C. C.	ON C"Los la: ++++ dad" 000	
	2	wetiand part of a wildlife corridor.	ĺ	Or a Habitat Island	Latitude 42.86922/ Longitude -71.408395
Adjacent land use Roadway, ROW, Residential		Distance to neare:	st roadway or o	Distance to nearest roadway or other development 10 feet	Prepared by: LGJ Date 12/15/2014
Dominant wetland systems present_PF01C		Contiguous und	leveloped buffe	Contiguous undeveloped buffer zone present_No	Wetland Impact: _{Tyne} See Table _{Area} See Table
= -	-	; ; -	- - - -	۵/N	
is tne wetiand a separate nydraulic system <i>:</i>		If not, where does the wetland lie in the drainage basin?	id lie in the dra	ınage basın <i>:</i>	ion based $ imes$
How many tributaries contribute to the wetland?	None	Wildlife & vegetation div	rersity/abundar	& vegetation diversity/abundance (see attached list)	Corps manual wetland delineation
	Suitabilitv		Principal		completed? Y_X_ N
Function/Value	z >	(Reference #)*	Function	Function(s)/Value(s) Cor	Comments
星 Groundwater Recharge/Discharge	X	4, 5, 15	We	Wetland does not contribute to gw recharge/discharge function.	/discharge function.
Floodflow Alteration	×	6	We	Wetland does not provide flood storage based on small size and location.	ed on small size and location.
Fish and Shellfish Habitat	×	1	We	Wetland does not contain suitable fish or shellfish habitat.	ilfish habitat.
Sediment/Toxicant Retention	X	1, 2, 4	We	Wetland does not provide this function due to small size and location.	o small size and location.
Nutrient Removal	×	4	We	Wetland does not provide this function due to small size and location.	o small size and location.
Production Export	×	-	We	Wetland function low in producing food for organisms.	organisms.
Sediment/Shoreline Stabilization	×	!	We	Wetland is not located along the banks or shoreline of a waterbody.	oreline of a waterbody.
ك Wildlife Habitat	×	7	We	Wetland does not provide this function due to small size and location	co small size and location
Recreation	X	!	We	Wetland does not provide recreational opportunities.	rtunities.
Educational/Scientific Value	×		We	Wetland is not effective as a site for outdoor learning or research.	learning or research.
\chi Uniqueness/Heritage	×		We	Wetland is not unique; exhibits characteristics typical to a utility ROW environment.	s typical to a utility ROW environment.
Visual Quality/Aesthetics	X	-	We	Wetland does not hold aesthetic or visual qualities.	alities.
ES Endangered Species Habitat					
Other					

Notes: Small isolated wetland located adjacent to residential driveway with ROW.



						Wetland ID 124
Total area of wetland 0.96 Human made?	8	_ls wetland part of a wildlife corridor?_	corridor?	No	or a "habitat island"? No	Latitude 42.871049 Longitude -71.406883
Adjacent land use_Access Road, Roadway, ROW, Residential	/, Residential	Distance to neares	t roadwa	y or other	Distance to nearest roadway or other development_10 feet	Prepared by: LGJ Date 05/12/2015
Dominant wetland systems present_PSS/EM1E		Contiguous undeveloped buffer zone present No	padolava	buffer zo	ne present_No	Type_See TableArea_See Table
Is the wetland a separate hydraulic system? Yes	If not	If not, where does the wetland lie in the drainage basin? $\overline{ m N/A}$	d lie in th	e drainag	je basin?	Evaluation based on:
How many tributaries contribute to the wetland? None		Wildlife & vegetation diversity/abundance (see attached list)	ersity/abı	undance ((see attached list)	Office $ imes$ Field $ imes$ Corps manual wetland delineation
Function/Value	Suitabilitv Y N	Rationale (Reference #)*	Principal Functior	ipal tion(s)/⁄	 Principal Function(s)/Value(s) Cor	completed? Y_X_ N Comments
groundwater Recharge/Discharge	X	2, 5, 15		Wetland	Wetland exhibits signs of variable water levels.	S
Floodflow Alteration	×	6, 9, 18	X	Some flo function	Some flood storage capacity due to wetland' function/value low due to wetland size.	Some flood storage capacity due to wetland's position within the landscape; however function/value low due to wetland size.
Fish and Shellfish Habitat	X			Wetland	Wetland does not contain suitable fish or shellfish habitat.	llfish habitat.
Sediment/Toxicant Retention	X			Wetland	d is not effective in sediment/toxicant	Wetland is not effective in sediment/toxicant retention due to small size and location.
Nutrient Removal	X	3, 4, 5, 8		Wetland	Wetland is not effective in nutrient removal due to small size and location.	ue to small size and location.
• Production Export	X	1,7		Wetland	Wetland function low in producing food for organisms.	organisms.
Sediment/Shoreline Stabilization	X			Wetland	Wetland is not located along the banks or shoreline of a waterbody.	oreline of a waterbody.
र्ी Wildlife Habitat	×	7, 8, 13	X	High ve	High vegetation density, potential food sour	High vegetation density, potential food sources available. Wetland function reduced due to size and location.
Recreation	X			Wetland	Wetland does not provide recreational opportunities.	tunities.
Educational/Scientific Value	X			Wetland	Wetland is not effective as a site for outdoor learning or research.	earning or research.
🜟 Uniqueness/Heritage	X	!		Wetland	d is not unique; exhibits characteristic	Wetland is not unique; exhibits characteristics typical to a utility ROW environment.

Notes:

Other

* Refer to backup list of numbered considerations.

Adapted from: U.S.Army Corps of Engineers - New England District. 1999. The Highway
Methodology Workbook: Supplement: Wetland Functions and Values - A Descriptive
Approach. NAEEP-360-1-30a.

Wetland does not hold aesthetic or visual qualities.

 \times

ES Endangered Species Habitat

Visual Quality/Aesthetics



New England District						Wetland I.D. 125
otal area of wetland 0.05 Human made?	N 9	_ls wetland	and part of a wildlife corridor?_	idor? No	or a "habitat island"? No	Latitude 42.873629 Longitude -71.405869
Adjacent land use Access Road, Roadway, ROW, Residential	, Residen	ıtial	Distance to nearest ro	adway or o	Distance to nearest roadway or other development_10 feet	Prepared by: LGJ Date 12/15/2014
Dominant wetland systems present_PSS1B			Contiguous undeveloped buffer zone present No	loped buffe	er zone present No	Wetland Impact: Type_See TableArea_See Table
s the wetland a separate hydraulic system? Yes		f not, w	If not, where does the wetland lie in the drainage basin?	in the drai	inage basin?	Evaluation based on:
-low many tributaries contribute to the wetland?	None	W	Wildlife & vegetation diversity/abundance (see attached list)	ty/abundar	nce (see attached list)	Office X Field X
5 Function/Value	Suitabilitv Y N	ξ	Rationale (Reference #)*	Principal Function	Principal Function(s)/Value(s) Co	completed? Y_X_NN
groundwater Recharge/Discharge	X		2, 4, 5, 15	We	Wetland is small roadside drainage swale. Little to no function/value.	ttle to no function/value.
Floodflow Alteration	X		5,9	We	Wetland receives roadway run-off. Wetland characteristics.	Wetland receives roadway run-off. Wetland is not suitable for flood storage based on size and characteristics.
Fish and Shellfish Habitat	X			We	Wetland does not contain suitable fish or shellfish habitat.	ellfish habitat.
Sediment/Toxicant Retention	X			We	Wetland is not suitable for this function based on size and characteristics.	ed on size and characteristics.
Nutrient Removal	X		4	We	Wetland is not suitable for this function based on size and characteristics.	ed on size and characteristics.
Production Export	X		-	We	Wetland is not a food source.	
	X			We	Wetland is not located along the banks or shoreline of a waterbody.	noreline of a waterbody.
्र Wildlife Habitat	X			We	Wetland is not suitable for this function based on size and characteristics.	ed on size and characteristics.
Recreation	X			We	Wetland does not provide recreational opportunities.	ortunities.
Educational/Scientific Value	X			We	Wetland is not effective as a site for outdoor learning or research.	learning or research.
Vniqueness/Heritage	X			We	Wetland is not unique; exhibits characteristics typical to a utility ROW environment.	cs typical to a utility ROW environment.
Visual Quality/Aesthetics	\times			We	Wetland does not hold aesthetic or visual qualities.	alities.
ES Endangered Species Habitat						
Other						

Notes: Narrow isolated scrub-shrub wetland swale.



						Wetland I.D. 127
Total area of wetland 0.11 Human made?	8	_Is wetland part of a wildlife corridor?	corridor?_	No_or a	or a "habitat island"? No	Latitude 42.874037 Longitude -71.406341
Adjacent land use_Access Road, Roadway, ROW, Residential	V, Residentia	Distance to nearest roadway or other development	t roadway	or other deve	lopment_200 feet	Prepared by: LGJ Date 12/15/2014
Dominant wetland systems present PSS1C		Contiguous undeveloped buffer zone present No	eveloped b	uffer zone pr	esent_No	Wetland Impact: _{Type} See Table Area See Table
Is the wetland a separate hydraulic system? Yes	If no	If not, where does the wetland lie in the drainage basin? $\overline{{ m N/A}}$	d lie in the	drainage bas	in? N/A	on:
How many tributaries contribute to the wetland?	None	Wildlife & vegetation diversity/ahundance (see attached list)	ersitv/ahu	e ees) ebueba	ttached list)	Office Field
ווסא ווומון מוסממוופן כסוומוסמכר גט נווכ איכממוומן.		Rationala	Principal	וממווכב (זכב מ	נומכוובת ווסר)	Corps manual wetland delineation completed? $Y X N$
Function/Value	Sultability Y N	(Reference #)*	Functi	Function(s)/Value(s)		Comments
groundwater Recharge/Discharge	×	2, 4, 5, 15	×	Wetland borders value due to size.	ers an aquifer boundary. Wetlan ze.	Wetland borders an aquifer boundary. Wetland located along gradual slope, low function/value due to size.
Floodflow Alteration	X	20		Wetland does	Wetland does not provide flood storage due to size and location.	to size and location.
Fish and Shellfish Habitat	X			Wetland does	Wetland does not contain suitable fish or shellfish habitat.	llfish habitat.
Sediment/Toxicant Retention	×	1,6		Function negli	Function negligible due to size, location, and wetland plant composition.	wetland plant composition.
Nutrient Removal	×	4		Function negli	Function negligible due to size, location, and wetland plant composition.	wetland plant composition.
• Production Export	×	1,8		Wetland is not	Wetland is not effective in producing food for living organisms.	r living organisms.
Sediment/Shoreline Stabilization	×			Wetland is not	Wetland is not located along the banks or shoreline of a waterbody.	oreline of a waterbody.
री Wildlife Habitat	×	7, 5, 8		Wetland locate	Wetland located adjacent to large emergent/scrub-shrub complex.	scrub-shrub complex.
Recreation	X			Wetland does	Wetland does not provide recreational opportunities.	tunities.
Educational/Scientific Value	×			Wetland is not	Wetland is not effective as a site for outdoor learning or research.	earning or research.
🜟 Uniqueness/Heritage	×			Wetland is not	unique; exhibits characteristic	Wetland is not unique; exhibits characteristics typical to a utility ROW environment.
Visual Quality/Aesthetics	×			Wetland does	Wetland does not hold aesthetic or visual qualities.	alities.
ES Endangered Species Habitat						
Other						

Notes:



New England District						Wetland I.D. 128, 128A
otal area of wetland 7.5, 0.2 Human made? _		ls v	NoIs wetland part of a wildlife corridor?_	ridor?_	Noora "habitat island"?No	Latitude 42.875423 Longitude -71.405060
Adiacent land use Access Road, Road, ROW, Residential, Field	sidenti	al, Fie		adway	Distance to nearest roadway or other development 50 feet	Prepared by:_LGJ Date12/15/2014
, Dominant wetland systems present_PEM/PSS1C,E, PEM1F, PFO1C	E, PEM1	F, PF		í loped b		Wetland Impact: Type_See TableArea_See Table
s the wetland a separate hydraulic system? No		_ If n	If not, where does the wetland lie in the drainage basin? Middle	in the	drainage basin? Middle	Evaluation based on:
How many tributaries contribute to the wetland?_	м		_Wildlife & vegetation divers	ty/abur	& vegetation diversity/abundance (see attached list)	OfficeX FieldX
	10	A ilit		Principal		Corps manual wetland delineation completed? Y_X_ N
runcuon/value	Z	_	(Reference #)"	חווכרו -מווכרו	ruilcuoli(s)/ vaiue(s)	Comments
星 Groundwater Recharge/Discharge	\times		2, 4, 5, 7, 9, 15	X	Recharge - Wetland is a large emergent/scrub-shrub complex that extends outside of the project ROW. Located along edge of aquifer boundary. Majority of soil very poorly drained	Recharge - Wetland is a large emergent/scrub-shrub complex that extends outside of the project ROW. Located along edge of aquifer boundary. Majority of soil very poorly drained.
Floodflow Alteration	X		5, 6, 7, 9, 10, 13, 14, 16, 1	X	Wetland is effective at slowing water movem storage capacity.	Wetland is effective at slowing water movement within the landscape and has a large flood storage capacity.
Fish and Shellfish Habitat		X	-		Wetland does not contain suitable fish or shellfish habitat.	llfish habitat.
Sediment/Toxicant Retention	X		1-5,10,11,12,13,14, 15,16	X	Slow water movement through wetland, poo wetland. Dense emergent and scrub-shrub ve	Slow water movement through wetland, poorly drained soils present. Several channels feed wetland. Dense emergent and scrub-shrub vegetation exists. Surrounding area developed.
Nutrient Removal	X		2, 3, 4, 5, 6, 7,9,12,13,14	X	Slow water movement through wetland, poo wetland. Dense emergent and scrub-shrub ve	Slow water movement through wetland, poorly drained soils present. Several channels feed wetland. Dense emergent and scrub-shrub vegetation exists. Surrounding area developed.
Production Export		X	1,7		Wetland function low in producing food for organisms.	organisms.
Sediment/Shoreline Stabilization	X		3, 4, 5, 7, 12, 13		Streams associated with wetland are small and diffuse/sinuous.	id diffuse/sinuous.
્ર Wildlife Habitat	X		6, 7, 8, 9, 13, 14	X	Large complex within conservation easement boundaries. Food sources exist, vegetation density high. Function somewhat reduced due to proximity to roadway and developmen	Large complex within conservation easement boundaries. Food sources exist, vegetation density high. Function somewhat reduced due to proximity to roadway and development.
Recreation	<i></i>	X	1		Wetland is located within the Musquash Conslittle to no recreational value due to location	Wetland is located within the Musquash Conservation area; however the wetland provides little to no recreational value due to location within an existing electric utility ROW corridor.
Educational/Scientific Value	/ \	X			Wetland is not effective as a site for outdoor I existing electric utility ROW corridor.	Wetland is not effective as a site for outdoor learning or research due to location within an existing electric utility ROW corridor.
\chi Uniqueness/Heritage		X			Wetland is not unique; exhibits characteristics typical to a utility ROW environment.	s typical to a utility ROW environment.
Visual Quality/Aesthetics		X			Wetland does not hold aesthetic or visual qualities	alities.
ES Endangered Species Habitat						
Other						

Notes:



INOW ELIGIBILITY DISUITE					Wetland I.D132
otal area of wetland 5.61 Human made?	8	_Is wetland part of a wildlife corridor?_	corridor?	No or a "habitat island"? No	Latitude 42.876737 Longitude -71.400043
djacent land use_Access Road, Roadway, ROW, Residential	V, Residenti		t roadway	Distance to nearest roadway or other development 50 feet	Prepared by: LGJ Date 12/15/2014
ominant wetland systems present_PSS1C, PSS1E, PSS/PEM1C,E	E, PSS/PEM		padolava	Contiguous undeveloped buffer zone present No	Wetland Impact: Type See Table Area See Table
the wetland a separate hydraulic system? No		vhere	d lie in th	e drainage basin?Middle	uo:
low many tributaries contribute to the wetland?_	-	Wildlife & vegetation dive	ersity/abu	& vegetation diversity/abundance (see attached list)	Office Field
Function//allue	Suitability V N	Rati (Ref	Principal	_	Corps manual wetland delineation completed? Y_{-} N
▼ Groundwater Recharge/Discharge	- ×	2, 4, 5,15	5	Wetland is hydrologically connected to 128	Wetland is hydrologically connected to 128 via culvert underneath High Range Road. Signs of
	<			variable water levels present.	
Floodflow Alteration	×	3, 5, 6, 7, 9, 10, 18	\times	Large emergent/scrub-shrub complex. Broa capacity.	Large emergent/scrub-shrub complex. Broad, flat topography; ideal for high water storage capacity.
Fish and Shellfish Habitat	×	!		Wetland does not contain suitable fish or shellfish habitat.	ellfish habitat.
Sediment/Toxicant Retention	×	1, 3, 4, 5, 6, 14	X	Wetland is effective is slowing and retaining water. Wetland contains dense em scrub-shrub vegetation. Wetland surrounded by roadway and residential areas.	Wetland is effective is slowing and retaining water. Wetland contains dense emergent and scrub-shrub vegetation. Wetland surrounded by roadway and residential areas.
Nutrient Removal	×	3, 4, 7, 8, 9, 12	X	Wetland is effective is slowing and retaining water. Wetland contains dense em scrub-shrub vegetation. Wetland surrounded by roadway and residential areas.	Wetland is effective is slowing and retaining water. Wetland contains dense emergent and scrub-shrub vegetation. Wetland surrounded by roadway and residential areas.
Production Export	×	1,7		Wetland function low in producing food for organisms.	organisms.
↓ Sediment/Shoreline Stabilization	X			Wetland is not located along the banks or shoreline of a waterbody.	noreline of a waterbody.
Wildlife Habitat	×	7, 8, 9,13		High vegetation density, food source poten location.	High vegetation density, food source potential. Function/value reduced somewhat due to location.
Recreation	×			Wetland does not provide recreational opportunities.	ortunities.
Educational/Scientific Value	×			Wetland is not effective as a site for outdoor learning or research.	learning or research.
🖊 Uniqueness/Heritage	X			Wetland is not unique; exhibits characteristics typical to a utility ROW environment.	cs typical to a utility ROW environment.
Visual Quality/Aesthetics	×			Wetland does not hold aesthetic or visual qualities.	ualities.
ES Endangered Species Habitat					
Other					

Notes:



Total area of wetland 0.58 Human made?	8	ls wetland	tland part of a wildlife corridor?.	ridor?	No or a "habitat island"?No	Wetland I.D. 133
Adjacent land use_Access Road, ROW, Residential	ial		Distance to nearest ro	adway	Distance to nearest roadway or other development 200 feet	
Dominant wetland systems present PFO1C, PEM1E, PSS1C	IE, PS	51C	Contiguous undeve	oped b	Contiguous undeveloped buffer zone present No	Wetland Impact: — Type See Table Area See Table
s the wetland a separate hydraulic system? Yes		If not,	If not, where does the wetland lie in the drainage basin? $\overline{ m N/A}$	e in the	drainage basin?	on:
Anw many tributarias contributa to the water	None		Wildlife & vanatation divarcity/ahundanna (see attanhad list)	dide/v+	danca (saa attachad list)	Office X Field X
i			viidiile & vegetatiori aivers	ty/abun	dance (see attached list)	Corps manual wetland delineation
5 Function/Value	Suita Y I	Suitability Y N	Rationale (Reference #)*	Principal Functior	ı(s)/Value(s)	
星 Groundwater Recharge/Discharge	X		2, 4, 5, 15		Wetland exhibits signs of variable water levels.	evels.
Floodflow Alteration	X		5, 6, 7, 9, 18	X	Some flood storage capacity due to wetlifunction/value low due to wetland size.	Some flood storage capacity due to wetland's position within the landscape; however function/value low due to wetland size.
Fish and Shellfish Habitat		X			Wetland does not contain suitable fish or shellfish habitat.	shellfish habitat.
Sediment/Toxicant Retention		X	1,4		Wetland is not effective in sediment/toxi	Wetland is not effective in sediment/toxicant retention due to small size and location.
Nutrient Removal		X	3, 5, 7, 8		Wetland is not effective in nutrient removal due to small size and location.	/al due to small size and location.
Production Export		X	1,7		Wetland function low in producing food for organisms.	for organisms.
Sediment/Shoreline Stabilization		X			Wetland is not located along the banks or shoreline of a waterbody.	r shoreline of a waterbody.
ည Wildlife Habitat	X		7, 8, 13		High vegetation density, potential food s size and location.	High vegetation density, potential food sources available. Wetland function reduced due to size and location.
Recreation		X	-		Wetland does not provide recreational opportunities.	pportunities.
Educational/Scientific Value		X			Wetland is not effective as a site for outdoor learning or research.	oor learning or research.
\chi Uniqueness/Heritage		X			Wetland is not unique; exhibits character	Wetland is not unique; exhibits characteristics typical to a utility ROW environment.
Visual Quality/Aesthetics		X			Wetland does not hold aesthetic or visual qualities.	qualities.
ES Endangered Species Habitat						
Other						

Notes:



New Littland District						Wetland I.D. 137
Total area of wetland 8.65 Human made?	8	- 1	_ls wetland part of a wildlife corridor?_	- 1	No or a "habitat island"? No	Latitude 42.878193 Longitude -71.392200
Adjacent land useAccess Road, Roadway, ROW, Residential	/, Resi	dential		vay or	Distance to nearest roadway or other development100 feet	Prepared by: LGJ Date 12/16/2014
Dominant wetland systems present_PEM1G,PSS1E,PSS/EM1E,PFO1E_	E,PSS,	/EM1E,	PFO1E_Contiguous undeveloped buffer zone present_No	ad buf		Wetland Impact: Type_See TableArea_See Table
Is the wetland a separate hydraulic system? No		If no	If not, where does the wetland lie in the drainage basin?Upper	the dr	ainage basin?_Upper	Evaluation based on:
How many tributaries contribute to the wetland? Unknown Wildlife & vegetation diversity/abundance (see attached list)	Unkr	nwor	Wildlife & vegetation diversity/a	pund		Office X Field X
		=	2,20 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			Corps manual wetland delineation completed? Y $\stackrel{ extstyle \times}{ extstyle \times}$ N $\stackrel{ extstyle \times}{ extstyle \times}$
Function/Value	Suitabi	Suitability Y N	(Reference #)* Fun	ction	n(s)/Value(s)	Comments
groundwater Recharge/Discharge	X		2, 5, 15	X	Recharge. Large emergent wetland complex. Slow retention. Variable water levels, poorly drained soil	Recharge. Large emergent wetland complex. Slow water movement, long duration water retention. Variable water levels, poorly drained soil.
Floodflow Alteration	X		2, 5, 6, 7, 9, 10, 14, 18	×	Large emergent wetland complex with inters levels, poorly drained soil. Flat topography.	Large emergent wetland complex with interspersed braided/diffuse channels. Variable water levels, poorly drained soil. Flat topography.
Fish and Shellfish Habitat		X		>	Wetland does not contain suitable fish or shellfish habitat.	lífish habitat.
Sediment/Toxicant Retention	X		1, 3, 4, 5, 13, 14, 16	X e s	Slow-moving water movement, poorly drained soil and dense vegetation make wetland effective in sediment/toxication retention. Developed areas located to the north and so.	Slow-moving water movement, poorly drained soil and dense vegetation make wetland effective in sediment/toxication retention. Developed areas located to the north and south.
Nutrient Removal	X		3, 5, 7, 8, 9, 12, 14	X ef SI	Slow-moving water movement, poorly drained soil and dense vegetation make wetland effective in nutrient removal. Developed areas located to the north and south.	ed soil and dense vegetation make wetland s located to the north and south.
Production Export		X	1,7	>	Wetland function low in producing food for organisms.	rganisms.
Sediment/Shoreline Stabilization		X		3	Wetland is not located along the banks or shoreline of a waterbody.	oreline of a waterbody.
المالية Wildlife Habitat	X		7, 8, 11, 13	¥ 0	High vegetation density, potential food sourc Other wetland systems located nearby.	High vegetation density, potential food sources exist. Large complex extends outside of ROW. Other wetland systems located nearby.
Recreation		X		>	Wetland does not provide recreational opportunities.	tunities.
Educational/Scientific Value		X		>	Wetland is not effective as a site for outdoor learning or research.	earning or research.
🗡 Uniqueness/Heritage		X		>	Wetland is not unique; exhibits characteristics typical to a utility ROW environment.	s typical to a utility ROW environment.
Visual Quality/Aesthetics		X		>	Wetland does not hold aesthetic or visual qualities.	alities.

Notes:

Other

ES Endangered Species Habitat



	2				Wetland I.D. 141, 143
otal area of wetland 0.1, 0.09 Human made?	2	_Is wetland part of a wildlife corridor?		Noor a "habitat island"? No	Latitude 42.878651 Longitude -71.389278
diacent land use Access Road, ROW, Residential	tial	Distance to neares	t roadway o	Distance to nearest roadway or other development 300 feet	Prepared by: LGJ Date 12/16/2014
ominant wetland systems present_PFO1C (141), PSS1B (143)	, PSS1B (143)		, eveloped bu	Contiguous undeveloped buffer zone present No	Wetland Impact: Trype See Table Area See Table
				4	5
s the wetland a separate hydraulic system? Yes	If no	If not, where does the wetland lie in the drainage basin? $\overline{}^{\mathrm{NA}}$	d lie in the d	rainage basin?	tion based
low many tributaries contribute to the wetland?_	None	Wildlife & vegetation diversity/abundance (see attached list)	ersity/abunc	dance (see attached list)	Office X Field X
	S. iitability	Rationale	Principal		completed? Y_X_ N
Function/Value	Juliability Y N	(Reference #)*	Functio	ı(s)/Value(s)	Comments
T Groundwater Recharge/Discharge	X	2, 4, 5		Wetland does not contribute to GW recharge/discharge function.	e/discharge function.
Floodflow Alteration	×	5, 6, 9		Wetland does not provide flood storage based on small size and location	ed on small size and location.
Fish and Shellfish Habitat	×			Wetland does not contain suitable fish or shellfish habitat.	ellfish habitat.
Sediment/Toxicant Retention	×	1, 4		Wetland not effective in providing this functi composition.	Wetland not effective in providing this function due to small size, location and vegetation composition.
Nutrient Removal	×	4,8		Wetland not effective in providing this functi composition.	Wetland not effective in providing this function due to small size, location and vegetation composition.
Production Export	X	1,7		Wetland is not effective in producing food for living organisms.	or living organisms.
	X	!		Wetland is not located along the banks or shoreline of a waterbody.	ioreline of a waterbody.
Wildlife Habitat	×	7, 8, 13		Function significantly reduced due to size and location.	nd location.
Recreation	X			Wetland does not provide recreational opportunities.	ortunities.
Educational/Scientific Value	×			Wetland is not effective as a site for outdoor learning or research.	learning or research.
\chi Uniqueness/Heritage	×			Wetland is not unique; exhibits characteristics typical to a utility ROW environment.	cs typical to a utility ROW environment.
Visual Quality/Aesthetics	×			Wetland does not hold aesthetic or visual qualities.	ıalities.
ES Endangered Species Habitat					
Other					

Notes: Small isolated wetlands within ROW, provide little to no function/value.



New England District						Wetland ID 144
otal area of wetland 10.94 Human made? _	2	1	_Is wetland part of a wildlife corridor?_	ridor?	No or a "habitat island"? No	Latitude 42.879545 Longitude -71.385034
Adjacent land use Access Road, Roadway, ROW, Residential	/, Resid	dential		adway	Distance to nearest roadway or other development_300 feet	Prepared by: LGJ Date 12/16/2014
Dominant wetland systems present_PEM/SS1E,PFO5E,PSS1B,PFO1E	-05E,P	SS1B,F		loped b		Wetland Impact: Type_See TableArea_See Table
s the wetland a separate hydraulic system? No		If no	If not, where does the wetland lie in the drainage basin? Middle	e in the		Evaluation based on:
How many tributaries contribute to the wetland?UnknownWildlife	Unkr	nwor	_Wildlife & vegetation divers	ty/abur		OfficeX FieldX
5 Function/Value	Suitabilitv Y N	bilitv		Principal Functior	Con	Corps manual wetland delineation completed? Y $\stackrel{ ext{$\times$}}{ ext{$\times$}}$ N $\stackrel{ ext{$\times$}}{ ext{$\times$}}$ Comments
groundwater Recharge/Discharge	X		2, 4, 5, 15	X	Recharge - Wetland is a large complex dominantly comprised of dense emergent/scrub vegetation. Water movement is slow through wetland.	antly comprised of dense emergent/scrub wetland.
Floodflow Alteration	X		5, 6, 7, 9, 10, 14, 18	X	Wetland part of a large complex. Very poorly drained soils/mucky ideal for high water storage capacity. Slow moving water present.	Wetland part of a large complex. Very poorly drained soils/mucky peat. Broad, flat topography; ideal for high water storage capacity. Slow moving water present.
Fish and Shellfish Habitat		X			Wetland does not contain suitable fish or shellfish habitat.	lfish habitat.
Sediment/Toxicant Retention	X		1, 2, 3, 4, 5, 10, 12, 14	X	High function in sediment/toxicaton removal wetland. Slow moving water present.	High function in sediment/toxicaton removal due to soil type and broad, flat topography in wetland. Slow moving water present.
Nutrient Removal	X		3, 4, 5, 7, 8, 9, 12	X	High function in nutrient removal due to soil type and broad, flat topography in wetland. Sources of excess nutrients surround wetland. Slow moving water present.	ype and broad, flat topography in wetland. . Slow moving water present.
Production Export		X	1, 7, 8		Wetland function low in producing food for organisms. Diverse and abundant plant community.	rganisms. Diverse and abundant plant
Sediment/Shoreline Stabilization		\times			Wetland is not located along the banks or shoreline of a waterbody.	reline of a waterbody.
Wildlife Habitat	X		6, 7, 8, 9, 11, 13, 14	X	High vegetation density, food sources available classes. Other wetland systems present nearby.	High vegetation density, food sources available. Wetland contains interspersion of vegetation classes. Other wetland systems present nearby.
Recreation		X			Wetland does not provide recreational opportunities.	tunities.
Educational/Scientific Value		X			Wetland is not effective as a site for outdoor learning or research.	earning or research.
\chi Uniqueness/Heritage		X			Wetland is not unique; exhibits characteristics typical to a utility ROW environment.	typical to a utility ROW environment.
Visual Quality/Aesthetics		X			Wetland does not hold aesthetic or visual qualities.	lities.
ES Endangered Species Habitat						
Other						

Notes:



Adjacent land useAccess Road, Roadway, ROW, Residential	developed buffer zone present No Indeveloped buffer see Table Indeveloped buffer zone present No Indeveloped buffer see Table Indeveloped buffer see Table Indeveloped buffer see Table Indeveloped See Table Indevelo	roadway or other development TOD Teet veloped buffer zone present No Type See Table Area See Tal Type See Table Area See Tal Evaluation based on: Office X Field X Corps manual wetland delineation completed? Y X Wetland associated with large complex to the west. Very poorly drained soils/mucky peat. Wetland part of large complex. Very poorly drained soils/mucky peat. Broad, flat topograph, ideal for high water storage capacity. Slow moving water present. Wetland does not contain suitable fish or shellfish habitat. High function in sediment/toxicaton removal due to soil type and broad, flat topography in wetland. Slow moving water present.	beloped buffer zone present No It in the drainage basin? Middle It in the drainage basin? Middle It it is in the drainage basin? Middle It is in the drainage basin? Metal basin and broad, flat topography in wetland. Both moving water present. It is in the drainage basin. Area present. It is in the drainage basin? Middle It is in the drainage basin. Area basin? Middle It is in the drainage basin. Area basin. Area basin? Middle It is in the drainage basin. Area basin.	adway or other development 100 Teet loped buffer zone present No in the drainage basin? Middle ty/abundance (see attached list) Principal Completed? Y X N Comments Wetland associated with large complex to the west. Very poorly drained soils/mucky Receives and retains water from surrounding watershed. Aquifer boundary nearby. Wetland part of large complex. Very poorly drained soils/mucky peat. Broad, flat top ideal for high water storage capacity. Slow moving water present. Wetland does not contain suitable fish or shellfish habitat. High function in sediment/toxicaton removal due to soil type and broad, flat topography in wet potential sources of excess nutrients surround wetland. Slow moving water present. Wetland function low in producing food for organisms. Diverse and abundant plant community.	oadway or other development TOU Teet leloped buffer zone present No ie in the drainage basin? Middle ie in the drainage basin? Middle is ity/abundance (see attached list) Principal Function(s)/Value(s) Wetland associated with large complex to the west. Very poorly drained sosociated with large complex to the west. Very poorly drained solis/mucky pea ideal for high water storage capacity. Slow moving water present. Wetland does not contain suitable fish or shellfish habitat. Wetland slow moving water present. High function in nutrient removal due to soil type and b wetland. Slow moving water present. High function in nutrient removal due to soil type and b wetland. Slow moving water present. Wetland function low in producing food for organisms. Diverse and community. Wetland is not located along the banks or shoreline of a waterbody.	eloped buffer zone present. No ie in the drainage basin? Middle iity/abundance (see attached list) Principal Function(s)/Value(s) Wetland part of large complex. Very poorly drained soils/mucky peat. Receives and retains water from surrounding watershed. Aquifer boundary nearby. Wetland does not contain suitable fish or shellfish habitat. Wetland. Slow moving water present. Wetland Slow moving water present. Wetland sources of excess nutrients surround wetland. Slow moving water present. Wetland function in sediment/toxicaton removal due to soil type and broad, flat topography in wetland. Slow moving water present. Wetland sources of excess nutrients surround wetland. Slow moving water present. Wetland function low in producing food for organisms. Diverse and abundant plant community. Wetland large in size and associated with complex to the west. High vegetation density, food sources available. Interspersion of vegetation dasses present.	roadway or other development	roadway or other development_IOU Feet veloped buffer zone present_NO Is in the drainage basin? Middle Isity/abundance (see attached list) Principal Wetland associated with large complex to the west. Very poorly d Receives and retains water from surrounding watershed. Aquifer Wetland part of large complex. Very poorly drained soils/mucky p ideal for high water storage capacity. Slow moving water present Wetland does not contain suitable fish or shellfish habitat. High function in sediment/toxicaton removal due to soil type and wetland. Slow moving water present. High function in nutrient removal due to soil type and broad, flat Potential sources of excess nutrients surround wetland. Slow mov Wetland function low in producing food for organisms. Diverse an community. Wetland does not provide recreational opportunities. Wetland does not provide recreational opportunities. Wetland is not effective as a site for outdoor learning or research.	troadway or other development IOU Teet eveloped buffer zone present No d lie in the drainage basin? Middle ersity/abundance (see attached list) Principal Function(s)/Value(s) Wetland associated with large complex to the west. Very poorly drained soils/muck Receives and retains water from surrounding watershed. Aquifer boundary nearby. Wetland does not contain suitable fish or shellfish habitat. Wetland does not contain suitable fish or shellfish habitat. Wetland dunction in verient removal due to soil type and broad, flat topography in wetland function in untrient removal due to soil type and broad, flat topography in wetland function low in producing food for organisms. Diverse and abundant plant community. Wetland large in size and associated with complex to the west. High vegetation der sources available. Interspersion of vegetation classes present. Wetland does not provide recreational opportunities. Wetland large in size and associated with complex to the west. High vegetation der sources available. Interspersion of vegetation classes present. Wetland is not located along the banks or shoreline of a waterbody. Wetland is not located along the banks or shoreline of a waterbody. Wetland is not located along the banks or shoreline of a waterbody. Wetland is not located along the banks or shoreline of a waterbody. Wetland is not effective as a site for outdoor learning or research. Wetland is not unique; exhibits characteristics typical to a utility ROW environment.
rest roadway or other development10 Indeveloped buffer zone present_No	developed buffer zone present_No_ ideveloped buffer zone present_No_ and lie in the drainage basin? _Middle_ liversity/abundance (see attached list) Principal Function(s)/Value(s) Wetland associated with large Receives and retains water fro Receives and retains water fro Receives and retains water for Ital Wetland bart of large complex ideal for high water storage ca	roadway or other development	badway or other development	adway or other development	eloped buffer zone present No eloped buffer zone present No ie in the drainage basin? Middle sity/abundance (see attached list) Principal Ywetland associated with large Receives and retains water fro Wetland part of large complex ideal for high water storage ca wetland does not contain suit Wetland does not contain suit High function in sediment/tox wetland. Slow moving water p Potential sources of excess nu Wetland function low in produ Community. Wetland is not located along t	eloped buffer zone present No eloped buffer zone present No ie in the drainage basin? Middle sity/abundance (see attached list) Principal Wetland associated with large Receives and retains water fro Wetland part of large complex ideal for high water storage ca Wetland does not contain suit Wetland does not contain suit High function in sediment/tox wetland. Slow moving water p High function in nutrient reme Potential sources of excess nu Wetland function low in produ community. Wetland large in size and asso sources available. Interspersio	veloped buffer zone present No veloped buffer zone present No Ilie in the drainage basin? Middle rsity/abundance (see attached list) Principal Kuction(s)/Value(s) Wetland associated with large Receives and retains water fro Wetland part of large complex ideal for high water storage ca Wetland does not contain suit High function in sediment/tox wetland. Slow moving water potential sources of excess nu Wetland function in nutrient reme Potential sources of excess nu Wetland function low in producommunity. Wetland large in size and asso sources available. Interspersio	roadway or other development	t roadway or other development
and lie in the drainage basin? and lie in the drainage basin? liversity/abundance (see attach Principal Function(s)/Value(s) Wetland associated Receives and retain	ideveloped buffer zone presen and lie in the drainage basin?_ liversity/abundance (see attach arincipal Function(s)/Value(s) Wetland associated Receives and retain and the ideal for high water wetland does not contact and the ideal for high water and the ideal for high wate	veloped buffer zone presen I lie in the drainage basin? rsity/abundance (see attach Principal Function(s)/Value(s) Wetland associated Receives and retain Wetland part of larg ideal for high water ideal for high water Wetland does not c High function in ser	ie in the drainage basin?ity/abundance (see attacharincipalanction(s)/Value(s) Wetland associatedala associatedala wetland part of largideal for high wateranala for high function in sewetland. Slow moviment of high function in nuaper of the function in the wetland. Slow moviment of high function in the wetland. Slow moviment of high function in the wetland. Slow moviment of the function in the potential sources or	loped buffer zone presen in the drainage basin? ty/abundance (see attact Tunction(s)/Value(s) Wetland associated Wetland part of larg Wetland part of larg ideal for high water Wetland does not c High function in see wetland. Slow movi High function in not potential sources of wetland function in not potential sources of wetland function in community.	eloped buffer zone presen ie in the drainage basin?	eloped buffer zone presen ie in the drainage basin? sity/abundance (see attact} Principal Wetland associated Receives and retain Wetland part of larg ideal for high water Wetland does not c Wetland does not c Wetland function in see wetland. Slow movi High function in nu Potential sources of Wetland function lc community. Wetland large in siz sources available. Ir	veloped buffer zone presen rsity/abundance (see attact Principal Function(s)/Value(s) Wetland associated Receives and retain Wetland part of larg ideal for high water Wetland does not contect ideal for high water Wetland sources of wetland function in see wetland. Slow movi High function in nu Potential sources of Wetland function in Community. Wetland is not located wetland is not located sources available. It wetland does not prove the w	rsity/abundance (see attach Principal Function(s)/Value(s) Wetland associated Receives and retain Wetland bart of larg ideal for high water Wetland boes not c Wetland soorces of wetland. Slow movi Wetland soorces of wetland sources of wetland is not local wetland is not local wetland is not local sources available. It wetland does not t Wetland large in siz sources available. It wetland does not t Wetland does not p Wetland does not p Wetland does not p	eveloped buffer zone presen d lie in the drainage basin?_ ersity/abundance (see attacthonction(s)/Value(s) Wetland associated Receives and retained Receives of Wetland does not community. Wetland large in size sources available. Ir Wetland does not provetland is not toffer Wetland is not effer wetland is not effer wetland is not uniquicing wetland wetland is not uniquicing wetland
and lie in the drainadiversity/abundanc Principal Function(s) X Wetla Recei	iversity/abundanc Principal Function(s) Kecei Recei 14 Wetla	rsity/abundanc Principal Function(s) Recei Keeei Keetla High Wetla	ity/abundanc Principal Function(s) Recei Recei Recei High Wetla Wetla Wetla High Peter	ty/abundanc ty/abundanc Principal -unction(s) Wetla Comr	sity/abundanc Principal Function(s) Recei Wetla Wetla High Wetla High Wetla	ie in the draina sity/abundanc Principal Function(s) Recei	rsity/abundanc Principal Function(s) Recei X Wetla Recei X Wetla ideal ideal X Wetla X Wetla Recei X Wetla Wetla X Wetla X Wetla X Wetla	rsity/abundanc Principal Function(s) Received Wetla	ersity/abundanc Principal Function(s) Recei Recei Recei Wetla Wetla Comm Wetla Sourc Wetla
Pril Full	Prii Fui 14	Prij	Prij Hy	\$ in 5 4 4 4 4 4 4 4 4 4	Sit ½, Sit ¾, Si	Prii sity,	Prii Fui	Prij Full Full Full Full Full Full Full Ful	Prii Fuii Fuii Fuii Fuii Fuii Fuii Fuii F
13,	13,	13, 14	t)* 13, 14 13, 14 14, 15	, 14 1, 15 14, 15	t)* 13, 14 13, 14 12, 14	t)* 13, 14 13, 14 12, 14 3, 14	t)* 13, 14 13, 14, 15 12, 14 3, 14	13, 14 15 12, 14 3, 14	f)* 13, 14, 1 12, 14
Rationale (Reference #)* 2, 5, 7, 15 , 6, 7, 8, 9, 10, 13,	Aationale Reference #)* 2, 5, 7, 15 6, 7, 8, 9, 10, 13,	Aationale Reference #)* 2, 5, 7, 15 6, 7, 8, 9, 10, 13, 14	Aationale Reference #)* 2, 5, 7, 15 6, 7, 8, 9, 10, 13, 14 2, 3, 4, 10, 12, 14, 15 4, 5, 7, 8, 9, 12, 14	rtionale eference #)* 2,5,7,15 7,8,9,10,13,14 3,4,10,12,14,15 3,4,10,12,14,15 1,5,7,8,9,12,14	Aationale Reference #)* 2, 5, 7, 15 6, 7, 8, 9, 10, 13, 14 2, 3, 4, 10, 12, 14, 15 4, 5, 7, 8, 9, 12, 14 1, 7	Aationale Reference #)* 2, 5, 7, 15 6, 7, 8, 9, 10, 13, 14 2, 3, 4, 10, 12, 14, 15 1, 7 1, 7 1, 7, 8, 9, 11, 13, 14	Aationale Reference #)* 2, 5, 7, 15 6, 7, 8, 9, 10, 13, 14 1, 7, 8, 9, 11, 13, 14	Aationale Reference #)* 2, 5, 7, 15 6, 7, 8, 9, 10, 13, 14 2, 3, 4, 10, 12, 14, 15 4, 5, 7, 8, 9, 12, 14 1, 7 1, 7, 8, 9, 11, 13, 14	Aationale Reference #)* 2, 5, 7, 15 6, 7, 8, 9, 10, 13, 14 1, 7, 8, 9, 11, 13, 14
Y N (Refere) X 2, 5, X 5, 6, 7, 8, 9	X X X X X X X X X X X X X X X X X X X	5, 6 1, 2,	5, 6 3, 4 3, 4	X X X X X X X X X X X X X X X X X X X	3,4 X X X X X X X X X X X X X X X X X X X	3,4 3,4 3,4 3,6 6,7 8,6	3,4 X X X X X X X X X X X X X X X X X X X	3,4 X X X X X X X X X X X X X X X X X X X	3,4 X X X X X X X X X X X X X X X X X X X
XX	XXX								
w Alteration	Iflow Alteration X nd Shellfish Habitat	and Shellfish Habitat iment/Toxicant Retention	on Habitat it Retention	on Habitat It Retention	on Habitat It Retention t	on Habitat It Retention t	on Habitat It Retention t	on Habitat It Retention ne Stabilization tific Value	Floodflow Alteration Fish and Shellfish Habitat Sediment/Toxicant Retention Nutrient Removal Production Export Sediment/Shoreline Stabilization Wildlife Habitat Recreation Educational/Scientific Value Uniqueness/Heritage
	×	tion X 1, 2,	Habitat X 1, 2, 1, 2, X 3, 4	Habitat X 1, 2, 1, 2, 1, 2, X 3, 4	Habitat X 1, 2, it Retention X 3,4 t X 3,4 t X X A	Habitat X 1, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2,	Habitat X 1, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2,	Habitat X 1, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2,	Habitat X 1, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2,

Notes:

Other

ES Endangered Species Habitat



New England District						Wetland I.D. 147
otal area of wetland_1.02 Human made?	2	ls wetland	tland part of a wildlife corridor?_	- 1	Noora "habitat island"?No	
Adjacent land use_Access Road, Roadway, ROW, Residential	, Resic	dential	Distance to nearest r	oadway o	Distance to nearest roadway or other development 200 feet	Prepared by: LGJ Date 12/16/2014
Oominant wetland systems present_PFO1C, PEM/SS1C	SS1C		Contiguous undev	eloped bı	Contiguous undeveloped buffer zone present No	Wetland Impact: See Table See Table
s the wetland a separate hydraulic system? Yes		_ If not,	If not, where does the wetland lie in the drainage basin?	lie in the o	drainage basin?	Evaluation based on:
۷.	None		Wildlife & vegetation diversity/abundance (see attached list)	sitv/abun	dance (see attached list)	Office X Field X
	Suitability		Rationale	Principal	al	Corps manual wetland delineation completed? Y_X_ N
Function/Value	>	z	(Reference #)*	Function	Function(s)/Value(s)	Comments
groundwater Recharge/Discharge	X		2, 4, 5, 15	X	Groundwater discharge.	
Floodflow Alteration		X	5, 9, 18		Wetland function low in floodflow alterati storage capacity.	Wetland function low in floodflow alteration. Located along gradual slope, minimal flood storage capacity.
Fish and Shellfish Habitat		X			Wetland does not contain suitable fish or shellfish habitat.	shellfish habitat.
Sediment/Toxicant Retention	X		1, 4, 6		Little to no function due to lack of sources within the ROW.	Little to no function due to lack of sources nearby and the wetland being entirely confined within the ROW.
Nutrient Removal	X		3, 5, 8, 9		Function limited due to lack of sources of excess nutrients.	excess nutrients.
Production Export		×	1,7		Wetland is not significant in providing food sources to living organisms.	d sources to living organisms.
Sediment/Shoreline Stabilization		X			Wetland is not located along the banks or shoreline of a waterbody.	shoreline of a waterbody.
്. Wildlife Habitat		X	8, 13		Does not provide viable wildlife habitat bacleared ROW) and size.	Does not provide viable wildlife habitat based on location (entirely confined within an existing cleared ROW) and size.
Recreation		X			Wetland does not provide recreational opportunities.	portunities.
Educational/Scientific Value		X			Wetland is not effective as a site for outdoor learning or research.	or learning or research.
Vniqueness/Heritage		X			Wetland is not unique; exhibits characteristics typical to a utility ROW environment.	stics typical to a utility ROW environment.
Visual Quality/Aesthetics		\times			Wetland does not hold aesthetic or visual qualities.	qualities.
ES Endangered Species Habitat						
Other						

Notes:



New Ligidid District						Wetland I.D. 149, 149A
otal area of wetland 3.97, 5.89 Human made?	8	ls wetland	tland part of a wildlife corridor?_	rridor?_	No or a "habitat island"? No	Latitude 42.894213 Longitude -71.362410
Adjacent land use_Access Road, Roadway, ROW, Residential	/, Resi	dential	Distance to nearest I	oadway	Distance to nearest roadway or other development_50 feet	Prepared by: LGJ Date 12/16/2014
Dominant wetland systems present PEM1E,G,H, PSS1B,C, PFO5F,G	SS1B,	,C, PF05	1	eloped k	Contiguous undeveloped buffer zone present No	Wetland Impact: Type_See TableArea_See Table
s the wetland a separate hydraulic system? No		If not,	where does the wetland	ie in the	If not, where does the wetland lie in the drainage basin? Middle	Evaluation based on:
How many tributaries contribute to the wetland?	None		Wildlife & venetation diversity/ahındance (see attached list)	sitv/ah	ndance (see attached list)	Office FieldX
	1	1	Rationala	Principal	וממווכר (אבר מומכווכת וואי)	Corps manual wetland delineation completed? Y_X N
Function/Value	Sulta - 		(Reference #)*	Functi	ı(s)/Value(s)	Comments
g Groundwater Recharge/Discharge	X		2, 5, 15		Wetland partly made up of stony soils and m of ponded water present.	Wetland partly made up of stony soils and mucky peat/very poorly drained soils. Larger areas of ponded water present.
Floodflow Alteration	X		5, 6, 7, 9, 18	X	Wetland partly made up of stony soils and mucky peat/of ponded water present. High water storage potential.	Wetland partly made up of stony soils and mucky peat/very poorly drained soils. Larger areas of ponded water present. High water storage potential.
Fish and Shellfish Habitat		X			Wetland does not contain suitable fish or shellfish habitat.	ilfish habitat.
Sediment/Toxicant Retention	X		1, 2, 3, 4, 5,14	X	Wetland partly made up of stony soils & mucky peat/very poorly drained soils. Ponded w present. Dense emergent/scrub-shrub vegetation present. Close proximity to roadways.	Wetland partly made up of stony soils & mucky peat/very poorly drained soils. Ponded water present. Dense emergent/scrub-shrub vegetation present. Close proximity to roadways.
Nutrient Removal	X		2, 3, 4, 5, 7, 8, 9, 12	X	Wetland partly made up of stony soils & mucky peat/very poorly drained soils. Ponded w present. Dense emergent/scrub-shrub vegetation present. Close proximity to roadways.	Wetland partly made up of stony soils & mucky peat/very poorly drained soils. Ponded water present. Dense emergent/scrub-shrub vegetation present. Close proximity to roadways.
Production Export		X	1,7		Wetland function low in production export.	
Sediment/Shoreline Stabilization		X			Wetland is not located along the banks or shoreline of a waterbody.	oreline of a waterbody.
് Wildlife Habitat	X		7, 8, 9,11,13, 20	X	Wetland contains interspersion of classes with areas of open water present. Large system extends outside of ROW. Dense vegetation present.	h areas of open water present. Large system resent.
Recreation		X			Wetland does not provide recreational opportunities.	tunities.
Educational/Scientific Value		X			Wetland is not effective as a site for outdoor learning or research.	earning or research.
🖊 Uniqueness/Heritage		X			Wetland is not unique; exhibits characteristics typical to a utility ROW environment.	s typical to a utility ROW environment.
Visual Quality/Aesthetics		×			Wetland does not hold aesthetic or visual qualities.	alities.
ES Endangered Species Habitat						
Other						

Notes:



New England District					Wetland I.D. 152
otal area of wetland 0.93 Human made?	8	_Is wetland part of a wildlife corridor?_	orridor?_	No or a "habitat island"? No	
djacent land use Access Rd, Roadway, ROW, Resid, Industrial	Resid, Indust		roadway	Distance to nearest roadway or other development 300 feet	Prepared by: LGJ Date 12/16/2014
ominant wetland systems present_PEM1E, PFO1C	10	Contiguous unde	, reloped k	Contiguous undeveloped buffer zone present No	Wetland Impact: Type_See TableArea_See Table
s the wetland a separate hydraulic system? Yes		If not, where does the wetland	lie in the	e does the wetland lie in the drainage basin?	Evaluation based on:
dow many tributaries contribute to the wetland?_	None	_Wildlife & vegetation diversity/abundance (see attached list)	rsity/abuı	ndance (see attached list)	Office FieldX
Function/Value	Suitabilitv Y N	Rationale (Reference #)*	Principal Functior		Copps manual wetland delineation completed? $Y X N$
groundwater Recharge/Discharge	×	2, 4, 5, 15		Small drainage system located within an water levels.	Small drainage system located within an aquifer boundary. Evidence of saturation and variable water levels.
Floodflow Alteration	×	3, 5, 6, 7, 9, 18	X	Evidence of saturation and variable wate moderate storage capacity.	Evidence of saturation and variable water levels, geomorphic position allows for low to moderate storage capacity.
Fish and Shellfish Habitat	×	1		Wetland does not contain suitable fish or shellfish habitat.	shellfish habitat.
Sediment/Toxicant Retention	×	1, 2, 3, 4	X	Gravel/sand operation and industrial bu hydrological connection between this ar	Gravel/sand operation and industrial businesses are located to the north. It appears there is a hydrological connection between this area and the wetland based on aerial interpretation.
Nutrient Removal	×	3, 4, 5, 7, 8, 9		Wetland function low to moderate based position.	Wetland function low to moderate based on vegetative composition and geomorphic position.
Production Export	×	1,7		Wetland function low in production export.	ort.
	×			Wetland is not located along the banks or shoreline of a waterbody.	r shoreline of a waterbody.
ک Wildlife Habitat	×	7, 8, 13		Wetland does not provide valuable wildlife habitat	ífe habitat.
Recreation	×	1		Wetland does not provide recreational opportunities.	pportunities.
Educational/Scientific Value	×			Wetland is not effective as a site for outdoor learning or research.	oor learning or research.
Vniqueness/Heritage	X			Wetland is not unique; exhibits characte	Wetland is not unique; exhibits characteristics typical to a utility ROW environment.
Visual Quality/Aesthetics	×			Wetland does not hold aesthetic or visual qualities.	I qualities.
ES Endangered Species Habitat					
Other					

Notes:



					Wetland I.D. 154
otal area of wetland 0.07 Human made?	No_ls wetland	retland part of a wildlife corridor?	corridor?	No_ora "habitat island"? No_	Latitude 42.899595 Longitude -71.354453
djacent land use Access Road, Roadway, ROW, Residential	V, Residentia		t roadway o	Distance to nearest roadway or other development_500 feet	Prepared by: LGJ Date 12/16/2014
Ominant wetland systems present PSS1B		Contiguous unde	eveloped bu	Contiguous undeveloped buffer zone present_No	Wetland Impact: _{Type} See Table _{Area} See Table
the wetland a conarate hydraulic cyctem? Yes	<u>+</u>		d lie in the	e does the wetland lie in the drainage basin? N/A	
			, ; ; ;		Office X Field X
low many tributaries contribute to the wetland?_	None	_Wildlife & vegetation diversity/abundance (see attached list)	ersity/abun	dance (see attached list)	manual wetland
7 1 - 1 A - 1 - 1 - 1 - 1		Rationale	Principal		completed? Y_X_ N
Function/value	Z	(Reference #)"	רטווכוונ	runction(s)/value(s)	Comments
星 Groundwater Recharge/Discharge	X	2, 4, 5		Little to no function/value due to small size.	
Floodflow Alteration	×	6'2		Minimal flood storage capacity due to small size.	size.
Fish and Shellfish Habitat	×			Wetland does not contain suitable fish or shellfish habitat.	ellfish habitat.
Sediment/Toxicant Retention	X	1,4		Little to no function/value based on small siz sources.	Little to no function/value based on small size, location (confined within ROW), and lack of sources.
Nutrient Removal	×	8,9		Little to no function/value based on small siz sources.	Little to no function/value based on small size, location (confined within ROW), and lack of sources.
Production Export	×			Wetland is not a significant source of food for living organisms.	or living organisms.
Sediment/Shoreline Stabilization	×	1		Wetland is not located along the banks or shoreline of a waterbody	ioreline of a waterbody.
Wildlife Habitat	×	7, 8, 13		Function reduced based on small size and location (confined to cleared ROW),	cation (confined to cleared ROW).
Recreation	×			Wetland does not provide recreational opportunities.	ortunities.
Educational/Scientific Value	×			Wetland is not effective as a site for outdoor learning or research.	learning or research.
🖊 Uniqueness/Heritage	X			Wetland is not unique; exhibits characteristics typical to a utility ROW environment.	cs typical to a utility ROW environment.
Visual Quality/Aesthetics	×	-		Wetland does not hold aesthetic or visual qualities.	ıalities.
ES Endangered Species Habitat					
Other					

Notes: Small isolated wetland within ROW.



INOW ELIGIBILITY DISUITE					Wetland I.D. 154
otal area of wetland 1.73 Human made?	8	_Is wetland part of a wildlife corridor?_	corridor?_	No or a "habitat island"? No	Latitude 42.900367 Longitude -71.352328
diacent land use Access Rd, Roadway, ROW, Resid/Commerc	Resid/Comm		st roadwa	Distance to nearest roadway or other development 50 feet	Prepared by: LGJ Date 12/16/2014
J 01	10		eveloped	Contiguous undeveloped buffer zone present No	Wetland Impact: Trupe See Table Area See Table
the wetland a separate hydraulic system? Yes		f not where does the wetland lie in the drainage basin? WA	Id lie in the	e drainage basin? N/A	3
			, , ,		Office X Field X
low many tributaries contribute to the wetland?	None	Wildlife & vegetation div	ersity/abu	& vegetation diversity/abundance (see attached list)	Ф
oulc/V acitoria	Suitability	Rationale	Principal	(3)01116/7/(3)	completed? Y_X_ N
ruiiciiOii/ value	z -	(#טפופופווכע)	ב ב ב		
g Groundwater Recharge/Discharge	×	2, 4, 5, 15		Wetland function low in groundwater recharge/discharge.	rge/discharge.
Floodflow Alteration	X	3, 5, 6, 7, 9,18	X	Wetland function low to moderate based on size. Wetland located dow industrial property. Dense emergent and scrub-shrub vegetation exists.	Wetland function low to moderate based on size. Wetland located downslope of developed industrial property. Dense emergent and scrub-shrub vegetation exists.
Fish and Shellfish Habitat	×			Wetland does not contain suitable fish or shellfish habitat.	ellfish habitat.
Sediment/Toxicant Retention	×	1, 2, 3, 4, 5, 16	X	Industrial property/business located directly adjacent (upslope of wetland a significant amount of cars and equipment based on aerial observations.	Industrial property/business located directly adjacent (upslope of wetland). Property contains a significant amount of cars and equipment based on aerial observations.
Nutrient Removal	×	3, 4, 5, 7, 8, 9		Wetland characteristics make it suitable for this function.	this function.
Production Export	×	1,7		Wetland function low in production export.	
↓ Sediment/Shoreline Stabilization	×			Wetland is not located along the banks or shoreline of a waterbody.	noreline of a waterbody.
Wildlife Habitat	×	7, 8, 13		Wetland function low in providing wildlife habitat due to location (directly adjacent to roadway and developed commercial/industrial properties.	abitat due to location (directly adjacent to rial properties.
Recreation	×			Wetland does not provide recreational opportunities.	ortunities.
Educational/Scientific Value	×			Wetland is not effective as a site for outdoor learning or research.	learning or research.
🖊 Uniqueness/Heritage	×			Wetland is not unique; exhibits characteristics typical to a utility ROW environment.	cs typical to a utility ROW environment.
Visual Quality/Aesthetics	X			Wetland does not hold aesthetic or visual qualities.	ualities.
ES Endangered Species Habitat					
Other					

Notes:



New England District						Wetland LD 160
Fotal area of wetland 0.73 Human made?	2	ls wetland	tland part of a wildlife corridor?_	rridor?_	Noor a "habitat island"?No	Latitude 42.900657 Longitude -71.350172
Adjacent land use_Access Rd, Roadway, ROW, Resid/Commerc	esid/C	ommer		oadway	Distance to nearest roadway or other development_100 feet	Prepared by: LGJ Date 12/16/2014
01	U			eloped b	Contiguous undeveloped buffer zone present No	Wetland Impact: Type_See TableArea_See Table
is the wetland a separate hydraulic system? Yes		_ If not,	If not, where does the wetland lie in the drainage basin? $\overline{{ m N/A}}$	lie in the	drainage basin?	Evaluation based on:
How many tributaries contribute to the wetland?	None		Wildlife & vegetation diver	sity/abur	& vegetation diversity/abundance (see attached list)	Office X Field X Corps manual wetland delineation
S Function/Value	Suitabilitv Y N	oilit<	Rationale (Reference #)*	Principal Functior	ı(s)/Value(s)	completed? $V \times N$
groundwater Recharge/Discharge	, ,	X	2, 4, 5, 15		Wetland is not a discharge wetland. Wetland	Wetland is not a discharge wetland. Wetland does not significantly contribute to GW recharge.
Floodflow Alteration	X		5, 6, 7, 9, 10, 18	X	Broad, relatively flat topography allows for some water retention. Appears to be hyd connected to expansive Beaver Brook wetland system to northeast based on aerials.	Broad, relatively flat topography allows for some water retention. Appears to be hydrologically connected to expansive Beaver Brook wetland system to northeast based on aerials.
Fish and Shellfish Habitat	, ,	X	1		Wetland does not contain suitable fish or shellfish habitat.	ellfish habitat.
Sediment/Toxicant Retention	X		1, 2, 4	X	Wetland directly abuts roadway (NH 28). Cor	Wetland directly abuts roadway (NH 28). Commercial/industrial properties located nearby.
Nutrient Removal	X		3, 4, 5, 7, 8, 9		Wetland function low to moderate. Wetland appears to be hydrologically connected to expansive Beaver Brook wetland system to northeast based on aerials.	appears to be hydrologically connected to northeast based on aerials.
Production Export	, ,	X	1,7		Wetland function low in production export.	
Sediment/Shoreline Stabilization	, ,	X			Wetland is not located along the banks or shoreline of a waterbody.	noreline of a waterbody.
الله حكم Wildlife Habitat	, ,	X	7, 8, 13		Does not contain suitable wildlife habitat due to location (directly abuts busy roadway).	ne to location (directly abuts busy roadway).
Recreation	, ,	X	1		Wetland does not provide recreational opportunities.	ortunities.
Educational/Scientific Value	, ,	X			Wetland is not effective as a site for outdoor learning or research.	learning or research.
\chi Uniqueness/Heritage	, ,	X			Wetland is not unique; exhibits characteristics typical to a utility ROW environment.	cs typical to a utility ROW environment.
Visual Quality/Aesthetics	, ,	×			Wetland does not hold aesthetic or visual qualities.	ualities.
ES Endangered Species Habitat						
Other						

Notes:



INOW ELIGIBILITY DISUITOR					Wetland I.D. 165
otal area of wetland 9.07 Human made?	2	_Is wetland part of a wildlife corridor?_	dor?	Yes or a "habitat island"? No	Latitude_42.901923_ Longitude71.344750
diacent land use Access Rd, Roadway, ROW, Resid/Commerc	Resid/Comr		dwave	Distance to nearest roadway or other development 100 feet	Prepared by: LGJ Date 12/16/2014
J 01	UB2H, PSS,		ped b		Wetland Impact: _{Type} See Table _{Area} See Table
the wetland a separate hydraulic system? No	I-JI	ere	in the		.: :::o
Change 1 + xxxx x x x x x x x x x x x x x x x	-	**************************************	<u>-</u>		Office Field
dow many unbutanes continbute to the wetland:_	-	wildlile & vegetation diversity	//abur	« vegetation diversity/abundance (see attached list)	al wetland
0.11c/A 2.01th 20.17	Suitability	Rationale	Principal		completed? Y_X_ N
runction/value	Z ≻	(Reference #)" FI			Comments
星 Groundwater Recharge/Discharge	\times	2, 4, 5, 7, 9,15	X	Very large wetland complex associated with perennial stream channel, Beaver Browithin an aquifer. Large areas of ponded water present. Very poorly drained soils.	Very large wetland complex associated with perennial stream channel, Beaver Brook. Located within an aquifer. Large areas of ponded water present. Very poorly drained soils.
Floodflow Alteration	×	5,6,7,9,10,13,14,15,16, 18	X	Broad, relatively flat topo. retains large amounts of water. Densely vegetated. Very poorly drained soils. Associated with perennial stream channel. Areas of ponded water present.	ts of water. Densely vegetated. Very poorly n channel. Areas of ponded water present.
Fish and Shellfish Habitat	×			Wetland does not contain suitable fish or shellfish habitat.	fish habitat.
Sediment/Toxicant Retention	×	1-5,10,11,12,13,14,15,16	X	Wetland contains dense emergent and scrub-shrub vegetation. Long duration water ret Wetland part of very large Beaver Brook complex which extends to the north and south.	Wetland contains dense emergent and scrub-shrub vegetation. Long duration water retention. Wetland part of very large Beaver Brook complex which extends to the north and south.
Nutrient Removal	×	2,3,4,5,6,7,8,9,12,13,14	X	Contains dense emergent/scrub-shrub vegeta outlet (beaver). Part of very large Beaver Brook	Contains dense emergent/scrub-shrub vegetation. Long duration water retention. Constricted outlet (beaver). Part of very large Beaver Brook complex which extends to the north and south.
Production Export	×	1, 7, 8, 10		Wetland function moderate in production export.	ort.
↓ Sediment/Shoreline Stabilization	×	3, 4, 5, 7, 12, 13		Wetland borders Beaver Brook on both sides.	
Wildlife Habitat	×	6,7,8,9,10,11,12,13,14,17	X	Beaver activity present. Associated with perennial stream. Within tier 3, Supporting Landsca of NH F&G Critical Habitat desig areas. Potential vernal pool located within northern extent.	Beaver activity present. Associated with perennial stream. Within tier 3, Supporting Landscape, of NH F&G Critical Habitat desig areas. Potential vernal pool located within northern extent.
Recreation	×			Wetland does not provide recreational opportunities.	unities.
Educational/Scientific Value	×			Wetland is not effective as a site for outdoor learning or research.	arning or research.
\chi Uniqueness/Heritage	×			Wetland is not unique; exhibits characteristics typical to a utility ROW environment.	typical to a utility ROW environment.
Visual Quality/Aesthetics	X			Wetland does not hold aesthetic or visual qualities.	ities.
ES Endangered Species Habitat					
Other					

Notes:



New England District							Wetland I.D. 166, 167	
otal area of wetland 0.1, 0.4 Human made?	S N	ls wetland	tland part of a wildlife corridor?_	rridor?_	No_ora "hab	or a "habitat island"? No	Latitude 42.904074 Longitude -71.344264	4
Adjacent land useROW, Substation			Distance to nearest roadway or other development	oadway	or other developm	50 feet	Prepared by: LGJ Date 12/16/2014	4
Dominant wetland systems present_PSS1B (166); PEM/SS1E (167)	PEM/	SS1E (16	57) Contiguous undeveloped buffer zone present No	eloped b	uffer zone present		Wetland Impact: Type_See TableArea_See Table	ا رو
s the wetland a separate hydraulic system? Yes		If not	If not, where does the wetland lie in the drainage basin? $\overline{\ \ \ \ \ \ \ \ \ }$	ie in the	drainage basin?		Evaluation based on:	
How many tributaries contribute to the wetland?_	None		Wildlife & vegetation diversity/abundance (see attached list)	ity/abur	dance (see attach	ist)	OfficeX FieldX	
	Suita Y	Suitabilitv Y N	Rationale (Reference #)*	Principal Functior	Principal Function(s)/Value(s)	Con	Corps manual wetland delineation completed? $Y X N$.	
▼ Groundwater Recharge/Discharge		X	2, 4, 5, 15		Wetlands are not a d	Wetlands are not a discharge/recharge site.		
Floodflow Alteration	X		3, 5, 6, 7, 9, 10, 18	X	Wetlands located in a appears to be directed	lat area downslope of de	Wetlands located in flat area downslope of developed substation site. Substation drainage appears to be directed toward wetland via existing outlet at corner of substation.	
Fish and Shellfish Habitat		X			Wetlands do not con	Wetlands do not contain suitable fish or shellfish habitat.	ish habitat.	
Sediment/Toxicant Retention	X		1, 2, 4, 16	X	Wetlands consists of run-off via installed s	Wetlands consists of dense emergent/scrub-shrub vegrrun-off via installed substation drainage infrastructure.	Wetlands consists of dense emergent/scrub-shrub vegetation. Appear to receives stormwater run-off via installed substation drainage infrastructure.	
Nutrient Removal	X		3, 5, 7, 8, 9		Suitable based on ve	Suitable based on vegetation composition and location.	d location.	
Production Export		×	1,7		Wetlands do not sigr	ificantly contribute to fo	Wetlands do not significantly contribute to food source production based on size and location.	
↓ Sediment/Shoreline Stabilization		X	-		Wetlands are not loc	ated along the banks or s	Wetlands are not located along the banks or shoreline of a waterbody.	
⊘ Wildlife Habitat		X	7, 13		Wetlands are not suitab large active substation).	able for wildlife habitat f on).	Wetlands are not suitable for wildlife habitat function due to location (directly adjacent to large active substation).	
Recreation		X			Wetlands do not pro	Wetlands do not provide recreational opportunities.	unities.	
Educational/Scientific Value		X			Wetlands do not effe	Wetlands do not effective as a site for outdoor learning or research.	r learning or research.	
\chi Uniqueness/Heritage		X			Wetlands are not uni	que; exhibits characterist	Wetlands are not unique; exhibits characteristics typical to a utility ROW environment.	
Visual Quality/Aesthetics		\times			Wetlands do not hol	Wetlands do not hold aesthetic or visual qualities.	ties.	
ES Endangered Species Habitat								
Other								

Notes:



Attachment H

Vernal Pool Summary Table & Photographs

MERRIMACK VALLEY RELIABILITY PROJECT - VERNAL POOL SUMMARY TABLE

ID Associated Wetland VP-38 38 VP-39 39 VP-40 40 VP-43 43	Pelham Pelham Pelham	91an Sheet # 35 35 36	Wetland Complex Wetland Complex	Parent Material Dense Till	Aquatic Resource Type Shrub Wetland	Pool Canopy Cover %	Predominate Substrate	Approx. Size (LxWxD) Feet		Rhydrological				Spotted	Spotted					
VP-38 38 VP-39 39 VP-40 40	Pelham Pelham	35 35	Wetland Complex						Est. Hydroperiod	Regime	Water Quality	Within 100'	Within 750'	Salamander	Salamander Wood Frog	Other	Direct	250' Buffer	Photos	Other Comments
VP-40 40			Wetland Complex			U	Organic Matter	250x120x4	Ear Nov- Late Dec	Permanent	Clear Little Color	25 % Forestland, 75% ROW	75% Forestland, 25% ROW	em (>200)	em (>50)	Fairy Shrimp (c), Caddisfly (f)	0		1, 2	Deep Organic bottom
	Pelham	36		Dense Till	Forested Wetland	25	Organic Matter	100x70x3	Ear Mar - Ear Jul	Semi-permanent	Clear Little Color	85& Forestland, 15% ROW	75% Forestland, 25% ROW	em (5)	em (7)	Caddisfly (f)	0	1,516**	3, 4	Old road close, constructed culver outlet
VP-43 43			Wetland Complex	Dense Till	Herbaceous Wetland	10	Organic Matter	100x60x4	Ear Sep - Ear Nov	Semi-permanent	Clear Little Color	20% Forestland, 10& Developed, 70% ROW	30% Forestland, 20% Developed, 50% ROW	em (3)		Spring Peeper (a) Dead	279	2,297	5	Appears to be located in a previou excavated area/old borrow pit
	Pelham	38	Upland Depression	Loose Till	Shrub Wetland	0	Mineral Soil	30x20	Ear Mar - Ear Jul	Seasonal	Tannic	100% ROW	30% Forestland, 70% ROW		No Species Present		0	204	N/A	
VP-51 51	Pelham	46	Wetland/Pool Complex	Dense Till	Shrub Wetland	0	Organic Matter	130x100x3	Ear Sep - Ear Nov	Semi-permanent	Clear Little Color	5% Forestland, 95% ROW	30% Forestland, 70% ROW	em(15)	em(30), t (>1,000)		0	2,275	6, 7	
VP-51A 51	Pelham	46	Wetland/Pool Complex	Dense Till	Shrub Wetland	0	Organic Matter	100x70x18	Ear Sep - Ear Nov	Semi-permanent	Clear Little Color	10% Forestland, 90% ROW	30% Forestland, 70% ROW	em(1)	em(50), t(>1,000)		0	0	8	
VP-56 56	Pelham	50	Upland Depression	Loose Till	Shrub Wetland	3	Mineral Soil	50x80x3	Ear Mar - Ear Jul	Seasonal	Clear Little Color	100% ROW	15% Forestland, 5% Developed, 80% ROW		em (10), t (>1,000)		10	2,891	9, 10	
VP-63 63	Windham	56	Upland Depression	Loose Till	Open Water	5	Mineral Soil	15x20x3	Ear Jul - Ear Sept	Seasonal	Clear Little Color	15% Forested, 15% Developed, 65% ROW, 5% Roadway	10% Forestland, 15% Developed, 65% ROW, 10% Road	em(5)	t(100), a(1)		0	2,666	11, 12	
VP-87A 87A	Hudson	70	Wetland Complex	Alluvium	Shrub Wetland	0	Organic Matter	100x60x2	Ear Jul - Ear Sept	Seasonal	Clear Little Color	10% Forested, 90% ROW	15% Forestland, 5% Developed, 75% ROW, 5% Road		em (>50), t (>500)	Caddisfly (c), Diving Beetle, Adult Newt	0	40,943	13	Constricted culverted outlet
VP-88 88	Hudson	70	Wetland Complex	Loose Till	Forested Wetland	80	Organic Matter	200x100x2	Ear Jul - Ear Sept	Seasonal	Tannic	66% Forested, 33% ROW	66% Forestland, 33% ROW	em (>30)	em(>50) em(>40)		15,227	50,100	14, 15	Completely dries in fall
VP-90 90 L	Londonderry	71	Upland Depression	Gacial Fluvial	Open Water	5	Mineral Soil	150x80x3	Ear Nov- Late Dec	Permanent	Clear Little Color	40% Forested, 40% ROW, 20% Pond	25% Forestland, 50% ROW, 25% Other	em(21)	em(1)	Crayfish, Bullfrog	475	28,286	16	Part of sand pit complex
VP-92 92 L	Londonderry	72	Wetland Complex	Loose Till	Shrub Wetland	5	Organic Matter	500x60x3	Intermittently Exp	Permanent	High Algae Conten	50% Forestland, 25% Developed, 25% ROW	40% Forestland, 10% Developed, 50% ROW	em(3)		Caddisfly (f)	2,760	47,405	17	Ponded, constricted culverted out
VP-98 98 L	Londonderry	74	Wetland/Pool Complex	Loose Till	Forested Wetland	66	Mineral Soil	80x100x3	Ear Jul - Ear Sept	Seasonal	Tannic	50% Forestland, 50% ROW	50% Forestland, 50% ROW		em(21)	Caddisfly (c), oligochites, small beetle	3,886		18, 19	Flooded forested wetland
VP-101 101 L	Londonderry	74	Wetland/Pool Complex	Loose Till	Forested Wetland	66	Mineral Soil	100x200x3	Ear Jul - Ear Sept	Seasonal	Clear Little Color	70% Forestland, 30% ROW	50% Forestland, 50% ROW	em(20)	em(2) em(25), t(>100)	Caddisfly (c), small oligochites, small beetle	8,465	98,124**	20	Flooded forested wetland
VP-102 102 L	Londonderry	74	Upland Depression, Wetland/Pool Complex	Loose Till	Forested Wetland	100	Organic Matter	35x15x4	Ear Sep - Ear Nov	Seasonal	Clear Little Color				No Species Observed		266		21	Small borrow pit/quarry
VP-114 114 L	Londonderry	82	Upland Depression, Wetland Complex	Loose Till	Forested Wetland	75	Organic Matter	30x10x2	Ear Jul - Ear Sept	Seasonal	Clear Little Color	15% Forestland, 10& Shrubland, 10% Developed, 65% ROW	20% Forestland, 5% Developed, 75% ROW	em(1)		Caddisfly (f)	423	20,216	22, 23	Small borrow pit/quarry
VP-165 165 L	Londonderry	102	Wetland Complex	Loose Till	Forested Wetland	20	Organic Matter	175x70x4	Ear Sep - Ear Nov	Seasonal	Clear Little Color	90% Forestland, 20% Shrubland, 10% ROW	20% Forestland, 65% ROW, 15% Substation	em(31)	em(12), a(1)	Caddisfly (f), Spotted Turtle (2)	0	35,412	24, 25	Flooded forested wetland

^{*} EM = Egg Mass; A = Adult; C = Common; F = Few

^{**} Vernal Pool 250-foot Buffers Overlap



Photo 1: View south of vernal pool (VP-38) located within WA 38. 04/28/2015.



Photo 2: View of wood frog egg masses found within VP-38. 04/28/2015.



Photo 3: View east of vernal pool (VP-39) located within WA 39. 04/21/2015.



Photo 4: View of spotted salamander egg mass found within VP-39. 04/28/2015.



Photo 5: View northeast of vernal pool (VP-40) located within WA 40. 04/28/2015.



Photo 6: View northwest to vernal pool (VP-51) located within WA 51. 04/29/2015.



Photo 7: View of wood frog egg masses observed within VP-51. 04/29/2015.



Photo 8: View east of vernal pool (VP-51A) located within WA 51. 04/29/2015.



Photo 9: View southeast of vernal pool (VP-56) located within WA 56. 04/29/2015.



Photo 10: View of wood frog egg mass observed within VP-56. 04/29/2015.



Photo 11: View east of vernal pool (VP-63) located within WA 63. 04/29/2015.



Photo 12: View of spotted salamander egg mass observed within VP-63. 04/29/2015.



Photo 13: View southwest of vernal pool (VP-87A) located within WA 87A. 04/28/2015.



Photo 14: View southwest of vernal pool (VP-88) located within WA 88. 04/28/2015.



Photo 15: View of blue spotted salamander egg mass observed within VP-88. 04/28/2015.



Photo 16: View east of vernal pool (VP-90) located within WA 90. 04/28/2015.



Photo 17: View east of vernal pool (VP-92) located within WA 92. 04/28/2015.



Photo 18: View north of vernal pool (VP-98) located within WA 98. 04/29/2015.



Photo 19: View of wood frog egg mass observed within VP-98. 04/29/2015.



Photo 20: View north of vernal pool (VP-101) located within WA 101. 04/29/2015.



Photo 21: View south of vernal pool (VP-102) located within WA 102. 04/29/2015.



Photo 22: View west of vernal pool (VP-114) located within WA 114. 04/29/2015.



Photo 23: View of spotted salamander egg mass observed within VP-114. 04/29/2015.



Photo 24: View south of vernal pool (VP-165) located within WA 165. 04/29/2015.



Photo 25: View of spotted turtle found within VP-165. 04/29/2015.



Attachment I

Preliminary Project Mitigation Agreement

NHDES PRELIMINARY MITIGATION AGREEMENT FORM

I, <u>Public Service Company of New Hampshire d/b/a Eversource Energy & New England Power Company d/b/a National Grid</u> , ("Applicant"), by <u>Vanasse Hangen Brustlin, Inc. (VHB)</u> ("Authorized Agent"), (Print Applicant name legibly) (Print Authorized Agent name legibly)
and the Department of Environmental Services ("DES") hereby agree to the process described below to streamline the review of Applicant's application for a permit under RSA 482-A.
A Preliminary Mitigation package is being submitted with the Standard Dredge and Fill Application in accordance with Env-Wt 501.06 and Env-Wt 800. The package contains the information required as outlined in the DES Compensatory Mitigation Checklist.
The preliminary mitigation proposal type is (please check one or more types):
Wetland Restoration Upland Buffer Preservation Wetland Creation Payment into the Aquatic Resource Mitigation Fund following consideration of the three options noted above and determining them to not be feasible for complete mitigation.
By executing this agreement, DES agrees to accept Applicant's Preliminary Mitigation proposal for purposes of determining whether the application is administratively complete. However, the application will not be deemed complete if other basic information is missing, such as the required plans, attachments, and/or fees.
Applicant agrees to submit the final mitigation plans to DES for review by: No later than 5 months after the NH Site Evaluation Committee deems the MVRP Application to be complete, or in the alternative, a date that DES specifies.
Applicant and DES, by mutual agreement authorized under RSA 482-A:3, XIV(c)(3), agree to extend the response time for DES to review the final mitigation proposal, once received, to 60 days from receipt of the final mitigation plans.
The applicant agrees that if the information required under Env Wt 800 is not submitted by the date specified in this agreement or 120 days from a Request For More Information by DES, the application will be denied.
I, Applicant _X_ Authorized Agent [check one] hereby certify that the information submitted with the application meets the Preliminary Mitigation requirements for the DES Wetlands Bureau to understand the nature and appropriateness of the proposed mitigation.
Sherri Tred Signature of Applicant or Authorized Agent Date
The NHDES Wetlands Bureau agrees, by the signature below, that the information submitted meets the Preliminary Mitigation requirements, and that technical review of the mitigation proposal will not commence until the required items are submitted before or on the date noted above.
NHDES Wetland Mitigation Coordinator Date