

Photo 1: View looking north across Mohawk River from Rotterdam Substation to Structure T-256.



Photo 2: View looking north from State Route 147 (Sacandaga Road) at Structures T-234 and T-233



Photo 3: View looking south from State Route 147 (Sacandaga Road) at Structure T-235.



Photo 4: View looking north of Snake Hill Road from residential driveway towards Structure T-226.



Photo 5: View looking south from ROW across Swaggertown Road towards Structure T-219 and the Swaggertown Substation Tap.



Photo 6: View looking north from Swaggertown Road at Structure T-218.

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Photo 7: View looking south from Crooked Street at Structure T-209.



Photo 8: View looking north from Crooked Road at Structure T-208.

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Photo 9: View looking south from Old Stage Road at T-207.



Photo 10: View looking north from Stage Road (Co. Rte. 53) at Structure T-204.



Photo 11: View looking north from Charvale Swimming Pool Association driveway off Valentine Road at Structure T-201.



Photo 12: View looking south from Charvale Swimming Pool Association driveway off Valentine Road towards Structure T-202.



Photo 13: View looking south from Valentine Road at Structure T-198 and T-199.



Photo 14: View looking north from Valentine Road at Structure T-197.

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Photo 15: View looking south from Charlton Road (Co. Rte. 51) at Structure T-196.



Photo 16: View looking north from Charlton Road (Co. Rte. 51) at Structure T-195.



Photo 17: View looking north from Sweetman Road at Structure T-187.



Photo 18: View looking south from Root Road at Structure T-184.

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Photo 19: View looking north from Root Road at Structure T-183.



Photo 20: View looking south from Randall Road at Structure T-175.



Photo 21: View looking south from Hop City Road & State Route 67 at T-165 & T-166.



Photo 22: Looking northward from Paisley Road at Structure T-162.



Photo 23: View from Goode Road looking south across Galway Road at T-146.



Photo 24: View from Dewar Road looking north at replaced Structure T-145.



Photo 25: View looking south from Lewis Road at Structure T-142.



Photo 26: View looking south from Rock City Road at existing Switch 144 & T-139.



Photo 27: View looking north from Rock City Road towards Structures T-138 and T-137.



Photo 28: View looking north from Sodeman Road at Structure T-122



Photo 29: View looking south from State Route 29 at Structure T-123.



Photo 30: View looking south from Middle Grove Road at Structure T-110.



Photo 31: View looking north from Middle Grove Road at Structure T-109.



Photo 32: View looking south from Dunham Pond Road at Structure T-104.



Photo 33: View looking north from Dunham Pond Road at Structure T-103.



Photo 34: View looking south from Hyspot Road at Structure T-101.



Photo 35: View looking north from Hyspot Road at Structure T-100.



Photo 36: View looking south from Russell Road at Structure T-97.



Photo 37: View looking north from Russell Road at Structure T-96.



Photo 38: View looking north from Bockes Road at Structure T-87.



Photo 39: View looking south from Porter Corners Road at Structure T-79.



Photo 40: View looking north from Porter Corners Road at Structure T-78.



Photo 41: View looking south from Spier Falls Rd. (Co. Rte. 25) at Structure T-69.



Photo 42: View looking south from Howe Road at Structure T-57.



Photo 43: View looking east from Angel Road at Structure T-37.



Photo 44: View looking west from County Route 25 at Structures T-29 and T-30.



Photo 45: View looking west from County Road 25 (Main St.) looking at Structure T-28.



Photo 46: View looking west from County Route 24 at Structure T-22.



Photo 47: View looking south from Spier Falls Road towards Structure T-19.



Photo 48: View looking north from Spier Falls Road at Structure T-18.



Photo 49: View looking southwest from T-5 toward Structure T-6.



Photo 50: View looking northeast at Spier Falls Substation from Spier Falls Road.

Figure 4.4-3b:Representative Views of the Ballston Tap 115 kV Line 1 and 2 ROW
at Road Crossings from Ballston Tap to the Ballston Substation

Figure 4.4-3b Representative Views of the Ballston Tap 115 kV Line 1 and 2 ROW at Road Crossing from Ballston Tap to the Ballston Substation



Photo 1: View looking east across Hop City Road at Line 2 Structure T-183 on left side.



Photo 2: View looking east from Goode Street at Line 2 Structure T-192 on left.

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Figure 4.4-3b Representative Views of the Ballston Tap 115 kV Line 1 and 2 ROW at Road Crossing from Ballston Tap to the Ballston Substation



Photo 3: View looking east from Middle Line Road at Line 2 Structure T-204 on left.



Photo 4: View looking west from Garrett Lane at Line 2 Structures T-213 on right.

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Figure 4.4-3b Representative Views of the Ballston Tap 115 kV Line 1 and 2 ROW at Road Crossing from Ballston Tap to the Ballston Substation



Photo 5: View looking northeast towards Ballston Substation from Garrett Road at ROW angle at Line 2 Structure 219.

Figure 4.4-3c – 4.4-3j: Representative Visual Simulation of Proposed Structures Viewed from Road Crossings



Photo 1A: Existing view looking south from Vley Road and Structure T-247 towards Structure T-248.



Photo 1A: Proposed view looking south from Vley Road.

NOTE: Representative visual simulation photo locations are shown on Figure 4.4-1.





Photo 3: View looking south from State Route 147 (Sacandaga Road) at Structure T-235.



Photo 3: Proposed view looking south from State Route 147 (Sacandaga Road).

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SPIER FALLS - ROTTERDAM NEW 115 kV TRANSMISSION PROJECT				
REPRESENTATIVE VISUAL SIMULATION OF PROPOSED STRUCTURES VIEWED FROM ROAD CROSSINGS				
FIGURE 4.4-3d	JAN. 2010			

NOTE: Representative visual simulation photo locations are shown on Figure 4.4-1.



Photo 8: Existing view looking north from Crooked Road at Structure T-208.



Photo 8: Proposed view looking north from Crooked Road. The existing distribution line shown on the left (west) side of ROW will be removed and relocated along an existing street easement. The proposed view simulates this line and structures as removed.

NOTE: Representative visual simulation photo locat

Representative visual simulation photo locations are shown on Figure 4.4-1.





Photo 10: Existing view looking north from Stage Road (Co. Rte 53) toward Structure T-204.



Photo 10: Proposed view looking north from Stage Road (Co. Rte 53).

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SPIER FALLS - ROTTERDAM NEW 115 kV TRANSMISSION PROJECT				
REPRESENTATIVE VISUAL SIMULATION OF PROPOSED STRUCTURES VIEWED FROM ROAD CROSSINGS				
FIGURE 4.4-3f		JAN. 2010		

NOTE: Representative visual simulation photo locations are shown on Figure 4.4-1.



Photo 22: Existing view looking northward from Paisley Road at Structure T-162.



Photo 22: Proposed view looking northward from Paisley Road.

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SPIER FALLS - ROTTERDAM NEW 115 kV TRANSMISSION PROJECT				
REPRESENTATIVE VISUAL SIMULATION OF PROPOSED STRUCTURES VIEWED FROM ROAD CROSSINGS				
FIGURE 4.4-3g		JAN. 2010		

NOTE: Representative visual simulation photo locations are shown on Figure 4.4-1.


Photo 39: Existing view looking south from Porter Corners Road at Structure T-79.



Photo 39: Proposed view looking south from Porter Corners Road.



NOTE: Representative visual simulation photo locations are shown on Figure 4.4-1.



Photo 46: Existing view looking west from County Road Route 24 at Structure T-22.



Photo 46: Proposed view looking west from County Road Route 24.

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SPIER FALLS - ROTTERDAM NEW 115 kV TRANSMISSION PROJECT				
REPRESENTATIVE VISUAL SIMULATION OF PROPOSED STRUCTURES VIEWED FROM ROAD CROSSINGS				
FIGURE 4.4-3i		JAN. 2010		

NOTE: Representative visual simulation photo locations are shown on Figure 4.4-1.



Photo 4: Existing view looking west from Garrett Lane at Line 2 Structure T-213 on right on the existing Ballston Tap ROW.



Photo 4: Proposed view looking west from Garrett Lane at Structure T-213 on the existing Ballston Tap ROW (proposed rebuild, renamed Line 302).

NOTE: Representative visual simulation photo locations are shown on Figure 4.4-1.



Figure 4.4-4a – 4d Viewpoint 1 and Viewpoint 1A: Moreau Lake State Park









Figure 4.4-5a – 5b Viewpoint 2: Mohawk-Hudson Bike Way





Figure 4.4-6a – 6b Viewpoint 3: Mohawk River Near Rotterdam Substation





Figure 4.4-7a – 7b Viewpoint 4: Maalwyck Park





4.5 CULTURAL RESOURCES

In accordance with PSL § 122(1)(c) and 16 NYCRR §§ 86.3(a)(1)(iii) and 86.5(b)(2)(i), this section includes a study of existing cultural resources and potential impacts resulting from the construction and operation of the Project. Cultural resources include archaeological and historic architectural resources that are eligible or potentially eligible for listing on the NRHP. This section reviews available cultural resource data records and correspondence with the NYS OPRHP to determine the presence or likely presence of archaeological and historic structures, artifacts, sites, and areas, and the potential for impact of the Project on these resources.

4.5.1 Existing Cultural Resources Setting

To address the potential for impacts on historic and archaeological resources, a Phase I literature and site file review was conducted for the area within a 1.0 to 3.0 mile radius from the Project ROW for archaeological and historic architectural resources. The results of the file review are summarized in Section 4.5.1.1.

In 1982, the New York State Legislature created the Urban Cultural Parks Program under the jurisdiction of the NYS OPRHP. This Program, which aims to develop, interpret, identify, and preserve the natural and cultural resources of the state has grown beyond the original concept and was amended in 1994 to become the State Heritage Areas Program. The Project is geographically located within the vicinity of three State Heritage Areas or Corridors, the Mohawk Valley Heritage Corridor, the Town of Saratoga Springs, and the City of Schenectady.

The Mohawk Valley Heritage Corridor was the first regional heritage corridor incorporated as part of the NYS Heritage Area Program. The corridor follows 130 miles along the Mohawk River including Schenectady and Saratoga Counties. This extensive area along the Mohawk Valley was designated for its historic significance, including historic sites from early settlement, colonial, revolutionary, and industrial periods, as well as its generally scenic landscape.

The Town of Saratoga Springs is a designated state heritage area for its role as a 19th century spa. The town still features mineral springs and Victorian era architecture. The central, downtown area of Saratoga Springs is over 2.0 miles east of where the ROW traverses northern Milton and southern Greenfield in Saratoga County.

The City of Schenectady is one of the oldest cities in the United States. It was designated as a state heritage site for its history as an important port along the Erie Canal and its later role as the industrial center where General Electric and the American Locomotive Company were founded. The Project passes near Schenectady where the lines cross over the Mohawk River near the southern end of the existing Spier Falls-Rotterdam 115 kV Line 1 and 2 ROW at Rotterdam Substation.

4.5.1.1 Known Archaeological and Historic Sites

Historic properties are properties on or eligible for inclusion in the National or State Register of Historic Places.

A review of the NYS GIS Clearinghouse for historic sites listed on the NRHP or the NYS Register identified 47 individual properties, complexes, and historic districts that are listed on the NRHP and/or the NYS Register within 5.0 miles of the Project. Most of these sites are located within the downtown areas of Saratoga Springs or the City of Schenectady and are outside of the Project area. There are no known or mapped prehistoric or historic archaeological sites within 5.0 miles of the Project ROW. The NRHP and historic landmarks are listed in Table 4.5-1.

4.5.2 Agency Consultation and Area of Potential Effect Assessment

The NYS OPRHP and the SHPO were requested to review historic records and comment on the Project in August 2007 and June 2009. A regional map with known historic sites obtained from the NYS GIS Clearinghouse and a Project description was provided to the NY OPRHP. The NYS OPRHP reviewed the Project in accordance with Section 106 of the National Historic Preservation Act of 1966. Based on this review, the SHPO stated that the Project will have no effect on cultural resources listed on or eligible for inclusion on the NRHP.

SECTION 4.5 - CULTURAL RESOURCES

TABLE

TABLE 4.5-1							
Historic Sites and NRHP Historic Landmarks Within A 5.0-Mile Radius of the Project ROWs							
Name	Location	County	Distance from Project (miles)	Historic Category ¹			
Historic Sites							
Broadway Historic District (Boundary Increase II)	Broadway, Washington and Rock Sts., Saratoga Springs	Saratoga	4.53	NRHP			
Brookside	Charlton St., Ballston Spa	Saratoga	3.21	NRHP, State Register			
Canfield Casino and Congress Park	Roughly bounded by Spring and Circular Sts., Park Pl., and Broadway, Saratoga Springs	Saratoga	4.94	NRHP			
Casino-Congress Park-Circular Street Historic District	Bounded by Broadway, Spring, and Circular Sts., Saratoga Springs	Saratoga	4.92	NRHP, State Register			
Charlton Historic District	Main St. (SR 51), Charlton	Saratoga	0.64	NRHP, State Register			
Drinkhall, The	297 Broadway, Saratoga Springs	Saratoga	4.39	NRHP			
Franklin Square Historic District	In an irregular pattern from Beekman St. along both sides of Grand Ave., Franklin, and Clinton Sts. to Van Dam, Saratoga Springs	Saratoga	4.59	NRHP			
Grant Cottage	CR 101 North of NYS Route 9, Mount McGregor	Saratoga	1.61	NRHP, State Register, State Historic Site			
Saratoga Spa State Park District	US 9 & NY 50, Saratoga Springs	Saratoga	4.15	NRHP, State Register			
Todd, Hiram Charles House	4 Franklin Sq., Saratoga Springs	Saratoga	4.72	NRHP			
Union Avenue Historic District	Union Ave., Saratoga Springs	Saratoga	4.96	NRHP			
US Post OfficeBallston Spa	1 Front St., Ballston Spa	Saratoga	3.54	NRHP, State Register			
US Post OfficeSaratoga Springs	475 Broadway, Saratoga Springs	Saratoga	4.93	NRHP			
Verbeck House	20 Church St., Ballston Spa	Saratoga	3.55	NRHP, State Register			
West Charlton United Presbyterian Church	1331 Sacandaga Rd., West Charlton	Saratoga	4.88	NRHP			
West, George Residence	Rock City Falls	Saratoga	1.43	NRHP, State Register			
West Side Historic District	Roughly, along Church, Van Dam, State and Washington Sts., Woodlawn and Grand Aves. and Franklin Sq., Saratoga Springs	Saratoga	4.84	NRHP, State Register			
Abrahams Farmhouse	Hardin Rd., Duanesburg	Schenectady	4.99	NRHP			
Barney, H. S., Building	217-229 State St., Schenectady	Schenectady	2.79	NRHP, State Register			

TABLE 4.5-1					
Historic Sites and NRHP Historic Landmarks Within A 5.0-Mile Radius of the Project ROWs					
Name	Location	County	Distance from Project (miles)	Historic Category ¹	
Brandywine Avenue School	108 Brandywine Ave., Schenectady	Schenectady	4.14	NRHP, State Register	
Central Fire Station	Erie Blvd., Schenectady	Schenectady	2.81	NRHP, State Register	
Dellemont-Wemple Farm	W of Schenectady on Wemple Rd., Schenectady	Schenectady	3.76	NRHP, State Register	
Foster Building	508 State St., Schenectady	Schenectady	3.12	NRHP, State Register	
Franklin School	Ave. B and Mason St., Schenectady	Schenectady	3.66	NRHP, State Register	
General Electric Realty Plot	Roughly bounded by Oxford Pl., Union Ave., Nott St., and Lenox and Lowell Rds., Schenectady	Schenectady	3.73	NRHP	
General Electric Research Laboratory	General Electric Main Plant, Schenectady	Schenectady	2.66	NRHP, State Register	
Glen, Abraham House	Mohawk Ave., Scotia	Schenectady	1.86	NRHP, State Register	
Green, Joseph, Farmhouse, Duanesburg MRA	NY 159, Duanesburg	Schenectady	3.83	NRHP, State Register	
Hotel Van Curler	78 Washington Ave., Schenectady	Schenectady	2.62	NRHP, State Register	
Langmuir, Irving House	1176 Stratford Rd., Schenectady	Schenectady	3.98	NRHP, State Register	
Lasher, George House, Duanesburg MRA	Levey Rd., Duanesburg	Schenectady	2.32	NRHP, State Register	
Liddle, Robert Farmhouse, Duanesburg MRA	Little Dale Farm Rd., Duanesburg	Schenectady	4.18	NRHP, State Register	
Mabee House	South of Rotterdam Junction on NY 5S, Rotterdam Junction	Schenectady	2.19	NRHP, State Register	
Mariaville Historic District	NY 159 Duanesburg	Schenectady	1.88	NRHP, State Register	
Nott Memorial Hall	Union College Campus, Schenectady	Schenectady	3.44	NRHP, State Register	
Proctor, F. F. Theatre and Arcade	432 State St., Schenectady	Schenectady	3.04	NRHP, State Register	
Schenectady Armory	125 Washington Ave., Schenectady	Schenectady	2.68	NRHP, State Register	
Schenectady City Hall and Post Office	Jay St., Schenectady	Schenectady	3.06	NRHP, State Register	
Seeley Farmhouse	2 Freeman's Bridge Rd., Schenectady	Schenectady	3.11	NRHP, State Register	
Stockade Historic District	Roughly bounded by Mohawk River, RR tracks, and Union St., Schenectady	Schenectady	2.37	NRHP	
Stockade Historic District (Boundary Increase)	Bounded by Mohawk River, RR tracks, and Union St.,	Schenectady	2.52	NRHP	

TABLE 4.5-1						
Historic Sites and NRHP Historic Landmarks Within A 5.0-Mile Radius of the Project ROWs						
Name	Location	County	Distance from Project (miles)	Historic Category ¹		
	Schenectady					
Swart House and Tavern	130 Johnson Rd., Glenville	Schenectady	3.53	NRHP, State Register		
Union Mill Complex	NY 50, Milton Ave., Ballston Spa	Schenectady	3.33	NRHP, State Register		
Union Street Historic District	Union St. from Hudson River to Phoenix Ave., Schenectady	Schenectady	2.97	NRHP, State Register		
US Post OfficeSchenectady	Jay and Liberty Sts., Schenectady	Schenectady	3.09	NRHP, State Register		
US Post OfficeScotia Station	224 Mohawk Ave., Scotia	Schenectady	1.48	NRHP, State Register		
Vale Cemetery and Vale Park	907 State St., Nott Ter., Schenectady	Schenectady	3.30	NRHP, State Register		
National Park System						
Erie Canalway National Heritage Corridor	500+ miles of the New York Canal System	Schenectady	N/A	National Heritage Corridor		
National Natural Landmarks						
Petrified Sea Gardens	42 Petrified Gardens Rd., Saratoga Springs	Saratoga	2.04	NRHP, National Natural Landmark, National Historic Landmark		
Heritage Areas/Urban Parks						
Mohawk Valley Heritage Corridor	Counties along the Mohawk River	Saratoga and Schenectady	N/A	Heritage Corridor/Urban Cultural Park		
Saratoga Springs	City of Saratoga Springs	Saratoga	N/A	Heritage Area/Urban Cultural Park		
City of Schenectady	City of Schenectady	Schenectady	N/A	Heritage Area/Urban Cultural Park		
¹ NRHP = National Register of Historic Places						

4.6 TERRESTRIAL AND WILDLIFE RESOURCES

In accordance with PSL § 122(1) (c) and 16 NYCRR §§ 86.5(a) and (b), this section provides a description of the study of ecological communities and wildlife resources along the Project ROWs and the potential changes or effects of construction and operation of the Project on terrestrial and wildlife resources. This section also describes efforts undertaken during the siting and design of the proposed facilities to avoid or minimize potential adverse effects on these resources.

Background

The identification of plant and animal populations and the classification of ecological communities involve recognizing the assemblage of interacting plant and animal populations that share a common environment influenced or formed by landscape features, vegetation cover, hydrology, topography, soils, and other factors, including human activity. Ecological communities occupied by certain plant and animal populations define and modify habitat. For example, a dense hemlock forest creates a thick canopy that shades the forest floor and keeps it cool and damp, effectively promoting certain understory shrub and herbaceous cover. A large population of deer browsing that understory can modify or change this habitat. Beaver can modify a stream corridor and change the habitat to open water and wetland. Maintained ROWs remove tree canopy and create a variety or mosaic of shrub and herbaceous communities and habitat with relatively dynamic plant and animal populations.

The existing plant communities and wildlife expected to occupy recognized ecological communities and habitats within and adjacent to the Project ROWs were characterized based on available GIS data compiled from the NYSDEC's Natural Heritage Program ("NHP"), literature reviews, field surveys, and agency consultations. Prior to field surveys, existing information was reviewed in the vicinity of the Project ROWs, including aerial photographs, wetland maps, and documented occurrences of significant natural communities and threatened and endangered species. During the summer and early fall of 2007 and the spring of 2009, surveys of general plant communities and wildlife habitat were conducted within the Project ROWs, in conjunction with wetland resource delineation and cover type surveys.

Ecological communities present within the existing Project ROWs were verified and evaluated during surveys conducted in July and August 2007, March 2008, and June 2009 for species composition and qualitative habitat attributes, and to facilitate the classification of existing ecological communities. Ecological communities were classified, where applicable, in

accordance with the classification system presented in the publication entitled "Ecological Communities of New York State" (Reschke, 1990). Wetland resources were identified along the Project ROWs in accordance with appropriate wetland delineation and classification methodology described in Section 4.7.

In addition to identifying ecological communities and potential wildlife, vegetation communities were also identified using cover type mapping from the NYS GIS and field verified in order to identify wildlife use in the Project ROWs. A literature review was also conducted to identify wildlife species that are likely to use identified vegetative communities or recognized habitats present along the Project ROWs and to further define potential ecological communities. The literature that was reviewed included publications on natural history of species and preferred habitat usage (DeGraaf et al., 1986), as well as other relevant resource maps and descriptions (Bull, 1976; Burt and Grossenheider, 1976; Bailey, 1995). Information on federally and state listed threatened and endangered species and state recognized Significant Natural Communities is presented in Section 4.6.4.

4.6.1 Existing Ecological Communities in the Project Area

The Project traverses two broad "eco-region" provinces of the Warm Continental Division: the Eastern Broadleaf Forest province and the Adirondack-New England Mixed Forest-Coniferous Forest-Alpine Meadow province (Bailey, 1995). The Eastern Broadleaf Forest province includes the southern segment of the Project and is characterized by temperate, deciduous forest communities dominated by broadleaf trees that provide a dense, continuous canopy in summer and shed their leaves completely in winter. Representative vegetation includes American beech (Fagus grandifolia), tuliptree (Liriodendron tulipifera), basswood (Tilia Americana), sugar maple (Acer saccharum), red maple (Acer rubra), red oak (Quercus rubra), white oak (Q. alba), and Eastern hemlock (Tsuga canadensis), which is a common conifer in the region (Bailey, 1995). The northern segment of the Project traverses vegetation communities included in the Adirondack-New England Mixed Forest-Coniferous Forest-Alpine Meadow province. This ecoregion province is a transition zone between the boreal spruce-fir forest to the north and the deciduous forest to the south. Valley areas in this eco-region consist of hardwood forest with maples (Acer spp.), birch (Betula spp.), beech (Fagus spp.), and hemlocks (Tsuga spp.), while the low mountain slopes support a mixed forest of spruce (*Picea* spp.), fir (*Abies* spp.), maple, beech, and birch (Bailey, 1995).

Within these eco-region provinces, certain ecological communities persist. The ecological communities described in Reschke (1990) are defined in association with typical species. An ecological community is a variable assemblage of interacting plants and animal populations that share a common environment. Figures 4.6-1 and 4.6-2 indicate the presence of land use and vegetation communities overlaid on aerial photo-imaginary. Table 4.6-1 lists the representative ecological communities in and adjacent to the Project ROWs. The following cover type descriptions are correlated with ecological communities and based on the presence of common vegetation types (Reschke, 1990). The general ecological communities within and adjacent to the Project ROWs are described in the following paragraphs.

4.6.1.1 Existing Ecological Communities along the Project ROWs

The existing Project ROWs are maintained in accordance with National Grid's integrated *Transmission Right-of-Way Management Program*. Tree species are periodically trimmed or removed, and controlled on a limited basis with a periodic and selective herbicide treatment program. Because the ROWs are periodically maintained under National Grid's *Transmission Right-of-Way Management Program* and also traverse residential parcels where lawns are maintained, these areas have been classified as "Mowed Lawn with Trees," "Mowed Roadside/Pathway," or "Mowed Lawn" according to descriptions provided in "Ecological Communities of New York State" (Reschke, 1990). Nonetheless, the existing Project ROWs in many remote areas consist of a variety of non-forested secondary ecological communities associated with successional vegetation comprising terrestrial shrub and herbaceous communities, wetlands and water resources, and former agricultural land that has successional meadow herbaceous species. The ecological communities adjacent to the Project ROWs also consist of successional vegetation and several primary types of forested land.

Observed ecological communities adjacent to the existing Project ROWs from the towns of Moreau to Rotterdam are predominantly Successional Northern Hardwoods, Pine Plantation, and Brushy Cleared Land. Approximately 13% of the Project's existing ROWs cross through agricultural areas consisting of cropland, hay, and pasture fields. Wetlands and open water account for less than 18% of the Project ROWs. The largest open water area crossed by the Project is the Mohawk River at the Rotterdam-Glenville town line. Approximately 11% of the Project ROWs traverse developed areas consisting of urban vacant lots, unpaved roads, paved roadways, and mowed areas. Approximately 48.5 % of the Project ROWs is "Mowed Pathway" under National Grid's authorized *Transmission Right-of-Way Management Program*. Other

general ecological communities not influenced by the management of the ROWs encountered within and adjacent to the Project ROWs are described as follows.

Lacustrine or Open Water

Lacustrine or open water habitat consists of large depressions (large ponds and lakes) or dammed river channels that form impoundments or reservoirs and lack emergent vegetation. Lacustrine habitats are distinguished by their "trophic state," which are seasonal cycles influenced by thermal stratification and circulation. These habitats lack emergent vegetation due to depth of water, but they support submerged vegetation. The only lacustrine habitat traversed by the Project ROWs is a small, unnamed pond in Schenectady County.

Riverine Systems

Riverine systems include moderate sized streams and rivers with aquatic communities associated with flowing, non-tidal water that lacks persistent emergent vegetation, but may include areas with submerged or floating-leaved aquatic vegetation. Riverine communities are influenced by their position in the watershed, flow characteristics, and habitats that are modified by the type of substrate, riffles, channel and run characteristics, and pools and backwater areas that may persist in a given reach. The major riverine systems crossed by the ROWs include the Mohawk River and the Kayaderosseras Creek.

Palustrine Wetlands

Wetland ecological communities are characterized in Section 4.7. As described in this section, the Project ROWs cross a total of 109 wetland areas.

Successional Old Field and Shrubland

This cover type includes areas of sparse vegetative cover (less than 25 percent) that change from one land cover to another resulting from various land use activities. Examples include forest clear-cuts or lands that have otherwise been cleared, meadows in a transitional phase from agricultural land that has been cleared, plowed, and then abandoned, and the temporary clearing of vegetation and changes due to natural causes (e.g., fire, flood, etc.). Typically, these areas consist of early successional vegetation species.

Terrestrial Forest Communities

The Project ROWs traverses several terrestrial forest communities located adjacent to the existing ROW. These communities described by Reschke (1990) include the following.

Successional Northern Hardwoods include hardwood or mixed forests that occur on sites that have been cleared or otherwise disturbed or altered. The dominant tree species found in Successional Northern Hardwoods include quaking aspen (*Populas tremuloides*), big-toothed aspen (*P. grandidentata*), balsam poplar (*P. balsamifera*), black cherry (*P. serotina*), red maple (*Acer rubrum*), paper birch (*Betula papyrifera*), gray birch (*B. populifolia*), white ash (*Fraxinus americana*), and American elm (*Ulmus americana*). Successional Northern Hardwood forest communities are wind-dispersed species that are well adapted to disturbance and that require abundant sunlight. Successional forests tend to have shrub and herbaceous layer species that are typical of old field habitats.

Other forest communities encountered adjacent to the Project ROWs include Pine Plantation, Red Maple Hardwood Swamp, Successional Southern Hardwoods, Beech-Maple Mesic Forest, Hemlock-Northern Hardwood Forest, and Pine-Northern Hardwood Forest.

Some of the other tree species observed during the field surveys include white pine (*Pinus strobus*), oak (*Quercus spp.*), hickory (*Carya spp.*), basswood (*Tilia spp.*), and American beech.

Common species found in coniferous forests adjacent to the Project ROWs include cedar (*Juniperus* spp.), hemlock (*Thuja* spp.), spruce (*Picea* spp.), and pine (*Pinus* spp.). The Project ROWs also cross a Christmas tree farm in Milton just south of Galway Road.

Pastureland

Pasturelands are agricultural lands permanently maintained as a grazing area for livestock. Pastureland is a subsystem of Terrestrial Cultural communities that have been created, maintained, and/or modified by humans. Pastures may include grass species and crop plants. Dominant grass and herbaceous species include red fescue (*Festuca rubra*), goldenrod (*Solidago* sp.) Queen Anne's lace (*Daucus carota*), orchard grass (*Dactylis glomerata*), spreading dogbane (*Apocynum androsaemifolium*), thistle (*Cirsium* sp.), asters (*Aster* sp.), violet (*Viola* sp.), and timothy.

Cropland/Field Crop

Croplands are also agricultural lands that consist of planted row crops such as corn, potatoes, and soybeans. Row crop fields may also be cycled to field crops that consist of alfalfa, wheat,

timothy, and oats. Croplands are also a subsystem of the Terrestrial Cultural community as described above.

4.6.2 Project Effects on Ecological Communities and Mitigation

The majority of the Project will involve access and construction within the existing ROWs. No significant ecological or natural communities would be affected by the Project. As described in Section 4.2.1, National Grid proposes to expand the existing Spier Falls-Rotterdam 115 kV Line 1 and 2 ROW segment between Rotterdam Substation and Ballston Tap in several areas to accommodate the proposed New Line 1. Approximately 11.1 acres of mixed forest adjacent to the proposed New Line 1 ROW will be cleared to accommodate proposed ROW expansion and easements. Of this amount, 3.2 acres would be for fee-owned ROW and 7.9 acres would be for a 20-foot-wide vegetation management easement on the westerly side of the ROW (see Section 4.2.1). Following construction, National Grid proposes to maintain this area as a border zone in accordance with National Grid's *Transmission Right-of-Way Management Program*. Maintenance of this border zone will include removal of tall growing species; however, some medium growing species and woody shrubs will be allowed to revegetate. Approximately 2.7 acres of forested wetland areas along the proposed Line 1 ROW will also be selectively cleared of tall-growing trees and converted to scrub-shrub wetlands (see Section 4.7).

The construction of proposed New Line 302 from the existing Spier Falls Substation to the Ballston Tap junction will involve the installation of new structures and transmission lines parallel to existing structures within the existing ROW. National Grid proposes a "compact" structure design that facilitates the installation of the new pole structures within the existing ROW without the need for expansion. Approximately 45.8 acres of mixed forest adjacent to the proposed New Line 302 ROW will be cleared to accommodate proposed ROW expansion and easements. Of this amount, 0.3 acre would be for fee-owned ROW and 45.5 acres would be for a 20-foot-wide vegetation management easement on the westerly side of the ROW (see Section 4.2.1). Selective tree removal is proposed in the "danger tree" zone beyond the existing Project ROWs consistent with National Grid's *Transmission Right-of-Way Management Program*.

The proposed rebuild of the existing Ballston Tap Line 2 structures in the Ballston Tap to Ballston Substation ROW will require a 25-foot-wide vegetation management easement on the northerly side of the ROW and affect approximately 3.2 acres of mixed forest.

Existing non-forested and early successional vegetation communities in the Project ROWs will not be adversely affected. Disturbance of plant communities within and adjacent to the Project ROWs are expected to be limited to temporary construction disturbance that will be mitigated with the restoration of these areas following construction. Restoration will generally entail restoring disturbed grades around pole structures and access roads and properly stabilizing disturbed soils that will encourage the re-establishment of similar vegetation existing prior to Project construction (e.g., agricultural area and early succession cover types). Because the existing ROWs are currently maintained in early successional grasses, herbaceous, and scrubshrub communities, the ROWs and associated wildlife habitats are expected to quickly reestablish with similar vegetation cover. Site-specific restoration procedures will be prescribed in the EM&CP.

All vegetation will be managed in the Project ROWs in a condition that ensures safe access to the existing and proposed transmission structures, and to prevent future electrical service interruptions caused by tall growing tree saplings and tall shrubs in the ROWs. Adjacent "danger trees" will be removed. "Danger trees" are defined as any tree rooted outside the ROW that, due to its proximity and physical condition (i.e., mortality, lean, decay, cavities, cracks, weak branching, root lifting, or other instability), poses a particular risk of contact with the conductor or other key component of a transmission facility (see New York State Public Service Commission Case 04-E-822). Dead trees and trees with branches that extend into the ROWs will be removed or pruned to achieve appropriate line clearance requirements that ensure minimal line outages and maximum reliability. Such "danger tree" management will be performed where property rights allow. Where such rights are limited, National Grid will seek cooperation and permission or easement rights from landowners. The EM&CP will describe further details regarding clearing techniques, the site specific procedures for handling and disposal of logs and slash, and herbicide use.

Old field and active agricultural land within and adjacent to the ROWs that are temporarily affected during construction will be restored to appropriate standards and procedures prescribed in the EM&CP. To assist in the restoration of vegetation in sensitive areas, such as farmlands and wetlands, after the installation of pole structures and the stringing of new conductors is complete topsoil will be segregated during the construction phase and retained so that it may be returned to disturbed work areas to facilitate vegetation restoration.

In the few areas where the ROWs will be expanded, vegetation conversion will occur where the pre-construction vegetation type adjacent to the ROW is forested. Early successional shrub and herbaceous cover will re-establish similar to the existing maintained ROWs. The Project will not result in conversion of or cause long-term adverse effects to existing early succession vegetation, agricultural fields and pasture, or mowed grasses in residential or commercial areas in the ROW. Anticipated vegetation conversion effects of the Project on wildlife habitat are discussed in Section 4.6.3.1.

4.6.3 Existing Wildlife

Wildlife use in the existing Project ROWs generally relates to the early successional vegetative communities that persist in the ROWs as a result of National Grid's *Transmission Right-of-Way Management Program*. Potential wildlife habitat along the existing Project ROWs has been characterized using a combination of field observations and review of applicable wildlife literature. Most of the wildlife species likely to occur in the Project ROW are those commonly found in situations where human interactions and disturbance are common, and are adept at responding to disturbed conditions. The majority of the Project ROWs traverse relatively rural or open space land interspersed with rural residential properties. There are no segments of the Project ROWs that cross unique or state significant habitat.

The significance of wildlife habitat was evaluated within the overall ecological context of lands and water resources that the Project ROWs traverse. Such lands and water resources generally occur within a comparatively rural area, with several forests, successional shrublands, meadows and old fields, mixed-age forests, wetlands, and agriculturally-managed land. By virtue of the process of periodically and selectively removing sapling and mature tree species from the ROWs, the ROWs have a diverse array of desirable shrubland and herbaceous vegetation cover and food species for avian, vertebrate, and mammal species. Signs of beaver activity were observed on the Project ROWs in the area of the Kayaderosseras Creek wetland system, in the Town of Greenfield, and the Ballston Tap ROW, in the Town of Ballston.

A list of wildlife species that are likely to use the existing Project ROWs or the habitats immediately adjacent to the ROWs is provided in Table 4.6-2. Table notes indicate the types of areas where wildlife species may occur along the Project ROWs.

4.6.3.1 Project Effects on Wildlife and Mitigation

The Project will be constructed primarily within the existing Project ROWs, except for minor ROW expansions between the existing Rotterdam Substation and the Ballston Tap junction. In total, approximately 60.1 acres of existing forest cover will be removed to accommodate proposed ROW expansion and easements. Because the Project will predominately utilize the existing ROWs, significant wildlife habitat loss or conversion will be avoided. As with the existing Project ROWs, the ROW expansion and easements areas will be maintained every five years with an integrated *Transmission Right-of-Way Management Program* that includes selective tree cutting and targeted herbicide applications.

Wildlife use within and adjacent to the Project ROWs is not anticipated to measurably change as a result of construction or operation of the Project. Following the temporary disturbances along access roads and around new pole structures, vegetative cover and food sources are expected to be restored with early succession shrublands and meadow species that are typical of the existing Project ROWs. Clearing, construction, and operation will not destroy or adversely affect wildlife habitat, nor will the Project be a significant factor in the survival of any wildlife species.

A review of ecological literature related to transmission ROWs indicates that transmission line construction and operation do not adversely affect wildlife resources and transmission ROWs, and may have beneficial habitat value in ecological areas. Transmission ROW studies have shown there has been a general decline of early successional woody shrubland habitats in New York as well as the New England states and that there has been a corresponding decline in shrubland breeding and migratory bird species. Studies indicate that there is a need to encourage or manage, to some extent, contiguous shrubland areas that provide preferable cover food sources or browsing areas for deer, bears, and bird species (Askins, 1998; DeGraaf and Yamasaki, 2003; Confer and Pascoe, 2003).

Powerline ROWs are important habitats for early successional shrubland birds because the ROWs are constantly maintained in an early stage of succession (Askins, 1994). Open corridors, such as the existing Project ROWs, which are maintained with selective cutting and selective herbicide applications to remove trees species create relatively stable shrubland or shrub-grass communities (Niering and Goodwin, 1974; Bramble et al., 1992). The extent to which the forest canopy is removed influences the species composition of the early successional area that is maintained by National Grid's *Transmission Right-of-Way Management Program*. Several studies have shown that early successional vegetation growth and the wildlife response are most

significant within the first five years of vegetation regeneration after clear cutting or extensive selective cutting. Forest stand "edge" effects in forest dominated landscapes in the northern United States is ephemeral because forest regeneration in cut stands grows quickly (DeGraaf and Yamasaki, 2002).

Other studies suggest that utility corridors that traverse forested areas, such as the Project ROWs, support a high production of shrubland birds and do not exert a measurably harmful effect on forest nesting birds (Confer and Pascoe, 2003). Bird species observed in clear cut regeneration areas include common yellowthroats, chestnut-sided warblers, cedar waxwings, American goldfinches, mourning warblers, Swanson's thrushes, eastern towhees, American redstarts, northern flickers, rose-breasted grosbeaks, black and white warbler, and many other species. Fleshy fruits from typical regeneration species in these clear areas such as wild strawberry (*Fragaria* sp.), raspberry (*Rubus* spp.), blackberry (*Rubus* spp.), and cherry (*Prunus* spp.) provide soft mast in regenerating stands (DeGraaf and Yamasaki, 2003). In New England, the majority of vertebrates are adaptive in their habitat distributions (DeGraaf and Yamasaki, 2001). Among birds, the relative abundance of fruit bearing shrubs may be more important than habitat structure in determining habitat use during autumnal migration in the mid-Atlantic region (Suthers et al., 2000).

With respect to herbicide treatments in ROWs, studies have shown that current herbicide formulations temporarily reduce hardwood browse, but the resprouting of herbicide resistant hardwoods as well as untreated "skip" areas often result in dense shrub patches in which numerous shrub dwelling birds and browsing mammals can be found (e.g., Hagan et al., 1997; Raymond et al., 1996; Santillo et al., 1989). Bramble et al (1992) found in a study in Connecticut that high densities of several species of warblers, field sparrows, and indigo buntings in powerline ROWs were maintained by the use of selective basal spraying. Studies also found that open corridors along roads and utility corridors provide an opportunity for maintaining shrubland habitat. They also found that the consolidation of corridors not only reduces fragmentation of forests, but also may result in better habitat for some shrubland species (Askins, 1994). Because the Project will increase existing shrubland habitat in the proposed ROW expansion areas, of which several areas have moderately extensive forested areas adjacent to the ROW, the Project is likely to result in an overall increase in the diversity of wildlife habitat.

4.6.4 Endangered and Threatened Species and Protected Communities

Based on correspondence with the U.S. Fish and Wildlife Service ("USFWS"), and the NYSDEC-NHP, as well as review of online records, there are no protected species occurrences in the Project ROWs. The Project ROWs are within the vicinity of three, state listed endangered or threatened plant species and one natural significant community (see Appendix A – Agency Correspondence).

Section 7 of the Federal Endangered Species Act ("ESA") outlines the procedures for federal interagency cooperation to protect federally listed endangered and threatened species and designated critical habitats. A request concerning the presence of endangered and threatened species and designated critical habitats in the vicinity of the project was submitted to the USFWS. The USFWS indicated that the Indiana bat (*Myotis sodalis*), the Karner blue butterfly (*Lycaeides melissa samuelis*), and the recently delisted bald eagle (*Haliaeetus leucocephalus*) may be present in the Project area in Saratoga and Schenectady Counties.

The NYSDEC-NHP was also consulted regarding the presence of state listed endangered and threatened species, significant natural communities, and other significant habitats in the vicinity of the Project. The NYSDEC-NHP database indicates that habitat for Carey's smartweed (*Persicaria careyi*) may be in the Project area. There are also two occurrences of the hemlock northern hardwood forest significant natural community that have also been found near the ROW in Moreau Lake State Park.

4.6.4.1 Federally Listed Species

Indiana bat (Myotis sodalis)

Indiana bats are small, dark gray to grayish-brown bats, which typically forage near the crowns of trees in a variety of wooded and semi-wooded areas and feed on flying insects. In the winter, Indiana bats hibernate in caves or mines, especially favoring wet limestone caves (DeGraaf and Rudis, 1986). Hollow trees, either live or dead, and trees with exfoliating bark are used for roosting and bearing young during the warmer months.

While there is some evidence that the population of Indiana bats may be increasing in the Northeast Region, according to the New York Natural Heritage Program 2009 Online Conservation Guide for *Myotis sodalis*, populations remain vulnerable due to the fact that most

of the population is concentrated at relatively few overwintering sites and that many of the areas used for breeding are undergoing increased development.

Correspondence with the USFWS revealed that Indiana bats may be present in both Saratoga and Schenectady Counties, but there is "no specific roost information to date, and they are present in such small numbers that it is unlikely that they would be present and impacted by any specific proposed Projects" (USFWS, 2007). Because no roosts for Indiana bat have been identified within the Project area, it is unlikely that this species will be adversely affected by the Project.

Karner Blue Butterfly (Plebejus melissa samuelis)

The Karner blue butterfly is listed as endangered by both the NYSDEC-NHP and the USFWS and occurs primarily in pine barrens, oak savannas or clearings in oak woodland, and maintained openings such as ROWs, airports, and other disturbed areas that contain wild blue lupine (*Lupinus perennis*) and other wildflower species. This butterfly is small and silvery violet-blue or purplish-blue, with orange crescents underneath the wings. The larvae of this species feed exclusively on native lupine, and it has been determined that the maintenance of Karner blue butterfly populations is dependent on the management of lupine. Some of the major conservation risks for Karner blue butterfly are habitat loss and suppression of fire, which reduces the availability of lupine, lupine browsing by large herbivores such as deer, and mosquito and other insecticide spraying.

Correspondence with the NYSDEC-NHP indicated that Karner blue butterfly may be present in the Project area in both Saratoga and Schenectady Counties, but did not indicate a specific location. One of the most significant areas for Karner blue butterfly is in Saratoga County, at the Saratoga County Airport where over 10,000 individuals have been observed in some years. The Saratoga County Airport is located approximately 2.0 miles east of the Project, in the Town of Milton. The Glacial Lake Albany Area is a designated Recovery Unit for the Karner blue butterfly under the USFWS' *Karner Blue Butterfly Recovery Plan* (2003).

In accordance with the *Karner Blue Butterfly Recovery Plan* (2003), National Grid has cooperated with the NYSDEC and the Albany Pine Bush Preserve Commission to try to manage the ROWs for Karner blue butterfly habitat along with other, existing electric and natural gas transmission ROWs that are located within the *Karner Blue Butterfly Recovery Plan* area (comprised of portions of Albany, Schenectady, Saratoga and Warren Counties). During 2006, in cooperation with the USFWS and the NYSDEC, National Grid performed a baseline survey

for the presence of Karner blue butterfly habitats. No such habitats were found on the Project ROWs.

National Grid is currently working with the USFWS and the NYSDEC to develop a Habitat Conservation Plan ("HCP") and an associated Incidental Take Permit application for the Karner blue butterfly. An Incidental Take Permit is required under the Federal ESA to authorize National Grid's continuing utility operation and maintenance activities on affected ROWs. If, in the future, the Karner blue butterfly and its habitats are found to occur in the Project ROWs, such locations will likely be added to National Grid's HCP and Incidental Take Permit.

Bald Eagle (Haliaeetus leucocephalus)

The USFWS had listed the bald eagle as occurring in Saratoga County. While bald eagles have recently been removed from the federal list of threatened species, the species is still protected under the Bald and Golden Eagle Protection Act ("BGEPA"). Based on the most recently available information from the NYSDEC-NHP, it is also still listed as a state threatened species.

Bald eagles are large raptors that usually hunt over large bodies of water, primarily for fish. They may occasionally take injured waterfowl and seabirds, mammals, and carrion. Adults have a distinctive white head and tail, while immature birds are dark with scattered white on the body and under wing. The eagles build stick nests at the tops of tall trees, and pairs typically reuse nests and nest trees over a number of years.

Bald eagles have been observed on occasion in the Project ROWs, preying on opportunistic mammal species attracted to early successional vegetation and habitat. Project construction could temporarily disturb areas that may attract prey for the bald eagle if construction were to take place near a nest tree. There are relatively few segments of the ROWs where conditions are suitable for bald eagle preferred nest sites (i.e., tall trees that are near large bodies of water). Such areas are limited to the Hudson River, in Moreau Lake State Park, and near lakes in the Town of Corinth. Because no nest trees have been identified along the Project ROWs, the Project is unlikely to adversely affect bald eagles.
4.6.4.2 State Listed Species

Carey's Smartweed (Persicaria careyi)

Carey's smartweed is a tall, erect annual plant listed as a NYS threatened species. It is found in moist, open or semi-open areas, especially in sandy soils. It may also be found in disturbed areas such as fields, meadows, clearings, or cultivated areas (ODNR, 2009).

GIS mapping from the NYSDEC-NHP indicates that the existing ROW in the Town of Glenville, near the crossing of the Mohawk River, is within a general area where Carey's smartweed has been found. Correspondence with the NYSDEC-NHP indicates there are no specific records within or near the Project ROW.

4.6.4.3 State Protected Significant Natural Communities

Hemlock-Northern Hardwood Forest

According to the NYSDEC-NHP, the Project is near two mapped areas of hemlock-northern hardwood forest, which are considered significant natural communities because of their potential for high quality habitat. The hemlock-northern hardwood forest community is described as a mixed, closed canopy forest that occurs on slopes at low to mid elevations and at well drained sites at the margins of swamps. Eastern hemlock is the dominant tree species in this forest community, with co-dominant species that include red oak, yellow birch, sugar maple, and American beech. Threats to this community include land use change and clearing for development, fragmentation, invasive species, over-browsing, fire suppression, and the spread of the Hemlock woolly adelgid (*Adelges tsugae*).

The first occurrence location is in Warren County, on the north bank of the upper Hudson River. It is described as a moderate sized forest in a well protected location with several intermittent streams. Because this location is across the Hudson River and not in proximity to proposed construction activities, Project construction will not have an adverse effect on this community. The second occurrence location is in Saratoga County, on the mid-high elevations of the Palmerton Mountain Range. It is described as a very large dominant community of hemlock. Based on mapping provided by the NYSDEC-NHP, much of this area appears to be located within Moreau Lake State Park, east of the Project ROW. National Grid surveyed the Project ROW as it traverses the Moreau Lake State Park, to confirm whether there is hemlock dominated forest directly adjacent to the ROW. The forest community adjacent to both sides of the ROW is mixed oak hardwood forest. Hemlock was not found near the ROW.

4.6.4.4 Project Effects on Endangered and Threatened Species and Protected Communities and Mitigation

Two natural significant communities of hemlock-northern hardwood forest occur near the Project ROWs. Hemlock-northern hardwood forest occurs on the west side of the Hudson River from the ROW and the southeastern edge of the ROW in Moreau Lake State Park. While the Project will require the clearing of "danger trees" along the edge of ROW to prevent large or dead trees or branches from falling on the transmission lines, this "danger tree" removal will not adversely affect the hemlock-northern hardwood forest community in Moreau Lake State Park, due to the absence of any hemlock in or near the ROW.

GIS mapping from the NYSDEC-NHP indicates an occurrence of one state listed threatened plant species, Carey's smartweed, near the ROW, in the Town of Glenville, near the Mohawk River. Correspondence from the NYSDEC-NHP indicates that the Project is unlikely to affect Carey's smartweed or suitable habitat for the species.

The Federally endangered Indiana bat and Karner blue butterfly may occur throughout the Project area, in Schenectady and Saratoga Counties. Similarly, the protected bald eagle may occur throughout the Project area. Because Indiana bats and bald eagles both travel and forage over long distances, temporary disturbance in a localized area from construction of the Project would not have an adverse effect on normal foraging activity. The primary risk to the Indiana bat would be from disturbance or removal of a roost tree, while the primary risk to bald eagle would be from removal of a nest tree. There are no known roosting locations for the Indiana bat or nesting locations for the bald eagle, in the Project area.

The Karner blue butterfly or its habitats are not currently known to occur along the Project ROWs. Some significant habitats are known to occur at the Saratoga County Airport, in the Town of Milton. The Karner blue butterfly is adversely affected when there is a loss of wild blue lupine, a required larval food source for this endangered butterfly. No known patches of wild blue lupine, however, were observed in the Project ROWs, during field surveys. National Grid will specify in the EM&CP, that a plant survey be conducted prior to construction, to ensure no wild blue lupine populations have colonized in the Project's proposed ROW access and work space areas.

SECTION 4.6 - TERRESTRIAL AND WILDLIFE RESOURCE

TABLES

TABLE 4.6-1			
Summary of Ecological Communities in and Adjacent to the Project ROWs			
Riverine			
Intermittent Stream			
Unconfined River			
Mid-reach Stream			
Main Channel Stream/R2UB			
Lacustrine			
Farm Pond/Artificial Pond			
Eutrophic Pond/L2UB			
Palustrine Wetland			
Red Maple Hardwood Swamp			
Deep Emergent Marsh/PEM			
Shallow Emergent Marsh			
Scrub Swamp			
Sedge Meadow			
Floodplain Forest/PFO			
Terrestrial			
Successional Shrubland			
Brushy Cleared Land			
Mowed Lawn			
Mowed Roadside/Pathway/ROW			
Mowed Lawn with Trees			
Beach Maple Mesic Forest			
Hemlock Northern Hardwood Forest			
Pine Northern Hardwood Forest			
Pine Plantation			
Successional Northern (deciduous) Hardwoods			
Successional Old Field			
Herbicide Sprayed Roadside/Pathway/ROW			
Cropland/Field Crop			
Pastureland			
Sand Mine			
Unpaved Road/Path			
Paved Road/Path			
Construction/Road Maintenance Spoils			
Urban Vacant Lot			
Urban Structure Exterior			

TABLE 4.6-2 Common or Typical Wildlife Reasonably Expected to Occur in Upland and Wetland Habitats on or Adjacent to the Project ROWs				
Amphibians				
Eastern American Toad	Bufo a. americanus	Any, especially woodland and garden/suburban/residential		
Gray Treefrog	Hyla versicolor	Forest/forested wetland/swamps/bogs		
Northern Spring Peeper	Pseudacris c. crucifer	Forested woodland/secondary woodlots/bogs/ponds		
Green Frog	Rana clamitans melanota	Shores/banks off ponds, creeks and woodland streams		
Northern Leopard Frog	Rana pipiens	Wet meadows/wet woods/floodplain		
Wood Frog	Rana sylvatica	Upland woods		
Spotted Salamander	Ambystoma maculatum	Wooded upland/wetland/vernal pool		
Redback Salamander	Plethodon cinereus	Upland mixed deciduous or coniferous woods		
Red-spotted Newt	Notophthalmus viridescens	Adults in ponds/marshes/lakes/streams, juveniles in woodlands		
Reptiles				
Snapping Turtle	Chelydra serpentina	Marshes/ponds/lakes/streams/rivers		
Eastern Painted Turtle	Chrysemys p. picta	Shallow ponds/marsh/pools/streams/lakes/wet meadow		
Eastern Garter Snake	Thamnophia s. sirtalis	Any, especially moist habitats on ROW and forest edges, stream edges		
Eastern Milk Snake	Lampropeltis t. triangulum	Farmland/shrubland/woods		
Northern Brown Snake	Storeria d. dekayi	Most urban and rural habitats		
Northern Redbelly Snake	Storeria o. occipitomaculata	Moist woods/hillsides/upland meadows		
Eastern Hognose Snake	Heterodon platyrhinos	Open fields and dry pine or deciduous woodland		
Northern Water Snake	Nerodia s. sipedon	Aquatic and wetland habitats		
Birds				
Green Heron	Butorides striatus	Wetlands/wooded streams, low elevations		
Canada Goose	Branta canadensis	Agricultural fields/golf courses/residential areas especially during migration		
Mallard	Anas platyrhynchos	Ponds/marshes/streams/rivers		
Wood Duck	Aix sponsa	Wetlands/forested wetlands		
Turkey Vulture	Cathartes aura	Any		
Red-tailed Hawk	Buteo jamaicensis	ROW or perched along edges, especially in agricultural and residential areas		
Wild Turkey	Meleagris gallopavo	ROW/fields/woodland/wood edges		
Ring-necked Pheasant	Phasianus colchicus	Open and agricultural fields		
American Kestrel	Falco sparverius	Agricultural fields		
Killdeer	Charadrius vociferus	Agricultural fields		
American Woodcock	Scolopax minor	Especially moist forest and forested wetland, also grassland and flooded field		
Mourning Dove	Zenaida macroura	Especially residential/suburban areas		
Rock Dove	Columba livia	Urban/suburban areas		
Chimney Swift	Chaetura pelagica	Any, especially residential and agricultural		
Downy Woodpecker	Picoides pubescens	Woodland/suburban		

TABLE 4.6-2					
Common or Typical Wildlife Reasonably Expected to Occur in Upland and Wetland Habitats on or Adjacent to the Project ROWs					
Common Name	Scientific Name	Habitat Notes ^{1,2,3,4}			
Northern Flicker	Colaptes auratus	Woodland/wooded edge/suburban			
Barn Swallow	Hirundo rustica	Open land, especially agricultural			
Tree Swallow	Tachycineata bicolor	Wetland/open water/forested wetlands/fields			
Belted Kingfisher	Ceryle alcyon	Rivers/streams, requires cut banks for breeding			
American Crow	Corvus brachyrhynchos	Any			
Blue Jay	Cyanocitta cristata	Woodland/suburban/residential			
American Robin	Turdus migratorius	Residential/woodland/agricultural			
Eastern Bluebird	Sialia sialis	Fields/ROW/agricultural fields/forest edges			
Gray Catbird	Dumetella carolinensis	Residential/thicket/edge			
Northern Mockingbird	Mimus polyglottos	Residential/agricultural/thicket/edge			
Eastern Kingbird	Tyrannus tyrannus	Especially fields and forest edges			
Eastern Phoebe	Sayornis phoebe	Woodland, especially near streams			
House Wren	Troglodytes aedon	Woodland and suburban			
Black-capped Chickadee	Parus atricapillus	Any, especially residential/suburban/woodland			
Cedar Waxwing	Bombycilla cedrorum	Woodland/edges/semi open land			
European Starling	Sturnus vulgaris	Any, especially urban/suburban			
Warbling Vireo	Vireo gilvus	Woodland/wooded edges, especially riparian and floodplain habitat			
Chestnut-sided Warbler	Dendroica pensylvanica	ROW/forest edge			
Common Yellowthroat	Geothlypis trichas	Wetland/thicket			
Golden-winged Warbler	Vermivora chrysoptera	ROW/forest edge			
Yellow Warbler	Dendroica petechia	Secondary forest/forest edge/wetland			
American Goldfinch	Carduelis tristis	Upland woods/edges/fields/cultivated areas/residential			
Brown-headed Cowbird	Molothrus ater	Any, but especially near agricultural fields and forest edges			
Common Grackle	Quiscalus quiscula	Woodlands/suburban/wetlands/fields			
Eastern Meadowlark	Sturnella magna	Upland fields and grassland			
Baltimore Oriole	lcterus galbula	Woodland and wooded edges			
Red-winged Blackbird	Agelaius phoeniceus	Wetlands			
Chipping Sparrow	Spizella passerina	Fields/residential lawns/edges			
Field Sparrow	Spizella pusilla	ROW/fields/thickets/pasture/wooded edges			
Song Sparrow	Melospiza melodia	Any, especially ROW/agricultural fields/wetland/residential			
Indigo Bunting	Passerina cyanea	ROW/fields/thickets/wooded edges			
Rose-breasted Grosbeak	Pheucticus Iudovicianus	Secondary forest and forest edge, especially in migration			
House Sparrow	Passer domesticus	Especially urban/suburban and agricultural habitats			
Mammals	1				
Big Brown Bat	Eptesicus fuscus	Wooded areas/residential areas			
Little Brown Bat	Myotis lucifugus	Wooded areas/residential areas			
Masked Shrew	Sorex cinereus	Forest/open country/brushland			
N. Short-tailed Shrew	Blarina brevicauda	Any, especially forest/grassland/wetland			
Hairy-tailed Mole	Parascalops breweri	Brushy areas in sandy loam			

TABLE 4.6-2				
Common or Typical Wildlife Reasonably Expected to Occur in Upland and Wetland Habitats on or Adjacent to the Project ROWs				
Common Name	Scientific Name	Habitat Notes ^{1,2,3,4}		
Star-nosed Mole	Condylura cristata	Low, moist areas/near streams and lakes		
Opossum	Didelphis marsupialis	Agricultural areas/woodland		
Coyote	Canis latrans	Open woodland/brushy areas		
Gray Fox	Urocyon cinereoargenteus	Open forest/scrubland		
Red Fox	Vulpes vulpes	Forest/open areas/forest edges		
Snowshoe Hare	Lepus americanus	Dense brushy areas		
Shorttail Weasel	Mustela erminea	Brushy and wooded areas		
Longtail Weasel	Mustela frenata	Any, near water		
Mink	Mustela vison	Near streams and lakes		
White-tailed Deer	Odocoileus virginianus	Forest/wetland/scrubland/edges		
Deer Mouse	Peromyscus maniculatus	Any upland habitat		
White-footed Mouse	Peromyscus leucopus	Woodland/brushy areas		
Meadow Jumping Mouse	Zapus hudsonius	Various, especially low meadows		
Meadow Vole	Microtus pennsylvanicus	Grassland/wet meadow		
Pine Vole	Microtus pinetorum	Deciduous or coniferous forest		
Beaver	Castor canadensis	Wetlands with open water		
Muskrat	Ondatra zibethicus	Wetlands with open water		
Striped Skunk	Mephitis mephitis	Semi-open/mixed woods/scrubland/residential		
Raccoon	Procyon lotor	Wooded areas or suburban/residential areas, especially near water		
Eastern Chipmunk	Tamias striatus	Deciduous forest		
Gray Squirrel	Sciurus carolinensis	Hardwood forests/suburban/residential		
Norway Rat	Rattus norvegicus	Urban		
Woodchuck	Marmota monax	Open woods/brushy areas/suburbs		
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2 Burt, W.H. and Gossenheider, R.P. 1976. A Field Guide to the Mammals of America North of Mexico. Houghton Mifflin: Boston.

3 Bull, J. 1976. Birds of New York State. Comstock Publishing Associates: Ithaca, United States.

4 New York State Reptile and Amphibian Mapping Project. Data available online at http://www.dec.ny.gov/animals/7140.html