

**Final Environmental Assessment
of the
National Grid HCP and ITP
for Upstate New York**

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1.0 PURPOSE AND NEED FOR PROPOSED ACTION

1.1 Introduction

This environmental assessment (EA) was prepared by the consulting firms Chazen Companies and Kleinfelder, Inc., with the review, oversight, and assistance of the U.S. Fish and Wildlife Service (Service), pursuant to the National Environmental Policy Act (NEPA) (42 U.S.C. 4321 *et seq.*). It evaluates National Grid's (NG) application for an incidental take permit (ITP) under section 10(a)(1)(B) of the Endangered Species Act of 1973 (ESA) (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*) for impacts to the federally listed endangered Karner blue butterfly (*Lycaeides melissa samuelis*) (KBB) and New York State-listed threatened frosted elfin (*Callophrys irus*) (FE) associated with continued electric and natural gas operation and maintenance (O&M), reconstruction and limited new construction activities on identified NG rights-of-way (ROWs) and associated properties, and the proposed implementation of a Habitat Conservation Plan (HCP) (The Chazen Companies 2011). Preparation and implementation of an HCP is a requirement of the ESA section 10(a)(1)(B). The proposed HCP is intended to offset negative effects to covered species that could occur as a result of issuing the ITP. The HCP has also been prepared as part of a permit application to the New York State Department of Environmental Conservation (NYSDEC) pursuant to the Environmental Conservation Law (ECL) section 11-0535 and New York State regulations at 6 NYCRR 182, Endangered and Threatened Species of Fish and Wildlife; Species of Special Concern; Incidental Take Permit.

NG submitted a draft HCP and ITP application in April 2009 and a revised final draft in July 2011 for the activities listed above on various NG ROWs and associated properties with a requested permit duration of 50 years in the HCP covered lands. Covered lands are defined to encompass all of the lands upon which the ITP authorizes incidental take of covered species and the lands to which the HCP mitigation measures generally apply. The covered lands consist of portions of five counties: Albany, Oneida, Saratoga, Schenectady, and Warren (figure 1 from HCP). The covered lands include NG's gas and electrical transmission facilities; the lands owned by NG and/or subject to NG easements for these facilities; private access routes to infrastructure associated with covered activities; electrical and gas distribution lines, substations, minor facility expansion areas; and mitigation areas for impacts resulting from the covered activities. The covered lands specifically include all lands (e.g., ROWs, easements, and NG-owned parcels) that were surveyed during the 2006 Wild Blue Lupine Baseline Survey (hereafter Baseline Survey) and that contain surveyed wild blue lupine populations. See section 1.2 in the draft HCP for a detailed description of covered lands.

Issuance of an ITP constitutes a Federal action by the Service and is thus subject to NEPA, which requires that the environmental effects of all Federal agency actions be evaluated.

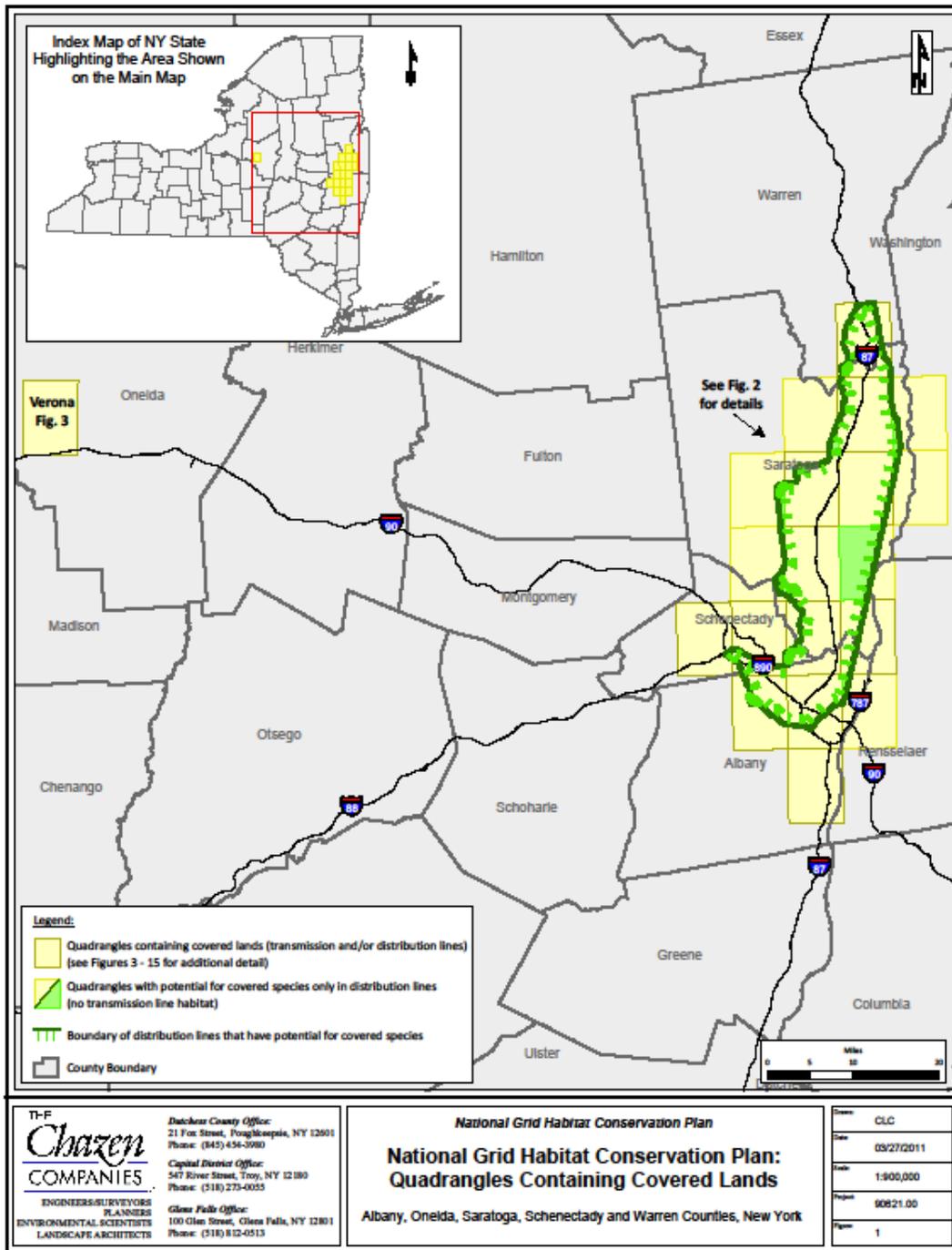


figure 1. HCP Covered Lands.

1.2 Purpose

The purpose of this EA is to evaluate the direct, indirect, and cumulative environmental effects of issuing an ITP and anticipate future effects of implementation of the HCP. The ultimate goal of Service's actions is to recover populations of the KBB to the point where protections under the ESA are no longer necessary. Given that KBBs and FEs face similar threats and have similar habitat requirements, the HCP provides collateral benefits to Fes, which are listed as threatened by the State of New York.

1.3 Need

The primary need for the proposed HCP is to allow for incidental take of covered species associated with NG's otherwise lawful activities while ensuring there is a sufficient plan to minimize and mitigate impacts associated with that take. The Service need for this action is to provide protection and conservation for listed, proposed, and unlisted species to the extent intended under the ESA.

1.4 Decision to be Made

After the public comment period, the Service' Regional Director will select one of the alternatives analyzed in detail and will determine, based on the facts and recommendations contained herein, whether this EA is adequate to support a Finding of No Significant Impact decision or whether an Environmental Impact Statement will need to be prepared.

1.5 Background

NG is a national utility supply corporation that has electrical transmission, electrical distribution, and natural gas transmission line ROWs in the northeast United States. In New York, some of these distribution and transmission line ROWs are located in habitat used by the KBB and the FE. Specifically, ROWs in the Glacial Lake Albany region of east central New York and in the Rome Sand Plains region of central New York contain KBB and/or FE.

During the course of reconstruction activities, new construction, standard O&M activities, and vegetative maintenance activities conducted by NG, within KBB habitat, the incidental take of KBB in one of its life forms is anticipated.

Sections 9 (a)(1)(B) and (C) of the ESA prohibits the take of endangered wildlife species. Section 4 of the ESA defines "take" as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." "Harm" is further defined in regulations promulgated by the Service as "an act which actually kills or injures wildlife. Such act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering" (50 CFR section 17.3). "Harass" is defined by the Service as "an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited

to, breeding, feeding, or sheltering" (50 CFR section 17.3). "Incidental take" is defined by the Service as "any taking otherwise prohibited, if such taking is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity" (50 CFR section 17.3).

Individuals and State and local agencies proposing an action that is expected to result in the take of federally listed species are encouraged to apply for an ITP under section 10(a)(1)(B) of the ESA to be in compliance with the law. Such permits are issued by the Service when take is not the intention of and is incidental to otherwise legal activities. An application for an ITP must be accompanied by an HCP. The regulatory standard under section 10(a)(1)(B) of the ESA is that the effects of authorized incidental take must be minimized and mitigated to the maximum extent practicable. Under section 10(a)(1)(B) of the ESA, a proposed project also must not appreciably reduce the likelihood of the survival and recovery of the species in the wild, and adequate funding for a plan to minimize and mitigate impacts must be ensured.

Although the FE currently receives no Federal protection, FEs use the same habitat and often co-occur with KBB. Should the FE ever become a federally listed species, incidental take is proposed to be authorized through issuance of an ITP to NG because the types of impacts by covered activities on the FE will be similar to the impacts on KBB. Additionally, the proposed conservation measures for the KBB are anticipated to benefit FE in a similar manner.

Over the last 15 years, research related to NG's O&M activities (and NG's actual O&M activities) on ROWs involving the KBB had been conducted under an ESA section 10(a)(1)(A) Enhancement of Recovery Permit (Permit No. TE813745-1). However, a more appropriate long-term authorization of NG activities is an ITP.

Therefore, an HCP has been developed to document and address NG activities that may result in the incidental take of the KBB and FE. NG has evaluated the biological resources within the covered lands and determined that KBB (and FE) were the only Federal endangered or state threatened species that may be affected by covered activities. In addition, no other species (aside from the FE) that are not currently listed, but may be listed during the permit term, were identified as having the potential to be affected by the covered activities. Therefore, the HCP covers only KBB and FE.

2.0 ALTERNATIVES, INCLUDING THE PROPOSED ACTION

NEPA section 102(E) requires Federal agencies to study, develop, and describe appropriate alternatives to recommended courses of action in any proposal that involves unresolved conflicts concerning alternative uses of available resources. This chapter describes the alternatives development process and presents the alternatives evaluated in this EA. It also includes a summary of alternatives considered but not carried forward for EA analysis.

NG and the Service (in conjunction with representatives from the NYSDEC) considered several alternatives to meet the purpose and need of the proposed action. Alternatives considered are described in further detail below.

2.1 alternatives Not Carried Forward for Detailed Analysis

2.1.1 Expand Covered Lands to Cover all NG ROWs in New York and Cover all federally listed Species

Consideration was given to include all of NG's ROWs in New York and cover all federally listed species. However, this alternative was deemed to be too broad because most federally listed species do not occur on NG ROWs and few ESA issues have occurred on other ROWs. NG has not anticipated (or observed) impacts to any other federally listed species from their activities to date.

2.1.2 Limit Covered Species to the Karner Blue Butterfly

Consideration was given to exclude coverage for FE as they currently receive no protection under the ESA. This alternative was not chosen because habitat requirements for FE are similar to that of KBB and it is likely that FE will be impacted by NG in a similar manner as KBB. Conserving habitat for KBB simultaneously conserves habitat for FE because both species are closely tied to their habitat and they both require lupine as a larval food source. NG's vegetation management program has been documented to promote and protect suitable habitat for both KBB and FE (Forrester et al. 2005) and no additional burden would be placed on NG to conserve habitat for FE. In addition, should FE become listed in the future, no additional requirements would be placed on NG for its work within the covered lands. For these reasons, the FE was included in the HCP provided by NG.

2.1.3 Issue ITP for an Alternate Permit Duration

NG has applied for an ITP with a 50-year period of coverage. Based on information from NG, the technology used to transmit electricity and natural gas is not expected to dramatically change during this time period. Without a significant change of technology involved in the transmission of electricity or natural gas, there would not be any significant changes to the proposed covered activities. Without such a technology change, the Service anticipates that the impacts to KBB and FE would be fairly constant over the next five decades. Therefore, a permit period of 50 years has been chosen for the ITP to maximize the usage of the ITP for NG while minimizing impacts to the KBB and FE that may arise due to minor changes in how covered activities are performed. A longer permit period was not proposed because it was felt that there would be a higher potential for technology changes that may affect impacts to KBB and FE in the future beyond 50 years. However, should a significant change in energy transmission and distribution, ROW management, or other associated factors occur during the ITP 50-year period, NG will coordinate with Service and NYSDEC to determine whether there are any new impacts to KBB and FE that were not considered in the HCP.

2.2 alternative A: Issue ITP Permit for the Proposed HCP

alternative A is the issuance of an ITP for the proposed HCP and includes the following associated actions:

- Approval of the proposed HCP; and
- Approval of the proposed Implementation Agreement (IA) for the NG HCP.

Under this alternative, NG would implement the HCP authorized through a 50-year ITP and conduct proposed covered activities, which include standard operations and maintenance procedures, reconstruction activities, and new construction. Activities that would be conducted under this alternative include O&M and new construction activities on electrical and gas transmission and distribution ROWs:

- Electric transmission, sub-transmission, and distribution maintenance activities,
- Electric substation maintenance activities,
- Natural gas pipeline and associated facilities maintenance activities,
- General ROW maintenance activities,
- Vegetation management/maintenance, including maintenance for wild blue lupine habitat and thus KBB,
- ROW repair, regrading, and revegetation,
- Access road O&M activities,
- Facility inspection activities,
- Land clearing,
- Vegetation disposal,
- Earthwork,
- Access road construction,
- Electric and natural gas facility installation,
- Regrading, stabilization, and restoration, and
- Spill occurrence, prevention, containment, and control.

The covered activities would be conducted to maintain continuous electric and natural gas service to customers to the best extent practicable through vegetation management, installation, maintenance, repair, replacement, reconstruction, and new construction and would involve vehicle, heavy equipment, and power equipment usage as well as foot traffic. A majority of

these activities have been occurring and undertaken on existing ROWs under the current management of NG.

Under alternative A, NG would implement all aspects of the draft HCP. This includes conducting their covered activities (section 2.2 of draft HCP), employing its conservation strategy (section 4 of draft HCP), and conducting monitoring and reporting activities (section 5 of draft HCP).

NG's typical utility activities include O&M, reconstruction, and new construction of electric transmission, sub-transmission, and distribution structures, substations, natural gas pipelines, and associated aboveground gas regulator stations and valve sites. Maintenance and reconstruction activities include replacement of structures and structural components that are deteriorated and nearing the ends of their useful service lives or that need upgrades due to load growth demands. NG's typical utility activities are temporary in nature and involve localized and limited ground disturbances around affected structures or components. In order to avoid or minimize overall environmental impacts associated with its utility activities, all NG personnel and contractors are required to follow NG's applicable Environmental Guidance (EG) for protection of the environment. These EG documents provide standards and criteria for all NG work.

Maintenance activities include routine and periodic inspections and maintenance of NG facilities in ROWs as well as emergency, non-scheduled activities. Maintenance activities include the use of equipment such as rubber-tired or track-mounted bucket trucks and aerial lifts, cranes, rubber-tired backhoes and/or track-mounted excavators, rubber-tired or track-mounted drill rigs with power augers, narrow-tracked bombardiers, pickup trucks, tractor or excavator-mounted mowers, helicopters, or other specialized heavy equipment. Included would be lawful activities by any NG employee, contractor, or agent required to safely and effectively operate and maintain its electric and natural gas transmission facilities and ROWs.

Over the duration of the ITP, NG will periodically rebuild and refurbish its existing electric and natural gas infrastructure in the covered lands. New electric and natural gas facilities will be occasionally installed and constructed in the covered lands as needed to support effective and reliable energy delivery to NG customers over the duration of the ITP. Any new construction activities by NG located outside the covered lands that may affect KBB and FE habitat will not be covered under this HCP, and should such a situation arise, an amendment to the HCP/ITP will be required.

The overall biological goal for the draft HCP is to complement existing conservation efforts in New York State for the KBB and FE. NG already employs best management practices (BMPs) to minimize impacts to KBB and FE. NG has proposed additional measures in an effort to meet this goal.

The following objectives will be the focus of the conservation strategy.

- *Objective 1:* To focus NG's mitigation/restoration activities

- a) within the Albany Pine Bush and Queensbury viable KBB and FE population areas. The objective of the activities within the Albany Pine Bush Preserve (Preserve) area is to enhance ROW habitats that act as corridors among existing Preserve populations. This will be accomplished by linking existing populations of wild blue lupine habitat. The objective of the activities in the Queensbury area is to create and restore wild blue lupine habitat within the ROWs to serve as primary habitat for the KBBs/FEs. There are currently no other existing wild blue lupine habitat units to link together in the general area of the ROWs. Efforts will also be expanded in the Queensbury area to provide supplemental KBB breeding populations through translocation efforts to increase the reproductive and colonization capacity of the species. (See HCP appendix C, figure 4, and the citation to figure 17 which illustrates these corridors in the Queensbury area, and HCP appendix C, figure 13, and the citation to figure 16 for the Albany Pine Bush area. See also HCP appendix H, 2010 APBPC Karner Blue Captive Rearing Protocol.);
 - b) on strategically selected portions of NG's fee-title owned ROWs, on adjacent NG property, and on easement lands only where permission has been granted by the landowner;
 - c) in areas where ROWs are essential for providing strategic connectivity among isolated populations (see HCP Appendix C, figures 3 through 15 which illustrate ROWs with covered species (red hatching), especially figure 4 for Queensbury and figure 16 for the Albany Pine Bush); and
 - d) on or adjacent to ROWs near larger KBB and FE management units.
- *Objective 2:* To locate and work with existing NGOs having an interest in conserving and managing KBB and FE habitat (e.g., restore additional habitat near existing conservation lands).
 - *Objective 3:* To avoid and/or minimize negative effects and actions (e.g., all-terrain vehicle use within ROWs) that are already occurring to the covered species habitat.
 - *Objective 4:* To promote education/outreach regarding the covered species and conservation of their habitat.
 - *Objective 5:* To improve and expand upon the 2006 Baseline Survey habitat acreage and also ensure that the amount of habitat for the covered species within the covered lands will not drop below the 2006 Baseline Survey habitat acreage of 34 acres.

Although, short-term negative impacts to habitat and mortality of some KBB and FE individuals may occur during NG activities, the goal of the HCP is to ensure long-term positive impacts on the species through maintaining and/or enhancing their habitats through a variety of measures. Under alternative A, NG would conduct mitigation/enhancement efforts that would be focused on established KBB and FE habitats that would benefit from mitigation/enhancement (e.g., through expansion of habitat).

2.3 alternative B: No Action alternative: An ITP is not Issued for the Proposed HCP

Under alternative B, NG would not receive a permit for take of KBB (or FE should they become listed) associated with the activities addressed in the HCP. Because KBB and FE already occur on NG lands, there are no foreseeable options to avoid all take of these species. This alternative would result in NG being unable to conduct its activities and be in compliance with the ESA.

Failure to implement the covered activities would avoid all potential project-related impacts on the listed species, including the potential for take of the KBB and FE. However, implementation of the No Action alternative would allow for the unrestricted growth of incompatible vegetation and the increase in danger and hazard trees in and along ROWs. Unrestricted growth of incompatible vegetation would have a long-term negative impact on KBB and FE habitat as low-growing vegetation habitat is replaced by tall-growing vegetation. Additionally, the No Action alternative would negatively impact utility service to NG customers as more power outages would occur as incompatible vegetation growth occurs and danger/hazard trees are not controlled.

In some locations, NG shares its ROWs with other utilities including public water, sanitary sewer, solid waste, telephone, and gas. These utilities require management of vegetation to keep pipelines from being impacted by the roots of trees and to provide access for repairs. Allowing tall-growing vegetation to occur would also violate the Public Service Commission regulations that require NG to maintain the Wire Security Zone, which is defined as a tall growing tree/shrub-free zone that exists beneath and beside conductors. The wire security zone increases as voltage class (and structure height) increases. For lines subject to the HCP Area, the clearance distances at the time of vegetation management are as follows: 34.5 kilovolts (kV)= 12 feet; 155kV= 18 feet; and 230kV= 22 feet.

2.4 alternative C: Issue ITP for Proposed Covered Activities within Proposed covered lands but Limit the Mitigation Activities to Areas of Impact

Under this alternative, as under the proposed HCP (alternative A), NG would implement a KBB and FE HCP authorized through an ITP. The only difference between alternative A and C is the mitigation strategy. Under alternative A, the HCP would focus conservation and mitigation efforts on targeted ROWs and off-ROW habitat areas where mitigation efforts would have the maximum potential benefits for KBB and FE. Under alternative C, NG would restore habitat anywhere they caused an impact. Under this alternative, isolated habitats would be maintained over time in response to mitigation/restoration at the exact site of impact.

3.0 AFFECTED ENVIRONMENT

This chapter describes those aspects of the environment on NG ROWs that could or would be affected by the issuance of an ITP allowing NG's covered activities in the covered lands to be conducted. This chapter focuses on existing conditions on and around NG's ROWs in the covered lands, with specific references to the following topics. In general, there are not

significant differences in the existing conditions between the various areas of the NG's ROWs that could be treated differently under the three alternatives identified in sections 2.2, 2.3, and 2.4 of this EA.

3.1 Physical Characteristics

3.1.1 Visual Resources

Due to the large size of the covered lands, a detailed analysis of visual resources has not been undertaken. However, an overview of the covered lands is provided. The ROWs are linear and mostly consist of open canopy vegetation with some access roads and low growing vegetation. Equipment located within electrical transmission ROWs consists of large steel towers (75 feet tall) or wooden poles and overhead electrical wires. One substation facility is located within the covered lands, which has a lupine population immediately adjacent to the substation's fence. Natural gas pipelines generally lack aboveground equipment, and they consist of mowed ROWs with low growing vegetation also.

The ROWs cover a large area of land, extend for many miles, and are located within a variety of habitats (e.g., residential, agricultural, commercial, and forested tracts). ROWs located in forested areas are partially screened by adjacent tree cover; however, the steel towers generally extend above the tree canopies. Natural gas pipelines located within forested areas are generally screened from roadways and adjacent residences by the tree cover. ROWs located within residential areas are visible from adjacent residences. ROWs located adjacent to commercial areas may be visible from malls, office buildings, and businesses. Several ROWs are also visible from roadways.

3.1.2 Regional Climate Setting and Air Quality

3.1.2.1 Regional Climate Setting

According to the Oneida County Soil Survey, Oneida County is snowy and cold in the winter and warm in the summer, with precipitation well distributed over the year. Oneida County does experience snow squalls and lake effect snow storms that can result in up to 2 feet of snow on the ground that drifts with heavy wind (Natural Resource Conservation Service [NRCS] 1991). Based on the Koppen-Geiger climate classification, both the Albany area portions and the Oneida County portions of the HCP covered lands are located in the Warm Summer Continental climate zone (Kottek et al. 2006). Winters are cold with temperatures generally ranging from the 10s°F at night into the 30s°F during the day. Summers are warm with average maximum temperature in the low 80s°F. Annual precipitation is approximately 43.3 inches in the Rome, New York, area with annual snowfall of 104 inches. Albany has an annual precipitation of approximately 38.6 inches with annual snowfall of 63.9 inches. Rainfall is spread fairly evenly over the year. Prevailing winds are generally from the west. Climatic data for Albany and Rome, New York, were available from the IDcide Web site (accessed 2011), Rome Chamber of Commerce Web site (accessed 2011), and the National Oceanic and Atmospheric Administration's National Climatic Data Center Web site (accessed 2008).

3.1.2.2 Air Quality

Air quality data from NYSDEC's 2009 Regional Air Quality Data were reviewed for Region 4 (Albany area) and Region 6 (Oneida County) (NYSDEC 2011a). Note that these are the most recent air quality data available from the NYSDEC. Based on the data, both Regions met NYS Ambient Air Quality Standards for sulfur dioxide, carbon monoxide, ozone, and inhalable particulates. The air monitoring site in Albany County (Loudonville) exceeded the 8-hour ozone concentrations identified by the Federal standards associated with the National Ambient Air Quality Standard in 2010 on July 4, July 7, and September 2. The standard is 0.075 parts per million (ppm), the September 2 levels in Loudonville were 0.092 ppm (NYSDEC 2011b).

3.1.3 Geologic Setting

3.1.3.1 Geology

The portion of the covered lands located in the Albany area is located in the Hudson Valley portion of the Hudson-Mohawk Lowlands and Adirondack Mountain physiographic provinces, while the Oneida area portion of the covered lands spans the boundary between the Mohawk Valley portion of the Hudson-Mohawk Lowlands and the Ontario Lowland physiographic provinces.

The eastern portion of the covered lands is predominantly underlain by Ordovician-aged sedimentary bedrock consisting of shale, siltstone, sandstone, and greywacke (New York State Museum 2008). Northern extents of the covered lands in Warren and Saratoga Counties are underlain by Precambrian-aged metamorphic rocks of the Adirondack Mountains (New York State Museum 2008).

Several block faults (Saratoga, MacGregor, and Hoffmans) traverse the eastern portion of the covered lands (U.S. Geological Survey (USGS) 2008a). There are also some klippen that have been isolated by thrust faulting from the Taconic Orogeny. Although there are faults through the covered lands, the covered lands are in the low hazard range based on the USGS Seismic Hazard Map of New York (USGS 2008b).

Surficial geology in the eastern portion of the covered lands is defined by the Glacial Lake Albany Sandplain, a broad, relatively flat plain of sand deposited by glacial action during the Pleistocene (New York State Museum 2008). The plain has subsequently been eroded by streams and rivers.

Bedrock in the western portion of the covered lands is predominantly Ordovician-aged shale and siltstone with lesser amounts of Silurian-aged shale and dolomite (New York State Museum 2008). Surficial geology in the western portion of the covered lands is defined by the Rome Sand Plains (New York State Museum 2008). These sand plains are also of glacial origin during the Pleistocene, which have subsequently been eroded by streams and rivers.

3.1.3.2 Soils

Soil horizons that have developed in the covered lands are generally sandy in nature with a glacial origin. Due to the large size of the covered lands, a detailed analysis of specific soils has not been undertaken. Soil samples collected from research plots throughout the Albany Pine Bush (APB) suggested that soils in the APB were somewhat acidic (mean pH 4.8) (Zaremba and Gebauer 1994).

3.1.3.3 Hydrology & Wetlands

The Albany area receives an average of 38.6 inches in precipitation annually, while the average annual precipitation in the Rome area is 46.3 inches (IDcide 2011). Due to the sandy nature of the soil in the covered lands, precipitation will mostly percolate into the subsurface rather than runoff via overland flow.

Hydrology in the covered lands is controlled by the Hudson and Mohawk Rivers. The Hudson River is a major south-flowing river, which heads in the eastern Adirondack Mountains at Lake Tear of the Clouds and flows into the Atlantic Ocean at New York City (NYSDEC 2011c). The Mohawk River is the largest tributary to the Hudson River. The Mohawk is a major easterly flowing river that originates in southwestern portions of the Adirondacks and the eastern edge of the Tug Hill Plateau and flows into the Hudson River at Cohoes, Albany County, New York (Mohawk River Research Center Inc. 2008).

Emergent wetlands, shrub swamps, and intermittent watercourses are scattered throughout the ROWs. Many of the wetlands consist of shallow emergent marshes dominated by invasive species (e.g., common reed and purple loosestrife). The intermittent watercourses consist of narrow streams that intersect the ROWs. It is noted that within the HCP, the covered lands that are actively being managed for the wild blue lupine, KBB, and FE (see “Covered Lands ROW with Covered Species,” “Covered Lands Mitigation,” and “Covered Lands Enhancement”) are typically sandy upland areas that significantly limit the potential for the presence of wetlands. Further, ROW areas with wetland soils were eliminated from survey requirements as part of the 2006 Baseline Survey (The Chazen Companies 2007).

3.2 Biological Environment

This section describes the vegetation and wildlife that occur, or may occur, within the covered lands. Although the NG HCP focuses on the KBB and FE, this section provides a general overview of the full range of vegetation communities and wildlife found in the covered lands, including, but not limited to, special-status species and sensitive habitats. Information on vegetation and wildlife is drawn from the results of a baseline survey conducted in 2006 (The Chazen Companies 2007).

3.2.1 Vegetation

Under electrical transmission lines or over natural gas lines, the vegetative species located within the ROWs are primarily early successional species as a result of current vegetation management practices. Many of the ROWs consist of areas with herbaceous and scrub-shrub vegetation, or large tracts of unvegetated sand. Herbaceous vegetation includes species such as little bluestem (*Schizachyrium scoparium*), spreading dogbane (*Apocynum adnrosaemifolium*), bird's-foot trefoil (*Lotus corniculatus*), whorled loosestrife (*Lysimachia quadrifolia*), wild strawberry (*Fragaria vesca*), common cinquefoil (*Potentilla simplex*), and bracken fern (*Pteridium aquilinum*).

Scrub-shrub species include scrub oak (*Quercus ilicifolia*), black raspberry (*Rubus occidentalis*), staghorn sumac (*Rhus typhina*), black oak (*Quercus velutina*), red oak (*Q. rubra*), white pine (*Pinus strobus*), and various brambles (*Rubus* sp.).

Emergent wetlands scattered throughout a few of the ROWs were dominated by species such as tussock sedge (*Carex stricta*), common reed (*Phragmites australis*), and reed canarygrass (*Phalaris arundinacea*).

3.2.2 Wildlife

Wildlife occurring within the ROWs covered under the HCP may include a variety of mammals, birds, reptiles, amphibians, and invertebrates. No specific inventories were conducted for these species as part of baseline studies. Instead, we reviewed the NYSDEC's Checklist of Amphibians, Reptiles, Birds and Mammals of New York State (revised September 2007) (NYSDEC 2007a) and various other references to identify the potential presence of the NYS Checklist species within the KBB Glacial Lake Albany Recovery Unit (GLARU) (covering parts of Warren, Saratoga, Albany, and Schenectady Counties) and the Rome Sand Plains Potential Recovery Unit (RSPPRU) (covering parts of Oneida County).

Distribution maps from the Herp Atlas Project were reviewed (NYSDEC 2011d) to assess potential amphibians and reptiles that may occur in the covered lands (table 1). Given that the covered lands that will be actively maintained for KBB and FE are generally sandy uplands, we do not anticipate frequent use by most amphibians; however, other portions of the ROW could contain open wetlands suitable for some amphibian species. The most common species found on electric transmission ROWs in central Pennsylvania were red-backed salamander (*Plethodon cinereus*), northern redbelly snake (*Storeria occipitomaculata occipitomaculata*), and northern ringneck snake (*Diadophis punctatus edwardsii*) (Yahner 2004) and we might expect similar species assemblages in New York. It is noted that the bog turtle is not identified as occurring in Warren, Saratoga, Schenectady, Albany, or Oneida Counties on the NYSDEC Herp Atlas Project Bog Turtle Distribution Maps (NYSDEC 2011d). Similarly, the eastern worm snake is not shown as occurring within Warren, Saratoga, Schenectady, Albany, or Oneida Counties on the NYSDEC Herp Atlas Project, but NYSDEC Region 4 has asked for surveys of this species in the area of the Albany Pine Bush.

The Second Atlas of the Breeding Birds in New York State (McGowan and Corwin 2008) was used to evaluate the potential presence of bird species in the covered lands (Table 2). Many of the birds are water-dependent, and as discussed above, covered activities associated with the draft HCP will be occurring in upland areas associated with sandy soils. Therefore, we do not anticipate normal activity of water-dependent birds to be present within the ROWs identified as covered lands within the HCP. In a long-term study of ROWs in central Pennsylvania, more than 40 bird species have been noted, with the most common being those that nest in brushy or grassy vegetation such as chestnut-sided warbler (*Dendroica pensylvanica*), common yellowthroat (*Geothlypis trichas*), eastern towhee (*Pipilo erythrophthalmus*), field sparrow (*Spizella pusilla*), and indigo bunting (*Passerina cyanea*). Later in the summer, family groups of several forest bird species commonly search for food in the brushy border zones, including black-capped chickadee (*Poecile atricapillus*), red-eyed vireo (*Vireo olivaceus*), and American redstart (*Setophaga ruticilla*) (Yahner 2004).

We were unable to conduct an assessment of mammalian species presence in the GLARU compared to the RSPPRU due to a lack of region-specific information. Instead, we provide a list of all mammalian species in New York (table 3). Common species observed along central Pennsylvania rights-of-way included white-tailed deer, eastern cottontail, woodchuck, gray squirrel, skunk, opossum, fox, and white-footed mouse (Bramble and Byrnes 1983). Tables 1, 2, and 3 include a field for Species of Greatest Conservation Need in New England that require young forest and shrubland habitat (Arbuthnot 2008) that should benefit from continued management of NG ROWs.

As with any manipulated environment, there is a predominant number of edge species present. These are species that inhabit the ecotone between forests and open ROWs. In more suburban areas, species characteristic of edge habitats as well as lawn and manicured landscape habitats are found.

Table 1 – Potential Reptiles in Covered Lands

Common Name	Scientific Name	Federal or State Listing	SGCN that require young forest/shrub land	GLARU	RSPPRU
Hellbenders, Mudpuppies, Salamanders					
Common Mudpuppy	<i>Necturus maculosus</i>			X	X
Jefferson Salamander	<i>Ambystoma jeffersonianum</i>	S-SC		X	X
Blue-spotted Salamander	<i>Ambystoma laterale</i>	S-SC	X	X	
Spotted Salamander	<i>Ambystoma maculatum</i>			X	X
Red-spotted Newt	<i>Notophthalmus viridescens</i>			X	X
Northern Dusky Salamander	<i>Desmognathus fuscus</i>			X	X
Allegheny Mountain Dusky Salamander	<i>Desmognathus ochrophaeus</i>			X	X
Northern Redback Salamander	<i>Plethodon cinereus</i>			X	X
Northern Slimy Salamander	<i>Plethodon glutinosus</i>			X	X
Four-toed Salamander	<i>Hemidactylium scutatum</i>			X	X
Northern Spring Salamander	<i>Gyrinophilus porphyriticus</i>			X	X
Northern Two-lined Salamander	<i>Eurycea bislineata</i>			X	X
Toads and Frogs					
Eastern Spadefoot	<i>Scaphiopus holbrookii</i>	S-SC		X	
Eastern American Toad	<i>Bufo americanus</i>			X	X
Fowler's Toad	<i>Bufo woodhousii</i>			X	
Gray Treefrog	<i>Hyla versicolor</i>			X	X

Northern Spring Peeper	<i>Pseudacris crucifer</i>			X	X
Bullfrog	<i>Rana catesbeiana</i>			X	X
Green Frog	<i>Rana clamitans</i>			X	X
Mink Frog	<i>Rana septentrionalis</i>			X	X
Wood Frog	<i>Rana sylvatica</i>			X	X
Northern Leopard Frog	<i>Rana pipiens</i>			X	X
Pickerel Frog	<i>Rana palustris</i>			X	X
Turtles					
Snapping Turtle	<i>Chelydra serpentina</i>			X	X
Common Musk Turtle	<i>Sternotherus odoratus</i>			X	X
Spotted Turtle	<i>Clemmys guttata</i>	S-SC	X	X	X
Bog Turtle	<i>Glyptemys muhlenbergii</i>	F-T S-SC			
Wood Turtle	<i>Clemmys insculpta</i>	S-SC		X	X
Eastern Box Turtle	<i>Terrapene carolina</i>	S-SC		X	
Northern Map Turtle	<i>Graptemys geographica</i>			X	
Red-eared Slider	<i>Trachemys scripta</i>			X	
Painted Turtle	<i>Chrysemys picta</i>			X	X
Blanding's Turtle	<i>Emydoidea blandingii</i>	S-T		X	
Snakes					
Northern Watersnake	<i>Nerodia sipedon</i>				
Northern Brownsnake	<i>Storeria dekayi</i>			X	X

Northern Redbelly Snake	<i>Storeria occipitomaculata</i>			X	X
Eastern Gartersnake	<i>Thamnophis sirtalis</i>			X	X
Eastern Ribbonsnake	<i>Thamnophis sauritus</i>			X	X
Eastern Hog-nosed Snake	<i>Heterodon platirhinos</i>	S-SC	X	X	
Northern Ring-necked Snake	<i>Diadophis punctatus</i>			X	X
Eastern Worm Snake	<i>Carphophis amoenus</i>	S-SC			
Northern Black Racer	<i>Coluber constrictor</i>		X	X	
Smooth Greensnake	<i>Opheodrys vernalis</i>			X	X
Black Ratsnake	<i>Elaphe obsoleta</i>			X	X
Eastern Milk Snake	<i>Lampropeltis triangulum</i>			X	X

Table 2 – Potential Birds in Covered Lands

Common Name	Scientific Name	Federal or State Listing	SGCN that require young forest/shrubland	GLARU	RSPPRU
Swans, Geese and Ducks					
Canada Goose	<i>Branta canadensis</i>			X	X
Wood Duck	<i>Aix sponsa</i>			X	X
American Black Duck	<i>Anas rubripes</i>			X	X
Mallard	<i>Anas platyrhynchos</i>			X	X
Blue-winged Teal	<i>Anas discors</i>			X	X
Green-winged Teal	<i>Anas crecca</i>			X	X
Hooded Merganser	<i>Lophodytes cucullatus</i>			X	X
Common Merganser	<i>Mergus merganser</i>			X	X
Gallinaceous Birds					
Ring-necked Pheasant	<i>Phasianus colchicus</i>			X	X
Ruffed Grouse	<i>Bonasa umbellus</i>		X	X	X
Wild Turkey	<i>Meleagris gallopavo</i>			X	X
Bitterns, Herons and Egrets					
American Bittern	<i>Botaurus lentiginosus</i>			X	X
Least Bittern	<i>Ixobrychus exilis</i>	S-T		X	X
Great Blue Heron	<i>Ardea herodias</i>			X	X
Green Heron	<i>Butorides virescens</i>			X	X
Black-crowned Night-heron	<i>Nycticorax nycticorax</i>			x	X

Osprey, Eagles, and Hawks					
Osprey	<i>Pandion haliaetus</i>	S-SC		X	X
Bald Eagle	<i>Haliaeetus leucocephalus</i>	F-Protected S-T		X	X
Northern Harrier	<i>Circus cyaneus</i>	S-T		X	X
Sharp-shinned Hawk	<i>Accipiter striatus</i>	S-SC		X	X
Cooper's Hawk	<i>Accipiter cooperii</i>	S-SC		X	X
Northern Goshawk	<i>Accipiter gentilis</i>	S-SC		X	X
Red-shouldered Hawk	<i>Buteo lineatus</i>	S-SC		X	X
Broad-winged Hawk	<i>Buteo platypterus</i>			X	X
Red-tailed Hawk	<i>Buteo lagopus</i>			X	X
Falcons					
American Kestrel	<i>Falco sparverius</i>			X	X
Merlin	<i>Falco columbarius</i>			X	
Rails					
Virginia Rail	<i>Rallus limicola</i>				
Sora	<i>Porzana carolina</i>			X	X
American Coot	<i>Fulica americana</i>			X	X
Plovers					
Killdeer	<i>Charadrius vociferus</i>			X	X
Sandpipers, Phalaropes and other shorebirds					
Spotted Sandpiper	<i>Actitis macularius</i>			X	X

Upland Sandpiper	<i>Bartramia longicauda</i>	S-T		X	X
Wilson's Snipe	<i>Gallinago delicata</i>			X	X
American Woodcock	<i>Scolopax minor</i>		X	X	X
Doves and Pigeons					
Rock Pigeon	<i>Columba livia</i>			X	X
Mourning Dove	<i>Zenaida macroura</i>			X	X
Cuckoos					
Yellow-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>		X	X	X
Black-billed Cuckoo	<i>Coccyzus americanus</i>		X	X	X
Owls					
Eastern Screech-owl	<i>Megascops asio</i>			X	X
Great Horned Owl	<i>Bubo virginianus</i>			X	X
Barred Owl	<i>Strix varia</i>			X	X
Goatsuckers					
Common-nighthawk	<i>Chordeiles minor</i>	S-SC		X	
Whip-poor-will	<i>Caprimulgus vociferus</i>	S-SC		X	X
Swifts					
Chimney Swift	<i>Chaetura pelagica</i>			X	X
Hummingbirds and Kingfishers					
Ruby-throated Hummingbird	<i>Archilochus colubris</i>		X	X	X
Belted Kingfisher	<i>Ceryle alcyon</i>			X	X

Woodpeckers					
Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	S-SC			X
Red-bellied Woodpecker	<i>Melanerpes carolinus</i>			X	X
Yellow-bellied Sapsucker	<i>Sphyrapicus varius</i>			X	X
Downy Woodpecker	<i>Picoides pubescens</i>			X	X
Hairy Woodpecker	<i>Picoides villosus</i>			X	X
Northern Flicker	<i>Colaptes auratus</i>			X	X
Pileated Woodpecker	<i>Dryocopus pileatus</i>			X	X
Flycatchers					
Eastern Wood-pewee	<i>Contopus virens</i>			X	X
Alder Flycatcher	<i>Empidonax alnorum</i>			X	X
Willow Flycatcher	<i>Empidonax trailii</i>			X	X
Least Flycatcher	<i>Empidonax minimus</i>			X	X
Eastern Phoebe	<i>Sayornis phoebe</i>			X	X
Great Crested Flycatcher	<i>Myiarchus crinitus</i>			X	X
Eastern Kingbird	<i>Tyrannus tyrannus</i>			X	X
Vireos					
Yellow-throated Vireo	<i>Vireo flavifrons</i>			X	X
Blue-headed Vireo	<i>Vireo solitarius</i>			X	X
Warbling Vireo	<i>Vireo gilvus</i>			X	X
Red-eyed Vireo	<i>Vireo olivaceus</i>			X	X

Jays, Crows, and Ravens					
Blue Jay	<i>Cyanocitta cristata</i>			X	X
American Crow	<i>Corvus brachyrhynchos</i>			X	X
Fish Crow	<i>Corvus ossifragus</i>			X	
Common Raven	<i>Corvus corax</i>			X	
Larks					
Horned Lark	<i>Eremophila alpestris</i>	S-SC		X	X
Swallows					
Purple Martin	<i>Progne subis</i>			X	X
Tree Swallow	<i>Tachycineta bicolor</i>			X	X
Northern Rough-winged Swallow	<i>Stelgidopteryx serripennis</i>			X	X
Bank Swallow	<i>Riparia riparia</i>			X	X
Cliff Swallow	<i>Petrochelidon pyrrhonota</i>			X	X
Barn Swallow	<i>Hirundo rustica</i>			X	X
Chickadees and Titmice					
Black-capped Chickadee	<i>Poecile atricapillus</i>			X	X
Tufted Titmouse	<i>Baeolophus bicolor</i>			X	X
Nuthatches and Creepers					
Red-breasted Nuthatch	<i>Sitta canadensis</i>			X	X
White-breasted Nuthatch	<i>Sitta carolinensis</i>			X	X
Brown Creeper	<i>Certhia americana</i>			X	X

Wrens					
Carolina Wren	<i>Thryothorus ludovicianus</i>			X	
House Wren	<i>Troglodytes aedon</i>			X	X
Winter Wren	<i>Troglodytes troglodytes</i>			X	X
Marsh Wren	<i>Cistothorus palustris</i>			X	X
Gnatcatchers					
Blue-gray Gnatcatcher	<i>Poliophtila caerulea</i>			X	X
Thrushes					
Eastern Bluebird	<i>Sialia sialis</i>			X	X
Veery	<i>Catharus fuscescens</i>			X	X
Hermit Thrush	<i>Catharus guttatus</i>			X	X
Wood Thrush	<i>Hylocichla mustelina</i>		X	X	X
American Robin	<i>Turdus migratorius</i>			X	X
Mockingbirds and Thrashers					
Gray Catbird	<i>Dumetella carolinensis</i>		X	X	X
Northern Mockingbird	<i>Mimus polyglottos</i>			X	X
Brown Thrasher	<i>Toxostoma rufum</i>		X	X	X
Starlings					
European Starling	<i>Sturnus vulgaris</i>			X	X
Waxwings					
Cedar Waxwing	<i>Bombycilla garrulus</i>			X	X

Warblers					
Blue-winged Warbler	<i>Vermivora pinus</i>		X	X	X
Nashville Warbler	<i>Vermivora ruficapilla</i>			X	X
Yellow Warbler	<i>Dendroica petechia</i>			X	X
Chestnut-sided Warbler	<i>Dendroica pensylvanica</i>		X	X	X
Black-throated blue Warbler	<i>Dendroica caerulescens</i>			X	
Yellow-rumped Warbler	<i>Dendroica coronata</i>			X	X
Black-throated Green Warbler	<i>Dendroica virens</i>			X	
Blackburnian Warbler	<i>Dendroica fusca</i>			X	
Pine Warbler	<i>Dendroica pinus</i>			X	X
Prairie Warbler	<i>Dendroica discolor</i>		X	X	
Cerulean Warbler	<i>Dendroica cerulea</i>	S-SC		X	X
Black-and-white Warbler	<i>Mniotilta varia</i>			X	X
American Redstart	<i>Setophaga ruticilla</i>		X	X	X
Ovenbird	<i>Seiurus aurocapilla</i>			X	X
Northern Waterthrush	<i>Seiurus noveboracensis</i>			X	X
Louisiana Waterthrush	<i>Seiurus motacilla</i>			X	
Common Yellowthroat	<i>Geothlypis trichas</i>			X	X
Canada Warbler	<i>Wilsonia canadensis</i>			X	X
Yellow-breasted Chat	<i>Icteria virens</i>	S-SC	X	X	

Tanagers					
Scarlet Tanager	<i>Piranga olivacea</i>			X	X
Sparrows					
Eastern Towhee	<i>Pipilo erythrophthalmus</i>			X	X
Chipping Sparrow	<i>Spizella passerina</i>			X	X
Clay-colored Sparrow	<i>Spizella pallida</i>			X	
Field Sparrow	<i>Spizella pusilla</i>		X	X	X
Vesper Sparrow	<i>Pooecetes gramineus</i>	S-SC		X	
Savannah Sparrow	<i>Passerculus sandwichensis</i>		X	X	X
Grasshopper Sparrow	<i>Ammodramus savannarum</i>	S-SC		X	X
Song Sparrow	<i>Melospiza melodia</i>			X	X
Swamp Sparrow	<i>Melospiza georgiana</i>			X	X
White-throated Sparrow	<i>Zonotrichia albicollis</i>		X	X	X
Dark-eyed Junco	<i>Junco hyemalis</i>			X	X
Grosbeaks and Buntings					
Northern Cardinal	<i>Cardinalis cardinalis</i>			X	X
Rose-breasted Grosbeak	<i>Pheucticus ludovicianus</i>			X	X
Indigo Bunting	<i>Passerina cyanea</i>		X	X	X
Blackbirds and Orioles					
Bobolink	<i>Dolichonyx oryzivorus</i>			X	X
Red-winged Blackbird	<i>Agelaius phoeniceus</i>			X	X

Eastern Meadowlark	<i>Sturnella magna</i>			X	X
Common Grackle	<i>Quiscalus quiscula</i>			X	X
Brown-headed Cowbird	<i>Quiscalus major</i>			X	X
Orchard Oriole	<i>Icterus spurius</i>			X	X
Baltimore Oriole	<i>Icterus galbula</i>			X	X
Finches					
Purple Finch	<i>Carpodacus purpureus</i>			X	X
House Finch	<i>Carpodacus mexicanus</i>			X	X
Pine Siskin	<i>Carduelis pinus</i>			X	
American Goldfinch	<i>Carduelis tristis</i>			X	X
Evening Grosbeak	<i>Coccothraustes vespertinus</i>			X	X
House Sparrow	<i>Passer domesticus</i>			X	X

Table 3 – Potential Mammals in Covered Lands

Common Name	Scientific Name	Federal or State Listing	SGCN that require young forest/shrubland
Marsupials			
Virginia Opossum	<i>Didelphis virginiana</i>		
Shrews and Moles			
Masked Shrew	<i>Sorex cinereus</i>		
Water Shrew	<i>Sorex palustris</i>		
Smoky Shrew	<i>Sorex fumeus</i>		
Long-tailed Shrew	<i>Sorex dispar</i>		
Pygmy Shrew	<i>Sorex hoyi</i>		
Northern Short-tailed Shrew	<i>Blarina brevicauda</i>		
Least Shrew	<i>Cryptotis parva</i>		
Hairy-tailed Mole	<i>Parascalops breweri</i>		
Eastern Mole	<i>Scalopus aquaticus</i>		
Star-nosed Mole	<i>Condylura cristata</i>		
Bats			
Little Brown Bat	<i>Myotis lucifugus</i>		
Keen's Bat	<i>Myotis septentrionalis</i>		
Indiana Bat	<i>Myotis sodalis</i>	F-E S-E	
Silver-haired Bat	<i>Myotis leibii</i>	S-SC	
Eastern Pipistrelle	<i>Pipistrellus subflavus</i>		

Big Brown Bat	<i>Eptesicus fuscus</i>		
Red Bat	<i>Lasiurus borealis</i>		
Hoary Bat	<i>Lasiurus cinereus</i>		
Canids			
Coyote	<i>Canis latrans</i>		
Red Fox	<i>Vulpes vulpes</i>		
Gray Fox	<i>Urocyon cinereoargenteus</i>		X
Bear			
Black Bear	<i>Ursus americanus</i>		
Raccoon			
Raccoon	<i>Procyon lotor</i>		
Mustelids			
Marten	<i>Martes americana</i>		
Fisher	<i>Martes pennant</i>		
Ermine	<i>Mustela erminea</i>		
Long-tailed Weasel	<i>Mustela frenata</i>		
Mink	<i>Mustela vison</i>		
Striped Skunk	<i>Mephitis mephitis</i>		
River Otter	<i>Lontra canadensis</i>		
Felids			
Bobcat	<i>Lynx rufus</i>		

Ungulates			
White-tailed Deer	<i>Odocoileus virginianus</i>		
Moose	<i>Alces alces</i>		
Rodents			
Eastern Chipmunk	<i>Tamias striatus</i>		
Woodchuck	<i>Marmota monax</i>		
Gray Squirrel	<i>Sciurus carolinensis</i>		
Fox Squirrel	<i>Sciurus niger</i>		
Red Squirrel	<i>Tamiasciurus hudsonicus</i>		
Southern Flying Squirrel	<i>Glaucomys volans</i>		
Northern Flying Squirrel	<i>Glaucomys sabrinus</i>		
Beaver	<i>Castor canadensis</i>		
Deer Mouse	<i>Peromyscus maniculatus</i>		
White-footed Mouse	<i>Peromyscus maniculatus</i>		
Southern Red-backed Vole	<i>Clethrionomys gapperi</i>		
Meadow Vole	<i>Microtus pennsylvanicus</i>		
Pine Vole	<i>Pitymys pinetorum</i>		
Muskrat	<i>Ondatra zibethicus</i>		
Black Rat	<i>Rattus rattus</i>		
Norway Rat	<i>Rattus norvegicus</i>		
House Mouse	<i>Mus musculus</i>		

Meadow Jumping Mouse	<i>Zapus hudsonius</i>		
Woodland Jumping Mouse	<i>Napaeozapus insignis</i>		
Porcupine	<i>Erethizon dorsatum</i>		
Rabbits and Hares			
Eastern Cottontail	<i>Sylvilagus floridanus</i>		

3.2.3 Special-Status Species within ROWs

3.2.3.1 Federally listed Threatened and Endangered Species and Candidate Species

There are no Federal candidate species known to occur within the covered lands at this time. There are four species that are currently protected under the ESA that are known or may occur within the counties crossed by the covered lands. These include KBB, bog turtle (*Clemmys [=Glyptemys] muhlenbergii*), Indiana bat (*Myotis sodalis*), and shortnose sturgeon (*Acipenser brevirostrum*).

3.2.3.1.1 Karner blue butterfly

The KBB has a global status of G5T2 (imperiled) and a status of S1 in the State of New York (NatureServe 2011). The State of New York listed the species as endangered in 1977. The KBB was listed as an endangered species under the ESA on December 14, 1992 (57 FR 59236). The ultimate goal of the ESA is the conservation of endangered and threatened species and the ecosystems upon which they depend. The Service finalized a recovery plan for the KBB in September 2003. The KBB is closely tied to its habitat, as the sole source of food for larvae is wild blue lupine (*Lupinus perennis*) leaves. Wild blue lupine is a species commonly found in the early stages of plant succession, as it is adapted to relatively dry and infertile soils. In the Northeast, utility ROWs are often host to wild blue lupine populations, as it is a species that thrives in open areas where periodic disturbance reduces canopy cover. Due to the uniquely close association that the KBB has with wild blue lupine, all wild blue lupine colonies were regarded as occupied within the HCP covered lands. Adult KBB food sources include various plant species including: common milkweed (*Asclepias syriaca*), butterfly weed (*Asclepias tuberosa*), horsemint (*Monarda punctata*), strawberry (*Fragaria virginiana*), hawkweed (*Hieracium* sp.), and cinquefoil (*Potentilla* sp.) (Service 2003).

Due to the limited diversity of habitats within the ROWs in the covered lands, KBB and FE are the only special-status species that are anticipated to utilize the habitats found within the ROWs. Suitable habitat for these species is present throughout the ROWs in the covered lands. Impacts and mitigation measures are discussed in the HCP.

The KBB is bivoltine (completes two generations per year). The first flight is generally in late May into June and the second flight is generally in July. KBB overwinter in the egg stage at the base of lupine plants and/or on nearby grasses. They are generally short-distance fliers with tight associations to lupine patches and nectar resources. See the Final Recovery Plan (Service 2003) for a full discussion of KBB life history requirements.

Within New York State, the Recovery Plan designates the area between Glens Falls/Queensbury and the Albany Pine Bush as the GLARU. The Recovery Plan also designated two potential recovery units that may count towards meeting recovery criteria. One of these is the RSPPRU, an area in and around Oneida County containing sandy soils for this species. A Recovery Unit is a management sub-unit of the listed entity, is geographically or otherwise identifiable, is

essential to the recovery of the entire listed entity, and conserves genetic or demographic robustness, important life history stages, or other feature for long-term sustainability of the entire listed entity. For the KBB, recovery units are designed to ensure the long-term sustainability across the species' range (Service 2003). Within the GLARU, three viable populations of KBB are required for the species to be downlisted to threatened or delisted from the Endangered Species List. KBB are known to occur within four counties within the GLARU (Albany, Saratoga, Schenectady, and Warren). KBB do not currently occur in the RSPPRU; however, FE are present and there is potential for future reintroductions of KBB.

KBB populations in New York do not currently meet “viable population” criteria. Threats to KBB in New York include habitat degradation (through invasive species introduction and lack of habitat management), destruction, and fragmentation resulting in isolated patches of habitat across the GLARU, as well as a lack of reliable snow pack (Dirig 1994). KBB at small sites also appear less able to withstand weather events such as drought, heavy rain, or extreme temperatures.

3.2.3.1.2 Bog Turtle

Bog turtles are federally listed as threatened and State-listed as endangered. Bog turtles typically prefer open emergent wetlands that lack a shade-casting canopy such as herbaceous sedge meadows and calcareous fens (Service 2001). These habitats are typically seep/spring-fed wetlands that have deep, mucky sediments and are frequently associated with streams (Service 2001). Soil types commonly associated with bog turtle habitat include: Palms muck, Carlisle muck, Sun silt loam, and Wayland silt loam (Kiviat and Stevens 2001). Water levels in these habitats vary, ranging from drier areas to saturated surfaces to periodically flooded conditions. Within the covered lands, there are no extant populations and just a couple of historical records in Albany and Warren Counties. We do not anticipate any bog turtle occurrences within the covered lands. Therefore, impacts are not anticipated to bog turtles, and further consideration of this species is not warranted.

3.2.3.1.3 Indiana Bat

Indiana bats are federally listed and State-listed as an endangered species. There are two known winter hibernacula for Indiana bats in covered lands counties – one in Albany County and one in Warren County. However, both hibernacula are located outside the primary zone of sand deposits. There is a summer record of a male Indiana bat in Albany County; however, there are no summer records of Indiana bats within the covered lands to date.

Based on observations during the 2006 baseline survey and records of the habitat types located in the covered lands, we do not anticipate Indiana bat use of the ROWs. In addition, the forested habitats located in the immediate vicinity of the ROWs consisted mostly of coniferous vegetation, which does not provide suitable summer roosting habitat for Indiana bats. Therefore, impacts are not anticipated to Indiana bats, and further consideration of this species is not warranted.

3.2.3.1.4 Shortnose Sturgeon

The shortnose sturgeon is federally listed and State-listed as an endangered species. In New York State, shortnose sturgeon are found only in the lower portion of the Hudson River from the southern tip of Manhattan (River Mile 0) upriver to the Federal dam at Troy (River Mile 152) (NYSDEC 2011e). Habitat suitable to support this species is characterized by deep pools with soft substrates and vegetated bottoms (NYSDEC 2011e). Suitable habitat for shortnose sturgeon does not occur within the covered lands, and further consideration of this species is not warranted.

3.2.3.2 State-listed Species

In addition to the State-listed species discussed in section 3.2.2.1, there are other State-listed species that occur or have the potential to occur in the covered lands.

3.2.3.2.1 Frosted Elfin

The State-threatened FE is known to occur in the covered lands. The range of the species encompasses much of eastern North America. The FE is a globally rare species, and it has a status of S1S2 in New York State (NatureServe 2011). In 1999, the FE was listed as a threatened species in New York. FE are currently not federally listed under the ESA. In New York State, there are two species/subspecies of FE (NatureServe 2011). One of the species/subspecies feeds on wild blue lupine (flowers and leaves); the other species feeds on wild indigo (*Baptisia* spp.). Lupine feeders occur in the GLARU and RSPPRU, while wild indigo feeders primarily occur on Long Island. The NG HCP focuses only on lupine-feeding FE.

The FE is univoltine (one generation per year). Adults typically start hatching from overwintered pupae in mid-April, and they fly through early June. Similar to KBBs, adult females lay their eggs primarily on wild blue lupine plants and occasionally on other plants or leaf litter, within close proximity to wild blue lupine plants. The egg state is short, with larvae typically starting to hatch in mid-June. FE larvae feed on wild blue lupine flowers, developing pods, and leaves. The larvae pupate below the ground surface, in close proximity to wild blue lupine plants.

Suitable habitat requirements for FE are similar to those of KBB. Conserving habitat for KBB simultaneously conserves habitat for FE because both species are closely tied to their habitat and they both require wild blue lupine as a larval food source.

3.2.3.2.2 Bald Eagle

The bald eagle was formerly listed as a federally-threatened species; however, on August 8, 2007, it was delisted by the Service. Although bald eagles no longer receive protection under the ESA, they continue to receive protection under the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c). In addition, the bald eagle is listed as a threatened species in New York State. Bald eagles are known to breed throughout New York State, and they primarily winter in the

upper Delaware River, the St. Lawrence River, the lower Hudson River, and the Sacandaga River (NYSDEC 2007b). Suitable habitat includes undisturbed areas near large lakes and reservoirs, marshes and swamps, or stretches along rivers where they can find open water and their primary food, fish (NYSDEC 2007b). Perch sites typically include deciduous and coniferous trees, and nest trees include pine, spruce, fir, cottonwood, oak, poplar, and beech. As the vegetation located within the ROWs is mostly low-lying herbaceous or scrub-shrub vegetation, and large deciduous or coniferous trees are not present within ROWs, it is anticipated that bald eagles would not be present within the ROWs. Although bald eagles may fly over the ROWs when they are traveling between the large water bodies that are located in the surrounding areas, it is likely that they will not utilize the habitats located within the ROWs except on a transient basis. Further consideration of this species is not warranted.

3.2.3.2.3 Other State-listed Species

Tables 1, 2, and 3 above identify State-listed species (S-E for State-Endangered, S-T for State-Threatened, and S-SC for State-Special Concern) of reptiles, birds, and mammals. Many of these species are water-dependent and/or have very limited locations within the area of the GLARU or RSPPRU.

3.3 Social Environment

3.3.1 Cultural Resources

Based on information from NG, there are no known cultural resources within the covered lands. NG has an existing guidance document to govern its protection of cultural, historic, and other natural resources (EG-306-NY, National Grid 2006). This guidance document states that whenever work is planned, NG must screen for the presence/absence of cultural resources, perform surveys if necessary, coordinate with Federal, state, and/or local authorities, obtain any necessary permits or approvals, and design, schedule, and perform work to minimize any disturbances to cultural resources.

Within the covered lands, Federal, state, and local agencies to contact include NYS Historic Preservation Office, U.S. Department of the Interior National Park Service, NYSDEC, and NYS Department of Agriculture and Markets. The State Historic Preservation Office also covers historically significant Native American sites. For historically significant resources, NG consults the State Historic Preservation Office's Online Resource Center and submits a project review request to the State Historic Preservation Office for an official determination of project effect on any known culturally significant resources.

3.3.2 Land Use

The ROWs vary in width, depending upon the sizes of the electric and/or natural gas facilities. The electric transmission system encompasses approximately 140 miles and 1,696 acres within the covered lands. The natural gas transmission system covers approximately 23 miles and 71 acres in the covered lands. The ROWs are located in a variety of locations, including both rural

and urban areas. Thus, several land use types are located within the ROWs and in the surrounding areas.

3.3.2.1 Land Use within ROWs

The majority of the ROWs in the covered lands consist of large, linear areas of open sand with well-established trails. Besides NG's electrical and natural gas transmission equipment, the ROWs are mostly undeveloped. Areas of herbaceous and shrub vegetation are located within the ROWs; however, these areas are maintained by NG to prevent growth of the vegetation to heights that may lead to hazardous conditions. Because the height of the vegetation within and immediately adjacent to the ROWs is maintained by NG for safety reasons, large tracts of forested habitat are not present within the ROWs. The topography within the ROWs is mostly flat to rolling. A few of the ROWs are located within residential subdivisions; therefore, they contain areas with mowed lawns and roadways.

3.3.2.2 Adjacent Land Uses

In Albany County, the ROWs are located within a relatively urban area, compared to the overall covered lands. High density residential subdivisions and commercial developments are located adjacent to many of the ROWs. In addition, several heavily traveled roadways (e.g., Interstate 87) and railroad tracks are located adjacent to the ROWs. Only a few ROWs are located adjacent to undeveloped forested land or wetland systems.

In Oneida County, the ROW consists of a roadside distribution line that is located adjacent to residential and agricultural operations. Large tracts of undeveloped land are also located in the immediate vicinity of the Oneida ROW. In addition, several large wetland systems are located within and adjacent to the ROW.

In Saratoga County, the ROWs are surrounded by a mixture of residential, commercial, and undeveloped forested tracts of land. A few wetland systems are also located adjacent to the ROWs. Several heavily traveled roadways and railroad tracks either transect the ROWs, or they are located in the immediate surrounding area. The houses within the residential areas are mostly widely spaced. Warehouses, small- to medium-sized businesses, and Saratoga County Airport make up the bulk of the commercial developments located in the surrounding area.

In Schenectady County, the ROWs are located in more urban areas. The ROWs are primarily surrounded by commercial developments and high density residential subdivisions. Only a few of the ROWs are surrounded by undeveloped forested land or wetlands.

In Warren County, the ROWs are primarily surrounded by residential properties and undeveloped forested tracts of land. Many of the ROWs are located between close-clustered residential subdivisions, and several roadways transect the ROWs. A few commercial developments, including warehouses and a junkyard, are also located adjacent to the ROWs.

3.3.3 Noise

Ambient noise levels within and adjacent to the NG ROWs in the covered lands are generally low. The primary sources of noise include traffic on nearby roads and nearby residences. Illegal ATV use of the ROWs also causes higher levels of noise. Additionally, NG construction, reconstruction, and maintenance activities would contribute to noise levels during the periods of activity. However, these covered activities occur on a limited basis.

3.3.4 Population Growth

According to the most recent data from the U.S. Census Bureau, the total population for the counties included in the vicinity of the covered lands is approximately 967,587 people, based on the year 2009 (U.S. Census Bureau 2011). In general, population has grown in the vicinity of the covered lands.

Albany County is the most populated county with a 2009 population of 298,284. The county population had grown 1.3 percent since 2000. Oneida County has the second largest population in the project area with a 2009 population of 231,044. Oneida County had lost 1.9 percent of its population since 2000. Saratoga County is the fastest growing county. Its population in 2009 was 220,069, which represents a 9.7 percent increase since 2000. Schenectady County had a population of 152,169 in 2009, which was an increase of 3.8 percent since 2000. Warren County is the least populated, but second fastest growing. In 2009, Warren County had a population of 66,021, an increase of 4.3 percent since 2000.

3.3.5 Public Health Hazards

Thunderstorms and high winds may cause downing of power lines, which may also lead to a situation where electrocution may occur. Additionally, misuse of NG equipment and structures by unauthorized individuals in the ROWs and unauthorized use of the ROWs by ATVs within the covered lands may lead to a risk of electrocution from electric power lines or explosion from natural gas pipelines.

Additionally, NG personnel conduct maintenance and management activities in the ROWs to safely and effectively operate and maintain its electrical and natural gas transmission facilities and ROWs. Some of these activities may include the use of equipment that, when not used properly, could result in physical injury. Construction and reconstruction activities within ROWs may also result in physical injury to NG personnel.

NG has existing policies and maintenance practices, including an extensive safety program in effect to limit these hazards. Illegal use of the ROWs by ATVs may also result in accidental damage to NG facilities and/or personal injury if the ATVs are operated unsafely. .

3.3.6 Local Socio-Economic Conditions

Due to the large size of and the dispersed activities within the covered lands, a detailed analysis of existing local socio-economic conditions was not feasible for each parcel where covered activities are proposed. However, this type of analysis was not deemed necessary given the assessment of impacts to socio-economic conditions from the various alternatives.

3.3.7 Traffic

Due to the large size of and the dispersed activities within the covered lands, a detailed analysis of traffic conditions was not feasible for each parcel where covered activities are proposed. However, this type of analysis was not deemed necessary given the assessment of impacts to traffic from the various alternatives.

4.0 ENVIRONMENTAL CONSEQUENCES

This analysis is being conducted at a programmatic level. It is important to note that NG will continue to conduct its own environmental analyses on a project by project basis to ensure compliance with all pertinent laws and regulations (e.g., State Environmental Quality Review Act). This would include environmental reviews for any major reconstruction of existing utility ROWs or substations and/or construction of new utility ROWs or substations. It is also important to note that the only difference between alternative A and alternative C is that alternative A plans for and consolidates mitigation and enhancement activities for KBB and FE within specific locations in Queensbury and the Albany Pine Bush, whereas alternative C would require mitigation for KBB at any locations where impacts were occurring that would result in smaller, more localized locations of wild blue lupine habitat scattered across the ROWs.

4.1 alternative A: Issue ITP Permit for the Proposed HCP

Under this alternative, NG would implement the HCP authorized through a 50-year ITP and conduct proposed covered activities, which include standard operations and maintenance procedures, reconstruction activities, and new construction.

4.1.1 Physical Impacts

Potential physical impacts of covered activities in ROWs are described below. Physical features considered include visual resources, climate, and air quality, and geological setting.

4.1.1.1 Visual Resource Impacts

Rights-of-way represent long linear features that pass through a variety of natural and manmade habitats (residential, agricultural, commercial, and forested tracts). ROWs consist mainly of open canopy vegetation (trees removed) and low-growing shrub and herbaceous vegetation. Equipment in the form of large steel towers for power lines, wooden poles, and overhead electrical wires is usually present on electrical ROWs. On gas ROWs, all piping is underground.

Since these are established features, O&M activities within ROWs would not impact visual resources. Vegetation would be maintained through periodic management processes. It is noted that vegetation management for wild blue lupine may make these features slightly more visible as some screening vegetation will be removed.

Rebuilding, refurbishing, and constructing new electric or natural gas facilities within the covered lands may be needed during the life of the permit. Reconstruction activities would not result in visual impacts as the area is already an existing ROW. New construction activities have the potential for negative impact on visual resources, depending on where they occur.

4.1.1.2 Climate and Air Quality Impacts

Climate: Some covered activities would use vehicles, heavy equipment, and other power equipment that would introduce carbon dioxide and other greenhouse gases into the atmosphere. However, the number of vehicles/heavy equipment and power equipment used at one time would be small (generally less than 10) and vehicles and equipment would be operated for short time periods in any given habitat patch (ranging from only a few days per year during O&M activities to several months during new construction activities) (Sherman 2011). These have the potential to introduce greenhouse gases and carbon dioxide into the atmosphere. However, it is anticipated that the emissions from NG covered activities would be negligible compared to emissions from other local sources, and there would be no measurable impact on regional climate. Further, there would be no significant change in impacts under alternative A compared to conditions that currently exist as a result of NG ROW management activities on these ROWs.

Air Quality: Some covered activities would use vehicles, heavy equipment, and other power equipment that would introduce air pollutants into the atmosphere. However, the same discussion on greenhouse gases above applies for this general air quality analysis. It is anticipated that the emissions from NG covered activities would be negligible compared to emissions from other local sources, and there would be no measurable impact on regional air quality. Further, there would be no significant change in impacts under alternative A compared to conditions that currently exist as a result of NG ROW management activities on these ROWs. There may be localized short-term negative impacts on air quality because construction and O&M activities may result in more concentrated exhaust fumes and fugitive pollen and dust emissions in areas of work depending upon the activity. For this alternative, there may be more concentrated short-term activities in the areas of vegetative mitigation and enhancement for wild blue lupine compared to alternative C.

4.1.1.3 Geologic and Hydrologic Setting Impacts

ROW O&M activities would have no significant negative impacts on the geological setting, which includes geology, soils, hydrology, and wetlands. Access trails, stream crossings, and other conveyances, are already established by NG. The majority of O&M activities will use existing access trails to perform activities. Additionally, a small number of vehicles and/or equipment would be used at any one time and would be operated only for a few days per year in any ROW section.

Emergent and shrub wetlands and intermittent watercourses are scattered throughout the ROWs. However, the ROWs sections identified in the HCP as covered lands (e.g., “Covered Lands with Covered Species,” “Covered Lands for Mitigation or Enhancement,” “Covered Lands for Survey”) generally do not include areas of wetlands and/or intermittent watercourses because wetlands and watercourses do not suit the growth of wild blue lupine.

In instances where covered activities require disturbing soil through excavation or construction, the disturbed area is limited and localized. Following construction, repair, or replacement of structures, excavated areas would be backfilled as needed using the original soil that was staged in the temporary storage area. All disturbed areas will be re-seeded as described in the HCP. In the event that a wetland or stream must be crossed, timber mats are used to lessen the potential for wetland or stream disturbance.

Any significant land disturbance activities and/or wetland or stream impacts, for example for major reconstruction of utility lines and/or for new utility line construction, would be reviewed for compliance with other state and Federal regulatory programs governing impacts to soils and aquatic resources, and would likely require approvals for those activities.

4.1.2 Biological Impacts

Potential biological impacts of the covered activities are described below.

4.1.2.1 Vegetation Impacts

Currently, O&M activities involve vegetation maintenance on NG ROWs to prevent interruptions in service to customers. The O&M vegetation maintenance activities that are currently undertaken by NG and that are proposed to be covered by this permit maintain a stable low-growing plant community, clear of incompatible (high-growing) vegetation, which could compromise the security of the electrical lines. Vegetative species within the NG ROWs and covered lands are mostly early successional species or species that require open canopy habitats. These include herbaceous and scrub-shrub vegetation. Vegetative maintenance using power equipment occurs once at a maximum of every 4 to 8 years along the NG ROWs.

This type of vegetative maintenance has a negative impact on the natural succession of an established vegetative community. However, this type of management creates edge habitat, which supports a large number of plant and wildlife species. There are many plant species that find these growing conditions favorable. These include grassland plants, nectar species, shrub species, and species requiring significant sunlight.

This particular alternative would result in some localized areas of more intensive ROW maintenance for the creation of larger areas of wild blue lupine and nectar species habitat. This may reduce the diversity of other plant species in these areas but would increase the diversity of nectar and grassland plants. This additional maintenance activity could involve vehicle and heavy equipment use and soil excavation and could result in impacts to individual plants. However, given their localized nature, and short duration and the requirement to use established

BMPs, the impacts of these activities would be expected to be smaller in scope compared to normal vegetation maintenance. These activities would be expected to have negligible impacts on biological structure, function, diversity, and productivity of vegetation in the project area compared to existing conditions.

4.1.2.2 Wildlife Impacts

Covered activities may adversely affect wildlife through disturbance during vegetative maintenance, vehicular use, excavation, reconstruction, and new construction activities. Except for new construction activities, these activities and impacts currently exist and are already occurring within the ROW as part of NG ongoing maintenance programs. Vegetative maintenance using power equipment occurs once at a maximum of every 4 to 8 years, and NG ROWs exist as edge habitat with low growth vegetation.

Given ongoing disturbances and the presence of this edge habitat, most animals that use this habitat are generalist species that can utilize edge habitats and adapt to more frequent disturbances than those species with more specialized habitat requirements, for example, species dependent on interior forest habitat. The covered activities that are anticipated to occur are infrequent, localized, and of short duration. Given the existing conditions of the ROWs as low growth habitat, the impacts would have negligible impacts on the structure, function, and biological integrity of existing wildlife communities in the covered lands. Continued maintenance of a shrub and grass community should benefit those species that rely on edge habitat or on shrub and grass communities.

Many of the amphibians and reptiles that may be present within the covered lands are unlikely to occur within the open, sandy areas managed for KBB and FE. Species that do use ROWs may be at risk of periodically being crushed by vehicles. Maintenance of this edge habitat will benefit gallinaceous birds such as turkey and pheasant and will provide continued foraging areas for hawks and additional habitat for killdeer and hummingbirds, swallows, chickadees, titmice, sparrows, grosbeaks, blackbirds, and finches.

Mammals that utilize these ROWs will continue to be able to utilize the ROWs. Continued maintenance of a shrub and grass community should benefit shrews and moles, some bat species that may use this linear open habitat for foraging, canids that use this habitat as travel and migration corridors, ungulates that use it as habitat for browsing and migration, and rodents that favor open grasslands. With regard to new construction, the level of impacts to the species will significantly depend upon the type of habitat being crossed by the new construction and its relationship to existing habitats in the area. Some new construction involves expansion of existing ROWs, which would tend to expand the area of edge habitat. Other new construction involves development of new ROWs. Crossing of urban areas, active agricultural lands, or old field habitat would be less impacting to wildlife than crossing shrub or forested areas, which could lead to additional habitat fragmentation and impacts to forest interior species. As part of any new construction, NG is required to comply with existing Federal and state laws for consultation, review, and permitting, and this would include reviews of impacts to wildlife species.

4.1.2.3 Karner Blue Butterfly and Frosted Elfin

Based on section 3.2.3, the only Special-Status Species that warrant further consideration are KBB and FE. Although the covered activities could result in the incidental take of KBB and FE individuals, vegetative maintenance on ROWs would have an overall positive impact on these species. Vegetation management maintains the early-successional, open canopy vegetative habitat that wild blue lupine requires. In addition, NG has proposed multiple conservation measures to reduce the likelihood of take of KBB and FE during its covered activities. When considering the combination of these two factors, ROW covered activities would have an overall positive impact on the KBB and FE.

In addition to providing beneficial impacts to KBB and FE from ROW covered activities, alternative A provides mitigation to compensate for impacts of take of KBB and FE. While alternative C also provides mitigation (See section 4.3.2.3), alternative A targets creation of larger areas of wild blue lupine and nectar species. This consolidation of mitigation is anticipated to be more beneficial to the overall KBB and FE populations compared to the creation of smaller pockets of wild blue lupine habitat, because the large areas of habitat should allow for greater dispersal of KBBs over a larger area compared to smaller pockets of wild blue lupine that may or may not be utilized by KBBs.

To compensate for any impacts to KBB and FE from their activities, NG has proposed the following measures:

- establishing a permanent 5-acre, off-ROW KBB and FE preserve at a NG property located in the Town of Queensbury, Warren County (Covered Lands C); and
- implementing management activities to create and/or enhance KBB habitat on up to 23 acres of NG fee-owned ROW adjacent to Preserve lands and annually report on the status of these management activities (Covered Lands E). This management commitment will continue for the duration of the ITP and be enforced through the Implementing Agreement and in the permit conditions. NG intends to establish a binding contract with APBPC to carry out these management activities. In the event that APBPC cannot fulfill the contract, NG will contract with another suitable entity to conduct the management activities or may conduct the activities themselves with additional compliance monitoring responsibilities.

Within 90 days of permit issuance, NG will develop a binding contract with APBPC or another suitable entity associated with creating or enhancing KBB habitat on NG fee-owned ROW or will provide a plan for their own management. NG will execute and record the easement within 30 months of permit issuance in accordance with a schedule described in the permit conditions. In addition, NG will provide the Service with written monthly progress updates on the conservation easement development and scheduled milestones until the conservation easement has been officially recorded. In the event that scheduled milestones identified are not met by NG, no further HCP covered activities that will result in incidental take of KBB or FE through permanent habitat impacts may proceed until a Service-approved conservation easement is

officially recorded. If an unanticipated circumstance arises such that the final conservation easement is not approved by involved third parties and thus NG cannot meet the scheduled milestones, NG and the Service will reach mutual agreement on a revised schedule, or NG will provide for alternative permanent mitigation commensurate with the HCP obligations.

NG has also proposed additional conservation measures (above and beyond what is required to compensate for the impact of any take of KBB and FE) and these are described in section 4.5 of the HCP:

- *Enhance Covered Lands D1 – Spier-Queensbury #17/5 115 kV ROW:* The primary focus of Covered Lands D1 is the elimination of approximately 6 acres of woody shrubs and low-growing trees, the associated vegetation layer that would otherwise shade-out wild blue lupine and nectar species to the point that they cannot survive. This effort is described in greater detail in section 4.5.1 of this HCP.
- *Enhance Covered Lands D2 - Spier-Queensbury #17/5 115 kV ROW and Spier-Queensbury #5-Ogden Brook Tap 115 kV ROW:* The effort associated with Covered Lands D2 is described in greater detail in section 4.5.2 of this HCP. The focus of this effort is to provide necessary grading and soil preparation and seed a native nectar species/grass seed/lupine mix at disturbance locations, ATV-damaged habitat, and other open areas along these ROWs. This section of the HCP describes restoring approximately 25 acres of suitable habitat along these ROWs as an enhancement measure following successful cessation of ATV trespass (an additional enhancement measure).
- *Translocate Karner Blue Butterflies:* NG will provide access across its ROW to lands owned by others, will pay for butterfly translocation, and will contract with the APBPC to implement this enhancement measure involving a KBB translocation program at the intersection of the Spier-Queensbury #17/5 and the Spier-Queensbury #5-Ogden Brook Substation Tap ROWs in the Town of Queensbury, Warren County.
- *Conduct Public Outreach:* NG will conduct periodic outreach efforts to promote awareness of NG's HCP and the effects of ROW trespass and unauthorized uses upon the covered species and their ROW habitats. Targeted entities will include owners of properties located adjacent to ROWs with identified trespass problems and within the priority focus areas, any local ATV clubs or organizations, local media, and local law enforcement authorities.

The above-listed efforts are expected to result in an overall beneficial effect to KBB and FE. In addition to the benefits already described, implementation of the HCP may help buffer potential impacts to KBB and FE from climate change. While the HCP does not specifically mention climate change, the HCP incorporates triggers for addressing factors that may be influenced by climate change. For example, climate change may result in changes in weather patterns, and increased incidence of extreme climatic events. In the Northeast, temperatures are expected to continue to rise, winters are expected to be shorter, and more frequent heavy downpours are expected (Karl et al. 2009). One concern with increased warming is the northward expansion of invasive plants (Karl et al. 2009). If fire, windstorms, ice storms, tornadoes, or invasive species

impact NG's ability to meet the biological goals/objectives of the HCP, additional measures will be employed. The HCP mitigation strategy of creating larger patches of habitat and larger populations of KBB and FE is intended to provide increased resiliency of KBB and FE to localized threats. The strategy of including mitigation and enhancement measures in the Albany Pine Bush and Queensbury is intended to provide redundancy and geographic representation of KBB and FE populations such that if threats, such as climate change, result in changing conditions in one location additional populations are on the landscape that may not face the same threats. There will be a full analysis of impacts to KBB and FE through the Service's Intra-Service consultation process pursuant to section 7(a)(2) of the ESA.

4.1.3 Social Impacts

Potential social impacts of the covered activities are described below.

4.1.3.1 Cultural Resource Impacts

Currently, based on information from NG, there are no known cultural, historical, or other natural resource sites in the covered lands. Additionally, NG has established procedures governing the protection of any potential cultural, historical, and other natural resources (EG-306-NY). This guidance document states that whenever work is planned (including new construction), NG must screen for the presence/absence of cultural resources, perform surveys if necessary, coordinate with Federal, state, and/or local authorities, obtain any necessary permits or approvals, and design, schedule, and perform work to minimize any disturbances to these protected resources.

Most cultural resource concerns can be identified through established processes pursuant to section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C. 470) and section 14.09 of the New York State Historic Preservation Act of 1980. Under section 106 of the National Historic Preservation Act and section 14.09 of the New York State Historic Preservation Act, the State Historic Preservation Office's role in the review process is to ensure that effects or impacts on eligible or listed properties are considered and avoided or mitigated during the planning and completion of NG activities covered by the ITP and HCP. To reduce paperwork, avoid duplication, and expedite decision making, the section 106 process as defined in 36 CFR part 800 will be followed for purposes of the environmental assessment.

The Regional Director, as the responsible Federal agency official (36 CFR 800.2(a)), will ensure identification of cultural resources and historical properties within the areas of potential effect.

For every project (undertaking) involving land acquisition, ground disturbance, or buildings and structures 50 years and older:

1. NG is authorized to consult with the State Historic Preservation Officer (SHPO) as agent for the Service for the activities included in the ITP and HCP for the purpose of identifying cultural resources in the area of potential effect and to obtain from the SHPO a determination of no historical properties or no effect on historical properties;

2. NG will:
 - allow the SHPO at least 30 calendar days to respond to requests for a determination of historical property presence,
 - provide appropriate public and local government notification of covered lands projects,
 - notify appropriate Indian tribes about covered lands projects,
 - provide the Regional Historic Preservation Officer with sufficient documentation to determine if the section 106 process is completed before covered lands projects are implemented, and
 - provide the Service with copies of the State Historic Preservation Office letters of no historic properties or no effect on historical properties annually;
3. In event the SHPO fails to respond appropriately after 30 calendar working days, the Service will take over the section 106 process; and
4. If evaluation of cultural resources for eligibility for the National Register of Historic Places is needed, or if properties on or eligible for the National Register could be affected by the project, the Service will take over the section 106 process.

Therefore, while there may be adverse impacts on cultural resources by the covered activities, these impacts would be minimized through coordination with the SHPO.

4.1.3.2 Land Use Impacts

Rights-of-way are located in a variety of locations, including both rural and urban areas. The electric transmission system encompasses approximately 140 miles and 1,696 acres within the covered lands. The natural gas transmission system covers approximately 23 miles and 71 acres within the covered lands. The majority of ROWs consist of large, linear areas of open sand with well-established trails. A few of the ROWs are located within residential subdivisions and contain areas of mown lawns and roadways.

Covered activities would not change use of the land within the ROW or adjacent to the ROW. Lands will continue to be used for electric and natural gas transmission. Therefore, alternative A will not have an impact on land use within or adjacent to the ROW.

4.1.3.3 Noise Impacts

Ambient noise levels within and adjacent to the ROWs are generally low with the main sources of noise from nearby traffic, adjacent residences, illegal ATV use of the ROW, and covered activities.

Several covered activities would cause higher noise levels on a localized and limited basis. Such activities would include vegetative maintenance, new facility installation, construction, land clearing, earthwork and excavation, and access road construction. As discussed in section 3.3.3,

these activities occur on a limited basis. Vegetative maintenance using power equipment occurs once at a maximum of every 4 to 8 years. Construction activities, land clearing, and earthwork and excavation occur only as needed. Therefore, although there would be short-term negative impacts on noise levels, there would be only negligible long-term effects by covered activities.

4.1.3.4 Population Growth Impacts

alternative A would have no impact on population growth. Right-of-way O&M activities would maintain electricity and natural gas supply to the general population in ways that minimize outages. New electric and gas transmission lines are constructed in response to population and commercial growth. Therefore, alternative A would not impact human population growth.

4.1.3.5 Public Health Hazard Impacts

Public health hazards associated with NG ROWs include electrocution and explosion due to the existence of electric power lines and natural gas pipelines as well as personal injury from equipment. Under alternative A, covered activities would have an overall positive impact on public health hazards in that covered activities would operate and maintain electric power lines and natural gas pipelines in the safest manner possible to minimize the potential for hazardous conditions. Although NG personnel may use equipment during covered activities that may result in personal injury if not used properly, NG has existing policies and maintenance practices in effect, including an extensive safety program, to minimize these hazards. Therefore, there is an overall positive impact on public health hazards under alternative A.

4.1.3.6 Impacts on Local Socio-Economic Conditions

Many of the covered activities under alternative A are similar to those currently being conducted by NG. Reconstruction and new construction activities may create new jobs for the duration of the project(s). Therefore, covered activities may have an overall positive impact on socio-economic conditions under alternative A.

4.1.3.7 Traffic Impacts

Many of the covered activities (especially O&M activities) currently being conducted on ROWs will continue at the same rate as activities under alternative A. During reconstruction and new construction activities, short-term negative traffic impacts will be created as worker and construction vehicles will increase for the duration of these projects. However, reconstruction and new construction projects are undertaken only when needed. The projects are typically not long-term construction projects and do not involve a large number of construction or worker vehicles. Typically, new construction projects involve 6 to 12 pieces of construction equipment and approximately the same number of workers (Sherman 2011). Therefore, alternative A will have no long-term negative impacts on traffic.

4.2 alternative B: An ITP is Not Issued for the Proposed HCP (No Action alternative)

Under this alternative, an ITP would not be issued for incidental take of KBBs and Fes, and NG would cease covered activities, including O&M activities. NG would take no action in the ROWs or their associated facilities.

4.2.1 Physical Impacts

Potential physical impacts of the covered activities in ROWs are described under the following headings. Physical features considered include visual resources, climate, air quality, and geological setting.

4.2.1.1 Visual Resource Impacts

Section 4.1.1.1 describes the existing vegetative conditions associated with NG ROWs. With the discontinuation of covered activities under alternative B, vegetation would grow unchecked and change from early succession open canopy to closed canopy forest through natural vegetative succession. NG facilities would deteriorate with neglect. Therefore, there would be an overall negative impact on visual resources as the ROW becomes overgrown and equipment becomes deteriorated and unsightly.

4.2.1.2 Climate and Air Quality Impacts

Climate: section 4.1.1.2 describes the existing activities that occur on the NG ROWs. With the discontinuation of covered activities under alternative B, there would be no vehicles/heavy equipment or power equipment used in the ROW and no creation of greenhouse gases from emissions from NG operations. Although there would be the elimination of emissions from NG covered activities, this would be negligible compared to emissions from other local sources, and there would be no measurable change on regional climate.

Air Quality: Similar to the climate section above, this alternative would have no measurable impact on regional or localized air quality.

4.2.1.3 Geologic Setting Impacts

Under alternative B, with the elimination of covered activities, there would be no impact on the geologic setting since there would be no human disturbance in the ROWs, except for any illegal ROW use (e.g., ATVs). The geology, soils, hydrology, and wetlands would not be impacted by NG activities under alternative B.

4.2.2 Biological Impacts

Potential biological impacts of the covered activities are described below.

4.2.2.1 *Vegetation Impacts*

Sections 3.2.1 and 4.1.2.1 discuss the existing vegetative conditions along the NG ROWs, existing vegetative maintenance schedules, and the purpose of this existing vegetative maintenance. Alternative B proposes no covered activities along the NG ROWs. This would result in unchecked vegetative growth in the ROW as covered activities cease and the vegetation naturally progresses from early successional species to closed canopy forest.

4.2.2.2 *Wildlife Impacts*

Covered activities may adversely affect wildlife through disturbance (noise), crushing (vehicular use), and habitat loss or alteration (land clearing and excavation, access road construction, and new facility installation). Under alternative B, no covered activities would occur within the ROW. This would provide for positive impacts on wildlife species that utilize the ROWs in that disturbances from covered activities would no longer occur. However, as vegetative growth continues unchecked, wildlife adapted to the early successional vegetative habitat would be impacted as the habitat progresses to closed canopy forest.

4.2.2.3 *Karner Blue Butterfly and Frosted Elfin*

Based on section 3.2.3, the only Special-Status Species that warrant further consideration are the KBB and the FE. Alternative B would eliminate the possibility of incidental take of KBB and FE because covered activities would cease in the ROW. However, alternative B would cause significant long-term negative impacts on wild blue lupine that requires open canopy conditions to flourish. Therefore, alternative B would have significant negative impacts on the KBB and FE by allowing unchecked vegetative growth and successional forces that would potentially reduce the distribution of or eliminate the wild blue lupine that KBB and FE rely on as a food source and is required for these species to remain residents of existing NG ROW habitats. Management of the NG ROWs has, in fact, had a positive impact on the persistence of wild blue lupine habitat in the covered lands.

4.2.3 Social Impacts

Potential social impacts of the covered activities are described below.

4.2.3.1 *Cultural Resource Impacts*

As discussed in section 3.3.1, the covered lands do not include any known cultural, historical, and other natural resources based on information from NG. Given that alternative B would not involve covered activities on ROWs, there would be no impacts to cultural resources.

4.2.3.2 *Land Use Impacts*

Section 4.1.3.2 discusses the existing ROW conditions.

Alternative B would not change use of the land within the ROW or adjacent to the ROW. Therefore, alternative B will not have an impact on land use within or adjacent to the ROW.

4.2.3.3 Noise Impacts

Section 4.1.3.3 discusses the existing ambient noise levels in and around the ROWs.

Under alternative B, covered activities would no longer occur so the limited, short-term noise generated from covered activities would also cease. Additionally, as vegetation grows unchecked it would act as a noise buffer for adjacent noise sources. Therefore, alternative B would have a positive impact on noise.

4.2.3.4 Population Growth Impacts

Covered activities on ROWs are designed to maintain electricity and natural gas supply to the general population in a way that minimizes outages and meets the demands of the population. If covered activities were to stop, the number of outages would increase as vegetative maintenance no longer occurs and equipment deteriorates. As power and natural gas supply becomes unreliable, the general public would be inclined to move to an area with a more reliable supply. Therefore, alternative B would have long-term negative impacts on population growth in the areas surrounding the covered lands.

4.2.3.5 Impacts on Public Health Hazards

Public health hazards associated with NG ROWs include electrocution and explosion due to the existence of electric power lines and natural gas pipelines. alternative B would have a negative impact on public health hazards by allowing dangerous conditions to develop through the cessation of covered activities (including maintenance) on electric and natural gas lines.

4.2.3.6 Impacts on Local Socio-Economic Conditions

With the cessation of covered activities in the ROW under alternative B, several jobs associated with vegetation management for NG will be lost since the ROW would no longer be maintained. This would have a negligible effect on local socio-economic conditions. However, the loss of reliable energy sources within the areas surrounding the covered lands would impact not only population growth (see section 4.2.3.4), but also jobs in commercial, industrial, retail, and municipal services.

4.2.3.7 Traffic Impacts

Current covered activities create some vehicular traffic impacts. However, they are negligible because they are limited and short-lived. With the cessation of covered activities, no vehicular traffic would be generated. Therefore, alternative B would have negligible impacts on vehicular traffic in and around the ROWs.

4.3 Alternative C: Issue ITP for Proposed Covered Activities Within Proposed Covered Lands but Limit the Mitigation Activities to Areas of Impact

Under this alternative, as under the proposed HCP (alternative A), NG would implement a KBB and FE HCP authorized through an ITP. Under alternative A, the HCP would focus conservation and mitigation efforts on targeted ROW and off-ROW habitat areas where mitigation efforts would have the maximum potential benefits for KBB and FE. Alternative C would mitigate/restore habitat anywhere that NG caused an impact, even if no KBB or FE habitat was present prior to the impact. Under this alternative, isolated habitats would be created over time in response to mitigation/restoration at the exact site of impact. Thus, the long-term benefit of mitigation/restoration would not be strategic or nearly as beneficial to KBB and FE since scattered, isolated habitats would be created in areas that were not accessible to extant populations of these butterflies within the covered lands. This is the main difference between alternative A and alternative C.

4.3.1 Physical Impacts

Potential physical impacts of covered activities are described under the following headings. Physical features considered include visual resources, climate, air quality, and geological setting.

4.3.1.1 Visual Resource Impacts

Section 4.1.1.1 describes the existing visual resources associated with the presence of existing NG ROWs.

Under this alternative, vegetative management to mitigate for impacts to wild blue lupine would be localized to specific locations where impacts occur, rather than consolidated in particular but larger locations along the ROW. Since the ROWs are established features, O&M activities within ROWs would not impact visual resources. Vegetation would be maintained through periodic management processes. Any disturbances would be mitigated/restored in a timely manner. Therefore, alternative C would have no impact on visual resources because the visual resource would not be changed.

Rebuilding, refurbishing, and constructing new electric or natural gas facilities within the covered lands may be needed during the life of the permit. Reconstruction activities would not result in visual impacts as the area is already an existing ROW. New construction activities have the potential for negative impact on visual resources, depending on where they occur.

4.3.1.2 Climate and Air Quality Impacts

Climate: Some covered activities would use vehicles, heavy equipment, and other power equipment that would introduce carbon dioxide and other greenhouse gases into the atmosphere. However, the number of vehicles/heavy equipment and power equipment used at one time would be small (generally less than 10), and vehicles and equipment would be operated for short time periods in any given habitat patch (ranging from only a few days per year during O&M activities

to several months during new construction activities) (Sherman 2011). These have the potential to introduce greenhouse gases and carbon dioxide into the atmosphere. However, it is anticipated that the emissions from NG covered activities would be negligible compared to emissions from other local sources, and there would be no measurable impact on regional climate. Further, there would be no significant change in impacts under alternative C compared to conditions that currently exist as a result of NG management activities on these ROWs.

Air Quality: Some covered activities would use vehicles, heavy equipment, and other power equipment that would introduce air pollutants into the atmosphere. However, the same discussion on greenhouse gases above applies for this general air quality analysis. It is anticipated that the emissions from NG covered activities would be negligible compared to emissions from other local sources, and there would be no measurable impact on regional air quality. Further, there would be no significant change in impacts under alternative C compared to conditions that currently exist as a result of NG management activities on these ROWs. There may be localized short-term negative impacts on air quality because construction and O&M activities may result in more concentrated exhaust fumes and fugitive pollen and dust emissions in areas of work depending upon the activity.

4.3.1.3 Geologic Setting Impacts

The impacts associated with this section would be very similar to the impacts associated with alternative A. The only difference would be that soil disturbance that might be associated with vegetation management for the establishment of wild blue lupine and other nectar species as mitigation and enhancement activities will be scattered throughout the NG ROWs under alternative C rather than consolidated in two locations in Queensbury, Warren County, and the Albany Pine Bush as proposed under alternative A and discussed in section 4.1.1.3.

4.3.2 Biological Impacts

Potential biological impacts of the covered activities are described below.

4.3.2.1 Vegetation Impacts

Impacts associated with vegetative management for alternative C are very similar to those impacts associated with vegetative management under alternative A and discussed in section 4.1.2.1.

The main difference between these two alternatives is that alternative A would have two areas of intensive vegetation management in Queensbury, Warren County, and in the Albany Pine Bush to create large areas of wild blue lupine and nectar species in comparison to alternative C which would require creation of mitigation and enhancement areas in close proximity to any proposed impacts to wild blue lupine. Except for these small, scattered, but localized, areas of more intensive vegetative management under alternative C or consolidated localized and larger areas of more intensive vegetative management under alternative A, there will not be any other differences in vegetative management. Both scenarios have a negative impact on the natural

succession of vegetation but provide a strong positive impact on existing and potential wild blue lupine habitat by maintaining the open canopy conditions that wild blue lupine requires. The differences in wild blue lupine management are discussed further below in section 4.3.2.3.

4.3.2.2 *Wildlife Impacts*

Impacts to wildlife associated with alternative C are very similar to those impacts associated with wildlife management under alternative A and discussed in section 4.1.2.2. With regard to new construction, impacts will be similar to those described in section 4.1.2.2.

The main difference between these two alternatives is that alternative A proposes two areas of intensive vegetation management (in Queensbury, Warren County, and in the Albany Pine Bush) to create large areas of wild blue lupine and nectar species. In comparison, alternative C would require creation of mitigation and enhancement areas for wild blue lupine in close proximity to any proposed impacts. This would result in small, scattered, but localized areas of more intensive vegetative management under alternative C. Except for this, there should be no other significant differences in wildlife impacts for alternative C compared to those discussed in section 4.1.2.2.

4.3.2.3 *Karner Blue Butterflies and Frosted Elfin*

Based on section 3.2.3, the only Special-Status Species that warrant further consideration are KBB and FE. Although covered activities could result in the incidental take of KBB and FE individuals, vegetative maintenance would have an overall positive impact on the KBB and FE in that it would maintain the open canopy vegetative habitat that wild blue lupine requires to persist within the ROWs. Therefore, ROW covered activities would have an overall positive impact on the KBB.

The primary difference between alternative A and alternative C, is where the required mitigation will occur. Alternative A focuses mitigation into specific areas where the probability of success is the greatest or where mitigation efforts are specifically needed (e.g., Queensbury area where habitat availability is low). Alternative C requires mitigation wherever a disturbance in the covered lands occurs. Alternative C will potentially result in smaller, more widely dispersed, lower quality mitigation areas that have a lower probability of successfully becoming occupied habitats. In many of the more isolated areas where mitigation would occur, it is possible that these locations would not include existing significant populations of wild blue lupine, and even if wild blue lupine was present, it is unlikely that it is occupied, which results in less dispersal. Even if wild blue lupine was established, it is unlikely that KBB or FE would disperse to that habitat due to the isolated nature of the mitigation areas or the absence of a nearby colonizing population.

4.3.3 Social Impacts

Potential social impacts of the covered activities are described below.

4.3.3.1 Cultural Resource Impacts

There are no differences in cultural resource impacts between alternative A, discussed in section 4.1.3.1, and alternative C.

4.3.3.2 Land Use Impacts

Land use under alternative C are similar to those under alternative A. Refer to section 4.1.3.2.

4.3.3.3 Noise Impacts

Noise impacts under alternative C are similar to those under alternative A. Refer to section 4.1.3.3.

The main difference between these two alternatives is that alternative A would have two areas of intensive vegetation management in Queensbury, Warren County, and in the Albany Pine Bush to create large areas of wild blue lupine and nectar species in comparison to alternative C which would require creation of mitigation and enhancement areas in close proximity to any proposed impacts to wild blue lupine.

Thus, there may be some areas of higher noise levels on a localized and limited basis in different areas depending upon the alternative. In alternative A, noise associated with implementing the mitigation and enhancement efforts would be located in the Queensbury, Warren County, and Albany Pine Bush area, whereas for alternative C, the noise impacts associated with mitigation would be located in close proximity to proposed impacts. Vegetative maintenance using power equipment occurs once at a maximum of every 4 to 8 years. Construction activities, land clearing, and earthwork and excavation occur only as needed. Therefore, although there would be short-term negative impacts on noise levels under alternative C, there would be only negligible long-term effects. Except for these differences, there will not be any other differences in vegetative management and associated noise impacts under the two alternatives.

4.3.3.4 Population Growth Impacts

Alternative C would have no impact on population growth. Right-of-way O&M activities would maintain electricity and natural gas supply to the general population in a way that minimizes outages. New electric and gas transmission lines are constructed in response to population and commercial growth. Therefore, alternative C would not impact human population growth.

4.3.3.5 Public Health Hazard Impacts

Public health hazards associated with NG ROWs include electrocution and explosion due to the existence of electric power lines and natural gas pipelines as well as personal injury from equipment. Under alternative C, covered activities would have an overall positive impact on public health hazards in that covered activities would operate and maintain electric power lines and natural gas pipelines in the safest manner possible to minimize the potential for hazardous conditions. Although NG personnel may use equipment during covered activities that may result in personal injury if not used properly, NG has existing policies and maintenance practices in effect, including an extensive safety program, to minimize these hazards. Therefore, there is an overall positive impact on public health hazards under alternative C.

4.3.3.6 Impacts on Local Socio-Economic Conditions

Many of the covered activities under alternative C are similar to those currently being conducted by NG. Reconstruction and new construction activities may create new jobs for the duration of the project(s). Therefore, covered activities may have an overall positive impact on socio-economic conditions under alternative C.

4.3.3.7 Traffic Impacts

Many of the covered activities (especially O&M activities) currently being conducted in ROWs will continue at the same rate as activities under alternative C. During reconstruction and new construction activities, short-term negative traffic impacts will be created as worker and construction vehicles will increase for the duration of these projects. However, construction and new construction projects are undertaken only when needed. The projects are not long-term construction projects and do not involve large numbers of construction or worker vehicles. Typically, new construction projects involve 6 to 12 pieces of construction equipment and approximately the same number of workers (Sherman 2011). Therefore, alternative C will have no long-term negative impacts on traffic.

4.4 Environmental Justice

All Federal agencies are required to assess the impacts of Federal actions with respect to environmental justice. Environmental justice is achieved when everyone, regardless of race, culture, or income, enjoys the same degree of protection from environmental and health hazards and equal access to a healthy environment to live, work, and play. None of the alternatives would have any environmental or socio-economic impacts on women, minority, ethnic, religious, or social groups, or the civil rights of any citizen of the United States. Potentially affected Native American Tribes will be consulted under Secretarial Order 3206. The only environmental health risk inherent in any of the alternatives is the negligible effect of pollen and dust generated from the alternatives; no prime farmland or rangeland would be adversely impacted.

4.5 Cumulative Impacts

Cumulative impacts are considered from a historical and contemporary perspective. Historical cumulative impacts occurred prior to implementation of the activities outlined under this EA, whereas contemporary cumulative impacts include additional impacts that could result from the implementation of these alternatives.

4.5.1 Historical Cumulative Impacts

Early successional pine barrens and oak savannah communities have experienced significant degradation, loss, and fragmentation since European settlement of the covered lands. The sandy soils typical of these habitats are well suited for human development. The Interstate 87 corridor between Albany and Warren Counties is anticipated to be subject to continued development pressure. Additionally, fire suppression in developed areas also helps the progression to taller trees and shrubs. These conditions have led to the decline and isolation of remaining KBB and FE populations.

4.5.2 Contemporary Cumulative Impacts

Right-of-way covered activities under alternatives A and C would tend to counter the ongoing cumulative impacts of vegetative succession that are being accelerated by development of the pine barrens. For the majority of ROW covered activities, impacts would be temporary and carefully contained by HCP guidelines to minimize the adverse effects to KBB and FE. In instances where ROW covered activities disturb KBB and FE habitat, mitigation and/or restoration measures would be taken in a timely manner to restore the habitat. Therefore, alternatives A and C would be expected to provide negligible or no overall contribution to adverse cumulative impacts on KBB and FE habitat. Similarly, there would be negligible cumulative impacts on other physical, biological, and social aspects.

In contrast, alternative B would allow the cumulative impacts of vegetative succession that would naturally eliminate KBB and FE habitat as the habitat progressed from an early successional to closed canopy vegetative community. Additionally, alternative B would allow deterioration of the power and natural gas lines as equipment deteriorated and vegetation interfered with power equipment, ultimately causing power outages and public hazards of electrocution and explosion. Therefore, alternative B would negatively affect KBB and FE habitat and social aspects. There would be negligible cumulative impacts on other physical aspects of the environment.

Alternative A would offer the greatest potential for collaboration among owners of occupied KBB and FE habitat. It would, therefore, result in improved coordination in efforts to conserve KBB and FE populations within the conservation areas and would allow for better tracking of KBB and FE populations. It would also maximize exposure to conservation issues related to KBB and FE because a large number of agencies/private companies would be working together. This exposure would be expected to provide more protection for the KBB and FE, more information on KBB and FE distribution, and more opportunities for pro-active management.

Alternative C would also allow for mitigation/restoration within the NG ROWs. This would promote the establishment and maintenance of wild blue lupine habitats outside the Priority Conservation Areas (e.g., within the Albany Pine Bush and Queensbury viable KBB and FE population areas) and create the potential for new KBB and FE habitats along the ROWs. By establishing new habitats, KBB can establish new populations over a larger area and become more resistant to a catastrophic impact (e.g., disease). Alternative C may be easier and quicker to implement since NG would not be coordinating with other non-governmental organizations (e.g., The Nature Conservancy), private land developers, or private landowners for agreements or to implement mitigation/restoration. However, because the restoration of habitat is not taking place in areas of high KBB and FE colonization potential, the probability that these new habitats will become populated is low.

5.0 CONSULTATION/COORDINATION WITH THE PUBLIC AND OTHERS

During the preparation of the EA, consultation and coordination occurred among the NYSDEC, the Service's New York Field Office, Service's Northeast Regional Office, the Northeast Regional Office of the Solicitor, and NG and their consultants. A Notice of Availability for the draft EA and receipt of an ITP application and HCP was published in the *Federal Register* on October 19, 2011. Intra-Service consultation pursuant to section 7 of the ESA has been completed.

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