

A. INTRODUCTION

This chapter describes natural resources that could be affected by the Direct Route Alternative transmission line and expansion of the Bridgehampton Substation, including wetlands, terrestrial flora and fauna, and federal and state endangered, threatened, or special concern species.

The Direct Route Alternative would be situated in primarily agricultural and residential areas. Four potential line configurations are being considered for this alternative, including all overhead, all underground, overhead in residential areas and underground in agricultural areas, and overhead in agricultural areas and underground in residential areas. The impact analysis considered the configuration (overhead or underground) that would likely have the greatest impact on the particular resource, such as underground for wetlands or overhead for avian resources.

A field investigation of the Direct Route Alternative corridor was conducted to characterize terrestrial habitats, and to identify common, rare, and environmentally sensitive species and communities within the area that could be affected by construction, installation, and maintenance within the Direct Route Alternative corridor (i.e., the right-of-way and 50 feet on either side). As the Bridgehampton Substation would be expanded, a survey and wetland delineation was conducted to describe conditions at the site.

The purpose of this chapter is to:

- Describe the regulatory programs that protect floodplains, wetlands, wildlife, threatened or endangered species, and other natural resources that may apply to the Direct Route Alternative transmission line and the expansion of the Bridgehampton Substation;
- Describe the current condition of natural resources, such as wetlands and terrestrial plants, wildlife, and threatened or endangered species within and adjacent to the Direct Route Alternative corridor and the expansion of the Bridgehampton Substation;
- Based on information from LIPA on installation and maintenance of the proposed transmission line, assess the probable impacts on floodplains, water quality, and terrestrial natural resources from the Direct Route Alternative transmission line and the expansion of the Bridgehampton Substation.

B. BACKGROUND AND SURVEY METHODS

STUDY AREA

The Direct Route Alternative transmission line would follow a northeasterly route from the Southampton Substation to the Bridgehampton Substation, as noted in Figure 1-3, along the following path: LIRR right-of-way, David Whites Lane, Seven Ponds Road, Lower Seven Ponds Road, Head of Pond Road, Scuttle Hole Road, and Bridgehampton Sag Harbor Turnpike. The

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transmission line would follow the route of the existing distribution line within the public right-of-way, which currently runs underground and along wood overhead poles (~250 poles), and alternate between the north and south side of the road. The natural resources survey study area included the right-of-way and 25 feet on either side of the existing or proposed transmission line route (referred to hereafter as the 'corridor'), and adjacent wetland areas noted from previous state or federal mapping or during field surveys.

REGULATORY CONTEXT

FEDERAL

Coastal Zone Management Act of 1972 (16 USC §§1451 to 1465)

The Coastal Zone Management Act of 1972 established a voluntary participation program to encourage coastal states to develop programs to manage development within the State's designated coastal areas to reduce conflicts between coastal development and protection of resources within the coastal area. The New York State program is discussed below.

Endangered Species Act of 1973 (16 USC §§1531 to 1544)

The Endangered Species Act of 1973 recognizes that endangered species of wildlife and plants are of aesthetic, ecological, educational, historical, recreational, and scientific value to the nation and its people. The Act prohibits the importation, exportation, taking, possession, and other activities involving illegally taken species covered under the Act, and interstate or foreign commercial activities. The Act also provides for the protection of critical habitats on which endangered or threatened species depend for survival.

NEW YORK STATE

Waterfront Revitalization of Coastal Areas and Inland Waterways Act (Sections 910-921, Executive Law, Implementing Regulations 6 NYCRR Part 600 et seq.)

Under the Waterfront Revitalization of Coastal Areas and Inland Waterways Act, the New York State Department of State (NYS DOS) is responsible for administering the Coastal Management Program (CMP). The Act also authorizes the State to encourage local governments to adopt Waterfront Revitalization Programs (WRP) that incorporate the State's policies. The Act meets the requirements of the federal Coastal Zone Management Act of 1972.

Floodplain Management Criteria for State Projects (6 NYCRR Part 502)

Under 6 NYCRR Part 502, all State agencies are to ensure that the use of State lands and the siting, construction, administration, and disposition of State-owned and State-financed projects involving any change to improved or unimproved real estate are conducted in ways that would minimize flood hazards and losses. Projects are to consider alternative sites on which the project could be located outside the 100-year floodplain. Projects to be located within the floodplain are to be designed and constructed consistent with the need to minimize flood damage within the 100-year floodplain and include adequate drainage to reduce exposure to flood hazards. All public utilities and facilities associated with the project are to be located and constructed to minimize or eliminate flood damage. No project may be undertaken unless the cumulative effect of the Direct Route Alternative and existing developments would not cause material flood damage to the existing developments.

Endangered and Threatened Species of Fish and Wildlife; Species of Special Concern (ECL, Sections 11-0535[1]-[2], 11-0536[2], [4], Implementing Regulations at 6 NYCRR Part 182)

The Endangered and Threatened Species of Fish and Wildlife; Species of Special Concern regulations prohibit the taking, import, transport, possession, or selling of any endangered or threatened species of fish or wildlife, or any hide, or other part of these species as listed in 6 NYCRR §182.6.

Freshwater Wetlands (Article 24 of ECL)

Freshwater wetlands mapped by the New York State Department of Environmental Conservation (NYSDEC) are regulated at the State level. Disturbance to the wetlands themselves or the adjacent area (generally the area 100 feet from a wetland) require a permit from the NYSDEC.

Tidal Wetlands (Article 25 of the ECL)

Tidal wetlands are regulated by the NYSDEC. Disturbance to tidal wetlands or the adjacent area (generally the area extending 300 feet from the boundary of tidal wetlands, subject to certain exceptions) requires a permit from the NYSDEC.

SOUTHAMPTON

LIPA, as a state public authority, serves an essential governmental function, and is not obligated to seek local approvals for the Direct Route Alternative. Therefore, the Direct Route Alternative would not be subject to local approvals. Nevertheless, a discussion of local natural resources laws and policies is provided to assess the project's compliance with the intent of the Town of Southampton and Village of Southampton natural resources goals.

Code of the Town of Southampton (Chapters 325 and 325A)

Wetlands (freshwater, brackish, and tidal) are protected pursuant to Chapters 325 and 325A of the *Code of the Town of Southampton*. The Town Board's policy (i.e., to achieve no net loss of existing wetlands and to restore/create wetlands where appropriate) is regulated by a permit process for activities in wetland areas or within 200 feet of a wetland boundary. Permits are sought from the Conservation Board or Planning Board, depending on the type of application.

Code of the Village of Southampton (Chapter 116, "Zoning," Article IIIA, "Wetlands")

The Village requires that a wetland permit be obtained for regulated activity within a wetland or a regulated area, including placing or depositing debris, fill, sand, gravel or other material within 150 feet of any boundary of any wetland; clearing, digging, or dredging within 150 feet of any wetland boundary; construction or reconstruction of a structure within 150 feet of any wetland boundary. The Village Zoning Board of Appeals is the regulatory authority with respect to wetland protection.

METHODOLOGY

This section presents the methodology used to describe existing natural resources within the project area under existing and future conditions, and to assess potential impacts to these resources from the Direct Route Alternative transmission line. For terrestrial resources and floodplains, the study area was 50 feet on either side of the right-of-way, due to the highly developed nature of surrounding land uses and the limited corridor in which construction and

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maintenance would occur. An exception was made for the identification of endangered, threatened, and special concern species, which were evaluated based on information from State and federal agencies for a distance up to ½ mile from the project area.

The analysis of potential impacts to natural resources from the Direct Route Alternative considered the potential effects for direct habitat loss, wetland loss, modification of surface water and groundwater patterns, and temporary or permanent disruption of wildlife habitats or migration patterns from the installation of transmission line poles or trenching for buried transmission lines within the project footprint.

Existing conditions for wetlands and terrestrial natural resources within the vicinity of the Direct Route Alternative transmission line were summarized from the following sources:

- Observations made during site surveys in August 2007;
- Existing information identified in literature and obtained from governmental and non-governmental agencies and organizations, including the Town of Southampton Draft Critical Wildlands and Groundwater Protection Plan, New York State Department of Environmental Conservation Breeding Bird Atlas, the National Audubon Society's Christmas Bird Count, NYSDEC Herp Atlas, and local sources; and
- Information (see Appendix B) on rare, threatened or endangered species in the vicinity of the project area from the New York Natural Heritage Program (NYNHP). Additional information on the presence of federally listed species in Suffolk County was obtained from the U.S. Fish and Wildlife Service (USFWS). Information on threatened or endangered marine wildlife, Fish and Wildlife Coordination Act species, and area designated as Essential Fish Habitat (EFH) was obtained from the National Marine Fisheries Service (NMFS).

WETLANDS

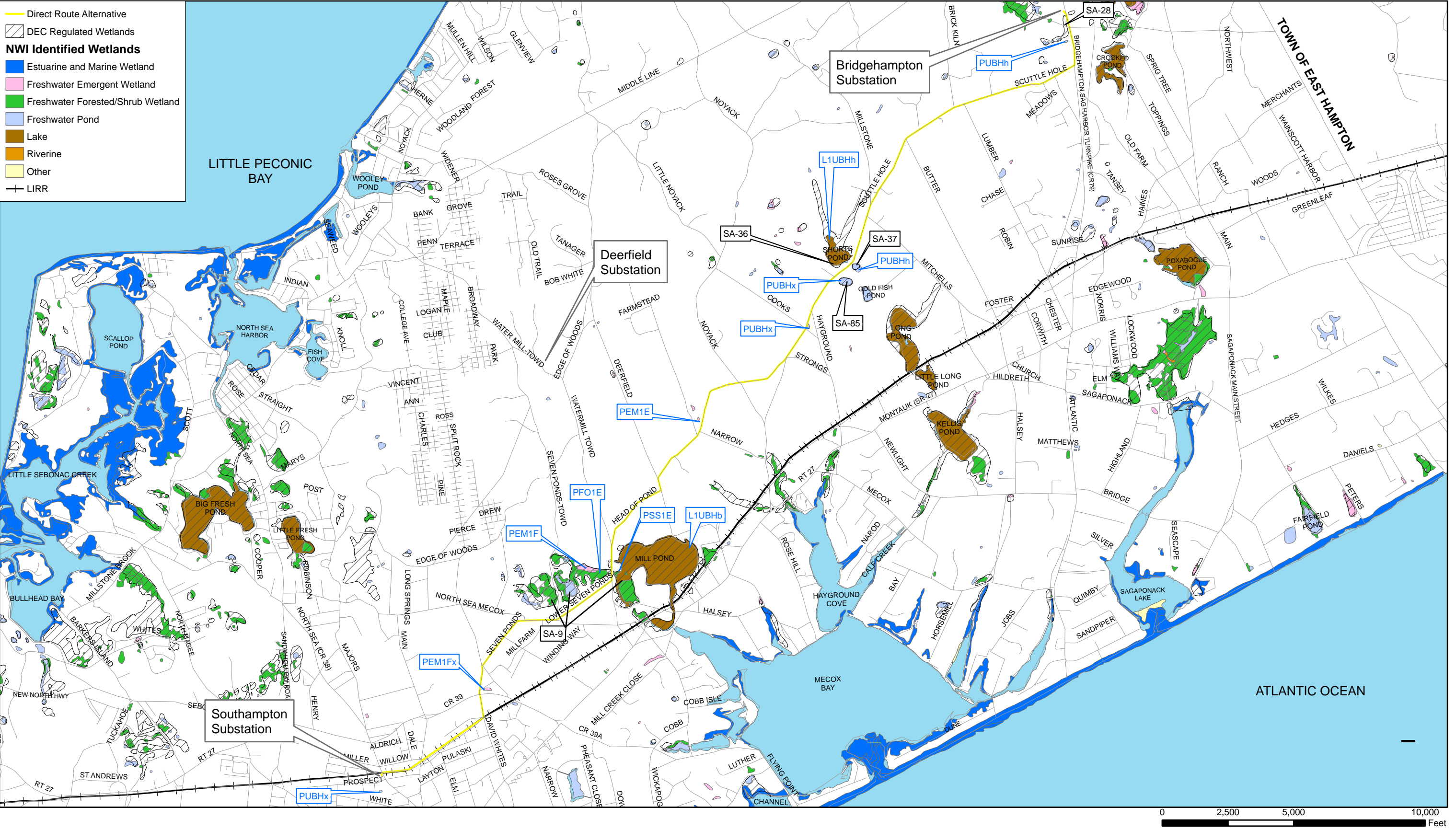
Prior to conducting field investigations, the area encompassing all alternative routes was evaluated for mapped freshwater and tidal wetlands, including data on NYSDEC designated wetlands and USFWS National Wetlands Inventory (NWI) mapped wetlands (Figure 9-1). NWI is a wetland mapping effort by USFWS. During each onsite survey, the presence of wetlands within the proposed route corridor and nearby areas was verified by visually inspecting the area for the presence of hydrophytic vegetation and wetland hydrology. If wetlands were found to exist below the existing overhead power lines, within the corridor, or suspected of providing critical habitat for rare species, they were further investigated as potentially sensitive ecological areas. Field verification of wetland areas occurred for all four proposed transmission line routes from 15-17, 23-25, and 30 August 2007.

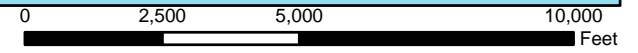
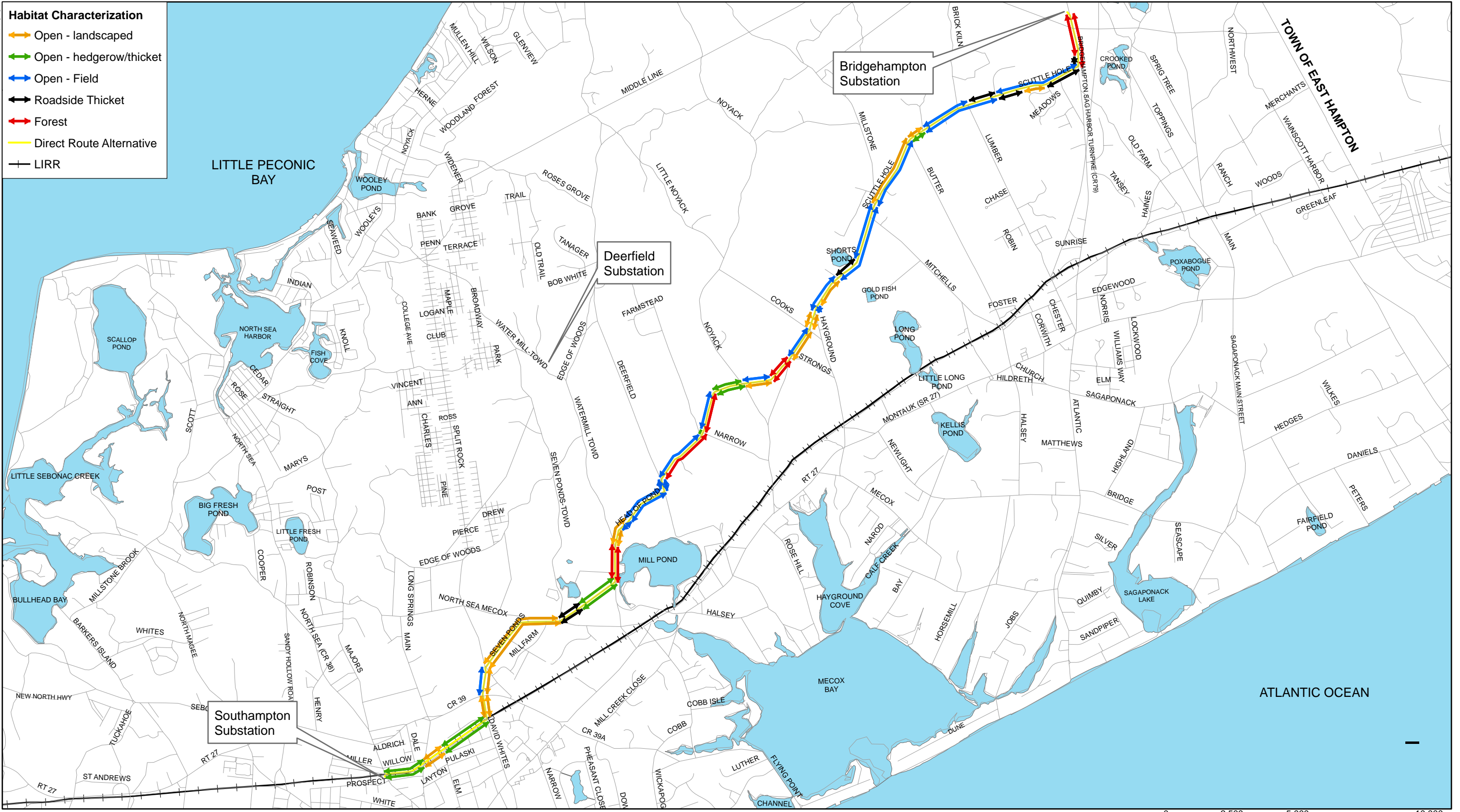
The footprint of the proposed Bridgehampton Substation expansion at the eastern end of the proposed transmission line at Bridgehampton Sag Harbor Turnpike was investigated and delineated in accordance with the 1987 Corps of Engineers Wetlands Delineation Manual (TR Y-87-1) and Town of Southampton Wetland Regulations (Town Code Chapter 325).

TERRESTRIAL FLORA AND FAUNA

Terrestrial flora and fauna were described along each of the four proposed route corridors (i.e., the right-of-way and 50 feet on either side) during field surveys on 15-17, 23-25, and 30 August 2007 (Figure 9-2). The Bridgehampton and Southampton Substations were also surveyed, including the area within and adjacent to the footprint of the proposed expansion of the

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Bridgehampton Substation. Observations were recorded in written field notes and photographs linked to each proposed alternative transmission line route. Most surveys were conducted between 8:00 AM and 6:00 PM to detect wildlife; search efforts for certain taxa were concentrated at times of peak activity (i.e., morning and evening for bird feeding activity, etc.).

Field surveys for each route were conducted by a two- to three-person team, working either individually or collectively. All proposed route corridors were surveyed on foot. Shared sections of the four proposed routes were surveyed once, including the LIRR east from Southampton Substation to Southampton Public Works lot, Bridgehampton Sag Harbor Turnpike north from the LIRR crossing to Scuttle Hole Road, and Bridgehampton Sag Harbor Turnpike north from Scuttle Hole Road to Bridgehampton Substation.

Surveys were conducted by walking the length of each proposed alternative route, and noting species of flora and fauna present within the corridor. Surveys concentrated on characterizing dominant species/communities within the Direct Route Alternative corridor, and noting rare or protected species/communities mentioned by the NYNHP and *Town of Southampton Draft Critical Wildlands and Groundwater Protection Plan* (AKRF 2003) when possible. These natural community types are listed in Figure 9-3.

Bird species were noted by sight (via 10 x 42 binoculars) and vocalization, and identified to species. Mammal presence was described based on direct encounters and observation of tracks and scat, and identified to species whenever possible. For reptiles and amphibians, surveys involved turning over existing debris (i.e., plywood boards, timber, logs, plastic and metal debris, etc.). Insect observations were documented opportunistically, with a concentration on identifying the lowest taxonomic order.

The following reference manuals and field guides were used for identification of flora and fauna: vegetation and plant communities (Peterson and McKenny 1968, Newcomb 1977, Clemants and Gracie 2006, Britton and Brown 1913, Petrides 1972, Brown 1979, Knobel 1980, Harrington 1977, Barnard 2002, Dirr 1983), birds (Dunn and Alderfer 2006, Rising and Beadle 1996), mammals (Reid 2006), reptiles and amphibians (Conant et al. 1998), and insects (Milne and Milne 1980, Swan and Papp 1972). Additional print and web resources (i.e., USDA Plant data base, Birds of North America database) and State breeding atlases for birds, reptiles, and amphibians were used to interpret and summarize species occurrence data collected in the field.

ENDANGERED, THREATENED, SPECIAL CONCERN AND RARE SPECIES

NYNHP, a joint venture of the NYSDEC and The Nature Conservancy since 1985, maintains an ongoing, systematic, scientific inventory on rare plants and animals native to New York State. The NYNHP database is updated continuously to incorporate new records and changes in the status of rare plants or animals. The NYNHP was contacted and a list of past occurrences of listed plant and animal species was provided for the four project alternatives.

In addition to the State program, the USFWS maintains information for federally listed threatened or endangered freshwater and terrestrial plants and animals. The USFWS maintains a web-based list of federally threatened and endangered species for Suffolk County, and also noted that the NYNHP would provide detailed, site specific information on listed species within the project site (Steven Sinkevitch, USFWS, phone conversation on 20 September 2007).

NMFS provides information for federally listed threatened or endangered marine organisms, essential fish habitat, and species covered by the Fish and Wildlife Coordination Act. A request

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for information letter was sent to NMFS for their perspective on the potential impacts of this project on marine and estuarine organisms and critical habitats.

Based on information received from the above agencies, the survey teams conducted opportunistic searches for species and communities during field observations.

C. EXISTING CONDITIONS

TERRESTRIAL RESOURCES

The Direct Route Alternative corridor consists predominantly of maintained, residential-type habitats (open-ornamental, open-hedgerow/thicket) and agricultural habitats (open field). With the exception of the Bridgehampton Sag Harbor Turnpike section, the majority of the route was not forested, although it is lined along much of the corridor with mature landscaped trees (i.e., Sycamore Maple, Norway Maple, etc.), which offer minimal cover or food for wildlife but do have aesthetic and shading value discussed elsewhere in this report.

In terms of specific flora within the Direct Route Alternative corridor, the survey team identified 3 ferns, 79 forbs/herbs, 25 grasses, 35 shrubs, 48 trees, and 16 vines. Table 9-1 presents a list of all vegetation identified within the Direct Route Alternative.

Table 9-1
Flora Noted Identified within the Direct Route Alternative, 2007

Growth Habit	Scientific Name	Common
Fern	<i>Dennstaedtia punctilobula</i>	hay scented fern
Fern	<i>Pteridium gleditsch</i>	bracken fern
Fern	<i>Thelypteris noveboracensis</i>	New York fern
Forb/Herb	<i>Achillea millefolium</i>	yarrow
Forb/Herb	<i>Alliaria officinalis</i>	garlic mustard
Forb/Herb	<i>Amaranthus retroflexus</i>	green amaranth
Forb/Herb	<i>Ambrosia artemisiifolia</i>	Common ragweed
Forb/Herb	<i>Ambrosia vulgaris</i>	mugwort
Forb/herb	<i>Anthemis cotula</i>	mayweed
Forb/Herb	<i>Apocynum cannabinum</i>	hemp dogbane
Forb/Herb	<i>Apocynum sp.</i>	dogbane
Forb/Herb	<i>Arctium sp.</i>	burdock sp.
Forb/Herb	<i>Arisaema triphyllum</i>	jack-in-the-pulpit
Forb/Herb	<i>Asclepias syriaca</i>	common milkweed
Forb/Herb	<i>Asclepias tuberosa</i>	butterfly weed
Forb/Herb	<i>Aster sp.</i>	aster sp.
Forb/Herb	<i>Bidens connata</i>	swamp beggar's tick
Forb/Herb	<i>Bidens frondosa</i>	beggars ticks
Forb/Herb	<i>Brassica nigra</i>	black mustard
Forb/Herb	<i>Carum carvi</i>	caraway
Forb/Herb	<i>Cassia fasciculata</i>	partridge pea
Forb/Herb	<i>Centaurea maculosa</i>	spotted knapweed
Forb/Herb	<i>Centaurea nigra</i>	black knapweed
Forb/Herb	<i>Centaurea sp.</i>	knapweed sp.
Forb/Herb	<i>Chenopodium album</i>	lamb's quarters
Forb/Herb	<i>Cichorium intybus</i>	chickory
Forb/Herb	<i>Cirsium arvense</i>	canada thistle

Table 9-1 (cont'd)

Flora Noted Identified within the Direct Route Alternative, 2007

Growth Habit	Scientific Name	Common
Forb/Herb	<i>Cirsium vulgare</i>	bull thistle
Forb/Herb	<i>Commelina communis</i>	Asiatic dayflower
Forb/Herb	<i>Cuscuta gronovii</i>	common dodder
Forb/Herb	<i>Datura stramonium</i>	jimsonweed
Forb/Herb	<i>Daucus carota</i>	Queen Anne's lace
Forb/Herb	<i>Erigeron annuus</i>	daisy fleabane
Forb/Herb	<i>Erigeron canadensis</i>	horseweed
Forb/Herb	<i>Eupatorium dubium</i>	eastern joe-pye weed
Forb/Herb	<i>Eupatorium hyssopifolium</i>	hyssop-leaved boneset
Forb/Herb	<i>Eupatorium perfoliatum</i>	common boneset
Forb/Herb	<i>Eurybia divaricata</i>	white wood aster
Forb/Herb	<i>Galium asprellum</i>	rough bedstraw
Forb/Herb	<i>Gerardia pedicularia</i>	fern-leaved false foxglove
Forb/Herb	<i>Helianthus annuus</i>	common sunflower
Forb/Herb	<i>Impatiens capensis</i>	jewelweed
Forb/Herb	<i>Ipomoea coccinea</i>	small red morning glory
Forb/Herb	<i>Lactuca canadensis</i>	wild lettuce
Forb/Herb	<i>Leontodon autumnalis</i>	fall dandelion
Forb/Herb	<i>Leonurus cardiaca</i>	motherwort
Forb/Herb	<i>Lepidium campestre</i>	field peppergrass
Forb/Herb	<i>Lespedeza capitata</i>	round-headed bush-clover
Forb/Herb	<i>Lespedeza sp.</i>	bush-clover
Forb/Herb	<i>Linaria vulgaris</i>	butter and eggs
Forb/Herb	<i>Lotus corniculatus</i>	birdfoot trefoil
Forb/Herb	<i>Oenothera biennis</i>	common evening primrose
Forb/Herb	<i>Oxalis europea</i>	yellow wood sorrel
Forb/Herb	<i>Oxalis grandis</i>	wood sorrel
Forb/Herb	<i>Phytolacca americana</i>	pokeweed
Forb/Herb	<i>Plantago lanceolata</i>	English plantain
Forb/Herb	<i>Plantago major</i>	common plantain
Forb/Herb	<i>Polygonum cuspidatum</i>	japanese knotweed
Forb/Herb	<i>Polygonum hydropiperoides</i>	mild water pepper
Forb/Herb	<i>Polygonum lapathifolium</i>	nodding smartweed
Forb/Herb	<i>Polygonum persicaria</i>	lady's thumb
Forb/Herb	<i>Portulaca oleracea</i>	common purslane
Forb/Herb	<i>Potentilla simplex</i>	common cinquefoil
Forb/Herb	<i>Pseudognaphalium obtusifolium</i>	sweet everlasting
Forb/Herb	<i>Rumex obtusifolius</i>	bitter dock
Forb/Herb	<i>Saponaria officinalis</i>	bouncing bet
Forb/Herb	<i>Silene latifolia</i>	white campion
Forb/Herb	<i>Smilax rotundifolia</i>	common greenbriar
Forb/Herb	<i>Solanum carolinense</i>	horsenettle
Forb/Herb	<i>Solanum dulcamara</i>	bitter nightshade
Forb/Herb	<i>Solanum nigrum</i>	black nightshade
Forb/Herb	<i>Solidago altissima</i>	tall goldenrod
Forb/Herb	<i>Solidago canadensis</i>	Canada goldenrod
Forb/Herb	<i>Solidago gigantea</i>	late goldenrod
Forb/Herb	<i>Solidago sp.</i>	goldenrod sp.
Forb/Herb	<i>Solidago tenuifolia</i>	slender-leaved goldenrod
Forb/Herb	<i>Sonchus oleraceus</i>	common sow-thistle
Forb/Herb	<i>Taraxacum officinale</i>	common dandelion

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**Table 9-1 (cont'd)
Flora Noted Identified within the Direct Route Alternative, 2007**

Growth Habit	Scientific Name	Common
Forb/Herb	<i>Trifolium pratense</i>	red clover
Forb/Herb	<i>Trifolium repens</i>	white clover
Forb/Herb	<i>Verbascum thapsus</i>	common mullein
Forb/Herb	<i>Vicia crecca</i>	cow vetch
Graminoid	<i>Agropyron repens</i>	quack grass
Graminoid	<i>Agrostis alba</i>	purple top grass
Graminoid	<i>Agrostis stolonifera</i>	redtop
Graminoid	<i>Andropogon virginicus</i>	broom sedge
Graminoid	<i>Carex crinita</i>	fringed sedge
Graminoid	<i>Carex lurida</i>	shallow sedge
Graminoid	<i>Dactylis glomerata</i>	orchard grass
Graminoid	<i>Dichanthelium clandestinum</i>	deer tongue
Graminoid	<i>Digitaria sanguinalis</i>	crab grass
Graminoid	<i>Echinochloa crusgalli</i>	barnyard grass
Graminoid	<i>Eragrostis spectabilis</i>	purple lovegrass
Graminoid	<i>Festuca elatior</i>	measo fescue
Graminoid	<i>Festuca rubra</i>	red fescue
Graminoid	<i>Hordeum vulgare</i>	barley
Graminoid	<i>Lolium sp.</i>	ryegrass
Graminoid	<i>Panicum sp.</i>	switchgrass
Graminoid	<i>Phalaris arundinacea</i>	reed canary grass
Graminoid	<i>Phleum pratense</i>	timothy grass
Graminoid	<i>Phragmites australis</i>	common reed
Graminoid	<i>Phyllostachys aureosulcata</i>	phyllostachys bamboo
Graminoid	<i>Schizachyrium scoparium</i>	little bluestem grass
Graminoid	<i>Scirpus cyperinus</i>	wool grass
Graminoid	<i>Seteria magna</i>	giant foxtail
Graminoid	<i>Triodia flava</i>	purple top grass
Graminoid	<i>Zea mays</i>	corn
Shrub	<i>Amalanchier arborea</i>	juneberry
Shrub	<i>Amalanchier laevis</i>	smooth juneberry
Shrub	<i>Berberis thunbergii</i>	Japanese barberry
Shrub	<i>Clethra alnifolia</i>	sweet pepperbush
Shrub	<i>Comptonia peregrina</i>	sweet fern
Shrub	<i>Cornus sp.</i>	dogwood
Shrub	<i>Diervilla lonicera</i>	Northern bush honeysuckle
Shrub	<i>Elaeagnus umbellata</i>	autumn olive
Shrub	<i>Euonymus atropurpureus</i>	burning bush
Shrub	<i>Gaylussacia baccata</i>	black huckleberry
Shrub	<i>Hibiscus sp.</i>	hibiscus
Shrub	<i>Hybiscus syriacus</i>	rose of sharon
Shrub	<i>Hydrangea sp.</i>	hydrangea
Shrub	<i>Ilex crenata</i>	Japanese holly
Shrub	<i>Ilex verticillata</i>	winterberry
Shrub	<i>Juniperus communis</i>	dwarf juniper
Shrub	<i>Kalmia latifolia</i>	mountain laurel
Shrub	<i>Ligustrum ovalifolium</i>	California privet
Shrub	<i>Ligustrum sp.</i>	privet
Shrub	<i>Lindera benzoin</i>	spicebush
Shrub	<i>Lonicera morrowi</i>	morrow honeysuckle

Table 9-1 (cont'd)
Flora Noted Identified within the Direct Route Alternative, 2007

Growth Habit	Scientific Name	Common
Shrub	<i>Morella pennsylvanica</i>	bayberry
Shrub	<i>Pyrus sp.</i>	chokeberry
Shrub	<i>Rhamnus frangula</i>	European buckthorn
Shrub	<i>Rosa multiflora</i>	multiflora rose
Shrub	<i>Rosa rugosa</i>	rugose rose
Shrub	<i>Rubus allegheniensis</i>	Allegheny blackberry
Shrub	<i>Rubus idaeus</i>	wild red raspberry
Shrub	<i>Rubus occidentalis</i>	black raspberry
Shrub	<i>Rubus phoenicolasius</i>	wineberry
Shrub	<i>Syringa vulgaris</i>	common lilac
Shrub	<i>Vaccinium corybosum</i>	common highbush blueberry
Shrub	<i>Vaccinium palladium</i>	early lowbush blueberry
Shrub	<i>Viburnum dentatum</i>	arrowwood
Shrub/Tree	<i>Taxus canadensis</i>	yew
Tree	<i>Acer negundo</i>	box elder
Tree	<i>Acer platanoides</i>	Norway maple
Tree	<i>Acer pseudo-platanus</i>	sycamore maple
Tree	<i>Acer rubrum</i>	red maple
Tree	<i>Acer saccharinum</i>	silver maple
Tree	<i>Aesculus hippocastanum</i>	horse chestnut
Tree	<i>Ailanthus altissima</i>	tree-of-heaven
Tree	<i>Betula populifolia</i>	gray birch
Tree	<i>Betula sp.</i>	birch sp.
Tree	<i>Carya cordiformis</i>	pignut hickory
Tree	<i>Carya ovata</i>	shagbark hickory
Tree	<i>Carya tomentosa</i>	mockernut hickory
Tree	<i>Catalpa bignonioides</i>	common catalpa
Tree	<i>Chamaecyparis sp.</i>	ornamental false cypress
Tree	<i>Cornus florida</i>	flowering dogwood
Tree	<i>Fagus grandifolia</i>	American beech
Tree	<i>Fagus sp.</i>	beech sp.
Tree	<i>Fagus sylvatica</i>	European beech
Tree	<i>Juglans nigra</i>	black walnut
Tree	<i>Juniperus virginiana</i>	Eastern red cedar
Tree	<i>Liquidambar styraciflua</i>	sweet gum
Tree	<i>Morus alba</i>	white mulberry
Tree	<i>Nyssa sylvatica</i>	black gum
Tree	<i>Picea abies</i>	Norway spruce
Tree	<i>Picea glauca</i>	white spruce
Tree	<i>Pinus rigida</i>	pitch pine
Tree	<i>Pinus strobus</i>	Eastern white pine
Tree	<i>Pinus thunbergii</i>	Japanese black pine
Tree	<i>Platanus x acerifolia</i>	London planetree
Tree	<i>Prunus avium L.</i>	sweet cherry
Tree	<i>Prunus serotina</i>	black cherry
Tree	<i>Prunus sp.</i>	cherry (ornamental)
Tree	<i>Pyrus calleryana</i>	Callery pear
Tree	<i>Pyrus communis</i>	domestic pear
Tree	<i>Pyrus coronaria</i>	crab apple
Tree	<i>Quercus alba</i>	white oak
Tree	<i>Quercus coccinea</i>	scarlet oak

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Table 9-1 (cont'd)
Flora Noted Identified within the Direct Route Alternative, 2007

Growth Habit	Scientific Name	Common
Tree	<i>Quercus montana</i>	chestnut oak
Tree	<i>Quercus nigra</i>	black oak
Tree	<i>Quercus palustris</i>	pin oak
Tree	<i>Quercus stellata</i>	post oak
Tree	<i>Rhus copallina</i>	winged sumac
Tree	<i>Rhus glabra</i>	smooth sumac
Tree	<i>Robinia pseudo-acacia</i>	black locust
Tree	<i>Salix babylonica</i>	weeping willow
Tree	<i>Sassafras albidum</i>	sassafras
Tree	<i>Thuja occidentalis</i>	arborvitae
Tree	<i>Tsuga canadensis</i>	Eastern hemlock
Vine	<i>Ampelopsis brevipedunculata</i>	porcelain berry
Vine	<i>Aralia nudicaulis</i>	wild sarsaparilla
Vine	<i>Campsis radicans</i>	trumpet creeper
Vine	<i>Celastrus orbiculatus</i>	Asiatic bittersweet
Vine	<i>Convolvulus arvensis</i> L.	field bindweed
Vine	<i>Lonicera japonica</i>	Japanese honeysuckle
Vine	<i>Parthenocissus quinquefolia</i>	Virginia creeper
Vine	<i>Rhus radicans</i>	poison ivy
Vine	<i>Rubus flagellaris</i>	dew berry
Vine	<i>Vinca minor</i>	common periwinkle
Vine	<i>Vitis aestivalis</i>	summer grape
Vine	<i>Vitis labrusca</i>	fox grape
Vine	<i>Vitis palmata</i>	cat grape
Vine	<i>Vitis vulpina</i>	frost grape
Vine	<i>Wisteria sinensis</i>	Chinese wisteria
Vine	<i>Wisteria</i> sp.	wisteria sp.
Note:	This list represents flora observed within the Direct Route Alternative during field surveys in August 2007.	
Source:	AKRF field surveys, August 2007	

The Direct Route Alternative corridor was dominated in the overstory by scarlet, red, and white oaks in forested sections; and sycamore maple, London plane, and early successional species such as black cherry within landscaped and scrub-shrub thickets along roadsides. In the understory, introduced shrubs, vines, and forbs dominated roadside areas. Several areas along the corridor, representing a minority of the overall study area, exhibited a pine-oak forest overstory and an understory typical of such communities in eastern Long island (i.e., highbush blueberry, sweet fern, black huckleberry). Non-agricultural fields were characterized by a mix of introduced (i.e., common reed) and native (i.e., switchgrass, orchard grass) grasses.

In order to map the spatial occurrence of the general vegetative cover types that occur within the Direct Route Alternative and surrounding area, six cover-type designations were identified. These are shown in Figure 9-2, and are described as follows:

Open – landscaped: Landscaped vegetation and lawns within/adjacent to the right-of-way of the proposed transmission line route. Individually planted trees, from saplings to mature trees, are also consistent with this classification.

Open – hedgerow/thicket: Hedges and multispecies thickets, potentially in conjunction with limited (< 50 ft) open/mowed lawns within/adjacent to the proposed transmission line corridor.

Open – field: Open areas characterized by grasses, including expanses (> 50 ft) of mowed lawn, agricultural fields, and vacant lot dominated by grasses within/adjacent to the proposed transmission line corridor.

Old Field-Early Successional Shrubland: This cover type is generally limited to the areas beneath the Existing Line Alternative which are cleared periodically and kept in an early successional stage of forest stand development, dominated by grasses, forbs and shrubs.

Roadside thicket: Areas that are primarily scrub/shrub habitat containing early successional species and ornamental escapes within/adjacent to the proposed transmission line corridor.

Forest: Areas containing some overstory/understory differentiation and generally forested beyond (>50 ft) within/adjacent to the proposed transmission line corridor, which are typically dominated by overstory species indigenous to eastern Long Island.

A more detailed account of plant and animal species occurrence along the Direct Route Alternative corridor based on field inspection is provided in the “Location Specific Findings” section of this chapter below.

FLOODPLAINS AND WETLANDS

Figure 11-1 shows inundation zones and predicted hurricane surge impacts within the vicinity of the Direct Route Alternative corridor. In addition, the 100-year floodplain (area with a 1 percent chance of flooding each year) and the 500-year floodplain (area with a 0.2 percent chance of flooding each year) boundaries within the project area are shown on that figure. Figure 5-1 indicates the portions of the Direct Route Alternative corridor that fall within the coastal zone.

Both the USFWS NWI and the NYSDEC note the presence of freshwater wetlands along or adjacent to the Direct Route Alternative corridor, as shown on Figure 9-1. The NWI notes several freshwater palustrine wetlands within the vicinity of the Direct Route Alternative corridor, including those with emergent vegetation that are seasonally (PEM1E) or semipermanently (PEM1F) flooded and/or excavated (PEM1Fx); wetlands with unconsolidated bottoms that are permanently flooded and diked (PUBHh) or excavated (PUBHx); seasonally flooded scrub-shrub wetlands (PSS1E); and seasonally flooded wetlands within broad-leaved deciduous forests (PFO1E). There are also two lacustrine wetlands adjacent to Mill Pond and Shorts Pond that are both classified as permanently flooded, limnetic lakes with an unconsolidated bottom, and modified by beavers (L1UBHb).

NYSDEC maps describe five State-regulated freshwater wetlands within the vicinity of the Direct Route Alternative corridor. These include (from west to east) Seven Ponds and Mill Pond (SA-9) in the western portion of the corridor; Shorts Pond and adjacent wetlands (SA-36&37) within the Atlantic Golf Club; and several wetlands in the vicinity of the proposed Bridgehampton Substation expansion (SA-28).

No NWI or NYSDEC designated estuarine (tidal) wetlands were noted along or directly adjacent to the Direct Route Alternative corridor, although tidal wetlands do occur immediately to the south of the project site, including a periodic connection between Mecox Bay and the Atlantic Ocean via an opening along the sandy beach that connects the two waterbodies. Some estuarine wetlands are noted in the northern reaches of Mecox Bay and into Hayground Cove.

SIGNIFICANT HABITATS AND ECOLOGICAL RESOURCES

NEW YORK STATE CRITICAL ENVIRONMENTAL AREAS (CEA)

Critical Environmental Areas (CEA) are designated under the State Environmental Quality Review Act (SEQRA) as areas of exceptional or unique natural value that have an inherent ecological, geological, or hydrological sensitivity. As shown in Figure 9-4, two CEAs have been designated in the project vicinity—the Long Pond Greenbelt and the South Fork Special Groundwater Protection Area (SGPA).

Long Pond Greenbelt

One of the most important communities adjacent to the Direct Route Alternative corridor is the Long Pond Greenbelt, located east of the Bridgehampton Sag Harbor Turnpike. This area was designated as a CEA by Suffolk County in 1988. The Long Pond Greenbelt is a prominent natural community that provides a concentration of rare plant and wildlife species. This area is defined by such natural communities as coastal plain pond, coastal plain pond shore, coastal plain stream, emergent marsh, vernal pool, red maple-hardwood swamp, shrub swamp, marsh headwater stream, intermittent stream, coastal oak heath, mixed mesophytic forest, and pitch pine-oak forest. The Long Pond Greenbelt encompasses a north-south corridor of interconnected ponds and woodlands stretching from the Village of Sag Harbor south to the Atlantic Ocean shoreline. This chain of high-quality ponds is bordered by wetlands and pine-oak forests hosting some of the highest concentrations of rare species and natural communities known in the State.

Ponds that compose the Greenbelt assemblage include Black Pond (4 acres), Crooked Pond (17 acres), Deer Drink Pond (5 acres), Egans Pond (1 acre), Fore and Aft Pond (1 acre), Lily Pond (5 acres), Long Pond (75 acres), and Little Long Pond (20 acres).

Of the natural areas within the Greenbelt, one of the most valuable include a network of 13 coastal plain pond and pond shore communities. These environments are considered very rare both statewide and globally, and harbor one of the highest concentrations of rare plants and animals in the state.

Specifically, the vegetation zones found in Long Pond Greenbelt include:

- Upper wetlands thicket, which is a pine barrens shrub community;
- Low herbaceous fringe, which is a narrow band of peat substrate just above the water level;
- Sandy exposed bottom, which occurs during periods of low precipitation and is dominated by annual species, some of which are rare;
- Organic exposed bottom, which is more frequently flooded than the sandy zone and has a greater accumulation of organic matter (this zone has a low species diversity); and
- Coastal plain pond, which is regularly inundated and vegetated with emergent and floating species.

Within this network of groundwater fed ponds, a progression of vegetation zones step out from the open water, giving rise to many unusual flora. The plant species located on these shorelines are distinct because they are rare spatially and temporally. They are spatially rare because they occur only at few locations in New York State; and they are temporally rare because they grow only in select years depending on the pond water level.

Exemplary red maple-hardwood swamp forests can also be found in the Greenbelt, some of which merge with the upland shrubby borders of the coastal plain ponds. Also important are the surrounding pitch pine-oak woodland communities, where mountain laurel, azalea, arbutus, and lady slipper orchid flower each spring.

South Fork Special Groundwater Protection Area (SGPA)

SGPAs are watershed recharge areas important for the maintenance of large volumes of high quality groundwater. SGPAs are usually located in largely undeveloped or sparsely developed areas of Long Island that provide recharge to portions of the deep flow aquifer system. The existing water supply policy is to ensure the future quantity and quality of groundwater recharge by controlling development and pumpage in these SGPAs. All SGPAs are designated CEAs under SEQRA, which are areas of exceptional or unique natural settings that have an inherent ecological, geological, or hydrological sensitivity. The South Fork SGPA covers the area where the Direct Route Alternative is proposed (see Figure 12-3).

NEW YORK STATE DEPARTMENT OF STATE - SIGNIFICANT COASTAL FISH AND WILDLIFE HABITATS

New York State Department of State has identified Mecox Bay, Hayground Cove, and Mill Creek as Significant Coastal Fish and Wildlife Habitat (DOS 1987). The designation was based on factors such as ecosystem rarity, species vulnerability, human use, population level, and replaceability. Mecox Bay is a large brackish pond, bordered on the south by a barrier beach inlet. Mecox Bay receives freshwater inputs from Hayground Cove, Mill Creek, and Calf Creek from the north, Burnett Creek and Channel Pond from the west, and Sam's Creek and Swan Creek from the east.

An inlet along the southern shore of Mecox Bay is periodically managed to keep a connection open with the Atlantic Ocean depending on both water and salinity level (Town of Southampton 2003). This provides potential spawning and nursery habitats for a variety of anadromous and resident freshwater fishes, supports a white perch fishery of regional importance, periodic nesting of least terns and piping plovers, and is an important stopover site for migratory shorebirds and wintering waterfowl (NYS DOS 1987). It also supports shellfish populations that are dependent on suitable salinity levels within the bay (10 parts per thousand or higher, Rivara 2001).

Great Swamp

The Great Swamp covers approximately 300 acres west of the Bridgehampton Sag Harbor Turnpike, and the area generally bounded by Scuttle Hole Road to the south, and Brick Kiln Road to the west and north. Although not specifically designated as a CEA, it is one of the few remaining undisturbed bogs on the South Fork and is composed of an assemblage of ponds, marshlands, vernal ponds, and springs that provide a unique niche for many types of fauna and flora.

Great Swamp is a drained, undisturbed bog that allows for decomposition of various forms of organic matter which in turn encourages a cycle of growth and decay. In certain locations, the bog soil is over twenty feet deep. In addition, Great Swamp is hydrologically connected to Long Pond Greenbelt, providing surface water input to the Greenbelt through the "dreen."

Noteworthy is the adjacent upland of glacial knolls and kettles, especially the rise near the swamp's western edge. These uplands are characterized by pitch pine oak forests, which

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continue in a fairly unbroken pattern across Brick Kiln Road, up towards Whiskey Hill, the Golf at the Bridge property, and eventually to Trout Pond to the northwest. This larger region is considered significant with respect to biodiversity, open space, and groundwater protection.

NEW YORK STATE NATURAL HERITAGE PROGRAM - ECOLOGICAL COMMUNITIES

As part of the *Town of Southampton's Draft Critical Wildlands and Groundwater Protection Plan* (AKRF 2003), ecological communities have been mapped by Town of Southampton following the New York State community classification system contained in *Ecological Communities of New York State* (Reschke (1990), Edinger et al. (2002), New York Natural Heritage Program). These habitat areas are shown in Figure 9-3. A number of these community types are located in the vicinity of the Direct Route Alternative corridor.

Among those communities listed as “natural” communities (not actively maintained) are the following listed in Table 9-2.

Of all the natural communities listed above, two are considered rare and vulnerable within New York State by the NYNHP—the Coastal Plain Pond Shore and the Coastal Oak-Heath Forest communities. Both of these communities are not present in the Direct Route Alternative corridor, but have been documented within the Long Pond Greenbelt located east of the Bridgehampton Sag Harbor Turnpike.

The Coastal Plain Pond Shore community is defined as the shore of a coastal plain pond with seasonally and annually fluctuating water levels. Characteristic vegetative cover varies according to the water level. The vegetation ranges from sedges and grasses in dry years to emergent and floating-leaved aquatics in wet years. Many rare, threatened, and endangered plant species can be found within this community type.

The Coastal Oak-Heath Forest, usually located on dry, well-drained, sandy soils is classified by low diversity of hardwoods. This community is co-dominated by scarlet, white, and black oaks. The chestnut oak (*Quercus montana*) is also commonly found. American chestnut (*Castanea dentata*) sprouts can be located in this ecological community. The shrub layer maintains a low continuous cover of dwarf heaths, i.e., blueberries (*Vaccinium pallidum*), (*Vaccinium angustifolium*) and black huckleberry. A typically sparse herbaceous layer is composed of bracken fern (*Pteridium aquilinum*), wintergreen (*Gaultheria procumbens*), and Pennsylvania sedge (*Carex pensylvanica*).

Field inspection conducted for the Direct Route Alternative and habitat mapping completed in 2003 for the Southampton Critical Wildlands effort found that the majority of the habitat types occurring in proximity to the Direct Route Alternative are human-maintained habitats. These are described as “Terrestrial - Cultural” in Edinger et al. (2002), indicating altered or maintained by man (i.e., residential development, agriculture, etc.).

Table 9-2

Ecological Communities within the Vicinity of the Direct Route Alternative

Natural Community Type	Location	Some NHP-Reported Characteristic Species Associated with Community
Floodplain Forest (NHP Rank: G3G4/S2S3)	Project vicinity: Greenbelt Region	Flora: Red and silver maple, cottonwood, black willow, swamp white oak, spicebush, sensitive fern Fauna: Yellow-throated vireo, tufted titmouse, red-bellied woodpecker
Red Maple-Hardwood Swamp (NHP Rank: G3G4/S2)	Bridgehampton Sag Harbor Turnpike North of Scuttle Hole Road Water Mill Towd Road and Head of Pond/Upper Seven Ponds Road	Flora: Red maple, black gum/tupelo, sweet pepperbush, highbush blueberry, swamp azalea, cinnamon fern, skunk cabbage Fauna: NHP faunal details lacking
Coastal Plain Poor Fen (NHP Rank: G3/S1)	Project vicinity: Greenbelt Region	Flora: Sphagnum moss, leatherleaf, water willow, cranberry, dwarf huckleberry, cottongrass, sundews, bladderworts, rose pogonia orchid Fauna: Great blue heron, green frog, bullfrog, spotted turtle
Coastal Plain Pond Shore (NHP Rank: G3G4/S2)	Adjacent/Greenbelt Region	Flora: Fragrant waterlily, pondweeds, sphagnum moss, rushes, pipewort, slender blue-flag, panic grasses, large cranberry Fauna: Painted turtle, muskrat, dragonflies, damselflies, chain pickerel
Rich Mesophytic Forest (G4/S2/S3)	-Bridgehampton Sag Harbor Turnpike North of Scuttle Hole Road	Flora: Red oak, red maple, white ash, American beech, black cherry, sugar maple, red-berried elderberry, witch hazel Fauna:
Coastal Oak-Heath Forest (NHP Rank: G4/S3)	Project vicinity: Greenbelt Region	Flora: Various oaks, pitch pine, blueberries, huckleberries, bracken fern, wintergreen, Pennsylvania sedge Fauna: Eastern Towhee, white-tailed deer
Successional Shrubland (NHP Rank: G4/S4)	-Scuttle Hole Road east of Casey Lane	Flora: Sumac, serviceberries, eastern red cedar, gray dogwood, raspberries, wild plum, arrowwood, nanny-berry Fauna: brown thrasher, blue-winged warbler, indigo bunting, song sparrow
Successional Old Field (NHP Rank: G4/S4)	-Scuttle Hole Road east of Casey Lane -Head of Pond at Shorts Pond -Head of Pond and Narrow Lane -Seven Ponds Road and David Whites Lane	Flora: Various goldenrods, timothy grass, quackgrass, brome grass, various asters, queen-anne's lace, sumacs Fauna: Field sparrow
Successional Red Cedar Woodland	-Head of Pond Road east of Narrow Lane	Flora: Eastern Red Cedar, gray birch, hawthorn, non-native bluegrasses, early successional hardwoods Fauna: Prairie Warbler
Successional Southern Hardwoods	-Scuttle Hole Road west of Casey Lane -Scuttle Hole Road at Shorts Pond -Head of Pond east of Narrow Lane -Head of pond at Mill Pond -Upper Seven Ponds road east of Mill Farm Lane	Flora: American elm, red maple, sassafras, box elder, eastern red cedar, choke-cherry, black locust, tree of heaven Fauna: Chestnut-sided warbler
Pine Barrens Shrub Swamp (NHP Rank: G5S3)	Project vicinity: Greenbelt Region	Flora: Highbush blueberry, inkberry, male-berry, fetterbush, leatherleaf, sheep laurel, sweet pepperbush, cinnamon fern, sphagnum moss Fauna: NHP faunal details lacking
Pitch Pine-Oak Forest (NHP Rank: G4G5/S4)	-Bridgehampton Sag Harbor Turnpike North of Scuttle Hole Road -Head of Pond and Narrow Lane -Head of Pond and Water Mill Towd	Flora: Various oaks, pitch pine, scrub oak, low blueberries, black huckleberry, wintergreen, bracken fern, Pennsylvania sedge Fauna: rufous-sided towhee, pine warbler, blue jay, yellowthroat
Freshwater Pond with Shallow Emergent Marsh (NHP Rank: G5/S5)	Shorts Pond and Goldfish Pond at Scuttle Hole Road Mill Pond at Upper Seven Ponds Road	Flora: Various sedges and rushes, Indian soapbush, swamp loostrife, black gum Fauna: Various waterfowl, pied-billed grebe, spring peeper, spotted salamander, spotted turtle, painted turtle
Vernal Pool (NHP Rank: G4 S3/S4)	Project vicinity: Greenbelt Region	Flora: Sphagum spp., Glyceria sp. Fauna: spotted salamander, spring peeper, gray frog, spotted turtle, red-spotted newt, marbled salamander

Source: Resche (1990), Edinger et al. (2002), and AKRF field surveys (August 2007)

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Communities meeting these definitions along the Direct Route Alternatives include the following types:

- Cropland/row crops: Agricultural fields planted with row crops such as corn, potatoes, or beans;
- Cropland/field crops: Agricultural areas planted with field crops such as alfalfa and hay species;
- Flower/herb garden: Cultivation of commercial, residential, or horticultural land for the production of ornamental plants;
- Orchard: Stands of cultivated fruit trees (in use or abandoned);
- Mowed roadside/pathway: A narrow strip of mowed vegetation along a roadside or a pathway through taller vegetation;
- Paved road/path: a road or path paved with asphalt, concrete, brick and other impervious materials; and
- Urban structure exterior: the metal, wood, concrete, or inorganic exterior surfaces of structures such as houses, buildings, and bridges urban and suburban areas.

These landscapes have been altered or modified by human activity, including grading and draining of the landscape, and changing the landscape through agriculture or planting of ornamentals and the construction of impervious surfaces in commercial areas, and succession occurring in formerly cleared urban vacant lots. Both developed and suburban areas are present throughout the entire Direct Route Alternative corridor, and include areas that have reverted to successional shrub/scrub or woodlands, and planted residential yards with mowed lawns and mowed lawns with trees. Open areas are more prevalent on the northerly and easterly portions of the Direct Route Alternative corridor, and include lands that were cleared and currently used for farming (e.g., row crops or field crops). Very few unmodified natural communities exist within the study area along the Direct Route Alternative, although fairly contiguous communities with high ecological value do occur nearby (i.e., Long Pond Greenbelt).

WILDLIFE

Due to the available habitat along the Direct Route Alternative corridor and degree of human impacts, wildlife expected to be present would include common native and non-native species adapted to suburban and agricultural landscapes. The Direct Route Alternative corridor includes several vegetative communities and structural features that could provide cover, food resources, nesting substrate, and protection for a variety of wildlife. However, these habitats offer a patchwork of nesting habitat. Vegetated cover varies from non-agricultural grasslands, wetland areas, and forested areas valuable to nesting/foraging birds and mammals, to forest and thicket areas that provide protection, nesting sites, and food sources for the wildlife. Lastly, non-vegetative cover of human origin, such as refuse, is prevalent throughout the site and may provide cover for mammals, reptiles, amphibians, and insects, and could be used as nesting material by birds and mammals.

Ecological communities adjacent to the Direct Route Alternative corridor include numerous fragments of grasslands, forests, and freshwater wetlands (the “Southampton Wildlands”) that provide significant resources to wildlife. The extensive croplands and orchards offer food and cover at various times of the year to migratory shorebirds (i.e., buff-breasted sandpiper, upland

sandpiper), blackbirds (i.e., mixed species flocks of common grackles, rusty and red-winged blackbirds), and grassland birds (i.e., horned lark, American pipit, eastern meadowlark). Hedgerows and other landscaped thickets, while often offering little in food value, provide cover and nesting substrate for a variety of birds and mammals.

Larger adjacent areas, such as the Long Pond Greenbelt described above, provide the most valuable habitat to resident and migratory wildlife species. Long Pond Greenbelt is one of the Town of Southampton's most biologically diverse ecosystems. Over 100 bird species have been recorded, many of which depend directly or indirectly on the wetland complexes of the Greenbelt. These include breeding birds (i.e., osprey, chuck-will's widow, American redstart, scarlet tanager, wood thrush), migrants (i.e., cerulean warbler, Acadian flycatcher), and wintering birds (i.e., various waterfowl species). Mammals found in the Greenbelt include white-tailed deer, red fox, flying squirrel, opossum, mink, and bats. Along the wooded pond edges and shallows, numerous species of reptiles (i.e., spotted turtle, painted turtle, snapping turtle, and northern water snake) and amphibians (i.e., the endangered tiger salamander, and red-spotted newt, pickerel frog, wood frog, bull frog, and green frog, spotted and marbled salamander) have been reported in the area. In upland areas, reptiles and amphibians known to occur in the area include ribbon snake, garter snake, black racer, hognose snake, ringneck snake, and milk snake may dwell in the open forests, along with Fowler's toad, spring peeper, gray tree frog, and red-backed salamander. While these species might be expected as transients or existing in small populations within the Direct Route Alternative corridor, core populations would more likely occur in larger, more contiguous communities such as the Long Pond Greenbelt.

BIRDS

The Direct Route Alternative corridor passes through primarily agricultural and moderate-density residential areas. Habitats within this area, while heavily fragmented by development, include several communities noted in the *Town of Southampton Draft Critical Wildlands and Groundwater Protection Plan* (AKRF 2003). These include freshwater emergent and forested wetlands, freshwater ponds, young and mature forests, and open meadows. These areas offer nesting, foraging, and roosting habitat for diverse breeding, migrating, and wintering bird species. Based on information collected on breeding and wintering birds between 2000-2005, over 200 bird species are present throughout the year in the vicinity of the Direct Route Alternative corridor (Table 9-3), including 98 potentially or actively breeding species (NYSDEC 2007, NAS 2007).

During AKRF field surveys in August 2007, 37 bird species were observed within the Direct Route Alternative corridor and Bridgehampton Substation. The majority of birds observed were common breeding species in suburban scrub-shrub and fragmented woodland edges (gray catbird, northern cardinal, house sparrow), with other species that typical of forests (eastern wood-pewee, great crested flycatcher), open meadows and agricultural fields (savannah sparrow, song sparrow, killdeer), and freshwater ponds (belted kingfisher, mallard). Two New York State threatened species (pied-billed grebe and least bittern) that potentially breed in wetlands within the four proposed transmission line routes were not noted during field surveys.

Location-specific information for bird species along the Direct Route Alternative corridor is listed in the following section.

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Table 9-3
Bird Species Known to Occur within the Direct Route Alternative

Common Name	Scientific Name	Observed in August 2007
Greater White-fronted Goose	<i>Anser albifrons</i>	
Snow Goose	<i>Chen caerulescens</i>	
Brant	<i>Branta bernicla</i>	
Barnacle Goose	<i>Branta leucopsis</i>	
Canada Goose	<i>Branta canadensis</i>	x
Mute Swan	<i>Cygnus olor</i>	
Tundra Swan	<i>Cygnus columbianus</i>	
Wood Duck	<i>Aix sponsa</i>	
Gadwall	<i>Anas strepera</i>	
Eurasian Wigeon	<i>Anas penelope</i>	
American Wigeon	<i>Anas americana</i>	
American Black Duck	<i>Anas rubripes</i>	x
Mallard	<i>Anas platyrhynchos</i>	x
Blue-winged Teal	<i>Anas discors</i>	
Northern Shoveler	<i>Anas clypeata</i>	
Northern Pintail	<i>Anas acuta</i>	
Green-winged Teal	<i>Anas crecca</i>	
Canvasback	<i>Aythya valisineria</i>	
Redhead	<i>Aythya americana</i>	
Ring-necked Duck	<i>Aythya collaris</i>	
Greater Scaup	<i>Aythya marila</i>	
Lesser Scaup	<i>Aythya affinis</i>	
King Eider	<i>Somateria spectabilis</i>	
Common Eider	<i>Somateria mollissima</i>	
Harlequin Duck	<i>Histrionicus histrionicus</i>	
Surf Scoter	<i>Melanitta perspicillata</i>	
White-winged Scoter	<i>Melanitta fusca</i>	
Black Scoter	<i>Melanitta nigra</i>	
Long-tailed Duck	<i>Clangula hyemalis</i>	
Bufflehead	<i>Bucephala albeola</i>	
Common Goldeneye	<i>Bucephala clangula</i>	
Barrow's Goldeneye	<i>Bucephala islandica</i>	
Hooded Merganser	<i>Lophodytes cucullatus</i>	
Common Merganser	<i>Mergus merganser</i>	
Red-breasted Merganser	<i>Mergus serrator</i>	
Ruddy Duck	<i>Oxyura jamaicensis</i>	
Ring-necked Pheasant	<i>Phasianus colchicus</i>	x
Wild Turkey	<i>Meleagris gallopavo</i>	
Northern Bobwhite	<i>Colinus virginianus</i>	
Red-throated Loon	<i>Gavia stellata</i>	
Common Loon	<i>Gavia immer</i>	
Pied-billed Grebe	<i>Podilymbus podiceps</i>	
Horned Grebe	<i>Podiceps auritus</i>	
Red-necked Grebe	<i>Podiceps grisegena</i>	
Cory's Shearwater	<i>Calonectris diomedea</i>	
Northern Gannet	<i>Morus bassanus</i>	
Eastern Brown Pelican	<i>Pelecanus occidentalis</i>	
Double-crested Cormorant	<i>Phalacrocorax auritus</i>	

Table 9-3 (cont'd)
Bird Species Known to Occur within the Direct Route Alternative

Common Name	Scientific Name	Observed in August 2007
Great Cormorant	<i>Phalacrocorax carbo</i>	
American Bittern	<i>Botaurus lentiginosus</i>	
Least Bittern	<i>Ixobrychus exilis</i>	
Great Blue Heron (Blue form)	<i>Ardea herodias</i>	
Great Egret	<i>Ardea alba</i>	
Cattle Egret	<i>Bubulcus ibis</i>	
Green Heron	<i>Butorides virescens</i>	
Black-crowned Night-Heron	<i>Nycticorax nycticorax</i>	
Yellow-crowned Night-Heron	<i>Nyctanassa violacea</i>	
Osprey	<i>Pandion haliaetus</i>	x
Bald Eagle	<i>Haliaeetus leucocephalus</i>	
Northern Harrier	<i>Circus cyaneus</i>	
Sharp-shinned Hawk	<i>Accipiter striatus</i>	
Cooper's Hawk	<i>Accipiter cooperii</i>	x
Northern Goshawk	<i>Accipiter gentilis</i>	
Broad-winged Hawk	<i>Buteo platypterus</i>	
Red-tailed Hawk	<i>Buteo jamaicensis</i>	x
Rough-legged Hawk	<i>Buteo lagopus</i>	
American Kestrel	<i>Falco sparverius</i>	
Merlin	<i>Falco columbarius</i>	
Peregrine Falcon	<i>Falco peregrinus</i>	
Clapper Rail	<i>Rallus longirostris</i>	
Virginia Rail	<i>Rallus limicola</i>	
American Coot	<i>Fulica americana</i>	
Black-bellied Plover	<i>Pluvialis squatarola</i>	
Killdeer	<i>Charadrius vociferus</i>	x
Greater Yellowlegs	<i>Tringa melanoleuca</i>	
Ruddy Turnstone	<i>Arenaria interpres</i>	
Red Knot	<i>Calidris canutus</i>	
Sanderling	<i>Calidris alba</i>	
Purple Sandpiper	<i>Calidris maritima</i>	
Dunlin	<i>Calidris alpina</i>	
Wilson's Snipe	<i>Gallinago delicata</i>	
American Woodcock	<i>Scolopax minor</i>	
Laughing Gull	<i>Larus atricilla</i>	
Black-headed Gull	<i>Larus ridibundus</i>	
Bonaparte's Gull	<i>Larus philadelphia</i>	
Ring-billed Gull	<i>Larus delawarensis</i>	
Herring Gull	<i>Larus argentatus</i>	x
Iceland Gull	<i>Larus glaucooides</i>	
Lesser Black-backed Gull	<i>Larus fuscus</i>	
Glaucous Gull	<i>Larus hyperboreus</i>	
Great Black-backed Gull	<i>Larus marinus</i>	
Black-legged Kittiwake	<i>Rissa tridactyla</i>	
Thick-billed Murre	<i>Uria lomvia</i>	
Razorbill	<i>Alca torda</i>	
Rock Pigeon	<i>Columba livia</i>	x
Mourning Dove	<i>Zenaida macroura</i>	x
Yellow-billed Cuckoo	<i>Coccyzus americanus</i>	
Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>	

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Table 9-3 (cont'd)

Bird Species Known to Occur within the Direct Route Alternative

Common Name	Scientific Name	Observed in August 2007
Eastern Screech-Owl	<i>Megascops asio</i>	
Great Horned Owl	<i>Bubo virginianus</i>	
Long-eared Owl	<i>Asio otus</i>	
Short-eared Owl	<i>Asio flammeus</i>	
Northern Saw-whet Owl	<i>Aegolius acadicus</i>	
Common Nighthawk	<i>Chordeiles minor</i>	
Chuck-will's-widow	<i>Caprimulgus carolinensis</i>	
Whip-poor-will	<i>Caprimulgus vociferus</i>	
Chimney Swift	<i>Chaetura pelagica</i>	
Ruby throated Hummingbird	<i>Archilochus colubris</i>	
Belted Kingfisher	<i>Ceryle alcyon</i>	x
Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	
Red-bellied Woodpecker	<i>Melanerpes carolinus</i>	x
Yellow-bellied Sapsucker	<i>Melanerpes varius</i>	
Downy Woodpecker	<i>Picoides pubescens</i>	x
Hairy Woodpecker	<i>Picoides villosus</i>	x
Northern Flicker	<i>Colaptes auratus</i>	x
Eastern Wood-Pewee	<i>Contopus virens</i>	x
Willow Flycatcher	<i>Empidonax traillii</i>	
Eastern Phoebe	<i>Sayornis phoebe</i>	
Great Crested Flycatcher	<i>Myiarchus crinitus</i>	x
Eastern Kingbird	<i>Tyrannus tyrannus</i>	
Northern Shrike	<i>Lanius excubitor</i>	
White-eyed Vireo	<i>Vireo griseus</i>	
Yellow-throated Vireo	<i>Vireo flavifrons</i>	
Warbling Vireo	<i>Vireo gilvus</i>	
Red-eyed Vireo	<i>Vireo olivaceus</i>	
Blue Jay	<i>Cyanocitta cristata</i>	x
American Crow	<i>Corvus brachyrhynchos</i>	x
Fish Crow	<i>Corvus ossifragus</i>	x
Horned Lark	<i>Eremophila alpestris</i>	
Purple Martin	<i>Progne subis</i>	
Tree Swallow	<i>Tachycineta bicolor</i>	
Northern Rough-winged Swallow	<i>Stelgidopteryx serripennis</i>	
Bank Swallow	<i>Riparia riparia</i>	
Barn Swallow	<i>Hirundo rustica</i>	x
Black-capped Chickadee	<i>Poecile atricapillus</i>	x
Tufted Titmouse	<i>Baeolophus bicolor</i>	
Red-breasted Nuthatch	<i>Sitta canadensis</i>	
White-breasted Nuthatch	<i>Sitta carolinensis</i>	
Brown Creeper	<i>Certhia americana</i>	
Carolina Wren	<i>Thryothorus ludovicianus</i>	
House Wren	<i>Troglodytes aedon</i>	
Winter Wren	<i>Troglodytes troglodytes</i>	
Sedge Wren	<i>Cistothorus platensis</i>	
Marsh Wren	<i>Cistothorus palustris</i>	
Golden-crowned Kinglet	<i>Regulus satrapa</i>	
Ruby-crowned Kinglet	<i>Regulus calendula</i>	

Table 9-3 (cont'd)
Bird Species Known to Occur within the Direct Route Alternative

Common Name	Scientific Name	Observed in August 2007
Blue-gray Gnatcatcher	<i>Polioptila caerulea</i>	
Eastern Bluebird	<i>Sialia sialis</i>	
Townsend's Solitaire	<i>Myadestes townsendi</i>	
Hermit Thrush	<i>Catharus guttatus</i>	
Wood Thrush	<i>Hylocichla mustelina</i>	
American Robin	<i>Turdus migratorius</i>	x
Gray Catbird	<i>Dumetella carolinensis</i>	x
Northern Mockingbird	<i>Mimus polyglottos</i>	x
Brown Thrasher	<i>Toxostoma rufum</i>	
European Starling	<i>Sturnus vulgaris</i>	x
American Pipit	<i>Anthus rubescens</i>	
Cedar Waxwing	<i>Bombycilla cedrorum</i>	x
Blue-winged Warbler	<i>Vermivora pinus</i>	
Orange-crowned Warbler	<i>Vermivora celata</i>	
Nashville Warbler	<i>Vermivora ruficapilla</i>	
Northern Parula	<i>Parula americana</i>	
Yellow Warbler	<i>Dendroica petechia</i>	
Yellow-rumped (Myrtle) Warbler	<i>Dendroica coronata</i>	
Pine Warbler	<i>Dendroica pinus</i>	
Prairie Warbler	<i>Dendroica discolor</i>	
Palm Warbler	<i>Dendroica palmarum</i>	
Black-and-white Warbler	<i>Mniotilta varia</i>	
American Redstart	<i>Setophaga ruticilla</i>	
Ovenbird	<i>Seiurus aurocapilla</i>	
Common Yellowthroat	<i>Geothlypis trichas</i>	
Wilson's Warbler	<i>Wilsonia pusilla</i>	
Yellow-breasted Chat	<i>Icteria virens</i>	
Scarlet Tanager	<i>Piranga olivacea</i>	
Eastern Towhee	<i>Pipilo erythrophthalmus</i>	x
American Tree Sparrow	<i>Spizella arborea</i>	
Chipping Sparrow	<i>Spizella passerina</i>	
Clay-colored Sparrow	<i>Spizella pallida</i>	
Field Sparrow	<i>Spizella pusilla</i>	
Vesper Sparrow	<i>Pooecetes gramineus</i>	
Savannah Sparrow	<i>Passerculus sandwichensis</i>	x
Grasshopper Sparrow	<i>Ammodramus savannarum</i>	
Nelson's Sharp-tailed Sparrow	<i>Ammodramus nelsoni</i>	
Saltmarsh Sharp-tailed Sparrow	<i>Ammodramus caudacutus</i>	
Seaside Sparrow	<i>Ammodramus maritimus</i>	
Fox Sparrow	<i>Passerella iliaca</i>	
Song Sparrow	<i>Melospiza melodia</i>	x
Swamp Sparrow	<i>Melospiza georgiana</i>	
White-throated Sparrow	<i>Zonotrichia albicollis</i>	
White-crowned Sparrow	<i>Zonotrichia leucophrys</i>	
Dark-eyed (Slate-colored) Junco	<i>Junco hyemalis</i>	
Lapland Longspur	<i>Calcarius lapponicus</i>	
Snow Bunting	<i>Plectrophenax nivalis</i>	
Northern Cardinal	<i>Cardinalis cardinalis</i>	x
Rose-breasted Grosbeak	<i>Pheucticus ludovicianus</i>	
Indigo Bunting	<i>Passerina cyanea</i>	

Table 9-3 (cont'd)

Bird Species Known to Occur within the Direct Route Alternative

Common Name	Scientific Name	Observed in August 2007
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	x
Eastern Meadowlark	<i>Sturnella magna</i>	
Rusty Blackbird	<i>Euphagus carolinus</i>	
Common Grackle	<i>Quiscalus quiscula</i>	x
Brown-headed Cowbird	<i>Molothrus ater</i>	
Orchard Oriole	<i>Icterus spurius</i>	
Baltimore Oriole	<i>Icterus galbula</i>	x
Purple Finch	<i>Carpodacus purpureus</i>	
House Finch	<i>Carpodacus mexicanus</i>	
Common Redpoll	<i>Carduelis flammea</i>	
Pine Siskin	<i>Carduelis pinus</i>	
American Goldfinch	<i>Carduelis tristis</i>	x
Evening Grosbeak	<i>Coccothraustes vespertinus</i>	
House Sparrow	<i>Passer domesticus</i>	x
Notes: Birds in bold-face were noted in the 2000-2005 NY State Breeding Bird Atlas as potential or confirmed breeders within the area of the four proposed transmission lines (Atlas 2000 blocks 7152a, 7152b, 7153c, 7153d, 7253c, 7153a, 7153b, 7253a). Wintering birds from 2000-2006 Christmas Bird Counts are also listed.		
Sources: NYSDEC 2000-2005, NAS 2000-2006, AKRF field surveys, August 2007		

MAMMALS

AKRF field surveys in 2007 identified 12 mammal species within the Direct Route Alternative corridor. Mammals within the Direct Route Alternative corridor were identified from road kill (i.e., Norway rat, dog, Virginia opossum, skunk), foraging within residential areas (i.e., gray squirrel, cat, eastern chipmunk, house mouse, raccoon), open fields (i.e., meadow vole, white-tailed deer) and agricultural areas (i.e., woodchuck).

Based on available habitat and ecological requirements and movement patterns of mammal known to exist in New York State, approximately 23 species would be expected to occur in the vicinity of the four transmission line routes (NYSDEC 2007) and are listed in Table 9-4. Mammals occurring within the Direct Route Alternative corridor are likely to be typical suburban or agricultural species adapted to human-impacted landscapes. Most species would not be habitat-specific to areas within the Direct Route Alternative corridor, with the exception of those tied to wetlands areas for breeding (i.e., muskrat, beaver). Terrestrial areas of the Direct Route Alternative would be expected to support rodents, feral canids and felids, rabbits, bats, and other mammals. Wetland areas would be expected to support mammals that breed or forage in aquatic systems (i.e., muskrat, raccoon, and Virginia opossum).

Table 9-4

Mammals Expected to Occur within the Four Alternative Transmission Line Routes

Common Name	Scientific Name	Observed in 2007	Habitat
Eastern cottontail	<i>Sylvilagus floridanus</i>	X	Bottomlands, swamps, lake borders, coastal waterways.
Muskrat	<i>Ondatra zibethica</i>		Fresh, brackish, or saltwater marshes, ponds, lakes, rivers, canals.
Domestic cat	<i>Felis silvestris</i>	X	Residential areas.
House mouse	<i>Mus musculus</i>	X	Buildings; areas with good ground cover, including cultivated fields. Uncommon in undisturbed or natural habitats.
Meadow vole	<i>Microtus pennsylvanicus</i>	X	Lush grassy fields; also marshes, swamps, woodland glades, mountaintops.
Virginia opossum	<i>Dipelphis virginiana</i>	X	Open woods, bushy wastelands, farmlands.
Raccoon	<i>Procyon lotor</i>	X	Various, but most common along wooded streams.
Gray squirrel	<i>Sciuris carolinensis</i>	X	Hardwood or mixed forests with not trees, especially oak-hickory forests.
Norway rat	<i>Rattus norvegicus</i>	X	Farms, cities, many types of human dwellings; in summer: often cultivated fields.
White footed mouse	<i>Peromyscus leucopus</i>		Wooded and bushy areas.
Eastern chipmunk	<i>Tamias striatus</i>	X	Open woodland; forest edges; brushy areas; bushes and stone walls in cemeteries and around houses.
Little brown bat	<i>Myotis lucifugus</i>		In summer, form nursery colonies in buildings. In winter, hibernates in caves and mines in the East.
Red bat	<i>Lasiurus borealis</i>		Typical migrant through coastal areas
Hoary bat	<i>Lasiurus cinereus</i>		Typical migrant through coastal areas
Silver-haired bat	<i>Lasionycteris noctivagans</i>		Typical migrant through coastal areas
Short-tailed shrew	<i>Blarina brevicauda</i>		Woods and wet areas in warmer and drier parts of range.
Eastern mole	<i>Scalopus aquaticus</i>		Open fields, waste areas, lawns, gardens, and sometimes woods, in well-drained loose soil.
Feral dog	<i>Canis lupus familiaris</i>		
White-tailed Deer	<i>Odocoileus virginianus</i>	X	Woodlands, fields, suburbs.
Red fox	<i>Vulpes vulpes</i>		Varied; mixed cultivated and wooded area, brushlands.
Striped skunk	<i>Mephitis mephitis</i>	X	Woodlands, grassy plains, suburbs.
Woodchuck	<i>Marmota monax</i>	X	Open woodland; forest edges; brushy areas; bushes and stone walls in cemeteries and around houses
Beaver	<i>Castor canadensis</i>		Forested, freshwater marshes, ponds, lakes, rivers.
Note: Observations occurred during August 2007 field surveys			
Sources: NYSDEC 2007, habitat information from Peterson 1980			

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REPTILES & AMPHIBIANS

The NYSDEC Herp Atlas Project conducted a survey of reptiles and amphibians from 1990-1999, documenting the geographic distribution of New York's turtles, snakes, lizards, frogs, toads, and salamanders (NYSDEC 2007). Based on these surveys, and available habitat in the vicinity of the Direct Route Alternative corridor, approximately 27 reptiles and amphibian species can be expected to use the Direct Route Alternative corridor and vicinity and are listed in Table 9-5. This list is likely representative of breeding species that would either disperse through the Direct Route Alternative corridor prior to and following the breeding season, and those that breed in adjacent freshwater ponds.

Three reptile species were noted within the Direct Route Alternative corridor during the August 2007 field surveys: painted and snapping turtles in freshwater ponds along the corridor (i.e., Shorts Pond, Mill Pond) and an eastern box turtle in the proposed expansion area of the Bridgehampton Substation. It is likely that other reptiles and amphibians exist within the Direct Route Alternative corridor, though more directed surveys would be required to detect their presence.

**Table 9-5
Reptiles and Amphibians Expected to Occur within the Four Alternative
Transmission Line Routes**

Common Name	Scientific Name	Noted in August 2007
Reptiles		
Common Snapping Turtle	<i>Chelydra s. serpentina</i>	
Common Musk Turtle	<i>Sternotherus odoratus</i>	
Eastern Mud Turtle	<i>Kinosternon s. subrubrum</i>	
Spotted Turtle	<i>Clemmys guttata</i>	
Eastern Box Turtle	<i>Terrapene c. carolina</i>	X
Eastern Redbelly Turtle	<i>Pseudemys rubriventris</i>	
Yellowbelly Slider	<i>Trachemys s. scripta</i>	
Red-eared Slider	<i>Trachemys scripta elegans</i>	
Painted Turtle	<i>Chrysemys picta</i>	X
Common Garter Snake	<i>Thamnophis sirtalis</i>	X
Eastern Hognose Snake	<i>Heterodon platirhinos</i>	
Northern Black Racer	<i>Coluber c. constrictor</i>	
Eastern Milk Snake	<i>Lampropeltis t. triangulum</i>	
Eastern Ribbon Snake	<i>Thamnophis sauritus</i>	X
Northern Water Snake	<i>Nerodia sipedon</i>	X
Amphibians		
Marbled Salamander	<i>Ambystoma opacum</i>	
Spotted Salamander	<i>Ambystoma maculatum</i>	
Eastern Tiger Salamander	<i>Ambystoma tigrinum</i>	
Red-spotted Newt	<i>Notophthalmus v. viridescens</i>	
Northern Redback Salamander	<i>Plethodon c. cinereus</i>	
Eastern Spadefoot	<i>Scaphiopus holbrookii</i>	
Fowler's Toad	<i>Bufo fowleri</i>	
Gray Treefrog	<i>Hyla versicolor</i>	
Northern Spring Peeper	<i>Pseudacris c. crucifer</i>	
Bullfrog	<i>Rana catesbeiana</i>	
Green Frog	<i>Rana clamitans melanota</i>	X
Wood Frog	<i>Rana sylvatica</i>	
Pickerel Frog	<i>Rana palustris</i>	
Notes:	Species observed during the 1990-1998 NY State Herp Atlas in the vicinity of the four proposed transmission line routes, and species observed during August 2007 AKRF field surveys	
Sources:	NYSDEC 2007, Field surveys in August 2007	

INSECTS

The presence and complexity of insect communities is regulated by various factors: 1) specific plants, as many insects are co-adapted to specific plant genera or species; 2) habitat complexity; and 3) microhabitat, specifically subtle differences in biotic and abiotic conditions (Gullen and Cranston 2005). Habitats and microhabitats along the Direct Route Alternative corridor would be expected to support substantial insect populations during reproduction, migration (for dragonflies, damselflies, butterflies, moths, etc.), and overwintering periods.

Table 9-6 shows a list of insect taxa expected to be present based on available habitat within the Direct Route Alternative corridor, and observations made during field surveys. Location-specific information for insect species, specifically for rare odonates known to occur within the vicinity, is listed in the following section.

Table 9-6
Insect Orders Expected to Occur within the Four Alternative Transmission Line Routes

Order	Example(s)	Average Size (Length)	North American species	At project site (2007)
Anoplura	Sucking lice	0.25"	62	
Coleoptera	Beetles	(lg. tropical s p.)	30,000	X
Collembola	Springtails (wingless)	0.06"-0.25"	315	
Dermaptera	Earwigs (some sp. wingless)	0.75"-1.4"	20	X
Diptera	Flies, mosquitoes	0.1"-0.7"	17,130	X
Diplura	Two-pronged bristletail (wingless, blind)	<0.25"	25	
Ephemeroptera	Mayflies	0.3"-0.75"	550	
Embioptera	Web spinners	0.4"	10	
Hemiptera	True bugs	0.3"-0.8"	4,500	X
Homoptera	Aphids, leaf hoppers, cicadas	0.25"-1.5"	6,700	X
Hymenoptera	Bees, wasps, ants	0.5"-1.0"	17,300	X
Isoptera	Termites (winged and wingless)	0.2"-1.0"	41	
Lepidoptera	Butterflies, moths	0.4"-10.6" (wingspan)	11,000	X
Mallophaga	Chewing lice, bird lice	0.05-0.12"	318	
Mecoptera	Scorpionflies, earwigflies	0.6"-1.0"	85	
Microcoryphia	Jumping bristletails (wingless)	0.6"	25	
Megaloptera	Antlions, lacewings, dobsonflies	0.4"-2.75"	338	
Odonata	Dragonflies, damselflies	0.75"-5.0"	450	X
Orthoptera	Roaches, grasshoppers, crickets, mantids	1.5"	1,000	X
Protura	Minute white insect (wingless, eyeless)	0.06"	20	
Plecoptera	Stone flies	1.0"-3.0"	400	
Psocoptera	Book lice, bark lice	0.04"-0.12"	150	
Siphonaptera	Fleas (wingless)	<0.25"	250	
Strepsiptera	Minute, beetle-like (only males have wings)	0.13"	60	
Thysanoptera	Thrips (winged and wingless)	0.5 mm-0.13"	606	
Thysanura	Bristletails, silverfish (wingless)	0.5"	40	
Trichoptera	Caddis flies	0.4"-0.8"	1,200	
Note: Observations based on August 2007 field surveys				
Source: Milne and Milne 1980; Swan and Papp 1972.				

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LOCATION-SPECIFIC FINDINGS

The following is a detailed description of segments of the Direct Route Alternative, west to east, within 11 sub-sections along the Direct Route Alternative corridor and terminating at the Bridgehampton Substation site.

SOUTHAMPTON SUBSTATION ALONG LIRR TO DAVID WHITES LANE

This section of the Direct Route Alternative corridor follows the LIRR tracks east from Southampton Substation to David Whites Lane. Southampton Substation was surrounded by landscaped lawns with occasional ornamental (Kwanzan cherry, Norway maple) and native (pin oak) trees, shrubs (bayberry, rugose rose), and vines (poison ivy, Asiatic bittersweet). Vegetation along the LIRR tracks in commercial/industrial sections near the Southampton Station LIRR platform consisted of unmaintained thickets comprised of woody and herbaceous species that would typically be present in disturbed areas (i.e., mugwort, wild lettuce, horseweed, Asiatic bittersweet, Japanese knotweed). Tree species within the roadside thicket sections are mainly Norway maple, tree-of-heaven, black cherry, black locust, Norway maple, and sycamore maple. A small number of large trees (24 inches in diameter at breast height [dbh]) along the railroad tracks are located this section of the Direct Route Alternative corridor, with unmaintained hedgerows and thickets separating backyards of residential areas from the railroad tracks. Bird species included introduced and native species common to residential areas (European starling, house sparrow, rock pigeon, American robin, fish and American crows, Carolina wren, gray catbird, American goldfinch) and raptors common in roadside and suburban areas (Cooper's hawk, red-tailed hawk). Mammals include those expected in forested residential areas, such as gray squirrel, eastern chipmunk, and domesticated dogs and cats. No reptiles or amphibians were observed along this section, and monarch butterflies were observed.

DAVID WHITES LANE FROM LIRR TO SEVEN PONDS ROAD INTERSECTION

This section of the Direct Route Alternative corridor follows David Whites Lane through a commercial/old field area south of County Road 39 (CR 39), and an ornamental tree/shrub nursery north of Route 39, having a mixture of open-landscaped and open-field habitat habitats. To the east of David Whites Lane just north of the LIRR, a small successional old field is present, characterized by native and introduced scrub-shrub species (bayberry, red cedar, winged sumac, autumn olive, Asiatic bittersweet, Japanese knotweed), forbs (goldenrods, chicory) grasses (orchard grass, bordered within the existing distribution line corridor by a sidewalk and ornamental street trees (ornamental cherry, sycamore maple, London plane). The commercial areas around Route 39 are highly landscaped with ornamental street trees, evergreen shrubs, and manicured lawns. North of CR 39, a nursery with native and ornamental cedars, spruces, and pines is located along the western side of David Whites Lane, with the eastern side characterized by street trees (mainly London planes) and manicured lawns. Roadside herbaceous vegetation on both sides of the road includes red clover, chicory, round-headed bush clover, mugwort, ragweed, Virginia creeper, English pliantain, and crab grass.

Bird species included introduced and native species common to residential areas (European starling, house sparrow, rock pigeon, American robin, fish, and American crows) and sparrows (chipping, song, and savannah sparrows). Mammals included meadow vole and gray squirrel. No reptiles or amphibians were observed along this section. Insects noted included migratory butterflies (monarch, American lady, question mark) and one odonate (green darner).

SEVEN PONDS ROAD TO LOWER SEVEN PONDS ROAD

The transmission poles in this section are located on the north side of the road, but poles disappear at North Sea Mecox Road and reappear in the middle of a mowed field close to Seven Ponds Road.

This section of the Direct Route Alternative corridor can be characterized as having a mixture of open-landscaped and open-field habitat classifications. Maintained landscapes typically consist of tall walls of California privet and forsythia with occasional ornamental varieties of yew and cedar. Some of these maintained landscapes consist of lawn areas and small orchards planted with apple and pear trees that meet the transmission line corridor. In some areas, large trees, mainly sycamore maple (24 inches dbh), border transmission lines both on the edges of maintained lawns and open fields.

The open-field areas are either planted or mowed. A similar mixture of herbaceous plants is present on the edges of farmed and mowed fields. Plants included some of the following: Queen Anne's lace, chicory, English plantain, quack grass, red clover, and goldenrods.

Mammals include those expected in forested residential areas, such as gray squirrel, eastern chipmunk, and domesticated dogs and cats. No reptiles, amphibians, or insects were observed along this section.

LOWER SEVEN PONDS ROAD TO HEAD OF POND ROAD/DEERFIELD ROAD

The segment is characterized by open-agricultural cover type, and sporadic residential development where shade trees, privet and ornamental plantings occur exhibiting the open-ornamental and roadside thicket cover types. Trees included fairly large (~24 to 36 inches dbh) planetree maples, with white spruce, yews, and domestic pear, and some native oaks up to 20 inches in diameter. Shrub and understory herbaceous vegetation included California privet, wisteria, northern bush-honeysuckle, little bluestem, chicory, garden phlox, horseweed, bittersweet nightshade, purslane, caraway, and tall goldenrod.

Remnant forested land more characteristic of pre-development conditions occurs on the north side of Lower/Upper Seven Ponds Road opposite the existing distribution line poles, with tree species such as white oak, post oak, European buckthorn, black walnut, sassafras, black cherry, Eastern red cedar, also Japanese holly, and copper/European beech. Understory shrubs and herbaceous vegetation included Montauk daisy, yellow wood sorrel, Morrow's honeysuckle, Japanese barberry, and winged sumac.

The area along Head of Pond Road between Lower Seven Ponds and Water Mill Towd Road is characterized by a stream/culvert connecting Seven Ponds, west of the roadway, to Mill Pond to the east. The cover type is primarily forested, with a native overstory of oaks, black gum, and pitch pine with sporadic landscape plantings where residential development has occurred. This stretch represents a remnant patch of oak/pine forest, with scarlet oak (20 inches dbh), pepperbush, black gum, pitch pine, white pine, lamb's quarters, winged euonymus, and juneberry.

The area east of Water Mill Towd Road is characterized by open agricultural fields and residential development. The cover type is primarily open-landscaped and open-agricultural, with tree-of-heaven, ornamental false cypress, planetree maple, California privet, hydrangea, autumn olive, black knapweed, orchard grass, Canada goldenrod, English plantain, winged sumac, red clover, Asiatic bittersweet, and chicory.

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HEAD OF POND ROAD/DEERFIELD ROAD TO SCUTTLE HOLE ROAD

The segment from Deerfield Road to Noyac Path on Head of Pond Road is characterized by the open-agricultural cover type. A narrow stretch of remnant woods lies adjacent to the roadway in the vicinity of Narrow Lane and again at Narrow Lane South. A noteworthy agricultural use here is a landscaping business. Trees included black oak (15 inches dbh), Norway maple (30 inches dbh), white oak, pignut hickory, planetree maple, grey birch, black cherry, scarlet oak (36 inches dbh), and European beech. Understory included red clover, ragweed, black mustard, English plantain, chicory, mayweed, dandelion, green amaranth, butter and eggs, barnyard grass, ragweed, chicory, summer grape, jimsonweed, bamboo, slender leaved goldenrod, and hay scented fern.

The area between Noyac Path and Scuttle Hole Road is a mix of open-agricultural cover type, switching to forested and roadside thicket cover types closer to Strongs Lane. Large lot residential zoning has preserved larger areas of forest, accounting for the presence of some oak/hickory associations, with more early-successional or invasive species (red cedar, black cherry, Norway maple) close to the roadway edge. Trees included white oak, black cherry, pignut hickory, Norway maple, scarlet oak, planetree maple, Eastern red cedar, and sassafras. Overstory trees were typically 10-20 inches in diameter. The understory includes California privet, yellow foxtail, chicory, common plantain, red/white clover, orchard grass, jewelweed, bitter dock, multiflora rose, wine raspberry, daisy fleabane, and black raspberry.

SCUTTLE HOLE ROAD/STRONGS LANE/HEAD OF POND ROAD TO MILLSTONE ROAD

From Strongs Lane to Cooks Lane at the Scuttle Hole/Head of Pond Roads intersection, the Direct Route Alternative corridor segment is characterized by open-landscaped and a combination of forested and roadside thicket for a short stretch east of Noyac Path. Generally speaking, it is dominated by planted ornamental trees and wind-disseminated herbaceous plants common of roadsides. Agricultural uses occur on the north side of Scuttle Hole Road, opposite the existing distribution line poles.

From Cooks Lane to Millstone Road on Scuttle Hole Road, this segment is characterized by open agricultural, golf, and landscaped habitat. Shorts Pond and Haines Pond border Scuttle Hole Road in the vicinity of Atlantic Golf Club. The cover type can be characterized as primarily open-agricultural and open-roadside thicket, with trees including silver maple, sweet cherry, sweetgum, Norway spruce, white pine, eastern red cedar, box elder, Norway maple, and planetree maple. Understory includes burning bush, multiflora rose, horse chestnut, hydrangea, redtop grass, meadow fescue, orchard grass, timothy grass, Asiatic bittersweet, black cherry, pokeweed, mugwort, common burdock, black mustard, common and English plantain, and barley.

*SCUTTLE HOLE ROAD/MILLSTONE ROAD TO BRIDGEHAMPTON SAG HARBOR
TURNPIKE*

This section was characterized by cornfields and commercial tree and shrub nurseries with occasional sections of manicured and unmaintained thickets and hedgerows, thus with a combination of open-landscaped, open-field, open-hedgerow, and roadside thicket habitats. Residential and landscaped areas were open agricultural fields and residential development. Flora in residential sections includes manicured lawns with old sycamore maple (30-40 inches dbh) and California privet, with black cherry, autumn olive, black knapweed, orchard grass,

goldenrods, English plantain, winged sumac, red clover, oriental bittersweet, and chicory. Open-field areas are either planted or mowed, with a similar mixture of herbaceous plants present on the edges of farmed and mowed fields. Plants included Queen Anne's lace, chicory, English plantain, quack grass, red clover, broom sedge, and various goldenrod species.

Bird species noted in the vicinity included introduced and native species common to residential and suburban area areas (European starling, house sparrow, rock pigeon, American robin, fish and American crows), fields (song and Savannah sparrows, red-winged blackbird, common grackle), as well as downy and red-bellied woodpecker, northern flicker, and red-tailed hawk. Mammals included meadow vole, gray squirrel, raccoon, and eastern chipmunk. No reptiles or amphibians were observed along this section. Insects noted included migratory butterflies (monarch, red admiral), various unidentified skippers, and one odonate (green darner).

BRIDGEHAMPTON SAG HARBOR TURNPIKE FROM SCUTTLE HOLE ROAD TO BRIDGEHAMPTON SUBSTATION

The west side of the Bridgehampton Sag Harbor Turnpike from Scuttle Hole Road to Bridgehampton Substation is characterized by upland oaks (black, scarlet, white) from 12 to 30 inches in diameter, beech, and flowering dogwood. A mapped wetland occurs adjacent to the roadway roughly half way between the existing substation and Scuttle Hole Road. In this wetland area, black gum, red maple to 30 inches in diameter, pepperbush, and elderberry are common beneath the existing distribution line. The cover type for this stretch is primarily forested.

This section is unique in the Direct Route Alternative corridor, as it is the main section with a largely forested overstory. The understory is occupied by pockets of herbaceous plant communities typical of sandy soils (i.e., dominated by sweet fern, huckleberry, etc), unmaintained roadside thickets, and landscaped residential development. Tree species within the forested sections are mainly deciduous hardwoods, and include scarlet, white, and pin oaks, mockernut hickory, and sassafras. There are significantly large trees (30 inches dbh) throughout the corridor along this section of the Direct Route Alternative corridor. Bird species of note include common woodland breeders, including black-capped chickadee, tufted titmouse, eastern wood-pewee, great crested flycatcher, and downy and hairy woodpeckers. Mammals include those expected in forested residential areas, such as gray squirrel, eastern chipmunk, and domesticated dogs and cats. No reptiles or amphibians were observed along this section, and insects most often observed were monarch butterflies, which were beginning their seasonal migration during the field surveys.

FOOTPRINT OF PROPOSED BRIDGEHAMPTON SUBSTATION EXPANSION

The existing substation at the terminus of the Direct Route Alternative, and the other three Alternatives, would be expanded northward as shown in Figure 1-3. This area is currently occupied by an oak-hickory forest with overstory tree diameters generally eight (8) to twenty-four (24) inches. Black, scarlet, and white oak are the primary overstory dominants, with frequent occurrence of beech, pignut and shagbark hickory, and red maple. The understory is heavily colonized by black huckleberry, mountain laurel, and early low blueberry. Other understory species include flowering dogwood, mapleleaf viburnum, New York fern, white wood aster, jack-in-the-pulpit, wild sarsaparilla, and highbush blueberry. Hair-cap moss (*Polytrichum* sp.) was also present in the understory. Several ephemeral drainageways transect

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the parcel leading downslope to the east. Such species as sweet pepperbush, spicebush and winterberry occur sporadically along the margins of these drainage ways.

The proposed substation would be constructed in upland habitat. The ephemeral drainageways, although bordered by some facultative wetland plants, most notably sweet pepperbush, exhibit no hydric soil characteristics and only convey water during precipitation events and for a short time thereafter. The water in these drainageways does not reach the Bridgehampton Sag Harbor Turnpike. These ephemeral drainageways are not regulated as “waters of the U.S.” by the Army Corps of Engineers.

Surface runoff from the substation site flows eastwards, towards the Long Pond and Crooked Pond wetlands east of Bridgehampton/Sag Harbor Turnpike. The site serves as a hydrologic and habitat link between the regionally important Great Swamp west of the existing substation and Long Pond to the east. Therefore, preservation of surface water connections across the project site is necessary for this link.

The northernmost edge of the proposed substation expansion area ends in upland habitat. Just north of the proposed disturbance footprint for the substation, a wet meadow habitat occurs occupied by mild water pepper, reed canary grass, swamp beggar ticks, sedges (i.e., *Carex crinita* and *Carex lurida*), common reed, and bordered by red maple. Soils and hydrology within this wetland meet the federal and local criteria as regulated wetland. The wetland itself would not be disturbed by the Direct Route Alternative and the expansion of the Bridgehampton Substation. Therefore, no federal Army Corp of Engineers wetland permit would be required.

An approximately 16-year-old eastern box turtle was found on the edge of the wet meadow, just north of the proposed substation expansion footprint. This species is entirely terrestrial, and therefore may be expected to frequent the substation expansion area and surrounding woodlands. During construction, the installation of turtle exclusion fencing would prevent impacts to this species by the Direct Route Alternative.

ENDANGERED, THREATENED, SPECIAL CONCERN, AND RARE SPECIES

Information on endangered, threatened, special concern, and rare species within ½ mile of the project site was requested from the USFWS Long Island Office, NMFS, and NYNHP. Written requests and agency responses are presented with all project-related correspondence in Appendix B.

U.S. FISH AND WILDLIFE SERVICE

USFWS maintain records of the occurrence of threatened and endangered species throughout the country. Listed species are protected from direct and indirect (habitat) disturbance in accordance with the Endangered Species Act (ESA), 16 U.S.C. §1531-1544. This agency was contacted to determine if any listed species are known to occur on the project site or in the vicinity.

The USFWS list of federally endangered, threatened, or proposed listed species for Suffolk County (USFWS 2007) includes marine turtles (Kemp's ridley, green, hawksbill, leatherback, and loggerhead turtles), fish (shortnose sturgeon), birds (piping plover, roseate tern) and plants (seabeach amaranth, sandplain gerardia, small whorled pogonia). All but one of these species are generally restricted to marine and shoreline beach habitats, it is unlikely that they would be present within the vicinity of the four proposed transmission lines except for overhead flights during dispersal or migration for the bird species mentioned. The one upland orchid species, the federally threatened and state endangered small whorled pogonia (*Isotria medeoloides*), is found

in rich mesic forests dominated by hardwoods such as sugar maple, beech, and yellow birch (*Betula alleghaniensis*), although it is known only from historic records in New York State and has not been observed in the state in over 20 years.

Isotria medeoloides was not found within the proposed footprint of disturbance of the Direct Route Alternative. No habitats dominated by sugar maple, beech and yellow birch were identified. As such, the presence of this species within the project footprint is unlikely.

NATIONAL MARINE FISHERIES SERVICE

NMFS and the USFWS share responsibility for implementing the Endangered Species Act and follow the federal process of listing threatened or endangered species.

Threatened and endangered species that require marine and estuarine environments, such as marine turtles, would not likely occur in waterbodies within the project site. However, various bays and inlets along the south shore of Long Island, including Mecox Bay, are designated as essential fish habitat (EFH) for a variety of marine and estuarine species during various life stages (D. Rusanowsky, NMFS Fisheries Biologist, personal communication on 5 November 2007). As there is a connection between the Atlantic Ocean and Mecox Bay, and the Bay receives freshwater inputs from at least two waterbodies within the project area (i.e., Hayground Cove, Mill Creek) and saltwater inputs from the Atlantic Ocean, anadromous fish may use aquatic habitats within the project area at some phase in their life cycle. The Direct Route Alternative corridor, however, based on the lack of a substantial connection with Hayground Cove or Mill Creek, would not be expected to support anadromous fish populations. Additionally, no threatened or endangered species listed under NMFS jurisdiction would likely be affected by the Direct Route Alternative (Colligan 2007).

NEW YORK NATURAL HERITAGE PROGRAM

The New York State Natural Heritage Program (NYNHP) maintains records of the occurrence of threatened and endangered species throughout New York. Listed species are protected from direct and indirect (habitat) disturbance in accordance with ECL Sections 11-0535 and 9-1503. This agency was contacted to determine if any listed species are known to occur on the project site or in the vicinity.

In a response regarding the draft scope of work for the Direct Route Alternative (see Appendix B), the NYNHP identified twenty three (23) listed plants, two (2) listed amphibians, two (2) listed damselfly species, and two (2) rare ecological communities known to occur within the vicinity of the four proposed transmission line routes based on past records of occurrence.

AKRF staff conducted habitat characterization surveys along the Direct Route Alternative corridor in mid-late August 2007, with the primary effort dedicated to a rapid assessment and description of all habitat communities and species occurring along the route, with additional attention paid to areas with suitable habitat for state and federally listed species noted by NYNHP. As these surveys were conducted during a fairly short period in late August, they are not considered to be exhaustive or quantitative surveys for State and federally listed flora and fauna. They do represent, however, a fair description of available habitat along the Direct Route Alternative corridor, and the potential for listed species to occur along this route is described below.

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Ecological Communities

Although ecological communities are not given legal protection by the New York endangered species regulations, they are designated and monitored by the NYNHP and must be considered by the lead agency as part of SEQRA review.

The “Coastal Plain Pond Shore” community has been documented east of the Direct Route Alternative project area, extending from Sag Harbor southwards to the LIRR and encompassing a number of ponds and their associated wetland and upland habitats. This community type consists of the gently sloping shores of coastal plain ponds with seasonally and annually fluctuating water levels and sandy, gravelly or mucky substrate. The vegetation of this community can change dramatically from one year to the next depending on fluctuations in groundwater levels. Rare animals of this community include the NYS “threatened” bluet damselflies (*Enallagma recurvatum* and *Enallagma pictum*); and the NYS “endangered” tiger salamander (*Ambystoma tigrinum*). Community rarity is ranked as (S2) at the State level - meaning 6 to 20 occurrences Statewide making it very vulnerable; and, (G3G4) globally indicating rare and of local occurrence.

The “Coastal Oak-Heath Forest”, is also documented for the region east of the project site by the NYNHP. The site inspection revealed that much of the remnant woodland patches in the region contain a similar plant species assemblage, most notably lands bordering the Existing Route Alternative, which described in Chapter 17, “Alternatives.” This community type consists of a hardwood forest dominated by oaks and an ericaceous understory in dry, sandy soils of glacial outwash plains. It is ranked (S3) at the State level indicating typically 21-100 occurrences in NYS; and (G4) globally indicating that it is apparently secure globally but rare in parts of its range.

Vegetation

Of the 23 protected plants known to occur in the vicinity of the Direct Route Alternative based in NYNHP records, only 14 have been identified in recent years. All NYNHP reported listed plants are listed in Table 9-7 below, which also shows their State regulatory status (threatened, endangered, or rare) and general habitat requirements. None of these listed plants were identified within the Direct Route Alternative corridor during August 2007 field inspections.

Plants of the Coastal Plain Pond Shore Community

Of the fourteen listed plant species having recent records of occurrence, all but one were found along pond margins or in wetland habitats of the Coastal Plain Pond Shore vegetative community type.* As such, most records of occurrence for these species are located further east than the easternmost terminus of the Direct Route Alternative corridor. These plants occur in standing water, along undulating margins, and in the extreme upper edges in wet sandy and muddy shorelines of the coastal pond shore community. Some of the plants and habitats recorded in NYNHP records include the following: knotted spikerush (*Eleocharis equisetoides*) in two to four feet of water; long-tuberclad spikerush (*Eleocharis tuberculosa*) in the area between the high and low water line; stargrass (*Aletris farinose*) in a partially cleared shrub margin; long-beaked beakrush (*Rhynchospora scirpoides*) in a mucky exposed margin; and

*NYS Regulations prohibit the disclosure of specific locations of protected plants/animals.

Table 9-7

Records of New York State Threatened/Endangered/Rare Plant Species Known to Occur in the Vicinity of the Project

Species	Habitat (Flowering Period)	NYS Legal Status
Extant/Current Records of Occurrence:		
Stargrass (<i>Aletris farinose</i>)	Sandy soil, open woods, barrens, edges of peat bogs (June to July)	T
Peanut Grass (<i>Amphicarpum purshii</i>)	Sandy soils (August to mid-September)	E
Atlantic White Cedar (<i>Chamaecyparis thyoides</i>)	Acidic wet soils, wetlands, lowland areas (vegetative throughout year)	R
Rose Coreopsis (<i>Coreopsis rosea</i>)	Wet sand, peat, shores (July to September)	R
Knotted Spikerush (<i>Eleocharis equisetoides</i>)	Standing water, sandy substrate (July)	T
Long-tubercled Spikerush (<i>Eleocharis tuberculosa</i>)	Upper pond margin (July to mid-September)	T
Creeping St. John's-wort (<i>Hypericum adpressum</i>)	Marshes, shores, wet meadows, mucky substrates, open wetlands, borders of a woods and fields (July to August)	E
Carolina Redroot (<i>Lachnanthes caroliniana</i>)	Swamps and pine-barren bogs (August to November)	E
Globe-fruited Ludwigia (<i>Ludwigia sphaerocarpa</i>)	Swamps, wet soils, pond shores (mid-July to September)	T
Clustered Bluets (<i>Oldenlandia uniflora</i>)	Wet soils, damp sands (August to September)	E
Opelousa Smartweed (<i>Polygonum hydropiperoides</i> var. <i>opelousanum</i>)	Shallow water, wet shores (mid-June to mid-October)	T
Tooth-cup (<i>Rotala ramosior</i>)	Mud or wet soil (July to September)	T
Short-beaked Beakrush (<i>Rhynchospora nitens</i>)	Open wet sandy margins of ponds (August to mid-September)	T
Long-beaked Beakrush (<i>Rhynchospora scirpoides</i>)	Mucky exposed margin (August to mid-October)	R
Historic Records of Occurrence (last sighted between 1925-1955):		
small white snakeroot (<i>Ageratina aromatica</i>)	dry, hilly woods (mid-August to mid-September)	E
smooth tick trefoil (<i>Desmodium laevigatum</i>)	dry oak woods, rocky open woods (August to mid-September)	E
slender crabgrass (<i>Digitalia filiformis</i>)	sandy roadside, full sun in sterile sandy soils (August)	T
velvety bush clover (<i>Lespedeza stuevei</i>)	dry woods, dry railroad embankment (June to September)	T
orange fringed orchid (<i>Platanthera ciliaris</i>)	pond shoreline, wet thicket, bogs, meadows and woods (mid-June to mid-September)	E
catfoot (<i>Pseudognaphalium helleri</i> ssp. <i>micradenium</i>)	dry hilly woods, pine barrens (August to September)	E
drowned beakrush (<i>Rhynchospora inundata</i>)	shallow water of peaty-muddy small freshwater ponds (August to mid-September)	T
silvery aster (<i>Symphotrichum concolor</i> var. <i>concolor</i>)	dry open sandy bank (August to mid-October)	E
tiny blue-curls (<i>Trichostema setaceum</i>)	dry open sandy railroad embankment in woods (July to August)	E
Notes: E—New York State Endangered; T—New York State Threatened; R—New York State Rare		
Sources: NYNHP (2007), Newcomb (1977), Peterson/McKenny (1968)		

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clustered bluets (*Oldenlandia uniflora*) in exposed sandy substrate. Certain plants also occupy moist soils in the extreme upper edges of the coastal plain pond shore communities. These plants include globe-fruited ludwigia (*Ludwigia sphaerocarpa*); creeping St. John's-wort (*Hypericum adpressum*); opelousa smartweed (*Polygonum hydropiperoides* var. *opelousanum*) and peanut grass (*Amphicarpum purshii*).

The presence and distribution of these plants often depends on variation in water tables during the growing season. Given these dynamic conditions, it is possible that these rare plant species can be found in different locations within a given pond from year to year. It should be noted that some plants are not solely isolated to the habitat conditions for which they were recorded. For example, stargrass can also be found in sandy soil, open woods, and barrens; St. John's-wort habitat can range from marshes, shores, wet meadows, mucky substrates, and open wetlands to the border of a woods and fields; opelousa smartweed habitat can consist of both shallow water and wet places; and Carolina redroot can be found in swamps and pine-barren bogs.

Listed Plants of other Habitats

The NYS "rare" Atlantic white cedar (*Chamaecyparis thyoides*) has been documented in the western portion of the Direct Route Alternative corridor within acidic wet soils and low lying areas in an area interspersed with residential development and agriculture. Although the Direct Route Alternative corridor would traverse close to the wetland area where this species was last identified, the wetland adjacent to the roadway in this vicinity was dominated by a deciduous (not coniferous) palustrine wetland. No specimens of *Chamaecyparis thyoides* were identified beneath the existing distribution line. It is therefore likely that this species and its habitat are located some distance from the Direct Route Alternative project disturbance area.

The NYS "endangered" creeping St. John's-wort (*Hypericum adpressum*) and the NYS "threatened" opelousa smartweed (*Polygonum hydropiperoides* var. *opelousanum*) are known to occur both east of the Direct Route Alternative project site and within appropriate wetland habitat in the general region of the proposed Bridgehampton Substation expansion. The footprint of the substation expansion area is predominantly upland habitat with distinct ephemeral drainageways. As such, neither of these species is expected to occur in the disturbance area nor were they found during site inspection. *Polygonum hydropiperoides* was identified immediately north of the proposed substation expansion area. However, it was not keyed to variety level of taxonomic nomenclature, which requires supplemental field inspections.

Historic Records of Listed Plants

An additional 9 NYS listed plant species were reported as occurring historically (prior to 1979) the vicinity of the Direct Route Alternative. Dates of last field verification range from 1925 to 1955. As such, they are less likely to be extant species. None was seen during August 2007 field investigations. As with the plant species identified by NYNHP in more recent years, most were found in areas of Coastal Plain Pond Shore community habitat and adjacent uplands in regions east of the easternmost terminus of the Direct Route Alternative (East of Bridgehampton Sag Harbor Turnpike).

Several of these species are known to occur in dry, sandy woods and embankments.* Such habitats do occur along the Direct Route Alternative. Although not identified during August 2007 site inspection, to absolutely rule out the presence of these listed species, supplemental surveys conducted during the appropriate flowering periods would be necessary. The habitats are along the Bridgehampton Sag Harbor Turnpike segment of the corridor.

Wildlife

The NYNHP database indicates that there is the potential for four threatened or endangered animal species to occur in the vicinity of the project site based on records of past occurrence.

These are:

- Eastern tiger salamander (*Ambystoma tigrinum*) - NYS “endangered”
- northern cricket frog (*Acris crepitans*) - NYS “endangered” (historic record)
- scarlet bluet (*Enallagma pictum*) - NYS “threatened”
- pine barrens bluet (*Enallagma recurvatum*) - NYS “threatened”

Eastern Tiger Salamander

The NYNHP database indicates that there are two documented locations on or in close proximity to the project site, and nine documented locations within a ¼ mile of the Direct Route Alternative corridor, where the endangered eastern tiger salamander has been recorded. These locations are concentrated in areas east of Millstone Lane. In New York State, the tiger salamander is found only on Long Island; while some areas have been identified in the vicinity of the project area, the majority of known breeding colonies exist in pineland ecosystems located in central Long Island (NYSDEC undated).

Surveys have been conducted over the past 20 years to determine the local habitat requirements of Eastern tiger salamander populations on Long Island (i.e., Madison and Farrand 1998; J. Cryan, NYSDEC, personal communication October 31, 2007), and numerous studies have been published on the life cycle and ecological requirements for this species throughout its range. The Eastern tiger salamander, a member of mole salamander family, *Ambystomatidae*, has a complex life cycle that involves migration from upland habitats to pools or ponds during specific hydroperiods for the sole purpose of breeding. Ideal breeding sites include vernal pools that have sufficient water levels during the late winter and spring months to support breeding populations, but dry up during the summer months. The hydrological regimes of these ponds are in most cases, not suitable for fish survival, and thus eliminate the possibility of egg or larva consumption by predatory fish (Klemens 1989). Eastern tiger salamanders typically utilize forested habitat with a dense shrub understory, rather than open habitats, during migration (Semlitsch 1981). They generally move in all directions within the terrestrial habitats, but avoid grass and road areas when possible (Madison and Farrand 1998). Intact terrestrial migration corridors are clearly critical to maintaining breeding populations in wetlands, as migratory movements of over 300 meters between forested areas and wetland breeding pools have been identified (Madison and Farrand 1998).

*NYNHP Chief Botanist Steven Young has been contacted (10/07) for any additional information the Department may have on the habitat requirements of listed plant species.

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Like many mole salamanders, the eastern tiger salamander spends most of its life in subterranean burrows feeding on invertebrates. Eastern tiger salamanders live up to 15 years, but do not reach sexual maturity until about four or five years of age (NYSDEC undated). During early-season migration to breeding locations, tiger salamanders emerge at night, typically during rain events, between the months of February and March. Within a coastal plain pond in New Jersey, for instance, eastern tiger salamanders tend to emerge earlier than any other amphibian, and are thus exposed to harsher conditions within the environment than other spring breeders (Hassinger et al. 1970).

Eggs are laid by females in masses of 25 to 50 eggs and are attached to underwater woody debris and vegetation. Masses are typically laid in the deepest areas of ponds, to avoid the threat of freezing following egg placement (Hassinger et al. 1970). Eggs hatch after approximately four weeks, depending on temperature. Larvae remain in the breeding ponds until they are ready to emerge as air breathing metamorphs usually between the months of June or early August. Water levels in a given pond are often associated with the rate of larval development (Klemens 1989) and metamorphosis is partly triggered by drying of the pond (Hassinger et al. 1970). After emerging from the aquatic stage, the tiger salamander sub-adults disperse from wetland habitats to underground burrows in forested upland areas.

Habitat fragmentation, degradation, and destruction are responsible for the near-extirpation of the eastern tiger salamander (NYSDEC undated) and the cause of many amphibian declines worldwide (Stuart et al. 2004). Intact wetland terrestrial habitats support a wide-range of species, some of which are dependent on a narrow set of requirements that can be impacted by changes in land use. For instance, the conversion of woodland areas to lawns may alter habitat (i.e., food, forage, moisture, light, and migration routes) for certain populations leaving them vulnerable to changes in species diversity and abundance. Due to the complex life cycle and habitat requirements of pool-breeding salamanders, they are particularly vulnerable to localized extinctions from fragmentation of wetlands and upland habitats (Egan and Paton 2004). Amphibians distribute themselves across the wetland and terrestrial habitat differently between breeding and non-breeding seasons (Rittenhouse and Semlitsch 2007), thus making the buffer area of a wetland critical habitat to amphibian populations.

Due to a high degree of human use along the Direct Route Alternative corridor, the suite of forested uplands and wetlands required by Eastern tiger salamanders are surrounded by agricultural and other open fields, residential manicured lawns, and areas of impervious surfaces. These landscapes do not suit the requirements of pool-breeding salamanders, particularly the Eastern tiger salamander. However, while vernal pools and other ponds in wooded or open areas are the typical breeding locations for Eastern tiger salamanders, this species has also been identified as breeding in human-made depressions filled with water (NYSDEC undated). It is possible, therefore, that habitats supporting this species exist within the Direct Route Alternative corridor.

In a previous survey of the Shorts Pond area relating to the proposed Atlantic Golf Club, four wetland areas were evaluated in the vicinity of Equinox Farm along Scuttle Hole Road and Noyack Path (Klemens 1989). This survey was conducted due to the discovery of a dead metamorph Eastern tiger salamander in the vicinity of Shorts Pond (Klemens 1989). Shorts Pond itself is not considered to provide suitable habitat for tiger salamanders, as water levels remain throughout the year and it supports turtles and a potential fish population (Klemens 1989). One wetland, a deep kettle pond north of the Direct Route Alternative corridor along Noyac Path

adjacent to wooded areas, was confirmed to support a breeding population; three other wetlands were characterized as unsuitable. The Atlantic Golf Club was constructed, and it is not known if this pond continues to support Eastern tiger salamander reproduction. In the decade since construction of the Atlantic Golf Club course, residential housing development in forested lands north and northwest of the confirmed breeding wetlands has continued to fragment the summer foraging habitat of the eastern tiger salamander substantially as evidenced by a comparison of aerial photography over this time period.

There are several NWI mapped palustrine wetlands adjacent to the Direct Route Alternative corridor (i.e., north of Scuttle Hole Road between Millstone Road and Bridgehampton Sag Harbor Turnpike) that, due to the presence of suitable hydrology and proximity to forested uplands, may support Eastern tiger salamander breeding activity. Additionally, it is likely that there are other unmapped wetlands within woodland settings, and with suitable ephemeral hydrology, that would support salamander breeding habitat. However, none of these habitats were observed during August 2007 field inspection or are expected to occur within the Direct Route Alternative corridor.

Northern Cricket Frog

Last sighted historically in 1932 according to the NYNHP in the wetland regions east of the project site, the northern cricket frog (*Acris crepitans*) is North America's smallest vertebrate, ranging from 0.75 to 1.5 inches (19–38 mm) long. The northern cricket frog is listed as “endangered” in New York State. Cricket frogs prefer the edges of slow moving, permanent bodies of water such as the muddy banks of shallow streams or ponds. It is generally believed that the cricket frog spends the coldest winter months burrowed in muck or peat below the frost line, although there is evidence in New York State that some individuals may overwinter in upland sites. Breeding generally occurs from May through July. One egg is laid at a time and generally attached to a piece of vegetation. The decline of the cricket frog apparently began in the 1800s with the clearing and drainage of wetland habitat. Aerial spraying of DDT and other chlorinated hydrocarbon pesticides in the 1950s and 1960s is thought to have contributed to the decline of most remaining populations. Other factors that may have contributed to the cricket frog's decline are contamination of ponds by road salt and the introduction of predatory fish, which feed on their eggs.

Appropriate habitat for this species was not identified within the proposed disturbance footprint of the Direct Route Alternative corridor.

Scarlet Bluet and Pine Barrens Bluet

The scarlet bluet (*Enallagma pictum*) and pine barrens bluet (*Enallagma recurvatum*) are part of the Odonata order of insects comprised of dragonflies and damselflies. Both are listed as “threatened” in New York State. They are two of 23 species of damselflies in the genus *Enallagma* found in New York State. Both species are known for the coastal plain pond community of groundwater fed ponds located east of the project site in Long Pond Greenbelt. The scarlet bluet is found in acidic sandy ponds with emergent vegetation such as lily pads (*Nuphar* sp. and *Nymphaea* sp.). The pine barrens bluet (*Enallagma recurvatum*) is a regional endemic with very similar habitat requirements (i.e., it is restricted to coastal plain ponds, with sandy shallow shores, large amounts of vegetation close to shore, and yearly fluctuation in water levels).

The major threat to the scarlet and pine barrens bluets is degradation and destruction of the wetlands which are their breeding and nymphal habitat. Threats include development, artificial

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drawdown of pond water by groundwater pumping, runoff from roadways, and high impact recreational uses such as off road vehicles which can disturbing pond shores. Protected uplands adjoining breeding sites are also necessary for the development of maturing adults.

Introduction of fish may be a threat as a number of *Enallagma* species are thought to be restricted to, or reach their highest population levels in, fishless ponds. Historically, coastal plain ponds dried out completely during occasional severe droughts, which prevented fish from establishing themselves in these ponds. Today, many ponds coastal plain ponds never go completely dry due to deepening from excavation at the edge and several species of fish introduced by the public have become permanent pond residents.

Appropriate habitat for these two species was not identified within the proposed disturbance footprint of the Direct Route Alternative.

D. POTENTIAL IMPACTS OF THE PROPOSED PROJECT

The following analysis summarizes natural resources impacts that could potentially result from placement, construction, and maintenance of the proposed Direct Route Alternative, both along the transmission line corridor and within the footprint of the proposed Bridgehampton Substation expansion. Construction activities necessary to build the transmission line are described in detail in Chapter 15, "Construction," and are summarized below as they relate to natural resources.

The proposed 69 kV line along the Direct Route Alternative corridor would follow a similar pathway as the present distribution line, and any potential impacts would be limited to construction activities. The construction activities would include clearing of existing vegetation where the new poles would be set or the trench for underground installation dug. In addition, setback areas would be needed for construction vehicles. Maintenance activities would include tree trimming and herbicide usage within the right-of-way. These maintenance activities are currently done for the existing electric distribution system.

TERRESTRIAL RESOURCES

TRANSMISSION CORRIDOR

Overhead

Existing distribution lines along the Direct Route Alternative are largely overhead, placed along approximately 250 wooden poles between 30-35 feet above grade and approximately 16 inches in diameter at the base. Replacement poles for these sections would be approximately 48 feet tall (above grade) and 22 inches in diameter at the base.

For overhead line construction within the Direct Route Alternative corridor, poles would be set within 10 feet of the existing roadway. Only minor clearing of vegetation would be required for construction of the transmission line. Newly installed poles would be set close to existing poles to ease the transferring of distribution lines. Maintenance for the overhead lines would consist of tree trimming every 3 to 7 years. In wetland areas, overhead lines would be situated to span the line over the wetlands, and no poles would be set within wetlands.

Mature trees bordering the corridor may be subject to removal of entire trees and/or branches overhanging existing lines, if trees would pose a danger to the existing distribution lines and/or

the new transmission line. The street trees would be inspected by a licensed arborist or trained horticulturalist before final project design to assess which trees would require trimming or other special protection provisions. These provisions for special construction techniques would be integrated into the Contract Bid documents. Any special conditions would be closely observed and best management practices would be integrated into the project design. Conservation strategies to reduce impact on wildlife in upland areas, such as design to maximize connectivity between forested uplands and wetlands, would be implemented during project installation.

As noted in the general habitat characterization map (Figure 9-2) and the map of natural communities located on or adjacent to the Direct Route Alternative corridor (Figure 9-3), a diverse network of important ecological communities fragmented by human uses of the landscape exist along the Direct Route Alternative corridor. Because new lines would be placed predominantly in previously disturbed areas (i.e., along open-landscaped habitats and roadways), the Direct Route Alternative would not represent a substantial additive impact on the connectivity of adjacent ecological communities.

During construction and maintenance of the Direct Route Alternative, the disturbance area for construction of overhead lines would be limited to a narrow corridor along the roadway and would involve few direct impacts to vegetation. This would not have a deleterious effect on the landscape, as this corridor exists along a highly developed, human-influenced roadside corridor. Construction activities (i.e., clearing, grading, excavating soils, removing vegetation) would be limited to existing disturbed areas within the right-of-way, whenever possible, to ensure that any suitable habitat would not be disturbed.

Underground

For areas of the Direct Route Alternative that may be placed underground (e.g., Village underground option) trenches would be constructed within existing roadways; as these sites are already paved, no natural resources impacts would be expected. The contractor would select either directional drilling or open cut to install the underground portion of the proposed transmission line. Typically, contractors use open cut for the majority of the line, and directional drilling only under intersections, streams, and wetlands. The contract documents would direct the contractor to drill under any identified wetlands. Any underground installation in regulated wetland areas would be authorized under the General Wetlands Permit issued to KeySpan, as directional drilling under a wetland is an authorized activity. No maintenance within the wetlands would be expected for underground lines.

During construction and maintenance of the Direct Route Alternative, the disturbance area for construction of underground lines would be limited to a narrow corridor and would involve few direct impacts to vegetation. This would not have a deleterious effect on the landscape, as this corridor exists along a highly developed, human-influenced roadside corridor. Construction activities (i.e., clearing, grading, excavating soils, removing vegetation) would be limited to existing disturbed areas within the right-of-way whenever possible, to ensure that any suitable habitat would not be disturbed.

Thus, the Direct Route Alternative would have no significant adverse impacts on terrestrial resources, whether the line is constructed overhead, underground, or hybrid, including the Village underground option.

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BRIDGEHAMPTON SUBSTATION

The proposed expansion of the Bridgehampton Substation would involve clearing approximately 3.5 acres, and a 14-foot wide access road from the Bridgehampton Sag Harbor Turnpike, as shown in Figure 1-3. Due to the relative prevalence of oak-hickory forests and associated ericaceous understory surrounding the Bridgehampton Substation expansion, this limited clearing would not be expected to have a significant adverse impact on terrestrial resources.

FLOODPLAINS AND WETLANDS

Army Corps of Engineers (ACOE) and NYSDEC regulate freshwater wetlands existing in the vicinity of the Direct Route Alternative corridor. In concurrence with conditions of a NYSDEC General Permit issued to KeySpan, LIPA would coordinate with NYSDEC on wetland and rare species-related issues. The General Permit authorizes KeySpan to perform minor utility install, repair and maintenance activities in the adjacent areas of tidal wetlands, freshwater wetlands, and Wild and Scenic Rivers. These activities include the installation of poles with overhead cables, and trenching in the adjacent area. The General Permit also authorizes drilling under wetlands as long as the entry and exit points are in the adjacent area and the wetlands are not disturbed. KeySpan is allowed to use this General Permit for LIPA projects. Precautions during the removal of the existing poles and replacement of poles near wetland areas would avoid any impacts to sensitive ecological habitats and associated species. No new poles would be installed within wetlands, and the new poles would be no closer to wetland areas than the existing poles.

LOCAL WETLAND REGULATIONS

Both the Town of Southampton and the Village of Southampton regulate freshwater wetlands at the local level. Although LIPA as a State public authority serving essential governmental functions is not subject to local jurisdiction, the following discussion is presented for full disclosure purposes.

Town of Southampton regulates wetlands as set forth in the *Code of the Town of Southampton*, Chapter 325, "Wetlands". A wetlands permit is required for certain activities in a wetlands area or within 200 feet of a wetland boundary.

The standards for permit approval for undeveloped lands include:

- A minimum buffer zone of 100 feet for turf, fertilizers, pesticides, herbicides, fungicides, or landscaping in undeveloped lands; 75 feet for turf, fertilizers, pesticides, herbicides, fungicides, or landscaping in developed lands;
- A minimum buffer zone of 125 feet for structures in undeveloped lands; 100 feet for structures in developed lands; and
- A minimum buffer zone of 150 for wastewater disposal and/or septic systems.

The Village of Southampton regulates wetlands pursuant to Chapter 116, "Zoning," Article IIIA, "Wetlands," of the Code of the Village of Southampton (Village Code). The Village requires that a wetland permit be obtained for regulated activity within a wetland or a regulated area, including:

- Placing or depositing debris, fill, sand, gravel or other material within 150 feet of any boundary of any wetland;

- Clearing, digging, or dredging within 150 feet of any wetland boundary;
- Construction or reconstruction of a structure within 150 feet of any wetland boundary;
- Building or installation of septic systems within 200 feet of any wetland boundary;
- Creating, eliminating, enlarging, or diminishing and wetland; and
- Planting, seeding, or cultivating with the use of fertilizers within 125 feet of any wetland boundary.

TRANSMISSION CORRIDOR

As LIPA is a State public authority serving essential governmental functions, local wetland regulations would not apply to the Direct Route Alternative. Nevertheless, new poles would not be placed closer to wetland areas than existing distribution line poles. Sub-surface trenching would be conducted beneath the existing roadway and would retain all groundwater or culvert flows. Therefore, any existing wetlands adjacent to the transmission line would not be negatively affected.

Areas of mapped wetlands that are within local wetland buffers for pole or sub-surface placement include:

- Head of Pond Road adjacent to palustrine forested wetlands at Mill Pond/Seven Ponds. A culvert at this location conveys flows linking these two mapped wetland areas.
- Palustrine and lacustrine wetlands adjacent to Scuttle Hole Road and the Atlantic Golf Club.

No significant adverse impacts to floodplains or wetlands would result from the Direct Route Alternative, whether the line is overhead, underground, or hybrid, including the Village underground option.

BRIDGEHAMPTON SUBSTATION

The location of the Bridgehampton Substation expansion area is within the 125 foot Town of Southampton buffer zone for structures; however, LIPA is a State public authority, and thus only State and federal wetland regulations would apply to the proposed substation expansion.

The 14 foot wide access road required as part of the proposed substation expansion, would cover three ephemeral streams that currently convey surface water runoff eastwards towards the Bridgehampton Sag Harbor Turnpike and then to Long Pond. These areas do not exhibit wetland soil and therefore do not meet the definition of a federal wetland in accordance with the 1987 ACOE Wetland Delineation manual. These features convey surface water flows during precipitation events and for a period of time afterwards. These drainage ways do not convey water as far as the Bridgehampton Sag Harbor Turnpike or the Long Pond Greenbelt. The applicability of local and federal wetland regulations to these drainage ways is unlikely. Their potential importance to threatened or endangered wildlife is discussed below. Culverts would be placed in these areas to maintain the hydrological connection and would not impair the wetlands.

No significant adverse impacts to floodplains and wetlands would result from the proposed substation expansion.

STORMWATER

Under the Phase II stormwater permitting program, site disturbance of more than 1 acre requires the development of a Stormwater Pollution Prevention Plan (SPPP) and submission of a Notice

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of Intent (NOI) to NYSDEC. The installation of the underground portions of the Direct Route Alternative would expose and involve less than 1 acre at any given time. Therefore, a construction stormwater management measures would not be required. Nevertheless, KeySpan's Wetland Construction Guidelines would be used for erosion control and stormwater management to protect critical wetlands, drainage channels, and private property during construction. A discussion of stormwater issues is found in Chapter 12, "Groundwater and Surface Water Resources."

SIGNIFICANT HABITATS AND ECOLOGICAL RESOURCES

TRANSMISSION CORRIDOR

Several sites outside of the Direct Route Alternative corridor provide suitable habitat for NYNHP-listed plant and wildlife species, particularly the Long Pond Greenbelt wetland and pond shore communities east of the Bridgehampton Sag Harbor Turnpike. Since the Direct Route Alternative transmission corridor would not be placed through these areas, and there would be no construction or maintenance within these adjacent areas, the Direct Route Alternative would not have an impact on these ecologically sensitive areas as a result of transmission line construction.

BRIDGEHAMPTON SUBSTATION

As noted above, wetlands within the vicinity of the expanded substation area are not mapped by the NWI or NYSDEC, but could represent potential habitat for several threatened and endangered species known to occur in the vicinity of the Direct Route Alternative (e.g., knotted and long-tubercled spikerush, creeping St. John's-wort, etc.). These plants have been noted in the past within Great Swamp (west of the substation) and the Long Pond Greenbelt CEA (east of the substation). The wetlands within the substation area represent an important ecological and hydrological connection between the Great Swamp and Long Pond wetland systems, and are important to the long term well-being of these habitats. Therefore, the drainage ways within the substation area would be maintained with the expanded Bridgehampton Substation, and no construction would take place within the nearby wetlands. These steps would preclude any significant adverse impacts to the Great Swamp and Long Pond wetland systems and would not impair their long term well being.

WILDLIFE

It is unlikely that the Direct Route Alternative, including the Bridgehampton Substation expansion, would have a substantial effect on commonly occurring birds, mammals, reptiles and amphibians, or insects. Species with expanding populations (i.e., wild turkey, ring-necked pheasant, white-tailed deer) would also not likely be effected by the proposed project). Habitats available along the proposed transmission corridor are either highly landscaped, used for agricultural purposes, or contain remnant elements of natural ecological communities. As a result, fauna typical of edge habitats are dominant. The relatively small disturbance zone (approximately 25 feet or less on either side of existing overhead and underground line placement) would result in subtle changes in the existing terrestrial habitats, and are not likely to result in an overall degradation of critical habitat for commonly occurring species.

Once a route has been selected and the precise location and arrangement of all transmission line equipment has been verified, more detailed wildlife surveys would be performed within the areas of potential impact to species of concern, and appropriate measures would be followed to reduce impacts to wildlife populations during construction and maintenance of the selected transmission line route.

To reduce the chance of wildlife dispersal or migration through areas subject to construction activity, temporary fencing (i.e., type B silt fence) would be placed in the vicinity of the disturbed area, and would extend beyond the area of construction to allow for the movement of wildlife around the construction area. An experienced terrestrial ecologist would direct the placement of any temporary fencing to prevent wildlife movement through areas impacted by construction.

Consequently, the Direct Route Alternative, including the Bridgehampton Substation expansion, would not have a significant adverse impact on wildlife, whether the transmission line was constructed overhead, underground, or hybrid, including the Village underground option.

ENDANGERED, THREATENED, SPECIAL CONCERN, AND RARE SPECIES

TRANSMISSION CORRIDOR

No threatened and endangered plant or wildlife species listed by the NYNHP were found along the Direct Route Alternative corridor during the August 2007 field surveys. Once a route has been selected, and the precise location and arrangement of all transmission line equipment has been verified, more detailed wildlife surveys would be performed within the areas of potential impact to listed flora and fauna, and appropriate measures would be followed to minimize impacts to these populations during construction and maintenance of the selected transmission line route.

Construction activities (i.e., clearing, grading, excavating soils, removing vegetation) would be limited to existing disturbed areas within the right-of-way, whenever possible, to ensure that any suitable habitat for threatened, endangered, or rare plant communities would not be disturbed.

To reduce the chance of wildlife dispersal or migration through areas subject to construction activity, temporary fencing (i.e., type B silt fence) would be placed in the vicinity of the disturbed area, and would extend beyond the area of construction to allow for the movement of wildlife around the construction area. An experienced terrestrial ecologist would direct the placement of any temporary fencing to prevent wildlife movement through construction areas.

The Direct Route Alternative corridor includes several ecologically sensitive areas, either directly on (i.e., Mill Pond, Short's Pond) or within the vicinity of (i.e., coastal plain pond shoreline in the Long Pond Greenbelt) the Direct Route Alternative. Many of the species indicated by the NYNHP were located in habitat conditions that vary from year to year (i.e. fluctuating water levels, ephemeral wetlands), often having dormant seed banks.

The State-endangered Eastern tiger salamander, which has been identified over the past 20 years in at least one area adjacent to the Direct Route Alternative (i.e., wetlands in the Shorts Pond area), has specific ecological requirements only supported by the presence of dispersal corridors between breeding areas (i.e., small wetlands unable to support substantial predatory fish populations) and underground burrows in forested uplands where adults of this species spend the majority of the year. However, direct impact to wetland habitats would be avoided along the Direct Route Alternative corridor, thereby minimizing the potential for affecting wetland-

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dependent listed plant or animal species. It is unlikely that Eastern tiger salamanders would be significantly affected by the temporary construction along the corridor.

As all project-related construction and maintenance activities would occur adjacent to highly-traveled roadways, no significant impacts are expected to occur to important dispersal pathways that have not already occurred. However, LIPA recognizes the value of these dispersal corridors and would limit barriers to the movement of reptiles and amphibians.

Consequently, the Direct Route Alternative would not have a significant adverse impact on threatened, endangered, special concern or rare species, whether the transmission line was constructed overhead, underground, or hybrid, including the Village underground option.

BRIDGEHAMPTON SUBSTATION

No threatened and endangered plant or wildlife species listed by the NYNHP were found along the proposed substation expansion area during the field surveys.

One major conservation concern in the vicinity of the proposed substation expansion is the potential for significant impacts to connectivity between forested upland areas and wetland areas, specifically Great Swamp and the Long Pond Greenbelt. Several threatened and endangered plant species and one state-endangered amphibian species, the Eastern tiger salamander, have occurred in wetland areas present in the vicinity of the proposed substation expansion. These species move to and from wetland areas and adjacent upland areas during their life cycle.

The New York State-endangered Eastern tiger salamander has been identified over the past 20 years in at least one area adjacent to the proposed substation expansion (i.e., wetlands in the Long Pond Greenbelt). It is possible that the wetland-forest mosaic at and in the vicinity of the proposed substation expansion could support breeding populations of Eastern tiger salamanders.

According to correspondence with NYSDEC with regard to the Eastern tiger salamander, while the Direct Route Alternative is considered by NYSDEC to be one of the least intrusive routes of the four project alternatives considered in this EIS (see Appendix B), the proposed substation is closest to areas known to support Eastern tiger salamanders. In order to minimize disturbance to potential habitats of the Eastern tiger salamander, the NYSDEC suggests that more information collected during a biologically relevant time of year is required to determine the presence of this species along the Direct Route Alternative corridor. NYSDEC recommends a survey be conducted during February and March for the presence of vernal pools that may provide adequate habitat.

Once a route has been selected, and the precise location and arrangement of all equipment has been verified, more detailed surveys for threatened and endangered flora and fauna would be performed within the areas of potential impact. Accepted survey protocols would be used to search for target species, and the NYSDEC would be consulted for more specific information on threatened and endangered flora and fauna within the area of the proposed substation footprint. LIPA would conduct such a survey and make appropriate adjustments in the plans for the Direct Route Alternative to prevent loss of tiger salamander habitat in the event that the Direct Line Alternative is selected.

Consequently, the Bridgehampton Substation expansion would not have a significant adverse impact on threatened, endangered, special concern or rare species, whether the transmission line was constructed overhead, underground, or hybrid, including the Village underground option.

CONCLUSIONS

Based upon the information above, no significant adverse impacts to natural resources, including wetlands, flora and fauna, or rare and endangered species, would be expected to occur as a result of the construction of the Direct Route Alternative and the Bridgehampton Substation expansion. The Direct Route Alternative transmission line would call for in-situ replacement of an existing line through a landscape marked by human uses (i.e., agricultural and residential). Most of the Direct Route Alternative is characterized by landscaped and maintained vegetation, consisting of ornamental trees and herbaceous vegetation, hedgerows, and lawns offering minimal resources for wildlife (i.e., birds, mammals, reptiles and amphibians). Plant communities located in less developed vacant land along the Direct Route Alternative corridor are relatively small scrub-shrub/wooded thickets dominated by a small suite of introduced and native species and ornamental escapes.

Forested areas located at the eastern end of the line, in the vicinity of the Bridgehampton Substation and Bridgehampton Sag Harbor Turnpike, offer more substantial resource value to wildlife, although based on close proximity to a major road with residential development, it is likely that human-adapted or edge species dominate in this landscape.

Construction activities would be limited to a narrow corridor along a rail line and well-traveled two-lane roadways, and impacts during construction and routine maintenance would be limited to the proposed transmission line corridor. *