BROOKSIDE SOLAR, LLC

Matter No. 21-00917

900-2.12 Exhibit 11

Terrestrial Ecology

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Acronym List

AES	The AES Corporation, Inc.
BBS	Breeding Bird Surveys
BCI	Bat Conservation International
BMPs	Best Management Practices
CBC	Christmas Bird Count
CWA	Clean Water Act
DBH	diameter at breast height
ERM	Environmental Resource Mapper
HMANA	Hawk Migration Association of North America
IBA	Important Bird Area
IPaC	Information for Planning and Consultation
ISMCP	Invasive Species Management and Control Plan
LOD	limits of disturbance
NYBBA	New York State Breeding Bird Atlas
NYCRR	New York Codes, Rules and Regulations
NYNHP	New York Natural Heritage Program
NYSAGM	New York State Department of Agriculture and Markets
NYSDEC	New York State Department of Environmental Conservation
ORES	Office of Renewable Energy Siting
POI	point of interconnection
SWAP	State Wildlife Action Plan
SWPPP	Stormwater Pollution Prevention Plan
TNC	The Nature Conservancy
USCs	Uniform Standards and Conditions
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WRS	Winter Raptor Surveys

Glossary Terms

Applicant	Brookside Solar, LLC, a subsidiary of The AES Corporation, Inc. (AES), the entity seeking a siting permit for the Facility from the Office of Renewable Energy Siting (ORES) under Section 94-c of the New York State Executive Law.
Facility	The proposed components to be constructed for the collection and distribution of energy for the Brookside Solar Project, which includes solar arrays, inverters, electric collection lines, and the collection substation.
Facility Site	The parcels encompassing Facility components, which totals 1,471 acres in the Towns of Burke and Chateaugay, Franklin County, New York (Figure 2-1).
Limits of Disturbance	The area to which construction impacts will occur, totaling approximately 645 acres.
Study Area	In accordance with the Section 94-c Regulations, the Study Area for the Facility includes a radius of 5 miles around the Facility Site boundary, unless otherwise noted for a specific resource study or Exhibit. The 5-mile Study Area encompasses 69,963 acres, inclusive of the 1,471-acre Facility Site.
Towns	Towns of Burke and Chateaugay, Franklin County, New York.

Exhibit 11: Terrestrial Ecology

This Exhibit provides information required in accordance with the requirements of Section 900-2.12 of the Section 94-c regulations. Included are descriptions of the various plant communities found at the Facility Site, descriptions of any unique or protected vegetation, and the methods the Applicant will employ to minimize impacts to these vegetation resources

11(a) Existing Conditions

The Facility Site, as well as adjacent properties within 100 feet of areas to be disturbed by construction and the Facility's point of interconnection (POI), is located within the Upper St. Lawrence Valley ecological region (ecoregion), as defined by Bryce et al., (2010). This ecoregion separates the Northern and Western Adirondack Foothills to the south and Canada to the north. Historically, northern hardwoods dominate the hills, although small farms also occur in a landscape mosaic with abandoned field and woodlots. Soils in the Facility Site are stony loam, derived from sandstone, quartz, gneiss, and marble that support dairy farming and are suitable for growing hay, grain, potatoes (Bryce et al., 2010).

The Facility Site is composed predominantly of agricultural land with smaller portions of successional shrubland, hedgerows, and forested land. Historic aerial imagery from 1985, 1993, 1994, 2006, 2007, 2008, 2009, 2011, 2012, 2014, and 2016 depicts agricultural uses within open areas of the Facility Site and adjacent properties within 100 feet. Agricultural areas mostly consist of corn ***(****Zea mays)*, soybeans (*Glycine max*), and hay fields. The Facility Site was classified through review of the most recent National Land Cover Database (NLCD, 2019), aerial photography and onsite observations during field visits conducted in June, October, and December 2020, and May 2021.

(1) Plant Communities

The plant communities identified within the Facility Site and adjacent areas are common in the State of New York (Edinger et al., 2014). Figure 11-1 includes mapped plant communities as well as disturbances to the communities required by the construction and siting of the Facility. Descriptions of plant communities and typical plant species found in each community, as well as those species observed during field visits, are provided below and summarized in Table 11-1 below.

Table 11-1. Representative Plant Species and Vegetation Community Types

Common Name	Scientific Name
Row Crops	
Corn	*Zea mays*
Hay/Pasture	
Reed canary grass	*Phalaris arundinacea*
Timothy grass	*Phleum pratense*
Beech-maple Mesic Forest	
Sugar maple	*Acer saccharum*
American beech	*Fagus grandifolia*
Yellow birch	*Betula allegheniensis*
White ash	*Fraxinus americana*
Eastern hop hornbeam	*Ostrya virginiana*
Red maple	*Acer rubrum*
Hobblebush	*Viburnum lantanoides*
American hornbeam	*Carpinus caroliniana*
Striped maple	*Acer pensylvanicum*
Witch hazel	*Hamamelis virginiana*
Alternate-leaved dogwood	*Cornus alternifolia*
Eastern hemlock	*Tsuga canadensis*
Red spruce	*Picea rubens*
Hemlock-hardwood Swamp	
Eastern hemlock	*Tsuga canadensis*
Yellow birch	*Betula alleghaniensis*
Red maple	*Acer rubrum*
White pine	*Pinus strobus*
Blackgum	*Nyssa sylvatica*
Green ash	*Fraxinus pennsylvanica*

Table 11-1. Representative Plant Species and Vegetation Community Types

Common Name	Scientific Name
Highbush blueberry	*Vaccinium corymbosum*
Great rhododendron	*Rhododendron maximum*
Sweet pepperbush	*Clethra alnifolia*
Various viburnums	*Viburnum nudum var. cassinoides, V. lentago, and V. lantanoides*
Winterberry	*Ilex verticillata*
Mountain holly	*Nemopanthus mucronatus*
Cinnamon fern	*Osmunda cinnamomea*
Sensitive fern	*Onoclea sensibilis*
Various sedges	*Carex trisperma, C. folliculata, and C. bromoides*
Goldthread	*Coptis trifolia*
Canada mayflower	*Maianthemum canadense*
Common wood-sorrel	*Oxalis montana*
Foamflower	*Tiarella cordifolia*
Wild sarsaparilla	*Aralia nudicaulis*
Hemlock-northern Hardwood Forest	
Eastern hemlock	*Tsuga canadensis*
Sugar maple	*Acer saccharum*
Red maple	*Acer rubrum*
Yellow birch	*Betula alleghaniensis*
Black birch	*Betula lenta*
Red oak	*Quercus rubra*
American beech	*Fagus grandifolia*
White ash	*Fraxinus americana*
Chestnut oak	*Quercus montana*
White oak	*Quercus alba*

Table 11-1. Representative Plant Species and Vegetation Community Types

Common Name	Scientific Name
White pine	*Pinus strobus*
Eastern hop hornbeam	*Ostrya virginiana*
Black cherry	*Prunus serotina*
Basswood	*Tilia americana*
Striped maple	*Acer pensylvanicum*
Witch hazel	*Hamamelis virginiana*
Hobblebush	*Viburnum lantanoides*
Maple-leaf viburnum	*Viburnum acerifolium*
Lowbush blueberry	*Vaccinium pallidum*
Raspberries	*Rubus spp.*
Great rhododendron	*Rhododendron maximum*
Maple-basswood Rich Mesic Forest	
Sugar maple	*Acer saccharum*
American basswood	*Tilia americana*
White ash	*Fraxinus americana*
Eastern hop hornbeam	*Ostrya virginiana*
Yellow birch	*Betula allegheniensis*
Northern red oak	*Quercus rubra*
American beech	*Fagus grandifolia*
Alternate-leaved dogwood	*Cornus alternifolia*
Witch hazel	*Hamamelis virginiana*
Wild leek	*Allium tricoccum*
Common lady fern	*Athyrium filix-femina*
Blue cohosh	*Caulophyllum thalictroides*
False Solomon’s seal	*Maianthemum racemosum*
Bloodroot	*Sanguinaria* spp.

Table 11-1. Representative Plant Species and Vegetation Community Types

Common Name	Scientific Name
Red Maple-hardwood Swamp	
Red maple	*Acer rubrum*
Green ash	*Fraxinus pennsylvanica*
American elm	*Ulmus americana*
Yellow birch	*Betula allegheniensis*
American hornbeam	*Carpinus caroliniana*
Eastern white pine	*Pinus strobus*
Northern spicebush	*Lindera benzoin*
Southern arrowwood	*Viburnum dentatum*
Silky dogwood	*Corus amomum*
Sensitive fern	*Onoclea sensibilis*
Successional Old Field	
Goldenrods	*Solidago* spp.
Timothy grass	*Phleum pratense*
Queen Anne's lace	*Daucus carota*
Bedstraw	*Galium* spp.
Common milkweed	*Asclepias syriaca*
Honeysuckles	*Lonicera* spp.
Dogwoods	*Cornus* spp.
American vetch	*Vicia americana*
White clover	*Trifolium repens*
Common dandelion	*Taraxacum officinale*
Successional Shrubland	
Red osier dogwood	*Cornus alba*
Gray dogwood	*Cornus racemosa*
White meadowsweet	*Spiraea alba*

Table 11-1. Representative Plant Species and Vegetation Community Types

Common Name	Scientific Name
Morrow's honeysuckle	*Lonicera morrowii*
Disturbed/Developed Land	
Multiflora rose	*Rosa multiflora*
Common buckthorn	*Rhamnus cathartica*
Common Reed Marsh	
European common reed	*Phragmites australis*
Shallow Emergent Marsh	
Reed canary grass	*Phalaris arundinacea*
Narrowleaf cattail	*Typha angustifolia*
White meadowsweet	*Spiraea alba*
Fox sedge	*Carex vulpinoidea*
Soft rush	*Juncus effusus*
Gray dogwood	*Cornus racemosa*
Spotted touch-me-not	*Impatiens capensis*
Joe-pye-weed	*Eutrochium maculatum*
Smartweeds	*Persicaria hydropiperoides*
Deep Emergent Marsh	
Various cattails	*Typha spp.*
Arrowhead	*Sagittaria latifolia*
Rice cutgrass	*Leersia oryzoides*
Water horsetail	*Equisetum fluviatile*
Duckweeds	*Lemna minor, L. trisulca*
Common yellow pond-lily	*Nuphar variegata*
Water milfoils	*Myriophyllum spicatum, M. sibericum*
Shrub Swamp	
White meadowsweet	*Spiraea alba*

Table 11-1. Representative Plant Species and Vegetation Community Types

Common Name	Scientific Name
American elm	*Ulmus americana*
Swamp white oak	*Quercus bicolor*
Black willow	*Salix nigra*
Gray dogwood	*Cornus racemosa*
Morrow's honeysuckle	*Lonicera morrowii*
Various willows	*Salix spp.*
Arrowwood	*Viburnum dentatum var. lucidum*

Agricultural Land

Agricultural land consists of cropland/field crops (hay) and cropland/row crops (corn) throughout the majority of the Facility Site. These ecological communities are "either created and maintained by human activities or are modified by human influence" and are therefore, altered from their original state prior to human influence (Edinger et al., 2014). Both cropland/field crops and cropland/row crops are found throughout New York State and have a ranking status of "unranked cultural" by the New York Natural Heritage Program (NYNHP). Based on observations and data collected during surveys, the dominant row crop established within the Facility Site is corn, and the dominant plants in hay fields within the Facility Site is reed canary grass (*Phalaris arundinacea*) and Timothy grass (*Phleum pratense*). More information regarding agricultural resources within the Facility Site can be found in Exhibit 15 of the Application.

Forestland

Forested communities within the Facility Site are predominantly composed of deciduous species including beech-maple mesic forests, hemlock-hardwood swamps, hemlock-northern hardwood forests, maple-basswood rich mesic forests, and red maple-hardwood swamps (Edinger et al., 2014). The largest forest patches are in the northeastern and southwestern portions of the Facility Site, are approximately 55.8 and 9.5 acres, respectively, and are not connected to one another outside the Facility Site but do extend offsite.

The Nature Conservancy (TNC) has defined matrix forest blocks as large contiguous areas capable of supporting species that require interior forest conditions (Anderson and Bernstein, 2003). None of the forests at the Facility Site are part of a TNC matrix forest block or serve as a corridor to a TNC matrix forest block. A small percentage of the forested land at the Facility Site can be classified as edge forest, which is defined as forested land within 300 feet of the forest's edge along agricultural land and roads. Refer to Section 11(b) for further discussion.

Beech-maple mesic forest (Heritage Rank: G4 S4 *[Apparently secure globally, apparently secure in New York State]***)**

Beech-maple mesic forest occurs on moist, well-drained, usually acidic soils. It is a northern hardwood forest with sugar maple (*Acer saccharum*) and American beech (*Fagus grandifolia*) codominant. This is a broadly defined community type with several regional and edaphic variants. These forests occur on moist, well-drained, usually acid soils. Common associates are yellow birch (*Betula alleghaniensis*), white ash (*Fraxinus americana*), hop hornbeam (*Ostrya virginiana*), and red maple (*Acer rubrum*). Characteristic small trees or tall shrubs are hobblebush (*Viburnum lantanoides*), American hornbeam (*Carpinus caroliniana*), striped maple (*Acer pensylvanicum*), witch hazel (*Hamamelis virginiana*), and alternate-leaved dogwood (*Cornus alternifolia*). Typically, there is also an abundance of tree seedlings, especially of sugar maple; American beech and sugar maple saplings are often the most abundant "shrubs" and small trees. Eastern hemlock (*Tsuga canadensis*) may be present at a low density. In the Adirondacks, a few red spruce (*Picea rubens*) may also be present.

Typical beech-maple mesic forest communities identified during environmental field surveys at the Facility Site include sugar maple, American beech, striped maple, and red maple.

Hemlock-hardwood swamp (Heritage Rank G4G5 S4 *[Either rare and local throughout its range (21 to 100 occurrences) to apparently secure globally, apparently secure in New York State]***)**

Hemlock-hardwood swamps have mineral or muck soils that are somewhat poorly drained to very poorly drained. They are a mixed swamp that occurs on mineral soils and deep muck in depressions, which receive groundwater discharge, typically in areas with acidic substrate. These swamps usually have a fairly closed canopy (70 to 90% cover), sparse shrub layer, and low species diversity. The tree canopy is typically dominated by eastern hemlock, and

codominated by yellow birch and red maple. Other less frequently occurring trees include white pine (*Pinus strobus*), blackgum (*Nyssa sylvatica*), and green ash (*Fraxinus pennsylvanica*). Characteristic shrubs include saplings of canopy trees plus highbush blueberry (*Vaccinium corymbosum*), often dominant, with great rhododendron (*Rhododendron maximum*) and sweet pepperbush (*Clethra alnifolia*) becoming more common in Lower Hudson Valley examples. Other less frequently occurring shrubs include various viburnums (*Viburnum nudum* var. *cassinoides, V. lentago,* and *V. lantanoides*), winterberry (*Ilex verticillata*), and mountain holly (*Nemopanthus mucronatus*). Characteristic herbs are cinnamon fern (*Osmunda cinnamomea*) and sensitive fern (*Onoclea sensibilis*). Groundcover may also be fairly sparse. Other less frequently occurring herbs include sedges (*Carex trisperma, C. folliculata,* and *C. bromoides*), goldthread (*Coptis trifolia*), Canada mayflower (*Maianthemum canadense*), common wood-sorrel (*Oxalis montana*), foamflower (*Tiarella cordifolia*), and wild sarsaparilla (*Aralia nudicaulis*).

Typical Hemlock-hardwood swamp forest communities identified during environmental field surveys at the Facility Site include eastern hemlock, yellow birch, green ash, and white pine.

Hemlock-northern hardwood forest (Heritage Rank G4G5 S4 *[Either rare and local throughout its range (21 to 100 occurrences) to Apparently secure globally, apparently secure in New York State]***)**

Hemlock-northern hardwood forests typically occur on moderately well-drained to well-drained loamy or silty soils. It is a mixed forest that typically occurs on middle to lower slopes of ravines; on cool, mid-elevation slopes; and on moist, well-drained sites at the margins of swamps. In any one stand, eastern hemlock is codominant with any one to three of the following: sugar maple, red maple, yellow birch, black birch (*B. lenta*), red oak (*Quercus rubra*), American beech, white ash, chestnut oak (*Quercus montana*), white oak (*Q. alba*), white pine, other trees may include hop hornbeam, black cherry (*Prunus serotina*), and basswood (*Tilia americana*). The relative cover of eastern hemlock is quite variable, ranging from nearly pure stands in some steep ravines to as little as 20 percent of the canopy cover. Striped maple is often prominent as a mid-story tree. The shrub layer may be sparse and typically includes saplings of canopy trees. Characteristic shrubs are witch hazel, hobblebush, maple-leaf viburnum (*Viburnum acerifolium*), lowbush blueberry (*Vaccinium pallidum*), and raspberries (*Rubus* spp.). In some ravines, especially in the southern part of the state, great rhododendron forms a dense subcanopy or tall

shrub layer. Canopy cover can be quite dense, resulting in low light intensities on the forest floor and hence, a relatively sparse ground layer.

Typical Hemlock-northern hardwood forest communities identified during environmental field surveys at the Facility Site include sugar maple, American beech, white pine, and yellow birch.

Maple-basswood rich mesic forest (Heritage Rank: G4 S3 *[Apparently secure globally, typically 21 to 100 occurrences in New York State]***)**

Maple-basswood mesic forest communities typically occur on moist, well-drained soils with a neutral pH. The dominant trees include sugar maple, American basswood, and white ash. Common associates occurring in the community are eastern hop hornbeam (*Ostrya virginiana*), yellow birch, northern red oak, and American beech. The shrub layer includes alternate-leaved dogwood (*Cornus alternifolia*) and witch hazel. A high diversity of calcium-rich indicator herbs are predominant in the ground layer and are usually correlated with calcareous bedrock. Characteristic species of the herbaceous layer include wild leek (*Allium tricoccum*), common lady fern (*Athyrium filix-femina*), blue cohosh (*Caulophyllum thalictroides*), false Solomon's seal (*Maianthemum racemosum*), and bloodroot (*Sanguinaria canadensis*).

Typical maple-basswood mesic forest communities identified during environmental field surveys at the Facility Site include sugar maple, yellow birch, American beech, and witch hazel.

Red maple-hardwood swamp (Heritage Rank G5 S4S5 *[Demonstrably secure globally, apparently or demonstrably secure in New York State]***)**

Red maple-hardwood swamps occur in poorly drained depressions, usually on inorganic soil, but occasionally on muck or shallow peat. This community is broadly defined with several regional variants. Generally, red maple is either the only canopy dominant or codominant with one or more hardwoods, including green ash, American elm (*Ulmus americana*), and yellow birch. Other trees present could include American hornbeam (*Carpinus caroliniana*) and eastern white pine. The shrub layer is usually well-developed and may be quite dense due to characteristic shrubs such as northern spicebush (*Lindera benzoin*), southern arrowwood (*Viburnum dentatum*), and silky dogwood (*Corus amomum*). The herbaceous layer may be quite diverse and is often dominated by ferns, including sensitive fern.

Typical red maple-hardwood swamp forest communities identified during environmental field surveys at the Facility Site include red maple, American elm, green ash, and yellow birch.

Successional Old Field

This community is defined as a meadow dominated by forbs and grasses that occur on sites that have been cleared or plowed due to agriculture or development, and subsequently abandoned. Most old field communities are irregular and infrequently mowed. As such, conditions favor the establishment and spread of representative old field species. Characteristic herbaceous species include many goldenrods (*Solidago* spp.), timothy grass, Queen Anne's lace (*Daucus carota*), bedstraw (*Galium* spp.), and common milkweed (*Asclepias syriaca*). Shrubs can be present within old field communities but represent less than 50 percent of the community (Edinger et al., 2014). Common shrubs found in this community are honeysuckles (*Lonicera* spp.) and dogwoods (*Cornus* spp.). If not maintained by infrequent mowing, this relatively short-lived community succeeds to a successional shrubland, woodland, or forest community.

Typical vegetation species recorded during environmental field surveys at the Facility Site include timothy grass, American vetch (*Vicia americana*), white clover (*Trifolium repens*), and common dandelion (*Taraxacum officinale*).

Successional Shrubland

Successional shrubland consists of shrublands that have established after a site has been cleared (e.g., for agriculture, logging, or development) or was disturbed by natural events. This community is defined by at least a 50-percent cover of shrub species (Edinger et al., 2014). Successional shrublands are transitory communities between old field and successional forest communities. Characteristic shrubs found within the Facility Site are red osier dogwood (*Cornus alba*), gray dogwood (*Cornus racemosa*), white meadowsweet (*Spiraea alba*), and Morrow's honeysuckle (*Lonicera morrowii*).

Disturbed/Developed Land

Disturbed/developed land is characterized by the presence of buildings, roadways, quarries, residential areas, commercial properties, industrial sites, and maintained greenspaces (e.g., mowed lawns, gardens, parks) or other areas with extreme anthropogenic influence (Edinger et

al., 2014). Developed land communities in the Facility Site include mowed lawn (Heritage Rank: unranked cultural), mowed roadside/pathway (Heritage Rank: unranked cultural), and rural structure exterior (Heritage Rank: unranked cultural). Vegetation within these areas tend to be sparse when not artificially planted or influenced. However, when present, certain species that thrive in disturbed environments act as pioneer species or become directly or indirectly introduced. Often in developed areas, non-native plant species flourish in a community that generally characterizes old field appearances and functions. Non-native species such as multiflora rose (*Rosa multiflora*) and common buckthorn (*Rhamnus cathartica*), and various upland grasses generally populate these developed areas (Edinger et al., 2014).

Farm Pond/Artificial Pond

A total of two farm pond/artificial pond community types are located within the Facility Site. These ponds are approximately 0.8 acres and 0.1 acres in size (0.9 acres total) and are three quarters of a mile apart. They are manmade and maintained as farm ponds on agricultural property. These community types are common throughout New York State and are unranked by the NYNHP.

Riverine Communities

Riverine communities delineated within the Facility Site include two unconfined rivers (S-WCR-4 and S-JJB-2) (Heritage Rank G4S3S4), 14 intermittent and 4 ephemeral streams (Heritage rank: G4 S4), and 8 ditch/artificial intermittent stream (Heritage Rank: unranked cultural). A total of 29,245 feet of stream was delineated at the Facility Site during field evaluations.

As described by Edinger et al. (2014), unconfined rivers cover a broad variety of low gradient streams. The two unconfined rivers identified onsite are S-JJB-2 and S-WCR-4; S-JJB-2 a medium-sized, perennial waterbody that extends for approximately 2,780 linear feet in the western portion of the Facility Site, and S-WCR-4 an ephemeral, medium-sized waterbody that extends approximately 1,764 linear feet in the northern portion of the Facility Site. Perennial streams tend to flow throughout the year, except during severe drought conditions.

Intermittent streams include “the community of a small, intermittent, or ephemeral streambed in the uppermost segments of streams systems” (Edinger et al., 2014). Within this riverine community type, streams can be further classified by their usual level of flow regime. Intermittent streams flow only during certain times of year from alternating springs, snow melt,

or from seasonal precipitation runoff. Ephemeral streams flow sporadically and are entirely dependent on precipitation from storm events or periodic snow melts. They tend to flow above the water table and are often found as drainage features adjacent to or within the headwaters of a more major stream system. Within the Facility Site, 14 streams were classified to have a flow regime of intermittent, while 4 streams were classified as ephemeral. Stream substrates typically included silt and clay, with some streams containing cobble or gravel, with a depth primarily between 0 to 6 inches. Although aquatic vegetation grows within some of these communities, emergent wetland vegetation often grows along the periphery of riverine communities. Typical emergent wetland species associated with riverine communities within the Facility Site include reed canary grass. Waterbody and stream habitat types are further described in Exhibit 13.

Palustrine Communities

Palustrine communities consist of non-tidal, perennial wetlands, which are characterized by the presence of emergent vegetation (Edinger et al., 2014). Palustrine wetland communities delineated within the Facility Site include common reed marsh (Heritage Rank: unranked), shallow emergent marshes (Heritage Rank: G5 S5), deep emergent marshes (Heritage Rank G5 S5), shrub swamps (Heritage Rank: G5 S5), hemlock-hardwood swamp (Heritage Rank G4G5 S4), red maple-hardwood swamps (Heritage Rank G5 S4S5). A total of 72.4 acres of palustrine wetlands were delineated onsite. Emergent marshes within the Facility Site are dominated by reed canary grass, narrowleaf cattail, white meadowsweet, fox sedge (*Carex vulpinoidea*), soft rush (*Juncus effusus*), gray dogwood, and spotted touch-me-not (*Impatiens capensis*). Shrub swamps observed within the Facility Site were dominated by gray dogwood, black willow, Morrow's honeysuckle, and white meadowsweet. Dominant vegetation in the forested wetlands observed within the Facility Site typically included silver maple (*Acer saccharinum*), red maple, black willow, eastern hemlock, and black spruce (*Picea mariana*) in the tree stratum, and gray dogwood and Morrow's honeysuckle within the shrub stratum. Wetland habitat types are further described in Exhibit 14.

Invasive Species

Invasive vegetative species are of special concern as their spread is likely to cause some degree of environmental, human health, or economic harm. The result can be a rapid spread of invasive species populations, which can alter ecological communities and diminish biological

diversity. Normal dispersal methods for invasive plant species include wind, water, and wildlife; however, anthropogenic means of spread (e.g., construction activity) have the potential to accelerate their distribution. An Invasive Species Management and Control Plan (ISMCP) has been created for the Facility and was developed in accordance with 6 New York Codes, Rules and Regulations (NYCRR) Part 575 (Appendix 11-1). The intent of the ISMCP is to outline a clear plan to minimize the spread of invasive species that are present within the Facility. As part of the Facility field efforts, ecological resource surveys were performed for the Facility in the summer of 2020 and 2021. During ecological resource surveys and wetland and stream delineations, TRC biologists documented occurrences of invasive species within the Facility Site to be used as a baseline survey for future monitoring efforts.

11(b) Temporary and Permanent Impacts to Plant Communities

Construction and operation of the Facility will result in unavoidable temporary and minor permanent impacts to agricultural land (pasture and row crops), forested land, and successional shrubland. Areas that are temporarily impacted will be restored to their original condition following the completion of construction. Permanent impacts to plant communities will occur in areas designated for permanent operation of the Facility. Locations of Facility components and corresponding vegetative community types that would be impacted as a result of construction and operation are shown on Figure 11-1 and described in further detail below. Table 11-2 below provides the approximate acreage of the vegetative communities that would be affected during construction and operation of the Facility. Calculations of specific impacts to these communities within the Facility Site are based on the Facility Design Drawings included as Appendix 5-1 of Exhibit 5.

Table 11-2. Vegetation Type Construction and Operation Impacts

Vegetative Type	Component	Impacts (Acres)[1]	
		Temporary	Permanent
Cropland/Field Crops	Limit of Disturbance (LOD)	40.7	-
	Collection Trench	0.1	-
	Tree Clearing	-	1.4
	Selective Tree Clearing[2]	0.4	-
	Laydown Yards	0.2	-
	Solar Arrays	-	88.2

Table 11-2. Vegetation Type Construction and Operation Impacts

Vegetative Type	Component	Impacts (Acres)[1]	
		Temporary	Permanent
	Fenced Area	195.6	-
	Fence Line	-	1.1
	Haul Roads	-	11.3
	HDD Pits	0.1	-
	HDD Collection Line	<0.1	-
	Inverter Pads	-	0.2
	Grading	-	16.6
	Junction Box	-	<0.1
	Subtotal	237.0	118.8
Cropland/Row Crops	LOD	19.9	-
	Collection Trench	0.5	-
	Tree Clearing	-	0.1
	Solar Arrays	-	39.7
	Fenced Area	95.6	-
	Fence Line	-	0.6
	Haul Roads	-	3.8
	Inverter Pads	-	0.1
	Grading	-	5.2
	HDD Pits	0.1	-
	HDD Collection Line	<0.1	-
	Laydown Yard	0.3	-
	MET Station	-	<0.1
	Selective Tree Clearing	0.2	
	Culvert/ Riprap	-	<0.1
	Junction Box	-	<0.1
	Subtotal	116.6	49.3
Forested Land	Tree Clearing (shading)	-	14.1
	Solar Arrays	-	14.7
	Fenced Area	22.1	-
	Fence Line	-	0.4

Table 11-2. Vegetation Type Construction and Operation Impacts

Vegetative Type	Component	Impacts (Acres)[1]	
		Temporary	Permanent
	Haul Roads	-	1.4
	Inverter Pads	-	<0.1
	Collection Trench	<0.1	-
	Culverts/ Riprap	-	<0.1
	Grading	-	5.5
	HDD Pits	<0.1	-
	HDD Collection Line	<0.1	-
	Laydown Yard	<0.1	-
	LOD	6.5	-
	Selective Tree Clearing	17.9	-
	Subtotal	46.6	36.1
Successional Shrubland	Tree Clearing	-	0.3
	Selective Tree Clearing	0.1	-
	Solar Arrays	-	2.8
	Fenced Area	7.3	-
	Fence Line	-	<0.1
	Haul Roads	-	0.5
	Inverter Pads	-	<0.1
	Collection Trench	<0.1	-
	HDD Collection Line	<0.1	-
	Culvert/ Riprap	-	<0.1
	Grading	-	1.1
	HDD Pits	<0.1	-
	LOD	0.7	-
	Subtotal	8.1	4.7
Successional Old Field	Tree Clearing	-	<0.1
	Selective Tree Clearing	0.1	-
	Solar Arrays	-	4.3
	Fenced Area	9.7	
	Fence Line	-	0.1

Table 11-2. Vegetation Type Construction and Operation Impacts

Vegetative Type	Component	Impacts (Acres)[1]	
		Temporary	Permanent
	Haul Roads	-	0.2
	Collection Trench	<0.1	-
	HDD Collection Line	<0.1	
	Culverts/ Riprap	-	<0.1
	Grading	-	0.1
	HDD Pits	<0.1	-
	Laydown Yard	<0.1	-
	LOD	4.8	-
	Subtotal	14.6	4.7
Developed/Disturbed Land	Selective Tree Clearing	<0.1	-
	Solar Arrays	-	0.1
	Fenced Area	0.2	-
	Fence Line	-	<0.1
	Haul Roads	-	0.8
	Collection Trench	<0.1	-
	HDD Collection Line	<0.1	-
	Culverts/ Riprap	-	<0.1
	Grading	-	0.1
	Laydown Yard	<0.1	-
	LOD	0.4	-
	Subtotal	0.6	1.0
PEM Delineated Wetland	Selective Tree Clearing	0.3	-
	Solar Arrays	-	0.1
	Fenced Area	0.3	-
	Fence Line	-	<0.1
	Haul Roads	-	<0.1
	HDD Collection Line	<0.1	-
	Grading	-	<0.1
	LOD	1.2	-
	Subtotal	2.1	0.2

Table 11-2. Vegetation Type Construction and Operation Impacts

Vegetative Type	Component	Impacts (Acres)[1]	
		Temporary	Permanent
PFO Delineated Wetland	Selective Tree Clearing	0.9	-
	LOD	0.3	-
	Subtotal	1.2	-
PSS Delineated Wetland	Fenced Area	2.0	-
	Selective Tree Clearing	0.2	-
	Tree Clearing	-	0.7
	Haul Roads	-	<0.1
	Grading	-	<0.1
	LOD	0.2	-
	Subtotal	2.3	0.7
PUB Delineated Wetland	LOD	0.2	-
	Subtotal	0.2	-
Other	Selective Clearing	<0.1	-
	LOD	<0.1	-
	Grading	-	<0.1
	Subtotal	<0.1	-
	Total Impacts	429.1	215.5

[1] Individual Impact Acres may not add to the total impact acreages due to rounding.

[2] Selective Tree clearing is defined as clearing without grading or the grubbing of stumps.

Impacts to Agricultural Land

Limits of disturbance (LODs) to agricultural land for the construction and operation of the Facility include approximately 521.7 acres and consist of 353.6 acres of temporary impacts, 168.1 acres of permanent impacts. Of the 521.7 acres of total impacts, only 5.5 acres of classified as a PEM wetland. See Exhibit 15 for further description of agricultural resources within the Facility Site. Temporary impacts are limited to collection line installation, limited tree clearing, and proposed laydown yards. Permanent impacts are associated with the installation of the collection substation, construction of permanent haul roads, and installation of solar arrays and inverter pads.

Pre-existing hayfields that will be temporarily impacted will be re-seeded to the pre-existing vegetative conditions following construction, unless the land is returning to agricultural production or otherwise specified by the landowner. In accordance with the *New York State Department of Agriculture and Markets (NYSAGM) Guidelines for Solar Energy Projects* (NYSAGM, 2019), temporarily disturbed active agricultural areas will be stripped of topsoil, which will be set aside prior to construction and will be replaced upon completion of the construction phase of the Facility. During the life of the Facility, agricultural areas underneath and in the immediate vicinity of the solar panels will be maintained as grasses and forbs that require periodic mowing. Agricultural areas with row crops will be converted for the useful life of the Facility due to the installation of the solar arrays, since the plant community that will be maintained beneath the arrays will be different from the pre-existing row crops. Agricultural land that is used for Facility components will be restored following Facility decommissioning and agricultural operations may resume at that time (refer to Exhibit 23 for further information).

Impacts to Forested Land

Most solar arrays in the Facility Site have been sited outside forested areas to decrease fragmentation of existing forest community types. Fragmentation can result from the creation of openings, farmland expansion, creation or widening of road corridors, or the establishment of developed areas. To the extent practicable, connectivity of forested corridors with surrounding forest patches has been maintained, including areas where forested wetland communities are found. Isolated patches occurring within the Facility Site are unlikely to support conditions consistent with interior forest, or communities of forest-obligate and forest interior species, whereas larger forested areas promote connectivity to extensive forest habitat in the surrounding vicinity.

Forested land within the Facility Site consists of both small to medium, forested edges and larger forested areas that extend offsite. There will be moderate impacts to forested land, and the Applicant has avoided impacts in one of the two largest forested sections within the Facility Site (16.6 acres). Impacts to forested areas have been avoided and minimized to the maximum extent practicable while adhering to necessary setbacks described in Exhibits 5 and 24. As shown in the Design Drawings in several locations (see Sheets PV-C.00.06 and PV-C.00.12 for two examples), the Applicant has minimized tree clearing impacts to forest within 50 feet of NYS protected streams. No temporary laydown yards or work areas are proposed in forested areas to minimize the amount of tree clearing required for the Facility. The Applicant plans to remove

stumps only where certain Facility components will be located. The Facility requires a total of 46 acres of tree clearing for construction of the Facility, 20 acres of which will be selective tree clearing. Selective tree clearing is defined as clearing without grading or the grubbing of stumps.

Clearing for the Facility will result in the loss of 43.5 acres of peripheral forest area, defined as forest within 300 feet of the forest edge. The loss of peripheral forest will be removed through the addition of permanent haul roads and solar arrays within existing forest patches. The removal of peripheral forest can significantly impact edge effects that affect animal and plant populations or community structures that occur at the boundaries of fragmented habitats. These effects are most evident in species that exhibit edge-sensitivity.

Approximately 14.9 acres of vegetative screening will be planted, offsetting the impact to forested land. The proposed vegetative screening contains native trees and shrubs. A Landscape Plan, included on Sheet PV-C.13.00 of Appendix 5-1, depicts the vegetative screening that will screen the Facility components to reduce visibility and help maintain the visible greenery in the landscape that makes up the rural character. Facility components were sited away from forested land to the maximum extent practicable to prevent wildlife habitat loss.

Impacts to Successional Shrubland, Successional Old Field, and Developed/Disturbed Land

Construction of the Facility will result in temporary and permanent impacts to successional shrubland, successional old field, and developed/disturbed land communities as outlined in Table 11-2 above.

Temporary impacts to these cover types will occur from the initial, limited clearing for purposes of construction access and the installation of underground collection lines. Following construction, these areas will be restored and will return to their preexisting condition. Permanent loss will occur to approximately 4.7 acres of successional shrubland communities and 1.0 acres of disturbed/developed land communities that will occur from the siting of certain Facility components as outlined in Table 11-2 above.

As described herein, the impacts to the representative plant communities within the Facility Site are not expected to result in the significant loss or extirpation of any representative plant community.

11(c) Avoidance, Minimization, and Restoration Measures for Plant Community Impacts

As described in the preceding sections of this Exhibit 11, impacts to the vegetative communities present at the Facility Site have been avoided and minimized to the extent practicable. Preliminary Facility siting efforts considered the results of field surveys conducted at the Facility Site and focused on siting Facility components on contiguous parcels, confining Facility component locations to the smallest area possible, and avoiding potential fragmentation of vegetative community types. To minimize impacts to plant communities, solar panels and laydown yards will be located within previously disturbed agricultural areas and open fields to the maximum extent practicable. Linear Facility components such as haul roads and collection lines will be co-located to avoid and minimize impacts to plant communities. The design of the Facility includes avoidance of unnecessary impacts to grasslands, interior forests, wetlands, shrublands, and early successional forests, and results in only marginal impacts to these areas. No significant natural communities are located within the Facility Site.

The construction of the Facility will be typical of that for a project this size in a rural, agricultural landscape in New York State. The Applicant will implement appropriate Best Management Practices (BMPs) to ensure that impacts related to Facility construction and/or operation are limited to the Facility Site and are minimized to the extent practicable. This includes implementation of a comprehensive erosion and sediment control plan as part of the Facility's Stormwater Pollution Prevention Plan (SWPPP) for the Facility. Prior to the commencement of construction activities, temporary erosion and sediment controls shall be installed to prevent erosion of the soils and prevent water quality degradation in wetlands and waterbodies. Anticipated stormwater practices may include vegetated swales and level spreaders. A Preliminary SWPPP is included as Appendix 13-1 of this Application. The Applicant will also comply with the Uniform Standards and Conditions (USCs) as presented in Subpart 900-6 of the Section 94-c Regulations, including proper notification procedures and compliance with other applicable regulations (such as Sections 401 and 404 of the Clean Water Act [CWA]). As the impacts associated with construction of the Facility are typical, the use of alternative technologies during construction is not likely to reduce impacts and/or benefit the Facility significantly.

11(d) Wildlife Species Likely to Occur in Ecological Communities Onsite

The following section contains lists of the species of mammals, birds, amphibians, terrestrial invertebrates, and reptiles that are likely to occur in the vegetative community types identified in the preceding sections of this Exhibit. A complete list of species likely to occur within the Facility Site has been included in Appendix 12-1: Wildlife Site Characterization Report. Wildlife and wildlife habitat were documented during ecological surveys conducted onsite, including wetland and stream delineations, breeding bird surveys (BBS), and winter raptor surveys (WRS), in conjunction with publicly available data from the following sources:

- NYNHP database;
- New York State Amphibian and Reptile Atlas Project (Herp Atlas);
- New York State Breeding Bird Atlas (NYBBA) and range maps;
- United States Geological Survey (USGS) BBS data;
- National Audubon Society Christmas Bird Count (CBC) data;
- Hawk Migration Association of North America (HMANA) hawk watch count data;
- eBird;
- TNC data; and
- The Kingbird publication.

Table 11-3 below identifies the terrestrial species likely to occur in the vegetative community types described at the Facility Site and identifies species observed during field surveys or site visits.

Table 11-3. Wildlife Species Likely to Occur and/or Observed in Vegetative Community Types

Species		Occurrence
Common Name	**Scientific Name**	
Agricultural Community Type		
White-tailed deer	*Odocoileus virginianus*	1
Barn swallow	*Hirundo rustica*	3

Table 11-3. Wildlife Species Likely to Occur and/or Observed in Vegetative Community Types

Species		Occurrence
Common Name	**Scientific Name**	
Bobolink	*Dolichonyx oryzivorus*	3
European starling	*Sturnus vulgaris*	Likely to occur
Kildeer	*Charadrius vociferous*	Likely to occur
Red-winged blackbird	*Agelaius phoeniceus*	2, 3
Short-eared owl	*Asio flammeus*	Likely to occur
Upland sandpiper	*Bartramia longicauda*	Likely to occur
Horned lark	*Eremophila alpestris*	Likely to occur
Vesper sparrow	Pooecetes gramineus	Likely to occur
Northern harrier	*Circus cyaneus*	3
Rock pigeon	*Columba livia*	3
Mourning dove	*Zenaida macroura*	3
Eastern meadowlark	*Sturnella magna*	3
Wild turkey	*Meleagris gallopavo*	2
Turkey vulture	*Cathartes aura*	2
Mallard	*Anas platyrhynchos*	2
Canada goose	*Branta canadensis*	2
American kestrel	*Falco sparverius*	2
American crow	*Corvus brachyrhynchos*	2
Grasshopper sp.	*Caelifera sp.*	Likely to occur
Cricket sp.	*Gryllidae sp.*	Likely to occur
Dragonfly sp.	*Anisoptera sp.*	Likely to occur
Harvestmen	*Opiliones sp.*	Likely to occur
Forested Land Community Type		
Coyote	*Canis latrans*	Likely to occur
Eastern chipmunk	*Tamias striatus*	Likely to occur
Eastern cottontail	*Sylcilagus floridanus*	Likely to occur
Eastern gray squirrel	*Sciurus carolinensis*	Likely to occur
Eastern raccoon	*Procyon lotor lotor*	Likely to occur
Fisher	*Martes pennant*	Likely to occur

Table 11-3. Wildlife Species Likely to Occur and/or Observed in Vegetative Community Types

Species		Occurrence
Common Name	**Scientific Name**	
Gray fox	*Urocyon cinereoargenteus*	Likely to occur
Long-tailed weasel	*Mustela frentata*	Likely to occur
North American porcupine	*Erethizon dorasatum*	Likely to occur
Red fox	*Vulpes Vulpes*	Likely to occur
Striped skunk	*Mephitis mephitis*	Likely to occur
Various mice	*Mus spp., Peromyscus spp.*	Likely to occur
Various moles	*Condylura spp., Scalopus spp., Sorex spp.,*	Likely to occur
Various shrews	*Blarnia spp., Cryptotis spp., Sorex spp.*	Likely to occur
Various bats	*Myotis spp., Eptesiscus spp., Lasiurus spp., Permimyotis spp.*	Likely to occur
Virginia opossum	*Didelphis virginiana*	Likely to occur
White-tailed deer	*Odocoileus virginianus*	Likely to occur
Common garter snake	*Thamnophis sirtalis*	Likely to occur
Northern leopard frogs	*Lithobates pipiens*	Likely to occur
Wood frogs	*Rana sylvatica*	Likely to occur
Eastern American Toad	*Anaxyrus americanaus*	Likely to occur
Gray treefrog	*Hyla versicolor*	Likely to occur
Green frog	*Rana clamitans*	1
Northern spring peeper	*Pseudacris crucifer*	Likely to occur
Black-capped chickadee	*Poecile atricapillus*	2, 3
Black-throated green warbler	*Setophaga virens*	Likely to occur
Eastern wood-pewee	*Contopus virens*	Likely to occur
Hermit thrush	*Catharus guttatus*	3
Scarlet tanager	*Piranga olivacea*	3
Sharp-shinned hawk	*Accipiter striatus*	Likely to occur
Cooper's hawk	*Accipiter cooperii*	3
Winter wren	*Troglodytes hiemalis*	3
White-throated sparrow	*Zonotrichia albicollis*	3
White-breasted nuthatch	*Sitta carolinensis*	3
Veery	*Catharus fuscescens*	3

Table 11-3. Wildlife Species Likely to Occur and/or Observed in Vegetative Community Types

Species		Occurrence
Common Name	**Scientific Name**	
Ruffed grouse	*Bonasa umbellus*	3
Red-eyed vireo	*Vireo olivaceus*	3
Ovenbird	*Seiurus aurocapilla*	3
Northern cardinal	*Cardinalis cardinalis*	3
Mourning dove	*Zenaida macroura*	3
Great crested flycatcher	*Myiarchus crinitus*	3
Eastern wood-pewee	*Contopus virens*	3
Common raven	*Corvus corax*	3
Chestnut-sided warbler	*Setophaga pensylvanica*	3
Blue jay	*Cyanocitta cristata*	3
Black-and-white warbler	*Mniotilta varia*	3
Wild turkey	*Meleagris gallopavo*	2, 3
Red-tailed hawk	*Buteo jamaicensis*	2
Pileated woodpecker	*Dryocopus pileatus*	2, 3
Eastern bluebird	*Sialia sialis*	2
Common grackle	*Quiscalus quiscula*	2
American robin	*Turdus migratorius*	2, 3
American crow	*Corvus brachyrhynchos*	2, 3
Grasshopper sp.	*Caelifera sp.*	Likely to occur
Cricket sp.	*Gryllidae sp.*	Likely to occur
Dragonfly sp.	*Anisoptera sp.*	Likely to occur
Harvestmen	*Opiliones sp.*	Likely to occur
Successional Shrubland Community Type		
Coyote	*Canis latrans*	Likely to occur
Eastern chipmunk	*Tamias striatus*	Likely to occur
Eastern cottontail	*Sylcilagus floridanus*	Likely to occur
Eastern gray squirrel	*Sciurus carolinensis*	Likely to occur
Gray fox	*Urocyon cinereoargenteus*	Likely to occur
Red fox	*Vulpes Vulpes*	Likely to occur

Table 11-3. Wildlife Species Likely to Occur and/or Observed in Vegetative Community Types

Species		Occurrence
Common Name	Scientific Name	
Striped skunk	*Mephitis mephitis*	Likely to occur
Various mice	*Mus spp.*	Likely to occur
Various shrews	*Blarnia spp., Cryptotis spp., Sorex spp.*	Likely to occur
Various moles	*Condylura spp., Scalopus spp., Parascalops spp.*	Likely to occur
Virginia opossum	*Didelphis virginiana*	Likely to occur
White-tailed deer	*Odocoileus virginianus*	Likely to occur
Common garter snake	*Thamnophis sirtalis*	Likely to occur
Eastern American toad	*Anaxyrus americanaus*	Likely to occur
Northern spring peeper	*Pseudacris crucifer*	Likely to occur
Northern leopard frog	*Lithobates pipiens*	Likely to occur
American goldfinch	*Carduelis tristis*	3
American woodcock	*Scolopax mino*	Likely to occur
Baltimore oriole	*Icterus galbula*	Likely to occur
Brown thrasher	*Toxostoma rufum*	3
Chipping sparrow	*Spizella passerina*	Likely to occur
Common yellowthroat	*Geothlypis trichas*	3
Eastern towhee	*Pipilo erythrophthalmus*	Likely to occur
Field sparrow	*Spizella pusilla*	Likely to occur
Gray catbird	*Dumetella carolinensis*	3
Song sparrow	*Melospiza melodia*	3
Yellow warbler	*Setophaga petechia*	3
Wilson’s snipe	*Gallinago delicata*	3
Mourning dove	*Zenaida macroura*	3
Alder flycatcher	*Empidonax alnorum*	3
Wild turkey	*Meleagris gallopavo*	2
Eastern bluebird	*Sialia sialis*	2
Common grackle	*Quiscalus quiscula*	2
American robin	*Turdus migratorius*	2, 3
American crow	*Corvus brachyrhynchos*	2, 3

Table 11-3. Wildlife Species Likely to Occur and/or Observed in Vegetative Community Types

Species		Occurrence
Common Name	**Scientific Name**	
American black duck	*Anas rubripes*	2
Grasshopper sp.	*Caelifera sp.*	Likely to occur
Cricket sp.	*Grylidae sp.*	Likely to occur
Dragonfly sp.	*Anisoptera sp.*	Likely to occur
Harvestmen	*Opiliones sp.*	Likely to occur
Successional Old Field Community Type		
Coyote	*Canis latrans*	Likely to occur
Eastern cottontail	*Sylcilagus floridanus*	Likely to occur
Gray fox	*Urocyon cinereoargenteus*	Likely to occur
Striped skunk	*Mephitis mephitis*	Likely to occur
Various mice	*Mus spp.*	Likely to occur
Various shrews	*Blarnia spp., Cryptotis spp., Sorex spp.*	Likely to occur
Various moles	*Condylura spp., Scalopus spp., Parascalops spp*	Likely to occur
White-tailed deer	*Odocoileus virginianus*	Likely to occur
Common garter snake	*Thamnophis sirtalis*	Likely to occur
Eastern American toad	*Anaxyrus americanaus*	Likely to occur
Eastern milk snake	*Lampropeltis triangulum*	Likely to occur
Green frog	*Rana clamitans*	Likely to occur
Northern leopard frog	*Lithobates pipiens*	Likely to occur
Spring peeper	*Pseudacris crucifer*	Likely to occur
American goldfinch	*Carduelis tristis*	3
American woodcock	*Scolopax mino*	Likely to occur
Bobolink	*Dolichonyx oryzivorus*	3
Eastern kingbird	*Tyrannus tyrannus*	3
Field sparrow	*Spizella pusilla*	Likely to occur
House wren	*Troglodytes aedon*	Likely to occur
Red-winged blackbird	*Agelaius phoeniceus*	2, 3
Savannah sparrow	*Passerculus sandwichen*	3
Henslow's sparrow	*Ammodramus henslowii*	Likely to occur

Table 11-3. Wildlife Species Likely to Occur and/or Observed in Vegetative Community Types

Species		Occurrence
Common Name	**Scientific Name**	
Grasshopper sparrow	*Ammodramus savannarum*	3
Mourning dove	*Zenaida macroura*	3
Eastern meadowlark	*Sturnella magna*	3
Turkey vulture	*Cathartes aura*	2
Red-tailed hawk	*Buteo jamaicensis*	2
Eastern bluebird	*Sialia sialis*	2
Common grackle	*Quiscalus quiscula*	2
Canada goose	*Branta canadensis*	2
American robin	*Turdus migratorius*	2, 3
American kestrel	*Falco sparverius*	2
American crow	*Corvus brachyrhynchos*	2, 3
Grasshopper sp.	*Caelifera sp.*	Likely to occur
Cricket sp.	*Gryllidae sp.*	Likely to occur
Dragonfly sp.	*Anisoptera sp.*	Likely to occur
Harvestmen	*Opiliones sp.*	Likely to occur
Developed/Disturbed Land Community Type		
Multiflora rose	*Rosa multiflora*	Likely to occur
Common buckthorn	*Rhamnus cathartica*	Likely to occur
Various upland grasses	Various	Likely to occur

Notes:
1) Wetland Delineations, fall, spring, and summer of 2020, and summer 2021.
2) State-Listed Wintering Grassland Raptor Survey, winter of 2019 and 2020.
3) Grassland Breeding Bird Survey, summer of 2020.

Agricultural

Active agriculture, such as field and row crops, provides marginal habitat for most species. One mammal species that may be present in agricultural areas is white-tailed deer; however, this species is likely to only use these community types in a transient nature due to the frequent disturbance regime associated with active agriculture. Mammals may eat agricultural crops as a supplement to natural food sources.

Although agricultural areas may be too frequently disturbed for nesting and breeding, some birds use these for foraging and as a stop-over during migration. As grassland BBS were performed during the active agricultural season, incidental observations of bird species using agricultural areas for foraging or stop-over include bobolink (*Dolichonyx oryzivorus*), northern harrier (*Circus cyaneus*), rock pigeon (*Columba livia*), mourning dove (*Zenaida macroura*), eastern meadowlark (*Sturnella magna*), and red-winged blackbird (*Agelaius phoeniceus*). Locations of northern harrier sightings are depicted on Figure 11-1. Further information on bird species observed at the Facility is provided within the Grassland Breeding Bird Survey Report (Appendix 12-2) and the State-Listed Wintering Grassland Raptor Survey Report (Appendix 12-3).

BBS were performed from late May through July of 2020 (the Study Period). The objective of the BBS was to determine the presence and site use by state-listed threatened, endangered, or special concern grassland bird species during the breeding season. A total of 846 grassland bird observations of 47 species occurred within the Facility Site during the Study Period. During the Study, two state-listed threatened species were documented. Northern harrier was observed on two occasions, with one observation during regular surveys and one incidentally during a meander survey in transit between survey points. Two observations of Henslow's sparrows (*Ammodramus henslowii*) were documented during daytime surveys. These observations are believed to represent two individuals. A nest was observed for the northern harrier; however, the nest was later destroyed by agricultural activities. DEC determined no incidental take permit was needed pursuant to Part 182.13(a)(3), which exempts the taking of any species listed as endangered or threatened resulting from existing, routine and ongoing agricultural activities. For more details on this occurrence please see the Grassland Breeding Bird Survey Report included in Appendix 12-2 of Exhibit 12. The most frequently observed species during surveys was the ring-winged blackbird, bobolink, savannah sparrow (*Passerculus sandwichensis*), song sparrow (*Melospiza melodia*), and eastern meadowlark.

A WRS was conducted at the proposed Facility Site from December 5, 2019 to March 31, 2020. The objective of the WRS was to determine the presence and Facility Site use by state-listed grassland raptor species during the winter season and assess the need for any additional studies to determine impacts to these species from the proposed Facility. A total of one raptor observation of one species was recorded during the stationary surveys. Two raptor observations representing two species were recorded during the driving surveys, including two species not

observed during stationary surveys. There were no state-listed raptor species observed in the Facility Site. Turkey vulture (*Cathartes aura*) was the most observed species during the stationary surveys. American kestrel (*Falco sparverius)* and red-tailed hawk (*Buteo jamaicensis*) were the most observed raptor species during the driving surveys. The full survey report can be found in Appendix 12-3 of Exhibit 12.

Forested Land

Forests contain many characteristics and components that can be used to the benefit of individual organisms. Some features include decreased anthropogenic disturbance levels, lower light levels, relatively protected nesting sites, increased shelter structure, dry shelter sites, concealment/camouflage, variable food sources, and high moisture levels.

Representative mammals that have habitat requirements that overlap with conditions present in the forested habitat within the Facility Site and vicinity are included in Table 11-3 above. Many of the species noted in Table 11-3 are adapted to increasingly fragmented habitats and are considered generalists, which may inhabit a wide range of habitat types, including agricultural, residential, and urban landscapes.

Reptiles and amphibians are believed to inhabit forest communities within the Facility Site based on observations of green frogs (*Rana clamitans*) in forested wetlands onsite. Additional species with potential to use forest communities at the Facility Site include the common garter snake (*Thamnophis sirtalis*), eastern American toad (*Anaxyrus americanaus*), gray tree frog (*Hyla versicolor*), leopard frog (*Lithobates pipiens),* wood frog (*Rana* sylvatica), and northern spring peeper (*Pseudacris crucifer*).

Bird species observed within forested habitats in the Facility Site during the summer 2020 Grassland BBS surveys include black-capped chickadee (*Poecile atricapillus*), eastern wood-pewee (*Contopus virens*), hermit thrush (*Catharus guttatus*), and scarlet tanager (*Piranga olivacea*).

Successional Shrubland

Successional shrublands occur on sites that have been cleared (for farming, logging, development, etc.) or otherwise disturbed. This community has at least 50-percent cover of shrubs. Successional shrublands are dynamic and variable habitats characterized by

successional vegetation regeneration. A multitude of vegetative species which regenerate naturally following disturbance provides cover for birds and small mammals that prefer open habitats but are heavily preyed upon.

Mammals, reptiles, and amphibians that may use successional shrubland communities within the Facility Site include several of the same species identified in forested land including various mice, shrews, and moles, common garter snake, northern spring peeper, eastern American toad, northern spring peeper, and northern leopard frog.

Bird species that use successional shrubland habitat and with potential to occur in the Facility Site include American goldfinch (*Carduelis tristis*), American woodcock (*Scolopax minor*), Baltimore oriole (*Icterus galbula*), brown thrasher (*Toxostoma rufum*), chipping sparrow (*Spizella passerina*), common yellowthroat (*Geothlypis trichas*), field sparrow (*Spizella pusilla*), gray catbird (*Dumetella carolinensis*), and song sparrow.

The successional shrublands at the Facility Site provide a variety of food and cover for wildlife. The location of some of the successional shrublands in relation to open fields means they provide some wildlife protection from predators. Invasive shrubs such as multiflora rose, common buckthorn, and morrow's honeysuckle may dominate the successional shrublands over time. If left unmanaged, the successional shrubland may advance into successional hardwood forests. While each of the species mentioned above may use successional shrubland, none use this habitat type exclusively.

Successional Old Field

The open grassland habitats of successional old fields contain a mix of herbaceous plant species, including grasses, sedges, and rushes. These open areas provide habitat for species that prefer open grassland and a variety of forage material. Successional old field habitats typically include flowering forbs, which provide food for pollinators such as bees, flies, and butterflies, and grasses that support macroinvertebrate populations and provide nesting material and cover for grassland nesting species. Mammals, reptiles, and amphibians believed to use grassland communities within the Facility Site are similar to those of successional shrublands.

Several bird species that use successional old fields were observed during field surveys and include American goldfinch (*Carduelis tristis*), bobolink, eastern kingbird (*Tyrannus tyrannus*), red-winged blackbird, and savannah sparrow.

While each of the species may use successional shrubland, none use this habitat type exclusively. If left unmanaged, successional old field habitat will turn into successional shrubland over time.

Terrestrial Invertebrates

As common inhabitants of the community types onsite and in the vicinity of the Facility Site, numerous terrestrial invertebrates are likely to occur within the Facility Site. Terrestrial invertebrates include a variety of arthropods, including insects (e.g., beetles, bugs, ants, bees, butterflies, moths, cockroaches, mantis, stick insects, dragonflies, mosquitoes, fleas, crickets, grasshoppers, fireflies, cicadas, and flies), arachnids (e.g., various spider species, ticks, and mites), and myriapods (e.g., millipedes and centipedes), among many others. Terrestrial species include earthworms and nematodes, which are very common invertebrates that live in the topsoil. Mollusks are another vast group of invertebrates. Of this immense group, a portion of mollusks are terrestrial, including snails and slugs. Invertebrates are often the keystone components to the health of habitats and ecosystems and support more familiar vertebrate species. Most of the terrestrial invertebrates' important services include pollination, decomposition, nutrient cycling, and the promotion of soil fertility for plant growth. Terrestrial invertebrates are also a vital food source for many larger species within ecosystems due to their population abundance. Terrestrial invertebrates common and abundant in Upstate New York are presumed present within the Facility Site.

United States Geological Survey Breeding Bird Survey

The USGS BBS is conducted by the Patuxent Wildlife Research Center of the USGS. This survey is an international avian monitoring program that is designed to track the status and trends of North American bird population over a large scale and long timeframe. Each survey route is approximately 24.5 miles long. During the survey, 3-minute point counts are conducted at 0.5-mile intervals. During the point counts, every bird seen or heard within a 0.25-mile radius is recorded (Pardieck et al., 2015).

There is one survey route located in the vicinity of the Facility Site. The Ellenburg route is located approximately 9 miles east of the Facility Site, and the route traverses north to south. A total of 63 species have been documented during the lifetime of the Ellenburg survey route, which has been surveyed 4 out of the last 53 years, with the most recent survey in 2006. Most

birds documented have been common species found within the forests, forest edge shrublands, old fields, and wetlands throughout New York State.

The most common species documented on the Ellenburg survey route include the American goldfinch, barn swallow, American crow, red-winged blackbird, American robin, and European starling.

Of the species documented by the USGS BBS, 13 of them were observed at the Facility Site during field surveys (see Appendix 12-2 and Appendix 12-3). Most of these observed species are common and widely distributed throughout their respective ranges. Additionally, many of the species listed are habitat generalists, which are adapted to changing and increasingly human-altered landscapes. Facility development is not expected to impact any species at the population level, or significantly impact local population in proximity to the Facility Site.

Audubon Christmas Bird Count

Data from the Audubon CBC was obtained to gain an understanding of year-round wintering avian inhabitants of the Facility Site. The CBC provides a summary of avian species that inhabit regions during the early winter months. The primary objective of the CBC is to monitor the status and distribution of wintering bird populations in the Western Hemisphere. Counts occur in a single day during a 3-week period around Christmas. A 15-mile-diameter search area is created around a central point in a given area and all bird species and individuals observed within this search radius are recorded on the day of the count. The closest CBC circle to the Facility Site is the Plattsburgh search area (Audubon Count Code: NYPL). The center of this search area is approximately 36 miles southeast from the Facility Site, and none of the Facility Site is within the 15-mile search radius. A total of 52 avian species were reported during the December 19, 2020 count. The 2020 count is the most recent count for the Plattsburgh search area as no count was conducted in 2021. The exact location of these observations is not provided in the source data; therefore, these observations only serve to indicate that these species are locally occurring.

Hawk Migration Association of North America

HMANA is a non-profit organization consisting of over 200 members and affiliate organizations that collectively aim to record and summarize data on raptor populations and migration across the North American continent. Hawkwatch stations are independently operated and report data

as part of long-term monitoring, or short-term, research-focused efforts. The closest Hawkwatch station to the Facility Site is Franklin Mountain Hawkwatch in Oneonta, New York. This station is 175 miles south of the Facility Site. Given the distance of the Hawkwatch station from the Facility Site, data collected there has little relevancy to the Facility and is therefore not summarized here.

A complete list of avian species that were observed or are presumed to occur within the Facility Site based on the data above can be found in Appendix 12-1.

11(e) Wildlife and Wildlife Habitat Impacts from Construction and Operation

(1) Impacts to Wildlife and Wildlife Habitat

A direct and permanent loss of 215.5 acres of wildlife habitat will result from the Facility. Habitat loss represents 14.6 percent of the total 1,471.0 acres included in the Facility Site. Of this percentage, approximately 16.8 percent of the loss is to forested land, 2.2 percent is to successional shrublands, while the majority, 78.0 percent, is to active agriculture. Active agriculture supports wildlife habitat of marginal quality, and revegetation efforts following construction may improve habitat quality for grassland-associated species. Considerable habitat is available in the surrounding area including 37,951 acres of forest, 623 acres of shrubland, and 17,795 acres of open habitat (i.e., grasslands, old fields). Of the surrounding 5-mile Study Area, only 0.3 percent of habitat will be lost or converted due to the Facility, which represents an insignificant impact to habitat availability in the local area.

Grassland Birds

The Facility is located within the St. Lawrence River Valley Grassland Focus Area as defined by the New York State Department of Environmental Conservation (NYSDEC) Grassland Landowner Incentive Program, which promotes habitat protection for grassland birds. Additionally, the Facility is located adjacent to a recognized Continental Important Bird Area (IBA), the Adirondack Forest Tract IBA, which supports an abundance and diversity of grassland and shrub breeding communities. More detailed information regarding IBAs and Grassland Focus Areas can be found within the Wildlife Site Characterization Report (Appendix 12-1).

Overall, construction of the Facility will result in temporary impacts to 14.6 acres of grassland habitat including grassland birds, to support Facility components during its useful life. While

some of this acreage will be employed for Facility components, the area between and under solar arrays will be converted to successional old field with vegetative structures and floristic diversity comparable with natural grassland and meadow habitat. These areas will constitute improved habitat quality for species of grassland birds, which are not adapted to using active agriculture during breeding, nesting, and post-breeding periods (DeVault et al., 2014). The disturbance regime associated with Facility operations will be less frequent than what is typical of agricultural operations, again reducing the overall direct impact to grassland nesting birds and representing an improvement to the existing habitat within the Facility Site.

Bats

Consultation with the NYSDEC and the United States Fish and Wildlife Service (USFWS) was conducted to determine the presence and extent of occupied habitat for state and federally listed bat species that have the potential to occur within the Facility Site. Consultation with the USFWS was conducted through the Information for Planning and Consultation (IPaC) system on (December 1, 2021; USFWS, 2020). The Official Species List indicated the potential for northern long-eared bats (*Myotis septentrionalis*) to be present within the vicinity of the Facility Site (see Appendix 11-2). The list did not include Indiana bat since the Facility Site is located outside the known range of Indiana bat.

Based upon a review of the NYSDEC Environmental Resource Mapper (ERM) and consultation with the NYNHP, the Facility is not located within the vicinity of any known hibernacula or maternity roost trees for the northern long eared bat.

Forested habitat within the Facility Site contains structures that may provide roosting and foraging habitat for bat species. Tree species with a diameter at breast height (DBH) greater than 5 inches observed included red maple, sugar maple, and eastern hemlock. There are forested areas and forested riparian corridors within the Facility Site, which could be used as foraging, travelling, and roosting habitat.

The LOD for the proposed Facility includes temporary impacts to 46.6 acres of forested habitat, and permanent loss of an additional 36.1 acres. Based on range distribution information provided by the NYNHP, USFWS, Bat Conservation International (BCI), NYSDEC Nature Explorer and the NYSDEC State Wildlife Action Plan (SWAP), the following species have the potential to occur within the Facility Site: big brown bat (*Eptesicus fuscus*); eastern red bat

(*Lasiurus borealis*); eastern small-footed bats (*Myotis leibii*); hoary bat (*Lasiurus cinereus*); little brown bat (*Myotis lucifugus*); northern long-eared bat; silver-haired bat (Lasionycteris noctivagans); and tri-colored bat [eastern pipistrelle] (*Perimyotis subflavus*). Since the Facility is outside of the range of the Indiana bat and is not within 5 miles of a northern long-eared bat hibernaculum nor within 1.5 miles of a northern long-eared bat maternity roost the Facility is unlikely to adversely affect the northern long-eared bat or the Indiana bat. Therefore, seasonal tree clearing limitations are not applicable.

Amphibians and Reptiles

Immediate disturbances during the construction phase of the Facility may cause temporary disruption of amphibians and reptiles at the Facility Site. Amphibians and reptiles observed or that have the potential to occur within the Facility Site based on the Herp Atlas database, the Wildlife Site Characterization Report for the Facility, and other sources are listed above in Table 11-3. The USFWS IPaC Official Species List did not identify any federally listed amphibians or reptile species within the vicinity of the Facility Site. Additionally, the NYNHP response did not identify any known occurrences of state-listed amphibian or reptile species within the vicinity of the Facility Site. Wetlands and streams delineated in 2020 within the Facility Site may provide habitat for the reptiles and amphibians listed in Section 11(d). Siting of Facility components have been designed to avoid wetlands and streams to the maximum extent practicable, as such impacts to amphibian and reptile species have been avoided and minimized to the maximum extent practicable.

Travel between habitats that may be used by amphibians and reptiles may be temporarily disrupted. Amphibians and reptiles are less mobile than other species; therefore, injury and mortality are more likely to result from the construction of the Facility than to other more mobile taxa. However, no amphibian or reptilian species of concern have been identified within the Facility Site.

Insects

Immediate disturbances during the construction phase of the Facility may cause temporary disruption of insects at the Facility Site. The USFWS IPaC Official Species List did not identify any federally listed insect species within the vicinity of the Facility Site. Consultation with the NYSDEC and the USFWS was conducted to determine the presence and extent of occupied

habitat for the candidate insect species that have the potential to occur within the Facility Site. The Official Species List indicated the potential for monarch butterfly (*Danaus plexippus*) to be present within the vicinity of the Facility Site (see Appendix 11-2).

Game Species

Immediate disturbances during the construction phase of the Facility will cause temporary disruption of local game species (e.g., white-tailed deer, ruffed grouse, and wild turkey). However, other than nest sites (eggs) and infant fawns, these species are very mobile. Consequently, injury and mortality are not expected from immediate disturbance. After the construction phase of the Facility is completed, game species generally will adapt to the cleared areas and perimeter fencing. The perimeter fencing will inhibit travel and foraging of larger game species such as white-tailed deer; therefore, it is presumed they will search for new foraging habitat elsewhere within the Facility Site and in the surrounding areas.

(2) Construction-related Impacts to Wildlife

Direct and indirect impacts to wildlife will occur due to Facility construction. Impacts are anticipated to be restricted to incidental injury and mortality due to various construction activities, displacement due to increased human activity during construction, and habitat disturbance and/or loss (including the loss of travel corridors) due to clearing, earth-moving, and the siting of Facility components. Each listed impact is addressed in more detail below.

Incidental Injury and Mortality

Although calculating the incidental injury and/or mortality of wildlife individuals is inherently difficult, it is understood that construction activities could generate injury or mortality to local wildlife in isolated random occurrences. It is presumed that injury and mortality could be inflicted more directly upon sedentary species during construction (e.g., small or young mammals, reptiles, invertebrates, and amphibians). Species that are more mobile have a better ability to vacate construction areas prior to the onset of disturbance.

Mortality events due to vehicular activity is presumed to increase due to increased traffic from construction activities within the Facility Site. Upon the completion of construction, traffic is expected to return to more standard patterns and frequencies so mortality events due to

vehicular traffic will reduce to pre-construction levels. A full analysis of traffic volumes associated with construction and operation of the Facility is provided in Exhibit 16.

Wildlife Displacement

Facility construction may cause both temporary and permanent wildlife displacement. The extent of displacement will vary between species and will fluctuate depending on the nature and season timing of construction activities. Displacement impacts such as noise or human presence may affect breeding, nesting, denning, and other routine use (e.g., travel foraging, communication, and territorial marking). If construction begins before the initiation of breeding, nesting, denning, or other routine activities, then the associated wildlife will generally avoid the impact area and navigate through or re-establish in adjacent habitat. If construction occurs while the area is in use by wildlife, then the species that are accustomed to similar land clearing disturbances are expected to relocate and use similar habitats near the construction impact area. Species unable to relocate may become at risk to incidental injury or mortality. Displacement impacts due to the Facility will be relatively minor due to the availability of habitat nearby for many local wildlife species. These animals will remain within or adjacent to the Facility Site. Additionally, portions of the Facility Site are actively farmed or hayed, and are therefore subject to considerable disturbance throughout the growing season. Construction activities are not expected to exceed the existing level of disturbance that would otherwise occur due to routine agricultural activities in the Facility Site.

Further, avoidance of wetland habitat to the maximum extent practicable has been incorporated in Facility siting and design to mitigate temporary or permanent loss of wetland habitat and displacement of wetland-associated species.

Habitat Disturbance and Loss

Approximately 644.6 acres of wildlife habitat will be temporarily impacted during construction of the Facility. However, 521.7 of the 644.6 acres of potential wildlife habitat to be impacted are currently active agricultural areas that are disturbed regularly and provide limited habitat for wildlife due to these regular disturbances and anthropogenic pressures of active farming practices.

Specifically, it is anticipated that approximately 8.1 acres of successional shrubland, 14.6 acres of successional old fields, 353.6 acres of active agricultural lands, and 46.6 acres of forested

lands will be temporarily disturbed during construction. A total of approximately 36.1 acres of forestland, 4.7 acres of successional shrubland, 4.7 acres of successional old field, and 168.1acres of active agricultural lands will be permanently impacted due to the Facility. Disturbed/developed areas were excluded from these calculations as wildlife habitat in these areas is presumably present but more marginal in nature where wildlife has adapted to survive in a disturbed setting. The Facility avoids direct impacts to open-water habitats. See Exhibit 13 for a detailed discussion on impacts to surface water defined by onsite wetland and waterbody delineations conducted within the Facility component impact areas.

(3) Operation and Maintenance Related Impacts to Wildlife

Operation-related impacts, or impacts that can potentially occur to vegetation, wildlife, and wildlife habitat while the Facility is operating, include direct habitat loss and habitat degradation through forest fragmentation, disturbances associated with solar array operation and maintenance, and specific mortality due to solar array collisions. Once construction has been completed and the Facility is operational, there will be few, if any, impacts to wildlife.

Mortality during the operations phase is expected to be negligible. Though few peer-reviewed studies exist that estimate mortality from solar arrays, research indicates collision risk is the primary cause for injury and death (Smith and Dwyer, 2016). Mortality events at solar facilities resulting from collision with Facility components has been estimated at between 2.49 birds/MW/year (Kosciuch et al., 2020) and 9.9 birds/MW/year (Walston et al., 2016), representing less than 1 percent of anthropogenic sources of avian mortality. Annual mortalities were estimated across all operational utility-scale solar facilities in the US at the time of study (2016), with estimates ranging from approximately 37,800 to 136,800 deaths per year. Comparatively, collisions with windows or buildings, the greatest source of avian mortality from anthropogenic sources, causes between 365 and 988 million avian mortalities annually (Walston et al., 2016). However, even these estimates may overstate facility-related mortality as some events could not be directly attributed to collision with facility infrastructure. The solar panels and substation are stationary and will not impact wildlife due to their operation.

During the operational phase of the Facility, disturbance will be limited, and displacement impacts are likely to be negligible. Routine maintenance, including mowing the grass, will occur approximately two to three times a year, depending on seasonal conditions. Most wildlife that

will be within the fenced-in areas of the Facility are mobile enough to avoid being impacted due to the mowing activity.

(4) Summary Impact Table

Table 11-4 below quantifies anticipated temporary and permanent impacts to wildlife habitats identified within the Facility Site due to Facility construction and operation. Impacts by component type are provided in Table 11-2 above.

Table 11-4. Summary Impact Table

Habitat	Acres within Facility Site	Temporary Impacts (acres)	Permanent Loss (acres)	Total Impacts/ Loss (acres)
Row Crops	404.9	116.6	49.3	165.9
Hay/Pasture	534.9	237.0	118.8	355.8
Forest	270.2	46.6	36.1	82.6
Successional Old Field/Grassland	133.9	14.6	4.7	19.4
Successional Shrubland	25.5	8.1	4.7	12.9
Shallow Emergent Marsh	44.0	1.9	0.2	2.1
Forested Wetland	9.7	1.2	-	1.2
Shrub swamp	20.7	2.3	0.7	3.0
Open Water	1.9	0.2	-	0.2
Other[1]	25.2	0.6	1.0	1.6
Total[2]	1,471.4	429.1	215.5	644.6

[1]Includes: screened wetland, developed pervious, and developed impervious cover types.

[2] Individual Impact Acres may not add to the total impact acreages due to rounding.

11(f) Avoidance and Minimization of Impacts to Wildlife and Wildlife Habitat

To the maximum extent practicable, Facility components have been intentionally sited within active agricultural fields, which largely reduces impacts to natural communities and wildlife habitat. Active agricultural areas provide limited wildlife habitat due to recurrent disturbances in the form of clearing, mowing, plowing, and harvesting. Agricultural fields are often monotypic in

nature, consisting of large expanses of a single crop that lack the floristic diversity and structural complexity necessary to support more diverse wildlife assemblages. Prioritizing construction of the Facility and siting of components within these areas will minimize the species and habitats impacted by the Facility. The revegetation effort following construction is likely to produce higher quality habitat in areas beneath and between panels. These areas will likely contain a greater diversity of plants and insect prey, provide additional cover for ground-nesting species, and provide novel perching substrate. Further, agricultural land used for Facility components can be restored for agricultural use at the end of the Facility's active operation life as part of the Site Decommissioning and Restoration Plan (Appendix 23-1).

Incidental mortality and injury may increase in association new or improved haul roads. Haul road widths have been proposed at the minimum width required for maintenance and emergency vehicle access in an effort to reduce the amount of permanent land impacts.

Overall mortality resulting from Facility construction and operation is expected to be negligible, with no significant impact to local populations of any species. No single habitat present within the Facility Site will be entirely eradicated. No habitats identified in the Facility Site represent significant natural communities and are all abundant in the immediate vicinity of the Facility and throughout New York State.

The Applicant sited the Facility to avoid or minimize impacts to sensitive features, specifically wetlands, streams, and forested areas, as well as siting within previously disturbed parcels to the maximum extent practicable. Although habitat modification could not be entirely avoided, the Applicant attempted to maximize use of contiguous parcels to reduce the overall footprint of the Facility. Additionally, the Applicant has made a concerted effort to co-locate Facility components where feasible to reduce the Facility footprint. Although impacts to agricultural areas, which constitute the majority of habitat available for grassland birds, are unavoidable, as addressed in Exhibit 12, the Applicant has proposed mitigation to address impacts to threatened and endangered grassland bird habitat. As the impacts associated with construction of the Facility are typical, the use of alternative technologies during construction is not likely to reduce impacts and/or benefit the Facility significantly.

Conclusions

Facility components have been sited on contiguous parcels and confined to the smallest area possible, and linear Facility components have been co-located, thereby avoiding fragmentation of vegetative community types to the extent practicable. No single habitat type present within the Facility Site will be eradicated, and none are designated as significant natural communities. Facility components will be located within open fields and previously disturbed agricultural areas (which are monotypic and have been cleared, mowed, plowed, and harvested) to the maximum extent practicable. Once construction has been completed and the Facility is operational, there will be few, if any, impacts to wildlife. The revegetation effort following construction is likely to produce higher quality habitat in these areas beneath and between panels. The Facility has been designed to comply with 19 NYCRR Section 900-2.12 and the USCs, and impacts related to terrestrial ecology have been avoided and minimized to the maximum extent practicable.

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