Hoffman Falls Wind Project

Case No. 23-00038

900-2.12 Exhibit 11

Terrestrial Ecology

Revision 2

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

EXHIBIT 11 TERRESTRIAL ECOLOGY

(a) Identification and Description of Plant Communities

The Facility Site encompasses approximately 3,897 acres in Madison County and is largely comprised of rural agricultural and forested lands. Plant communities present within the Facility Site, and adjacent properties within 100 feet of the limits of disturbance (the Study Area) correspond with specific community descriptions provided in *Ecological Communities of New York State* (Edinger et al., 2014). EDR classified and mapped each plant community based on land cover and soil data collected during various on-site field surveys conducted in 2023 (e.g., wetland and stream delineations and avian surveys). As a result, EDR has identified over two dozen different communities, which are described in Section (a)(2). The Study Area is dominated by active agricultural communities (i.e., row cropland, field cropland, and pastureland) and a mix of managed hardwood forests and conifer plantations.

Figure 11-1 illustrates the plant communities within the Study Area, and anticipated impacts to plant communities. Table 11-1 in Section (b) provides the total acreage for each plant community identified within the Study Area, as well as the anticipated impacts in each community as a result of Facility construction and operation.

(1) Significant Natural Communities and Rare Plants

The Applicant coordinated with state and federal agencies to determine the presence of special status plant communities within the Study Area. An Official Species List obtained from the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) system did not identify any federally listed plants or rare communities in the vicinity of the proposed Facility (Appendix 12-A).

The New York Natural Heritage Program (NYNHP) maintains data on state listed rare, threatened, and endangered plant and animal species, as well as significant ecological communities. A site-specific request for documented occurrences was submitted to the NYNHP on November 4, 2022. The NYNHP response was received on December 28, 2022 (Appendix 12-A) and identified no records of state listed plants or significant natural communities within the Study Area. Exhibit 12 provides a detailed discussion of endangered, threatened, and special concern wildlife species within the vicinity of the Facility.

(2) Plant Community Descriptions

Descriptions of the upland ecological communities within the Study Area are provided herein. Ecological community types are grouped into the applicable subsystems defined in *Ecological Communities of New York State* (Edinger et al., 2014). Detailed descriptions of wetland and stream community types encountered during on-site wetland delineations, including Open Wetlands (i.e., emergent, open water, and scrub-shrub wetlands), Forested Wetlands, and Riverine (i.e., perennial, intermittent, and ephemeral streams) are provided in Exhibits 13 and 14 and Appendix 14-A.

Open Uplands

Open uplands include "open communities with less than 25% canopy cover of trees; the dominant species are shrubs, herbs, or cryptogamic plants (mosses, lichens, etc.)" (Edinger et al., 2014). Open upland communities are found across 11% of the Study Area (512.9 acres) and include successional old fields and successional shrubland community types that have been historically disturbed and are reverting to a more natural state.

Successional Old Field

Although no native grassland communities exist within the Study Area, successional old fields across the Study Area exhibit the characteristics of grassland habitats. Successional old fields comprise approximately 7% of the Study Area (296.1 acres). As defined by Edinger et al. (2014), a successional old field is a meadow dominated by forbs and grasses that occurs on sites that have been cleared and plowed for farming and/or development. This includes fields that are mowed at infrequent intervals (typically less than once per year), which promotes the reproduction of characteristic successional old field species, such as goldenrods (*Solidago* spp.), ryegrass (*Lolium* sp.), woolgrass (*Scirpus cyperinus*), raspberry (*Rubus* spp.), blackberry (*Rubus* spp.), and several other upland grasses and forbs.

Successional Shrubland

Successional shrublands comprise approximately 5% of the Study Area (216.8 acres) and generally occur in areas previously cleared for farming (Edinger et. al., 2014). Species within this community include raspberries, chokecherry (*Prunus virginiana*), dogwoods (*Cornus* spp.), wild grape (*Vitus* sp.), staghorn sumac (*Rhus typhina*), invasive shrubs such as multiflora rose (*Rosa multiflora*), autumn olive (*Elaeagnus umbellata*), bush honeysuckles (*Lonicera* spp.), and saplings of common early successional tree species (e.g., aspen [*Populus* spp.], eastern white pine [*Pinus strobus*], and red maple [*Acer rubrum*]) (Edinger et. al., 2014).

Many of the successional shrublands within the Study Area verge on woodlands, having sparse canopies of trees with a ground layer that is predominantly shrubby (Edinger et al., 2014). These successional shrubland/woodland communities occur in areas that were previously cleared for farming or logging, and which have not yet reverted to a forested state.

Forested Uplands

Forested uplands include "communities with more than 60% canopy cover of trees; substrates are deep to shallow soils that include less than 50% rock outcrop or very shallow soil over bedrock" (Edinger et al., 2014). Forested uplands make up 33% of the Study Area (1,485.5 acres) and occur on hillsides, hedgerows, and in woodlots interspersed among agricultural fields and successional shrubland communities. The Study Area includes a variety of deciduous, coniferous, and mixed forest communities. Specific upland forest types identified within the Study Area include successional northern hardwood, beech-maple mesic forest, and hemlock northern hardwood forest.

Common species in the successional northern hardwood community within the Study Area include quaking aspen (*Populus tremuloides*), black cherry (*Prunus serotina*), red maple, eastern white pine, white ash (*Fraxinus americana*), and green ash (*Fraxinus pennsylvanica*). Notably, many of the successional northern hardwood forests within the Study Area have been recently logged. During avian surveys and wetland and stream delineations, surveyors noted the prevalence of logging evidence and the dominance of successional communities with limited commercial value (i.e., communities principally composed of aspen and poplar species [*Populus* spp.], red maple, and immature specimens of more desirable species).

Common species in the beech-maple mesic forest cover type include sugar maple (*Acer saccharum*), American beech (*Fagus grandifolia*), and American hophornbeam (*Ostrya virginiana*). Common species in the hemlock northern hardwood forest include eastern hemlock (*Tsuga canadensis*), sugar maple, and red maple. The understory of forested communities in the Study Area is typically comprised of saplings of the species listed previously, but also include dogwoods, multiflora rose, wild grape, sedges (*Carex* spp.), and various ferns, along with other woody and herbaceous plants.

Terrestrial Cultural

Terrestrial cultural communities are created or maintained by human activities and are substantively different in character from the communities that existed prior to human influence. Terrestrial cultural communities are found across 47% of the Study Area and include cropland, pastureland, spruce/fir plantations, and disturbed/developed community types that have been or are currently being modified by human activities.

Cropland

Cropland in the Study Area represents approximately 32% (1,443.8 acres) of all lands within the Study Area. Specific cover types in this class include active row cropland (e.g., corn and soybeans) and field cropland (alfalfa and hay). In some locations, emergent wetlands were observed within small portions of cropland. Shallow emergent wetlands were characterized by the dominance of erect, rooted herbaceous wetland plants and evidence of persistent inundation or saturation.

Pastureland

Agricultural lands maintained as pasture areas for livestock—generally dairy farming operations—are found across 5% (210.9 acres) of the Study Area. Pasturelands within the Study Area are somewhat dynamic, with areas switching from pastureland to cropland intermittently.

Spruce/Fir Plantation

Spruce/fir plantations are found throughout the Study Area in various states, from recently planted, to mature, to partially logged. These communities are found across 7% (307.0 acres) of the Study Area and the largest stands are principally composed of Norway spruce (*Picea abies*) and white spruce (*Picea glauca*). Where these communities have been partially logged, species common to the successional shrubland and successional northern hardwood communities are common.

Disturbed/Developed

This community type consists of a grouping of several cultural communities, as defined in the *Ecological Communities of New York State* (Edinger et. al., 2014), including paved and unpaved roads, mowed lawns, and quarries. Developed/disturbed lands comprise approximately 4% of the Study Area (188.6 acres). Vegetation in these areas is generally either lacking or highly managed (e.g., mowed lawns), and volunteer vegetation that naturally reestablishes in these areas is typically comprised of old field, often non-native, herbaceous species such as bull thistle (*Cirsium vulgare*), curly dock (*Rumex crispus*), spotted knapweed (*Centaurea maculosa*), and various upland grasses.

(b) Impact to Plant Communities

Construction and operation of the Facility will result in impacts to plant communities. To estimate impacts to ecological communities, the Applicant has developed the following potential impact classifications, all of which are presented on Figure 11-1:

- Limit of Disturbance (LOD): This limit encompasses 314.6 acres or 7% of the Study Area and includes the anticipated outer bounds of where construction and related impacts may occur. This boundary includes defined work corridors along Facility components and incorporates areas where construction vehicles and/or personnel may need extra room to construct the Facility. Within the LOD, existing vegetation will be cleared or mowed to an appropriate height prior to installation of Facility components. The use of machinery to install Facility components within the LOD may also result in temporary soil impacts, further described in Exhibit 10. The LOD is presented in the Design Drawings in Appendix 5-A, Figures 3-1, 3-1, 10-1, 10-3, and 10-4, and with mapping of plant communities in Figure 11-1.

- Limit of Vegetation Management (LOVM): This limit encompasses 72.8 acres or 2% of the Study Area and represents all areas within the LOD that will have maintained vegetation for the life of the Facility. This generally includes the collection line corridors, maintained access road shoulders, areas adjacent to the collection substation and point of interconnection (POI), and areas maintained for stormwater purposes. The LOVM is presented in Figure 11-1.

- Limit of Impervious Surface (LOIS): This limit encompasses 32.7 acres or <1% of the Study Area and represents all areas that will host built components of the Facility and will be maintained in an unvegetated state for the life of the Facility. The LOIS includes the wind turbine foundation pedestals and associated gravel rings and crane pads, aboveground components associated with the meteorological (MET) and aircraft detection lighting system (ADLS) towers, access roads, and the collection substation, POI, and operations and maintenance (O&M) facility. These areas will be cleared of all vegetation, grubbed, and graded prior to installation, as needed. The LOIS represents permanent impacts to existing plant communities during the construction and operation of the Facility. The LOIS is presented in Figure 11-1.

A total of 101 acres of forested uplands will be cleared during the construction of the Facility.[1] Forested upland clearing impacts associated with the Facility can be characterized as one of three types: permanent impact, permanent conversion, and temporary impact (i.e., natural regeneration). Permanent upland forest impacts will occur within the LOIS; 6.3 acres or approximately 0.4% of all forested uplands within the Study Area will be permanently impacted. Permanent forest conversion will occur within the LOVM; 35.0 acres or 2.4% of forested uplands within the Study Area will be permanently converted. Natural regeneration will occur in areas outside the LOVM but within the LOD where forests are initially cleared during construction but are allowed to naturally regenerate during operations (e.g., temporary wind turbine workspaces); 59.7 acres or 59.1% of forested uplands within the Study Area that are cleared during construction will be allowed to regenerate naturally.

Facility-related impacts to vegetation were calculated using the LOD, LOVM, and LOIS. These potential impact areas were generated based on the actual proposed locations of components and grading limits necessary for construction, as identified in the Design Drawings (Appendix 5-A). Table 11-1 summarizes the anticipated temporary and permanent impacts to plant communities due to construction and operation of the Facility. Figure 11-1 presents the community types identified by EDR within the Study Area relative to the LOD. Impacts associated agricultural plant community types (i.e., Field Cropland, Row Cropland, and Pastureland) in Table 11-1 reflect the Facility's direct impacts to these plant communities. See Exhibit 15 for a discussion of the Facility's agricultural impacts.

Table 11-1. Estimated Temporary and Permanent Impacts to Plant Communities

Plant Community Type	Study Area (acres)	Temporary Impacts (acres)[1]	Permanent Conversion in LOVM (acres)[2]	Permanent Impacts in LOIS (acres)
Open Uplands	**512.9**	**34.1**	**12.1**	**6.7**
Successional Shrubland	216.8	12.0	5.6	1.5
Successional Old Field	296.1	22.1	6.5	5.2
Terrestrial Cultural	**2,150.3**	**218.1**	**24.5**	**19.4**
Field Cropland	334.2	30.1	2.2	3.5
Row Cropland	1,109.6	133.9	5.8	10.3
Pastureland	210.9	19.7	1.1	1.7
Spruce/Fir Plantation	66.1	8.4	1.7	0.8
Successional Spruce/Fir Plantation	240.9	18.7	13.0	2.7
Disturbed/Developed	188.6	7.3	0.7	0.4
Forested Uplands	**1,485.5**	**59.7**	**35.0**	**6.3**
Beech-maple Mesic	853.7	37.8	22.1	3.6
Successional Northern Hardwood	566.4	19.8	11.9	2.2
Hemlock Northern Hardwood	65.4	2.1	1.0	0.4
Open Wetlands	**247.2**	**2.2**	**0.8**	**0.2**
Emergent (PEM)	122.3	0.9	0.1	<0.1
Shrub Scrub (PSS)	113.3	1.3	0.7	0.1
Open Water (POW)	11.6	--	--	--
Forested Wetlands	**133.3**	**0.3**	**0.2**	**0.1**

[1] Note: Per Edinger et al. 2014, spruce/fir plantations are characterized as terrestrial/cultural communities, not forested uplands.

Plant Community Type	Study Area (acres)	Temporary Impacts (acres)[1]	Permanent Conversion in LOVM (acres)[2]	Permanent Impacts in LOIS (acres)
Forested (PFO)	133.3	0.3	0.2	0.1
Riverine	**17.9**	**0.2**	**0.2[3]**	**<0.1**
Perennial (R3)	6.0	0.1	0.1[3]	<0.1
Intermittent (R4)	2.2	0.1	0.1[3]	<0.1
Ephemeral (R6)	0.3	<0.1	<0.1[3]	<0.1
TOTAL	**4,547.2**	**314.5**	**72.8**	**32.7**

[1] Impacts that will occur only during construction. Temporarily impacted areas will be restored following construction and will be allowed to revegetate naturally (i.e., will not be further disturbed during Facility operation). As discussed in this Exhibit, this type of impact is considered a permanent impact in forested communities because regrowth of a forest canopy takes many years.
[2] Areas that will be cleared during Facility construction and maintained as early successional communities for the life of the Facility. Conversion of row croplands to perennial early successional communities, such as those that will be maintained adjacent to access roads, is expected to result in no impact or a positive impact, respectively, to vegetation and soil resources.
[3] Surface water features within the LOVM will not be permanently converted, however lands adjacent to these features will be maintained within the LOVM throughout the life of the Facility.

Areas that have been temporarily impacted will be replanted and restored in accordance with the Applicant's Vegetation Management Plan, which will be submitted as a pre-construction compliance filing. Consistent with Title 19 New York Codes, Rules and Regulations (NYCRR) §900-10.2(e)(4) requirements. The Vegetation Management Plan will ensure that any proposed plantings consist of plant material and seeds appropriate for the Study Area and disturbed areas, ruts, and rills are restored to original grades and conditions with permanent re-vegetation and erosion controls appropriate for those locations. In addition, an Invasive Species Control and Management Plan will be developed for the Facility in accordance with 19 NYCRR §900-10.2 (Pre-Construction Compliance Filings) that will include prescribed measures to control, remove, and dispose of invasive species during construction, and control contingency measures to be implemented for the duration of the Facility's adaptive management and monitoring period, within the LOD.

Temporary and permanent impacts to plant communities will not result in the extirpation or significant reduction of any natural ecological community type, or in the significant reduction of any cultural community type (e.g., agricultural land, disturbed/developed) within the Study Area. At the end of the Facility lifespan, Facility components will be decommissioned, and the land restored, consistent with 19 NYCRR §900-6.6 (a) requirements, as described in Exhibit 23 of this Application. Following completion of decommissioning and restoration, impacted lands within the Facility Site are expected to be allowed to return to pre-construction conditions.

(c) Measures to Avoid or Mitigate Plant Community Impacts

Avoidance, minimization, and mitigation of impacts to plant communities have been and will be accomplished primarily through careful site planning. As described and quantified in Section 11(b) and in Exhibit 15, while minimizing impacts to active agricultural land, Facility components have been sited in terrestrial cultural communities and open uplands to the maximum extent practicable to avoid significant impacts to forested uplands, wetlands, and riverine systems. As evidence of this, only 6% of forested uplands and wetlands within the Study Area (101.6 acres) will be impacted by the construction of the Facility. In

comparison, 12% of terrestrial cultural communities within the Study Area (262.0 acres), and 10% of open uplands within the Study Area (52.9 acres) will be impacted by the construction and operation of the Facility. Whenever possible, the Applicant sited components to prioritize avoiding forests and wetlands, while also balancing impacts to open communities that provide habitat for state listed grassland bird species (refer to Exhibit 12 and Exhibit 14 for a further discussion of avian and wetland impacts, respectively).

For example, as shown in Figure 11-1 and Appendix 5-A, the Applicant has sited the collection substation, POI switchyard, O&M building, MET and ADLS towers, and laydown yards within open uplands or terrestrial-cultural communities to minimize tree clearing in the surrounding area. In addition, even though 33% of the Study Area is comprised of forested upland, including most of the high elevation ridgelines suitable for turbine siting, 19 of the 24 wind turbines have been sited in open uplands or terrestrial-cultural communities to minimize clearing in forested upland communities.

To protect adjacent undisturbed vegetation and other ecological resources, a comprehensive Erosion and Sediment Control Plan will be developed and implemented prior to Facility construction (Appendix 13-C). Other mitigation measures to avoid or minimize impacts to vegetation include marking sensitive areas (such as wetlands) where no disturbance or vehicular activities will be allowed, consistent with 19 NYCRR §900-6.4 (e), educating the construction workforce on respecting and adhering to the physical boundaries of off-limit areas, employing best management practices during construction, and maintaining a clean work area within the designated construction sites. The Applicant will hire an independent environmental monitor to conduct inspections of all areas requiring environmental compliance during construction activities, with an emphasis on those activities that are occurring within sensitive areas consistent with 19 NYCRR §900-6.4 (b).

Alternative technologies that will be employed during construction to minimize impacts upland and wetland communities adjacent to streams include the use of trenchless technologies to install collection lines under various streams and selective tree removal methods that minimize soil disturbance and retain the existing root biomass and seed bank.

As previously discussed in Section 11(a), all plant communities identified within the Study Area are common to New York State. Therefore, no impacts to unique or rare natural communities will result from Facility construction. Following construction activities, temporarily disturbed areas will be seeded (and stabilized with mulch and/or straw, if necessary) to reestablish vegetative cover in these areas. Except in active agricultural fields, native/naturalized species will be allowed to revegetate temporarily disturbed areas.

At the end of the Facility's operational life, the Applicant will remove Facility components and restore the land, as described in Exhibit 23, consistent with 19 NYCRR §900-6.6(a) requirements. Following completion of decommissioning and restoration, lands within the Study Area are expected to return to pre-construction conditions.

(d) Species List

A Wildlife Species List is included in Appendix 11-A. The Wildlife Species List identifies species that may occur within the Facility Site at some time during the year. It is also based on site-specific field survey results, such as the avian surveys conducted within the Facility Site (refer to Exhibit 12), as well as assessments of habitat availability and existing publicly available data, summarized in the Wildlife Site Characterization Report (WSC) (Appendix 12-A).

(e) Impacts Wildlife, Wildlife Habitats, and Wildlife Travel Corridors

As outlined in Section 11(d), the Applicant compiled a list of wildlife species, including federally and state listed species, based on site-specific correspondence, review of publicly available database queries, and direct observations made on-site. A description of potential impacts to state listed endangered, threatened, and special concern species is provided in Exhibit 12. As discussed in Section 11(b) and shown in Figure 11-1, many of the potential impacts to wildlife and wildlife habitat associated with the construction and operation of the Facility (62%) will occur in terrestrial cultural communities (e.g., agricultural, plantation, and disturbed/developed communities). Impacts to other plant communities within the Study Area represent 38% of total anticipated impacts.

Terrestrial cultural communities generally provide limited, marginal, and/or seasonal habitat for wildlife due to the regular modification of land by human activities, such as tilling, applying agrochemicals, planting, cultivating, mowing, harvesting, and logging. Active fields of row crops, such as corn and soybeans, typically provide marginal habitat for wildlife species, as these habitats are often too disturbed for nesting and breeding to be successful. Depending on the extent and frequency of site disturbance, hay fields and pastureland can provide habitat for wildlife such as grassland birds and small mammals However, practices such as cutting hay earlier, mowing more frequently, and using high-speed disk mowers often result in wildlife mortality and/or nest loss (Hyde and Campbell, 2012). Spruce/fir plantations are generally composed of introduced softwood monocultures with limited wildlife habitat value. Understory habitat in these communities is typically limited by high canopy densities. Where these plantations have been partially or fully harvested, successional processes can improve the diversity and therefore the habitat value of these plantations.

Forests provide important breeding, migratory stopover, and wintering habitat for a wide variety of species. Research has demonstrated that larger forest tracts typically support more species than smaller forest stands. The amount of forest cover, size of individual forest patches, forest type, and linkages to other patches in a landscape determine their ability to support wildlife species which depend on them, including area-sensitive and edge intolerant species. This is particularly true for mammals and forest birds that require extensive forests (Environment Canada, 2004). Many larger patches of forested uplands and wetlands within the Study Area are bisected by spruce/fir plantations or exhibit ongoing disturbance due to private logging, recreational use, and livestock activity. Core forest blocks (i.e., patches of forest greater than 150 acres as defined by 19 NYCRR §900-1.3(g)(1)(iii)) are present within the Study Area; however, impacts to forested uplands have been limited to the maximum extent practicable, and have been balanced with impacts to open communities.

The construction and operation of the Facility may result in some habitat loss or species displacement. A total of up to approximately 32.7 acres of vegetation (<1% of the Study Area) will be removed and converted to impervious surfaces associated with Facility components (e.g., wind turbine foundations, access roads, substation, etc.) and up to 101 acres of forested uplands (2% of the Study Area) will be cleared. However, construction and operation will not result in extirpation, significant reduction, or fragmentation of plant communities or wildlife habitat. The majority of the Study Area is comprised of terrestrial cultural communities and open uplands that are actively farmed, were farmed recently, or which are otherwise subjected to regular disturbance (e.g., spruce/fir plantations). Therefore, impacts to wildlife are expected to be minimal and insignificant. Additional discussion regarding impacts to state or federally listed threatened or endangered species, or species of concern, are discussed in Exhibit 12.

(1) Construction-Related Impacts to Wildlife and Wildlife Habitats

Construction-related impacts to wildlife are anticipated to be limited to incidental injury and mortality due to construction activity and vehicular movement, habitat disturbance/loss associated with clearing and earth-moving activities, and displacement of wildlife due to increased noise and human activities. Each of these potential impacts is described herein.

Incidental Injury or Mortality

Direct impacts from construction equipment may include incidental injury or mortality due to construction activities, such as clearing of vegetation, grading, excavation activities, driving of vehicles and equipment, as well as construction crew foot traffic. Vehicle-related mortality may increase temporarily due to the increased traffic during construction and operation. However, potential mortality is expected to be low, as equipment used in wind energy facility construction generally moves at slow rates or is stationary for long periods (e.g., earth moving equipment, erection cranes). In addition, much of the land within the Study Area is actively farmed. Such areas typically provide limited food and cover for most wildlife species and are routinely subject to disturbance-related farming activities (e.g., plowing, mowing, pesticide application). Incidental injury and mortality are expected to be limited to juvenile and sedentary/slow-moving species that are unable to move out of the area that is being disturbed by construction, such as small mammals, ground-nesting bird eggs and hatchlings, reptiles, amphibians, and invertebrates. More mobile species and mature individuals should be able to vacate the disturbed areas. Vehicle-related mortality may increase temporarily due to the increased traffic during construction; however, as traffic decreases upon the completion of construction, so will the potential for wildlife-vehicle collisions.

For most of the wildlife species potentially present, overall populations are stable and any adverse impacts would be localized and not significant. For instance, impacts to species nesting in active farm fields should not differ greatly from existing impacts resulting from normal agricultural management of these fields for farming purposes. Thus, any direct impacts associated with disturbance and displacement from construction areas would be a temporary impact and individuals would be able to return to disturbed areas following completion of construction activities.

Habitat Disturbance and Loss Due to Clearing and Earth-moving Activities

Facility components have been sited to minimize impacts to wildlife habitat. This includes preferentially siting wind turbines in terrestrial cultural communities (e.g., agricultural land, disturbed/developed communities, and plantations) and open uplands to avoid or minimize impacts to forested uplands and wetland communities. Forested uplands are one of the most abundant community types within the Study Area, occupying approximately 1,485.5 acres (33% of the Study Area). However, only 7% of forested uplands within the Study Area (101 acres) will be impacted by the construction of the Facility. In comparison, 12% of terrestrial cultural communities within the Study Area (262.0 acres), and 10% of open uplands within the Study Area (52.9 acres) will be impacted by the construction and operation of the Facility.

It is anticipated that approximately 262 acres of terrestrial cultural communities and 52.9 acres of open uplands will be directly impacted by construction-related disturbance. On a landscape scale, an abundance of these habitats occurs within the Study Area, in nearby areas, and in the broader region. Of the total impacts, 218.1 acres of terrestrial cultural communities and 34.1 acres of open uplands will be only temporarily impacted during construction and will be allowed to return to their previous condition post-construction. As the Study Area is surrounded by similar habitats within the disturbance areas and most of the wildlife species that may be impacted by the Facility currently have stable populations within New York State and the region, any indirect impacts are not anticipated to be significant. The indirect impacts would be short term in duration, and various wildlife species would be expected to return to the temporarily disturbed areas following construction.

During the construction of aboveground Facility components (e.g., the substation, access roads, wind turbine foundations), grading will occur in association with leveling areas for Facility component installation. In these areas, existing vegetation will be cleared and structures and/or impervious surfaces will be installed. Non-impervious areas will be maintained in an early successional state for the life of the Facility. Maintained early successional areas are expected to provide considerable habitat value for many wildlife species including pollinators and other invertebrates, small mammals, reptiles and amphibians, and avian species. A total of approximately 24.5 acres of terrestrial cultural communities, 34.1 acres of open uplands, 35.0 acres of forested uplands, and 2.5 acres of wetlands will be maintained in a successional state.

Changes in vegetation have the potential to influence the behavior of wildlife species by changing the quality of habitat for foraging, nesting, or roosting, although significant adverse impacts on wildlife are not expected. As indicated previously, the row crop fields that will be disturbed by Facility construction provide habitat for relatively few wildlife species.

Displacement of Wildlife

Some wildlife displacement may occur due to increased noise and human activity associated with Facility construction. The significance of this impact will vary by species and the seasonal timing of construction activities. These impacts are not expected to be significant due to the limited habitat value

of the areas being impacted because a sizeable amount of suitable habitat will remain undisturbed by Facility construction within and adjacent to the Study Area. As mentioned previously, the majority of land proposed to host Facility components is subject to frequent mechanical disturbance associated with farming activities. Consequently, it is anticipated that many of the wildlife species within the Study Area are accustomed to disturbances such as those that will occur during Facility construction. Outside of localized displacement due to construction disturbance in the immediate vicinity of Facility components, no significant displacement impacts on wildlife species are anticipated during construction.

(2) Operation-Related Impacts to Wildlife and Wildlife Habitats

Operation-related impacts to wildlife include direct habitat loss, habitat degradation through fragmentation, disturbance/displacement of wildlife due to the presence of wind turbines, and mortality as a result of collisions with operating turbines.

Habitat Loss

A total of 32.7 acres of wildlife habitat will be permanently lost from the Study Area (i.e., converted to roads or built facilities) (Table 11-1). This habitat loss represents less than 1% of the 4,547.2-acre Study Area. Facility construction will result in a temporary loss of approximately 314.5 acres of habitat. An additional 72.8 acres, including 35.0 acres of upland forest, will be permanently converted to a successional community (mowed lawn, old field, shrubland, or saplings) for the life of the Facility by necessary Facility maintenance activities. This will result in an increase in habitat for early successional species, many of which are in decline (Swanson et al., 2010; Litvaitis, 1993). In addition, habitat conversion from forest to maintained successional communities may contribute to advancing the New York State Department of Environmental Conservation (NYSDEC) Young Forests Initiative, as outlined in the New York State Forest Action Plan, by replacing more mature forest with young forest, providing desirable early successional habitat for a variety of migrant songbirds, native gamebirds, and other wildlife (NYSDEC, 2020). In particular, the Forest Action Plan and the New York State Wildlife Action Plan both cite the importance of young forests to wildlife diversity and the threat posed by forest succession to SGCN (NYSDEC, 2015).

Forest clearing or conversion will reduce available habitat and could result in impacts to forest avian species, which are sensitive to edge effects and habitat fragmentation. Fragmentation impacts can degrade habitat quality by impacting the movements and breeding, roosting, or foraging behaviors of birds and bats, and may ultimately impact reproductive success or survival. Impacts are taxa/species-specific, can occur at different spatial scales, and will vary depending on configuration and extent of impacted areas, previous land uses or quality of previous habitat, as well as new land uses in the impacted areas. Forest nesting species, such as the broad-winged hawk (*Buteo platypterus*), black-throated blue warbler (*Setophaga caerulescens*), ovenbird (*Seiurus aurocapilla*), scarlet tanager (*Piranga olivacea*), and wood thrush (*Hylocichla mustelina*) may experience a loss of habitat and effects associated with fragmentation. In addition, forest loss and fragmentation could result in adverse impacts to bat species depending on preferred prey, foraging habitats, roosting needs, and flight

morphology, among other factors. Suitable roosting areas for some bat species may be lost as a result of Facility construction; however, the creation of open areas and forest edge habitat may benefit some species such as the little brown bat (*Myotis lucifugus*) and the big brown bat (*Eptesicus fuscus*) by increasing foraging opportunities.

Publicly available data from the National Land Cover Database (NLCD; USGS, 2021) indicate that forestlands are prevalent throughout Madison County with core forest blocks (i.e., contiguous areas one 150 acres or larger) comprising nearly 186,767 acres within Madison County. Permanent forest clearing represents only 6% of all forested uplands in the Study Area, and less than 0.1% of forests within core forest blocks within Madison County, so forest losses are *de minimis* relative to habitat availability. Further, the existing forested areas within the Study Area have been regularly subject to disturbance including logging and development. This is particularly true for spruce/fir plantation communities, which were originally planted with the intention of an eventual harvest. Effects associated with conversion of habitat and fragmentation due to the Facility are expected to be minimal and comparable to existing conditions. The areas that will have some forest clearing are in proximity to similar forested habitats. Since the amount of habitat fragmentation will be low and there will not be a regional landscape-level change in habitat, the impacts to wildlife species from forest fragmentation are expected to be limited. In addition, the habitat conversion is expected to provide an increase in habitat for early successional species.

Fragmentation of grassland habitats may also occur to a lesser extent as a result of the Facility. The proposed Facility may fragment grassland habitats through creation of permanent access roads, turbine pads, and other infrastructure within large, contiguous grassland habitats. These features may result in smaller patches of grassland habitat in some areas. The creation of new roads at wind facilities in grassland habitat may create edge habitats which may increase nest predation or brood parasitism (Pearce-Higgins et al., 2009; Pearce-Higgins et al., 2012), impacting reproductive success and survival. Current landowner activities have largely shaped the nature of existing grassland habitats. Lands used for active cultivation and most fields in the Study Area are considered marginal grassland habitat due to existing landowner management disturbances. Buried collection lines would have minimal, short-term, temporary impacts on habitat during construction and are not likely to result in long-term fragmentation effects. Fragmentation of existing grassland habitats due to the Facility is not expected to have significant impacts on wildlife. Impacts to occupied habitat identified for threatened and endangered grassland bird species will be mitigated through implementation of the Net Conservation Benefit Plan (NCBP; refer to Exhibit 12 and Appendix 12-I).

Disturbance/Displacement of Wildlife

Habitat alteration and disturbance resulting from the operation of turbines and other wind energy facility infrastructure may render some areas within the Study Area unsuitable or less suitable for nesting, foraging, roosting, or other wildlife use. The Facility is sited in an agricultural and forested landscape that is subject to frequent disturbances associated with farming activities such as tilling, plowing, pesticide application, mowing/harvesting, livestock grazing, and logging operations. Wind turbines have been sited in open uplands and terrestrial cultural communities to the greatest extent

practicable to avoid the need to impact other valuable wildlife habitat such as mature forest stands, or wetlands. For example, 19 of the 24 wind turbines, the collector substation and POI switchyard, the O&M facility, the MET and ADLS towers, and construction laydown yards have been largely sited in open uplands and terrestrial cultural communities to minimize tree and vegetation clearing in the surrounding area, as shown in the Exhibit 5 (Design Drawings) Appendix 5-A. As further discussed in Exhibit 14, Facility components have also been set back to avoid permanent impacts to state regulated wetlands and streams, to the greatest extent practicable.

The presence of turbines in terrestrial cultural, open upland, and forested upland communities within the Study Area will likely render these habitats less desirable for certain species that would otherwise utilize these areas for foraging, roosting, and breeding habitat. This may be particularly true for avian species that generally require large, open grassland areas or for forest avian species that generally require large stands of intact, undisturbed forests for foraging activities and establishing breeding territories. Similar forested and grassland habitats are available in the Study Area and surrounding landscape for birds which may be displaced due to the Facility. The creation of edge habitats and early successional habitats will benefit other species of birds and wildlife species which thrive in more open and regenerating habitats. Permanent impacts to the wintering and breeding habitat of grassland bird species are anticipated. The Applicant will implement avoidance, minimization, and mitigation measures as presented in Exhibit 11(c).

Disturbances associated with the operation and maintenance of a wind energy facility, such as noise produced by operating turbines and the substation, vehicle traffic, maintenance of turbines or other project components (e.g., roads and buried collection lines), can impact breeding, foraging, resting, or other wildlife behaviors. Maintenance activities and vehicle traffic during operations may result in disturbances such as noise effects, damage to nests of ground nesting birds or other disturbances to nesting activities, or potential vehicular collisions of wildlife. However, maintenance activities will be relatively infrequent and temporary, and are not expected to result in long-term or adverse impacts. Operations and maintenance effects to wildlife are expected to be comparable to, or less than, other land uses including regular road traffic and agricultural practices (e.g., operation of farm machinery). Further, as specified in the Facility's NCBP (Appendix 12-I), if an active nest of a federally or state listed endangered or threatened bird species is discovered incidentally within the Facility Site during the life of the Facility, measures will be implemented to avoid disturbance to the nest.

Avian Collision Risk

Wind turbines (including towers and operating or stationary blades) pose a collision risk for birds, and every wind energy facility in the U.S. likely results in some bird mortality. Evaluation of studies conducted at wind energy facilities across North America has indicated that fatality rates for all bird species can vary considerably, ranging from 0.0 birds/Megawatt (MW)/year to 77.0 birds/MW/year (Smallwood, 2013). However, most wind energy facilities have reported bird fatality rates closer to the low end of this range. For example, based on an analysis of 42 post-construction monitoring studies conducted for wind energy facilities in the eastern U.S. (including New York), the American Wind Wildlife Institute (AWWI) reported an overall median bird fatality rate of 1.43 birds/MW/year, and an overall mean bird

fatality rate of 2 birds/MW/year. The median fatality rates for small birds, large birds, and raptors were 1.64 birds/MW/year, 0.19 birds/MW/year, and 0.01 birds/MW/year, respectively. The mean fatality rates for these same groups were 2.09 birds/MW/year, 0.48 birds/MW/year, and 0.05 birds/MW/year, respectively (AWWI, 2020a). Approximately 60% of birds found during carcass searches consist of small passerines (i.e., songbirds; AWWI, 2021). Passerines are the most abundant group of birds in the world, and their abundance combined with nocturnal migratory behavior likely contributes to their increased risk. Peak periods of collision mortality typically coincide with spring and fall migration, particularly during periods of fog or inclement weather.

It is important to note that wind energy facilities represent a very small contribution to overall avian fatalities compared to other anthropogenic sources. Of the main anthropogenic sources of avian fatalities regularly identified in scientific reviews, six account for an overwhelming majority of bird deaths in the U.S. and Canada: (1) domestic cats; (2) windows and buildings; (3) highways and vehicles; (4) pesticides; (5) legal and illegal hunting; and (6) electric transmission line structures. Together, these anthropogenic sources result in more than four billion (4,000,000,000) estimated avian fatalities per year. Compared to this estimate, the operation of wind turbines in the U.S. and Canada results in only 368,000 estimated avian fatalities per year—approximately 0.009% of avian fatalities from anthropogenic sources (Erickson et al., 2014).

To date, there has been no significant population impact documented for any one species of bird due to wind energy development. This is largely because nocturnal migrant passerines, the bird group most frequently known to collide with tall, artificial structures, are relatively abundant (Johnson et al., 2002; NRC, 2007; Arnold and Zink, 2011; Erickson et al., 2014). As there are no unique natural resource features (e.g., significant migration corridors, major open waterbodies, etc.) that would concentrate avian flights in the vicinity of the Study Area, significant adverse effects associated with operating Facility wind turbines are not expected.

Bat Collision Risk

Wind energy development has shown to result in higher direct impacts to bats than birds, and hundreds of thousands of bats are likely killed annually by wind turbines across the U.S. and Canada (Arnett and Baerwald, 2013; Hayes, 2013; Smallwood, 2013). Evaluation of studies conducted at wind energy facilities across the U.S. has indicated that fatality rates for all bat species can vary, ranging from less than one bat/MW/year to 50 bats/MW/year (AWWI, 2018), with 75% of wind energy facilities reporting fatality estimates of less than 5 bats/MW/year. Based on a more recent analysis of 59 post-construction monitoring studies conducted for wind energy facilities in the northeastern U.S. (including New York), the AWWI reported an overall median fatality rate of 3.99 bats/MW/year, and an overall mean fatality rate of 8.65 bats/MW/year (AWWI, 2020b). Collision risk is highest for three migratory, tree-roosting bat species (i.e., the hoary bat [*Lasiurus cinereus*], silver-haired bat [*Lasionycteris noctivagans*], and eastern red bat [*Lasiurus borealis*]), which account for approximately 70% of all bat fatalities at wind energy facilities in the U.S. (AWWI, 2021). Therefore, these three migratory tree-roosting bat species would likely be those most affected during Facility operation. None of these bat species are currently listed as endangered, threatened, or special concern species in New York State.

Because limited information is available on tree-roosting bat species' populations, the significance of mortality due to collisions with wind turbines is not well understood. In addition, the reasons for these species' increased vulnerability to collision are also uncertain (AWWI, 2021). Other species of bats are also known to collide with wind turbines, including cave-hibernating *Myotis* species. *Myotis* bats have suffered significant population declines due to white-nose syndrome. White-nose syndrome is a fungal disease affecting cave-hibernating bats, and it represents the most significant source of bat fatalities in the U.S. and Canada since it was first documented in New York in 2006 (WNSRT, 2024). In the following years, this disease has spread to more than 16 states and four Canadian provinces, resulting in at least 5.7 million to 6.7 million bat fatalities (USFWS, 2012). Therefore, *Myotis* bats may also be vulnerable to impacts associated with wind turbine collisions where they are still present in the post-white-nose syndrome era.

Collision risk for bats in the U.S. peaks in the late summer and early fall, which overlaps with the time of year when tree-roosting bat species migrate (AWWI, 2021). Collision risk also coincides with periods of low wind speeds and warm temperatures. With minimization measures implemented at the Study Area during peak periods of bat risk, significant adverse impacts due to collision are not anticipated. Namely, in accordance with §900-6.4(o)(4)(v), the Applicant will implement operational curtailment from July 1 to October 1 when wind speeds are at or below 5.5 meters per second and temperatures are at or above 10° Celsius (50° Fahrenheit) from 30 minutes before sunset to 30 minutes after sunrise. This curtailment schedule will be followed on an individual turbine basis and will be determined by weather conditions as measured by individual weather stations on each wind turbine nacelle.

Impacts to Wildlife Travel Corridors and Concentration Areas

As discussed in the WSC Report (Appendix 12-A), the Applicant conducted research to identify documented wildlife travel/migration corridors and concentration areas within or adjacent to the proposed Facility. No documented wildlife travel corridors or migration stopover sites were identified within the Study Area based on consultations with the USFWS and the NYNHP. In addition, there are no national wildlife refuges, Audubon Important Bird Areas, high elevation mountaintops, known bat hibernacula, Great Lakes shorelines, large river corridors, or other documented significant habitat areas within 5 miles of the Facility Study Area (as defined in the WSC Report) (Appendix 12-A).

Landscape features and other resources within 5 miles of the Facility Study Area that could support wildlife travel or function to concentrate wildlife include: (1) the Tioughnioga Wildlife Management Area (WMA), which is located approximately 4.5 miles southwest of the Facility Study Area (as defined in the WSC Report) at its closest point—only a small fraction of this WMA is located within 5 miles of the Facility Site; (2) Grassland Focus Area 4, which encompasses over 1 million acres in the Central Leatherstocking and Mohawk River Valley regions; (3) core forest blocks, which comprise approximately 36% of the total land area within 5 miles of the Facility Study Area boundaries defined in the WSC Report; (4) West Stockbridge Hill, which is a ridge located approximately 5 miles northeast of the Facility Site; and (5) forested riparian areas located along streams. Migratory and resident wildlife would be expected to use these resources, and some impacts to wildlife may result due to construction and operation of the Facility, as discussed in this Exhibit. However, impacts to wildlife travel corridors and

concentration areas would be limited, as the Facility has avoided more significant wildlife resources of particular regional, state, and national importance (e.g., lake shorelines, national wildlife refuges). Therefore, the Facility is not anticipated to have significant adverse impacts to wildlife travel corridors or concentration areas. Smaller-scale wildlife travel corridors used for local movement between resource patches are present within the Study Area. Examples may include riparian corridors, hedgerows, forest patches, deer trails, and areas between wetlands and uplands. Due to the relatively small area of disturbance and permanent facilities proposed for the Facility, and the abundance of similar habitat features surrounding these impacted areas, the Facility is anticipated to have minimal impact on local wildlife travel corridors.

Cumulative Impacts to Birds, Bats, and Wildlife Habitat

Cumulative impacts analyses (i.e., potential avian mortality analysis, potential bat mortality analysis, and a potential wildlife habitat impact analysis) were completed for the Facility in relation to two existing wind energy facilities (the Fenner Wind Farm and the Munnsville Wind Farm; USGS, 2023) and one proposed wind energy facility (the Cody Road Wind Farm; Green Power Energy, LLC, 2011) and their associated infrastructure located within 5 miles of the Facility Site (Figure 3-4). For the purposes of the avian and bat mortality analyses, it was assumed that all these facilities will be operational throughout the life of the Facility and will maintain their current numbers of wind turbines and energy generating capacities. Based on publicly available data, the existing Fenner Wind Farm was assumed to have 20 wind turbines with a total capacity of 30 MW (USGS, 2023), the existing Munnsville Wind Farm was assumed to have 23 wind turbines with a total capacity of 35 MW (USGS, 2023), and the proposed Cody Road Wind Farm was assumed to have four wind turbines with a total capacity of 10 MW (Green Power Energy, LLC, 2011). The results of the cumulative impact analyses are discussed in the following sections. Additional information regarding avoidance, minimization, and mitigation of impacts to state listed wildlife species is provided in Exhibit 12.

Avian Mortality Estimates

As noted previously in this Exhibit, the AWWI conducted an analysis of 42 post-construction monitoring studies completed for wind energy facilities in the eastern U.S. (including New York) and reported an overall mean bird fatality rate of 2 birds/MW/year (AWWI, 2020a). Based on this mean bird fatality rate for the eastern U.S. and a maximum generating capacity of 100 MW, the Facility could potentially result in the loss of approximately 200 birds/year. The Fenner Wind Farm, Munnsville Wind Farm, and Cody Road Wind Farm could potentially result in annual losses of 60, 70, and 20 birds/year, respectively. Therefore, the Facility's contribution to cumulative avian mortality is estimated to be approximately 57% within 5 miles. Thus, the Facility's addition of 24 new wind turbines in New York State will increase the potential numbers of bird fatalities. However, these impacts would not be expected to have effects on the populations for any one bird species (Arnold and Zink, 2011), and the cumulative impacts of these wind energy facilities to birds will represent a very small proportion of overall bird mortality from anthropogenic sources, which also include domestic cats, windows and buildings, highways and vehicles, pesticides, hunting, and

electric transmission line structures (Erickson et al., 2014). Furthermore, the Facility's impacts to birds must be balanced against the environmental threats to bird species and their habitats posed by a failure to address and mitigate climate change. Climate change represents one of the most significant threats to a wide variety of wildlife species, potentially threatening two-thirds of North American bird species with extinction (National Audubon Society, 2019). Wind energy facilities can reduce carbon emissions and, therefore, represent one means of ameliorating the effects of climate change. Science-based organizations dedicated to the conservation of birds and their habitats, such as the National Audubon Society, strongly support the development of wind energy facilities (National Audubon Society, 2020).

Bat Mortality Estimates

As noted previously in this Exhibit, the AWWI conducted an analysis of 59 post-construction monitoring studies completed for wind energy facilities in the northeastern U.S. (including New York) and reported an overall mean bat fatality rate of 8.65 bats/MW/year (AWWI, 2020b). Based on this mean bat fatality rate for the northeastern U.S. and a maximum generating capacity of 100 MW, the Facility could potentially result in the loss of approximately 865 bats/year. The Fenner Wind Farm, Munnsville Wind Farm, and Cody Road Wind Farm could potentially result in annual losses of 260, 303, and 87 bats/year, respectively. Therefore, the Facility's contribution to cumulative bat mortality is estimated to be approximately 57% within 5 miles. Thus, the Facility's addition of 24 new wind turbines in New York State will increase the potential numbers of bat fatalities. However, it is important to note that these estimates are likely conservative, and do not fully account for the fatality reductions that will be achieved by implementing operational curtailment. During pre-application consultations, the Office of Renewable Energy Siting (ORES) provided a bat fatality rate of 7.2 bats/MW/year for wind energy facilities in New York State (which is lower than the mean bat fatality rate reported by the AWWI) and indicated that curtailment would be expected to reduce bat fatalities substantially for certain species (i.e., up to 85%, or a minimization factor of 0.15).

Based on the ORES-provided bat fatality rate for New York State and a maximum generating capacity of 100 MW, the estimated bat fatality rate for the Facility (without curtailment applied) would be approximately 720 bats/year. Depending on the species, curtailment would then be expected to substantially reduce bat fatalities for most species. For example, a study conducted for two wind energy facilities in northeast Illinois demonstrated that curtailment alone reduced overall bat mortality by 42.5%, and curtailment combined with the use of acoustic deterrents reduced overall bat mortality by 66.9%, with species-specific reductions ranging from 58.1% to 94.4% (Good et al., 2022). The Facility's planned curtailment schedule would also be anticipated to substantially reduce annual and total numbers of bat fatalities. In addition, the Facility may also employ ultrasonic acoustic bat deterrent systems and/or other similar technologies during operation to further reduce bat fatalities and the Facility's contribution to cumulative bat mortality.

Wildlife Habitat Analysis

To estimate cumulative impacts to wildlife habitat within 5 miles of the Facility, the limit of permanent impacts was quantified for each of the existing and proposed wind energy facilities identified in the previous sections. The limits of permanent impacts for the Fenner Wind Farm and the Munnsville Wind Farm were digitized based on review of current aerial imagery (Esri, 2024), and totaled approximately 16.1 acres and approximately 17.9 acres, respectively. The limit of permanent impacts for the Cody Road Wind Farm was estimated to total approximately 4 acres based on the average number of acres impacted per wind turbine calculated for the two existing wind energy facilities and the Facility (approximately 1 acre per turbine) multiplied by the total number of wind turbines (four). The Facility's limit of permanent impacts corresponds with the LOIS defined previously in Section 11(b) and will total approximately 32.7 acres. Based on these calculations, the combined permanent impacts of existing and proposed wind facilities within 5 miles of Facility (including the Facility) total approximately 70.6 acres. Therefore, the Facility's contribution to cumulative wildlife habitat impacts will be approximately 46.3% within 5 miles. Of the total land area estimated to be permanently impacted by the Facility, 16.0% is field cropland/pastureland, 19.6% is forestland, 31.5% is cultivated cropland, 4.6% is shrubland, 1.2% is developed land, and 0.6%% is wetland (woody and herbaceous), based on current land cover data obtained from the NLCD (USGS, 2021).

Cumulative impacts to wildlife habitat as a result of wind energy facility development in the region are expected to be minimal. This is largely because many operational and proposed wind turbines within the region and New York State are, or will be, sited in existing agricultural areas used for crop production that do not represent suitable habitat for most wildlife species. Although wind energy facilities do require the clearing of open and/or forested habitats at some wind turbine locations, these impacts are typically minor on a landscape scale. In addition, tree removal activities for the Facility will occur between November 1 and March 31 to the extent possible, which will serve to further minimize impacts to birds and bats that utilize forested habitats. Furthermore, existing wind turbine locations and current aerial imagery were reviewed using the U.S. Wind Turbine Database (USGS, 2023), and many operational wind energy facilities appear to have had minimal effects on forest or grassland habitat; large areas of undisturbed forest and grassland habitat remain in the immediate vicinity of these facilities following construction, and the permanent footprint of a given wind energy facility represents a very small portion of the total wildlife habitat available on the landscape. Additional information regarding direct and indirect habitat impacts is provided in the previous sections of this Exhibit.

(f) Measures to Avoid or Mitigate Impacts to Wildlife and Wildlife Habitats

Avoidance and minimization of impacts related to construction and operation of the Facility were accomplished through careful site design (e.g., utilizing existing roads or previously disturbed corridors, avoiding sensitive habitat such as wetlands and riparian corridors, and minimizing disturbance to the maximum extent practicable), adherence to designated construction limits, and implementation of an Erosion and Sediment Control Plan in the Stormwater Pollution Prevention Plan (SWPPP) (refer to Exhibit

13 for more information regarding the SWPPP). As described and quantified in Section 11(b), Facility components have been sited in terrestrial cultural communities (e.g., agricultural land, disturbed/developed communities, and plantations) and open uplands to the maximum extent practicable to avoid significant impacts to forested uplands and wetlands. As evidence of this, forested uplands are the most abundant community type within the Study Area, occupying 1,485.5 acres (33% of the Study Area). However, only 7% of forested uplands within the Study Area (101 acres) will be impacted by the construction of the Facility. In comparison, 12% of terrestrial cultural communities within the Study Area (262.0 acres), and 10% of open uplands within the Study Area (52.9 acres) will be impacted by the construction and operation of the Facility.

Cleared forestland at the periphery of some wind turbines and access roads will be allowed to regenerate in areas that are not required for Facility maintenance, providing habitat for early successional species over the short-term and supporting forest species in the long-term. In areas of natural regeneration, grubbing and grading will be limited to the minimum required to install Facility components. Furthermore, during the compliance filing phase, the Applicant will develop a Traffic Control Plan to ensure safe and efficient traffic flow during construction and operations, thus minimizing risk of wildlife injury or mortality due to traffic collision. The Applicant will hire an Environmental Monitor to conduct regular inspections of construction activities, ensuring that sensitive habitats are flagged and avoided, and observations of any threatened and endangered species are recorded in accordance with the final Siting Permit conditions.

Exhibit 12 provides information regarding the Facility's potential impacts on state listed endangered, threatened, and special concern species.

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