Grassland Breeding Birds Cumulative Impacts Assessment

East Point Energy Center

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1.0 Introduction

1.1 Project Description

East Point Energy Center, LLC, (East Point Energy Center or the Applicant) a wholly-owned indirect subsidiary of NextEra Energy Resources, LLC (NEER), is submitting an application to construct a major electric generating facility, the East Point Energy Center (the Project), under Article 10 of the Public Service Law (PSL).

The East Point Energy Center Project will have a generating capacity of 50 MW of power and will be located on land leased from owners of private property located in the Town of Sharon, Schoharie County, New York (Figure 1). Project facilities will include commercial-scale solar arrays, access roads, inverters, fencing, buried electric collection lines, and electrical interconnection facilities. Proposed interconnection facilities will include a 69-kV switchyard which will be transferred to National Grid to own and operate. The proposed collection substation and interconnection facilities will be located on land within the Project Area in relative proximity to National Grid's existing Sharon – Marshville 69 kV transmission line and the existing Sharon substation.

The proposed facility will consist of ground-mounted solar arrays and associated infrastructure with an anticipated footprint of approximately 352 acres within the 1,313-acre Project Area.

1.2 Purpose and Objectives

A cumulative impact analysis was requested by the New York Department of Environment and Conservation (NYSDEC) to evaluate the actual and expected impacts from the construction, operation, and maintenance of the Project on federally and State-listed threatened or endangered species, particularly grassland birds, in combination with the impacts of proposed and operating solar energy projects with a generating capacity greater than or equal to 5 MW occupying grassland habitat within 100 miles of the Project Area. This analysis is based upon a NYSDEC database consisting of mapping of solar facilities provided to the Applicant, and any publicly available information researched by the Applicant, in its sole judgement, chooses to employ (Study Projects) located in New York State but not beyond New York State borders (Grassland Study Area). The Applicant was not required to make Freedom of Information Requests nor perform any avian field studies at the Study Projects. This analysis includes, at a minimum:

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- Examination of publicly available open and grassland habitat data on the Study Projects within the Grassland Study Area using the NYSDEC database t and the publicly available information. the Applicant obtained;
- estimated take of state-listed T&E bird species and their habitats at the Facility, if any, and a description of methods used, and sources consulted to estimate take;
- estimates of available open and grassland habitat within the Grassland Study Area;
- estimates of acres of grassland breeding bird habitat lost directly through installation of panels and other project components at the Study Projects, using best available information or typical industry solar land use metrics;
- estimates of acres of grassland habitat indirectly affected by the Study Projects due to functional loss/degradation of habitat; and
- cumulative impacts of grassland habitat use, particularly potential impacts on statelisted grassland bird species, within the Facility Area.

2.0 Literature Review

2.1 Solar Energy Impacts to Grassland Breeding Birds

2.1.1 Direct Impacts

There are relatively few studies quantifying the effects of utility-scale solar projects on biodiversity, including birds. The currently availably peer-reviewed publications on renewable energy, including solar, are insufficient to thoroughly assess the impact of utility scale solar projects on wildlife populations (Lovich and Ennen, 2011). The two types of direct impacts to birds from utility-scale solar projects occur in the form of burning and collisions (Walston Jr. et al., 2016). Burning impacts are not applicable to the East Point Energy Center as the use of photovoltaic solar modules is proposed rather than solar thermal technology. Estimates of annual avian mortality from utility scale solar energy developments, including both thermal and PV solar, in the US ranges from 37,800 to 138,600 (Walston Jr. et al. 2016), which taken in context accounts for an insignificant portion of annual avian mortality from anthropogenic sources (Loss 2015). For example, wind turbines account for an estimated 573,093 deaths annually and power line collisions kill over 22,800,000 birds each year. A full review of literature regarding impacts is provided within Exhibit 22 of the Article 10 Application for this Project.

2.1.2 Indirect Impacts

Establishing a ground-mounted solar system at the Project Area is not likely to adversely affect grassland birds in the vicinity. To date, there has been only one peer-reviewed study of the indirect effects of ground-mounted solar systems and birds (DeVault et al., 2014). This study of bird use at ground-mounted solar facilities and managed grasslands at airfields found that although bird diversity was lower than adjacent grasslands, bird density was greater at solar facilities. The same study found several grassland birds using solar systems including eastern meadowlark, grasshopper sparrow and savannah sparrow (DeVault et al., 2014).

Grassland birds are declining in New York State due to the loss of agricultural lands such as pastures and hay fields. Most utility-scale solar facilities in the United States are sited in agricultural areas, and construction of facilities often results in conversion of land use out of row crop production. While species-specific requirements for grassland birds vary, the habitat provided by row crop cover is generally considered marginal for species such as bobolink,

grasshopper sparrow, and savannah sparrow (Morgan and Burger, 2008). Agricultural operations provide reduced foraging opportunities, provide lower vertical structure and horizontal cover, are often monotypic in floristic diversity, and generally experience increased disturbance associated with human activity.

Following construction, solar energy facilities typically use a grass seed mix to establish a stabilized vegetative ground cover. These grass seed mixes are comprised of grasses that are native and/or indigenous to the area and are considered favorable for wildlife habitat and sustainable growth. Additionally, the effects of climate change have been identified as a preeminent threat to continental bird populations (National Audubon Society, 2014). Increasing the capacity to generate energy from renewable sources will indirectly benefit birds through climate change mitigation.

2.2 Summary of Previous Site-Specific Studies

2.2.1 Grassland Breeding Bird Study

A preconstruction monitoring survey of grassland bird species during the 2018 breeding season required by the NYSDEC was conducted by Tetra Tech, an engineering services company. The survey methodology followed the *NYSDEC Draft Survey Protocol for State-listed Breeding Grassland Bird Species* (NYSDEC, 2015a) and incorporated comments provided by NYSDEC on the site-specific protocol. The objective of the grassland breeding bird survey was to determine the presence and site use of federally and State-listed threatened/endangered, rare, and special concern grassland bird species within the proposed Project Area including:

- northern harrier (Circus hudsonius), first observed on June 12, 2018
- upland sandpiper (*Bartramia longicauda*)
- short-eared owl (Asio flammeus)
- Henslow's sparrow (Ammodramus henslowii)
- sedge wren (Cistothorus platensis)
- grasshopper sparrow (Ammodramus savannarum), first observed on May 22, 2018
- vesper sparrow (Pooecetes gramineus)
- horned lark (Eremophila alpestris)

Additional target grassland bird species the subject of the survey included:

- American kestrel (Falco sparverius), first observed on May 22, 2018
- bobolink (Dolichonyx oryzivorus), first observed on May 22, 2018
- eastern meadowlark (Sturnella magna), first observed on March 29, 2019
- golden-winged warbler (*Vermivora chrysoptera*)
- savannah sparrow (*Passerculus sandwichensis*), first observed on May 22, 2018

Biologists observed a total of 218 individuals representing 5 grassland bird species (i.e., bobolink, savannah sparrow, grasshopper sparrow, American kestrel, and northern harrier) at the Project Area. This included grassland birds observed at the survey points, outside of the 100-meter radius circular plot, and birds observed during the meander surveys. Bobolinks (n = 153) were the most commonly observed grassland bird species and comprised 70.2 percent of all grassland birds observed. Mean use was highest for bobolinks (2.01 birds/100-meter radius plot/5 minutes), followed by savannah sparrows (0.47 birds/100-meter radius plot/5 minutes), and grasshopper sparrows (0.07 birds/100-meter radius plot/5 minutes). Bobolinks and savannah sparrows were the most numerous grassland species observed and these species can be expected where there is suitable grassland habitat. Nine raptors from two species (eight American kestrels and one northern harrier), were observed at the Project Area.

The northern harrier is a state-listed threatened species and an adult female of this species was observed flying low over the open fields of the Project Area early on the morning of June 12, 2018 and is not believed to be nesting at the Project Area. The grasshopper sparrow is a state-listed species of special concern and a total of six grasshopper sparrows were observed at the Project Area. No breeding or nesting activity was observed. No species documented during the survey, regardless of protected status, were observed to be breeding or nesting on site. For a detailed description of the 2018 Grassland Breeding Bird Survey, including figures showing locations, methods, and results, refer to Appendix 22-3.

2.2.2 Winter Grassland Raptor Surveys

TRC conducted a preconstruction monitoring survey of wintering grassland raptors required by the NYSDEC. The objective of the wintering grassland raptor survey was to determine the presence and site use of state-listed threatened/endangered grassland raptors within the proposed Project Area. Target species were short-eared owl and northern harrier. The survey methodology followed the NYSDEC Draft Survey Protocol for State-listed Wintering Raptor Species (NYSDEC, 2015b) and incorporated comments provided by NYSDEC on the site-specific protocol.

Surveys were performed in winter of 2018–2019 and were conducted between November 15, 2018, and April 15, 2019. Surveys were originally planned to end on March 31, 2019 but were extended due to the observation of a State-listed threatened or endangered species during the last two weeks of March. This observation was of a bald eagle, observed at the Project Area on March 29, 2019. Driving surveys took place every week from December 7, 2019 – April 15, 2019. Stationary surveys were conducted for a total of 94.7 hours, and 22.7 total hours were spent conducting daytime driving surveys.

No northern harriers or short-eared owls were observed during winter raptor surveys at the Project Area. Two observations of bald eagles (*Haliaeetus leucocephalus*) were made during stationary surveys in the east-central portion of the Project Area. Individuals were observed flying over fields within the Project Area. The most common raptor species observed at the Project Area was the red-tailed hawk (*Buteo jamaicensis*); first observed on November 28, 2019; which comprised approximately 75 percent and 83 percent of total raptor observations during the stationary and driving surveys, respectively. Horned larks, which were a target species in the grassland breeding bird survey, were observed incidentally in the Project Area, first on November 28, 2019, during the wintering grassland raptor survey. For a more detailed description of the wintering grassland raptor survey. For a more detailed description of the wintering 22-4.

3.0 Methods

3.1 Desktop Review

3.1.1 Grassland Species Use

TRC conducted a review of publicly available information to determine grassland bird species with potential to occur within the Project Area and those which may be impacted by solar energy development within the 100-mile Grassland Study Area. This review focused on state and federally listed Threatened (T) and endangered (E) species and grassland species of Special Concern (SC) as designated in the NYSDEC grassland breeding bird survey protocol (NYSDEC 2015a). This review included:

- Route-level data from the USGS North American Breeding Bird Survey for survey routes within the Project Area
- Block-level data from the 2nd New York State Breeding Bird Atlas (2000-2005) for survey blocks within the Project Area
- Christmas Bird Count data from counts located closest to the Project Area
- County-level eBird data for Schoharie County and counties with Study Projects in the Grassland Study Area
- County-level data from the NYNHP for Schoharie County and counties with Study Projects in the Grassland Study Area

While additional species in New York may use grassland habitat during some portion of the annual life-cycle and have potential to occur within the Project Area, analyses were restricted to those species considered "Grassland Breeding Birds" in the NYSDEC protocol (NYSDEC 2015a) and the North American Breeding Bird Survey (USGS 2019).

3.1.2 Study Project Identification

TRC queried the database provided by the NYSDEC for Study Projects with a proposed generating capacity of 5MW or greater within the 100-mile Grassland Study Area and within the New York State boundaries. Projects were cross-referenced with the NYISO Interconnection Queue to obtain additional project-specific information. Few projects reported MW capacity; therefore, a conservative approach was used to identify Study Projects within the database which

met the criteria to be included in further analysis. Any projects with a size of less than 20 acres reported in the database were eliminated from the Study, based on the standard ratio of 1 MW: 4 acres for fixed ground-mounted solar PV arrays¹.

A literature search was conducted for each remaining Study Project in order to obtain any additional relevant information, which is publicly and electronically available, including Project location, generating capacity, area of impact, and avian studies completed to date.

3.2 Spatial Analysis

TRC used the USGS National Land Cover Database land cover dataset for the conterminous United States, updated 2016, to determine the presence and extent of grassland habitat within the Grassland Study area, the Study Project boundaries, and to characterize habitat available within the proposed Project Area.

The NLCD categorizes each 30x30-meter pixel into one of 20 cover classes. As a conservative approach, for the purposes of this analysis, grassland habitat was defined as including both the "Grassland/Herbaceous" category and pixels classified as "Pasture/Hay," which are consistent with the definition of grassland communities of New York described in Edinger et al. 2014².

NLCD provides the following definition for each of these categories:

- Grassland/Herbaceous areas dominated by graminoid or herbaceous vegetation, generally greater than 80 percent of total vegetation. These areas are not subject to intensive management such as tilling but can be used for grazing.
- Pasture/Hay areas of grasses, legumes, or grass-legume mixtures planted for livestock grazing or the production of seed or hay crops, typically on a perennial cycle. Pasture/hay vegetation accounts for greater than 20 percent of total vegetation.

¹ Denholm, Paul, and Robert Margolis. *Regional Per Capita Solar Electric Footprint for the United States*. No. NREL/TP-670-42463. National Renewable Energy Lab. (NREL), Golden, CO (United States), 2007.

² From Edinger et al. 2014: Grasslands include communities that are dominated by grasses and sedges; they may include scattered shrubs (never more than 50% cover of shrubs), and scattered trees (usually less than one tree per acre, or 3 trees per hectare).

Grassland habitat was extracted from the NLCD dataset using a Geographic Information System (GIS) to determine percent area in grassland cover. Acreages and percent cover values were compared between the Project Area, Study Projects (collectively), and the Grassland Study Area. This approach was used to highlight the overall indirect impact posed to grassland breeding birds resulting from habitat conversion/loss associated with Project construction. This methodology conservatively assumes that although the total footprint of the Project is limited to approximately 352 acres, indirect impacts to grassland birds have the potential to occur on all grassland habitat acres within the Project Area.

4.0 Results

4.1 Grassland Species Use

4.1.1 Project Area

Several target grassland species were identified on site during the grassland breeding bird and winter raptor surveys. Species observed included bobolink, savannah sparrow, grasshopper sparrow, American kestrel, and northern harrier. Bobolinks (n = 153) were the most commonly observed grassland bird species and comprised 70.2 percent of all grassland birds observed. Mean use was highest for bobolinks (2.01 birds/100-meter radius plot/5 minutes), followed by savannah sparrows (0.47 birds/100-meter radius plot/5 minutes), and grasshopper sparrows (0.07 birds/100-meter radius plot/5 minutes).

One northern harrier (ST) was observed during the breeding bird surveys, and two bald eagles (SE) were observed during the winter grassland raptor survey. Horned lark (SC) was also observed during winter raptor surveys conducted within the Project Area.

Review of publicly available datasets indicated the potential for occurrence of two additional species that breed in grassland habitat. None of the additional species identified are listed as threatened and endangered, and neither has been observed on site.

4.1.2 Study Project Counties

TRC reviewed the NYNHP and eBird databases to determine the most recent occurrence of grassland birds within each of the 31 counties where Study Projects were identified (Tables 2 and 3). Numerous species were widely distributed and had recent records among the counties, and all have been recently observed (within last 10 years) in Schoharie County except for Henslow's sparrow and sedge wren. Few species were less recently recorded or limited in distribution, including:

- Barn Owl; observed in 17 counties; last observed in Schoharie County in 2010
- Henslow's Sparrow; observed in 16 counties; last observed in Schoharie County in 2008
- Sedge Wren; observed in 18 counties; last observed in Schoharie County in 2008

• Upland Sandpiper; observed in 25 counties; last observed in Schoharie County in 2014

Recent records for the remaining species indicate widespread distribution within the Grassland Study Area. Although only the most recent record is reported, many of these species (with the exception of those listed above) were also documented in each of these counties during the most recent Breeding Bird Atlas, conducted from 2000-2005, indicating a persisting population over the previous 15-20 years (NYS BBA, 2008).

4.2 Summary of Study Projects Evaluated

An initial review of the NYSDEC-provided database yielded 423 proposed or constructed solar projects within the Grassland Study Area. Multiple projects were identified as duplicate records, with duplicates containing slightly modified project areas. Polygons were merged to retain the full extent of the project area, resulting in 381 unique Study Projects.

Many of the records contained missing data. Of 381 records, only 38 contained the proposed or actual MW capacity. Records were filtered based on acreage to retain only those projects greater than 20 acres in size, resulting in the identification of 295 Study Projects. Three projects were removed from the analysis as they were designated with a "Discontinued" status in the database, or as "Withdrawn" from the NYISO queue, resulting in 292 Study Projects considered in the evaluation of impacts. The full list of Study Projects evaluated is provided as Table 4.

Study Projects were identified in 32 of the 36 counties within the Grassland Study Area. Orange County contained the highest concentration of Study Projects with 56 projects identified, followed by Ulster County (23) and Albany (22). The remaining counties had fewer than 20 Study Projects. No Study Projects were identified in Hamilton, Jefferson, St. Lawrence, or Franklin counties (Table 1; Figure 2). Study Project locations are depicted in Figure 2. In addition to the Project, nine Study Projects were identified in Schoharie County.

Study Projects, including the Project, encompass a total of 49,536 acres within the Grassland Study Area. Of the 292 Study Projects, 39 have already been constructed and account for 2,826 acres of development. It should be noted that none of the proposed Study Projects in the database provided information regarding the total impact resulting from construction within their respective project area boundaries, therefore the total area reported is likely an overestimation as additional

land area could be included within each project's boundary beyond what is needed to achieve the project's proposed generating capacity.

Study Projects within Oneida County comprised the largest amount of acreage among Study Projects, with total area of 14,193 acres across nine projects. Study Projects in Montgomery county have a total area of 8,128 acres across 19 projects, and Orange County with 56 projects, has a total proposed area of 5,759 acres. Schoharie County, where the Project is located, has a proposed development area of 1,917 acres (including the Project), accounting for 3.8 percent of the total area of development within the Grassland Study Area.

The results of pre-construction studies of grassland bird use are not publicly available for the majority of Study Projects. Several of the Study Projects have begun the process of filing for an Article 10 certificate and as such have made the results of such studies publicly available. This information is summarized below and considered in the evaluation of cumulative impacts. Project narratives were obtained from publicly filed Article 10 application exhibits.

Avangrid Renewables – Mohawk Solar, Montgomery County

"Mohawk Solar LLC (Mohawk), a wholly-owned subsidiary of Avangrid Renewables LLC (AR), is planning the development of a 90 megawatt (MW) photovoltaic (PV) solar energy generating facility in Montgomery County, New York called the Mohawk Solar Project. The Facility Area comprises approximately 2,761 hectares (ha; 6,600 acre [ac]); however, only approximately 405 ha (1,000 ac) will be used for the Facility." (Mohawk Solar, 2019)

Grassland breeding bird surveys were conducted from April through July of 2018. Ninety-one species were observed, with the most common being red-winged blackbird (1,878 observations; *Agelaius phoeniceus*), song sparrow (1,248 observations; *Melospiza melodia),* bobolink (1,226 observations) European starling (1,190 observations), and savannah sparrow (1,129 observations). No federally threatened or endangered species were observed. Three state-listed threatened species were observed during surveys and/or incidentally: northern harrier (21 observations); upland sandpiper (two observations); and pied-billed grebe (*Podilymbus podiceps*; two observations.

Winter raptor surveys were conducted between November 2017 and March 2018. A total of 24 species were observed during surveys including the state-listed threatened northern harrier (n=7), state-listed threatened short-eared owl (n=9), and the state-listed threatened bald eagle (n=10).

Hecate Energy – Coeymans Solar Farm, Albany County

"Hecate is proposing to construct the Facility on privately owned land located in the Town of Coeymans, between County Route (CR) 101 and United States (US) Route 9W, approximately 7 miles south of the City of Albany, New York. The Facility will have a nameplate capacity of approximately 40 MW (alternating current [AC]) and is expected to generate approximately 73,000 megawatt-hours of energy annually. The Facility will consist of solar arrays and associated infrastructure and have a final footprint that occupies approximately 220 acres (50 percent [%]) of the approximately 436-acre Facility Area." (Hecate Energy, 2019)

Both Grassland Breeding Bird and Winter Raptor surveys were conducted within the proposed project area. Breeding bird surveys were conducted from May through July of 2018. Grassland species observed include bobolink (*Dolichonyx oryzivorus*), savannah sparrow (*Passerculus sandwichensis*), grasshopper sparrow (*Ammodramus savannarum*), and eastern meadowlark (*Sturnella magna*). No federally listed species were identified. Grasshopper sparrow is state-listed threatened.

Winter raptor surveys were conducted for two consecutive years, from March through April of 2018, and December 2018 through March 2019. Species observed include peregrine falcon (*Falco peregrinus*) (state-listed endangered), bald eagle (*Haliaeetus leucocephalus*) (state-listed threatened), Cooper's hawk (*Accipiter cooperii*), merlin (*Falco columbarius*), red-tailed hawk (*Buteo jamaicensis*), and American kestrel (*Falco sparverius*) (state-listed special concern). Additionally, the state-listed threatened Northern harrier (*Circus hudsonius*) was observed during surveys.

NextEra Resources - High River Energy Center, Montgomery County (Results Confidential)

The results of studies conducted at the High River Energy Center have not been publicly filed and are being provided at the discretion of NextEra. These results are to be considered preliminary.

The High River facility is located on 1,203 acres of land with an anticipated footprint of 550 acres and a generating capacity of 90MW.

Stationary winter grassland surveys were conducted during 2017-2018 and a driving survey during 2019. Three species were identified during surveys including red-tailed hawk, turkey vulture (*Cathartes aura*), and American kestrel. No state or federally listed species were identified.

4.3 Facility Impacts to Grassland Habitat

Land cover within the East Point Energy Center Project Area is predominantly characterized as Hay/Pasture (485.4 acres) and cultivated crops (452.2 acres), together comprising 71 percent of land cover within the Project Area (Table 5; Figure 3). Grassland habitat within the Project area consist mainly of hay/pasture, with grassland herbaceous cover accounting for only 4.7 acres, and collectively comprises 490.1 acres (37%) of the Project Area (Figure 4). When compared with the Grassland Study area, which contains approximately 2.2 million acres of grassland habitat (Figure 5), impacts from the Project will affect less than 0.03% of available habitat within 100-miles in the state of New York.

4.4 Cumulative Impacts of Grassland Habitat Use

The Grassland Study Area encompasses 16,528,129.5 acres. Together, the 292 Study Projects comprise 48,753.8 acres of proposed development within the Grassland Study Area (0.3% of total area; Table 6). Grassland habitat covers 2,222,265 acres and accounts for 13.5% of land within the Grassland Study Area. Grassland habitat within the boundaries of the 292 Study Projects totals 20,529 acres, which covers 42.1% of the proposed area of development among the projects and accounts for less than 1 percent (approximately 0.9%) of available grassland habitat within the Grassland Study Area (Table 6).

The proposed Project is anticipated to impact (directly and indirectly) approximately 490 acres of grassland habitat in the Project Area. The actual limits of disturbance to grassland habitat within each of the Study Projects is unknown and impact studies from the Study Projects are not available. Therefore to estimate cumulative impacts, a conservative approach was employed and assumed that all grassland habitat within the 292 Study Projects (20,529 acres) would be developed. Even with this conservative assumption, less than 1 percent of available grassland habitat within the Grassland Study Area would be impacted.

5.0 Discussion

Mortality studies are inherently lacking with specific reference to utility-scale ground-mounted solar. As such, providing an accurate or reliable estimate of take of listed species for this or other Projects is infeasible and was therefore not conducted. To date, only two studies within North America have been published, both from projects located in the Western United States. From these limited studies, annual avian mortality events are insignificant, ranging from 37,800 to 138,600 individuals (Walston Jr. et al. 2016). These estimates indicate that at the scale of development proposed within the Grassland Study Area, direct impacts to listed species are unlikely to have measurable impact at the population level.

The total limits of disturbance were unavailable for most of the Study Projects, and as a result the extent of permanent impacts to grassland habitat within the Grassland Study Area could not be quantified, therefore these results likely reflect an overestimation. It should be noted that the estimates are speculative in nature due in part to the lack of information available regarding the specific limits of disturbance for each of the Study Projects reviewed and the probability that the proposed projects included in this analysis will ultimately be developed.

Based upon the overly conservative assumptions used in this analysis, the analysis estimates that less than 1% of grassland habitat within the more than 16-million-acre Grassland Study Area would be impacted in the unlikely event that all 292 Study Projects and the proposed Project are ultimately developed. Considering that the amount of grassland habitat which would be impacted within each Study Project accounts for only a portion of area within the proposed project boundaries, this is a highly conservative estimate and the actual impact will be substantially lower.

The suite of species identified, and those with the potential to occur, are primarily widely distributed throughout the Grassland Study Area, with recent and multiple records in counties where grassland habitat exists. A review of the literature surrounding these species indicates that while trends are declining state-wide for many grassland birds, these species are also adapting to changing habitat at the landscape scale. Many grassland bird species in fact may benefit from the conversion of agriculture to more structurally diverse vegetation typically seeded beneath and between solar panels. While the conversion of grassland habitat types to solar development has the potential to impact individuals among these species, adverse population-level impacts are not likely from this Project, or cumulatively from the 292 Study projects identified.

6.0 References

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Tables

Table 1. Summary of Grassland Species with Potential to Occur Within the Project Area.

	Federal	NYS	SGCN Listing ³	Habitat Brafaranaa ⁴	Source of	Observed On site
Species Name	Status ¹	Status ²	Listing ³		Potential Presence ⁵	Observed Off Sile
American Kestrel (Falco sparverius)	-	-	SGCN	This species prefers open areas, such as successional old fields, forest edges, scrublands, pastures and hay fields. Suitable habitat for this species occurs within the Project Area.	C, D, E, F	Yes
Barn Owl (Tyto alba)	-	-	SGCN-HP	This species prefers open habitats which include grasslands, marshes, brushy fields, and agriculture. They typically nest in tree cavities, caves, but often in human structures. Suitable habitat for this species occurs within the Project Area.	F	No
Bobolink (Dolichonyx oryzivorus)	-	-	SGCN-HP	This species prefers grasslands, including pastures, successional old fields, and meadows. Suitable habitat for this species occurs within the Project Area.	C, D, F	Yes
Eastern Meadowlark (<i>Sturnella magna</i>)	-	-	SGCN-HP	This species prefers farm fields, pastures, grasslands, and wet fields. Suitable habitat for this species occurs within the Project Area.	C, D, F	No
Golden-winged Warbler (Vermivora chrysoptera)	-	SSC	SGCN-HP	This species prefers open woodlands, wet thickets, and successional shrublands. A mosaic of shrubby, open areas and mature forests are important for this species. Suitable habitat for this species occurs within the Project Area.	C, D	No
Grasshopper Sparrow (Ammodramus savannarum)	-	SSC	SGCN-HP	This species prefers open fields and prairie including active hay fields, successional old field, and minimally in successional shrublands. Suitable habitat for this species occurs within the Project Area.	C, F	Yes
Henslow's Sparrow (Ammodramus henslowii)	-	-	SGCN-HP	This species prefers moist fallow fields and meadows. Breeding occurs in a variety of habitats with tall, dense grass and herbaceous vegetation. Suitable habitat for this species occurs within the Project Area.	D, F	No
Horned Lark (Eremophila alpestris)	-	SSC	SGCN-HP	This species prefers open habitats with sparse vegetation such as prairies and heavily grazed pastures. Suitable habitat for this species does not occurs within the Project Area.	C, D, E	No
Northern Harrier (Circus cyaneus)	-	THR	SGCN	This species prefers freshwater marshes, wet grasslands, lightly grazed pastures, successional old field, and croplands. Suitable habitat for this species occurs within the Project Area.	A, C, D, E, F	Yes

	Fodoral	NVC	SGCN		Source of	
Species Name				Habitat Preference ⁴	Potential	Observed On site
	Status	Status	Listing		Presence ⁵	
Prairie Warbler				This species prefers successional shrubland, successional old-field, brush piles,		
(Setophaga discolor)	-	-	SGCN	and pastures. Breeds in dry old field and clearing, edges of forest, and sandy	С	No
				pine barrens. Suitable habitat for this species occurs within the Project Area.		
				This species prefers agricultural land and old fields, especially fields that are		
Ring-necked Pheasant	_	_	_	interspersed with grass ditches, hedges, marshes, woodland borders, and	E G	No
(Phasianus colchicus)			-	brushy groves. Pheasant may also be found in pasture/hay, particularly alfalfa.	L, O	
				Suitable habitat for this species occurs within the Project Area.		
Sovonob Sporrow				The species prefers patches of bare ground or short vegetation interspersed		
(Desservulue				among taller dense grasses, pastures, hayfields, native prairies, the grassy		Van
(Fasserculus	-	-	-	edges of marshes, and reclaimed strip mines. Suitable habitat for this species	A, C, D, F	Tes
sandwichensis)				occurs within the Project Area.		
Sedge Wren		тир	SCON	This species prefers shallow marshes, wet meadows, grasslands, and hayfields.		No
(Cistothorus platensis)	-		SOCI	Suitable habitat for this species occurs within the Project Area.	A, C, D, F	INO
Short-eared Owl	_	тир	SCONLHP	This species prefers open areas grasslands, prairies, marshes, and meadows.	F	No
(Asio flammeus)			0000	Suitable habitat for this species occurs within the Project Area.	L	
Upland Sandpiper		тир		This species prefers prairies, grasslands, and successional old field. Suitable	C	No
(Bartramia longicauda)	-		SGCN-HP	habitat for this species occurs within the Project Area.	C	INO
Voopor Sporrow				This species responds quickly to changes in habitat and often occupies		
(Pooecetes gramineus)	-	SSC	SGCN	abandoned old farm fields and successional shrub lands as they return to forest.	C, D, F	No
(i obecetes grammeus)				Suitable habitat for this species occurs within the Project Area.		

1 'Federal Status' refers to the species listing as federally endangered (END) OR threatened (THR).

2 'NYS Status' refers to the species listing as a state-listed endangered (END), threatened (THR), or species of special concern (SSC).

3 'SGCN Listing' refers to is the species state listed as a Species of Greatest Conservation Need – High Priority (SGCN-HP), Species of Greatest Conservation Need (SGCN), or a Species of Potential Conservation Need (SPCN).

4 References for habitat preference were Audubon.org, Allaboutbirds.org, and NYSDEC SWAP

5 "Source of Potential Presence" refers to the source of information indication the potential presence of the species at the Project Area:

A: Species identified by NYNHP as occurring within 10 miles of the Project Area

B: Species identified by USFWS online database (IPaC)

C: Species identified in the USGS Breeding Bird Survey

D: Species identified in the NYS BBA

E: Species identified in the Audubon CBC

F: Species identified in eBird

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Table 2. Grassland Bird Species Occurrence Records for Study Project Counties (A-M)

Species							Last Year	Observed in	County ³						
Species	Albany	Broome	Cayuga	Chenango	Columbia	Cortland	Delaware	Dutchess	Essex	Fulton	Greene	Herkimer	Lewis	Madison	Montgomery
American Kestrel ¹	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019
Bald Eagle ¹	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019
Bobolink ¹	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019
Common Barn Owl ²	1975	1966	2000- 2005		1983		2002	1976			1986	1964			
Eastern Meadowlark ¹	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019
Golden-winged Warbler ²	2019	2019	2019	2019	2019	2019	2016	2019	2019	2000- 2005	2009	2015	2018	2016	2000-2005
Grasshopper Sparrow ¹	2018	2018	2019	2016	2019	2015	2019	2019	2014	2017	2018	2019	2017	2019	2016
Henslow's Sparrow ²	2017	1982	2001	2000			2014					2010			2011
Horned Lark ¹	2019	2019	2019	2019	2019	2019	2019	2019	2019	2018	2019	2019	2019	2019	2019
Northern Harrier ¹	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019
Prairie Warbler ¹	2019	2019	2019	2019	2019	2019	2019	2019	2019	2018	2019	2018	2014	2019	2019
Ring-necked Pheasant ¹	2019	2019	2019	2019	2019	2019	2019	2019	2019	2018	2018	2019	2017	2019	2019
Savannah Sparrow ¹	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019
Sedge Wren ²	1991		2019					2001	2008	2001	1982	2000-2005	2000- 2005		2000-2005
Short-eared Owl ¹	2018	2009	2019	2003	2019	2014	2012	2017	2019	2014	2019	2017	2018	2019	2019
Upland Sandpiper ²	2016		2018		2010	2014	2016	1983	2019	2012	2014	2001	2017	2013	2019
Vesper Sparrow ¹	2019	2019	2019	2019	2019	2018	2019	2019	2019	2019	2018	2019	2008	2019	2018

Species	Last Year Observed in County ³															
opecies	Oneida	Onondaga	Orange	Oswego	Otsego	Putnam	Rensselaer	Saratoga	Schenectady	Schoharie	Sullivan	Tioga	Tompkins	Ulster	Warren	Washington
American																
Kestrel ¹	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019
Bald Eagle ¹	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019
Bobolink ¹	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019
Common Barn					2000-											
Owl ²		1971	2015	2012	2005					2010	2008		2018	2018	2018	
Eastern																
Meadowlark ¹	2019	2019	2019	2019	2019	2011	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019
Golden-																
winged					2000-											
Warbler ²	2019	2019	2019	2019	2005		1984	2019	2019	2015	2018	2018	2019	2019	2017	2000-2005
Grasshopper																
Sparrow ¹	2019	2019	2019	2019	2018	2016	2019	2019	2017	2019	2015	2018	2019	2019	2019	2019
Henslow's																
Sparrow ²		2017	1993	2000	2007			1998		2008			2016	2018		2008
Horned Lark ¹	2019	2019	2019	2019	2019	2018	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019
Northern																
Harrier ¹	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019
Prairie																
Warbler ¹	2019	2018	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2017	2019
Ring-necked																
Pheasant ¹	2019	2018	2019	2019	2019	2019	2019	2019	2018	2018	2019	2019	2019	2019	2010	2019
Savannah																
Sparrow ¹	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019
Sedge Wren ²		2019	2011	2010				1997		2008	2002		2011	2006		2019
Short-eared																
Owl ¹	2018	2018	2019	2019		2017	2018	2018	2019	2007	2012	2019	2019	2019		2019
Upland																
Sandpiper ²	2019	2014	2018	2019	2015			2014	2018	2014	2008		2018	2019		2019
Vesper																
Sparrow ¹	2019	2019	2019	2019	2016	2018	2019	2019	2018	2010	2019	2018	2019	2019	2019	2019

Table 3. Grassland Bird Species Occurrence Records for Study Project Counties (N-Z)

1 Most recent record from eBird database

2 Most recent record taken from either NYNHP or eBird

3 A date range of 2000-2005 indicates data retrieved from NY BBA

NHP Project Number	Project Name	Applicant	County	Municipality	MW	Acres	DEC Region	Status	NHP Requesting Agent
	Costanza Solar	Cypress Creek Renewables	Albany	Westerlo	2.00	20.00	4	Proposed	
	Lumens Solar Garden	Lumens Holdings 3, LLC	Albany	Coeymans	2.00	20.58	4	Proposed	
20181036	Solar array at 115 Orchard Hill Road		Albany	New Scotland		24.33	4	Proposed	Borrego Solar Systems, Inc.
20171502	Coeymans Solar		Albany	Coeymans		24.59	4	Proposed	C&S Engineers
2017762	Bethlehem CSD - LaGrange solar project	Forefront Power	Albany	Bethlehem, New Scotland		33.53	4	Proposed	TRC
20171489	Quay Road Solar		Albany	Knox		43.26	4	Proposed	C&S COMPANIES
	Switzkill Solar/ Berne Solar		Albany	Berne		45.94	4	Proposed	
	2825 Curry Road	Monolith Solar	Albany	Guilderland	1.20	47.90	4	Proposed	
			Albany	Bethlehem		50.59	4	Constructed	
2017198	Proposed Selkirk Solar Farm Project, Bridge Street (Route 396)	NextEra Energy Resources, LLC	Albany	Bethlehem		60.33	4	Constructed	Kleinfelder
20181199	Proposed solar array at 1080 Township Road, Altamont		Albany	Knox		62.97	4	Proposed	Borrego Solar Systems, Inc.
20181387	Dunnsville Road Solar Farm	Ingalls Associates	Albany	Guilderland		65.00	4	Proposed	Ingalls & Associates, LLP
20161148	Bozenkill Solar		Albany	Knox		66.40	4	Proposed	OneEnergy Renewables
2014697	Solar Photovoltaic Solar System, Bridge Street		Albany	Bethlehem		81.79	4	Constructed	Borrego Solar Systems, Inc.
2016357	Albany Solar Farm, Berne- Altamont Road		Albany	Guilderland, Knox		91.85	4	Proposed	LaBella Associates, D.P.C.
2017489	Shepards Park Solar Utility Westerlo, NY	Borrego Solar Systems Inc	Albany	Westerlo		123.27	4	Proposed	Borrego Solar Systems, Inc.
2017888	100 Miller Road Solar Project	Dynamic Energy	Albany	Guilderland		141.69	4	Proposed	Ingalls & Associates, LLP
2018128	Delvecchio Solar, LLC		Albany	Westerlo		153.03	4	Proposed	Cypress Creek Renewables
2017781	Guilderland CSD - Kuehnert Solar Site	Forefront Power	Albany	Guilderland	2.00	163.00	4	Proposed	TRC
201857	Sunset Hill Solar, LLC	Cypress Creek Renewables, LLC	Albany	Coeymans	20.00	172.00	4	Proposed	TRC

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NHP Project Number	Project Name	Applicant	County	Municipality	MW	Acres	DEC Region	Status	NHP Requesting Agent
20181201	Proposed solar arrays at 275 Beaver Dam Road, Selkirk		Albany	Bethlehem		181.65	4	Proposed	Borrego Solar Systems, Inc.
2018154	Coeymans Solar Farm	Hecate Energy	Albany	Coeymans	40.00	426.77	4	Proposed	Tetra Tech
2016105	Broome County solar project	SolarCity	Broome	Conklin		47.69	7	Constructed	TRC
20181439	Scipio Solar Facility at 2909 Center Road	Duke Energy Renewables	Cayuga	Scipio		162.54	7	Proposed	ERM
20171559	Evans Property		Chenango	Norwich		96.27	7	Proposed	LaBella Associates
20161058	Construction of 12-acre solar electric system, 1330A County Route 19		Columbia	Livingston		27.42	4	Proposed	Borrego Solar Systems, Inc.
20161122	Scudderhook Solar, LLC Solar Site, 1 John Bay Road	Cypress Creek Renewables	Columbia	Livingston		30.51	4	Proposed	TRC
201893	Beauden Solar, LLC		Columbia	Clermont		33.94	4	Proposed	Cypress Creek Renewables
	ELP Greenport Solar	ELP Greenport Solar LLC	Columbia	Greenport	8.00	115.98	4	Proposed	
20161331	Proposed Hidden Meadow Solar project		Columbia	Livingston		122.11	4	Proposed	OneEnergy Renewables
20181298	Claverack Community Solar Project	Eden Renewables	Columbia	Claverack		233.77	4	Proposed	The Environmental Design Partnership, LLP
2018602	Hecate Columbia Solar Facility	Hecate Energy	Columbia	Copake, Hillsdale	60.00	656.26	4	Proposed	Tetra Tech
20181419	Bellasario Solar Project	Distributed Sun LLC	Cortland	Lapeer		310.55	7	Proposed	Tetra Tech
2016745	Davenport Solar Array	Delaware River Solar	Delaware	Davenport		48.47	4	Proposed	The Chazen Companies
2018194	Cary Institute Solar Farm, 2801 Sharon Turnpike		Dutchess	Washington		22.96	3	Proposed	YSG Solar
20171357	Cream Street Solar	NexAmp	Dutchess	Hyde Park		23.97	3	Proposed	LRC Group
2017360	108 Cardinal Road		Dutchess	Hyde Park		24.08	3	Proposed	LAM Development
201716	East Fishkill Solar	East Fishkill Solar	Dutchess	East Fishkill		24.16	3	Proposed	East Light Partners
2015295	SolarCity-Oakwood Friends School project, 22 Spackenkill Road		Dutchess	Poughkeepsie		44.48	3	Constructed	LRC Group
20161348	Arlington School Delineation and Survey	Tetra Tech, Inc.	Dutchess	Union Vale		44.89	3	Proposed	The Chazen Companies

NHP Project Number	Project Name	Applicant	County	Municipality	MW	Acres	DEC Region	Status	NHP Requesting Agent
2017367	Nexamp Solar, Wappinger (Chazen Job #51711)	Nexamp Solar Energy Solutions	Dutchess	Wappinger		48.90	3	Proposed	The Chazen Companies
20161320	Brittany Hollow Solar project		Dutchess	Red Hook, Rhinebeck		49.95	3	Proposed	OneEnergy Renewables
2018257	27 Rombout Rd, Poughkeepsie Solar		Dutchess	La Grange		59.61	3	Proposed	Borrego Solar Systems, Inc.
20161175	Cricket Hill Solar, LLC Site (Cypress Creek Renewables)		Dutchess	Dover		60.29	3	Proposed	TRC
2018213	129 & 133 Cream Street	Gillespie & Stokosa, PLLC	Dutchess	Hyde Park		61.67	3	Proposed	Ecological Solutions, LLC
2017211	Underhill Solar, LLC Site	Cypress Creek Renewables LLC	Dutchess	Poughkeepsie		64.54	3	Proposed	ERM
2018211	Athanas East	Gillespie & Stokosa, PLLC	Dutchess	Hyde Park		83.33	3	Proposed	Ecological Solutions, LLC
			Dutchess	East Fishkill		105.00	3	Proposed	
2018212	Athanas West	Gillespie & Stokosa, PLLC	Dutchess	Hyde Park		118.82	3	Proposed	Ecological Solutions, LLC
2017301	Solar project, Seaman Road		Dutchess	East Fishkill		125.21	3	Proposed	Borrego Solar Systems, Inc.
2017998	Mt. Alvernia Solar		Dutchess	Poughkeepsie		169.48	3	Proposed	LAM Development
2017492	529 Old Chilson Road Solar Utility		Essex	Ticonderoga		93.99	5	Proposed	Borrego Solar Systems, Inc.
20181239	Charboneau Solar, LLC	Charboneau Solar, LLC	Essex	Ticonderoga		199.76	5	Proposed	Cypress Creek Renewables
20161657	Oppenheim South Solar Facility	Borrego Solar Systems Inc	Fulton	Oppenheim		20.32	5	Proposed	Borrego Solar Systems, Inc.
20161126	Ground-mounted solar system, 231 State Highway 331, St. Johnsville		Fulton	Oppenheim		21.02	5	Proposed	Miller Bros.
20161310	Construction of solar electric system at West State Street		Fulton	Johnstown	4.80	30.28	5	Constructed	Borrego Solar Systems, Inc.
20161083	Solar project, Elmwood Avenue, Gloversville	PV Envineers PC	Fulton	Johnstown		33.26	5	Constructed	Borrego Solar Systems, Inc.
20151276F	SoCore NY Development LLC Potential Solar Array, 2461 Route 67, Johnstown		Fulton	Johnstown		40.82	5	Proposed	TRC
20151277	Solar energy development, Perth		Fulton	Perth		47.55	5	Constructed	Tetra Tech, Inc.

NHP Project Number	Project Name	Applicant	County	Municipality	MW	Acres	DEC Region	Status	NHP Requesting Agent
2018287	State Street, Johnstown Solar Project	Borrego Solar Systems Inc	Fulton	Johnstown		47.55	5	Proposed	Borrego Solar Systems, Inc.
2016145	Solar field at 560 Route 29		Fulton	Broadalbin		87.12	5	Constructed	Trident Environmental
2018851	Solar arrays at 616 County Highway 107		Fulton	Johnstown		92.47	5	Proposed	Borrego Solar Systems, Inc.
2018853	Solar arrays at 1639 NY Route 29, Gloversville		Fulton	Mayfield		104.58	5	Proposed	Borrego Solar Systems, Inc.
2016148	Solar field at 143 County Route 142A		Fulton	Johnstown		112.22	5	Constructed	Trident Environmental
20151033	Proposed 19th Hole solar energy development		Fulton, Montgomery	Johnstown, Mohawk		203.63	45	Constructed	Tetra Tech, Inc.
2018308	Cairo Solar Site Project	Clean Energy Collective	Greene	Cairo		30.25	4	Proposed	Bergmann Associates
20161405	Freehold Solar, LLC Site - Installation of ground- mounted solar system on portion of site at 9775-9873 State Route 32	Cypress Creek Renewables	Greene	Greenville		32.01	4	Proposed	TRC
2018814	Potic Road Solar, LLC	Freepoint Solar, LLC	Greene	Athens		40.75	4	Proposed	TRC
20161572	Aspasia Solar, LLC	Cypress Creek Renewables (CCR)	Greene	Athens		43.42	4	Proposed	TRC
2017892	Lampman Hill Solar EDR Project No. 17068	ED&R	Greene	Coxsackie	2.00	56.90	4	Proposed	Environmental Design & Research, Landscape Architecture, Engineering & Environmental Services, D.P.C. (EDR)
20161508	Amberjack Solar, LLC Site - installaton of ground- mounted solar system, 10200FÇÉ10225 State Rte. 32	Cypress Creek Renewables	Greene	Greenville	3.00	57.20	4	Proposed	TRC
20181185	Bogart Solar	Cypress Creek Renewables, LLC	Greene	Catskill	3.00	61.33	4	Proposed	Cypress Creek Renewables
2017302	Solar project, 665 Platte Cove Road		Greene	Hunter		67.47	4	Proposed	Borrego Solar Systems, Inc.

NHP Project Number	Project Name	Applicant	County	Municipality	MW	Acres	DEC Region	Status	NHP Requesting Agent
2018652	Coxsackie Solar	Freepoint Solar LLC	Greene	Coxsackie	5.00	67.80	4	Proposed	Freepoint Solar LLC
2018127	Xavier Solar, LLC		Greene	Coxsackie		74.19	4	Proposed	Cypress Creek Renewables
2018970	Grandview Solar	Cypress Creek Renewables	Greene	Cairo		88.18	4	Proposed	CAIRO PLANNING BOARD
	CR 51 and 26 Solar	PDM Consulting	Greene	New Baltimore	19.90	91.16	4	Proposed	
2018665	Hunter Landfill Solar	Solitude Solar	Greene	Hunter	2.16	118.40	4	Proposed	C.T. Male Associates
			Greene	Cairo		126.58	4	Constructed	
	Inglaside Solar	Cypress Creek Renewables	Greene	Greenville		127.87	4	Proposed	
	Vandenburgh Solar	PDM Consulting	Greene	Coxsackie	19.90	142.05	4	Proposed	
2018867	Flint Mine Solar Project	Flint Mine Solar LLC	Greene	Athens, Coxsackie	100.00	1622.80	4	Proposed	Environmental Design & Research
20161154	Sugar Maple Solar		Herkimer	Russia		160.46	6	Proposed	OneEnergy Renewables
			Lewis	Martinsburg		58.92	6	Proposed	
2018876	Solitude Solar Denmark solar development project at 11057 NYS Route 26 (Project No. 18.8362)		Lewis	Denmark		71.20	6	Proposed	C.T. Male Associates
2018874	Solitude Solar Croghan solar development project at 6985 Belfort Road (Project No. 18.8358)		Lewis	Croghan		80.93	6	Proposed	C.T. Male Associates
2018877	Solitude Solar Turin solar development project at 5047 East Road (Project No. 18.8363)		Lewis	Turin		148.31	6	Proposed	C.T. Male Associates
2015625	Twin Lantern Solar Partners LLC & Global Resource Options Inc. (groSolar) solar site		Madison	Oneida		35.12	7	Proposed	Shumaker Consulting Engineering & Land Surveying, D.P.C.
	Helios-Lenox Solar Project	Helios Energy LLC, Solarpark Energy LLC	Madison	Lenox		79.88	7	Proposed	
	Lenox Solar Array	Town of Lenox	Madison	Lenox		151.52	7	Proposed	

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NHP Project Number	Project Name	Applicant	County	Municipality	MW	Acres	DEC Region	Status	NHP Requesting Agent
20161082	Solar project, Log City Road		Montgomery	Amsterdam		22.08	4	Proposed	Borrego Solar Systems, Inc.
2016146	Solar field at 157 Seebers Lane	Trident Environmental	Montgomery	Canajoharie		23.61	4	Proposed	Trident Environmental
20161284	Minaville 3	Borrego Solar Systems	Montgomery	Florida	2.80	37.60	4	Constructed	Borrego Solar Systems, Inc.
20181412	Palatine - Caswell Road Solar	NexAmp	Montgomery	Palatine		43.23	4	Proposed	LRC Group
2016115	Solar field at 537 NYS Route 67	Safari Energy, LLC	Montgomery	Amsterdam	2.00	50.10	4	Constructed	Trident Environmental
2016116	Solar field at 546 NYS Route 67	Safari Energy, LLC	Montgomery	Amsterdam	2.00	50.10	4	Constructed	Trident Environmental
20161311	Construction of solar electric system at East Main Street (Route 5), Palatine Bridge		Montgomery	Palatine		54.46	4	Proposed	Borrego Solar Systems, Inc.
			Montgomery	Florida		64.55	4	Constructed	
20161146	Leatherstocking Solar		Montgomery	Glen		77.94	4	Proposed	OneEnergy Renewables
20181186	Drinkwater Solar LLC	Cypress Creek Renewables, LLC	Montgomery	St. Johnsville	2.00	91.46	4	Proposed	Cypress Creek Renewables
	Nellis Solar	Lightsource BP	Montgomery	Palatine	5.00	122.15	4	Proposed	
	Fox Solar	Lightsource BP	Montgomery	St. Johnsville	5.00	142.20	4	Proposed	
2018485	Double Lock Solar, LLC	Cypress Creek Renewables, LLC	Montgomery	Minden		155.37	4	Proposed	VHB
20181202	Proposed solar arrays at 142 Park Drive, Fultonville		Montgomery	Glen		213.39	4	Proposed	Borrego Solar Systems, Inc.
2018615	Tayandenega Solar, LLC	Cypress Creek Renewables, LLC	Montgomery	St. Johnsville	20.00	248.00	4	Proposed	
2017873	OYA Amsterdam Utility- Scale Solar Project	OYA Solar NY LP	Montgomery	Amsterdam		476.09	4	Constructed	Stantec Cconsulting Services, Inc.
	Tabletop Solar	Sun East Development Holdings LLC	Montgomery	Paletine	25.00	569.00	4	Proposed	
2018569	High River Energy Center	North Park Energy	Montgomery	Florida	100.00	1113.22	4	Proposed	TRC
20181475	Mohawk Solar Project (EDR Project No. 16044)	Community Energy Solar Inc.	Montgomery	Canajoharie, Minden	90.00	4573.80	4	Proposed	EDR
			Oneida	Whitestown		27.16	6	Constructed	

NHP Project Number	Project Name	Applicant	County	Municipality	MW	Acres	DEC Region	Status	NHP Requesting Agent
2014946	City of Rome Lamphear Road Solar Project	Rome Steel Solar, LLC	Oneida	Rome		42.79	6	Constructed	Shumaker Consulting Engineering & Land Surveying, D.P.C.
			Oneida	Camden		51.65	6	Constructed	
2014575	Rome Steel Solar Project at 530 Henry Street		Oneida	Rome		51.70	6	Proposed	Shumaker Consulting Engineering & Land Surveying, D.P.C.
2014179	Proposed construction of a ground-mounted solar photvoltaic system on 20-25 acres		Oneida	Whitestown		69.90	6	Proposed	Borrego Solar Systems, Inc.
2014574	Tannery Road Solar Project	Tannery Road Solar LLC	Oneida	Rome		70.85	6	Constructed	Shumaker Consulting Engineering & Land Surveying, D.P.C.
2015485	Revere Copper Products Site and MVCC Site Solar Projects, Old Oneida Road	Twin Solar Partners LLC and Mohawk Valley Solar Partners LLC	Oneida	Rome		78.66	6	Constructed	Shumaker Consulting Engineering & Land Surveying, D.P.C.
	ONEIDA SUTLIFF WEST AND SUTLIFF SOUTH SOLAR PROJECT	Oneida DG Solar LLC	Oneida	Whitestown		196.52	6	Constructed	
20181119	Oneida County Solar Project		Oneida	Verona		13604.20	6	Proposed	Invenergy
201676	Proposed OneEnergy solar energy facility, 1299 Kingdom Road		Onondaga	Van Buren		21.24	7	Constructed	Tetra Tech, Inc.
2015196	SolarCity-Onondaga County Jamesville project at 6660 E. Seneca Turnpike		Onondaga	De Witt		22.27	7	Constructed	LRC Group
20171270	ASP CNY OC1 FÇô Brewerton PV Plant	Abundant Solar Power, Inc.	Onondaga	Cicero		32.06	7	Proposed	LaBella Associates, DPC
20171271	ASP CNY OC2 FÇô Baldwinsville PV Plant	Abundant Solar Power, Inc.	Onondaga	Lysander		45.61	7	Constructed	LaBella Associates, DPC
	Dewitt Landfill Solar Project	RER Energy Group	Onondaga	Dewitt		48.54	7	Proposed	
20161149	Sundew Solar		Onondaga	Lysander		49.15	7	Proposed	OneEnergy Renewables

NHP Project Number	Project Name	Applicant	County	Municipality	MW	Acres	DEC Region	Status	NHP Requesting Agent
2014787	5 MW solar array		Onondaga	Otisco		53.89	7	Proposed	NextEra Energy Resources
2016643	Potter Solar Project	SolarCity	Onondaga	Tully		54.10	7	Proposed	TRC
20161150	Archimedes East Solar		Onondaga	Lysander		56.20	7	Proposed	OneEnergy Renewables
20171269	ASP CNY W4 FÇô Van Buren PV Plant	Abundant Solar Power, Inc.	Onondaga	Van Buren		60.04	7	Proposed	LaBella Associates, DPC
			Onondaga	Clay		76.00	7	Constructed	
20161214	Carley Farm Solar, LLC Site (Cypress Creek Renewables)		Onondaga	La Fayette		82.63	7	Proposed	TRC
20161151	Archimedes West Solar		Onondaga	Lysander		98.69	7	Proposed	OneEnergy Renewables
20181045	Sky High Solar, LLC	Cypress Creek Renewables, LLC	Onondaga	Tully	20.00	274.92	7	Proposed	TRC
20171219	Clean Energy Collective; Deerpark B		Orange	Deerpark		20.11	3	Proposed	Alpine Environmental Consultants
2017676	Wawayanda	Nexamp, LLC	Orange	Wawayanda		21.27	3	Proposed	Chazen Companies
2018298	Middletown D - Solar Site Project	Clean Energy Collective	Orange	Wawayanda		22.33	3	Proposed	Bergmann Associates
2017955	20 Trestle Tree Lane	Greenstreet Solar	Orange	Blooming Grove		22.66	3	Proposed	Lehman & getz Engineering
20171217	Clean Energy Collective; Chester B		Orange	Chester		22.91	3	Proposed	Alpine Environmental Consultants
2018345	Glenmere Lake Solar LLC	Community Energy Solar	Orange	Goshen		23.31	3	Proposed	LAN Associates Engineering Planning Architecture Surveying Inc.
2017889	Jessup Switch Solar LLC	Community Energy Inc	Orange	Goshen		24.92	3	Proposed	Environmental Design & Research, Landscape Architecture, Engineering & Environmental Services, D.P.C. (EDR)

NHP Project Number	Project Name	Applicant	County	Municipality	MW	Acres	DEC Region	Status	NHP Requesting Agent
2017205	Solar project, 103 Long Lane		Orange	Crawford		25.27	3	Proposed	Borrego Solar Systems, Inc.
201639	Proposed installation of two (2) ground-mounted photovoltaic solar systems along Crans Mill Road and Route 302		Orange	Crawford		27.72	3	Proposed	PV Engineers, D.P.C.
2017493	84 Lakeside Road Solar Utility		Orange	Newburgh		28.72	3	Proposed	Borrego Solar Systems, Inc.
2016368	Solar array at 1718 Rte 1, Westtown		Orange	Minisink		31.93	3	Constructed	Borrego Solar Systems, Inc.
20161590	Construction of solar electric system at 74-75 Fordlea Road		Orange	Minisink		34.31	3	Proposed	Borrego Solar Systems, Inc.
2017175	Finchville Tpke Solar	PV Engineers PC	Orange	Mount Hope		34.34	3	Proposed	Borrego Solar Systems, Inc.
20181369	OYA Pocatello Road CSG	OYA Solar NY, LP	Orange	Wallkill		40.38	3	Proposed	Stantec
2017977	Tarbell Solar LLC		Orange	Wallkill		41.15	3	Proposed	TRC
20181421	Solar array at Maybrook Road		Orange	Hamptonburgh		42.83	3	Proposed	Borrego Solar Systems, Inc.
20181386	Riley Road Solar Project	Green Street Power Partners	Orange	New Windsor		43.73	3	Proposed	TRC
20161605	Nexamp - Wawayanda Solar	Nexamp, Inc.	Orange	Wawayanda		43.79	3	Proposed	VHB
20171218	Clean Energy Collective; Westtown H		Orange	Minisink		45.65	3	Proposed	Alpine Environmental Consultants
2017207	Solar project, Albany Post Road		Orange	Montgomery		46.33	3	Proposed	Borrego Solar Systems, Inc.
2017481	Golden Hill Solar, LLC	Cypress Creek Renewables	Orange	Warwick		47.33	3	Proposed	TRC
20181341	Solar array at Montgomery Heights Road		Orange	Montgomery		47.60	3	Proposed	Borrego Solar Systems, Inc.
201861	Svenski Solar, LLC	Cypress Creek Renewables, LLC	Orange	Crawford		50.54	3	Proposed	TRC
2018204	Proposed solar array south of Route 52, Walden		Orange	Montgomery		52.75	3	Proposed	Borrego Solar Systems, Inc.
20171295	Solar Provider Group - 456 Lower Road	Solar Provider Group	Orange	Minisink		54.79	3	Proposed	The Chazen Companies.com
	FEHRING PROEPRTY - OYA SOLAR FACILITY	Jogee Road LLC	Orange	Wawayanda		56.44	3	Proposed	

East Point Energy Center

NHP Project Number	Project Name	Applicant	County	Municipality	MW	Acres	DEC Region	Status	NHP Requesting Agent
20171507	Matrix Solar	Matrix Development	Orange	Montgomery		59.36	3	Proposed	C.T. Male Associates, P.C.
2018102	Twain Solar, LLC		Orange	Wawayanda		64.05	3	Proposed	Cypress Creek Renewables
20161177	Grabinski Solar, LLC Site (Cypress Creek Renewables)	Grabinski Solar LLC	Orange	Montgomery		70.49	3	Proposed	TRC
20171363	Commercial Solar Facility		Orange	Minisink		70.68	3	Proposed	Alpine Environmental Consultants
	McMullen Road - Oya Solar	McMullen Road	Orange	Minisink		71.06	3	Proposed	
2018255	833 Pulaski Highway, Goshen Solar		Orange	Goshen		71.95	3	Proposed	Borrego Solar Systems, Inc.
2017499	Slate Hill Solar (EDR Project No. 17045)		Orange	Minisink		75.33	3	Proposed	EDR
2017580	PV Solar array at Johnson Farms Site	AES Energy	Orange	Chester		80.85	3	Proposed	C.T. Male Associates
	Davis Solar Project	Michael Davis	Orange	Goshen		84.83	3	Proposed	
20171296	Solar Provider Group - 501 County Highway 62	Solar Provider Group	Orange	Minisink		86.51	3	Proposed	The Chazen Companies.com
2018742	Washingtonville Solar	Community Energy Solar	Orange	Blooming Grove		86.99	3	Proposed	Environmental Design & Research, D.P.C.
2017498	Minisink Solar (EDR Project No. 17044)		Orange	Minisink		89.44	3	Proposed	EDR
2018446	South Centerville Road, Middletown Solar Array		Orange	Wawayanda		93.21	3	Proposed	Borrego Solar Systems, Inc.
20171216	Clean Energy Collective; Greenville A		Orange	Greenville		99.30	3	Proposed	Alpine Environmental Consultants
20161178	Howell Solar, LLC Site (Cypress Creek Renewables)		Orange	Mount Hope		105.12	3	Proposed	TRC
2016341	Pierson Farms Solar Array Site, Pierson Hill Road		Orange	Mount Hope		107.38	3	Proposed	Borrego Solar Systems, Inc.
2016114	Solar field at 1274 County Route 12	Safari Energy, LLC	Orange	Wawayanda		108.45	3	Proposed	Trident Environmental
2017906	1839 State Route 17A, Goshen Project		Orange	Goshen		108.83	3	Proposed	Borrego Solar Systems, Inc.

NHP Project Number	Project Name	Applicant	County	Municipality	MW	Acres	DEC Region	Status	NHP Requesting Agent
20161679	Dubois Solar, LLC Site - ground-mounted solar system at 2208 NY State Route 52	Cypress Creek Renewables	Orange	Crawford		126.17	3	Proposed	TRC
2017500	Lockenhurst Pond Solar (EDR Project No. 17046)		Orange	Minisink		129.43	3	Proposed	EDR
20161176	Fogarty Solar, LLC Site (Cypress Creek Renewables)		Orange	Wallkill		165.34	3	Proposed	TRC
20161180	McCarthy Solar, LLC Site (Cypress Creek Renewables)		Orange	Blooming Grove		167.37	3	Proposed	TRC
2017890	Silver Spring Solar EDR Project No. 17069		Orange	Goshen		216.66	3	Proposed	Environmental Design & Research, Landscape Architecture, Engineering & Environmental Services, D.P.C. (EDR)
2018628	East Walden Solar (EDR No. 18037)		Orange	Montgomery		242.06	3	Proposed	Environmental Design & Research
2018631	Slate Hill Solar (EDR No. 18037)		Orange	Wawayanda		242.66	3	Proposed	Environmental Design & Research
2018629	Goshen Solar (EDR No. 18037)		Orange	Goshen, Wawayanda		268.90	3	Proposed	Environmental Design & Research
2018925	Solar Array Projects at 310 and 366 County Road 12		Orange	Wawayanda		287.78	3	Proposed	Stantec Cconsulting Services, Inc.
2017187	Proposed solar arrays, 51 Muktananga Marg		Orange	Montgomery		293.11	3	Proposed	Borrego Solar Systems, Inc.
2018190	Proposed solar farm		Orange	Deerpark		374.00	3	Proposed	Maser Consulting P.A.
2018656	Little Pond Solar, LLC	Cypress Creek Renewables, LLC	Orange	Deerpark		758.58	3	Proposed	TRC
	SOURCE RENEWABLES RICHLAND SOLAR	Source Renewables	Oswego	Richland		29.16	7	Proposed	
			Oswego	Sandy Creek		44.07	7	Proposed	
NHP Project Number	Project Name	Applicant	County	Municipality	MW	Acres	DEC Region	Status	NHP Requesting Agent
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20161633	Crofoot Solar, LLC Site - ground-mounted solar system at 2089 Whitaker Road	Cypress Creek Renewables	Oswego	Volney		70.94	7	Proposed	TRC
201846	Route 57 Solar - Schroeppel, NY		Oswego	Schroeppel		90.16	7	Proposed	CITE Development, Engineering & Landscape Architecture, PLLC
2016188	Otsego County Gravel Pit Solar System	SolarCity	Otsego	Laurens		24.85	4	Constructed	TRC
2016761	Laurens Solar Array	Delaware River Solar	Otsego	Laurens		75.12	4	Proposed	The Chazen Companies
			Putnam	Patterson		40.43	3	Constructed	
20161155	Armstrong Solar, LLC Site, Mooney Hill Road	Cypress Creek Renewables	Putnam	Kent		41.36	3	Proposed	ERM
			Rensselaer	Brunswick		26.67	4	Proposed	
			Rensselaer	Pittstown		27.03	4	Constructed	
20141281	Proposed solar energy development		Rensselaer	Brunswick		28.64	4	Proposed	Tetra Tech, Inc.
2016642	Proposed Solar Project FÇô Cottontail Solar		Rensselaer	Schodack		28.94	4	Proposed	OneEnergy Renewables
20161238	NY Solar Electric development at 138 Brick Church Road	Borrego Solar Systems Inc	Rensselaer	Brunswick	5.60	33.90	4	Proposed	Borrego Solar Systems, Inc.
2015831	SR 22 Hoosick Falls	Nextera	Rensselaer	Hoosick		42.55	4	Proposed	Tetra Tech, Inc.
2015830	Proposed solar energy development near the intersection of Highway 67 and Cottrell Road, Hoosick Falls		Rensselaer	Hoosick		44.20	4	Proposed	Tetra Tech, Inc.
20171501	Knickerbocker Solar		Rensselaer	Schodack		51.26	4	Proposed	C&S Eningeers
20181081	2 River Solar Farm	Eden Renewables	Rensselaer	Schodack		51.42	4	Proposed	The Environmental Design Partnership, LLP
	13 Paul Road		Rensselaer	Castleton-on- Hudson		74.74	4	Proposed	
20151034	Proposed Buskirk solar energy development		Rensselaer	Schaghticoke		86.46	4	Proposed	Tetra Tech, Inc.

NHP Project Number	Project Name	Applicant	County	Municipality	MW	Acres	DEC Region	Status	NHP Requesting Agent
20181068	Solar project at 1918 Tamarac Road	Borrego Solar Systems Inc.	Rensselaer	Pittstown		100.37	4	Proposed	Shumaker Engineering
	4-3842-00110	West Wind Farms	Rensselaer	Schaghticoke		138.63	4	Proposed	
2015608	Proposed Halfmoon Solar Project, 252 Lower Newtown Road		Saratoga	Halfmoon		20.80	5	Proposed	OneEnergy Renewables
20171589	Solar arrays at 234 Sugar Hill Road		Saratoga	Clifton Park		25.58	5	Proposed	Borrego Solar Systems, Inc.
20181338	Solar array at 267 Sugar Hill Road		Saratoga	Clifton Park		32.94	5	Constructed	Borrego Solar Systems, Inc.
			Saratoga	Corinth		33.73	5	Proposed	
2018875	Solitude Solar - Sugar Hill Road Community Solar	Solitude Solar LLC	Saratoga	Clifton Park		42.71	5	Proposed	C.T. Male Associates
2018402	Crooks Grove Solar, LLC	Crooks Grove Solar, LLC	Saratoga	Greenfield		90.65	5	Proposed	Cypress Creek Renewables
20171570	Ashdown Road Solar Project	PC Engineers PC	Saratoga	Clifton Park		92.39	5	Proposed	Borrego Solar Systems, Inc.
2013439	Skidmore College, Possible Solar Facility		Saratoga	Greenfield		119.30	5	Constructed	LA Group
2018288	Grooms Road, Clifton Park Solar Project	PV Engineers PC	Saratoga	Clifton Park		125.17	5	Proposed	Borrego Solar Systems, Inc.
20176	Ellsworth Solar, LLC Site - ground-mounted solar system at 100 Pruyn Hill Road	Cypress Creek Renewables, LLC	Saratoga	Halfmoon		179.34	5	Proposed	TRC
2016949	Schalmont Central School District Solar Array (SOLR 1615)		Schenectady	Rotterdam		25.87	4	Proposed	Pennoni
2018130	Turnbull Solar, LLC		Schenectady	Duanesburg		49.42	4	Proposed	Cypress Creek Renewables
2018129	Talent Solar, LLC		Schenectady	Duanesburg		50.06	4	Proposed	Cypress Creek Renewables
2016147	Alexander Road Solar	Onyx Renewable Partners	Schenectady	Duanesburg		65.00	4	Constructed	Trident Environmental
2018224	Solar array at 5489 Mariaville Road		Schenectady	Princetown		65.94	4	Proposed	Borrego Solar Systems, Inc.
2016785	Proposed solar farm project, north side of Duanesburg Road (NYS Route 7)		Schenectady	Duanesburg		81.24	4	Proposed	Ingalls & Associates, LLP
2018681	Duanesburg Solar, 10516 Western Turnpike		Schenectady	Duanesburg		95.25	4	Proposed	Borrego Solar Systems, Inc.

Cumulative Impacts Analysis

NHP Project Number	Project Name	Applicant	County	Municipality	MW	Acres	DEC Region	Status	NHP Requesting Agent
2018598	172 Mariaville Scotch Road, Pattersonville Solar Arrays		Schenectady	Duanesburg		96.93	4	Proposed	Borrego Solar Systems, Inc.
2018597	5971 Mariaville Road, Princetown Solar Array		Schenectady	Princetown		123.37	4	Proposed	Borrego Solar Systems, Inc.
2016710	Mariaville Road Solar	RER Energy Group	Schenectady	Princetown		133.00	4	Proposed	Ingalls & Associates, LLP
			Schenectady	Rotterdam		146.77	4	Proposed	
2018508	Oak Hill Solar	New PowerCo Inc. / Eden Renewables	Schenectady	Duanesburg	5.00	204.02	4	Proposed	The Environmental Design Partnership, LLP
20151276C	SoCore NY Development LLC Potential Solar Array, Cliffside Drive, Middleburgh		Schoharie	Middleburgh		20.21	4	Proposed	TRC
20171125	Risse Trail, Middleburgh Project		Schoharie	Middleburgh		31.09	4	Proposed	Borrego Solar Systems, Inc.
2018592	916 Highway Route 20, Sharon Solar Arrays		Schoharie	Sharon		55.16	4	Proposed	Borrego Solar Systems, Inc.
20141346	Birdseye Solar	OneEnergy	Schoharie	Sharon	2.90	70.00	4	Constructed	OneEnergy Renewables
2018232	Solar array east of Route 30		Schoharie	Schoharie		141.33	4	Proposed	Borrego Solar Systems, Inc.
2018535	806 Slate Hill Road, Sharon Solar Project		Schoharie	Sharon		194.13	4	Proposed	Borrego Solar Systems, Inc.
2018354	Sunny Knoll Solar, LLC	Cypress Creek Renewables, LLC	Schoharie	Schoharie		300.82	4	Proposed	TRC
2018972	Rock District Solar, LLC	Cypress Creek Renewables, LLC	Schoharie	Carlisle, Seward	20.00	322.29	4	Proposed	TRC
20181095	East Point Energy Center Project	East Point Energy Center, LLC	Schoharie	Sharon	80.00	1312.52	4	Proposed	TRC
20161121	Saint Ives Solar, LLC Site, 35 Birch Street	Cypress Creek Renewables	Sullivan	Fallsburg		20.26	3	Proposed	TRC
20161103	Installation of large-scale ground-mount solar farm, Phillipsport Road		Sullivan	Mamakating		23.56	3	Proposed	BlueWave
20161006	Cochecton Solar Array	Delaware River Solar	Sullivan	Cochecton		25.72	3	Proposed	The Chazen Companies
2017565	Wood Oak Drive Photovoltaic Plant	Delaware River Solar	Sullivan	Tusten		29.69	3	Proposed	The Chazen Companies
			Sullivan	Liberty		44.39	3	Constructed	

NHP Project Number	Project Name	Applicant	County	Municipality	MW	Acres	DEC Region	Status	NHP Requesting Agent
2016614	Proposed large-scale groundmount solar farm, Mt Vernon Road		Sullivan	Mamakating		45.39	3	Proposed	BlueWave
			Sullivan	Fallsburg		50.10	3	Proposed	
2016587	Hospital Road Solar	Xzerta Energy Group	Sullivan	Delaware		61.31	3	Proposed	The Chazen Companies
20131093	Proposed Solar Array at the Center for Discovery	HelioSage LLC	Sullivan	Thompson		65.57	3	Proposed	Shumaker Consulting Engineering & Land Surveying, D.P.C.
20161695	Kuhl Solar, LLC	Cypress Creek Renewables (CCR)	Sullivan	Mamakating		67.92	3	Proposed	TRC
2016784	Proposed solar farm, Mt. Vernon Road		Sullivan	Mamakating		76.47	3	Proposed	BlueWave
	Dunntown & Sugar Gum Solar	Cypress Creek Renewables LLC	Sullivan	Mamakating		80.76	3	Proposed	
2016586	Baer Road Solar	Xzerta Energy Group	Sullivan	Delaware		207.05	3	Proposed	The Chazen Companies
20161575	Proposed large-scale groundmount solar farm, 290 Sand Pond Dr		Sullivan	Lumberland		1584.49	3	Proposed	BlueWave
20161118	Proposed solar farm installation, Spencer Road		Tioga	Candor		30.55	7	Proposed	Renovus Solar
2018794	Gaskill Road Solar Farm	Delaware River Solar	Tioga	Owego		160.31	7	Proposed	Bergmann Associates
2017186	sun8 2150 Dryden Road Solar Array Project	sun8	Tompkins	Dryden		140.19	7	Proposed	LaBella Associates, D.P.C.
2017185	sun8 Ellis Tract Solar Array Project	sun8	Tompkins	Dryden		143.19	7	Proposed	LaBella Associates, D.P.C.
20181406	CES Marbletown Solar	Con Edison Solutions	Ulster	Marbletown		23.24	3	Proposed	ECS Mid- Atlantic, LLC
2016591	Woodstock WWTP Solar Panel Installation		Ulster	Woodstock		24.25	3	Proposed	The Chazen Companies
2017470	Solar Array, Off Airport Road		Ulster	Rochester		24.82	3	Proposed	Borrego Solar Systems, Inc.
2017469	Solar Array, North of Route 209		Ulster	Rochester		30.28	3	Proposed	Borrego Solar Systems, Inc.
2018100	Sarafain Solar, LLC		Ulster	New Paltz		31.44	3	Proposed	Cypress Creek Renewables

Cumulative Impacts Analysis

NHP Project Number	Project Name	Applicant	County	Municipality	MW	Acres	DEC Region	Status	NHP Requesting Agent
			Ulster	Wawarsing		42.63	3	Proposed	
201892	Andoom Solar, LLC		Ulster	Shawangunk		46.68	3	Proposed	Cypress Creek Renewables
20161387	Installation of ground- mounted Photovoltaic (PV) solar system located on the north side of Sawkill Road, immediately east of Hallihans Hill Road		Ulster	Kingston		46.94	3	Proposed	ERM
20161587	Burnt Meadows Solar, LLC Site - installation of ground- mounted solar system at 321 Burnt Meadow Road	Cypress Creek Renewables	Ulster	Gardiner		51.84	3	Proposed	TRC
20171506	Matrix Development FÇô Malden		Ulster	Saugerties		56.75	3	Proposed	C.T. Male Associates, P.C.
20161106	Yin Solar, LLC Site, Albany Post Road	Cypress Creek Renewables	Ulster	Gardiner		59.13	3	Proposed	TRC
20161410	Windgate Solar, LLC Site - Installation of ground- mounted solar system at 3809-3813 Route 9W	Cypress Creek Renewables	Ulster	Lloyd		70.17	3	Proposed	TRC
2017491	Meckler Road Solar Utility Wawarsing, NY		Ulster	Wawarsing		72.93	3	Proposed	Borrego Solar Systems, Inc.
20161181	Reisender Solar, LLC Site (Cypress Creek Renewables)		Ulster	Wawarsing		76.24	3	Proposed	TRC
2017206	Solar project, 60 Armato Lane		Ulster	Gardiner		76.66	3	Proposed	Borrego Solar Systems, Inc.
20161101	Installation of ground- mounted solar system on ~25 acres of Rondout Creek Solar, LLC Site, 12 Pompey's Cave Road	Cypress Creek Renewables	Ulster	Rochester		80.93	3	Proposed	TRC
20161632	Dejager Solar, LLC Site - ground-mounted solar system at 1781-2897 Lucas Turnpike		Ulster	Rochester		93.24	3	Proposed	TRC
20161179	Kamback Solar, LLC Site (Cypress Creek Renewables)		Ulster	Wawarsing		96.24	3	Proposed	TRC
20161303	Kaaterskill Solar Facility, 2007-2073 Old Kings Highway		Ulster	Saugerties		122.18	3	Proposed	Tetra Tech

NHP Project Number	Project Name	Applicant	County	Municipality	MW	Acres	DEC Region	Status	NHP Requesting Agent
2017612	New Beginnings Solar, LLC Site at 2585 US-209	Cypress Creek Renewables, LLC	Ulster	Hurley, Marbletown		125.31	3	Proposed	TRC Environmental Corporation
			Ulster	Denning		149.44	3	Proposed	
20171587	Blue Stone Solar Project		Ulster	Saugerties		158.60	3	Proposed	Geronimo Energy
20171098	Landau Solar, LLC		Ulster	Ulster		347.50	3	Proposed	Cypress Creek Renewables
2017415	groSolar Garnet Solar Partners FÇô Proposed Solar Development (C.T. Male Project No. 15.5725)		Warren	Johnsburg		34.77	5	Constructed	C.T. Male Associates, P.C.
2015585	Proposed installation of 2 ground-mounted solar photovoltaic arrays at 721- 723 Upper Sherman Road		Warren	Queensbury		49.96	5	Proposed	SolarCity
20151276B	SoCore NY Development LLC Potential Solar Array, 221 Geer Road, Hudson Falls		Washington	Kingsbury		27.54	5	Proposed	TRC
			Washington	Whitehall		36.88	5	Constructed	
20181184	Aviator Way Solar	Cypress Creek Renewables, LLC	Washington	Kingsbury		56.79	5	Proposed	Cypress Creek Renewables
20161034	Buckley Road Solar Facility	PV Engineers PC	Washington	Whitehall		61.57	5	Constructed	Borrego Solar Systems, Inc.
2018401	McCaw Solar, LLC		Washington	Fort Edward		73.93	5	Proposed	Cypress Creek Renewables
2014987	Great Valley Solar		Washington	Easton		83.47	5	Proposed	OneEnergy Renewables
20171496	Greenwich Solar		Washington	Greenwich		100.61	5	Proposed	C&S COMPANIES
20181460	Solar array at 2131 Route 40, Village of Greenwich		Washington	Easton		105.56	5	Proposed	Borrego Solar Systems, Inc.
20181324	Argyle Solar	Eden Renewables	Washington	Argyle		230.18	5	Proposed	The Environmental Design Partnership, LLP

NLCD Land Cover Class	Project Area	Grassland Study Area	Relative Percent of Project Area to GSA ¹
Open Water	2.22	485,047.01	0.0005
Developed, Open Space	28.82	728,596.60	0.0040
Developed, Low Intensity	4.79	293,526.49	0.0016
Developed, Medium Intensity	0.53	126,655.64	0.0004
Developed, High Intensity	0.13	45,367.75	0.0003
Barren Land (Rock/Sand/Clay)	0.00	35,527.03	0.0000
Deciduous Forest	152.49	6,728,375.98	0.0023
Evergreen Forest	5.24	1,678,724.46	0.0003
Mixed Forest	155.68	2,133,282.20	0.0073
Shrub/Scrub	9.73	120,667.08	0.0081
Grassland/Herbaceous	4.71	126,992.00	0.0037
Hay/Pasture	485.40	2,095,272.97	0.0232
Cultivated Crops	452.21	668,326.65	0.0677
Woody Wetlands	8.11	1,157,247.41	0.0007
Emergent Herbaceous			
Wetlands	2.44	104,520.28	0.0023
Grand Total	1312.52	16,528,129.54	0.0079

Table 5. NLCD Land Cover Data for Project Area and relative to Grassland Study Area

1 Overall contribution of Project Area acres to habitat class within the Grassland Study Area

Table 6. Percent of Grassland Habitat Among Study Projects Relative to Proposed Project andAvailable Habitat Within Grassland Study Area

Area Evaluated	Acres of Grassland Habitat	Total Acres	Percent of Grassland Study Area - Grassland Habitat	Percent of Grassland Study Area - Total Acres	
Project Area	490.11	1312.52	0.022%	0.003%	
Study Projects	20,529.00	48,753.80	0.924%	0.124%	
Grassland Study Area	2,222,264.97	16,528,129.54	N/A	13.445%	

Figures



Cumulative Impacts Assessment



Cumulative Impacts Analysis



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Cumulative Impacts Analysis



Cumulative Impacts Analysis