Grassland Bird Cumulative Impacts Analysis

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Watkins Glen Solar Energy Center

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1.0 Introduction

1.1 Project Description

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

The Watkins Glen Solar Energy Center Project (the Project) will have a generating capacity of 50 megawatts (MW) of power and will be located on land leased from owners of private property located in the Town of Dix, Schuyler County, New York (Project Area) shown on 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 collection substation and point of interconnection (POI) switchyard, which will be transferred to New York State Electric & Gas (NYSEG) to own, maintain, and operate. The proposed collection substation and POI switchyard will be located on land within the Project Area, in relative proximity to NYSEG's Bath – Montour Falls 115-kilovolt transmission line (see Figure 2), which will be connected to the POI switchyard.

The proposed facility will consist of ground-mounted solar arrays and associated infrastructure with an anticipated footprint of 353.5 acres within the approximately 770-acre Project Area.

1.2 Purpose and Objectives

In proposed Stipulation 22(f)(11), dated February 21, 2020, the Applicant agreed to perform a cumulative impact analysis as 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 the NYSDEC database consisting of mapped solar facilities provided to the Applicant, and any publicly available information researched by the Applicant (Study Projects) located within but not beyond New York State borders (Grassland Study Area). The Applicant was not required to perform any avian field

studies at the Study Projects nor was it required to make Freedom of Information Requests. This analysis includes, at a minimum:

- Examination of publicly available open and grassland habitat data on the Study Projects within the Grassland Study Area using the NYSDEC database and any publicly available information found by the Applicant;
- Estimated take of state-listed T&E bird species and their habitats at the Project, 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 state-listed grassland bird species, within the Project 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 Watkins Glen Solar 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 in the United States 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 may not significantly 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 grass seed mixes to establish a stabilized vegetative groundcover. These grass seed mixes are composed 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*);
- 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 21, 2018;
- Vesper sparrow (Pooecetes gramineus); and
- Horned lark (Eremophila alpestris).

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

- American kestrel (*Falco sparverius*);
- Bobolink (*Dolichonyx oryzivorus*), first observed on May 21, 2018;
- Eastern meadowlark (*Sturnella magna*);
- Golden-winged warbler (*Vermivora chrysoptera*); and
- Savannah sparrow (*Passerculus sandwichensis*), first observed on May 21, 2018.

Biologists recorded a total of 297 observations, including individuals representing three grassland bird species (i.e., bobolink, savannah sparrow, and grasshopper sparrow) at the Project Area. This included grassland birds observed at the survey points, outside the 100-meter radius circular plot, and birds observed during the meander surveys. No other state or federally listed threatened or endangered species were documented. Bobolinks (n = 189) were the most commonly observed grassland bird species and comprised 63.6 percent of all grassland birds observed. Mean use was highest for bobolinks (3.42 birds/100-meter radius plot/5 minutes), followed by savannah sparrows (1.21 birds/100-meter radius plot/5 minutes), and grasshopper sparrows (0.09

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. No raptor species were observed during the study.

The grasshopper sparrow is a state-listed species of special concern and a total of three grasshopper sparrows were observed at the Project Area. No state or federally listed threatened or endangered species 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 of the Project Article 10 Application.

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 to 2019, specifically between November 15, 2018 and March 31, 2019. Driving surveys took place every week from December 7, 2019 to March 31, 2019. A total of 16 stationary surveys and 13 driving route surveys were conducted during the study totaling 23.9 and 9.87 survey hours, respectively.

No short-eared owls or northern harriers were observed during winter raptor surveys at the Project Area. A total of 24 birds of four species were observed during the course of the surveys. An additional four individuals were observed; however, they were not able to be identified to species level. No state-listed threatened or endangered species were observed. Five individuals were observed during stationary counts, including three red-tailed hawks, two Cooper's hawks and one rough-legged hawk. During daytime driving surveys, 19 individuals were observed, including 18 red-tailed hawks and one turkey vulture. Red-tailed hawk was the most frequently observed species in both stationary and driving surveys, accounting for 55.56% and 94.74% of observations, respectively.

State-listed special concern species (Cooper's hawk) were observed in the northeastern portions of the Project Area and isolated to one survey date (February 14, 2018). Cooper's hawk observations made up approximately 22% of total raptor observations during stationary surveys (Table 1). Both observations were made during a single stationary survey on February 14, 2019. The surveyor assumed this was most likely the same individual, as the hawk was seen 9 minutes later and in the same vicinity of the first sighting. For a more detailed description of the wintering grassland raptor survey, including a list of incidental bird observations, please refer to Appendix 22-3.

Winter surveys occur well outside the breeding period for target species, therefore, are intended only to document presence within the Project Area.

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 (SSC) as designated in the NYSDEC grassland breeding bird survey protocol (NYSDEC 2015a). This review included:

- Route-level data from the United States Geological Survey (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 Schuyler County and counties with Study Projects in the Grassland Study Area, and
- County-level data from the New York Natural Heritage Program (NYNHP) for Schuyler 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 reviewed the database provided by the NYSDEC for Study Projects with a proposed generating capacity of 5 MW 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 25 acres reported in the database were eliminated from the Study, based on the minimum capacity-weighted average land use for photovoltaic (PV) solar technologies of ~5 acres/MWac[1].

A literature search was conducted for each remaining Study Project to obtain any additional relevant information that 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 (NLCD) 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. 2014[2].

[1] Ong, S., Campbell, C., Denholm, P., Margolis, R., & Heath, G. 2013. Land-use requirements for solar power plants in the United States (No. NREL/TP-6A20-56290). National Renewable Energy Lab. (NREL), Golden, CO (United States).
[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).

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.

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 353.5 acres, indirect impacts to grassland birds have the potential to affect 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, and grasshopper sparrow. Bobolinks (n = 189) were the most commonly observed grassland bird species and comprised 63.6 percent of all grassland birds observed. Mean use was highest for bobolinks (3.42 birds/100-meter radius plot/5 minutes), followed by savannah sparrows (1.09 birds/100-meter radius plot/5 minutes), and grasshopper sparrows (0.09 birds/100-meter radius plot/5 minutes).

One Cooper's hawk (SSC) was observed during winter raptor surveys conducted within the Project Area. This species is not typically associated with grassland habitat, though may utilize open areas for foraging throughout the breeding and post-breeding seasons.

Review of publicly available datasets indicated the potential for occurrence of several additional species that utilize grassland habitat (Table 1). None of the additional species identified have 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 29 counties where Study Projects were identified (Tables 2 through 4). Numerous species were widely distributed and had recent records among the counties, and all have been recently observed (within last 10 years) in Schuyler County except for barn owl, golden-winged warbler, Henslow's sparrow, and sedge wren. Few species were less recently recorded or limited in distribution, including:

- Barn Owl, observed in 13 counties, no observations in Schuyler County;
- Golden-winged Warbler, observed in 25 counties, no observations in Schuyler County;
- Henslow's Sparrow, observed in all 29 counties, last observed in Schuyler County County during the 2nd Breeding Bird Atlas between 2000 and 2005;
- Sedge Wren, observed in 21 counties, no observations in Schuyler County; and
- Upland Sandpiper, observed in 26 counties, last observed in Schuyler County in 2016.

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 to 20 years (NYS BBA, 2008).

4.2 Summary of Study Projects Evaluated

An initial review of the NYSDEC-provided database yielded multiple projects that 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 208 unique proposed or constructed solar utility projects within the Grassland Study Area. Reported acreage provided in the database was not consistent with the calculated area of the Study Project polygons. The area for each Study Project was recalculated using GIS and is shown in Table 5 as the "actual acreage." The actual acreage was used in the evaluation of land cover and grassland habitat impacts reported below.

Many of the records contained missing data. Of 208 records, only 44 contained the proposed or actual MW capacity. Records were filtered based by MW where available to retain only those greater than 5 MW, or on acreage to retain only those projects greater than 25 acres in size, resulting in the identification of 114 Study Projects considered in the evaluation of impacts. The full list of Study Projects evaluated is provided as Table 5.

Study Projects were identified in 26 of the 29 counties within the Grassland Study Area. Monroe County contained the highest concentration of Study Projects with 19 projects identified, followed by Onondaga County (12) and Ontario (10). The remaining counties had 9 or fewer Study Projects. No Study Projects were identified in Delaware, Herkimer, or Niagara Counties (Table 5; Figure 2). Study Project locations are depicted on Figure 2.

Study Projects, including the Project, encompass a total of 117,932 acres within the Grassland Study Area. Of the 114 Study Projects, 20 have already been constructed and account for 1,109 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 25,969 acres across nine projects. The Proposed Project is the only solar project located in Schuyler County, with a total area of approximately 770 acres, accounting for approximately 0.66 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 permit with the New York State Department of Public Service 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 and published reports where available.

NextEra Resources – Excelsior Energy Center, Genesee County

The Excelsior facility will consist of ground-mounted solar arrays and associated infrastructure with an anticipated footprint of 1,500 to 2,000 acres within the 3,418-acre facility.

Grassland breeding bird surveys were conducted during the 2019 breeding season. Biologists observed a total of 1,224 observations of 61 species, including four grassland bird species (i.e., bobolink, savannah sparrow, vesper sparrow, and horned lark) at the Project Area. In addition, 1 American kestrel was recorded as an incidental observation. Also observed were 2 vesper sparrows and 66 horned larks (both SSC).

Stationary and driving winter grassland surveys were conducted during 2019-2020. The most common raptor species observed at the Project Area was the red-tailed hawk (*Buteo jamaicensis*); first observed on November 19, 2019; which comprised approximately 80 percent and 65 percent of total raptor observations during the stationary and driving surveys, respectively. During the survey, six northern harriers (ST), one Cooper's hawk, and one bald eagle (ST) were observed. Additionally, horned larks (SSC) were observed.

NextEra Resources – Trelina Solar Energy Center, Seneca County

The Trelina Solar facility will consist of ground-mounted solar arrays and associated infrastructure with an anticipated footprint of 450 acres within the 1,072-acre facility.

Grassland breeding bird surveys were conducted during the 2019 breeding season. Biologists observed a total of 608 observations of 55 species, including four grassland bird species (i.e., bobolink, horned lark, savannah sparrow, and vesper sparrow) at the Project Area. Seven horned larks and two vesper sparrows (both SSC) were observed, although these vesper sparrow observations are believed to be one individual. In addition, one bald eagle (ST) was observed as an incidental.

Stationary and driving winter grassland surveys were conducted during 2019-2020. The most common raptor species observed at the Project Area was the red-tailed hawk (*Buteo jamaicensis*); first observed on November 20, 2019; which comprised approximately 56 percent and 63 percent of total raptor observations during the stationary and driving surveys, respectively. During the survey, 2 northern harriers (ST) and 10 bald eagles (ST) were observed. Additionally,

Cooper's hawk, sharp-shinned hawk, osprey, horned larks, and vesper sparrows (all SSC) were observed.

4.3 Facility Impacts to Grassland Habitat

Land cover within the Watkins Glen Solar Energy Center Project Area is predominantly characterized as Hay/Pasture (263 acres) comprising 34% of land cover within the Project Area (Table 5; Figure 3). Grassland habitat within the Project area consists mainly of hay/pasture, with grassland herbaceous cover accounting for only 3 acres, and collectively comprises 266 acres (34%) of the Project Area (Figure 4). When compared with the Grassland Study area, which contains approximately 2.05 million acres of grassland habitat (Figure 5), impacts from the Project will affect less than 0.01% of available habitat within 100-miles in the state of New York.

4.4 Cumulative Impacts of Grassland Habitat Use

Together, the 114 Study Projects comprise 117,932 acres of development (both proposed and constructed) within the 11,555,390-acre Grassland Study Area (1% of total area; Table 6). Grassland habitat within the boundaries of the Study Projects total 23,596 acres, which covers 20% of the proposed area of development among the projects. Grassland habitat among Study Projects accounts for approximately 1.1% of available grassland habitat within Grassland Study Area, and less than 0.2% of total land area (Table 6).

The proposed Project is anticipated to impact (directly and indirectly) approximately 770 acres of grassland habitat. 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 114 Study Projects (23,596 acres) would be developed. Even with this conservative assumption, only approximately 1.2% of available grassland habitat within the Grassland Study Area would be impacted.

5.0 Discussion

Mortality studies are inherently lacking with specific reference to ground-mounted solar. As such, providing an accurate or reliable estimate of take of listed species for this or other Projects is infeasible and therefore, was 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 impacts 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 only approximately 1.1% of grassland habitat within the more than 11.5-million-acre Grassland Study Area would be impacted in the unlikely event that all 114 Study Projects and the proposed Project are ultimately developed. Considering that the amount of grassland habitat that 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 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, population-level impacts are not anticipated from this Project, or cumulatively from the 114 Study Projects identified.

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Tables

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

Species Name	Federal Status[1]	NYS Status[2]	SGCN Listing[3]	Habitat Preference[4]	Source of Potential Presence[5]	Observed On site
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.	D, E, F, G, H	No
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 or caves, but often in human structures. Suitable habitat for this species occurs within the Project Area.	None	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.	A, D, E, H	Yes
Eastern Meadowlark (*Sturnella magna*)	-	-	SGCN-HP	This species prefers farm fields, pastures, grasslands, and wet fields. Suitable habitat for this species occurs within the Project Area.	D, E, H	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.	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.	A, D, E, H	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	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 occur within the Project Area.	D, F, G	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.	D, E, F, G, H	No
Prairie Warbler (*Setophaga discolor*)	-	-	SGCN	This species prefers successional shrubland, successional old field, brush piles, and pastures. Breeds in dry old field and clearing, edges of forest, and sandy pine barrens. Suitable habitat for this species occurs within the Project Area.	G	No

Species Name	Federal Status[1]	NYS Status[2]	SGCN Listing[3]	Habitat Preference[4]	Source of Potential Presence[5]	Observed On site
Ring-necked Pheasant (*Phasianus colchicus*)	-	-	-	This species prefers agricultural land and old fields, especially fields that are interspersed with grass ditches, hedges, marshes, woodland borders, and brushy groves. Pheasant may also be found in pasture/hay, particularly alfalfa. Suitable habitat for this species occurs within the Project Area.	D, F, G	No
Savannah Sparrow (*Passerculus sandwichensis*)	-	-	-	The species prefers patches of bare ground or short vegetation interspersed among taller dense grasses, pastures, hayfields, native prairies, the grassy edges of marshes, and reclaimed strip mines. Suitable habitat for this species occurs within the Project Area.	A, D, E, G	Yes
Sedge Wren (*Cistothorus platensis*)	-	THR	SGCN	This species prefers shallow marshes, wet meadows, grasslands, and hayfields. Suitable habitat for this species occurs within the Project Area.	None	No
Short-eared Owl (*Asio flammeus*)	-	THR	SGCN-HP	This species prefers open areas grasslands, prairies, marshes, and meadows. Suitable habitat for this species occurs within the Project Area.	G	No
Upland Sandpiper (*Bartramia longicauda*)	-	THR	SGCN-HP	This species prefers prairies, grasslands, and successional old field. Suitable habitat for this species occurs within the Project Area.	G	No
Vesper Sparrow (*Pooecetes gramineus*)	-	SSC	SGCN	This species responds quickly to changes in habitat and often occupies abandoned old farm fields and successional shrub lands as they return to forest. Suitable habitat for this species occurs within the Project Area.	D, G	No

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 observed on site

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

C: Species identified by USFWS online database (IPaC)

D: Species identified in the USGS Breeding Bird Survey

E: Species identified in the NYS BBA

F: Species identified in the Audubon CBC

G: Species identified in eBird

H: Species identified in HMANA Hawkwatch Station Count Data

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

Species	Last Year Observed in County[4]											
	Allegany	Broome	Cattaraugus	Cayuga	Chemung	Chenango	Cortland	Delaware	Erie	Genesee	Herkimer	Livingston
American Kestrel[1]	2020	2020	2020	2020	2020	2020	2020	2020	2020	2020	2020	2020
Bald Eagle[1]	2020	2020	2020	2020	2020	2020	2020	2020	2020	2020	2020	2020
Bobolink[1]	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019
Common Barn Owl[2]		1966	1992		No Date			2002	No Date		1964	
Eastern Meadowlark[1]	2019	2020	2020	2020	2020	2019	2020	2019	2020	2020	2020	2020
Golden-winged Warbler[1]	2019	2016	2017	2015	2015	2019	2019	2016	2019	2016		2018
Grasshopper Sparrow[1]	2019	2018	2018	2019	2018	2016	2015	2019	2019	2019	2019	2019
Henslow's Sparrow[2]	2003	1982	2000	2001	2001	2000	Recent	2014	2006	2001	2010	2018
Horned Lark[1]	2020	2020	2020	2020	2020	2020	2020	2020	2020	2020	2020	2020
Northern Harrier[1]	2020	2020	2020	2020	2020	2020	2019	2020	2020	2020	2020	2020
Prairie Warbler[1]	2019	2019	2019	2019	2019	2019	2019	2019	2019		2018	2019
Ring-necked Pheasant[1]	2020	2020	2020	2020	2020	2019	2019	2019	2019	2020	2020	2020
Savannah Sparrow[1]	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2020
Sedge Wren[2]			2019	2019		Historic			2016	2018	2000-2005	2000-2005
Short-eared Owl[1]	2019	2009	2020	2020	2019	2003	2014	Recent	2019	2020	2020	2020
Upland Sandpiper[2]	2002	2018	2000	2018	2015		2014	2016	2019	2017	2018	2019
Vesper Sparrow[1]	2018	2019	2019	2019	2018	2019	2019	2019	2019	2019	2019	2019

1 Most recent record from eBird database

2 Most recent record taken from either NYNHP or eBird

3 Most recent record from NYNHP

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

Table 3. Grassland Species Occurrence Records for Study Project Counties (M-O)

Species	Last Year Observed in County[4]								
	Madison	Monroe	Niagara	Oneida	Onondaga	Ontario	Orleans	Oswego	Otsego
American Kestrel[1]	2020	2020	2020	2020	2020	2020	2020	2020	2020
Bald Eagle[1]	2020	2020	2020	2020	2020	2020	2020	2020	2020
Bobolink[1]	2019	2019	2019	2019	2019	2019	2019	2019	2019
Common Barn Owl[2]		No Date	1995		1971		2019	2012	
Eastern Meadowlark[1]	2019	2020	2020	2019	2020	2020	2020	2020	2020
Golden-winged Warbler[2]	2013	2019	2018	2019	2019	2010	2017	2019	2011
Grasshopper Sparrow[1]	2019	2019	2019	2019	2019	2019	2019	2019	2018
Henslow's Sparrow[2]	Recent	2018	2000-2005	Recent	2017	Recent	2009	2000	2007
Horned Lark[1]	2020	2020	2020	2020	2020	2020	2020	2020	2020
Northern Harrier[1]	2020	2020	2020	2020	2020	2020	2020	2020	2020
Prairie Warbler[1]	2019	2019	2014	2019	2018	2019	2019	2019	2019
Ring-necked Pheasant[1]	2020	2020	2020	2020	2020	2020	2020	2020	2020
Savannah Sparrow[1]	2019	2020	2019	2019	2019	2019	2019	2019	2019
Sedge Wren[2]	1985	2019	2018	Historic	2019	2019	2018	2019	
Short-eared Owl[1]	2019	2020	2018	2018	2018	2020	2020	2019	
Upland Sandpiper[2]	2013	2019	2017	2019	2014	2005	2016	2019	2015
Vesper Sparrow[1]	2019	2019	2018	2019	2019	2019	2019	2019	2016

1 Most recent record from eBird database

2 Most recent record taken from either NYNHP or eBird

3 Most recent record from NYNHP

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

Table 4. Grassland Species Occurrence Records for Study Project Counties (P-Z)

Species	Last Year Observed in County[4]							
	Schuyler	Seneca	Steuben	Tioga	Tompkins	Wayne	Wyoming	Yates
American Kestrel[1]	2020	2020	2020	2020	2020	2020	2020	2020
Bald Eagle[1]	2020	2020	2020	2020	2020	2020	2020	2020
Bobolink[1]	2019	2019	2019	2019	2019	2019	2019	2019
Common Barn Owl[2]			2018		2013			
Eastern Meadowlark[1]	2020	2020	2020	2019	2020	2020	2019	2019
Golden-winged Warbler[2]		2019		2018	2019	2018	2017	
Grasshopper Sparrow[1]	2019	2019	2019	2019	2019	2019	2019	2019
Henslow's Sparrow[2]	2000-2005	2002	2015	Recent	2016	2000-2005	2002	2002
Horned Lark[1]	2020	2020	2020	2020	2020	2020	2020	2020
Northern Harrier[1]	2020	2020	2020	2020	2020	2020	2020	2020
Prairie Warbler[1]	2019	2019	2019	2019	2019	2019	2018	2018
Ring-necked Pheasant[1]	2020	2020	2019	2020	2020	2020	2020	2020
Savannah Sparrow[1]	2019	2020	2019	2019	2020	2019	2019	2019
Sedge Wren[2]		2019	2014		2011	2019	Historic	1998
Short-eared Owl[1]	2020	2020	2019	2020	2019	2020	2017	2018
Upland Sandpiper[2]	2016	2019	2018		2019	2010	2016	
Vesper Sparrow[1]	2019	2019	2016	2019	2019	2019	2019	2017

1 Most recent record from eBird database

2 Most recent record taken from either NYNHP or eBird

3 Most recent record from NYNHP

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

Table 5. Summary of Study Projects Evaluated

NHP Project Number	Project Name	Applicant	Municipality	County	DEC Region	MW	Acres	Status
2013687	Houghton College Solar Array Project	Houghton College	Caneadea	Allegany	9		47.2	Constructed
2018647	Swift Hill Solar Facility	Solar Provider Group	Rushford	Allegany	9		35.0	Proposed
20161227	Allegany County Solar Project	SolarCity	Amity	Allegany	9		28.8	Proposed
2018630	Moraine Solar Energy Center		Burns, Dansville, Ossian	Allegany, Steuben, Livingston	89	75	9804.8	Proposed
2016105	Broome County Solar Project	SolarCity	Conklin	Broome	7		47.7	Constructed
2018963	Borrego Solar Systems	Borrego Solar Systems Inc.	Portville	Cattaraugus	9	7	68.5	Proposed
2018390	4959.15 Yorkshire-Fisher PV	Nexamp Solar, LLC	Yorkshire	Cattaraugus	9		38.3	Proposed
20171266	ASP CNY WL1 – Ledyard PV Plant	Abundant Solar Power, Inc.	Ledyard	Cayuga	7		39.3	Proposed
20171267	ASP CNY WL2 – Aurora PV Plant	Abundant Solar Power, Inc.	Ledyard	Cayuga	7		50.8	Proposed
20181439	Scipio Solar Facility	Duke Energy Renewables	Scipio	Cayuga	7		162.5	Proposed
	Dog Corners Solar Project		Ledyard	Cayuga	7		230.2	Proposed
	Garnet Solar	NextEra Energy Resources	Conquest	Cayuga	7	200	1595.7	Proposed
20161266	Renovus Energy Inc, Community Solar Project	Renovus Solar	Catlin	Chemung	8	5.25	37.9	Constructed
20161265	Solar Farm Installation, Breesport Road	Renovus Solar	Erin	Chemung	8		30.6	Proposed
20161015	Delaware Snell Road		Chemung	Chemung	8		41.5	Proposed
2016832	Turner Solar Array	Delaware River Solar	Baldwin	Chemung	8		27.2	Constructed
	Erin Solar Array		Erin	Chemung	8	5	100.4	Proposed
20171559	Evans Property		Norwich	Chenango	7		96.3	Proposed
20181419	Jennings Creek at LLC Bellisario Solar		Lapeer	Cortland	7		310.5	Proposed
	Homer Solar Energy Center		Homer, Cortlandville, Solon	Cortland	7	90	8062.0	Proposed
	Genesee Road Solar Energy Center		East Concord, Sardinia	Erie	9	350	20520.4	Proposed

NHP Project Number	Project Name	Applicant	Municipality	County	DEC Region	MW	Acres	Status
20181217	Borrego Solar Systems Inc. Batavia Solar Array	Borrego Solar Systems, Inc.	Batavia	Genesee	8		55.5	Proposed
20181215	Solar array at 3235 West Main Street Road	Borrego Solar Systems, Inc.	Batavia	Genesee	8		51.5	Proposed
20181216	Solar array at 3232 West Main Street Road	Borrego Solar Systems, Inc.	Batavia	Genesee	8		94.0	Proposed
20161509	Seven Springs Solar, LLC		Stafford	Genesee	8		128.3	Proposed
	Excelsior Energy Center	NextEra Energy Resources	Byron	Genesee	8	280	3416.1	Proposed
2018633	Morris Ridge Solar		Mount Morris	Livingston	8	175	1408.5	Proposed
20181230	York Solar Project	Geronimo Energy	York	Livingston	8		133.2	Proposed
	White Creek Solar		Byron	Livingston	8	135	2598.7	Proposed
2018724	Horseshoe Solar	Invenergy	Caledonia, Rush	Livingston, Monroe	8	180	2818.8	Proposed
2015625	Twin Lantern Solar Partners LLC & Global Resource Options Inc. (groSolar) solar site		Oneida	Madison	7		35.1	Proposed
	Helios-Lenox Solar Project		Lenox	Madison	7		79.9	Proposed
	Lenox Solar Array		Lenox	Madison	7		151.5	Proposed
20171590	2645 Union Street Solar	Borrego Solar Systems, Inc.	Ogden	Monroe	8		70.5	Proposed
201685	Genesse Solar LLC	OneEnergy Renewables	Parma	Monroe	8		37.7	Proposed
2016777	Helios Rush Solar Farm/Swillburg 2 Solar	OneEnergy Renewables	Rush	Monroe	8		100.9	Proposed
2016304	Helios Sweden Solar Farm/Caprock Solar	OneEnergy Renewables	Sweden	Monroe	8		114.5	Proposed
20161152	Oatka Solar	OneEnergy Renewables	Wheatland	Monroe	8		55.2	Proposed
2018226	Solar Array at 3254 Roosevelt Highway	Borrego Solar Systems, Inc.	Hamlin	Monroe	8		59.1	Proposed
2018132	Brokenstraw Solar, LLC	Cypress Creek Renewables	Rush	Monroe	8		59.8	Proposed
20171592	Solar Arrays at 2675 Union Street	Borrego Solar Systems, Inc.	Ogden	Monroe	8		63.9	Proposed
2018594	Mumford Project	Borrego Solar Systems, Inc.	Wheatland	Monroe	8		75.0	Proposed
20161322	Flotilla 4 Solar Project	OneEnergy Renewables	Hamlin	Monroe	8		75.1	Proposed
20181193	Proposed Solar Arrays at 2668 Redman Road	Borrego Solar Systems, Inc.	Clarkson	Monroe	8		83.6	Proposed
20171591	Solar Arrays at 2648 Union Street	Borrego Solar Systems, Inc.	Ogden	Monroe	8		87.2	Proposed

NHP Project Number	Project Name	Applicant	Municipality	County	DEC Region	MW	Acres	Status
20161321	Flotilla 3 Solar Project	OneEnergy Renewables	Hamlin	Monroe	8		97.3	Proposed
20161192	Parma Delaware Solar	Delaware Solar	Parma	Monroe	8		43.1	Proposed
2016544	Caspian 2 Solar Project	OneEnergy Renewables	Riga	Monroe	8		46.9	Proposed
	Delaware River Solar LLC Solar Energy Facility		Ogden	Monroe	8	8	85.7	Proposed
	Monroe County Solar Project		Penfield	Monroe	8		89.5	Constructed
	Monroe County Solar Project		Greece	Monroe	8		274.8	Proposed
	Parma Community Solar		Parma	Monroe	8		38.7	Proposed
2014574	Tannery Road Solar Project		Rome	Oneida	6		70.9	Constructed
2014575	Rome Steel Solar Project at 530 Henry Street		Rome	Oneida	6		51.7	Proposed
2014179	Proposed Construction of a Ground-mounted Solar PV System on 20-25 acres	Borrego Solar Systems, Inc.	Whitestown	Oneida	6		69.9	Proposed
2014946	City of Rome Lamphear Road Solar Project	Rome Steel Solar, LLC	Rome	Oneida	6		42.8	Constructed
2015485	Revere Copper Products Site and MVCC Site Solar Projects, Old Oneida Road	Twin Solar Partners LLC and Mohawk Valley Solar Partners LLC	Rome	Oneida	6		78.7	Constructed
	Oneida Sutliff West and Sutliff South Solar Project		Whitestown	Oneida	6		196.5	Constructed
	Verona Solar		Verona	Oneida	6	250	25379.8	Proposed
			Whitestown	Oneida	6		27.2	Constructed
			Camden	Oneida	6		51.6	Constructed
20161149	Sundew Solar	OneEnergy Renewables	Lysander	Onondaga	7		49.2	Proposed
2014787	5-MW Solar Array	NextEra Energy Resources	Otisco	Onondaga	7		53.9	Proposed
20161150	Archimedes East Solar	OneEnergy Renewables	Lysander	Onondaga	7		56.2	Proposed
20161214	Carley Farm Solar, LLC Site		La Fayette	Onondaga	7		82.6	Proposed
20161151	Archimedes West Solar	OneEnergy Renewables	Lysander	Onondaga	7		98.7	Proposed
20171270	ASP CNY OC1 – Brewerton PV Plant	Abundant Solar Power, Inc.	Cicero	Onondaga	7		32.1	Proposed
20171271	ASP CNY OC2 – Baldwinsville PV Plant	Abundant Solar Power, Inc.	Lysander	Onondaga	7		45.6	Constructed

NHP Project Number	Project Name	Applicant	Municipality	County	DEC Region	MW	Acres	Status
20171269	ASP CNY W4 – Van Buren PV Plant	Abundant Solar Power, Inc.	Van Buren	Onondaga	7		60.0	Proposed
20181045	Sky High Solar, LLC	Cypress Creek Renewables, LLC	Tully	Onondaga	7		274.9	Proposed
2016643	Potter Solar Project	SolarCity	Tully	Onondaga	7		54.1	Proposed
	Dewitt Landfill Solar Project		Dewitt	Onondaga	7		48.5	Proposed
			Clay	Onondaga	7		76.7	Constructed
2016518	Driscoll Solar Project		Phelps	Ontario	8		43.8	Proposed
2014834	Solar PV Array at 4380 SR 14A	OneEnergy Renewables	Seneca	Ontario	8		47.6	Constructed
2015635	Wallace Farms Solar Project	US Department of Agriculture - Rural Development	Geneva	Ontario	8		33.6	Constructed
2018192	North Road Community Solar Garden, 4575 North Road		Canandaigua	Ontario	8		36.1	Proposed
2018161	Proposed Ground Mount Solar System at 2493 State Route 21, Canandaigua	YSG Solar	Hopewell	Ontario	8		125.8	Proposed
2018595	Hemlock Solar Arrays	Borrego Solar Systems, Inc.	Richmond	Ontario	8		46.5	Proposed
	Delaware River Solar LLC		Farmington	Ontario	8	7	135.4	Proposed
	Large Scale Solar Array Bennet Farms Inc		Bloomfield	Ontario	8		194.8	Proposed
			Canadaigua	Ontario	8		26.3	Constructed
			Canadaigua	Ontario	8		29.5	Constructed
2018850	3962 Allis Road Solar Energy System	Borrego Solar Systems, Inc.	Ridgeway	Orleans	8	6.8	42.0	Proposed
	Orleans Solar		Barre, Shelby	Orleans	8	200	2154.1	Proposed
201846	Route 57 Solar		Schroeppel	Oswego	7		90.2	Proposed
20161633	Crofoot Solar, LLC Site	Cypress Creek Renewables	Volney	Oswego	7		70.9	Proposed
	SOURCE RENEWABLES RICHLAND SOLAR		Richland	Oswego	7		29.2	Proposed
			Sandy Creek	Oswego	7		44.1	Proposed
			Oswego	Oswego	7		44.7	Constructed
2016761	Laurens Solar Project	Delaware River Solar	Laurens	Otsego	4		75.1	Proposed
	Watkins Glen Solar Energy Center		***Dix***	***Schuyler***	***8***	***50***	***774.7***	***Proposed***

NHP Project Number	Project Name	Applicant	Municipality	County	DEC Region	MW	Acres	Status
2018632	Suffragette Solar Energy Center		Seneca Falls	Seneca	8	20	219.3	Proposed
	Trelina Solar Energy Center	NextEra Energy Resources	Waterloo	Seneca	8	80	898.6	Proposed
20141222	Slingshot Solar	OneEnergy Renewables	Wayne	Steuben	8		46.0	Proposed
20161118	Proposed Solar Farm Installation, Spencer Road	Renovus Solar	Candor	Tioga	7		30.5	Proposed
2018794	Gaskill Road Solar Farm	Delaware River Solar	Owego	Tioga	7		160.3	Proposed
2017176	sun8 Gillis Property Solar Array Project	sun8	Spencer	Tioga	7		220.1	Proposed
20161503	Ground-mounted PV Solar Array at the Intersection of Millard Hill Road and Burdge Hill Road		Newfield	Tompkins	7		30.7	Proposed
20161533	Solar Array near the Intersection of Trumbull Corners Road and Blovsky Hill Road		Newfield	Tompkins	7		40.0	Proposed
2016829	Newfield Solar Array	Delaware River Solar	Newfield	Tompkins	7		94.8	Proposed
2017186	Dryden Road Solar Array Project	sun8	Dryden	Tompkins	7		140.2	Proposed
2017185	sun8 Ellis Tract Solar Array Project	sun8	Dryden	Tompkins	7		143.2	Proposed
20161566	Podunk Road Solar Site	xzerta energy group	Enfield	Tompkins	7		25.3	Proposed
			Ulysses	Tompkins	7		62.7	Constructed
20161511	Brickchurch Solar Project		Sodus	Wayne	8		27.2	Proposed
20161510	Laidlaw Solar, LLC - Solar Energy Facility, 4031 W. Walworth Road		Walworth	Wayne	8		44.7	Proposed
	Rosalen Solar Energy Center		Rose, Galen	Wayne	8	350	24262.8	Proposed
	Town of Williamson Ground-mounted Solar Panels		Williamson	Wayne	8		25.6	Constructed
	Wang Community Solar Project		Sodus	Wayne	8		139.5	Proposed
20181420	Silver Lake Solar Project		Castile	Wyoming	9		452.1	Proposed
20181395	Niagara Solar Project	Duke Renewables	Bennington	Wyoming	9	20	158.8	Proposed
	Big Tree Solar Project		Bennington, Sheldon	Wyoming	9	175	5830.5	Proposed
2017448	Middlesex Solar Array	sun8 PDC LLC	Middlesex	Yates	8		28.0	Proposed

Table 6. NLCD Land Cover Data for Project Area and relative to Grassland Study Area

NLCD Land Cover Class	Project Area	Grassland Study Area	Relative Percent of Project Area to GSA[1]
Barren Land (Rock/Sand/Clay)	0.0	23879.5	0.00000
Cultivated Crops	186.3	1787655.3	0.01042
Deciduous Forest	190.1	3850028.4	0.00494
Developed, High Intensity	0.0	34643.9	0.00000
Developed, Low Intensity	3.6	245459.1	0.00147
Developed, Medium Intensity	0.0	90394.3	0.00000
Developed, Open Space	25.5	644761.4	0.00395
Emergent Herbaceous Wetlands	0.0	77937.8	0.00000
Evergreen Forest	6.7	424651.9	0.00158
Grassland/Herbaceous	2.9	50484.7	0.00574
Hay/Pasture	263.3	2002794.1	0.01315
Mixed Forest	89.1	1240407.3	0.00718
Open Water	0.0	286098.3	0.00000
Shrub/Scrub	5.6	88436.7	0.00633
Woody Wetlands	0.9	707757.2	0.00013
Grand Total	**774.0**	**11,555,390**	**0.00670**

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

Table 7. Percent of Grassland Habitat Among Study Projects Relative to Proposed Project and Available 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	266.1	774.0	0.01%	0.00%
Study Projects	23595.5	117931.8	1.15%	0.20%
Grassland Study Area	2053279.5	11555389.9	N/A	17.77%

Figures

Project Area
Village Boundary
Municipal Boundary
County Boundary

Data: NYS Office of Information Technology Services, GIS Program Office, 2018
Base Map: USGS/The National Map

0 1.5 3 Miles

N

MAP LOCATION

NEXTera ENERGY RESOURCES

REGIONAL PROJECT LOCATION

WATKINS GLEN
SOLAR ENERGY CENTER, LLC
TOWN OF DIX, NY

FIGURE 1 | MAY 2020

Map Produced by TRC

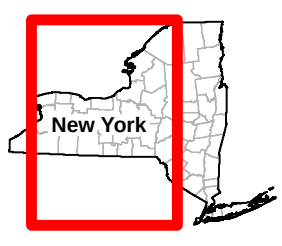
Project Area
Solar Project
County Boundary
Grassland Study Area

N

0 20 40 Miles

Data: NYS Office of Information Technology Services, GIS Program Office, 2018
Base Map: USGS/The National Map

MAP LOCATION



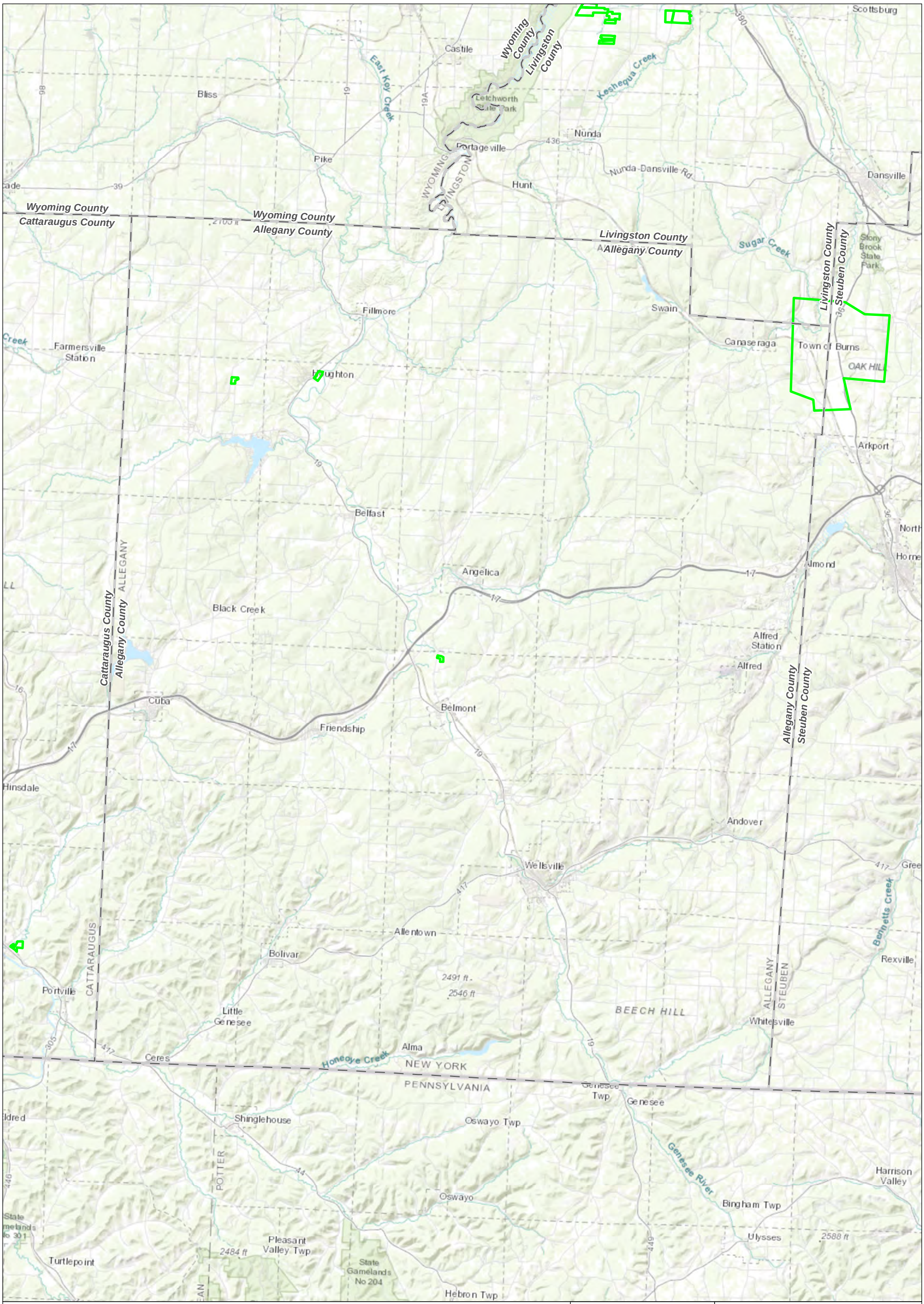
NEXTera ENERGY RESOURCES

GRASSLAND STUDY AREA

WATKINS GLEN SOLAR ENERGY CENTER, LLC
TOWN OF DIX, NY

FIGURE 2	MAY 2020

Map Produced by TRC



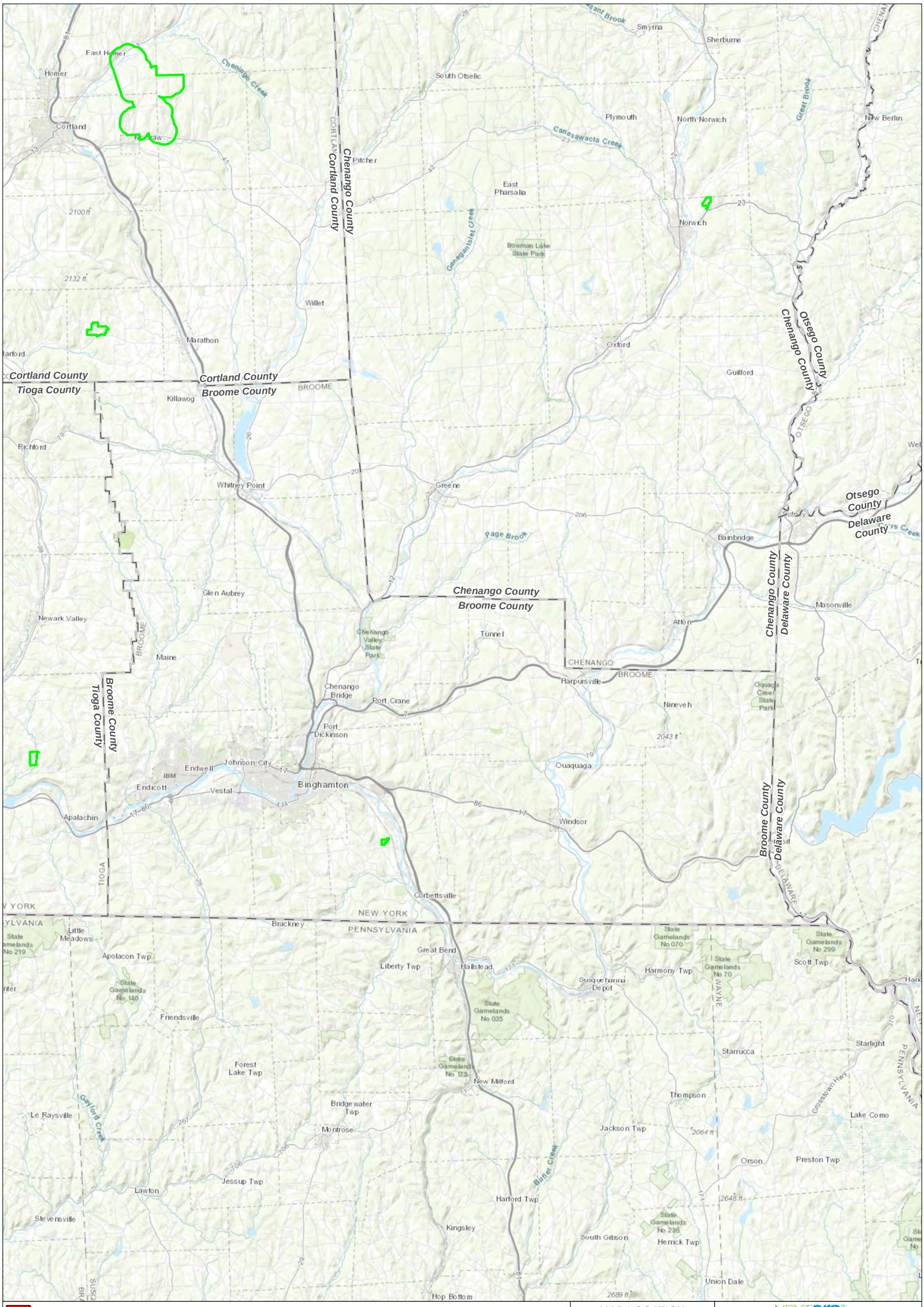
Data: NYS Office of Information Technology Services, GIS Program Office, 2018
Base Map: USGS/The National Map

NEXTera ENERGY RESOURCES

GRASSLAND STUDY AREA
ALLEGANY COUNTY
WATKINS GLEN
SOLAR ENERGY CENTER, LLC
TOWN OF DIX, NY

FIGURE 2 | MAY 2020

Map Produced by TRC


East Homer
Homer
Cortland
Chenango Creek
South Otselic
Smyrna
Sherburne
Plymouth
North Norwich
New Berlin
Great Brook
Canasawacta Creek
Pitcher
East Pharsalia
Cortland County
Chenango County
2100 ft
2132 ft
Willet
Marathon
Bowman Lake State Park
Norwich
Oxford
Guilford
Otsego County
Chenango County
Cortland County
Tioga County
Cortland County
Broome County
Killawog
Richford
Whitney Point
Greene
Page Brook
Bainbridge
Otsego County
Delaware County
Chenango County
Broome County
Glen Aubrey
Newark Valley
Maine
Chenango Valley State Park
Tunnel
Afton
Masonville
Chenango Bridge
Port Crane
Port Dickinson
Harpursville
Nineveh
Oquaga Creek State Park
2043 ft
Ouaquaga
Broome County
Tioga County
Endwell
IBM
Endicott
Johnson City
Vestal
Binghamton
Apalachin
Windsor
Broome County
Delaware County
Corbettsville
NEW YORK
PENNSYLVANIA
Brackney
Little Meadows
Apolacon Twp
Great Bend
Liberty Twp
Hallstead
Susquehanna Depot
Harmony Twp
Scott Twp
Friendsville
Forest Lake Twp
New Milford
Starrucca
Starlight
Thompson
Lake Como
Le Raysville
Montrose
Bridgewater Twp
Jackson Twp
Orson
Preston Twp
Jessup Twp
Lawton
Harford Twp
Butler Creek
Gaylord Creek
Stevensville
Kingsley
South Gibson
Herrick Twp
Union Dale
Hop Bottom
2689 ft
Project Area
Solar Project
County Boundary
N
0 1.25 2.5
Miles
MAP LOCATION
New York
Data: NYS Office of Information Technology Services, GIS Program Office, 2018
Base Map: USGS/The National Map
NEXTera ENERGY RESOURCES
GRASSLAND STUDY AREA
BROOME COUNTY
WATKINS GLEN
SOLAR ENERGY CENTER, LLC
TOWN OF DIX, NY
FIGURE 2
MAY 2020
Map Produced by TRC

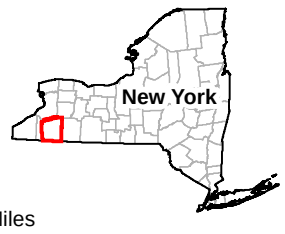
Project Area
Solar Project
County Boundary

Data: NYS Office of Information Technology Services, GIS Program Office, 2018
Base Map: USGS/The National Map

N

0 1.25 2.5 Miles

MAP LOCATION

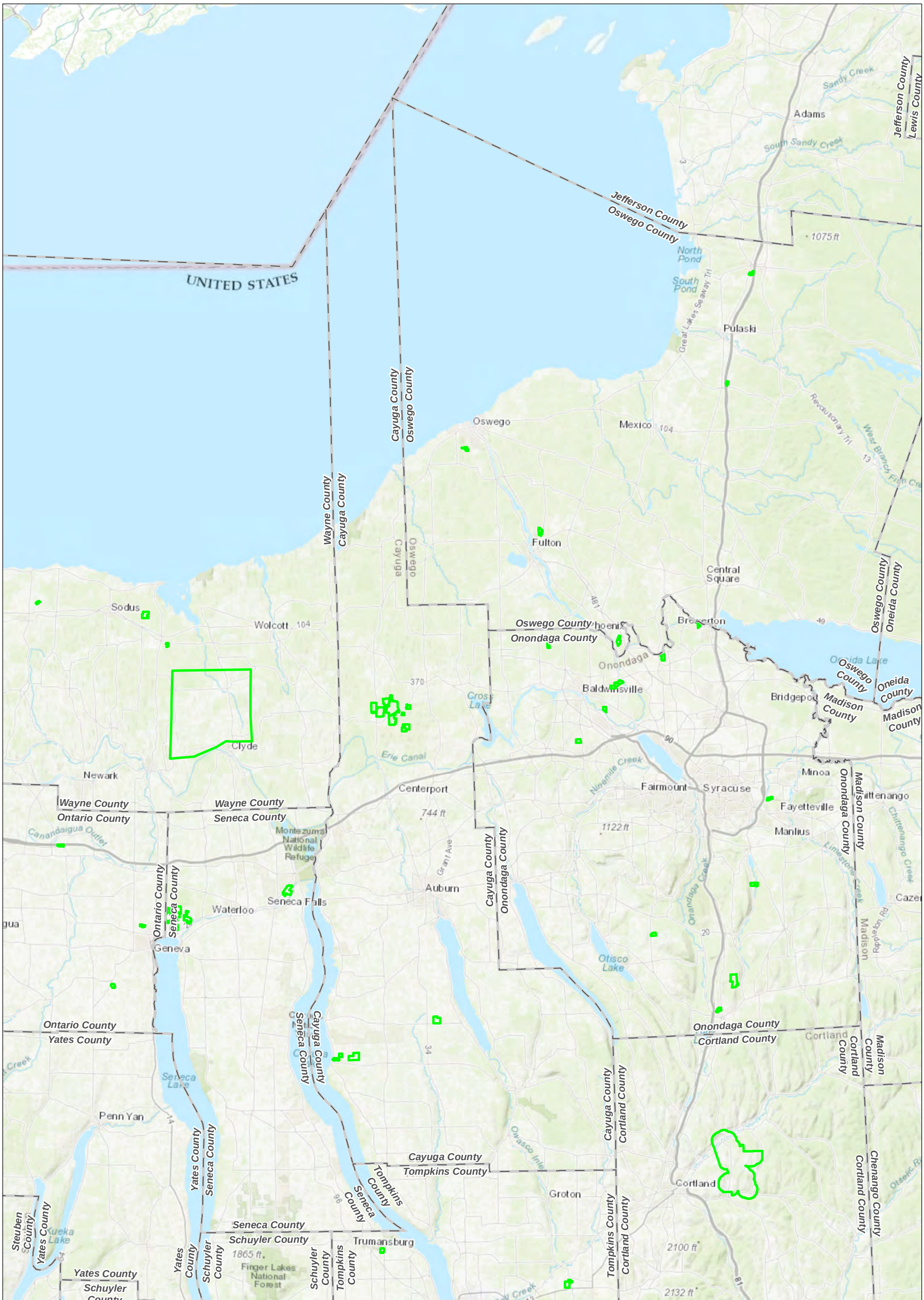


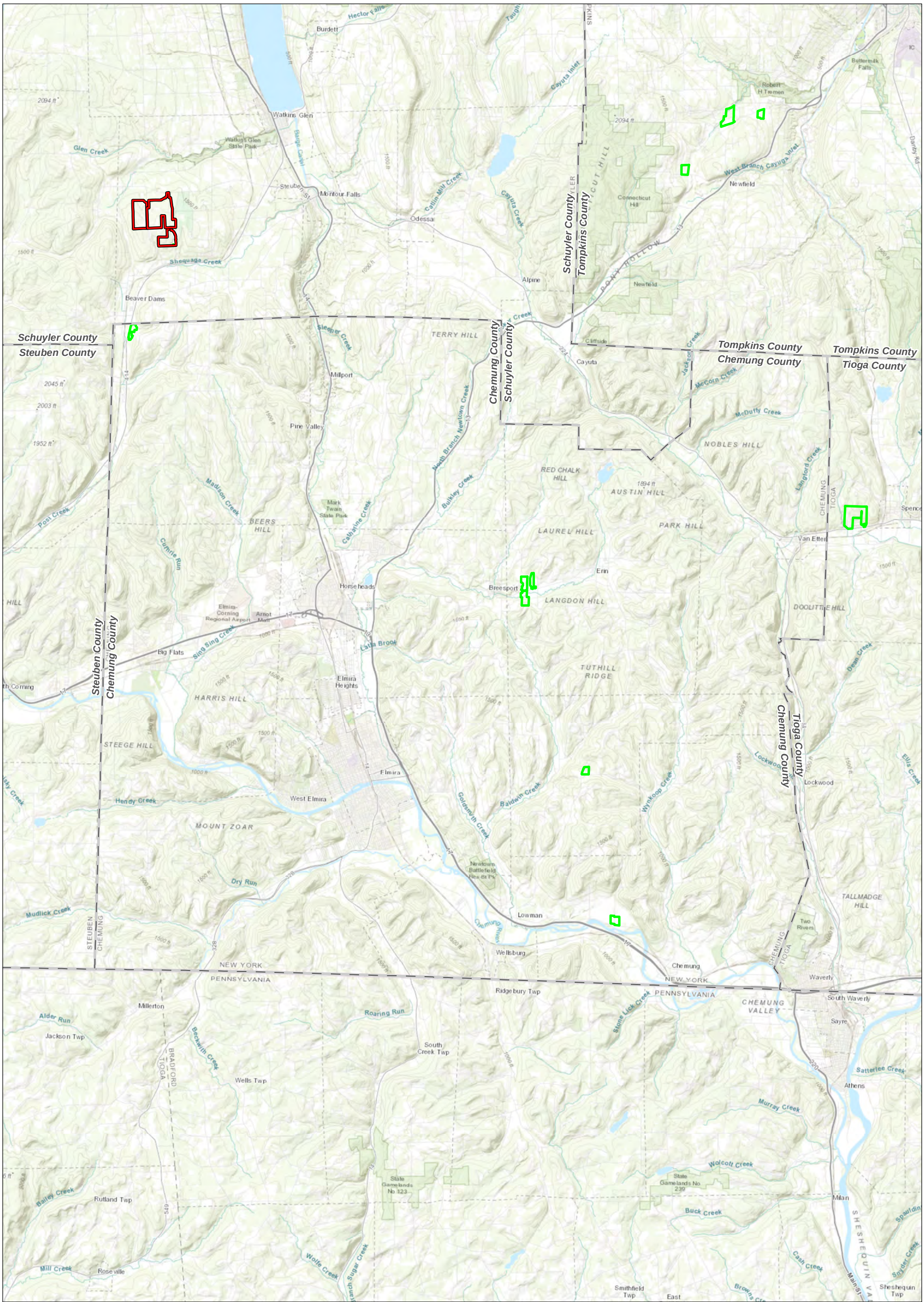
NEXTera ENERGY RESOURCES

GRASSLAND STUDY AREA
CATTARAUGUS COUNTY
WATKINS GLEN
SOLAR ENERGY CENTER, LLC
TOWN OF DIX, NY

FIGURE 2	MAY 2020

Map Produced by TRC


UNITED STATES
Jefferson County
Oswego County
Lewis County
Sandy Creek
Adams
South Sandy Creek
1075 ft
North Pond
South Pond
Great Lakes Seaway Trl
Pulaski
Cayuga County
Oswego County
Oswego
Mexico
104
Revolutionary Trl
West Branch Fish Creek
Wayne County
Cayuga County
Fulton
Central Square
Oswego County
Oneida County
Sodus
Wolcott
104
Oswego County
Onondaga County
Phoenix
Brewerton
481
49
Onondaga
Oneida Lake
Oswego County
Oneida County
370
Cross Lake
Baldwinsville
Bridgeport
Madison County
Madison County
Clyde
Erie Canal
90
Ninemile Creek
Minoa
Onondaga County
Madison County
Newark
Centerport
Fairmount
Syracuse
Wayne County
Ontario County
Wayne County
Seneca County
744 ft
1122 ft
Fayetteville
Manlius
Canandaigua Outlet
Montezuma National Wildlife Refuge
Grant Ave
Limestone Creek
Chittenango Creek
Ontario County
Seneca County
Seneca Falls
Auburn
Cayuga County
Onondaga County
Waterloo
Onondaga Creek
20
Geneva
Otisco Lake
Madison
Ridge Rd
Ontario County
Yates County
Onondaga County
Cortland County
Cortland
Cortland County
Madison County
Seneca Lake
Seneca County
Cayuga County
Penn Yan
14
Yates County
Seneca County
Cayuga County
Cortland County
Owasco Inlet
Cayuga County
Tompkins County
Tompkins County
Seneca County
Groton
Cortland
Chenango County
Cortland County
Steuben County
Yates County
Keuka Lake
54
Seneca County
Schuyler County
Trumansburg
96
2100 ft
Yates County
Schuyler County
1865 ft.
Finger Lakes National Forest
Schuyler County
Tompkins County
Tompkins County
Cortland County
2132 ft
81
Yates County
Schuyler County
Project Area
Solar Project
County Boundary
Data: NYS Office of Information Technology Services, GIS Program Office, 2018
Base Map: USGS/The National Map
N
0 1.252.5
Miles
MAP LOCATION
New York
NEXTera ENERGY RESOURCES
GRASSLAND STUDY AREA
CAYUGA COUNTY
WATKINS GLEN
SOLAR ENERGY CENTER, LLC
TOWN OF DIX, NY
FIGURE 2
MAY 2020
Map Produced by TRC


Project Area
Solar Project
County Boundary
Data: NYS Office of Information Technology Services, GIS Program Office, 2018
Base Map: USGS/The National Map
0 1.25 2.5 Miles
N
MAP LOCATION
New York
NEXTera ENERGY RESOURCES
GRASSLAND STUDY AREA
CHEMUNG COUNTY
WATKINS GLEN
SOLAR ENERGY CENTER, LLC
TOWN OF DIX, NY
FIGURE 2
MAY 2020
Map Produced by TRC

Project Area
Solar Project
County Boundary

Data: NYS Office of Information Technology Services, GIS Program Office, 2018
Base Map: USGS/The National Map

0 1.25 2.5 Miles

N

MAP LOCATION

New York

NEXTera ENERGY RESOURCES

GRASSLAND STUDY AREA
CHENANGO COUNTY
WATKINS GLEN
SOLAR ENERGY CENTER, LLC
TOWN OF DIX, NY

FIGURE 2	MAY 2020

Map Produced by TRC

Project Area
Solar Project
County Boundary

Data: NYS Office of Information Technology Services, GIS Program Office, 2018
Base Map: USGS/The National Map

MAP LOCATION

0 1.25 2.5 Miles

NEXTera ENERGY RESOURCES

GRASSLAND STUDY AREA
CORTLAND COUNTY
WATKINS GLEN
SOLAR ENERGY CENTER, LLC
TOWN OF DIX, NY

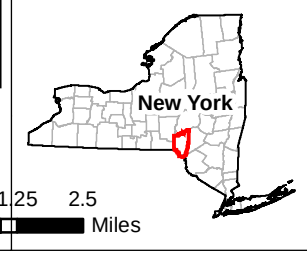
FIGURE 2 | MAY 2020

Map Produced by TRC

Project Area
Solar Project
County Boundary

Data: NYS Office of Information Technology Services, GIS Program Office, 2018
Base Map: USGS/The National Map

MAP LOCATION



NEXTera ENERGY RESOURCES

GRASSLAND STUDY AREA
DELAWARE COUNTY
WATKINS GLEN
SOLAR ENERGY CENTER, LLC
TOWN OF DIX, NY

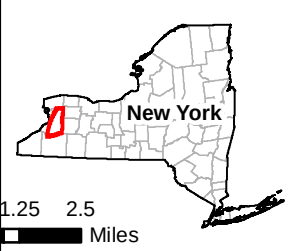
FIGURE 2	MAY 2020

Map Produced by TRC

Project Area
Solar Project
County Boundary

Data: NYS Office of Information Technology Services, GIS Program Office, 2018
Base Map: USGS/The National Map

MAP LOCATION



NEXTera ENERGY RESOURCES

GRASSLAND STUDY AREA
ERIE COUNTY
WATKINS GLEN
SOLAR ENERGY CENTER, LLC
TOWN OF DIX, NY

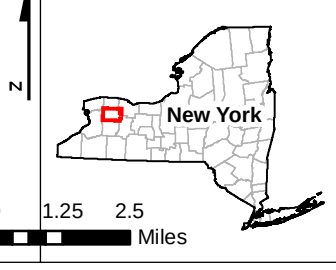
FIGURE 2	MAY 2020

Map Produced by TRC

Project Area
Solar Project
County Boundary

Data: NYS Office of Information Technology Services, GIS Program Office, 2018
Base Map: USGS/The National Map

MAP LOCATION



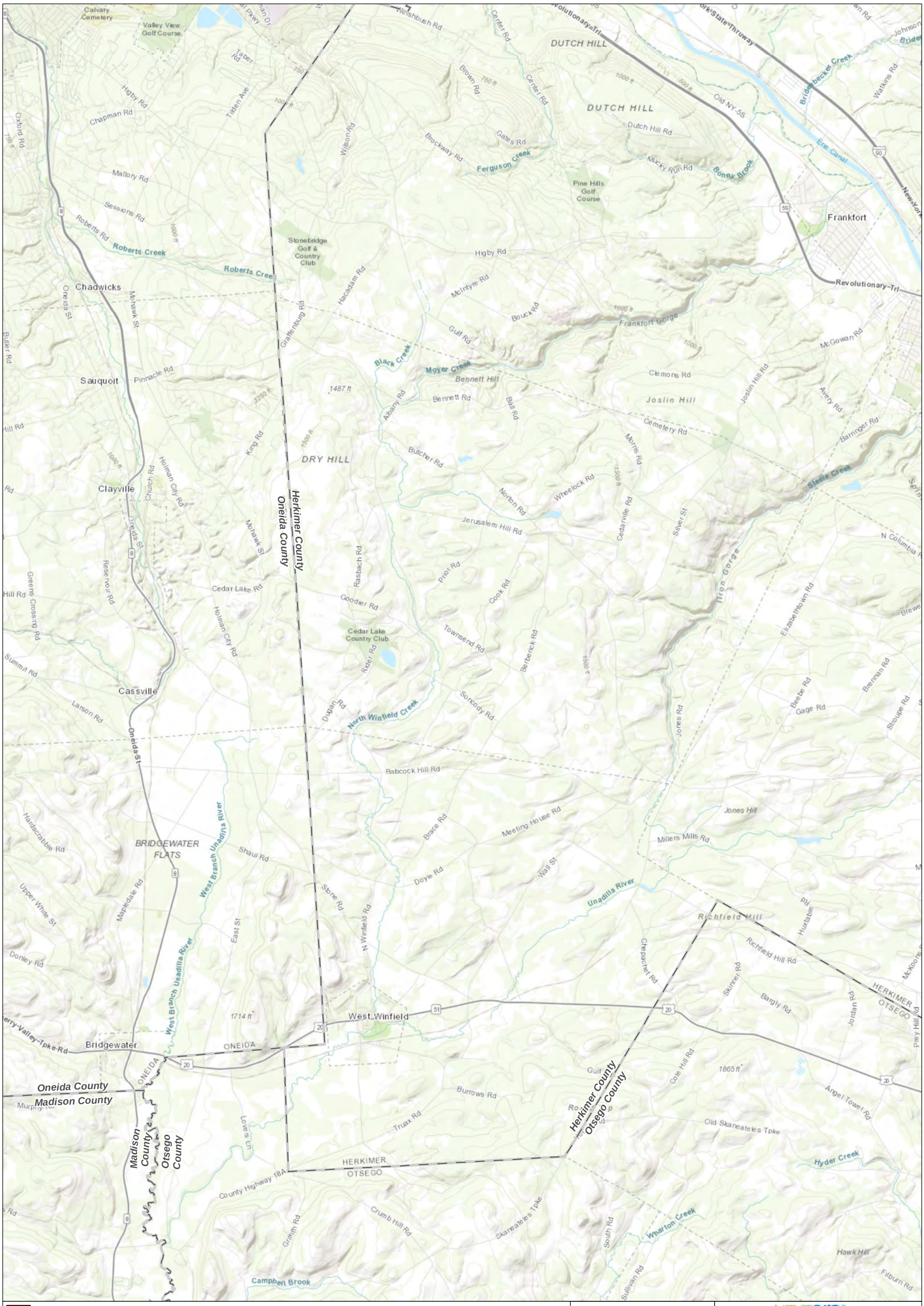
0 1.25 2.5 Miles

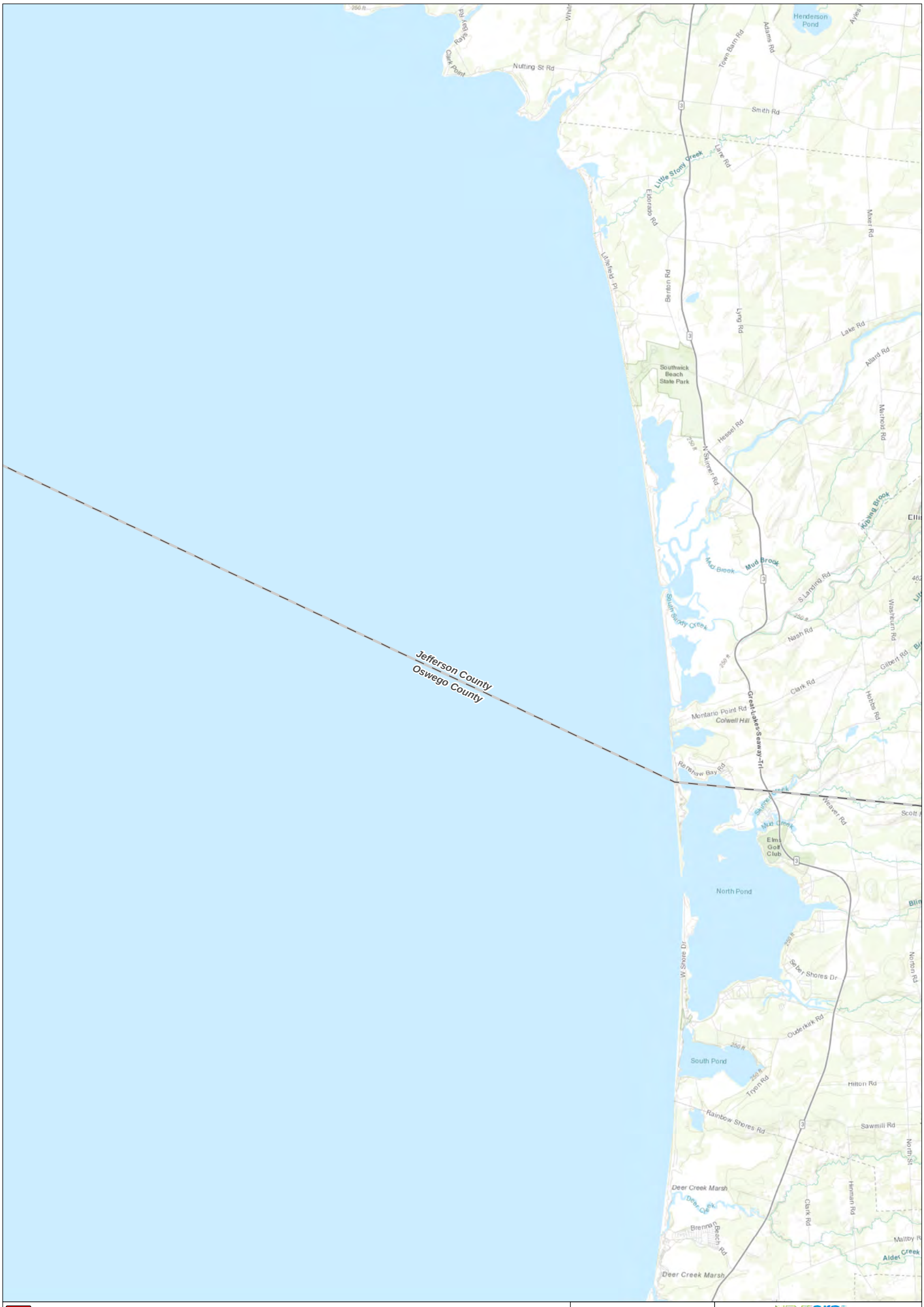
NEXTera ENERGY RESOURCES

GRASSLAND STUDY AREA
GENESEE COUNTY
WATKINS GLEN
SOLAR ENERGY CENTER, LLC
TOWN OF DIX, NY

FIGURE 2	MAY 2020

Map Produced by TRC


DUTCH HILL
DUTCH HILL
DRY HILL
Frankfort
Chadwicks
Sauquoit
Clayville
Cassville
Bridgewater
BRIDGEWATER FLATS
West Winfield
Joslin Hill
Richfield Hill
Jones Hill
Pine Hills Golf Course
Stonebridge Golf & Country Club
Cedar Lake Country Club
Calvary Cemetery
Valley View Golf Course
Frankfort Gorge
Iron Gorge
Herkimer County
Oneida County
Madison County
Otsego County
Roberts Creek
Ferguson Creek
Bonny Brook
Black Creek
Moyer Creek
Bennett Hill
Steele Creek
Unadilla River
West Branch Unadilla River
North Winfield Creek
Wharton Creek
Hyder Creek
Campbell Brook
Erie Canal
Old NY-5S
Revolutionary Trl
New York State Thruway
Dutch Hill Rd
Higby Rd
Mallory Rd
Sessions Rd
Roberts Rd
Chapman Rd
Oxford Rd
Tilden Ave
Taber Rd
Wilson Rd
Brockway Rd
Gates Rd
Mucky Run Rd
Center Rd
Brown Rd
Hershbush Rd
Watkins Rd
Bridgebecker Creek
Haldaam Rd
McIntyre Rd
Bouck Rd
Gulf Rd
Graffenburg Rd
Oneida St
Mohawk St
Pinnacle Rd
Butler Rd
Albany Rd
Ball Rd
Bennett Rd
Clemons Rd
McGowan Rd
Joslin Hill Rd
Avery Rd
Cemetery Rd
Barringer Rd
Morris Rd
Wheelock Rd
Norton Rd
Jerusalem Hill Rd
Cedarville Rd
Silver St
Butcher Rd
King Rd
Church Rd
Holman City Rd
Reservoir Rd
Greens Crossing Rd
Summit Rd
Larson Rd
Cedar Lake Rd
Goodier Rd
Rasbach Rd
Prior Rd
Cook Rd
Townsend Rd
Berberick Rd
Rider Rd
Dugan Rd
Sorcody Rd
Jones Rd
Elizabethtown Rd
Beebe Rd
Gage Rd
Brennan Rd
Stroupe Rd
Babcock Hill Rd
Meeting House Rd
Brace Rd
Miners Mills Rd
Wall St
Doyle Rd
Shaul Rd
Stone Rd
Hardscrabble Rd
Upper White St
Mapledale Rd
East St
N Winfield Rd
Donley Rd
Chepachet Rd
Skinner Rd
Richfield Hill Rd
Bangly Rd
Jordan Rd
Prey Hill Rd
McKoon Rd
Cole Hill Rd
Angel Tower Rd
Old Skaneateles Tpke
Skaneateles Tpke
Truax Rd
Burrows Rd
Lewis Ln
Griffith Rd
Crumb Hill Rd
South Rd
Sullivan Rd
Hawk Hill
Filburn Rd
Perry-Vallery-Tpke-Rd
County Highway 18A
HERKIMER
OTSEGO
ONEIDA
1714 ft
1865 ft
1487 ft
1250 ft
1500 ft
1000 ft
750 ft
500 ft
150 ft
100 ft
Project Area
Solar Project
County Boundary
MAP LOCATION
New York
N
0
1.25
2.5
Miles
Data: NYS Office of Information Technology Services, GIS Program Office, 2018
Base Map: USGS/The National Map
NEXTera ENERGY RESOURCES
GRASSLAND STUDY AREA
HERKIMER COUNTY
WATKINS GLEN
SOLAR ENERGY CENTER, LLC
TOWN OF DIX, NY
FIGURE 2
MAY 2020
Map Produced by TRC

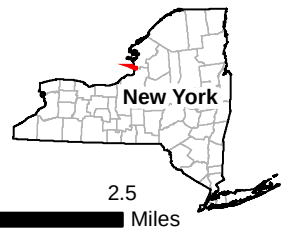


Project Area
Solar Project
County Boundary

N

0 1.25 2.5 Miles

MAP LOCATION



Data: NYS Office of Information Technology Services, GIS Program Office, 2018
Base Map: USGS/The National Map

NEXTera ENERGY RESOURCES

GRASSLAND STUDY AREA
JEFFERSON COUNTY
WATKINS GLEN
SOLAR ENERGY CENTER, LLC
TOWN OF DIX, NY

FIGURE 2	MAY 2020

Map Produced by TRC

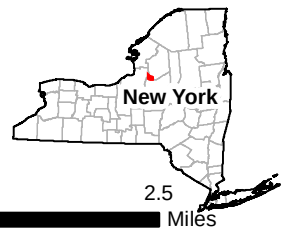
Project Area
Solar Project
County Boundary

Data: NYS Office of Information Technology Services, GIS Program Office, 2018
Base Map: USGS/The National Map

0 1.25 2.5 Miles

N

MAP LOCATION



NEXTera ENERGY RESOURCES

GRASSLAND STUDY AREA
LEWIS COUNTY
WATKINS GLEN
SOLAR ENERGY CENTER, LLC
TOWN OF DIX, NY

FIGURE 2 | MAY 2020

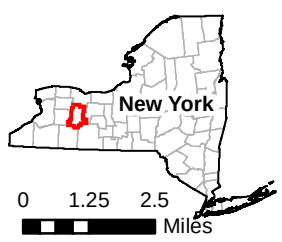
Map Produced by TRC

Project Area
Solar Project
County Boundary

Data: NYS Office of Information Technology Services, GIS Program Office, 2018
Base Map: USGS/The National Map

N

MAP LOCATION

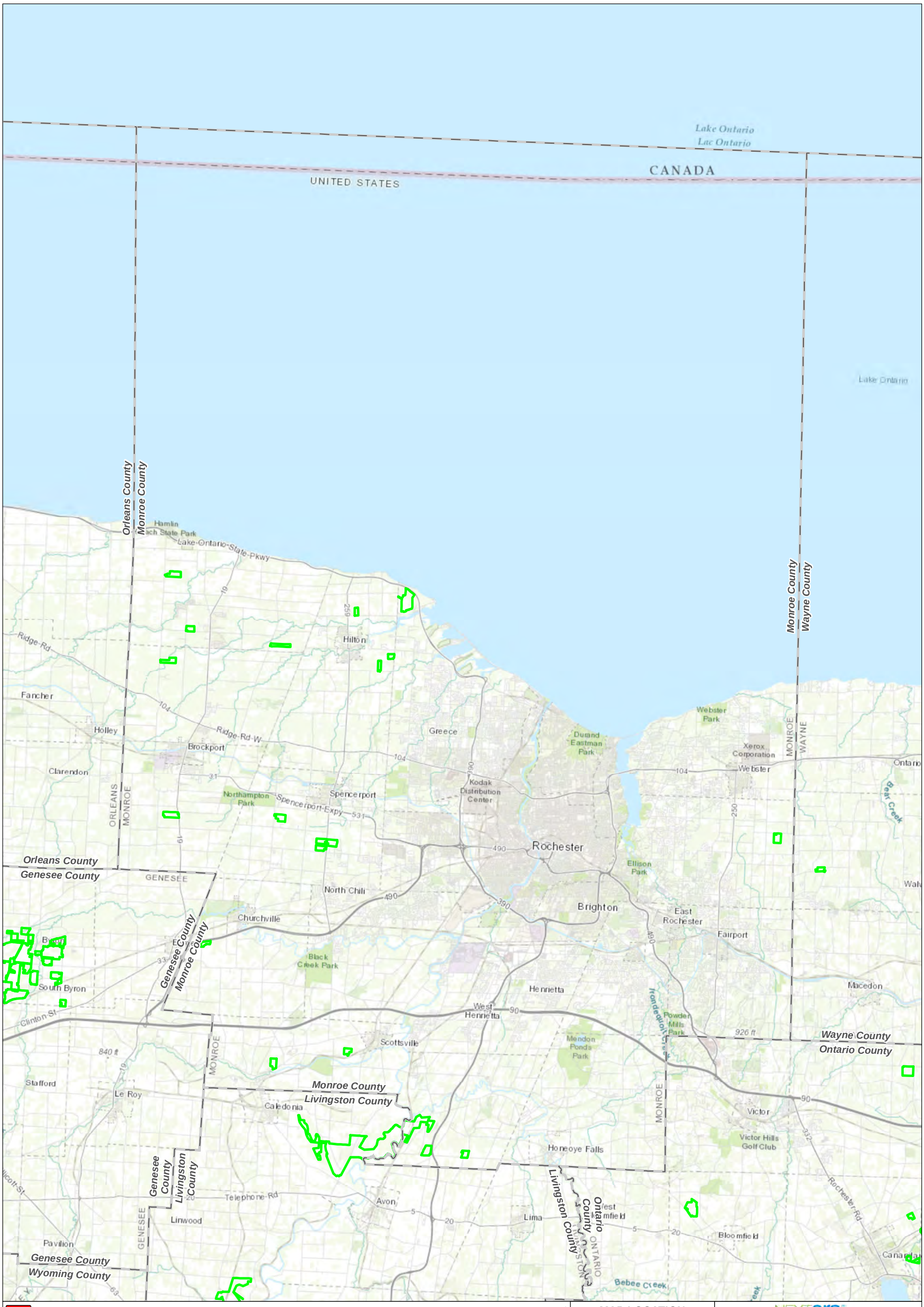


NEXTera ENERGY RESOURCES

GRASSLAND STUDY AREA
LIVINGSTON COUNTY
WATKINS GLEN
SOLAR ENERGY CENTER, LLC
TOWN OF DIX, NY

FIGURE 2 | MAY 2020

Map Produced by TRC


Lake Ontario
Lac Ontario
CANADA
UNITED STATES
Lake Ontario
Orleans County
Monroe County
Monroe County
Wayne County
Hamlin Beach State Park
Lake-Ontario-State-Pkwy
Hilton
Ridge-Rd
Fancher
Holley
Ridge-Rd-W
Brockport
Clarendon
Northampton Park
Spencerport
Spencerport-Expy
Greece
Durand Eastman Park
Webster Park
Xerox Corporation
Webster
Kodak Distribution Center
Rochester
Ellison Park
Orleans County
Genesee County
GENESEE
North Chili
Churchville
Brighton
East Rochester
Fairport
Black Creek Park
Henrietta
West Henrietta
Macedon
Powder Mills Park
Mendon Ponds Park
Scottsville
Wayne County
Ontario County
South Byron
Clinton St
Stafford
Le Roy
Caledonia
Monroe County
Livingston County
Honeoye Falls
Victor
Victor Hills Golf Club
Genesee County
Livingston County
Telephone-Rd
Avon
Linwood
Lima
Bloomfield
Pavilion
Genesee County
Wyoming County
Bebee Creek
Project Area
Solar Project
County Boundary
Data: NYS Office of Information Technology Services, GIS Program Office, 2018
Base Map: USGS/The National Map
MAP LOCATION
New York
0 1.25 2.5 Miles
N
NEXTera ENERGY RESOURCES
GRASSLAND STUDY AREA
MONROE COUNTY
WATKINS GLEN
SOLAR ENERGY CENTER, LLC
TOWN OF DIX, NY
FIGURE 2
MAY 2020
Map Produced by TRC

Project Area
Solar Project
County Boundary

Data: NYS Office of Information Technology Services, GIS Program Office, 2018
Base Map: USGS/The National Map

MAP LOCATION

0 1.25 2.5 Miles

NEXTera ENERGY RESOURCES

GRASSLAND STUDY AREA
NIAGARA COUNTY
WATKINS GLEN
SOLAR ENERGY CENTER, LLC
TOWN OF DIX, NY

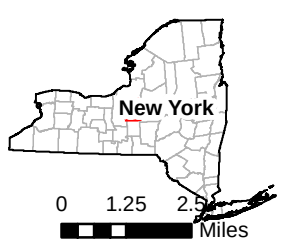
FIGURE 2	MAY 2020

Map Produced by TRC

Project Area
Solar Project
County Boundary

Data: NYS Office of Information Technology Services, GIS Program Office, 2018
Base Map: USGS/The National Map

MAP LOCATION

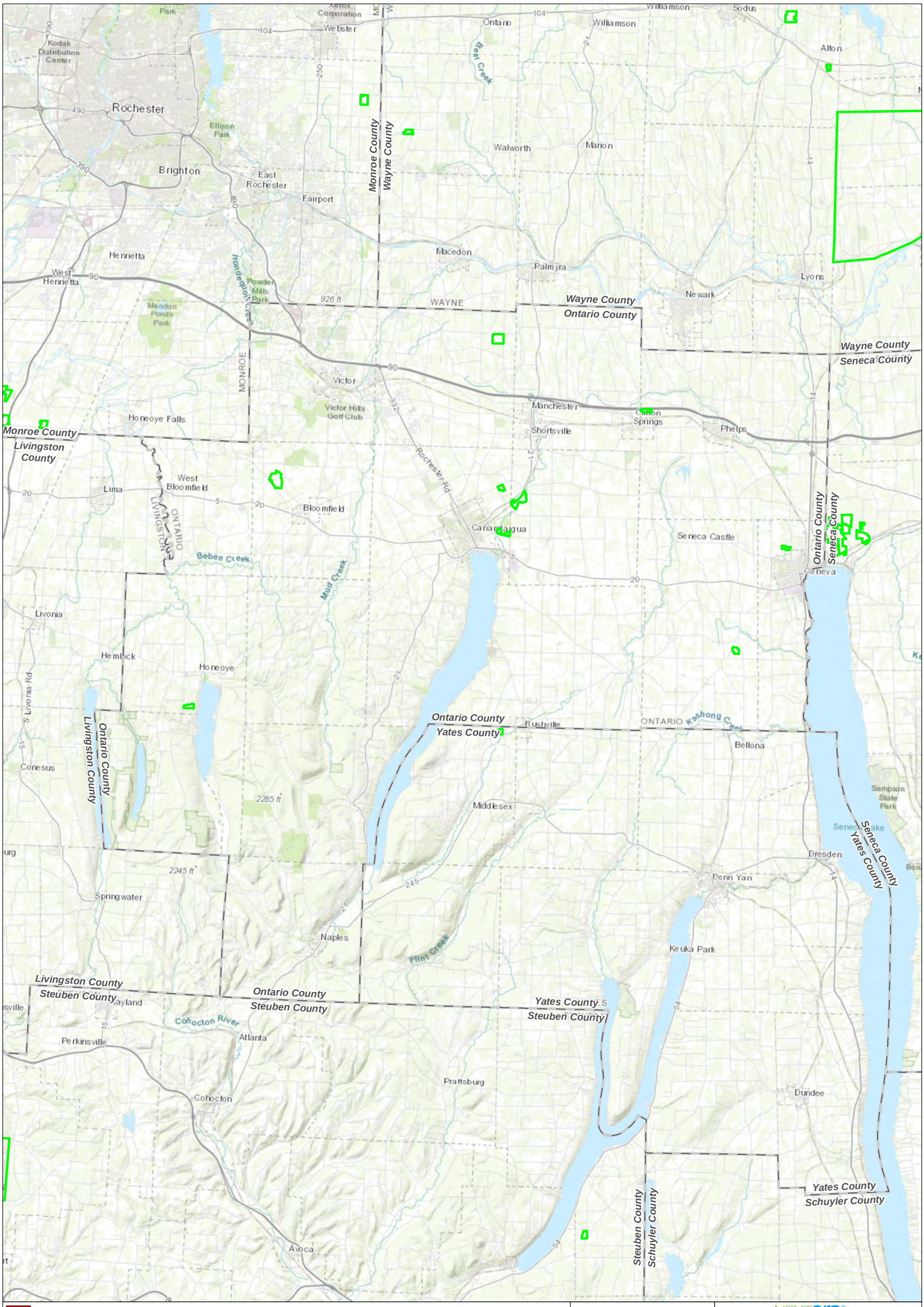


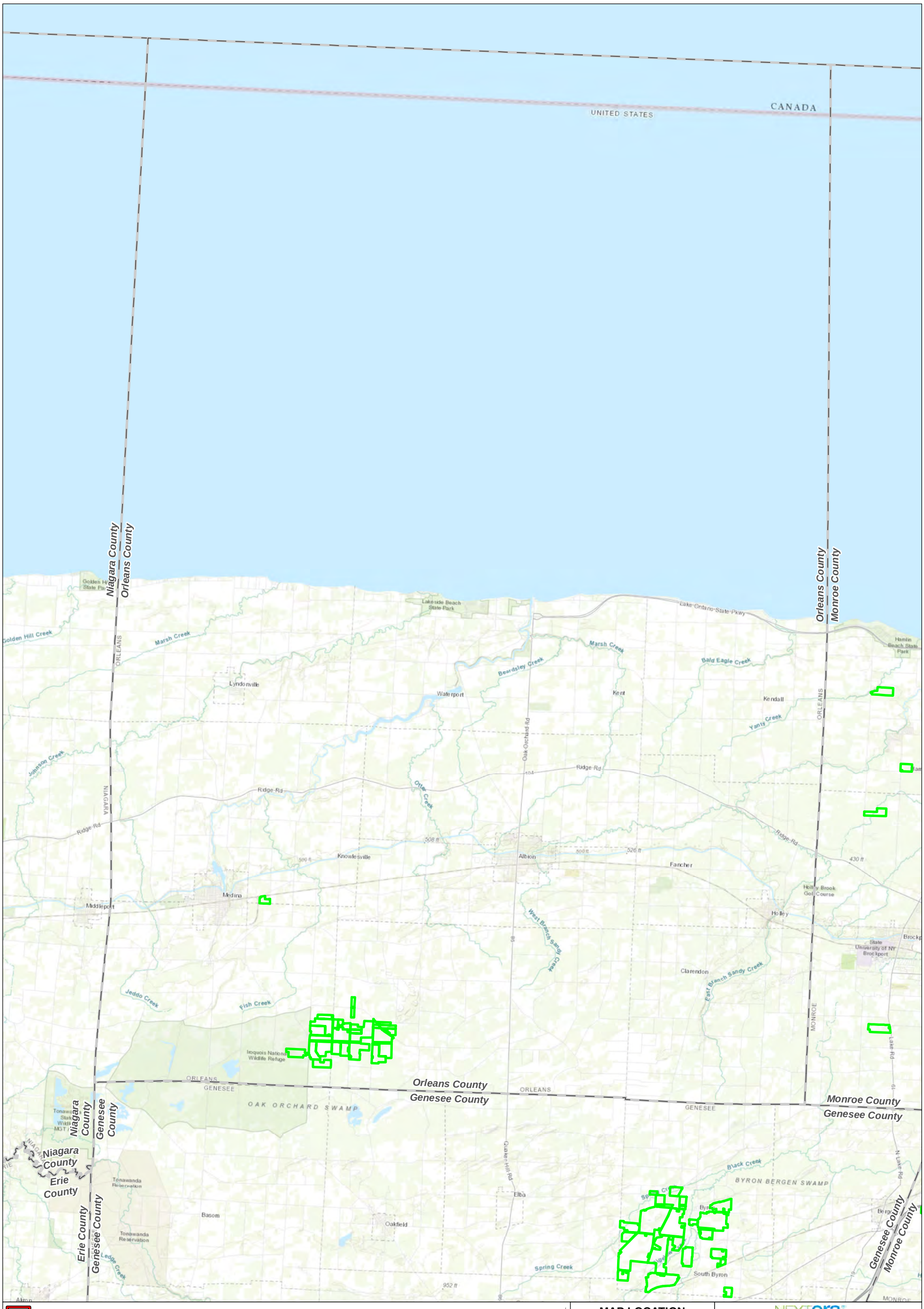
NEXTera ENERGY RESOURCES

GRASSLAND STUDY AREA
ONONDAGA COUNTY
WATKINS GLEN
SOLAR ENERGY CENTER, LLC
TOWN OF DIX, NY

FIGURE 2	MAY 2020

Map Produced by TRC


Rochester
Brighton
East Rochester
Fairport
Henrietta
West Henrietta
Mendon Ponds Park
Honeoye Falls
Victor
Victor Hills Golf Club
Webster
Xerox Corporation
Kodak Distribution Center
Ellison Park
Powder Mills Park
Ontario
Williamson
Sodus
Alton
Walworth
Marion
Macedon
Palmyra
Newark
Lyons
WAYNE
Monroe County
Wayne County
Ontario County
Seneca County
Livingston County
MONROE
ONTARIO
LIVINGSTON
Lima
West Bloomfield
Bloomfield
Canandaigua
Seneca Castle
Geneva
Livonia
Hemlock
Honeoye
Conesus
Springwater
Naples
Middlesex
Rushville
Bellona
Penn Yan
Dresden
Keuka Park
Yates County
Steuben County
Schuyler County
Perkinsville
Cohocton
Atlanta
Prattsburg
Avoca
Dundee
Sampson State Park
Seneca Lake
Beaver Creek
Bebee Creek
Mud Creek
Flint Creek
Cohocton River
Irondequoit Creek
Rochester Rd
S Livonia Rd
926 ft
2285 ft
2245 ft
245
Project Area
Solar Project
County Boundary
Data: NYS Office of Information Technology Services, GIS Program Office, 2018
Base Map: USGS/The National Map
N
MAP LOCATION
New York
0 1.25 2
Miles
NEXTera ENERGY RESOURCES
GRASSLAND STUDY AREA
ONTARIO COUNTY
WATKINS GLEN
SOLAR ENERGY CENTER, LLC
TOWN OF DIX, NY
FIGURE 2
MAY 2020
Map Produced by TRC



NEXTera ENERGY RESOURCES

GRASSLAND STUDY AREA
ORLEANS COUNTY

WATKINS GLEN
SOLAR ENERGY CENTER, LLC
TOWN OF DIX, NY

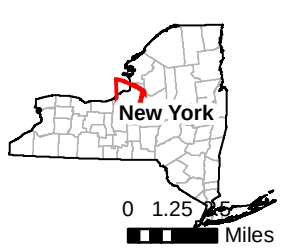
FIGURE 2	MAY 2020

Map Produced by TRC

Project Area
Solar Project
County Boundary

Data: NYS Office of Information Technology Services, GIS Program Office, 2018
Base Map: USGS/The National Map

MAP LOCATION



NEXTera ENERGY RESOURCES

GRASSLAND STUDY AREA
OSWEGO COUNTY
WATKINS GLEN
SOLAR ENERGY CENTER, LLC
TOWN OF DIX, NY

FIGURE 2	MAY 2020

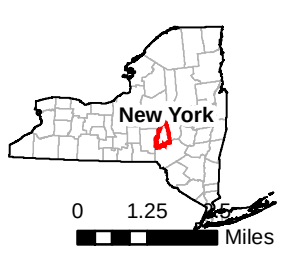
Map Produced by TRC

Project Area
Solar Project
County Boundary

Data: NYS Office of Information Technology Services, GIS Program Office, 2018
Base Map: USGS/The National Map

N

MAP LOCATION



NEXTera ENERGY RESOURCES

GRASSLAND STUDY AREA
OTSEGO COUNTY
WATKINS GLEN
SOLAR ENERGY CENTER, LLC
TOWN OF DIX, NY

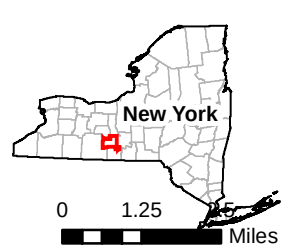
FIGURE 2	MAY 2020

Map Produced by TRC

Project Area
Solar Project
County Boundary

Data: NYS Office of Information Technology Services, GIS Program Office, 2018
Base Map: USGS/The National Map

MAP LOCATION

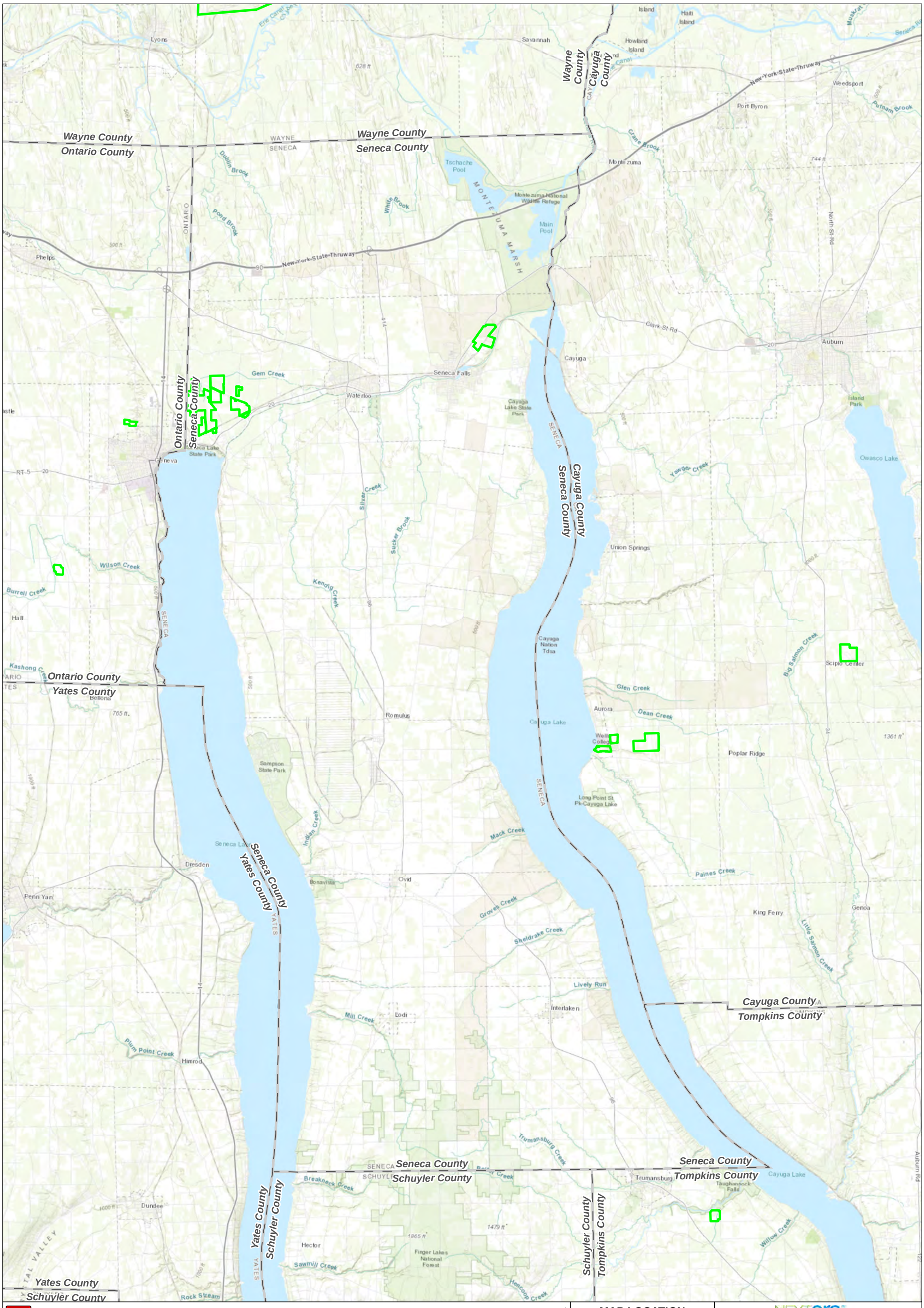


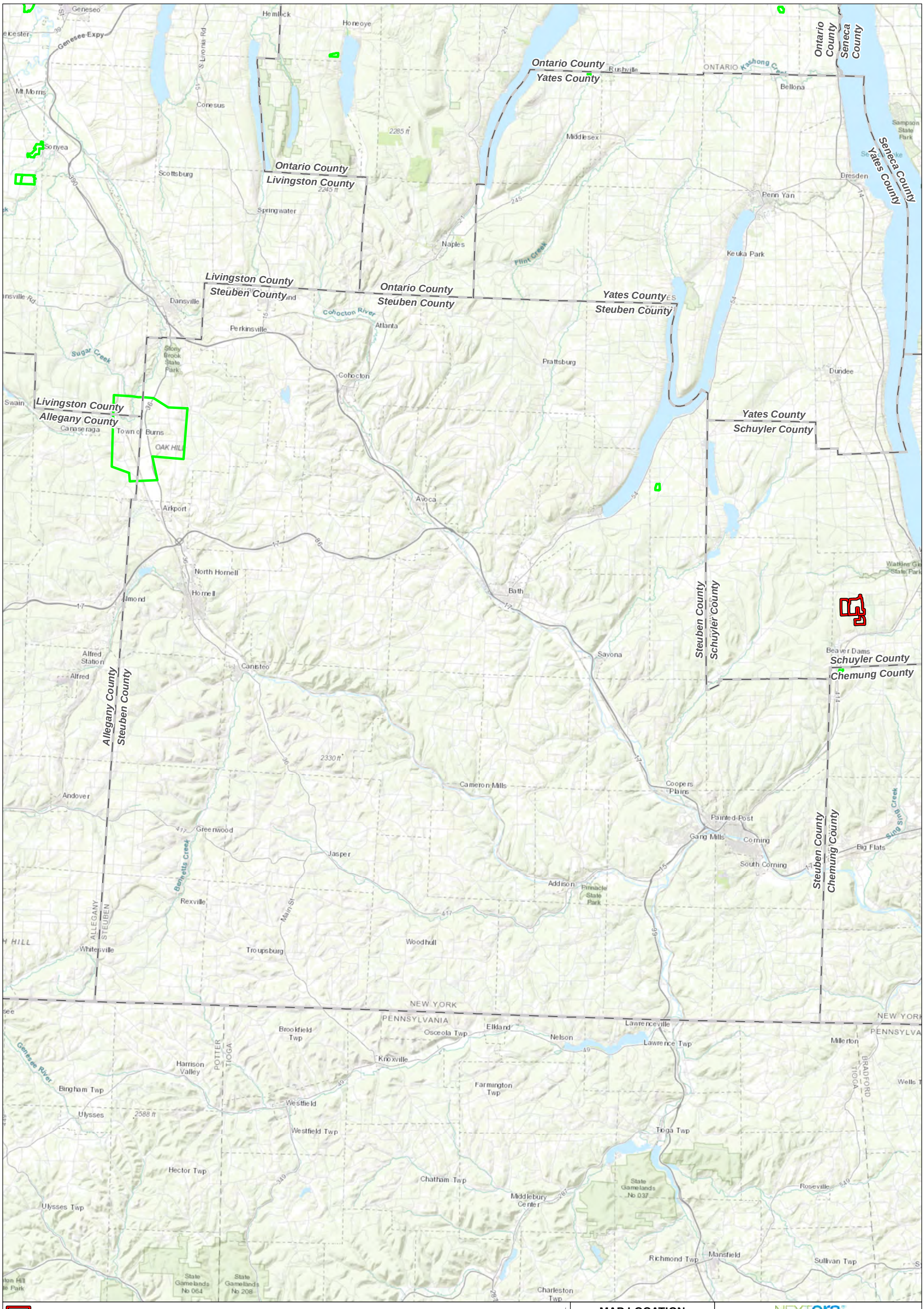
NEXTera ENERGY RESOURCES

GRASSLAND STUDY AREA
SCHUYLER COUNTY
WATKINS GLEN
SOLAR ENERGY CENTER, LLC
TOWN OF DIX, NY

FIGURE 2	MAY 2020

Map Produced by TRC

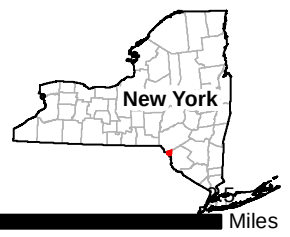

Wayne County
Ontario County
Wayne County
Seneca County
Wayne County
Cayuga County
Ontario County
Seneca County
Cayuga County
Seneca County
Ontario County
Yates County
Seneca County
Yates County
Cayuga County
Tompkins County
Seneca County
Schuyler County
Seneca County
Tompkins County
Yates County
Schuyler County
Schuyler County
Tompkins County
Lyons
Savannah
Howland Island
Haiti Island
Island
Weedsport
Port Byron
Montezuma
Tschache Pool
Montezuma National Wildlife Refuge
Main Pool
MONTEZUMA MARSH
Phelps
Clark St Rd
Auburn
Cayuga
Seneca Falls
Waterloo
Gem Creek
Cayuga Lake State Park
Seneca Lake State Park
Geneva
Wilson Creek
Burrell Creek
Hall
Kashong Creek
Bellona
765 ft.
Romulus
Sampson State Park
Seneca Lake
Dresden
Penn Yan
Bonavista
Ovid
Union Springs
Cayuga Nation Tdsa
Aurora
Cayuga Lake
Wells College
Poplar Ridge
Long Point St Pk-Cayuga Lake
Scipio Center
King Ferry
Genoa
Owasco Lake
Island Park
Interlaken
Lodi
Himrod
Plum Point Creek
Dundee
Hector
Finger Lakes National Forest
Rock Stream
Trumansburg
Taughannock Falls
Cayuga Lake
Dublin Brook
Pond Brook
White Brook
Crane Brook
Putnam Brook
North St Rd
Silver Creek
Sucker Brook
Kendig Creek
Yawger Creek
Big Salmon Creek
Glen Creek
Dean Creek
Mack Creek
Paines Creek
Groves Creek
Sheldrake Creek
Little Salmon Creek
Indian Creek
Mill Creek
Trumansburg Creek
Breakneck Creek
Sawmill Creek
Hemcoop Creek
Willow Creek
Auburn Rd
628 ft
744 ft
1361 ft
1865 ft
1479 ft
1000 ft
500 ft
Project Area
Solar Project
County Boundary
Data: NYS Office of Information Technology Services, GIS Program Office, 2018
Base Map: USGS/The National Map
MAP LOCATION
New York
0
1.25
2.5
Miles
N
NEXTera ENERGY RESOURCES
GRASSLAND STUDY AREA
SENECA COUNTY
WATKINS GLEN
SOLAR ENERGY CENTER, LLC
TOWN OF DIX, NY
FIGURE 2
MAY 2020
Map Produced by TRC


Ontario County
Yates County
Ontario County
Seneca County
Seneca County
Yates County
Ontario County
Livingston County
Livingston County
Steuben County
Ontario County
Steuben County
Yates County
Steuben County
Livingston County
Allegany County
Yates County
Schuyler County
Allegany County
Steuben County
Steuben County
Schuyler County
Schuyler County
Chemung County
Steuben County
Chemung County
Project Area
Solar Project
County Boundary
MAP LOCATION
New York
0 1.25 2.5 5
Miles
N
Data: NYS Office of Information Technology Services, GIS Program Office, 2018
Base Map: USGS/The National Map
NEXTera ENERGY RESOURCES
GRASSLAND STUDY AREA
STEUBEN COUNTY
WATKINS GLEN
SOLAR ENERGY CENTER, LLC
TOWN OF DIX, NY
FIGURE 2
MAY 2020
Map Produced by TRC

Project Area
Solar Project
County Boundary

N

MAP LOCATION



0 1.25 2.5 Miles

Data: NYS Office of Information Technology Services, GIS Program Office, 2018
Base Map: USGS/The National Map

NEXTera ENERGY RESOURCES

GRASSLAND STUDY AREA
SULLIVAN COUNTY
WATKINS GLEN
SOLAR ENERGY CENTER, LLC
TOWN OF DIX, NY

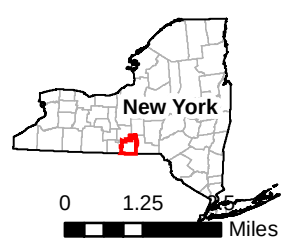
FIGURE 2	MAY 2020

Map Produced by TRC

Project Area
Solar Project
County Boundary

Data: NYS Office of Information Technology Services, GIS Program Office, 2018
Base Map: USGS/The National Map

MAP LOCATION

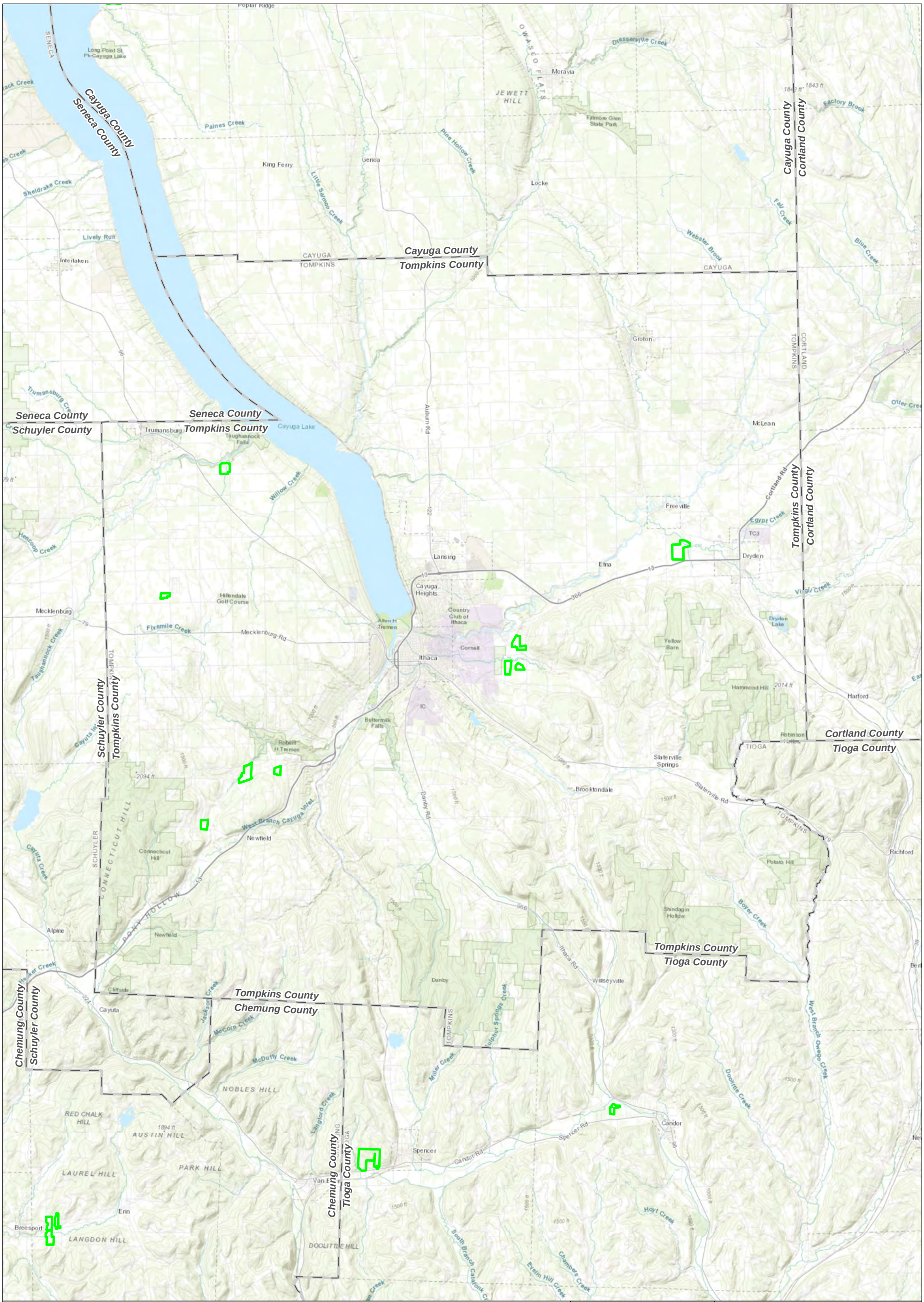


NEXTera ENERGY RESOURCES

GRASSLAND STUDY AREA
TIOGA COUNTY
WATKINS GLEN
SOLAR ENERGY CENTER, LLC
TOWN OF DIX, NY

FIGURE 2	MAY 2020

Map Produced by TRC


Cayuga County
Seneca County
Cayuga County
Cortland County
Cayuga County
Tompkins County
Seneca County
Schuyler County
Seneca County
Tompkins County
Schuyler County
Tompkins County
Tompkins County
Cortland County
Cortland County
Tioga County
Tompkins County
Tioga County
Chemung County
Schuyler County
Tompkins County
Chemung County
Chemung County
Tioga County
Project Area
Solar Project
County Boundary
Data: NYS Office of Information Technology Services, GIS Program Office, 2018
Base Map: USGS/The National Map
MAP LOCATION
New York
0 1.25 2.5 Miles
N
NEXTera ENERGY RESOURCES
GRASSLAND STUDY AREA
TOMPKINS COUNTY
WATKINS GLEN
SOLAR ENERGY CENTER, LLC
TOWN OF DIX, NY
FIGURE 2
MAY 2020
Map Produced by TRC

CANADA

UNITED STATES

Lake Ontario

Monroe County — Wayne County

Wayne County — Cayuga County

Webster Park

Xerox Corporation

Webster

Ontario

Bear Creek

East Williamson

Williamson

Sodus

Sodus Point

Chimney Bluffs State Park

Fair Haven Beach State Park

Fair Haven

Red Creek

Wolcott

Alton

North Rose

Walworth

Marion

Fairport

Macedon

Palmyra

Newark

Lyons

Clyde

South Butler

Savannah

Howland Island

Wog Island

Erie Canal

Montezuma

Montezuma National Wildlife Refuge

Victor

Victor Hills Golf Club

Manchester

Shortsville

Clifton Springs

Phelps

Rochester Rd

Clark St Rd

926 ft

Wayne County — Ontario County

Wayne County — Seneca County

Ontario County — Seneca County

Seneca County — Cayuga County

Project Area

Solar Project

County Boundary

Data: NYS Office of Information Technology Services, GIS Program Office, 2018
Base Map: USGS/The National Map

N

MAP LOCATION

New York

0 1.25 2.5 Miles

NEXTera ENERGY RESOURCES

GRASSLAND STUDY AREA
WAYNE COUNTY
WATKINS GLEN
SOLAR ENERGY CENTER, LLC
TOWN OF DIX, NY

FIGURE 2	MAY 2020

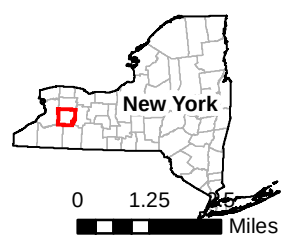
Map Produced by TRC

Project Area
Solar Project
County Boundary

Data: NYS Office of Information Technology Services, GIS Program Office, 2018
Base Map: USGS/The National Map

N

MAP LOCATION



NEXTera ENERGY RESOURCES

GRASSLAND STUDY AREA
WYOMING COUNTY
WATKINS GLEN
SOLAR ENERGY CENTER, LLC
TOWN OF DIX, NY

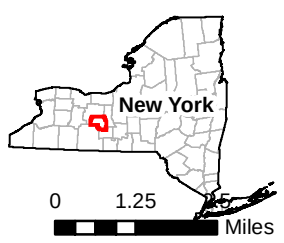
FIGURE 2 | MAY 2020

Map Produced by TRC

Project Area
Solar Project
County Boundary

N

MAP LOCATION



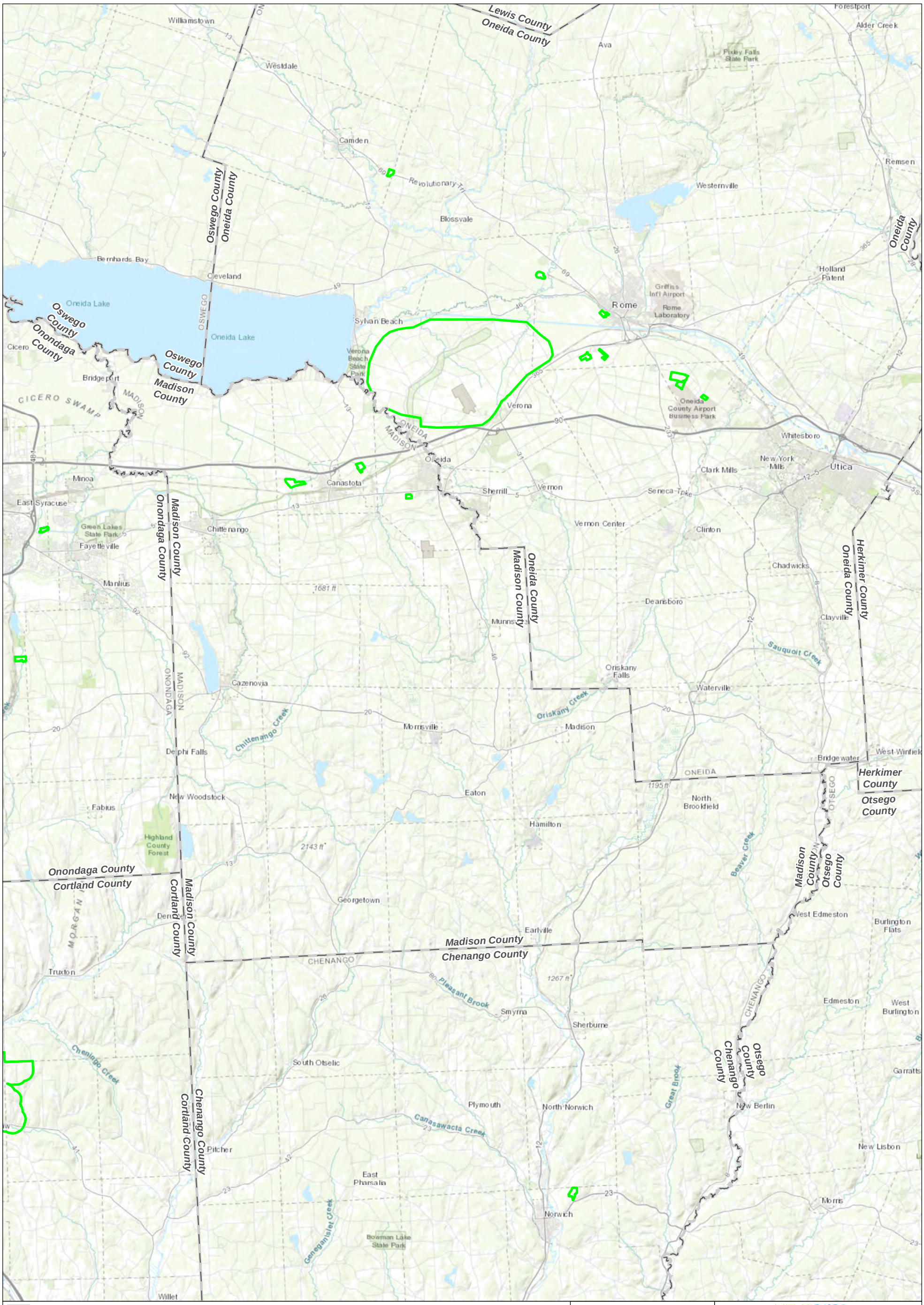
Data: NYS Office of Information Technology Services, GIS Program Office, 2018
Base Map: USGS/The National Map

NEXTera ENERGY RESOURCES

GRASSLAND STUDY AREA
YATES COUNTY
WATKINS GLEN
SOLAR ENERGY CENTER, LLC
TOWN OF DIX, NY

FIGURE 2	MAY 2020

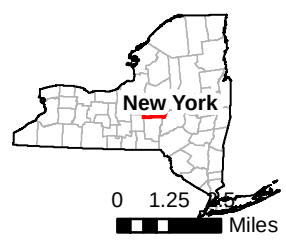
Map Produced by TRC



Project Area
Solar Project
County Boundary

Data: NYS Office of Information Technology Services, GIS Program Office, 2018
Base Map: USGS/The National Map

MAP LOCATION



NEXTera ENERGY RESOURCES

GRASSLAND STUDY AREA
MADISON COUNTY
WATKINS GLEN
SOLAR ENERGY CENTER, LLC
TOWN OF DIX, NY

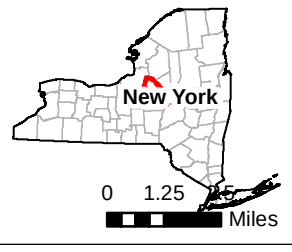
FIGURE 2 | MAY 2020

Map Produced by TRC

Project Area
Solar Project
County Boundary

Data: NYS Office of Information Technology Services, GIS Program Office, 2018
Base Map: USGS/The National Map

MAP LOCATION

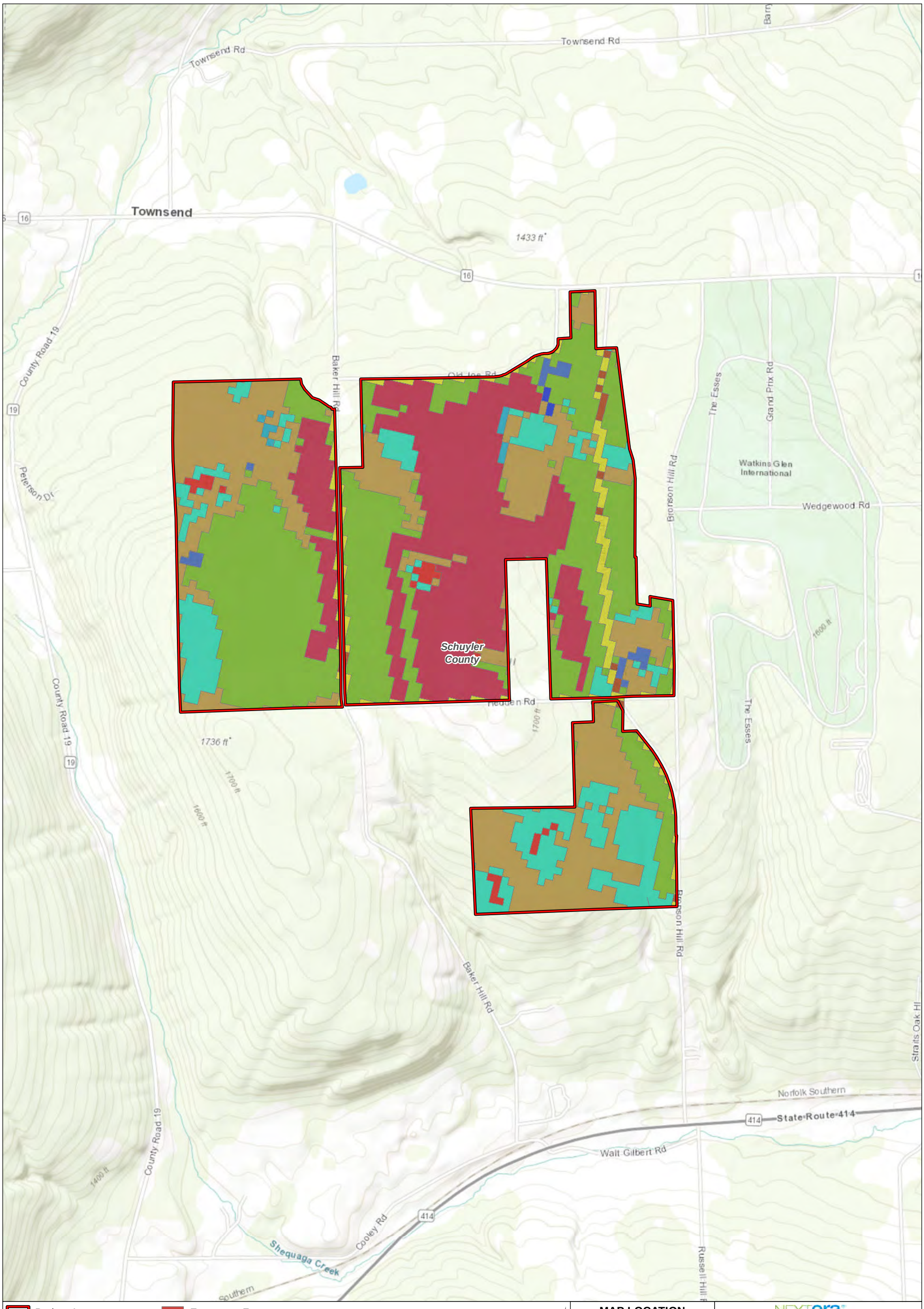


NEXTera ENERGY RESOURCES

GRASSLAND STUDY AREA
ONEIDA COUNTY
WATKINS GLEN
SOLAR ENERGY CENTER, LLC
TOWN OF DIX, NY

FIGURE 2	MAY 2020

Map Produced by TRC



Project Area
County Boundary

Land Cover Classification

Cultivated Crops
Deciduous Forest
Developed, Low Intensity
Developed, Open Space
Evergreen Forest
Hay/Pasture
Herbaceuous
Mixed Forest
Shrub/Scrub
Woody Wetlands

N

Data: USGS National Land Cover Dataset, 2016
Base Map: NYS Office of Information Technology Services, GIS Program Office, 2018; Esri and its contributors

0 1,250 2,500 Feet

MAP LOCATION

NEXTera ENERGY RESOURCES

NLCD PROJECT AREA

WATKINS GLEN SOLAR ENERGY CENTER, LLC
TOWN OF DIX, NY

FIGURE 3	MAY 2020

Map Produced by TRC

\\employees\gis\GIS\1-PROJECTS\NEXTERA\NEER\5-MXD\Figures\Grassland\WatkinsGlen_Fig3_Grassland_NLCD_11x17P_2020-05-07.mxd

Mud Lake Hammondsport Rd
Mud Lake Hammondsport Rd
14
Village of Watkins Glen
N Main St/NY-14
S Decatur St
County Road 16
414
414
414
Hornby Rd
Hornby Rd
Brewer Dams Rd
Schuyler County
Steuben County
Steuben County
Chemung County
Schuyler County
Chemung County
Chambers Rd

Project Area
2-Mile Study Area
Town Boundary
Village Boundary
County Boundary

Land Cover Classification
Grassland/Herbaceous
Hay/Pasture

Data: USGS National Land Cover Dataset, 2016
Base Map: NYS Office of Information Technology Services, GIS Program Office, 2018; Esri and its contributors

0 2,000 4,000 Feet

N

MAP LOCATION

New York

NEXTera ENERGY RESOURCES

NLCD - GRASSLAND/HERBACEOUS AND HAY/PASTURE

WATKINS GLEN SOLAR ENERGY CENTER, LLC
TOWN OF DIX, NY

FIGURE 4	MAY 2020

Map Produced by TRC

\\employees\gis\GIS\1-PROJECTS\NEXTERA\NEER\5-MXD\Figures\Grassland\WatkinsGlen_Fig4_Grassland_NLCD_11x17P_2020-05-07.mxd

Project Area
County Boundary
Grassland Study Area

Land Cover Classification

Grassland/Herbaceuous
Hay/Pasture

Data: NYS Office of Information Technology Services, GIS Program Office, 2018
Base Map: USGS/The National Map

0 20 40 Miles

N

MAP LOCATION

New York

NEXTera ENERGY RESOURCES

NLCD - GRASSLAND/HERBACEOUS AND HAY/PASTURE

WATKINS GLEN SOLAR ENERGY CENTER, LLC
TOWN OF DIX, NY

FIGURE 5	MAY 2020

Map Produced by TRC