

# **Hoffman Falls Wind Project**

**Matter No. 23-00038**

**900-2.16 Exhibit 15**

**Agricultural Resources**

**Revision 1**

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## EXHIBIT 15 AGRICULTURAL RESOURCES

As described in this Exhibit, the majority of the Facility Site is enrolled in Certified Agricultural Districts and approximately 40% of the Facility Site is comprised of active agricultural land.<sup>1</sup> To date, numerous wind projects have been built on agricultural land and within Certified Agricultural Districts in New York State. When appropriately designed and built, these projects are consistent with, and supportive of, agricultural land uses and districts and allow continued use of farmland for agricultural production. In addition, as described in Exhibit 18, direct economic benefits of wind facilities, including the proposed Project, will support existing agricultural operations in the form of lease payments.

Wind turbines sited in agricultural land are compatible with and can even be beneficial to agricultural production as well as farmers. Many crops (e.g., corn) require a high availability of carbon dioxide (CO<sub>2</sub>) in order to grow. Wind turbines increase the amount of air being mixed above agricultural lands and can therefore increase the rate of photosynthesis by allowing more CO<sub>2</sub> to become available for crops, which spurs more growth and increases crop yields (Afetian, 2018). A boost in CO<sub>2</sub> can also reduce water loss through transpiration. Additionally, windier conditions overnight results in a smaller amount of dew on leaves, which decreases the opportunity for harmful fungal diseases to grow on crops (Afetian, 2018). Wind turbines can also stabilize temperatures and minimize impacts caused by significant temperature swings (Afetian, 2018).

Moreover, renewable energy produced by wind facilities such as the proposed Facility reduce the effects of climate change on agriculture and farming. It is commonly known that farming practices and agricultural production around the world, and here in New York, are impacted by the effects of climate change, such as severe weather, including hotter summers with frequent drought conditions, warmer winters with more lake-effect snowstorms, and storm systems with extreme rainfall. These climactic factors create abiotic stresses for crops, such as salinity, drought, heat stress, and cold stress (Malhi et al., 2021). In the northeastern United States, there is a probability of more warm extremes, lesser cold extremes, and strengthened precipitation extremes in the future, and these changes are intensified by higher greenhouse gas emissions (Malhi et al., 2021). In parallel, continued sea-level rise along heavily populated coastlines has the potential to displace millions of residents and create new real estate development pressures for farmland. Wind energy generating facilities, such as the proposed Facility, have fewer overall effects on the environment than many other energy sources, offering an opportunity to reduce state-wide reliance on fossil fuels with the downstream effect of reducing the negative consequences of climate change.

In addition to having crop production benefits, wind generating facilities can also be financially beneficial to agricultural landowners. Landowners can either sell their land completely or they can lease their land for the siting of wind facility components. Farmers can then use the income generated from either selling or leasing the land to reinvest in their agricultural land. If the land is leased, the portion of the farmland that

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<sup>1</sup> Active agricultural land is defined as all lands involved in the production of crops, livestock and livestock products at least three of the last five years.

will not host turbines remains usable for crop production, even after the construction of the facility has taken place (Trvst, 2022).

## (a) Study Area Assessment

### (1) NYS Certified Agricultural Districts

The Agricultural Districts Law, (Article 25-AA, Section 305-A of the New York State Agriculture and Markets Law), is a county- and state-wide effort intended to preserve, protect, and encourage the development and improvement of New York State's most valuable agricultural assets. The Agricultural Districts Law encourages the continued use of farmland for agricultural production by the following means:

- Provide a framework to limit local regulation on farm practices.
- Modify public agencies' ability to acquire land through eminent domain.
- Modify the right to advance public funds to construct facilities that encourage development.
- Require state agencies to modify regulations to encourage farming.
- Provide Right to Farm provisions for protection from private nuisance suits.

The Agricultural Districts Law also allows reduced property tax bills for land in agricultural production by limiting the property tax assessment of such land to its prescribed agricultural assessment value. Depending on the design and construction plans, projects such as the Facility can be consistent with and supportive of agricultural land uses if the site is allowed to return to its prior agricultural use following decommissioning.

New York State Agriculture and Markets Law §303b allows land to be added to agricultural districts through an annual process; however, land can only be removed from districts as part of a mandatory eight-year review. Madison County contains four agricultural districts, of which two (Madison County Agricultural Districts 1 and 2) occur within the Facility Site. The next eight-year reviews for Madison County Agricultural Districts 1 and 2 are scheduled for September 10, 2029 and September, 17 2028, respectively.

The 5-mile Study Area, which encompasses approximately 122,462 acres, includes agricultural district lands in Madison and Oneida Counties. The 3,897-acre Facility Site includes only agricultural district lands in Madison County (see Table 15-1). Approximately 44% of the 5-mile Study Area and 63% of the Facility Site, respectively, are comprised of lands enrolled in an agricultural district.

**Table 15-1. Lands Enrolled in Agricultural Districts**

Area of Interest	Lands Enrolled in Agricultural Districts (acres)
New York State	>9,000,000
Madison County	158,742
<b>5-mile Study Area</b>	<b>54,051</b>
Madison County Agricultural District 1	21,519

Area of Interest	Lands Enrolled in Agricultural Districts (acres)
Madison County Agricultural District 2	24,901
Madison County Agricultural District 3	7,299
Madison County Agricultural District 4	67
Oneida County Agricultural District 4	265
<b>Facility Site</b>	<b>2,460</b>
Madison County Agricultural District 1	1,528
Madison County Agricultural District 2	932

Figure 15-1 depicts all properties enrolled in a New York State Certified Agricultural District within the Facility Site and the 5-mile Study Area.

## (2) Land Receiving Real Property Agricultural Value Assessment

As mentioned above, agricultural lands may qualify for a tax break through the agricultural value assessments program. Land taxes are based on current land use and are determined by the Town Assessor, independent of the agricultural district. No parcels within the Facility Site are enrolled in the agricultural value assessment program; however, 13,737 acres associated with 237 parcels within the 5-mile Study Area are enrolled (11% of the 5-mile Study Area). Figure 15-1 depicts parcels receiving real property agricultural value assessment within the Facility Site and 5-mile Study Area.

Shapefiles of all parcels within the 5-mile Study Area that are enrolled in a certified Agricultural District or that received a Real Property Agricultural Value Assessment, are being submitted with this Application.

## (3) Compliance with Local Zoning

The Facility Site is proposed in areas zoned for Agricultural, Residential, and Commercial Uses in the Towns of Eaton, Fenner, and Nelson. There are no published zoning maps or publicly available descriptions of any existing or proposed zoning districts in the Town of Smithfield.<sup>2</sup> Figure 3-6 depicts mapped zoning districts that intersect the Facility Site.

The objective of the Town of Eaton's Agricultural, Residential, Commercial Zone (ARC) is *"to preserve farmlands and adjoining settlements as long as possible, to provide for separate residences of all kinds and to invite all other uses, under certain controls, in order to assure the livelihood and enjoyment of those who live there"* (Town of Eaton Zoning Regulation, Section 120-10). As outlined in §120-23.14 of the Town of Eaton Code, Commercial Wind Facilities may be permitted in the ARC district through a special use permit and site plan approval. Large-scale wind energy systems are an allowable use within the ARC District if the project meets the standards and regulations outlined in the Wind Energy Facilities Law (§120-23.15 of the Town of Eaton Code).

<sup>2</sup> Per personnel communication with the Town of Smithfield Clerk.

The intent of the Town of Fenner's A and B Districts is to *"provide attractive built-up housing areas in rural settings that will maintain health via proper sewage disposal, safe water supply, and the minimum of nuisance indifferent land uses"* and *"preserve farmlands and adjoining settlements as long as possible to provide for separate residence of all kinds, and to invite other uses, under certain controls, in order to assure the livelihood and enjoyment of those who live there"*, respectively. In accordance with Section 301 and 302 of the 1997 Town of Fenner Zoning Law, as amended by Local Laws No. 1 of 2000, 2001, 2005, and 2009, public utility uses are allowed in A and B Districts.

The Town of Fenner created a third district, District C, in 2000, in response to the proposed Fenner Wind Farm project. District C was created to *"foster the development of the Town's windpower resource while preserving the farmlands and adjoining settlements as compatible adjoining uses"*. District C includes just those parcels hosting wind turbines and associated infrastructure for the Fenner Wind project and has been amended twice, once in 2001 and again in 2005 to encompass all parcels hosting Fenner Wind project components. The Town has not expanded District C to include parcels hosting the proposed Facility. As outlined throughout this Exhibit the proposed Facility is consistent with preserving farmlands in the host municipalities. See Exhibit 24 for further details on the Applicant's waiver request and compliance with the Town of Fenner's zoning requirements.

The intent of the Town of Nelson's Rural (R) District is *"to maintain the area's rural and natural setting, promote agricultural and equestrian land uses, and to preserve open space, prime agricultural soils, natural resources, environmentally sensitive areas, and scenic vistas."* According to Section 403 of the 2011 Town of Nelson Land Use and Development Law, commercial wind energy facilities are an allowable use within the Rural District.

#### (4) Agricultural and Non-Agricultural Land Uses

Figure 15-2 and Table 15-2 show the distribution of agricultural land uses throughout the Facility Site and 5-mile Study Area. According to the United States Department of Agriculture (USDA) National Agricultural Statistics Service (NASS) Cropland Data Layer (USDA, 2022), the dominant agricultural uses within the 5-mile Study Area (by acreage) include grassland/pasture, corn, and alfalfa. Most agricultural land within the Facility Site is devoted to corn, grass/pasture, and alfalfa. To a lesser extent, agricultural lands in the Facility Site are also currently designated other hay/non-alfalfa, oats, and soybeans.

**Table 15-2. Agricultural Land Uses within the Facility Site and the 5-Mile Study Area**

Existing Uses	5-Mile Study Area		Facility Site	
	Acres	%	Acres	%
Agricultural Uses				
Grassland/Pasture	20,814.7	17	606.2	16
Corn	12,010.8	10	661.8	17
Alfalfa	10,392.5	8	310.0	8
Other Hay/Non-Alfalfa	8,130.7	7	196.8	5
Soybeans	1,818.1	1	41.1	1
Dry Beans	371.0	<1	1.1	<1
Oats	318.2	<1	48.7	1

Existing Uses	5-Mile Study Area		Facility Site	
	Acres	%	Acres	%
Winter Wheat	307.8	<1	0.4	<1
Clover/Wildflowers	39.6	<1	0.7	<1
Rye	24.5	<1	0.4	<1
Barley	21.8	<1	--	--
Sorghum	9.8	<1	0.2	<1
Triticale	6.9	<1	0.2	<1
Christmas Trees	6.2	<1	--	--
Sweet Corn	2.7	<1	--	--
Spring Wheat	2.4	<1	0.4	<1
Grapes	2.2	<1	--	--
Apples	2.0	<1	--	--
Sunflower	1.6	<1	--	--
Cabbage	1.6	<1	--	--
Pears	0.9	<1	--	--
Millet	0.7	<1	--	--
Pumpkins	0.7	<1	--	--
Buckwheat	0.4	<1	--	--
Other Crops	0.4	<1	--	--
Onions	0.4	<1	--	--
Blueberries	0.4	<1	--	--
Sod/Grass Seed	0.2	<1	--	--
Peaches	0.2	<1	--	--
<b>Total</b>	<b>54,289.5</b>	<b>44</b>	<b>1,868.8<sup>2</sup></b>	<b>48</b>
Non-Agricultural Uses <sup>1</sup>				
Deciduous Forest	42,943.6	35	1,627.5	42
Woody Wetlands	6,538.2	5	136.8	4
Developed/Open Space	6,387.2	5	61.8	2
Mixed Forest	3,492.0	3	106.3	3
Evergreen Forest	3,324.3	3	80.5	2
Open Water	2,247.7	2	1.6	<1
Developed/Low Intensity	1,779.8	1	6.9	<1
Developed/Medium Intensity	769.9	1	4.2	<1
Herbaceous Wetlands	200.6	<1	4.0	<1
Barren	179.0	<1	0.4	<1
Developed/High Intensity	169.5	<1	0.9	<1
Shrubland	82.1	<1	1.8	<1
Fallow/Idle Cropland	58.5	<1	1.1	<1
<b>Total</b>	<b>68,172.4</b>	<b>56</b>	<b>2,033.3<sup>2</sup></b>	<b>52</b>

Source: USDA National Agricultural Statistics Service Cropland Data Layer, 2022

<sup>1</sup>Non-agricultural land uses within the NASS dataset are derived from the 2021 National Land Cover Dataset (NLCD) which presents more general cover types than those defined in Exhibit 11 (Terrestrial Ecology), shown in Figure 11-1, and presented in Table 15-5.

<sup>2</sup>Pixels that comprise the clipped Cropland raster extend beyond Facility Site boundary and account for the discrepancy in acreage.

As indicated in Table 15-1, there are 54,051 acres of agricultural land uses within the 5-mile Study Area and 2,460 acres within the Facility Site. As depicted in Figure 15-7 and discussed further below, 121.4 acres of agricultural land will be temporarily taken out of agricultural production during construction and an additional 91.6 acres will be temporarily impacted during construction and operations. In total, these temporary impacts represent less than 1% of the agricultural use within the 5-mile Study Area and less than 14% of the agricultural use within the Facility Site. These temporarily



impacted areas will be restored and returned to agricultural use, at the discretion of the landowner following construction or decommissioning.

## **(5) Existing Energy Infrastructure and Completed Renewable Energy Facilities**

Figure 3-4 illustrates existing energy infrastructure within the 5-mile Study Area along with the proposed Facility. The Facility will connect to the existing 115 kV Fenner-Cortland electric transmission line, which is owned and operated by National Grid and bisects the Facility Site from southwest to northeast. There are two operating renewable wind energy facilities within the 5-mile Study Area: Fenner Wind Power Project and Munnsville Wind Farm. Fenner Wind Power is located northwest of the Facility Site and entirely within the Town of Fenner. The closest Fenner Wind Power turbine is approximately 0.4 mile from the Facility Site. The Munnsville Wind Farm is located east of the Facility Site and intersects the Towns of Eaton, Madison, and Stockbridge in Madison County, and Town of Augusta in Oneida County. The closest Munnsville Wind Farm turbine is approximately 2.7 miles east of the Facility Site. An analysis of cumulative impacts to agricultural soils associated with the proposed Facility and these existing facilities is provided in Section (a)(8) and Table 15-6. See Exhibit 3 and Figure 3-7 for additional detail on the renewable energy generating facilities located in the 5-mile Study Area.

## **(6) Active Agricultural Businesses**

The total number of farms in Madison County decreased by 7.1% between 2007 and 2017 (USDA, 2007; USDA, 2017). The total land in farms decreased by 8.7%, and the average farm size decreased by 1.6%. The total market value of products sold by farms in Madison County increased by 31.6% between 2007 and 2017. Despite decreases in the number of farms, total land in farms, and average farm size between 2007 and 2017, agriculture remains a stable industry in Madison County due to the significant growth in the value of the agricultural products sold. With decreases in the total number of farms, land dedicated to farming, and average farm size, it can be inferred that smaller farms may be consolidating or being acquired by larger operations that are able to take advantage of economies of scale (USDA, 2007; USDA, 2017).

While the Facility itself is located in Madison County, the 5-mile Study Area required for consideration by the regulations under 19 New York City Rules and Regulations (NYCRR) 900-2.16(a) extends east into Oneida County. In Oneida County, the total number of farms decreased by 4.5% while the total land in farms increased by 0.3% between 2007 and 2017 (USDA, 2007; USDA, 2017). The average farm size increased by 4.7% during this same period. The total market value of products sold increased between 2007 and 2017 by 11.5%, though growth slightly decreased from 2012 to 2017. With a decrease in the total number of farms, compared with an increase in land dedicated to farming, and average farm size, it can be inferred that farm operations in Oneida County take advantage of economies of scale (USDA, 2007; USDA, 2017).

**Table 15-3. Study Area Agricultural Census Summary 2007-2017**

Metric	2007	2012	2017	Percent Change (%)
<b>Madison County</b>				
Number of Farms	744	838	691	-7.1
Land in Farms (acres)	188,320	187,496	171,865	-8.7
Average Farm Size (acres)	253	224	249	-1.6
<b>Total Market Value of Products Sold (\$)</b>	<b>86,331,000</b>	<b>117,730,000</b>	<b>113,630,000</b>	<b>+31.6</b>
<b>Oneida County</b>				
Number of Farms	1,013	1,066	967	-4.5
Land in Farms (acres)	192,232	205,106	192,767	+0.3
Average Farm Size (acres)	190	192	199	+4.7
<b>Total Market Value of Products Sold (\$)</b>	<b>90,113,000</b>	<b>113,189,000</b>	<b>100,455,000</b>	<b>+11.5</b>

Source: USDA Census of Agriculture for Madison and Oneida Counties, 2007, 2012, and 2017

Between 2012 and 2017, the distribution of sales between livestock and crops in Madison County shifted slightly towards more livestock and fewer crops (see Table 15-4) (USDA, 2012; USDA 2017). Livestock generates most of the total value of agricultural sales (75%). Cattle, calves, and milk from cows are the most valuable products, representing 98% of the total value of all livestock, poultry, and products sold in 2017. The most important agriculture crops in Madison County are grains, oilseeds, dry beans, and dry peas, representing approximately 42% of the total value of all crops sold in 2017 (USDA, 2017).

The distribution of sales between livestock and crop farming in Oneida County also shifted towards more livestock and fewer crops between 2012 and 2017 (USDA, 2012; USDA 2017). In Oneida County, livestock, poultry, and related products generate almost three-quarters of the total value of agricultural sales, with the most important livestock activity being dairy farming, which represented 85% of the total value of all livestock sales in 2017. The crops that generated the most sales in Oneida County are grains, oilseeds, dry beans, and peas.

**Table 15-4. Study Area Value of Agricultural Sales by Farming Type**

Type	2012	Percent of total (%)	2017	Percent of Total (%)
<b>Madison County</b>				
Livestock, Poultry, and Products	\$86,636,000	74	\$85,516,000	75
Crops	\$31,094,000	26	\$28,115,000	25
<b>Total</b>	<b>\$117,730,000</b>	<b>100</b>	<b>\$113,630,000</b>	<b>100</b>
<b>Oneida County</b>				
Livestock, Poultry, and Products	\$71,018,000	63	\$70,514,000	70
Crops	\$42,170,000	37	\$29,941,000	30
<b>Total</b>	<b>\$113,189,000</b>	<b>100</b>	<b>\$100,455,000</b>	<b>100</b>

Source: USDA Census of Agriculture for Madison and Oneida Counties, 2012, 2017

Although the number of farms within Madison County has declined since 2007, the value of products produced has continued to grow substantially. Approximately 15.6 acres (less than 0.1%) of agricultural lands in Madison County are proposed to host Facility infrastructure; however, agricultural operations on these parcels may continue after construction. Construction of the Facility is not anticipated to significantly impact existing agricultural operations or businesses within the Facility Site or 5-mile Study Area.

In evaluating impacts to agricultural businesses within the 5-mile Study Area, the Applicant incorporated the data summarized above and, in accordance with 19 NYCRR § 900-2.16(a)(6), reviewed the following publicly available resources and databases to identify agricultural businesses and facilities within the 5-mile Study Area: New York State Agriculture and Markets Farm Directory, United States Department of Agriculture Local Food Directories, United States Department of Agriculture National Agriculture Statistics Service, and New York State GIS Clearinghouse. The Applicant also reviewed publicly available Google Earth maps and tax parcel data. A total of 25 agricultural businesses within the 5-mile Study Area were identified. Two of these businesses are located within the Facility Site: Howard Hall Farm and Blue Hill Farm.

As indicated in the landowner responses to the Agricultural Survey (discussed further herein), lease payments made by the Applicant to the landowners within the Facility Site may provide opportunities to support agricultural business growth and investment. More generally, payments made by the Applicant to taxing jurisdictions that intersect the Facility have the potential to support the region economically (see Exhibit 18). Considering these benefits, and the temporary impacts that the Project will have on active agricultural lands (an estimated 14% of active agricultural lands within the Facility Site) the Facility is not anticipated to negatively impact existing agricultural land uses or businesses activities within the Facility Site or within the 5-mile Study Area during operation. The locations and names of all agricultural businesses identified within the Study Area are shown on Figure 15-1 and provided as an ESRI shapefile with this Application.

To better understand potential impacts of the Facility on agricultural businesses and operations, a survey was distributed in July of 2023 to all participating landowners with parcels that contain active agricultural land that host Facility components. The purpose of the survey was to determine how the Facility may impact agricultural operations for participating landowners. The Applicant received responses from all landowners surveyed.<sup>3</sup> Of the 41 complete surveys received, 37 (90%) indicated at least one active agricultural land use occurring on the property in the last five years (2019 – 2023). Four of the 41 surveys (9%) indicated inactive (for agriculture) or did not provide land use data within the last five years; see Appendix 15-A for copies of the Agricultural Survey correspondence.

Of the 37 responses from landowners indicating recent or existing agricultural use, 14 landowners indicated no change to existing land use is expected to result from the development of the proposed Facility. One landowner who produces crops, livestock, and livestock products indicated that they may

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<sup>3</sup> In total 42 surveys were sent out; responses were received from all landowners; however, one landowner grouped multiple parcels into one survey, resulting in a total of 41 complete surveys, and one blank survey, received.

have to plant differently. Another landowner who grows crops and livestock indicated that the Facility would affect existing agricultural use in a positive way. The remaining landowners did not indicate whether the proposed Facility would affect existing agricultural land use on their parcel.

As discussed further in Exhibit 15(a)(7), no agricultural lands in Madison County are proposed to be permanently impacted by the Facility. As stated above, all landowners that responded to the Agricultural Survey plan to continue agricultural operations on lands owned both inside and outside of the Facility Site. Removal of a portion of these lands from agricultural use to host the Facility will not have a significant adverse effect on the greater agricultural economy locally or in the region. The Facility will support participating landowners in their continued agricultural operations both on lands associated with the Facility and those that are not, through the issuance of lease payments.

### **(7) Potential Construction Impacts and the Methods Available to Facilitate Farming Activity During Construction**

Construction of the Facility will result in some impacts to agricultural operations and farming practices.

- Permanent Impacts
  - Areas impacted by the Facility that will be permanently taken out of agricultural production (i.e., areas where agricultural production will not be capable of resuming post-decommissioning).
  - The only area within the Facility Site that will not be returned to pre-construction conditions, or equivalent, following decommissioning is the point of interconnection (POI) switchyard, which will be transferred to National Grid following construction. As the POI switchyard is not located within active agricultural land, no permanent impacts to agricultural land are being proposed by the Applicant.
- Temporary Impacts During Operations
  - Areas impacted by the Facility that will be temporarily taken out of agricultural production during construction and operations.
  - These impacts would occur within (1) graded areas with finish grade of greater than or equal to 8% (high-slope grading), (2) impervious surfaces that will not be removed post-construction (e.g., access roads, crane pads, O&M facility, etc.), and (3) areas where farming practices cannot resume during operations as a result of high-slope grading or impervious surfaces (i.e., orphaned farmland).
  - For the purposes of the impact analysis outlined in this exhibit, orphaned farmland is defined as active agricultural land that will not be accessible by typical farm equipment. A turning radius of 40 feet was assumed for equipment operating in row cropland and a turning radius of 20 feet was assumed for equipment operating in field cropland.<sup>4</sup>

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<sup>4</sup> These metrics were derived from agricultural field dimensions and the turning radii of equipment currently being utilized within the Facility Site. No equipment turning radii were assumed for pastureland as high-slope areas and impervious surfaces do not prohibit livestock use.

- Temporary Impacts During Construction
  - Areas impacted by the Facility will be temporarily taken out of agricultural production until the end of the construction period, at which point they will be restored and returned to agricultural use.
  - These impacts would occur in areas within the Limits of Disturbance that will be restored post-construction. Slopes with a finish grade of greater than or equal to 8%, impervious surfaces that will not be removed post-construction, and orphaned farmland are not included within the bounds of this impact type.

To ensure agricultural practices can resume post-construction, areas that are temporarily disturbed and where agricultural production will resume post-construction will be restored in accordance with the Agricultural Plan provided in Appendix 15-B and the New York State Department of Agriculture and Markets (NYSAGM) *Guidelines for Agricultural Mitigation for Wind Power Projects* (Revision 04/19/2018).

The Applicant proposes to minimize impacts to agricultural resources by installing buried collection lines that cross agricultural fields in accordance with the NYSAGM guidelines to assure that impacts to active agricultural land are minimized to the extent practicable. Potential impacts to buried agricultural drainage infrastructure will be repaired in accordance with the Applicant's Drainage Remediation Plan (Appendix 15-C), which is further described in Section (d). In addition, the Applicant will coordinate with landowners to minimize disruption to farming activities to the extent practicable throughout the duration of construction. Compensation will be provided for any unanticipated crop loss.

Once the Facility is operational there will be no interference with ongoing farming operations, aside from occasional maintenance and repair activities. Access roads built for the Facility will be available for use by farmers for equipment access to active fields, should it be requested by a participating landowner.

## **(8) Impacts to Agricultural Production Areas**

Agricultural production areas (i.e., active agricultural lands) comprise approximately 1,554.5 acres or 40% of the 3,897-acre Facility Site.<sup>5</sup> A discussion of impacts to various agricultural resources and lands is provided throughout this section. Table 15-5 provides a comprehensive summary of temporary and permanent impacts<sup>6</sup> to agricultural production areas and Mineral Soil Groups (MSG)<sup>7</sup> within the Facility Site and the acres of agricultural areas within various relevant geographic extents.

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<sup>5</sup> The active agricultural area calculations provided in this exhibit differ from those presented in Exhibit 11 as wetlands found within active agricultural areas have been merged with the broader agricultural area they are found within in this exhibit. In Exhibit 11 wetlands are considered as a distinct ecological community type. In addition, the study areas used in this exhibit and Exhibit 11 differ slightly.

<sup>6</sup> As defined in Exhibit 15(a)(7).

<sup>7</sup> The New York State Agricultural Land Classification System (NYSLCS) classifies each soil's inherent capability for agricultural production into one of 10 specifically ranked "Mineral Soil Groups (MSG)". The highest quality soil-types with the best sustained capability for agriculture comprise soil group 1. Conversely, those soils least suited for farming are classed in MSG 10. The State Division of Equalization and Assessment employs the NYSLCS to calculate land value per individual soil-type based on its capability for agricultural production. This provides the standard for the agricultural tax assessment system.

Table 15-5. Agricultural Production Areas and Mineral Soil Groups Relative to Various Geographic Extents.

Agricultural Area	Facility Site					5-Mile Study Area (acres)	Town of Fenner (acres)	Town of Smithfield (acres)	Town of Nelson (acres)	Town of Eaton (acres)	Madison County (acres)	New York State (acres)
	Perm Impact <sup>1</sup> (acres)	Temp Impact During Construction <sup>2</sup> (acres)	Temp Impact During Operations <sup>2</sup> (acres)	No Impact (acres)	Total (acres) <sup>3</sup>							
Agricultural Production Areas <sup>4</sup>												
Annual Row Crops	0	89.6	63.7	892.3	1045.7	23,199.7	4,896.7	2,840.9	1,197.3	5,349.8	57,371.5	n/a
Perennial Field Crops <sup>5</sup>	0	19.7	17.0	265.3	301.8	28,133.7	4,761.9	4,945.8	5,312.6	6,305.8	93,594.2	n/a
Pastureland	0	12.2	10.9	183.8	207.0							
Total	0	121.4	91.6	1341.4	1554.5	51,333.4	9,658.6	7,786.7	6,510.0	11,655.6	150,965.7	6,434,762.4
Mineral Soil Group												
Group 1	0	0.7	0.3	14.3	15.3	1,801.6	11.2	56.4	79.4	693.3	5,655	1,879,144.0
Group 2	0	56.4	25.2	570.6	652.2	23,709.2	5,827.5	2,827.9	2,472.3	4,987.6	60,057.4	1,815,434.6
Group 3	0	23.7	9.6	220.0	253.3	12,062.6	2,384.6	2,505.9	1,052	876.7	28,360.1	1,717,480.7
Group 4	0	21.9	12.6	239.4	273.9	3,933.3	607.4	207.2	1,998	916.5	33,826	306,176.2
Total	0	102.7	47.8	1044.2	1194.7	41,506.7	8,830.7	5,597.4	5601.7	7,474.1	127,898.5	5,718,235.5
Groups 5-10	0	170.9	102.2	2428.8	2701.9	80,955.7	11,077.3	10,081.8	22,629.7	21,711.1	295,352.1	31,101,882.2
Agricultural Production Areas within Mineral Soil Groups 1-4												
Annual Row Crops	0	45.4	21.6	409.4	476.3	13,133.0	3,246.2	1,609.0	541.2	2,530.2	32,633.9	n/a
Perennial Field Crops	0	8.0	5.9	102.9	116.8	11,521.7	2,393.2	2,137.4	1,605.3	1,747.0	35,151.5	n/a
Pastureland	0	4.3	4.4	53.8	62.6							
Total	0	57.7	31.9	566.1	655.7	24,654.7	5,639.4	3,746.5	2,146.2	4,277.2	67,785.4	n/a

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<sup>1</sup> As defined in Exhibit 15(a)(7).

<sup>2</sup> As defined in Exhibit 15(a)(7). Note: approximately 3.5 acres of impacts associated with temporary intersection improvements are located outside the Facility Site.

<sup>3</sup> Table 15-5 summarizes agricultural production areas within the Facility Site. Therefore, the total acres of agricultural production discussed in this exhibit differ slightly from what is presented in Exhibit 11, which has a more expansive study area.

<sup>4</sup> Agricultural production areas (i.e., active agricultural lands) within the Facility Site have been extracted from the site-specific ecological communities layer developed for the project that is described in Exhibit 11 and shown in Figure 11-1. Agricultural production areas for all other geographic areas have been extracted from the 2019 National Land Cover Database (NLCD).

<sup>5</sup> The 2019 NLCD data used in making agricultural area calculations outside the Facility Site does not differentiate between perennial field crops (i.e., hayland) and pastureland. Therefore, these classes were grouped for areas outside the Facility Site.

As presented in Table 15-5, construction of the Facility will result in an estimated temporary disturbance during construction of up to approximately 121.4 acres (8%) and an estimated temporary disturbance during construction and operations of up to approximately 91.6 acres (6%) to agricultural production within the Facility Site. No agricultural production areas within the Facility Site will be permanently taken out of production (see Exhibit 15(a)(7) for a definition of temporary and permanent impacts to agricultural areas.

Of the total acreage of agricultural production areas within the Facility Site, 655.7 acres, or approximately 42%, is classified as MSGs 1-4; the remaining 58% of agricultural production areas within Facility are classified in group 5 or greater. The 89.6 acres of MSG 1-4 soils in agricultural production areas that will be temporarily impacted by the Facility represent approximately 14% of MSG 1-4 soils in agricultural production areas within the Facility Site, less than 1% within the 5-mile Study Area, and less than 1% within Madison County. Areas within the Facility Site with the potential to be temporarily impacted by the Facility represent a very small fraction of agricultural production lands within the Facility or the region.

The Applicant conducted an analysis of cumulative impacts to MSGs 1-4 resultant from the operation of the Facility and all other operating renewable energy projects within the 5-Mile Study Area. There are two wind energy generating facilities that are currently under operation in the 5-mile Study Area—the Fenner Wind Power Project and the Munnsville Wind Farm—and one wind energy generating facility that is proposed—the Cody Road Wind Farm (see Figure 3-7). To conduct the analysis, the locations of apparent temporary impacts during operations (i.e., wind turbines and foundations, access roads, and substations) associated with these projects were digitized based on publicly available aerial imagery for the existing projects. For the Cody Road Wind Farm, impacts were calculated based on average impact values interpolated from the Fenner Wind Power Project.

Table 15-6 summarizes the cumulative impacts to agricultural land as a result of the operation of the Facility and existing renewable energy projects within the 5-mile Study Area. These facilities are anticipated to cumulatively result in 46.4 acres of impacts to MSG 1-4 soils in agricultural production areas during operations, which represents less than 1% of all MSG 1-4 soils in agricultural production areas within the 5-mile Study Area.

**Table 15-6. Cumulative Impacts to Agricultural Production Areas and Mineral Soil Groups 1-4.**

Agricultural Area	Temporary Impacts During Operations (acres) <sup>1</sup>				
	Hoffman Falls Wind Project	Fenner Wind Power Project	Munnsville Wind Farm	Cody Road Wind Farm	Total Cumulative
<b>Agricultural Production Areas<sup>2</sup></b>					
Annual Row Crops	62.2	8.2	10.1	0.0	70.4
Perennial Field Crops <sup>3</sup>	16.4	3.3	3.8	0.5	35.1
Pastureland	11.1				
<b>Total</b>	<b>89.7</b>	<b>11.5</b>	<b>14.0</b>	<b>0.5</b>	<b>105.5</b>
<b>Mineral Soil Group</b>					
Group 1	0.29	-	-	0.0	0.3
Group 2	17.83	4.5	4.5	0.2	27.0



Agricultural Area	Temporary Impacts During Operations (acres) <sup>1</sup>				
	Hoffman Falls Wind Project	Fenner Wind Power Project	Munnsville Wind Farm	Cody Road Wind Farm	Total Cumulative
Group 3	8.0	1.9	1.8	0.03	11.8
Group 4	7.4	2.5	1.5	0.0	11.4
<b>Total</b>	<b>33.5</b>	<b>9.0</b>	<b>7.8</b>	<b>0.2</b>	<b>50.5</b>
Groups 5-10	60.0	7.1	7.3	2.1	76.5
<b>Agricultural Production Areas within Mineral Soil Groups 1-4</b>					
Annual Row Crops	23.3	4.0	5.3	0.0	32.6
Perennial Field Crops	5.6	2.1	1.4	0.18	13.9
Pastureland	4.6				
<b>Total</b>	<b>33.5</b>	<b>6.0</b>	<b>6.7</b>	<b>0.18</b>	<b>46.4</b>

<sup>1</sup> As defined in Exhibit 15(a)(7).

<sup>2</sup> Agricultural production areas for the Hoffman Falls Facility Site have been extracted from the site-specific ecological communities layer developed for the project that is described in Exhibit 11 and shown in Figure 11-1. Agricultural production areas the Fenner Wind Power Project and Munnsville Wind Farm have been extracted from the 2019 National Land Cover Database (NLCD).

<sup>3</sup> The 2019 NLCD data used in making agricultural area calculations outside the Facility Site does not differentiate between perennial field crops (i.e., hayland) and pastureland. Therefore, these classes were grouped for areas outside the Facility Site.

### ***(9) Avoidance, Minimization, and Mitigation of Agricultural Impacts***

The proposed Facility has been sited to avoid impacts to a variety of sensitive resources, including significant agricultural resources, to the maximum extent practicable. The Applicant is also limited to developing the Project on lands made available by participating landowners where construction of the Facility is feasible, while maintaining a design capacity up to 100 MW, as required by contracts with New York State Energy Research and Development Authority (NYSERDA). Table 15-7 provides a detailed summary of all efforts made by the Applicant to avoid and minimize temporary permanent impacts to agricultural resources.

**Table 15-7. Agricultural Resource Impact Minimization Design Revisions.**

Facility Component(s)	Description of Design Revision
T-1 and Access Road	<ul style="list-style-type: none"> <li>• Turbine location shifted to the edge of the field.</li> <li>• Access road routing revised to follow the field edge, to the extent practicable.</li> </ul>
O&M Facility	<ul style="list-style-type: none"> <li>• O&amp;M facility sited on the edge of the field.</li> </ul>
T-2 and Access Road	<ul style="list-style-type: none"> <li>• Turbine sited to minimize field fragmentation to the extent practicable, considering turbine setback and spacing requirements and topographic constraints.</li> <li>• Access road routing revised to follow the existing farm road, to the extent practicable.</li> </ul>
T-3 and Access Road	<ul style="list-style-type: none"> <li>• Turbine location shifted to the edge of the field.</li> <li>• Access road route revised to follow the existing farm road and improve farm access by replacing the existing low water stream crossing with an appropriately sized culvert crossing.</li> <li>• The proposed access road route limits impacts to the existing fenced lane for dairy cows and minimizes grading in active agricultural land. <ul style="list-style-type: none"> <li>○ Note: A direct access road route to the turbine was evaluated</li> </ul> </li> </ul>

Facility Component(s)	Description of Design Revision
	but was determined to not be feasible due to the excessive grades along this route.
T-4 and Access Road	<ul style="list-style-type: none"> <li>Access road route revised to follow the field edge, to the extent practicable.</li> </ul>
Collection Line, T-3 to Francis Road	<ul style="list-style-type: none"> <li>Collection line route revised at the request of the landowner to follow the field edge, to the extent practicable.</li> </ul>
Collection Line, Substation to Cody Road	<ul style="list-style-type: none"> <li>Collection line route revised to follow the field edge, to the extent practicable.</li> </ul>
T-9 and Access Road	<ul style="list-style-type: none"> <li>Turbine sited to minimize field fragmentation to the extent practicable, considering turbine setback and spacing requirements and topographic constraints.</li> <li>Access road route revised to follow the existing farm road. However, an environmentally sensitive area along the existing farm road and deliverability constraints required some deviation near Cody Road and the turbine.</li> </ul>
T-11 and Access Road	<ul style="list-style-type: none"> <li>Turbine location shifted to the edge of the field to minimize agricultural impacts and the potential for field fragmentation.</li> <li>Access road sited to minimize field fragmentation, to the extent practicable considering road grade requirements.</li> </ul>
T-12 and Access Road	<ul style="list-style-type: none"> <li>Turbine location shifted as close to the edge of the field as possible considering topographic constraints.</li> <li>Access road route revised to follow the existing farm road and improve farm access by replacing the existing culvert crossing with an appropriately sized culvert crossing. <ul style="list-style-type: none"> <li>Note: The existing farm road located to the south of the proposed access road was evaluated; however, utilizing that existing farm road was determined to not be feasible due to the presence of farm infrastructure and excessive grades and wetlands along the route.</li> </ul> </li> <li>Western portions of the access road route were revised to closely follow the boundary of the forested riparian corridor, while also minimizing tree clearing.</li> </ul>
T-14 and Access Road	<ul style="list-style-type: none"> <li>Turbine location shifted to the edge of the field.</li> <li>Access road route revised to follow the northern boundary of Parcel ID# 89.-1-20.11 and the field edge, to the extent practicable. <ul style="list-style-type: none"> <li>Note: A route that paralleled the southern boundary of Parcel ID# 98.-3-3 was evaluated and determined to not be feasible due to the presence of wetlands.</li> </ul> </li> </ul>
T-15 and Access Road	<ul style="list-style-type: none"> <li>Access road route revised to closely follow the field edge.</li> </ul>
Meteorological Tower	<ul style="list-style-type: none"> <li>Setback and spacing requirements for the meteorological tower minimized opportunities for micro-siting this feature; however, the tower location was designed to minimize field fragmentation, to the extent practicable, considering the additional constraints imposed by wetlands and topography.</li> </ul>
Collection Line, T-15 to Stone Bridge Road	<ul style="list-style-type: none"> <li>Collection line route revised to closely follow the field edge.</li> </ul>

Facility Component(s)	Description of Design Revision
T-16 and Access Road	<ul style="list-style-type: none"> <li>Access road route revised from original location on Parcel ID# 110.-1-6.2—where it approached the turbine from the southeast by crossing through active agricultural land—to its current location. This substantively reduced impacts to active agricultural land.</li> </ul>
T-17 and Access Road	<ul style="list-style-type: none"> <li>Turbine sited as close to the edge of the field as possible, considering topographic constraints and adjacent wetlands.</li> <li>Access road route revised to follow the boundary between row crop fields and pastureland, to the extent practicable considering other constraints (e.g., wetlands and topography).</li> </ul>
T-18 and Access Road	<ul style="list-style-type: none"> <li>Turbine sited to minimize field fragmentation to the extent practicable, considering turbine setback and spacing requirements and topographic constraints.</li> <li>Access road routing avoids impacts to agricultural land by approaching from the southwest.</li> </ul>
T-19 and Access Road	<ul style="list-style-type: none"> <li>Turbine sited as close to the edge of the field as possible considering topography and wetland constraints.</li> <li>Access road route revised to follow the existing farm road, to the extent practicable considering the adjacent wetland.</li> </ul>
T-20 and Access Road	<ul style="list-style-type: none"> <li>Turbine sited as close to the edge of the field as possible considering topographic constraints.</li> <li>Access road route revised to follow the existing farm road and the field edge, to the extent practicable considering the turbine deliverability constraints.</li> </ul>
T-21 and Access Road	<ul style="list-style-type: none"> <li>Turbine sited to minimize field fragmentation to the extent practicable, considering turbine setback and spacing requirements and topographic constraints.</li> <li>Access road route revised to follow the existing farm road. <ul style="list-style-type: none"> <li>Note: The entrance of this access road on Davis Corners Road was shifted to its present location at the request of the landowner.</li> </ul> </li> </ul>
T-22 and Access Road	<ul style="list-style-type: none"> <li>Turbine sited to minimize field fragmentation to the extent practicable, considering turbine setback and spacing requirements and topographic constraints.</li> <li>Access road route revised to follow existing farm road and connect to T-23 via an access road from the north, rather than via an access road from the west.</li> </ul>
T-23 and Access Road	<ul style="list-style-type: none"> <li>Access road route revised to follow the field edge.</li> </ul>
T-24 and Access Road	<ul style="list-style-type: none"> <li>Access road route revised to follow the field edge, to the extent practicable considering grade requirements and land control.</li> </ul>

In addition to these specific impact minimization measures, various measures to protect and restore agricultural lands and farming operations within the Facility Site will be undertaken during and after construction, including full restoration of temporarily disturbed agricultural land in accordance with the Agricultural Plan (Appendix 15-B), which was developed by the Applicant based on NYSAGM Guidelines. The Applicant and/or a designated third-party Agricultural Monitor will consult with the NYSAGM

during construction if deviation from the approved plan is necessary. In addition, the Applicant will continue to consult with landowners and the NYSAGM throughout the Section 94-c process and during construction and operation of the Facility to ensure impacts to active agricultural land and farming operations are avoided, minimized, and/or mitigated to the extent practicable.

For example, stripped topsoil in active agricultural areas will be stockpiled from work areas and kept separate from other excavated material (rock and/or sub-soil) until the completion of Facility construction and site restoration. All topsoil will be stockpiled as close as is reasonably practical to the areas where it was stripped/removed and will be used for restoration on that particular area. Proposed access will be established as soon as possible to limit temporary disturbance and avoid impact to undisturbed soils. All temporarily disturbed agricultural soils will be restored following construction. This process will generally involve the following sequence of activities:

1. Decompaction of compacted subsoils to a depth of 18 inches using a deep ripper or heavy-duty chisel plow.
2. Disking and removal of stones (four inches and larger in size) from de-compacted subsoil.
3. Spreading of stockpiled topsoil over the de-compacted subsoil and reestablishing pre-construction contours to the extent practicable.
4. Discing and removal of stones (four inches and larger in size) following the spreading of topsoil.
5. Seeding in restored agricultural fields will be based on guidance provided by the landowner and NYSAGM personnel.
6. Regrading all access roads to restore original surface drainage patterns or other drainage patterns incorporated into the design, as determined by the Soil and Water Conservation District and the landowner.

The Applicant will also provide monitoring and remediation of restored agricultural land, as necessary, for two complete growing seasons following the date upon which the agricultural area achieves the establishment of the desired crop. The two-year period will allow for observation of impacts that may not be obvious at the end of construction or only may become evident as a result of the effects of frost action, precipitation, and crop growth. The monitoring and remediation phase will be used to identify any remaining agricultural impacts associated with construction that need to be addressed and to implement follow-up restoration. General conditions to be monitored include topsoil thickness, relative content of rock and large stones, trench settling, crop production, drainage, and repair of fences. Impacts will be identified by the Agricultural Monitor through on-site monitoring of all agricultural areas impacted by construction and through contact with the affected farm operators and the NYSAGM. See Section 15(d) for further discussion on impacts to drainage tiles.

There are no regulated areas in Madison County or the Facility Site that have been historically quarantined due to Golden Nematode (*Globodera rostochiensis*); a soil-borne insect pest that damages potato crops. Best management practices (BMPs) from the USDA Animal and Plant Health Inspection Service are typically required to prevent inadvertent transportation of potentially contaminated soils that may result from the construction and operation of the Facility. These BMPs include strict sanitation

of vehicles and equipment, pressure-washing to remove soil, and for equipment with difficult to reach areas, a steam under tarpaulin treatment or fumigation to ensure equipment is nematode-free.

## **(b) Maps**

### **(1) Field-Verified Active Agriculture Land Use**

Figure 15-3 depicts active agricultural land use within the 5-mile Study Area, which includes land involved in the production of crops, livestock, and livestock products during at least three of the last five years. Approximately 51,333 acres (42%) of the 5-mile Study Area is identified as active agricultural land.

As mentioned previously, the Applicant has consulted with the landowners of parcels that comprise the Facility Site through a landowner survey. The reported dominant agricultural uses within the Facility Site between 2019 and 2023 include row crops (90%), livestock (41%), livestock products (29%), and other agricultural uses (2%).

The Survey questionnaire requested landowners provide: 1) an indication of the agricultural land uses that have taken place on their property in the last five years; 2) an indication of the current agricultural land use on the property; 3) a description of how existing agricultural operations will be affected post-construction; 4) confirmation of any drainage tile infrastructure on their property, and a sketch of the location of any drainage tile infrastructure; and 5) a solicitation of additional comments (see Appendix 15-A).

The Applicant verified the location and extent of active agricultural land during on-site surveys, including wetland, archaeological, and avian field surveys. Data points and photos collected during on-site surveys informed the delineation of active agricultural land within the Facility Site. As indicated in Exhibit 15(a)6 and (a)7, active agricultural land represents an estimated 40% (1,554.5 acres) of the Facility Site. The Applicant utilized information from the agricultural survey and spatial data to completely avoid impacts to approximately 1,341.4 acres, (86%) of the agricultural land within the Facility Site. Access to these areas will not be impeded and agricultural operations may continue.

The Applicant will implement the New York State Department of Agriculture and Markets Guidelines for Agricultural Mitigation for Wind Power Projects (Revised 04/19/2018), to mitigate potential impacts to active agricultural land.

### **(2) Agricultural Production Acreage Proposed to Remain in Agricultural Use**

Agricultural land within the Facility Site not proposed to host Facility components is expected to remain in active agricultural use, unless otherwise decided upon by the landowner. As described above, within the 5-mile Study Area, 51,333.4 acres (approximately 42% of the 5-mile Study Area) is identified as active agricultural land. Temporary impacts to active agricultural land during operations totals 91.6 acres. The remaining 51,241.8 acres of active agricultural land within the 5-mile Study Area would be able to remain in agricultural production once the Facility is operational.

Various measures to protect and restore agricultural lands and farming operations within the Facility Site will be undertaken during and after construction and will include full restoration of temporarily disturbed agricultural land in accordance with the Drainage Tile Remediation Plan (Appendix 15-C) and Agricultural Plan (Appendix 15-B), which were developed by the Applicant based on NYSAGM Guidelines. At the end of the Facility lifespan, Facility components will be decommissioned, and the land restored, consistent with 19 NYCRR §900-6.6(a) requirements, as described in Exhibit 23 of this Application. Following completion of decommissioning and restoration, agricultural lands within the Facility Site are expected to return to pre-construction use, depending on the intentions of the landowners.

### **(3) Landowner-Imposed Development Restrictions**

Areas with landowner-imposed development restrictions are depicted in Figures 15-4 & 4-1. These development restriction areas are generally associated with lands located directly adjacent to residences, specific agricultural fields, and forests. There are five landowner-imposed exclusion areas (244.2 acres) with some form of development restriction; these areas are shown on Figures 15-4 & 4-1. Outside of applicable setbacks required by Section 94-c (e.g., setback required by 19 NYCRR §900-2.6(d)), no other landowner-imposed development restrictions have been identified. Exhibit 4 (Real Property) provides additional information regarding the Applicant's real property rights.

### **(4) Locations of Known or Suspected Drainage Systems**

As part of the agricultural landowner survey, the Applicant consulted with the landowners of parcels that comprise the Facility Site to obtain specific information on the location of drainage systems. Responding landowners indicated if the parcels included drain systems, which fields contained drainage systems, and presented the information graphically in their response, if they chose to. This information was supplemented by geospatial information gathered by field crews regarding the locations of surface drainage systems.

To supplement data collected within the Facility Site from landowners and over the course of the field surveys, a dataset from the National Center for Atmospheric Research (NCAR) was utilized to assess the potential for drainage systems within the larger 5-mile Study Area; see Figure 15-5. The NCAR data use multiple USDA and USGS datasets to show a 30-meter resolution layer of suspected drain tile areas (Valayamkunnath et al., 2020). The Applicant also contacted the Natural Resource Conservation Service's (NRCS's) District Office to request any information on drainage features in and around the Facility Site. The NRCS indicated that they do not have any records of drainage systems.

Surface drainage features are discussed in the Drainage Remediation Plan (Appendix 15-C), as well as Exhibit 13 and Exhibit 14. Non-jurisdictional surface drainage features are identified in Appendix 15-C; jurisdictional surface drainage features are depicted in Figure 14-1. No unique agricultural drainage facilities were specifically identified at the Facility Site.

The Applicant has prepared a Drainage Remediation Plan to address unavoidable or inadvertent damages to drainage systems within the Facility Site during construction (Appendix 15-C). This Plan is discussed in Section (d).

## **(5) USDA Soil Mapping**

Soil types within the Facility Site were identified using data from the USDA NRCS Soil Survey Geographic (SSURGO) Database (Soil Survey Staff, 2023). A description of the soil types within the Facility Site and their characteristics are provided in Exhibit 10 (Geology, Seismology, and Soils). See Figure 10-3 for a map delineating soil types within the Facility Site.

## **(6) NYS Agricultural Land Classification Mineral Soil Groups for Impacted Agricultural Areas**

Figure 15-6 depicts MSG 1-4 soils and MSG 5-10 soils within the Facility Site. See Table 15-5 and Exhibit 15(a)(8) for a further discussion of the Facility impacts on MSG soils and Exhibit 10 for information on the Facility's impacts to soils more generally. See Figure 15-6 for a map depicting the NYS agricultural land classification system MSGs 1 through 10 within the Facility Site. In addition, Section (a)(8) presents the anticipated impacts to agricultural production areas, including MSG.

## **(c) Agricultural Plan**

As mentioned above, the Applicant prepared an Agricultural Plan (Appendix 15-B), consistent with the NYSAGM *Guidelines for Agricultural Mitigation for Wind Power Projects* (Revision 04/19/2018), to avoid, minimize, and mitigate impacts to active agricultural lands within MSG 1-4 during the construction, restoration, post construction monitoring and remediation, and decommissioning phases of the Facility. Within the Facility Site, there are approximately 655.7 acres of MSG 1-4 soils in agricultural production areas. Of those, 9% (57.7 acres) will be temporarily impacted during construction and 5% (31.9 acres) will be temporarily impacted during construction and will be taken out of agricultural use while the Facility is in operation. Figure 15-7 shows the active agricultural lands within MSGs 1-4, to which the Agricultural Plan would apply.

## **(d) Drainage Tile Remediation Plan**

The Applicant has prepared a Drainage Remediation Plan to address inadvertent damages to drainage features (Appendix 15-C). The potential impacts to drainage systems and process for identification and repair of the drainage features are summarized below, and further described in Appendix 15-C.

### **(1) Demonstration of the Likelihood of Impacts to Surface/Subsurface Drainage**

The steps taken by the Applicant to identify the locations of known or suspected drainage systems are discussed in Exhibit 15(b)(4). In total 52 surface/subsurface drainage systems have been identified within the Facility Site (see Figure 15-5). Based on the NCAR data, several additional parcels within the Facility Site have the potential to host sub-surface drainage infrastructure (Valayamkunnath et al., 2020).

Prior to construction, the location of all known systems will be identified in the field to facilitate the avoidance, minimization, and mitigation of impacts to these systems. While identification of existing drain tile systems can aid in minimizing impacts, impacts cannot feasibly be ruled out. The Applicant will follow the procedures outlined below and in the Drainage Tile Remediation Plan (Appendix 15-C) should any drainage systems become damaged or need repair during construction or decommissioning of the Facility. It is anticipated that drainage systems that serve lands that will remain in agricultural production will not negatively be impacted by the construction of the Facility. The Applicant is not aware of any drain tile systems that could be impacted by the Facility that extend outside the Facility Site onto non-participating parcels.

Impacts to non-jurisdictional surface drainage features are discussed in the Drainage Remediation Plan; impacts to jurisdictional surface drainage features are discussed in Exhibit 13 (Water Resources and Aquatic Ecology) and Exhibit 14 (Wetlands). As discussed in these materials, Facility components have been sited to avoid impacts to surface drainage features to the maximum extent practicable.

## **(2) Identification of Methods of Repair for Damaged Drainage Features**

Drainage systems that are damaged during the construction and operation of the Facility will be repaired in accordance with NYSAGM Guidelines and the Drainage Remediation Plan. The Applicant will implement any required corrective measures throughout operation of the Project, including the implementation of the Decommissioning and Site Restoration Plan (Exhibit 23 and Appendix 23-A) and in response to any issues identified through the complaint resolution process described in the Applicant's approved Complaint Management Plan which will be submitted as a pre-construction compliance filing consistent with 19 NYCRR §900-10.2 (e)(7) requirements.

### **(e) Co-utilization Plan**

As indicated in Exhibit 15(a)(6) and (a)(9), the Applicant worked closely with landowners to carefully site linear Facility components (e.g., access roads and collection lines) in areas that would allow the landowners to continue any desired farming practices. Wind turbines are largely constrained by wind resources, setbacks, and environmental constraints. The Applicant was able to site linear Facility components in a way that minimized the Facility's impacts. The Applicant is proposing to install collection lines underground; there will be no impacts to agricultural lands during operations as a result of the installation of the buried collection lines. Facility access roads utilize existing farm lanes to the maximum extent practicable. In areas where access roads could not be collocated with existing farm lanes due to other environmental or engineering constraints (topography, delineated wetlands or streams, turning radius requirements), the Applicant sited the access roads in a way that would minimize impacts to agricultural lands, including selecting routes that would require less grading, crossing drainage infrastructure in a way that would allow continued use of the infrastructure, proposing drainage restoration details, and committing to restoring agricultural lands to pre-construction contours or slopes to allow the continued use of mechanized farming equipment.



As described in this Exhibit, the total acreage of land that will be taken out of agricultural production during operations will be approximately 91.6 acres, which represents 2% of the Facility Site. Figure 15-7 shows the active agricultural land within MSG 1-4 that will be temporarily impacted by the Facility. The careful design and siting of the Facility will allow continued use of farmland for agricultural production in areas not utilized by Project components. The Applicant has also facilitated the potential for ongoing agricultural production by ensuring the Facility design does not impede access to agricultural fields by farming equipment (see Exhibit 15(a)(7) for a discussion of the commitments to agricultural restoration of agricultural areas temporarily disturbed during construction), and by limiting the potential for fragmentation of agricultural fields. Most landowners that responded to the agricultural survey described in Exhibit 15(a)(6) indicated that the Project would not have an adverse effect on the agricultural use of their land. Through the implementation of measures described throughout this exhibit, the Applicant has ensured that the Facility will not have an effect on continued agricultural land uses within the Study Area to the maximum extent practicable. The Facility itself represents a co-utilization of agricultural land. Therefore, an Agricultural Co-utilization Plan is not proposed for the Facility and the requirements of §900-2.16(e) are not applicable.

## REFERENCES

Afetian, M. 2018. *Wind turbines on farms help crops grow, according to science*. Available at: <https://www.landthink.com/wind-turbines-on-farms-help-crops-grow-according-to-science/> (Accessed June 2023).

Cornell Institute for Resource Information Sciences. 2022. Agricultural Districts, Ontario County NY, 2022. Available at: <https://cugir.library.cornell.edu/catalog/cugir-007977> (Accessed June 2022).

Cornell Institute for Resource Information Sciences. 2022. Agricultural Districts, Steuben County NY, 2021. Available at: <https://cugir.library.cornell.edu/catalog/cugir-007989> (Accessed June 2022).

Cornell Institute for Resource Information Sciences. 2022. Agricultural Districts, Yates County NY, 2016. Available at: <https://cugir.library.cornell.edu/catalog/cugir-008000> (Accessed June 2022).

Energy Information Administration (EIA). 2009. *Household Energy Use in New York*. Available at: [https://www.eia.gov/consumption/residential/reports/2009/state\\_briefs/pdf/NY.pdf](https://www.eia.gov/consumption/residential/reports/2009/state_briefs/pdf/NY.pdf) (Accessed October 2021).

Johnson, Jacqueline. 2022. Personal communication. May 27, 2022.

Malhi, G.S., M. Kaur, and P. Kaushik. 2021. *Impact of Climate Change on Agriculture and Its Mitigation Strategies: A Review*, Sustainability 13, no. 3: 1318. <https://doi.org/10.3390/su13031318> (Accessed: November 2023)

New York State Department of Agriculture and Markets (NYSAGM). 2022. Guidelines for Agricultural Mitigation for Wind Power Projects, Revised April 19, 2018. Available at: [https://agriculture.ny.gov/system/files/documents/2019/10/wind\\_farm\\_guidelines.pdf](https://agriculture.ny.gov/system/files/documents/2019/10/wind_farm_guidelines.pdf) (Accessed June 2022).

New York State Department of Taxation and Finance (NYSDTF). 2022. *Agricultural Assessment Program - Overview*. Available at: [https://www.tax.ny.gov/research/property/assess/valuation/ag\\_overview.htm#:~:text=Introduction,mechanism%20for%20creating%20agricultural%20districts](https://www.tax.ny.gov/research/property/assess/valuation/ag_overview.htm#:~:text=Introduction,mechanism%20for%20creating%20agricultural%20districts) (Accessed June 2022).

Soil Survey Staff. 2023. *Soil Survey Geographic (SSURGO) Database*. Natural Resources Conservation Service (NRCS), United States Department of Agriculture (USDA). Available at: <https://sdmdataaccess.nrcs.usda.gov/> (Accessed June 2023).

Trvst. 2022. *Wind energy and agriculture working together*. Available at: <https://www.trvst.world/renewable-energy/wind-energy-and-agriculture/> (Accessed June 2023).

United States Department of Agriculture (USDA). 2009. Best Management Practices for Preventing Spread of Potato Cyst Nematodes. USDA Animal and Plant Health Inspection Service (APHIS). Available at: [https://www.aphis.usda.gov/plant\\_health/plant\\_pest\\_info/nematode/downloads/bestpractices.pdf](https://www.aphis.usda.gov/plant_health/plant_pest_info/nematode/downloads/bestpractices.pdf). (Accessed June 2022).

USDA. 2019. 2017 Census of Agriculture: United States Summary and State Data, Volume 1. National Agricultural Statistics Service. AC-17-A-51. Issued April 2019.

USDA. 2022. CropScape – Cropland Data Layer. National Agricultural Statistics Service. Available at: <https://nassgeodata.gmu.edu/CropScape/> (Accessed June 2023).

USDA. 2007. *County Summary Highlights*. 2007 Census of Agriculture. Available at: [https://agcensus.library.cornell.edu/wp-content/uploads/2007-New\\_York-st36\\_2\\_001\\_001-2.pdf](https://agcensus.library.cornell.edu/wp-content/uploads/2007-New_York-st36_2_001_001-2.pdf) (Accessed June 2023).

USDA. 2012. *County Summary Highlights*. 2012 Census of Agriculture. Available at: [https://agcensus.library.cornell.edu/wp-content/uploads/2012-New\\_York-st36\\_2\\_001\\_001.pdf](https://agcensus.library.cornell.edu/wp-content/uploads/2012-New_York-st36_2_001_001.pdf) (Accessed June 2023).

USDA. 2017. *County Summary Highlights*. 2017 Census of Agriculture. Available at: [https://www.nass.usda.gov/Publications/AgCensus/2017/Full\\_Report/Volume\\_1,\\_Chapter\\_2\\_County\\_Level/New\\_York/st36\\_2\\_0001\\_0001.pdf](https://www.nass.usda.gov/Publications/AgCensus/2017/Full_Report/Volume_1,_Chapter_2_County_Level/New_York/st36_2_0001_0001.pdf) (Accessed June 2023).

USDA. 2017a. Census of Agriculture, Steuben County. Available at: [https://www.nass.usda.gov/Publications/AgCensus/2017/Online\\_Resources/County\\_Profiles/New\\_York/cp36101.pdf](https://www.nass.usda.gov/Publications/AgCensus/2017/Online_Resources/County_Profiles/New_York/cp36101.pdf) (Accessed May 2022).

USDA. 2017b. Census of Agriculture, Yates County. Available at: [https://www.nass.usda.gov/Publications/AgCensus/2017/Online\\_Resources/County\\_Profiles/New\\_York/cp36123.pdf](https://www.nass.usda.gov/Publications/AgCensus/2017/Online_Resources/County_Profiles/New_York/cp36123.pdf) (Accessed May 2022).

USDA. 2017c. Census of Agriculture, Ontario County. Available at: [https://www.nass.usda.gov/Publications/AgCensus/2017/Online\\_Resources/County\\_Profiles/New\\_York/cp36069.pdf](https://www.nass.usda.gov/Publications/AgCensus/2017/Online_Resources/County_Profiles/New_York/cp36069.pdf) (Accessed May 2022).

USDA. 2012a. Census of Agriculture, Steuben County. Available at: [https://agcensus.library.cornell.edu/wp-content/uploads/2012-New\\_York-cp36101.pdf](https://agcensus.library.cornell.edu/wp-content/uploads/2012-New_York-cp36101.pdf) (Accessed May 2022).

USDA. 2012b. Census of Agriculture, Yates County. Available at: [https://agcensus.library.cornell.edu/wp-content/uploads/2012-New\\_York-cp36123.pdf](https://agcensus.library.cornell.edu/wp-content/uploads/2012-New_York-cp36123.pdf) (Accessed May 2022).

USDA. 2012c. Census of Agriculture, Ontario County. Available at: [https://agcensus.library.cornell.edu/wp-content/uploads/2012-New\\_York-cp36069.pdf](https://agcensus.library.cornell.edu/wp-content/uploads/2012-New_York-cp36069.pdf) (Accessed May 2022).

U.S. Environmental Protection Agency. 2021. *Greenhouse Gas Equivalencies Calculator*. Energy and the Environment. Available at: <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator> (Accessed October, 2021).

United States Geological Survey (USGS), 2019. *NLCD 2019 Land Cover Conterminous United States*. Remote sensing image. Sioux Falls, SD. U.S. Geological Survey.

Valayamkunnath, P., M. Barlage, F. Chen, D. Gochis & K. Franz. 2020. *Mapping of 30-meter resolution tile-drained croplands using a geospatial modeling approach*. Scientific Data 7, 257. Available at: <https://doi.org/10.1038/s41597-020-00596-x> (Accessed July 2022).

