FLAT CREEK SOLAR

Permit Application No. 23-00054

§ 1100-2.20 Exhibit 19

Environmental Justice

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Acronym List

ACS	American Community Survey
BMP	Best Management Practices
CDC	Center for Disease Control
CJWG	Climate Justice Working Group
DAC	Disadvantaged Community
dBA	A-weighted decibel
HDD	Horizontal Directional Drilling
LOD	Limits of Disturbance
NYCRR	New York Codes, Rules and Regulations
NYSDEC	New York State Department of Environmental Conservation
ORES	Office of Renewable Energy Siting and Electric Transmission
PEJA	Potential Environmental Justice Area
POI	Point of Interconnection
SAE	Standard Automotive Engineering
VIA	Visual Impact Assessment
VIMMP	Visual Impacts Minimization and Mitigation Plan
VSA	Visual Study Area
WHO	World Health Organization

Glossary Terms

Applicant	Flat Creek Solar NY LLC, a subsidiary of Cordelio Power LP, the entity seeking a siting permit for the Facility from the Office of Renewable Energy Siting and Electric Transmission (ORES) under Article VIII of the New York State Public Service Law.
Facility	Flat Creek Solar, a 300 MW solar generating facility located in the Towns of Root and Canajoharie, NY. The proposed Facility components to be constructed for the generation, collection, and distribution of energy for Flat Creek Solar include solar panel modules, electrical collection system, collection substation, point of interconnection (POI) switchyard, access roads, laydown/staging areas, and other ancillary facilities.
Facility Site	The participating parcels encompassing Facility components, which totals approximately 3,794 acres in the Towns of Canajoharie and Root, Montgomery County, New York (Figure 2-1).
Impact Study Area	The Impact Study Area for the Facility includes a radius of a half mile around the Facility Site boundary, unless otherwise noted for a specific resource study or Exhibit. The half-mile Study Area encompasses approximately 8,665.6 acres, inclusive of the approximately 3,794-acre Facility Site.
Limit of Disturbance (LOD)	The area to which temporary construction impacts will occur, totaling approximately 1,637 acres.

Exhibit 19 Environmental Justice

This Exhibit provides information required in accordance with the requirements of §1100-2.20 of the Article VIII Regulations.

19(a) Environmental Justice Analysis Methodology

The purpose of an Environmental Justice evaluation is to determine if a facility potentially could have a significant and adverse disproportionate environmental impact on defined communities or populations. As a solar-powered electric generation facility, Flat Creek Solar Facility (the Facility) will not generate air emissions during operation. Nevertheless, based on the criteria set forth in § 1100-2.20 of the Article VIII Regulations, the Applicant has defined the "Impact Study Area" for Environmental Justice consideration to consist of a 0.5-mile radius around the Facility Site boundary. The Impact Study Area, including the Facility Site, includes approximately 12,459.3 acres.

A Potential Environmental Justice Area (PEJA) is defined by 6 New York Codes, Rules and Regulations (NYCRR) § 487.3[1] as an area with a population that meets one or more of the thresholds related to minority and low-income populations. The New York State Department of Environmental Conservation (NYSDEC) has updated these thresholds based on its statistical analysis of American Community Survey (ACS) data (NYSDEC, 2021). The most current thresholds for identifying a PEJA are:

- 52.42 percent or more of the population in an urban area reported themselves to be members of minority groups; or
- 26.28 percent or more of the population in a rural area reported themselves to be members of minority groups;[2] or

[1]Official Compilation of Codes, Rules and Regulations of the State of New York Title 6. Department of Environmental Conservation Chapter IV. Quality Services Subchapter H Environmental Justice Part 487. Analyzing Environmental Justice Issues in Siting of Major Electric Generating Facilities Pursuant to Public Service Law Article 10. See: https://govt.westlaw.com/nycrr/Document/Ie9f1255ef2ab11e1837f0000845b8d3e?viewType=FullText&originationContext=documenttoc&transitionType=CategoryPageItem&contextData=(sc.Default)

[2] *Minority population* means a population that is identified or recognized by the U.S. Census Bureau as Hispanic, African-American, or Black, Asian and Pacific Islander, or American Indian.

- 22.82 percent or more of the population in an urban or rural area had household incomes below the federal poverty level.[3]

The Impact Study Area, including a half-mile buffer around the site, is contained within five block groups in Montgomery County (Figure 19-1):

Table 19-1 below presents the low-income and minority populations for the block groups containing the Impact Study Area.

Table 19-1. Low-Income and Minority Populations in the Flat Creek Solar Project Study Area

Block Group	Low-income Population	Minority Population (non-white and/or Hispanic)	Potential EJ Area
Block Group 1, Tract 723	12.9%	4.2%	No
Block Group 1, Tract 726 (host)	4.9%	5.8%	No
Block Group 2, Tract 726	21.4%	9.8%	No
Block Group 3, Tract 727 (host)	11.6%	9.7%	No
Block Group 4, Tract 727 (host)	4.1%	5.8%	No
Source: U.S. Census Bureau, 2018-2022 ACS 5-Year Estimates. (U.S. Census Bureau 2024). These data are the most recent available and best reflect the current demographic profile of the population in the vicinity of the Facility Site			

Based on the review of the minority and low-income population of these Census block groups from the most recent ACS data available (2022 vintage), the Study Area does not currently include block groups that meet the criteria for a PEJA (Figure 19-1).

The Impact Study Area was also evaluated to determine the presence of Disadvantaged Communities (DACs), as identified by the New York Climate Justice Working Group (NY CJWG). DACs are Census tracts that bear the burdens of negative public health effects, environmental

[3] The annual thresholds for the federal poverty level vary with household size and composition. In 2022, the poverty level for a family of four related persons with two children under age 18 was $ 29,678. For more information, see https://www2.census.gov/programs-surveys/cps/tables/time-series/historical-poverty-thresholds/thresh22.xlsx

pollution, impacts of climate change, possess certain socioeconomic criteria, or comprise high-concentrations of low- and moderate-income households. The Climate Leadership and Community Protection Act required the CJWG to establish criteria to identify DACs statewide. The CJWG has released DAC criteria maps based on the criteria adopted in March 2023. Based on these maps, Tracts 723 and 727 in the Study area are DACs (NYCJWG 2023). DACs are included in Figure 19-2.

As described in Exhibit 3: Location of Facilities and Surrounding Land Use, the proposed Facility Site includes approximately 3,793.7 acres of land. The Facility Site represents the broader area of parcels over which the Applicant has control, and within which selected areas were surveyed to support Facility layout refinement for solar panels and related infrastructure. The half-mile Impact Study Area (not including the Facility Site) includes approximately 8,665.6 acres of land.

19(b) Significant and Adverse Disproportionate Environmental Impacts

A review of the Study Area, which included a half-mile radius around the Facility Site, found no PEJAs present according 2018-2022 ACS Data, based on the revised thresholds established by the NYSDEC (Figure 19-1). A review of potential Facility impacts to noise (Exhibit 7. *Noise and Vibration*), visual resources (Exhibit 8. *Visual Impacts*), and transportation (Exhibit 16. *Effects on Transportation*) to DACs is detailed in the following sections.

Noise and Vibration

A detailed analysis of the potential sound impacts associated with the Facility's construction and operation was conducted (see Exhibit 7. Noise and Vibration). Construction noise modeling was performed for the main phases of construction and from activities at the proposed laydown areas.

All sensitive receptors within at least a 1,500-foot radius from any noise source (e.g., substation transformer(s), inverters) proposed for the Facility or within the 30 A-weighted decibel (dBA) noise contour, whichever is greater, were included in the analysis. In total, 764 discrete receptors were analyzed for the Facility. These include 560 residential receptors, 11 public receptors, and 193 other receptors.

The five major construction phases for this are: site preparation and grading, trenching and road construction, equipment installation, horizontal directional drilling (HDD), and commissioning. The highest sound level at a non-participating receptor located in a DAC (Receptor #565) is 57 dBA during site preparation and grading, 58 dBA during trenching and road construction, 58 dBA

during equipment installation, and 23 dBA during commissioning. The highest sound level at a non-participating receptor located in a DAC (Receptor #763) during the HDD is 78 dBA and 53 dBA during the HDD commissioning. Most of the construction will occur at significant distances to sensitive receptors, and therefore noise from most phases of construction is not expected to result in impacts to sensitive receptors. Additionally, construction noise will be minimized through the use of best management practices (BMP). Sound levels during construction range between 17 and 74 dBA are approximately the sound levels of a quiet natural area with no wind up to a vacuum cleaner (Yale University Environmental Health and Safety 2024) and therefore, no significant adverse impacts are expected to occur. Noise impacts associated with construction will be temporary and only occur during daytime hours throughout the expected two-year construction timeline.

Sound impacts during worst-case operation of the inverters and substation were also calculated. In DACs, the highest mitigated sound level during operations at residential receptors is 39 dBA. This sound level is below the requirements as set forth in Section 1100-2.8(b)(2) of the Article VII Regulations. For comparison, 40 dBA is approximately the sound level of a suburban area at night (Yale University Environmental Health and Safety 2024). The noise levels during Facility operation will comply with Article VIII noise level requirements. As a result, minimal noise impacts are associated with Facility operation, with minimal noise impacts to DACs.

Visual

As described in Exhibit 8. Visual Impacts, a solar array viewshed analysis was conducted to assess visual impacts from the Facility within the Visual Study Area (VSA). The VSA is established as a two-mile radius around the fence perimeter of the proposed Facility in accordance with Section 1100-2.9 of the Article VIII regulations. The solar array viewshed analysis presented in Figure 4 of the Visual Impact Assessment (VIA) in Exhibit 8, Appendix 8-1, indicates that some visibility of the proposed solar arrays and supporting infrastructure is expected within the VSA. These data suggest that an insignificant amount of predicted visibility (1.46 percent) may occur in sensitive locations, such as developed areas, open areas, and the Mohawk River. Slightly more visibility (10.97 percent) will occur on non-participating properties than on participating properties (7.22 percent). However, mitigatory strategies, including 30,750 linear feet of plantings and 24,355 linear feet of fencing, will reduce viewer sensitivity to the visual change. Overall, the results from VIA indicate that, although nearby locations are anticipated to have moderate views of the Facility, the Facility will not detract from any significant unique or scenic visual landscape.

Moreover, the VIA indicates that, at locations where the existing landscape has moderate scenic quality, the Facility's visual contrast is not expected to detract from existing views. Therefore, the Applicant does not anticipate adverse impacts to visual resources within DACs.

A Glint and Glare Analysis (Exhibit 8, Appendix 8-2, Plan 7C and Attachment 7) was conducted to evaluate the potential effects of solar array glint and glare. According to the results of the Glint and Glare Analysis, potential glare would be limited to residences and roadways greater than 0.5 miles away (outside of the Impact Study Area). Additionally, non-glare finish will be applied to transmission structures and the Glint and Glare Analysis will inform placement of arrays to minimize glare. Therefore, the Applicant does not anticipate adverse glint or glare within DACs.

Transportation

As described in Exhibit 16. Effects on Transportation, potential transportation-related impacts from Facility construction will largely be from proposed routes for construction vehicles. These haul routes are shown in Exhibit 16, Figure 16-1, and Figure 16-2. The operational phase will not include heavy vehicle traffic. Further, the operational phase workforce will not affect traffic around the Facility Site and is not anticipated to have an added impact to adjacent roadways. During construction, all equipment delivery via heavy vehicles to the Facility Site are expected to use the following haul route:

1. Construction vehicles will exit I-90 at Exit 29, and travel east on SR 5S (Main Street).
2. Construction vehicles will turn right at Hilltop Road/County Road 96, Rappa Road, or Flat Creek Road/County Road 98 and disperse throughout the Facility Site.

A total of 6,180 loaded trips are expected to transport equipment required for Facility construction over two years of construction. Access roads within DACs are anticipated to be off of: Flat Creek Road, Sloansville Road, Mapletown Road, Conway Road, Carlisle Road, County Road 96, and Rappa Road. Travel on these roads will mainly be near the participating parcels. Other roads in DACs are not expected to be affected, including roads which are more heavily populated. Additional construction traffic may cause delay to school buses, but bus routes will not change. The contractor will adjust shift start and finish times to accommodate school traffic. As a result, the facility’s construction is not expected to adversely affect transportation routes in DACs.

Based on staffing requirements, as discussed in Exhibit 18. Socioeconomic Effects, little to no transportation effects are anticipated within DACs (see Exhibit 16. Effects on Transportation).

Additionally, heavy vehicles or equipment will not be traveling to and from the Facility Site regularly during operations. As a result, the facility's operational phase is not expected to adversely affect transportation routes in DACs.

19(c) Effectiveness of Avoidance, Mitigation, and Offset Measures

As required under Article VIII, the Applicant has prepared the relevant and appropriate studies and analyses to inform the completion of the exhibits which demonstrate that the Applicant has designed the Facility to minimize, mitigate, and avoid impacts to the maximum extent practicable in the Impact Study Area and, by extension, DACs. These analyses were performed within the Facility Site and associated specified Impact Study Area distances in accordance with Article VIII (half-mile radius of Facility Site unless otherwise noted). To mitigate impacts to DACs within the Impact Study Area, the Applicant is committed to coordination and communication with the community.

The Applicant will communicate with the public to provide notification at the commencement of construction in accordance with the requirements of Article VIII. Construction noise will be minimized in DACs and throughout the Impact Study Area using BMPs as described in Exhibit 7. Noise and Vibration. in addition, the Applicant will have a Complaint Resolution Plan in place to address complaints. These BMPs include, but are not limited to:

- Post installation and HDD will be limited to daytime hours.
- Pursuant to 19 NYCRR § 6.2(k)(1), utilizing construction equipment fitted with exhaust systems and mufflers that have the lowest associated noise whenever those features are available and maintaining functioning mufflers on all transportation and construction machinery.
- Maintaining equipment and surface irregularities on construction sites to prevent unnecessary noise.
- Configuring, to the extent feasible, the construction in a manner that keeps loud equipment and activities as far as possible from noise-sensitive locations.
- Using back-up alarms with a minimum increment above the background noise level to satisfy the performance requirements of the current revisions of Standard Automotive Engineering (SAE) J994 and OSHA requirements.

- Developing a staging plan that establishes equipment and material staging areas away from sensitive receptors when feasible.
- Contractors shall use approved haul routes to minimize noise at residential and other sensitive noise receptors.

The Applicant will coordinate with the local school districts to avoid impacts and delays to bus routes throughout the construction process. Local school districts will be advised in advance of any road closures so that alternatives routes can be developed. It is expected that overall impacts to the local school districts busing program will be minimal and no significant mitigation exceeding ongoing coordination is recommended. Similar coordination will be performed with the appropriate Public Transportation bus providers.

The Applicant has and will continue to coordinate with local emergency service providers throughout the construction period, so that they are aware of any sporadic road closures that may impact their routing decisions during the duration of the closure. They will also be kept informed of expected site work and number of workers so that emergency response can be planned in advance. It is expected that overall impacts to the local emergency service providers will be minimal and no significant mitigation exceeding ongoing coordination is recommended. Under a Road Use and Restoration Agreement with the relevant authority (State, County, or Town, as applicable), the Applicant will repair damage to roads caused by heavy equipment or construction activities related to the Facility thereby restoring the affected roads to a condition equal to or better than documented by a pre-construction survey. Roads will be maintained in good working order during construction and operation.

To mitigate visual impacts from the Facility to DACs, the Applicant has created a Visual Impacts Minimization and Mitigation Plan (VIMMP) to reduce visibility of the proposed Facility. The VIMMP includes the following measures:

- Other than warning and safety signs, no advertisements, conspicuous lettering, or logos will be permitted on Facility components.
- The collection system is proposed underground by either trenching or HDD.
- Transmission structures facilitating the POI shall have a non-glare finish.

- Non-specular conductors shall be used for the transmission line, electric collection system, as well as the electrical substation equipment to reduce light reflectance.

Additionally, the Applicant has developed a Planting Plan and a Lighting Plan. The Planting Plan (see Appendix 5-2 of Exhibit 5 Design Drawings) will use vegetative screening to minimize and mitigate visual impact to the surrounding environment. The following items and concepts were applied to the plan:

- Planted vegetation will need suitable time to establish a meaningful height and breadth to provide appropriate visual screening while also maintaining minimum mature heights that will not shade Facility components, reducing power generation. See Table 8-9 below for an outline of the planting schedule for the Landscape Plan.

- Planting templates are proposed to parallel the Facility's fence perimeter as noted on the Landscaping Plan. Landscape templates A and B are proposed for an approximate total of 30,750 linear feet (approximately 5.82 miles comprising 419 deciduous trees, 2,001 evergreen trees, and 1,966 deciduous shrubs).

The Lighting Plan (see Plan 7B of Attachment 7 of the VIA) illustrates the proposed positions, orientation, and tilt angle of the light fixtures. The Lighting Plan was developed to minimize light creep and runaway light while meeting lighting standards established by the National Electric Safety Code. The proposed plan also complies with Occupational Safety and Health Administration requirements as proper illumination will be provided for all working spaces around the electrical equipment.

19(d) Summary of Environmental Justice Analysis

A review of the Facility Site and its 0.5-mile buffer found that there are no PEJAs present, according 2018-2022 ACS Data. Additionally, the Study Area includes two DACs, according to the CJWG mapping. Based on the analyses detailed above, no significant and adverse disproportionate effects on populations in DACs are expected to arise from the construction and operation and maintenance of the Facility. The Applicant will avoid and/or minimize any significant and adverse disproportionate environmental impacts of the Project should they arise, to the maximum extent practicable for all local communities.

References

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