



WATKINS GLEN SOLAR ENERGY CENTER

Case No. 17-F-0595

1001.23 Exhibit 23

Water Resources and Aquatic Ecology

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Exhibit 23: Water Resources and Aquatic Ecology

This Exhibit will track the requirements of Stipulation 23, dated February 21, 2020, and therefore, the requirements of 16 New York Codes, Rules and Regulations (NYCRR) § 1001.23.

23(a) Groundwater

(1) Hydrologic Character

The Project Area is not located within or adjacent to mapped aquifers. According to the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS), the average representative depth to the water table within the Project Area is 2.1 feet (0.64 meters) and the depth to bedrock ranges from 0 to 76 inches. This data was obtained from the USDA NRCS Web Soil Survey tool, which lists depth to restrictive layers and the water table by soil map unit for a given area of interest. Geotechnical evaluations were performed at the Project Area by Terracon Consultants, Inc. (Terracon) on October 8, October 14, and November 12, 2019 to determine actual site-specific conditions. Findings of the geotechnical investigations on site indicate groundwater at depths ranging from the soil surface to 16 feet below existing grades; however, groundwater conditions may vary by season and due to weather conditions. Subsurface conditions generally indicate bedrock depth between 10.5 and 30.5 feet throughout the Project Area. The Geotechnical Engineering Report for the Project Area is provided as Appendix 21-1. For purposes of the Application, the bedrock depths are depicted visually on Figure 21-3 in Exhibit 21 based upon publicly available data. Figure 23-1 depicts the depth to high groundwater across the Project Area also based on publicly available data (USDA NRCS data). Exposed bedrock was not seen within the Project Area during field surveys.

At the depths encountered by the geotechnical survey, most construction is not expected to intercept or affect groundwater on site. Posts will be embedded to a depth of approximately 9-12 feet. Based on the results from the geotechnical investigation, groundwater may be experienced anywhere below the surface. Temporary dewatering may be required during construction if perched water, groundwater, or seepage is encountered.

Based on actual conditions encountered in the borings and test pits, bedrock conditions within the Project Area are deeper than suggested by the USDA NRCS Web Soil Survey. Encountered site conditions are generalized as depicted below in Table 23-1.

Table 23-1. Generalized Geotechnical Review Results

Description	Approximate Depth to Bottom of Stratum (feet)	Material Description	Relative Density/ Consistency
Stratum 1	2 to 20	Native soil, consisting of silt, sand, and gravel mixtures with occasional rock fragments	Medium Dense to Very Dense
Stratum 2	1 to 26.5	Weathered Shale Bedrock	Very Dense
Stratum 3	30.5 (maximum depth explored)	Shale Bedrock	Medium Strong with Very Thin Bedding and Close Fractured

Source: Preliminary Geotechnical Engineering Report, Terracon Consultants-NY, Inc., 2020.

(2) Map of Groundwater Aquifers and Groundwater Recharge Areas

To enhance and promote proper development, management, and protection of the unconsolidated aquifers of upstate New York, the United States Geological Survey (USGS) has completed hydrogeologic mapping projects in cooperation with New York State and local agencies. The distribution and hydrogeologic characteristics of the unconsolidated aquifers are presented at the 1:250,000 scale in a series of five maps that were published in 1988 in cooperation with the New York State Department of Environmental Conservation (NYSDEC). More detailed hydrogeologic maps are available for selected aquifers at 1:24,000 scale. Since 1980, 33 of these aquifer maps have been published in cooperation with the NYSDEC and Department of Health and various local agencies. The aquifer maps generally include a series of 1:24,000 maps showing aquifer boundaries, surficial geology, location of wells and test holes, and the water table or potentiometric surface (USGS, n.d.). These 1:24,000 scale maps are not available for the Project Area.

The Project Area does not overlay any NYSDEC-listed primary aquifers. The closest primary aquifers are the Lower Cohocton Aquifer, approximately 9 miles west of the Project Area's western limit (Pagano et al., 1984) and the Valley Fill Aquifer approximately 9 miles south of the Project Area's southern limit (Miller et al., 1982). Primary aquifers are defined by the USGS and

the NYSDEC as “*highly productive aquifers presently utilized as sources of water supply by major municipal water supply systems*” (NYSDEC, 1990).

The Project Area does not overlay any NYSDEC-listed principal aquifers. As opposed to primary aquifers, principal aquifers, as per the NYSDEC, are aquifers known to be highly productive or whose geology suggests abundant potential water supply, but which are not intensively used as sources of water supply by major municipal systems at the present time. As depicted on Figure 23-2, the closest NYSDEC-listed principal aquifer is approximately 0.25 miles to the south of the Project Area.

According to the *Principal Aquifers of the United States* (USGS, 2003), the Project Area does not overlay any USGS-listed principal aquifers. The USGS defines a principal aquifer as “a regional extensive aquifer or aquifer system that has the potential to be used as a source of potable water” (USGS, 2003). Groundwater aquifers and groundwater wells are mapped on Figure 23-2. The data on groundwater aquifers and recharge areas was obtained through the NYSDEC Division of Water Resources, Bureau of Water Management. Specific information pertaining to local mapped groundwater aquifers and groundwater wells are described in detail below.

The nearest USGS groundwater monitoring site (USGS 423143076582601 Local number, Ya-180) is located in Dundee, New York, approximately 13 miles north of the Project Area. According to data collected at this USGS groundwater site, the average annual depth to the sand and gravel aquifer (glaciated region’s) water level is approximately 4.5 feet below land surface with seasonal variation of approximately 2.5 feet.

To identify existing groundwater wells within the Project Area, Freedom of Information Law (FOIL) (Public Officers Law, Article 6 Sections 84-90) request letters were sent to the New York State Department of Health (NYSDOH) and the NYSDEC to identify the locations of existing water wells within the 2-mile Study Area. These letters requested any information pertaining to groundwater wells (including location, construction logs, depths, and descriptions of encountered bedrock) within the Project Area. An initial request letter was sent to the NYSDEC on March 2, 2020, asking for the water well completion reports. No response has been received by the Applicant. The most recent publicly available NYSDEC well data for the Project and Study areas is depicted on Figure 23-1. Three of these wells are located within approximately 500 feet of the Project Area boundary, and three wells are located approximately 2,000 feet from the Project Area Boundary. No wells are located within the Project Area. Coordinates, the depth, and the yield of each well are detailed

on Figure 23-1. Public NYSDEC well data showed that typical well depth ranged from 30 to 294 feet and averaged 107 feet within the 2-mile Study Area. Depth to groundwater ranged from 4 to 250 feet and averaged 38 feet. Most wells reported yields between 5 and 10 gallons per minute (gpm), with some as low as 1 gpm and as high as 100 gpm. Copies of submitted FOIL letters and responses received are included in Appendix 23-1.

A FOIL request letter was also sent to the NYSDOH on March 2, 2020, requesting data on wells within the Project Area. The NYSDOH responded on May 8, 2020, stating that no public water sources are located within a mile of the Study Area. A FOIL request letter was sent to both the Schuyler County Public Health Director and the Schuyler County Soil and Water Conservation District (SWCD) on March 2, 2020, requesting groundwater well information. No response has been received by the Applicant from either the Schuyler County Public Health Department or the Schuyler County SWCD to date.

(3) Impacts on Groundwater Quality and Quantity

Sole source aquifers are defined by the United States Environmental Protection Agency (USEPA) as aquifers that supply at least 50% of the drinking water for their service areas; there are no reasonable alternative drinking sources should these aquifers become contaminated. The nearest sole source aquifer is in Tioga County, approximately 20 miles southeast of the nearest point within the Project Area. (The USEPA “Sole Source” aquifer being coincident with the NYSDEC primary-class aquifer described above.) Refer to Figure 23-2.

No permanent impacts to aquifers (primary, principal, or sole source) or groundwater are anticipated to result from this Project. There is potential for minor and temporary adverse impacts to the local water table, which will be avoided and/or minimized through best management practices (BMPs) including measures proposed in the Stormwater Pollution Prevention Plan (SWPPP) provided as Appendix 23-3.

Temporary impacts to groundwater could potentially occur through the introduction of pollutants from inadvertent discharges of petroleum or other chemicals used during the construction, operation, or maintenance phases of the Project. These discharges could result from mechanical failures in construction, operation, and maintenance equipment, and through spills during the refueling of equipment. Impacts to groundwater, however, are not anticipated due to the implementation of required avoidance, minimization, and mitigation measures, which will be strictly adhered to. These measures will be outlined in the Project’s Preliminary Spill Prevention,

Containment, and Countermeasure (SPC) Plan that will be submitted prior to construction/operation of the Project.

The Project will add only a small area of impervious surface, 6.61 acres (0.86% of the Project Area), to the landscape through the placement of equipment pads, access roads, the collection substation, and the Point of Interconnection (POI) switchyard. These impervious areas will be dispersed throughout the Project Area and will have, at most, a negligible effect on groundwater recharge for the local region. The construction of these impervious surfaces is typical of construction projects throughout New York State with methods approved by the NYSDEC.

Within the Project Area, depths to the seasonal high-water table are approximated to range from the surface (in isolated areas) to more than 16 feet below ground level. Proposed access roads are impervious and designed to distribute runoff as sheet flow to roadside buffers where it will infiltrate the groundwater. It is presumed that groundwater may be encountered in poorly drained soils, areas with a characteristic shallow water table, areas that contain seasonally perched groundwater, or areas where semi-impervious or impervious layers of substrata do not permit groundwater to permeate deeply within the soil profile (i.e., aquitards and aquicludes). Furthermore, the ponding of surface waters and the pooling of water due to significant precipitation events could occur in open excavation areas or depressions during the construction phases of the Project.

Project construction and operation is not anticipated to cause any impacts to drinking water. Measures contained in the SWPPP and SPC will be taken to avoid and/or minimize possible impacts to surface water and groundwater. Additionally, the Project will not have adverse impacts on public or private water wells. If a resident feels that their well water has been adversely affected by Project construction or operation, they may file a formal complaint to the Applicant through the Complaint Resolution Plan (see Appendix 12-3).

Plans for notification and complaint resolution during construction of the Project for owners/operators of public and private wells within a 1-mile radius of the Project Area are detailed in Exhibit 12 of this Application and the full Complaint Resolution Plan is available in Appendix 12-3.

(4) Private Well Survey Results

To help identify information on private well locations, well survey questionnaires were mailed to all landowners of tax parcels within a 2,000-foot radius of the Project Area, totaling 41 surveys. Included in the survey were questions about the size, yield, depth, and quality of water obtained from well(s) on the property, and location in relation to any buildings on the property. The letter also contained a phone number to reach a TRC consultant if the recipient had any questions, along with a stamped self-addressed envelope to facilitate returns to TRC on behalf of the Applicant. As of April 13, 2020, TRC received 3 responses to the surveys. One of the three survey responses indicated they did not have any wells currently in use on their property, while two sites stated that wells were on the property. See Figure 23-2 for approximate private well locations as determined by survey responses.

Seven total responses to this survey were completed and received. Based on the results and level of detail provided within each response, the depths of private wells ranged from approximately 9 feet to 100 feet below ground. Average well depth was unable to be determined due to limited response to the survey. Groundwater discharge from wells reported in this survey could not be determined due to limited response to the survey and no reports of known gpm metrics of reported wells. Completed responses are attached in Appendix 23-2.

23(b) Surface Water

(1) Surface Water Map

The locations of surface waters within the Project Area are mapped on Figure 23-3. This map was generated from publicly available data from the NYSDEC, Environmental Systems Research Institute (ESRI), USGS, National Wetland Inventory, and waterbody data collected during on-site waterbody and wetland delineations. On-site survey data for surface waters was also provided to NYSDEC and New York State Department of Public Service (NYSDPS) as shapefiles and in tabular format that can be cross-referenced to the maps.

(2) Surface Water Characteristics

The Study Area is located within the NYSDEC-defined Oswego River/Finger Lakes major drainage basin. This major drainage basin drains an area of 5,070 square miles entirely within New York State. The majority of Schuyler County is within this drainage basin and includes the drainages of the Oswego, Oneida, Seneca, and Clyde Rivers and most of the New York Finger

Lakes. Water quality measurements for rivers are generally good with no major water quality concerns (NYSDEC, 2010).

The Project Area is located within the USGS-defined Seneca River sub-basin (HUC 04140201). At the watershed level, the Project Area is located within the Seneca Lake Inlet watershed (HUC 0414020106). At the sub-watershed level, the Project Area is located within the Sleeper Creek-Catharine Creek Watershed (HUC 041402010602) and Seneca Lake Inlet (HUC 041402010603).

The NYSDEC has implemented regulations addressing state-listed protected waterbodies in reference to Title 5 of Article 15 within the New York State Environmental Conservation Law (ECL) (Protection of Waters). Any action that disturbs the bed or banks of these protected waterbodies requires the issuance of a permit, except that permit is supplanted by Article 10 of the Public Service Law and the approval is instead issued by the Siting Board as part of the Certificate.

The NYSDEC has classified waterbodies state-wide with the following letters or grades: AA, AA(T), A, A(T), B, B(T), C, C(T), and D. Class AA or A waterbodies are reserved for the waterbodies with the highest water quality. AA or A classes indicate that the best use of the waterbody can be as a source of water supply for drinking, culinary or food processing purposes; primary and secondary contact recreation; and fishing. Class B waters are suggested to only be used for primary and secondary contact recreation and fishing. The best usage of Class C waters is fishing and non-contact related activities. Class D waters represent the poorest water quality standard and activities within this water class are advised to not occur. Waters with classifications A, B, and C may also have a standard of (T), indicating that it may support a trout population, or (TS), indicating that it may support trout spawning events. Certain waters of the State are listed as protected due to their classification level.

Waterbodies with a classification of AA, A, B, or C with a standard of (T) or (TS) are collectively referred to as "protected waterbodies," and are subject to the provisions of the Protection of Waters regulations. Special requirements apply to sustain (T) and (TS) waters that support sensitive fisheries resources. There are two NYSDEC-classified waterbodies located in the Project Area; however, neither waterbody is a protected waterbody. Table 23-1 below lists the NYSDEC-classified waterbodies within the Project Area and their State classifications. Figure 23-3 portrays their locations relative to the Project Area. In addition to those NYSDEC-mapped waterbodies listed below, numerous small unnamed and unmapped (by NYSDEC) waterbodies

and tributaries are present within the Project Area. Waterbodies within 500 feet of any Project Components have been mapped through a desktop analysis and are identified on Figure 23-2.

Table 23-2. NYSDEC-Mapped Streams within the Study Area

NYSDEC Stream Name	NYS Major Drainage Basin	USGS HUC 8 Sub-basin and Name	NYSDEC Classification and Standard
Tributary of Glen Creek and Vanzandt Hollow	Seneca River	04140201 (Seneca River)	C
Tributary of Shequaga Creek	Seneca River	04140201 (Seneca River)	C

Wetland and waterbody delineations occurred in the summer of 2017 and spring of 2019. A full description of the wetland and waterbody delineation methodology and the results of the surveys can be reviewed in the Wetland and Stream Delineation Report located in Appendix 22-6. A total of 25 stream features were identified during the delineation efforts. These stream features incorporate portions of the NYSDEC-mapped streams and unmapped streams identified by field staff. Most streams were documented as having intermittent flow, but there were two streams with perennial flow and one with ephemeral flow.

An inquiry was sent to the NYSDEC Division of Fish, Wildlife & Marine Resources on March 2, 2020, requesting site-specific data on the fish species that reside in the waterbodies that cross or are proximate to the Study Area to determine the potential impacts to local aquatic due to the Project. Waterbodies that are encompassed in the Study Area and incorporated into the information request include Glen Creek and Shequaga Creek. Minor tributaries associated with these waterbodies were also included in the inquiry. No response has been received by the Applicant.

A complete list of freshwater fish species that were observed or presumed to occur within the Project Area can be found in the master wildlife inventory list attached in Appendix 22-1.

Based on current distribution data within the NYSDEC’s list of Common Aquatic Invasive Species of New York (n.d.), it is not expected that common invasive aquatic species will occur within the vicinity of the Project Area. No species from the NYSDEC list were observed during wetland and waterbody delineations. Due to the location of the Project Area in the watershed, most of the

Project Area does not consist of waterbodies large enough to support these aquatic invasive species.

(3) Downstream Drinking Water Supply Intakes

The nearest permitted drinking water intake downstream of the Project Area is the Village of Watkins Glen Water Filtration Plant, operated by the Village of Watkins Glen, within Schuyler County. This intake is located on Seneca Lake, approximately 4 miles downstream of the Project Area. The water is pumped to a filtration plant on Steuben Street and treated with alum and soda ash and disinfection with chlorine. The water is then put through flocculation and then filtration. The Project is not expected to have any adverse impacts on the water quality of Seneca Lake and therefore, no impacts on the downstream drinking water supply for the Village of Watkins Glen.

(4) Surface Water Impacts

Project Components have been sited to minimize temporary or permanent impacts to wetlands and waterbodies to the maximum extent practicable. Temporary impacts to 13 non-state-regulated wetlands are anticipated as a result of the Project and one stream crossing will be required. Refer to Exhibit 22 for a more detailed discussion of wetlands and streams and measures employed to avoid and/or minimize potential impacts. Certain construction activities have potential to result in direct and/or indirect impacts to surface waters. These activities include the installation of access roads, installation of collection lines, and the development of temporary staging areas and workspaces around the solar arrays, collection substation, and POI switchyard. Impacts related to the construction of access road crossing will be minimized to the maximum extent practicable by utilizing existing crossings and crossing at narrow waterbody locations where feasible. In addition, implementation of the BMPs in the SPC and SWPPP will avoid or minimize impacts to the maximum extent practicable.

The Applicant evaluated potential temporary and permanent impacts to surface waters resulting from the construction and operation of the Project based on the Project design as shown in the Preliminary Design Drawings (Appendix 11-1). Construction of the Project is anticipated to result in approximately 7 linear feet of temporary disturbance and 50 linear feet of permanent disturbance to one waterbody identified during on-site wetland and stream delineation. This disturbance is a result of improvements to an existing stream crossing where an existing farm

road crossing a waterbody will be improved with culverts to serve as an access road to the western portion of the Project Area.

Impacts to wetlands and streams have been minimized and/or avoided through the siting of Project Components after surveys were completed to avoid wetlands and waterbodies to the maximum extent practicable and through the siting of stream crossings in locations of existing access ways or along narrow sections of stream channels to reduce impact numbers. Table 23-3 lists a summary of the potential impacts to waterbodies identified near Project Component placement and construction. See Table 22-11 of Exhibit 22 for a complete list of wetland and waterbody impacts.

Table 23-3. Impacts to Wetlands and Streams

Field ID	Flow Regime ¹	Linear Feet within Project Area	Potential Jurisdiction	NYSDEC Classification	Temporary Impact (Linear Feet)	Permanent Impact (Linear Feet)	Project Component	Method of Crossing
S-DL-6	RIN	1,746	USACE	N/A	7	50	Access Road	Culvert
1. Flow Regime: REPH – Ephemeral, RIN – Intermittent, RUP – Perennial, UNK - Unknown								

As indicated in Table 23-3 and on the Preliminary Design Drawings in Appendix 11-1, there will be a total of one waterbody crossing. As noted above, this disturbance is a result of improvements to an existing stream crossing where an existing farm road crossing a waterbody will be improved with culverts to serve as an access road to the western portion of the Project Area. Refer to drawing number C.304 in the site plans included in Appendix 11-1. This stream is not a NYSDEC-protected waterbody, and therefore, is not regulated under Article 15 of the ECL. The Project will comply with the following proposed BMPs to prevent and reduce stream impacts: temporary equipment bridge, dam and pump stream crossing, open cut stream crossing, flumed stream crossing, dewatering basin, sediment filter bag, stream bank matting, and trench plugs. Final BMPs will be considered in the Article 10 certificate conditions.

To also address impacts to wetlands containing open waters due to Project-related construction and operation, any temporary and permanent impacts to delineated wetlands with open water features were documented. No Project Components have been sited within or adjacent to open

water wetlands. Therefore, construction and operation of the Project is anticipated to result in no temporary disturbance to open water resources.

Surface waters surrounded by steep uplands are subject to erosion potential during any construction-related activity that may take place near these slopes. The Project has been designed to avoid steep slopes to the maximum extent practicable to pursue safe and economical design and construction procedures. Construction of the Project could result in minor siltation and sedimentation in waterbodies that are adjacent to steep uplands. The Applicant will take measures to avoid and minimize siltation events pursuant to the SWPPP that are ultimately approved. The preliminary Project SWPPP is contained in Appendix 23-3 of this Application.

As noted earlier in this Exhibit, there are no surface drinking water intake sites in the Project Area or downstream of the Project Area within the Study Area. Based on the information obtained, the Project will not result in impacts to water-supply intakes. All practicable measures will be taken by the Applicant to avoid and/or minimize any impacts to surface waters through the measures adopted in the SWPPP and SPC.

In keeping with guidance outlined by the NYSDPS and NYSDEC, the Applicant will develop a SPC Plan that also will be utilized to avoid or minimize the potential for the release of hazardous chemicals into local natural resources. The SPC Plan will assist in the avoidance, minimization, and mitigation of surface water impacts to protect local drinking water supplies.

(5) Groundwater Minimization Methods

Site planning was done to avoid impacts to groundwater to the maximum extent practicable as explained in Section 23(a)(3). Pre-construction planning for the Project will be completed with the understanding that groundwater could be encountered due to the variable seasonal high water table throughout the Project Area. Conventional sump and pump methods are anticipated to be adequate to control any groundwater accumulation in shallow trenches or ponded surface water in low-laying areas utilized during construction. The sediment-laden water removed during these dewatering activities will be filtered and discharged in upland locations avoiding waterbodies and wetlands.

Dewatering will likely occur if shallow groundwater is encountered during the construction phase of the Project. If dewatering is required, a temporary pit or designed sediment trap will be utilized and placed in well-drained upland areas. These sediment traps will not be placed within or directly

adjacent to wetlands or waterbodies. Sediment traps will collect excess sediment in turbid waters and filter out cleaner water, discharging it into a pre-determined stable discharge area. Dewatering techniques will follow the standard actions of pumping accumulated water to a device (e.g., sediment filter bag, silt fence barrier, sediment trap), which will decrease the discharge velocity of water outflow and trap any suspended sediment prior to out letting to well-drained undisturbed upland areas. Additionally, construction of the Project will adhere to the SPC Plan and SWPPP guidelines, which prevent the contamination of and/or erosion due to surface water runoff or groundwater discharge, thereby avoiding significant adverse impacts to any water resources.

In areas where construction activity occurs below the water table, there is always some potential to impact localized groundwater flow regimes if precautions are not taken. At the Project Area, since minimal subsurface work proposed, it is assumed groundwater could flow around the disturbance area and assume normal flow regimes further downslope. If groundwater infiltrates work areas that occur below the water table, removal of the groundwater by pumping could slightly decrease the level of local water tables within the vicinity of the construction activity. Any impact, however, will be minimal, localized, and temporary. Measures to restore the groundwater will be implemented. All water subject to the pumping operations will be pumped to the surface and discharged in an approved technique for decreasing its outlet velocity. Slowly discharged water through sediment bags or grass detention basins as appropriate, will be allowed to permeate back into the ground and re-settle below the water table downslope. Where possible, the location selected for re-infiltration into the water table will occur on permeable soils (but not in wetland areas), which will help increase the rate of infiltration and reduce net loss of water volumes to evaporation. As stated above, construction of the Project will adhere to the SPC Plan and SWPPP guidelines, which prevent the contamination of and/or erosion due to surface water runoff or groundwater discharge, thereby avoiding significant adverse impacts to associated water resources.

Groundwater migration events could result from the installation of buried interconnect lines, which may facilitate groundwater travel along the loosened soils surrounding the buried collection line. It is believed water could collect in the trench and migrate along the trench route to areas downslope. However, it is presumed there will be no net loss of groundwater as volumes will be naturally allowed to infiltrate back into the water table at lower elevations. Trench plugs may be used where deemed appropriate in any areas potentially affecting wetland resources.

The Project is not expected to have adverse impacts on public or private water wells. Any impacts to groundwater due to the Project will be minimal, localized, and temporary. In the unlikely event a local resident believes that their well water has been adversely impacted by the Project construction or operation, they may file a formal complaint, which will be responded to by the Applicant through the Complaint Resolution Plan mentioned above.

(6) Surface Water Avoidance/Minimization Methods

The use of existing and narrow crossings of surface waters will help minimize direct impacts to surface waters. To the maximum extent practicable, Project Components have been sited to avoid or minimize both temporary and permanent impacts to surface waters. Project Components will avoid surface waters to the maximum extent practicable. Large temporary construction facilities (staging areas, etc.) will avoid surface water and impacts to surface water to the maximum extent practicable as shown in the Preliminary Design Drawings (Appendix 11-1). Furthermore, the number and overall impacts of access roads crossing surface waters will be minimized by using an existing crossing.

When the crossing of a surface water resource is deemed necessary for the Project, BMPs will be put into place following the guidelines and requirements put forth by the USACE and in certificate conditions adopted by the Siting Board in other proceedings. Proper briefing and signage will be utilized with construction crews to dictate areas where equipment access is prohibited. Crossing will occur only along properly permitted access roads or using temporary matting to traverse delineated waterbodies and wetlands. Also, a selection of activities will be restricted within a predetermined buffer zone around delineated waterbodies, wetlands, and other waterbodies. These buffer restrictions will include no equipment refueling or washing in the buffer area, no storage of petroleum or chemical materials, no disposal of concrete or washwater, no amassing of construction debris or accumulation of slash materials in the area, no use of herbicides within the area, and no actions that may result in the degradation of waterbody banks or steep slopes above water resources.

During construction the use of silt fences, straw bales, siltation catch basins, check dams, and other standardized sedimentation control measures will be installed and maintained throughout the Project and until impact areas become stabilized as determined by appointed Environmental Monitors (EM). To facilitate soil stabilization, exposed soils will be seeded and mulched in a timely manner to reduce the risk of sedimentation events arising from storm events. Control measures

will be dictated in the Project SWPPP. Their locations and design will be shown on the appropriate construction drawings.

As part of Article 10 requirements, an EM will be in place throughout the work period and during the restoration period to inspect and assess sedimentation risk and mitigate any unforeseen issues specific to the nature of the Project Area. Dewatering will likely occur if shallow groundwater is encountered during the construction phase of the Project. Refer to Section 23(b)(5) for additional detail on dewatering methods.

Thermal changes to waterbodies due to clearing vegetation is unlikely, as there is minimal tree clearing adjacent to streams proposed. Changes to in-stream structure and morphology of streams are not expected or will be minimal due to the use of culverts and temporary crossings. The effect of turbidity on nearby aquatic habitat will be reduced by following the SWPPP and other guidelines imposed by the regulatory agencies. There are no anticipated impacts to or take of state-listed threatened and endangered species, species of special concern, or species of greatest conservation need in aquatic habitat in the Project Area, as these species, based upon investigation of publicly available information, are not indicated to occur in the Project Area. Refer to Section 22(f)(10) for further discussion on take of threatened and endangered species and Section 22(o)(2) for further discussion on impacts to state and federally listed species.

(7) Stream Crossings

The Preliminary Design Drawings (see Appendix 11-1) detail the temporary and permanent stream crossing methods and procedures. Culvert specifications, sizing, and flow calculations will be provided in the Final SWPPP. The culverts will be designed to accommodate the appropriate storm event as determined in the Project's Certificate Conditions. Refer to Section 23(c)(4) below for additional information on the Final SWPPP. The Final SWPPP will detail BMPs to be used for the stream crossings. Proposed erosion and sediment control measures to be utilized to prevent and reduce impacts to streams during stream crossing activities include temporary equipment bridges, damming and pumping stream crossings, open cutting stream crossings, flumed stream crossings, dewatering basins, sediment filter bags, stream bank matting, and trench plugs.

It is expected that the trenchless excavation technique of horizontal directional drilling (HDD) will be used during construction to install a collection line under S-DL-6. An Inadvertent Return Plan has been prepared to outline the procedures and responsibilities for the prevention, containment,

and cleanup of an inadvertent release associated with the HDD process. The Inadvertent Return Plan is included in Appendix 21-2 of this Application.

The feasibility of using trenchless stream crossings will be assessed for all streams proposed to be crossed. BMPs will be utilized year-round for all stream crossings. Where impacts are deemed unavoidable, the mitigation measures discussed in Sections 23(b)(5) and 23(b)(6) above shall be used to reduce impacts to the maximum extent practicable.

23(c) Stormwater

(1) SWPPP

The NYSDEC requires coverage under the NYSDEC State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activity (GP-0-20-001 or most recent) for any “construction activities involving soil disturbances of one or more acres; including disturbances of less than one acre that are part of a larger common plan of development or sale that will ultimately disturb one or more acres of land; excluding routine maintenance activity that is performed to maintain the original line and grade, hydraulic capacity or original purpose of a facility.” This authorization is subject to review by NYSDEC but is coordinated with the Article 10 process. The Applicant will seek coverage under the NYSDEC SPDES General Permit for the construction phase of the Project.

Prior to construction, the Applicant will be required to prepare a Final SWPPP, which will describe in specific terms the erosion and sediment control practices that will be implemented during construction activities, and the stormwater management practices that will be used to reduce the pollutants in stormwater discharges after Project construction has been completed. This SWPPP will be prepared as part of the requirements for coverage under GP-0-20-001. It is anticipated that a Notice of Intent (NOI) will be prepared and submitted to the NYSDEC, who will review and authorize a SPDES General Permit number along with the NYSDEC Letter of Acknowledgement certifying that the Project will be in compliance with the technical requirements of GP-0-20-001. Once the Project receives this required documentation, the Letter of Acknowledgement will be inserted within the SWPPP and kept on site, as required by GP-0-20-001. The NOI will be included in the Final SWPPP in Attachment A.

A Preliminary SWPPP has been designed in accordance with the guidelines set forth in GP-0-20-001 and is provided as Appendix 23-3. The Preliminary SWPPP includes a detailed description

of preconstruction requirements. As part of these requirements, an EM is required to be on site daily to inspect the Project's erosion and sediment control practices when soil-disturbing activities are being performed.

The Preliminary SWPPP provides information on stormwater management practices, including erosion and sediment control (vegetative and structural measures, temporary and permanent measures), construction phasing and disturbance limits, waste management and spill prevention, and site inspection and maintenance.

The SWPPP will be updated with Project-specific details once final design is complete as a condition of the Article 10 Certificate.

(2) Post Construction Erosion and Sediment Practices

Increases in stormwater runoff will be minimal, as Project construction will result in limited addition of impervious surface. Therefore, no significant changes to the rate or volume of stormwater runoff are anticipated due to Project operations. However, precautionary and appropriate post-construction BMPs will be installed and maintained according to the Project-specific NYSDEC-accepted SWPPP for the Project per applicable regulations.

Existing drainage patterns will be maintained to the maximum extent practicable. Minimal grading and impervious surfaces are proposed as part of the Project. Therefore, negative impacts to water wells and surrounding agricultural land uses are not anticipated. Erosion and sediment controls will remain in place during site restoration until disturbed areas have been stabilized with vegetation.

(3) Maryland Stormwater Design Guidance

The Maryland "Stormwater Design Guidance – Solar Panel Installations," was considered as part of the draft SWPPP development. The two distinctions between the Maryland guidance, and current New York State SWPPP requirements are as follows:

- The Maryland guidance recommends using a level spreader, energy dissipater, or berm for site slopes between 5 and 10%.
- The amount of grass between panel rows must be equal to or greater than the width of the panels.

The Project complies with both these criteria. Otherwise, the design aspects for solar panel installations are consistent with SWPPPs developed through adherence to New York State guidance. A discussion of the conformance with the Maryland guidelines is included in the SWPPP (see Appendix 23-3).

(4) Final SWPPP

The Final SWPPP will include an erosion and sediment control plan as required per GP-0-20-001 to limit the possibility of off-site impacts, will minimize soil erosion and sedimentation within water resources throughout the Project Area to the maximum extent practicable, and will be submitted to the Secretary for information purposes once accepted by NYSDEC.

(5) Post-Construction Runoff

The Preliminary SWPPP was developed in accordance with the most current version of the New York State Standards and Specification for Erosion and Sediment Controls (SSESC). The SWPPP identifies the post-construction erosion and sediment practices that will be used to manage stormwater runoff from the developed Project Area. Details are presented within the SWPPP (see Appendix 23-3).

23(d) Chemical and Petroleum Bulk Storage

(1) Spill Prevention and Control Measures

No on-site storage or disposal of large volumes of substances regulated under the chemical and petroleum bulk storage programs of New York State are proposed. The generator step-up (GSU) transformer proposed within the collection substation will contain mineral oil (such as ASTM D3487 Type II Inhibited Mineral Oil, or similar) for insulating purposes. Transformers are exempt from the petroleum bulk storage program as they are considered operational tank systems. Operational tank system means a tank system that is integral to or connected to equipment or machinery for which the petroleum in the system is used solely for operational purposes. Petroleum in an operational tank system is not consumed in any context (such as being combusted as fuel or used as a raw material in a manufacturing process).

The Project will adhere to a SPC Plan to minimize the potential impact to aquatic resources from minor leaks or mechanical failures of construction equipment/vehicles. The SPC Plan will be

completed prior to receipt of the Certificate and submitted to the Secretary or the NYSDPS Staff prior to construction/operation of the Project.

This plan dictates that all contractors will be required to keep materials on hand to control and contain a petroleum spill. Any spills will be reported in accordance with state and/or federal regulations. Contractors will be responsible for ensuring responsible action on the part of construction personnel.

The purpose of this SPC Plan is to:

- Provide guidance and information to the personnel that would be called upon to respond to sudden oil releases from oil-filled equipment and oil storage containers;
- Describe measures in place that would prevent released oil from reaching nearby navigable waters;
- Describe the inspection procedures; and
- Discuss the discharge response actions and notifications to ensure employees are prepared to carry out their responsibilities during an oil spill incident.

This Plan has the full approval of Project management with authority to commit the necessary resources to fully implement the Plan, and expeditiously respond to releases of oil.

(2) Storage or Disposal of Regulated Substances

The on-site storage or disposal of large volumes of substances regulated under the chemical and petroleum bulk storage programs of New York State is not proposed. If construction operations require petroleum or other hazardous chemicals to be stored on site, applicable state and federal laws and guidelines will be followed.

(3) Storage of Hazardous Substances Compliance with Local Law Storage Regulations

There are no local, substantive storage of hazardous substances regulations known to be applicable to the Project. Refer to Exhibit 31 for a detailed list of local laws applicable to the Project.

23(e) Aquatic Species and Invasive Species

(1) Biologic Aquatic Resource Impacts

Exhibit 22 directly addresses potential impacts to wetlands and waterbodies, as applicable, within the Project Area. Secondary reference can also be made through review of Tables 23-2 and 23-3.

Any potential impacts to surface waters within the Project Area could, in turn, possibly impact ecologies, organisms, and ecosystems dependent upon these aquatic resources through the introduction of invasive species. Only a small portion of these biological complexes, however, could be impacted by the construction and operation of the Project due to its siting design.

TRC, on behalf of the Applicant, consulted local, statewide, and federal desktop databases and environmental agencies to determine common species documented to occur in the region of the Project Area. None of the invasive species listed within the Common Aquatic Invasive Species of New York (NYSDEC, n.d.) list were documented during on-site survey work conducted by environmental field staff. Adverse impacts to aquatic biology as a result of the spread of invasive species as a direct result of the Project construction, therefore, are not anticipated.

In addition, the Project Area contains limited suitable habitat for the prevalence of aquatic invasive species and general aquatic communities and ecologies. This is due to most of the Project residing within higher elevations where documented waterbodies and wetlands act as headwaters, and to the limited depth and size of waterbodies within the Project Area. For these reasons, the biological diversity of aquatic life on site is relatively low.

(2) Avoidance/Minimization Measures for Biological Aquatic Resources

Measures to avoid and/or minimize potential impacts to surface waters during construction are addressed in Section 23(b)(7) above. In summation, the protection of biological aquatic resources will be a direct result of protecting the surface waters on which these biological resources are dependent on. Water quality will be protected by avoiding impacts to wetlands and waterbodies to the maximum extent practicable. The utilization of underground drilling to avoid some stream features will also reduce impact to documented surface waters. Surface water impacts are only proposed to occur as a direct result of construction of the Project. No impacts to surface waters are likely to occur during the operation phase of the Project. It should be noted that loss of habitat has been largely avoided through careful siting and design of the Project. The Project Area

encompasses small headwater streams and wetlands. As such, there are no impacts to larger streams and rivers that contain a clear majority of the aquatic habitat that exists in the region. Where permanent roads cross a stream, the culverts will be embedded 20% to allow for aquatic species to travel through impacted areas unrestricted as required by USACE regulatory requirements.

23(f) Cooling Water

This Project will not utilize cooling water during any phase of construction or operation and, therefore, cooling water withdrawals will not be addressed in the Application.

References

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- New York State Department of Environmental Conservation (NYSDEC). 1990. *Division of Water Technical & Operational Guidance Series 2.1.3. Primary and Principal Aquifer Determinations*. https://www.dec.ny.gov/docs/water_pdf/togs213.pdf. Accessed February 11, 2020.
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- USGS. n.d. *Unconsolidated Aquifers of Upstate New York*. <https://ny.water.usgs.gov/projects/bqag/aquifer.maps/maps.html>. Accessed July 18, 2019.