



## **EIGHT POINT WIND ENERGY CENTER**

**Case No. 16-F-0062**

**1001.23 Exhibit 23**

**Water Resources and Aquatic Ecology**

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## Exhibit 23: Water Resources and Aquatic Ecology

### 23(a) Groundwater

#### *(1) Hydrologic Character*

The average depth to the water table is 27.89 inches (70.84 centimeters) within the Facility Site and the average depth to bedrock is > 6.5 feet (> 1.98 meter). This data is based off of soils data within the Project Area provided through the Natural Resources Conservation Service (NRCS), United States Department of Agriculture (USDA) Web Soil Survey tool which lists depth to bedrock and water table by soil series for a given subject area. For purposes of the Application, this information is depicted visually in Figure 21-3.

The average depth to the water table is deeper at the location of the turbines within the Facility Site, as observed during the preliminary geotechnical investigations undertaken at the proposed turbine locations (see 21-2).

#### *(2) Map of Groundwater Aquifers and Groundwater Recharge Areas*

The Project Area does not overlay any groundwater aquifers. As depicted in Figure 23-1, two NYSDEC listed principal aquifers are located approximately 0.88 miles southwest and 1.32 miles northeast of the Project Area respectively. Principal aquifers are designated areas of underground water-bearing permeable rock, rock fractures or unconsolidated materials (gravel, sand, or silt) which are believed to be highly productive or have geological characteristics which suggests abundant potential water supply. These aquifers are not intensively used as present sources of water supply by major municipal systems. Groundwater aquifers and groundwater wells are mapped in Figure 23-1. 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 also groundwater wells are described in detail below.

In order to identify existing groundwater wells within the Project Area, a 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 in a one-mile radius of the Project 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 April 5, 2017 asking for the water well completion reports within the Towns of Greenwood and West Union in Steuben County, NY. A response from the NYSDEC Central Office was received on April 6, 2017 providing 59 well completion reports. A general summary of the dataset is given below. A second FOIL request was sent to the NYSDEC on April 11, 2017 inquiring about well completion reports for the Town of Troupsburg in Steuben County and the Town of Andover in Allegany County, NY. A response was received on April 19, 2017. These reports were received in a tabulated Excel spreadsheet showing location coordinates, depth, and yield of the wells. All records obtained from the NYSDEC are included in Appendix 23-1 and locations of wells obtained from the records are mapped in Figure 23-1 (note that only wells that actually provided coordinates in their

well completion reports were included in Figure 23-1). Copies of the FOIL letters and responses received are included in Appendix 23-2.

Well completion reports obtained from the NYSDEC showed that well depth varied throughout the Project Area. Most wells had a depth between 60 and 180 feet however some reported depths as shallow as 25 feet and as deep as 398 feet. Most wells reported yields between 5 and 12 gallons per minute (gpm), with some as low as 1.5 gpm and as high as 40 gpm.

FOIL request letters were also sent to the NYSDOH on March 8, 2017. Upon correspondence with the NYSDOH, the Applicant was directed to direct the request to the Steuben County Department of Public Health (SCDOPH). FOIL request letters were sent to SCDOPH on February 28, 2017. At this time the Applicant is still awaiting a response to the initial request to SCDOPH.

### *(3) Water Well Surveys*

To help identify private well locations, well survey questionnaires were mailed to all landowners of tax parcels within 1-mile of the Project Area. TRC, as the Applicant's environmental consultant, sent out questionnaires to the owners of 496 different tax parcels. Included in the survey were questions about whether the parcel had well(s) on it, the size, yield, depth, and quality of water obtained from well(s) on the property, location in relation to any buildings on the property, etc. 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 back to TRC on behalf of NextEra.

TRC received 197 responses to the surveys. 111 out of the 197 surveys indicated they did not have any wells currently in use on their property. A total of 62 sites stated that wells were on the property. A total of seven (7) sites could neither confirm nor deny the presence of any wells on the property. For planning and avoidance purposes, wells which are utilized for drinking but have an unknown location were identified and marked as to be occurring within the general vicinity of the current residence. A small number of surveys returned indicating that remnant wells were assumed to be on the property in question, but their locations were unknown. These wells were not mapped due to the lack of available location information. It should also be noted that 17 responses indicated that potable water was obtained through groundwater discharge sites (springs) located on the property. Also, some surveys indicated that springs were on the property but no information was given if these springs were in fact utilized as a potable water supply. As springs occur on the Earth's surface and act as the sources for wetlands and waterbodies down slope, any impacts to these spring features would be acknowledged through the analysis of wetland and waterbody delineation efforts performed for this Project. No known impact to delineated spring features which provide a source of drinking water for a residences is known to occur at this time.

Based on the results and level of detail provided within each responses, the depths of private wells ranged from approximately 25 feet to 500 feet below grade with averages around 165 feet. Groundwater discharge from wells reported in this survey ranged from one gallon per minute (gpm) to 35 gpm with averages around 12.5 gpm. The completed responses are attached in Appendix 23-3.

#### *(4) Water Well Locations Table*

The information obtained through the FOIL requests from the NYSDEC were provided in tabular format for the Town of Andover in Allegany County and the Town of Troupsburg in Steuben County and can be found in Appendix 23-1. The well completion reports for the Towns of West Union and Greenwood in Steuben County were not provided in tabular format by the NYSDEC and are not provided in tabular format here. The well completion reports can be found in Appendix 23-1.

#### *(5) Water Well Locations*

Well locations were field verified by the owners of the property that responded to the survey that was discussed above. The Applicant has also verified some well locations when visiting Facility Sites to ensure that there are no wells within 1000 feet (304.8 meters) of a turbine. During the “micrositing” of Components, which includes a site visit and evaluation of all major facility components, the Applicant confirmed there were no wells that would interfere with the development of any major facility component. The Applicant is continuing to verify well locations on an ongoing basis through discussions with landowners, site visits and field verifications.

#### *(6) Impacts on Groundwater Quality and Quantity*

A review of existing aquifer mapping provided by the NYSDEC, USEPA, and the USGS indicates that the Project Area resides in higher elevations above the surficial aquifers which reside in the river valleys within the region.

Sole source aquifers are defined by the US Environmental Protection Agency (USEPA) as aquifers that supply at least 50 percent 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 approximately 35 miles away from the nearest Project component. Therefore no direct impacts to sole source aquifers are anticipated to result from construction or operation of the Project. See Figure 23-1.

Primary aquifers are defined by the NYSDEC as “highly productive aquifers presently utilized as sources of water supply by major municipal water supply systems” (NYSDEC, 2016). The U.S. Geological Survey (USGS) has mapped locations of these aquifers in cooperation with both the NYSDOH and NYSDEC. The closest primary aquifer to the Project is approximately 20 miles away to the east near the Town of Addison in Steuben County. As a result, no direct impacts to primary aquifers are anticipated to occur from construction or operation of the Project. See Figure 23-1.

Principal aquifers are aquifers known to be highly productive, or contain geological characteristics which suggests the potential for abundant water supply, but which are not intensively used as contemporary sources of water supply by major municipal systems (NYSDEC, 2016). The nearest principal aquifers are approximately 1-mile to the northeast and southwest from Project components respectively. Potential direct impacts are not proposed to occur as a result of the Project as no construction is occurring directly over any principal aquifers. Should any groundwater be encountered during excavation, the Applicant has developed several measures which will be undertaken to mitigate any adverse impacts to

groundwater within the Project Area. All groundwater mitigation measures are described in more detail below.

No permanent impacts to groundwater quality or quantity are anticipated to result from this Project. However, there is potential for minor and temporary adverse impacts to the local water table during the construction phase of the Project.

Temporary impacts to groundwater may potentially occur through the introduction of pollutants from inadvertent discharges of petroleum or other chemicals used during the construction, operations, or maintenance phases of the Project. These discharges could result from mechanical failures in construction, operations, and maintenance equipment and also spills during the refueling of equipment. Impacts to groundwater, however, are not anticipated due to the implementation of avoidance, minimization, and mitigation measures which will be directly adhered to. These guidelines will be outlined in the Project's Preliminary Spill Prevention, Containment and Countermeasure (SPCC) Plan that will be completed upon receipt of the Certificate, and submitted as part of the compliance filing for approval prior to construction/operation of the Project. This plan will be developed and applied in order to minimize to the maximum extent practicable the potential for the releases of hazardous chemicals during the construction and operation phases of the Project.

The Project will add only a small area of impervious surface to the landscape through the placement of the collection substation, operation and maintenance facility, turbine foundations, and also their associated access roads. These impervious areas will be dispersed throughout the Project Area, and will have a negligible effect on groundwater recharge for the local region.

Construction of the Project could result in temporary localized impacts to groundwater resources and the use of such waters by landowners adjacent to Component related construction efforts. Specific localized temporary impacts to groundwater could include an interruption of groundwater flows down slope of proposed turbine foundations and access roads; alterations to groundwater recharge characteristics due to changes in surface water runoff or waterbody flows; and impacts to groundwater discharge and recharge areas.

Within the Project Area, depths to the Seasonal High Water Table (SHWT) is approximated to range from the surface to more than 50 inches below ground level. With conditions being so variable across the Project Area, it is not readily known if the proposed turbine locations and associated access roads will encounter or impact groundwater. Test boring performed to date did not encounter groundwater within overburden soils prior to introducing water for use in rock coring (Kenney, 2017). However, as indicated, this could vary seasonally as perched water conditions could potentially develop in site specific areas. It is presumed that groundwater may be encountered in poorly drained soils, areas with a characteristic shallow water table, areas which 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 (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.

As such, pre-construction planning for the Project will be designed with the understanding that groundwater could be encountered recurrently. As such, conventional sump and pump methods are anticipated to be sufficient approaches to control any accumulation of groundwater 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 sufficiently filtered and discharged in upland locations avoiding waterbodies and wetlands. Please refer to discussion on the avoidance and mitigation of surface water impacts for additional detail on dewatering methods, and the preliminary design drawings for typical details. Additionally, construction of the Project will adhere to a SPCC plan and a SWPPP to strictly adhere to established 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.

The greatest potential for impact to groundwater on the Project Area is the installation of turbine foundations and their associated access roads. The proposed wind turbines and associated access roads will be constructed on upland areas and will likely encounter glacial till. The glacial till encountered in the area typically consists of a binder of hard, low-plasticity silty clay that encapsulates particles ranging in size from fine sand to boulders the size of automobiles. The glacial till typically provides high bearing strength and good short term excavation stability if it is left undisturbed (Kenney, 2017). It is therefore anticipated that the foundation system for the wind turbines can utilize a shallow foundation system sized for over-turning. Design frost depth is four (4) feet in the Project Area, and foundations must bear below this depth to prevent movement due to frost heave. It is presumed that this Project will require embedment of approximately 8 to 10 feet for over-turning and sliding resistance. At these depths, the wind turbine foundations may therefore encounter shale or sandstone bedrock as well as glacial till. If bedrock is encountered during construction of the wind turbine foundations, the construction crews will extract encountered bedrock with excavators, chipping hammers, rock rippers, or other heavy equipment. If the bedrock cannot be extracted, attempts at excavation will utilize pneumatic jacking and hydraulic fracturing. No blasting will be conducted if these procedures can be completed. However, should field conditions require blasting, a pre-determined blasting plan will be utilized. For more information on the pre-determined blasting plan please refer to Exhibit 21 of this Application. Impacts associated with excavation and potential blasting methods will be managed through use of BMPs tailored specifically to address constraints within the Project site including the Project's SPCC and SWPPP, as explained in Exhibit 21.

In areas where construction activity occurs below the water table, there is a potential to impact localized groundwater flow regimes. It is assumed groundwater could flow around the disturbance area and assume normal flow regimes further down slope. As mentioned previously, if groundwater infiltrates work areas which occur below the water table, a removal of the groundwater by pumping could decrease the level of local water tables within the vicinity of the construction activity. Any impact, however, will be localized and of a temporary capacity and measures to restore the groundwater to the table will be implemented. All water subject to the pumping operations will be pumped to the surface and discharged in an approved technique of decreasing its outlet velocity. Slowly discharged water through sediment bags, will be allowed to permeate back into the ground and re-settle below the water table down slope. It is assumed that the location selected for re-infiltration into the water table will occur on easily 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, construction of the Project will adhere



to a SPCC plan and a SWPPP to strictly adhere to established 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.

The curing process of the concrete in the turbine foundations may cause a temporary and localized increase in the pH of groundwater in the immediate area of the foundation placement. If perched or pooled groundwater occurs at a turbine site, the dewatering methods described above and in detail with the Project SWPPP, will be implemented. For constructability and safety purposes, most contemporary turbine foundation designs are constructed to inhibit the pooling of groundwater around the foundation. Should shallow or perched groundwater be encountered at some turbine foundations, impacts will be mitigated through common construction and engineering practices including dewatering techniques mentioned above. The implementation of these techniques will avoid and/or minimize the potential for groundwater to pool along the foundation and erode or increase the sedimentation of groundwater downstream and also the influx of increase pH levels.

Groundwater migration events could result from the installation of buried interconnect lines which may facilitate groundwater to 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.

Project construction and operation is not anticipated to cause any impacts to drinking water. Measures will be taken to avoid, minimize, and mitigate for any possible impacts to surface water. The Project is not anticipated to have any adverse impacts on public or private water wells, impacts to groundwater will be localized and minimal. 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.

### *(7) Notification and Complaint Resolution*

Plans for notification and complaint resolution during construction of the Project for owners/operators of public and private wells within a one-mile radius of the Project Area are detailed in Exhibit 12(d) of this Application and the full Complaint Resolution Plan is available in Appendix 12-2.

## 23(b) Surface Water

### *(1) Surface Water Map*

The locations of surface waters are mapped in Figure 23-2. This map was generated from publicly available data from Steuben County, the NYSDEC, ESRI, U.S. Geological Survey, National Wetland Inventory and waterbody data collected during on-site waterbody and wetland delineations.

## *(2) Surface Water Characteristics*

The Project Area is located within both the Chemung River (USGS Hydrologic Unit 02050104, Tioga sub-basin) and Genesee River (USGS Hydrologic Unit 04130002, Upper Genesee sub-basin) major drainage basins of New York.

According to the NYSDEC, the Chemung River drainage basin covers an area of 2,600 square miles along the border of New York and Pennsylvania. A majority of Steuben County is covered by this basin. The Chemung River flows across the western section of the Southern Tier of New York before its confluence with the Susquehanna River, which ultimately empties into the Chesapeake Bay and the Mid-Atlantic Ocean. In the Chemung Watershed, about 73% of river/waterbody miles, and 83% of lake, pond and reservoir acres have been assessed (NYSDEC, 2007). Water quality measurements in the New York portion of the Chemung River Watershed are classified as satisfactory. However, aquatic weed growth and invasive species influxes have caused impacts to some of the larger lakes in the watershed. Various nonpoint source pollutions from agricultural operations are the most frequently cited source of impacts due to the mostly rural setting (NYSDEC, 2007).

The Genesee River drainage basin is found almost entirely within New York State. Only 15 miles of the river and its tributaries originate in the Allegheny Plateau of Northern Pennsylvania (NYSDEC, 2003). The river flows north for approximately 140 miles before emptying into Lake Ontario within the vicinity of the City of Rochester. Water quality measurements in the Genesee River Watershed are also found to be generally satisfactory. Water quality concerns in the watershed are mostly associated with urban and industrial point source pollution in the vicinity of the City of Rochester. Agriculture and other nonpoint sources become more pronounced within the largely rural areas heading southward and in a setting shared by the Project Area.

Within the Chemung River drainage basin, the Project specifically occupies the Tioga Subbasin (USGS Hydrologic Unit 02050104). Within the Genesee River drainage basin the Project occupies the Upper Genesee Sub-basin (USGS Hydrologic Unit 04130002). Local watersheds included within Project limits are as follows:

### Tioga Sub-basin

- Bennetts Creek (USGS Hydrologic Unit 0205010402)
- Troups Creek (USGS Hydrologic Unit 0205010405)
- Cowanesque River (USGS Hydrologic Unit 0205010408)

### Upper Genesee Sub-basin

- Dyke Creek (USGS Hydrologic Unit 0413000202)
- Cryder Creek (USGS Hydrologic Unit 0413000203)

In reference to Title 5 of Article 15 within the New York State Environmental Law (Protection of Waters), the NYSDEC has implemented regulations addressing state-listed protected waterbodies. Any action which disturbs the bed or banks of these protected waterbodies requires the issuance of a permit, but that permit is supplanted by Article 10 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 also 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.

All waterbodies and small waterbodies located in the course of a waterbody with a classification of AA, A, or B, or with a classification of 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. Table 23-1 below lists all NYSDEC mapped waterbodies within the Project Area and their state classifications. Correspondingly, Figure 23-2 portrays their locations relative to the Project Area. In addition to those listed below, a number of small unnamed waterbodies and tributaries are also present within the Project Area. If these features fell in close proximity to the presumed Project layout, portions of the features would be mapped and identified during the wetland and waterbody delineation effort and/or approximation of wetland and waterbodies within 500-feet of the proposed components.

**Table 23-1. NYSDEC Classified Steams within the Project Area**

Waterbody Name	Major Drainage Basin	NYSDEC Classifications
Bennetts Creek, Lower (and minor tributaries)	Chemung River	C
Bennetts Creek, Upper (and tributaries)	Chemung River	C, C(T), C(TS)
Canisteo River, Middle (and minor tributaries)	Chemung River	C
Cryder Creek (and minor tributaries)	Genesee River	C, C(T)
Dyke Creek, Upper (and minor tributaries)	Genesee River	C
Minor tributaries to Pennsylvania	Chemung River	C
Purdy Creek (and minor tributaries)	Chemung River	C
Troups Creek, Lower (and minor tributaries)	Chemung River	C
Wileyville Creek (and minor tributaries)	Genesee River	C, C(TS)

Wetland and waterbody delineations occurred in the late summer of 2016 and spring and summer of 2017. Data was collected on the waterbodies which were encountered in close proximity to proposed Project components. Wetland and waterbody delineations were conducted where impacts were proposed to occur as a result of construction or operation of the Project. As such, the tax parcels which define the Project Area were not covered in their entirety. A full description of the wetland and waterbody delineation methodology and the results of the surveys can be reviewed in the Wetland and Waterbody Delineation Report located in Appendix 22-2. A total of 81 waterbody features were identified during the delineation efforts. These waterbody features incorporate portions of the aforementioned mapped waterbodies and also unmapped waterbodies identified by field staff. Waterbodies were documented as having perennial, intermittent, or ephemeral flows.

Due to the high elevation areas required by turbine sites to generate sufficient wind for the viability of the Project, most of the Project Area resides in the highest regions of the surrounding watersheds. As such, most waterbodies within the Project Area are narrower, steeper in grade, and have marginal depths. Waterbodies which contain sufficient depths and other habitat characteristics to support fish species are located at the bases of these hilltops and in the river valleys bisecting the Project Area. In these areas, linear Project features including access roads, overhead transmission lines, and underground collection lines traverse waterbody features. Project layout was designed through an iterative process of identifying wetland and waterbody locations and siting Project components to avoid and minimize impacts to surface waters and wetlands in support of Federal and State laws. The use of Horizontal Directional Drilling (HDD) in select locations and culverts along encountered waterbodies will be utilized in order to mitigate adverse impacts to fish and other aquatic populations within the Project Area.

In an effort to conservatively report on the potential impacts to local aquatic wildlife as a result of the Project, an inquiry was sent to the NYSDEC- Division of Fish, Wildlife & Marine Resources on March 2, 2017 requesting site specific data on the fish species which reside in the waterbodies that cross or are proximate to the Project Area. Waterbodies which are encompassed in the Project Area and incorporated into the information request include, Cryder (Marsh) Creek, Purdy Creek, Wileyville Creek, the upper and lower portions of Bennett Creek, the middle portions of Canisteo River, the upper portions of Dyke Creek, and the lower portions of Troups Creek. Minor tributaries associated with the aforementioned waterbodies and also some tributaries which flow into neighboring Pennsylvania watersheds within the Project Area were also included in the database query.

All fish species listed within the NYSDEC Statewide Fisheries Database which are related to the aforementioned waterbodies were also included in the master wildlife inventory list attached in Appendix 22-4. A total of 31 fish species were identified as a result of the inquiry. Larger, and recreationally significant fish located within the Project Area include brook trout (*Salvelinus fontinalis*), brown bullhead (*Ameiurus nebulosus*), brown trout (*Salmo trutta*), largemouth bass (*Micropterus salmoides*), pumpkinseed (*Lepomis gibbosus*), rock bass (*Ambloplites rupestris*), and smallmouth bass (*Micropterus dolomieu*). Smaller fish species are far more inconspicuous, however they still play important roles in the aquatic ecologies of inhabited waterbodies. These smaller fish are also known to inhabit the above-mentioned waterbodies as well, and include species such as banded darter (*Etheostoma zonale*), bluntnose minnow (*Pimephales notatus*), common shiner (*Luxilus cornutus*), creek chub (*Semotilus atromaculatus*), Eastern blacknose dace (*Rhinichthys atratulus*), fantail darter

(*Etheostoma flabellare*), johnny darter (*Etheostoma nigrum*), spottail shiner (*Notropis hudsonius*), tessellated darter (*Etheostoma olmstedii*), and the white sucker (*Catostomus commersonii*). A complete list of freshwater fish species which were observed or presumed to occur with the Project Area is located in the master wildlife inventory list attached in Appendix 22-4.

In reference to the NYSDEC's list of Common Aquatic Invasive Species of New York, it is perceived based off of current distribution data provided within the list, only six common invasive aquatic species might occur within the vicinity of the Project Area. These species include the Quagga mussel (*Dreissena bugensis*), zebra mussel (*Dreissena polymorpha*), Asiatic clam (*Corbicula fluminea*), water chestnut (*Trapa natans*), Eurasian watermilfoil (*Myriophyllum spicatum*), and curly leaf pondweed (*Potamogeton crispus*). No invasive aquatic species were observed during wetland and waterbody delineations. As mentioned previously, due to the location of the Project Area in the higher elevations of the watershed, the vast majority of the Project Area does not consist of waterbodies large enough (or with a sufficient water column) to support the prevalence of these invasive species.

### *(3) Downstream Drinking-Water Supply Intakes*

A FOIL request was sent to the Steuben County Department of Health on February 27, 2017 asking for the locations of any surface water drinking supply intakes within or downstream from the Project Area. No such records were identified and there are no surface drinking water intake sites in the Project Area or downstream of the Project Area. Accordingly, the Project will not result in impacts to water-supply intakes. All practicable measures will be taken by the Applicant to avoid, minimize, and mitigate any impacts to surface waters; see below for further detail.

### *(4) Surface Water Impacts*

The siting of Project components have been done to avoid temporary or permanent impacts to wetlands and waterbodies to the maximum practicable extent. Certain construction activities have potential to result in direct and/or indirect impacts to surface waters. These activities include the installation of access roads and turbine foundations, upgrading of existing roads, installation of collection lines (above ground and buried), and the development of temporary staging areas and workspaces around turbine sites and substations. Impacts related to the construction of access road and collection line crossings will be minimized to the maximum extent practicable by utilizing existing crossings and also crossing at narrow wetland and waterbody locations where feasible. Direct impacts to surface waters include: sedimentation and siltation due to activities such as excavating and grading, buried cable installation resulting in waterbody bank and/or substrate disturbance, and direct placement of timber mats and/or fill to accommodate temporary or permanent road crossings respectively. Indirect impacts include increased ambient temperatures of waterbodies, sedimentation events within the water column, and increased erosion potential caused by vegetation removal, soil disturbance, and other construction activities.

Potential temporary and permanent impacts to surface waters resulting from the construction and operation of the Project have been calculated utilizing aforementioned impact assumptions. As stated previously, impacts were determined based off of assumed construction limits required for the placement of specific components and pre-determined work areas required during the construction

phase of the Project. Construction of the Project is anticipated to result in approximately 3,701 linear feet of temporary disturbance and up to approximately 169 linear feet of permanent disturbance to waterbodies identified during on-site survey work.

Calculated temporary and permanent impacts have been estimated conservatively in an effort to address any potential impact to adjacent wetlands and waterbodies. Impacts have been minimized through the re-siting of components after surveys were completed to avoid wetlands and waterbodies to the maximum extent practicable and siting stream crossings in locations of existing access ways, or along narrow sections of stream channels to reduce impact numbers. Table 23-2 lists a summary of the potential impacts to waterbodies identified in close proximity to proposed Project component placement and construction.

**Table 23-2. Impacts to Waterbodies**

ID	Type	Linear Feet of Waterbody Within Study Area	Federal Juris.	State Juris.	NYSDEC Classification	Temporary Impact (Linear Feet)	Permanent Impact (Linear Feet)	Crossing Type
AS-S-1	REPH	755.09	Yes	No	-	720.89	-	Collection (buried and overhead) <sup>1</sup>
AS-S-2	REPH	288.36	Yes	No	-	56.73	-	Collection
AS-S-3	RUP	3066.22	Yes	Yes	C(TS)	53.35	-	Collection
AS-S-3A	RI	112.43	Yes	No	-	40.21	-	Collection
AS-S-4	REPH	399.77	Yes	No	-	-	-	-
AS-S-5	RUP	286.59	Yes	Yes	C(T)	53.74	-	Collection
AS-S-6	RI	328.80	Yes	No	-	-	-	-
CL-S-1	REPH	338.78	Yes	No	-	-	-	-
CL-S-2	RI	292.60	Yes	No	C	-	-	-
CL-S-3	RUP	10870.8	Yes	Yes	C(T)	-	-	-
CL-S-4	RI	73.00	Yes	No	-	-	-	-
CL-S-5	RI	226.19	Yes	No	-	-	-	-

ID	Type	Linear Feet of Waterbody Within Study Area	Federal Juris.	State Juris.	NYSDEC Classification	Temporary Impact (Linear Feet)	Permanent Impact (Linear Feet)	Crossing Type
CL-S-7	RI	414.34	Yes	No	-	64.7	-	Collection
CL-S-8	RUP	349.94	Yes	Yes	C(T)	67.64	-	Collection
CL-S-10	REPH	401.17	Yes	No	-	-	-	-
CL-S-11	RI	620.40	Yes	No	C	-	-	-
CL-S-12	RI	192.53	Yes	No	-	-	-	-
CL-S-13	RI	393.78	Yes	No	C	45.24	-	Collection
CL-S-14	RUP	494.68	Yes	No	C	54.4	-	Collection
CL-S-15	RI	1088.05	Yes	No	-	127.5	-	Collection
CL-S-16	RI	374.68	Yes	No	-	355.57	-	Collection
DL-S-1	RI	228.03	Yes	No	-	43.44	1.37	Access Road Collection
DL-S-2	RI	128.89	Yes	No	-	32.71	3.73	Access Road Collection
DL-S-3	RUP	295.43	Yes	No	C	-	-	-
DL-S-4	RUP	229.11	Yes	No	C	-	-	-
DL-S-5	RUP	270.63	Yes	No	C	-	-	-
DL-S-6	RUP	318.03	Yes	No	C	-	-	-
DL-S-7	RUP	554.98	Yes	No	-	-	-	-
DL-S-8	RUP	131.14	Yes	No	-	47.14	-	Collection
DL-S-9	RUP	188.41	Yes	No	C	-	-	-

ID	Type	Linear Feet of Waterbody Within Study Area	Federal Juris.	State Juris.	NYSDEC Classification	Temporary Impact (Linear Feet)	Permanent Impact (Linear Feet)	Crossing Type
DL-S-10	RUP	571.15	Yes	Yes	C(T)	525.01	-	Turbine2
DL-S-11	RI	310.71	Yes	No	-	247.86	62.85	Turbine2
DL-S-12	REPH	379.04	Yes	No	-	341.65	37.39	Turbine2
DL-S-13	RI	454.08	Yes	No	-	454.08	-	Turbine2
DL-S-14	RUP	63.02	Yes	Yes	C(T)	63.02	-	Turbine2
DL-S-19	RI	237.60	Yes	No	-	-	-	-
DL-S-20	RUP	184.35	Yes	No	C	-	-	-
DL-S-21	RUP	290.21	Yes	No	C	-	-	-
DL-S-22	RUP	319.83	Yes	No	-	-	-	-
DL-S-23	RUP	463.90	Yes	No	-	-	-	-
DL-S-24	RUP	679.66	Yes	No	C	-	-	-
DL-S-25	RUP	215.50	Yes	No	C	-	-	-
DL-S-26	RUP	925.04	Yes	No	C	-	-	-
DL-S-27	RUP	1060.77	Yes	No	C	-	-	-
DL-S-28	RUP	575.88	Yes	No	C	52.71	-	Collection
DL-S-29	REPH	386.34	Yes	No	-	-	-	-
FA-S-1	REPH	162.13	Yes	No	-	33.17	-	Collection Overhead
FA-S-2	RUP	466.01	Yes	Yes	C(T)	-	-	-
FA-S-3	REPH	414.83	Yes	No	-	-	-	-



ID	Type	Linear Feet of Waterbody Within Study Area	Federal Juris.	State Juris.	NYSDEC Classification	Temporary Impact (Linear Feet)	Permanent Impact (Linear Feet)	Crossing Type
FA-S-4	RI	262.65	Yes	No	-	-	-	-
FA-S-5	REPH	591.01	Yes	No	-	57.74	-	Collection
FA-S-6	RI	121.04	Yes	No	-	-	-	-
FA-S-7	RI	91.31	Yes	No	-	-	-	-
FA-S-8	RI	538.96	Yes	No	C	-	-	-
FA-S-9	RUP	605.78	Yes	No	C	-	-	-
FA-S-10	RI	58.82	Yes	No	C	-	-	-
FA-S-11	RI	168.13	Yes	No	C	-	-	-
JB-S-1	REPH	1555.93	Yes	No	-	330.13	-	Turbine
JB-S-2	RUP	877.02	Yes	Yes	C(T)	-	-	-
JB-S-4	RUP	277.10	Yes	Yes	C(T)	-	-	-
JB-S-6	REPH	119.07	Yes	No	-	-	-	-
JB-S-7	REPH	1229.99	Yes	No	C	25.52	19.84	Access Road
WB-S-1	RUP	436.56	Yes	No	C	62.13	-	Collection
WB-S-2	REPH	860.32	Yes	No	-	163.57	-	Collection
WB-S-3	RI	159.37	Yes	No	-	22.29	-	Collection
WB-S-4	RI	293.44	Yes	No	-	52.69	-	Collection
WB-S-5	RUP	1410.09	Yes	No	C	14.56	-	Collection
WB-S-6	RI	544.39	Yes	No	-	-	-	-

ID	Type	Linear Feet of Waterbody Within Study Area	Federal Juris.	State Juris.	NYSDEC Classification	Temporary Impact (Linear Feet)	Permanent Impact (Linear Feet)	Crossing Type
WB-S-7	RI	363.82	Yes	No	-	-	-	-
WB-S-8	REPH	54.53	Yes	No	-	-	-	-
WB-S-9	REPH	139.96	Yes	No	-	53.04	-	Collection Overhead <sup>1</sup>
WB-S-10	RI	402.84	Yes	No	-	157.57	-	Collection Overhead <sup>1</sup>
WB-S-11	RI	1973.25	Yes	No	C	35.44	16.08	Access Road
WB-S-13	REPH	541.70	Yes	No	-	21.02	-	Access Road
WB-S-14	RI	434.90	Yes	No	-	58.9	-	Collection
WB-S-15	RUP	1014.41	Yes	Yes	C(T)	325.2	-	Collection
WB-S-16	RI	383.10	Yes	No	-	-	-	-
WB-S-17	REPH	73.42	Yes	No	-	-	-	-
WB-S-18	REPH	40.73	Yes	No	-	-	-	-
WB-S-19	RI	627.40	Yes	No	-	-	-	-
WB-S-20	RI	141.81	Yes	No	-	-	-	-

Notes: <sup>1</sup> Indications that crossings are in reference to overhead collection lines. As such, reference to impacts resulting from overhead collection line is a conservative approach and true impacts are likely minimal due to limited ground disturbance and an overhead spanning of stream channels.

<sup>2</sup> Selected streams are impacts associated from construction operations which would occur with the construction of Alternate Turbine 3. At this stage of planning, Alternative Turbine 3 is not planned to be constructed. The significant linear feet of impacts (1631 linear feet of temporary impact; 100 feet of permanent impact) referenced in the table is also not likely to occur.

As indicated in Table 23-2, there will be a total of 35 waterbody crossings. Of the total waterbody crossings, six will include impacts to NYSDEC-protected waterbodies, which are regulated under Article 15 of the Environmental Conservation Law. Crossings will be constructed in accordance with NYSDEC and USACE regulations and conditions. Adherence to best management practices (BMPs) and other guidelines for Article 15 stream crossings will be developed in consultation with NYSDEC and the New

York State Department of Public Service (NYS DPS) and submitted as part of the Project Compliance Filing.

To also address impacts to wetlands containing open waters as a result of Project related construction and operation, temporary and permanent impacts to delineated wetlands with open water features were documented. All open water wetlands which were identified during the field survey were included in the summary. Table 23-3 below lists all associated open water wetlands within the wetland delineation study area. Acreage impacts to associated open water wetlands were a conservative estimate as although these waterbodies may reside within the impact area for some components, onsite practices will ultimately avoid siting components within or adjacent to these open water settings. Construction and operation of the Project is anticipated to result in only approximately 0.37 acre of temporary disturbance to open water resources and no permanent loss of open water habitats including the emergent wetlands which tend to reside along the periphery of the delineated open water areas.

**Table 23-3. Impacts to Open Water Wetland (Ponds)**

ID	Type	Acres Within Study Area	State Jurisdiction	Federal Jurisdiction	Temporary Impact (Acre)	Permanent Impact (Acre)	Related Component
AS-W-08	PUB	0.07	No	No	N/A	N/A	N/A
CL-W-1	PEM/ PUB	0.03/0.09	No	No	N/A	N/A	N/A
DL-W-04	PUB/ PEM	0.14/0.07	No	No	0.10 Acre	N/A	Collection Line
DL-W-06	PUB	0.26	No	Yes	0.23 Acre	N/A	Collection Line
DL-W-12	PUB	0.02	No	No	N/A	N/A	N/A
DL-W-31	PUB	0.03	No	No	N/A	N/A	N/A
FA-W-3	PEM/ PUB	4.53/0.68	No	Yes	0.04 Acre	N/A	Collection Line
FA-WB-1	PUB	0.07	No	Yes	N/A	N/A	N/A
FA-WB-2	PUB	0.27	No	Yes	N/A	N/A	N/A
FA-WB-3	PUB	0.30	No	Yes	N/A	N/A	N/A

Surface waters surrounded by steep uplands are subject to more erosion potential and decisively, are more susceptible to erosion and sedimentation events during any construction related activity which may take place in close proximity to these slopes. In order to pursue safe and economical design and

construction procedures, the Project has been designed to avoid steep slopes to the maximum extent practicable. However, given the local topographies and the linear designed components (access roads and collection lines) some construction in areas of steep slopes is unavoidable. Construction of the Project could result in minor siltation and sedimentation in waterbodies which are adjacent to steep uplands. The Applicant will take measures to avoid and minimize siltation events pursuant to the SWPPP that is ultimately approved. Impacts to drinking water are not anticipated as a result of Project construction or operation.

There are no surface drinking water intake sites in the Project Area or downstream of the Project Area. Based on the information obtained, the Project should not result in impacts to water-supply intakes. All practicable measures will be taken by the Applicant to avoid, minimize, and mitigate any impacts to surface waters through the measures adopted in the SWPPP and SPCC. The Project is not expected to have adverse impacts on public or private water wells. It is believed that the impacts to groundwater as a result of the Project will be minimal and localized.

If 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.

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

### *(5) Surface Water Mitigation Measures*

The use of existing and narrow crossings will help minimize direct impacts to surface waters. To the maximum extent practicable, Project components have been sited to avoid or decrease both temporary and permanent impacts to surface waters. Turbine foundations, O&M buildings, substations, and other large built components will avoid surface waters to the maximum extent practicable. Large temporary construction facilities (staging areas etc.) will avoid impacts to surface water to the maximum extent practicable. Furthermore, the number and overall impacts of access roads and collection lines crossing surface waters will be minimized by using existing crossings and narrow crossing locations wherever possible.

When the crossing of a surface water resource is deemed necessary for the Project, BMPs will be put into place following the guidelines and recommendations put forth by the NYSDEC, NYSDPS and the United States Army Corps of Engineers (USACE). Proper briefing and signage will be utilized with construction crews to dictate areas where equipment access is prohibited. Crossing will only occur along permitted access roads or through non-jurisdictional use of 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 which may result in the degradation of waterbody banks or steep slopes above water resources.

To limit the possibility of soil erosion and sedimentation events occurring within water resources throughout the Project Area, a soil erosion and sedimentation control plan (SWPPP) will be created and included as part of the SPDES General Permit for the Project. During construction operations the use of silt fences, hay 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. 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 (see below). Their locations and design will be shown on appropriate construction drawings.

As part of the SWPPP, an Environmental Monitor will be in place throughout the work period and during the restoration period in order to inspect and assess sedimentation risk and also 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. 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 also trap any suspended sediment prior to out letting to well-drained undisturbed upland areas.

## 23(c) Stormwater Information

### *(1) Stormwater Pollution Prevention Plan (SWPPP)*

The NYSDEC requires coverage under the NYSDEC State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activity (GP-0-15-002) for any “construction activities involving soil disturbances of one (1) 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, and is independent of the Article 10 process. The Applicant will seek coverage under the NYSDEC State Pollution Discharge Elimination System (SPDES) General Permit during the construction phase of the Project.

Prior to construction, the Applicant will be required to prepare a complete 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-0-15-002. 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-0-15-002. Once the Project receives this required documentation, the Letter of Acknowledgement will be inserted within the SWPPP and kept onsite, as required by the SPDES general Permit for construction activities. 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 the SPDES General Permit, and is attached as Appendix 23-4. The attached Preliminary SWPPP includes a detailed description of preconstruction requirements. As part of these requirements, an Environmental Monitor is required to be on-site on a daily basis to inspect the site'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 Applicant anticipates that submission and approval of a Final SWPPP will be a condition of the Article 10 Certificate. Preparation of the Final SWPPP will require a level of detail that is not expected to be available until after the completion of the Application and final engineering.

## *(2) Post-Construction Sediment and Erosion Control Plan*

As mentioned previously, final engineering will not be completed until the Facility has received the Certificate, and therefore a Final SWPPP is not included with the Application. Following Certification of the Project, the Applicant will conduct the detailed engineering necessary to prepare a Final SWPPP in accordance with the applicable requirements.

Any increase 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 as a result of Project operations. However, precautionary and appropriate post-construction sediment and erosion control measures will be installed and maintained according to the Project-specific NYSDEC-approved SWPPP for the Project per applicable regulations. It is anticipated that the Applicant will utilize permanent vegetated filter buffer strips for pre-treatment in combination with other commonly used New York State Stormwater Management Design Manual approved practices.

## **23(d) Chemical and Petroleum Bulk Storage**

### *(1) Spill Prevention and Control Plan (SPCC)*

An SPCC Plan that NextEra implements on all of its wind energy centers in the United States is included as Appendix 23-5, and will be updated for use on the Eight Point Wind Energy Center Project. The SPCC Plan will be implemented to minimize the potential for unintended releases of petroleum and other hazardous chemicals during Project construction and operation. This Plan is applicable for the

components that comprise a typical wind energy center, with the understanding they operate 24 hours a day, 365 days a year. During after-hour periods and holidays, assigned personnel are on-call.

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 Plan (included as Appendix 23-5) 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;
- Provide a physical description of the Wind Sites covered by this Plan;
- Describe each wind energy center's oil storage provisions, potential to discharge, type of failures, containment/diversionary structures, and drainage system;
- 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 management with authority to commit the necessary resources to fully implement the Plan, and expeditiously respond to releases of oil (See Section 4 - Management Approval of the Plan).

### *(2) Storage or Disposal of Regulated Substances*

The Applicant does not currently anticipate the on-site storage or disposal of large volumes of substances regulated under the chemical and petroleum bulk storage programs of New York State. If construction operations require petroleum or other hazardous chemicals to be stored on-site, all State and Federal laws and guidelines will be followed.

Every wind turbine, along with the collection substation, will be monitored by on-site O&M personnel and also remotely monitored by the Fleet Performance & Diagnostics Center (FPDC) located in Juno Beach, Florida.

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

The Applicant does not currently anticipate the on-site storage or disposal of large volumes of substances regulated under the chemical and petroleum bulk storage programs of any local laws. If construction operations require petroleum or other hazardous chemicals to be stored on-site, those substances will be stored in a manner such that all local laws and guidelines will be followed.

## 23(e) Aquatic Species and Invasive Species

### *(1) Biological Aquatic Resource Impacts*

Exhibit 22 directly addresses impacts to wetlands and waterbodies within the Project Area. Secondary reference can also be made through review of respect to impacts to surface waters through review of Tables 23-2 and 23-3 encountered in this Exhibit.

It is assumed that any potential impacts to surface waters within the Project Area will, in turn, possibly impact ecologies, organisms, and ecosystems which directly rely on these aquatic resources. Only a small portion of these biological complexes could be impacted by the construction and operation of the Project. No invasive species listed within the Common Aquatic Invasive Species of New York (NYSDEC, 2014) list were documented during on-site survey work conducted by environmental field staff. Although, a comprehensive and specific inventory of local aquatic species was not conducted, TRC, on behalf of the Applicant consulted local, statewide, and federal desktop databases and environmental agencies to determine common species which were documented to occur in the region of the Project Area.

The Project Area contains limited suitable habitat for the prevalence of aquatic invasive species and general aquatic communities and ecologies. This is due to a vast majority of the Project residing within higher elevations where documented waterbodies and wetlands act as headwaters high in the watershed and due to the limited depth of water columns and size of waterbodies, the biological diversity of aquatic life is low. Adverse impacts to aquatic biology as a result of the spread of invasive species as a direct result of the Project construction are not anticipated.

### *(2) Mitigation Measures for Biological Aquatic Resources*

Measures to avoid and mitigate impacts to surface waters during construction are addressed in sections above.

In summation, the protection of biological aquatic resources will be a direct result of protecting the surface waters in which these biological resources are dependent on. Protection of water quality by avoiding impacts to wetlands and waterbodies where practicable and ensuring avoidance of impacting protected streams during times of the year when target fish species are likely to be migrating and spawning will also directly support the preservation of biological aquatic resources during the construction and operation phases of the Project. Collection lines routes which cross large bodies of water or waterbodies residing in deeply incised gorges will be spanned overhead and ultimately over these surface waters. Such techniques will also avoid impacts to select surface waters by reducing the potential for erosion or sedimentation events due to little in-stream work arising. The utilization of HDD methods and 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. Therefore, operational impacts to aquatic species will only be in the form of disturbance responses and habituation



of behaviors of species and ecologies due to any minor loss of habitat resulting from placement of Project components in documented surface waters. It should be noted that loss of habitat has been largely avoided through careful siting and design of the Project. As stated previously, the Project Area is located high in the watershed and encompasses small headwater streams and wetlands. As such, there are no impacts to larger streams and rivers which contain a vast majority of aquatic habitat which exists in the region. Where permanent roads cross stream, the placement of “bottomless culverts” will also 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 of the Project. As such, the requirements dictated in 16 NYCRR § 1001.23(f) are not applicable to this Project and discussion of this topic is not included in this application.

## References

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- United States Environmental Protection Agency (USEPA) (2017) *Sole Source Aquifers for Drinking Water* Available at: <https://www.epa.gov/dwssa> Accessed April 2017.
- United States Department of Agriculture, Natural Resources Conservation Service (NRCS). *Web Soil Survey*. Available at: <https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>. Accessed April 2017.