Summary of Impacts to NYSDEC regulated Adjacent Area (AA)

Summary of impacts to mapped NYSDEC Wetland SC-12 AA:

- Wetland SCV18-W110: 0.27870 acres of temporary impact and 0.0005 acre of permanent fill impact with 0.55251 acres of permanent forest conversion.

- Wetland SVC10-W111: 0.21994 acres of temporary impact and no permanent fill impact with 0.60394 acres of permanent forest conversion.

Summary of impacts to mapped NYSDEC Wetland SC-13 AA:

- Regulated AAs for W61, W62, W63, W64, and W65 overlap. Impacts to the adjacent areas for these wetlands are all inclusive in the adjacent area total for NYSDEC Wetland SC-13. The adjacent area impacts: 1.24183 acres of temporary impact and 0.0020 acre of permanent fill impact with 2.52221 acres of permanent forest conversion.

A summary and discussion of impacted NYSDEC protected streams is provided in Section 2.5.1.

Temporary and permanent impacts to streams are listed in Section 2.5 in Tables 2-7 and 2-8 for Generation and Transmission portions of the Project.

2.5 Surface Water: Impacts and Mitigation Summary

Construction and operation of the Project, including the building of access roads and placement of turbines, electrical collection, and transmission lines, may impact surface water resources and, ultimately, water quality, through ground disturbance and runoff. This section addresses possible impacts on surface water as a result of construction and operation of the Project. Long-term impacts on surface water quality are expected to be minimal, as water resources were avoided to the extent practicable when siting Project facilities, and Noble will minimize any unavoidable construction impacts to surface waters through the implementation of BMPs. These measures are discussed in Appendix G. To further minimize impacts, Project facilities have been sited to utilize existing agricultural, field and logging roads and culverts, or other disturbed areas, to the extent possible.

Construction of the Project will result in minor, short-term impacts on the streams crossed. These impacts could occur as a result of in-stream construction activities or construction on slopes adjacent to stream channels. Clearing and grading of stream banks, in-stream trenching, trench dewatering, and backfilling could result in modification of aquatic habitat, increased sedimentation, turbidity, decreased dissolved oxygen concentrations, releases of chemical and nutrient pollutants contained in stream sediments, and introduction of chemical contaminants, such as fuel and lubricants, from possible spills. In general, these impacts will be limited to the period of in-stream construction and conditions are expected to return to normal shortly after completion of activities.

No significant impacts are expected to streams in the Project Area resulting from the operation of Project facilities. After construction is complete, temporary access roads within the generation portion of the Project will be reduced to 16-foot permanent access roads. Culverts will be installed as part of road installation to ensure hydrologic connectivity during construction and operation of the facility. Within the transmission ROW, temporary stream impacts will be minimized by bridging streams with wetland mats and temporary culverts, as necessary, for equipment crossing within a 30-foot-wide travel corridor adjacent to the transmission line centerline during construction. The mats and temporary culverts will be removed and the stream banks will be allowed to revegetate to an emergent or scrub-shrub community following construction. Temporary and permanent impacts to streams are listed in Tables 2-7 and 2-8 for Generation and Transmission portions of the Project, respectively. The tables include a listing of impacted streams, stream classification, stream characteristics, temporary and permanent impacts, and comments regarding installation methods and siting to minimize impacts.

Generation Portion

Stream crossings have been avoided during generation facility siting to the greatest extent practicable. No streams will be impacted by construction of the turbines. Due to the location and number of streams in the Project Area, it will be necessary to cross streams for installation of access roads and collection lines and permanent impacts will result from placement of culverts for roads and temporary impacts from collection installation. Wetland mats, temporary culverts, and additional BMPs will be used as applicable for stream crossings to minimize stream impacts.

Construction and operation of the generation portion of the Project will result in permanent impacts to 392.98 linear feet of stream and temporary impacts to 1123.03 linear feet of stream. Table 2-7 identifies streams that will be crossed by the Generation portion of the Project.

Across streams, access roads will be installed within a generally narrowed 40-foot-wide construction ROW. Culverts of an appropriate type and size will be installed to maintain sufficient flow at access road locations. Access road and collection lines that cross streams will utilize existing farm and logging road crossings where possible, but may require the replacement of existing culverts. Seventeen streams will be crossed by the temporary access road and adjacent collection lines, one of which will be crossed in two locations, once for an access road and again for underground collection.

In areas where the collection line cannot be collocated with the access roads, the collection lines will be installed within a 22- to 50-foot ROW, depending on the number of circuits and the method used for crossing (i.e., underground or overhead). Seven streams will be crossed by underground collection lines, one of which will be crossed in two locations, once for an access road and again for underground collection and stream WBC103-S602 will be crossed by overhead

Table 2-7 Stream Impacts, Ball Hill Windpark Generation Portion

Project Component	Stream ID	Stream Name	Bank Height (feet)	Width of Water (feet)	Bank to Bank Width (feet)	Substrate	Flow Type[2]	Flow Type[3]	NYSDEC Classification	Length of Stream within the Construction ROW (feet)	Length of Stream within the Permanent Disturbance Corridor (feet)	Length of Stream within the Area to Be Restored (feet)	Comments	Appendix I Stream Impact Map Sheet
Sector A Cluster 1 (T1, T2, T3)														
Access Road	WBC28-S83	Unnamed tributary to West Branch Conewango Creek	3-6	3	12-15	Gravel	Perennial	Perennial RPW	C	61.87	30.94	30.93	The stream will be crossed by an access road with adjacent underground collection lines. Stream disturbance will take place during dry or low flow conditions if possible to minimize impacts. If water is present at the time of crossing, the area will be dewatered using a flume crossing or a dam and pump crossing to minimize impacts. The existing stream is shown in photographs P463, P464, P478 and P479 in Attachment A of the Wetland and Waterbodies Report.	A-1
Sector A Cluster 2 (T4) - No Streams														
Sector A Cluster 3 (T5, T6) - No Stream Impacts														
Sector A Collection Line - No Streams														
Sector B Cluster 4 (T7)														
Access Road	WBC72-S92	Unnamed tributary to West Branch Conewango Creek	0-3	2	3	Silt/Clay	Perennial	Perennial RPW	C	40.33	20.01	20.32	The stream will be crossed by an access road with adjacent underground collection lines. Stream disturbance will take place during dry or low flow conditions if possible to minimize impacts. If water is present at the time of crossing, the area will be dewatered using a flume crossing or a dam and pump crossing to minimize impacts. The existing stream is shown in photographs P1511 and P1512 in Attachment B of the Wetland and Waterbodies Report.	B-1
Sector B Cluster 5 (T8, T9, T10) -No Stream Impacts														
Cluster 6 (T11, T13, T14)														
Access Road	WBC101-S101	Unnamed tributary to West Branch Conewango Creek	0-3	2	4-6	Silt/Clay	Perennial	Perennial RPW	C	40.02	20.01	20.01	The stream will be crossed by an access road with adjacent underground collection lines. Stream disturbance will take place during dry or low flow conditions if possible to minimize impacts. If water is present at the time of crossing, the area will be dewatered using a flume crossing or a dam and pump crossing to minimize impacts. The existing stream is shown in photographs P1556, P1556a, P1601 and P1603 in Attachment B of the Wetland and Waterbodies Report.	B-5
Sector B Cluster 7 ((T16, T17) - No Stream Impacts														
Cluster 8 (T68) - No Streams														
Sector B Cluster 9 (T18, T19, T20, T21) - No Streams														
Sector B Collection Line														
Underground Collection Line	WBC90-S598	Unnamed tributary to West Branch Conewango Creek	0-3	10	10	Bedrock, Gravel	Perennial	Perennial RPW	C	52.44	NA	52.44	Underground collection will be installed via trenching. Stream disturbance will take place during dry or low flow conditions if possible to minimize impacts. If water is present at the time of crossing, the area will be dewatered using a flume crossing or a dam and pump crossing to minimize impacts. The existing stream is shown in photographs P953, P954 and P955 in Attachment B of the Wetland and Waterbodies Report.	B-10
Overhead Collection Line	WBC103-S602	Unnamed tributary to West Branch Conewango Creek	0-3	3-10	5-20	Gravel, Silt/Clay	Perennial	Perennial RPW	C	14.594	NA	14.59	This perennial stream will be spanned by overhead collection lines. Wetland mats or temporary culverts will be used to facilitate equipment crossing within a 14 foot corridor, thus minimizing in-stream disturbance. Stream disturbance will take place during dry or low flow conditions if possible to minimize impacts. The existing stream is shown in photographs P964, P965, P966 and P967 in Attachment B of the Wetland and Waterbodies Report.	B-9
Sector C Cluster 10 (T25) - No Stream Impacts														
Sector C Cluster 11 (T23 and T24) - No Streams														
Sector C Cluster 12 (T22) - No Streams														

Table 2-7 Stream Impacts, Ball Hill Windpark Generation Portion

Project Component	Stream ID	Stream Name	Bank Height (feet)	Width of Water (feet)	Bank to Bank Width (feet)	Substrate	Flow Type[2]	Flow Type[3]	NYSDEC Classification	Length of Stream within the Construction ROW (feet)	Length of Stream within the Permanent Disturbance Corridor (feet)	Length of Stream within the Area to Be Restored (feet)	Comments	Appendix I Stream Impact Map Sheet
Sector C Cluster 13 (T26) - No Streams														
Sector C Cluster 14 (T27) - No Streams														
Sector C Cluster 15 (T29) - No Stream Impacts														
Sector C Cluster 16 (T30, T31 and T32) - No Streams														
Sector C Cluster 17 (T33, T34 and T35) - No Stream Impacts														
Sector C Cluster 18 (T36) - No Streams														
Sector C Collection Line - No Stream Impacts														
Sector D Cluster 19 (T38)														
Access Road	WBC107-S533	Unnamed tributary to West Branch Conewango Creek	0-3	2.5-6	2-5	Silt/Clay	Perennial	Perennial RPW	C	178.70	24.60	154.10	The stream will be crossed by an access road with adjacent underground collection lines. The road will be constructed at an existing crossing, with an existing culvert. Stream disturbance will take place during dry or low flow conditions if possible to minimize impacts. If water is present at the time of crossing, the area will be dewatered using a flume crossing or a dam and pump crossing to minimize impacts. The existing stream is shown in photograph P674 in Attachment D of the Wetland and Waterbodies Report.	D-1
Access Road	NBC69-S534	Unnamed tributary to North Branch Conewango Creek	0-3	1	12	Gravel, Silt/Clay	Perennial	Perennial RPW	C	59.07	20.03	39.04	The stream will be crossed by an access road with adjacent underground collection lines. The road will be constructed at an existing crossing, with an existing culvert. Stream disturbance will take place during dry or low flow conditions if possible to minimize impacts. If water is present at the time of crossing, the area will be dewatered using a flume crossing or a dam and pump crossing to minimize impacts. The existing stream is shown in photographs P678 and P679 in Attachment D of the Wetland and Waterbodies Report. This stream crossing connects Cluster 19 to Cluster 20.	D-2
Sector D Cluster 20 (T39, T40, T41, T42, T43, T45)														
NBC69-S534- See Cluster 19														
Sector D Cluster 21 (T46, T47)														
Access Road	NBC46-S31	Unnamed tributary to North Branch Conewango Creek	0-3	1-2	2-4	Gravel, large flat stone	Perennial	Perennial RPW	C	45.70	24.86	20.84	The stream will be crossed by an access road with adjacent underground collection lines. Stream disturbance will take place during low flow conditions if possible to minimize impacts. If water is present at the time of crossing, the area will be dewatered using a flume crossing or a dam and pump crossing to minimize impacts. The existing stream is shown in photographs P181, P182 and P183 in Attachment D of the Wetland and Waterbodies Report.	D-8
Sector D Cluster 22 (T48, T50, T51)														
Access Road	SVC138-S16	Unnamed tributary to Silver Creek	0-3	2	4	Gravel	Intermittent	Seasonal RPW	A[1]	60.72	21.31	39.41	The stream will be crossed by an access road with adjacent underground collection lines. The road will be constructed at an existing crossing, which will be improved as the crossing is currently without a culvert. Stream disturbance will take place during dry or low flow conditions if possible to minimize impacts. If water is present at the time of crossing, the area will be dewatered using a flume crossing or a dam and pump crossing to minimize impacts. The existing stream is shown in photograph P96 in Attachment D of the Wetland and Waterbodies Report.	D-13

Table 2-7 Stream Impacts, Ball Hill Windpark Generation Portion

Project Component	Stream ID	Stream Name	Bank Height (feet)	Width of Water (feet)	Bank to Bank Width (feet)	Substrate	Flow Type[2]	Flow Type[3]	NYSDEC Classification	Length of Stream within the Construction ROW (feet)	Length of Stream within the Permanent Disturbance Corridor (feet)	Length of Stream within the Area to Be Restored (feet)	Comments	Appendix I Stream Impact Map Sheet
Sector D Cluster 23 (T52, T53, T55)														
Access Road	SVC133-S1002	Unnamed tributary to Silver Creek	0-3	1-2	12-15	Silt/clay	Perennial	Perennial RPW	A[1]	44.51	23.86	20.65	The stream will be crossed by an access road with adjacent underground collection lines. Stream disturbance will take place during dry or low flow conditions if possible to minimize impacts. If water is present at the time of crossing, the area will be dewatered using a flume crossing or a dam and pump crossing to minimize impacts. The existing stream is shown in photographs P33, P34 and P35 in Attachment B of the Wetland and Waterbodies Report.	D-18
Sector D Collection Line														
Underground Collection Line	SVC140-S22	Unnamed tributary to Silver Creek	0-3	2	3	Silty with other sediments	Perennial	Perennial RPW	A[1]	32.26	NA	32.26	Underground collection will be installed via trenching. Stream disturbance will take place during dry or low flow conditions if possible to minimize impacts. If water is present at the time of crossing, the area will be dewatered using a flume crossing or a dam and pump crossing to minimize impacts. There will be no permanent impacts to this stream. The existing stream is shown in photographs P115, P116 and P117 in Attachment D of the Wetland and Waterbodies Report.	D-15
Underground Collection Line	SVC129-S1001/S551	Unnamed tributary to Silver Creek	0-3	4-6	7-10	Gravel, Silt/Clay, Cobble	Perennial	Perennial RPW	A[1]	50.53	NA	50.53	Underground collection will be installed via trenching. Stream disturbance will take place during dry or low flow conditions if possible to minimize impacts. If water is present at the time of crossing, the area will be dewatered using a flume crossing or a dam and pump crossing to minimize impacts. There will be no permanent impacts to this stream. The existing stream is shown in photographs P765, P766 and P767 in Attachment D of the Wetland and Waterbodies Report.	D-19
Underground Collection Line	SVC129-S1001a	Unnamed tributary to Silver Creek	0-3	18'	2-3	Gravel, Sand, Silt/Clay	Intermittent	Seasonal RPW	A[1]	13.85	NA	13.85	Underground collection will be installed via trenching. Stream disturbance will take place during dry or low flow conditions if possible to minimize impacts. If water is present at the time of crossing, the area will be dewatered using a flume crossing or a dam and pump crossing to minimize impacts. There will be no permanent impacts to this stream. The existing stream is shown in photograph P265 in Attachment D of the Wetland and Waterbodies Report.	D-19
Sector E Cluster 24 (T56) - No Stream Impacts														
Sector E Cluster 25 (T57, T58, T59, T60, T67)														
Access Road	SVC118-S132	Unnamed tributary to Silver Creek	0-3	2-3	3-4	Gravel	Intermittent	Seasonal RPW	A	58.03	26.43	31.60	The stream will be crossed by an access road with adjacent underground collection lines. The road will be constructed at an existing crossing, which will be improved as the crossing is currently without a culvert. Stream disturbance will take place during dry or low flow conditions if possible to minimize impacts. If water is present at the time of crossing, the area will be dewatered using a flume crossing or a dam and pump crossing to minimize impacts. The existing stream is shown in photographs P1000 - P1002 in Attachment B of the Wetland and Waterbodies Report.	E-7

Table 2-7 Stream Impacts, Ball Hill Windpark Generation Portion

Project Component	Stream ID	Stream Name	Bank Height (feet)	Width of Water (feet)	Bank to Bank Width (feet)	Substrate	Flow Type[2]	Flow Type[3]	NYSDEC Classification	Length of Stream within the Construction ROW (feet)	Length of Stream within the Permanent Disturbance Corridor (feet)	Length of Stream within the Area to Be Restored (feet)	Comments	Appendix I Stream Impact Map Sheet
Access Road	SVC118-S576	Unnamed tributary to Silver Creek	0-3	2-6	2-8	Gravel, Sand	Perennial	Perennial RPW	A	83.45	25.57	57.88	The stream will be crossed by an access road with adjacent underground collection lines. The road will be constructed at an existing crossing, with an existing culvert. Stream disturbance will take place during dry or low flow conditions if possible to minimize impacts. If water is present at the time of crossing, the area will be dewatered using a flume crossing or a dam and pump crossing to minimize impacts. The existing stream is shown in photographs P1701, P1702, P1703, P1704 and P1695 in Attachment E of the Wetland and Waterbodies Report.	E-7
Access Road	SVC204-S577 (see also Sector E Collection)	Unnamed tributary to Silver Creek	0-3	2-6	2-8	Gravel, Sand	Perennial	Perennial RPW	A	73.75	23.90	49.85	The stream will be crossed by an access road with adjacent underground collection lines. The road will be constructed at an existing crossing, with an existing culvert. Stream disturbance will take place during dry or low flow conditions if possible to minimize impacts. If water is present at the time of crossing, the area will be dewatered using a flume crossing or a dam and pump crossing to minimize impacts. The existing stream is shown in photographs P1718, P1719, P864 and P865 in Attachment E of the Wetland and Waterbodies Report.	E-2 and E-4
Access Road	SVC124-S591	Unnamed tributary to Silver Creek	0-3	1-4	1-5	Gravel, Silt/Clay, Vegetation	Intermittent	Seasonal RPW	A	102.36	26.79	75.57	The stream will be crossed by an access road with adjacent underground collection lines. Stream disturbance will take place during dry or low flow conditions if possible to minimize impacts. If water is present at the time of crossing, the area will be dewatered using a flume crossing or a dam and pump crossing to minimize impacts. The existing stream is shown in photographs P883 and P884 in Attachment E of the Wetland and Waterbodies Report.	E-4
Access Road	SVC124-S592	Unnamed tributary to Silver Creek	0-3	3-6	7-9	Silt/Clay	Perennial	Perennial RPW	A	40.83	20.53	20.30	The stream will be crossed by an access road. The road will be constructed at an existing crossing, with an existing culvert. Stream disturbance will take place during dry or low flow conditions if possible to minimize impacts. If water is present at the time of crossing, the area will be dewatered using a flume crossing or a dam and pump crossing to minimize impacts. The existing stream is shown in photograph P922 in Attachment E of the Wetland and Waterbodies Report.	E-2
Access Road	SVC124-S592A	Unnamed tributary to Silver Creek	0-3	0.5-1	2-8	Gravel/Silt/Clay	Intermittent	Seasonal RPW	A	24.51	22.94	1.57	The stream will be crossed by an access road . The road will be constructed at an existing crossing, which will be improved as the crossing is currently without a culvert. Stream disturbance will take place during dry or low flow conditions if possible to minimize impacts. If water is present at the time of crossing, the area will be dewatered using a flume crossing or a dam and pump crossing to minimize impacts. The existing stream is shown in photographs P923 in Attachment E of the Wetland and Waterbodies Report.	E-2

Table 2-7 Stream Impacts, Ball Hill Windpark Generation Portion

Project Component	Stream ID	Stream Name	Bank Height (feet)	Width of Water (feet)	Bank to Bank Width (feet)	Substrate	Flow Type[2]	Flow Type[3]	NYSDEC Classification	Length of Stream within the Construction ROW (feet)	Length of Stream within the Permanent Disturbance Corridor (feet)	Length of Stream within the Area to Be Restored (feet)	Comments	Appendix I Stream Impact Map Sheet
Sector E Cluster 26 (T64, T65, T66)														
Access Road	SVC109-S568	Unnamed tributary to Silver Creek	0-3	2-5	8-10	Silt/Clay	Perennial	Perennial RPW	A	50.06	20.23	29.83	The stream will be crossed by an access road with adjacent underground collection lines. Stream disturbance will take place during dry or low flow conditions if possible to minimize impacts. If water is present at the time of crossing, the area will be dewatered using a flume crossing or a dam and pump crossing to minimize impacts. The existing stream is shown in photograph P829 in Attachment E of the Wetland and Waterbodies Report.	E-8
Sector E Cluster 27 (T61, T62)														
Access Road	SVC103-S1519	Unnamed tributary to Silver Creek	0-3	4-6	6-8	Gravel, Silt/Clay	Perennial	Perennial RPW	A	42.23	20.01	22.22	The stream will be crossed by an access road with adjacent underground collection lines. The road will be constructed at an existing crossing, with an existing culvert. Stream disturbance will take place during dry or low flow conditions if possible to minimize impacts. If water is present at the time of crossing, the area will be dewatered using a flume crossing or a dam and pump crossing to minimize impacts. The existing stream is shown in photographs P723, P724, P725 and P726 in Attachment E of the Wetland and Waterbodies Report.	E-10 and E-13
Access Road	SVC73-S1520	Unnamed tributary to Silver Creek	0-3	7-12	7-12	Gravel	Perennial	Perennial RPW	A	72.16	20.96	51.20	The stream will be crossed by an access road with adjacent underground collection lines. The road will be constructed at an existing crossing, with an existing culvert. Stream disturbance will take place during dry or low flow conditions if possible to minimize impacts. If water is present at the time of crossing, the area will be dewatered using a flume crossing or a dam and pump crossing to minimize impacts. The existing stream is shown in photographs P747 and P748 in Attachment E of the Wetland and Waterbodies Report.	E-10 and E-14
Sector E Collection Line														
Underground Collection	SVC204-S577 (see also Cluster 25)	Unnamed tributary to Silver Creek	0-3	2-6	2-8	Gravel, Sand	Perennial	Perennial RPW	A	155.50	NA	155.50	The stream will be crossed by underground collection lines leading to the Ball Hill substation . Underground collection line will be installed via trenching. Stream disturbance will take place during dry conditions or low flow conditions if feasible. If water is present at the time of crossing, the area will be dewatered using a flume crossing or a dam and pump crossing to minimize impacts. The existing stream is shown in photographs P1718, P1719, P864 and P865 in Attachment E of Appendix E, Wetland and Waterbodies Report.	E-2 and E-4
Underground Collection	SVC126-S561	Unnamed tributary to Silver Creek	0-3	1-3	6-9	Silt/Clay, muddy bottom	Perennial	Perennial RPW	A	50.29	NA	50.29	Underground collection will be installed via trenching. Stream disturbance will take place during dry conditions if possible to minimize impacts. If water is present at the time of crossing, the area will be dewatered using a flume crossing or a dam and pump crossing to minimize impacts. The existing stream is shown in photographs P793, P794, P795 and P796 in Attachment E of the Wetland and Waterbodies Report.	E-1

Table 2-7 Stream Impacts, Ball Hill Windpark Generation Portion

Project Component	Stream ID	Stream Name	Bank Height (feet)	Width of Water (feet)	Bank to Bank Width (feet)	Substrate	Flow Type[2]	Flow Type[3]	NYSDEC Classification	Length of Stream within the Construction ROW (feet)	Length of Stream within the Permanent Disturbance Corridor (feet)	Length of Stream within the Area to Be Restored (feet)	Comments	Appendix I Stream Impact Map Sheet
Underground Collection	SVC122-S564	Unnamed tributary to Silver Creek	0-3	1-3	4-6	Silt/Clay, rounded rocks	Ephemeral	Non-RPW	A	68.25	NA	68.25	Underground collection will be installed via trenching. Stream disturbance will take place during dry conditions if possible to minimize impacts. If water is present at the time of crossing, the area will be dewatered using a flume crossing or a dam and pump crossing to minimize impacts. The existing stream is shown in photographs P799 and P801 in Attachment E of the Wetland and Waterbodies Report.	E-1
									Totals	**1516.01**	**392.98**	**1123.03**		

Notes:

1.) These stream classifications were inferred from NYCRR Chapter X

2., 3.) Stream flow classifications are based on the following definitions:

Perennial Flow (Perennial RPW) - The stream flow is evident throughout the year, in most years.

Intermittent Flow (Seasonal RPW) - The stream channel contains flowing water for at least three months but does not flow throughout the year, in most years.

Ephemeral Flow (Non-RPW) - The stream channel contains flowing water for less than three months of the year, in most years.

Key:

RPW = Relatively Permanent Water

Table 2-8 Stream Impacts, Ball Hill Windpark Transmission Line

Stream ID	Stream Name	Bank Height (feet)	Width of Water (feet)	Bank to Bank Width (feet)	Substrate	Flow Type[2]	Flow Type[3]	NYSDEC Classification	Length of Stream Within 30-foot Wide Temporary Construction Corridor (feet)	Length of Stream Within the 100-foot Permanent ROW (feet)	Comments	Appendix I Stream Impact Map Sheet
Sector F Transmission Line												
Ball Hill Substation to Empire Road												
TUC6-S108	Unnamed tributary to Tupper Creek	0-3	1-2	1-2	Silt/Clay	Perennial	Perennial RPW	C	37.37	155.77	To avoid impacts, mats will be used to cross wetlands and streams. There will be no grading or ground disturbance. The existing stream is shown in Photograph P1586 in Attachment F of the Wetland and Waterbodies Report.	F-1
WNC87-S607	Unnamed tributary to Walnut Creek	0-3	2	2	Silt/Clay	Perennial	Perennial RPW	C[1]	30.04	100.86	To avoid impacts, mats will be used to cross wetlands and streams. There will be no grading or ground disturbance. The existing stream is shown in Photographs P1006, P1007 in Attachment F of the Wetland and Waterbodies Report.	F-3
WNC92-S607a	Unnamed tributary to Walnut Creek	0-3	2	4-6	Gravel	Perennial	Perennial RPW	C[1]	35.96	110.07	To avoid impacts, mats will be used to cross wetlands and streams. There will be no grading or ground disturbance. The existing stream is shown in Photographs P1008 and P1009 in Attachment F of the Wetland and Waterbodies Report.	F-3
Empire Road to Hopper Road (No Streams)												
Hopper Road to Dennison Road												
WNC47-S103	Unnamed tributary to Walnut Creek	3-6+	10	25	Bedrock	Perennial	Perennial RPW	C	30.13	110.69	The stream will be crossed by overhead transmission lines. Wetland mats and culverts will be used as temporary bridges for equipment crossing during construction resulting in temporary, but no permanent impacts to the stream bed and banks. The existing stream is shown in Photographs P563 and P564 in Attachment F of the Wetland and Waterbodies Report.	F-7
WNC43-S104a	Unnamed tributary to Walnut Creek	0-3	NA	3-5	Gravel, Silt/Clay	Intermittent	S-RPW	C	11.44	124.82	To avoid impacts, mats will be used to cross wetlands and streams. There will be no grading or ground disturbance. The existing stream is shown in Photographs P300a, P301a, P303a in Appendix J, Addendum to Wetland and Waterbodies Report.	F-7
WNC30-S50	Unnamed tributary to Walnut Creek	6+	12-16	25	Bedrock	Perennial	Perennial RPW	C	32.63	119.50	The stream will be crossed by overhead transmission lines. Wetland mats and culverts will be used as temporary bridges for equipment crossing during construction resulting in temporary, but no permanent impacts to the stream bed and banks. The existing stream is shown in Photographs P266 and P267 in Attachment F of the Wetland and Waterbodies Report.	F-9
WNC47-S2000	Unnamed tributary to Walnut Creek	3-6	2	5	Gravel	Intermittent	Seasonal RPW	C	129.49	224.40	The stream will be crossed by overhead transmission lines. Wetland mats and culverts will be used as temporary bridges for equipment crossing during construction resulting in temporary, but no permanent impacts to the stream bed and banks.	F-7
WNC28-S1014	Unnamed tributary to Walnut Creek	0-3	3	6	Bedrock	Perennial	Perennial RPW	C(T)	37.63	115.35	To avoid impacts, mats will be used to cross wetlands and streams. There will be no grading or ground disturbance. The existing stream is shown in Photographs P279, P281, P282 and P283 in Attachment F of the Wetland and Waterbodies Report.	F-10
WNC28-S1014a	Unnamed tributary to Walnut Creek	0-3	1	4	Gravel	Intermittent	Seasonal RPW	C(T)	11.44	124.82	To avoid impacts, mats will be used to cross wetlands and streams. There will be no grading or ground disturbance. The existing stream is shown in Photographs P280, P284 and P285 in Attachment F of the Wetland and Waterbodies Report.	F-10

Table 2-8 Stream Impacts, Ball Hill Windpark Transmission Line

Stream ID	Stream Name	Bank Height (feet)	Width of Water (feet)	Bank to Bank Width (feet)	Substrate	Flow Type[2]	Flow Type[3]	NYSDEC Classification	Length of Stream Within 30-foot Wide Temporary Construction Corridor (feet)	Length of Stream Within the 100-foot Permanent ROW (feet)	Comments	Appendix I Stream Impact Map Sheet
WNC103-S54	Unnamed tributary to Walnut Creek	6+	2	5-7	Gravel, Sand, Silt/Clay	Perennial	Perennial RPW	C(T)[1]	89.83	319.32	This stream crosses the permanent transmission ROW in two locations. To avoid impacts, mats will be used to cross wetlands and streams. There will be no grading or ground disturbance. The existing stream is shown in Photographs P299 and P300 in Attachment F of the Wetland and Waterbodies Report.	F-11 and F-12
WNC103-S54a	Unnamed tributary to Walnut Creek	6+	2	2-4	Silt/Clay	Intermittent	Seasonal RPW	C(T)[1]	6.68	72.48	To avoid impacts, mats will be used to cross wetlands and streams. There will be no grading or ground disturbance. The existing stream is shown in Photographs P301, P302, P303, P323 and P324 in Attachment F of the Wetland and Waterbodies Report.	F-11 and F-12
Dennsion Road to the Switchyard												
WNC103-S56	Unnamed tributary to Walnut Creek	0-3	3	5	Silt/Clay	Perennial	Perennial RPW	C(T)[1]	85.53	441.87	To avoid impacts wetland mats and a temporary culvert will be used to cross this stream. Equipment access to the stream cannot be avoided as access will be needed for the placement of Pole 19. One utility pole (Pole 19) will be placed within 50 feet of the stream bank due to spacing constraints required to avoid placing utility poles in wetland and to accomodate a turn in the transmission line ROW. The existing stream is shown in Photograph P372 in Attachment F of the Wetland and Waterbodies Report.	F-12
WNC103-S56a	Unnamed tributary to Walnut Creek	3-6	20	25	Silt/Clay	Perennial	Perennial RPW	C(T)[1]	31.51	103.13	The stream will be crossed by overhead transmission lines; however, wetland mats and culverts will be used as temporary bridges for equipment crossing during construction. Equipment access to the stream cannot be avoided as access will be needed for the placement of Pole 18. Pole 18 will be placed within 50 feet of the stream bank due to spacing constraints required to avoid placing utility poles in wetland and to accomodate a turn in the transmission line ROW. The existing stream is shown in Photographs P370 and P371 in Attachment F of the Wetland and Waterbodies Report.	F-12
SVC23-S60	Unnamed tributary to Silver Creek	0-3	6	8-10	Silt/Clay	Perennial	Perennial RPW	C(T)[1]	56.29	213.27	To avoid impacts, mats will be used to cross wetlands and streams. There will be no grading or ground disturbance. The existing stream is shown in Photographs P352 and P353 in Attachment F of the Wetland and Waterbodies Report.	F-13
								Total	**625.97**	**2336.35**		

Notes:

1.) These stream classifications were inferred from NYCRR Chapter X

2., 3.) Stream flow classifications are based on the following definitions:

Perennial Flow (Perennial RPW) - The stream flow is evident throughout the year, in most years.

Intermittent Flow (Seasonal RPW) - The stream channel contains flowing water for at least three months but does not flow throughout the year, in most years.

Ephemeral Flow (Non-RPW) - The stream channel contains flowing water for less than three months of the year, in most years.

Key:

RPW = Relatively Permanent Water

collection. Underground collection lines will be installed via trenching of the streams. The collection line will be installed within the construction ROW approximately 4 feet below the stream bed. To minimize impacts, trenching will take place under dry conditions. Streams that are not naturally dry at the time of crossing will either be dammed and pumped, or flumed. These crossing methods are included in the engineering drawings provided in Appendix A. The preferred method for installing underground collection lines uses specialized equipment that cuts a trench, places the cable and backfills the trench in a single pass, thereby reducing the duration of stream disturbance. However, backhoes may be used as an alternative equipment type for installation particularly if either topography or substrate is not conducive to the use of specialized equipment. Temporary impacts associated with installation of overhead collection lines will be minimal. A single stream, Stream WBC103-S602, will be spanned by overhead collection lines. Wetland mats or temporary culverts will be used to facilitate equipment crossing thus minimizing in-stream disturbance.

Transmission Portion

Fourteen streams located within the transmission ROW will be crossed by overhead electrical transmission lines; one stream (WNC103-S54) will be crossed in two locations for a total of 15 stream crossings associated with transmission. Due to the location and number of streams along the transmission line, it will be necessary to cross streams during construction. Temporary impacts will be minimized by using temporary bridges or wetland mats (accompanied with temporary culverts as necessary), and any vegetation impeding equipment access will be hand cleared in the vicinity of streams. No permanent impacts to streams are expected due to construction and operation of the transmission line. Table 2-8 identifies streams that will be crossed by the Transmission portion of the Project.

Haul Route

No streams were delineated along the Haul Route.

2.5.1 Protected Streams

Twenty-two of the streams crossed by the Project have been classified as protected streams by NYSDEC and could be impacted by installation of access roads, underground collection, and the transmission line. Of these protected streams, 10 are crossed by access roads, five are crossed by underground collection lines, one is crossed in two separate locations by an access road and underground collection, and seven are crossed by the transmission line.

Generation Portion

Sixteen of the 25 streams crossed by the Generation portion of the Project have been classified as protected streams by NYSDEC. Each of these protected streams is Class A and 10 are crossed by access roads, five are crossed by underground collection lines, and one is crossed in two separate locations by an access road and underground collection. The protected streams that will be crossed by Generation are all unnamed tributaries to Silver Creek.

Proposed stream crossing methods for each of the streams in the Generation portion are provided in Table 2-7. Mitigation measures that will be implemented during stream crossing are discussed in detail in Section 2.5.3. The following list describes the protected streams that will be crossed during construction of the Generation portion:

- Stream SVC138-S16, an unnamed intermittent tributary to Silver Creek, will be temporarily impacted within a narrowed 40-foot-wide ROW by the construction of Access Road 22 and adjacent underground collection lines. The collection line will be installed via trenching within the construction ROW approximately 4 feet below the stream bed. The stream will be permanently impacted by the permanent 16-foot road for Access Road 22. The road will be constructed at an existing crossing without a culvert. Construction may improve stream flow conditions through culvert installation.

- Stream SVC133-S1002, an unnamed perennial tributary to Silver Creek, will be temporarily impacted within a narrowed 40-foot-wide ROW by the construction of Access Road 23 and adjacent underground collection lines. The collection line will be installed via trenching within the construction ROW approximately 4 feet below the stream bed. The stream will be permanently impacted by the permanent 16-foot road for Access Road 23.

- Stream SVC118-S132, an unnamed intermittent tributary to Silver Creek, will be temporarily impacted within a narrowed 40-foot-wide ROW by the construction of Access Road 25 and adjacent underground collection lines. The collection line will be installed via trenching within the construction ROW approximately 4 feet below the stream bed. The stream will be permanently impacted by the permanent 16-foot road for Access Road 25. The road will be constructed at an existing crossing without a culvert. Construction may improve stream flow conditions through culvert installation.

- Stream SVC118-S576, an unnamed perennial tributary to Silver Creek, will be temporarily impacted by the construction of Access Road 25 and adjacent underground collection lines. It was not possible to narrow the ROW to 40 feet in this location because of the turning radius required at this junction, however, the corridor was narrowed as much as possible while still maintaining the minimum width needed to install the turning radius. The collection line will be installed via trenching within the construction ROW approximately 4 feet below the stream bed. The stream will be permanently impacted by the permanent 16-foot-road for Access Road 25. The road will be constructed at an existing crossing, with an existing culvert.

- Stream SVC124-S591, an unnamed intermittent tributary to Silver Creek, will be temporarily impacted within a 60-foot-wide corridor by the construction of Access Road 25 and adjacent underground collection lines. It was not possible to narrow the ROW in this location because of the number of underground circuits that are required to be installed at this location. The collection line

will be installed via trenching within the construction ROW approximately 4 feet below the stream bed. The stream will be permanently impacted by the permanent 16-foot road for Access Road 25.

- Stream SVC124-S592, an unnamed perennial tributary to Silver Creek, will be temporarily impacted within a narrowed 40-foot-wide ROW by the construction of Access Road 25. The stream will be permanently impacted by the permanent 16-foot road for Access Road 25. The road will be constructed at an existing crossing, with an existing culvert.

- Stream SVC124-S592a, an unnamed intermittent tributary to Silver Creek, will be temporarily impacted within a narrowed 40-foot-wide ROW by the construction of Access Road 25. The stream will be permanently impacted by the permanent 16-foot road for Access Road 25. The road will be constructed at an existing crossing, which will be improved as the crossing is currently without a culvert.

- Stream SVC109-S568, an unnamed perennial tributary to Silver Creek, will be temporarily impacted within a narrowed ROW by the construction of Access Road 26 and adjacent underground collection lines. It was not possible to narrow the ROW to 40 feet in this location because of the turning radius required at this junction, however, the corridor was narrowed as much as possible while still maintaining the minimum width needed to install the shoulder required for turning. The collection line will be installed via trenching within the construction ROW approximately 4 feet below the stream bed. The stream will be permanently impacted by the permanent 16-foot road for Access Road 26.

- Stream SVC103-S1519, an unnamed perennial tributary to Silver Creek, will be temporarily impacted within a narrowed 40-foot-wide ROW by the construction of Access Road 27 and adjacent underground collection lines. The collection line will be installed via trenching within the construction ROW approximately 4 feet below the stream bed. The stream will be permanently impacted by the permanent 16-foot road for Access Road 27. The road will be constructed at an existing crossing, with an existing culvert.

- Stream SVC73-S1520, an unnamed perennial tributary to Silver Creek, will be temporarily impacted within the ROW by the construction of Access Road 27 and adjacent underground collection lines. It was not possible to narrow the ROW to 40 feet in this location because of the turning radius required at this junction, however, the corridor was narrowed as much as possible while still maintaining the minimum width needed to install the shoulder required for turning. The collection line will be installed via trenching within the construction ROW approximately 4 feet below the stream bed. The stream will be permanently impacted by the permanent 16-foot road for Access Road 27. The road will be constructed at an existing crossing, with an existing culvert.

- Stream SVC140-S22, an unnamed perennial tributary to Silver Creek, will be temporarily impacted by the installation of underground collection within a 32-foot ROW with two circuits. Underground collection will be installed via trenching and the stream will be restored following installation, resulting in no permanent impacts.

- Stream SVC129-S1001/S551, an unnamed perennial tributary to Silver Creek, will be temporarily impacted by the installation of underground collection within a 50-foot ROW with four circuits. Underground collection will be installed via trenching and the stream will be restored following installation, resulting in no permanent impacts.

- Stream SVC129-S1001a, an unnamed intermittent tributary to Silver Creek, will be temporarily impacted by the installation of underground collection within a 50-foot ROW with four circuits. Underground collection will be installed via trenching and the stream will be restored following installation, resulting in no permanent impacts.

- Stream SVC126-S561, an unnamed perennial tributary to Silver Creek, will be temporarily impacted by the installation of underground collection within a 50-foot ROW with four circuits. Underground collection will be installed via trenching and the stream will be restored following installation, resulting in no permanent impacts.

- Stream SVC122-S564, an unnamed ephemeral tributary to Silver Creek, will be temporarily impacted by the installation of underground collection within a 50-foot ROW with four circuits. Underground collection will be installed via trenching and the stream will be restored following installation, resulting in no permanent impacts.

- Stream SVC204-S577, an unnamed perennial tributary to Silver Creek will be crossed in two locations. At one location the stream will be temporarily impacted within a 60–foot-wide ROW by the construction of Access Road 25 and adjacent underground collection lines. It was not possible to narrow the ROW to 40 feet in this location because of the turning radius required at this junction, however, the corridor was narrowed as much as possible while still maintaining the minimum width needed to install the shoulder required for turning. The collection line will be installed via trenching within the construction ROW approximately 4 feet below the stream bed. The stream will be permanently impacted by the permanent 16-foot road for Access Road 25. The road will be constructed at an existing crossing, with an existing culvert. At a separate location, this stream will be temporarily impacted by the installation of underground collection within a 50-foot ROW with four circuits. Underground collection will be installed via trenching and the stream will be restored following installation, resulting in no permanent impacts.

Transmission Portion

Seven of the 14 streams to be crossed by the transmission line have been classified as protected streams by NYSDEC. All seven protected streams (Streams WNC103-S54, WNC103-S54a, WNC103-S56, WNC103-S56a, SVC23-S60, WNC28-S1014, and WNC28-S1014a) are Class C(t) streams. These streams will be crossed by the 30-foot construction equipment travel corridor.

NYSDEC stream classifications are described in Section 2.2, Surface Water: Environmental Setting. While streams may be impacted by construction of the Project, impacts are considered temporary. Permits from NYSDEC will be required to cross these streams under Article 15 of the NYS ECL. Mapping showing streams crossed by the transmission portion are provided in Appendix I.

To minimize impacts, wetland mats (accompanied with temporary culverts as necessary) will be used as temporary bridges for construction equipment at transmission stream crossings. All equipment access will be restricted to a 30-foot construction equipment travel corridor. Any vegetation impeding equipment access will be hand cleared in the vicinity of the protected streams. All vegetation will be left within 50 feet of protected streams to the maximum extent possible. Stumps will be pulled only where necessary to allow for placement of wetland mats or the installation of poles.

Overhead transmission poles will generally be set back a minimum of 50 feet from the top of bank. However, two streams crossed by overhead transmission will result in poles being located within 50 feet of the top of bank. Based on maintaining a safe engineering and design and spacing constraints, it is not possible to set Pole 18 and Pole 19 back 50 feet from their adjacent streams (Stream WNC103-S56a and Stream WNC103-S56, respectively). Spacing for Poles 18 and 19 was maximized to the extent possible to accommodate a turn in the transmission ROW and to avoid impacts to Wetlands WNC103-W56 and WNC103-W57.

Proposed stream crossing methods for each of the streams in the Transmission portion are provided in Table 2-8. Mitigation measures that will be implemented during stream crossing are discussed in detail in Section 2.5.3. The following list describes the protected streams that will be crossed during construction of the Transmission portion:

- Stream WNC103-S54, an unnamed perennial tributary to Walnut Creek, will be crossed by overhead transmission in two locations. Temporary stream impacts will be minimized by using wetland mats as temporary bridges during equipment crossing.

- Stream WNC103-S54a, an unnamed intermittent tributary to Walnut Creek, will be crossed by overhead transmission. Temporary stream impacts will be minimized by using wetland mats as a temporary bridge during equipment crossing.

- Stream WNC103-S56, an unnamed perennial tributary to Walnut Creek, will be crossed by overhead transmission. Temporary stream impacts will be minimized by using wetland mats, in conjunction with a temporary culvert as a temporary bridge during equipment crossing. Utility pole 19 will be placed within 50 feet of the stream bank to accommodate a turn in the transmission ROW and to avoid impacts to Wetland WNC103-W57.

- Stream WNC103-S56a, an unnamed perennial tributary to Walnut Creek, will be crossed by overhead transmission. Temporary stream impacts will be minimized by using wetland mats, in conjunction with a temporary culvert as a temporary bridge during equipment crossing. Utility pole 18 will be placed within 50 feet of the stream bank to accommodate a turn in the transmission ROW and to avoid impacts to Wetland WNC103-W56.

- Stream SVC23-S60, an unnamed perennial tributary to Silver Creek, will be crossed by overhead transmission. Temporary stream impacts will be minimized by using wetland mats as a temporary bridge during equipment crossing.

- Stream WNC28-S1014, an unnamed perennial tributary to Walnut Creek, will be crossed by overhead transmission. Temporary stream impacts will be minimized by using wetland mats and a temporary culvert during equipment crossing.

- Stream WNC28-S1014a, an unnamed intermittent tributary to Walnut Creek, will be crossed by overhead transmission. Temporary stream impacts will be minimized by using wetland mats during equipment crossing.

Haul Route

A roadside Haul Route investigation was conducted and is included as Appendix F. Depending on the Final Haul Route chosen, roadside surveys indicate that there are streams identified in proximity to Haul Route intersections in need of improvement (see Table 2 of Appendix F). When the Haul Route has been determined and access has been obtained, detailed delineations will be performed within the required workspace as necessary.

2.5.2 Stormwater

Construction of the Project could temporarily impact the quality of stormwater runoff. Indirect impacts to surface waters could potentially result from construction activities including increased sedimentation and turbidity caused by increased surface runoff from disturbed areas. Stormwater pollution could potentially arise from the release of pollutants or hazardous materials in the event of a spill during construction. Impacts could include the release of fuels or oils to surface water and/or groundwater any potential impacts would be short term and minor. BMPs in accordance with Appendix G will be used to avoid impacts to stormwater during construction and operation of the facilities.

No significant increase in impervious surface will result from the Project facilities. Tower pedestals will add 0.24 acres of impervious surface to the 13,658-acre Project Area. Therefore, no significant changes to stormwater runoff volumes are anticipated. The access roads and crane pads at turbine sites will be gravel based, which will allow stormwater to continue to infiltrate into the soil.

2.5.3 Mitigation

Several measures will be implemented to ensure surface water quality protection, including the SWPPP, which will require the use of sediment and erosion control measures and BMPs; environmental monitoring of the site, which will occur during construction and site restoration in accordance with Noble's construction plan and SWPPP; and the Quality Assurance Plan, which will contain permit conditions and other commitments made by Noble during Project permitting, including those associated with stream disturbance, stormwater management, and erosion control.

The SWPPP will encompass all requirements set forth by the NYSDEC SPDES General Permit for Stormwater Discharges from Construction Activities and will include an erosion and sediment control plan, measures for post-construction runoff control, and a spill prevention plan. Furthermore, throughout the construction phase, sediment and erosion control devices will be monitored weekly (at a minimum), as per State Pollutant Discharge Elimination System (SPDES) regulations. The SWPPP will be submitted to the Towns prior to construction.

Stormwater pollution prevention measures will be implemented via the SWPPP. BMPs that will be used during construction to prevent excess stormwater runoff from construction areas will be described in detail in the SWPPP. The SWPPP will address BMPs that will take place on site to prevent spills and, in the event of a spill, response procedures that will minimize groundwater and surface water impacts. Any spillage of fuels, waste oils, other petroleum products, or hazardous materials shall be reported to NYSDEC's Spill Hotline (1-800-457-7362) within 2 hours. Any increase in stormwater discharges resulting directly from the construction of the Project will be documented in the SWPPP and permitted through an SPDES General Permit for Stormwater Discharges from Construction Activities. Furthermore, measures will be taken to maintain the site with BMPs for post-construction runoff control to ensure that all new facilities consistent with the operation of the Project do not create any additional stormwater runoff than was generated during pre-construction conditions.

Groundwater impacts will also be minimized through development and implementation of the SWPPP. With the exception of the compaction required within an approximate 35-foot radius around each turbine base, all surface soils that are temporarily compacted will be de-compacted and/or mitigated as described in the construction plan. Instances of soil compaction will be minimized through BMPs, including the segregation of subsoil and topsoil, use of geotextiles to prevent

compaction, and soil compaction mitigation where appropriate. Similar activities in wetlands, if encountered, will be governed by NYSDEC and USACE permits.

If shallow groundwater enters the excavation areas during turbine foundation placement, it will be pumped out prior to installation of the foundation. Any groundwater that is pumped out of a foundation excavation will be discharged to an area (approved by the landowner) that will either direct the flow toward existing waterbodies or temporarily retain the water until it can infiltrate back into the ground. Specific details relating to the pumping of groundwater will be included in the SWPPP. Temporary sediment traps or the controlled release of water over vegetated areas will be utilized during construction to intercept and manage sediment-laden runoff from dewatering of turbine foundations. Based on engineering designs contained in the SWPPP, the control practices will temporarily retain the runoff and allow sediment to settle prior to discharge to of water to a swale, a ditch, or vegetated area.

Surface water impacts have been minimized by siting Project components away from surface water resources to the greatest extent practicable. However, it will be necessary to cross streams for installation of access roads, collection lines, and transmission lines. During construction, appropriate erosion/sediment control measures (e.g., silt fences or straw bale dikes or other stormwater measures) will be used to limit the area of impact to surface waters in accordance with permit requirements set forth as a result of this application. Any sediment runoff or increased turbidity to surface waters as a result of construction will be minimal as a result. Other measures that will be implemented to minimize impacts to streams during construction include:

- In protected streams, all in-stream work, as well as any work that may result in the suspension of sediment shall not occur during the trout spawning and incubation period commencing October 1 and ending May 31, unless prior approval is obtained by NYSDEC;

- Clearing of existing vegetation will be limited to the material which poses a hazard or hindrance to construction. Snags which provide shelter in streams for fish will not be disturbed unless they cause serious obstructions, scouring, or erosion. Trees will not be felled into any stream or onto the immediate stream bank;

- Where necessary, appropriately sized culverts will be designed to meet hydraulic capacity and structural integrity criteria;

- There will be no widening or constriction of the stream channel bed through the road crossing, and no berms will be constructed on the stream banks;

- The elevation of the road will be a minimum of 6 inches higher at the culvert than at 25 feet on either side of the culvert to allow road surface water to exit the roadway and leach through the vegetation before entering the stream.

However, some heavy equipment may require a flat roadway surface during construction. In this case, roadways crossing culverts may be slightly sloped to allow road surface water to flow into a side drain or exit points located approximately 100 feet apart on areas greater than or equal to 5% slope. In addition, stabilized culvert entrance and exit points will be established at each stream crossing;

- If culverts with bottoms are to be used and will be permanent, including round culverts, they will be installed so that at least 20% of the culvert's height is embedded below the existing stream bed at the outlet end of the culvert. Culverts with bottoms, including round culverts, will not be used if the streambed is bedrock;

- Road banks within 50 feet of the culvert will be adequately protected with riprap or seeded and mulched within seven days of completion of the culvert crossing. Road banks sloped steeper than 1 foot vertically to 3 feet horizontally will be protected with clean rock riprap 6 inches in diameter or larger. Mitigation of stream disturbances within 50 feet of protected streams will be coordinated with the applicable agencies. This may include planting of shrubs along the stream bank as would be dictated by NYSDEC and the USACE;

- During periods of work activity, flow immediately downstream of the work site will equal flow immediately upstream of the work site;

- When crossing perennial streams or streams with flow at the time of crossing, dewatering procedures will be followed to control water adjacent to the work area; and

- Additional recommendations identified by NYSDEC or the USACE during the permitting process.

Access roads and collection lines have been collocated with existing stream crossings whenever possible to avoid creating new disturbances across these resources. In addition, Project facilities have been collocated with existing disturbed areas where possible (including existing farming and logging roads and all-terrain vehicle [ATV] trails), in an effort to minimize impacts and improve these areas. In most cases, only minor improvements, such as replacing culverts, will be required.

2.6 Turbine Cluster Detail

To facilitate agency field review, as well as agency preparation of jurisdictional determinations and permits for the Generation and Transmission portions of the Project, Sections 2.6 and 2.7 present a detailed discussion of impacts for generation and transmission facilities. Generation impacts, organized by sectors and clusters, are presented in this section. A detailed description of impacts for the transmission portion is provided in Section 2.7. Impacts are depicted on detailed impact mapping included in Appendix I.

Each sector includes one or multiple turbine clusters along with associated access roads and collection lines that are in geographic proximity to each other. Each cluster is identified by the primary access road to the turbine grouping (i.e., Cluster 1 is served by Access Road 1). Figure 1.1-2 and Table 1-1 identify the layout and location of each sector and cluster and all associated facilities. These divisions are for the sole purpose of organizing work flow and discussion and do not imply any separation of facilities. Photos for the turbine sites, wetlands, and streams are organized by sector and cluster and can be found in the corresponding appendices of the Wetland and Waterbodies Report (included in the DEIS in Appendix D).

Sections 2.6.1 through 2.6.5 include discussions of and details for wetlands and waterbodies that will be impacted by the Generation portion of the Project for each sector and cluster. Section 2.7 includes this information for the Transmission portion of the Project.

2.6.1 Sector A

2.6.1.1 Cluster 1 (Turbines T1, T2, and T3)

Cluster 1 includes three turbines. Turbines T1 and T3 and their associated access roads are located in forested areas. Turbine T2 and its associated access road are located along the northern edge of an agricultural field. Access Road 1 was sited along the edge of agricultural fields to minimize impacts to agricultural land use and the adjacent forest, but crosses a small forested area to reach Turbine T1. An alternative access route from Zahm Road was considered during the siting process (see Figure 1.3-1). The route was discarded due to steep slopes, greater forest impacts, and multiple stream crossings.

A small portion of the north edge of emergent Wetland WBC29-W79 will be temporarily impacted by the construction ROW for Access Road 1, but will be restored to preconstruction contours following construction.

The southwest portion of emergent/shrub-scrub Wetland WBC28-W83 will be temporarily impacted by the construction ROW, temporary road and collocated underground collection lines, and permanently impacted by Access Road 1. The impacted area is a linear riparian wetland associated with perennial stream WBC28-S83; as such, the stream will also be crossed by an access road with adjacent underground collection lines, requiring trenching for collection line installation. Stream disturbance will take place during dry or low flow conditions, if possible, and BMPs will be employed to minimize impacts associated with this crossing. If water is present at the time of crossing, the area will be dewatered using a flume crossing or a dam and pump crossing to minimize impacts.

Table 2-9 Summary of Delineated Wetland Impacts, Ball Hill Windpark Generation Portion

Wetland ID	Wetland Community Type	Hydrologic Connection	Watershed	Location Relative to Associated Stream Reach (Adjacent or Abutting)[1]	Facility Type	Isolated Area of Construction Impact (acres)[2]	Isolated Area of Permanent Impact (acres)[3]	Isolated Area to be Restored to Contours (acres)	Federally Jurisdictional Area of Construction Impact (acres)[2,4]	Federally Jurisdictional Area of Permanent Impact (acres)[3, 4]	Federally Jurisdictional Area to be Restored to Contours (acres)[5]	Federally Jurisdictional Area to be Converted from Forest to Shrub/Scrub Emergent (acres)[6]	Federally Jurisdictional Forest to be Permanently Filled (acres)[3, 4]	Comment and Justification for Unavoidable Impacts	Appendix J Wetland Map Sheet
Sector A															
Sector A Cluster 1 (Turbines T1, T2, T3)															
WBC29-W79	PEM	Unnamed tributary to West Branch Conewango Creek	WBC29	Adjacent with Surface Connection	Access Road 1	NA	NA	NA	0.00034	NA	0.00034	NA	NA	Access Road 1 was sited along the edge of agricultural fields to minimize impacts to agricultural use and the adjacent forest. Small, emergent Wetland WBC29-W79 will be temporarily impacted by the Construction ROW at the wetland's northwest boundary.	A-2
WBC28-W83	PEM/PSS	Unnamed tributary to West Branch Conewango Creek	WBC21	Abutting	Access Road 1	NA	NA	NA	0.02277	0.01115	0.01162	NA	NA	Access Road 1 was sited along the edge of agricultural fields to minimize impacts to agricultural use and the adjacent forest, but crosses a small forested area to reach turbine T1. Wetland WBC28-W83 will be temporarily impacted by the Construction ROW and the temporary road, and permanently impacted by Access Road 1. The impacted portion is a linear emergent/shrub-scrub portion associated with a perennial stream.	A-1
Sector A Cluster 2 (T4) - No Wetland Impacts															
Sector A Cluster 3 (T5, T6)															
WBC77-W74 (see also Sector A Collection Line)	PEM/PSS/PFO	Unnamed tributary to West Branch Conewango	WBC77	Adjacent with Surface Connection	Access Road 3	NA	NA	NA	0.00062	NA	0.00062	0.00062	NA	The construction ROW for Access Road 3 crosses WBC77-W74 near the wetland's north boundary. This area will be temporarily impacted and will be restored to pre-construction contours following construction. Permanent forest conversion will occur in this portion of the wetland.	A-4
Sector A Collection Line															
WBC77-W74 (see also Sector A Cluster 3)	PEM/PSS/PFO	Unnamed tributary to West Branch Conewango	WBC77	Adjacent with Surface Connection	Underground Collection Line	NA	NA	NA	0.03008	NA	0.03008	NA	NA	The collection line on the west side of Round Top Road crosses wetland WBC77-W74 on the wetland's west side, near its narrowest point. This area of wetland WBC77-W74 will be temporarily impacted and will be restored to pre-construction contours following construction.	A-4
WBC46-W90	PEM	Unnamed tributary to West Branch Conewango Creek	WBC46	Adjacent with Surface Connection	Underground Collection Line	NA	NA	NA	0.02160	NA	0.02160	NA	NA	The collection line for Clusters 1, 2 and 3 was sited along the west side of Round Top Road, and crosses emergent wetland WBC46-W90 at its narrowest point. WBC46-W90 will be temporarily impacted during installation of the underground collection system and will be restored to pre-construction contours following construction.	A-3
WBC38-W89	PEM/PSS	Unnamed tributary to West Branch Conewango Creek	WBC38	Adjacent with Surface Connection	Underground Collection Line	NA	NA	NA	0.07556	NA	0.07556	NA	NA	The collection line for Clusters 1, 2 and 3 was sited along the west side of Round Top Road, and crosses an emergent/shrub-scrub portion of wetland WBC38-W89. Wetland WBC38-W89 will be temporarily impacted during installation of the underground collection system and will be restored to pre-construction contours following construction.	A-2
Sector A Totals						**0.00000**	**0.00000**	**0.00000**	**0.15097**	**0.01115**	**0.13982**	**0.00062**	**0.00000**		

Table 2-9 Summary of Delineated Wetland Impacts, Ball Hill Windpark Generation Portion

Wetland ID	Wetland Community Type	Hydrologic Connection	Watershed	Location Relative to Associated Stream Reach (Adjacent or Abutting)[1]	Facility Type	Isolated Area of Construction Impact (acres)[2]	Isolated Area of Permanent Impact (acres)[3]	Isolated Area to be Restored to Contours (acres)	Federally Jurisdictional Area of Construction Impact (acres)[2,4]	Federally Jurisdictional Area of Permanent Impact (acres)[3, 4]	Federally Jurisdictional Area to be Restored to Contours (acres)[5]	Federally Jurisdictional Area to be Converted from Forest to Shrub/Scrub Emergent (acres)[6]	Federally Jurisdictional Forest to be Permanently Filled (acres)[3, 4]	Comment and Justification for Unavoidable Impacts	Appendix J Wetland Map Sheet
Sector B															
Sector B Cluster 4 (T7)															
WBC72-W92	PEM/PSS	Unnamed tributary to West Branch Conewango Creek	WBC72	Abutting	Access Road 4	NA	NA	NA	0.08278	0.04235	0.04043	NA	NA	Access Road 4 has been sited to provide a direct route to turbine T7 and to minimize impacts to the extent possible. Wetland WBC72-W92 will be temporarily impacted by the Construction ROW and temporary road, and permanently impacted by Access Road 4. The impacted portion is a linear emergent/shrub-scrub area associated with a perennial stream.	B-1
Sector B Cluster 5 (T8, T9, T15)															
WBC88-W98	PSS/PFO	Unnamed tributary to West Branch Conewango Creek	WBC88	Abutting	Access Road 5	NA	NA	NA	0.09339	0.02967	0.06372	0.09339	0.02967	Access Road 5 was sited along the edge of agricultural fields to minimize impacts to agricultural use and the adjacent forest. Wetland WBC88-W98 will be temporarily impacted by the Construction ROW and temporary road and permanently impacted by Access Road 5. Permanent forest conversion will also occur. Wetland WBC88-W98 is impacted in its southern portion.	B-4
WBC88-W100	PEM	Unnamed tributary to West Branch Conewango Creek	WBC88	Adjacent with Surface Connection	Access Road 5	NA	NA	NA	0.10258	0.02892	0.07366	NA	NA	Access Road 5 between Turbines T9 and T15 was sited to minimize impacts to wetlands to the extent possible. Wetland WBC88-W100 will be temporarily impacted by the Construction ROW and temporary road, and permanently impacted by Access Road 5. Emergent wetland WBC88-W100 will be impacted on its western side.	B-4
Sector B Cluster 6 (T11, T13, T14)															
WBC101-W101b	PEM/PSS	Unnamed tributary to West Branch Conewango Creek	WBC101	Abutting	Turbine Staging Area	NA	NA	NA	0.02668	NA	0.02668	NA	NA	The turbine staging area for T13 was sited to minimize wetland impacts to the extent possible. A narrow, linear emergent/shrub-scrub portion of WBC101-W101b will be temporarily impacted during clearing and grading of the turbine staging area and will be restored to pre-construction contours following construction.	B-5
Sector B Cluster 7 (T16, T17)															
WBC90-W603	PEM	Unnamed tributary to West Branch Conewango Creek	WBC90	Adjacent with Surface Connection	Turbine Staging Area	NA	NA	NA	0.00694	NA	0.00694	NA	NA	The turbine staging area for turbine T16 has been sited in a field to reduce impacts to forest. Additionally, it has been reduced in size at its southwest corner. Small, emergent wetland WBC90-W603 will be temporarily impacted on its south side by the turbine staging area and will be restored to pre-construction contours following construction.	B-7 and B-9
Sector B Cluster 8 (T68) - No Wetland Impacts															
Sector B Cluster 9 (T18, T19, T20, T21)															
WBC56-W596	PEM	Unnamed tributary to West Branch Conewango Creek	WBC56	Adjacent with Surface Connection	Access Road 9	NA	NA	NA	0.03048	0.01394	0.01654	NA	NA	Clusters 9 and 10 and their associated Access Roads were sited along an open ridgeline. Their locations minimize wetland impacts to the extent possible. A narrow, linear, emergent portion of Wetland WBC56-W596 will be temporarily impacted by the Construction ROW and temporary road, and permanently impacted by Access Road 9.	B-12

Table 2-9 Summary of Delineated Wetland Impacts, Ball Hill Windpark Generation Portion

Wetland ID	Wetland Community Type	Hydrologic Connection	Watershed	Location Relative to Associated Stream Reach (Adjacent or Abutting)[1]	Facility Type	Isolated Area of Construction Impact (acres)[2]	Isolated Area of Permanent Impact (acres)[3]	Isolated Area to be Restored to Contours (acres)	Federally Jurisdictional Area of Construction Impact (acres)[2,4]	Federally Jurisdictional Area of Permanent Impact (acres)[3, 4]	Federally Jurisdictional Area to be Restored to Contours (acres)[5]	Federally Jurisdictional Area to be Converted from Forest to Shrub/Scrub Emergent (acres)[6]	Federally Jurisdictional Forest to be Permanently Filled (acres)[3, 4]	Comment and Justification for Unavoidable Impacts	Appendix J Wetland Map Sheet
Sector B Collection Line															
WBC90-W598	PEM	Unnamed tributary to West Branch Conewango Creek	WBC90	Abutting	Underground Collection Line	NA	NA	NA	0.01392	NA	0.01392	NA	NA	The collection line south of Cluster 9 has been sited directly to Cluster 7 to minimize impacts to the extent possible. A very small, emergent portion of WBC90-W598 associated with a perennial stream will be temporarily impacted during installation of the underground collection system and will be restored to pre-construction contours following construction.	B-10
WBC90-W599	PEM in Forested area	No apparent surface water connection to traditional navigable waters	WBC90	Adjacent without Surface Connection	Underground Collection Line	0.01131	NA	0.01131	NA	NA	NA	NA	NA	The collection line south of Cluster 9 has been sited directly to Cluster 7 to minimize impacts to the extent possible. Small, emergent wetland WBC90-W599 (no surface connection to Traditional Navigable Waters) will be temporarily impacted during installation of the underground collection system and will be restored to pre-construction contours following construction.	B-9
WBC90-W600	PEM in Forested area	Unnamed tributary to West Branch Conewango Creek	WBC90	Adjacent with Surface Connection	Underground Collection Line	NA	NA	NA	0.02758	NA	0.02758	NA	NA	The collection line south of Cluster 9 has been sited directly to Cluster 7 to minimize impacts to the extent possible. Emergent wetland WBC90-W600 will be temporarily impacted during installation of the underground collection system and will be restored to pre-construction contours following construction.	B-9
WBC90-W601	PEM in Forested area	No apparent surface water connection to traditional navigable waters	WBC90	Adjacent without Surface Connection	Underground Collection Line	0.03164	NA	0.03164	NA	NA	NA	NA	NA	The collection line south of Cluster 9 has been sited directly to Cluster 7 to minimize impacts to the extent possible. Emergent wetland WBC90-W601 will be temporarily impacted during installation of the underground collection system and will be restored to pre-construction contours following construction.	B-9
Sector B Totals						**0.04295**	**0.00000**	**0.04295**	**0.38435**	**0.11488**	**0.26947**	**0.0934**	**0.02967**		
Sector C															
Sector C Cluster 10 (T25) - No Wetland Impacts															
Sector C Cluster 11 (T23, T24)															
WBC35-W522	PEM	Unnamed tributary to West Branch Conewango Creek	WBC35	Adjacent with Surface Connection	Access Road 11	NA	NA	NA	0.15079	0.02305	0.12774	NA	NA	Access Road 12 was sited to minimize impacts to the extent possible. The south portion of emergent wetland WBC35-W522 will be temporarily impacted by the Construction ROW and temporary road, and permanently impacted by Access Road 12.	C-2
Sector C Cluster 12 (T22) - No Wetland Impacts															
Sector C Cluster 13 (T26)															
WBC23-W500	PEM	No apparent surface water connection to traditional navigable waters	WBC23	Adjacent without Surface Connection	Access Road 13	0.00774	0.00745	0.00029	NA	NA	NA	NA	NA	Access Road 1 3 was sited to minimize impacts to the extent possible. Wetland WBC23-W500 will be impacted by the Construction ROW and temporary road, and permanently impacted by Access Road 13. A small portion of emergent wetland WBC23-W500 (no surface connection to Traditional Navigable Waters) at its north boundary will be impacted.	C-7
WBC23-W501	PEM	No apparent surface water connection to traditional navigable waters	WBC23	Adjacent without Surface Connection	Access Road 13	0.00006	0.00002	0.00004	NA	NA	NA	NA	NA	Access Road 1 3 was sited to minimize impacts to the extent possible. A very small portion of emergent wetland WBC23-W501 will be impacted by the Construction ROW and permanently impacted by Access Road 13.	C-7

Table 2-9 Summary of Delineated Wetland Impacts, Ball Hill Windpark Generation Portion

Wetland ID	Wetland Community Type	Hydrologic Connection	Watershed	Location Relative to Associated Stream Reach (Adjacent or Abutting)[1]	Facility Type	Isolated Area of Construction Impact (acres)[2]	Isolated Area of Permanent Impact (acres)[3]	Isolated Area to be Restored to Contours (acres)	Federally Jurisdictional Area of Construction Impact (acres)[2,4]	Federally Jurisdictional Area of Permanent Impact (acres)[3, 4]	Federally Jurisdictional Area to be Restored to Contours (acres)[5]	Federally Jurisdictional Area to be Converted from Forest to Shrub/Scrub Emergent (acres)[6]	Federally Jurisdictional Forest to be Permanently Filled (acres)[3, 4]	Comment and Justification for Unavoidable Impacts	Appendix J Wetland Map Sheet
Sector C Cluster 14 (T27) - No Wetlands															
Sector C Cluster 15 (T29) - No Wetland Impacts															
Sector C Cluster 16 (T30, T31, T32) - No Wetlands															
Sector C Cluster 17 (T33, T34, T35) - No Wetland Impacts															
Sector C Cluster 18 (T36) - No Wetlands															
Sector C Collection Line															
WBC23-W518	PEM	No apparent surface water connection to traditional navigable waters	WBC23	Adjacent without Surface Connection	Underground Collection Line	0.03113	NA	0.03113	NA	NA	NA	NA	NA	The collection line between Clusters 11 and 12 was sited along the edge of a field to minimize impacts to the adjacent forest. Emergent wetland WBC23-W518 will be temporarily impacted during installation of the underground collection system and will be restored to pre-construction contours following construction.	C-5
WBC23-W523	PEM/PSS	Unnamed tributary to West Branch Conewango Creek	WBC23	Adjacent with Surface Connection	Underground Collection Line	NA	NA	NA	0.06484	NA	0.06484	NA	NA	The collection line between Clusters 11 and 14 was sited along an existing ROW clearing to minimize impacts to the adjacent forest. Emergent/shrub/scrub wetland WBC35-W523 will be temporarily impacted during installation of the underground collection system and will be restored to pre-construction contours following construction.	C-5 and C-6
WBC23-W507	PEM	Unnamed tributary to West Branch Conewango Creek	WBC23	Adjacent with Surface Connection	Underground Collection Line	NA	NA	NA	0.07628	NA	0.07628	NA	NA	The collection line between Turbines T26 and T27 was sited along the edge of a field to minimize impacts to the adjacent forest and agricultural land. Emergent wetland WBC23-W507 will be temporarily impacted during installation of the underground collection system and will be restored to pre-construction contours following construction.	C-7
WBC23-W510	PEM/PSS/PFO	Unnamed tributary to West Branch Conewango Creek	WBC23	Adjacent with Surface Connection	Underground Collection Line	NA	NA	NA	0.13570	NA	0.13570	0.13570	NA	The collection lines between Turbines T26 and T27 and between Clusters 11 and 14 were sited along the edge of a field and an existing cleared ROW to minimize impacts to the adjacent forest. Emergent wetland WBC23-W510 will be temporarily impacted during installation of the underground collection system and will be restored to pre-construction contours following construction. Permanent forest conversion will also occur.	C-6 and C-7
WBC23-W519	PEM/PSS	Unnamed tributary to West Branch Conewango Creek	WBC23	Adjacent with Surface Connection	Underground Collection Line	NA	NA	NA	0.15338	NA	0.15338	NA	NA	The collection line between Clusters 11 and 14 was sited along an existing ROW clearing to minimize impacts to the adjacent forest. Emergent/shrub-scrub wetland WBC23-W519 will be temporarily impacted during installation of the underground collection system and will be restored to pre-construction contours following construction.	C-5
WBC45-W529	PEM/PSS	Unnamed tributary to West Branch Conewango Creek	WBC45	Adjacent with Surface Connection	Underground Collection Line	NA	NA	NA	0.07920	NA	0.07920	NA	NA	The collection line between Prospect Road and Clusters 16 and 17 was sited in successional field and at the edge of forest to minimize impacts to agricultural land and forest. Emergent/shrub-scrub wetland WBC45-W529 will be temporarily impacted during installation of the underground collection system and will be restored to pre-construction contours following construction.	C-10
Sector C Totals						**0.03893**	**0.00747**	**0.03146**	**0.66019**	**0.02305**	**0.63714**	**0.13570**	**0.00000**		

Table 2-9 Summary of Delineated Wetland Impacts, Ball Hill Windpark Generation Portion

Wetland ID	Wetland Community Type	Hydrologic Connection	Watershed	Location Relative to Associated Stream Reach (Adjacent or Abutting)[1]	Facility Type	Isolated Area of Construction Impact (acres)[2]	Isolated Area of Permanent Impact (acres)[3]	Isolated Area to be Restored to Contours (acres)	Federally Jurisdictional Area of Construction Impact (acres)[2,4]	Federally Jurisdictional Area of Permanent Impact (acres)[3, 4]	Federally Jurisdictional Area to be Restored to Contours (acres)[5]	Federally Jurisdictional Area to be Converted from Forest to Shrub/Scrub Emergent (acres)[6]	Federally Jurisdictional Forest to be Permanently Filled (acres)[3, 4]	Comment and Justification for Unavoidable Impacts	Appendix J Wetland Map Sheet
Sector D															
Sector D Cluster 19 (T38)															
NBC69-W534-See Sector D Cluster 20															
Sector D Cluster 20 (T39, T40, T41, T42, T43, T45)															
NBC69-W534/W534a	PEM/PFO 1/4	Unnamed tributary to North Branch Conewango Creek	NBC69	Abutting	Access Road 20	NA	NA	NA	0.03455	0.02089	0.01366	NA[7]	NA[7]	Access Road 20 was sited on an existing dirt/gravel road to minimize impacts. A linear, emergent portion of wetland NBC69-W534/W534a associated with a perennial stream will be temporarily impacted by the construction ROW and temporary road, and permanently impacted by Access Road 20. No permanent forest conversion will occur because the area of disturbance/impact is within the existing road.	D-2
NBC62-W538	PEM	No apparent surface water connection to traditional navigable waters	NBC62	Adjacent without Surface Connection	Turbine Staging Area	0.02600	NA	0.02600	NA	NA	NA	NA	NA	Turbine T41 and its staging area were sited to minimize impacts to agricultural land and forest. Wetland NBC62-W538 is a small, emergent wetland with no surface connection to Traditional Navigable Waters, and will be temporarily impacted by the turbine staging area.	D-3
Sector D Cluster 21 (T46 and T47)															
NBC46-W30	PEM/PSS	Unnamed tributary to North Branch Conewango Creek	NBC46	Adjacent with Surface Connection	Access Road 21	NA	NA	NA	0.04031	0.02276	0.01755	NA	NA	Access Road 21 was sited to minimize impacts to the extent possible. However, emergent/shrub-scrub wetland NBC46-W30 could not be avoided and as such, will be crossed at one of it's narrowest areas. The wetland will be temporarily impacted by the construction ROW and temporary road, and permanently impacted by Access Road 21.	D-8
NBC46-W31	PEM	Unnamed tributary to North Branch Conewango Creek	NBC46	Abutting	Access Road 21	NA	NA	NA	0.02408	0.01056	0.01352	NA	NA	Access Road 21 was sited to minimize impacts to the extent possible. Emergent wetland NBC46 W31 will be crossed at its narrowest point, a linear area associated with an existing farm road through perennial stream NBC46-S31. NBC46-W31 will be temporarily impacted by the construction ROW and temporary road, and permanently impacted by Access Road 21. The stream crossing location allows for culvert placement that will improve the current farm road crossing through the stream bed and will also maintain flow to the stream channel rather than disrupting or redirecting flow.	D-8
SVC142-W27	PFO 1/4	Unnamed tributary to Silver Creek	SVC142	Adjacent with Surface Connection	Turbine Staging Area	NA	NA	NA	0.08601	NA	0.08601	0.08601	NA	The turbine staging area for T47 has been reduced in size at its northern corner to minimize impacts to wetland SVC142-W27 to the extent possible. A portion of SVC142-W27 on its southeast side will be temporarily impacted by the turbine staging area but will be restored to preconstruction contours following construction. Permanent forest conversion will occur within SVC142-W27 as a result of the turbine staging area.	D-9

Table 2-9 Summary of Delineated Wetland Impacts, Ball Hill Windpark Generation Portion

Wetland ID	Wetland Community Type	Hydrologic Connection	Watershed	Location Relative to Associated Stream Reach (Adjacent or Abutting)[1]	Facility Type	Isolated Area of Construction Impact (acres)[2]	Isolated Area of Permanent Impact (acres)[3]	Isolated Area to be Restored to Contours (acres)	Federally Jurisdictional Area of Construction Impact (acres)[2,4]	Federally Jurisdictional Area of Permanent Impact (acres)[3, 4]	Federally Jurisdictional Area to be Restored to Contours (acres)[5]	Federally Jurisdictional Area to be Converted from Forest to Shrub/Scrub Emergent (acres)[6]	Federally Jurisdictional Forest to be Permanently Filled (acres)[3, 4]	Comment and Justification for Unavoidable Impacts	Appendix J Wetland Map Sheet
Sector D Cluster 22 (T48, T50, T51)															
SVC138-W16	PEM/PSS	Unnamed tributary to Silver Creek	SVC138/SVC137	Abutting	Turbine Staging Area	NA	NA	NA	0.00125	NA	0.00125	NA	NA	The eastern border of W16 will be temporarily impacted by the staging area for T51 , and will be restored to preconstruction contours following construction.	D-13
SVC138-W16	PEM/PSS	Unnamed tributary to Silver Creek	SVC138/SVC137	Abutting	Access Road 22	NA	NA	NA	0.0429517	0.02104	0.02191	NA	NA	Access Road 22 west of Turbine T51 was sited along an existing farm road to minimize impacts to the extent possible. Emergent/shrub-scrub wetland SVC138-W16 will be crossed at its narrowest point where the existing farm road crosses. SVC138-W16 will be temporarily impacted by the construction ROW and temporary road, and permanently impacted by Access Road 22.	D-13
NBC46-W122	PEM	No apparent surface water connection to traditional navigable waters	NBC46	Adjacent without Surface Connection	Turbine Staging Area	0.01369	NA	0.01369	NA	NA	NA	NA	NA	TThe turbine staging area for T51 has been sited to avoid impacts to wetlands SVC138-W16 and NBC38-W17. Small, emergent wetland NBC46-W122 will be impacted by the collection system and turbine staging area. NBC46-W122 has no surface connection to Traditional Navigable Waters.	D-14
SVC137-W18	PEM	Unnamed tributary to Silver Creek	SVC137	Adjacent with Surface Connection	Access Road 22	NA	NA	NA	0.01824	0.00349	0.01475	NA	NA	Access Road 22 west of Turbine T51 was sited along an existing farm road to minimize impacts to the extent possible. However, wetland SVC137-W18 will be temporarily impacted by the construction ROW and temporary road, and permanently impacted by Access Road 22. The wetland is located adjacent to the farm road in a very small natural depression in a cow pasture.	D-12
SVC140-W35	PFO 1/4	Unnamed tributary to Silver Creek	SVC140	Adjacent with Surface Connection	Turbine Staging Area	NA	NA	NA	0.06726	NA	0.06726	0.06726	NA	The turbine staging area for T48 has been reduced in size at its western corner to minimize impacts to wetland SVC140-W35 to the extent possible. A portion of SVC140-W35 on its southeast side will be temporarily impacted during clearing and grading of the turbine staging area and will be restored to preconstruction contours following construction. Permanent forest conversion will occur within SVC140-W35 as a result of the turbine staging	D-10

Table 2-9 Summary of Delineated Wetland Impacts, Ball Hill Windpark Generation Portion

Wetland ID	Wetland Community Type	Hydrologic Connection	Watershed	Location Relative to Associated Stream Reach (Adjacent or Abutting)[1]	Facility Type	Isolated Area of Construction Impact (acres)[2]	Isolated Area of Permanent Impact (acres)[3]	Isolated Area to be Restored to Contours (acres)	Federally Jurisdictional Area of Construction Impact (acres)[2,4]	Federally Jurisdictional Area of Permanent Impact (acres)[3, 4]	Federally Jurisdictional Area to be Restored to Contours (acres)[5]	Federally Jurisdictional Area to be Converted from Forest to Shrub/Scrub Emergent (acres)[6]	Federally Jurisdictional Forest to be Permanently Filled (acres)[3, 4]	Comment and Justification for Unavoidable Impacts	Appendix J Wetland Map Sheet
Sector D Cluster 23 (T52, T53, T55)															
SVC131-W2	PEM/PFO	Unnamed tributary to Silver Creek	SVC131	Adjacent with Surface Connection	Access Road 23	NA	NA	NA	0.06008	0.03134	0.02874	0.02635**	0.01155***	Access Road 23 west of Turbine T55 was sited along the edge of a field to minimize impacts to forest and agricultural land. Wetland SVC131-W2 will be crossed at a PEM/PFO section at the edge of a field. SVC131-W2 will be temporarily impacted by the construction ROW and temporary road, and permanently impacted by Access Road 23. Permanent forest conversion and permanent fill within forest will occur within SVC131-W2 as a result of Access Road 23.	D-17
SVC131-W3	PEM	Unnamed tributary to Silver Creek	SVC131	Adjacent with Surface Connection	Turbine Staging Area/Access Road 23 (overlap)	NA	NA	NA	0.08061	0.00308	0.07753	NA	NA	Access Road 23 north of Turbine T55 was sited along the edge of a field to minimize impacts to the extent possible. Emergent wetland SVC131-W3 will be temporarily impacted by the construction ROW and temporary road, and permanently impacted by Access Road 23 on the wetland's southeast side. SVC131-W3 will also be temporarily impacted by the turbine staging area on the southeast side.	D-17
Sector D Collection Line															
NBC46-W122	PEM	No apparent surface water connection to traditional navigable waters	NBC46	Adjacent without Surface Connection	Underground Collection Line	0.01421	NA	0.01421	NA	NA	NA	NA	NA	The collection line to turbine T51 has been moved from the northeast to its current alignment to avoid greater impacts to wetlands NBC40-W19, NBC40-W21, SVC140-W22/W22a, NBC40-W23 and SVC140-W24. Small, emergent wetland NBC46-W122 will be impacted by the collection system and turbine staging area. NBC46-W122 has no surface connection to Traditional Navigable Waters.	D-14
SVC136-W10	PFO 1/4	Unnamed tributary to Silver Creek	SVC136	Adjacent with Surface Connection	Underground Collection Line	NA	NA	NA	0.02512	NA	0.02512	0.02512	NA	Wetland SVC136-W10 will be temporarily impacted during installation of the underground collection system and will be restored to pre-construction contours following construction. Permanent forest conversion will also occur within SVC136-W10 due to installation and maintenance of the collection line.	D-15 and D-16
SVC136-W11	PFO	Unnamed tributary to Silver Creek	SVC136 and NBC 39	Adjacent with Surface Connection	Underground Collection Line	NA	NA	NA	0.05933	NA	0.05933	0.05933	NA	Wetland SVC136-W11 will be temporarily impacted during installation of the underground collection system and will be restored to pre-construction contours following construction. Permanent forest conversion will also occur within SVC136-W11 due to installation and maintenance of the collection line.	D-15
SVC142-W13	PFO 1/4	Unnamed tributary to Silver Creek	SVC 142	Adjacent with Surface Connection	Underground Collection Line	NA	NA	NA	0.23862	NA	0.23862	0.23862	NA	Wetland SVC136-W13 will be temporarily impacted during installation of the underground collection system and will be restored to pre-construction contours following construction. Permanent forest conversion will also occur within SVC136-W13 due to installation and maintenance of the collection line.	D-14 and D-15

Table 2-9 Summary of Delineated Wetland Impacts, Ball Hill Windpark Generation Portion

Wetland ID	Wetland Community Type	Hydrologic Connection	Watershed	Location Relative to Associated Stream Reach (Adjacent or Abutting)[1]	Facility Type	Isolated Area of Construction Impact (acres)[2]	Isolated Area of Permanent Impact (acres)[3]	Isolated Area to be Restored to Contours (acres)	Federally Jurisdictional Area of Construction Impact (acres)[2,4]	Federally Jurisdictional Area of Permanent Impact (acres)[3, 4]	Federally Jurisdictional Area to be Restored to Contours (acres)[5]	Federally Jurisdictional Area to be Converted from Forest to Shrub/Scrub Emergent (acres)[6]	Federally Jurisdictional Forest to be Permanently Filled (acres)[3, 4]	Comment and Justification for Unavoidable Impacts	Appendix J Wetland Map Sheet
SVC140-W14	PFO	Unnamed tributary to Silver Creek	SVC140	Adjacent with Surface Connection	Underground Collection Line	NA	NA	NA	0.00013	NA	0.00013	0.00013	NA	Wetland SVC140-W14 will be temporarily impacted during installation of the underground collection system and will be restored to pre-construction contours following construction. Permanent forest conversion will also occur within SVC140-W14 due to installation and maintenance of the collection line.	D-14
SVC142-W15	PFO 1/4	Unnamed tributary to Silver Creek	SVC142	Adjacent with Surface Connection	Underground Collection Line	NA	NA	NA	0.12674	NA	0.12674	0.12674	NA	Wetland SVC142-W15 will be temporarily impacted during installation of the underground collection system and will be restored to pre-construction contours following construction. Permanent forest conversion will also occur within SVC142-W15 due to installation and maintenance of the collection line.	D-9
SVC136-W20	PEM/PFO	Unnamed tributary to Silver Creek	SVC136	Adjacent with Surface Connection	Underground Collection Line	NA	NA	NA	0.06340	NA	0.06340	0.06340	NA	Wetland SVC136-W20 will be temporarily impacted during installation of the underground collection system and will be restored to pre-construction contours following construction. Permanent forest conversion will also occur within SVC136-W20 due to installation and maintenance of the collection line.	D-14
SVC140-W22/W22a	PFO	Unnamed tributary to Silver Creek	SVC140	Abutting	Underground Collection Line	NA	NA	NA	0.02033	NA	0.02033	0.02033	NA	Wetland SVC140-W22/W22a, abutting a perennial stream, will be temporarily impacted during installation of the underground collection system and will be restored to pre-construction contours following construction. Permanent forest conversion will also occur within SVC140-W22/W22a due to installation and maintenance of the collection line.	D-14
SVC140-W24	PFO	Unnamed tributary to Silver Creek	SVC140	Adjacent with Surface Connection	Underground Collection Line	NA	NA	NA	0.15350	NA	0.15350	0.15350	NA	Wetland SVC140-W24 will be temporarily impacted in two separate areas during installation of the underground collection system west of Turbine T42 and north of T47 and will be restored to pre-construction contours following construction. Permanent forest conversion will also occur within SVC140-W24 due to installation and maintenance of the collection line.	D-14
SVC142-W26	PEM/PSS/PFO	Unnamed tributary to Silver Creek	SVC142	Adjacent with Surface Connection	Underground Collection Line	NA	NA	NA	0.15586	NA	0.15586	0.15586	NA	Wetland SVC142-W26 will be temporarily impacted during installation of the underground collection system and will be restored to pre-construction contours following construction. Permanent forest conversion will also occur within SVC142-W26 due to installation and maintenance of the collection line. The collection line alignment has not been resited to the east or west to avoid SVC142-W26 because the wetland extends everal hundred feet east and west of the survey corridor.	D-9
NBC49-W33	PEM/PSS	Unnamed tributary to North Branch Conewango Creek	NBC49	Adjacent with Surface Connection	Underground Collection Line	NA	NA	NA	0.09586	NA	0.09586	NA	NA	The collection line along Bartlett Hill Road was sited in part to avoid The Wesleyan Church and Ball Hill Cemetery. Wetland NBC49-W33 will be temporarily impacted during installation of the underground collection system and will be restored to pre-construction contours following construction.	D-7
Sector D Totals						**0.05390**	**0.00000**	**0.05390**	**1.39423**	**0.11316**	**1.28107**	**0.99630**	**0.00000**		

Table 2-9 Summary of Delineated Wetland Impacts, Ball Hill Windpark Generation Portion

Wetland ID	Wetland Community Type	Hydrologic Connection	Watershed	Location Relative to Associated Stream Reach (Adjacent or Abutting)[1]	Facility Type	Isolated Area of Construction Impact (acres)[2]	Isolated Area of Permanent Impact (acres)[3]	Isolated Area to be Restored to Contours (acres)	Federally Jurisdictional Area of Construction Impact (acres)[2,4]	Federally Jurisdictional Area of Permanent Impact (acres)[3, 4]	Federally Jurisdictional Area to be Restored to Contours (acres)[5]	Federally Jurisdictional Area to be Converted from Forest to Shrub/Scrub Emergent (acres)[6]	Federally Jurisdictional Forest to be Permanently Filled (acres)[3, 4]	Comment and Justification for Unavoidable Impacts	Appendix J Wetland Map Sheet
Sector E															
Sector E Cluster 24 (T56) - No Wetland Impacts															
Sector E Cluster 25 (T57, T58, T59, T60, T67)															
SVC118-W129	PFO 1/4	Unnamed tributary to Silver Creek	SVC118	Adjacent with Surface Connection	Access Road 25	NA	NA	NA	0.06153	0.04788	0.01365	0.06153	NA	Access Road 25 was sited on an existing logging/ farm road to minimize impacts to forest, agricultural land and wetlands. SVC118-W129 will be temporarily impacted by the construction ROW and temporary road, and permanently impacted by Access Road 25. The permanent access road is sited where the existing road currently crosses SVC118-W129. There is no acreage of forest to be permanently filled for SVC118-W129 because trees do not occur where the logging road is located.	E-7
SVC204-W134	PSS	Unnamed tributary to Silver Creek	SVC204	Adjacent with Surface Connection	Access Road 25	NA	NA	NA	0.00111	NA	0.00111	NA	NA	Access Road 25 was sited on an existing logging/ farm road to minimize impacts to forest, agricultural land and wetlands. Wetland SVC204-W134 will be temporarily impacted by the construction ROW and the temporary access road at the wetland's eastern boundary.	E-7
SVC116-W566	PEM in forested area	No apparent surface water connection to traditional navigable waters	SVC116	Adjacent without Surface Connection	Access Road 25	0.00024	NA	0.00024	NA	NA	NA	NA	NA	Access Road 25 was sited on an existing logging/ farm road to minimize impacts to forest, agricultural land and wetlands. Small, emergent wetland SVC116-W566 (without a surface connection to Traditional Navigable Waters) will be impacted by the construction ROW at the wetland's south boundary.	E-5
SVC118-W576	PEM in forested area	Unnamed tributary to Silver Creek	SVC118	Abutting	Access Road 25	NA	NA	NA	0.06063	0.02617	0.03446	NA	NA	Access Road 25 was sited on an existing logging/farm road to minimize impacts to forest, agricultural land and wetlands. Associated stream S576 will be crossed at an existing culvert along the existing road, which already travels directly adjacent and partially through wetland W576 in the area of impact.	E-7
SVC204-W577	PEM/PSS	Unnamed tributary to Silver Creek	SVC204	Abutting	Access Road 25	NA	NA	NA	0.01181	0.00835	0.00346	NA	NA	Access Road 25 was sited on an existing logging/farm road to minimize impacts to forest, agricultural land and wetlands. SVC204-W577 will be temporarily impacted by the construction ROW and permanently impacted by Access Road 25. The permanent access road is sited where the existing road currently crosses SVC204-W577. SVC204-W577 will be impacted in two separate places, the north end, and south end where it is associated with a perennial stream.	E-4
SVC204-W579	PEM	Unnamed tributary to Silver Creek	SVC204	Adjacent with Surface Connection	Turbine Staging Area	NA	NA	NA	0.05813	NA	0.05813	NA	NA	The turbine staging area for Turbine T58 has been sited to avoid impacts to wetlands SVC204-W578, SVC204-W580, and SVC204-W581. Wetland SVC204-W579 will be temporarily impacted on its north side by installation of the turbine staging area and will be restored to preconstruction contours following construction.	E-2 and E-4

Table 2-9 Summary of Delineated Wetland Impacts, Ball Hill Windpark Generation Portion

Wetland ID	Wetland Community Type	Hydrologic Connection	Watershed	Location Relative to Associated Stream Reach (Adjacent or Abutting)[1]	Facility Type	Isolated Area of Construction Impact (acres)[2]	Isolated Area of Permanent Impact (acres)[3]	Isolated Area to be Restored to Contours (acres)	Federally Jurisdictional Area of Construction Impact (acres)[2,4]	Federally Jurisdictional Area of Permanent Impact (acres)[3, 4]	Federally Jurisdictional Area to be Restored to Contours (acres)[5]	Federally Jurisdictional Area to be Converted from Forest to Shrub/Scrub Emergent (acres)[6]	Federally Jurisdictional Forest to be Permanently Filled (acres)[3, 4]	Comment and Justification for Unavoidable Impacts	Appendix J Wetland Map Sheet
SVC204-W580	PEM/PSS	Unnamed tributary to Silver Creek	SVC204	Adjacent with Surface Connection	Access Road 25	NA	NA	NA	0.00001	NA	0.00001	NA	NA	Access Road 25 was sited on an existing logging/farm road to minimize impacts to forest, agricultural land and wetlands. Wetland SVC204-W580 will be temporarily impacted by the construction ROW at the wetland's east boundary.	E-2
SVC204-W588	PEM	No apparent surface water connection to traditional navigable waters	SVC204	Adjacent without Surface Connection	Access Road 25	0.00026	NA	0.00026	NA	NA	NA	NA	NA	Access Road 25 was sited on an existing logging/farm road to minimize impacts to forest, agricultural land and wetlands. Wetland SVC204-W588 will be temporarily impacted by the construction ROW at the wetland's east boundary.	E-2
SVC124-W592	PEM	Unnamed tributary to Silver Creek	SVC124	Abutting	Access Road 25	NA	NA	NA	0.00438	NA	0.00438	NA	NA	Access Road 25 was sited on an existing logging/farm road to minimize impacts to forest, agricultural land, and wetlands. Wetland SVC124-W592 will be temporarily impacted by the construction ROW where it is associated with a perennial stream.	E-2
SVC124-W593	PEM	Unnamed tributary to Silver Creek	SVC124	Abutting	Access Road 25	NA	NA	NA	0.00003	0.00002	0.00001	NA	NA	Access Road 25 was sited on an existing logging/farm road to minimize impacts to forest, agricultural land, and wetlands. Wetland SVC124-W593 will be temporarily impacted by the construction ROW and temporary road, and permanently impacted in a very small area by the access road at the wetland's east boundary, where it is associated with a perennial stream.	E-2
SVC117-W605	PEM	Unnamed tributary to Silver Creek	SVC117	Adjacent with Surface Connection	Turbine Staging Area	NA	NA	NA	0.02309	NA	0.02309	NA	NA	Small, emergent wetland SVC117-W605 will be temporarily impacted by installation of the Turbine T57 staging area and will be restored to preconstruction contours following construction.	E-5
Sector E Cluster 26 (T64, T65, T66)															
SVC109-W568	PEM/PSS	Unnamed tributary to Silver Creek	SVC109	Abutting	Access Road 26	NA	NA	NA	0.01819	0.00619	0.01190	NA	NA	Access Road 26 was sited along the edge of a field to minimize impacts to forest and agricultural land. A narrow, linear portion of SVC109-W568 will be temporarily impacted by the construction ROW and permanently impacted by Access Road 26.	E-8
Sector E Cluster 27 (T 61, T62)															
SVC103-W542 (see also Sector E Collection Line)	PEM/PSS	Unnamed tributary to Silver Creek	SVC103	Adjacent with Surface Connection	Access Road 27	NA	NA	NA	0.00615	NA	0.00615	NA	NA	Access Road 27 was co-located with an existing driveway to minimize impacts to residential property and wetlands. Wetland SVC103-W542 will be temporarily impacted by the construction ROW of the Access Road at State Route 39 and will be restored to preconstruction contours following construction.	E-10
SVC106-W543	PEM	Unnamed tributary to Silver Creek	SVC106	Abutting	Access Road 27	NA	NA	NA	0.03632	NA	0.03632	NA	NA	Access Road 27 was co-located with an existing driveway to minimize impacts to residential property and wetlands. The north portion of wetland SVC106-W543 will be temporarily impacted by the Construction ROW and will be restored to preconstruction contours following construction.	E-10

Table 2-9 Summary of Delineated Wetland Impacts, Ball Hill Windpark Generation Portion

Wetland ID	Wetland Community Type	Hydrologic Connection	Watershed	Location Relative to Associated Stream Reach (Adjacent or Abutting)[1]	Facility Type	Isolated Area of Construction Impact (acres)[2]	Isolated Area of Permanent Impact (acres)[3]	Isolated Area to be Restored to Contours (acres)	Federally Jurisdictional Area of Construction Impact (acres)[2,4]	Federally Jurisdictional Area of Permanent Impact (acres)[3, 4]	Federally Jurisdictional Area to be Restored to Contours (acres)[5]	Federally Jurisdictional Area to be Converted from Forest to Shrub/Scrub Emergent (acres)[6]	Federally Jurisdictional Forest to be Permanently Filled (acres)[3, 4]	Comment and Justification for Unavoidable Impacts	Appendix J Wetland Map Sheet
SVC73-W547	PEM	Unnamed tributary to Silver Creek	SVC73	Adjacent with Surface Connection	Access Road 27	NA	NA	NA	0.00040	NA	0.00040	NA	NA	Access Road 27 was co-located with an existing driveway to minimize impacts to residential property and wetlands. The east portion of wetland SVC73-W547 will be temporarily impacted by the Construction ROW and will be restored to preconstuction contours followoing construction.	E-13
SVC73-W548/W548a	PEM	No apparent surface water connection to traditional navigable waters	SVC73	Adjacent without Surface Connection	Access Road 27	0.0000001	NA	0.0000001	NA	NA	NA	NA	NA	Small, emergent wetland SVC73-W548/W548a (no surface connection to Traditional Navigable Waters) will be permanently impacted by the construction of the Access Road.	E-13
Sector E Collection Line															
SVC103-W542 (see also Sector E Cluster 27)	PEM/PSS	Unnamed tributary to Silver Creek	SVC103	Adjacent with Surface Connection	Underground Collection Line	NA	NA	NA	0.04338	NA	0.04338	NA	NA	Wetland SVC103-W542 will be temporarily impacted by the collection line along State Route 39 and will be restored to preconstruction contours following construction.	E-10
SVC126-W561	PEM	Unnamed tributary to Silver Creek	SVC126	Abutting	Underground Collection Line	NA	NA	NA	0.18613	NA	0.18613	NA	NA	Installation of the collection line between Turbines T56 and T57 will temporarily impact wetland SVC126-W561. The wetland will be restored to pre-construction contours following construction.	E-1
SVC122-W563	PEM	Unnamed tributary to Silver Creek	SVC122	Adjacent with Surface Connection	Underground Collection Line	NA	NA	NA	0.01277	NA	0.01277	NA	NA	Installation of the collection line between Turbines T56 and T57 will temporarily impact wetland SVC122-W563. The wetland will be restored to pre-construction contours following construction.	E-1
SVC122-W564	PEM	Unnamed tributary to Silver Creek	SVC122	Abutting	Underground Collection Line	NA	NA	NA	0.00222	NA	0.00222	NA	NA	Installation of the collection line between Turbines T56 and T57 will temporarily impact wetland SVC122-W564 where it is associated with an ephemeral stream. The wetland will be restored to pre-construction contours following construction.	E-1
SVC109-W569	PEM/PFO 1/4	Unnamed tributary to Silver Creek	SVC109	Adjacent with Surface Connection	Underground Collection Line	NA	NA	NA	0.15405	NA	0.15405	0.15405	NA	Installation of the collection line between Turbines T64 and T67 will temporarily impact wetland SVC109-W569. The wetland will be restored to pre-construction contours following construction.	E-8
Sector E Totals						**0.00050**	**0.00000**	**0.00050**	**0.68033**	**0.08861**	**0.59162**	**0.21558**	**0.00000**		
Generation Totals						**0.13628**	**0.00747**	**0.12881**	**3.27006**	**0.32468**	**2.91911**	**1.42064**	**0.02967**		

Notes:

2.6.1.2 Cluster 2 (Turbine T4)

Cluster 2 includes Turbine T4, the associated access road and collocated underground collection, which are located near the northern edge of an agricultural field. Access Road 2 and Turbine T4 in this cluster were carefully sited to avoid impacts to the greatest extent possible and, therefore, will not result in impacts to wetlands or waterbodies.

2.6.1.3 Cluster 3 (Turbines T5 and T6)

Cluster 3 includes two turbines (Turbines T5 and T6) that are largely sited within active cow pastures and hay fields; however, a portion of each turbine staging area is sited within Beech-Maple forests.

Access Road 3 and the turbines in this cluster were carefully sited to minimize impacts to the greatest extent possible and; however, a very small portion of the forested component of Wetland WBC77-W74 will be temporarily impacted by the construction ROW for Access Road 3. The wetland will be restored to preconstruction contours following construction.

2.6.1.4 Sector A Collection

The collection system within Sector A includes:

- Underground collection connecting Cluster 1 and Cluster 2, along the west edge of Round Top Road;
- Underground collection connecting Cluster 2 and Cluster 4 (in Sector B), the collection portion considered in Sector A terminates at Round Top Road; and
- Underground collection connecting Cluster 3 to Cluster 5 (Sector B). The collection portion considered in Sector A terminates at Round Top Road.

The underground collection line that connects Clusters 1 and Cluster 2 was sited along the west side of Round Top Road, primarily through reverting and agricultural fields. The route was sited in this location to avoid existing utility lines and to minimize disturbance to agricultural fields; additionally landowner access was not secured on the east side of Round Top Road. The collection line crosses an emergent/shrub-scrub portion of Wetland WBC38-W89 and the narrowest point of emergent Wetland WBC46-W90. Both wetlands will be temporarily impacted during installation of the underground collection system via trenching and will be restored to pre-construction contours following construction.

No wetlands or waterbodies were identified in the underground collection line survey corridor between Cluster 2 in Sector A and Cluster 4 in Sector B. This portion of the collection line was sited adjacent to the west side of Round Top Road along the edge of an agricultural field and crosses the road to Sector B to avoid a forested area and a parcel with no access.

The underground collection line within Sector A that connects Cluster 3 to Cluster 5 in Sector B is also sited through reverting and agricultural fields. The portion of the collection line that is located on the west side of Round Top Road crosses an emergent portion of WBC77-W74 near its narrowest point. Wetland WBC77-W74 will be temporarily impacted during installation of the underground collection system via trenching and will be restored to pre-construction contours following construction.

2.6.2 Sector B

2.6.2.1 Cluster 4 (Turbine T7)

Cluster 4 has one turbine (T7) located in a reverting agricultural field. Access Road 4 has been sited to provide the most direct route to Turbine T7 and to utilize an existing farm road to avoid impacts to the extent possible.

Emergent/shrub-scrub Wetland WBC72-W92 will be temporarily impacted by the construction ROW, temporary road and trenching associated with the collocated underground collection lines, and permanently impacted by Access Road 4. Wetland WBC72-W92 will be crossed where it narrows to a linear riparian wetland associated with perennial Stream WBC72-S92. This area is currently crossed by the existing farm road, although no culverts exist as part of the current road design.

The proposed crossing of Wetland WBC72-W92 and Stream WBC72-S92 provides an opportunity for culvert placement that will improve the current farm road crossing through the stream bed and will also maintain flow to the stream channel rather than disrupting or redirecting flow. By incorporating a culvert as part of the construction of Access Road 4, stream flow can be maintained and direct vehicular disturbance to the stream bed will be eliminated. Stream disturbance will take place during dry or low flow conditions, if possible, and BMPs will be employed to minimize impacts associated with this crossing. If water is present at the time of crossing, the area will be dewatered using a flume crossing or a dam and pump crossing to minimize impacts.

2.6.2.2 Cluster 5 (Turbines T8, T9, and T15)

Cluster 5 includes three turbines. Turbine T8 is located in a maintained agricultural field. Turbine T9 is located in a forested area dominated by ash (*Fraxinus sp.*) and silver maple (*Acer saccharinum*), although hydrophytic vegetation is present at this turbine location, this area does not have the hydrology or soil characteristics to be considered wetland. Turbine T15 is located in a Hemlock-Hardwood forest.

The portion of Access Road 5 that provides access to Turbines T8 and T9 was sited primarily along the edge of agricultural fields to minimize impacts to agricultural use and the adjacent forest. The access road turns north through a forested area along the most direct route to Turbine T9.

The portion of Access Road 5 that leads south from the field edge to Turbine T15 was sited through a forest to minimize impacts to wetlands to the extent possible; however, due to access constraints to the south and west, impacts to wetlands were unavoidable. Forested/shrub-scrub Wetland WBC88-W98 will be temporarily impacted at its southern edge by the construction ROW, temporary road and collocated underground collection lines and permanently impacted by Access Road 5. As a result, permanent forest conversion of WBC88-W98 will occur. The western portion of emergent Wetland WBC88-W100 will be temporarily impacted by the construction ROW, temporary road and collocated underground collection lines and permanently impacted by Access Road 5. This wetland was characterized during field delineations as an emergent wetland in a forested area; therefore, no permanent forest conversion will occur.

The installation and operation of this cluster will not result in impacts to waterbodies.

2.6.2.3 Cluster 6 (Turbines T11, T13, and T14)

Cluster 6 includes three turbines that are all located in a forested area. Most of Access Road 6 connecting the turbines is located in forested areas, however, the portion of the access road that connects Villenova Road to Turbine T14 is located along the eastern edge of an agricultural field.

The staging area for Turbine T13 was sited to minimize wetland impacts to the extent possible; however, impacts to a narrow, linear emergent/shrub-scrub portion of WBC101-W101b could not be avoided and this portion of the wetland will be temporarily impacted during clearing and grading of the turbine staging area but will be restored to pre-construction contours following construction.

Perennial Stream WBC101-S101 will be temporarily impacted by the construction ROW, temporary road and trenching associated with the collocated underground collection lines and permanently impacted by Access Road 6. Stream disturbance will take place during dry or low flow conditions, if possible, and BMPs will be employed to minimize impacts associated with this crossing. If water is present at the time of crossing, the area will be dewatered using a flume crossing or a dam and pump crossing to minimize impacts.

2.6.2.4 Cluster 7 (Turbines T16 and T17)

Cluster 7 contains two turbines. Turbine T16 is located in an active alfalfa field at the edge of a hemlock forest and Turbine T17 is located in an active agricultural field.

The staging area for Turbine T16 was sited to minimize wetland impacts to the extent possible; however impacts to the south edge of emergent Wetland WBC90-W603 could not be avoided and this portion of the wetland will be temporarily impacted during clearing and grading of the turbine staging area but will be restored to preconstruction contours following construction.

The installation and operation of this cluster will not result in impacts to waterbodies.

2.6.2.5 Cluster 8 (Turbine T68)

Cluster 8 contains one turbine (Turbine T68), which is located in an active agricultural field.

Access Road 8 and the Turbine T68 in this cluster were carefully sited to avoid impacts to the greatest extent possible and, therefore, will not result in impacts to wetlands or waterbodies.

2.6.2.6 Cluster 9 (Turbines T18, T19, T20, and T21)

Cluster 9 contains four turbines. Turbines T19, T20, and T21 are located within inactive agricultural fields with herbaceous vegetation. Turbine T18 is located in an active hay field, with some planted corn.

Cluster 9 and Access Road 9 were sited along an open ridgeline to minimize impacts to the extent possible; however, a narrow, linear, emergent portion of Wetland WBC56-W596 will be temporarily impacted by the construction ROW, temporary road and trenching associated with the collocated underground collection lines and permanently impacted by Access Road 9.

The installation and operation of this cluster will not result in impacts to waterbodies.

2.6.2.7 Sector B Collection

The collection system within Sector B includes:

- Underground collection between Access Road 2 (Sector A) and Access Road 4 along the east side of Round Top Road;
- Underground collection between Access Road 3 (Sector A) and Access Road 5 along the east side of Round Top Road;
- Underground collection connecting Turbine T14 in Cluster 6, Turbine T16 in Cluster 7, and Turbine T15 in Cluster 5. A portion of collection line between Turbines T15 and T16 is overhead collection in order to reduce impacts to a stream;
- Underground collection that connects Turbine T68 in Cluster 8, via the east side of North Hill Road and the north side of Villenova Road, to Cluster 7; and
- Underground collection that connects Turbine T15 in Cluster 5 to Turbine T21 in Cluster 9.

Underground collection between Access Roads 2 and 4 and Access Roads 3 and 5 along the east side of Round Top Road was collocated with the road to minimize agricultural, forested and wetland impacts. The installation of these portions of the collection line will not result in impacts to wetlands or waterbodies.

Overhead collection between Clusters 7 and 5 will cross Stream WBC103-S602. Impacts associated with overhead collection installation are limited to equipment crossing of the stream. Wetland mats or temporary culverts will be used to facilitate equipment crossing thus minimizing in-stream disturbance. Stream disturbance will take place during dry or low flow conditions if possible and BMPs will be employed to minimize impacts associated with this crossing.

The underground collection line from Turbine T15 in Cluster 5 to Turbine T21 in Cluster 9 was sited through a forested area to open agricultural fields along the shortest route possible, to minimize forest impacts and utilize agricultural fields and an existing stream crossing at WBC90-S598. Four emergent wetlands along the forested portion of the collection line (WBC90-W601, WBC90-W600, WBC90-W599, and WBC90-W598) will be temporarily impacted due to the installation of underground collection lines via trenching due to this preferred alignment. These wetlands will be restored to pre-construction contours following construction.

Wetland WBC90-W598, an emergent wetland and the associated perennial Stream WBC90-S598 are currently crossed by an existing farm road without a culvert, and trenching for collection line installation will occur at this location, where continual disturbance by farm equipment occurs. Stream disturbance will take place during dry or low flow conditions if possible and BMPs will be employed to minimize impacts associated with this crossing. If water is present at the time of crossing, the area will be dewatered using a flume crossing or a dam and pump crossing to minimize impacts. The stream bed and banks will be restored to preconstruction contours.

The rest of the collection line within Sector B was sited to avoid impacts to the greatest extent possible and, therefore, will not result in additional impacts to wetlands or waterbodies.

2.6.3 Sector C

2.6.3.1 Cluster 10 (Turbine T25)

Cluster 10 has one turbine (Turbine T25), which is located in an active agricultural field, surrounded by the east and south side by apple trees and forest.

Access Road 10 and Turbine T25 were sited to avoid impacts to the greatest extent possible and, therefore, will not result in impacts to wetlands or waterbodies.

2.6.3.2 Cluster 11 (Turbines T23 and T24)

Cluster 11 includes two turbines (T23 and T24), which were sited within open fields.

Access Road 11 was sited along the edge of a reverting field to minimize impacts to the extent possible. The southern portion of emergent Wetland WBC35-W522 will be temporarily impacted by the construction ROW and temporary road and permanently impacted by Access Road 11. The current alignment was designed to cross the wetland at its narrowest portion. The design of the windpark does not require underground collection to be collocated with this portion of Access Road 11.

Installation and operation of this cluster will not result in impacts to waterbodies.

2.6.3.3 Cluster 12 (Turbine T22)

Cluster 12 consists of Turbine T22 located along the eastern edge of an agricultural field.

Access Road 12 and Turbine T22 were sited to avoid impacts to the extent possible; therefore, the installation and operation of this cluster will not result in impacts to wetlands or waterbodies.

2.6.3.4 Cluster 13 (Turbine T26)

Cluster 13 consists of Turbine T26, which is located with an active hay field.

Access Road 13 was sited through an agricultural field to minimize impacts to the extent possible; however, two wetlands will be impacted. Wetland WBC23-W500 and WBC23-W501 will both be temporarily impacted by the construction ROW, temporary road and trenching associated with the underground collection lines and permanently impacted by Access Road 13. Only a small portion of emergent Wetland WBC23-W500, at its north boundary, will be impacted. Similarly, the area of impact for emergent Wetland WBC23-W501 is only a very small portion at its north boundary, and this wetland is located in the middle of an active agricultural field.

The installation and operation of this cluster will not result in impacts to waterbodies.

2.6.3.5 Cluster 14 (Turbine T27)

Cluster 14 consists of Turbine T27, which is located in an active corn field.

Access Road 14 and Turbine T27 in this cluster were carefully sited to avoid impacts; therefore, the installation and operation of this cluster will not result in impacts to wetlands or waterbodies.

2.6.3.6 Cluster 15 (Turbine T29)

Cluster 15 consists of Turbine T29, which is located in an active corn field.

Access Road 15 and Turbine T29 in this cluster were carefully sited to avoid impacts; therefore, the installation and operation of this cluster will not result in impacts to wetlands or waterbodies.

2.6.3.7 Cluster 16 (Turbines T30, T31, and T32)

Cluster 16 consists of three turbines (T30, T31, and T32). Turbines T30 and T31 are located in agricultural fields, and Turbine T32 is located in a reverting agricultural field.

Access Road 16 and the turbines in this cluster were carefully sited to avoid impacts; therefore, the installation and operation of this cluster will not result in impacts to wetlands or waterbodies.

2.6.3.8 Cluster 17 (Turbines T33, T34, and T35)

Cluster 17 consists of three turbines (T33, T34, and T35). Turbine T33 is located at the west edge of an agricultural field; Turbines T34 and T35 are located in a Beech-Maple forest.

Access Road 17 and the turbines in this cluster were carefully sited to avoid impacts; therefore, the installation and operation of this cluster will not result in impacts to wetlands or waterbodies.

2.6.3.9 Cluster 18 (Turbine T36)

Cluster 18 consists of Turbine T35 which is located in an area that is predominantly shrub-scrub with some trees.

Access Road 18 and the Turbine T36 in this cluster were carefully sited to avoid impacts; therefore, the installation and operation of this cluster will not result in impacts to wetlands or waterbodies.

2.6.3.10 Sector C Collection

The collection system within Sector C includes:

- Underground collection between Turbine T25 in Cluster 10 and Turbine T24 in Cluster 11;
- Underground collection between Turbine T23 in Cluster 11, where it is joined by collection from Turbine T27 in Cluster 14 before reaching Access Road 13 in Cluster 13 and;
- Underground collection between Access Road 15 west of Prospect Road, to Access Road 21 in Sector D. The collection portion considered in Sector C terminates at Prospect Road.
- Underground collection connecting Access Road 15 to Access Road 16;

- Underground collection connecting Access Road 16 and Access Road 17 to Cluster 20 in Sector D; and

- Underground collection connecting Access Road 18 to Cluster 19 in Sector D.

The collection line between Clusters 11 and 12 was sited along the edge of a field to minimize impacts to the adjacent forest. Emergent Wetland WBC23-W518 will be temporarily impacted via trenching during installation of the underground collection system and will be restored to pre-construction contours following construction.

The collection line heading east from Turbine T23 in Cluster 11 to Clusters 13 and 14 was sited along an existing ROW clearing to minimize impacts to the adjacent forest. Emergent/shrub-scrub Wetlands WBC23-W519 and WBC35-W523 will be temporarily impacted via trenching during installation of the underground collection system and will be restored to pre-construction contours following construction.

The collection line between Turbine T26 in Cluster 13 and T27 in Cluster 14 was sited along the edge of a field and an existing cleared ROW to minimize impacts to the adjacent forest. Emergent Wetland WBC23-W507 and emergent/forested Wetland WBC23-W510 will be temporarily impacted during installation of the underground collection system and will be restored to pre-construction contours following construction. Permanent forest conversion of a portion of Wetland WBC23-W510 will occur; the forested component will be converted to emergent/shrub-scrub wetland.

The collection line between Prospect Road and Clusters 16 and 17 was sited in a successional field at the edge of a forested area to minimize impacts to agricultural land and forest. Emergent/shrub-scrub Wetland WBC45-W529 will be temporarily impacted via trenching during installation of the underground collection system and will be restored to pre-construction contours following construction.

The installation of the remaining underground collection systems in Sector C were carefully sited to avoid impacts and will not result in impacts to wetlands or waterbodies.

2.6.4 Sector D

2.6.4.1 Cluster 19 (Turbine T38)

Cluster 19 consists of one turbine location (Turbine T38) located at the east edge of an agricultural field.

The installation and operation of this cluster will not result in impacts to wetlands. However perennial Stream WBC107-S533 will be temporarily impacted by the construction ROW, temporary road and trenching associated with the collocated underground collection lines and permanently impacted by Access Road 19. The access road has been sited to utilize an existing crossing, which has an existing

culvert; however, in-stream disturbance via trenching will be required to install underground collection lines. The existing culvert will be replaced to accommodate the temporary road required during construction. Stream disturbance will take place during dry or low flow conditions if possible and BMPs will be employed to minimize impacts associated with this crossing. If water is present at the time of crossing, the area will be dewatered using a flume crossing or a dam and pump crossing to minimize impacts.

A small portion of access road connects Cluster 19 to Cluster 20 and for the purpose of discussion is considered a component of Cluster 20; as such, impacts that will result to Wetland NBC69-W534/W534a and Stream NBC69-S534 are reported in the impact discussion for Cluster 20 in Section 2.6.4.2.

2.6.4.2 Cluster 20 (Turbines T39, T40, T41, T42, T43, and T45)

Cluster 20 consists of six turbines: T39 and T41 are located at the west and northeast edges, respectively, of agricultural fields; T42 is located at the east edge of an agricultural field; T40 is located within a birch, beech, and hemlock forest; and T43 and T45 are located in agricultural fields.

Access Road 20 is collocated with an existing dirt/gravel road to minimize impacts. A linear, emergent portion of Wetland NBC69-W534/W534a associated with perennial Stream NBC69-S534 will be temporarily impacted by the construction ROW, temporary road and trenching associated with collocated underground collection lines, and permanently impacted by Access Road 20. No permanent forest conversion will occur because the area of disturbance/impact is within an existing farm road and the associated riparian portion of Wetland NBC69-W534/W534a is emergent. The access road has been sited to utilize the existing crossing, which has an existing culvert; however, in-stream disturbance via trenching will be required to install underground collection lines. The existing culvert will be replaced to accommodate the temporary road required during construction. Stream disturbance will take place during dry or low flow conditions if possible and BMPs will be employed to minimize impacts associated with this crossing. If water is present at the time of crossing, the area will be dewatered using a flume crossing or a dam and pump crossing to minimize impacts.

Turbine T41 and its staging area were sited to minimize impacts to agricultural land and forest; as such it is located in the northeast edge of an inactive agricultural field. Wetland NBC62-W538 is a small, emergent wetland, located within a depression in the inactive agricultural field, and will be temporarily impacted by the turbine staging area.

2.6.4.3 Cluster 21 (Turbines T46 and T47)

Cluster 21 consists of two turbines (T46 and T47). Turbine T46 is located in an active agricultural field and Turbine T47 is located in a mixed forest. A third turbine, Turbine T49, was originally included as part of this cluster and sited north of T47; however, the location was eliminated to avoid permanent impacts to Wetlands SVC140-W24 and SVC142-W15.

Access Road 21 was sited to minimize impacts to the extent possible, by taking a direct route through agricultural fields except where necessary to minimize wetland impacts. Between Turbines T46 and T47, Access Road 21 crosses emergent Wetland NBC46-W31 at its narrowest point where it forms a linear riparian area associated with perennial Stream NBC46-S31. The access road will be collocated with an existing farm road, without a culvert. Wetland NBC46-W31 and Stream NBC46-S31 will be temporarily impacted by the construction ROW, temporary road and trenching associated with the installation of collocated underground collection, and permanently impacted by Access Road 21.

The proposed crossing of Wetland NBC46-W31 and Stream NBC46-S31 provides an opportunity for culvert placement that will improve the current farm road crossing through the stream bed and will also maintain flow to the stream channel rather than disrupting or redirecting flow. By incorporating a culvert as part of the construction of Access Road 21, stream flow can be maintained and direct vehicular disturbance to the stream bed will be eliminated. Stream disturbance will take place during low-flow or dry conditions, if possible, and BMPs will be employed to minimize impacts associated with this crossing. If water is present at the time of crossing, the area will be dewatered using a flume crossing or a dam and pump crossing to minimize impacts.

Access Road 21 will cross emergent/shrub-scrub Wetland NBC46-W30; however, the road has been sited to cross at one of the wetland's narrowest areas. Wetland NBC46-W30 will be temporarily impacted by the construction ROW, temporary road and trenching associated with the installation of collocated underground collection, and permanently impacted by Access Road 21.

The staging area for Turbine T47 has been reduced in size at its northern corner to minimize impacts to Wetland SVC142-W27 to the extent possible. A portion of forested Wetland SVC142-W27 on its southeast side will be temporarily impacted by the turbine staging area; however, preconstruction contours will be reestablished following construction. Permanent forest conversion will occur within SVC142-W27 as a result of the turbine staging area.

2.6.4.4 Cluster 22 (Turbines T48, T50, and T51)

Cluster 22 includes three turbines (Turbines T48, T50, and T51). Turbine T48 is located in a mixed forest, Turbine T50 is located within an active cow pasture, and Turbine T51 is located in a reverting field. Access Road 22 was originally sited to connect 10 turbines (Turbines T46, T47, T48, T49, T50, T51, T52, T53, T54 and T55). Access roads were later re-designed to avoid permanent impacts to numerous forested wetlands. As a result the number of turbines was reduced to eight across three separate clusters (Clusters 21, 22 and 23). As discussed above, Turbines T46 and T47 were incorporated into Cluster 21. Turbines T52, T53, T54, and T55 were incorporated into Cluster 23, and are discussed in Section 2.6.4.5.

In Cluster 22, Turbine T48 was originally sited due west of Turbine T47 (see Figure 1.3-1); however, the location and the access road connecting the turbines were modified to avoid impacts to a large forested hemlock wetland. As a result, Turbine T47 became part of Cluster 21. Additionally Turbine T49 was also eliminated to avoid impacts to forested hemlock wetland. Turbine T51 was moved southwest to its current location to avoid impacts to Wetland SVC138-W17. After field delineations were completed, the turbine staging area for T51 was aligned to avoid impacts to Wetlands SVC138-W16 and NBC38-W17; however, a small portion of emergent Wetland NBC46-W122 will be temporarily impacted during the clearing and grading of the turbine staging area. This wetland will be restored to preconstruction contours following construction.

Access Road 22, west of Turbine T51, was sited along an existing farm road in an agricultural field, to minimize impacts to the extent possible. Access Road 22 will cross emergent/shrub-scrub Wetland SVC138-W16 and associated intermittent Stream SVC138-S16 along the existing farm road. The road will intersect the wetland at its narrowest point. In this location Wetland SVC138-W16 and Stream SVC138-S16 will be temporarily impacted by the construction ROW, temporary road, and trenching associated with the installation of collocated underground collection, and permanently impacted by Access Road 22. The wetland's eastern border will also be temporarily impacted by the staging area for Turbine T51, but will be restored to preconstruction contours following construction in this location.

The proposed crossing of Wetland SVC138-W16 and Stream SVC138-S16 provides an opportunity for culvert placement that will improve the current farm road crossing through the stream bed and will also maintain flow to the stream channel rather than disrupting or redirecting flow. By incorporating a culvert as part of the construction of Access Road 22, stream flow can be maintained and direct vehicular disturbance to the stream bed will be eliminated. Stream disturbance will take place during low-flow or dry conditions, if possible, and BMPs will be employed to minimize impacts associated with this crossing. If water is present at the time of crossing, the area will be dewatered using a flume crossing or a dam and pump crossing to minimize impacts.

Emergent Wetland SVC137-W18 will be temporarily impacted by the construction ROW and temporary road, and permanently impacted by Access Road 22. This wetland is located adjacent to the existing farm road, and is situated in a very small natural depression in a cow pasture. The design of the Windpark does not require underground collection to be collocated with Access Road 22 in this location.

The turbine staging area for Turbine T48 has been reduced in size at its western corner to minimize impacts to forested Wetland SVC140-W35 to the extent possible. A portion of SVC140-W35 on its southeast side will be temporarily impacted during clearing and grading of the turbine staging area, but will be restored

to preconstruction contours following construction. Permanent forest conversion will occur within Wetland SVC140-W35 as a result of the turbine staging area.

2.6.4.5 Cluster 23 (Turbines T52, T53, and T55)

Cluster 23 includes three turbines (Turbines T52, T53, and T55). Turbine T55 will impact both an active agricultural field and beech, maple, and black cherry forest. Turbines T52 and T53 are both located in a mixed upland forest of beech, maple, black cherry, and hemlock. An additional turbine, Turbine T54, was originally included in this cluster and sited northeast of Turbine T53; however, the location was eliminated to avoid permanent impacts to Wetlands SVC129-W4, SVC129-W5, and SVC129-W124.

Access Road 23, north of Turbine T55, was sited through a forested area and along the edge of a field to minimize impacts to the extent possible. Emergent Wetland SVC131-W3 will be temporarily impacted by the construction ROW and temporary road, and permanently impacted by Access Road 23 on the wetland's southeast side. The design of the Windpark does not require underground collection to be collocated with Access Road 23 north of Turbine T55. Wetland SVC131-W3 will also be temporarily impacted by the turbine staging area on the southeast side, but will be restored to preconstruction contours in this area following construction.

Access Road 23, west of Turbine T55, was sited along the edge of a field to minimize impacts to forest and agricultural land. The road turns southwest through a forested area to provide access to Turbines T53 and T52 along the most direct route possible. Wetland SVC131-W2, which contains both forested and emergent components, will be crossed by the access road; as such, SVC131-W2 will be temporarily impacted by the construction ROW, temporary road and trenching associated with the installation of collocated underground collection, and permanently impacted by Access Road 23. Although Access Road 23 is located at the edge of a field, some minimal permanent forest conversion and permanent fill within forested wetland will occur.

Northeast of Turbine T53, perennial Stream SVC133-S1002 will be temporarily impacted by the construction ROW, temporary road and trenching associated with the collocated underground collection lines, and permanent impacted by Access Road 23. Stream disturbance will take place during dry or low flow conditions, if possible, and BMPs will be employed to minimize impacts associated with this crossing. If water is present at the time of crossing, the area will be dewatered using a flume crossing or a dam and pump crossing to minimize impacts.

2.6.4.6 Sector D Collection

The collection system within Sector D includes:

- Underground collection between Access Road 24 (Sector E) and Access Road 23;

- Underground collection connecting Turbine T47 in Cluster 21, where it is joined by collection from Turbine 51 in Cluster 22, before reaching Turbine T52 in Cluster 23;

- Underground collection between Access Road 13 (Sector C) and Turbine T50, in Cluster 22; and

- Underground collection between Sector C (originating at Access Road 15 in Cluster C) and Cluster 21, south of Bartlett Hill Road.

Underground collection between Access Road 24 in Sector E and Access Road 23 was sited primarily through agricultural land, but as the alignment approaches Sector E, there were no available alternatives that would completely avoid wetland and waterbodies; therefore, the alignment will cross perennial Stream SVC129-S1001/S551 and intermittent Stream SVC129-S1001a. Underground collection will be installed via trenching. Stream disturbance will take place during dry or low flow conditions, if possible, and BMPs will be employed to minimize impacts at these stream crossings. If water is present at the time of crossing, the areas will be dewatered using flume or dam and pump crossings to minimize impacts. The stream bed and banks will be restored to pre-construction conditions following construction.

Underground collection connecting Clusters 21, 22, and 23 will impact 10 wetlands, nine of which are forested or have a forested component (emergent Wetland NBC46-W122; forested Wetlands SVC136-W10, SVC136-W11, SVC136-W13, SVC140-W14, SVC142-W15, SVC140-W22/W22a, SVC140-W24; emergent/forested Wetland SVC136-W20; and emergent/shrub-scrub/forested Wetland SVC142-W26). Forested Wetland SVC140-W24 will be temporarily impacted at two separate locations during installation of the underground collection system, west of Turbine T52 and north of Turbine T47. The portion of the collection line alignment that connects to Turbine T51 was moved from the northeast to its current alignment to avoid greater impacts to forested Wetlands NBC40-W19, NBC40-W21, SVC140-W22/W22a, NBC40-W23, and SVC140-W24. Temporary impacts to Wetland SVC142-W26, located in the portion of the alignment that connects to Turbine T47, could not be avoided as the wetland extends several hundred feet east and west of the survey corridor. However, Wetland SVC142-W26 and other wetlands between Turbines T47 and T52 exhibit previous disturbance from historic logging activities.

All of these wetlands will be temporarily impacted during installation of the underground collection system via trenching and will be restored to pre-construction contours following construction. Forested conversion will occur in each of the nine forested wetlands due to the installation and maintenance of the collection line. The forested component of each impacted area will be converted to emergent/shrub-scrub wetland.

Perennial Stream SVC140-S22 will also be crossed by underground collection in the portion of the alignment that connects to Turbine T51. The stream will be temporarily disturbed by the installation of the underground collection line via trenching. Stream disturbance will take place during dry or low flow conditions if possible and BMPs will be employed to minimize impacts associated with this crossing. If water is present at the time of crossing, the area will be dewatered using a flume crossing or a dam and pump crossing to minimize impacts. The stream bed and banks will be restored to preconstruction contours.

In addition to collection line impact, Wetland NBC46-W122, a small emergent wetland, will be impacted by the staging area for Turbine T51. This portion of the wetland will also be restored to pre-construction contours following construction.

The collection line south of Bartlett Hill Road was sited in part to avoid the Wesleyan Church and Ball Hill Cemetery. Wetland NBC49-W33 will be temporarily impacted during installation of the underground collection system via trenching and will be restored to pre-construction contours following construction.

2.6.5 Sector E

2.6.5.1 Cluster 24 (Turbine T56)

Cluster 24 has one turbine (Turbine T56) which is located at the edge of an active hay field.

Access Road 24 and Turbine T56 were carefully sited to avoid impacts; therefore, the installation and operation of this cluster will not result in impacts to wetlands or waterbodies.

2.6.5.2 Cluster 25 (Turbines T57, T58, T59, T60, and T67)

This cluster has five turbines: Turbines T57 and T58 are located in an active pasture, Turbine T59 is located in a sugar maple (*Acer saccharum*) forest, Turbine T60 is located in a cleared area of a forest where four logging roads intersect, and Turbine T67 is located in a hemlock forest. The turbines were carefully sited to minimize impacts to the surrounding wetlands, the adjacent agricultural fields, and adjacent forested areas to the extent possible, while maintaining appropriate setbacks from the roadway and between the turbines themselves.

Access Road 25 was collocated with an existing logging/farm road to minimize impacts to forest, agricultural land, and wetlands; however, 11 wetlands and six streams will be impacted by the construction of the road. Shrub-scrub Wetland SVC204-W134, emergent/shrub-scrub Wetland SVC204-W580, and emergent Wetland SVC204-W588 will all be temporarily impacted by the construction ROW along each wetland's eastern boundary. Small, emergent Wetland SVC116-W566 will be temporarily impacted by the construction ROW at its southern boundary. Each of these wetlands will be restored to pre-construction contours following construction.

Forested Wetland SVC118-W129 will be temporarily impacted by the construction ROW, temporary road and trenching associated with the installation of collocated underground collection, and permanently impacted by Access Road 25. The access road was sited to coincide with an existing logging road, without a culvert, that crosses Wetland SVC118-W129, improving the condition of the existing road and minimizing impacts to the wetland by utilizing an area of previous disturbance.

Access Road 25 will cross emergent Wetland SVC118-W576 and associated Stream SVC118-S576, both of which will be temporarily impacted by the construction ROW, temporary road and trenching associated with the collocated underground collection, and permanently impacted by Access Road 25. Access Road 25 was sited to be collocated with an existing farm road, with a culvert, to minimize impacts. However, the culvert at Stream SVC118-S576 functions poorly, causing the back up of sheet flow across the road during high run off events. It appears that the culvert has been crushed over time by vehicle traffic over the existing road. As part of construction activities, this culvert will be replaced during road construction, which will facilitate restoration of stream channel flow. Stream disturbance will take place during dry or low flow conditions, if possible, and BMPs will be employed to minimize impacts associated with this crossing. If water is present at the time of crossing, the area will be dewatered using a flume crossing or a dam and pump crossing to minimize impacts.

Emergent/shrub-scrub Wetland SVC204-W577 will be temporarily impacted by the construction ROW, temporary road and collocated underground collection, and will be permanently impacted by Access Road 25, which was sited where an existing road currently crosses the wetland. Wetland SVC204-W577 will be impacted in two separate places, the north end, and south end where it is associated with perennial Stream SVC204-S577. The access road has been sited in both areas to utilize existing crossings, with existing culverts; however, in-stream and wetland disturbance via trenching will be required to install underground collection lines. The existing culverts will be replaced to accommodate the temporary road required during construction. Stream disturbance will take place during dry or low flow conditions, if possible, and BMPs will be employed to minimize impacts associated with this crossing. If water is present at the time of crossing, the area will be dewatered using a flume crossing or a dam and pump crossing to minimize impacts.

Emergent Wetland SVC124-W592 will be temporarily impacted by the construction ROW at its west edge where it is associated with a perennial Stream SVC124-S592. Emergent Wetland SVC124-W593 will be temporarily impacted by the construction ROW and temporary road, and permanently impacted in a very small area by Access Road 25. The impact to this wetland will be limited to the wetland's east boundary, where it is associated with intermittent Stream SVC124-S592a. Wetland SVC124-W592 will be restored to pre-construction contours following construction. Streams SVC124-S592 and SVC124-S592a will

be temporarily impacted by the construction ROW, temporary road and permanently impacted by Access Road 25. The access road has been sited to utilize the existing crossing, with an existing culvert. The existing culverts will be replaced to accommodate the temporary road required during construction. Stream disturbance will take place during dry or low flow conditions, if possible, and BMPs will be employed to minimize impacts associated with this crossing. If water is present at the time of crossing, the area will be dewatered using a flume crossing or a dam and pump crossing to minimize impacts. The design of the Windpark does not require underground collection to be collocated with Access Road 25 in this location.

The staging area for Turbine T58 was sited to avoid impacts to Wetlands SVC204-W578, SVC204-W580, and SVC204-W581; however, modifications to the staging area were not successful at avoiding impacts emergent Wetland SVC204-W579. Wetland SVC204-W579 will be temporarily impacted on its north side by installation of the turbine staging area and will be restored to preconstruction contours following construction. Small, emergent Wetland SVC117-W605 will be temporarily impacted by installation of the Turbine T57 staging area and will be restored to preconstruction contours following construction.

Intermittent Streams SVC118-S132 and SVC124-S591 will be temporarily impacted by the construction ROW, temporary road and trenching associated with the installation of collocated underground collection lines, and permanently impacted by Access Road 25. The crossing at Stream SVC118-S132 has been sited to utilize the existing crossing, with an existing culvert; however, in-stream disturbance via trenching will be required to install underground collection lines. The existing culvert will be replaced to accommodate the temporary road required during construction. Stream disturbance at both Stream SVC118-S132 and SVC124-S591 will take place during dry or low flow conditions, if possible, and BMPs will be employed to minimize impacts associated with this crossing. If water is present at the time of crossing, the area will be dewatered using a flume crossing or a dam and pump crossing to minimize impacts.

2.6.5.3 Cluster 26 (Turbines T64, T65, and T66)

Cluster 26 includes three turbines. Turbine T64 is located in an agricultural field, adjacent to a forested area within the western portion of the turbine staging area. Turbine T65 is in an active agricultural field. Turbine T66 is located in a maintained field with a steep slope and forest to the east of the turbine staging area.

Access Road 26 was sited along the edge of a field to minimize impacts to forest and agricultural land. A narrow, linear portion of emergent/shrub-scrub Wetland SVC109-W568 and associated perennial Stream SVC109-S568 will be temporarily impacted by the construction ROW, temporary road trenching associated with the collocated underground collection lines, and permanently impacted by Access Road 26. Stream disturbance will take place during dry or low flow conditions if possible and BMPs will be employed to minimize impacts associated with this

crossing. If water is present at the time of crossing, the area will be dewatered using a flume crossing or a dam and pump crossing to minimize impacts.

2.6.5.4 Cluster 27 (Turbines T61 and T62)

Cluster 27 includes two turbines. Turbine T61 is located both within an apple orchard and within an active corn field. Turbine T62 is located in both an active corn field and forested areas.

Access Road 27 was collocated with an existing driveway to minimize impacts to residential property and wetlands. Emergent/shrub-scrub Wetland SVC103-W542 will be temporarily impacted by the construction ROW for Access Road 27 at its junction with State Route 39 and will be restored to pre-construction contours following construction. The construction ROW, temporary road and trenching associated with the installation of collocated underground collection lines will also temporarily impact Wetland SVC106-W543. Across this wetland, the access road has been collocated with an existing driveway which contains a functional culvert. The driveway and culvert will be extended east to accommodate the construction ROW and will result in temporary impacts to the wetland. After installation of the permanent road, Wetland SVC106-W543 will be restored to preconstruction contours. A small portion of the northern sections of Wetland SVC73-W547 and Wetland SVC73-W548/W548 will be temporarily impacted by the construction ROW but will be restored to preconstruction contours following construction.

Perennial Streams SVC103-S1519 and SVC73-S1520 will be crossed by both the access road and collocated underground collection lines. The road will be constructed at existing crossings, with existing culverts; however, in-stream disturbance via trenching will be required to install underground collection lines. The existing culverts will be replaced to accommodate the temporary road required during construction. Stream disturbance at both Stream SVC118-S1519 and SVC124-S1520 will take place during dry or low flow conditions, if possible, and BMPs will be employed to minimize impacts associated with this crossing. If water is present at the time of crossing, the area will be dewatered using a flume crossing or a dam and pump crossing to minimize impacts.

2.6.5.5 Sector E Collection

The collection system within Sector E includes:

- Underground collection between Turbine T56 (Cluster 24) and Turbine T57 (Cluster 25);
- Underground collection between Cluster 25 and the substation and transmission line;
- Underground collection between Turbine T67 (Cluster 25) and Turbine T64 (Cluster 26); and

- Underground collection between Access Road 27 and Access Road 26, along State Route 39.

The collection line between Clusters 24 and 25 is sited through a small portion of forested area, along the straightest route possible, while the majority of the alignment traverses through pasture land to minimize impacts to forest. Within the pasture, emergent Wetlands SVC126-W561 and associated perennial Stream SVC126-S561; emergent Wetland SVC122-W563; and emergent Wetland SVC122-W564 and associated ephemeral Stream SVC122-S564 will be temporarily impacted by the construction ROW required for the installation of the underground collection line via trenching. The wetlands and stream bed and banks will be restored to preconstruction contours following construction.

The collection line between Cluster 25 and the substation will cross perennial Stream SVC204-S577, which will be temporarily impacted by the construction ROW required for the installation of the underground collection line via trenching. Stream bed and banks will be restored to preconstruction contours following construction. This stream is also crossed downstream by Cluster 25 (impacts associated with the Access Road 25 crossing were previously discussed in Section 2.6.5.2).

The collection line between Clusters 25 and 26 is sited through a forested area, but along the straightest route possible to minimize forest impacts and avoid impacts to Wetlands SVC112-W571 and SVC112-W572. Emergent/forested Wetland SVC109-W569 will be temporarily impacted by the construction ROW required for installation of the underground collection line via trenching. Impacts could not be avoided because the wetland extends east and west beyond the survey corridor. Forest conversion will occur in this wetland due to the installation and maintenance of the collection line. The wetland will be restored to preconstruction contours following construction and will be maintained in an emergent/shrub-scrub condition.

Underground collection between Access Road 27 and Access Road 26 was sited along the south side of State Route 39 to minimize impacts to the extent possible. However, emergent/shrub-scrub Wetland SVC103-W542 will be temporarily impacted by the construction ROW required for the installation of the underground collection line via trenching along State Route 39. The wetland will be restored to preconstruction contours following construction.

2.7 Transmission Detail

Sections 2.7.1, 2.7.2, and 2.7.3 include discussions of and details of wetland and waterbody impacts for the Transmission portion of the Project, including the substation and switchyard. A detailed list of impacts to areas subject to federal jurisdiction within the Transmission portion is provided in Table 2-10.