Wetland 261 (A11)	78.25224	42.75396	W261-1 through W261-12	0.185±	Shallow Emergent Marsh	**PEM**
Wetland 262 (A11)	78.25069	42.75371	W262-1 through W262-8	0.206±	Intermittent Stream / Shallow Emergent Marsh	**R4SB7 / PEM**
Wetland 263 (A11)	78.24694	42.75220	W263-1 through W263-11	1.853±	Cattail/ *Phragmites* Marsh	**PEM**
Wetland 264 (A16)	78.23972	42.74200	W264-1 through W254-15	0.392±	Shallow Emergent Marsh / Shrub-swamp	**PEM / PSS**
Wetland 265 (A16)	78.23952	42.74142	W265-1 through W265-16	0.371±	Shallow Emergent Marsh / Shrub-swamp	**PEM / PSS**
Wetland 266 (A16, A17)	78.23948	42.74060	W266-1 through W266-21	0.652±	Shrub-swamp	**PSS**
Wetland 268 (A19)	78.23163	42.73937	W268-1 through W268-12	0.159±	Hemlock-Hardwood Swamp	**PFO**
Wetland 269 (A18, A19)	78.23137	42.73878	W269-1 through W269-10	0.194±	Hemlock-Hardwood Swamp	**PFO**
Wetland 270 (C14)	78.24387	42.70756	W270-1 through W270-24	1.519±	Shallow Emergent Marsh / Red Maple - Hardwood swamp	**PEM / PFO**
Wetland 271 (C16)	78.24867	42.71575	W271-1 through W271-9	0.033±	Red Maple – Hardwood Swamp	**PFO**
Wetland 272 (C16)	78.24783	42.71608	W272-1 through W272-10	0.441±	Red Maple - Hardwood Swamp	**PFO**
Wetland 273 (C16)	78.24771	42.71674	W273-1 through W273-12	0.266±	Shrub-swamp	**PSS**
Wetland 274 (C16)	78.24606	42.71656	W274-1 through W274-25	1.738±	Shrub-swamp	**PSS**
Wetland 275 (C16)	78.24495	42.71690	W275-1 through W275-16	1.209±	Shrub-swamp	**PSS**

Wetland 277 (D05)	78.23518	42.72477	W277-1 through W277-8	0.139±	Shrub-swamp	**PSS**
Wetland 278 (D05)	78.23531	42.72326	W278-1 through W278-3	0.015±	Vernal Pool	**PFO**
Wetland 279 (A14)	78.25756	42.74906	W279-1 through W279-22	0.417±	Floodplain Forest / Intermittent Stream	**PFO / R4SB3**
Wetland 280 (A13)	78.26082	42.74886	W280-1 through W280-15	1.312±	Shallow Emergent Marsh	**PEM**
Wetland 281 (A13)	78.26225	42.74867	W281-1 through W281-5	0.100±	Shallow Emergent Marsh / Shrub-swamp	**PEM / PSS**
Wetland 282 (A13)	78.26317	42.74889	W282-1 through W282-22	0.871±	Shallow Emergent Marsh / Shrub-swamp	**PEM / PSS**
Wetland 283 (C01)	78.27244	42.74686	W283-1 through W283-13	0.370±	Hemlock-Hardwood swamp / Intermittent stream	**PFO / R4SB3**
Wetland 284 (A13)	78.26533	42.74982	W284-1 through W284-5	0.195±	Shallow Emergent Marsh	**PEM**
Wetland 285 (A12)	78.26433	42.75176	W285-1 through W285-18	0.287±	Shallow Emergent Marsh / Intermittent Stream	**PEM / R4SB7**
Wetland 286 (D02)	78.24346	42.73257	W286-1 through W286-8	0.278±	Shrub-swamp	**PSS**
Wetland 287 (D03)	78.24078	42.73005	W287-1 through W287-4	0.014± (Out-side project limits)	Shallow Emergent Marsh	**PEM**
Wetland 288 (D03)	78.24140	42.72964	W288-1 through W288-3	0.033±	Shrub-swamp	**PSS**
Wetland 289 (D03)	78.24190	42.72966	W289-1 through W289-4	0.028±	Shrub-swamp	**PSS**
Wetland 290 (A07)	78.25822	42.76542	W290-1 through W290-16	0.143±	Shallow Emergent Marsh / Shrub-swamp	**PEM / PSS**

Wetland 292 (A18)	78.23556	42.73630	W292-1 through W292-6	0.043±	Shallow Emergent Marsh	**PEM**
Wetland 293 (D02)	78.24016	42.73153	W293-1 through W293-10	0.345±	Shallow Emergent Marsh / Shrub-swamp	**PEM / PSS**
Wetland 294 (D11)	78.21413	42.71563	W294-1 through W294-20	0.000± (Out-side project limits)	Shallow Emergent Marsh / Vernal Pool	**PEM / PFO**
Wetland 295 (D11)	78.21231	42.71587	W295-1 through W295-6	0.000± (Out-side project limits)	Vernal Pool	**PFO**
Wetland 296 (D06)	78.23553	42.71825	W296-1 through W296-5	0.039±	Shrub-swamp	**PSS**
Wetland 297 (D11)	78.22050	42.71983	W297-1 through W297-7	0.137±	Shallow Emergent Marsh / Vernal Pool	**PEM**
Wetland 298 (D08)	78.22566	42.71823	W298-1 through W298-41	0.513±	Hemlock-hardwood swamp / Shallow Emergent Marsh / Deep Emergent Marsh / Shrub-swamp	**PFO / PEM / PSS**
Wetland 299 (D08)	78.22387	42.71785	W299-1 through W299-13	0.417±	Hemlock-hardwood Swamp / Shallow Emergent Marsh / Red Maple Swamp	**PEM / PFO**
Wetland 300 (D08)	78.22498	42.71765	W300-1 through W300-7	0.150±	Shallow Emergent Marsh / Shrub-swamp	**PEM / PSS**
Wetland 301 (D08)	78.22640	42.71633	W301-1 through W301-13	0.392±	Hemlock-hardwood Swamp / Shrub-swamp	**PSS / PFO**

Wetland 302 (D09)	78.22865	42.71349	W302-1 through W302-20	8.618±	Upper Perennial Stream / Marshy Headwater Stream / Shallow Emergent Marsh / Deep Emergent Marsh / Shrub-swamp	**R3UB1 / R4SB7 / PEM / PSS**
Wetland 303 (D07)	78.23239	42.71267	W303-1 through W303-10	0.701±	Red Maple – Hardwood Swamp / Shrub-swamp	**PFO / PSS**
Wetland 304 (B14)	78.22961	42.75789	W304-1 through W304-14	0.222±	Intermittent Stream, Flood Plain Forest, Shrub-swamp	**R4SB5 / FPO / PSS**
Pond 1 (B21)	78.19473	42.75505	PD-1 through PD-10	0.047±	Farm Pond	**POW**
Pond 2 (C05)	78.27707	42.72609	PD-1 through PD-5	0.126±	Farm Pond	**POW**
Pond 3 (D06)	78.23610	42.71729	N/A	0.038±	Farm Pond	**POW**
Total Acreage:				**126.684±**		

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SECTION I

INTRODUCTION

Invenergy, LLC has proposed the construction of a commercial wind farm which includes 59 wind turbine generators (WTG's), approximately 15 miles of gravel access roads, approximately 28 miles of underground collection cable, a new substation and operations and maintenance building, a permanent meteorological tower and a 10-acre temporary lay-down area. EDI investigated an area approximately 2486.46± acres in size. The investigation area was generally defined by a 300-foot radius from the center of each proposed turbine location, a 200-foot wide corridor for all proposed roads and underground cable routes, and 100-foot perimeter beyond the proposed limits of all other improvements (i.e. substation, temporary lay down, etc.). The project area is bound by the Town of Attica line to the north; Snyder and Syler Roads to the west; Almeter and Wilder Roads to the south; and the Town of Warsaw line to the east, and is located in the Town of Orangeville, County of Wyoming, and State of New York. The project has been given the name Stony Creek Wind Farm and is located on the USGS 7.5 minute quadrangle maps indexed as Attica, Dale, Warsaw, and Johnsonburg Quadrangles in DeLorme 2002 (Figure 1).

This report serves as an addendum to the July 23, 2010 report. The project limits have been revised to reflect the final project layout. This report includes additional areas of investigation. Wetland acreages listed include only those wetlands which fall within the requested Jurisdictional Determination area.

Invenergy, LLC has retained Earth Dimensions, Inc. (EDI) to complete a wetland delineation study at this site. The investigation was designed to facilitate a determination of the extent of U.S.

Army Corps of Engineers (Corps) and New York State Department of Environmental Conservation (NYSDEC) jurisdiction over the project area pursuant to Section 404 of the Clean Water Act and Article 24 (Freshwater Wetlands) of the New York State Environmental Conservation Law.

EDI has performed a wetland delineation study at the site under guidelines specified by the *Corps of Engineers Wetlands Delineation Manual*, dated January 1987 (referred to hereafter as the Corps Manual) and the *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region* (referred to hereafter as the Northcentral and Northeast Regional Supplement). The purpose of this report is to present EDI's methods, results, conclusions and recommendations with respect to the Stony Creek Wind Farm project site.

SECTION II

SITE DESCRIPTION

The natural topography of the Stony Creek Wind Farm site is consistent with the rolling hills typical of Wyoming County. The topography of the project area, as well as the overall region, is the result of the Pleistocene glaciers that covered western New York approximately 18,000 years before present and post-glacial surface water run-off. Uplands are relatively broad, stream dissected, and include undulating plateaus with elevations in the vicinity of the project area ranging from 1,500 feet to 2,030 feet above sea level. The uplands form the headwaters to Tonawanda Creek and the Genesee River. The western portion of the project area drains into the Tonawanda Creek via Stony Brook. Tonawanda Creek flows into the Niagara River. The majority of the eastern portion of the project area flows into the Genesee River via Stony Creek and Oatka Creek. The south-central portion of the project site flows into East Koy Creek which then flows into the Genesee River. The wetland areas of the site are comprised of shallow emergent marsh, deep emergent marsh, farm pond, shrub-swamp, floodplain forest, hemlock-hardwood swamp, red maple-hardwood swamp, vernal pool, silver maple-ash swamp, and spruce-fir swamp communities. The uplands within the project area are comprised of cropland/ field crop, cropland/ row crop, successional old field, successional shrubland, successional northern hardwood, pine plantation, spruce/ fir plantation, hemlock-northern hardwood forest, pastureland, rich mesophytic forest, beech-maple mesic forest, mowed roadside/ pathway, and unpaved road/ path. The vegetative communities of the investigation area are described according to *Ecological Communities of New York State* (Edinger et al. 2002).

SECTION III

PRELIMINARY DATA REVIEW

A. SUMMARY OF FINDINGS

Several sources of information may be reviewed to facilitate the completion of a wetland delineation study. In some cases it is even possible to make a preliminary office wetland determination based upon available vegetation, soils, and hydrologic information for a project area. EDI completed a preliminary review of several data sources at the onset of this study. The results of the review are summarized as follows:

1. USGS 7.5 Minute Topographical Map

   Figure 1 depicts the Stony Creek Wind Farm site on the Attica, Dale, Warsaw, and Johnsonburg DeLorme 2002 - 7.5 minute quadrangle maps. The maps depict the typical rolling landscape of Wyoming County. Incised drainage features are prevalent throughout the project area. Several branches of Stony Brook, a tributary to Tonawanda Creek, are evident in the western portion of the project site, while several branches of Stony Creek, a tributary to Oatka Creek, are depicted in the eastern portion of the project site. The south-central portion of the project area contains the headwater streams of East Koy Creek, a tributary to the Genesee River.

2. USFWS National Wetlands Inventory Map

   The National Wetland Inventory Map is included as Figure 2 of this report and depicts areas of potential federally jurisdictional wetland mapped throughout the project area.

3. Natural Resources Conservation Service Soils Map

Figure 3 presents the project area outlined on a copy of the Wyoming County Soil Survey map from the National Cooperative Soil Survey. As shown on that figure, the following soil types are mapped within the project area:

Soil Name	Soil Map Unit	Hydric Soil / Inclusions
Alden mucky silt loam	Ad	Hydric Soil
Alluvial land	Am	Inclusions Likely
Arkport very fine sandy loam, 2 to 8 percent slopes	ArB	Inclusions Unlikely
Arkport very fine sandy loam, 8 to 15 percent slopes	ArC	Inclusions Unlikely
Bath channery silt loam, 3 to 8 percent slopes	BaB	Inclusions Unlikely
Bath channery silt loam, 8 to 15 percent slopes	BaC	Inclusions Unlikely
Bath channery silt loam, 15 to 25 percent slopes	BaD	Inclusions Unlikely
Bath channery silt loam, 25 to 40 percent slopes	BaE	Inclusions Unlikely
Bath-Valois gravelly loams, 0 to 3 percent slopes	BlA	Inclusions Unlikely
Bath-Valois gravelly loams, 3 to 8 percent slopes	BlB	Inclusions Unlikely
Bath-Valois gravelly loams, 8 to 15 percent slopes	BlC	Inclusions Unlikely
Bath-Valois gravelly loams, 15 to 25 percent slopes	BlD	Inclusions Unlikely
Canaseraga silt loam, 0 to 3 percent slopes	CcA	Inclusions Unlikely
Canaseraga silt loam, 3 to 8 percent slopes	CcB	Inclusions Unlikely

Castile gravelly loam, 0 to 3 percent slopes	CgA	Inclusions Unlikely
Castile gravelly loam, 3 to 8 percent slopes	CgB	Inclusions Unlikely
Castile channery silt loam, fans, 0 to 3 percent slopes	ChA	Inclusions Unlikely
Chenango gravelly loam, 0 to 3 percent slopes	ClA	Inclusions Unlikely
Chenango gravelly loam, 3 to 8 percent slopes	ClB	Inclusions Unlikely
Chenango gravelly loam, 8 to 15 percent slopes	ClC	Inclusions Unlikely
Chenango gravelly loam, 15 to 25 percent slopes	ClD	Inclusions Unlikely
Chenango channery silt loam, fans, 3 to 8 percent slopes	CmB	Inclusions Unlikely
Collamer silt loam, 3 to 8 percent slopes	CoB	Inclusions Unlikely
Dalton silt loam, 0 to 3 percent slopes	DaA	Inclusions Possible
Dalton silt loam, 3 to 8 percent slopes	DaB	Inclusions Possible
Ellery silt loam	Ee	Hydric Soil
Erie silt loam, 0 to 3 percent slopes	ErA	Inclusions Possible
Erie channery silt loam, 3 to 8 percent slopes	EsB	Inclusions Possible
Fremont silt loam, 0 to 3 percent slopes	FrA	Inclusions Possible
Fremont silt loam, 3 to 8 percent slopes	FrB	Inclusions Possible
Halsey loam	Ha	Hydric Soil
Homer gravelly loam	Hg	Inclusions Possible
Homer gravelly loam, clayey substratum	Hh	Inclusions Possible
Howard gravelly loam, 0 to 3 percent slopes	HmA	Inclusions Unlikely
Howard gravelly loam, 3 to 8 percent slopes	HmB	Inclusions Unlikely
Howard gravelly loam, 8 to 15 percent slopes	HmC	Inclusions Unlikely
Howard-Madrid gravelly loams, 3 to 8 percent slopes	HoB	Inclusions Unlikely

Howard-Madrid gravelly loams, 8 to 15 percent slopes	HoC	Inclusions Unlikely
Howard and Chenango soils, 25 to 40 percent slopes	HsE	Inclusions Unlikely
Ilion silt loam	In	Hydric Soil
Langford channery silt loam, 0 to 3 percent slopes	LaA	Inclusions Unlikely
Langford channery silt loam, 3 to 8 percent slopes	LaB	Inclusions Unlikely
Langford channery silt loam, 8 to 15 percent slopes	LaC	Inclusions Unlikely
Langford channery silt loam, 15 to 25 percent slopes	LaD	Inclusions Unlikely
Lordstown channery silt loam, 2 to 8 percent slopes	LoB	Inclusions Unlikely
Manlius and Lordstown soils, 40 to 90 percent slopes	MnF	Inclusions Unlikely
Mardin channery silt loam, 0 to 3 percent slopes	MrA	Inclusions Unlikely
Mardin channery silt loam, 3 to 8 percent slopes	MrB	Inclusions Unlikely
Mardin channery silt loam, 8 to 15 percent slopes	MrC	Inclusions Unlikely
Mardin channery silt loam, 15 to 25 percent slopes	MrD	Inclusions Unlikely
Niagara silt loam	Ng	Inclusions Possible
Palms muck	Pa	Hydric Soil
Papakating silt loam	Pk	Hydric Soil
Papakating mucky silt loam	Pm	Hydric Soil
Pits, gravel	Pt	Inclusions Unlikely
Red Hook gravelly loam	Rh	Inclusions Possible
Sun silt loam	Su	Hydric Soil
Tuller channery silt loam, 0 to 3 percent slopes	TuA	Inclusions Possible
Varysburg gravelly loam, 2 to 8 percent slopes	VaB	Inclusions Unlikely
Volusia channery silt loam, 0 to 3 percent slopes	VoA	Inclusions Possible

Volusia channery silt loam, 3 to 8 percent slopes	VoB	Inclusions Possible
Volusia channery silt loam, 8 to 15 percent slopes	VoC	Inclusions Possible
Wallington silt loam	Wa	Inclusions Possible
Water	w	n/a

The U.S. Department of Agriculture's National Technical Committee for Hydric Soils Criteria has developed a list of soils that often display hydric soil characteristics. Hydric soil typically forms in places of the landscape where surface water periodically collects for some time and/or where groundwater discharges sufficient to create waterlogged or anaerobic soils. Such anaerobic soils can support the growth and survival of hydrophytic vegetation that is tolerant of such conditions. As outlined in the table above there are various hydric soils and soils with potential hydric inclusions mapped throughout the project area. Wetland hydrologic conditions, hydric soils, and hydrophytic vegetation are the three criteria of a wetland.

4. NYSDEC Freshwater Wetlands Map

The NYSDEC Freshwater Wetlands map obtained from the online NYSDEC Environmental Resource Mapper indicates four (4) state-regulated wetlands mapped within the project area. These wetlands include Freshwater Wetlands AT-8 (Class II), DA-21 (Class II), DA-24 (Class IV), and WW-1 (Class II).

B. RESULTS OF AGENCY INFORMATION REVIEW

The preliminary data review indicated the likely presence of both state and federally jurisdictional wetlands throughout the project area. The methods specified in the *Corps of Engineers Wetlands Delineation Manual* (January 1987) and *Northcentral and Northeast Regional Supplement* (October 2009) were employed during the field investigation. Procedures, results, and conclusions of the wetland delineation study are presented in the remainder of this report.

SECTION IV

FIELD INVESTIGATION PROCEDURES

Step 1

EDI applied methodology specified by the *1987 Corps of Engineers Wetlands Delineation Manual* and *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region* to perform a delineation of Federal jurisdictional wetlands within the site. EDI used the Level 2 Routine Determination method (on-site inspection necessary) since insufficient information was available for making a determination for the entire project area. This methodology is consistent with Part IV, Section D of the Corps Manual.

Step 2

EDI's initial evaluation of the project area revealed that no atypical situations existed. If an atypical situation had existed, EDI would have used methodology outlined in Part IV, Section F of the Corps manual and/or Section 5 of the *Northcentral and Northeast Supplement*.

Step 3

EDI made the determination that normal environmental conditions were present, as the area was not lacking hydrophytic vegetation or hydrologic indicators due to annual, seasonal or long-term fluctuations in precipitation, surface water, or groundwater levels. The *Northcentral and Northeast Supplement* defines the growing season as beginning when one of the following indicators of biological activity are evident in a given year: (1) above-ground growth and development of vascular plants and/or (2) soil temperature measured at 12" below ground surface reaches 41ºF. The end of the growing season is defined as the point at which deciduous species lose their leaves or the last herbaceous plants cease flowering and their leaves become dry or brown, whichever comes latest. Based on this definition, the field work was performed during the growing season, and

hydrophytic vegetation indicators were judged to be sufficient to perform the delineation. The field work was conducted from April 19, 2010 through October 28, 2010.

Step 4

In order to accurately identify the limits of various vegetative communities and extent of wetlands on-site, a routine determination method was used. As depicted in Attachment D, eighty (80) data points were used to characterize the site.

Step 5

The plant community inhabiting each observation point was characterized in accordance with methods specified in the Northcentral and Northeast Regional Supplement. Dominant plant species were identified within four vegetative strata (i.e. herb, sapling/shrub, tree and woody vines at each sampling point. The Northcentral and Northeast Regional Supplement defines the vegetative strata in the following manner:

Herb – A non-woody individual of a macrophytic species. Seedlings of woody plants (including vines) that are less than 3.28 feet in height are considered to be herbs.

Sapling/Shrub – A layer of vegetation composed of woody plants < 3.0 inches in diameter at breast height but greater than 3.28 feet in height, exclusive of woody vines.

Tree – A woody plant > 3.0 inches in diameter at breast height, regardless of height (exclusive of woody vines)

Woody Vines – A layer of vegetation in forested plant communities that consist of woody vines greater than 3.28 feet in height.

As outlined in the Northcentral and Northeast Regional Supplement, the quadrant sizes used for the vegetative strata were (i) a five-foot radius for herbs; (ii) a fifteen-foot radius for saplings and

shrubs; and (iii) a 30-foot radius for trees and woody vines. Dominant plant species were estimated using aerial coverage methods. Dominant species are defined in the Corps Manual as the most abundant plant species that when ranked in descending order of abundance and cumulatively totaled immediately exceed 50 percent of the total dominance measure for the stratum, plus any additional species comprising 20 percent or more of the total dominance measure.

The wetland indicator status (OBL, FACW, FAC, FACU, or UPL) listed for each identified species by the U.S. Fish and Wildlife Service in the *National List of Plant Species that Occur in Wetlands: Northeast (Region 1)* was recorded. The U.S. Fish and Wildlife wetland indicator status listings are defined as follows:

OBL – Plants that occur almost always (estimated probability >99 percent) in wetlands under natural conditions, but which may also occur rarely (estimated probability < 1 percent) in nonwetlands.

FACW – Plants that occur usually (estimated probability >67 percent to 99 percent) in wetlands, but also occur (estimated probability 1 percent to 33 percent) in nonwetlands.

FAC – Plants with a similar likelihood (estimated probability 33 percent to 67 percent) of occurring in both wetlands and nonwetlands.

FACU – Plants that occur sometimes (estimated probability 1 percent to <33 percent) in wetlands, but occur more often (estimated probability >67 percent to 99 percent) in nonwetlands.

UPL – Plants that occur rarely (estimated probability < 1 percent) in wetlands, but occur almost always (estimated probability >99 percent) in nonwetlands under natural conditions.

The plant community data was summarized on the data forms provided in the *Northcentral and Northeast Regional Supplement* included in this report as Attachment B.

Step 6

Plant data from each observation point were tested against the hydrophytic vegetation criterion specified in the Corps Manual and Northcentral and Northeast Regional Supplement. The Northcentral and Northeast Regional Supplement identifies a four-tiered approach for making a determination of whether or not the hydrophytic vegetation criteria is met for a sample plot. Indicator 1 (Rapid Test for Hydrophytic Vegetation) was first applied to determine if all dominant species across all strata are rated OBL and/or FACW. If Indicator 1 did not meet the hydrophytic vegetation criteria, Indicator 2 was then applied (dominance test); if greater than 50% of all plant species across all strata were rated OBL, FACW, or FAC, the hydrophytic vegetation criteria was considered met. In rare cases, when Indicators 1 and 2 did not meet the hydrophytic vegetation criteria but soils and hydrology criteria were met, Indicators 3 (Prevalence Index) and 4 (Morphological Adaptations) were used to make a final determination. All observation points that met the hydrophytic vegetation criterion were considered potential wetlands. Soils were then characterized.

Step 7

The Corps Manual specifies that soils need not be characterized (and are assumed hydric soils) at sampling points meeting the hydrophytic vegetation criterion if: (i) all dominant plant species have an indicator status of OBL, or (ii) all dominant species have an indicator status of OBL and/or FACW, and the wetland boundary is abrupt.

Step 8

At observation points requiring a soil evaluation, soil borings were performed by an EDI Soil Scientist using methods specified in the *Northcentral and Northeast Regional Supplement*. Soil pits were dug using a tile spade. Test pits were generally dug to a depth of 20 inches below ground

surface. Soils were examined for any of the hydric soil indicators, as outlined in the *Field Indicators of Hydric Soils in the United States*. A determination was made as to whether or not the hydric soil criterion was met. Soils data was recorded on the data forms included in Attachment D of this report.

Step 9

EDI's Soil Scientist examined hydrologic indicators using methods specified by the Northcentral and Northeast Regional Supplement at each observation point. The wetland hydrology criterion was met if: (i) one or more primary indicators was materially present or (ii) two or more secondary indicators were present. Results were recorded on data forms taken from the Corps Manual and are included in this report as Attachment D.

Step 10

A wetland determination was made for every observation point. If a sample plot met the hydrophytic vegetation, hydric soil, and wetland hydrology criteria, the area was considered to be wetland.

Step 11

Based on the results of the transected data, wetland boundaries were established for each identified wetland using survey ribbon labeled "wetland delineation" and numbered consecutively along each wetland boundary. As outlined in the Corps Manual, the placement of flags was based on the limits of areas where all three parameters were met. Wetland flag numbers are listed in the table included in the executive summary of this report.

SECTION V

RESULTS AND CONCLUSIONS

Earth Dimensions, Inc. (EDI) has completed a wetland delineation study at the Stony Creek Wind Farm site located in the Town of Orangeville, County of Wyoming, and State of New York. A field investigation was conducted by a Soil Scientist and Wetland Ecologist. The wetland delineation study found two hundred eighty-eight (288) wetlands and three (3) open water farm ponds totaling 126.684± acres.

The uplands within the project area are comprised of cropland/field crop, cropland/row crop, pastureland, successional old field, successional shrubland, successional northern hardwood, pine plantation, spruce/fir plantation, hemlock-northern hardwood forest, rich mesophytic forest, beech-maple mesic forest, mowed roadside/pathway, and unpaved road/path. The wetland areas of the site are comprised of shallow emergent marsh, deep emergent marsh, farm pond, shrub-swamp, floodplain forest, hemlock-hardwood swamp, red maple-hardwood swamp, vernal pool, silver maple-ash swamp, and spruce-fir swamp communities. The vegetative communities of the investigation area are described according to *Ecological Communities of New York State* (Edinger et al. 2002).

The cropland / field crop community consisted of the following species: annual bluegrass (*Poa annua*), coltsfoot (*Tussilago farfara*), orchard grass (*Dactylis glomerata*), common dandelion (*Taraxacum officinale*), wild madder (*Galium mullago*), Canada goldenrod (*Solidago canadensis*), narrowleaf plantain (*Plantago lanceolata*) and white clover (*Trifolium repens*).

The cropland / row crop community consisted of the following species: Corn (*Zea mays*), soy bean (*Glycine max*), beans (*Phaseolus sp.*), and narrowleaf plantain (*Plantago lanceolata*).

The successional old-field community included species such as: yellow birch (*Betula alleghaniensis*), pin cherry (*Prunus pensylvanica*), eastern cottonwood (*Populus deltoides*), Russian olive (*Elaeagnus angustifolia*), annual bluegrass (*Poa annua*), eastern woodland sedge (*Carex blanda*), sugar maple (*Acer saccharum*), Tartarian honeysuckle (*Lonicera tatarica*), common red raspberry (*Rubus idaeus*), Virginia strawberry (*Fragaria virginiana*), timothy (*Phleum pratense*), Canada goldenrod (*Solidago canadensis*), flat-top fragrant goldenrod (*Euthamia graminifolia*), showy goldenrod (*Solidago speciosa*), oxeye daisy (*Leucanthamum vulgare*), common milkweed (*Asclepias syriaca*), white clover (*Trifolium repens*), early goldenrod (*Solidago juncea*), sweet vernal grass (*Anthoxanthum odoratum*), common cinquefoil (*Potentilla simplex*), Queen Anne's lace (*Daucus carota*), annual ragweed (*Ambrosia artemisiifolia*), bird's-foot trefoil (*Lotus corniculatus*), butter and eggs (*Lineria vulgaris*), reed canary grass (*Phalaris arundinacea*), yellow foxtail (*Setaria pumila*), greater burdock (*Actium lappa*) and wrinkled goldenrod (*Solidago rugosa*).

The successional shrubland community consisted of the following species: Russian olive (*Elaeagnus angustifolia*), pin cherry (*Prunus pensylvanica*), quaking aspen (*Populus tremuloides*), Tartarian honeysuckle (*Lonicera tatarica*), southern arrowwood (*Viburnum recognitum*), cockspur

hawthorn (*Crataegus crus-galli*), eastern hop-hornbeam (*Ostrya virginiana*), common apple (*Malus officinalis*), mulitflora rose (*Rosa multiflora*), common red raspberry (*Rubus idaeus*), Allegheny blackberry (*Rubus allegheniensis*), Virginia strawberry (*Fragaria virginiana*), common periwinkle (*Vinca minor*), black raspberry (*Rubus occidentalis*), yellow avens (*Geum aleppicum*), Canada goldenrod (*Solidago canadensis*), common dandelion (*Taraxacum officinale*) and summer grape (*Vitis aestivalis*).

The pine plantation community consisted of the following species: white spruce (*Picea glauca*), Scotch pine (*Pinus sylvestris*), red pine (*Pinus resinosa*), white pine (*Pinus strobus*), cockspur hawthorn (*Crataegus crus-galli*), green ash (*Fraxinus pensylvanica*), Tartarian honeysuckle (*Lonicera tatarica*), annual bluegrass (*Poa annua*), Virginia strawberry (*Fragaria virginiana*), early goldenrod (*Solidago juncea*), common red raspberry (*Rubus idaeus*), old field cinquefoil (*Potentilla simplex*), yellow wood sorrel (*Oxalis stricta*), yellow avens (*Geum aleppicum*) and common dandelion (*Taraxacum officinale*).

The successional northern hardwood community was comprised of the following species: sugar maple (*Acer saccharum*), black cherry (*Prunus serotina*), pin cherry (*Prunus pensylvanica*), white ash (*Fraxinus americana*), eastern cottonwood (*Populus deltoides*), red maple (*Acer rubrum*), American beech (*Fagus grandifolia*), American hornbeam (*Carpinus caroliniana ssp. virginiana*), eastern hemlock (*Tsuga canadensis*), eastern hop-hornbeam (*Ostrya virginiana*), cockspur hawthorn (*Crataegus crus-galli*), American witchhazel (*Hamamelis virginiana*), common red raspberry (*Rubus idaeus*), trout lily (*Erythronium umbilicatum*), wild leek (*Allium tricoccum*), white trillium (*Trillium flexipes*), cutleaf toothwort (*Cardamine concatenata*), tall hairy groovebur (*Agrimonia gryposepala*), New York fern (*Thelypteris noveborensis*), partridgeberry (*Mitchella*