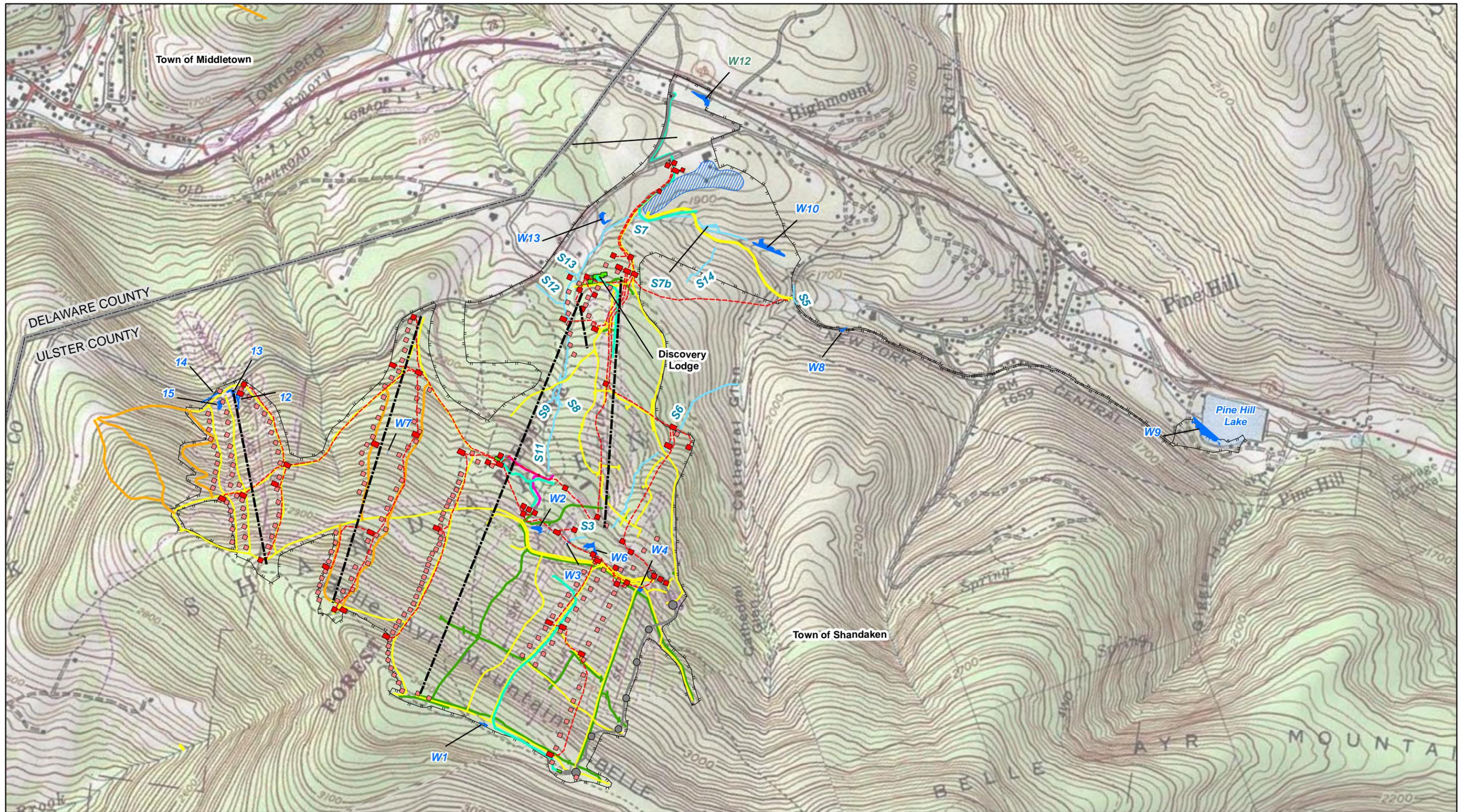


0 200 Feet

Belleayre Mountain Ski Center
Catskill State Park
Highmount Ski Resort, Aerial Imagery

- Proposed Ski Lift Line
- Existing Contour
- Proposed Contour
- Flow Diversion
- Existing Structure
- Proposed Structure
- Proposed Driveway
- Rock Outcrop
- Area of Proposed Grading
- Proposed Retaining Wall
- Delineated Wetland Area
- Proposed Trail Clearing
- Wetland Mitigation Area
- Impacts to Wetlands due to Grading
- Temporary Impacts to Wetlands due to Trail Clearing



Belleayre Mountain Ski Center
Catskill State Park
Project Area, USGS Topographic Imagery

- | | | | |
|---------------------------------------|----------------------------------------|----------------------------|----------------------------------------|
| --- Proposed Ski Lift | --- Proposed Underground Electric Line | ■ Proposed Electric Device | ■ Proposed Electric Fan Gun Receptacle |
| — Unclassified Delineated Stream Line | — Proposed Sewer Line | ● Proposed Sewer | ■ Discovery Lodge |
| ■ Delineated Wetland | — Proposed Potable Water Line | — Proposed Snow Air Line | ▭ Township Boundary |
| ■ Proposed Snow Making Pond | — Proposed Sanitary Sewer | — Proposed Snow Water Line | ▭ Study Boundary (October, 2009) |



Figure 4.3-3 Belleayre Mountain Ski Center Utility Locations

Sheet No.
1

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Date: January 31, 2013

Field surveys were conducted within the survey areas shown on Figure 1-2 during August 2008 to complete an assessment of potential project-related impacts. Wetland boundaries were delineated and wetland functions and values characterized to obtain sufficient data about the individual wetlands. Field data were recorded on USACE wetland delineation datasheets (Appendix B). Vegetation cover types were classified as belonging to upland, wetland, and aquatic ecological communities. Photographs were taken of each delineated wetland (see Attachment 2). All water bodies and watercourses, including rivers, streams, drains, and seeps in the natural resources study area were characterized.

Field teams used established delineation procedures as outlined in the USACE *Wetland Delineation Manual* (Environmental Laboratory 1987) and NYSDEC's *Freshwater Wetlands Delineation Manual* (1995). The specific procedures used to evaluate the soils, vegetation, and hydrology, at each potential wetland location are described below.

Several of the wetlands within the Highmount Ski Area that have been included in this report were delineated by the LA Group during a previous survey conducted during a series of visits between September 14 and November 9, 1999. These wetlands were identified using the USACE Wetland Delineation Manual (Environmental Laboratory 1987) through observations of changes in ground slope, vegetation and soil characteristics (LA Group March 2000). Details on the procedures to evaluate soils, vegetation, and hydrology for these additional wetlands are provided in Appendix 14 of the Modified Belleayre Resort at Catskills SDEIS.

4.2.1 Soils

The presence of hydric soils is one of the three diagnostic characteristics of a wetland. Hydric soils are soils that are gleyed (gray colors) immediately below the A horizon or at 10 inches or have a low matrix chroma (dark color) with or without mottles immediately below the A horizon (Wetland Training Institute Inc. 1995). Mottling refers to the spots of contrasting color found within the soil.

Hydric soils can be classified into two categories, organic and mineral. Organic soils are continuously saturated or inundated with water while mineral soils are saturated periodically enough to develop a reducing environment. Organic soils are often referred to as peats and mucks. Mineral soils are composed mainly of clay, silt, and/or sand with varying amounts of organic matter.

Soils were examined and evaluated both within and outside the wetland boundaries by using a tile spade shovel, or "sharpshooter," to a depth of approximately 14 inches (36 centimeters [cm]). Wherever disturbance of the soils was evident because of past excavation or fill activity, soils in adjacent, undisturbed areas within the potential wetland were characterized. Soils were characterized at a depth immediately below the A horizon or at 10 inches (30 cm), whichever was shallower. Soil colors were identified using a Munsell Soil Color

Chart (Munsell 1996), and other characteristics such as soil texture and moisture were recorded. Hydric characteristics such as organic soil layers, gleying, mottling, and oxidized rhizospheres were noted where they occurred.

4.2.2 Hydrology

The *Wetlands Delineation Manual* (U.S. Army Corps of Engineers, Environmental Laboratory 1987) provides guidelines for determining the presence of wetland hydrology, the second of the three diagnostic characteristics of a wetland. Wetland hydrology is the result of surface water runoff or groundwater seepage. In general, the criteria for wetland hydrology are met if the area is inundated or saturated at the soil surface during the growing season for a time sufficient to develop hydric soils and support hydrophytic vegetation. In some instances, it is necessary to use other field characteristics to identify wetland hydrology. These characteristics may include water staining, sediment deposits, drainage patterns, or drift lines. Hydrology characteristics and depth of surface water or depth to soil saturation were recorded for each wetland area.

It is important to note that due to the considerable size of the natural resources study area and the time needed to investigate it, weather conditions varied greatly throughout the duration of the field survey. New York State has fairly uniform precipitation throughout the year, with no discernable wet or dry periods. However, precipitation had a direct effect on local hydrology and was often highly variable from day to day.

4.2.3 Vegetation

To determine the presence of hydrophytic vegetation, the third of the diagnostic wetland characteristics, the dominant species in each major vegetative stratum (tree, shrub/sapling, herbaceous, and woody vine) were identified and recorded. Each plant was then assigned a wetland-indicator status (obligate wetland, facultative wetland, facultative, facultative upland, or upland) from the USFWS *National List of Vascular Plant Species that Occur in Wetlands: 1998 National Summary*. A prevalence of dominant species that are facultative, facultative wetland, and obligate wetland indicates the presence of hydrophytic vegetation.

The hydrophytic vegetation present at a site is seasonally dependent. The field surveys were conducted in the late summer and fall, and this seasonal timeframe determined which hydrophytic species were present at a given site. Late-blooming hydrophytic species were identified and used as wetland indicators. Some species of hydrophytic vegetation present earlier in the year (i.e., spring and early summer) already had died out.

4.2.4 Delineation

If the soils, hydrology, and vegetation at a survey point indicated that it was within a wetland, the boundary of the wetland was determined and clearly marked in the field within the survey corridor. The approximate boundary was recorded on site maps, and the boundary was surveyed using a global positioning system

(GPS) unit with submeter accuracy. The location of wetland soil pits and photograph points were also recorded using a GPS unit with submeter accuracy. The electronic files generated from the GPS survey were then downloaded and integrated into the existing alignment drawings to identify where the delineated wetlands and the proposed project facilities overlapped. All initial data from the delineated wetland, including vegetation, soil characteristics, hydrology, photograph information, and sketches, were recorded in an appropriate field notebook or data sheet. The datasheets are included in Appendix B of this report. Photographs were taken at selected wetland areas representative of the natural resources study area and are included in Appendix C.



5

On-site Conditions and Wetland Characteristics

Twelve wetlands were delineated within the survey corridor of the Belleayre Mountain Ski Center natural resources study area during the field investigations conducted by E & E in August 2008 and four additional wetlands were identified by the LA Group in September 1999. Generally, the wetlands were either small emergent or forested wetlands, found along streams and at the edges of ski trails and parking lots. Wetlands located in the steep areas, along the ski slopes, were primarily small emergent wetlands that flowed downslope into small drainage swales and catch basins.

One of the 16 wetlands (Wetland W7) does not have any hydrological surface connection to any other jurisdictional waters of the United States and is isolated pursuant to *Solid Waste Agency of Northern Cook County (SWANCC) v. United States Army Corps of Engineers*¹. The wetlands identified were typical of wetlands found in northeastern New York. Many exhibited evidence of direct and indirect disturbance from both previous and present land uses. The following describes the specific attributes of the wetlands found throughout the study area corridor. A wetland delineation map (see Figure 4.3-1 [back pocket]) depicts the natural resources study area, the wetland boundaries, and the locations of all streams noted during the survey.

5.1 Wetland Communities

Two community types or classes are found in the natural resources study area—palustrine emergent wetlands (PEM) and palustrine forested wetlands (PFO). Each wetland was categorized according to the Cowardin et al. (1979) classification system (see Table 5-1), which broadly defines wetland types by hydrology and vegetative stem cover. Within these two classes of wetlands are a variety of regionally specific plant communities. These plant communities provide different functions and values in the surrounding landscape and are

¹ The USACE included in its definition of “waters of the United States” those that “could be used as habitat by birds” and thus “are protected by the Migratory Bird Treaty.” This regulation was invalidated by the United States Supreme Court in *Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers* in January 2001. The Supreme Court ruled that this regulation exceeded the Corp’s authority under the Clean Water Act. Today, millions of acres of wetlands in the United States do not fall within the jurisdiction of the Corps due to the outcome of this court case.

5. Onsite Conditions & Wetland Characteristics

described below. (Plant community descriptions were adopted from Edinger [2002]). Because of the similarities between many of the wetlands in the natural resources study area, detailed descriptions of the individual wetlands have not been provided. Rather, a description of each of the major wetland types is presented below and a brief description of each wetland is provided in Table 5-3. Wetlands delineated by the LA Group were not included as part of the assessment provided in Table 5-3. A functional assessment of the wetlands is provided in Section 7.

5.1.1 Proposed Impacts and Mitigation

Impacts to wetlands would be minimized by avoiding wetland areas. Unavoidable impacts are summarized in Table 5-1. Construction activity would include some clearing of brush to permit ski trail crossings of wetland areas. This work would not entail any dredging or filling in wetlands, and totals 0.009 acres. Unavoidable impacts to wetlands 12, 13, and 14 are necessary for the construction of the Highmount Ski Lift. This work includes re-grading, with no structures built in the wetlands. These impacts total 0.139 acres. Although Nationwide Permit 42 allows impacts up to 0.5 acres, the required Pre-Construction Notification requires mitigation for impacts that exceed 0.1 acres.

A concept for the mitigation is shown in Figure 4.3-2. Wetland 14, which is one of the wetlands regulated by the Army Corps of Engineers, is a low-lying drainage swale through an existing flat, grassy area. The drainage continues to an unnamed tributary of Emory Brook. The wetland plant community consists of (*Carex* spp.), flat-top fragrant goldenrod (*Euthamia graminifolia*), giant goldenrod (*Solidago gigantea*), *Agrostis alba*, purple-leaf willow-herb (*Epilobium coloratum*) and wild chervil (*Anthriscus sylvestris*). Grading would impact 0.24 acres of this 0.090-acre wetland.

The proposed mitigation area is a 0.219-acre grassy area north of Wetland 14. This represents a mitigation ratio of 1.6. The mitigation area shares a border with the area. It was selected because it is down-gradient and adjacent to the existing wetland, it is currently mowed lawn with a high likelihood of having deep organic soils, is free of invasive species, and is near the proposed construction area, so access by earthmoving equipment would be uncomplicated.

Successful wetland hydrology would be established by excavating the mitigation area to nine inches below the thalweg (lowest point) of the existing Wetland 14 drainage ditch. This ditch incept slows from the large area of Belleayre Mountain to the south. The proposed excavation would divert and detain the drainage, with the excavated material piled and graded into a berm on the southern margin of the proposed mitigation area. During excavation, the existing organic topsoil would be temporarily stockpiled and spread back onto the mitigation area to a depth of six to nine inches to support the growth of new wetland vegetation.

5. Onsite Conditions & Wetland Characteristics

Table 5-1 Belleayre Mountain Ski Center Delineated Wetland Summary

Wetland ID	Isolated Wetland	Wetland Type	Delineated Area (Acres)	Project Impacts (Acres)	
				Hand Vegetation/Tree Clearing for Proposed Ski Trails (Temporary Impacts)	Grading for Highmount Ski Lift Base Installation (Permanent Impacts)
W1	NO	PEM	0.088		
W2	NO	PEM	0.030		
W3	NO	PEM	0.030		
W4	NO	PEM	0.135		
W6	NO	PFO1	0.353		
W7	YES	PFO1	0.008		
W8	NO	PEM	0.077		
W9	NO	PEM	0.997		
W10	NO	PFO1	0.710		
W12	NO	PFO1	0.415		
W13	NO	PFO1	0.308		
12*	NO	PEM	0.100		0.04
13*	NO	PEM	0.080	0.005	0.075
14*	NO	PEM	0.090	0.004	0.024
15*	NO	PEM	0.140		
Total Impacts			3.606	0.009	0.139
Proposed Wetland Mitigation Area Adjacent to 14				0.219	

* Wetland delineated during field surveys conducted by LA Group as reported in Modified Belleayre Resort at Catskills Park SDEIS.

Note: Wetland classifications from Cowardin et al. 1979

Key: PEM = Palustrine emergent wetland.
 PFO1 = Forested hardwood wetland

5. Onsite Conditions & Wetland Characteristics

The excavation and grading of the proposed wetland mitigation area would establish wetland hydrology by capturing and detaining flows from the mountainside. The existing organic soil would provide the basis for the development of a wetland soil once it was consistently inundated. A wetland plant community would be established by raking the topsoil during a dry period and hand seeding with a local wetland seed mix. A vendor with products adapted for this zone is Southern Tier Consulting (<http://www.southerntierconsulting.com/seedmix.htm#WGSM>). In accordance with the supplier's recommendations, seed would be cold-stratified or warm-stratified depending on the season when the planting would take place.

Control of invasive species is always a concern for wetland mitigation. Wetland 14 does contain one nuisance species, wild chervil (*Anthriscus sylvestris*). Efforts would be made to eliminate this species by raising the water level with a low berm at the outlet of the existing channel. Wild chervil is native, but it grows and spreads rapidly and is listed as an invasive species in Massachusetts. In addition, the Invasive Species Control Program (Appendix 21 of the Crossroads Resort at Catskill Park SDEIS) would be extended to monitor and control this constructed wetland.

5.1.2 Palustrine Emergent Wetland (PEM) Class

The palustrine emergent wetlands (PEM) are dominated by herbaceous vegetation with little or no woody plant material present. These wetlands were the most common within the natural resources study area and typically occurred in depressions where water from slopes or field drainage collects. These depressions were largely found in conjunction with ski slopes, alluvial land, or reverting fields. PEM wetlands were also encountered within clearings in forested areas. In most cases, surface inundation in the PEM wetlands is temporary and occurs only during the wetter months. However, in some areas where groundwater input occurs, such as on side-slopes or upwelling areas, this period of inundation can continue throughout the growing season.

Shallow Emergent Marsh

A majority of the PEM wetlands that were delineated are shallow emergent marsh communities. These herbaceous wetland systems found within the natural resources study area are typically seasonally flooded to permanently saturated and have water depths that may range from 6 to 12 inches below the soil surface to as much as 3.3 feet of inundation during flood stages. They mainly occur on mineral soil with a few of the wetlands containing muck or peat overlying mineral soils.

A large number of these wetlands were found around the base of the ski slopes in disturbed areas that have been maintained for recreational purposes. An example of a typical shallow emergent marsh within the natural resources study area is wetland W3. The hydrology of this wetland is due partly to a shallow water table, with soils saturated to the surface and also to the overflow from the adjacent ski slope. W3 runs north along Stream 3 (S3) and extends beyond the study area

5. Onsite Conditions & Wetland Characteristics

corridor to the south. Overflow from the ski slopes commonly influences the hydrology of most of the shallow emergent marshes throughout the natural resources study area. Characteristic plant assemblages growing under these conditions include fringed sedge (*Carex crinita*), spotted touch-me-not (*Impatiens capensis*), sensitive fern (*Onoclea sensibilis*), rough stem goldenrod (*Solidago rugosa*), glossy-leaved aster (*Aster puniceus*), green bulrush (*Scirpus atrovirens*), and arrowleaf tearthumb (*Polygonum sagittatum*).

5.1.3 Palustrine Forested Wetland (PFO) Class

PFOs are defined as being dominated by woody vegetation that is more than 20 feet (6 meters) tall or taller and covering 30% or more of the area. Forested wetlands were typically found within deeper valleys or depressions. These wetlands receive runoff from adjacent areas and because of the poorly drained nature of the underlying soils are inundated for periods during the rainy season. These areas may have several inches to a foot of water in the wet seasons while completely drying out in the drier summer months. A number of the forested wetland complexes delineated are likely to be supplemented by groundwater discharge.

Red Maple Hardwood Swamp

Red maple hardwood swamp is a community consisting of a variant hardwood swamp occurring in poorly drained depressions on inorganic soils. This type of swamp was generally found at the base of ski and hillside slopes in the natural resources study area. Many of these swamps were closely associated with groundwater recharge/discharge functions, runoff retention, or adjacent to watercourses. The canopy is usually dominated by red maple or can be mixed with other hardwoods such as American elm, trembling aspen, and green ash (*Fraxinus pennsylvanica*). The shrub layer, which can be dense at times, includes winterberry, arrowwood (*Viburnum recognitum*), dogwoods (*Cornus* spp.), willows (*Salix* spp.), spice bush (*Lindera benzoin*), and canopy tree saplings. The groundcover, in some instances, is highly productive and consists of ferns, sedges, mosses, bugleweed, and spotted touch-me-not. An example of a typical red maple hardwood swamp in the natural resources study area is W12, located in a depression along State Highway 28.

5.1.4 Waters of the United States

The stream channels that drain the project are classified as Waters of the United States (see Sections 2.1 and 2.2) under the Rivers and Harbors Act and Clean Water Act) because they have direct hydrological connections to navigable waters. All of these stream channels are depicted on Figure 4.3-1. Three stream crossings are required for ski trails as shown in Table 5-2 and depicted on the inset map on Figure 4.3-1. The two wooden bridges would span the channels and have no direct impacts on the streams. The third crossing would require brush clearing so skiers could ski across the channel, which has very shallow banks and freezes solid in the winter. These three crossings add to a potential impact of up to 75 feet of stream reach. No mitigation for this *de minimis* impact is proposed.

5. Onsite Conditions & Wetland Characteristics

Table 5-2 Impacts from Proposed Stream Crossings

Stream Crossing ID	Potential Stream Crossing Impacts from Ski Trail Construction (Linear Feet)
HMT-9A Trail	25
West-6 Trail (Bridge)	15
Deer Run Ext. Trail (Bridge)	35
Total	75

5.2 NYSDEC Wetlands

No NYSDEC-designated wetlands are in the natural resources study area. All NYSDEC wetlands are located in the southern part of Ulster County.

5.3 Wetlands with No Obvious Surface Connection

In addition to the wetland classes described above, wetlands were also classified as either isolated or non-isolated. The apparent hydrological connection for each wetland is noted in Table 5-3. During field investigations, one wetland in the natural resources study area—W7—was found to have no obvious connections to jurisdictional waters of the U.S. and are therefore considered isolated. Pursuant to the *Solid Waste Agency of Northern Cook County V. United States Army Corps of Engineers (SWANCC)*, wetlands with no hydrologic surface connection to “waters of the U.S.” are not jurisdictional under Section 404 of the Clean Water Act. Confirmation of non-jurisdictional wetlands would be made by the USACE during the permitting process.

5.3.1 Wetland Descriptions

Presented below is a description of the physical features of the wetlands that have been identified as non-jurisdictional or jurisdictional, along with information to support that conclusion. Most of the wetlands were emergent wetlands with a high diversity in the herb layer because of the absence of a tree layer, allowing an abundance of sunlight to penetrate the area. Table 5-3 lists the wetland identification number, community type, hydrologic connection, and any additional comments associated with the delineated wetlands. Upon review, W5 was found to not meet the criteria of a wetland and was removed from the list. These descriptions are based on information collected in the field. USACE datasheets for the E & E delineated wetlands are included in Appendix B. Photographs were taken at wetland areas representative of the natural resources study area and are included in Appendix C.

Table 5-3 Wetland Summary, Belleayre Mountain Ski Center

Wetland ID	Wetland Community Type (Cowardin et al. 1972)	Hydrologic Connection	Additional Comments
W1	PEM	Possible hydrologic connection to U.S. waters because wetland drains into a wetland swale that drains down the back side of Belleayre Mountain.	Small, moderately diverse wetland located at the top of the Area 51 ski slope in a slight depression, dominated by mannagrass (<i>Glyceria spp.</i>), fowl mannagrass (<i>Glyceria striata</i>), rough-stemmed goldenrod (<i>Solidago rugosa</i>), flat-top goldenrod (<i>Euthamia graminifolia</i>), and other common emergent vegetation; flows into a small drainage swale that flows down slope to the southwest.
W2	PEM	Possible hydrologic connection to S7, Crystal Spring Brook Trib. 4.	Well-defined drainage area at the base of two ski trails with moderate vegetative diversity: green bulrush (<i>Scirpus atrovirens</i>), fringed sedge (<i>Carex crinita</i>), bottlebrush sedge (<i>Carex hystericina</i>), and other common emergent vegetation.
W3	PEM	Riparian wetland to S3, an unnamed tributary of Crystal Spring Brook (S7).	Small, diverse wetland, located below the Esopus ski slope that extends beyond the study corridor. Soils are saturated at the surface. The wetland is dominated by fringed sedge (<i>Carex crinita</i>), Canada goldenrod (<i>Solidago canadensis</i>), reed canary grass (<i>Phalaris arundinacea</i>), sensitive fern (<i>Onoclea sensibilis</i>), and other common emergent vegetation.
W4	PEM	Possible hydrologic connection to Crystal Spring Brook (S7).	Small, disturbed, seepage wetland located at the bottom of two intersecting ski slopes, Tongora and Belleayre Run; moderate vegetative diversity dominated by glossy-leaved aster (<i>Aster puniceus</i>), fringed sedge (<i>Carex crinita</i>).
W6	PFO1	Riparian wetland to S6, an unnamed tributary to Crystal Spring Brook (S7).	Small, moderately diverse riparian wetland on both sides of S6, fed by a spring seep and two outlet pipes. Surrounded by maintenance roads, ski slopes, and a parking lot; dominant vegetation is fringed sedge (<i>Carex crinita</i>), hairy sedge (<i>Carex lacustris</i>), melic mannagrass (<i>Glyceria melicaria</i>), and yellow birch (<i>Betula alleghaniensis</i>).

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Table 5-3 Wetland Summary, Belleayre Mountain Ski Center

Wetland ID	Wetland Community Type (Cowardin et al. 1972)	Hydrologic Connection	Additional Comments
W7	PFO1	No apparent surface water connection to waters of the U.S.	Small, spring seep with perennial flow, halfway down a proposed ski trail in a mature hardwood forest. Wetland does not have a lot of soil except in small pools of water that are surrounded by moss and filled with 0 to 3 inches of organic matter. The wetland has a low diversity of vegetation dominated by spotted touch-me-not (<i>Impatiens capensis</i>), spinulose woodfern (<i>Dryopteris carthusiana</i>), and white snakeroot (<i>Ageratina altissima</i>).
W8	PEM	Hydrologic connection to an unnamed Class (C) tributary that flows into an unnamed Class B(T) tributary of Crystal Spring Brook.	This small wetland is located along the railroad tracks and is fed by surface water runoff and groundwater seepage from the steep-sided adjacent slope. There is no diversity in vegetation; dominant vegetation is spotted touch-me-not (<i>Impatiens capensis</i>) and melic mannagrass (<i>Glyceria melicaria</i>).
W9	PEM	Floodplain wetland to Pine Hill Lake.	Floodplain wetland to Pine Hill Lake; provides wildlife habitat as well as aesthetic and recreational functions. Drainage from the wetland flows into Pine Hill Lake. The dominant vegetation is fox sedge (<i>Carex vulpinoidea</i>), bottlebrush sedge (<i>Carex hystericina</i>), purple loosestrife (<i>Lythrum salicaria</i>), flat-top goldenrod (<i>Euthamia graminifolia</i>), sensitive fern (<i>Onoclea sensibilis</i>), soft rush (<i>Juncus effusus</i>), spotted joe-pye-weed (<i>Eupatorium maculatum</i>), common cinquefoil (<i>Potentilla simplex</i>), and purpleleaf willowherb (<i>Epilobium coloratum</i>).
W10	PFO1	Riparian wetland abutting Crystal Spring Brook (S7).	Riparian wetland with overland sheet flow from the adjacent steep-sided slopes and groundwater seepage. The area was historically used for grazing and farming. Dominated by purpleleaf willowherb (<i>Epilobium coloratum</i>), spotted touch-me-not (<i>Impatiens capensis</i>), melic mannagrass (<i>Glyceria melicaria</i>), yellow birch (<i>Betula alleghaniensis</i>), green ash (<i>Fraxinus pennsylvanica</i>), and red maple (<i>Acer rubrum</i>).

Table 5-3 Wetland Summary, Belleayre Mountain Ski Center

Wetland ID	Wetland Community Type (Cowardin et al. 1972)	Hydrologic Connection	Additional Comments
W12	PFO1	Possible hydrologic connection to Birch Creek.	Wetland found in a depression below Route 28 to the north and an unpaved road to the south. The vegetation is moderately diverse with red maple (<i>Acer rubrum</i>) and green ash (<i>Fraxinus pennsylvanica</i>) being the dominant species. Primary functions are wildlife habitat and a significant amount of floodwater retention/detention.
W13	PFO1	Hydrologic connection to Crystal Spring Brook.	Wetland found in a depression below the existing lower parking lot, west of the proposed pond. The vegetation is diverse with sensitive fern (<i>Onoclea sensibilis</i>), red ash (<i>Fraxinus pennsylvanica</i>), yellow birch (<i>Betula alleghaniensis</i>), Canada goldenrod (<i>Solidago canadensis</i>), spotted touch-me-not (<i>Impatiens capensis</i>), red maple (<i>Acer rubrum</i>), purple-stemmed aster (<i>Aster puniceus</i>), and arrow-leaved tearthumb (<i>Polygonum sagittatum</i>).
12	PEM	Hydrologic connection to Unnamed Tributary to Emory Creek	Wetland found in drainage along the edge of one of the ski slopes of the Highmount Ski Resort Area. The vegetation is diverse with sensitive fern (<i>Onoclea sensibilis</i>), wild chervil (<i>Anthriscus sylvestris</i>), fringed sedge (<i>Carex crinita</i>), giant goldenrod (<i>Solidago gigantea</i>), interrupted fern (<i>Osmunda claytoniana</i>), and lady fern (<i>Athyrium thelypteroides</i>). Also some red raspberry (<i>Rubus idaeus</i>) and black elderberry (<i>Sambucus canadensis</i>) was observed in the wetland.
13	PEM	Hydrologic connection to Unnamed Tributary to Emory Creek	Wetland is part of drainage path along edge of Highmount Ski Area slopes near the base of the existing chair lift. Includes a portion of a seepy hillside that was cut to create the proper grade for the lift and consists of fringed sedge (<i>Carex crinita</i>), soft rush (<i>Juncus effusus</i>), jointed rush (<i>Juncus acuminatus</i>) and flat-top fragrant goldenrod (<i>Euthamia graminifolia</i>), as well as young shrubs of pussy willow (<i>Salix discolor</i>) and white spiraea.

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Table 5-3 Wetland Summary, Belleayre Mountain Ski Center

Wetland ID	Wetland Community Type (Cowardin et al. 1972)	Hydrologic Connection	Additional Comments
14	PEM	Hydrologic connection to Unnamed Tributary to Emory Creek	Wetland is located within a drainage channel identified along the edge of ski slopes within the Highmount Ski Area. Vegetation is largely confined to the drainage channel and is dominated by sedges (<i>Carex</i> spp.), flat-top fragrant goldenrod (<i>Euthamia graminifolia</i>), giant goldenrod (<i>Solidago gigantea</i>), <i>Agrostis alba</i> , purple-leaf willow-herb (<i>Epilobium coloratum</i>) and wild chervil (<i>Anthriscus sylvestris</i>).
15	PEM	Hydrologic connection to Unnamed Tributary to Emory Creek	Wetland was located along ski slopes of Highmount Ski Area. Detailed descriptions of vegetation types are not available.

5.3.1.1 Non-Jurisdictional Wetlands**Wetland W7**

W7 is a small forested wetland on an undisturbed mountain slope. It is formed by groundwater discharge that flows to the east-northeast (downslope) throughout the growing season. The wetland does not have a lot of soil except in small pools of water that are surrounded by moss and filled with up to 3 inches of organic matter. The wetland provides excellent ambystomid habitat, groundwater discharge, and recharge. The vegetation is dominated by spotted touch-me-not (*Impatiens capensis*), spinulose woodfern (*Dryopteris carthusiana*), and white snakeroot (*Ageratina altissima*).

5.3.1.2 Jurisdictional Wetlands**Wetland W1**

W1 is a small emergent wetland located at the top of the Area 51 slope, just above the proposed trail expansion. The wetland flows into a small drainage swale that flows downslope to the southwest. Many tadpoles were observed in the ponded portion of the wetland. The dominant vegetation is rough-stemmed goldenrod (*Solidago rugosa*), flat-top goldenrod (*Euthamia graminifolia*), fringed sedge (*Carex crinita*), fringed willowherb (*Epilobium glandulosum*), melic mannagrass (*Glyceria melicaria*), and fowl mannagrass (*Glyceria striata*).

Wetland W2

W2 is an emergent wetland located at the base of two ski trails (Esopus and Peekamoose) with both a groundwater and surface water influence on its hydrology. The surface water from the wetland flows into a catch basin at its northern end. This wetland provides little wildlife habitat (as a function of its size). Because of its steep slope, W2 does not provide groundwater recharge or floodwater detention/retention; however, it does provide groundwater discharge. The dominant vegetation is green bulrush (*Scirpus atrovirens*), fringed sedge (*Carex crinita*), bottlebrush sedge (*Carex hystericina*), and common selfheal (*Prunella vulgaris*).

Wetland W3

W3, located at the base of the Esopus ski slope, is a small emergent wetland abutting S3. The soils are saturated at the surface. The dominant vegetation is fringed sedge (*Carex crinita*), arrowleaf tearthumb (*Polygonum sagittatum*), glossy-leaved aster (*Aster puniceus*), Canada goldenrod (*Solidago canadensis*), reed canary grass (*Phalaris arundinacea*), purple loosestrife (*Lythrum salicaria*), sensitive fern (*Onoclea sensibilis*), and spotted touch-me-not (*Impatiens capensis*).

Wetland W4

W4 is a seepage emergent wetland located at the bottom of two intersecting ski slopes, Tongora and Belleayre Run. Portions of W4 have been significantly

5. Onsite Conditions & Wetland Characteristics

disturbed by recreational use and grounds maintenance. The dominant vegetation is green bulrush (*Scirpus atrovirens*), soft rush (*Juncus effusus*), glossy-leaved aster (*Aster puniceus*), fringed sedge (*Carex crinita*), reed canary grass (*Phalaris arundinacea*), and red maple (*Acer rubrum*).

Wetland W6

W6 is a forested wetland with a few small upland inclusions (only the largest inclusion was delineated). W6 is fed by a spring seep and two outlet pipes. The origin of the outlet pipes is unknown. W6 drains into S6, which runs to the northeast under the Overlook Ski Lodge access road and parking lot. W6 provides groundwater discharge and a small amount of wildlife habitat. The wetland is isolated by maintenance roads, ski slopes, and a parking lot. As a result of its small size and isolated nature, it does not provide a significant amount of water treatment, floodwater detention/retention, or recreational opportunity. The dominant vegetation is fringed sedge (*Carex crinita*), hairy sedge (*Carex lacustris*), spotted touch-me-not (*Impatiens capensis*), melic mannagrass (*Glyceria melicaria*), and yellow birch (*Betula alleghaniensis*).

Wetland W8

W8 is a small emergent wetland fed by surface water runoff and groundwater seepage from the steep-sided adjacent slope. The wetland is located along the railroad tracks that lead to Pine Hill Lake. Wetland drainage patterns are present. Saturated soils and a pooled area (up to 6 inches deep) may provide amphibian breeding habitat. The dominant vegetation is spotted touch-me-not (*Impatiens capensis*) and melic mannagrass (*Glyceria melicaria*).

Wetland W9

W9 is composed of an emergent wetland fringe and an aquatic vegetation bed abutting Pine Hill Lake to the southwest with both surface water and groundwater hydrology. It provides wildlife habitat as well as aesthetic and recreational functions. Drainage from the wetland flows into Pine Hill Lake. The dominant vegetation is fox sedge (*Carex vulpinoidea*), bottlebrush sedge (*Carex hystericina*), purple loosestrife (*Lythrum salicaria*), flat-top goldenrod (*Euthamia graminifolia*), sensitive fern (*Onoclea sensibilis*), soft rush (*Juncus effusus*), spotted joe-pye-weed (*Eupatorium maculatum*), common cinquefoil (*Potentilla simplex*), and purpleleaf willowherb (*Epilobium coloratum*).

Wetland W10

W10 is a forested wetland located in the floodplain of S7 and contains a few small successional forest islands that were too small to flag. Overland sheet flow from the adjacent steep-sided slopes and groundwater seepage make up the wetland hydrology. Groundwater discharge and recharge is present due to a number of small depressions and pools filled with organic soils. The presence of several intersecting stone walls indicates that this area was historically used for grazing and farming. W10 provides amphibian breeding habitat. The dominant vegetation is purpleleaf willowherb (*Epilobium coloratum*), spotted touch-me-not

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(*Impatiens capensis*), melic mannagrass (*Glyceria melicaria*), panicled aster (*Aster simplex*), yellow birch (*Betula alleghaniensis*), green ash (*Fraxinus pennsylvanica*), red maple (*Acer rubrum*), sugar maple (*Acer saccharum*), and yellow birch (*Betula alleghaniensis*).

Wetland W12

W12 is a forested wetland bounded by Route 28 to the north and a small unpaved road to the south. W12 is characterized by deep organic soils (histosol) and drains to the southeast. This wetland provides a significant amount of floodwater retention/detention. The dominant vegetation is sensitive fern (*Onoclea sensibilis*), cinnamon fern (*Osmunda cinnamomea*), glossy-leaved aster (*Aster puniceus*), giant goldenrod (*Solidago gigantea*), flat-top goldenrod (*Euthamia graminifolia*), common winterberry (*Ilex verticillata*), red maple (*Acer rubrum*), and green ash (*Fraxinus pennsylvanica*).

Wetland W13

W13 is a forested wetland located in a depressional area, bounded by a parking lot to the south, just north of Discovery Lodge, and by the proposed parking lot to the north. W13 drains to the north east. This wetland provides flood water detention/retention. The dominant vegetation is sensitive fern (*Onoclea sensibilis*) and spotted touch-me-not (*Impatiens capensis*).

The following wetlands were delineated as part of the Modified Crossroads Resort at Catskill Park in the Highmount Area. Note the similarity in numbering: Wetlands W12 and W13 are distinct from Wetland 12 and Wetland 13,

Wetland 12

Wetland 12 was delineated by the LA Group during a September 1999 survey. This wetland is located along the edge of an existing ski slope at the Highmount Ski Area, which has not been in operation for several years. At its most upgradient end there is a spring house from which a small stream flows eastward and enters a culvert under the ski trail. The wetland is dominated by herbs, including sensitive fern (*Onoclea sensibilis*), wild chervil (*Anthriscus sylvestris*), fringed sedge (*Carex crinita*), giant goldenrod (*Solidago gigantea*), interrupted fern (*Osmunda claytoniana*), and lady fern (*Athyrium thelypteroides*). Also some red raspberry (*Rubus idaeus*) and black elderberry (*Sambucus canadensis*) were observed within the wetland. Upland vegetation of the adjacent ski slope is also dominated by herbs, mainly strawberry (*Fragaria virginiana*), Canada bluegrass (*Poa compressa*), dotted St. John's-wort (*Hypericum punctatum*), crooked-stem aster (*Aster prenanthoides*), white goldenrod (*Solidago bicolor*), black-eyed Susan (*Rudbeckia* sp.), and old-field cinquefoil (*Potentilla simplex*).

Wetland 13

Wetland 13 was delineated by the LA Group during September 1999 survey. This wetland lies along a drainage that is located near the base of the existing chair lift and is just downgradient of wetland 12. It includes a portion of seepy hillside that

5. Onsite Conditions & Wetland Characteristics

was cut to create the proper grade for the lift. The area is covered by plants such as fringed sedge (*Carex crinita*), soft rush (*Juncus effusus*), jointed rush (*Juncus acuminatus*) and flat-top fragrant goldenrod (*Euthamia graminifolia*), as well as young shrubs of pussy willow (*Salix discolor*) and white spiraea..

Wetland 14

Wetland 14 was also delineated by the LA Group during a September 1999 survey. It is associated with a drainage channel that runs perpendicular to the ski slope along the northwestern corner of the Highmount Ski Area which drainages to the east. The wetland vegetation is largely confined to the drainage channel and is composed mainly of sedges (*Carex* spp.), flat-top fragrant goldenrod (*Euthamia graminifolia*), giant goldenrod (*Solidago gigantea*), *Agrostis alba*, purple-leaf willow-herb (*Epilobium coloratum*) and wild chervil (*Anthriscus sylvestris*).

Wetland 15

Wetland 15 was delineated by the LA Group during a September 1999 survey; however no additional information about the hydrology or vegetation types were provided for summary.

6

Waterbodies

Waterbodies (e.g., streams, lakes, and ponds) were also mapped and described during the field investigations. Eleven streams were found within the survey corridor of the Belleayre Mountain Ski Center. The majority of these streams are high-gradient, perennial, or intermittent tributaries within the headwaters of Birch Creek. Most have gravel and cobble substrates and are within or connected to wetlands. Many of the streams are tributaries that join two larger streams, S6 and S7 (Crystal Spring Brook). Only those streams of ecological significance are discussed below (S3, S5, S6, S7, and S8). A summary of the physical characteristics of each individual stream is provided in Table 6-1.

Desktop review of potential streams within the natural resources study area as depicted on NYSDEC stream classification maps (Figure 4-2) indicated the presence of five streams in the natural resources study area. One Class B stream, located in the western portion of the natural resources study area formerly known as the Highmount ski area was not found in the field. Of the eleven streams delineated in the field, only one contained habitat suitable of sustaining a cold water fishery.

6.1 Field-Delineated Streams

Four named watercourses, Crystal Spring Brook (S7), Cathedral Glen Brook, Woodchuck Hollow Brook, and Birch Creek, as well as several unnamed tributaries are located in the natural resources study area (see Figure 4-3.1). Crystal Spring Brook, a tributary of Birch Creek, is a perennial, relatively permanent water with hydrology generated by surface runoff and a seasonal high water table. The riparian areas for these streams are mature red maple and yellow birch hardwood forests.

Crystal Spring Brook has many unnamed tributaries that flow from the slopes of Belleayre Mountain. Two of the tributaries, Cathedral Glen Brook and Woodchuck Hollow Brook, cross only a small portion of the study area, which is over the railroad tracks that lead to Pine Hill Lake. The other tributaries that flow into Crystal Spring Brook were identified in the field. These tributaries (S9, S10, S11, S12, S13, and S14) are low-gradient, intermittent streams that likely have

flow during rainstorms and during the spring when the snow from the mountain is melting.

Table 6-1 describes all perennial streams with well-defined stream channels that were identified during surveys within the natural resources study area. The locations of these streams are depicted in relation to project facilities (see Figure 4-3.1). There are two stream ID numbers listed in Table 6-1, the Watershed Index Number (WIN) and the project id number. The project id number begins with an S.

Table 6-1 Stream Characteristics, Belleayre Mountain Ski Center

Stream ID (WIN & Project ID#)	Flow	Left Bank Height (Feet)	Right Bank Height	Width to Bank (Feet)	Width of Water (Feet) ¹	Substrate	Classification (NYSDEC)	Connection
H-171-52-4-1 (S3)	Perennial RPW	0-3	0-3	5	3	Gravel/Cobble	Not Classified	Crystal Spring Brook
H-171-52-4-1 (S5)	Perennial RPW	6+	0-3	6	4	Gravel/Cobble	Not Classified	Cathedral Glen Brook
H-171-52-4-1 (S6)	Perennial RPW	0-3	3-6	4	2	Gravel/Cobble/Silt/Clay	Not Classified	Crystal Spring Brook
H-171-52-3 (S7)	Perennial RPW	6+	6+	15	12	Gravel/Cobble	B(T)	Crystal Spring Brook

¹ This is an estimate of the width of the water during a 25-year storm event based on indicators in the field.

Key:

RPW = Relatively permanent waters.

6.2 Protected Streams

NYSDEC stream classification data were reviewed to determine whether streams in the natural resources study area are protected by New York State under Article 15 of the Environmental Conservation Law. NYSDEC uses a stream classification system to identify the value and uses of watercourses in the state. A protected stream is any stream or particular portion of a stream for which any of the following classifications or standards have been adopted by the department or any of its predecessors: AA, AA(T), A, A(T), B, B(T), or C(T). Streams designated (T)—trout—also include those more specifically designated as (TS)—trout spawning. Disturbance of the bed or banks of protected streams requires a permit under Article 15 of the New York ECL (see Section 2).

The majority of the watercourses within the natural resources study area are identified as Class C, B(T), and B(TS), while others have no classification. Birch

Creek is designated a class B(TS) stream. Birch Creek is a locally important recreational trout fishery. Crystal Spring Brook (S7) is classified as a B(T) stream delineated within the Belleayre Mountain Ski Center natural resources study area. Although Crystal Spring Brook is classified as supporting trout populations, the current conditions are mostly unsuitable for fish species. However, amphibians and macro-invertebrates are likely to inhabit these streams during appropriate times of the year.

None of the unnamed tributaries to Crystal Spring Brook contain trout habitat because most are intermittent. Although these streams are intermittent during periods of the year, fish may spawn in the spring or fall when water is flowing. Therefore, intermittent streams within the natural resources study area may potentially provide fish habitat and are protected as (TS) streams. Construction would be scheduled during times when trout or trout eggs are not present. These streams are considered unclassified and therefore are not subject to the Article 15 Permit. Regulation of these streams would be through conditions on a Temporary Revocable Permit (TRP) or in the form of intra-agency memos.

Two of the tributaries, Cathedral Glen Brook and Woodchuck Hollow Brook, which flow into Crystal Spring Brook, have been given a Class C status. These two streams contain trout species; however, they have not been classified as (T) or (TS).

Another unnamed tributary of Emory Brook is mapped as a Class B stream, (See Figure 4.3-1). This unnamed stream is listed as Item 765 and given Waters Index Numbers D-70-80-12-2, 3, 4, including P 368f, P 368g, 5 for all its tributaries and associated waters in §815.6 Table I of the Environmental Conservation Law.

This mapped stream will be crossed by a ski trail and utility lines (see Figure 4,3-3). During the wetland delineation conducted in 2008, this stream channel was not observed. Subsequent review of the stream mapping, which is based on topographic surveys on a large scale, depicted the headwaters of this stream extending up to the proposed utility line. Prior to any construction, the Department will conduct another wetland survey during the growing season to confirm the boundary of the headwaters. Stream crossings by utility lines will be either overhead or underground and will not impact wetlands.



7

Functional Assessment

The information below is a generalized description of the functions and values of the wetlands found in the Belleayre Mountain Ski Center natural resources study area. All wetland habitats within the study area were evaluated using the standard USACE *Highway Methodology Workbook for Wetland Functions and Values: A Descriptive Approach*. The “descriptive approach” to wetland functions and values is twofold and incorporates both wetland science and professional judgment. Functions are important physical components of a wetland ecosystem; values pertain to the significance of the wetland from a local, regional, and/or national perspective. The area’s pre-alteration functioning would serve as a guide for the purposes of wetland compensation work. The functions and values that were considered in evaluating the wetlands in the natural resources study area are described below.

7.1 Evaluation of Wetland Functions and Values

Groundwater Recharge/Discharge

This function considers the potential for a wetland to serve as a groundwater recharge/discharge area. A majority of the wetlands that function in this manner that were found in the natural resources study area are either seep wetlands, depressional areas, linear forested wetlands, or simply riparian. The depressional wetlands were located primarily in forested areas or at the base of ski slopes that have altered the interaction with the groundwater. Many are also the result of a seasonal high water table. The depressional characteristics of these wetlands allow runoff waters to be collected and retained and subsequent percolation into the aquifer below. Some of the wetlands at the base of the ski slopes are a result of snowmelt from higher elevations. The linear forested wetlands were found in undisturbed and disturbed areas, some located on mountain slopes and some located at the base of the mountain around the cross-country ski trails and proposed trails. These wetlands collect runoff and allow direct recharge of groundwater. Riparian wetlands interact directly with discharging groundwater in a perennial stream. All of the wetlands identified in the natural resources study area provide this function to some degree.

Flood-flow Alteration

This function considers the effectiveness of a wetland in reducing flood damage by retaining water for prolonged periods following precipitation. Flood-flow alteration is a primary function of those wetlands associated with watercourses. Smaller wetlands higher in the watershed also have some ability to alter flood-flow by attenuating runoff; however, this is a secondary function of these wetlands. Wetlands of various types exhibiting this function are scattered throughout the natural resources study area. There are many examples of depressional, isolated wetlands simply holding runoff and precipitation. There are riparian wetlands such as W6 (associated with S6), W9 (associated with Pine Hill Lake), and W10 (associated with Crystal Spring Brook). They provide a floodplain for the channel during high flows, and the vegetation slows down water velocity, preventing flash-flooding downstream. Flood-flow alteration is a primary function of W12.

Fish and Shellfish Habitat

This function considers the effectiveness of seasonal watercourses or permanent waterbodies associated with wetlands for fish habitat. One wetland, W9, in the natural resources study area is an important fish habitat. W9 is located next to Pine Hill Lake.

Sediment/Toxicant/Pathogen Retention

This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediment, toxicants, or pathogens in runoff from surrounding uplands or from upstream eroding wetland areas. A large portion of the natural resources study area is recreational land that may contain sources of sediments, toxicants, and pathogens that originate from construction and maintenance of the natural resources study area. Field investigations saw no evidence of drains carrying runoff from construction and maintenance directly into wetlands; however, there is a potential for this to occur. There are a number of depressional wetlands at the base of the ski slopes and nearby that serve as a trap for pollutants. Riparian wetlands are functioning primarily as sediment, toxicant, and pathogen retention areas, particularly W6, W9, and W12. These wetlands receive floodwater that may contain sediments, toxicants, and pathogens that settle out of suspension and are deposited in the wetlands.

Nutrient Removal/Retention/Transformation

This function considers the effectiveness of wetlands as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. Wetlands with this characteristic are typically scrub-shrub and forested both with productive emergent components. None of the wetlands identified during field investigations provide a significant amount of nutrient cycling.

Production Export

This function evaluates the effectiveness of the wetland to produce food or usable products for man or other living organisms. Availability of food for wildlife within the wetland is a qualifier of this function. Generally the large wetland complexes such as the beaver lodge found in W9 and wetland W10 contain vegetation that is a large source of browse and forage for wildlife.

Sediment/Shoreline Stabilization

This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion. The wetlands associated with watercourses are capable of performing this function. This is evident in W6, a riparian wetland adjacent to S6. The presence of vegetation holds soil in place and slows the velocity of high water, reducing the erosive force. On the other hand, W10 does not effectively stabilize the stream bank of S7 because the stream bank is more than 6 feet high. If a major flood were to occur, then W10 would stabilize the stream bank of S7.

Wildlife Habitat

This function considers the effectiveness of the wetland in providing habitat for various types and populations of animals typically associated with a wetland and/or the wetland edge. These wetlands are scattered throughout the natural resources study area. All wetlands on the site serve as habitat for amphibians, small mammals such as mice, moles, and voles, deer, and some songbirds. The larger wetland complexes consist of more diverse vegetation and therefore potential wildlife habitat; however, they are fewer in number. Valuable habitat in W9 is a beaver lodge and fish habitat.

Recreation

This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities. Swimming, fishing, and other recreational activities are associated with Pine Hill Lake. W9 enhances the water quality, wildlife habitat and aesthetics of Pine Hill Lake, helping to provide recreational opportunities during the summer months. Other than W9 there are no wetlands within the natural resources study area that have any considerable recreational value.

Educational/Scientific Value

This value considers the suitability of the wetland as a site for an outdoor classroom or as a location for scientific study or research. There are no wetlands adjacent to any facilities that are of any educational value.

Uniqueness/Heritage

This value considers the effectiveness of the wetland or associated waterbodies in providing cultural values. There are no wetlands possessing any cultural value within the natural resources study area.

Visual Quality/Aesthetics

This value considers the visual and aesthetic quality of the wetland. Visual quality associated with the wetlands in the natural resources study area is expected to remain naturally intact.

Endangered Species

This value considers the ability of a wetland or associated waterbody to support threatened and endangered species. All endangered species issues related to this project are addressed in the DEIS. Endangered or threatened plant and wildlife species are not known to occur within the wetlands. The wetlands and uplands in the natural resources study area were dominated by plant communities typical of this region of New York State.

7.2 Conclusion

Wetlands may possess multiple functions and values. It is important to keep in mind the primary characteristics and the possibility they may change because of disturbance or natural progression of time. The predominant functions and values of the wetlands in the Belleayre Mountain Ski Center natural resources study area are groundwater recharge/discharge, flood-flow alteration, sediment/shoreline stabilization, and wildlife habitat. As a result of their relatively small size and location in the landscape, the site's wetlands do not provide many of the functions typically associated with wetlands to a significant degree.

8

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A

Agency Correspondence

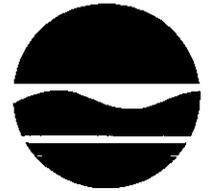
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Fish, Wildlife & Marine Resources

New York Natural Heritage Program

625 Broadway, Albany, New York 12233-4757

Phone: (518) 402-8935 • FAX: (518) 402-8925



Alexander B. Grannis
Commissioner

September 11, 2008

Anne Elizabeth Warlick
Ecology and Environment, Inc
90 Broad Street, Suite 1906
New York, NY 10004

Dear Ms. Warlick:

In response to your recent request, we have reviewed the New York Natural Heritage Program database with respect to an Environmental Assessment for the proposed Expansion Project at the Belleayre Mountain Ski Center, area as indicated on the map you provided, located in the Town of Highmount, Ulster County.

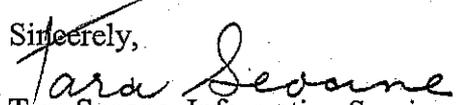
We have no records of known occurrences of rare or state-listed animals or plants, significant natural communities, or other significant habitats, on or in the immediate vicinity of your site.

The absence of data does not necessarily mean that rare or state-listed species, natural communities or other significant habitats do not exist on or adjacent to the proposed site. Rather, our files currently do not contain any information which indicates their presence. For most sites, comprehensive field surveys have not been conducted. For these reasons, we cannot provide a definitive statement on the presence or absence of rare or state-listed species, or of significant natural communities. This information should not be substituted for on-site surveys that may be required for environmental assessment.

Our databases are continually growing as records are added and updated. If this proposed project is still under development one year from now, we recommend that you contact us again so that we may update this response with the most current information.

This response applies only to known occurrences of rare or state-listed animals and plants, significant natural communities and other significant habitats maintained in the Natural Heritage Data bases. Your project may require additional review or permits; for information regarding other permits that may be required under state law for regulated areas or activities (e.g., regulated wetlands), please contact the appropriate NYS DEC Regional Office, Division of Environmental Permits, at the enclosed address.

Sincerely,


Tara Seoane, Information Services
NY Natural Heritage Program

Enc.

cc: Reg. 3, Fisheries Mgr.

DIVISION OF ENVIRONMENTAL PERMITS REGIONAL OFFICES

January 2004

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6 (sub-office)	Herkimer & Oneida	J. Joseph Homburger* NYS-DEC State Office Building 207 Genesee Street Utica, NY 13501-2885 Telephone: (315) 793-2555



Ulster County

Federally Listed Endangered and Threatened Species and Candidate Species

This list represents the best available information regarding known or likely County occurrences of Federally-listed and candidate species and is subject to change as new information becomes available.

<u>Common Name</u>	<u>Scientific Name</u>	<u>Status</u>
Bald eagle ¹	<i>Haliaeetus leucocephalus</i>	D
Bog turtle	<i>Clemmys [=Glyptemys] mühlenbergii</i>	T
Indiana bat (W/S)	<i>Myotis sodalis</i>	E
Northern wild monkshood	<i>Aconitum noveboracense</i>	T
Shortnose sturgeon ²	<i>Acipenser brevirostrum</i>	E
Small whorled pogonia (<i>Historic</i>)	<i>Isotria medeoloides</i>	T

Status Codes: E=Endangered T=Threatened P=Proposed C=Candidate D=Delisted

W=Winter S=Summer

¹The bald eagle was delisted on August 8, 2007. While there are no ESA requirements for bald eagles after this date, the eagles continue to receive protection under the Bald and Golden Eagle Protection Act (BGEPA). Please follow the Service's May 2007 Bald Eagle Management Guidelines to determine whether you can avoid impacts under the BGEPA for your projects. If you have any questions, please contact the endangered species branch in our office.

²Primarily occurs in Hudson River. Principal responsibility for this species is vested with the National Oceanic and Atmospheric Administration/Fisheries.

Information current as of: 7/9/108



United States Department of the Interior

FISH AND WILDLIFE SERVICE

3817 Luker Road
Cortland, NY 13045



October 6, 2008

Ms. Anne-Elizabeth Warlick
Biologist
Ecology and Environment, Inc.
90 Broad Street, Suite 1906
New York, NY 10004

Dear Ms. Warlick:

This responds to your August 18, 2008, letter regarding the New York State Department of Environmental Conservation's (NYSDEC) proposed expansion of the Belleayre Mountain Ski Center in the Town of Highmount, Ulster, County, New York.

The following comments are provided by the U.S. Fish and Wildlife Service (Service) pursuant to the Endangered Species Act of 1973 (ESA) (87 Stat. 884, as amended; 16 U.S.C. 661 *et seq.*)

Your letter addressed the potential for Federally-listed species to occur in the project area. We agree with your conclusion that it is unlikely that the Indiana bat (*Myotis sodalis*) or bog turtle (*Clemmys [=Glyptemys] muhlenbergii*) occur in the project area and no further coordination for those species is necessary. Additional information is necessary to determine whether the northern wild monkshood (*Aconitum noveboracense*) or small whorled pogonia (*Isotria medeoloides*) may occur in the area. Surveys by a qualified botanist during the appropriate season should be conducted for these species.

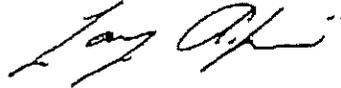
As you are aware, the most recent compilation of Federally-listed and proposed endangered and threatened species in New York is available for you information.* Until the proposed project is complete, we recommend that you check our website every 90 days from the date of this letter to ensure that listed species presence/absence information for the proposed project is current.*

The above comments pertaining to endangered species under our jurisdiction are provided as technical assistance pursuant to the ESA. This response does not preclude additional Service comments under other legislation.

The above listed species are also listed by the State of New York. Any changes in project plans or new information regarding the potential for impacts to either species should be coordinated with both this office and with the NYSDEC Endangered Species Program Unit Leader, Mr. Peter Nye, Endangered Species Unit, NYSDEC, 625 Broadway, Albany, NY 12233 (telephone: [518] 402-8859).

Thank you for you time. If you require additional information, please contact Robyn Niver at 607-753-9334. Future correspondence with us on this project should reference project file 70707.

Sincerely,



ds David A. Stilwell
Field Supervisor

*Additional information referred to above may be found on our website at:
<http://www.fws.gov/northeast/nyfo/es/section7.htm>

cc: NYSDEC, New Paltz, NY (A. Ciesluk/S. Joule)
NYSDEC, Albany, NY (Endangered Species Unit; Attn: P. Nye)
NYSDEC, Albany, NY (Natural Heritage Program; Attn: S. Young)

B

Wetland Datasheets

Routine Wetland Determination

DATA FORM

1987 Corps Wetland Delineation Manual

Project/Site: Belleayre Mt. Ski Resort Applicant/owner: NYS Department of Conservation Investigator(s): Anne-Elizabeth Warlick and Peter Feinberg	Date: 8/4/08 County: Ulster State: NY
Do normal circumstances exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Is the site significantly disturbed (atypical situation)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is the area a potential problem area? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Explanation of atypical or problem area:	Community ID: PEM Transect ID: WS _____ -W <u> 1 </u> Status: Jurisdictional

VEGETATION (For *strata, indicate T = tree; S = shrub; H = herb; V = vine)

Dominant Plant Species	*Stratum	Indicator	% Cover	Dominant Plant Species	*Stratum	Indicator	% Cover
<i>Solidago rugosa</i>	H	OBL	10%				
<i>Euthamia graminifolia</i>	H	FAC	10%				
<i>Carex Crinita</i>	H	OBL	< 10%				
<i>Epilobium glandulosum</i>	H	FAC-	< 10%				
<i>Glyceria melicaria</i>	H	OBL	40%				
<i>Glyceria striata</i>	H	OBL	40%				

HYDROPHYTIC VEGETATION INDICATORS:
 % of dominants OBL, FACW, & FAC: 83
 Remarks:

Hydrophytic vegetation present? Yes No
 Rationale for decision/Remarks:
 Greater than 50% of the dominant vegetation is FAC, FACW, or OBL

HYDROLOGY

Inundated: <input checked="" type="checkbox"/>	Water Marks: <input type="checkbox"/> on	Sediment Deposits: <input type="checkbox"/>
Saturated in upper 12 in: <input checked="" type="checkbox"/> WQ if sat/inundated: <input type="checkbox"/> Water is clear <input type="checkbox"/> Presence of litter <input checked="" type="checkbox"/> Water is turbid <input type="checkbox"/> Other: _____ <input type="checkbox"/> Oil Sheen present _____	Drift Lines: <input type="checkbox"/>	Drainage Patterns: <input checked="" type="checkbox"/>
Depth of inundation: 6 inches	Oxidized Root (live roots) Channels <12in.: <input type="checkbox"/>	Local Soil Survey: <input type="checkbox"/>
Depth to free water in pit: inches	FAC Neutral: <input type="checkbox"/>	Water-stained Leaves: <input type="checkbox"/>
Depth to saturated soil: 0 inches		

Check all that apply & explain below: <input type="checkbox"/> Stream, lake or gage data <input type="checkbox"/> Aerial photographs <input type="checkbox"/> Other	Other (explain):
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Wetland hydrology present? Yes No

Rationale for decision/remarks:

SOILS

Map Unit Name (Series and Phase) :

Drainage Class

Field observations confirm mapped type? Yes No

Taxonomy (subgroup)

Profile Description

Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size and contrast	Texture, concretions, structure, etc.
0-9	A	10YR3 3/2			Sandy Clay Loam

Hydric Soil Indicators: (check all that apply)

- Histosol
- Histic Epipedon
- Sulfidic Odor
- Aquic Moisture Regime
- Reducing Conditions
- Gleyed or Low-Chroma
- Matrix chroma ≤ 2 with mottles
- Mg or Fe Concretions
- High Organic Content in Surface Layer of Sandy Soils
- Organic Streaking in Sandy Soils
- Listed on National/Local Hydric Soils List
- Other (explain in remarks)

Hydric soils present? Yes No

Rationale for decision/Remarks:

Wetland Determination

- Hydrophytic vegetation present? Yes No
- Hydric soils present? Yes No
- Wetland hydrology present? Yes No
- Is the sampling point within a wetland? Yes No

What is this based on?

Stream name (if known):

TBD

Approximate distance to stream:

TBD

Watershed Relationship

What watershed is the delineated wetland within?

- Wetland is Abutting
- Adjacent with surface connection
- Adjacent without surface connection

Comments:

Is the associated stream reach delineated? Yes No

Flow relationship to associated stream:

- intermittent surface ephemeral surface
- perennial surface no surface flow

Is the associated stream reach: TNW P-RPW
TBD S-RPW Non-RPW

Flow is:

- discrete discrete and confined
- confined overland sheet flow
- other

Explain:

Rationale/Remarks: Wetland is a small emergent wetland in a successional forest at the top of the ski mountain. Surface water from the wetland flows to the SW into a small drainage swale. Many tadpoles were observed in the ponded portion of the wetland.

Routine Wetland Determination

DATA FORM

1987 Corps Wetland Delineation Manual

Project/Site: Belleayre Mt. Ski Resort Applicant/owner: NYS Department of Conservation Investigator(s): Anne-Elizabeth Warlick and Peter Feinberg	Date: 8/5/08 County: Ulster State: NY
Do normal circumstances exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Is the site significantly disturbed (atypical situation)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Is the area a potential problem area? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Explanation of atypical or problem area:	Community ID: PEM Transect ID: WS <u>148</u> -W <u>2</u> Status: Jurisdictional

VEGETATION (For *strata, indicate T = tree; S = shrub; H = herb; V = vine)

Dominant Plant Species	*Stratum	Indicator	% Cover	Dominant Plant Species	*Stratum	Indicator	% Cover
<i>Scirpus atrovirens</i>	H	OBL	70%				
<i>Carex crinita</i>	H	OBL	10%				
<i>Carex hystericina</i>	H	OBL	10%				
<i>Carex ovalis gp.</i>	H	NI	<10%				
<i>Prunella vulgaris</i>	H	FACU+	<10%				

HYDROPHYTIC VEGETATION INDICATORS:
 % of dominants OBL, FACW, & FAC: **75**
 Remarks:

Hydrophytic vegetation present? Yes No
 Rationale for decision/Remarks:
 Greater than 50% of the dominant vegetation is FAC, FACW, or OBL

HYDROLOGY

Inundated: <input type="checkbox"/> Saturated in upper 12 in: <input checked="" type="checkbox"/> WQ if sat/inundated: <input type="checkbox"/> Water is clear <input type="checkbox"/> Presence of litter <input type="checkbox"/> Water is turbid <input type="checkbox"/> Other: _____ <input type="checkbox"/> Oil Sheen present _____	Water Marks: <input type="checkbox"/> on Drift Lines: <input type="checkbox"/>	Sediment Deposits: <input type="checkbox"/> Drainage Patterns: <input checked="" type="checkbox"/>
Depth of inundation: inches Depth to free water in pit: inches Depth to saturated soil: 0 inches	Oxidized Root (live roots) Channels <12in.: <input type="checkbox"/> FAC Neutral: <input type="checkbox"/>	Local Soil Survey: <input type="checkbox"/> Water-stained Leaves: <input type="checkbox"/>

Check all that apply & explain below: <input type="checkbox"/> Stream, lake or gage data <input type="checkbox"/> Aerial photographs <input type="checkbox"/> Other	Other (explain):
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Wetland hydrology present? Yes No

Rationale for decision/remarks:

SOILS

Map Unit Name (Series and Phase) :

Drainage Class

Field observations confirm mapped type? Yes No

Taxonomy (subgroup)

Profile Description

Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size and contrast	Texture, concretions, structure, etc.
0-8	A	10YR 3/2	7.5 YR 4/6	Few, large	Organic Loam
8+					Gravelly Loam

Hydric Soil Indicators: (check all that apply)

- Histosol
- Histic Epipedon
- Sulfidic Odor
- Aquic Moisture Regime
- Reducing Conditions
- Gleyed or Low-Chroma
- Matrix chroma ≤ 2 with mottles
- Mg or Fe Concretions
- High Organic Content in Surface Layer of Sandy Soils
- Organic Streaking in Sandy Soils
- Listed on National/Local Hydric Soils List
- Other (explain in remarks)

Hydric soils present? Yes No

Rationale for decision/Remarks: Soils are low chroma w/ mottles and a significant amount of organic matter

Wetland Determination

- Hydrophytic vegetation present? Yes No
- Hydric soils present? Yes No
- Wetland hydrology present? Yes No
- Is the sampling point within a wetland? Yes No

What is this based on?

Stream name (if known):

TBD

Approximate distance to stream:

TBD

Watershed Relationship

What watershed is the delineated wetland within?

WS 148

Comments:

- Wetland is Abutting
- Adjacent with surface connection
- Adjacent without surface connection

Is the associated stream reach delineated? Yes No

Flow relationship to associated stream:

- intermittent surface ephemeral surface
- perennial surface no surface flow

Is the associated stream reach: TNW P-RPW
TBD S-RPW Non-RPW

Flow is:

- discrete discrete and confined
- confined overland sheet flow
- other

Explain: Visual observation

Rationale/Remarks: Wetland 2 is an emergent wetland dominated by *Carex* sedges and *Scirpus atrovirens*. It is on and at the toe of 2 intersecting ski trails. Hydrology is apparently from spring melt and groundwater discharge. It is on a slope and does not provide any groundwater recharge or floodwater detention or retention. Wetland drains into catch basin.

Routine Wetland Determination

DATA FORM

1987 Corps Wetland Delineation Manual

Project/Site: Belleayre Mt. Ski Resort	Date: 8/5/08
Applicant/owner: NYS Department of Conservation	County: Ulster
Investigator(s): Anne-Elizabeth Warlick and Peter Feinberg	State: NY
Do normal circumstances exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Community ID: PEM Transect ID: WS _____ -W <u>3</u> Status: Jurisdictional
Is the site significantly disturbed (atypical situation)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Is the area a potential problem area? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Explanation of atypical or problem area:	

VEGETATION (For *strata, indicate T = tree; S = shrub; H = herb; V = vine)

Dominant Plant Species	*Stratum	Indicator	% Cover	Dominant Plant Species	*Stratum	Indicator	% Cover
<i>Carex crinita</i>	H	OBL	20	<i>Onoclea sensibilis</i>	H	FACW	10
<i>Polygonum sagittatum</i>	H	OBL	< 10	<i>Impatiens capensis</i>	H	FACW	<10
<i>Aster puniceus</i>	H	OBL	< 10				
<i>Solidago canadensis</i>	H	FACU	20				
<i>Phalaris arundinacea</i>	H	FACW+	20				
<i>Lythrum salicaria</i>	H	FACW+	< 10				

HYDROPHYTIC VEGETATION INDICATORS:
 % of dominants OBL, FACW, & FAC: 88
 Remarks:

Hydrophytic vegetation present? Yes No
 Rationale for decision/Remarks:
 Greater than 50% of the dominant species are FAC, FACW, or OBL

HYDROLOGY

Inundated: <input type="checkbox"/>	Water Marks: <input type="checkbox"/>	Sediment Deposits: <input type="checkbox"/>
Saturated in upper 12 in: <input checked="" type="checkbox"/>	Drift Lines: <input type="checkbox"/>	Drainage Patterns: <input checked="" type="checkbox"/>
WQ if sat/inundated: <input type="checkbox"/> Water is clear <input type="checkbox"/> Presence of litter <input type="checkbox"/> Water is turbid <input type="checkbox"/> Other: _____ <input type="checkbox"/> Oil Sheen present _____		
Depth of inundation: _____ inches	Oxidized Root (live roots) Channels <12in.: <input type="checkbox"/>	Local Soil Survey: <input type="checkbox"/>
Depth to free water in pit: _____ inches	FAC Neutral: <input type="checkbox"/>	Water-stained Leaves: <input type="checkbox"/>
Depth to saturated soil: 0 inches	Other (explain):	
Check all that apply & explain below: <input type="checkbox"/> Stream, lake or gage data <input type="checkbox"/> Aerial photographs <input type="checkbox"/> Other		

Wetland hydrology present? Yes No
 Rationale for decision/remarks: Soils saturated to surface, abutting surface drainage.

Soils saturated to surface, abutting surface damager

SOILS

Map Unit Name (Series and Phase) :

Drainage Class

Field observations confirm mapped type? Yes No

Taxonomy (subgroup)

Profile Description

Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size and contrast	Texture, concretions, structure, etc.
0-2	A	10YR 3/2			Clay Loam
2+					Gravelly Loam

Hydric Soil Indicators: (check all that apply)

- Histosol
- Histic Epipedon
- Sulfidic Odor
- Aquic Moisture Regime
- Reducing Conditions
- Gleyed or Low-Chroma
- Matrix chroma ≤ 2 with mottles
- Mg or Fe Concretions
- High Organic Content in Surface Layer of Sandy Soils
- Organic Streaking in Sandy Soils
- Listed on National/Local Hydric Soils List
- Other (explain in remarks)

Hydric soils present? Yes No

Rationale for decision/Remarks: Soils below 2" impenetrable, low chroma, saturated to surface with a high percentage of organic matter.

Wetland Determination

- Hydrophytic vegetation present? Yes No
- Hydric soils present? Yes No
- Wetland hydrology present? Yes No
- Is the sampling point within a wetland? Yes No

What is this based on?

Visual Assessment

Stream name (if known):

51

Approximate distance to stream:

0

What watershed is the delineated wetland within?

Watershed Relationship

- Wetland is **Abutting**
- Adjacent with surface connection**
 - Adjacent without surface connection**

Comments:

Is the associated stream reach delineated? Yes No

Flow relationship to associated stream:

- intermittent surface** **ephemeral surface**
- perennial surface** **no surface flow**

Is the associated stream reach: **TNW** **P-RPW**
 S-RPW **Non-RPW**

Flow is:

- discrete** **discrete and confined**
- confined** **overland sheet flow**
- other**

Explain: _____

Rationale/Remarks: Wetland 3 is a very small wetland abutting S3. Due to its very small size it does not provide significant functionality as a wetland.

Routine Wetland Determination

DATA FORM

1987 Corps Wetland Delineation Manual

Project/Site: Belleayre Mt. Ski Resort	Date: 8/5/08
Applicant/owner: NYS Department of Conservation	County: Ulster
Investigator(s): Anne-Elizabeth Warlick and Peter Feinberg	State: NY
Do normal circumstances exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Community ID: PEM
Is the site significantly disturbed (atypical situation)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Transect ID: WS <u>167</u> W <u>4</u>
Is the area a potential problem area? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Status: Jurisdictional
Explanation of atypical or problem area:	

VEGETATION (For *strata, indicate T = tree; S = shrub; H = herb; V = vine)

Dominant Plant Species	*Stratum	Indicator	% Cover	Dominant Plant Species	*Stratum	Indicator	% Cover
<i>Scirpus atrovirens</i>	H	OBL	<10%	<i>Fraxinus pennsylvanica</i>	T	FACW	<10%
<i>Juncus effusus</i>	H	FACW+	<10%				
<i>Aster puniceus</i>	H	OBL	20%				
<i>Carex crinita</i>	H	OBL	20%				
<i>Phalaris arundinacea</i>	H	FACW+	<10%				
<i>Acer rubrum</i>	T	FACW+	<10%				

HYDROPHYTIC VEGETATION INDICATORS:

% of dominants OBL, FACW, & FAC: 100

Remarks:

Hydrophytic vegetation present? Yes No

Rationale for decision/Remarks:

Greater than 50% of the dominant vegetation is FAC, FACW, or OBL

HYDROLOGY

Inundated: <input checked="" type="checkbox"/>	Water Marks: <input checked="" type="checkbox"/> on	Sediment Deposits: <input type="checkbox"/>
Saturated in upper 12 in: <input checked="" type="checkbox"/> WQ if sat/inundated: <input type="checkbox"/> Water is clear <input type="checkbox"/> Presence of litter <input type="checkbox"/> Water is turbid <input type="checkbox"/> Other: _____ <input checked="" type="checkbox"/> Oil Sheen present _____	Drift Lines: <input type="checkbox"/>	Drainage Patterns: <input checked="" type="checkbox"/>
Depth of inundation: <1 inches	Oxidized Root (live roots) Channels <12in.: <input type="checkbox"/>	Local Soil Survey: <input type="checkbox"/>
Depth to free water in pit: _____ inches	FAC Neutral: <input type="checkbox"/>	Water-stained Leaves: <input type="checkbox"/>
Depth to saturated soil: 0 inches	Other (explain): Seepage	
Check all that apply & explain below: <input type="checkbox"/> Stream, lake or gage data <input type="checkbox"/> Aerial photographs <input type="checkbox"/> Other		

Wetland hydrology present? Yes No

Rationale for decision/remarks:

SOILS

Map Unit Name (Series and Phase) :

Drainage Class

Field observations confirm mapped type? Yes No

Taxonomy (subgroup)

Profile Description

Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size and contrast	Texture, concretions, structure, etc.
0-1	A	10YR 3/2			Clay Loam
1+					Impenetrable Gravelly Loam

Hydric Soil Indicators: (check all that apply)

- Histosol
- Histic Epipedon
- Sulfidic Odor
- Aquic Moisture Regime
- Reducing Conditions
- Gleyed or **Low-Chroma**
- Matrix chroma ≤ 2 with mottles
- Mg or Fe Concretions
- High Organic Content in Surface Layer of Sandy Soils
- Organic Streaking in Sandy Soils
- Listed on National/Local Hydric Soils List
- Other (explain in remarks)

Hydric soils present? Yes No

Rationale for decision/Remarks: Soil below 1" impenetrable. Low chroma, saturated soil with a significant amount of organic matter.

Wetland Determination

- Hydrophytic vegetation present? Yes No
- Hydric soils present? Yes No
- Wetland hydrology present? Yes No
- Is the sampling point within a wetland? Yes No

What is this based on?

Stream name (if known):

Approximate distance to stream:

Watershed Relationship

- Wetland is **Abutting**
- Adjacent with surface connection**
- Adjacent without surface connection**

What watershed is the delineated wetland within?

167

Comments:

Is the associated stream reach delineated? Yes No

Flow relationship to associated stream:

- intermittent surface** **ephemeral surface**
- perennial surface** **no surface flow**

Is the associated stream reach: **TNW** **P-RPW**
 S-RPW **Non-RPW**

Flow is:

- discrete** **discrete and confined**
- confined** **overland sheet flow**
- other**

Explain: Constant spring seepage

Rationale/Remarks: Wetland 4 is a seepage wetland located at the base of two intersecting ski slopes. Portions of the wetland have been significantly disturbed.

SOILS

Map Unit Name (Series and Phase) :

Drainage Class

Field observations confirm mapped type? Yes No

Taxonomy (subgroup)

Profile Description

Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size and contrast	Texture, concretions, structure, etc.
0-2	A	10YR 3/2			Clay Loam
2+					Gravelly Clay Loam (impenetrable)

Hydric Soil Indicators: (check all that apply)

- Histosol
- Histic Epipedon
- Sulfidic Odor
- Aquic Moisture Regime
- Reducing Conditions
- Gleyed or **Low-Chroma**
- Matrix chroma ≤ 2 with mottles
- Mg or Fe Concretions
- High Organic Content in Surface Layer of Sandy Soils
- Organic Streaking in Sandy Soils
- Listed on National/Local Hydric Soils List
- Other (explain in remarks)

Hydric soils present? Yes No

Rationale for decision/Remarks: Low chroma saturated soil. Impenetrable below 2"

Wetland Determination

- Hydrophytic vegetation present? Yes No
- Hydric soils present? Yes No
- Wetland hydrology present? Yes No
- Is the sampling point within a wetland? Yes No

What is this based on?

Visual observation

Stream name (if known):

56

Approximate distance to stream:

0

Watershed Relationship

What watershed is the delineated wetland within?

WS-153

- Wetland is **Abutting**
- Adjacent with surface connection**
- Adjacent without surface connection**

Comments:

Is the associated stream reach delineated? Yes No

Flow relationship to associated stream:

- intermittent surface** **ephemeral surface**
- perennial surface** **no surface flow**

Is the associated stream reach: TNW P-RPW S-RPW Non-RPW

Flow is:

- discrete** **discrete and confined**
- confined** **overland sheet flow**
- other**

Explain: Visual observation

Rationale/Remarks: Wetland 6 is a small forested wetland with numerous small upland inclusions isolated by maintenance roads, parking facility, and ski slope. Hydrological input comes from two outfall pipes (C6A and C6B) and groundwater seepage. As a result of its small size and isolated nature it does not supply many wetland functions.

Rationale for decision/remarks:

SOILS

Map Unit Name (Series and Phase) :

Drainage Class

Field observations confirm mapped type? Yes No

Taxonomy (subgroup)

Profile Description

Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size and contrast	Texture, concretions, structure, etc.
0-3					Organic
3+					Impenetrable Gravel

Hydric Soil Indicators: (check all that apply)

- Histosol
- Histic Epipedon
- Sulfidic Odor
- Aquic Moisture Regime
- Reducing Conditions
- Gleyed or Low-Chroma
- Matrix chroma ≤ 2 with mottles
- Mg or Fe Concretions
- High Organic Content in Surface Layer of Sandy Soils
- Organic Streaking in Sandy Soils
- Listed on National/Local Hydric Soils List
- Other (explain in remarks)

Hydric soils present? Yes No

Rationale for decision/Remarks: Spring seep, little soil development except for 3" organic matter in pools.

Wetland Determination

- Hydrophytic vegetation present? Yes No
- Hydric soils present? Yes No
- Wetland hydrology present? Yes No
- Is the sampling point within a wetland? Yes No

What is this based on?

Stream name (if known):

Approximate distance to stream:

Watershed Relationship

- Wetland is Abutting
- Adjacent with surface connection
- Adjacent without surface connection

What watershed is the delineated wetland within?

Comments:

Is the associated stream reach delineated? Yes No

Flow relationship to associated stream:

- intermittent surface ephemeral surface
- perennial surface no surface flow

Is the associated stream reach: TNW P-RPW
 S-RPW Non-RPW

Flow is:

- discrete discrete and confined
- confined overland sheet flow
- other

Explain:

Rationale/Remarks: Wetland 7 is a non-jurisdictional seep wetland located in an undisturbed area of the proposed ski mountain expansion. It provides amphibian habitat and groundwater discharge. Drainage from the wetland is via overland sheet flow. There is no surface connection to any other surface water.

SOILS

Map Unit Name (Series and Phase) :

Drainage Class

Field observations confirm mapped type? Yes No

Taxonomy (subgroup)

Profile Description

Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size and contrast	Texture, concretions, structure, etc.
0-8	A	10YR 4/5			Sandy Loam
		10YR 4/2	10YR 4/1	Few, large	

Hydric Soil Indicators: (check all that apply)

- Histosol
- Histic Epipedon
- Sulfidic Odor
- Aquic Moisture Regime
- Reducing Conditions
- Gleyed or Low-Chroma
- Matrix chroma ≤ 2 with mottles
- Mg or Fe Concretions
- High Organic Content in Surface Layer of Sandy Soils
- Organic Streaking in Sandy Soils
- Listed on National/Local Hydric Soils List
- Other (explain in remarks)

Hydric soils present? Yes No

Rationale for decision/Remarks:

Wetland Determination

- Hydrophytic vegetation present? Yes No
- Hydric soils present? Yes No
- Wetland hydrology present? Yes No
- Is the sampling point within a wetland? Yes No

What is this based on?

Visual observation

Stream name (if known):

S6

Approximate distance to stream:

1/2 mile

Watershed Relationship

- Wetland is
- Abutting
 - Adjacent with surface connection
 - Adjacent without surface connection

What watershed is the delineated wetland within?

WS168

Comments:

Is the associated stream reach delineated? Yes No

Flow relationship to associated stream:

- intermittent surface ephemeral surface
- perennial surface no surface flow

Is the associated stream reach: TNW P-RPW

S-RPW Non-RPW

Flow is:

- discrete discrete and confined
- confined overland sheet flow
- other

Explain: _____

Rationale/Remarks: Small emergent wetland fed by surface water and groundwater, seep off adjacent slope. Water flow constricted by RR Row.

SOILS

Map Unit Name (Series and Phase) :

Drainage Class

Field observations confirm mapped type? Yes No

Taxonomy (subgroup)

Profile Description

Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size and contrast	Texture, concretions, structure, etc.
0-6	A	10YR3/3			Gravelly Clay Loam
8+	A	7.5YR3/2	7.5YR4/6	Few, small	Gravelly Clay Loam

Hydric Soil Indicators: (check all that apply)

- | | |
|------------------------------------------------|-------------------------------------------------------------------------------|
| <input type="checkbox"/> Histosol | <input checked="" type="checkbox"/> Matrix chroma ≤ 2 with mottles |
| <input type="checkbox"/> Histic Epipedon | <input type="checkbox"/> Mg or Fe Concretions |
| <input type="checkbox"/> Sulfidic Odor | <input type="checkbox"/> High Organic Content in Surface Layer of Sandy Soils |
| <input type="checkbox"/> Aquic Moisture Regime | <input type="checkbox"/> Organic Streaking in Sandy Soils |
| <input type="checkbox"/> Reducing Conditions | <input type="checkbox"/> Listed on National/Local Hydric Soils List |
| <input type="checkbox"/> Gleyed or Low-Chroma | <input type="checkbox"/> Other (explain in remarks) |

Hydric soils present? Yes No

Rationale for decision/Remarks:

Wetland Determination

- Hydrophytic vegetation present? Yes No
- Hydric soils present? Yes No
- Wetland hydrology present? Yes No
- Is the sampling point within a wetland? Yes No

What is this based on?

Visual observation and USGS topo

Stream name (if known):

Approximate distance to stream:

0

What watershed is the delineated wetland within?

161

Comments:

Watershed Relationship

- Wetland is **Abutting**
- Adjacent with surface connection**
- Adjacent without surface connection**

Flow relationship to associated stream:

Is the associated stream reach delineated? Yes No **intermittent surface** **ephemeral surface** **perennial surface** **no surface flow**Is the associated stream reach: **TNW** **P-RPW** **S-RPW** **Non-RPW**

Flow is:

 discrete **discrete and confined** **confined** **overland sheet flow** **other**

Explain: _____

Rationale/Remarks: Wetland 9 is an emergent wetland on the fringe of P09. It also has an aquatic bed component. Wetland hydrology is from surface water runoff and ground water discharge along slopes. Its abutting relationship to P09 gives it high value to fisheries and wildlife.

SOILS

Map Unit Name (Series and Phase) :

Drainage Class

Field observations confirm mapped type? Yes No

Taxonomy (subgroup)

Profile Description

Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size and contrast	Texture, concretions, structure, etc.
0-6	A	10YR3/1			Organic / Gravelly

Hydric Soil Indicators: (check all that apply)

- Histosol
- Histic Epipedon
- Sulfidic Odor
- Aquic Moisture Regime
- Reducing Conditions
- Gleyed or Low-Chroma
- Matrix chroma ≤ 2 with mottles
- Mg or Fe Concretions
- High Organic Content in Surface Layer of Sandy Soils
- Organic Streaking in Sandy Soils
- Listed on National/Local Hydric Soils List
- Other (explain in remarks)

Hydric soils present? Yes No

Rationale for decision/Remarks:

Wetland Determination

- Hydrophytic vegetation present? Yes No
- Hydric soils present? Yes No
- Wetland hydrology present? Yes No
- Is the sampling point within a wetland? Yes No

What is this based on?

Visual observation

Stream name (if known):

S7

Approximate distance to stream:

0

Watershed Relationship

What watershed is the delineated wetland within?

WS114

- Wetland is **Abutting**
- Adjacent with surface connection**
- Adjacent without surface connection**

Comments:

Is the associated stream reach delineated? **DYes** No

Flow relationship to associated stream:

- intermittent surface** **ephemeral surface**
- perennial surface** **no surface flow**

Is the associated stream reach: **TNW** **P-RPW**
 S-RPW **Non-RPW**

Flow is:

- discrete** **discrete and confined**
- confined** **overland sheet flow**
- other**

Explain:

Rationale/Remarks: Forested wetland with small SF inclusions. Wetland hydrology from overland sheet flow and ground water seep. Area historically used for farming or grazing. Located in the flood plan of S7.

SOILS

Map Unit Name (Series and Phase) :

Drainage Class

Field observations confirm mapped type? Yes No

Taxonomy (subgroup)

Profile Description

Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size and contrast	Texture, concretions, structure, etc.
0-10+	A	10YR3/1			Histosol

Hydric Soil Indicators: (check all that apply)

- Histosol
- Histic Epipedon
- Sulfidic Odor
- Aquic Moisture Regime
- Reducing Conditions
- Gleyed or Low-Chroma
- Matrix chroma ≤ 2 with mottles
- Mg or Fe Concretions
- High Organic Content in Surface Layer of Sandy Soils
- Organic Streaking in Sandy Soils
- Listed on National/Local Hydric Soils List
- Other (explain in remarks)

Hydric soils present? Yes No

Rationale for decision/Remarks: Greater than 16" organic matter

Wetland Determination

- Hydrophytic vegetation present? Yes No
- Hydric soils present? Yes No
- Wetland hydrology present? Yes No
- Is the sampling point within a wetland? Yes No

What is this based on?

USGS Topo map
 Stream name (if known):
 Birch Creek (S7)
 Approximate distance to stream:
 1 mile

Watershed Relationship

- Wetland is Abutting
- Adjacent with surface connection
- Adjacent without surface connection

What watershed is the delineated wetland within?
 WS101
 Comments:

Is the associated stream reach delineated? Yes No

Flow relationship to associated stream:

- intermittent surface ephemeral surface
- perennial surface no surface flow

Is the associated stream reach: TNW P-RPW
 S-RPW Non-RPW

Flow is:

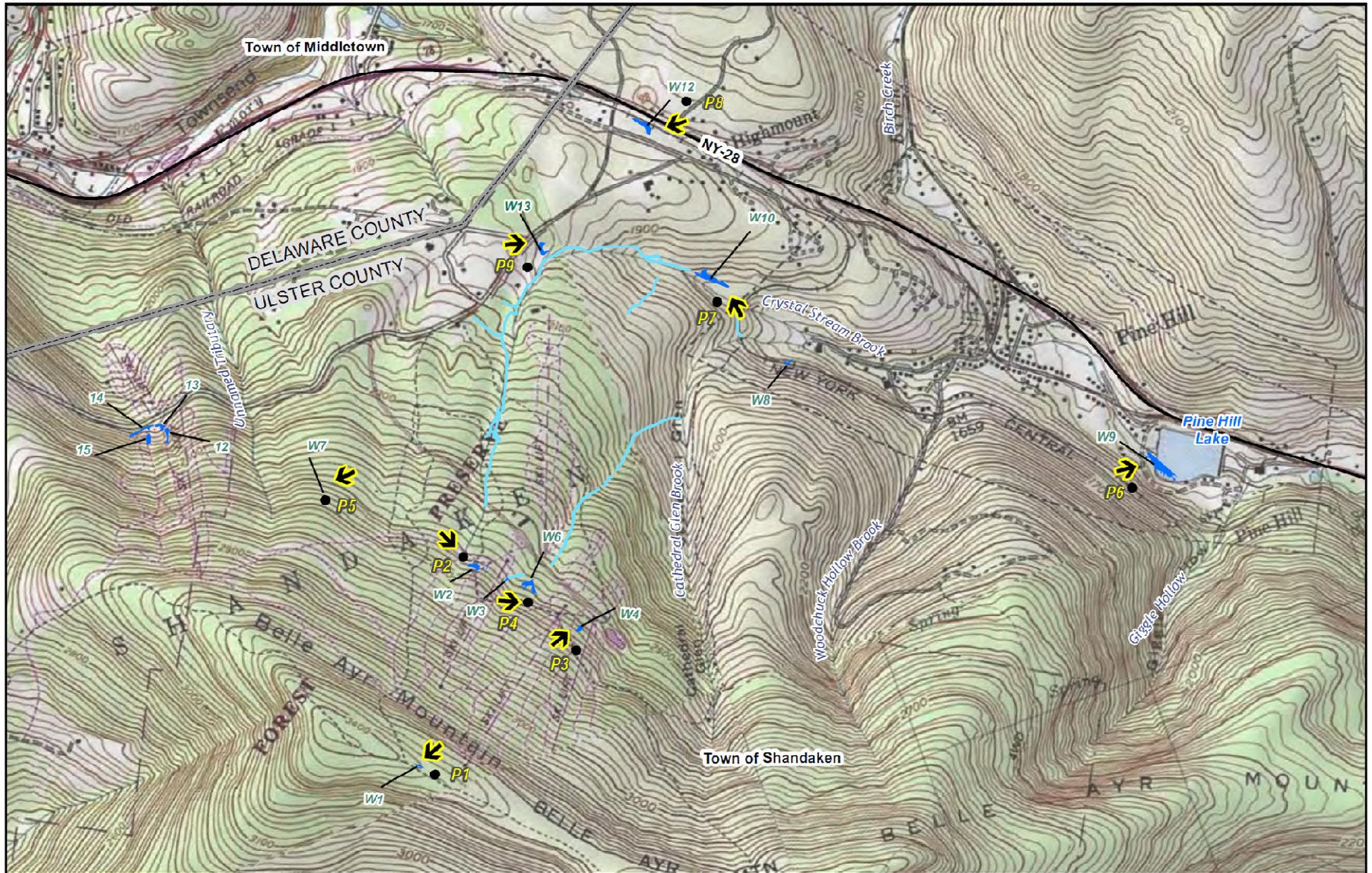
- discrete discrete and confined
- confined overland sheet flow
- other

Explain:

Rationale/Remarks: Wetland 12 is a forested wetland bound on one side by an abandoned RR Row and on the other side by an unpaved road. It provides a significant amount of flood water retention/detention.

C

Photolog



0 2,000 Feet

Belleayre Mountain Ski Center Catskill State Park

Project Area, USGS Topographic Imagery

- Photopoints
- Unclassified Delineated Stream Line

- Delineated Wetland
- ▭ Township Boundary



Figure AA-C-1 Belleayre Mountain Ski Center
Photo Points of Field-Delineated Wetlands

Sheet No.
1

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MXD\DE\SI\Wetland_Photos.mxd

Date: February 13, 2013



Photo 1: Looking southwest at Wetland 1 (W1).



Photo 2: Looking southeast at Wetland 2 (W2).



Photo 3: Looking northeast at Wetland 4 (W4).



Photo 4: Looking east at Wetland 6 (W6).



Photo 5: Looking south southwest at Wetland 7 (W7).



Photo 6: Looking east at an overview of Wetland 9 (W9) which is adjacent to Pine Hill Lake.



Photo 7: Looking northwest at Wetland 10 (W10).



Photo 8: Looking southwest at Wetland 12 (W12).



Photo 9: Looking northeast at Wetland 13 (W13)