D. VEGETATION, WILDLIFE AND AQUATIC ECOLOGY

1. Vegetation and Wildlife:

The Study Area is located in the temperate ecological zone, characterized by deciduous forest as the climax vegetative community. This area contains a variety of vegetative communities and associated species, their presence and distribution influenced by both natural and human factors. Natural physical characteristics, including geologic (soils, topography, etc.) and hydrologic (ponds, streams, wetlands, etc.) conditions, past and present agricultural activities, and recent development have all contributed to create existing vegetative characteristics.

Open space and associated vegetation are important as wildlife habitat and as aesthetic and recreational resources. Recent development trends have reduced the amount of open space in the Study Area; however, significant amounts of open space still remain. Based on current estimates of land use in the Study Area, approximately 3,320 acres (40 percent of the total Study Area) represent open space or undeveloped lands, which contribute to the rural/suburban character of this area.

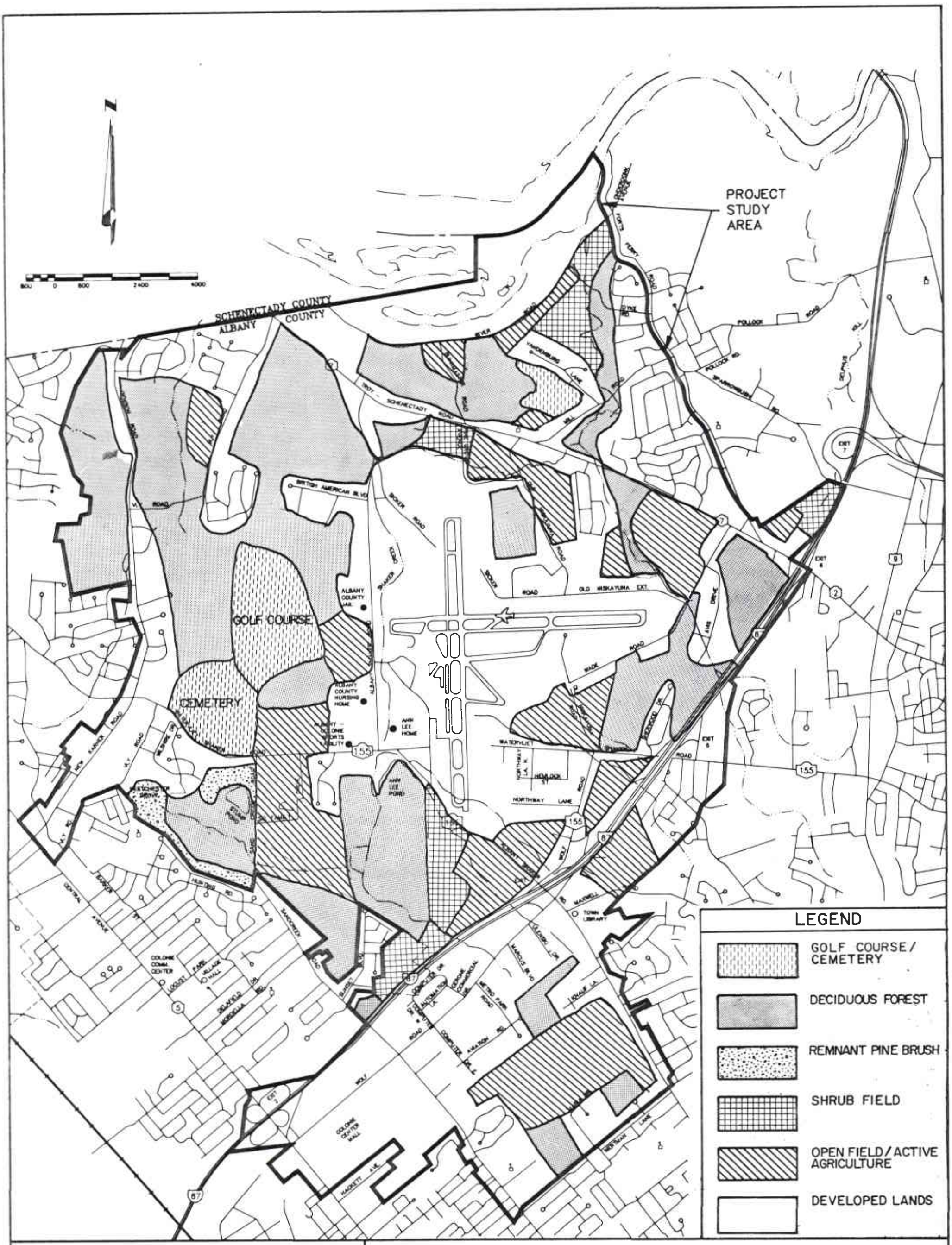
Open space within the Study Area includes a mixture of deciduous forest, shrub field, open field, active agriculture, and remnant pine bush, (Exhibit II-D-1). As evidenced by this Exhibit, a few large contiguous parcels of open space remain. These areas include the Ann Lee Pond Nature and Historic Preserve - Stump Pond corridor, Shaker Ridge, and the slopes adjacent to the Mohawk River. As discussed later in this section, several of these open space areas contain NYSDEC regulated wetlands.

Wooded portions of the Study Area identified in Exhibit II-D-1 generally contain deciduous forest, with some small, interspersed stands of conifers. In addition, the portion of the Study Area located adjacent to Stump Pond contains a remnant pine bush community. Appendix 6 includes a list of primary tree species found in these woodlands, which are typical for the region in general. Many of these forested lands are located along steep slopes, waterways, or wetlands, because these areas have experienced limited development.

Several of the wetland areas (Exhibit II-D-2), including a portion of the Ann Lee Pond Nature and Historic Preserve, contain wooded wetlands. Vegetation in these areas includes Red Maple, Willow, Speckled Alder, and Birches.

Shrub field and open field communities represent lands which have been previously cleared. Two primary areas in these categories include the Airport clear zones, which are periodically clear-cut to provide adequate vertical clearance for air traffic, and abandoned agricultural lands. For purposes of this report, lands within the airport boundaries are not included, as they do not contain any special or unique species or significant habitat. Principal species in the open field areas include grasses and herbs. The shrub field, representing a later successional stage, contains numerous shrub and immature tree species in addition to grasses and herbs.

The level portions of the Study Area, primarily to the south and east of the airport, are actively utilized for agriculture and represent important buffers and aesthetic resources. Once the economic base for the region, the viability of agriculture has become limited due to current economic trends and increasing land values. Most of the lands identified as agriculture in Exhibit II-D-1 are utilized as cropland for either hay or various vegetables which supply farm markets in the vicinity.



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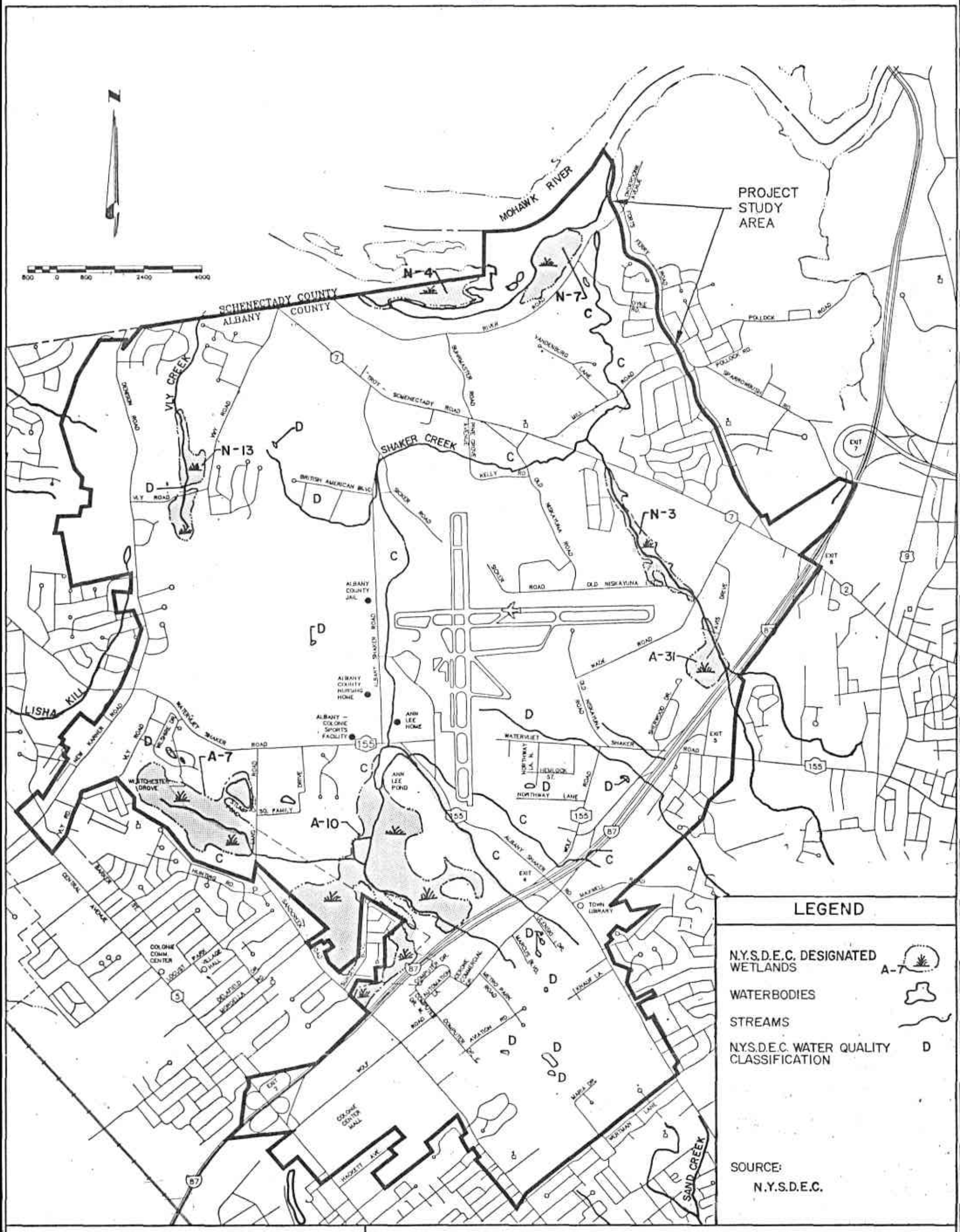
VEGETATIVE COMMUNITIES

EXHIBIT NO.
II - D - 1

AIRPORT AREA GENERIC ENVIRONMENTAL IMPACT STATEMENT



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SURFACE WATER RESOURCES AND WETLANDS

EXHIBIT NO.
II - D - 2

AIRPORT AREA GENERIC ENVIRONMENTAL IMPACT STATEMENT

Wetland communities are found throughout the Study Area (Exhibit II-D-2). These areas contain a variety of vegetation depending on specific hydrogeologic characteristics. As a result, some of these areas represent special or unique communities and potential significant habitat. Floodplain areas are primarily located along the Mohawk River and contain vegetative species similar to those found in wetland areas, particularly emergent species.

The Albany County Planning Department and NYSDEC Endangered Species Unit have identified Wild Lupine communities within the western portion of the Study Area. This species is the principal food source for the Karner Blue Butterfly, currently included on the state endangered species list. Exhibit II-D-3 identifies the locations of these communities based upon mapping prepared by the Albany County Planning Department.

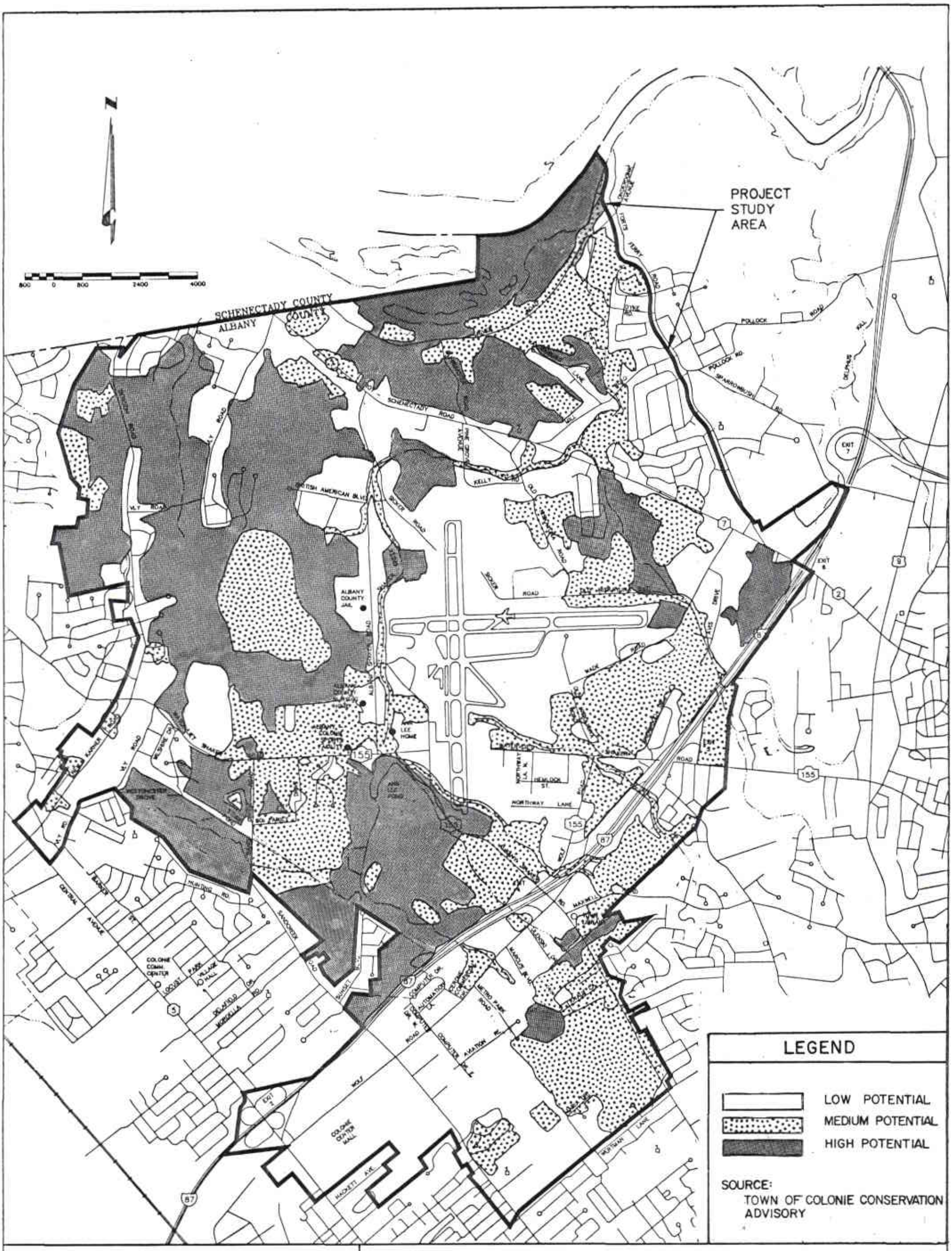
The vegetative communities and open space located within the Study Area represent potential habitat for a high diversity of wildlife species. Exhibit II-D-4 identifies areas listed as Potential Wildlife Habitat by the Town of Colonie Conservation Advisory Council. A list of species inhabiting the Study Area was compiled from several sources including the Ann Lee Pond Ecoregion Management and Use Plan, the Town of Colonie Environmental Inventory mapping, correspondence with NYSDEC Wildlife Resources Center and Region 4 office, and the Albany County Planning Department. In addition, several field investigations and comparisons of species habitat requirements with Study Area characteristics were completed to supplement the existing information.

Appendix 6 includes a list of mammals which are either known or anticipated to inhabit the Study Area based upon analysis of geographic distribution and habitat requirements. This appendix identifies potential wildlife species, and while it is not an exhaustive list, it does identify representative

mammalian species. Based on correspondence with Burrell Buffington of the NYSDEC and field investigations, there are no records indicating the existence of state or federal rare or endangered mammalian species within the Study Area.

The presence of wetlands, streams, and floodplains within the Study Area represent potential habitat for a variety of reptilian and amphibian species. Appendix 6 includes a list of reptiles and amphibians inhabiting the Study Area. Four of the species are categorized as Species of Special Concern by NYSDEC, including the Spotted and Jefferson Salamanders and the Spotted and Wood Turtles. Classification as a Special Concern Species indicates that current populations appear to be vulnerable or their present status in New York State is not known. Two principal factors for this classification are habitat loss and loss of individuals through uncontrolled collection by humans. No state or federal threatened or endangered herptilian species were identified as inhabiting the Study Area.

The presence of diverse aquatic and terrestrial natural communities represent habitat for a wide variety of resident and migratory species. Appendix 6 includes a list of bird species recorded as inhabiting and possibly breeding in the general area encompassing the Study Area as indicated in The Atlas of Breeding Birds in New York State. A significant number of waterfowl and shorebirds utilize the Mohawk River and Ann Lee Pond during breeding seasons and annual migrations. The open and forested areas represent breeding habitat for a wide variety of bird species as identified in Appendix 6. Based on correspondence with the NYSDEC Information Services and field investigations completed for this project, no known state or federal threatened or endangered species have been identified as inhabiting the Study Area. Two bird species identified in Appendix 6 are listed as



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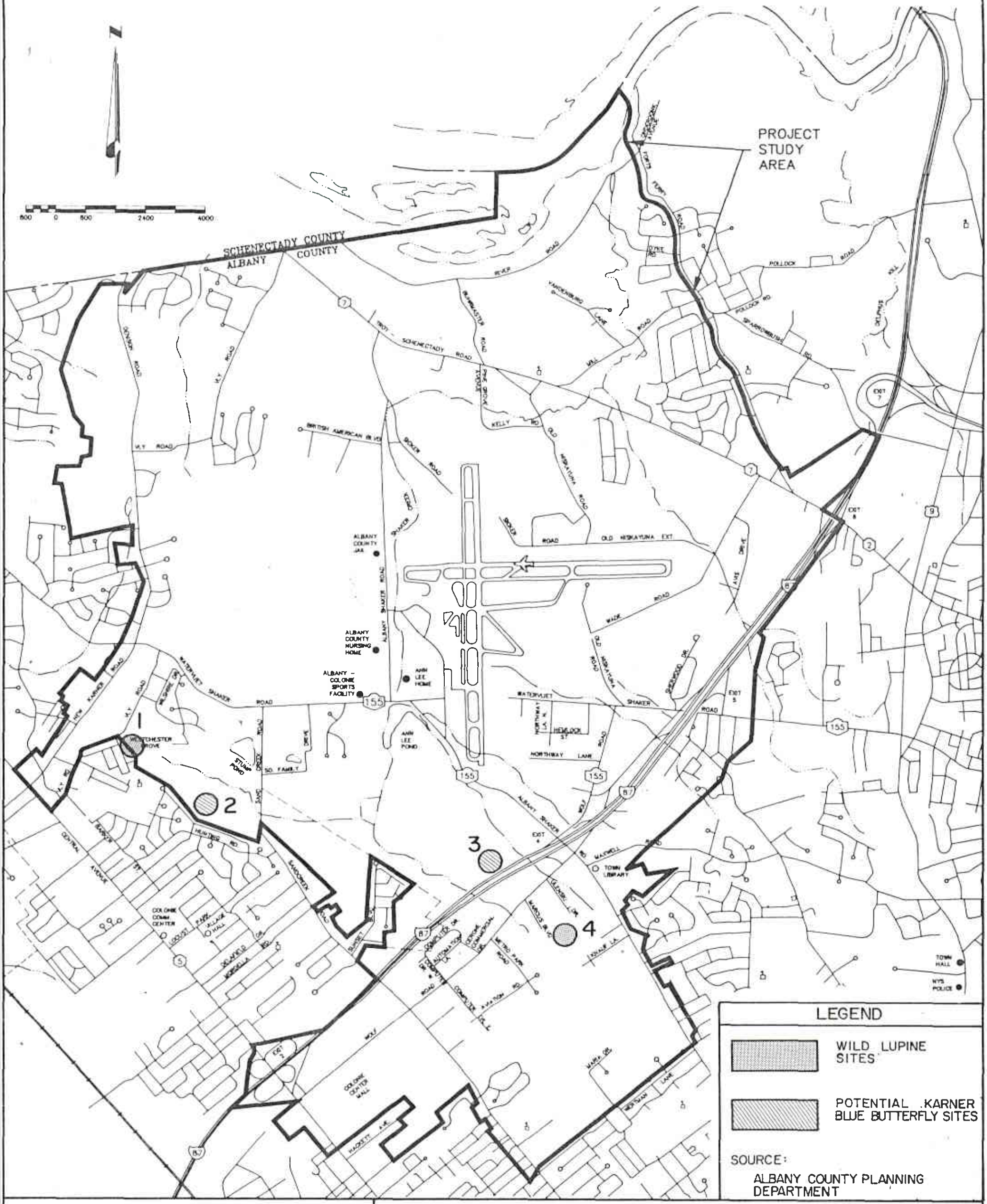
POTENTIAL WILDLIFE HABITATS

EXHIBIT NO.

II - D - 4

AIRPORT AREA GENERIC ENVIRONMENTAL IMPACT STATEMENT



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IDENTIFIED WILD LUPINE SITES AND POTENTIAL KARNER BLUE BUTTERFLY SITES

EXHIBIT NO.

II - D - 3

AIRPORT AREA GENERIC ENVIRONMENTAL IMPACT STATEMENT

Special Concern Species by NYSDEC, primarily as a result of habitat loss. These species include the Eastern Bluebird and the Coopers Hawk, which are generally not in danger of extirpation, but may be of local concern.

The two primary fish habitats located within the Study Area are Ann Lee Pond and the Mohawk River. Both these waters are utilized for recreational fishing and contain a variety of common fish species. Species diversity in Ann Lee Pond has been determined by stocking activities. A study conducted in 1977 identified six fish species, including Golden Shiner, Brown Bullhead, Largemouth Bass, Pumpkinseed Sunfish, Bluegill Sunfish, and Black Crappie. The Mohawk River represents a significant habitat for fish species, particularly the shallow, vegetated areas which are important for spawning and rearing of juveniles. While the river is utilized for fishing, recent studies have indicated relatively high levels of toxic materials in fish inhabiting the portion of the Mohawk downstream from Amsterdam. As a result, the NYSDEC recommends consumption limitations for most species taken from the River.

Based on correspondence with the NYSDEC, no significant habitats exist according to mapping prepared by the Significant Habitat and Natural Heritage Programs. Significant habitats include areas utilized by endangered or threatened species, or areas providing important foot or shelter functions for more common species. The Albany County Planning Department has identified four populations of Wild Lupine within the Study Area (Exhibit II-D-3). Two of these areas are identified as historic Karner Blue Butterfly sites, although correspondence with the NYSDEC Endangered Species Unit indicated that Site 4 had been disturbed as of July 1988 and is most likely no longer a viable habitat for Karner Blue Butterflies.

2. Aquatic Ecology:

a. Wetlands

As a result of topographic and hydrologic characteristics, the Study Area contains seven freshwater wetlands which are regulated under the NYS Freshwater Wetlands Act (ECL Article 24) (Exhibit II-D-2). This law regulates activities in freshwater wetlands 12.4 acres or larger and the 100-foot buffer zones adjacent to the wetlands. These wetlands are mapped by NYSDEC based upon aerial photography. Specific on-site surveys are required to delineate actual wetland boundaries and the associated 100-foot buffer zones prior to issuance of a freshwater wetland permit. There are also procedures for municipalities who wish to protect freshwater wetlands less than 12.4 acres which are discussed later in this section.

Exhibit II-D-2 identifies the regulated wetlands within the Study Area in accordance with current NYSDEC wetland mapping. Based upon this mapping, seven NYSDEC regulated wetlands have been identified which encompass approximately 560 acres, representing nearly 17 percent of the total open space in the Study Area.

The value of freshwater wetlands has become increasingly well documented. Some of the benefits of protecting this resource include provision of flood retention and stormwater control, groundwater recharge, pollution treatment and purification, erosion and sediment control, nutrient cycling, fish and wildlife habitat, recreation, education and research, and open space resources. Wetlands within the Study Area provide many of these benefits, depending upon specific natural and physical characteristics. The following discussion describes the seven NYSDEC regulated wetlands found within the Study Area, including classification,

size, natural and physical characteristics, as well as benefits. This information was compiled through review of NYSDEC files and was supplemented by field investigations.

Wetland A-7 encompasses approximately 102 acres located west of Sand Creek Road and includes Stump Pond. Wetland A-7 is a significant ecological resource within the Study Area. This wetland has been designated Class I by NYSDEC and is primarily comprised of hardwood swamp. Its primary functions and benefits include stormwater retention (tributary to a Flood Hazard Area), aquifer recharge through a hydrologic connection to a potential aquifer, provision of open space within an urban area, and provision of wildlife habitat.

Wetland A-10, also designated Class I, includes Ann Lee Pond and represents the largest wetland in the Study Area and the Town of Colonie. It encompasses approximately 258 acres. This wetland is part of a large drainage area which includes agricultural, undeveloped, and commercial/residential land uses. The primary wetland cover types located within A-10 is deciduous swamp, with small areas of open water and emergent marsh.

A significant portion of wetland A-10 is located within the Ann Lee Pond Nature and Historic Preserve which is used extensively for public recreational activities which include, but are not limited to: fishing, ice skating, hiking, and photography. Benefits or functions associated with this wetland include stormwater retention (tributary to a Flood Hazard Area), wildlife habitat, water purification and groundwater recharge (hydrologic connection to potential aquifer), and recreational and educational opportunities. This wetland is significant as a result of its size, diversity of natural communities,and recreational use. In addition, wetland A-10 is within the Watervliet Shaker Historic District which is included on both the State and National Registers of Historic Places (see Section II, K).

Wetland A-31 encompasses approximately 27 acres between Wade Road and I-87. This wetland is designated as Class II and is formed at the confluence of two small streams adjacent to I-87. Dominant vegetative communities associated with this wetland include emergent marsh and wooded wetlands. Primary benefits associated with this wetland are stormwater retention and erosion/sedimentation control. This wetland has been included on a list of proposed amendments to existing wetland delineations as of January 1990, but the mapping has not been officially changed according to the NYSDEC.

Wetland N-3 is located west of Wade Road and encompasses approximately 31 acres. This wetland is primarily comprised of deciduous swamp and includes the floodplain area of a small, unnamed tributary of Shaker Creek. Vegetation consists of mature hardwood species with several small areas of Alder thicket and emergents (Phragmites, Cattails, etc). Primary benefits associated with this wetland include stormwater storage, wildlife habitat, groundwater recharge, and erosion/sedimentation control.

Wetland N-4 (58 acres) and N-7 (40 acres) are both located along the Mohawk River adjacent to the Study Area's northern boundary. These wetland areas are both Class I wetlands and are associated with the Mohawk River floodplain. Primary benefits from these wetlands include flood storage, wildlife habitat, and provision of recreational open space. These wetlands are very important from an ecological perspective as they provide valuable habitat for a diversity of wildlife.

Wetland N-13, a Class II wetland, is located in the northwest portion of the Study Area along Vly Road. This wetland encompasses approximately 35 acres in a topographic depression along Shaker Ridge, and consists primarily of

deciduous swamp. Primary benefits include stormwater retention, erosion/ sedimentation control, and wildlife habitat.

b. Streams and Rivers

The two primary waterways within the Study Area are the Mohawk River and Shaker Creek, a tributary of the Mohawk. Details of hydrology, drainage and water quality of these waterways can be found in Section II, F.

In an effort to protect local streams and rivers, the Town of Colonie has adopted a Watercourse Area Management Ordinance (Local Law 10 of 1989). This ordinance regulates activities within 100 feet of the centerline of most waterways by either strictly prohibiting certain activities or requiring permits for an activity. The approximate location of streams affected by this ordinance are delineated on Exhibit II-D-5. This action, on the part of the Town, resulted from the previous degradation of the Town's streams, creeks, and rivers as a result of development activities.

The Study Area encompasses a portion of the Mohawk River, which includes wetland and floodplain areas. This portion of the river is significant as habitat for fish species, which utilize the shallow, vegetated areas for spawning, and for waterfowl, which utilize the area for food and rest during annual migrations. In addition, mammalian species (e.g., Muskrat, Mink, etc.) and herptilian species (e.g., Frogs, Turtles, etc.) also find suitable habitat in this area. The Mohawk River also represents the primary water source for the Latham Water District. In addition, a variety of recreational activities are associated with this portion of the River, including walking and biking along the Mohawk-Hudson Bikeway, birdwatching, fishing, and boating. The River represents a significant fishery, and has become increasingly utilized for recreational fishing.

Limited development has occurred along this portion of the River due to significant annual flooding in the lower elevations, poor soil stability, and steep slopes in the higher elevations.

Shaker Creek, a NYSDEC designated Class C stream, is within the Study Area and flows from Ann Lee Pond to the Mohawk River. The upper reaches of Shaker Creek are comprised of several small tributaries flowing into Ann Lee Pond, which has a dam and spillway structure. The Creek flows along the western boundary of the Airport, where it is contained within a closed drainage system. It then traverses the northern edge of the Airport and flows under Route 7 and continues toward the Mohawk River. The stream banks in this portion of the Creek are somewhat steep (8-15 percent slope). The Creek is relatively shallow and does not support any significant fish species. Beaver have traditionally inhabited various portions of the Creek and Ann Lee Pond contributing to existing flooding problems. A more in-depth discussion of the hydrologic characteristics of the Shaker Creek drainage basin can be found in Section II, F.

Impacts and Mitigation Measures:

1. **Vegetation and Wildlife:**

The Cumulative Growth Scenario described in Section II, B represents a potentially significant impact to the vegetative and wildlife resources in the Study Area. Based upon this development scenario, approximately 1,137 acres of open space (including agricultural land, Airport open land, preserve land, and wetlands) and associated vegetation will be eliminated (34 percent of total). Exhibit II-B-4 identifies the projected locations of future development and helps to illustrate the impact that this development will have on open space in the Study Area.

Anticipated development is concentrated in the Ann Lee Pond - Stump Pond corridor (includes Ann Lee Pond, associated wetlands, agricultural lands in the Watervliet Shaker Historic District, several small streams and drainage ditches, and Stump Pond and associated woods and wetlands); Shaker Ridge in the vicinity of British American Boulevard, between Route 7 and River Road; the Wade Road/Watervliet Shaker Road area; and the area between Albany Shaker and Sand Creek Roads. The Cumulative Growth Scenario will result in the loss of large tracts of open space and will adversely impact both plant and animal life either directly, as a result of development activities or indirectly, through the fragmentation of existing contiguous open spaces.

The development of open space and removal of vegetation adversely impacts the general character and aesthetics of the area. Vegetation and open space provide natural buffer areas which, when altered, forever change the overall character of a community and may reduce the aesthetic quality of an area.

The quality of wildlife habitat will also be impacted by development. The Study Area currently contains some large, contiguous undeveloped parcels which provide habitat for a variety of wildlife species. Elimination of significant amounts of vegetation and increased human activity adjacent to remaining open space will reduce both the quantity and quality of wildlife habitat in the Study Area. Areas of importance include the Ann Lee Pond-Stump Pond corridor and associated wetlands, the Mohawk River and associated wetlands, and the Shaker Ridge and Wade Road wetland areas. Current migration patterns by mammals, birds and reptiles and amphibians between different habitat areas (e.g., Ann Lee Pond to Stump Pond) will be disrupted and projected development will result in increased competition for remaining habitat. Thus a parcel may contain the appropriate vegetative characteristics for a particular species, but is simply not large enough to support it.

The proposed Exit 3 alternative designs (Section II, H, Transportation) also present potential impacts to vegetation and wildlife resources. The greatest impacts are associated with Option 1, as the proposed roadway bisects the Ann Lee Pond and Stump Pond natural habitats. This area has been identified as an important habitat connection and potential greenbelt to preserve existing terrestrial migratory movements. Option 1 would sever access between these two areas and would increased local ambient noise levels in these areas. Option 2, the extension of Route 155 and construction of a tunnel under an existing Airport runway, would not have as great an impact on vegetation and wildlife resources. The proposed roadway improvements called out in this Option are located along developed lands and would not impact any significant plant or animal habitats or communities.

In order to minimize impacts to the character and habitat potential of the Study Area, significant contiguous vegetative communities should be retained. Ann Lee Pond is afforded some protection from development because it is designated a County Preserve. Other significant habitats (Stump Pond, Mohawk River and adjacent land, and Shaker Ridge), while having some state regulatory protection such as the NYS Freshwater Wetlands Act, should be actively protected directly through actions taken by the County, Town and/or Village.

While impacts to vegetation and wildlife are not totally unavoidable, several mitigation measures are available to minimize potential impacts associated with the Cumulative Growth Scenario. The following presents some techniques which represent potentially viable methods for preserving the ecological characteristics of the Study Area:

a. Greenbelts

The creation of greenbelts represents a measure which can be utilized to maintain existing vegetation and wildlife characteristics. Greenbelts could be created in a manner which connects important vegetative communities and habitat areas (i.e., allows wildlife movement). Based on an analysis of existing land uses, physical characteristics, important and unique natural communities, and the proposed location of development as suggested by the Cumulative Growth Scenario, three principal greenbelt areas have been identified (Exhibit II-D-5). These areas may be integrated into any proposed future development plans to preserve contiguous open space and retain associated vegetation, and thus, maintain the area's viability as wildlife habitat. These greenbelt areas have been identified through consideration of land use, existing vegetation, habitat potential, hydrogeological characteristics, previously identified habitats (e.g. Ann Lee Pond Nature and Historic Preserve), and information provided by the County, Village and Town (e.g. LUMAC, Town of Colonie Recreation Department).

The largest greenbelt proposal encompasses Ann Lee Pond, Stump Pond, Shaker Ridge, and all associated wetlands. This greenbelt would serve to protect the most substantial vegetative and wildlife resources in the Study Area. Within the area are Ann Lee Pond and Stump Pond and their associated wetlands, previously identified habitat for the endangered Karner Blue Butterfly, and wetland N-13. In addition, the natural features of the Ann Lee Pond Nature and Historic Preserve and a portion of the Watervliet Shaker Historic District could be retained. Also located within this greenbelt are the Shaker Ridge Country Club and Memory Gardens Cemetery, which represent land uses generally compatible with adjacent natural communities and provide minimal disturbance to wildlife.

Option 1 for the proposed Exit 3 would bisect this greenbelt and sever the connection between the Ann Lee Pond Nature and Historic Preserve and Stump Pond. Potential mitigation measures could include construction of a tunnel for a portion of this option. By retaining existing natural ground-level characteristics, the connection between these areas would not be disturbed. It is anticipated that a minimum of 1,000 feet of tunnel would be necessary to maximize the potential benefits. Additionally, all at-grade portions of this roadway between the Northway (I-87) and Route 155 could be appropriately buffered to minimize noise impacts. One measure includes construction of landscaped berms which would reduce both noise and visual impacts and minimize disturbances to adjacent habitats.

A second greenbelt is recommended for the northern portion of the Study Area along River Road and includes the Mohawk River floodplain and associated wetlands (N-4 and N-7). This portion of the Study Area is significant in terms of value for prime wildlife habitat and as a recreational resource (walking, biking, bird watching, etc.). Establishing a greenbelt in this portion of the Study Area would protect the important wildlife and vegetation resources, and preserve the aesthetic and recreational benefits derived from them.

The third greenbelt is recommended for that portion of Shaker Creek to the north of the Albany County Airport and the tributary and wetland N-3 to the east of the airport. Primary benefits of this greenbelt include the retention of vegetation as both a visual and noise buffer, wildlife habitat, and the hydrological benefits associated with the wetlands (particularly flood control, water purification, etc.). This greenbelt could be linked to the River Road greenbelt area via the Shaker Creek Corridor. This would further reduce potential stream disturbance and impacts associated with increased stormwater runoff and downstream (Mohawk River) erosion and sedimentation. The Town's existing

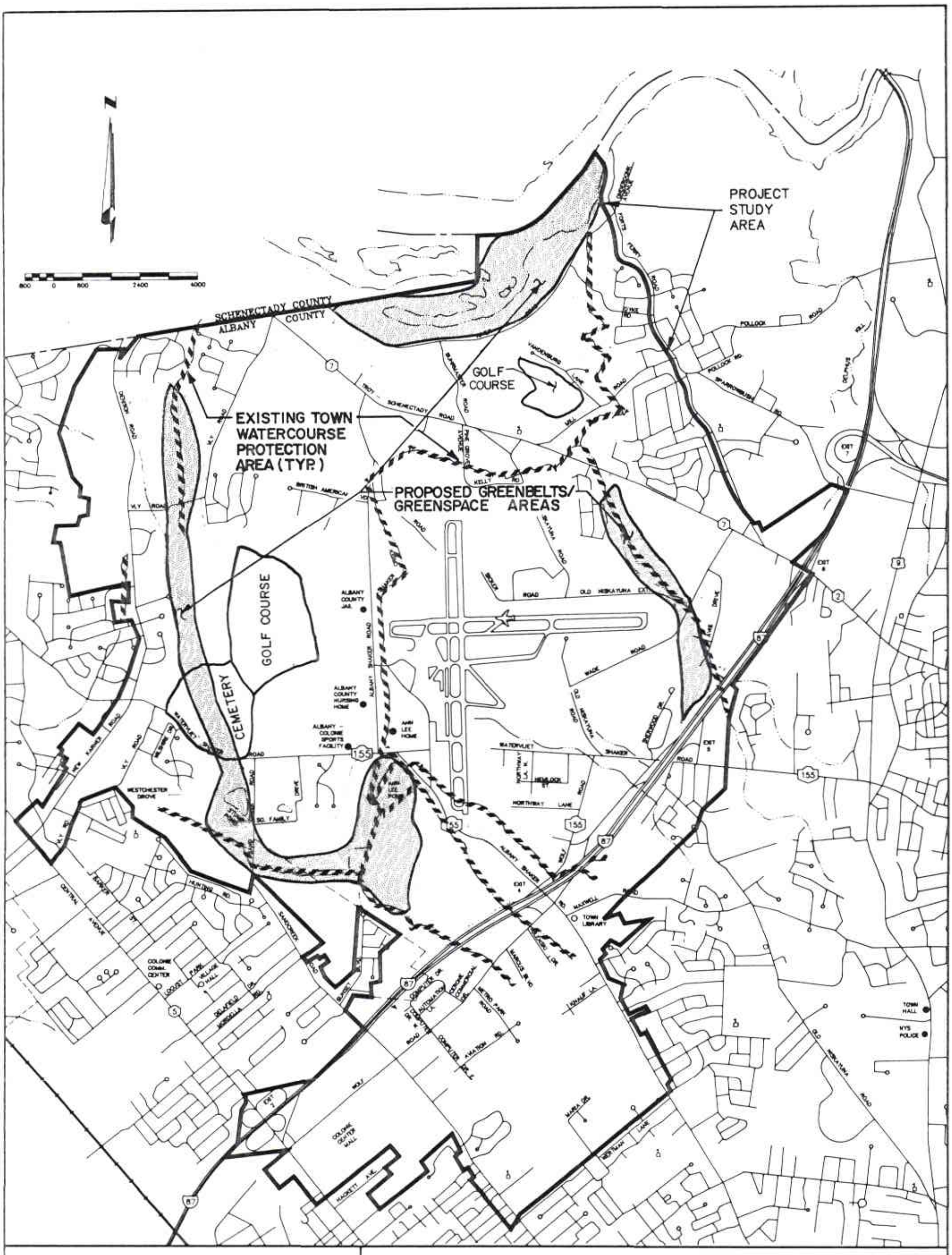

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EXHIBIT NO. II - D - 5	**AIRPORT AREA GENERIC ENVIRONMENTAL IMPACT STATEMENT**

Watercourse Area Management Ordinance could assist in accomplishing this connection, as it protects areas within 100 feet on each side of the stream centerline.

As most of the lands within the proposed greenbelt areas are privately owned, there would be some difficulty involved in creating these greenbelts. However, several mechanisms are available to assist in the creation of greenbelts and to minimize potential conflicts with landowners.

One method of establishing greenbelt areas to promote land conservation is a "Farmland and Open Space Conservation and Development Overlay District". This represents a practical approach to land conservation which preserves open space and agriculture while allowing landowners to retain the full value of their land. Essentially, it allows the subdivision of land into the same number of lots as specified by the underlying zoning district, but requires an owner to maintain a specified level of open space on the entire parcel.

These districts are established as overlay districts on a municipality's zoning map and referenced within the zoning law. Large undeveloped parcels which contain important habitats, scenic or cultural resources or other important characteristics are identified along with a written explanation of why a particular area is appropriate for inclusion in the overlay district. The overlay district would include strict regulations regarding uses (permitted and special permit uses), criteria for permitting, project information, and design guidelines.

Typical guidelines may include:

- o Minimum 50 percent open space on parcel;
- o Specific site plan criteria;
  - preserve most fertile soils, most significant vegetation or significant terrestrial wildlife migratory routes;

- minimize aesthetic impacts; and

o Landscaped buffer zones between non-compatable land uses.

Establishment of Farmland and Open Space Conservation and Development Overlay Districts afford landowners full utilization of their property while retaining agricultural or open space portions of the parcel.

A second method of establishing greenbelts is through selective public acquisition of properties within a greenbelt area. These lands could include specific parcels identified as unique or significant, or could comprise an entire greenbelt area. Prior to implementing such a program, a study should be conducted to identify the parcels to be acquired and suggest methods to finance their acquisition. Since establishment of greenbelt areas would benefit the entire population of the Town and Village, it is possible that monies for such acquisition may be raised from future subdivisions through the collection of money in lieu of parkland. This may be particularly appropriate in obtaining lands in the Ann Lee Pond and River Road areas as they are currently utilized for recreational activities. By preparing a Master Plan identifying areas with the capacity to support clustering and coordinating adjacent projects, a greenbelt area could be protected or supplemented.

Transfer of Development Rights (TDR) is a third method of preserving open space and creating greenbelt areas. Essentially, TDR involves designating a sending district and a receiving district. All development rights (per existing zoning) of parcels in a sending district are transferred to lands in a receiving district which have been identified as being capable of supporting higher density development. In turn, those lands in the sending district cannot be developed. While this method does achieve the desired goal of establishing

greenbelts, implementation and maintenance of a TDR program requires a significant commitment of municipal resources (particularly funding and program management), and would require further study.

The use of Conservation Easements is another technique which could be utilized to create greenbelts in the Study Area. Under Section 247 of New York State General Municipal Law, a municipality can acquire, by grant, the easement to land for the preservation of open space which would "maintain or enhance the conservation of natural or scenic resources." The owner granting an easement agrees to retain the existing character of the land for the term of the easement. The municipality, in turn, grants preferential tax treatment to land under easement (parcel is reassessed per the easement limitations). It is also possible to develop a similar type of agreement for the preservation of agricultural lands within the Study Area (some municipalities grant a greater tax abatement for agriculture to encourage continued farming). While this technique has successfully been implemented in several municipalities, there are potential impacts which must be considered. First, easements represent a reduction in the general tax base for a municipality. However, based on the variety of land uses (commercial, industrial, residential) in the Study Area, a program of this nature may not have a significant impact on the tax base of the affected municipalities. Second, easements and associated tax abatement are generally based on a specified, limited period of time. Thus, upon termination of the Conservation Easement period, a parcel could potentially be developed and disrupt linkages in the greenbelt.

Based upon the Cumulative Growth Scenario, several projects have been proposed within or adjacent to the identified greenbelt areas. Site specific mitigation measures are available to assist in reducing impacts to vegetation and wildlife. These mitigation measures may be particularly appropriate within and adjacent to greenbelt areas.

b. **Site Design**

Several mitigation measures to minimize potential development-related impacts on vegetation and wildlife are associated with site design requirements. Promoting clustering and retaining large portions of undisturbed land in the appropriate manner could reduce habitat disturbance. Clustering is similar to the Farmland and Open Space Conservation and Development Overlay District discussed earlier, in that it attempts to cluster development on a small portion of a particular parcel while retaining a specified level of open space. Clustering not only allows for a greater degree of conservation on sites than conventional development, but often requires less infrastructure, which can translate into lower cost housing and reduced municipal maintenance costs (e.g. roadway maintenance).

Increasing green space requirements, providing incentives for retaining open space in excess of requirements, and establishing maximum setbacks could be developed to retain open space in those areas most beneficial to wildlife.

Another method for preserving green space in the Study Area is through the creation of a strict site clearing and Tree Preservation Ordinance. Such an ordinance would serve to prohibit the elimination of vegetation. By requiring identification of all trees on a site by species, size and height, as well as general vegetative communities, the ordinance would identify significant vegetative sources on a site. An appointed municipal official or review board could be empowered to conduct site visits to review existing vegetation and make recommendations regarding clearing of a site for proposed development. In addition, the ordinance could require a two for one exchange where two trees of appropriate size and species be planted for each "significant" natural tree destroyed. The definition of a significant natural tree would be determined by the

municipality. An ordinance of this nature would serve to reduce impacts to existing site vegetation, and to a lesser extent, wildlife inhabiting the site. This technique could be combined with increased open space requirements in certain portions of the Study Area.

Another measure to reduce impacts on vegetation and wildlife in the Study Area is through the general reduction of allowable densities within and adjacent to proposed green space areas. An overall reduction in density, in combination with other measures such as clustering, could reduce the level of development proposed in the Cumulative Growth Scenario. However, such measures would benefit the vegetative and wildlife communities which currently inhabit the Study Area.

A final recommendation to minimize impacts to vegetation and wildlife, not only in greenbelt areas, but also throughout the Study Area, is to require developers to conduct a site specific ecological review prior to disturbance of any site. This could be accomplished under SEQR requirements, but may also be incorporated within the municipal site plan review process. Specific study requirements may be based upon the Potential Wildlife Habitat map prepared by the Town of Colonie (Exhibit II-D-4), recent mapping of Lupine communities (Exhibit II-D-3), or other resources (e.g., NYSDEC). Site specific ecological studies should be conducted by a qualified individual and results should be reviewed by an appropriate agency (e.g. Town Conservation Advisory Council) which would then make appropriate recommendations.

Based upon the Cumulative Growth Scenario, it is anticipated that the level of development proposed for the Study Area will have a significant impact on vegetation and wildlife. The mitigation measures presented above represent methods of reducing, but not eliminating impacts. These recommendations are generally consistent with the Town of Colonie LUMAC prepared in 1988. It is

necessary to preserve existing significant open space at this time to ensure that vegetation and wildlife resources within the Study Area will be not be compromised by future development.

2. Aquatic Ecology:

The Cumulative Growth Scenario represents potential impacts to both wetlands and waterways in the Study Area. The proposed development will have the greatest potential impact upon wetlands A-7 and A-10 and their respective adjacent areas. Several large residential projects have already been proposed within or adjacent to these wetland areas. Potential impacts to these wetlands associated with development include a reduction in the quality of wildlife habitat; increased stormwater runoff and associated erosion/sedimentation; contamination from pesticides, gas, oil, etc.; and increased nutrient loading (fertilizers, sanitary sewage, etc.). Such impacts may contribute to downstream flooding of Shaker Creek. In addition, these impacts could accelerate the eutrophication of Ann Lee Pond. However, since the most significant nutrient input from the Ann Lee Pond drainage area comes from agricultural lands to the east, it is difficult to quantify the impacts associated with development in this drainage area. A reduction in agricultural lands could actually represent a positive impact to surface waters by reducing existing nutrient loading.

Wetlands A-31 and N-3 may also be impacted by future development. As several small commercial projects are anticipated adjacent to these wetlands, impacts similar to those noted above are possible. Anticipated development will also impact the waterways within the Study Area. Several developments are proposed adjacent to Shaker Creek and its tributaries.

Since Shaker Creek is a tributary of the Mohawk River, it is anticipated that impacts to the Creek will also affect the River to some extent. Potential impacts to Shaker Creek include increased stormwater runoff, erosion and sedimentation, decreased quality as a result of non-point source discharges, and reduced wildlife habitat. It should be noted that the previously mentioned Watercourse Area Management Ordinance adopted by the Town of Colonie in 1988 represents a very important protective measure for maintaining the quality of these waterways. Continued implementation of the ordinance in the future will minimize the potential impacts noted above.

Presented below is a list of mitigation measures which can be implemented to minimize potential impacts to wetlands and to augment the existing Watercourse Area Management Ordinance enacted by the Town of Colonie. It should be noted that regardless of the implementation of mitigation measures, the status of Ann Lee Pond is not expected to change significantly. While mitigation measures will ensure that development does not accelerate the eutrophication process occurring at the pond, it will continue through the natural succession process unless a comprehensive management plan is developed and implemented. Such a plan must include both initial measures to reduce existing organic deposits (dredging) and nutrient loading and a long term maintenance plan to ensure no significant future deterioration occurs. While the loss of Ann Lee Pond (in its current state) may represent an adverse impact in some aspects (such as the elimination of wildlife habitat, stormwater control and purification, and as a recreational resource), allowing the succession process to continue represents potential future benefits in terms of research and education opportunities, and habitat for different wildlife species. Thus, some decisions regarding the future of Ann Lee Pond must be made in addition to the use of the following suggested mitigation measures.

a. Site Specific Wetland Surveys

As previously mentioned, NYSDEC wetland mapping is based upon vegetative classifications through aerial photograph interpretations and field investigations. As the boundaries identified in Exhibit II-D-2 are based on the NYSDEC mapping, site specific wetland delineations, approved by NYSDEC, should be required by the Town for all activities in regulated wetlands and their 100-foot buffer. This would ensure that potential impacts to the wetlands are identified early in the site review process, thus allowing the opportunity for appropriate plan modifications.

Municipalities also have the authority to regulate wetlands through local mechanisms. This can be accomplished through local assumption of wetland jurisdiction pursuant to 6 NYCRR 665 (Local Government Implementation of the Freshwater Wetlands Act). Section 665.4(a) states:

> "A local government must adapt a freshwater wetlands protection law or ordinance pursuant to section 24-0501 of the act and this Part in order to assume regulatory authority within its jurisdiction. The local law or ordinance must:
>
> 1. be applicable to all freshwater wetlands wholly or partially within the local governments jurisdiction;
>
> 2. be no less protective of freshwater wetlands, and no less effective in its administrative and judicial review, than the act; and
>
> 3. not regulate activities exempted from regulation by section 24-0701 of the act as set forth in Section 665.2(x)(1)-(3) of this Part."

In addition, section 665.4(c) provides the statutory authority for a municipality to regulate wetlands not regulated by NYSDEC (less than 12.4 acres) and to create stricter guidelines on all regulated wetlands. Specifically, this section states:

> "Pursuant to section 24-0507 of the act, a local government may elect to extend regulatory control to smaller wetland areas than those identified on the final freshwater wetlands map as

defined in section 665.2(m) of this Part. A local government may also institute, through its local law or ordinance, higher standards for permit issuance than those set out in section 665.7 of this Part."

Thus, local authority over freshwater wetland regulations represent one method of providing greater protection to these resources, and minimizing potential adverse impacts.

Pursuant to Section 404 of the Federal Clean Water Act, "the placement of dredged or fill material for the primary purpose of creating dry land, or of changing the bottom elevation of, waters of the United States is an activity regulated by the U.S. Army Corps of Engineers. Most waterbodies, including wetlands, intermittent streams and natural drainage courses are considered to be "waters of the United States". A NYSDEC determination classifying an area as an unregulated New York State Freshwater wetland does not relieve a property owner from his or her obligations under the Clean Water Act; the Army Corps of Engineers regulates the discharge of dredged or fill material into all freshwater wetlands, regardless of size. This level of analysis assists in minimizing wetland disturbance, and is a factor that the County, Town, and Village should consider in future development plans or site plan/subdivision review.

b. No Net-Loss Policy

The federal government is currently endorsing a no net-loss policy for wetlands. Essentially the Federal Government requires applicants to demonstrate that wetlands will be avoided or if the wetlands cannot be avoided, encroachment must be minimized. If the wetlands cannot be avoided and the impacts are deemed to be relatively minor by the U.S. Army Corps of Engineers, a disturbance permit may be issued to create a comparable amount of new wetland area for any wetland that is destroyed. The field of wetland creation is relatively new

and has generated a certain amount of controversy, particularly with regard to the ability to simulate the natural hydrogeologic and ecological characteristics and associated benefits of a wetland (which represents a lengthy natural process).

In any event, a no net-loss policy may be an appropriate mitigation measure for the wetlands in the Study Area. Such a policy could serve to retain natural wetland characteristics and benefits, and avoid potentially significant adverse impacts associated with their destruction.

c. Conservation Districts and Easements

As previously discussed, conservation districts or easements may be utilized along stream corridors or surrounding wetland boundaries to protect these resources in conjunction with existing regulation, including the Town's Watercourse Area Management Ordinance.

d. Greenbelts

As previously discussed, establishing greenbelts would serve to protect the overall ecological and cultural resources in the Study Area. This includes the wetlands and streams within the greenbelt areas, and the benefits which they provide.

e. Stormwater/Sediment and Erosion Control Regulations

Existing stormwater management and erosion control regulations could be revised to provide greater protection to water resources. Section II, F, contains recommendations for supplementing additional stormwater management requirements.

In conclusion, the ecology in the Study Area is comprised of a variety of complex, interrelated biotic and abiotic components. Development which affects one or more of these components, therefore, has an impact upon the entire

system. In order to protect the existing ecological communities in the Study Area, it is important that contiguous undeveloped parcels be preserved. The proposed greenbelt areas represent a significant step towards maintaining the environmental integrity and associated social benefits of the Study Area by retaining interconnected open space. Implementation of the other mitigation measures previously mentioned will also ensure that future development does not result in significant adverse impact to the ecology of the Study Area.