II. Development Considerations

(a) Natural resource considerations

(1) *Water*

Objectives:

- To preserve or improve the water quality in waterbodies in the Park.
- To maintain the natural flow conditions in waterbodies in the Park.
- To maintain or improve the trophic state of surface waters in the Park.
- To preserve or improve the quality and quantity of water contained in subsurface aquifers in the Park.
- To prevent the introduction and spread of aquatic invasive species.

The following development considerations are taken into account during review of impacts to water resources in the Park:

(i) *Existing water quality*

Water quality is a term that is used to describe the existing biological, chemical, physical, and aesthetic characteristics of surface or ground water and its general composition. These attributes affect the waterbody's ability to sustain life and its suitability for human consumption and recreation. Infestations of invasive species, such as Eurasian watermilfoil, Curlyleaf pondweed, and Water chestnut, are currently threatening the biodiversity, natural processes, and services afforded by the Park's aquatic ecosystems.

Projects should maintain or improve existing water quality.

(ii) *Natural sedimentation or siltation*

A certain degree of natural sedimentation or siltation occurs in all streams, rivers, and receiving water bodies. Natural stream or river channel stability is achieved by allowing the waterbody to develop a stable dimension, pattern, and profile so that over time channel features are

maintained and the stream system neither aggrades nor degrades. For a stream or river to be stable it must be able to consistently transport its sediment load associated with local scour and deposition. Channel instability occurs when the scouring process leads to degradation or excessive sediment deposition results in aggradation.

Projects should maintain a stable stream or river system and avoid sedimentation and/or siltation into waterbodies.

(iii) *Eutrophication*

Eutrophication, as considered by the Agency in its review of projects, means accelerated increases in the content of plant nutrients in sediment deposition in a waterbody. Eutrophication is typically caused by excess phosphorus and nitrogen, and results in a decline in water quality and algae blooms.

Projects should avoid or limit the introduction of nutrients and sediments into waterbodies.

(iv) *Existing drainage and runoff patterns*

Surface drainage, or runoff, is precipitation that finds its way into lakes, streams, wetlands, ditches, swales, or other features without infiltrating the soil. A runoff pattern is the configuration of a natural or artificial drainage system, and is strongly influenced by topography and geological structures. Existing drainage and runoff patterns often represent a stable landscape.

Projects should not alter stable drainage and runoff patterns.

(v) *Existing flow characteristics*

Flow refers to the amount, direction, and velocity of water movement in a waterbody. It can also refer to subsurface water movement. The disruption, shifting, increase, or other change in the flow of a waterbody can affect wetlands, habitat, and other terrestrial and aquatic resources.

Projects should avoid disturbance to existing flow characteristics, including amount, direction, and velocity of water.

(vi) *Existing water table and rates of recharge*

Existing water table and rates of recharge means the seasonal high groundwater table and the aquifer recharge rate.

The existing water table, also known as the zone of saturation or seasonal high groundwater table, is the depth at which soil pores are completely saturated with groundwater. Groundwater is all of the water beneath the ground surface stored in soil pores and bedrock fractures. Water table depth varies due to several factors, including hydrogeologic conditions, seasonal fluctuations, changes in climate, and withdrawal of groundwater for agricultural and domestic use.

The rate of recharge refers to the rate of the hydrologic process where water moves downward through soils to groundwater.

(a) The *seasonal high groundwater table* is the highest surface of a zone of saturated soil which is at least six inches thick and which persists during the average year for more than a week when the ground is free of frost.

(b) An *aquifer* is a permeable geologic formation which will yield significant quantities of potable water for supply by such means as drilled or artesian wells, springs and stream recharge.

(c) An *aquifer recharge area* is a region of land surface supplying water to an aquifer, and is characterized by gently sloping (less than 8%) soils with a rapid permeability rate (generally greater than 6.3 inches per minute) or with moderate to highly fractured bedrock at or near the surface.

Aquifer recharge areas and rates of recharge are dependent upon precipitation, snowmelt, infiltration from lakes, rivers, and wetlands occurring within a watershed, and other factors. Aquifers are susceptible to contamination and can be influenced by human activities including excessive withdrawal, impervious surfaces that prevent infiltration, and disturbance of native vegetation.

Projects should maintain or improve existing groundwater quality and quantity.

(2) ***Land***

Objectives:

- To preserve the existing topographic and soil conditions of the Park.
- To preserve the forest and open space areas of the Park.
- To preserve the agricultural soils of the Park.

- To locate development in suitable areas with minimal impacts to land.
- To prevent the introduction and spread of terrestrial invasive species.

The following development considerations are taken into account during review of impacts to land resources in the Park:

(i) ***Existing topography***

Topography is comprised of the relief features and surface configuration of land, and includes landforms such as hills and valleys. Topography affects watershed boundaries, drainage characteristics, water movement, water quality, and factors into potential aesthetic impacts.

Projects should minimize disturbance to existing topography.

(ii) ***Erosion and slippage***

Erosion and slippage can produce sedimentation into receiving waters and wetlands, and damage infrastructure. The potential for erosion and slippage increases as activity and development occurs closer to steep slopes or as runoff is manipulated and directed into an unnatural or unsustainable pattern. Clay soils, which swell, and sandy soils utilized beyond their angle of cohesion can be particularly unstable. The type and amount of vegetation on or adjacent to steeply sloped areas also contributes to the likelihood of erosion and soil slippage.

Projects should be located on appropriate slopes, employ erosion and sediment control best management practices, and adhere to a stormwater management plan where necessary.

(iii) ***Floodplain and flood hazard***

Floodplains store and dissipate floodwaters, protect water quality, are a source of groundwater discharge and recharge, provide riparian buffers, wildlife corridors and habitats, and serve as open space areas for recreational opportunities. Many floodplains in the Park have highly specialized ecosystems that include federally and state-protected species.

Floodplain and flood hazard includes floodplains, floodways, and floodway fringes, as determined by the highest level of flood that, on the average, is likely to be equaled or exceeded once every 100 years.

(a) A *floodplain* is a normally dry land area, adjoining rivers, streams, ponds, lakes, or wetlands, which is susceptible to partial

or complete inundation due to:

(1) overflow of inland waters;

(2) unusual or rapid accumulation or runoff of surface waters from any source, including spring snowmelt, severe rainfall, and/or oversaturation of the soil; or

(3) mudslides or mudflows proximately caused or precipitated by accumulations of water on or under the ground.

(b) *Floodways* are the part of the floodplain that must remain unrestricted in order to discharge the 100-year flood without cumulatively increasing the water surface elevation more than one foot at any point. They comprise the stream channel and immediately adjacent lands which are frequently flooded and which help carry the major portion of floodwaters during extreme floods.

(c) *Floodway fringes* are the parts of the floodplain extending from the outer edge of the floodway to the outer limit of the 100-year floodplain. Water in floodway fringes is often shallow and slow moving, even during a major flood.

Projects should protect the storage and dissipation abilities of floodplains, and should avoid changing base flood elevation.

(iv) *Mineral resources*

Mineral resources within the Park include sand, gravel, rock, garnet, wollastonite, and others, and provide a significant economic benefit to the region. Extraction of mineral resources may affect water and air quality, noise, traffic, and aesthetics, and may cause other impacts within and outside the mine boundary, both during and after extraction activities.

Mineral extraction projects should avoid, minimize, or mitigate impacts to water and air quality, noise, traffic, aesthetics, and other Park resources, and reclamation plans should be implemented upon completion of extraction activities.

(v) *Viable agricultural soils*

Viable agricultural soils are soils suited for agricultural production.

Projects should encourage proper and economic management of agricultural resources where appropriate.

(vi) *Forest resources*

The Adirondack Park contains the largest intact forest east of the Mississippi River. A forest is an ecosystem characterized by a relatively dense and extensive tree cover often consisting of stands varying in characteristics such as species composition, structure, age class, and associated processes. A forest ecosystem may also include meadows, streams, fish, wildlife and existing development. The climate and soils of the region are conducive to highly productive forests, and timber management, as well as recreational and other activities, depends on the forest resources of the Park's private lands. Invasive plants, insects, animals, and other organisms, such as Japanese knotweed and gypsy moths, are current threats to forest ecosystems.

Projects should encourage proper and economic management of forests where appropriate.

(vii) *Open space resources*

Open space within the Park consists of undeveloped public and private land. Private open space lands may be protected against development by conservation easement, deed covenant, or other means, or may be used as working forests or farms. Other open space may be land that is privately held and not yet developed.

Private open space lands contribute to wildlife habitat, serve the forest products, agricultural, and tourism industries, and are essential and basic to the unique character of the Park. Private open space lands may also be available for public recreational activity.

Projects should minimize disruption of and preserve open space resources where appropriate.

(viii) *Vegetative cover*

Vegetative cover is comprised of all of the plants in a given area. This includes the various layers of vegetation, such as the bryophyte (moss-lichen) crust, forbs and herbs, low shrubs, high shrubs, and low, mid and high canopy. Vegetative cover contributes to wildlife habitat, soil erosion prevention, stormwater runoff reduction, and aquifer and surface water quality and recharge. Vegetative cover can also improve the aesthetic character of an area.

Projects should minimize disruption to vegetative cover and may require the planting of additional vegetation.

(ix) ***The quality and availability of land for outdoor recreational purposes***

Private lands within the Park provide a host of outdoor recreational opportunities that may be open to all or a portion of the public. For example, fish and wildlife resources on private lands complement those available on state land, particularly where groups lease hunting and fishing rights. Outdoor recreation may also occur on private lands subject to conservation easements. In addition, golf courses, parks, beaches, campgrounds, playgrounds, snowmobile trails, and other development may be undertaken specifically to provide for outdoor recreation use on private lands.

Projects should encourage proper and economic management of recreational resources where appropriate.

(3) ***Air***

Objective:

- To preserve or improve the air quality of the Park.

The following development consideration is taken into account during review of impacts to the air resources of the Park:

(i) ***Air quality***

Air pollution can harm human health and damage the ecosystem. Air pollutants that affect the Park can be generated from activities undertaken both within and outside the Park. In general, most pollutants, including greenhouse gases, come from industrial manufacturing, use of vehicles and power equipment, and operation of energy facilities that burn oil, gas, or coal.

Projects should avoid, minimize, or mitigate air pollutant emissions.

(4) ***Noise***

Objective:

- To preserve the existing natural soundscapes of the Park.

The following development consideration is taken into account during review of noise impacts within the Park:

(i) *Noise levels*

The perception of noise is impacted by a sound's characteristics, environmental factors, and the physical and mental sensitivity of the receptor. Sound characteristics include amplitude (loudness), frequency (pitch), impulse patterns, and duration. Environmental factors include distance, surrounding terrain, ambient sound level, time of day, wind direction, temperature gradient, and relative humidity.

Projects should avoid, minimize, or mitigate noise impacts.

(5) *Critical resource areas*

Objective:

- To preserve critical resource areas in the Park.

The following development considerations are taken into account during review of impacts to critical resource areas of the Park:

(i) *Rivers and corridors of rivers designated to be studied as wild, scenic or recreational in accordance with Article 15, Title 27, of the Environmental Conservation Law*

Appendix Q-5 to the Agency Regulations lists the ten sections of rivers currently designated to be studied for possible inclusion into the wild, scenic, and recreational rivers system, as described in the Wild, Scenic and Recreational Rivers System Act in the Environmental Conservation Law.

Projects should avoid, minimize, or mitigate impacts to corridors of rivers designated to be studied for possible inclusion into the wild, scenic, and recreational rivers system.

(ii) *Rare plant communities*

The New York Natural Heritage Program works to facilitate conservation of rare plants and natural communities. The Department of Environmental Conservation (DEC) maintains lists of the rare plants and natural communities currently being tracked by the Natural Heritage Program.

Projects should avoid impacts to the rare plants and natural communities monitored by the New York Natural Heritage Program.

(iii) *Habitats of rare and endangered species and key wildlife habitats*

The New York Natural Heritage Program works to facilitate conservation of rare animals. The DEC maintains lists of the rare animals currently being tracked by the Natural Heritage Program.

The Endangered and Threatened Species provisions of the New York State Environmental Conservation Law are administered by the DEC, which maintains a list of endangered species protected under this law.

Key wildlife habitats means habitats required for the survival of wildlife species which are characteristic of the northern hardwood and coniferous forests of the Adirondack Park, many of which are unique, within New York, to the Adirondacks or rare or endangered within the State. Key wildlife habitats include:

> (1) deer wintering yards, which means areas having a distinctive combination of vegetation, topography, and hydrological characteristics that offer protection and food for deer forced to seek shelter due to deep snow or severe weather conditions;
>
> (2) waterfowl nesting, resting and feeding areas, which means areas vitally important to the maintenance of breeding and migrating waterfowl populations, especially shallow and deep water marshes contiguous to open water;
>
> (3) ecotones, which means areas of major vegetation transition zones providing valuable food, shelter, water, and rearing areas for a variety of wildlife species, some of which live primarily within the ecotone, and some of which depend on it during certain periods of their life cycle. Ecotones include borders of lakes, ponds, rivers, and streams, borders between coniferous and hardwood vegetation, and the edges of open areas such as fields and plains which abut forested lands.

Projects should avoid impacts to the rare animals monitored by the New York Natural Heritage Program, endangered, threatened, and special concern species protected under the Environmental Conservation Law, and key wildlife habitats.

(iv) *Alpine and subalpine life zones*

There are currently no private lands within alpine or subalpine zones.

(v) *Wetlands*

Approximately 15% of the Adirondack Park (around 900,000 acres) is covered by wetlands. Wetlands are critical for flood control, stormwater control, wildlife habitat, protection of subsurface water resources, nutrient cycling, pollution treatment, sediment control, recreational opportunities, aesthetic values, opportunities for scientific and educational study, and open space. Development within and around wetlands may degrade and destroy the functions and values wetlands provide.

Projects should avoid, minimize, or mitigate direct and indirect impacts to wetlands.

(vi) *Elevations of twenty-five hundred feet or more*

High elevation areas typically consist of shallow soils, cold temperature regimes, and stunted vegetation. Because of soil and climatic conditions, high elevation areas are extremely sensitive to disturbance.

Projects involving development at elevations of 2500 feet or more should be avoided and will involve extensive analysis and review.

(vii) *Unique features, including gorges, waterfalls, and geologic formations*

Unique features are remnants of past geologic or meteorologic actions, and include scenic features such as rock slides, cirques and arêtes, paleontologic features such as stromatolite fossils, and structural formations such as rusty quartz veins. On its website, the DEC maintains a list of larger unique geologic features in New York State.

Projects should avoid the destruction and/or alteration of gorges, waterfalls, geologic formations, and other unique features.

(6) ***Wildlife***

Objectives:

- To conserve fish and wildlife populations and habitat in the Park.
- To maintain critical fish and wildlife connectivity corridors where feasible.

The following development considerations are taken into account during review of impacts to wildlife in the Park:

(i) ***Fish and wildlife***

The ecosystems of the Park include diverse aquatic, wetland, and terrestrial habitats that provide food, nesting, spawning, and resting areas, and cover for fish and wildlife populations. Corridors that connect existing habitats assist in maintaining healthy populations and provide options for adapting to natural and human-induced environmental changes. Development locations, patterns, and intensity, as well as secondary impacts such as noise, can alter habitats and influence the distribution of fish and wildlife.

Projects should avoid impacts to fish and wildlife.

(7) ***Aesthetics***

Objectives:

- To preserve and enhance the scenic qualities of the Park.
- To design the built environment in harmony with both the existing character of an area and the natural landscape.

The following development considerations are taken into account during review of impacts to aesthetic resources in the Park:

(i) ***Scenic vistas***

Scenic vistas include distant views through or along an opening, especially views which frame or focus attention upon a scene of distinctive character and natural beauty such as a prominent landmark, mountain, river valley, plain, or historical monument. Scenic vistas include those designated on the official Adirondack Park Land Use and Development Plan Map and those locally designated.

Projects should avoid or minimize impacts to scenic vistas.

(ii) ***Natural and man-made travel corridors***

Natural and man-made travel corridors include the land or water visible from natural and man-made transportation routes such as interstate, state, county, and town highways, boating and canoe routes, and hiking and horse trails.

Projects should avoid or minimize impacts to natural and man-made travel corridors.

(b) Historic site considerations

(1) *Historic Factors*

Objectives:

- To avoid or minimize impacts to historic resources in the Park.

The following development consideration is taken into account during review of impacts to historic resources in the Park:

(i) *Historic sites or structures*

Historic resources take the form of historic archaeological sites, including sites underwater, and historic architectural structures, including the surrounding districts and areas. Historic sites can be impacted by both above-ground activities, such as construction of structures and roads, grading, and landscaping, and below-ground activities, such as excavations and installation of utilities, footings, and foundations. Historic structures can be impacted by their demolition or physical alteration, or by a change in scale to their visual prominence or visual context, including through the construction of new structures. The Historic Preservation Act of 1980 prohibits Agency approval of a project that may impact an eligible or registered property prior to review by the Commissioner of Parks, Recreation and Historic Preservation.

Projects should avoid, minimize, or mitigate impacts to historic resources.

(c) Site development considerations

(1) *Natural site factors*

Objectives:

- To analyze natural site factors to determine the suitability of a site for a proposed activity.

- To create a site design that recognizes and incorporates the limitations of a site based on existing natural site factors.

The following development considerations are taken into account during review of impacts to natural site factors in the Park:

(i) *Geology*

Geology includes the study of the earth and the materials out of which it is made, as well as the processes acting on these materials. Topographically, the Adirondacks are divided into the Central Highlands and Southeast Lowlands, with the Highlands largely controlled by highly erosion resistant bedrock and the Lowlands largely controlled by weakly resistant bedrock. Throughout the Park, the type of and depth to bedrock influence surface and subsurface characteristics, including slope, soil type, and depth to groundwater.

Projects should avoid development in areas where the geology will lead to adverse impacts.

(ii) *Slopes*

Steep slopes are 15% or greater, depending on the activity proposed and resources present. Disturbance to steep slopes can intensify erosion and sedimentation beyond the rate experienced through natural geomorphological processes, potentially resulting in the removal of vegetation, disturbance to habitats, degradation of water quality, silting of wetlands, alteration of drainage patterns, obstruction of drainage structures, and intensification of flooding.

Projects should avoid development on steep slopes.

(iii) *Soil characteristics*

Soils in the Adirondack Park vary in their ability to support certain activities. Soil characteristics such as color, texture, size and shape of soil aggregates, kind and amount of rock fragments, and distribution of plant roots can be used to identify soils and their ability to support activities such as building site development, erosion and sediment control, stormwater management, on-site wastewater treatment systems, and agriculture.

Projects should avoid development where the soil characteristics will lead to adverse impacts.

(iv) *Depth to ground water and other hydrological factors*

Depth to groundwater is the vertical separation distance between natural grade and water that flows or seeps downward and saturates soil or rock.

Other hydrological factors to take into consideration include assessment of predevelopment site hydrology. Site hydrology includes the movement, distribution, and quality of water associated with a particular project.

Projects should identify depth to groundwater and account for pre-development hydrology in their design.

(2) *Other site factors*

Objectives:

- To preserve or improve the character of a project area.
- To ensure the adequacy of existing or proposed site facilities.
- To ensure compliance with local, state, and federal guidelines, standards, and regulations.

The following development considerations are taken into account during review of impacts to other site factors in the Park:

(i) *Adjoining and nearby land uses*

Adjoining and nearby land uses means the developed and natural environment in the area surrounding a project site. Features that define an area may include a wide range of physical, visual and sensory characteristics, such as architectural styles, pattern and size of lots, scale of structures relative to lot size, density of development, noise levels, viewsheds, type, size and location of vegetation, traffic patterns and predominant vehicle types, structure materials and colors, structure heights, alignment of driveway/parking areas, placement and orientation of structures on sites, odors, signage, and lighting.

Projects should avoid development that will create a harmful change to the existing character of adjoining and nearby land uses.

(ii) *Adequacy of site facilities*

Site facilities consist of the services and features necessary to implement a proposed activity. Examples of site facilities include on-site wastewater treatment systems or availability of connections to off-site systems, utilities, roads and driveways, and parking areas. Site facilities may also include natural features of a site, such as a shoreline proposed for use by multiple parties.

Projects should ensure the adequacy of existing or proposed site facilities to serve the proposed activity.

(d) Governmental considerations

(1) *Governmental Service and Finance Factors*

Objectives:

- To ensure the construction, implementation, and maintenance of the infrastructure and services necessary for a project.
- To avoid negative impacts on taxation and user-fee revenues for local governments in the Park.

The following development considerations are taken into account during review of impacts to governmental service and finance factors in the Park:

(i) *Ability of Government to Provide Facilities and Services*.

Projects may place demands on public facilities and services, including water supply and sewage collection and treatment, local schools, public safety (fire, ambulance, police services), and solid waste disposal. Municipalities may incur costs due to increases in the population or the need for capital improvements and associated maintenance. Appropriate financing measures may include direct financial or other contributions to municipalities, constructing infrastructure in advance of project site conveyance, and posting performance guarantees to ensure continued infrastructure maintenance.

Projects should consider the capacity and ability of local governments to provide, construct, and maintain necessary facilities and services.

(ii) *Municipal, school or special district taxes or special district user charges*

Local jurisdictions raise revenue through various methods of taxation and user fees. Revenue is used for public facilities and services, including water supply and sewage collection and treatment systems, local schools, public safety (fire, ambulance, police services), and solid waste disposal, as well as general government administration.

Projects should consider potential impacts to taxation and user-fee revenue on local governments.

(e) Governmental review considerations

(1) *Governmental control factors*

Objective:

- To ensure coordination and compliance with all applicable federal, state, local, and other laws when authorizing a project.

The following development consideration is taken into account during review of impacts to governmental control factors in the Park:

(i) *Conformance with other governmental controls*

Agency regulatory procedures bar approval of a project that is a prohibited use or has been denied approval under a local law or ordinance. In addition, the Historic Preservation Act of 1980, the Endangered and Threatened Species provisions of the Environmental Conservation Law, the State Environmental Quality Review Act, and other laws may also restrict Agency review or approval.

Project review should occur in compliance with the procedures established in all applicable laws, and permits should not approve activities or contain conditions that would result in direct conflict with laws not implemented by the Agency.