



M E M O R A N D U M

TO: James Townsend, Counsel
FROM: Jennifer McAleese, Senior Attorney
RE: Development in the Adirondack Park
DATE: November 5, 2014

Development in the Adirondack Park (DAP) is an advisory publication written by Agency staff to provide guidance and assist project sponsors in designing proposals. The information in DAP is also generally applied by Agency staff after taking into account the specific facts and circumstances of each particular application. DAP provides guidance while allowing for individual and professional creativity and innovation in project design.

DAP is intended to be an evolving document that is continually updated by Agency staff. Last year, Agency staff began working on a thorough overhaul of DAP with the goal of producing a document that reflects current practices and new technology and information. In September 2013, Agency staff released the Development Considerations section of DAP, which provides additional explanation of each of the 37 considerations listed in section 805 of the Adirondack Park Agency Act. Staff also released three Construction Guidelines, which provide specific information about Lighting, Signs, and Historic Site Considerations.

Three new Construction Guidelines authored by staff are now available: Energy, Noise, and Biological Survey Guidelines. The Energy Construction Guideline describes energy efficiency and conservation measures and why the Agency may consider requiring implementation of energy-saving measures in a particular project. The Noise and Biological Survey Guidelines articulate processes, or a basic checklist, for applicants and Agency Staff to follow during project review. It is intended that more technical guidance, in the form of appendices, will be added to these documents as staff work with project sponsors and develop specific protocols.

CONSTRUCTION GUIDELINE: ENERGY

Objective: To reduce the consumption of energy, especially from fossil fuels.

Background:

Energy is power derived from the utilization of physical or chemical resources, especially to provide light and heat or to work machines.¹ Electric, thermal, mechanical, and other types of energy are necessary for land use and development activities, including the grading and mining of land and the construction and maintenance of structures. A portion of the energy used in the United States is derived from sources considered renewable on a human timescale, such as hydro, geothermal, solar, wind, biomass, and from nuclear sources. However, most energy comes from the burning of fossil fuels, such as coal, natural gas, and petroleum.

Fossil fuels are resources formed over hundreds of millions of years through the anaerobic decomposition of organisms. Because of the long period of time required for their creation, fossil fuels are considered non-renewable, and their conversion to energy has long been commercialized. Projected dates for depletion of the world's fossil fuels vary from tens to hundreds of years from now; in the meantime, their extraction and use as an energy source is a significant contributor to global climate change, air quality deterioration, and a variety of other environmental problems.²



In an effort to reduce these impacts, federal and state governments have developed laws and voluntary programs, many with associated incentives, to reduce the public's need for and use of fossil fuel energy. In addition, numerous non-profit organizations and for-profit companies offer programs and strategies for helping landowners reduce their energy consumption. These initiatives are often targeted at improving energy efficiency, although some also encourage or mandate energy conservation.

Energy efficiency:

The goal of energy efficiency requirements and programs is to reduce the amount of energy required for a specific development or service. For example, constructing new or retro-fitting existing buildings with appropriate insulation, or using a passive solar design, can minimize the energy needed for the heating and cooling of indoor temperatures.

¹ Oxford Dictionary. See www.oxforddictionaries.com/us/definition/american_english/energy.

² Other sources of energy also contribute to climate change, air quality, and other concerns. For example, while wood is considered a renewable biomass energy source and may be a preferred alternative to fossil fuels in the Adirondack context, worldwide deforestation is a major contributor to climate change, loss of habitat and biodiversity, and other environmental degradation.

Other energy-efficiency measures for buildings include using light emitting diodes, or LEDs, and energy-efficient appliances to minimize electricity consumption. The implementation of these measures may cost more initially, but often leads to financial savings over time.

Energy conservation:

Energy conservation refers to reducing energy consumption. For example, the need for energy derived from petroleum can be reduced on a regional or local scale through zoning and other requirements that create walkable downtown areas. Energy conservation measures on an individual scale include lowering indoor thermostats in winter and raising them in summer, and using lighting and other systems that turn off automatically when not in use.

Requirements and programs:

The Adirondack Park Agency does not implement laws directly targeted at reducing energy consumption. However, when evaluating a proposal's potential to create undue adverse impacts under the Adirondack Park Agency Act, Freshwater Wetlands Act, or Wild, Scenic and Recreational Rivers System Act, the Agency may consider any proposed energy efficiency or conservation measures. The Agency may also find that implementation of specific energy-saving measures is necessary for approval of a project.

Other energy-related laws and programs implemented by New York State include the following:

- Within New York State, residential and commercial construction must comply with the Energy Conservation Construction Code of New York State, or ECCCNY. This code is administered and enforced by local Code Enforcement Officers, and regulates insulation, heating, cooling, lighting, and other components of new and renovated construction. Information about the requirements of the ECCCNY is available at http://www.dos.ny.gov/dcea/energycode_code.html.
- The New York State Energy Research and Development Authority, often referred to as NYSERDA, is a public benefit corporation that offers technical expertise and funding to promote energy efficiency and the use of renewable energy sources. Information on specific programs and incentives is available at <http://www.nyserda.ny.gov/>.
- ENERGY STAR is a labelling system established to designate energy-efficiency. Products such as refrigerators, televisions, and furnaces, can display an ENERGY STAR label if they meet specifications established by the federal Environmental Protection Agency. Residential and commercial buildings can also be rated



through the ENERGY STAR program.³ ENERGY STAR information is available at <http://www.energystar.gov/>. Information on New York State programs using ENERGY STAR can be found at <http://www.nyserda.ny.gov/>.

³ Federal Energy Star ratings are currently available for homes, hotels, houses of worship, k-12 schools, office buildings, courthouses, retail stores, senior care facilities, supermarkets, warehouses, and wastewater treatment plants. Assessments are available for dormitories, hospitals, and medical offices. NYSERDA also offers ENERGY STAR certifications, based on the ECCCNY, for certain low-rise residential buildings.

PROJECT GUIDELINE: NOISE

Objective: All development activities should strive to preserve the existing soundscapes of the Park.

Background:

Existing Soundscapes

The Park's natural soundscapes constitute valuable resources. Natural soundscapes include animal sounds produced to establish territories, attract mates, nurture young, locate prey, navigate, detect, and avoid predators. The songs of birds, trill of spring peepers, and hum of summer cicadas are all animal sounds familiar to the Park.

Physical processes contribute to the natural soundscapes of the Park, as well, through the sounds of wind in the trees, rain and leaves falling, thunderstorms, waterfalls, and other natural occurrences.



Human communities are also a part of the Park's soundscapes. Existing hamlets, transportation corridors, and other more isolated developments all contribute sound.

Noise Definition, Causes, and Effects

Noise is sound that is unwanted or disturbing, often by interfering with normal animal and human activities. Amplitude (loudness), frequency (pitch), impulse patterns, and duration are relevant considerations when determining whether sound becomes noise. Other factors that influence the perception of sound include the distance between a sound source and receptors, uses of surrounding lands, ambient sound levels, time of day, topography, wind direction, air temperature, and relative humidity. The combination of sound characteristics, environmental factors, and the physical and mental sensitivity of a receptor to a sound determine whether or not sound will be

perceived as noise. Numerous studies have demonstrated adverse impacts from noise on fish, wildlife and human interactions and health.¹

Noise associated with new or established development can disrupt the natural soundscapes of the Park and nearby human communities. For example, dump trucks, bulldozers, concrete mixers, drills, and backhoes can all create noise while construction activities are occurring. Noises associated with established development include increased vehicle and human traffic, and the use of commercial or manufacturing equipment. To calculate the sound generated by equipment operation, one can consult the manufacturer's specifications for sound generation, available for various types of equipment. Another option for calculating sound generated by equipment is to make actual measurements of sound generated by existing similar equipment, elsewhere.



Sound levels are measured in units of decibels, symbolized as dB. The decibel scale is a logarithmic scale, which means the scale is not directly proportional to the energy or loudness of the noise. For instance, while an increase in sound of 3 dB over ambient sound levels may be just perceptible, an increase in sound of 10 dB causes a doubling of perceived loudness. Increases in sound pressure level above ambient levels have the potential to create adverse noise impacts on receptors.

Typical human reactions to increases in sound pressure are shown in the following chart, taken from the New York State Department of Environmental Conservation's Policy on Assessing and Mitigating Noise Impacts.

¹ For more information, see http://www.dec.ny.gov/docs/permits_ej_operations_pdf/noise2000.pdf; <http://www.epa.gov/air/noise.html>; <http://www.nature.nps.gov/sound/effects.cfm#wildlife>.

Increase in Sound Pressure (dB)	Human Reaction
Under 5	Unnoticed to tolerable
5 - 10	Intrusive
10 - 15	Very noticeable
15 - 20	Objectionable
Over 20	Very objectionable to intolerable

(Down and Stocks - 1978)

Guidelines:

The Agency may include conditions related to noise when authorizing a specific proposal. Even when not mandated, however, development activities within the Park should always be designed to minimize disruption to existing natural and human soundscapes.

Practices that help to avoid and mitigate impacts from noise include the following:

Location

Sources of sound related to development activities should be located so as to have the least possible impact. Sound generating activities should occur far from sound receptors, including animal habitats and existing human developments. Wherever possible, sources of sound should be placed away from fields, rivers, valleys, and bodies of water, as sound travels easily across these landscape features. Existing natural barriers such as slopes and vegetation, as well as artificial barriers such as berms, walls, material stockpiles, and fences, can be used to limit the transfer of sound to surrounding areas. Soundproof or sound controlling housings or enclosures should also be considered, to limit the emission of sound from structures such as water pumps, generators, and sawmills.

Timing, Duration and Frequency

Avoiding construction and operation activities at certain times can be crucial in preventing sound from disrupting animal migratory and breeding activities. Limiting activities at night, during holidays, and other recognized times may also help to prevent disruption to neighboring communities. Reducing the duration and frequency of construction and operation activities can also mitigate noise impacts.

Equipment

Development activities should be completed using the quietest equipment available. For example, electrically-operated equipment is often quieter than equipment powered by internal combustion engines. Using pneumatic drill silencers, updated mufflers, silencers, alternative technology back-up alarms, and other technologies may also help

to limit the creation of noise from development activities. Truck routes associated with development should be routed to avoid noise impacts to acoustically sensitive areas.

Noise impact analyses

A noise impact analysis may be required during the Agency's review for projects with the potential to create adverse noise impacts to the existing natural soundscape or human communities. Noise impact analyses will inherently vary, depending on the specific proposal and surrounding site conditions. Agency staff generally require that the methods and protocol of the analysis, format of the resulting report, and qualifications of the investigators be approved prior to the undertaking of a noise impact analysis.

Noise impact analyses must generally be prepared by a professional engineer licensed in New York State or other professional with appropriate experience, and must provide an assessment of changes to the ambient and operational level and character of the surrounding soundscape. The analysis should consider the potential for impacts to both animal and human communities, and should include the potential for impacts caused by vibrational changes. The analysis should detail any noise mitigation measures proposed with the development, as well as a method for handling and responding to complaints.

CONSTRUCTION GUIDELINE: BIOLOGICAL SURVEYS

Objective: To avoid, minimize, or mitigate adverse impacts to the biological resources of the Park.

Background:

Before issuing a permit for an activity on private land, the Agency must find that the proposal will not have an undue adverse impact on the natural, ecological, wildlife, open space, or other resources of the Park.¹ When making this finding, the Agency takes into account 37 “development considerations” listed in §805(4) of the Adirondack Park Agency Act; these considerations include factors that relate to the biological resources of a project site, including forest resources, vegetative cover, rare plant communities, habitats of rare and endangered species and key wildlife habitats, alpine and sub-alpine life zones, wetlands, and fish and wildlife.



Spruce Grouse, *Falci pennis Canadensis*
Audubon Society

Basic Biological Information Survey:

The first step in reviewing a proposal’s potential to impact biological resources involves submission by a project sponsor of all of the information required by the project application, including any applicable Supplemental Information Request, for the proposed activity. Application materials generally ask about existing

¹ Adirondack Park Agency Act §809; Environmental Conservation Law §24-0801(2) (the New York State Freshwater Wetlands Act); 9 NYCRR §577.8(b)(3) (Agency regulations implementing the New York State Wild, Scenic, and Recreational Rivers System Act).

species, as well as site conditions that may indicate the presence of important habitats.

Upon receipt, the Agency reviews these application materials, often in conjunction with biological information obtained during site visits and from existing maps, databases, websites, and literature. The Agency looks for any record of rare, threatened, or endangered species, or any other identified species or habitats on or near the project site, as well as indications of unusual or high combinations or numbers of species. The Agency also analyzes topographic and landscape features on and near the site, including river and stream corridors and other shorelines, wetlands, vernal pools, covertypes, soils, slopes, floodplains, and cliff faces, for evidence suggesting the presence of important, unique, or sensitive habitats. In addition, the Agency examines any indications of human use or impact, such as road corridors and structures.



Trillium Erectum

This survey of the basic biological information available for a site may provide the Agency with the information necessary for a full assessment of the proposal's potential impact on the biological resources of the Park. However, where additional verification of information is required, the Agency may determine that a more intensive biological survey must be completed. In addition, a more intensive survey may be required where a rare, threatened, or endangered species has been identified on or near the project site, or where the scope or configuration of the proposal could lead to significant fragmentation or disruption to a species or habitat of concern. For example, the construction of roads or driveways through identified movement corridors may indicate a need for an intensive biological survey.²

² The Agency may also require submission of an intensive biological survey for certain project proposals regardless of the basic biological information available for the area. For example, subdivisions creating more than 50 lots outside of hamlet areas generally require completion of a qualitative biological survey, at a minimum.

Intensive Qualitative and Quantitative Biological Surveys:

The purpose of intensive biological surveys is to ensure that the Agency has the information necessary to assess a proposal's impacts to Park resources. There are two types of intensive biological surveys that may be required as part of a project's review: **Qualitative** and **Quantitative**. It is usually the responsibility of the applicant to carry out an intensive biological survey, following Agency staff approval of the methods and protocol, format of the resulting report, and qualifications of the investigators. The type and scope of survey necessary often depends on the specific proposal and site conditions. The Agency will always consult with the applicant's biologist on the requirements for a specific survey.

1. Qualitative Biological Survey

A qualitative biological survey generally involves the verification and recording by a qualified biologist of basic site conditions, topographic and landscape features, the presence of plant and animal species and other organisms, habitat types unique to the regional setting, and existing or historic human uses and structures. A detailed, site-specific report consisting of maps, data, and lists of documented species is required.

2. Quantitative Biological Survey

Quantitative biological surveys involve gathering all of the information required as part of a qualitative survey, in addition to a more detailed study of the site using established and standardized methods of vegetation and organism sampling. Quantitative biological surveys allow for the collection of spatially explicit data to characterize and aid in analysis and protection of a site's biological resources. Quantitative biological survey sampling methods vary depending upon the taxa or landscape feature being reviewed. A detailed, site-specific report consisting of maps, data, survey methods, and resource impact analysis is required.

For Further Information:

NYS Natural Heritage Program-<http://www.dec.ny.gov/animals/29338.html>

NYSDEC Protective Plant List-<http://www.dec.ny.gov/regs/15522.html>

NYSDEC Protective Animal List-<http://www.dec.ny.gov/animals/7494.html>

Ecological Communities of NYS- <http://www.dec.ny.gov/animals/97703.html>