

## REGULATORY IMPACT STATEMENT

### 1. Statutory authority:

Section 43- 0107(8) of the Environmental Conservation Law provides that the Lake George Park

Commission shall have the authority to:

adopt, amend and repeal, after public hearing according to the provisions of the state administrative procedures act (except in the case of rules and regulations that relate to the organization or internal management of the agency) such rules and regulations, consistent with this article, as it deems necessary to administer this article, and to do any and all things necessary or convenient to carry out the purpose and policies of this article and to exercise all powers granted by law.

Section 43- 0112 (5) of the Environmental Conservation Law provides that:

the Commission shall, after consultation with the department, the department of health, the Adirondack Park Agency and each municipality located in whole or in part within the Park, further promulgate regulations relative to stream corridor management which shall include standards for the location of roads, stream channelization, the frequency of stream crossings, and timber harvesting and vegetative cutting restrictions within designated stream corridors. The regulations adopted pursuant to this section may be stricter than regulations promulgated by the department.

### 2. Legislative objectives:

The New York State Legislature has determined that it is in the public interest to preserve, protect, conserve and enhance the unique natural and scenic resources of the Lake George Park, including the Lake's superior water quality, for the appropriate residential, conservation, health, recreational and educational purposes. In 1987, the legislature enacted Chapter 617 which amended Section 43 for the purpose, among others, to establish permit requirements and standards for the protection of stream corridors within the Lake George Park. The intent of the standards is to preserve the water quality of Lake George and its tributaries; to protect the riparian and aquatic ecosystems of streams within the Lake George Park; and to provide for the environmentally sound use of the Lake George Park's land resources.

### 3. Needs and Benefits:

Lake George Watershed: Description and Condition

Lake George is a 44 square mile glacially-formed lake in the southeastern portion of the Adirondack Park. It is a relatively long lake (32 miles long and an average of 1.5 miles wide) and deep (averaging approximately 70 feet in depth). Lake George includes approximately 131 miles of shoreline and is fed by more than 150 streams (Shuster et al. 1994).

The Lake George Park was established in 1961 and is essentially contiguous with the watershed boundary for Lake George. The Park is comprised of approximately 100 square miles of State-owned land, primarily “forever wild” Forest Preserve, 155 square miles of privately-owned land and 45 square miles of water surface, of which about 44 square miles composes the surface of Lake George. Portions of three counties – Warren, Washington and Essex, including 12 local municipalities, are located within the park (the towns of Bolton, Dresden, Fort Ann, Hague, Lake George, Putnam, Queensbury, Ticonderoga, Horicon, Luzerne, and Warrensburg, and the Village of Lake George) (Morrison et al. 1997). Nine of these municipalities border directly on Lake George.

Lake George provides a number of benefits to the surrounding communities and the people of the State of New York. The Lake is the primary supply of drinking water for the Village of Lake George and the Hamlet of Ticonderoga, and is the reserve supply for the Town of Bolton. Lake George is also a drinking water supply to hundreds of commercial resorts and thousands of lakefront properties.

The Lake is a world renowned scenic and natural resource. Enjoying the environs of the Lake contributes to the health and quality of life of tens of thousands of residents and visitors each year. The Lake supports a marine and tourism economy upon which many local residents and communities rely.

The water source of Lake George is precipitation either directly to the water surface or to the Lake’s watershed. The contribution from the Lake’s watershed includes groundwater flows (springs) and surface water runoff carried by tributaries. The Lake’s tributaries contribute approximately 55% of the Lake’s source by volume (Shuster et al. 1994). The Lake’s characteristics of very clear, low productivity waters are a function of its land drainage basin which is covered primarily by a mixed coniferous/hardwood forest. A main contributor to the water quality of Lake George occurs between the point precipitation reaches the ground and the point it enters a tributary stream. In its transit, runoff removes pollutants from impervious surfaces which are dissolved or suspended in the runoff.

The amount and characteristics of such material being “washed” from developed areas is very significant in comparison to the amount released from undeveloped land. Approximately 92% of the Lake’s watershed area is undeveloped according to the 2016 Lake George Data Atlas produced by the Lake George Association and Chazen Companies (LGA 2016). Although representing less than 8% of the area, developed portions of the watershed contribute 43% of the phosphorus load from the watershed (Stearns & Wheeler 2001, LGA 2016). Phosphorus, the Lake’s limiting nutrient, is introduced from the watershed attached to sediments or dissolved in stormwater runoff.

Stormwater runoff from developed areas also contains grease, oil, lead, plant nutrients, chlorides, suspended solids, fecal coliform bacteria and other contaminants. Much of this material tends to accumulate on impervious surfaces during dry periods and is washed into streams and to the Lake during storm events. Water quality in Lake tributary streams and in the Lake is significantly reduced near storm sewer outfalls after storm events.

Data from Lake George samples suggest a decline in water quality. An analysis of water samples taken for the period 1980 to 1990 found, among other things, that: 1) indicators of biological productivity (algae growth) increased by 30 to 50%, 2) levels of various soluble nutrients (phosphorus, nitrogen and silica compounds) had increased, with the greatest increases occurring near land development and 3) in general, the trophic status of portions of the Lake was gradually shifting from oligotrophic (low dissolved nutrient concentrations and low biological productivity) to eutrophic (high dissolved nutrient concentration and high biological productivity) (Boylen et al. 1990). Separate analyses found that chlorides in the water have steadily increased over the last 28 years, with a heavier concentration appearing in the area of the Lake near the heaviest land development. Chloride sources include salt application on roadways, as well as effluent from septic tanks (Boylen et al. 1996).

Additionally, sediment has been a primary concern for the Lake George Basin, and its tributaries are identified as impaired waters on the 2008 New York State Section 303(d) List of Impaired/TDML Waters. Silt and sediment are listed as the cause of impairment, with urban runoff and erosion identified as the pollutant source. Sediment deposits at the outfalls of major streams in the Lake’s tributary system have created deltas that interfere with navigation and recreation (see DGEIS 2009). The feasibility of restoring seven affected shoreline areas was

evaluated in the Final Generic Environmental Impact Statement for Lake George Shoreline Restoration and Sediment Removal (2001). The project estimated the removal of more than 200,000 cubic yards of deposited sediment from deltas at the mouths of seven main tributaries of Lake George. Based upon general estimates derived from recent projects and the FGEIS (2001) for the project, restoration of these shoreline areas will cost approximately 6 to 8 million dollars.

#### Mitigating the Impact of Land Development: Current Measures and the Proposed Permit System

The Lake George Park Commission reviewed existing regulations and measures designed to mitigate the impact of land development and stream disturbances, including those of the Adirondack Park Agency (APA), the NYS Department of Environmental Conservation (DEC) and municipalities in the Lake George Basin. The Commission found that current state and local government requirements lack common objectives and consistent standards to maintaining vegetative buffers along streams when land in the Lake George Basin is developed:

- APA shoreline setbacks are not applicable to the Basin's streams except for limited reaches that are navigable.
- DEC protection of streams deals only with disturbances to the bed and banks of the stream.
- Only one municipal land use program has impervious surface setback requirements for streams currently in place. There are no stream corridor protection standards to limit vegetation clearing near streams in five of the nine lakefront municipalities. A hodgepodge of clearing limits and building setbacks apply under local codes in the remaining four municipalities. These range from 30 feet in one community to 50 feet in another, to 100 feet in certain zones of the remaining two communities (see FGEIS).

This proposed rule establishes designated stream corridors along permanent water courses that are tributary to Lake George for the purpose of protecting the water quality and environmental characteristics of those tributaries and the Lake. In summary, the rule:

- Identifies in rule text the permanent water courses subject to the proposed requirements;
- Establishes a required permit issued by the Lake George Park Commission for development, land disturbance and land clearing in a designated stream corridor;
- Defines "designated stream corridor" as "the stream bed and the area extending 35 feet from the high water mark on each side of a stream...";

- Limits construction of impervious surfaces such as buildings and parking lots, and vegetation cutting and removal in the designated stream corridors;
- Limits hydro-modification of stream channels identified by the Commission as permanent water courses that are tributary to Lake George so as to avoid undue impacts to the natural benefits of streams including their capacity to support trout and provide habitat for other species;
- Provides that variances to the standards set forth in the rule making may be pursued by application in accordance with the Commission's regulations governing variances to stormwater regulatory programs at 6 NYCRR Section 646-4.18.

### Vegetative Buffers: Benefits

Native vegetation, especially forest cover, along streams provides environmental benefits. Stream vegetative buffers of sufficient width effectively reduce sediment and nutrients in overland flow. They can also trap and filter a range of contaminants. Chapter 7 of the Draft Generic Environmental Impact Statement (DGEIS) for Adoption of Stream Corridor Management Regulations for the Lake George Park (January 2009) provides a brief overview of studies showing the effectiveness of vegetative buffers in removing sediment, phosphorus, pesticides, heavy metals and other contaminants from surface runoff before it is deposited into waterways.

Forest cover also protects key functions of streams such as preserving fish and wildlife habitat, including the local stream habitat in which native trout thrive. Stream water temperature is a key factor in habitat for fish and other species and the loss of the tree canopy can result in a significant increase in stream water temperature. Additionally, the removal of vegetation, especially on the moderate to steep slopes and sandy/loam soil found locally, starts the process of soil sloughing and erosion that transports sediments and organic matter to the stream. Sediments overlay desirable stream bottom habitat and fine particles reduce predation opportunities, clog gills and disrupt fish reproduction. Removal of vegetation or suburbanization removes amphibian habitat and disrupts animal migrations and reproduction (see FGEIS).

Finally, development of land close to streams limits the natural flow variation of the water. Streams are dynamic and energetic systems that are interacting with the surrounding land. The position of a stream at any given point of time is transitory with changes expected to occur in

relative short order in a geologic timescale. Accordingly, the effective management of the functions of a stream requires that certain areas of land also be managed. Vegetation along the bank of the stream and on nearby slopes is a critical feature of the land/stream dynamic when the energetic and ecological functions of the stream are considered.

The proposed stream corridor regulations have the specific benefit of retaining stream buffers as land is developed and thereby significantly reducing the future effects of un-buffered human land uses on the environment. A direct benefit of vegetative buffers is to reduce future reduction in water quality both in the streams and in Lake George which otherwise can be expected to occur as land is developed and re-developed. Reduced water quality, sedimentation of the shoreline, the growth of water weeds and algae degrade not only the Lake's environment but also its utility for recreation, navigation, and commerce. Decline of near-lake property values has been correlated in several studies with a reduction in lake water quality. Accordingly, an indirect benefit of the regulation is to help protect the value of the property along and near Lake George from being further affected by negative impacts. Stemming the introduction of sediments and nutrients has cost avoidance benefits relative to the restoration of the Lake that will be necessary to reverse existing problems and to sustain recreational use and the associated marine economy. Diminished water quality can be related to a location's appeal as a tourist destination and also can be expected to reduce the demand for second homes around the Lake. Reduced tourism and a reduction in the value of nearby property would result in lower tax income to the communities along the Lake. The size of the Lake is such that these economic effects are recognized as having a state-wide influence.

#### 4. Costs:

##### (a) Costs to the State government:

There will be direct costs to the Lake George Park Commission (LGPC) for the administration and enforcement of the regulations and for coordinating with other New York State agencies including Department of Environmental Conservation (DEC), Adirondack Park Agency (APA) and Department of Transportation (DOT). The LGPC currently regulates development activities through the stormwater management program (6 NYCRR Part 646) in five of the nine municipalities subject to this jurisdiction within the Lake George Park. Because of this, the adoption of the proposed regulations will not significantly increase the number of

jurisdictional projects but will add another component to the review. The increase in work load for these areas will be related to an increase in the number of stream channel disturbance projects that would become jurisdictional. This is estimated to be approximately 15 projects in the Lake George Park each year. Staff resources will be required for permit monitoring, compliance, enforcement, and consultations with other agencies.

The time requirements and corresponding costs vary significantly for such regulatory matters from as little as an hour of staff time for routine permits to several days of technical and enforcement time for more complicated matters such as enforcement hearings. However, the distribution of time is expected to correspond to the experience of the LGPC in administering permit programs and compliance activities in other of its regulatory programs. An additional 15 applications each year associated with stream bed disturbances represents an increase of roughly 5 percent above regulatory applications processed by the Commission in 2019. Assuming staff time is spent entirely on applications and equitably distributed among applications, the proposed stream bed disturbances may represent a direct agency expense of roughly \$6,500. Estimations of future program expenses should include adjustments for upward trends in salaries. However, it has also been the agency's experience that savings are incurred due to improved efficiency over time.

DEC is expected to delegate permit issuing authority for Section 15-0501 permits within the Lake George Park to the LGPC as part of the coordination efforts being developed. DEC technical staff will need to be consulted from time to time for projects that are Section 15-0501 jurisdictional but the overall effect is a reduction in costs for DEC. This would result in modest savings to DEC funds and a corresponding off-set of a portion of the additional LGPC expenses from the perspective of the State overall. APA staff consultations will be required on an estimated maximum of 10 cases per year. Two hours of technical review time at a cost of \$60 per hour per consultation would produce APA cost expenses upwards of \$1,200 per year, but likely less.

The New York State Department of Transportation (NYSDOT) administers highway systems within the Lake George Park which include a number of stream crossings. These crossings require periodic repair and replacement which may invoke the permit requirements and standards proposed to be established. The Commission and NYSDOT have entered into a memorandum of understanding (MOU) regarding administration of Stormwater Management

Regulations for the Lake George Park (6 NYCRR Section 646-4). The proposed regulations have provisions for similar agreements governing the planning and review of stream channel disturbances.

New State highways are not expected to be impacted in a significant way. Significant state highway maintenance projects involving stream channel disturbances, such as culvert replacement, are expected at the rate of one per year. Each stream channel disturbance requires consultation with DEC under the current Article 15 process, and this stream disturbance review will now be transferred to the LGPC, so no new costs are anticipated.

(b) Costs to local government:

County and municipal highway departments undertake stream disturbance projects under Section 15-0501 of the Environmental Conservation Law. These projects are most often covered under general permits issued by the Department of Environmental Conservation through the County Soil and Water Conservation District. The proposed regulations provide for administrative mechanisms to extend these agreements to any additional projects that become jurisdictional under the rule. Replacing stream crossings or creating new ones incorporating the standardized practices and designs are not expected to add costs either in terms of administrative delays or designs.

There are no costs to local government for land use reviews unless they elect to enter into an agreement with the Commission to administer one or more aspects of the regulations. Municipalities may desire to incorporate stream corridor vegetation protections into local land use programs. This will add an additional feature to municipal review of projects that already require a permit under local land use programs. Any community that chooses to administer this authority will have associated costs for review but those costs would not be expected to be significant due to the minimal acreage of private property this land use regulation involves.

(c) Costs to private regulated parties:

The rule would require permits for development projects affecting designated stream corridors. Project sponsors may incur minor additional costs for technical services for consultation with agency staff, the preparation of project plans and interaction with agency staff during the review process. The cost for any single project is highly dependent on a number of

variables. The following discusses the most important variables and presents several case scenarios to illustrate how those variables affect costs.

Project location is an important variable. Project sponsors can avoid permit jurisdiction and any additional costs by avoiding disturbances in designated stream corridors. Location is the most significant variable for the majority of development projects since stream corridors represent about 0.8% of the private land within the Lake George Park. It is expected that a lesser percentage of all development projects will require a permit under the proposed rule, as development within parcels would seek to avoid the 35-foot stream buffer area.

Design flexibility is another important variable. Flexibility is most related to the total area of the project sponsors property. The owner of a 2 acre single family home lot that is able to locate the house, driveway and accessory structures away from the stream corridor will face zero compliance costs. In laying out upland subdivisions where the permitted density of single family homes may require eight to ten acres per principal building, it is reasonable to expect that developers will have some flexibility to avoid land disturbances in designated stream corridors.

As noted earlier, the regulations define a designated stream corridor as an area within 35 feet of the high water mark on each side of a stream. The objective of the standards is to retain a natural buffer, ideally of native forest, in the corridor. Cutting vegetation and trees in the corridor of up to 30% of the woody vegetation (defined as having a diameter of 1 inch or greater) would be approvable with a permit. This cutting is not inconsistent with the objectives of the buffer and moderates the effect of the standards on private property. Cutting 30% of the trees in the stream corridor could be concentrated in certain areas to remove trees in a manner compatible with many of the customary open space uses of home sites and business premises (to protect buildings, open for sunlight etc). Property owners could receive permits for clearing associated with a stream crossing, a road, utility, or trail crossing that is necessary.

Existing development is defined as any use, building, paved area and landscaped area present on the effective date of the regulations. Existing development may be maintained in perpetuity. The following case scenarios illustrate the variables described above in relationship to several project types that will require permits under the proposed regulations and that are typical of those encountered as the program is administered.

Case 1:

The project involves the construction of a driveway and small home or hunting camp on a large upland parcel. Access to the site requires that the driveway cross a stream. Under current practice, an excavation contractor would place a small culvert and back fill. This part of the work would be completed in a day at a cost for time and materials of about \$1,500. Under the proposed regulations a permit would be required. The permit application process requires the preparation of a project plan. The permit application fee is \$100.

Under the rule, the project plan for this project is an accurate sketch that includes a plan view and a profile view with dimensions shown. It is not required to be to scale or to be prepared by an engineer. The agency application instructions provide illustrations. A property owner may prepare the sketch. However, the contractor often acts as an agent for the property owner in obtaining a permit for such projects. This case assumes that the contractor would prepare a project plan and file the application. The time required preparing the plan and for some consultation with the agency staff would not exceed 4 hours. The contractor charges for this time are estimated to be \$200.

This case also assumes that the culvert proposed by the contractor and part of his estimate to the property owner is undersized under the proposed rule. The under-sizing of culverts, usually done to reduce construction cost, is a typical fault encountered in stream protection programs. These undersized culverts are chronic issues in the Lake George basin and fail more frequently, resulting in sedimentation of the stream and resultant impacts to biota, habitat and water quality. The permit requires a larger sized culvert than the contractor estimated. This larger culvert adds \$500. Accordingly, the cost of compliance is as follows:

Permit application fee	\$100
Plan preparation	\$200
Additional construction costs	<u>\$500</u>
Total	\$800.

Case 2:

The project involves the expansion of a driveway and the construction of a three bay garage on developed residential. The 30 foot by 30 foot garage has a foot print of 900 square feet, and the driveway will also be expanded by 900 sqft. The house is located on a parcel

bounded on one side by a stream, which has a stream length of 200 foot on the site and has an undisturbed stream buffer along its length. The house is roughly centered on the lot, and has a setback from the stream of 62 feet, and a setback of 62 feet from the opposing property line. The garage will intrude 3 feet into the designated stream corridor. This would result in 90 square feet of impervious area within the corridor. The land disturbance would include clearing and grading extending 50 feet along and 13 feet deep into the corridor creating a contiguous clearing along 25% of the stream length within 22 feet of the stream.

The project sponsor can limit the amount of land disturbance to less than 7,500 square feet. Accordingly, the project is designated a minor project, and also requires a stormwater management permit due to the proposed land disturbance and impervious area. Minor project permits require an application fee of \$100. The project complies with the proposed stream corridor regulations that limit new impervious area to 100sqft and limit disturbance to 30% of the stream length.

In this scenario with equal setbacks on either side of the house, it is practicable for the applicant to modify their plans to avoid the stream corridor altogether, or they can pursue a stream corridor permit. The applicant chooses to pursue a stream corridor permit. The project, which is also subject to the stormwater regulations, already requires a design professional to create a site plan depicting proposed impervious areas and limits of land disturbance. As such, no additional field work or design is necessary. The proposed regulations state that when stream corridor permit requirements apply in conjunction with the requirements of the stormwater management regulations at 6 NYCRR 646-4, a single application form, fee, and permit processing shall be applicable. The applicant in this instance incurs no additional cost for the design and application. The total cost of construction is \$80,000. The cost of compliance is as follows:

Application fee	\$ NA – Covered by Stormwater Fee
Engineering costs	\$ NA – Same as Stormwater
Total cost of compliance	\$0 or 0% of construction costs

Case 3:

This case has the same project description as Case 2 but in this case there are pre-existing development impacts within the stream corridor such that 50% of the corridor length is lawn.

The proposed land disturbance associated with the project would impact a portion of the existing, naturally vegetated stream corridor. The property exceeds the allowable clearing within the stream corridor (50% > 30%), and the proposal would exacerbate this condition. This project cannot be approved without a variance.

As in Case 2, the applicant incurs expenses for a professional designer associated with stormwater management requirements, and has the ability to redesign to conform with the stream corridor standards by constructing the garage on the side of the house opposite the stream. Rather than pursue a variance, the applicant elects to have the design professional modify the plans such that there are no additional development impacts within the stream corridor. The cost of compliance is as follows:

Application fee	\$ NA – Covered by Stormwater Fee
Engineering costs for revisions	\$ 750
Total cost of compliance	\$750 or 0.9% of construction costs

#### Case 4:

An individual seeks to personally clear land and construct a stone patio within a designated stream corridor. The subject property has 100' of stream. The landowner provides the Commission a scaled site plan of the property utilizing either an existing site plan or survey, or by creating a new plan using publicly accessible, user-friendly online county mapping tools. The site plan depicts the plan view of existing and proposed land cover types (eg. roof, lawn, natural vegetation/woods), limits of clearing, temporary erosion and sedimentation controls, and the designated stream corridor. The proposed patio is round with a 20' diameter totaling 314sqft. Proposed land disturbance for the project is 2,500sqft, and involves a contiguous clearing in 25% of the stream corridor (25 linear feet x 35 feet wide).

The project is not subject to the stormwater management regulations. The project involves less than 15,000sqft of land disturbance, and would be classified as minor stream corridor project. As proposed, the project would require a variance due to the size of the impervious patio, but the applicant elects to design and construct the surface as a permeable patio. Construction of a permeable patio involves the addition of 6" of clean uniform stone beneath the patio. Estimating the cost associated with this stone, ~175 cubic feet (6.5 yards) of stone at \$40-50/yard, a permeable paver system would have specific costs of roughly \$300 in

materials. The cost of the pavers, 1” leveling sand, 4” of compacted crushed stone, and filter fabric already envisioned for this project cost roughly \$1,500, \$250, \$150, and \$100, respectively, totaling \$2000. The 6” of clean uniform stone replaces the 4” of compacted crushed stone, having a net effect of adding roughly \$150 in material.

Application fee	\$ 100
Extra material cost, 6” stone	\$ 150
Total cost of compliance	\$250 or 12.5% of construction costs

5. Local government mandate:

None. The proposed rule does not impose any program, service, duty or responsibility upon any county, city, town, village, school district, fire district or other special district. As noted in Section 646-5.10 of the rule text, the Lake George Park Commission may enter into agreements with municipalities, at the discretion of such local governments, to provide for the administration of permits and enforcement of the proposal’s requirements.

6. Paper work:

The proposed rule does not impose regular reporting requirements on regulated parties or other entities. It establishes a permit requirement that regulated parties must complete before they undertake development, land disturbance or land clearing in a designated stream corridor within the Lake George Park. The permit includes a short application (approximately two pages) and a project plan/drawing. Additionally, the proposal requires regulated parties to provide a completed “Notice of Intent to Harvest Timber Checklist” (approximately two pages) to the Lake George Park Commission fifteen days in advance of starting land disturbance or vegetation removal for timber harvesting.

7. Duplication:

Several municipalities around the Lake George Park currently administer land development jurisdiction within 35 feet of DEC designated streams (Village of Lake George, Town of Lake George, Town of Queensbury, Town of Bolton). Stream corridor vegetative cutting restrictions within the basin are similar to those proposed herein, and Queensbury currently has stream buffer standards that are more restrictive than the standards proposed within

the rule text. Given the similarities, it is anticipated that the municipalities listed above would easily adopt the stream corridor vegetation cutting restrictions or more stringent versions thereof.

#### 8. Alternatives:

No Action Alternative: The Lake George Park Commission carefully considered taking no action as a possible alternative to the proposed stream protection regulation. Such alternative would have required the Commission to ignore the legislative directives of Section 43- 0112 (5) of the Environmental Conservation Law which include the promulgation of regulations relative to stream corridor management in the Lake George Park.

As noted earlier, the Commission reviewed existing regulations and measures designed to mitigate the impacts of urban land development and stream disturbances administered by the Adirondack Park Agency, NYS Department of Environmental Conservation and municipalities in the Lake George Park, and found critical gaps in the protection of water quality. The Commission concluded that the foreseeable result of the no action alternative would be the continuation of current development practices that have resulted in the decline of Lake George's water quality, the loss of stream ecological functions, and acceleration of sedimentation and erosion. The Commission expects the number and magnitude of such conditions to increase and accelerate the Lake's decline if no action is taken. As a result, the Commission voted to advance the proposed Lake George Park stream protection regulation.

Alternatives to Specific Components of the Proposed Rule: The Lake George Park Commission relied heavily on existing literature; the work of expert consultants; and information gathered from workshops with interested parties, public meetings and written public comments to develop the proposed rule (see FGEIS). During the Commission's 2005-2010 effort, alternatives to significant components of the rule were considered:

- Definition of Stream – In a version of the rule text released for public review and comment early in rule development, the Commission defined “stream” to be “...any permanent or intermittent natural water course.” The streams of the Lake George Watershed are primarily first and second order, or “headwater” streams. These perennial and intermittent streams are highly vulnerable to development; particularly those that flow only during rainfall or snowmelt as they may be buried piped, moved or filled during construction. In the Lake George Park, the highly erodible nature of the soils

combined with very steep slopes throughout the watershed increase the potential for stream bed erosion. The greatest evidence of their vulnerability is the tremendous export of sediment from some of these streams.

During the course of the Commission's outreach efforts in the prior iteration of the proposed rules, a frequent objection recorded was that the proposed rule text created uncertainty as to the specific streams that would be subject to protection. Many comments expressed concern with the definition of stream that includes intermittent water courses with no corresponding definition of intermittent. Many suggested that this would lead to the application of the standards to an inordinate number of waterways. As a result, the Commission has revised the prior proposed rule text to define the streams to all perennial streams within the Lake George Basin that are designated or mapped as AA Special by the NYSDEC.

- Width of Stream Buffer – The proposed rule defines “designated stream corridor” as the area extending 35 feet on each side of the high water mark of a designated stream.

The U.S. Environmental Protection Agency (EPA), in a draft model ordinance for stream buffers, recommends a three zone, buffer system with each zone having its own allowable uses and vegetative targets. The Lake George Park Commission reviewed the EPA's recommended system and concluded that implementation and enforcement of a three-zone system would be an administrative burden. Similarly, the Commission concluded that varying the riparian and outer zone widths to take into consideration the slope of the land and other factors would also be administratively difficult to implement.

In its efforts of 2005-2010, the Commission strongly considered a corridor that extended 100 feet on each side of the stream. The 100 foot buffer was strongly opposed by the public, which viewed the buffer width as a land “taking”.

In seeking a balance for stormwater protections for Lake George under this proposal, the Commission has focused on the primary nutrient of concern, phosphorus. Research studies

support the finding that buffers of 5 to 10 meters reduce suspended sediments by up to 80 percent with corresponding reductions in phosphorus (see DGEIS). A literature review of hundreds of stream buffer studies (Wenger 1999, Castelle et al 1994, Knutsen and Naif 1997, Fischer et al 2000) concluded that widths of 30-50 feet can provide reasonable and adequate removal of up to 75% of phosphorus in runoff flowing through them. In addition, these studies were primarily in areas where there was limited regulatory controls regarding stormwater runoff, and on land areas where runoff might be more heavily impacted by nutrients (agricultural lands) than is reflected in the Lake George watershed. As such, the quality of stormwater runoff reaching the stream buffer in the Lake George watershed would likely be better than in the areas noted in the studies. Therefore, the Commission believes that the 35-foot width is seen as a very good balance between reasonable environmental protection and property rights.

- Projects Subject to the Permit Process – During the course of the Commission’s outreach efforts between 2005 and 2010, a frequent objection recorded to an early draft of the rule text was that the regulation establishing a 100 foot zone of protection along streams represents a “taking” of the total value or a significant portion of the value of private property. However, after careful consideration of the benefits and impacts of the proposed 100 foot buffer, the Commission selected to advance this proposal for consideration, submitting the full regulatory package to Albany in 2009. Based on community objection over the proposed buffer width, the Commission ultimately did not progress the regulations. Since that time the Commission has not sought further regulatory efforts related to stream corridors, until this current initiative. Beginning in 2017, the Commission began evaluation of its existing stormwater management regulations (NYCRR 646-4), including the idea of including stream buffers as a component of the revised regulations. Significant research was conducted regarding the nutrient and sediment removal capabilities of various buffer widths lesser than the originally proposed 100 feet. Meetings were held with the leadership of all municipalities and many stakeholders around Lake George to discuss this topic in 2017 and 2018. Ultimately, the Commission decided to advance a new stream buffer of 35 feet as part of its stormwater regulatory update. During the review process, it was determined that stream buffers should be advanced pursuant to ECL 43-0112(5) ‘Stream Corridors’

as opposed to 43-0112(1) 'Stormwater'. As such, the Commission removed stream buffer provisions from its 2020 stormwater regulatory update and included the buffer provisions as part of the development of these stream corridor protections. When seeking to implement stream buffer provisions in its recent stormwater regulations update, the Commission carefully considered past objections to ensure that private property impacts were given appropriate consideration and that there are measures to effectively mitigate disproportionate impacts in individual cases. The Commission considered several components to this essential consideration:

1. Ensure that the regulations do not abridge the continued use of land and improvements thereon that are existing when the regulations take effect. The proposed rule has several clear expressions in this regard. Existing buildings, landscaped areas, uses and impervious cover are clearly exempted from the permit requirements and standards, and may be continued and maintained.
2. The Commission's overarching authority to grant a variance to any provision of the proposed rule when the record supports that the impact of the strict application results in a disproportionate effect. This may from time to time relate to the concept of reasonable return on investment when land is held as a commodity in anticipation of some future return following development. However, a finding of hardship is not required for the area variance standards being referenced. Rather, the variance criteria apply a flexible standard of balancing interest of community/environmental protection and property interests. It is a benefit that the criteria for variances being employed have a well-established track record and case law history.

#### 9. Federal standards:

There are no existing federal standards for development, land clearing and stream disturbance for the purposes of preserving the water quality of lakes and tributary streams that are applicable to the Lake George Park. Therefore, the proposed rule does not conflict with federal standards.

## 10. Compliance schedule:

The proposed rule will take effect immediately upon adoption. The Lake George Park Commission anticipates that it will be positioned to implement the rule, including its permit requirements, upon adoption and regulated parties will be able to comply with the rule immediately. As noted in Section 646-5.4 of the proposed rule text, projects that received required approvals prior to the effective date of the proposal are not subject to the rule's permit requirements.

## 11. References Cited

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