

 <p>P.O. Box 99 • Ray Brook, New York 12977 • (518) 891-4050</p>	<p>APA Project Permit 2012-219</p>
<p>In the Matter of the Application of TOWN OF CHESTER for a permit pursuant to 9 NYCRR Part 578</p>	<p>Date Issued: March 26, 2013</p> <p>To the County Clerk: This permit must be recorded on or before May 27, 2013. Please index this permit in the grantor index under the following names:</p> <p>1. Town of Chester</p>

SUMMARY AND AUTHORIZATION

Town of Chester is granted a permit to control *Myriophyllum spicatum* (hereinafter: *M. spicatum*), on conditions, authorizing the restricted use of an aquatic herbicide with the active ingredient triclopyr as EPA registered product Renovate® On Target Flakes(OTF) (hereinafter: Renovate® OTF) over a 14.9± acre project site involving wetlands, in Loon Lake, Town of Chester, Warren County.

This project may not be undertaken until this permit is recorded in the Warren County Clerk's Office. This permit shall expire unless so recorded on or before May 27, 2013 in the names of all persons listed on the first page hereof and in the names of all owners of record of any portion of the project site on the recordation date.

This project shall not be undertaken or continued unless the project authorized herein is in existence within two years from the date the permit is recorded. The Agency will consider the project in existence when the application of Renovate® OTF has been completed in the treatment area identified herein.

Nothing contained in this permit shall be construed to satisfy any legal obligations of the applicant to obtain any governmental approval or permit from any entity other than the Agency, whether federal, State, regional or local.

AGENCY JURISDICTION

The project consists of the use of an aquatic herbicide involving emergent and deep water marsh wetlands and is a regulated activity pursuant to 9 NYCRR 578.2 and 578.3(n)(2)(ii) and 578.8(i).

PROJECT SITE

The project site is a 14.9±-acre portion of Loon Lake in the Town of Chester, Warren County. The NYS Office of General Service (OGS) has determined that the State of New York has title to the bed of the lake and has given authorization for the project to the Town of Chester. The treatment area (project site) extends from tax parcels 86.18-1-26 and 86.19-1-63 southeasterly to the lake's outfall.

PROJECT DESCRIPTION AS PROPOSED

The project as proposed and conditionally approved herein is summarized as the management and control of the invasive non-native *M. spicatum* in a 14.9±-acre area of Loon Lake using the aquatic herbicide Renovate® OTF (EPA#67690-42). A total of 1,508 pounds of the granular formulation of Renovate® OTF will be applied using an eductor applicator mounted on a pontoon boat to achieve an overall concentration of 0.75 parts per million (ppm). The proposed one-time herbicide treatment is scheduled for May 13 or 14 or May 30 or 31, 2013 with weather and *M. spicatum* growth being the determining factor.

The objective of the herbicide treatment is to manage an area with moderate to dense beds of *M. spicatum* growth in order to improve the ecological, recreational, and aesthetic values of Loon Lake. In addition, costs associated with controlling *M. spicatum* continue to rise and the one time herbicide application is intended to reduce the lake-wide population to a level where the annual maintenance cost would be no more than \$30,000.

Manipulation of Lake Levels

As part of the treatment strategy, immediately prior to the application of Renovate® OTF stop logs at the outlet dam will be installed to add lake storage capacity during the treatment. These stop logs have historically been removed every fall (and were in 2012) and replaced in the spring to provide storage capacity during spring runoff and to allow shoreline owners an opportunity to perform work on the shorelines and shoreline structures. While the stoplogs will prevent most of the water from exiting Loon Lake, sand bags and a manipulation of the dam's penstock will be employed as needed to maintain the New York State Department of Environmental Conservation's 3.5 cubic feet per second base flow requirement (the calculated approximate Minimum Average Seven Consecutive Day Flow; a volume

determined by the Department of Environmental Conservation as necessary to maintain aquatic organisms within the stream channel). Calculations suggest that the stoplogs will add approximately two feet of lake storage capacity and this will provide between 5 days and 28 days of lake storage capacity during treatment before natural flows return. It is estimated that 24 days of lake storage capacity will be available at a normal flow of 24 cubic feet per seconds for the entire treatment period. The actual number of days of storage is incalculable as it will be dependent upon environmental conditions leading up to the day of treatment.

SEQUESTERING CURTAIN

A custom made 630± foot sequestering curtain will be placed across the lake and between tax parcels 86.18-1-26 and 86.19-1-63 to maintain the desired herbicide concentration, increase the efficacy of the treatment, reduce the potential for herbicide drift, and reduce impacts to non-target aquatic plants. The curtain is composed of an impermeable vinyl material which will have a weighted bottom and a flotation at the top to keep the curtain extended vertically in the water column. The curtain will be custom fabricated to match the lake's bottom profile and will be designed to accommodate the increase in lake elevation which will occur when the dam's stoplogs are installed immediately prior to treatment. The curtain will be maintained until the triclopyr residual levels within the treatment area and the two in-lake sample stations located outside the treatment area are below the NYS established potable water standard of 50 parts per billion (ppb).

TRICLOPYR and POST TREATMENT PLANT MONITORING

Triclopyr monitoring will be completed using the FastEST laboratory analysis. A total of six sample stations will be sampled until triclopyr concentrations drop below 50 ppb at all sample sites. Once below 50 ppb one additional sample will be analyzed from one site within the treatment area and one site located 0.5 mile downstream in order to confirm concentrations have fallen below 1 ppb.

A detailed post-treatment aquatic plant survey by a qualified consultant will be completed by September 15, 2013. In addition, the map showing fall 2012 plan biovolume within the treatment area will be updated with the information collected during the post-treatment aquatic plant survey.

CONDITIONS

BASED UPON THE FINDINGS BELOW, THE PROJECT IS APPROVED WITH THE FOLLOWING CONDITIONS:

1. The project shall be undertaken as described in the completed application, the Project Description as Proposed, and Conditions herein. In the case of conflict, the Conditions control. Failure to comply with the permit is a violation and may subject the applicant, successors and assigns to civil penalties and other legal proceedings, including modification, suspension or revocation of the permit. A new or amended permit or letter of approval shall be required for any deviation to the project approved herein.
2. This permit is binding on the applicants, all present and future owners of the project site and all contractors undertaking all or a portion of the project. Copies of this permit and all the approved maps and plans referred to herein shall be furnished by the applicants to all contractors prior to undertaking the project, and to all subsequent owners or lessees of the project site prior to sale or lease.
3. Prior to any treatment occurring in Loon Lake, the applicant shall provide the Agency with written documentation that describes the spread prevention measures which have or shall be undertaken for all equipment to be used, to ensure that no non-native aquatic species will be introduced into the lake. This shall include confirmation that the sequestration curtain was either made from new (not recycled) curtain stock or, if constructed from existing, used curtain stock, confirmation that the curtain has been properly sanitized.
4. Agency staff shall be notified of the final treatment date at the earliest possible time. The Agency may conduct such on-site investigations, examinations, tests and evaluations as it deems necessary to ensure compliance with the terms and conditions hereof. Such activities shall take place at reasonable times and upon advance notice where possible.
5. A total of 1,508 lbs of Renovate[®] OTF shall be applied to achieve an initial target concentration of 0.75 ppm. It is expected that the application of the herbicide will be completed in one day.

The application of Renovate® OTF shall be applied in accordance with the EPA label and NYS Supplemental Labeling and shall only be applied by a certified pesticide applicator registered with the NYSDEC. Application shall only occur on the dates proposed or, with letter of approval from the Agency, on any other date between May 1 and May 31. An amended permit will be required if the treatment is postponed beyond May 31, 2013.

6. A pre-treatment plant survey shall first be conducted by a qualified consultant pursuant to an approved protocol to evaluate the growth stage of the *M. spicatum* and to verify that sufficient plant growth has occurred to provide a suitable target for Renovate® OTF.
7. The sequestration curtain shall be positioned as proposed prior to the application of the herbicide. The curtain shall be marked with buoys or other hazard warning markers to warn boaters of the curtain location. The sequestering curtain shall be maintained until triclopyr concentration levels within the treatment area decrease to below the NYS potable water threshold of 50 ppb.
8. The Renovate® OTF granular formation shall be dispersed throughout the treatment area using a calibrated eductor system which delivers the herbicide via a stream of water sprayed over the surface of the lake.
9. The disposal of all Renovate® OTF product containers shall be completed according to product label requirements and federal and state law.
10. A detailed post-treatment aquatic plant survey completed by an aquatic consultant, other than the pesticide applicator, shall be completed by September 15, 2013 and a copy of the final report provided to the Agency by December 31, 2013. The aquatic plant survey shall be a whole lake assessment using the Point Intercept Rake Toss Abundance Methodology (PIRTAM) Tier III approach developed by US Army Corps of Engineers and researchers at Cornell University. The final report shall include a detailed analysis comparing pre- and post-treatment aquatic plant community composition, including details of any non-target impacts which may have occurred inside and outside the treatment area.
11. The Town of Chester shall maintain the existing New York State Department of Environmental Conservation approved *M. spicatum* warning signs at all public boat launches and access points on Loon Lake at which the Town has authority to post signage.

Treatment Monitoring

12. The lake shall be monitored for triclopyr concentrations at six distinct sample locations as depicted in the application materials and shall include two within the treatment area, two located in the lake and outside the treatment area, and two located along the lake outfall. Samples shall be collected at sites 3, 4, and 5 at six hours after treatment, and at all sites 24 hours after treatment, 72 hours after treatment, seven days after treatment, and weekly thereafter until triclopyr concentrations decrease to below 50 ppb. One additional round of samples shall be collected at two sites, one within the treatment area and one downstream of the dam in order to verify when triclopyr concentrations are no longer detectable (less than 1 ppb). Water samples collected shall be analyzed using the FastEST laboratory analysis. A copy of all triclopyr residue sample results shall be reported to the Agency when received by the applicant or authorized representative.

If triclopyr concentrations of 50 ppb or more are detected at sites 1 or 2, then additional triclopyr monitoring shall be completed every three days at these sites until levels at both sites have dropped below 50 ppb.

13. The applicant shall conduct visual observations in the treatment area and outlet throughout the treatment period and for up to 3 days after treatment is completed. The applicant shall record and notify the Agency within 24 hours of any treatment related effects or unusual mortality on macroinvertebrates, fish and other aquatic organisms.

Removal of Sequestration Curtain

14. The sequestration curtain shall remain in place until triclopyr concentrations within the treatment area fall below 50 ppb or upon receipt of written approval from the Adirondack Park Agency.

Wetlands

15. Other than the activity authorized by prior Agency Permit 2012-66 (General Permit for Hand Harvesting and Benthic Barrier Installations for the control of invasive species) and the one time application of the aquatic herbicide Renovate® OTF authorized herein, no "regulated activity" as defined in the Agency's Freshwater Wetland Regulations (9 NYCRR Part 578) shall occur on the project site without prior Agency approval. Such activities include, but are not limited to, dredging or filling

of a wetland, or any other activity, whether or not occurring within the wetland, which pollutes it or substantially impairs its functions, benefits or values.

FINDINGS OF FACT

Background/Prior History

1. The project site was the subject of Agency Permit 2007-85, which allowed the Town of Chester to use hand harvesting and benthic barrier techniques to control *M. spicatum* in Loon Lake. The 2007 permit was valid through 2011. Agency permit 2012-66 (General Permit 2008G-1) authorized continued *M. spicatum* control using hand harvesting and benthic barrier installations.

Existing Environmental Setting

2. Loon Lake is 586± acres in size, has a mean depth of 15 feet, and a maximum depth of 32 feet. It is classified as an "AA (Special)" waterbody (classified as suited to be a potable water supply) by the New York State Department of Environmental Conservation.
3. During the period 1986 to 1990 the Town of Chester and Loon Lake Park District Association participated in the New York Citizen's Statewide Lake Assessment Program (CSLAP). Water quality conditions described in past CSLAP reports classify Loon Lake as mesotrophic, or a moderately productive waterbody.
4. A June 2012 survey found *M. spicatum* at 40 of the 42 sites surveyed. Of these sites, 17 contained moderate or dense beds of *M. spicatum* while density at the 23 other sites was characterized as sparse (one site was clear of *M. spicatum*). The summer 2012 hand harvesting and benthic barrier control efforts reduced the *M. spicatum* populations to a manageable level throughout much of the lake as evidenced by the September 2012 survey where *M. spicatum* was found at 17 of the 41 sites surveyed. Of these sites, six contained moderate or dense beds of *M. spicatum* while density at the 11 other sites was characterized as sparse. Twenty four sites were clear of *M. spicatum*. As in the past, the 2012 control effort focused on all portions of the lake except for the project site. In this area a large dense or moderately dense bed of *M. spicatum* remains. As of the fall of 2012, approximately 6.9± acres (46%) of the project site was colonized with *M. spicatum* at a density of Dense or Moderately Dense (per Tier III Rake Toss protocol).

Treatment Area and Treatment Activities

5. The treatment area is 14.9± acres in size. It has a mean depth of 6± feet and maximum depth of 8.9± feet. The lake's outfall is located at the southeasterly corner of the treatment area. Based upon 2012 measurements, the normal flow for Loon Lake is 24 cubic feet per second while the high flow rate is 74 cubic feet per second.
6. The use of the stoplogs to manipulate the lake level does not change the historic use in the water regime in Loon Lake since they are removed every fall. The treatment will delay the spring replacement of the stoplogs by two to four weeks (they have historically been installed at the end of April/early May).
7. The current inventory of the deep water marsh wetlands in Loon Lake is found in "Loon Lake 2012 Tier III Aquatic Vegetation Survey Warren County, New York", prepared by Lycott Environmental, Inc. and dated December 2012. Generally, deep water marshes provide valuable functions, such as providing fish and waterfowl habitat and protecting water quality. The vegetation provides shelter and food for fish and the organisms upon which fish feed, and enhances water quality by stabilizing the lake bottom, reducing turbidity and trapping suspended organics and silt. Deep water marsh wetlands generally have a value rating of "3" pursuant to 9 NYCRR 578.5. However, where the site is part of a larger wetland of 20 acres or more or where associated with threatened or endangered plant species, the wetland has a "1" value rating. Due to the presence of lesser bladderwort (*Utricularia minor*), a plant listed by New York State as Threatened, wetlands within the mean high water mark, and deep water marsh and emergent marsh covertype wetlands, the proposed treatment area has an overall value rating of "1" pursuant to 9 NYCRR 578.5 and 6.
8. There are a variety of land uses in and adjacent to the proposed treatment area, including a public swimming area, public boat launch, private docks, and private residences. In addition, the applicant has advised that there is one private potable water intake within the treatment area and two private potable water intakes in the lake, both of which are setback from the treatment area more than the New York State label requirement of 2,400 feet. The potable water user located within the project site has been offered bottled potable water for the duration of the use restriction (until triclopyr concentrations fall below 50 ppb).
9. Due to the 3.5 cubic feet per second discharge requirement set forth by the Department of Environmental Conservation, water containing Renovate® OTF will be leaving the project site.

However, the flow requirement is considerably less than the normal flow of 24 cubic feet per second and the water will be retained within the stream channel (the estimated capacity of the stream channel above the confluence with Friend's Lake outfall is 55 cubic feet per second). Once this water mixes with Chester Creek (which originates at Friends Lake and is approximately 0.3 stream miles from the treatment area), the maximum concentration of Renovate[®] OTF within the first 24 hours of treatment is estimated to be between 0.110 and 0.405 parts per million (0.110 assumes a 3.5 cubic feet per second discharge from Loon Lake and a 20.4 cubic feet per second discharge from Chester Creek while 0.405 ppm assumes a 24 cubic feet per second discharge from Loon Lake and a 20.4 cubic feet per second discharge from Chester Creek). At day 30 the concentrations are estimated to be approximately 0.006 parts per million at the lake outlet (within the treatment area) and once mixed with Chester Creek, no more than 0.003 parts per million. To ensure sufficient contact time and concentrations within the treatment area and to ensure that the water leaving the project site is contained within the stream channel, the project will be postponed should the flow over the dam exceed 50 cubic feet per second on the day of treatment or if a significant rain event has occurred or is expected to occur in close proximity to the day of treatment.

M. spicatum Past and Future Control Efforts

10. *M. spicatum* was first identified in the area of the boat launch (within the treatment area) in the lake in 2000-2001. It was hand harvested at the time, but in June 2004 was once again found in the same locale. Hand harvesting was employed to remove the plant. Volunteer control efforts were initiated by Loon Lake Park District Association divers in 2005 immediately following a vegetation survey which confirmed the presence of *M. spicatum*. Through these efforts additional *M. spicatum* sites were noted that were not detected in the point intercept survey. From 2006-2009 Adirondack Ecologists, LLC was contracted to hand harvest *M. spicatum*. Concurrently, Loon Lake Park District Association divers increased volunteer efforts, and began installing benthic barriers at select sites throughout the lake. In 2010, Lycott Environmental, Inc. was contracted and assumed the primary role in *M. spicatum* management wherein approximately 80% of efforts were dedicated to control/removal of *M. spicatum* via hand harvesting and roughly 20% of efforts were used for benthic barrier installation. Since 2010, management with benthic barriers has controlled growth at five of the large dense sites and hand harvesting has controlled growth at the 33 sparse to moderate sites. The overall management goal, working within annual budget constraints and in coordination with the Loon Lake Park District Association divers, has been to control growth at

sites beginning at the inlet and generally working toward the outlet (i.e., working with the prevailing wind and water currents toward the lake outfall).

11. Future management efforts for project site include monitoring the treatment area and using hand-harvesting to remove any remaining *M. spicatum* plants after treatment. This post treatment monitoring and control will be part of continuing long-term aquatic plant management program which employs benthic barriers in areas with dense *M. spicatum* beds and diver-assisted hand-harvesting of smaller, less concentrated areas of *M. spicatum* found throughout the lake.

Historic and Future Costs Associated with Control

12. Since 2005, Loon Lake Park District Association and the Town of Chester have spent approximately \$180,000 to control *M. spicatum*. Of that \$180,000, approximately \$132,000 has been spent since 2010 (an average of \$44,000 per year). The costs for control only provided modest treatment of the project site itself (see Finding of Fact 11 which discusses overall treatment strategy for Loon Lake). The total cost of the 2013 control program (including all costs associated with the Renovate® OTF treatment and all benthic barrier and hand harvesting activities) is expected to be \$85,000. Nonchemical control of the project site in 2013 would require more than the entire 2013 budget, thus eliminating any control for the rest of the lake. By undertaking the project authorized herein along with continued physical control as an integrated management strategy, the Loon Lake Park District Association and the Town of Chester hope to effectively control *M. spicatum* so that beginning in 2014 the cost for future control (by hand harvesting and benthic barrier installations) will be in the vicinity of \$30,000 per year.

Renovate® / Tryclopypyr

Mode of Action

13. Triclopypyr is the active ingredient in the EPA and DEC registered aquatic herbicide product Renovate® OTF, being 14% triclopypyr and 86% inert ingredients. Renovate® OTF is the dry flake (granular) formulation manufactured by SePRO Corporation. The dry flake formulation allows the triclopypyr to be carried to deeper waters and localizes it where the target plants are growing, making it more effective in treatment areas where dilution may be a problem. Triclopypyr is a systemic herbicide which enters through a plant's leaves and stems and translocates to the root system, thereby disrupting the plant's metabolism. As a systemic herbicide, killing the entire plant, including root systems, the

herbicide has greater efficacy and provides for a longer period of control of the target plant. Additional information concerning the mechanism of uptake, non-target studies, and environmental and human health impacts are found in the NYS Supplemental Environmental Impact Statement (March 2007) for Triclopyr and pesticide registration document.

Native Plant Susceptibility

14. Renovate® OTF is an aquatic herbicide which targets dicotyledons (dicots) and broadleaf species of plants. Native dicots including native milfoils (*Myriophyllum spp*), pickerelweed (*Pontedaria cordata*) yellow (*Nuphar spp*) and white (*Nymphaea spp*) lilies, watershield (*Brasenia schreberi*) are highly to moderately susceptible to triclopyr concentrations. Most native monocotyledons (monocots), such as pondweeds (*Potamogeton spp*) and sedges, are generally not affected by triclopyr. Individual plant sensitivity is dependent on application rate, concentration time, dilution potential, and time of year of treatment.

The Lesser Bladderwort (*Utricularia minor*), is listed as Threatened in New York State and is located within the treatment area. As outlined below, the plant has a low susceptibility to Renovate® OTF. In addition, the treatment will occur at a time when *U. minor* has not yet emerged for the season. Lastly, *U. minor* was only observed within the dense bed of *M. spicatum* and unless the area is cleared of the invasive exotic, *U. minor* could be smothered by *M. spicatum*.

Susceptibility to Renovate® for species present in or within close proximity to the treatment area:

Scientific Name	Common Name	Susceptibility to Renovate®
<i>Brasenia schreberi</i>	Watershield	Moderate
<i>Ceratophyllum demersum</i>	Coontail	Low
<i>Elodea canadensis</i>	Waterweed	Low
<i>Myriophyllum spicatum</i>	Eurasian Watermilfoil	High
<i>Myriophyllum tenellum</i>	Leafless Watermilfoil	High
<i>Najas flexilis</i>	Bushy Pondweed	Low
<i>Najas guadalupensis</i>	Southern Waternymph	Low
<i>Nitella/Chara</i>	Stonewort/Muskgrass	Low
<i>Potamogeton pusillus</i>	Small Pondweed	Low
<i>Potamogeton robbinsii</i>	Robin's Pondweed	Low
<i>Scirpus spp.</i>	Sedge	Low
<i>Utricularia geminiscapa</i>	Hiddenfruit Bladderwort	Low
<i>Utricularia minor</i>	Lesser Bladderwort	Low
<i>Utricularia purpurea</i>	Eastern Purple Bladderwort	Low
<i>Vallisneria americana</i>	Wild Celery	Low

Susceptibility Rating As Stated Use of the Aquatic Herbicide Triclopyr Renovate® in the State of New York Supplemental Environmental Impact Statement, 2007.

Utricularia minor is listed as Threatened by New York State but is regionally and federally secure.

Myriophyllum tenellum was only found in the treatment area in 2012 and only found at a single site in the northern lake in 2005.

Toxicity to Other Aquatic Organisms

15. According to the NYS Supplemental Environmental Impact Statement triclopyr triethylamine salt (TEA) is not listed as a carcinogen or mutagen and is not known to cause adverse reproductive effects or birth defects. The USEPA classifies triclopyr as slightly or practically nontoxic to aquatic fish and invertebrates and labeled application rates are many times lower than toxicity thresholds. Laboratory tests show 96-hour LC50 values of 552 and 891 ppm for rainbow trout (*Oncorhynchus mykiss*) and bluegill (*Lepomis macrochirus*), respectively. Based on waterflea (*Daphnia magna*), acute 48-hr acute LC50 was 1,170 ppm, while the chronic 21-day LC50 was 1,140 ppm. The acute oral LD50 for rates was determined to be 729 mg/Kg/day. Non-target effects on fauna are not expected given the relatively high concentration required for these effects mentioned above, the maximum allowable application rate of 0.75 ppm for Loon Lake, the relatively quick dissipation half lives, and negligible rates of accumulation in the aquatic environment.

During the May 17, 2010 Renovate® OTF treatment in Lake Luzerne (authorized by Agency Permit 2009-256) unexpected nontarget mortality of the banded mystery snail *Viviparus georgianus* occurred within the treatment area. *Viviparus georgianus* is a nonnative species. In Recommendations Regarding the Use of Aquatic Herbicides in Fish-Bearing Waters of the State" (December 3, 2012) the New York State Department of Conservation concluded that it did not appear that the triclopyr application was the cause of the die-off. In addition, toxicity tests performed by the Department of Environmental Conservation on native snails (performed prior to the treatment of Cazenovia Lake in 2009) found triclopyr to be practically nontoxic to those species.

Water Resources

16. As an aquatic herbicide, Renovate® OTF targets aquatic plants identified as dicots and works slowly on eliminating *M. spicatum*, thereby avoiding a sudden increase in decomposition of organic material on the lake bottom. Applying the herbicide early in the growing season when native vegetation is beginning to emerge and when water temperatures are colder will further avoid problems with dissolved oxygen depletion and phosphorous increases which

are associated with aquatic plant die-off. The proposed treatment program will not adversely affect the water quality of Loon Lake.

NYS Product Label and Water Use Restrictions

17. The US EPA product label including the NYS Special Local Need (SLN) Registration Label for Renovate[®] OTF was approved in New York State in 2007. The federal product label allows for a maximum concentration of 2.5 ppm and prohibits the use of Renovate[®] OTF-treated water for irrigation purposes for 120 days after application or until triclopyr residue levels are 1 ppb or less. The NYS Special Local Need label prohibits swimming in the treatment area for three hours after treatment and restricts the use of lake water treated with triclopyr as potable water until triclopyr residue levels are less than 50 ppb.

Fate of Triclopyr

18. Triclopyr is highly soluble in water and primary routes of degradation are aquatic photolysis and microbial breakdown. Dissipation half-lives of triclopyr range from 0.5 to 7.5 days in water and 2.8 to 7.5 days in sediment. Field dissipation studies also indicated that triclopyr does not accumulate in sediments, shellfish and fish.

Other Regulatory Permits and Approvals

19. The project requires approval from NYS DEC pursuant to DEC Article 15 Title 3 Aquatic Pesticide Permit. The application is pending with the NYS DEC for use of a restricted-use pesticide for aquatic vegetation control. No local government permits are required.

Evaluation of Alternatives

20. The applicant and their consultant have aggressively treated the lake using hand harvesting and benthic barriers since the first discovery of *M.spicatum*. These control efforts are effective but also very expensive in terms of both labor and cost. The applicant estimates that it will cost approximately \$105,000 to treat the 14.9± acre project site using benthic barriers (6± acres) and hand harvesting (9± acres) techniques. Due to the shallow nature of the area, the project would also involve the installation of a limnocurtain to exclude the public from the treatment area and from the public boat launch for much of the summer. The applicant has determined that this control technique would be too expensive and would cause significant user

conflicts. Other alternatives considered but rejected include the addition of grass carp (a species which has been shown to favor native plants over *M. spicatum*).

Benefits of Treatment

21. *M. spicatum* has jeopardized and diminished the recreational, ecological, and aesthetic values of Loon Lake. Due to the opportunistic and aggressive growth of *M. spicatum*, the density and diversity of native plant species in Loon Lake have been disrupted. In addition, beds of *M. spicatum* have negatively impacted recreational swimming and boating. Failure to control the distribution and density of *M. spicatum* in Loon Lake will negatively affect the ecosystem and public use of the lake. In addition, there is concern that anglers and other boaters who use Loon Lake may unintentionally spread *M. spicatum* to other lakes and wetlands in the surrounding community that are currently free of or attempting to control this nonnative invasive species.

As such, the objective of this treatment is to reduce the infestation coverage of *M. spicatum* within the treatment area and achieve control of a currently uncontrolled area. By doing so, the applicant achieves the goal of reducing the long-term management costs for control to no more than \$30,000 per year (approximately one half of the 2012 budget). Furthermore, the project approved is intended to reduce *M. spicatum* within an area of high boat traffic. Presently, boats often drive through the dense beds and create/transport fragments of *M. spicatum* to other areas of the lake. This unintended transport reduces the efficiency of the larger lake-wide control program and adds cost to the annual management costs.

The intended reduction of *M. spicatum* through the applicant's 2013 management plan has the additional benefit of reestablishing native wetland vegetation and thus allows for a more diverse community of native aquatic plant life and helps to restore the value and function of the wetland. Finally, the control of *M. spicatum* will result in enhanced recreational opportunities and aesthetics.

Public Notice and Comment

22. The Adirondack Park Agency notified all adjoining property landowners and those parties as statutorily required by §809 of the Adirondack Park Agency Act and published a Notice of Complete Permit Application in the Environmental Notice Bulletin. The Agency has received 44 letters commenting on the project. Forty one letters were received in support of the project. One letter

expressed conditional support for the project while one letter requested the project be sent to adjudicatory hearing and one letter provided neither support nor opposition to the project.

PROJECT IMPACTS

Wetlands

23. As a wetland species, *M. spicatum* provides many of the functions and benefits provided by other wetland species. However, *M. spicatum* is an opportunistic and aggressive invasive plant that has demonstrated an ability to grow faster than most native plants and poses a potential threat to the diversity of wetlands and biota. Applying the herbicide early in the growing season when native vegetation has not or is just beginning to emerge will increase efficacy of the treatment and reduce non-target impacts to native plants. The plant surveys and observations to date indicate that *M. spicatum* is currently found at approximately 32% sample locations within the lake (in 2005 it was found at 8% of the sample locations). In 2012 it was the fourth most abundant species in the lake. If left uncontrolled, *M. spicatum* will become the dominate wetland plant and the wetland benefits and values provided by a wetland comprised of diverse native wetland vegetation will be reduced. Further, the non-native plant interferes with recreational uses in shallow water areas in the lake and may have economic impacts if not managed effectively. The control of the relatively small area of the exotic *M. spicatum* proposed by this project will likely benefit the wetland complexes and reduce the potential of *M. spicatum* to displace the more valuable native aquatic vegetation. It also allows for physical control of *M. spicatum* by reducing the population to a more manageable level.
24. Timing the application of the herbicide to early spring, using sequestering curtains to confine the herbicide release to the 14.9± acre project site, using a lower concentration of Renovate® OTF, and using a water-based delivery system to apply the granular formulation will limit non-target impacts and user conflicts, and will also increase the efficacy of treatment by limiting the effects of dilution and herbicide drift. Any impacts to flora or fauna are expected to be short term in duration and rapid recovery of a more native plant assemblage is expected. Recommendations Regarding the Use of Aquatic Herbicides in Fish-Bearing Waters of the State" (December 3, 2012) the New York State Department of Conservation concluded that "...triclopyr has been used numerous times in NYS, including Saratoga Lake, Waneta, Lamoka, Cazenovia Lakes and Lake Luzerne." And "It has very effectively controlled infestations of EWM while leaving large areas of native vegetation unharmed."

Long-Term Management of *M. spicatum*

25. The one time use of Renovate® OTF to assist in the control of *M. spicatum* will not affect the Town of Chester's long term commitment to the use of benthic barrier and hand harvesting as the primary management tools employed to control *M. spicatum* growth and spread.

Cost

26. The herbicide treatment will cost the Town of Chester approximately \$35,000. This investment will be added to the benthic barrier and hand harvesting program and thus funding for these control activities will not be reduced during 2013. With a successful treatment, the Town hopes to reduce overall management expenses to \$30,000 per year. As stated above, the 2012 treatment season cost the Town over \$55,000.

Historic Sites or Structures

27. Based on review of available resource inventory, the project as proposed and authorized herein will not cause any change in the quality of "registered," "eligible," or "inventoried" property as those terms are defined in 9 NYCRR 426.2 for the purposes of implementing §14.09 of the New York State Historic Preservation Act of 1980.

CONCLUSIONS OF LAW

If undertaken in compliance with the conditions herein:

1. The project would not have an undue adverse impact upon the natural, scenic, aesthetic, ecological, wildlife, historic, recreational or open space resources of the Park or upon the ability of the public to provide supporting facilities and services made necessary by the project, taking into account the economic, social and other benefits that might be derived therefrom.
2. The Agency has considered the public policy of the State set forth in ECL § 24-0103, the statement of legislative findings set forth in ECL § 24-0105, and the effects of the project pursuant to ECL § 24-0705(1).
3. Based on the Findings of Fact made herein, the Agency concludes that the project is approvable and complies with the statutory and regulatory criteria set forth in Section 24-0801(2) of the Freshwater Wetlands Act (ECL Article 24, Title 8) and 9 NYCRR §§ 578.9 and 578.10.

