

# TECHNICAL MEMORANDUM

## Chautauqua Lake 2019 Herbicide Treatment Program

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### A. INTRODUCTION

In 2018, the NYSDEC requested that the Town of Ellery (acting as Lead Agency) complete a Supplemental Environmental Impact Statement (SEIS) for the application of EPA- and DEC-registered herbicides to target areas of Chautauqua Lake to eliminate or control invasive macrophyte populations. The 2018 Treatment Program was successful in eliminating invasive macrophyte populations, specifically curlyleaf pondweed and Eurasian watermilfoil (EWM), while having no reported direct or indirect adverse impacts on native plant species, invertebrate and vertebrate wildlife, or humans.

Herbicide treatments of Chautauqua Lake began in 1955 and were originally conducted by the NYSDEC from 1955 to 1959. From 1960 to 1992, the Chautauqua Lake Association (CLA) conducted herbicide treatments. In 2002, the Town of Ellicott treated approximately 90 acres of Burtis Bay. Herbicide applications were performed in accordance with NYSDEC regulations, including the requirement to obtain a permit after the adoption of Article 15 of the Environmental Conservation Law (ECL) and in compliance with the NYSDEC's 1981 *Programmatic Environmental Impact Statement on Aquatic Vegetation Control Program of the Department of Environmental Conservation Division of Lands and Forests* (1981 PEIS). In 1990, Chautauqua County completed the *Supplemental Environmental Impact Statement to New York State Aquatic Vegetation Control Program: Plan for Future Use of Aquatic Herbicides in Chautauqua Lake* (1990 SEIS).

In 2017, several Towns and Villages wanted to begin treatment of the Lake again with herbicides. A herbicide-based Data Collection Project was completed successfully in Bemus Bay in June, 2017, under NYSDEC supervision, to illustrate the effectiveness of the herbicides in differing concentrations, confirm minimal drift away from the treatment areas and confirm limited or no impact on native weeds. Subsequently, the NYSDEC requested that a SEIS be completed for the application of EPA- and DEC- registered herbicides to target areas of Chautauqua Lake to eliminate or control invasive macrophyte populations. Pursuant to SEQR, on November 9, 2017, the Ellery Town Board initiated the Coordinated Review process, issuing a solicitation letter seeking Lead Agency status to Involved and Interested

Agencies. In its request for designation as Lead Agency, the Ellery Town Board made clear its intention to issue a SEQR Positive Declaration and have a SEIS completed for the proposed project. On December 11, 2017, the Ellery Town Board officially accepted Lead Agency status. On the same date, the Town Board determined that the project may have a significant impact on the environment, and directed that a DSEIS be prepared to evaluate potential impacts. The Notification of the Positive Declaration was posted in the Environmental Notice Bulletin on December 20, 2017.

On February 8, 2018, the Ellery Town Board accepted the DSEIS as complete and ready for review and comment by Involved and Interested Agencies and the public. The DSEIS was made available at Ellery Town Hall and posted on the Town's website to facilitate public review of the document. Notice of the completion of the DSEIS and a Public Hearing on the DSEIS were published in the Environmental Notice Bulletin on February 21, 2018.

Following acceptance of the DSEIS as complete, a public hearing was held on March 1, 2018 to obtain comments from the public. The comment period was extended through March 16, 2018. At the public hearing, numerous comments were made and some were submitted as written statements. The Town also received numerous other letters, e-mails, and correspondence on this matter during the comment period. The NYSDEC provided written comments in a letter dated March

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20, 2018, which were addressed in the FSEIS. Numerous other agencies also provided comments on the document and those are addressed in the FSEIS.

The FSEIS for the Chautauqua Lake Herbicide Treatment project included project changes and revisions to the DSEIS, summaries and copies of the substantive comments and their source, and the responses to all substantive comments. The FSEIS was accepted by the Ellery Town Board on April 5, 2018 (2018 SEIS). Notice of the completion of the FSEIS was sent to all Involved and Interested Agencies and Notice of the Completion of the FSEIS was also sent to the Environmental Notice Bulletin and was published in that document on April 18, 2018.

For 2019, the Lead Agency seeks to modify the 2018 Treatment Program by treating target areas in Chautauqua Lake with two of the three EPA- and DEC- registered herbicides used in 2018 and studied in the 2018 SEIS. 45% of the acreage proposed for treatment in 2019 was included in areas proposed for treatment in 2018 and an additional 50% of the acreage proposed in 2019 is immediately adjacent to areas proposed for treatment in 2018. This Technical Memorandum describes the proposed action, how it relates to the action that was evaluated in 2018 and assesses whether the 2019 proposed treatment areas would result in any new or different significant adverse environmental impacts that were not previously studied, identified and mitigated in the 2018 SEIS. The proposed 2019 Treatment Plan will be reviewed against the SEQR findings that were issued for the treatment of herbicides in Chautauqua Lake in 2018. Mapping of treatment areas proposed in 2018 are compared to the treatment areas proposed for 2019, in an attachment to this Technical Memorandum (Attachment A.). The information contained in this Technical Memorandum will further compare the 2018 and 2019 treatment plans to enable the Lead Agency (and Involved Agencies) to confirm that the 2019 Treatment Program is in conformance with the Findings made for the 2018 Treatment Program or, alternatively, if Amended Findings are needed.

### **B. SEQR RE-EVALUATION**

This Technical Memorandum was completed pursuant to Article 8 of the New York *Environmental Conservation Law* (ECL) and Part 617 of the *New York Codes, Rules, and Regulations* (NYCRR), which together contain the requirements of the *State Environmental Quality Review Act* (SEQRA). The Lead Agency, in accordance to Article 8 of ECL and Part 617 of NYCRR, is obligated to review the changes represented in the proposed 2019 Treatment Program, specifically the modified target areas of the lake that are to be treated, to determine if the modification to the target areas causes any additional adverse environmental impacts that would require a new SEQR process to be completed.

### **C. PROJECT DESCRIPTION (PROPOSED ACTION)**

The 2018 SEIS evaluated the potential environmental impact of applying herbicides to approximately 1,031-acres of targeted areas within Chautauqua Lake. These target areas included areas which were referred to as Bemus Bay, Bemus Point, Bly Bay, Burtis Bay,

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Busti/Lakewood, Stockholm/Greenhurst, Stow, Sunrise Cove, Sunset Bay, and Warner Bay.<sup>1</sup> The 2018 Treatment Program was implemented successfully with no substantiated direct or indirect adverse environmental impacts on native plant species, invertebrate and vertebrate wildlife, or humans.

The 2019 Treatment Program modifies the target areas identified in the 2018 SEIS in an effort to effectively treat the infestation of EWM (*Myriophyllum spicatum*) and curlyleaf pondweed (*Potamogeton crispus*) that inhibits use of the Lake (in particular, the Lake's littoral zone) and negatively impacts the native macrophytes. A combination of two (2) herbicides (Aquathol-K (endothall) and Navigate (2, 4-D)) is being proposed for the 2019 Treatment Program. The herbicides are proposed to be applied in the lower range of their approved concentrations. A total of 1224 acres is proposed to be treated in 2019, 45% of the proposed 2019 acreage was included in proposed in 2018 treatment areas (Note that only 18 % of the proposed 2018 treatment areas were actually treated in 2018) and an additional 50% of the acreage proposed in 2019 is immediately adjacent to areas proposed in 2018. Application is planned to occur in the beginning of the growing season, over a month or two earlier than treatment occurred in 2018. This will increase protection of native plants and taking advantage of cooler water temperature to minimize invasive plant documentation. This 2019 Treatment Program modification is based on analysis of EWM plant density maps included in the *2018 Delineation of Non-Native Macrophytes and other Submersed Aquatic Vegetation (SAV) in Chautauqua Lake* completed in August/September 2018 (2018 Plant Survey). The 2018 Plant Survey (Attachment C) included shoreline and littoral zone areas adjacent to the Towns of Ellery, Ellicott, Busti, and North Harmony, as well

as the Villages contained therein (Bemus Point, Celoron, and Lakewood). Mapping of the 2019 proposed treatment areas is included as an attachment to this Technical Memorandum (Attachment A.).

Portions of the 2019 treatment areas overlay areas treated in 2018. These include sections of Warner Bay, North Harmony and Busti. In general, some re-infestation of treatment areas should be expected when only limited portions of much larger milfoil infestations are treated, particularly in a large waterbody with wind fetch, boat activity and aquatic plant harvesting. More specifically, overlapping sections in Warner Bay and North Harmony occur adjacent to untreated areas, so risk of re-infestation is higher in these areas. In the other North Harmony area, a small portion of the proposed treatment zone was actually approved for treatment, therefore this area was subject to re-infestation from both sides. Only the Busti section of overlapping treatment areas does not exhibit an obvious explanation for re-treatment. Most likely this area experienced wind-driven accumulation of milfoil fragments as the season progressed and new milfoil was able to colonize the area previously treated. It should be noted that plants that sprout 2-3 weeks after treatment would not exhibit impact from the previous application.

## D. PROJECT METHODOLOGY

Using the EWM plant density maps in the 2018 Plant Survey, polygons were drawn around areas of medium and dense EWM locations as a first priority. Polygons were then increased to include adjacent and contiguous areas of less dense EWM which were considered part of the larger area. Finally, polygons were also formed around contiguous areas of less dense EWM that incorporated multiple EWM data points. Once preliminary treatment polygons were drawn, they were adjusted, if needed, in most cases, to fall within the 10' contour line, and trimmed to avoid overlapping with any

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<sup>1</sup> DSEIS at 11.

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wetland or wetland adjacent areas. They were then compared to 2018 proposed treatment areas to ensure consistency with previous plans.

Two new target areas were identified in the Town of North Harmony. The northernmost treatment area was targeted due to an abundance of EWM points along a contiguous

shoreline, which was deemed a higher priority due to its location in a narrowing area of the Lake. An extensive infestation of curlyleaf pondweed was identified further south in North Harmony. As a result, this stretch of shoreline was identified as a target area for 2019.

### **E. COMPARISON OF IMPACTS**

The following sections compare and evaluate the Proposed Action (the 2019 Treatment Program) with the potential impacts identified as part of the 2018 SEIS. To aid the reader, this document follows the format of the 2018 SEIS Findings and specifically address each potential impact area. Under each potential identified impact section we include *abridged text (italicized)* from the 2018 SEIS Findings and then a “Comparison to the proposed 2019 Treatment Program” (labeled as such).

### **F. IMPACTS ON SURFACE WATER & GROUNDWATER (WATER RESOURCES)**

#### ***Impacts and evaluation summary from 2018 Findings:***

##### ***F.1 Project would potentially impact protected and non-protected water bodies:***

*Potential impacts to the Lake include loss of vegetation. The herbicides and application rates chosen target invasive non-native weeds and are anticipated to reduce the presence of curly leaf pondweed and Eurasian watermilfoil in treatment areas. The herbicides are not anticipated to eliminate native vegetation. As seen in Bemus Bay in June 2017, native vegetation is anticipated to rebound following treatment. Potential impacts to the wetlands include loss of vegetation and habitat caused by herbicide application. The mapping in the SEIS identifies the location of the NYS wetlands surrounding the Lake and the check zone areas that may extend into the Lake. The proposed treatment areas have been chosen to avoid the NYS mapped wetlands and the check zone areas. The herbicides selected target Eurasian watermilfoil and curly leaf*

*pondweed. They are not expected to have a significant negative impact on vegetation in the wetlands.*

##### **F.1.a. Comparison to Proposed 2019 Treatment Program:**

No adverse impacts to wetlands or native vegetation were observed as part of the 2018 Treatment Program. The proposed treatment areas have been chosen to avoid to the maximum extent practicable the NYS mapped wetlands and the adjacent regulatory/buffer zones. The herbicides to be utilized for the 2019 Treatment Program are not different than those utilized in 2018, except for Renovate, which is not part of the 2019 Treatment Program. The potential impacts are the same as discussed in this related section of the 2018 SEIS and Findings.

The proposed 2019 treatment includes ~20% more acreage than that proposed in 2018 (1013 acres proposed in 2018 and 1224 acres proposed in 2019). In Burtis Bay, a very

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large EWM infestation is proposed for treatment. Given its size, treatment may be split into two stages, with 2-3 weeks in between, to minimize the temporary impact to water quality. As explained below, the project has also been shown to not significantly impact the Lake itself.

*F.2 Project would potentially impact water quality of Chautauqua Lake by impacting the water column:*

*Herbicide treatment has the potential to temporarily decrease the dissolved oxygen in the Lake. The proposed treatment plan has been designed to minimize and mitigate effects on the water column. Only a small portion of the Lake will be treated and treatment will take place early in the season when native macrophyte biomass is low and water temperatures are low, thus lessening any potential impacts on dissolved oxygen. Although early treatment will lead to a release of phosphorous, as shown in the phosphorous release calculation included in the FSEIS, the phosphorous release caused by early season treatment will be less than treatment later in the season or natural end*

*of the season die-back. Therefore, impacts to the water column are expected to be small and temporary in nature.*

### **F.2.a Comparison to Proposed 2019 Treatment Program:**

The 2019 Treatment Program proposes to treat early (and earlier than treatment occurred in 2018), thus reducing the risk posed by any potential phosphorous release. In 2018, treatment was conducted in mid-June. In 2019, the proposed treatment will begin in late-April or early-May, when dissolved oxygen is higher than later in the season. Only a small portion of the Lake will be treated at any one time. Thus, the same analysis and findings made in the 2018 SEIS and Findings apply to the 2019 Treatment Program, as the impacts to the water column are expected to be similar, if not less.

*F.3 Project would potentially impact Chautauqua Lake and water outside the treatment areas from the application of herbicides:*

*Herbicides applied to the Lake have the potential to drift to areas of the Lake outside the treatment areas. Given the results of the June 2017 Bemus Bay Data Collection Project and the minimal*

*drift observed, any effect on water outside the treatment areas is expected to be minimal. The herbicides chosen target invasive macrophytes and at the proposed dosage rates are not expected to have significant negative impacts on native vegetation. The types and dosages of herbicides and the proposed locations will minimize, to the maximum extent practicable, the impacts to untreated waters (see Agriculture for impacts to farming).*

### **F.3.a. Comparison to Proposed 2019 Treatment Program:**

No adverse impacts to wetlands or native vegetation were observed as part of the 2018 Treatment Program. The proposed treatment areas have been chosen to avoid

to the maximum extent practicable the NYS mapped wetlands and the adjacent regulatory/buffer zones.

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Renovate, which was utilized in 2018 and had a 1 ppb threshold on irrigation,<sup>2</sup> will not be utilized in 2019. Both herbicides to be utilized in 2019, Aquathol and Navigate, will be applied in accordance with their respective product labels and with NYSDEC restrictions. Therefore, no changes to potential impacts to waters outside the treatment areas are anticipated. Please see pages 74-75 of the DSEIS for discussion of dilution/drift.

*F.4 Project would potentially impact groundwater, including groundwater in private wells located around Chautauqua Lake:*

*Studies, including results of analyses undertaken by the U.S. Environmental Protection Agency (EPA), have illustrated that there are no significant impacts to groundwater and the users of that groundwater from herbicide treatment in Lakes. Timing of the treatments and notifications will allow users to avoid usage of the water if they desire.*

### **F.4.a Comparison to Proposed 2019 Treatment Program:**

No adverse impacts to groundwater users were observed in 2018. The 2019 Treatment Program will follow the same mitigations that were utilized in 2018. Notifications will be made to subject users and treatments shall be timed to avoid impacts.

*F.5 Project would potentially impact public drinking water drawn by Chautauqua Utility District and Chautauqua Water District #2 from northern sections of Chautauqua Lake and drinking water drawn by individuals from private water intakes in the Lake:*

Locations of treatments far exceed the required setbacks and dilution calculations have illustrated that concentrations of herbicides will be below the limits set by government agencies and the manufacturer for public water intakes at the Chautauqua Utility District and Chautauqua Water District #2. All individuals who own property around the Lake in water use restriction areas will be notified of the treatments. Individuals who draw water from the Lake via private water intakes for potable uses and whose water intakes are within the water use restriction areas have the option to request bottled water for the duration of the potable use restrictions.

In 2018, each of the three herbicides was modeled individually to show the concentration of each herbicide in the downstream corridor. All three models used the application rate as a starting point at the outlet, instead of a diluted rate within the lake. All three models demonstrated that the potable water and irrigation thresholds were not met by the time water reached the NY/PA border. Therefore, notification was made to the border for potable water and irrigation, and the required shorter distance for swimming and animal consumption according to NYCRR Part 327.6.

In 2019, a single model was used to demonstrate the rate of either endothall or 2,4-D, using the application rate as a starting point at the outlet, still did not drop below the potable water or irrigation thresholds before reaching the border. Therefore, notification once again was made to the border for potable water and irrigation, and the required shorter distance for swimming and animal consumption according to NYCRR Part 327.6.

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<sup>2</sup> DSEIS at 98.

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In addition to the downstream model, a “north lake” model was also prepared to demonstrate a theoretical concentration of the two herbicides in the north end of the lake, by using the amount of product in treatment areas north of the Chautauqua Lake Bridge, and a lake “size” of 7,416 acres, representing the northern end of the lake. This model resulted in theoretical concentrations of 9 ppb endothal and 16.8 ppb 2,4-D in the “north” end of the lake, well below the 50 ppb regulatory threshold for potable water use.

#### **F.5.a. Comparison to Proposed 2019 Treatment Program:**

In 2019, the herbicide treatments will still far exceed the required setbacks. In 2019, the furthest north treatment area on the west shore is approximately 3 miles from the Chautauqua Institute water intake. On the east shore, the closest treatment area is approximately 2.53 miles from that same intake. The setback from a potable water intake per the product labels is 1,200'. For comparison, the closest 2018 proposed treatment area to the Chautauqua Institute water intake was approximately 1.77 miles.

The dilution calculations illustrate that the concentrations of herbicides will be below the limits set by government agencies and the manufacturers for public water intakes at the Chautauqua Utility District and Chautauqua Water District #2. Timing of the treatments (early in the year before seasonal users arrive) and notifications will allow private users to avoid usage of the water if they desire. In 2018, two (2) private users requested and were supplied bottled water. Bottled water will once again be made available to affected users.

#### *F.6 Mitigations/Project Design (from 2018 Findings):*

*Following the proposed treatment and notification Plan, the herbicide treatment labels/instructions, all legal notification and application requirements, and the availability of bottled water to individuals who draw water from the Lake via private water intakes will mitigate to the maximum extent practicable any potential adverse impacts to surface and groundwater. No additional mitigations are necessary.*

#### **F.7.a. Comparison to Proposed 2019 Treatment Program:**

No updates or changes are necessary for the proposed 2019 Treatment Program.

## **G. IMPACTS ON ECOLOGICAL RESOURCES (PLANTS AND WILDLIFE)**

### ***Impacts and Evaluation Summary from 2018 Findings:***

*G.1 Project would potentially directly or indirectly impact non-target native plants in the Lake and littoral zones:*

*The SEIS has demonstrated that the chosen herbicides and their treatment plan will minimize the loss of native species while reducing the abundance of two non-native aquatic plant species. The herbicides and application rates chosen target curlyleaf pondweed and Eurasian*

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watermilfoil and are not expected to negatively affect the majority of native macrophytes. The June 2017 Bemus Bay Data Collection Project showed that drift from the treatment areas is expected to be minimal and native plants should rebound following treatment. In addition, the proposed treatment covers less than 20% of the Lake's littoral zone and less than 10% of the Lake's surface area. Overall impact to the Lake is expected to be minimal.

### **G.1.a. Comparison to Proposed 2019 Treatment Program:**

The 2018 Treatment Program was effective at targeting specific areas of the Lake suffering from infestation of the non-native, invasive species of curlyleaf pondweed and EWM. No adverse effects to native Submerged Aquatic Vegetation (SAV) were observed. Anecdotal observations saw a rebound of native SAVs in areas that were treated in 2018. The 2019 Treatment Program only covers less than 25% of the Lake's littoral zone and less than 12% of the Lake's surface area.

*G.2 Project would potentially directly or indirectly impact existing wildlife in Chautauqua Lake (fish, shellfish, aquatic macroinvertebrates, birds, bats, and other wildlife that may use the Lake):*

*The types and concentrations of herbicides to be used, the locations of the treatments, and the overall treatment plan (including timing of the treatments) discussed in the SEIS have shown that the herbicide treatments will have minimal impacts on wildlife in the Lake. The chosen herbicides have low to no toxicity to fish and mammals. The proposed treatment area only covers 25% (2018) of the 2017 Chautauqua Lake*

*Macrophyte Management Strategy (MMS) identified important fish spawning areas. With regards to the DEC's collection of muskellunge to gather their eggs for spawning and rearing purposes, the proposed treatment will be conducted in coordination with the NYSDEC to minimize impacts to trapping of muskellunge for spawning and rearing purposes. There is no known mussel survey showing the types and locations of all mussels in Chautauqua Lake. Based on limited data available regarding mussels, the proposed treatment areas overlap with only approximately 20% of areas where mussels have been recorded to be present.*

### **G.2.a. Comparison to Proposed 2019 Treatment Program:**

During the implementation of the 2018 Treatment Program, no adverse impacts to wildlife were observed. The two herbicides to be utilized for the 2019 Treatment Program are the same two herbicides applied in 2018. Renovate, which was applied in 2018, will not be part of the 2019 Treatment Program.

The 2018 Plant Survey revealed zebra mussel populations throughout the survey area. Native mussels appeared more common in the North Basin.”<sup>3</sup> Similar to 2018, the 2019 Treatment Program will occur predominantly in the Lake's South Basin. As stated above, the 2018 treatment program may overlap with about 20% of the areas where mussels have been recorded, and for 2019, this percentage may be slightly higher.

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<sup>3</sup> Solitude Lake Management, 2018 *Delineation of Non-native Macrophytes and other Submersed Aquatic Vegetation (SAV) in Chautauqua Lake*, September 2018, Page 9.

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In 2019, the treatment areas overlay 35% of the 2017 Chautauqua Lake Macrophyte Management Strategy (MMS) identified important fish spawning areas, but the chosen herbicides have low to no toxicity to fish and mammals.

### *G.3 Project would potentially directly or indirectly impact potential, threatened, endangered, or species of special concern:*

*The SEIS has discussed and documented that, based on the treatment plan, the project will not adversely affect any Rare, Threatened or Endangered Species that are found in or stopover at the Lake. No impacts to Potamogeton hillii are anticipated as treatment is proposed at rates lower than needed for control of native pondweed species, and the herbicides chosen are not known to affect pondweed seeds. In addition, only small areas of the proposed treatment areas overlap with previously recorded Potamogeton hillii locations and no Potamogeton hillii was found in the 2018 Plant Survey. Spiny soft-shell turtles, a species of special concern, are known to live in the Lake Outlet and Chadakoin River. No herbicides are being applied to the river. Given that application of the herbicides is anticipated to have economic and social benefit to the region and environmental benefit to the Lake by allowing native plants to rebound, these benefits outweigh possible non-lethal harm to spiny soft-shell turtles.*

#### **G.3.a. Comparison to Proposed 2019 Treatment Program:**

The 2018 Plant Survey, completed in August/September of 2018 and serving as the basis for the proposed 2019 Treatment Program modifications, revealed no instances of *Potamogeton hillii* in the survey areas. Based on this and the analysis in the DSEIS, there are no additional impacts to this species.

DEC toxicologist Eric Paul, PhD, Rome Field Station, conducted a study on the impact of endothall and diquat on the spiny soft-shell turtle which was published in the *Journal of Aquatic Plant Management* in 2007. In 2018, Dr. Paul shared his verbal opinion with Solitude Lake Management that 2, 4-D use would likely not have

negative impacts on this turtle. With this information and the analysis in the DSEIS there will be no significant impacts to this species.

Other Rare, Threatened and Endangered Species were identified in the DSEIS, but were shown not to be significantly impacted by the treatment program. The 2019 treatment program does not create any additional impacts that were not discussed in the DSEIS (many of the species have not been seen in a long time and some are stopovers or not located in a specific area of the lake). Also, no adverse impacts to rare, threatened, or endangered species were observed during the implementation of the 2018 Treatment Program.

### *G.4 Project may result in release of nutrients from decaying plants to the water column and potentially increase HABS:*

*The SEIS provides information on the potential releases of phosphorous from the elimination of invasive macrophytes in the early season of the year. Calculations reveal that phosphorus release related to early herbicide treatment will be small relative to the total load of phosphorus to the Lake and will result in a lower release of phosphorous to the water column than late*

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*treatment or end of the season dieback. On an annual basis, early season treatment should minimize any release of nutrients from decaying aquatic plants.*

### **G.4.a. Comparison to Proposed 2019 Treatment Program:**

The 2019 Treatment Program proposes to treat even earlier in the season than in 2018, further reducing the risk posed by potential phosphorous release from treated plants. In 2018, treatment began and was completed in mid-June. In 2019, the proposed treatment will begin in late-April or early-May. By treating even earlier in the season than in 2018, any release of nutrients from decaying aquatic plants will be less. Only a small portion of the Lake will be treated at any one time. Thus, the same analysis and findings made in the 2018 SEIS and Findings apply to the 2019 Treatment Program.

### *G.5 Mitigations/Project Design (from 2018 Findings):*

*No additional mitigations are necessary.*

### **G.5.a. Comparison to Proposed 2019 Treatment Program:**

No updates or changes are necessary for the proposed 2019 Treatment Program.

## **H. IMPACTS ON AGRICULTURAL RESOURCES**

### *H.1 Project would potentially impact agricultural resources that are located in areas adjoining (and downstream of) Chautauqua Lake:*

*Herbicide application can potentially affect agricultural resources that use Lake water for irrigation purposes. There are no known direct agricultural users that rely on Lake or downstream water for irrigation purposes. Irrigation restrictions in the lake and downstream waters will be lifted as soon as the concentration of 2,4-D is below 100 ppb or 21 days after treatment, whichever comes first. In addition, the early season treatment will minimize impacts to agricultural resources as irrigation will likely not be required early in the season. Triclopyr (Renovate) was utilized in 2018, it will not be utilized in 2019.*

### **H.1.a. Comparison to Proposed 2019 Treatment Program:**

Renovate, which was utilized in 2018 and had a 1 ppb threshold on irrigation, will not be utilized in 2019. The other herbicides used in 2018, Aquathol and Navigate, will be applied in 2019 in accordance with their respective product labels and with NYSDEC restrictions. Therefore, no changes to potential impacts to waters downstream of the treatment areas are anticipated. Treatment will occur in early spring and there will be little or no expected use of waters for irrigation. The treatment areas proposed for the 2019 Treatment Program remain targeted. No adverse impacts to agricultural resources were observed as part of the 2018

Treatment Program. The 2019 Treatment Program will include the same notification requirements for Aquathol and Navigate as included in the 2018 plan.

### *H.2 Mitigations/Project Design (from 2018 Findings):*

*Following the proposed treatment, notification, and water sampling plan, the herbicide treatment labels/instructions, and all legal notification and application requirements will*

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*mitigate to the maximum extent practicable any potential adverse impacts on agricultural resources. No additional mitigations are necessary*

### **H.3.a. Comparison to Proposed 2019 Treatment Program:**

No updates or changes are necessary for the proposed 2019 Treatment Program.

## **I. IMPACTS ON HISTORIC AND CULTURAL RESOURCES**

*I.1 Project would potentially, but unlikely, impact historic and archaeological resources around Chautauqua Lake:*

*The 2018 SEIS documentation has shown that the project will not have any significant environmental impact on historic and/or cultural resources.*

### **I.1.a Comparison to Proposed 2019 Treatment Program:**

No updates or changes are necessary for the proposed 2019 Treatment Program.

*I.2 Mitigations/Project Design (from 2018 Findings):*

No additional mitigations are necessary.

### **I.2.a Comparison to Proposed 2019 Treatment Program:**

No updates or changes are necessary for the proposed 2019 Treatment Program.

## **J. IMPACTS ON OPEN SPACE AND RECREATIONAL RESOURCES**

*J.1 Project would potentially impact the “contact” uses (swimming, bathing) in Chautauqua Lake for a temporary period:*

*In 2018, the NYS Office of Parks, Recreation, and Historic Preservation was concerned about the project’s potential impacts to their parks and swimming areas. Memorial Day is historically the beginning of the summer season in Chautauqua Lake and when people begin to use the Lake for swimming and other recreational pursuits. Treatment is expected to occur in late-April or early-May so that the majority of water use restrictions will be lifted prior to Memorial Day weekend. The proposed location of treatments, herbicides chosen for each treatment area, herbicide dosages, and notifications regarding the water use restrictions will mitigate possible impacts on contact users of the water. In addition, the treatment plan of applying herbicides early in the year and prior to the major recreation/park season and notification requirements will minimize to the maximum extent practicable any adverse impacts to recreational (contact uses) resources. There are no impacts to significant open space resources or to the parks themselves.*

### **J.1.a Comparison to Proposed 2019 Treatment Program:**

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The proposed 2019 treatment is a 20% increase in the area of the lake to be treated than that proposed in 2018. In Burtis Bay, a very large EWM infestation is proposed for treatment. Given its size, treatment may be split into two stages, with 2-3 weeks in between, to minimize the temporary impact to water quality. The 2019 Treatment Program proposes to treat even earlier in the season than in 2018, further reducing the risk that any contact users of the Lake will be adversely affected. In 2019, the proposed

treatment will begin in late-April or early-May. Only a small portion of the Lake will be treated at any one time. Thus, the same analysis and findings made in the 2018 SEIS and Findings apply to the 2019 Treatment Program. In addition, the proposed 2019 Treatment Program would treat less park shoreline than was proposed for 2018.

### *J.2 Mitigations/Project Design (from 2018 Findings):*

*Following the proposed treatment and notification plan, the herbicide treatment labels/instructions and all legal notification requirements will mitigate to the maximum extent practicable any potential adverse impacts to open space and recreational resources. No additional mitigations are necessary.*

#### **J.2.a. Comparison to Proposed 2019 Treatment Program:**

No updates or changes are necessary for the proposed 2019 Treatment Program.

## **K. IMPACTS ON ENERGY**

*K.1 Project will not have any adverse impacts on energy resources.*

#### **K.1.a. Comparison to Proposed 2019 Treatment Program:**

No updates or changes are necessary for the proposed 2019 Treatment Program.

## **L. IMPACTS ON HUMAN HEALTH**

*L.1 Project would potentially impact areas that are used for public purposes (swimming, boating, domestic water use, etc.).*

*Memorial Day is traditionally the start of the summer season at Chautauqua Lake and when individuals begin using public areas for recreational uses. Treatment is*

*expected to occur in late-April or early-May so that the majority of water use restrictions will be lifted prior to Memorial Day weekend. The proposed location of treatments, herbicides chosen for each treatment area, herbicide dosages, and notifications regarding the water use restrictions will mitigate to the maximum*

*extent practicable the impacts on human health. Individuals who have private water intakes into the Lake, and that may be affected by the potable water use restrictions, may request bottled water for the duration of the potable water use restriction. Users of Lake water for domestic, non-potable, water will also receive notifications about water use restrictions.*

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### **L.1.a. Comparison to Proposed 2019 Treatment Program:**

The 2019 Treatment Program proposes to treat even earlier in the season than in 2018, further reducing the risk that any contact users of the Lake will be adversely affected. In 2019, the proposed treatment will begin in late-April or early-May. Only a small portion of the Lake will be treated at any one time. Timing of the treatments and notifications will allow users to avoid usage of the water if they desire. In 2018, only two (2) affected users requested bottled water. Bottled water will once again be made available to affected users who request it. Thus, the same analysis and findings made in the 2018 SEIS and Findings apply to the 2019 Treatment Program.

### *L.2 Mitigations/Project Design (from 2018 Findings):*

*Following the proposed treatment and notification Plan, the herbicide treatment labels/instructions, all legal notification and application requirements, and the availability of bottled water to individuals who draw water from the Lake via private water intakes will mitigate to the maximum extent practicable any potential adverse impacts to human health. No additional mitigations are necessary.*

### **L.2.a. Comparison to Proposed 2019 Treatment Program:**

No updates or changes are necessary for the proposed 2019 Treatment Program.

## **M. CONSISTENCY WITH COMMUNITY PLANS**

### *M.1 Project would potentially be inconsistent with community or regional plans:*

*The SEIS documents that the Plan is consistent with community plans. The information in the SEIS supplements the 1990 SEIS (completed by Chautauqua County) and relies on more recent and site specific data on herbicide treatments to supplement the nonbinding 2017 Macrophyte Management Strategy (MMS) for Chautauqua Lake.*

### **M.1.a. Comparison to Proposed 2019 Treatment Program:**

No updates or changes are necessary for the proposed 2019 Treatment Program.

### *M.2 Mitigations/Project Design (from 2018 Findings):*

*No additional mitigations are necessary.*

### **M.2.a. Comparison to Proposed 2019 Treatment Program:**

No updates or changes are necessary for the proposed 2019 Treatment Program.

## **N. SOCIOECONOMIC CONSIDERATIONS**

*N.1 Project may positively impact the economic vitality of the area.*

# TECHNICAL MEMORANDUM

## Chautauqua Lake 2019 Herbicide Treatment Program

*As stated in the impacts, the project may positively impact the economy by allowing Lake users to more easily enjoy the Lake following removal of invasive*

*plants. The plan to treat early in the season prior to recreational use of the Lake and the mitigations proposed will minimize any alleged (and unsupported) potential for negative impacts to the economy.*

### **N.1.a. Comparison to Proposed 2019 Treatment Program:**

No updates or changes are necessary for the proposed 2019 Treatment Program.

### *N.2 Mitigations/Project Design (from 2018 Findings):*

*Following the proposed treatment and notification plan, the herbicide treatment labels/instructions, and all legal notification and application requirements will mitigate to the maximum extent practicable any potential adverse impacts to the socioeconomic of the region. No additional mitigations are necessary.*

### **N.2.a. Comparison to Proposed 2019 Treatment Program:**

No updates or changes are necessary for the proposed 2019 Treatment Program.

## **O. CONCLUSION**

Based on the reviews and comparisons completed in this document, the potential significant environmental impacts identified and evaluated in the 2018 SEIS, are the same or not substantially different to those for the proposed 2019 treatment program. Therefore, as determined in the 2018 SEIS, adverse environmental impacts will be minimized or avoided to the maximum extent practicable by incorporating as conditions to the decision, those mitigating measures that were identified as practicable in the 2018 SEIS Findings.

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