FINDINGS STATEMENT

State Environmental Quality Review Act (SEQRA)
Saratoga Lake Aquatic Invasive Species 2019 Long-term Management Plan
Saratoga Lake Protection and Improvement District (SLPID)

1.0 Introduction

This Findings Statement(Findings) is the result of Final Supplemental Generic Environmental Impact Statement (FSGEIS) that was prepared in accordance with 6NYCRR 617, the procedural rules for the State Environmental Quality Review Act (SEQRA). The lead agency for this action described below is the Saratoga Lake Protection and Improvement District (SLPID).

The Supplemental Generic Environmental Impact Statement is inclusive of all the documents prepared during the SEQRA process and support material found on the SLPID website consisting of reports from Solitude, and Darrin Freshwater Institute.

The action is the continued management of aquatic invasive plants by use of New York State register aquatic herbicides, management of aquatic invasive species by the use of an integrated aquatic plant management on an annual basis. The integrated aquatic plant management plan will include use of herbicides, mechanical harvesting by cutting or removal of the plant, hand harvesting, annual draw down, annual inventory of plants, a lake steward program, and outreach and educations. Additional methods to control aquatic invasive may be added including herbicides register in NYS and emergency measures that be required to address introduction of new invasive species on a short-term basis.

2.0 Administrative Record

SLPID was the lead agency for a 2006 Draft Environmental Impact Statement (DEIS) that described the segmented whole-lake herbicide treatment that occurred during 2007-2009. The segmented whole lake treatment of Saratoga Lake littoral zone with herbicides was completed to control Eurasian watermilfoil (EWM). Following the segmented whole lake treatment from 2010-2018 additional herbicide applications took place to continue to manage EWM, curly leaf pond weed and water chestnut. .

SLPID was the lead agency for the original actions and proposed to prepare a Supplement Generic Environmental Impact Statement in 2018 and was confirmed as the lead agency in March 2019 following lead agency discussion with the New York State Department of Environmental Conservation.

Following review and comments by the SLPID board a Supplemental Draft Generic Environmental Impact Statement(SDGEIS) was accepted by the Board on April 2, 2019.

A notice was prepared and published in the New York State Environmental Notice Bulletin on April 10, 2019. A notice was also published in The Saratogian on April ,2019.

An opportunity for public comments was available as a part of the regularly schedule SLPID Board meeting on April 18,2019.

The public Comment period closed on May 2, 2019. One comment was received by e-mail.

A Final Supplemental Generic Environmental Impact Statement (FGSEIS) was prepared and reviewed by the SLPID Board. The FSGEIS was accepted on May 16, 2019. A notice was published in the ENB on May 29 , 2019 and The Saratogian on May X ,2019.

The SLPID Board reviewed and accepted a Findings Statement on June 20,2019.

3.0 Environmental Setting

3.1 Saratoga Lake

Saratoga Lake is a 4006-acre mesotrophic, dimitic lake that was created or established to the current size by a dam constructed at Winnie Reef in 1828. The lake is 28 m (95 feet) deep in a basin in the central portion of the lake, a second deep-water hole near Snake Hill is 12 meters deep (40 feet). These deep-water zones become devoid of oxygen by late July or August. The littoral zone depth is six meters (19.6 feet) covers 1,804 acres of the lake. The lake retention time is 0.4 years. The average depth of Saratoga Lake is 7.9 meters (26 feet).

Water quality in Saratoga Lake has improved from the 1970's. In 1972 the Secchi depth was 2.29m. From 1983-1995 the annual average Secchi depth varied from 2.20-3.69 m (CSLAP 1996) and in 1997 the Secchi depth increase to 5.59 meters. This increase in clarity is the result of the introduction of zebra mussels roughly three to four years prior to 1997. The secchi depth at Saratoga Lake between 1993-1997 was an average of 2.1 m, this increase to 4.38 m for the period 1997-2017 following the establishment and growth of Zebra mussels. The trophic state of the lake has improved to mesotrophic following the construction of the county wide sewer. Mesotrophic lakes have total phosphorous concentration of 0. 010-0. 020 ppm, Chlorophyll a concentration of 2-8ppb, and secchi depth of 2-5 m (NYSFOLA, 2009). The long-term average in Saratoga Lake for total phosphorous is 0. 020 ppm, Chlorophyll *a* 8. 2 ppb, and secchi depth of 3. 2 m.

Coliform sampling has been completed on the lake near beaches and in areas used for swimming, or locations that are popular boat anchorages. The coliform levels found on the lake are normally acceptable for contact recreation. Along with sampling the lake some samples are taken at the mouth of various streams and at discharge of culverts. Most of these locations meet contact recreation standard, however meeting this standard does not indicate that water entering the lake is free of coliforms.

The supports a water warm fishery that has both large mouth and small mouth bass, walleye ,perch and carp. The lake is a popular location for bass fishing tournaments run by both regional and out of state groups. There are frequently one or more bass fishing tournaments a week on the lake.

Saratoga Lake is within the Saratoga County Sewer District 1 and a perimeter sewer was completed in 1978, as well as a sewer system that diverted wastewater from Ballston Spa and Saratoga Springs out of the Saratoga lake Watershed. Prior to the diversion of wastewater there were frequent algae blooms on the lake. Sometime in the middle 1970's EWM was introduce into lake and began dense beds of plants developed shortly after the completion of the wastewater collection system. By early 1980's EWM had reached nuisance density and a diagnostic feasibility study was completed to identify the most appropriate actions to be taken to control EWM (Hardt 1983) . That feasibility study recommended that harvesting be used to manage EWM and improve access to open water. The same study also

recommended that a special purpose district be formed to manage harvesting. SLPID was form by New York Legislature in 1986.

The harvesting program from 1986-1994 removed the EWM mats and resulted in an increase number of rooted submersed aquatic plants from 15 in 1982 to 21 in 1994 plants. In 2018 there are 25 submerge aquatic plants in Saratoga Lake. Harvesting is not a method that would eliminate EWM from the lake, starting in 1999 SLPID began to investigate use of herbicides, followed by test application of Sonar® in 2001 and 2004. An aquatic plant management plan was prepared in 2006 followed by a DEIS in 2007. The segment whole lake treatment started in 2007 with Sonar® application on 158 acres , 292 acres with Renovate® in 2008 and 285 acres with Renovate ®in 2009. The segmented whole lake treatment reduced the % frequency of EWM from 49.7% frequency in 2007 to 6.9 % frequency in 2009. From 2010-2018 the % frequency of EWM has varied, but normally under 30 % frequency. During the same time period the native pond weeds % frequency increased to approximately 30 %, which is a desired outcome of the treatment program. The program to manage EWM has been successful.

Curly leaf pondweed, and water chestnut are two other nonnative invasive species that are being controlled at Saratoga Lake. Both plants are found in small areas at a variety of locations around the lake. Curly leaf pondweed is being managed with herbicide while water chestnut is managed by mechanical harvesting, hand harvesting and herbicides.

Other invasive species found in the lake are Zebra mussels, Chinese mystery snails, spinney water flea, and cyanobacteria associated with harmful algae blooms. Control methods will not be implemented for zebra mussels or spinney water flea, or HABs. Chinese mystery snails maybe hand harvested.

4.0 Potential Environmental Impacts and Findings

4.1 General Water Quality

Impacts

The water quality has improved since the construction of the Saratoga County Sewer District 1 (see section 3.1 above). The water clarity of the lake is influenced by the zebra mussels that feed on phytoplankton and selectively feed on algae that are associated with HAB. The dynamics of Zebra mussels feeding disconnect the relationship of phosphorous and chlorophyll a to a variable extent depending on number of zebra mussels in the lake.

The application of herbicides or other aquatic plant management activities has not had long term impact on water quality.

Findings

Water quality testing will be continued at Saratoga Lake. SLPID will continue to fund required aquatic plant surveys on the Saratoga Lake to support the ongoing aquatic invasive species management. SLPID will continue to improve public outreach so that the tax district residents have a better understanding of the management efforts. The annual reports by CSLAP on water quality Solitude aquatic plant management, lake steward programs and SLPID coliform monitoring will be posted on the SLPID web site.

Additional investigation of dissolve oxygen and temperature profiles should be completed on the lake in the fall when the lake is fully mixed. Also, a better understanding of water movement in the lake will

assist in herbicide application as well as understanding lake mixing. The dissolve oxygen temperature profile in the north deep-water area should be measured in July, August and September.

4.2 Non-Native Aquatic Plants

Impacts

The treatment of Saratoga Lake with New York State Register herbicides has been successful in reducing the coverage of the lake by EWM and is aiding in the control of Water chestnut and Curly leaf pond weed. Herbicide treatments will continue to be used and plan as described in the environmental impact statement. New herbicides as they are register for use in New York State will be considered for use at Saratoga Lake.

Harvesting will continue at Saratoga Lake as a method to reduce the amount of aquatic plants that interfere with recreational access to the lake. Along with mechanical harvesting by weed cutters, use of hydro rakes and skimmer devices will continue to be considered.

EWM, CLP and Water chestnut are found in Saratoga Lake. The CLP is often mixed within the EWM beds and is generally found in the littoral zone of the lake. Water chestnut is also found in limited areas along the shoreline on or near Manning Cove, Fish Creek, Kayaderosseras Creek outlet and a few other spots on the lake. These are the target species of the management program that will required continue use of herbicides. New York State Register herbicides will continue to be used as a part of the management plan. If new products are register for the control of invasive species those products will be evaluated and possibly used to control target species. The program of herbicide use will be continued to rely on multiple products to limit development of resistance herbicide.

To limit future introduction of new invasive species SLPID will continue to operate a lake steward program to limit introductions and possible transport of invasive species out of Saratoga Lake

Findings

SLPID will continue to manage aquatic invasive species by an integrated aquatic plant control that uses available techniques of hand harvesting, mechanical removal or harvesting, and herbicides. Herbicides to be used will be selected base on chemistry, target species, time of application and application techniques including split does, single or multiple product application. The concentration of herbicides used at Saratoga Lake has been with label limits but generally at the lower to mid-level concentration. In the future based on location where water is deeper higher concentration should be carefully considered. ProcellaCor® will be used in the future to target locations that have been difficult to treat with other products. ProcellaCor ®may also be used in locations with low density EWM, since Renovate® has not successful in further reducing EWM in these locations.

If it becomes feasible to control either zebra mussels or HABs those actions will be considered and may require a separate SEQRA action by SLPID. Invasive species as discovered will be evaluated as to their threat, and integrated control programs of herbicides, mechanical, or hand removal will be evaluated.

Currently, there is not sufficient evidence to consider biological control of EWM. The past testing of herbivore weevils was not successful, and in general to control with weevils the blue gill fish population has to be control otherwise insufficient number of weevils will survive to gain control of EWM.

4.3 Ecology and Non-target Plant Species Damage

Impacts
Herbicide treatments have occurred on Saratoga Lake from 2007-2015 and 2017-2019 targeting various non-native aquatic plants. None of these treatments resulted in significant non-target species damages within or outside of the treatment zone.

The potential for impacts on non-target plant species always exists when using broad-spectrum aquatic herbicides. Post treatment-monitoring plans will continue to be designed to address the potential recolonization of treated areas.

The diversity of native aquatic plant species has improved as a result of the control of EWM. During recent years Richardson Pondweed has become the most prevalent pond in the lake. Herbicide applications have successfully targeted invasive species while allowing Coontail, southern naiad, wild celery, and water stargrass to thrive in the lake .

To continue the robust growth of native species nuisance densities of these plants should be controlled by harvesting.

Findings
Herbicide use by SLPID will continued to be planned as an integrated aquatic plant control. This program will evaluate new chemistry of register herbicides to select best chemical for the target species. Post treatment surveys will be used to identify non-target species damage.

4.4 Fisheries

Impacts
An herbicide's mode of action or phytotoxicity is targeted to plant life's metabolic processes and when used in accordance with the label will not exhibit direct toxicity to animals (fish, amphibians and reptiles). To date of the herbicide applications have resulted in widespread or significant dissolve oxygen depletion in the lake. Available fisheries information collected during the segmented whole lake treatment and fish catch information from fish tournaments do not show a decline in the fisheries. The aquatic plant surveys show that the species composition has improved and that the littoral zone continues to be well stocked with plants providing needed habitat for fish.

Findings
Herbicide use and other aquatic plant or invasive control measures will continue to be used through integrated aquatic plant control methods. Further fisheries monitoring is not required to support the use herbicide or the harvesting program. Future treatments are expected to involve a more limited area or will make use of Renovate® and ProcellaCOR® which is highly selective against EWM, or low dose of combination of products that will be selective due to the timing of the application. When using Renovate® or ProcellaCOR® due to its highly selective characteristic targeting EWM, it is feasible to treat hundreds of acres without risking damage to the fisheries.

4.5 Wetlands

Impacts
Riparian wetlands are found in Manning Cove and along Fish Creek where the wetland extend into the lake. In two other locations there, State wetlands that exist outside the shoreline zone and discharge to

the lake. The geomorphic setting of the wetlands that border Saratoga Lake at Manning Cove indicate that water is moving through the wetlands and into the lake. Therefore, lake waters carrying herbicides are not likely to penetrate the wetlands. Only emergent wetland plants growing in standing water at the edge of the lake have any likelihood of being exposed to herbicides.

Findings
To date no wetland damage has been detected following herbicide applications. When feasible buffer space will be provided to protect wetlands. The herbicides with the lowest potential for wetland plant damage will be used for treatments occur in deep water wetlands associated with palustrine wetland community Herbicides are evaluated for each application site as a part of the proposed integrated aquatic plant control

4.6 Public Health and Potable Water Supplies

Impacts
All NYS pesticide label restriction related to potable water intakes will continue to be followed. Landowners on the lake receive notice and will continue to be instructed on the required use restriction for potable water and irrigation. Post herbicide testing will be completed as required.

Findings
Herbicides are evaluated for each application site as a part of the proposed integrated aquatic plant control plan and this process includes the evaluation of the potable water restriction or contact recreation restriction of the various pesticides. As done in the past alternative potable water supplies have been provided at no cost to the homeowner.

4.7 Harmful Algae Blooms and Non-native Mollusks

Impacts
The results of testing for microcystin and evidence of harmful algae blooms (HABs) by use of chlorophyll *a* measurement are an element of the CSLAP monitoring program. The CSLAP program begins in mid-June and samples are collect until September. Samples are collected offshore and in areas that appear to exhibit bloom conditions. Shoreline bloom conditions when blue green algae chlorophyll *a* was above 25 ug/l occurred once in 2016, three times in 2017 and twice in 2018. High concentrations of microcystin were not detected on any occasions. The precise conditions for HABs to occur are not well defined.

The proposed project has the potential to become a factor in harmful algae blooms if application of herbicides in waters of Saratoga Lake has the collateral effect of killing blue-green algae and causing them to release intracellular toxins to the water. The degree to which cyanobacteria are affected by herbicides varies according to the mode of action of the herbicide.

Findings
To minimize the hazard posed by harmful algae blooms and the potential that aquatic herbicide use may increase those hazards, SLPID will undertake efforts to monitor the occurrence of cyanobacteria and algal blooms in the waters of Saratoga Lake following herbicide application. At Saratoga Lake HAB conditions tend to occur in late summer while most herbicides are applied in May or July. Efforts will also be made to increase public awareness of harmful algae blooms. HABS will continue to be monitored as a part of the Citizen Statewide Lake Assessment Program(CSLAP)

4.8 Recreation

Impacts
Recreational activities will not be significantly impacted by the project. During the distribution of the chemical in the surface waters, water-skiers, fisherman and other water recreationalists will be restricted from the area, creating a more concentrated area for use for these activities.

Boating is a popular recreation activity on Saratoga Lake. The pattern of activity observed over the past years is that many boats are at anchor during the day. This has the effect of reducing conflicts. During the summer of 2016-2018 boat counts have been made at the lake and found that sufficient space for active boats was available.

In Fish Creek there are space conflicts due to limited navigation space, use of power and non-power boats , State boat launch and marinas. All boaters need to be aware of their surroundings, and use good navigation practices, in this area. Limiting the number of boats on the lake would require a combination of restricting docks, marina operations and boat launches. Past discussions of these topics found no consensus on the need to regulate recreational boating or private docks .

To control import or export of invasive species to or from Saratoga Lake, a lake steward program is operated by SLPID. This project provides a full-time boat launch monitor (lake steward) to implement the Watercraft Inspection Program with support from NYSOPRHP.

Findings
SLPID has funded a lake steward program since 2008 and will continue to fund the programs since it is a proven method of intercepting aquatic invasive species. The process of boat inspections does require time and may be an inconvenience for boaters. This inconvenience to boaters is not significant compared to the long-term benefits of preventing invasive species transport to and from Saratoga Lake is much greater for all lake users and the health of the ecosystem.

This is a short-term, boating or fishing use restrictions during herbicide application is relieved as soon as the treatment is completed for that area. This will be a minor issue since the timing of the chemical application will be planned to coincide with the lowest recreational usage.
SLPID will continue to monitor boating activity on the lake.
SLPID will continue to fund the Lake Steward and obtain grants when available to support the program.

4.9 Land use

Impacts
Saratoga lake watershed covers a third of Saratoga County approximately 245 square miles (sq. mi.). Most of the watershed is forested and there has been a change in the amount of impervious surface 2001 to 2011. The national land use cover inventory is completed by cooperating federal agencies to assess land use changes at ten intervals. In 2001 there were 31 acres of high intensity development while in 2011 the watershed has 90 acres of high intensity development. Addition growth was identified in the category of low density, and medium intensity development categories.
Land use and development is control locally at the Town level by zoning and subdivision regulations, at the county level when development is of a county wide concern, and by the State and Federal government when development involves resources regulated by those governments .Changes in land

use and development will cause changes in the lake as seen with the changes in water quality following the construction of Saratoga County sewer District One. SLPID does not have the authority to regulate land use and development. SLPID will provide input to communities when asked by municipal government for an opinion or comment on a project.

Nearly the entire shoreline of the lake developed for residential use, along with one campground and four marinas, a boat club, and undeveloped shoreline in Manning Cove and near the Kayaderosseras Creek. Development on the shoreline and conversion of housing stock on the shore needs to be carefully planned and executed in accordance with local state federal laws to protect water quality. Excessive development along the shoreline by the introduction of impervious surfaces in the upland changes recharge rates and increases runoff into the lake. At the same time hardening of the shore with break walls both increase the speed of water along the shoreline, moves sediments in the shallow water zone and alters fish habitats (C.L. Henderson, C.J. Dindorf, F.J. Rozumalski, 1999, Department of. Natural Resources).

Findings
SLPID will continue to work with communities on land use issues as it relates planning and zoning revisions. Implementation of local zoning will continue to be left to the local municipal boards. SPLID will provide input when requested by the municipality. SLPID will discuss riparian communities the need to examine shoreline development SLPID will work with the county to consider impacts of watershed growth on the lake. SLPID is expanding its education program through a "Take the Pledge" initiative which asks shore owners to utilize best management practices for shoreline protection. Outreach will continue to grow the partnership between PRISM, the Adirondack Watershed Institute, NYSDEC, and NYSOPRHP.

4.10 Economics and Recreation

Impacts
Measuring economics as it relates to fisheries, recreation, water quality, and ecology is complicated in that it is influenced by many factors. Human perceptions of their environment are different among lake user groups. Research does suggest there is a direct relationship between the quality of the recreational experience and the number of times a visitor will recreate, as well as how much they are willing to spend in that location.

Findings
Boating on Saratoga Lake is robust but appears to have leveled off in recent years. This is evidenced by the annual boat count conducted over the past 3 years where the number of active boats on Saratoga Lake ranged from 342 in 2016 to 368 in 2017 to 352 in 2018 – a range of only 26 boats. No mitigative measures are required since the anticipated impacts are not significant or are positive.

4.11 Aesthetics and Human Perceptions

Impacts
The continued use of herbicide treatments may cause some members of the public to react negatively due to a general perception that chemical treatments will be harmful to humans and animals. A public education program related to the herbicide treatments will continue to be a part of the outreach efforts

of SLPID. On an annual basis, the public will continue to experience greatly improved aesthetics within several months following the time of treatment.

Findings

It is necessary to continue to educate the public on the benefits of a stable native macrophyte community in the lake. This will be done by having annual presentations at SLA meetings, providing educational materials, both printed and electronic, at various locations. As the control of EWM progressed and this invasive became less dominant, there was the perception that the lake still had too many weeds. The public prefers lakes to be as weed-free as possible, and in natural meso trophic lakes it is an unachievable expectation for the lake to be weed-free. Outreach techniques will be improved to effectively communicate the value of a diverse aquatic plant community.

5.0 Conclusions

SLPID has completed the preparation and the review of the proposed management plan for aquatic invasive species, based on the documents prepared and individual expertise with due consideration conclude :

Whereas, the procedural requirements of the 6 NYCRR 617 SEQRA have been met, including both a comment period and public statement hearing,

Whereas, SLPID has consider the comment received on the Supplemental Draft Generic Environmental Impact Statement,

Whereas, the SLPID has met in open meetings and approved the documents,

Whereas , SLPID is authorized by the New York State Legislature Laws of 1986, S.7690-B and A.9211-B to Section 1, and Section 7(p) “take any and all other actions reasonably necessary and proper to further the purposes of the district,

Whereas, SLPID will continue to manage aquatic invasive species by use of a integrated control program that identifies and recommends control measures including quarantines, physical removal of invasive species, by mechanical means or hand harvesting, draw down, and pesticides,

Whereas, mechanical harvesting has proven to be a valuable method to improve the diversity of aquatic plants, and improved access to the lake and this work will continue,

Whereas, the employment of boat launch stewards has been successful in the interception of aquatic invasive species, this activity will continue to be supported by SLPID,

Whereas, gathering of information on lake and stream water quality testing will be aligned with information needed to support planning of management actions and these efforts will continue,
Whereas, SLPID will continue to engage in various outreach activities to keep the public informed on the management efforts and water quality in Saratoga Lake,

Whereas, to protect Saratoga Lake it is necessary to work cooperatively with riparian, and watershed communities, Saratoga County , New York State and the Federal government,

Whereas, SLPID has represented the lake community in Federal Energy Regulatory Commission licensing of dams, and has communicated with current dam operator, those efforts will continue,

SLPID approves the Certification of Findings below.

CERTIFICATION OF FINDINGS

Having considered the Draft and Final Supplemental Generic Environmental Impact Statements, and having considered the preceding written facts and conclusions and specific findings relied upon to meet the requirements of 6 N.Y.C.R.R. Part 617, this Statement of Findings certifies that:

1. The requirements of 6 N.Y.C.R.R. Part 617 have been met;

2. Consistent with the social, economic and other essential considerations, from among the reasonable alternatives thereto, the action is one which minimizes or avoids adverse environmental effects to the maximum extent practicable; including the effects disclosed in the environmental impact statement; and

3. Consistent with social, economic and other essential considerations, to the maximum extent practicable, adverse environmental effects revealed in the environmental impact statement process will be minimized or avoided to the maximum extent practicable by incorporating as conditions to the decision those mitigative measures which were identified as practicable.

Reviewed and approved by the SLPID Board (date)_____

Cristina Connolly, SLPID Chair _____