

State Environmental Quality Review
Findings Statement

Pursuant to Article 8 (State Environmental Quality Review Act – SEQRA) of the Environmental Conservation Law and 6 NYCRR Part 617, the Ontario County Planning Department as the Lead ~~or an~~ ~~Involved~~ Agency makes the following findings.

Name of Action: Application Of Alum In Honeoye Lake To Control The Internal Release And Recycling Of Phosphorus

Description of Action: The action involves deep water application of 120,000 gallons of liquid alum (aluminum sulfate) to the 800 acre portion of Honeoye Lake where the water is more than 18 feet deep. Alum is to be introduced at a depth of more than 6 feet. The alum application is expected to take approximately 7 days, and would be done either prior to June 15 or after September 15 to avoid the peak boating and recreation season. The intention of the application is for the alum to settle to the lake bottom and tightly bind with phosphorus in the bottom sediments to prevent the release of phosphorus into the lake water, especially when the deep water experiences anoxia during the summer growing season. This is intended to mitigate mid and late summer algal blooms that have historically occurred in Honeoye Lake. The action requires funding from local municipal sources, local project administration, coordination with law enforcement agencies to ensure a safe zone around the application barge during the application, and a State Pollution Discharge Elimination System permit from the New York State Department of Environmental Conservation. All lakeshore property owners and residents will be notified at least 5 days in advance of the start of the application by both newspaper notices and flyers mailed or delivered to each property owner and resident.

Location: Application will occur in Honeoye Lake, located in the Towns of Canadice and Richmond, Ontario County, New York. The local post office serving the area is Honeoye, NY 14471.

Agency Jurisdiction: Lead Agency

Date Final Environmental Impact Statement Filed: February 8, 2006

Facts and Conclusions Relied on to Support the Decision:

1. According to correspondence received from New York State Department of Environmental Conservation (DEC) the proposed alum application is “**not likely to harm the lake ecosystem in any significant manner.**” This statement is further supported by the data and analysis presented in the Environmental Impact Statement,
2. The largest potential impact related to the proposed action is accidental spill of liquid alum either on shore or in lake during the application. This risk shall be minimized to the extent practical through use of an experienced application contractor (in order to be qualified for consideration, the contractor must demonstrate prior experience with similar applications), safety precautions required of the application contractor in terms of site security, locking of storage equipment, and having spill containment and recovery equipment on hand during the application.’
3. There is a wealth of data available on lake water pH levels over the last 20 years, with only one isolated sample in 1998 showing an anomalous level near 6.0, making that sample suspect. All other samples and the bench testing of lake water indicate a more than adequate

buffering capacity of the lake water to ensure that pH will not fall below 6.0 during and after the proposed alum application. In addition, lake water testing will be done prior to the application to confirm safe alum dosing rates, and additional testing shall be done during the application to further ensure that the application will not result in pH levels below 6.0. This complete testing and monitoring package mitigates the risk of depressing pH levels in the lake water to the point where there is aluminum toxicity risk to the maximum extent practical.

4. A baseline survey of the existing benthic community has been conducted by Finger Lakes Community College that includes transects across the lake. The draft of the resulting report on this sampling was included in the appendix of the Final Environmental Impact Statement (FEIS). Since publication of the FEIS, additional work has been done with biologists at the New York Museum (as recommended by DEC) to confirm species identification in preparation of publication of the final report. The Ontario County Planning Department is committed to funding follow-up benthic studies to document any impacts on the benthic community. The FEIS also documents the lack of negative impact on similar benthic communities in other lakes where similar alum applications have been performed. The low diversity of the existing benthic community in Honeoye Lake and the expected lack of impact on this community, supports the DEC's conclusion that the proposed alum application is not likely to harm the ecosystem in any significant manner.
5. The documentation of anoxic conditions in the deep water of Honeoye Lake takes into account Dissolved Oxygen data collected by both DEC and by more comprehensive, recent data collected by FLCC. This information clearly documents the existence of significant anoxic conditions in the deep water and sediments in Honeoye Lake during the summer. The duration of the stratification and thus anoxia in any season is influenced by local wind and storm conditions. Typically, all tributaries except the Honeoye inlet dry up during the summer, but this is influenced by local precipitation. The deep north south running valley in which Honeoye Lake lies explains the lack of water mixing which occurs with normal wind levels of predominantly westerly direction. More violent west or easterly wind events and/or less intense wind events from the south or northerly direction are capable of breaking the lake's weak stratification. This begins to address the complexity of the systems governing the variability of the intensity and duration of mid to late summer algal bloom events in Honeoye Lake.
6. The statement presented by DEC that the zebra mussels upset the balance between Cyanobacteria (blue green algae) and other algal species is not supported by any information or definitive data provided by the DEC. Even if such a causal relationship exists, this does not explain nor address the additional nutrient loading necessary to support the late summer algal populations that occur in Honeoye Lake. The FEIS provides extensive data, information, scientific citations and discussion to support the link between internal phosphorus loading/recycling, increased lake productivity and the development of Cyanobacteria blooms.
7. The DEC statement that it would probably make sense to control external sources prior to addressing internal symptoms, ignores several significant conditions unique to the watershed of Honeoye Lake. First, the Honeoye Lake watershed is primarily undeveloped, and is indeed forested. External phosphorus loads are dominated by the primarily forested southern portion of the watershed. Runoff from the southern portion of the watershed drains primarily through an approximately 2,200 acre wetland, and the lake's main tributary, the Honeoye inlet, flows through this wetland. If it were theoretically possible to eliminate all man made impacts on the external load, the fact remains that the majority of the external load would still exist, as would the importance of the internally generated phosphorus load.

Second, the role and timing of the release of internally generated phosphorus load in regard to mid to late summer algal blooms has been well documented in the FEIS. Third, the adopted Honeoye Lake Watershed Management Plan contains numerous action items that are being actively pursued to address external loading. These external control actions are going on in concert with the proposed alum application. Fourth, the large impact actions that can be taken to address external loading in the watershed have already been taken, such as the installation of a full perimeter sewer system. Fifth, the proposed dosage rate for the alum application is fairly low, and the application area fairly small, resulting in a very economical cost for the proposed alum application, low enough in fact for it to be fundable by the two rural towns bordering the lake. Sixth, the proposed application is not intended to control an internal symptom. . The use of alum is not intended to be used in its traditional water quality role, that of stripping the water column of algae. In this case, applying alum to the deep water is intended to tie up the phosphorus in bottom sediments to prevent the recycling of phosphorus into the water column, which is the cause of the symptoms (algal blooms). Thus, there is no single action that will have as large a positive impact on the availability of phosphorus during the mid to late summer season that is as affordable and as likely to be effective as the proposed alum application.

8. The phosphorus modeling done by the consultant, Princeton Hydro, is based upon modeling techniques used by DEC and the EPA and is a generally accepted model. The DEC comments concerning the phosphorus load quantification refer to the DEIS, additional data and discussion directed specifically at DEIS related comments received from the NYSDEC are provided in sections 5 and 7 of the FEIS. Specifically, the information contained in the FEIS, although focusing on the lake's deep water sampling station, does include data collected by FLCC from other stations. Second, the field data is backed by conservative estimates developed through the pollutant load model. Third, NYSDEC and other regulatory and water quality agencies, including the USEPA, have used the same approach in analyzing and drawing conclusions in developing lake management plans and to develop TMDLs and even effluent discharge limitations. Overall, a robust, comprehensive dataset was used in the FEIS. The whole intention of developing and promulgating loading models is that the level of testing necessary to develop data specific to each lake is cost prohibitive. The models used have been validated over and over again by case studies and are recognized as accurately estimating phosphorus loading. The DEC comment that "they are virtually useless for describing the extent and duration of anoxia and phosphorus loading in the lake" is overly dismissive of the approach DEC and EPA use in assessing nutrient loading throughout the state. Thus, the methodology and results of the modeling are valid representations of the existing conditions in Honeoye Lake.
9. The impact of controlling the mid to late summer release of phosphorus on the macrophyte community is well discussed in the FEIS. The alum application will address mid to late summer internal release of phosphorus, long after the prime growing season for rooted macrophytes. As was discussed in a previous finding, external loading from this relatively undeveloped watershed is likely to continue at near its existing rates and certainly continue its existing annual timing cycle. Thus, similar phosphorus availability is expected during the spring and summer growing seasons for both algae and rooted macrophytes as are currently experienced. This supports the FEIS conclusion that little or no impact on water clarity is likely to occur and thus no impact on the rooted macrophyte community.
10. The Princeton Hydro data contained in the cited report pertains to the internal and external pollutant loading data and is provided in the FEIS. The final loading report will be completed and disseminated following the completion of the alum treatment and as such is still in progress

11. The purpose of this project, as definitively stated and emphasized in the FEIS is the overall management of the lake's eutrophication process, the basis of which is the control of the lake's internal phosphorus load. Please refer to the information presented in bold type on pages 7, 8 and 9 of the Executive Summary of the FEIS. The FEIS adequately identifies the Problem Statement. Algal blooms, as a symptom of mid to late summer release of internally generated phosphorus load, occur annually in Honeoye Lake. The FLCC data clearly shows an increasing trend in mid- and late-summer Chlorophyll *a* concentrations. It is important that spring 'clear water phase' chlorophyll *a* data is not included in this analysis, as they are not indicative of the mid to late summer conditions and will affect an annual mean comparison analysis of chlorophyll *a* level trends. The length and severity of such blooms vary annually based upon a number of meteorological conditions, and thus impairments to recreational activities and impacts on quality of life for residents of adjacent properties varies widely annually. The timing and amount of loading from internally generated phosphorus is well documented in the EIS and is the main source of phosphorus supporting these mid to late summer blooms. The control of internal phosphorus loads will reduce the most severe cases of such impairments during the mid to late summer.
12. Proposed Treatment: Information is contained in the FEIS pursuant to the pre-treatment monitoring of the lake's benthos, and the measurement of the lake's pH, dissolved aluminum and soluble reactive phosphorus immediately in advance of, during, and following the introduction of the alum (Section 6.2.4). As the goal of the project is the control of the lake's internal phosphorus load and the resulting minimization of mid- and late-summer algal blooms, post-treatment monitoring of the lake is planned and will be implemented by FLCC and the HLWTF under the direction of Princeton Hydro. The post-treatment monitoring will focus on the measurement of clarity, Chlorophyll *a*, total and soluble reactive phosphorus, DO/Temperature/pH profiles. To facilitate comparison with the pre-treatment database, these data will be collected at the appropriate frequency, locations and depths to allow comprehensive pre- post- condition analyses. As stated in the FEIS, there will be post-treatment sampling of the lake's benthic community conducted in a manner consistent with the sampling conducted in 2005 to allow comparison of the two datasets. It is acknowledged that the FEIS does not include details of the post-treatment monitoring. Although the comment is relevant it has no bearing on the issuance of a finding of no impact by the DEC and therefore its inclusion in the FEIS is not mandatory. As part of the issuance of any SPDES permit by DEC, the lead agency expects the parameters and requirements of reasonable, cost effective testing and monitoring to be specified by DEC and be conditions of the permit issuance.
13. The comment in the FEIS relative to the walleye was not intended to link the stocking of these fish as the primary cause for the extirpation of alewife. The FEIS simply states that walleye prey on alewife (among other prey species of fish) and that the reduction in the lake's alewife population was a combination of the both 1996 thermal event and walleye predation pressure.
14. The deep water alum application is a safe and cost effective way to control the internal generation of phosphorus with minimal risk of negative environmental impact. Follow up monitoring of lake conditions will document the longevity of the application success, and the need and advisability of future reapplication.

Certification To Approve/Fund/Undertake:

Having considered the draft and final Environmental Impact Statement and having considered the preceding written facts and conclusions relied on to meet the requirements of 6 NYCRR Part 617.11, this Statement of Findings certifies that:

1. The requirements of 6 NYCRR Part 617 have been met; and
2. Consistent with social, economic and other essential considerations from among the reasonable alternatives available, the action is the one that avoids or minimizes adverse environmental impacts to the maximum extent practicable, and that adverse impacts will be avoided or minimized to the maximum extent practicable, and that adverse impacts will be avoided or minimized to the maximum extent practicable by incorporating as conditions to the decision those mitigative measures that were identified as practicable.
3. (And if applicable) Consistent with the applicable policies of Article 42 of the Executive Law, as implemented by 19 NYCRR Part 600.5, this action will achieve a balance between the protection of the environment and the need to accommodate social and economic considerations.

Ontario County Planning Department

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Signature of Responsible Official

Name of Responsible Official

Associate Planner

March 3, 2006

Title of Responsible Official

Date

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