

Ulster County Executive Michael P. Hein
Comments on the Draft Scope of the EIS
NYC Department of Environmental Protection
Proposed Modification of the Catalum SPDES Permit

1.0 Defining a Successful Outcome

I am pleased to see the beginning of this long overdue SEQRA process that I have advocated for and greatly appreciate the New York State Department of Environmental Conservation (NYS DEC) providing an extended comment period on the Scope of the EIS which is critical to its success.

As we move forward with the EIS process, NYS DEC must insure that the data collected and the studies completed are capable of providing a comprehensive scientific basis for decision making. The EIS must include a full and complete alternative analysis as I have previously called for. It must finally address the flooding and property damage concerns that have been repeatedly vocalized by those below the reservoir.

I am concerned that the proposed action as defined limits the universe of the possible outcomes. It ensures that the efforts within the EIS will not be directed at how to control turbidity in the waters diverted from the Ashokan Reservoir but rather how to use the Ashokan Release Channel (ARC) and Interim Release Protocol (IRP) to control turbidity that enters the Kensico Reservoir to reduce alum use. This should change. Given the Phase III Catskill Turbidity Control Study conclusion that the implementation of Shaft 4 Interconnect and the Catskill Stop Shutters could reduce alum use at Kensico by 90%, albeit without the inclusion of Hurricane Irene or Tropical Storm Lee, the focus of this EIS should be what needs to be done to protect and enhance the environmental and economic conditions along the Lower Esopus. Ulster County should not have to accept a tradeoff between the use of alum at Kensico and the impacts our residents and businesses have experienced firsthand with the existing releases. Therefore, I urge that the proposed project be redefined to include not only alum use and protection of the NYC water supply, but also to accomplish the following:

- Manage the Ashokan Reservoir to reduce flood risks along the Lower Esopus and benefit the environment, recreation, and agricultural uses along it;
- Meet NYS water quality standards for any permitted releases to the Lower Esopus through the use of operational or structural changes to the Ashokan Reservoir or other elements of its water supply system;
- Provide for ongoing monitoring and support for studies and improvements to the Lower Esopus so as to respond to changing climate, water supply demands, and stream dynamics where reservoir operations will impact the Lower Esopus into the future; and
- Allow those communities along the Lower Esopus a continuing voice in decisions regarding reservoir operations that impact the Lower Esopus. Their voices should also be heard as part of the preparation of this EIS through a comprehensive public outreach component and access by Ulster County, the ARWG, and others to information/studies as it is produced.

2.0 General Comments

2.1. Prior Actions

I recognize that the City of New York's water supply system is a remarkably complex engineering marvel. And accordingly, capital improvements to maintain and enhance the flexibility of system operations regularly spans decades. These improvements can have major influences on the day to day operation on the system and consequences beyond their original intent. The Shaft 4 Interconnect, Catskill Aqueduct Stop Shutter improvements and the Croton Filtration Plant are examples of major capital improvements that enhance the City's ability to operate its water supply system. The improvements are the heart of the NYC DEP's Catskill Turbidity Control Program. Once operational, individually and combined they dramatically change the reliance on the Catskill System during turbid conditions that can last for months as well as water supply operations during droughts. As such they will have a profound impact on the operation of the Ashokan Reservoir particularly on the need for releases and/or spill to the Lower Esopus for water quality purposes or for flood control. As I have said in the past these improvements and the existing IRP give the Lower Esopus communities the choice of mud or flood. Yet these improvements may also offer profound opportunities that can benefit the Lower Esopus given increased availability of water and flexibility within the system. The increased availability of water ("the Croton System can meet 30% of the City's water supply needs during drought") can play a role in adjusting both the Combined Seasonal Storage Objective (CSSO) to reduce flooding as well as allowing other operational changes to the Ashokan Reservoir such as blending of East Basin water to reduce the turbidity levels of releases. Additional low flow releases may help establish a thriving fishery on the Lower Esopus and improve recreational use.

The Draft Scope of the EIS indicates that environmental review has been completed for these elements and no further review is necessary. The Final Scope should require that the associated changes to the operation of the Ashokan Reservoir and additional availability of water from the Croton System from these improvements be analyzed.

2.2. No Action Alternative

Given the ongoing capital investments described above, the requirements under Part 670 of Environmental Conservation Law (ECL) for releases from large dams, past releases, and the inclusion of the IRP in the Consent Order, the No Action Alternative is an oxymoron in the context of this EIS. Allowing the use of Shaft 4 while considering a No Action Alternative for releases would utterly fail to address the impacts on the Lower Esopus associated with its use.

Ulster County urges that the No Action Alternative be defined so as to preclude the ability to use the Shaft 4 Interconnect as a means of reduction in alum use at Kensico. The impact of using the Shaft 4 Interconnect and the corresponding operational changes to the use of the Catskill Aqueduct on the flood frequency associated with the Lower Esopus has not been studied and likely would be dramatic. It is this narrowing of scope and the failure to address the consequences of prior actions that goes to the heart of my concern that the NYC DEP is focused on a predetermined outcome.

The presence of the release works at the Ashokan Reservoir can no longer be ignored in relation to Part 670 of the Environmental Conservation Law (ECL) whereby conservation releases from large dams are required. The Final Scope should define the No Action Alternative to include releases as would be required under Part 672 of ECL. The Final Scope should also require that if the Shaft 4 Interconnect is permitted to be used under the No Action Alternative that the SEQRA findings associated with its use are invalid absent an examination of how the operational changes to the

Ashokan Reservoir would impact the flood frequency on the Lower Esopus.

2.3. A Science Based Approach

Throughout the Draft Scope there is a lack of basic data gathering and studies necessary to draw conclusions related to impacts. Examples include the use of desk audits, reviews, and literature searches for significant elements of the environmental information below the Lower Esopus and the spillway confluence. The analysis of the structural alternatives already studied for the Ashokan Reservoir will only be summarized in the EIS and a close reading of the EIS does not show any analysis of these alternatives based on their ability to lower turbidity released to the Lower Esopus, something that was not done in the initial analysis. In addition there is no proposed analysis of operational changes that may have similar results.

The Final Scope should replace all desk audits, reviews, and literature searches with required data collection and studies. The Final Scope should also require an analysis of all structural alternatives based on their ability to reduce turbidity loading to the Lower Esopus rather than have their results summarized as is currently indicated. Further support for this latter analysis lies in the Lower Esopus' designation as a 303d stream by EPA. Finally, the operation of the Ashokan Reservoir and its components in a manner that reduces flooding and turbidity must be on the table.

2.4. Public Health

The Draft Scope indicates that "if appropriate, the potential for adverse public health effects will be identified from other impact analyses prepared for the EIS and summarized." I am aware that individual wells along the Lower Esopus experienced turbidity during the releases (as per responses to the impact assessment questionnaires of 2011). The Town of Ulster's Public Water Supply lies adjacent to the creek and increased flows may affect this well field. The Town of Esopus water treatment plant on the Hudson River experienced high turbidity loads during releases that sediment fingerprinting showed came from the Catskills. In addition, Ulster County has reviewed the available gage records along the lower Esopus and it is apparent that large volumes of water in the Lower Esopus, recharge to the groundwater between the release channel and the Lomontville gage. It can then be assumed that during time of high volume turbid discharges, large volumes of turbid water are recharging the surficial aquifer in the area and potentially influencing private and public groundwater withdrawals. In addition, recreational users of the Lower Esopus may also be impacted from exposure to pathogens contained in the turbid water.

The NYSDEC should determine that public health is appropriate and require a full analysis of it as part of the EIS

2.5. Analysis of the IRP & Flooding

The Interim Release Protocol was developed without any noteworthy baseline data for the Lower Esopus and without any science to inform the various cutoffs, categories, durations or flushing procedures. The Draft Scope unfortunately calls for little analysis that would validate these numerous provisions of the IRP. It is disturbing that the Draft Scope seems intent on continuing this lack of knowledge in seeking to validate its continued use. Lacking are studies to evaluate the impacts of various turbidity levels contained within the IRP, the need for differing duration and volume of clean releases, confirmation of travel times associated with ramping schedules, particularly during floods, and the overall reservoir levels as contained with the CSSO.

Many, including myself, have repeatedly criticized the CSSO as not adequately addressing the

flooding potential along the Lower Esopus by allowing the Ashokan to refill sooner than necessary in the Spring and delaying drawdown in the Summer and Fall.

Rather than seek to validate the existing IRP the Final Scope should require an analysis of a release protocol that utilizes all of the environmental data and studies collected. It should begin with the assumption that releases should be consistent with the NYS water quality standard, improve the environmental conditions on the Lower Esopus, and reduce flood risk. This scenario should take full advantage of the increase in flexibility and water supply availability as stated in the Draft Scope. Once completed this analysis should be compared with existing IRP and the needs of the NYC water supply system. The evaluation should then focus on where conflicts exist and where alternatives can remove those conflicts. It should be noted that this type of analysis cannot be accomplished without the ability to examine the water supply operations of the NYC water supply system as a whole. The CSSO and the need for releases are tied to the ability of the system to withstand drought and its reaction to storms.

2.6. Climate Change

Climate change is a recognized environmental fact within New York State. Various agencies are involved in estimating its impacts and developing appropriate responses. Yet, the Draft Scope calls for a review of NYC DEP's existing studies of the potential effects of climate change. The impacts of climate change are already in evidence as seen from DEP own analyses and those of others of rainfall and storm patterns in the Catskills. Climate change impacts on reservoir operations and need for releases should not be relegated to the sidelines in the EIS.

The Final Scope should require a separate analysis of the impacts of climate change including studies produced by others. The OST modeling should be required based on different climate change scenarios, as indeed they have already been done. Inclusion of additional years of data that were not available for the Phase III Catskill Turbidity Control Study, which does not include data past 2008 thereby missing the most recent turbidity episodes including Hurricane Irene and Tropical Storm Lee, should also be considered.

2.7. Prior Site Visits

In 2011, the City working with the ARWG conducted site visits on over 60 properties along the Lower Esopus that claimed damages related to the releases. Many of these property owners sought redress from the City of New York only to be denied. No report, analysis or other acknowledgement of these site visits was ever produced. The Final Scope should require the information collected on these sites to be analyzed, the sites themselves to be revisited, and consideration given to these sites as the location for erosion analysis, cross sections, etc. Furthermore the economic study should be specific as to any economic impact associated with these sites.

2.8. Format of Draft Scope

The Draft Scope format compartmentalizes environmental information with little "look across" as to what is best for the Lower Esopus and the NYC water supply system. The scenarios proposed are not comprehensive and baseline condition work is lacking.

The Final Scope would also benefit from revised format that follows the environmental information generally seen as part of a stream management plan. Utilizing this format would highlight the baseline data and studies needed to examine the various alternatives both structural and operational. It would also greatly assist the development of a stream management plan as called for in the Consent Order.

2.9. Regulatory

The United States Environmental Protection Agency (EPA) recently included the Lower Esopus as a 303d listed stream under the Clean Water Act. Such listing has a direct economic impact on the stormwater permitting and other discharge permits for downstream businesses and municipalities. The listing was a direct result of the turbid releases from the ARC to the Lower Esopus. And this listing was held in place by the EPA with full knowledge of the existing IRP. Any analysis of the use of the ARC must include how such releases contribute to the continuation or removal of the 303d listing and the economic impacts likely to be experienced.

2.10. Water Modeling/Hydrologic Modeling

Flooding, channel erosion, and aggradation have been articulated as major concerns associated with the releases. Of particular concern is the change in Ashokan Reservoir operations and impacts on flood frequencies on the Lower Esopus, and, as discussed above, current levels in the CSSO. The HEC-RAS modeling effort in the Draft Scope only includes 600mgd discharges and is woefully insufficient. Current flood studies for the Lower Esopus reservoir use a Log Pearson analysis derived from historic reservoir operations and floods. This analysis is no longer valid with changes to the operation of the reservoir anticipated as part of the operation of the Shaft 4 Interconnect and the use of stop shutters in the Catskill Aqueduct under the No Action Alternative. In addition, actively managing the reservoir under the CSSO further invalidates the current flooding profiles on the Lower Esopus. The Final Scope should call for a full HEC-RAS model capable of representing up to and including 100 yr flood levels using all of the stream gage records now available to reestablish appropriate flood levels for the Lower Esopus.

Furthermore, to understand the aggradation and erosion issues associated with stream flow the sediment transport models for the Lower Esopus should be linked to the OASIS model. Other important aspects of the modeling effort should be to establish appropriate base flows and turbidity in the creek for conservation, as well as for recreational access and agricultural operations.

2.11. OST, OASIS and the FAD Expert Panel

Critical to the decisions on structural and operational alternatives to reduce turbidity in the Lower Esopus is the suite of models used by DEP in their evaluation. Currently, DEP utilizes an Operational Support Tool (OST) and an OASIS model developed by Hydrologics. As now linked the models supply both actual and predictive water supply and water quality information. Critically, OST model is not linked to the OASIS for the Lower Esopus. In addition, the OST model is dependent on the rules and operational parameters feed into it. Recognizing that critical water supply decisions rested on the OST, the Revised 2007 FAD called for the creation of an Expert Panel to evaluate its effectiveness and identify ways in which DEP can more effectively use OST to manage turbidity. In addition the Panel is charged with review of DEP's proposed use of the (OST), in evaluation of the proposed modifications of the Catalum SPDES Permit that is the subject of this EIS. The application and validity of the OST is critical to the evaluation of impacts and alternatives associated with this EIS.

The Final Scope must include the ability to incorporate the recommendations of the Expert Panel. In addition the assumptions used in the OST regarding the analysis of alternatives must be made transparent. The Scope would benefit by a requirement to summarize the OST runs within the EIS and include the technical details as an appendix to enable review. Finally, linking the OST to the OASIS model for the Lower Esopus would also improve scenario analysis for this EIS and have long term benefits for any releases included in the final decisions and should be required.

2.12. Stream Channel Geomorphology

Understanding stream channel geomorphology requires a rigorous look at historical records yet the Draft Scope proposes only to look at existing geometrically corrected photographs going back to 1994. Many additional years of photographic records, although not geometrically corrected, exist as far back as 1955. To fully understand the stream channel this longer record should be included. The data is essential to understanding historical channel migration zones as compared to more recent time steps included in the Scope.

2.13. Economic Impacts

Of critical concern is that the EIS accurately establishes how the economy of the communities of the Lower Esopus is tied to its accessibility and environmental health including its visual appearance. While the proposed use of the IMPLAN model is appropriate much more detail is needed on how it will be used to conclude that it can accurately establish the economic ties between the communities and the Lower Esopus. Of particular concern is finding the appropriate methodology to capture business owner sentiment and outlook along the creek including hotels, marinas, agricultural operations, etc. through the use of surveys, comparable circumstances, and other methods. In addition, it is important to consider other qualitative models, in addition to IMPLAN, to address some of these questions.

In closing, I would note that no private sector or municipality would be allowed to engage in the releases currently permitted under the IRP. Deliberate turbid releases to the Lower Esopus from a system designed to concentrate them are just as much a pollutant as alum use at the Kensico Reservoir. It is indefensible to accept one and not the other. This EIS should begin with that assumption and its thrust should be to find a solution.