

Dear Ms. Cady-Poulin,

Thank you for the opportunity to comment on the draft EIS for the modification of the Catalum SPDES permit. As a resident of the lower Esopus Creek waterfront, I am concerned about impacts of Ashokan Reservoir operations. As Executive Director of the Saugerties Lighthouse Conservancy, I write on behalf of a local not-for-profit organization dedicated to the preservation of this historic landmark and whose members cherish this scenic location. They include birdwatchers, boaters, anglers, hikers, photographers, waterfront neighbors, and others who value the habitat and scenery of the area. The lighthouse and adjoining nature preserve receive over 50,000 visitors annually. Earlier this year, our members and visitors watched with dismay as the creek flowed brown throughout the winter and early spring. Anglers were discouraged by the sight of the muddy water and reported that fishing was disappointing in early spring. Birders worried about the effects on waterfowl, ospreys, and bald eagles. Tourists were alarmed by the sight of the murky brown water and worried about what was happening to make the water so cloudy and dirty. As a first-impression for out-of-town visitors, it was obvious that the turbidity in the creek was not what would be considered "normal" or "natural."

The Saugerties Lighthouse Conservancy is a stakeholder on the lower Esopus and has been involved in the Ashokan Release Working Group since its inception. One of the purposes for which the Saugerties Lighthouse Conservancy formed was to "investigate and report on the Saugerties Lighthouse, its surrounding environment and natural resources." In keeping with this stated purpose, I offer the following comments and observations on the draft Environmental Impact Statement (DEIS) for the Catalum SPDES Permit Modification, including numerous reasons the New York State Department of Environmental Conservation (NYSDEC) should not accept the DEIS in its current form:

- turbid releases violate Surface Water Quality Standards,
- DEIS disregards estuarine habitat,
- DEIS ignores vulnerable fish and bird species,
- turbid releases impact scenic values,
- turbid releases affect tourism and recreation,
- cheap water for the City should not come at the expense of upstate residents,
- climate change strains the operations of the water system,
- Ashokan release protocol has shortcomings,
- negative impacts to lower Esopus outweigh alum reduction benefits at the Kensico,
- DEIS contains false, misleading, and/or questionable claims.

Turbid Releases violate Surface Water Quality Standards

Located on the confluence of the Esopus Creek with the Hudson River, the Saugerties Lighthouse offers a vantage point of any visible contrast between the Esopus and the receiving waters of the Hudson. Turbidity levels of the two waterways are usually similar except during prolonged turbid releases from the Ashokan Reservoir. These cause a substantial visible contrast to natural conditions that extends to the mid-channel of the Hudson and throughout the tidal flats and wetlands at the mouth of the creek. A "substantial visible contrast" is a violation of Surface Water Quality standards (6 NYCRR 703.2). Please see attached photo from January 15, 2021 showing the obvious contrast during Ashokan releases of turbidity over 100 NTU at a flow rate over 500 million gallons per day.

DEIS disregards estuarine habitat

The lighthouse marks the Saugerties Flats, the shallow delta area around the mouth of Esopus Creek. This area is also known as the Esopus Estuary, designated Significant Fish and Wildlife Habitat in the state Coastal Management Plan. This unique freshwater tidal estuarine habitat is so important that it is considered "irreplaceable" in the state's habitat designation. As lead-agency, NYSDEC is required to make a written certification of consistency based on the final EIS (see 6 NYCRR 617.11). Unfortunately, the information and analysis provided in the DEIS is inadequate to make a proper determination or certification for the consistency review. The DEIS tries to dismiss potential impacts to the coastal zone by merely stating: "These tidal flows are the key driver of the flow regime within Valley Reach 3F. Therefore, the Proposed Action would not affect the goals of the Coastal Management Plan." This statement only addresses flows, ignoring water quality concerns. This cursory dismissal of the coastal zone is insufficient. A "habitat impairment test" must be met for any activity that is subject to coastal consistency review. The habitat impairment test described in the Esopus Estuary designation should be specifically addressed in the DEIS. In the state's Esopus Estuary habitat designation, reservoir operations are listed among examples of activities which could destroy or significantly impair the habitat. The habitat narrative says unequivocally: "Operational reservoir releases should not adversely affect water quality nor excessively increase turbidity in order to avoid significant impairment to the habitat. Reservoir operations should be consistent with habitat protection." Certain time periods are particularly sensitive: "Habitat disturbances would be most detrimental during fish spawning and incubation periods, which generally extend from April through August for most species." Prolonged turbid reservoir releases have the potential to alter habitat conditions beyond the tolerance range of organisms. Unfortunately, the DEIS modeling of the frequency and duration of turbid

releases is flawed, which is evident by the most recent spate of turbid releases in January-March 2021.

DEIS ignores vulnerable fish and bird species

Certain vulnerable species listed in the Esopus Estuary are not even mentioned in the DEIS. These are: shortnose sturgeon (Endangered), least bittern (Threatened), osprey (Special Concern), and American bittern (Special Concern). As described in the habitat designation, the adjoining deepwater area of the Hudson serves as important post-spawning and wintering habitat for the endangered shortnose sturgeon (*Acipenser brevirostrum*). American bittern (*Botaurus lentiginosus*), and least bittern (*Ixobrychus exilis*), use the marsh habitat for nesting. Osprey (*Pandion haliaetus*) congregate at the mouth of the Esopus Creek during spring migration (mid-April through May) where the shallows offer prime foraging conditions. Moreover, a breeding pair of osprey returned this spring on March 27th for the fifth consecutive year to build a nest atop the channel marker opposite the lighthouse at the mouth of the creek. Birdwatchers anticipate their arrival in the spring and observe with interest as they renew their nest. Also of interest is a resident breeding pair of bald eagles that nest in a treetop opposite the lighthouse on the Hudson and frequent the Esopus Estuary to forage. They've been keeping the same nest together at least since 2010. Although the DEIS mentions the threatened bald eagle (*Haliaeetus leucocephalus*), it offers no information about potential impacts on the habitat requirement of open water areas suitable for (primarily fish) foraging. For both bald eagle and osprey, turbidity affects foraging success. Turbidity reduces prey visibility, making prey harder to catch, and may be responsible for decreased hunting success. Prolonged turbid releases in late winter and early spring could affect the ability of breeding pairs to provide for nestlings and affect survival rate of offspring. A coastal consistency determination cannot be made without specifically addressing potential impacts to these vulnerable species listed in the Esopus Estuary habitat designation. It is another egregious shortcoming of the DEIS that it overlooks these species in the coastal management zone.

Turbid releases impact scenic values

The Saugerties Lighthouse is also situated within the Ulster North Scenic Area of Statewide Significance, a designation that recognizes the aesthetic value of the Saugerties waterfront. The scenic designation describes how Esopus Creek is a particularly critical scenic component. Often views are contained and focused to the banks and curves of the creek. Reservoir releases impact this scenic resource. Since views of the water are an important component of the scenic area, and the Esopus Creek is a unifying feature, any visible degradation of water quality impairs the scenic beauty. The DEIS falsely claims that "Turbidity levels in flows from Ashokan Reservoir ... would fall within the range and variability of turbidity levels in lower Esopus Creek streamflow." The duration of

turbid releases lasting for 2 to 3 months is outside the norm for turbid flows after storm events and has obvious impact on the scenic value of the waterfront.

Turbid releases affect tourism and recreation

Renovation of the Saugerties Lighthouse was part of the Local Waterfront Revitalization Plan (LWRP) of the Village of Saugerties, leading the way for new tourism opportunities. The Village's LWRP was designed to promote appropriate water-dependent and water-enhanced uses of the waterfront area. The visual appeal of the water is crucial to the purpose of the LWRP. In regards to strengthening the economic base of its small harbor area (Coastal Policy 4), the Village's LWRP states: "Particular consideration will be given to the visual appeal and social benefits which, in turn, can make significant contributions to the generation of tourism." Prolonged turbid releases discourages and degrades water-dependent and water-enhanced uses of the waterfront, to the detriment of tourism, with impacts to the local economy that extend beyond the duration of turbid releases. If a tourist area develops a reputation for having unclean water, then people will avoid the area, leading to long-lasting economic losses. These non-tangible socioeconomic impacts can be difficult to quantify, and, as a result, the DEIS grossly underestimates them.

Cheap water for the City should not come at the expense of upstate residents

Water rates in New York City are below the national average and lower than those paid in Saugerties and other upstate municipalities. The City is keeping water rates low while dumping its turbidity problem onto lower Esopus communities. Turbid reservoir releases might be the least expensive option for New York City Department of Environmental Protection (NYCDEP), but it merely shifts costs and consequences onto those downstream. By externalizing the costs onto the lower Esopus, NYCDEP has come up with a cheap "solution" to its turbidity problem. The City can afford to invest more in its water supply and make the necessary upgrades to properly handle turbidity. Given the shortcomings of the current turbidity control program, NYCDEP should be compelled to explore other alternatives, including structural improvements, to better deal with turbidity in the Catskill system without the negative impacts on the lower Esopus.

Climate change strains the operations of the water system

The Ashokan Reservoir was engineered and built at the outset of the twentieth century, and now is the time to update its structures and operations for the challenges of the twenty-first century. Confronted with climate change, we expect more frequent intense storm events, which increases turbidity as well as flood risk in the Esopus Creek watershed. The City has thus far externalized the cost of turbidity control onto the lower Esopus Creek through prolonged turbid releases. The NYCDEP needs to be compelled to mitigate downstream impacts

and explore alternatives that offer greater flexibility to handle extreme storm events. With the overarching goal of developing up-to-date solutions that meet both the needs of the City and the concerns of downstream communities, I urge the NYSDEC to seriously consider the impacts of prolonged turbid releases as well as thoroughly explore alternatives, including structural ones, that will equip the NYCDEP to better operate the Catskill water supply. Protections for the lower Esopus and the interests of the lower Esopus communities should not be compromised in a trade-off with the aim of alum reduction. Reservoir operations should be optimized to meet multiple goals while avoiding trade-offs.

Ashokan release protocol has shortcomings

The release protocol cannot handle Catskill turbidity outside an optimum range without severe impacts to the lower Esopus. For several years, the release protocol for the Ashokan seemed to be working as planned, supplying clean water for the City without harmful turbid releases into the lower Esopus. Despite several years of good luck in terms of rain events, all it took was a big storm late in the year to fill up the reservoir with turbid water, triggering months of turbid releases into the lower Esopus. The turbid episodes of 2020-2021 were not unlike those of 2010-2011: major storms in fall or winter, cold water temperatures, and evenly mixed turbidity in the West Basin of the reservoir. The options for handling the turbid water are limited, especially with the added restriction on alum use for the aqueduct. NYCDEP should be compelled to examine other alternatives to increase their ability to properly handle turbidity without the negative impacts to the lower Esopus. Prolonged turbid releases need to be eliminated.

Negative impacts to lower Esopus outweigh alum reduction benefits at the Kensico

Simply transferring the problem of turbid, undesirable, water from the reservoir to the lower Esopus Creek is not a "solution." The NYSDEC should not continue the double standard of enforcing the Catalum SPDES permit at the Kensico while ignoring protections for the lower Esopus (surface water quality standards, impaired water body listing, coastal policies). The lower Esopus should be given a greater level of protection and steps should be taken to eliminate turbid releases.

With only nominal environmental benefits of reduced alum at the Kensico compared with a range of negative impacts of turbid releases into the lower Esopus, pursuing alum reduction at the expense of the lower Esopus doesn't make sense. According to NYCDEP's analysis in the DEIS, the accumulation of alum floc at the Kensico is not so urgent that dredging can't be delayed. In regards to alum use, the DEIS makes the following factual statement: "The application of alum to drinking water supplies is also a long-standing, well

accepted, and widely used practice throughout the United States, and the periodic application of alum to maintain water quality (for turbidity control) has occurred at Kensico Reservoir for nearly a century." The use of alum as a coagulant was mentioned by the Romans circa 77 AD. Alum was being used for coagulation for municipal water treatment in England by 1757. Alum application into the Catskill Aqueduct has been part of New York City's water system since 1916. Although alum is effective at reducing turbidity levels to meet drinking water requirements, the Catalum SPDES permit seeks to minimize the frequency and duration of alum application in order to avoid potential adverse effects on the aquatic environment at the Kensico Reservoir. Unlike the lower Esopus, the Kensico Reservoir is not listed on the state's Section 303(d) List of Impaired/TMDL Waters, and therefore, there are no applicable wasteload allocations (WLAs) for this discharge. Nevertheless, the Catalum permit includes the goal of reducing alum application. As a result, NYCDEP's turbidity control plan prioritizes alternatives that reduce turbidity without the addition of coagulants or other chemicals. Prolonged turbid releases into the lower Esopus are unacceptable, and inconsistent with state Surface Water Quality Standards and Coastal Management Plan. NYSDEC should reconsider the goal of alum reduction until a legal and acceptable alternative can be achieved. Instead of or in addition to the goal of reducing alum, the NYSDEC should make elimination of turbid releases into the lower Esopus a new requirement or condition of the Catalum SPDES permit.

The goal of reducing alum use at the Kensico Reservoir seems short-sighted, taking away operational flexibility of the water supply system when it is needed more than ever to respond to climate change. According to NYCDEP's analysis in the DEIS, the ongoing effects of climate change will necessitate the increased use of alum to respond to the increasing intensity and frequency of storm events. Under the circumstances, the City should explore structural alternatives that allow for routine alum use, such as improvements to the Kensico to contain alum floc to the greatest extent practicable. Also, consideration should be given to Outside Community Connections to the Aqueduct to allow them to handle higher raw water turbidity levels and/or rely on secondary water sources and/or increase water storage for use during turbid events. With climate change forecasted to bring more intense rain events, the NYCDEP needs operational flexibility to handle these storms while meeting drinking water demands, providing flood mitigation, and minimizing adverse impacts to the lower Esopus. The NYSDEC should grant NYCDEP operational flexibility in regards to alum use, especially as an alternative to prolonged turbid releases into the lower Esopus as a way to handle major storm events.

DEIS contains false, misleading, or questionable claims

The DEIS should not be approved in its current form due to flaws in the modeling and analysis. Here are just a few instances of misinformation in the DEIS:

-Claim: "the Proposed Action would not affect the goals of the Coastal Management Plan." This claim is highly questionable. In its role as lead agency for SEQRA and authorizing agency for CatAlum SPDES permit, the NYCDEC will need to make a written certification of consistency with coastal policy, but the DEIS provides insufficient information for a proper determination, offering only cursory references to the tidal area and practically ignoring the estuarine habitat designation. If an action cannot be certified as consistent with the coastal policies, it shall not be undertaken.

-Claim: "These tidal flows are the key driver of the flow regime within Valley Reach 3F." The DEIS attempts to summarily dismiss impacts to the tidal area with the often-repeated phrase "Valley Reach 3F is tidally influenced, and therefore, would not be affected by differences between the future without and with the Proposed Action" (See section 7.2.3, 7.3.3, 7.6.3, 7.9.3, and Table 7.9-2). This may be true in relation to flow regime but not for water quality. Turbid releases adversely affect the water quality of the tidal section regardless of the tidal flows.

-Claim: "Turbidity levels would be similar between the future without and with the Proposed Action and would fall within the range and variability of turbidity levels in lower Esopus Creek streamflow." The DEIS downplays actual turbidity impacts, and the modeling in the DEIS doesn't reflect the reality of what's been happening and what's going to continue to happen. Table 7.1-2 shows an "average year," which spreads out the turbid days over the entire period of record (70 years of data). This minimizes and hides the actual differences between the Action and No Action alternatives. Episodes of turbid releases do not occur as a day here or there but take place continuously over weeks and months. Table 7.1-2 indicates that incidence of releases over 50 NTU is likely to happen once per year, yet this year alone we had more than 60 days of turbid releases above that level. For releases over 100 NTUs, the modeling claims that will happen zero days, but this year it happened over 32 days. The modeling is obviously flawed, and the presentation of the data hides the reality of prolonged turbid releases. Prolonged turbid streamflow of a month or more is not "within the range and variability" of turbidity in the creek. The DURATION of the turbidity is atypical for the creek and a factor ignored by the DEIS. The modeling should be reevaluated to more accurately reflect major storm events and incorporate climate change forecasts of increasing storm intensity and frequency.

-Claim: "Observed turbidity levels in flow through the Ashokan Release Channel since 2013 are consistent with OST modeling results." This data set for observed turbidity conveniently leaves out the prolonged turbid releases of 2010 and 2011, which were not unlike the recent prolonged turbid releases of 2021. The narrow data set of observed turbidity and OST modeling are consistent because they share the same bias: downplaying the reality of prolonged turbid releases after major storm events. The modeling should be reevaluated to better reflect the reality of major storms and climate change.

-Claim: "The community release would provide sustained flow that would provide a potential benefit." Although a true statement, this is somewhat misleading on its own. In the context of reservoir release regulations, this is merely restating what is already required at other reservoirs under 6 NYCRR 672. The exception for the Ashokan Reservoir under 672-2.3 was only owing to the lack of release works, which is no longer the case. It is misleading to put the community releases as part of a "package deal" with the turbidity control program. These minimal releases, although beneficial, are not unique to Ashokan release protocol and do not offset the adverse effects of prolonged turbid releases into the lower Esopus. The notion that the Ashokan release protocol supposedly "makes up" for negative impacts by offering year-round high-quality community releases is false, especially in relation to the coastal zone area. The tidal Esopus does not gain anything appreciable from the beneficial flows (or flood mitigation, for that matter), but receives all the negative water quality impacts of prolonged turbid releases.

-Claim: "Releases from Ashokan Reservoir would maintain the CSSO, providing a flood attenuation benefit beyond that provided by Ashokan Reservoir." The DEIS claims a "flood attenuation benefit" from releases. However, "benefit" may be a bit of misnomer. Releases based on the CSSO are not so much "benefits" to downstream communities but rather "mitigation" of harms and flood risks caused by reducing or halting aqueduct diversions for alum reduction. Reduced demand for Catskill water to avoid alum use increases the amount of water that remains in the Catskill System and must be "wasted" through the release channel. The lower Esopus Creek waterfront developed over the past century with the reservoir operating under the normal historic regime. Major changes to operations such as reduced aqueduct diversions to avoid alum use increases reservoir levels above historic norms, affecting the risk of uncontrolled spills from the reservoir into the lower Esopus. The CSSO mitigates this increased flood risk, but counting it as a "benefit" may be overstating the point. Also, the CSSO is not entirely for flood mitigation but also provides the City with turbidity control by maintaining a void in the West Basin. Lower Esopus communities should not be

presented with a "mud or flood" dilemma. The release protocol should be optimized to reduce flood risk and eliminate prolonged turbid releases.

-Claim: "Overall, DEP's climate change studies demonstrate the high resiliency, high reliability, and low vulnerability of City's water supply system with a minimal effect on water quality within the system." This claim ignores water quality OUTSIDE the water system (i.e. lower Esopus Creek), revealing the bias of the NYCDEP's modeling and analysis. The City's turbidity control program in its current configuration has a significant impact on the water quality downstream of the Ashokan Reservoir.

Recommendations

Due to the numerous flaws in the DEIS and the unmitigated impact of turbid releases, we make the following recommendations:

- the DEIS should not be approved in its current form;
- prolonged turbid releases should be eliminated;
- other turbidity control alternatives should be considered;
- minimum flows (i.e. community releases) should be maintained;
- long-term funding should be provided for stream management and waterfront revitalization along the lower Esopus.

Over the past decade, we have gained experience of the Ashokan Reservoir release protocol. We understand that releases have a continued role to play, but more needs to be done to protect the lower Esopus. New York City should be compelled to make other improvements and changes to their water supply system to better handle the turbidity from major storm events without dumping the entire problem downstream.

Thank you again for considering public input, particularly that of lower Esopus stakeholders such as our local organization. If you have any questions about the comments provided, I can be reached at 845-247-0656 or info@saugertieslighthouse.com.

Sincerely,

Patrick Landewe
Executive Director
Saugerties Lighthouse