SEATUCK
Conserving Long Island Wildlife

(VIA EMAIL: bschneider@nassaucountyny.gov, dfucci@nassaucountyny.gov)

July 7, 2021

Brian Schneider
Deputy County Executive for Parks and Public Works
1550 Franklin Avenue
Mineola, New York 11550

Daniel Fucci
Nassau County Storm Water Coordinator
Nassau County Department of Public Works
3340 West Merrick Road
Wantagh, NY 11793

Dear Mr. Schneider and Mr. Fucci:

Thank you for your cooperation with the Bellmore Creek Fish Passage Project. We're grateful for the engagement of Nassau County staff to this point and looking forward to continuing to work with you to make fish passage at the Wantagh Mill Pond a reality.

As you know, our consultant, Princeton Hydro, has completed an assessment of three options for providing fish passage at the site: technical fishway, nature-like fishway and dam lowering (which was a replacement option after it was determined that full dam removal was not feasible). Their assessment provided detailed information about the site, as well as the long-term benefits and costs of the various options. Princeton Hydro also made presentations about the assessment to the Bellmore Creek Advisory Committee and to the general public – and feedback was collected from all meeting participants and other stakeholders. (The full Advisory Committee and public comments are attached.)

At this point, with the assessment of options completed and stakeholder input collected, we are obligated, pursuant to our NYSDEC grant, to work with our consultant to advance design plans for the "selected option." As such, we respectfully request a decision about how Nassau County – as the dam owner – would like to proceed. We need the county to officially notify us as to which option it would prefer to advance towards final design and – eventually – implementation. We would appreciate any effort you can make to let us know the county's

decision as soon as possible. The project must be completed by September 30 and we would like to give Princeton Hydro as much time as we can to advance the project design.

Finally, throughout this process, Seatuck endeavored to remain as objective as possible regarding the options. We were careful not to offer any opinions about the various options to the advisory committee or the public participants. However, now that the assessment process is complete, we have attached our thoughts about the various options and our recommendation about how Nassau County should proceed.

Please let us know if you have any questions or require additional information.

Very truly yours,

Enrico Nardone

Enrico Nardone
Executive Director

Emily Hall

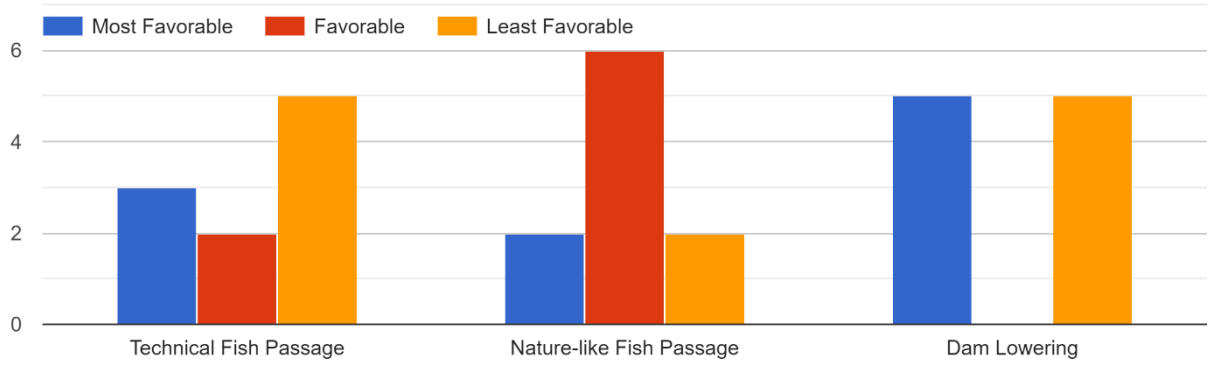
Emily Hall
Conservation Policy Advocate

Bellmore Creek Alternatives Analysis Feedback Summary
Seatuck Environmental Association
June 2021

GOOGLE FORM RESPONSES

Alternatives Ranking

Please rank the three different fish passage alternatives from least favorable, favorable, and most favorable.



Fish Passage Alternatives Feedback

Do you have any feedback on the technical fish passage, nature-like fish passage, or dam lowering options?

- Depending upon the update tidal flow data I would support the full technical fish ladder over the modified technical fish ladder. If however, the less expensive modified technical fish ladder will work then that makes more fiscal sense.

- If technical fishway was the only possible option then I would support but since we have other options I suggest steering away from it. Technical fishways, while they can move targeted fish over structures, do not move them as efficiently as a nature-like or dam removal/lowering. Also, technical fishways do not offer flood protection, restoration of the stream, or improve water quality.

- The South Shore Audubon Society Board strongly objected to dam lowering because it would reduce waterfowl populations. Some Board members have been involved in area waterfowl surveys for decades and they emphasized that Mill Pond supports greater diversity and numbers of waterfowl in comparison with other local ponds. They also

cited how streamflow augmentation in Massapequa Creek destroyed bird habitat, reduced shorebird numbers, and extirpated Wilson's Snipe and Long-billed Dowitchers from one of their only known local staging sites. Another objection was that changing the pond to a tidal wetland would change the character of the park for local residents, who may not enjoy a vista of mudflats. Phragmites invasion was also a concern.

The SSAS Board objected to fish ladders because they may also alter the ecosystem and reduce waterfowl populations, although to a much lesser extent than dam lowering. With all three alternatives, the Board was concerned that Nassau County would not have the budget or staff to maintain the structure, given the County's record with the SSAS-managed Brookside Preserve.

- The dam lowering should have a greater influence on fish passage and restoring the creek to its original state; it is budget-friendly. Potential for reduced nuisance flooding with the dam lowering.

- Once tide level measurements are completed, it will be easier to compare the partial dam removal with the other options

- Strongly object to Dam lowering. Changes entire use and history of the preserve.

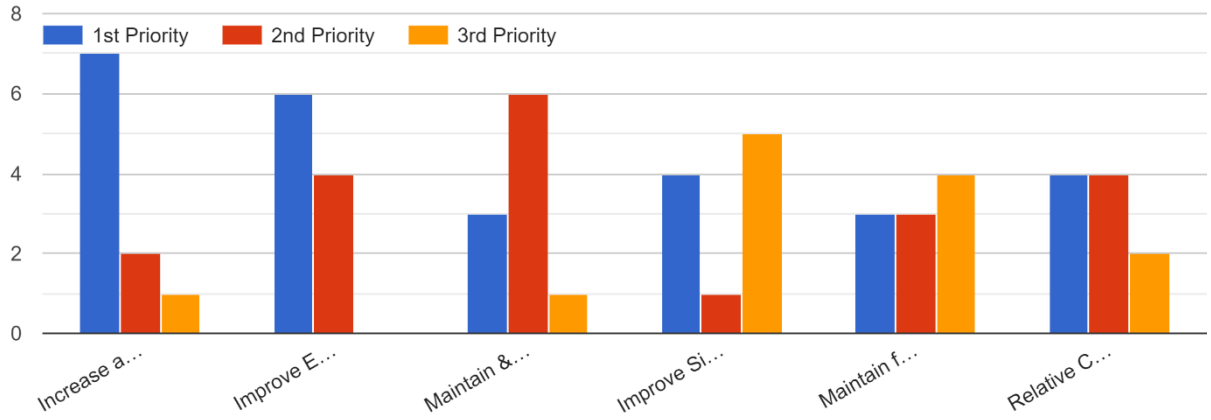
- I strongly prefer the dam lowering option, as it not only allows for the most natural passage for the fish, but also is the only option that would restore a natural habitat to the area, improving water quality and ecosystems for native flora and fauna. I understand concerns about waterfowl, but I view the overall ecology of the site as a higher priority, especially given that the current impoundment is artificial. Since it would be restoring to a more original state, the dam lowering also would reduce flooding and increase resiliency to sea level rise and climate change.

During seasonal high tides in the spring, and especially after heavy spring rains, the water level at high tide almost reaches the height of the dam spillway. I always thought that a slight lowering of the center portion of the spillway, which is the lowest section of the spillway, would allow the river herring to access the pond, at least during high tides. A slight lowering, rather than a lowering that would allow access at all tide levels, may maintain a higher level of water in the pond. This compromise may satisfy the concerns of the local community and many park users, who use the trail to enjoy the pastoral pond environment. During my many hours over 7 years of monitoring the river herring below this dam spillway, I have spoken with numerous park users. I am concerned about the community reaction to a drastic change to the pond area. These park users will not easily become friends of migratory fish if they arrive one day to find only a narrow stream surrounded by thick stands of phragmites. (Examples of local parks overgrown with phragmites: Meroke Preserve in Merrick, NY, and Mill Creek Corridor Park in Freeport.)

I recommend considering only a slight lowering of the dam, just enough to allow passage at high tide. An example of this currently exists at the Silver Lake Park pond spillway in Baldwin, NY.

Ranking Project Parameters

Please identify what project parameters should be a 1st, 2nd or 3rd priority. You may label multiple parameters as a 1st, 2nd, or 3rd priority.



1. Increase access to freshwater habitat for river herring and other migratory fish.
2. Improve Ecological Condition of Bellmore Creek (for issues like water quality, invasive plants, etc.)
3. Maintain & Enhance Recreational Values
4. Improve Site Resiliency to Climate Change & Sea Level Rise
5. Maintain full extent of impoundment for waterfowl habitat, warm water fishing, viewscape, etc.
6. Relative Costs

Project Parameters Feedback

Do you have any feedback on any of the project parameters? Are there other concerns we have missed or need to look at in our analysis?

- We may want to outline an invasive plant treatment and native plant planting plan for this project. If we really feel that Phragmites will be a problem at this site, then we should commit to tackling it before it becomes a problem. I suspect there is a nice seed bank that will emerge once the water levels drop but it might be a good idea to plant some natives in the Phrag treated areas just to give those sites a jump start.

- insect population growth or contraction

- The potential for phragmites to be a nuisance was brought up at the community meeting, but it seemed like it would be easier to manage, especially if done proactively as part of the project, which could include planting natives.

- The nature-like fish passage is a reasonable option, which I prefer to a technical fishway, but I'm concerned about the long-term durability and maintenance of such a large man-made feature.

Other Feedback

Do you have any other feedback?

- I believe that the nature like fish passage proposal is too invasive visually and habitat wise and expensive. I think the cost to benefit ratio does not support this option.

- I think dam lowering best meets the goals of the grant that funds this project. The project was funded under a Tributary Restoration & Resiliency grant that aims restore rivers and make them (and their communities) more resilient. The fact that lowering the dam is an option and it will meet some of these goals is a win-win to me. Also, lowering dam and reducing flood risk and increasing resiliency will make this project eligible to resiliency grants and infrastructure grants, which is likely not the case for the other two options. These types of grants already exist but we expect to see much more funding in these categories under the new Biden administration. So, cost may not be as much a factor if there is future funding available. Lowering the dam will likely improve overall water quality in the impoundment which is an added benefit to the site. I am not concerned about bird usage because the benefits of dam lowering will be far more important to the entire ecology of the site (and I think better for the birds).

- My own preference is for the nature-like fish ladder if its initial and maintenance costs together are not substantially more than a those of a technical fish ladder. While I respect the concern for waterfowl populations, I would not be opposed to dam lowering if there were more assurance of controlling phragmites. I believe fish passage (which, for better or worse for the fish, will provide food for birds), water quality improvements, resiliency with sea-level rise, and overall bird diversity are high priorities.

- The intent of the project is consistent with the priorities of the South Shore Estuary Reserve program goals.

- I recommend models maintaining or increasing mean pond levels are most beneficial. Especially in conjunction with increased fish populations and invasive vegetation reduction.

- wild fowl are the current residents

- I think we have a great opportunity here with the dam lowering option to increase resilience and greatly improve the local ecosystem and water quality! Perhaps those aspects of this option be helpful in obtaining additional funding? Even though full dam removal is no longer an option, we should take advantage of this opportunity to restore fish passage as well as one of the many artificially blocked tributaries here on the south shore!

ADDITIONAL EMAIL FEEDBACK

- Very impressive and informative presentation. I appreciate that the efforts of the group can lead to an emotional attachment to the work and to the goals of the project; but I hope against hope that the impact on waterfowl will not be discounted.

- I watched with interest the discussion regarding the Bellmore Creek spillway in as much as I live at the point of the outflow where it meets the estuary. When I had moved here the original galvanized pipe was still in place and at that time the water was clear enough to look through 10 feet of water and see the pebbles on the bottom and during the summer, we would swim in the lagoon next to Bellport Ave. And of course, at that time the estuary was much healthier, and I have watched the decline of all species of including the fish, seals, fresh water and marine turtles, fish hawks, muskrats and everything else that used to be there. It's a sad sight to stand in my backyard and see these unfortunate animals and fish trying to get back to the pond. In the process of your passage design I hope you would consider incorporating a turtle passage and include them as one of the species worthy of restoration.

It appeared that much of the data and observations were made in the area of the spillway however I would like you to consider to examine the exit outflow where it meets the estuary. I believe the current concrete culvert may divided into two halves with different exit flow rates in each of the halves which of course affects the already difficult upstream swim of the various species. If you decide to incorporate a turtle passage or if flow rates affect your design perhaps you might consider diverting even more water from the west culvert.

Along Bellport Ave are numerous waterfront lots that are locally called dock lots and I own several next to and just east of the outflow should you wish to observe or take measurements feel free to do so. If you happen to come by at slack water, you'll see a more natural dynamic and see the poor creatures making good headway in their futile run to the falls. Should you want some in person knowledge of the interior of the culvert and its laterals when my son was young, he and his friends would take a small boat and explore inside he's 51 now but I'm sure he'll remember, in fact the boat they used is still on my dock lot feel free borrow it to pole your way inside the culvert! Thank you for your consideration please contact if I can help.

- In support of the Bellmore Creek restoration Project I would like to offer further info for Seatuck and the involved Engineers of this Project. Shortly after the installation of the

existing drainage culvert a storm cycle occurred and downstream property and homeowners suffered significant losses to bulkheads, backyards, boats mostly due to velocity and direction the outflow from the culvert. Complaints were made and the Army Corps of Engineers issued a Notice of Violation and I and affected downstream stakeholders sued Nassau County et all and recovered damage payments. The Contractor was then required to return and correct the Engineering and physical errors.

If you would take a closer look at the Pond's spillway you'll notice that the water over the spillway now favors the eastern side. If you will enter the eastern culvert shortly after the entrance is a lateral running east that acts as a surge protector, at times of severe storms the water will reverse from the estuary and flow "upstream" to the Pond and into the lateral. There are two separated culverts and the western culvert has no laterals. At the exit of these two separate culverts are downstream stakeholders affected by the stream flow that exits the culverts into the estuary. Simply put the volume and velocity of the exit is different in each culvert and has a downstream effect.

If I can be allowed to express my opinion this restoration project is a positive step in creating a healthy pond and the downstream estuary. I also believe that the among the three choices offered (removal, ladder or natural) the one that might offer the most long-term benefit is the natural design.

SEATUCK ENVIRONMENTAL ASSOCIATION

Comments on Bellmore Creek Fish Passage Options
July 2021

Seatuck Environmental Association ("Seatuck") respectfully submits the following comments regarding the options for advancing fish passage at the Wantagh Mill Pond on Bellmore Creek.

After working closely with the experts at Princeton Hydro, engaging with the highly experienced Bellmore Creek Advisory Committee and listening to input from fisheries biologists, birders and and neighbors, we have concluded that dam lowering is the option that would not only be the most effective method for advancing fish passage at the Wantagh Mill Pond, but would also deliver the most ecological and economic benefits over the long term.

Ecological Benefits:

The construction of dams on Long Island's many rivers and streams, while often initially serving important purposes (e.g. grist mills, ice harvesting, farm irrigation), also had far reaching ecological impacts. The dams destroyed the connectivity and natural flow regime of our riverine systems, completely blocking the movement of nutrients, sediments and wildlife on which healthy systems rely. While dams impact individual rivers or streams, collectively, they also have a signigicant detrimental impact on the health of our overall coastal ecosystem.

Most notably, dams block the migrations of diadromous fish species (e.g. river herring, American eel) that play a vital role in delivering ocean-derived energy into our estuarine, riverine and upland habitats. Less understood, dams also blocked the flow of necessary nutrients and sediments, and interefered with the seasonal movements of myriad wildlife species, including brook trout and river otters. (*See,* Santucci, et al, "Effects of Multiple Low-Head Dams on Fish, Macroinvertebrates, Habitat, and Water Quality in the Fox River, Illinois" North American Journal of Fisheries Management 25:975–992, 2005). Collectively, dams have contributed appreciably to the overall degradation of Long Island's coastal habitat.

Restoring the health of our coastal ecosystem will require an effort to address the legacy of dams across our landscape. Many of our rivers and streams will need to be "reconnected" if we are to stitch the health of our ecosystem back together. While technical and nature-like fishways are capable of providing upstream access for certain species and partially

reconnecting rivers or streams, they are less-than-ideal compared to dam removal. They don't provide access for all wildlife, fully allow sediments and nutrients to flow downstream or address the thermal impacts caused by shallow impoundments. For these and many other reasons, removing dams is the preferred method for reestablizing riverine connectivity and restoring ecological health. (*See*, "The Ecology of Dam Removal; A Summary of Benefits and Impacts" by American Rivers for a good overview of the subject.)

Of course, not every dam on Long Island is a good candidate for removal. Some create ponds that are surrounded by significant public or private investment. Others have considerable historical value. Still others are not good candidates for removal for technical reasons related to the safety of nearby bridges and culverts or the potential to mobilize large amounts of sediment. This, as we learned from Princeton Hydro, is the case with the Wantagh Mill Pond.

While full dam removal turned out not to be a viable option for the Mill Pond, we think the dam lowering proposal provides the best of both worlds. It provides many of the ecological benefits of dam removal (especially in allowing nearly full wildlife movement on high tides), while avoiding the technical risks. Importantly, it also retains some of the open water areas that provide the ecological, aesthetic and recreational values that the community has associated with the impoundment for many years.

Lowering the dam would allow a native plant community to take hold from the site's exisiting seedbank. The natural restoration of former impoundments has been commonplace in dam removal efforts throughout the Northeast over the past decade. In most instances, an emergent freshwater meadow takes hold and slowly transitions to a forested riparian corridor (unless managed for grassland habitat). The 2019 draining of the fomer West Brook Pond in Bayard Cutting Arboretum has demonstrated the botanically rich habitat restoration that can occur at the site of former impoundments (see West Brook Botanical Survey). With the proper management, the Mill Pond site could, with lower water levels, become a botanically rich restoration site that hosted a wide diversity of plants and wildlife.

Of course, dam lowering would necessarily reduce the size of the pond and result in less open water. While we recognize that this would reduce habitat for overwintering waterfowl, we're confident that the remaining waterfowl habitat combined with the mudflats, grasslands and other riparian habitat that would establish would result in a net gain for bird diversity and abundance at the site. This pattern has been demonstrated at dam removal sites throughout the region and has certainly been the case at West Brook where species diversity has increased dramatically since the dam failure (See pre-dam and post-dam ebird surveys).

Overall, the lowering of the dam offers the most potential gain of ecological conditions and functions at Bellmore Creek. It would reverse some of the impacts that the dam initially inflicted on the creek and allow the site to return to a state that most aligned with historic natural conditions. Dam lowering would provide significant, tangible ecological benefits to the Bellmore Creek system and it would represent an important step in the right direction towards improving the health of the Western Bays and our broader coastal ecosystem.

Climate Resilience:

In addition to the ecological benefits outlined above, the lowering of the dam at the Wantagh Mill Pond would provide reslience benefits in an era of rising seas. In the coming decades, as Long Island faces higher sea levels and increasingly intense and more frequent storm events, Bellmore Creek, like all coastal waterways, will face higher daily tides and stronger storm surges. Local flooding around these streams will become more commonplace. Lowering the Mill Pond dam would allow flood waters to push further upstream into Bellmore Creek, with the basin of the former pond acting as a relief valve for flood waters and helping to protect surrounding property. In addition, as tidewater increasingly pushes into the pond basin, the salinity will have an impact on the plant community. Eventually, portions of the site could become a refuge for salt marsh plant and animals, species that will be at greater risk as sea levels rise.

Invasive Species:

Invasive plants and animals are a scourge across Long Island, as they are in many parts of the world. Species such as Asian bittersweet, fanwort and Japanese knotweed have had severe impacts on natural areas across our region. As you well know, no natural area is safe from the potential impacts of these and countless other dangerous species. The Wantagh Mill Pond is no exception: it is already beset with significant impacts from water chestnut. While dam lowering would help address this problem, it would create conditions for the potential emergence of other invasive species, including phragmites.

In other words, invasive species will be a problem no matter how the county decides to proceed with the fish passage project. In this situation, we understand that the county might prefer to stick with "the devil it knows" and deal with the water chestnut problem. However, in our opinion, lowering the dam will significantly reduce the impact of water chestnut and other submerged aquatic species that thrive in slow-moving water, while providing the opportunity to address – on dry land – phragmites and any other emerging species at an early stage. While the Wantagh Mill Pond site (like most natural areas) would require ongoing invasive species management after a dam lowering, we're confident that – especially if addressed early – phragmites and other species could be efficiently and effectively prevented from overruning what could be an ecologically rich restoration of riparian and wetland habitat.

Economic Impacts:

In addition to ecological benefits outlined above, the lowering the Mill Pond dam would reduce the long-term costs to the public of maintaining the dam & spillway infrastructure and the impoundment. Lowering the water level would reduce the water pressure on the dam and the

flow rates going over the spillway, both from downstream flows and from upstream high tides and storm surges. This would result in lower long-term maintenance costs for what is already

aging infrastruture. If left in place, the spillway and even the earthen dam itself will likely require costly repairs over time, especially for infrastructure so close to a busy public roadway.

Further, lowering the dam would limit the long-term costs of maintaining an open water impoundment behind it. As mentioned above, over time, as the natural sedimentation and vegetation of the impoundment continues, it will be more difficult – and more costly – to maintain the open water that provides the aesthetic and recreational values of the impoundment. In the coming decades, the county will almost certainly to be saddled with increasingly costly dredging and other efforts to maintain open water conditions in what is, in the end, an artificial pond.

Additionally, the long-term costs of removing aquatic plants from Mill Pond, even with new heavy machinery, will likely outweigh the cost of managing invasive phragmites from the outset after dam lowering. This will be especially true as the impoundment continues to silt in and grow shallower over the coming decades; more aquatic plants will grow and the cost of maintaining open water for aesthetic and recreational purposes will increase.

In conclusion, we urge the county to choose to advance the dam lowering option at the Wantagh Mill Pond. We're confident that, considering all ecological and economic factors over the long-term, it is the right choice. It will provide significant ecological benefits to Bellmore Creek, the Western Bays and our braoder coastal ecosystem. In the process, it will also prove to be the most economical way to address not only the ecological restoration of the creek, but also to deal with the long-term maintenance of the dam infrastructure, especially in an era of rising seas.

Thank you for the opportunity to submit these comments. We look forward to working with you to advance a final fish passage alternative at the Wantagh Mill Pond.

Submitted by:
Enrico Nardone, Executive Director
Emily Hall, Conservation Policy Advocate
Seatuck Environmental Association
P.O. Box 31, Islip, NY 11751
631-581-6908 • staff@seatuck.org