



Department of
Environmental
Conservation



FINAL REPORT

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Prepared By:	Greenman-Pedersen, Inc.
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HENRY HUDSON PARK SHORELINE STABILIZATION PROJECT

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This is a NEIWPCC and NYSDEC funded project.

This project was funded by an agreement awarded by NYSDEC to NEIWPC in partnership with the Town of Bethlehem. The viewpoints expressed here do not necessarily represent those of NEIWPC or NYSDEC nor does mention of trade names, commercial products, or causes constitute endorsement or recommendation for use.

EXECUTIVE SUMMARY

The proposed project is located within Henry Hudson Park, located at 157 Lyons Road in the Hamlet of Selkirk, in the Town of Bethlehem, New York. The park serves as the Town's only public access point to the Hudson River. The park's shoreline, constructed from dredged material placed along the riverbank behind a timber cribbing wall and capped, is experiencing severe erosion.

The Henry Hudson Park Shoreline Restoration Project was awarded \$184,000 from the Northeast Interstate Water Pollution Control Commission (NEIWPCC) in partnership with New York State Department of Environmental Conservation (NYSDEC) for funding under their Community Waterfront Resiliency Design and Permitting Program. The grant was received to prepare a construction ready engineering drawing set and permitting package. The project's goals are to stabilize and restore the park's shoreline while balancing ecological, recreational, and regulatory objectives. These goals support NEIWPCC's Community Waterfront Resiliency Design and Permitting program by promoting community resiliency, reducing shoreline vulnerabilities, improving habitat, and engaging the community.

Following the development of a Quality Assurance Project Plan, the project began with a desktop review to characterize site conditions and regulatory requirements. Reviewed materials included the Town of Bethlehem Town Code, aerial imagery, topographic mapping, floodplain mapping, wetland inventories, soil data, and previously completed design reports, studies, site reconnaissance, and mapping. These documents were used to establish baseline conditions and identify potential environmental constraints.

Field investigations included a detailed shoreline walkover, during which observations were made and documented for plant communities, wildlife, river and stream conditions, and suitable habitats for protected species. The ordinary high-water line (OHW) was determined, flagged and a preliminary map developed. Geotechnical investigations included twelve soil-borings and laboratory testing to assess soil properties along the shoreline. An aerial and bathymetric survey were also conducted to provide topographic and underwater data.

Findings from the investigations and desktop review acted as the baseline and technical foundation for the design of the shoreline restoration. Prior studies completed for the project site were expanded upon and riprap revetment, riprap revetment with joint plantings, and intertidal marsh sills are proposed to be used to stabilize and enhance the shoreline.

Meetings, communication, and input with stakeholders, regulatory agencies, and the public took place throughout the project process to produce a final design that meets project objectives.

Upon completion of this phase of the project, the Town will submit the permit application package to the relevant regulatory agencies. After the necessary approvals are obtained, the Town can proceed with applying for construction funding and initiating the bidding process. Once grant funding is secured, the Town will be positioned to advance the project to construction.

Following construction, ongoing monitoring and maintenance will be essential to preserve the integrity and functionality of the improvements over the long term. In parallel, the Town will continue to plan, design, and implement future park amenities, supporting the continued realization of the Park's Master Plan, and advancing the broader goals of enhanced public access, ecological resilience, and recreational opportunities.

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1. PROJECT SYNOPSIS

The proposed project is located within the 84-acre Henry Hudson Park, located at 157 Lyons Road in the Hamlet of Selkirk, in the Town of Bethlehem, New York. The park serves as the Town's only public access point to the Hudson River and provides the public with open space, woodlands, boat and kayak launches, picnic areas, playground, pavilion, recreation, restroom facilities, and shoreline fishing opportunities. The current shoreline was established by federal dredging initiatives in the 1860s by placing dredged soil behind a timber cribbing dike and therefore filling in a portion of the river. Riprap revetment was placed along this established shoreline and later in the 1900's concrete capping was installed to create the reinforced bulkhead.

See Appendix B for the Project Location Map.

The Hudson River is a tidal river and is used as a commercial shipping channel, allowing access to the Port of Albany from the south; large vessels and tankers are often seen passing the Henry Hudson Park. The wakes produced by these vessels have caused damage to existing docks and the timber cribbing. Additionally, the Hudson River typically sees ice coverage during the winter months between December and March. Tidal currents break up the ice into large flows known as drift ice, leading to ice scour along the shoreline. Due to these factors, the existing timber cribbing is in poor condition and has failed along the majority of the park shoreline, causing erosion of the adjacent upland in varying levels of severity, creating both hazardous conditions along the waterfront and loss of available park space.

The Henry Hudson Park Shoreline Restoration Project was awarded \$184,000 from NEIWPCC in partnership with the NYSDEC for funding under their Community Waterfront Resiliency Design and Permitting Program. The primary objective of this project is to advance the Hudson River Action Agenda's goal to create a climate adaptive community where, "Hudson Valley communities are thriving, resilient models for adapting to climate change, using natural, nature based, and socially equitable solutions".¹ Aligning with the goals of NEIWPCC's Community Waterfront Resiliency Design and Permitting program to help communities develop and implement projects that increase resilience to flooding and climate change.

The purpose of this project is to promote community resiliency by protecting and managing natural resources and sensitive ecosystems. Shoreline stabilization measures are crucial to maintain the health of the estuary and sustain the recreational waterfront access opportunities at Henry Hudson Park. The project helps the Town of Bethlehem reduce the vulnerability of the shoreline from the impacts of wakes created by large commercial boat traffic and recreational boaters along with the impacts from ice scour. It will also advance the objectives of NYSDEC's Hudson River Sustainable Shorelines Project by replacing the timber cribbing with new shoreline treatments that provide improved habitat for the estuary's diverse native species.

The project proposes to expand on the preferred alternative developed in the Henry Hudson Shoreline Stabilization Study completed in October 2011 with the preparation of engineering construction drawings, specifications, and permitting documents. The first step in the design process was to review existing project information and conduct environmental screenings using secondary data online resources. From this research, a survey limits plan was developed to guide the completion of a boundary, topographic and bathymetric survey needed to create a site base map. Directed by data obtained by a review of online soil investigation tools, a

¹ Hudson River Estuary Action Agenda 2021-2025, Opportunities for Action. NYS DEC, pg. 28.
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geotechnical investigation and boring plan was developed and completed. The site was visited by Greenman-Pedersen, Inc. (GPI) environmental scientists to complete wetland and water level delineations and assessments, endangered species and habitat screening, and identification of potential areas of environmental concern.

Following the site assessments and investigation, concept plans were developed to show the rock riprap shoreline with joint plantings, two intertidal marsh areas, and other improvements to the park that are necessary to successfully construct the shoreline upgrades. A pre-application field visit with NYSDEC regulatory staff, Town staff, and New York State Department of State (NYSDOS) took place to receive regulatory feedback on the proposed concept. Although the United States Army Corp of Engineers (USACE) were not available for a field visit, they were contacted, and feedback on the proposed project was received. Two public meetings were held to receive public input on the project. Regulatory and public feedback was then incorporated into the detailed design and preparation of the draft design plans, specifications, bid documents, and draft permitting applications. The draft documents were provided to NYSDEC and the Town of Bethlehem for review and feedback during the coordinated final review meeting.

All review comments were considered and incorporated into the final design documents. Final design documents include; stamped construction plans, Stormwater Pollution Prevention Plan (SWPPP), specifications and bid documents ready for final bidding information input, along with a Joint Application form and supporting documents for permitting. The permit documents will be packaged for submittal by the Town of Bethlehem to the permitting authorities following the completion of this project phase. Lastly, this final report has been prepared to document the project's outputs and findings.

Table 1 - Project Timeline

Task #	Task Title	Objective	Deliverable or Output	Timeline
A	Develop the QAPP	Prepare a quality assurance project plan (QAPP) that follows NEIWPCC Guidelines	QAPP Approval	Months #1-#3
B	Review Existing Information	Review preliminary plans and existing data, documentation, and reports provided by the Town of Bethlehem as well as natural resource information from publicly available sources.	Existing conditions memo identifying site constraints and features (1-3 pgs.)	Month #3
C	Coordinate Project Kick-off Meeting	Coordinate and host a project kick-off meeting attended by municipal representatives, and the NYSDEC Hudson River Estuary Program	Meeting summary emailed to attendees and project partners	Month #3
D	Site Assessment and Sampling	Complete topographic survey, soil borings, plant and animal screening, wetlands, and water delineations	Topographic survey map, soil investigation report, and supplemental environmental info for final report	Months #3 - #5
E	Concept Plan Development	Prepare a concept plan based off the completed field work and receive initial feedback from regulatory agencies and the public	Concept Plan, Pre-application field meeting with regulatory agencies. Hold public meeting for public input	Month #5
F	Develop and Deliver a Draft Engineering and Implementation Plan	Prepare draft engineering plans, specification (spec) sheets, bid documents, a Joint Application Form, and any other materials needed for environmental permitting for review by	Draft Engineering and implementation Plan including draft sheet drawings and permit	Months #6-#8

		the NEIWPCC, NYSDEC Hudson River Estuary Program, and the Town of Bethlehem	materials emailed to project partners.	
G	Coordinate Final Review Meeting	Deliver a presentation and review of draft deliverables to NEIWPCC, NYSDEC Hudson River Estuary Program, and the Town of Bethlehem	Meeting summary emailed to attendees and project partners.	Month #8
H	Prepare Applications for all Environmental Permits	Prepare permit materials required by local, state, and federal agencies, for eventual submittal by the Town of Bethlehem to the permitting authorities.	Completed Joint Application and supporting materials emailed to project partners.	Months #9 & #10
I	Final Engineering Documents And Implementation Plan	Develop final documents upon approval of draft materials (Tasks F & H) by HREP staff and the Town of Bethlehem.	4 printed sets (and 1 digital set) of all final materials will be delivered to the Town of Bethlehem. Send digital set to NEIWPCC	Months #8-#10
J	Quarterly Reports	Prepare and submit brief quarterly reports by April 10 for January-March, by July 10 for April-June, by October 10 for July- September, and by January 10 for October- December	Quarterly reports documenting progress on each task for each quarter contracted.	Months #1-#10
K	Final Report	Prepare and submit a final report	Final report, including an executive summary, fully documenting the project outputs and results	Oct. 31, 2025

2. TASKS COMPLETED

TASK 1 – QUALITY ASSURANCE PROJECT PLAN (QAPP)

A QAPP was prepared by GPI and approved on March 25, 2025, as Rev 1.2 that addressed stakeholder comments. The QAPP was later updated to version Rev 1.3 on June 27, 2025, that included additional information regarding the bathymetric and topographic survey. The purpose of the QAPP was to provide a project specific quality assurance plan to prevent deficiencies as the project progresses.

TASK 2 –REVIEW EXISTING INFORMATION

GPI reviewed relevant materials and previously completed studies and reports; including, but not limited to, the Town of Bethlehem Town Code, the Town of Bethlehem’s Local Waterfront Revitalization Program (LWRP), the Henry Hudson Park Master Plan, Bethlehem’s Parks and Recreation Master Plan, the Henry Hudson Shoreline Stabilization Study, and the NYSDEC Hudson River Shoreline Restoration Alternative Analysis. In addition, available online resources related to environmental constraints such as wetlands and threatened and endangered species that may affect the development of the project site were reviewed. All reviewed materials were consolidated and summarized in the Report Findings Memo dated May 5th, 2025.

TASK 3 – COORDINATED KICK-OFF MEETING

The initial project kick-off meeting was held on April 22, 2025, with staff from GPI, members of the Town of Bethlehem, and a representative of NYSDEC. The meeting focused on the project steps, agreements, and understandings.

TASK 4 – PUBLIC PARTICIPATION PLAN

GPI prepared a project specific Public Participation Plan (PPP) that outlined the public outreach and involvement in the project. The PPP document identified the project stakeholders and contact information, identified public outreach efforts and events, project website, and anticipated promotion materials.

TASK 5 – SITE INVESTIGATION

GPI environmental staff conducted an initial walkover of the shoreline corridor on May 8, 2025, to assess site conditions. The 'Environmental Investigation Memo Report' dated July 3, 2025, summarized the findings. The geotechnical investigation was carried out on May 13, 2025, and the 'Geotechnical Data Report' dated August 20, 2025, summarized the findings. On May 20, 2025, Bowman Consulting Group, LTD completed bathymetric and aerial LiDAR surveys. Photographs were taken during field activities to record the current condition of the shoreline.

TASK 6 – DRAFT ENGINEERING AND IMPLEMENTATION PLAN

GPI prepared a final concept plan, sent to the town on September 19, 2025. Comments received on the concept plan were used to develop the draft engineering drawing set, draft SWPPP report, and Environmental Permit package, which was submitted to the town on October 14, 2025.

TASK 7 – COORDINATED FINAL REVIEW MEETING

GPI presented the Task 6 deliverables in a final review meeting on October 16, 2025. Members of the Town of Bethlehem and NYSDEC were present and comments from this meeting were reflected in the updates to the final engineering and implementation plan.

TASK 8 – ENVIRONMENTAL PERMIT APPLICATIONS

Results from environmental screenings, field evaluations, and coordination with applicable regulatory agencies were used to develop a complete permit package for submittal by the Town of Bethlehem,

TASK 9 – FINAL ENGINEERING AND IMPLEMENTATION PLAN

Following the Final Review Meeting, all comments were addressed, and GPI developed the final stamped Engineering Drawings that included the implementation plan, SWPPP, Specifications, Bid Documents, and a Joint Application Form with supporting materials which were submitted to the project partners on October 31, 2025.

TASK 10 PROJECT MEETINGS AND QUARTERLY REPORTS

Coordination meetings were held with the Town of Bethlehem and the NYSDEC during the duration of the project. In addition, GPI submitted quarterly reports documenting project progress.

TASK 11 FINAL REPORTS

GPI has prepared this Final Report which covers the methods and results of the Henry Hudson Shoreline Stabilization Project.

3. METHODOLOGY

3.1 ENVIRONMENTAL INVESTIGATION AND PERMITTING

3.1.1 Desktop Review

Prior to any field visits, project staff completed an extensive desktop review to compile and analyze available environmental and regulatory data relevant to the project area. The review included examination of aerial imagery, topographic mapping, floodplain mapping, wetland inventories, soil data, and previous site reconnaissance and mapping to establish baseline conditions and identify potential environmental constraints.

Desktop screenings for threatened and endangered species were completed using the NYSDEC Environmental Resource Mapper (ERM), the State Environmental Assessment Form (EAF) Mapper, and the U.S. Fish and Wildlife Service (USFWS) IPaC online screening tool. The IPaC results indicated that federally protected species potentially occur in the project area including the Northern Long-eared Bat, Tricolored Bat, and Monarch Butterfly. The EAF Mapper noted that the Short-eared Owl and Bald Eagle, as well as rare dragonflies and other state-listed species could occur within or near the project limits. The ERM and National Marine Fisheries Service (NMFS) online tools for Section 7 Consultation Species and Essential Fish Habitat (EFH) identified the potential presence of Atlantic Sturgeon and Shortnose Sturgeon near the project site and that critical Atlantic Sturgeon habitat may be located nearby. The NYSDEC ERM also indicated that the project is in the vicinity of significant natural communities, specifically the Hudson River Tidal Estuary, and Freshwater Subtidal Aquatic Beds.

The S1/S2 Mussel Waterbody Layer from the NYSDEC ERM indicated potential occurrence of a protected mussel species in the Hudson River near the project area. Coordination with the NYSDEC Natural Heritage Program should be pursued during the permit application period to confirm the specific species present and to determine whether additional mussel surveys or analyses will be required. The ERM further indicated that the site lies within or adjacent to significant natural communities, including the Hudson River Tidal Estuary and Freshwater Subtidal Aquatic Beds.

Although Henry Hudson Park is located along the unregulated Class C Hudson River, and therefore not subject to Article 15 Protected Streams regulations, the project will require permitting through NYSDEC for work in State Navigable Waters. This permit will be authorized through the Joint Application process.

Additionally, Henry Hudson Park, being adjacent to the Hudson River, is located within the NYSDOS Coastal Area Boundary and lies within the Town of Bethlehem's approved LWRP area. To satisfy the State Coastal Management Program regulations under the Federal Coastal Zone Management Act (FCMA) and to maintain consistency with the Town of Bethlehem's LWRP, an FCAF has been filled out, and analysis of the involved coastal policies has been completed.

The New York State Historic Preservation Office (SHPO) online resources were also reviewed to determine whether the project area contains or is adjacent to known archaeological or historic resources that may require further evaluation under Section 106 of the National Historic Preservation Act. The project tax parcel 122.00-2-21 has one "Undetermined" site according to the CRIS system and is within an archeological buffer area. It was originally assumed that because the project would not involve activities within any previously undisturbed areas, a letter of no effect would be issued. However, following conversations with the staff from the Division for Historic Preservation, and the letter dated October 23, 2025, the project review by NYSHPO

determined that the project will require a Phase IA Archaeological Survey. This survey is designed to identify previously recorded archaeological sites and other cultural resources within or near the project area and determine if the need for a Phase IB archaeological testing will be required prior to the issuance of permits and construction. SHPO also provided the 'Programmatic Agreement Among the U.S. Army Corps of Engineers, New York District, and the New York State Historic Preservation Office, Regarding the Hudson River Habitat Restoration Project' (HRHR Programmatic Agreement), dated July 6, 2020. Appendix B of the HRHR Programmatic Agreement included a Cultural Resources Summary, a preliminary study that was completed by the USACE on several sites along the Hudson River, including Henry Hudson Park. It concluded that the potential for historic archaeological remains to exist within the area of proposed shoreline stabilization measures is low. The HRHR Programmatic Agreement indicated that the USACE is responsible for any additional studies for this site and the subsequent development of treatment plans, if necessary. Communication and coordination with the USACE during the permit application submission period will be required.

Findings from this comprehensive desktop analysis were compiled into the 'Findings Memo Report', that was prepared by GPI and dated May 5, 2025. These materials were then used to inform field observations, guide early regulatory coordination, and refine the project's permitting and design strategy.

3.1.2 Field Investigations

Following the completion of the desktop review, a comprehensive field investigation of the Henry Hudson Park shoreline was conducted on May 8, 2025, by GPI staff to document existing physical, biological, and habitat conditions and to inform future design and permitting efforts.

A preliminary map of Ordinary High Water (OHW) flag locations was developed during the site visit for use by a surveyor to collect accurate flag coordinates for subsequent design phases. Flagging efforts along the river's edge incorporated standard field methods for identifying the OHW mark of waterways, following guidance from the USACE and the NYSDEC. Based on the field efforts, a single continuous waterway boundary line was identified within the project site. It was determined that no wetland fringe was present within the project boundaries within the Hudson River corridor or along the Vloman Kill. The OHW boundary typically followed along the edge of the concrete cap, occasionally wavering inland slightly where erosion had allowed the MHW to encroach on the parkland lawn. In areas where riprap or concrete capstones remained in place along the shore, the boundary line was at a typical waterfront elevation.

The investigation included a thorough traverse of the shoreline corridor, focusing on the Hudson River edge and the Vloman Kill tributary. Observations were documented regarding plant species, community types, wildlife signs and sightings, river and stream conditions, and tree characteristics suitable for potential bat and other wildlife habitats.

No species listed in any screening efforts described above were encountered or documented within Henry Hudson Park or the adjacent Hudson River. Documentation of Sturgeon species and mussels would require further in-water field review and coordination with resource agencies. Several Bald Eagles were observed across the river from the park, including an active nest present on the far side of the Hudson River. Discussions with resident fishermen on-site revealed that Bald Eagles frequent the park and have been observed taking bait from fishing lines from the park shoreline and feeding on dead fish in the manicured lawn areas.

Coordination with the NYSDEC/ United States Fish and Wildlife Service (USFWS) should take place to ensure tree cutting/clearing will not impact the Bald Eagles.

Undiscovered or unrecorded threatened, endangered, or rare plants are highly unlikely due to the high degree of human activity and maintained nature of the parkland along the shoreline. Likewise, the manicured lawn, playground, riprap, paved access road, gravel parking areas, and fishing activity, all add up to a very limited possibility of additional protected species being found within the project corridor.

Findings from the site investigation were compiled into the 'Environmental Investigation Memo Report', that was prepared by GPI and dated July 3, 2025.

To support the permitting process, project staff met with representatives from the NYSDEC and the NYSDOS on October 7, 2025, to review jurisdictional considerations under Articles 15 and 24 of the Environmental Conservation Law and confirm consistency with the State Coastal Management Program and the Town of Bethlehem's LWRP.

Following recommendations from this meeting, a review of Submerged Aquatic Vegetation (SAV) mapping in the Hudson River Estuary was conducted. SAV is an important habitat in many aquatic ecosystems. SAV mapping has been undertaken during seven distinct time periods—1997, 2002, 2007, 2014, 2016, 2018, and 2022—supported through a combination of the National Oceanic and atmospheric Administration (NOAA), Hudson River Foundation, and New York State Environmental Protection Fund resources under the Hudson River Estuary Program (HREP). The mapping datasets provided insight into aquatic vegetation distribution and potential sensitive habitat areas adjacent to the project site. The absence of mapped SAV means its presence was not discernable from the aerial photography due to water turbidity, higher than optimum tide, overhanging vegetation, shadow, sun glint, or SAV was not present. Discernible SAV may not have been mapped if the bed was smaller than the minimum mapping unit. GPI Environmental biology staff visited the site in September 2025 and did not observe any SAV beds off-shore from the project limits. A SAV survey will need to be conducted between June and September prior to any construction to ensure that the proposed project does not infringe on any SAV habitat.

Project staff also engaged in email correspondence with the USACE to clarify potential federal jurisdiction under Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act. As advised by the USACE, a Nationwide Permit 27 - aquatic habitat restoration, enhancement, and establishment activities - is considered the best fit for this project and will be required for the proposed scope of work. This permit will be pursued through the Joint Application process in conjunction with a Water Quality Certification from the NYSDEC. To meet the requirements of Section 401 of the Clean Water Act, an Individual or Blanket Water Quality Certification will be pursued based on the design of the project. This certification will be sought in conjunction with the joint application process in association with the issued Nationwide Permit.

Findings from the field investigation and agency coordination have been incorporated into the project's permitting strategy, ecological assessment, and design development framework, ensuring that future restoration actions align with all applicable state, federal, and local environmental requirements.

3.1.3 Summary of Permits Required

Joint Application form sent to NYSDEC, USACE, and NYSDOS for the permits below:

- Stream Disturbance
- Excavation and Fill in Navigable Waters
- 401 Water Quality Certification

- Section 404 Clean Water Act
- Section 10 Rivers and Harbors Act
- Nationwide Permit #13 or 27
- Coastal Consistency Concurrence

See Appendix E for Supplemental Environmental Permit Information.

3.2 SITE SURVEY

On May 20, 2025, Bowman Consulting Group, LTD completed bathymetric and aerial LiDAR surveys for detailed design. These surveys also documented the locations of OHW flagging and soil borings, ensuring accurate mapping of these locations. In cases where some OHW flags were lost, the preliminary flag map was referenced to verify and restore missing points within the survey, maintaining the completeness and accuracy of the dataset. In addition, GPI conducted an additional tree survey of the shoreline to document the location, species, size, and condition of existing trees on October 10, 2025.

3.3 GEOTECHNICAL INVESTIGATION

A geotechnical evaluation was completed at the Henry Hudson Park project site to investigate subsurface soil properties and confirm site conditions for use in design development. The investigation was used to verify and supplement existing soil descriptions and classifications obtained from the United States Geological Survey (USGS) and other available mapping resources.

Fieldwork was performed by Core Down Drilling, LLC, which mobilized to the site on May 13, 2025, and completed twelve (12) geotechnical borings at various locations across the project area. Boring depths ranged from 12 to 22 feet below ground surface (bgs). Groundwater was observed at elevations ranging between 1.2 and 4.0 feet. Laboratory soil testing performed as part of the investigation indicated that all samples were below the New York State Soil Cleanup Objective (SCO) thresholds for contaminated soils.

The geotechnical investigation results confirm that the subsurface profile at the Henry Hudson Park shoreline primarily consists of fill and alluvial deposits overlying transitional gravelly material, with groundwater present at shallow depths. The results provide critical input for evaluating shoreline stabilization design options, including slope stability, and constructability of proposed stabilization measures.

The project's geotechnical data and analyses are documented in the report 'Geotechnical Data Report – Henry Hudson Park Shoreline Stabilization Project', prepared by GPI and dated August 2025.

The geotechnical study evaluated slope stability and material performance for several shoreline stabilization concepts. Based on subsurface conditions – particularly the presence of dredge material that is prone to instability at steeper slopes – two viable stabilization options were identified.

The first option maintained all proposed work on the inland side of the existing timber cribbing. This approach will construct a launchable 5-ft wide stone platform adjoining the timber cribbing, followed by a 1V:3.5H slope from this platform inland until reaching elevation +5.5'. This approach would allow the launchable stone to shift and self-stabilize the slope in the event of future timber cribbing failure.

The second option involves work behind the timber cribbing. Proposing to construct a more gradual 1V:4H slope and stabilizing the timber cribbing on the river side before continuing inland from the cribbing at a 1V:3.5H slope. While this alternative offers a potentially enhanced long-term stability and less parkland loss, it would increase the in-water work, disturbance, and amount of fill within the water way.

Both options were presented to the project team for review and discussed with regulatory agencies for permitting considerations. NYSDEC emphasized that no work should extend beyond the historical location of the timber cribbing into the Hudson River unless a justification could be made as to the necessity of that approach. This feedback eliminated the second option as a viable design. See the section below for additional information.

3.4 GEOTECHNICAL ANALYSIS AND DESIGN

The revetment shall be designed to withstand destabilizing forces caused by tidal fluctuations in river levels and wave action. Accordingly, the design must provide adequate stability against external and internal failure modes. The proposed design addresses global slope stability, liquefaction, wave action protection, and filter design.

3.4.1 Data Correction and Material Parameter Selection

Prior to developing our design, collected data required correction. At minimum, standard penetration test (SPT) data from GPI's soil borings were corrected for hammer efficiency, estimated overburden, rod lengths, and borehole diameter. Where soil classifications indicated material fines content equal to or greater than 5%, an additional correction for dilatancy was applied (Meyerhof). The corrections for hammer efficiency (E_H) and overburden (σ'_v) were performed using the following equations (Coduto) provided below:

$$N_{60} = \frac{E_H}{60}$$

$$N_{1,60} = N_{60} \times C_N; C_N = 0.77 \times \log_{10} \frac{20}{\sigma'_v} \text{ and } C_N \leq 2$$

All N-values were reviewed in the respective borings. Based on engineering judgement, N-values that were misrepresentative of their respective stratum, those that would incorrectly yet favorably skew the material strength and/or consistency, were not used to develop the final selected engineering parameters. Once corrected, average and standard deviation (σ) values of N_{60} and $N_{1,60}$ for the generalized strata were determined. To account for potential spatial variability in the soil strength properties, representative N_{60} and $N_{1,60}$ values for parameter selection were taken as 0.5σ below the calculated average.

Geotechnical parameters were assigned to each stratum for our analyses based on review of the available data. The soil strength and seepage parameters used in the analyses were selected using published SPT empirical correlations, soil classifications, laboratory results, and our engineering judgement. Table 2 presents a summary of the selected parameters:

Table 2 – Geotechnical Parameters

Model Material	Unit Weight, pcf	ϕ' , deg	c' , psf	Volumetric WC	k_x , ft/s	K_y/k_x
A2 – Coarse	105	26	-	0.6	0.0012	0.1
F2 – Sand	105	27	-	0.6	0.0012	1.0
Bedding Material	125	38	-	0.2	0.01	1.0
Medium Stone Fill	145	45	-	0.2	0.02	1.0

3.4.2 Revetment Section Selection and Slope Geometry

With the exception of the embankment toe, where some sections are still supported by timber cribbing and others have been lost to erosion, the existing revetment slope exhibits generally consistent geometry. GPI selected a representative slope where the cribbing is still intact directly south of the existing playground. The initial external slope geometries were based on the surveyed surfaces; whereas the internal slope geometries were developed based on the subsurface conditions encountered within the borings. These geometries were then altered for a proposed revetment system. The proposed slope system generally consists of a 3.5-ft horizontal to 1-ft vertical (3.5H:1V) slope and a launched stone section behind the existing timber cribbing. Surficial armoring consists of stone fill material overlying bedding material. Armoring is placed directly on excavated in-situ cut surfaces.

3.4.3 Surface and Groundwater Levels

Due to the composition of the existing ground and its proximity to the Hudson River, groundwater levels are assumed to correspond closely with river levels. River levels utilized for the design are based on the tide charts generated for Castleton-on-Hudson, NY. These charts indicate that river levels fluctuate approximately from EL 5.4 to EL -0.4 over a 6-hr duration. Changes in groundwater conditions during these fluctuations were estimated by performing a seepage analysis using GeoStudio SEEP/W program.

3.4.4 Wave Magnitude

To design adequate armoring for protection against wave action, it is necessary to establish a representative design wave height based on site conditions. Waves along this portion of the Hudson River are generated by wind and ship traffic, particularly those produced by container ships. Of these wave types, the container ship wakes are considered critical. To estimate a design wave height, GPI utilized USACE's Vessel Wake Prediction Tool (VWPT). This program allows for the input of channel geometry and vessel characteristics to determine wake heights. GPI used simplified channel geometry based on available depth charts, and assumed vessel properties for a Panamax shipping container, since this would be the largest vessel that the Port of Albany could service. VWPT produced several estimates based on different methodologies. Based on the various estimates, GPI selected a design wave height of 1-ft, since this agreed well with observed vessel-induced wave levels during field visits.

3.4.5 Global Stability Load Cases

The following load cases were considered for the proposed design following GPI's construction recommendation. Figures from Slope/W showing the proposed slope geometries, material stratigraphy, selected soil parameters, and phreatic levels are provided in Appendix F. The load cases considered are summarized in Table 3 below:

Table 3 - Load Case Summary

Load Case	Description
Load Case 1 - Normal River Levels	Water levels are assumed to be constant.
Load Case 2 – Rapid Drawdown Case	Drawdown of the Hudson River from high tide (EL 5.4) to low tide (EL-0.4). Multi-stage drawdown method of analysis is used, as recommended by EM 1110-2-1902. Seepage analysis performed
Load Case 3 – Pseudostatic	Constant water level and seismic loading conditions using PHGA for the 475-year recurrence-interval earthquake. If the analysis indicates the Factor of Safety is less than 1.0, then yield acceleration is determined to allow for qualitative assessment of seismic deformation.

3.4.6 Global Slope Stability

GPI performed a two-dimensional limit equilibrium analysis using SLOPE/W and SEEP/W (Rapid Drawdown Case Only), which are part of the GeoStudio 2023 software suite to evaluate the global stability of the proposed revetment section. The Morgenstern-Price method of analysis was used to perform the limit-equilibrium analyses as it satisfies both force and moment equilibrium. The analysis was performed generally following USACE EM 1110-2-1902.

The table below presents the results of the global stability analysis and compares them against the suitable factor of safety (FS).

Table 4 – Global Stability Analysis Comparison with Suitable Factor of Safety

Load Case	Factor of Safety	
	Proposed Revetment	Required
Load Case 1 - Normal Stream, No Scour	1.5	1.3
Load Case 2 – Rapid Drawdown	1.3	1.1
Load Case - Pseudostatic	1.0	1.0

The results of the stability analysis indicate the proposed geometry is suitable for the load cases considered.

3.4.7 Liquefaction Triggering Analysis

A liquefaction triggering analysis was performed based on methodology presented in *SPT-Based Liquefaction Triggering Procedures* (Idriss and Boulanger, 2010). This analysis uses SPT data collected from the site; fines content, estimated soil unit weights, mean earthquake magnitude, and PGA_M to determine the Factor of Safety (FS) against liquefaction. The analysis utilized a PGA_M of 0.085g. In this methodology, a FS is calculated for a given soil depth. A FS greater than 1.0 is considered unlikely to liquefy for the considered design event. The analysis indicated that the materials are unlikely to liquefy under this seismic load.

3.4.8 Armoring Design

Armoring size calculations were performed following methodology from USACE EM 1110-2-1614, supplemented by EM 1110-2-1901 and EM 1110-2-1601. For the design wave heights determined with VWPT, the following particle weight breakdown is recommended.

Table 5– Particle Weight

Percent Lighter by Weight, %	Stone Weight Limits, lbs
100	190-390
50	100-150
15	40-50
0	>28

NYSDOT Medium Stone Fill with modifications to meet the above limits is considered appropriate for this design. Minimum total thickness of this armoring shall be 1.75-ft and shall be placed upon a layer of bedding material meeting the specifications of NYSDOT.

3.4.9 Filter Design

To ensure migration of fine particles comprising the revetment does not occur, filter design was performed using laboratory gradations and flow rates due to tidal changes estimated in SEEP/W. Filters, whether soil medium or geotextile, shall be needed between the existing revetment material and the proposed bedding material. Where in-situ fine grained materials are encountered, a soil filter comprising materials meeting specifications for ASTM C33 Fine aggregate are recommended as a filter. Otherwise between in-situ coarse grained materials or ASTM C33 and bedding material, a geotextile meeting the following requirements are suitable.

- Nonwoven
- $\Psi_{ult} > 0.35 \text{ sec}^{-1}$
- AOS < 0.25 mm

Following discussion with the NYSDEC, the agency has expressed a preference for the use of biodegradable geotextile for this project. In-situ degradation of these materials increases the risk of future slope instability due to pore pressure buildup (if blinding or clogging occurs) or loss of fines. Depending on NYSDEC tolerance for these risks and acceptable project budget, a graded soil filter may be a suitable alternative. Such a filter would simply comprise zones of different materials gradually increasing in size.

3.4.10 Seismic Parameter

Seismic Site Classifications are assigned to new building construction for the purpose of developing design ground motions. However, it is also applicable to develop ground motions for use in liquefaction analyses and pseudostatic slope stability analyses for earthen embankments. GPI performed a Seismic Site Class determination for the site based on the N-values and engineering judgement. This estimate indicated that a Seismic Site Class E is considered appropriate for the site. Based on this site class designation, a peak ground acceleration (PGA) for a Seismic Site Class C/B (amplification factor=1) and corresponding to an earthquake with a 10% probability of exceedance within a 50-year period (475-return period), was determined using the USGS Hazard Tool. This PGA was then adjusted for the anticipated site class effects. The adjusted peak ground acceleration (PGA_M) used for analysis was determined to be 0.085g.

See Appendix F for Supplemental Geotechnical Material.

3.5 DRAFT AND FINAL ENGINEERING PLANS

The conceptual plan for shoreline restoration at Henry Hudson Park was developed using information gathered through desktop review, field investigation, geotechnical evaluation, and a review of previous studies and assessments conducted for the site. These prior studies provided historical context, baseline data, and design insights, which were incorporated and expanded upon in the development of project concept plan. In addition, the tidal datum water lines, mean low water (MLW) and mean high water (MHW), were determined by using linear interpolation of the data available from NOAA, recorded at the Albany station 8518995 and Turkey Station 8518962.

Findings from the investigation- including shoreline conditions, soils and subsurface materials, vegetation, habitat potential, and hydrologic characteristics—provided the technical foundation for utilizing a riprap revetment and riprap revetment with joint plantings for the majority of the shoreline stabilization. Feedback from the NYSDEC during early project meetings led to the design of two intertidal marshes with riprap sills to ecologically enhance the park shoreline.

Following the completion of the concept plan, two public on-site meetings were conducted to gather community input and stakeholder feedback on the proposed concept. From this meeting, there was a strong emphasis on maintaining the park's fishing access and to ensure that any plantings would not inhibit river views. To address these items, approximately 50% of the park shoreline modified the riprap revetment to include a 2-ft wide terrace, located at elevation +0.5' and +3.0', to provide fisherman with easier access to the water's edge during the full tidal range. A geotechnical analysis was completed with the terraced option to determine that it would be possible to reduce the slope above the "steps" to 1V:3H without the risk of slope failure. In addition, the selected species for joint plantings were chosen based on their ability to maintain a low growth profile therefore protecting river views. These species include red-oiser dogwood, and basket willow.

Project staff met with representatives from the NYSDEC and the NYSDOS on October 7, 2025 to review the proposed draft plan and discuss any concerns or recommendations that the regulatory agencies might have. Following this meeting, it was determined that no work would extend into the Hudson River beyond the historical location of the timber cribbing. The parallel line of the existing cribbing would be used as the limit of disturbance within the waterway. Any timber cribbing that is encountered will not be removed, as the removal could cause unnecessary disturbance, instead it was determined that the cribbing will be cut down to 0.5-ft above the existing grade. The NYSDEC also recommended that additional areas for joint plantings should be proposed, ensuring that the shoreline would support both fisherman and encourage natural vegetation to promote additional stabilization. Following this recommendation, the proposed shoreline was examined and approximately 30% of the shoreline will be comprised of riprap revetment with joint plantings. And lastly, the NYSDEC recommended that biodegradable geotextile fabric to be used below the riprap revetment. This consideration is due to the material often becoming exposed and turning into an unsightly element or washing away and polluting the waterbody. The eventual degradation of the fabric will also allow for the riprap to settle and embed into the soil below, increasing slope stabilization. Lastly, the Town expressed concerns regarding the proposed modifications at the southern point of the park. By removing the existing concrete cap and cutting back the slope in this area it would significantly alter the current use and functionality of this portion of the site. In response, it was determined that a revised approach would be implanted: new piles will be installed behind the existing timber cribbing, and a new concrete cap will be constructed to

reinforce the structure. The draft engineering plans and details were updated to reflect these recommendations.

The draft engineering plans were subsequently reviewed in the coordinated final review with Town representatives and the NYSDEC for regulatory coordination. Feedback included the replacement of removed trees on a 1 to 1 basis with species including red maples, sugar maples, white oaks, and red oaks. These trees will be clustered across the shoreline to provide shade for future users and habitat for native species. In addition, additional notes for construction work windows, in-water barge work, additional signage showcasing the project components, additional joint-planting notes, and considerations for monitoring and maintenance following construction were discussed. A summary of the coordinated review meeting minutes can be found in Appendix C. The feedback from the Town and NYSDEC was incorporated to refine the design, resulting in the final engineering plan that reflects project objectives, builds upon prior studies, and remains consistent with state, federal, and local regulatory requirements.

The finalized and stamped engineering plans will serve as the basis for permitting, cost estimation, and ensuring that the project is technically feasible, environmentally sensitive, and publicly supported.

3.6 IMPLEMENTATION PLAN

- Submit the completed permit applications to the regulatory agencies. This should be submitted as soon as practicable to maintain project momentum
 - Coordinate with ACOE and complete Phase 1A Archaeological Survey – will need to be completed prior to permit authorization
 - Complete SAV survey in summer 2026 – if required
 - Complete mussel survey in summer 2026 – if required
- Incorporate and respond to any agency comments
- Apply for construction funding and bidding
 - Complete a detailed construction estimate
 - Apply to grants
 - NYSDEC Local Waterfront Revitalization Program
 - NYSDEC Resilient Watersheds Grant (RWG) Program
 - See Appendix H for additional Grant Funding Programs
 - Solicit bids from contractors
- Construction and Implementation
 - Begin shoreline stabilization work
 - Tree cutting should take place between November 1 and March 31.
 - Work should take place at the boat docks and move south in sections
 - Cofferdam sheeting installed by impact hammer may only occur between September 1 and October 31. Installation using vibratory methods is permitted year-round, except during the spring restriction period. Spring in-water work windows are limited due to seasonal conditions, and coordination with NYSDEC is required to confirm specific dates. Typically, no in-water work is permitted between March 1 and May 31. There are no work window restrictions for work taking place behind the cofferdam once installed.
 - If proposed, barge-based work operations shall only proceed after the contractor has verified that water depths are sufficient under low-tide conditions

- Following all work, monitoring and complete maintenance should take place as needed based on permit requirements or for a minimum of three (3) years.
- Future Work
 - Design and construct future park amenities and improvements to advance the Park's Master Plan

4. QUALITY ASSURANCE TASKS COMPLETED

Quality Assurance (QA) activities were conducted in accordance with the QAPP to ensure that all project tasks were completed to the required standards of accuracy, reliability, and consistency. The QA process verified the data and deliverables generated throughout the project were technically sound and suitable for their intended use.

All personnel were properly trained and certified to perform their assigned duties. Field work followed established standard operating procedures to maintain data quality and integrity. Quality control (QC) checks were conducted prior to the submission of all project deliverables. For example, the survey data underwent an internal review, during which several updates were requested and implemented by the surveyor before the final product was accepted and transmitted to the Town of Bethlehem.

The geotechnical engineer reviewed all laboratory testing reports and incorporated the verified results into the final geotechnical report to ensure consistency between field data, lab analyses, and engineering interpretations. Similarly, environmental staff confirmed that field documentation accurately reflected site conditions.

In addition, the Project Manager (PM) ensured completeness, correctness, and compliance of all project activities with established objectives throughout the duration of the work. The PM verified that field and sample collection activities were performed according to approved standard operating procedures and reviewed all drawings and report documents to evaluate and address any potential technical or quality control non-conformities. The Quality Manager (QM) additionally performed an independent review on all project deliverables.

Quarterly progress reports were prepared and submitted throughout the duration of the project to confirm that milestones were met, and project goals remained on track. These reports provided an opportunity to evaluate data quality, address any deviations from the QAPP, and document corrective actions where necessary.

Overall, the QA task confirmed that the project adhered to the approved QAPP and that all data and deliverables meet the quality objectives necessary to support the findings and recommendations presented in this report.

5. DELIVERABLES COMPLETED

5.1 TASK 1 – QUALITY ASSURANCE PROJECT PLAN (QAPP)

- QAPP approved and signed March 24, 2025

5.2 TASK 2 – REVIEW EXISTING INFORMATION

- Findings Memo Report completed May 5, 2025

5.3 TASK 3 – COORDINATED KICK-OFF MEETING

- Meeting was held on April 22, 2025. Summary emailed to the project partners.

See Appendix C for Meeting Minutes.

5.4 TASK 4 – PUBLIC PARTICIPATION PLAN

- Public Participation Plan completed and emailed to the Town May 9, 2025
- Public Project website: <https://henryhudsonshoreline.wixsite.com/henry-hudson-park-sh>
- Project fliers
- Public meeting held at Henry Hudson Park on September 9, 2025
 - Promotional material provided to the Town
- Final Public Presentation at Town Board Meeting October 22, 2025

See Appendix D for Public Participation Documentation

5.5 TASK 5 – SITE INVESTIGATION

- Environmental Investigation Memo Report completed and emailed to the Town July 3, 2025
- Geotechnical Data Report completed and emailed to the project partners August 20, 2025
- Existing Conditions plan sheets prepared from the boundary, bathymetric and aerial surveys.

See Appendix F for Supplemental Geotechnical Material

See Appendix G for Site Photographs.

5.6 TASK 6 – DRAFT ENGINEERING AND IMPLEMENTATION PLAN

- Concept Plan completed and sent to the Town September 19, 2025
- Engineered Drawings completed and sent to the Town October 20, 2025
 - Cover Page
 - Existing Conditions
 - Demolition Plan
 - Site Layout Plan
 - Grading and Erosion and Sediment Control Plan
 - Landscape Plan
 - Cross Sections and Profiles
 - Detail Sheets
- Stormwater Pollution Prevention Plan (SWPPP) sent to the Town October 14, 2025
- Joint Application and Permit Documents sent to the Town October 14, 2025

5.7 TASK 7 – COORDINATED FINAL REVIEW MEETING

- Meeting held on October 16, 2025. Meeting Summary emailed to project partners and attendees.

See Appendix C for Meeting Minutes.

5.8 TASK 8 – ENVIRONMENTAL PERMIT APPLICATIONS

- Completed permit package including supporting documents and any local, state and federal agency applications for permits or approvals submitted to the Town October 31, 2025

See Appendix E for Supplemental Environmental Permitting Information.

5.9 TASK 9 – FINAL ENGINEERING AND IMPLEMENTATION PLAN

- Final stamped Engineering Drawings submitted to the Town October 31, 2025
- Specifications and Bid Documents submitted to the Town October 31, 2025
- Stormwater Pollution Prevention Plan submitted to the Town October 31, 2025
- Implementation Plan incorporated in the Final Project Report and Construction Sequence included in the engineering drawings.

5.10 TASK 10 PROJECT MEETINGS AND QUARTERLY REPORTS

- Quarterly Reports documenting progress on each task for each quarter contracted completed January 10, 2025, April 10, 2025, July 9, 2025, October 9, 2025, and October 31, 2025.
- Additional formal coordination meetings held June 6, 2025, and July 23, 2025

See Appendix C for Meeting Minutes.

6. CONCLUSIONS

The Henry Hudson Park Shoreline Restoration Project successfully produced a stamped engineering plan set and permit package that meets the Town of Bethlehem's objectives, NYSDEC goals, and state coastal management requirements. The project integrated desktop research, prior studies, field investigations, and geotechnical evaluations, resulting in a design that balances ecological restoration with recreational use. Key lessons learned include the value of early and ongoing coordination with regulatory agencies and the public. These insights provide a strong foundation for future restoration efforts and demonstrate effective strategies for achieving both environmental and community objectives

Future work will focus on advancing the Henry Hudson Park shoreline restoration from project design to construction, including submitting and obtaining the prepared permits. Post-construction monitoring and adaptive management will evaluate shoreline stability, vegetation establishment, ensuring long-term project success. Public engagement and educational initiatives align with the Town of Bethlehem's Local Waterfront Revitalization Program and will further support community and ecological objectives. These efforts will advance both site-specific restoration goals and NEIWPC's broader water program priorities.

In order to aid the Town of Bethlehem to advance the project to construction, a Grant Funding Spreadsheet has been prepared and included in Appendix H to outline potential funding opportunities. This project is well-positioned for implementation under both NYSDEC's Local Waterfront Revitalization Program for Implementation and Resilient Watersheds Grant (RWG) Program. The Henry Hudson Park Shoreline Restoration Project aligns closely with the eligibility criteria and objectives of both grant programs.

7. REFERENCES

New York State Department of Transportation (NYSDOT). (n.d.). *Bank and Channel Protective Lining Procedures*.

New York State Department of Transportation (NYSDOT). (n.d.). *Geotechnical Design Manual*.

Alden Research Laboratory, Inc. (March 2006). *Hudson River Shoreline Restoration Alternatives Analysis*. NYSDEC.

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Sotir, R., & Fischenich, C. (November 2007). *Live Stake and Joint Planting for Streambank Erosion Control*. US Army Engineer Research and Development Center, Environmental Laboratory.

The Town of Bethlehem. (March 2022). *Local Waterfront Revitalization Program*. The Town of Bethlehem: Resolution No. 2021-013.

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United STate Department of Agriculture, Natural Resources Conservation Service. (n.d.). *Part 633 National Engineering Handbook, Gradation Design of Sand and Gravel Filters (Chapter 26)*.

United States Army Corp of Engineers. (n.d.). *Engineering Manual for Hydraulic Design of Flood Control Channels (EM 1110-2-1601)*.

United States Army Corp of Engineers. (n.d.). *Engineering Manual for Slope Stability (EM 1110-2-1902)*.

8. APPENDICES

APPENDIX A: LIST OF ACRONYMS

APPENDIX B: LOCATION MAP

APPENDIX C: MEETING MINUTES

APPENDIX D: PUBLIC PARTICIPATION DOCUMENTATION

APPENDIX E: SUPPLEMENTAL ENVIRONMENTAL PERMIT INFORMATION

APPENDIX F: SUPPLEMENTAL GEOTECHNICAL MATERIAL

APPENDIX G: SITE PHOTOGRAPHS

APPENDIX H: GRANT FUNDING PROGRAMS

APPENDIX A:

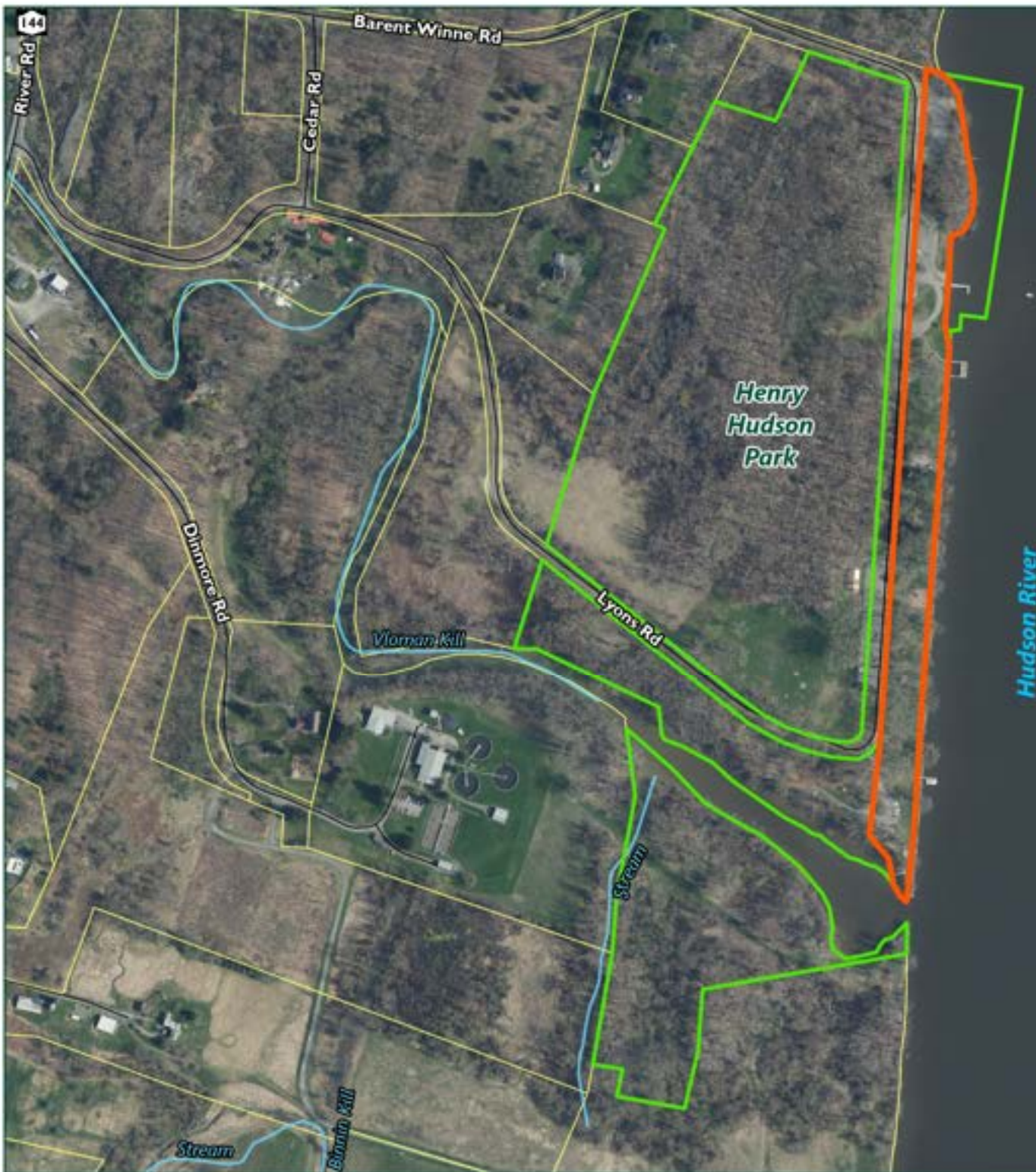
List of Acronyms

Acronym Full Term

BGS	Below Ground Surface
DEC	Department of Environmental Conservation (New York State)
ERM	NYSDEC Environmental Resource Mapper
EAf	State Environmental Assessment Form Mapper
FCAF	Federal Coastal Zone Management Act
FS	Factor of Safety
GPI	Greenman-Pedersen, Inc.
HREP	Hudson River Estuary Program
LWRP	Town of Bethlehem's approved Local Waterfront Revitalization Program
MHW	Mean High Water
MLW	Mean Low Water
NEIWPCC	Northeast Interstate Water Pollution Control Commission
NERR	National Estuarine Research Reserve
NOAA	National Oceanic and Atmospheric Administration
NMFS	National Marine Fisheries Service
NYSDOS	New York State Department of State
NYSDOT	New York State Department of Transportation
OHW	Ordinary High Water
PGA	Peak Ground Acceleration
PM	Project Manager
PPP	Public Participation Plan
QAPP	Quality Assurance Project Plan
QA/QC	Quality Assurance / Quality Control
QM	Quality Manager
SAV	Submerged Aquatic Vegetation
SCO	NYS Soil Cleanup Objective
SHPO	State Historic Preservation Office
SPDES	State Pollutant Discharge Elimination System
SPT	Standard Penetration Test
SWPPP	Stormwater Pollution Prevention Plan
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
VWPT	Vessel Wake Prediction Tool

APPENDIX B:

Location Map



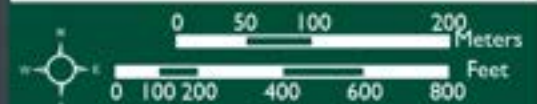
Henry Hudson Park (HHP) Shoreline Stabilization Project Town of Bethlehem Albany County, New York

Project Location

Legend

- HHP Shoreline Project Area
- HHP Parkland Boundary
- Mapped Streams
- Approximate Parcel Boundary

Regional Location



Produced For Planning Purpose Only. Data provided
by NYS GIS Clearinghouse & Other Third Parties.
Export Date: 12/5/2024

APPENDIX C:

Meeting Minutes

PROJECT KICKOFF MEETING

Meeting Date: 4/22/2025 @ 11:00am – 1:00pm

Project Name: Henry Hudson Park Shoreline Stabilization Project

NEIWPCC Job Code: 0100-183-002

GPI Project Number: ALB-2400035.01

Client Name: Town of Bethlehem

Project Team:

Attended Meeting	Project Role	Name	Organization	E-Mail	Phone Number
☐	Program Manager	Emily Bialowas	NEIWPCC	ebialowas@neiwpcc.org	978-349-2531
☒	NYSDEC Project Manager	Daniel Miller	NYSDEC/HRCP	daniel.miller@dec.ny.gov	845-889-4745 Ext.110
☒	Project Manager (PM)	Ryan Trunko	GPI	rtrunko@gpinet.com	518-898-9551
☒	Project Director (PD)	John Simkulet	GPI	jsimkulet@gpinet.com	518-898-9544
☐	Quality Manager (QM)	Amanda Kinley	GPI	akinley@gpinet.com	518-898-9547
☐	Lead Environmental Scientist	Kurt Weiskotten	GPI	kweiskotten@gpinet.com	518-898-9553
☒	Lead Geotechnical Engineer	Stephan Wise	GPI	swise@gpinet.com	518-898-9503
☒	Driller	Joe Bellucci	Core Down Drilling	Joe.coredowndrilling@gmail.com	845-661-7164
☒	Bethlehem Point-of-Contact Town Engineer	Eric Johnson	Bethlehem	ejohnson@townofbethlehem.org	518-439-4955 Ext 1140
☒	Town Supervisor	David VanLuven	Bethlehem	dvanluven@townofbethlehem.org	518-439-4955
☒	Town Planning	Rob Leslie	Bethlehem	rleslie@townofbethlehem.org	518-439-4955 Ext 1157
☒	Town Parks & Rec	Jason Gallo	Bethlehem	jgallo@townofbethlehem.org	518-439-4955 Ext 1604

Project Summary:

The proposed project is located in Henry Hudson Park, which is located at 157 Lyons Road in the Hamlet of Selkirk, Town of Bethlehem, and Albany County NY. The Henry Hudson Park serves as the Town's only public

PROJECT KICKOFF MEETING

access point to the Hudson River and provides the public with a boat launch, picnic areas, a playground, accessible fishing platform, kayak launch, gazebo, pavilion and several fields and courts for active recreation. The existing timber crib bulkhead is in poor conditions and has failed in a number of areas, causing erosion of the adjacent upland in varying levels of severity. The primary objective of this project is to advance the Goal of the Hudson River Action Agenda by ensuring the community is a “thriving, resilient model for adapting to climate change, using natural, nature based, and socially equitable solutions

Grant: This project was awarded a \$184,000 grant through NEIWPCC on behalf of the Hudson River Estuary Program.

Contract Documents: Status:

- GPI Prime Agreement – Executed 9/25/2024
- GPI Insurance – Submitted and Accepted
- Core Down Drilling – Subconsultant Agreement and Insurance submitted for review by NEIWPCC and NYSDEC. Needs to be executed.
- Survey Subconsultant Agreement is forthcoming.

Communication:

- Ryan Trunko (PM) will be the Point of Contact for the Project
- Discussed monthly coordination meeting, first meeting held week of May 26th, 2025.
- Meeting Minutes will be prepared by GPI after each meeting and distributed by email to Project Team.
- Quarterly Reports will be prepared by GPI and submitted to NEIWPCC and NYSDEC.
- Email is the preferred form of communication.
- Large files transfer: Microsoft OneDrive to be used, set up by GPI.

Quality:

- This Project has a specific Quality Assurance Project Plan (QAPP)
 - Current Version 1.2
 - PM responsible for maintaining and distributing revisions of document to project team.
 - Anticipated revision once Surveyor subconsultant is brought on board.
- PM will be responsible for performing quality reviews and documentation.
- QM is responsible for overseeing and supporting PM with QAQC procedures and review.
- Subconsultants are required to comply with QAPP.
- Discuss estimated review times of project materials
 - Town 2 weeks
 - NYSDEC/NEIWPCC Submit parallel with Town
 - Regulatory: Anticipate long lead times with ACOE, reach out early

PROJECT KICKOFF MEETING

Protocols/Standards:

- Project filing and documentation
 - Digital files of all data, reports, plans will be maintained on GPI's secure servers for the duration of the project and a minimum of 7 years post completion.
- CAD Standards
 - AutoCAD Civil3D 2023 or newer
 - Will follow National Cad Standards, V6
 - Sheet Size: 24"x36"
- See QAPP for standards and procedures for data collection

Public Outreach:

- GPI will be preparing a Public Participation Plan (PPP) that outlines the public outreach and involvement in the project. The PPP document will identify the project Stakeholders and contact information, identify public outreach efforts, project website, and anticipated promotion materials.
 - Targeting May 9th submittal for project Team review
- Project website prepared using Microsoft Sway, Town to post link.
 - **GPI to investigate management of project website at completion of project to include in the PPP.**
- Anticipate 2 public meetings
 - 1st Meeting will be presented at a location near the project site determined by the Town. Presentation will show the proposed concept plan after completion of site work. Looking for public feedback on park usage and desired elements.
 - 2nd Meeting to present completed project at a Town Board meeting and identify how public comments influenced design elements. Town Board meets 2nd and 4th Wednesday each month.
- Signs to be posted at job site with QR link to project website and comment submittal email. **GPI will prepare project signs and provide to Town for posting.**

Upcoming Site Work:

- There are no concerns with GPI personnel or subcontractors accessing the site.
- Site security from park users will be addressed by sectioning off the daily work area during drilling work.
 - **Town Parks Department to provide temporary wooden barriers and/or cones for work area.** Field personnel to move temporary barricades each day to active drilling areas.
 - **Town to post notices at project site in advance of fieldwork**
- Town and NYSDEC raised concerns about field work being competed during fishing season.
 - Concern for Striped Bass and Atlantic Sturgeons which arrive early spring

PROJECT KICKOFF MEETING

- Bathymetric Survey will be by boat and will need unrestricted access to shoreline. May need to post No Fishing day or survey operations.
 - Geotechnical investigation to be completed during the middle of the week to minimize fishing impacts
- Environmental Surveys
 - Scheduled week of May 5th
- Geotechnical Investigation
 - Core Down Drilling scheduled May 13th – May 16th
 - Overseen by Stephen Wise, PE, GPI's geotechnical engineer.
 - Chain of Custody for must be completed for samples
 - Responsible for any turf restoration if required.
- Access to water needed for drilling
 - Filling from Hydrants not allowed. Can fill at Town Highway Garage (74 Elm Ave E, Selkirk, NY 12158), will need a no cost permit from DPW. **GPI to coordinate and submit permit with Core Down Drilling.**
- Topographic and Bathymetric Surveys
 - TBD

Invoicing Process:

- Now that the QAPP is approved, GPI will need to submit the first invoice
- Invoice procedure to send to Emily Bialowas and Dan Miller for review and approval.
- No special forms required, must include information outlined in the Standard Agreement.
- Tasks must be completed before payment is sought and no partial payment will be awarded.
- Final Invoice is contingent on receipt of the approved Final Report
- Retention of Records for Audit Purposes for minimum 3-years.

Project Closeout:

- GPI will prepare a Final Project Report summarizing the project
- All digital files to be transferred to Town and NYSDEC
- Town to received up to 4 printed copies of the final project documents.

Discussion on Possible Problems:

- Project field work is starting later than anticipated and overall project schedule may be a concern.
 - NYSDEC clarified Nov 30th 2025 is a hard date for completion based on contract terms.

PROJECT KICKOFF MEETING

Scope and Schedule:

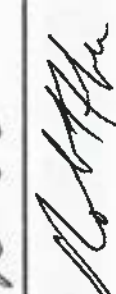
Task #	Task Title	Objective	Deliverable or Output	Timeline
A	Develop the QAPP	Prepare a quality assurance project plan (QAPP) that follows NEIWPCC Guidelines	QAPP Approval	Months #1-#3
B	Review Existing Information	Review preliminary plans and existing data, documentation, and reports provided by the Town of Bethlehem as well as natural resource information from publicly available sources.	Existing conditions memo identifying site constraints and features (1-3 pgs.)	Month #3
C	Coordinate Project Kick-off Meeting	Coordinate and host a project kick-off meeting attended by municipal representatives, and the NYSDEC Hudson River Estuary Program	Meeting summary emailed to attendees and project partners	Month #3
D	Site Assessment and Sampling	Complete topographic survey, soil borings, plant and animal screening, wetlands, and water delineations	Topographic survey map, soil investigation report, and supplemental environmental info for final report	Months #3 - #5
E	Concept Plan Development	Prepare a concept plan based off the completed field work and receive initial feedback from regulatory agencies and the public	Concept Plan, Pre-application field meeting with regulatory agencies. Hold public meeting for public input	Month #5
F	Develop and Deliver a Draft Engineering and Implementation Plan	Prepare draft engineering plans, specification (spec) sheets, bid documents, a Joint Application Form, and any other materials needed for environmental permitting for review by the NEIWPCC, NYSDEC Hudson River Estuary Program, and the Town of Bethlehem	Draft Engineering and implementation Plan including draft sheet drawings and permit materials emailed to project partners.	Months #6-#8
G	Coordinate Final Review Meeting	Deliver a presentation and review of draft deliverables to NEIWPCC, NYSDEC Hudson River Estuary Program, and the Town of Bethlehem	Meeting summary emailed to attendees and project partners.	Month #8
H	Prepare Applications for all Environmental Permits	Prepare permit materials required by local, state, and federal agencies, for eventual submittal by the Town of Bethlehem to the permitting authorities.	Completed Joint Application and supporting materials emailed to project partners.	Months #9 & #10

PROJECT KICKOFF MEETING

I	Final Engineering Documents And Implementation Plan	Develop final documents upon approval of draft materials (Tasks F & H) by HREP staff and the Town of Bethlehem.	4 printed sets (and 1 digital set) of all final materials will be delivered to the Town of Bethlehem. Send digital set to NEIWPPC	Months #8-#10
J	Quarterly Reports	Prepare and submit brief quarterly reports by April 10 for January-March, by July 10 for April-June, by October 10 for July-September, and by January 10 for October-December	Quarterly reports documenting progress on each task for each quarter contracted.	Months #1-#10
K	Final Report	Prepare and submit a final report	Final report, including an executive summary, fully documenting the project outputs and results	Oct. 31, 2025

MEETING ATTENDANCE SHEET

Page 1

Location:	Date: 4/22	Time: 11:00am	Project Name: Henry Hudson Park Shoreline Stabilization	GPI #:	
Client:	Client Project #:				
Description:					
Name & Title		Signature	Representing	E-Mail Address	Telephone
Name: Ryan Trunko	Project Manager		GPI	E-Mail: rtrunko@gpinc.com	Daytime: 518-898-9551
Title:					
Name: John Sankner	Project Director		GPI	E-Mail: jsankner@gpinc.com	Daytime: 518-898-9844
Title:					
Name: Joe Bellucci	Driller		CDD	E-Mail: joe.coredawn@drilling.com	Daytime: 845-661-7164
Title:					
Name: Jason Cella			Parks & Rec	E-Mail: sgrove@townofbellknap.org	Daytime: 518-439-4959
Title:					
Name: David VanLoven	Town Supervisor		Town	E-Mail: dvanloven@townofbellknap.org	Daytime:
Title:					
Name: Eric Johnson	Town Engineer		TOB	E-Mail: ejohnson@townofbellknap.org	Daytime: 518-439-4955
Title:					
Name: Van Miller	NYS DEC/HREP		DEC/HREP	E-Mail: daniel.miller@nydec.gov	Daytime: 845-889-4745
Title:					
Name: Rob Heslie	Director of Planning		TOB	E-Mail: rheslie@townofbellknap.org	Daytime: 518-439-4955
Title:					

PROGRESS MEETING

Meeting Date: 6/26/2025 @ 2:30pm – 3:00pm

Project Name: Henry Hudson Park Shoreline Stabilization Project

NEIWPCC Job Code: 0100-183-002

GPI Project Number: ALB-2400035.01

Client Name: Town of Bethlehem

Project Team:

Attended Meeting	Project Role	Name	Organization	E-Mail	Phone Number
☐	Program Manager	Emily Bialowas	NEIWPCC	ebialowas@neiwpcc.org	978-349-2531
☒	NYSDEC Project Manager	Daniel Miller	NYSDEC/HRCP	daniel.miller@dec.ny.gov	845-889-4745 Ext.110
☒	Project Manager (PM)	Ryan Trunko	GPI	rtrunko@gpinet.com	518-898-9551
☐	Project Director (PD)	John Simkulet	GPI	jsimkulet@gpinet.com	518-898-9544
☐	Quality Manager (QM)	Amanda Kinley	GPI	akinley@gpinet.com	518-898-9547
☐	Lead Environmental Scientist	Kurt Weiskotten	GPI	kweiskotten@gpinet.com	518-898-9553
☐	Lead Geotechnical Engineer	Stephan Wise	GPI	swise@gpinet.com	518-898-9503
☒	Bethlehem Point-of-Contact Town Engineer	Eric Johnson	Bethlehem	ejohnson@townofbethlehem.org	518-439-4955 Ext 1140
☒	Town Supervisor	David VanLuven	Bethlehem	dvanluven@townofbethlehem.org	518-439-4955
☒	Town Planning	Rob Leslie	Bethlehem	rleslie@townofbethlehem.org	518-439-4955 Ext 1157
☒	Town Parks & Rec	Jason Gallo	Bethlehem	jgallo@townofbethlehem.org	518-439-4955 Ext 1604

PROGRESS MEETING

Overall Project Status:

Task	Performance Measure / Deliverable / Product	Status	% Complete - Total
1. Quality Assurance Project Plan (QAPP)	1. Approved and Signed QAPP	Rev 1.3 needs to be finalized	90
2. Review Existing Info	1. Submit Findings Memo	Completed	100
3. Kick-Off Meeting	1. Meeting attendance and submit meeting minuets	Completed	100
4. Public Participation Plan	1. Public Participation Plan	GPI to send out final copy.	40
	2. Public Project Website	Need to prepare	
	3. Public Meeting and Presentation Materials	Need to schedule public information meeting	0
5. Site Investigation	1. Topographic and bathymetric survey	Reviewing info and will be finalized by 7/3	85
	2. Geotechnical Investigation Report	Field investigation work complete and samples have been sent to the lab for testing. Waiting on results.	80
	3. Environmental Investigation Memo	Will be submitted by 7/3	80
	4. Existing Conditions Photo Log	Will be submitted by 7/3	90
6. Draft Engineering and Implementation Plan	1. Submit Draft Engineering Drawings	No Started	0
	2. Submit Final Specifications and Draft Contract Documents	No Started	0
	3. Submit Final Implementation Plan	No Started	0

PROGRESS MEETING

7. Coordinated Final Review Meeting	1. Meeting Summary and Plan Mark-up's	No Started	0
8. Environmental Permit Applications	1. Submit draft Joint Application Form and supporting documents	No Started	0
	2. Submit draft SEQR, SHPO, and any other State and Federal permit applications required.	No Started	0
9. Final Engineering and Implementation Plan	1. Submit Final Engineering Drawings	No Started	0
	2. Submit Final Specifications and Draft Contract Documents	No Started	0
	3. Submit Final Implementation Plan	No Started	0
	4. Submit final Joint Application and environmental permit applications	C	0
10. Project Meetings and Quarterly Reports	1. Quarterly Reports	Quarterly Report 3 to be submitted by 7/10	40
11. Final Report	1. Submit Project Final Report	No Started	0

Public Outreach:

- Project website prepared using Microsoft Sway, Town to post link.
 - Concerns of SWAY have been raised and alternative website hosting needs to be investigated
 - **GPI to look into Square Space, GoDaddy, or other similar domains for website.**
- **Need to schedule 1st Public Meeting:** will be presented at a location near the project site determined by the Town. Presentation will show the proposed concept plan after completion of site work. Looking for public feedback on park usage and desired elements.
 - Anticipated first week in August. **Jason Gallo** to review schedule for Aug 4 & 5 as potential days. It was discussed having 2 presentations on same day, one at 2:00pm and

PROGRESS MEETING

the second at 6:00pm at the Henry Hudson Park Pavilion.
Pavilion does not have lights but has power.

- Signs to be posted at job site with QR link to project website and comment submittal email. **Project signs have been prepared but need to figure out website for QR link.**

Projected Work:

- Task 5 – Site Investigation
 - Survey plans submission 7/3
 - Photo Log submission 7/3
 - Environmental Memo Submission 7/3
 - Geotechnical Memo and lab results - TBD
- Task 6 – Draft Engineering Plans
 - Prepare coordinated concept plans and present at public information meeting
- Task 8 – Environmental Permit Applications
 - Application forms will be initiated and finalized when design plans are agreed upon.
 - Schedule pre-application meeting with NYSDEC.

Next Coordination Meeting: July 23, 2025 at 1:00pm

PROGRESS MEETING

Meeting Date: 7/23/2025 @ 1:00pm – 1:30pm

Project Name: Henry Hudson Park Shoreline Stabilization Project

NEIWPCC Job Code: 0100-183-002

GPI Project Number: ALB-2400035.01

Client Name: Town of Bethlehem

Project Team:

Attended Meeting	Project Role	Name	Organization	E-Mail	Phone Number
☐	Program Manager	Emily Bialowas	NEIWPCC	ebialowas@neiwpcc.org	978-349-2531
☒	NYSDEC Project Manager	Daniel Miller	NYSDEC/HRCP	daniel.miller@dec.ny.gov	845-889-4745 Ext.110
☒	Project Manager (PM)	Ryan Trunko	GPI	rtrunko@gpinet.com	518-898-9551
☐	Project Director (PD)	John Simkulet	GPI	jsimkulet@gpinet.com	518-898-9544
☐	Quality Manager (QM)	Amanda Kinley	GPI	akinley@gpinet.com	518-898-9547
☐	Lead Environmental Scientist	Kurt Weiskotten	GPI	kweiskotten@gpinet.com	518-898-9553
☐	Lead Geotechnical Engineer	Stephan Wise	GPI	swise@gpinet.com	518-898-9503
☒	Bethlehem Point-of-Contact Town Engineer	Eric Johnson	Bethlehem	ejohnson@townofbethlehem.org	518-439-4955 Ext 1140
☒	Town Supervisor	David VanLuven	Bethlehem	dvanluven@townofbethlehem.org	518-439-4955
☒	Town Planning	Rob Leslie	Bethlehem	rleslie@townofbethlehem.org	518-439-4955 Ext 1157
☒	Town Parks & Rec	Jason Gallo	Bethlehem	jgallo@townofbethlehem.org	518-439-4955 Ext 1604

PROGRESS MEETING

Overall Project Status:

Task	Performance Measure / Deliverable / Product	Status	% Complete - Total
1. Quality Assurance Project Plan (QAPP)	1. Approved and Signed QAPP	Rev 1.3 has been finalized and issued.	90
2. Review Existing Info	1. Submit Findings Memo	Completed	100
3. Kick-Off Meeting	1. Meeting attendance and submit meeting minuets	Completed	100
4. Public Participation Plan	1. Public Participation Plan	Submitted to project partners	100
	2. Public Project Website	Submitted for review	80
	3. Public Meeting and Presentation Materials	Need to schedule public information meeting	0
5. Site Investigation	1. Topographic and bathymetric survey	GPI needs to issue survey	95
	2. Geotechnical Investigation Report	Field investigation work complete and samples have been sent to the lab for testing. Waiting on results.	80
	3. Environmental Investigation Memo	Comments received and needs to update to finalize	90
	4. Existing Conditions Photo Log	Has been submitted with the investigation memo	100
6. Draft Engineering and Implementation Plan	1. Submit Draft Engineering Drawings	Concept started	10
	2. Submit Final Specifications and Draft Contract Documents	Not Started	0
	3. Submit Final Implementation Plan	Not Started	0

PROGRESS MEETING

7. Coordinated Final Review Meeting	1. Meeting Summary and Plan Mark-up's	Not Started	0
8. Environmental Permit Applications	1. Submit draft Joint Application Form and supporting documents	Not Started	0
	2. Submit draft SEQR, SHPO, and any other State and Federal permit applications required.	Not Started	0
9. Final Engineering and Implementation Plan	1. Submit Final Engineering Drawings	Not Started	0
	2. Submit Final Specifications and Draft Contract Documents	Not Started	0
	3. Submit Final Implementation Plan	Not Started	0
	4. Submit final Joint Application and environmental permit applications	Not Started	0
10. Project Meetings and Quarterly Reports	1. Quarterly Reports	Quarterly Report 3 has been submitted	40
11. Final Report	1. Submit Project Final Report	Not Started	0

Public Outreach:

- Public Participation Plan (PPP) submitted to the Town for final review. Document will be removed from project website and kept internal.
 - Final comments to be returned to GPI by Aug. 1st, 2025.**
 - GPI will remove the PPP from the project website and kept internal.**
- Project website updates, flyer, and comment form prepared by GPI has been submitted Town for final review.
 - Final comments to be returned to GPI by Aug. 1st, 2025.**
- Once final comments have been addressed, GPI to make the project website live and notify project team.
 - Town to post project flyer at Henry Hudson Park, Town Hall, and any additional public notification boards. Project flier**

PROGRESS MEETING

and website to be advertised through the Towns social media.

- 1st Public Presentation meeting scheduled in the meeting for September 9th 2025. It was discussed having 2 presentations on same day, a more formal presentation at 6:00pm at the Henry Hudson Park Pavilion and an “open House” style earlier in the day to capture users of the park. The presentation will show the proposed concept plan. Looking for public feedback on park usage and desired elements.
 - **Jason Gallo** to provide the best meeting time during the day to GPI.
- Begin advertising for the public meeting by August 19th 2025 which includes:
 - **GPI to post the Presentation Plan on the project website**
 - **GPI will update project website to direct visitors to the concept plan and advertise the public meeting on the homepage banner.**
 - **GPI to prepare a new project flyer for the public information meeting and provide to the Town for advertisement.**
 - **Town to advertise public information meeting using fliers and social media.**

Projected Work:

- Task 5 – Site Investigation
 - Environmental Memo updates
 - Geotechnical Memo and lab results - TBD
- Task 6 – Draft Engineering Plans
 - Prepare coordinated concept plans by **August 15th 2025**
- Task 8 – Environmental Permit Applications
 - Application forms will be initiated and finalized when design plans are agreed upon.
 - Schedule pre-application meeting with NYSDEC.

Next Coordination Meeting: August 20th 2025 at 1:00pm

COORDINATED REVIEW MEETING

Meeting Date: 10/16/2025 @ 10:00am – 12:00pm

Project Name: Henry Hudson Park Shoreline Stabilization Project

NEIWPCC Job Code: 0100-183-002

GPI Project Number: ALB-2400035.01

Client Name: Town of Bethlehem

Project Team:

Attended Meeting	Project Role	Name	Organization	E-Mail	Phone Number
☐	Program Manager	Emily Bialowas	NEIWPCC	ebialowas@neiwpcc.org	978-349-2531
☒	NYSDEC Project Manager	Daniel Miller	NYSDEC/HRCP	daniel.miller@dec.ny.gov	845-889-4745 Ext. 110
☒	NYSDEC	Heather Gierloff	NYSDEC	heather.gierloff@dec.ny.gov	
☒	Project Manager (PM)	Ryan Trunko	GPI	rtrunko@gpinet.com	518-898-9551
☐	Project Director (PD)	John Simkulet	GPI	jsimkulet@gpinet.com	518-898-9544
☐	Quality Manager (QM)	Amanda Kinley	GPI	akinley@gpinet.com	518-898-9547
☐	Lead Environmental Scientist	Kurt Weiskotten	GPI	kweiskotten@gpinet.com	518-898-9553
☐	Lead Geotechnical Engineer	Stephan Wise	GPI	swise@gpinet.com	518-898-9503
☒	Project Engineer	Elizabeth Donner	GPI	edonner@gpinet.com	518-898-9557
☒	Bethlehem Point-of-Contact Town Engineer	Eric Johnson	Bethlehem	ejohnson@townofbethlehem.org	518-439-4955 Ext 1140
☒	Town Supervisor	David VanLuven	Bethlehem	dvanluven@townofbethlehem.org	518-439-4955
☒	Town Planning	Rob Leslie	Bethlehem	rleslie@townofbethlehem.org	518-439-4955 Ext 1157
☒	Town Parks & Rec	Jason Gallo	Bethlehem	jgallo@townofbethlehem.org	518-439-4955 Ext 1604

COORDINATED REVIEW MEETING

Public Outreach:

- Public Presentation meeting scheduled and held September 9th 2025. Two presentations were held at the Henry Hudson Park Pavilion with an “Open House” style at 10AM to capture users of the park and followed by a more formal presentation at 5PM. The presentation showed the proposed concept plan. Public Feedback indicated:
 - **Ensure Park stays fisherman friendly – incorporate “steps” down the riprap for ease of access**
 - **Ensure river views aren’t lost – chose low growing plants for the joint planting sections**
- Final project presentation will be held at the 10/22/2025 Town Board Meeting

Regulatory Outreach:

- Met onsite, October 7, 2025, with representatives from NYSDEC (Theresa Swenson and Carrick Palmer) and NYSDOS (Tanna Legere). Comments and recommendations:
 - **Add joint plantings wherever the “stepped” approach is not used**
 - **Consider using biodegradable geotextile fabric**
 - **SAV habitat may be present, a survey may be required**
 - **Mussels may be present, a survey may be required**
 - **Work windows were discussed for Eagles, Sturgeon**
 - **Work should not take place beyond the historical location of the timber cribbing. If work has to take place beyond timber cribbing a justification must be made**
- USACE could not attend onsite meeting, but Sarah Montero provided comments and recommendations:
 - **NWP 27 may be the best fit for the project**
 - **MWH mark is needed and impacts for work below must be provided**
 - **Tree survey is required**
 - **SHPO coordination required**

Coordinated Review Meeting Minutes - Project Edits/Notes:

- Cover
 - Include Town of Bethlehem logo and information
- General Site Notes
 - Add barge work considerations
 - Update in-water work for sturgeon season
 - Elaborate the construction sequencing notes
- Existing Conditions Plan
 - Update location and size of Town of Bethlehem Seasonal Dock

COORDINATED REVIEW MEETING

- Site Layout Plan
 - Concerns with the southern point of the shoreline. Alternative to keeping the cap as is:
 - Provide layout if slope laid back with riprap to match remainder of the shoreline
 - Consider removing and replace the concrete cap
 - Additional interpretive signage for joint planting areas
 - Ensure there is a path between riprap and playground fence
 - Aim for a 1:1 tree removal and replacement
- Typical Sections
 - Recommended to use biodegradable nonwoven geotextile fabric
 - Add additional directions for Joint Plantings
 - Monitoring and maintenance guidance for plantings

Final Town Board Presentation: October 22, 2025, 6:00 PM

APPENDIX D:

Public Participation Documentation



Henry Hudson Park Shoreline Stabilization Design Project

WE WANT TO HEAR FROM YOU

Share your thoughts!

Scan below to
take a brief online
survey



More information about the project can be found in the coming months by visiting <https://henryhudsonshoreline.wixsite.com/henry-hudson-park-sh>

Project Information

- Goal is to stabilize the existing shoreline from erosion consistent with the Henry Hudson Park Shoreline Stabilization Study.
- Collaborate with NYSDEC and other stakeholders to identify the most appropriate stabilization technique that balance ecological health needs, flood resiliency, and recreational use of the waterfront.
- Greenman-Pedersen, Inc. (GPI) hired to identify the preferred alternatives, prepare engineered plans, and pursue the required environmental and construction permit approvals.
- Project received \$184,000 in grant funding from NEIWPCC and NYSDEC Hudson River Estuary Program.
- Next steps will use the engineered plans for shoreline stabilization to apply for construction funding (Phase 2) that will ultimately result in the stabilization of the Henry Hudson Park shoreline (Phase 3).

Project Sponsors



**Department of
Environmental
Conservation**



SAVE THE DATE

Join us in our 1st Public Information Meeting for the Henry Hudson Park Shoreline Stabilization Design Project

Learn about the proposed concept plan for the Henry Hudson Shoreline Stabilization Design Project and help shape its future by sharing your input.

The goal of Phase 1 is to develop a design to stabilize the existing shoreline from erosion consistent with the Henry Hudson Park Shoreline Stabilization Study. Next steps will use the engineered plans for shoreline stabilization, developed by Greenman-Pedersen, Inc., to apply for construction funding (Phase 2) that will ultimately result in the stabilization of the Henry Hudson Park shoreline and construction of park improvements (Phase 3).

Tuesday, September 9th



11:00 AM Open House
6:00 PM Public Presentation



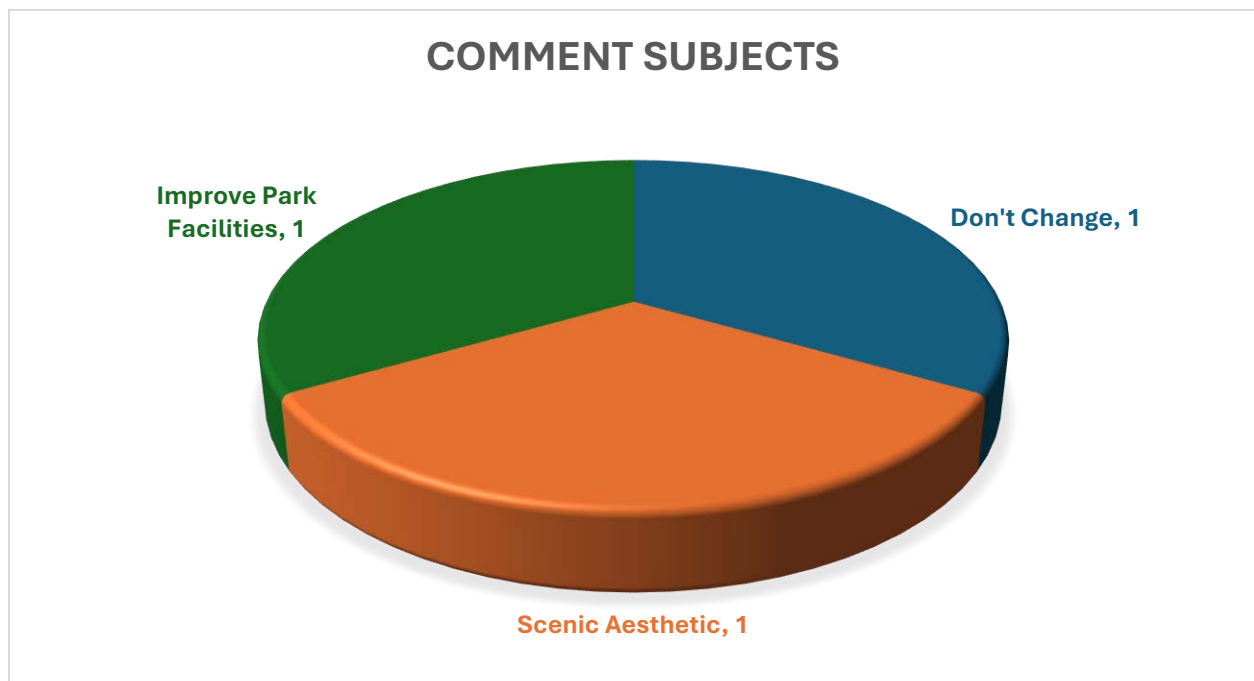
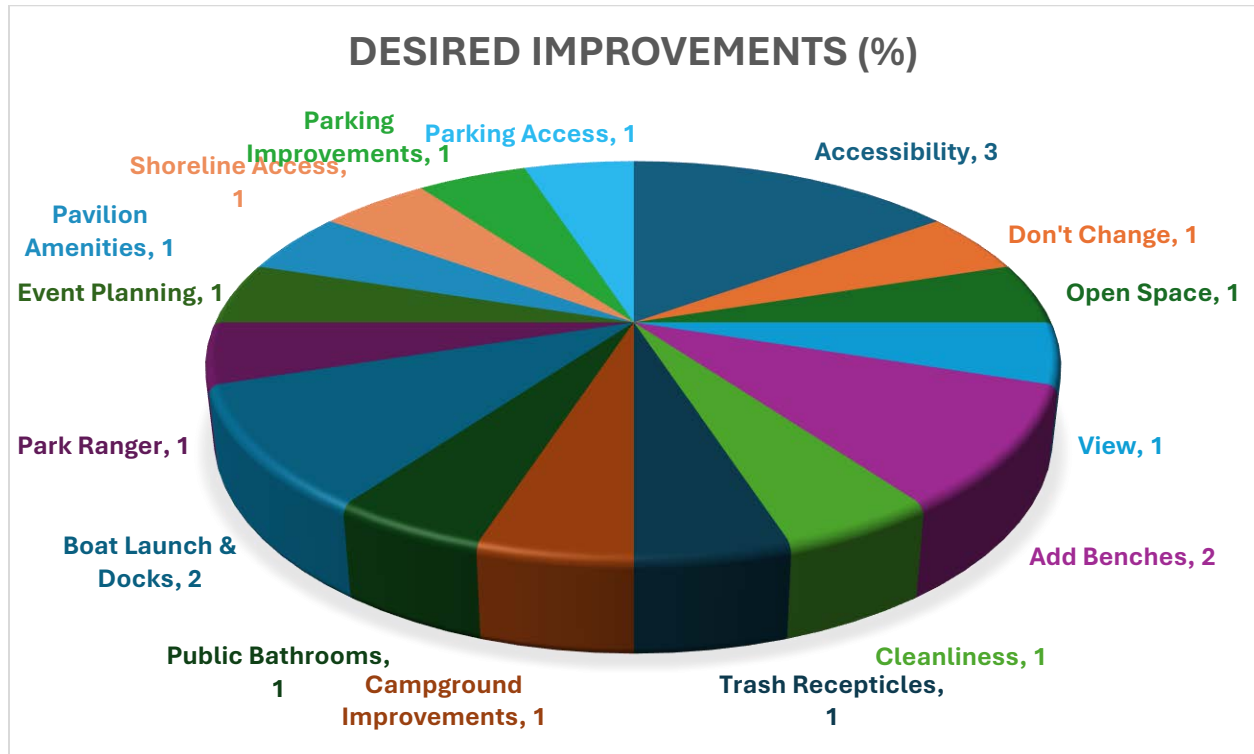
Henry Hudson Park Pavilion
169 Lyons Road
Selkirk, NY 12158

LET'S TALK ABOUT THE PARK. FEEL FREE TO JOIN US FOR ONE OR BOTH SESSIONS.

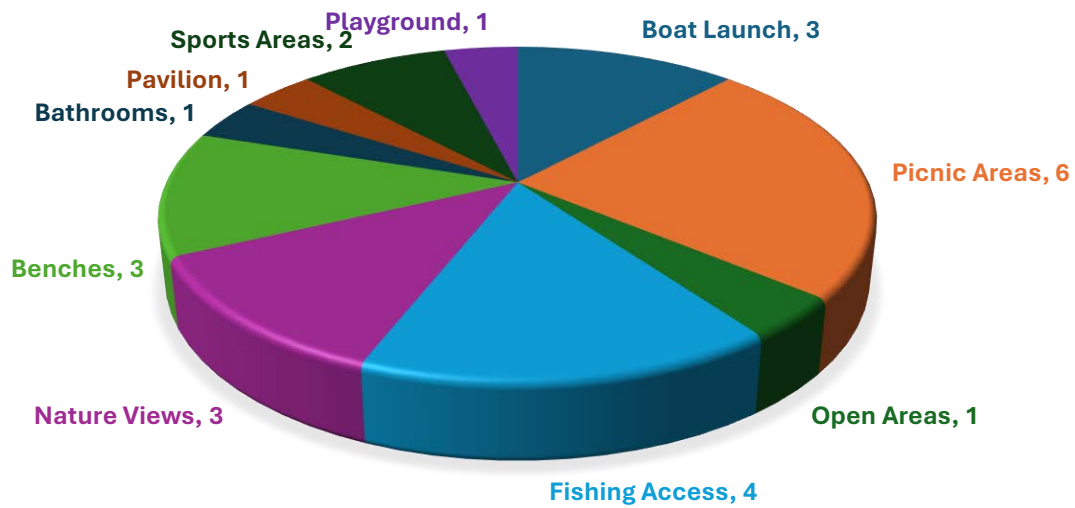
Visit the project website using the QR code below



Public Comments Received from Website and Public Meetings



AMENITIES USED





1 EXISTING CONDITIONS
 FIG. 1.6 SCALE: N/A



2 PROPOSED CONDITIONS
 FIG. 1.6 SCALE: N/A



LOCATION MAP



TOWN OF BETHLEHEM
 445 DELAWARE AVENUE
 DELMAR, NY 12054

NEIWPCC JOB CODE: 0100-183-002
 PROJECT CODE: 2024-011

HENRY HUDSON PARK SHORELINE STABILIZATION PROJECT

RENDER COMPARISON

157 LYONS ROAD, SELKIRK, NY 12158



GREENMAN-PEDERSEN, INC.
 CONSULTING ENGINEERS
 80 WOLF ROAD, SUITE 600
 ALBANY, NY 12205
 TEL: (518) 453-9431
 WWW.GPINET.COM

DRAWN: EJD	CHECK: RJT
DATE: 9/04/2025	SCALE: NOT TO SCALE
PROJECT NO.: ALB-2400035.01	
TITLE: FIG. 1.6	

Town Supervisor
David VanLuven
Town Board Members
Joyce Becker
Maureen Cunningham
David R. DeCancio
Tom Schnurr

TOWN OF BETHLEHEM

Town Board Agenda

Wednesday, October 22, 2025
6:00 PM



I. Pledge of Allegiance

II. Announcements

III. Public Comments

IV. Budget Presentation

1. 2026 Preliminary Budget Presentation.

V. Public Hearings

1. Solicit comment on the renewal of the Spectrum (formerly Time Warner Cable) Franchise Agreement.
2. Solicit comment on the 2026 Preliminary Budget on October 22, 2025, at 6:00pm.

VI. Minutes Approval

1. Town Board - Regular Meeting - Oct 8, 2025 6:00 PM

VII. Line Items

1. Request from the Town Engineer to appoint McKenzie Waufle as a Senior Engineering Technician effective October 27, 2025.
2. The Chief of Police requests the Town Board's approval for the appointment of Robert Geurtze to the position of part-time Telecommunicator, effective October 23, 2025, at an hourly rate of \$25.23.
3. Presentation by GPI Consulting Engineers on the Henry Hudson Park Shoreline Stabilization Project.
4. Presentation on the Capital District Reuse Center effort by the Director of Recycling & Composting and Madison Hrysko of the Capital District Regional Planning Commission.
5. Request from the Commissioner of Public Works to approve the re-levy of delinquent water and sewer rents to taxes and add these to the 2026 property tax bills of the subject property owners.
6. Request from the Recycling & Composting Department for approval to accept a donation of a custom designed and built giant metal catapult with trailer from Andrew Checkeye for use in our annual Pumpkin Smash events.

Meeting of Wednesday, October 22, 2025

7. Request to adopt a resolution requiring the Traffic Safety Team to improve transparency and public input in the development of traffic safety interventions.

VIII. New Business

IX. Adjournment

Henry Hudson Park Shoreline Stabilization Design Project

TOWN OF BETHLEHEM

Town Board Meeting
October 22, 2025

Henry Hudson Park
± 2,500 LF shoreline
157 Lyons Road
Town of Selkirk, NY

NEWIPCC: 0100-183-002
Project Code: 2024-011



Department of
Environmental
Conservation



01 || INTRODUCTION

Project History

Phase 1: Henry Hudson Park Shoreline Design Project

- Northeast Interstate Water Pollution Control Commission (NEIWPCC) in partnership with NYSDEC selected this project for funding under their Community Waterfront Resiliency Design and Permitting Program
- A grant for \$184,000 was received for the below work:
 - Create a Quality Assurance Project Plan (QAPP)
 - Review Existing Information
 - Coordinated Kick-Off Meeting
 - Create a Public Participation Plan and website
 - <https://henryhudsonshoreline.wixsite.com/henry-hudson-park-sh>
 - Site Investigation
 - **Prepare Design Plans and Construction Documents**
 - **Prepare Necessary Environmental Permit Applications**
 - Prepare an Implementation Plan
 - Prepare Quarterly Reports and a Final Engineering Report



GPI

Current Conditions & Concerns



GPI



02 || PUBLIC COMMENTS & FEEDBACK

*Photo Reference:
Presentation at the Henry Hudson Park Pavilion*

What We Heard from You



Public involvement made possible through:

- Website interface
- Online Comment Form
- Project Fliers
- Onsite public meeting

Improving safety and sustainability while addressing what the community values most:

- Maintaining river views
- Providing fishing access

03 || PROPOSED SOLUTIONS

Photo Reference
Comparison rendering

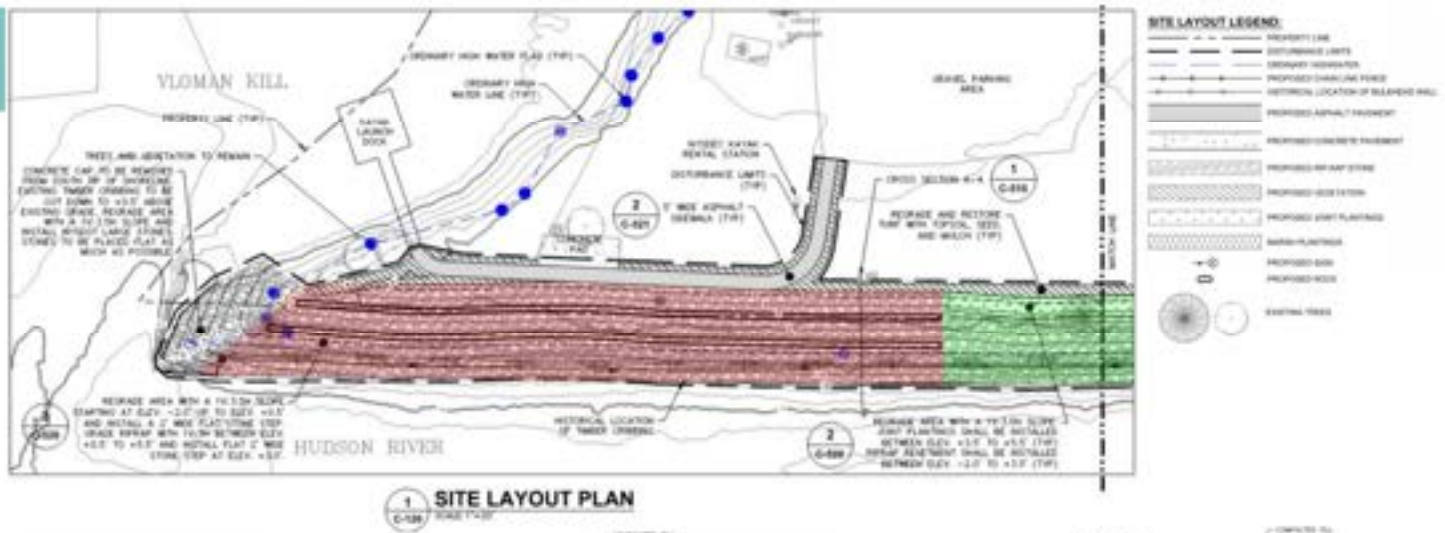


Site Investigation Approach

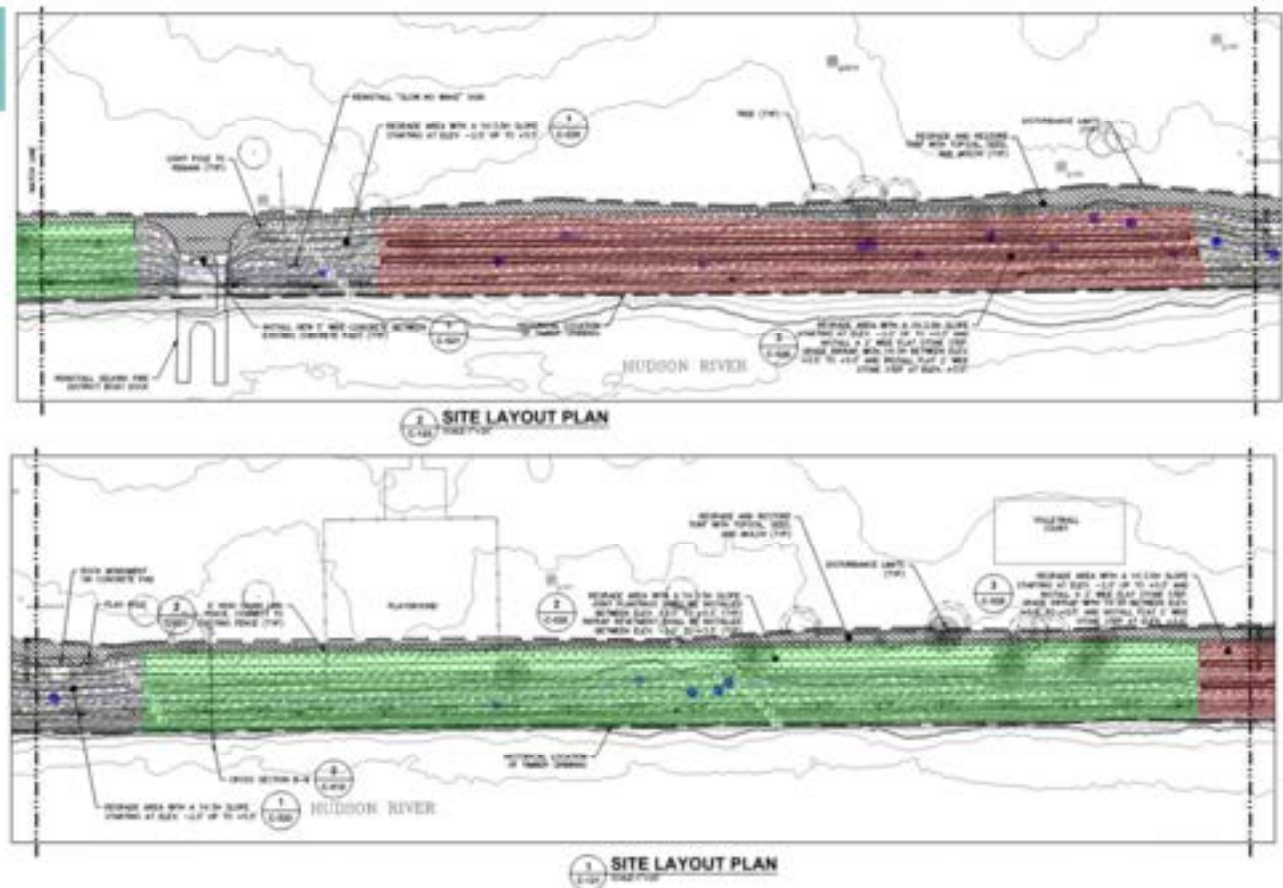


Key Items:

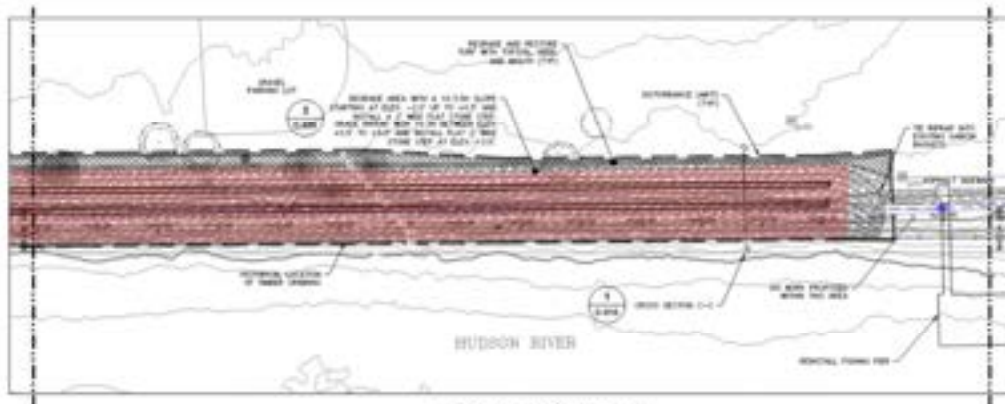
- Review existing reports, including:
 - NYSDEC Hudson River Shoreline Restoration Alternative Analysis
 - Henry Hudson Shoreline Stabilization Study
 - Town of Bethlehem Local Waterfront Revitalization Program
- Investigate soil conditions and assess subsurface stability
- Identify appropriate stabilization methods and locations based on site conditions
- Environmental investigations
- Discuss necessary permits and requirements with regulatory agencies



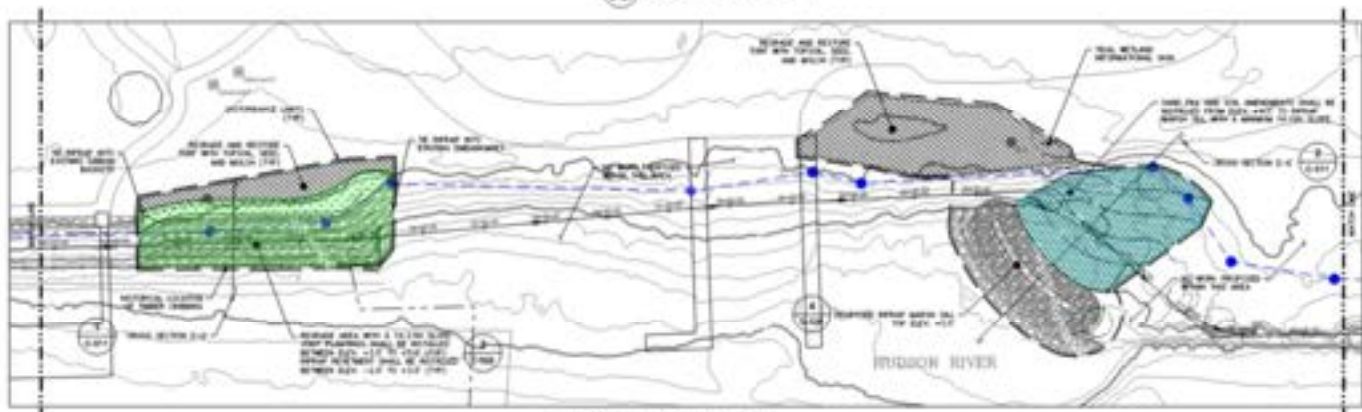
GPI



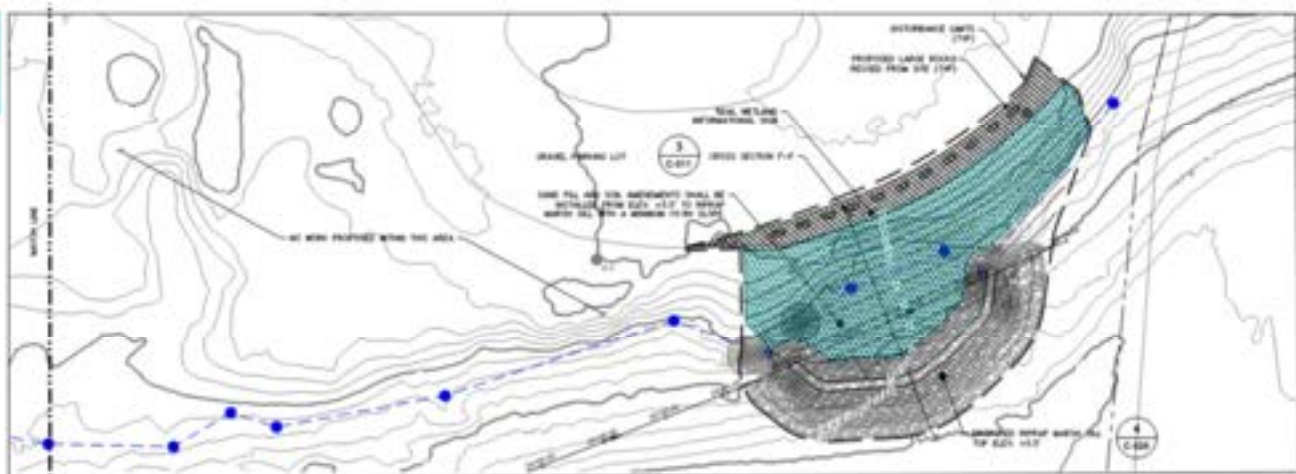
GPI



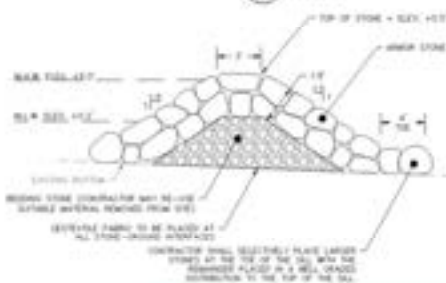
3 SITE LAYOUT PLAN
SHEET 700



1 SITE LAYOUT PLAN
SHEET 700



2 SITE LAYOUT PLAN
SHEET 700



4 TYPICAL RIPRAP MARSH SILL
SHEET 700 TO 701

- NOTES:
1. USE PROBABLY SANDY SOIL AS A SUBSTRATE FOR PLANTS. NO MORE THAN 10% OF THE FILL SUBSTRATE SHOULD CONSIST OF THE STANDARD NUMBER 100 GRADE.
 2. DESIGN AND CONSTRUCT PROJECT TO MEET THE LOW WATER LINE COVERED BY OPEN WATER DURING THE WARM MONTHS.
 3. GRADE USE AT 10% TO 15% TO MEET THE LOW WATER LINE EXTENDED TO THE MEAN LOW WATER LINE.
 4. RETAIN NATURAL BANK VEGETATION AS MUCH AS POSSIBLE. NEW LANE AS NEEDED TO PREVENT SLIDING OF BANK PLANTS.
 5. USE A LOW PROFILE STRUCTURE. DO NOT PLACE ROCK DIRECTLY ON SAND OR SOIL. INSTEAD PLACE BASE OF FILL COMPOSED OF SAND-LINE WATER LINE. USES OF THE FILL SHOULD HAVE AN APPROXIMATE 1:1.5 TO 1.0 RATIO.
 6. THE HEIGHT OF THE FILL SHOULD RANGE FROM 0 TO 1 FOOT ABOVE THE MEAN HIGH WATER LINE.
 7. GRADE STONE SHALL BE PLACED AND MOVED (CHAINED) STONE SHALL BE PLACED WITHIN STONE WALL. CHAINED STONE SHALL BE LAYED OUT AT AN ANGLE OF 45 DEGREES TO THE FILL. THE STONE SHALL BE LAYED OUT AT AN ANGLE OF 45 DEGREES TO THE FILL.

Proposed Condition Rendering



GPI

05 || LOOKING AHEAD

Next Steps

Timeline Phases

- Permitting & Environmental Review
 - Submit the completed permit applications to the regulatory agencies
 - Incorporate and respond to agency comments
- Phase 2: Apply for Construction Funding & Bidding
 - Detailed construction estimate
 - Apply for Grants
 - Solicit bids from contractors
- Phase 3: Construction & Implementation
 - Begin shoreline stabilization work
 - Monitor site and complete maintenance as needed
- Phase 4: Future Work
 - Design and construction of future park amenities and improvements

Potential Funding Sources to Pursue

- Local Waterfront Revitalization Program for Implementation
- Resilient Watersheds Grant (RWG) Program

Preliminary Construction Cost Range

Base Cost	20% Cont.	40% Cont.
\$4,200,000 (2026)	\$5,040,000	\$5,880,000
2027 Cost (+5%)	\$5,300,000	\$6,170,000
2028 Cost (+5%)	\$5,560,000	\$6,500,000
2029 Cost (+5%)	\$5,830,000	\$6,800,000
2030 Cost (+5%)	\$6,130,000	\$7,150,000

GPI

04 || QUESTIONS?



APPENDIX E:

Supplemental Environmental Permit Information

Henry Hudson Park Shoreline Stabilization Project

Supplemental Information for Permit Application

Wetlands and Waters:

A review of on-line wetland data and mappers indicated that there are State and Federal wetlands potentially occurring near the shoreline project corridor. Aerial photography and various other GIS layers, soil surveys, quadrangle maps, and the NYSDEC ERM and National Wetlands Inventory mapper were reviewed to assess potential field conditions in preparation of a field delineation of resources by GPI environmental staff. These mapping tools are typically approximate and are often inaccurate as to exact locations of the boundaries represented to the actual boundaries ultimately delineated in the field.

GPI conducted an initial walk-over of the entire shoreline corridor on May 8th, 2025, to determine the extent of wetlands and waters on the property. Flagging efforts along the river's edge incorporated standard field methods for identifying the Mean High Water (MHW) mark of waterways. A preliminary map of approximate flag locations was developed for surveyors to collect flag locations and for use in future design efforts.

Based on the field efforts, a single continuous water boundary line was identified within the project site (see the provided preliminary boundary map). The delineation began at the southern end of the project at the Vloman Kill where the MHW water of the stream was flagged. There was no wetland fringe along the Vloman Kill. This MHW line continued east along the stream and then turned north around the rock riprap point where the Vloman Kill enters the Hudson River. From here the MHW boundary continued north along the edge of the concrete capped revetment. The flagged line continued for the length of the waterfront, occasionally wavering inland slightly where erosion had allowed the MHW to encroach on the park landscape. In areas where rock riprap or concrete capstones remained in place along the shore, the boundary line was at a typical waterfront elevation. At the northern end of the project corridor, the MHW line entered into the forested wooden cribbing section and meandered in and out of the woods parallel to the shoreline.

All other portions of the project corridor and adjacent areas were checked for signs of wetlands and other drainage features. On the west side of the access road is a large, wooded section of park that is shown in on-line mapping tools as supporting both state and federal wetlands (see provided ERM wetland map). Interior portions of this woodland did

qualify as wetland; however, these wetlands were too far away from the shoreline corridor to be affected by the project in any way. No other areas of the project site contained any other wetlands or streams.

Submerged aquatic vegetation (SAV) is an important habitat and site of primary production in many aquatic ecosystems. Prior to 1995 there was no baseline information on SAV extent or distribution in the tidal freshwater Hudson River. The 2022 EPF funded NYSDEC mapping project is a continuation of SAV monitoring efforts from 1997, 2002, 2007, 2014, 2016 and 2018.

Submerged Aquatic Vegetation is typically represented by *Vallisneria americana* (Water Celery). *Vallisneria americana* is dominant and is associated with *Myriophyllum spicatum*, *Ceratophyllum demersum*, *Elodea nuttallii*, *Najas* sp., and *Potamogeton perfoliatus*.

The absence of mapped SAV indicates its presence was not discernable from the aerial photography due to water turbidity, higher than optimum tide, overhanging vegetation, shadow, sun glint, or SAV was not present. Discernible SAV may also not be mapped if the bed was smaller than the minimum mapping unit. On two occasions in September 2025, GPI Environmental staff investigated the Hudson River adjoining for the project length during lowest tide and did not observe any SAV vegetation. It should be noted that water was turbid at the time. The provided map of the 2022 DEC SAV mapping overlaid with project information indicates where work will occur near historic SAV beds. It is believed by GPI staff that the proposed stabilization work will not encroach on SAV locations since the work is confined to within the historic timber cribbing parallel to shore. The proposed wetland creation areas are also thought to not extend far enough out into the river to be in SAV areas.

Besides the Hudson River waterway itself, and the potential for SAV beds nearby, there are no wetlands within the project work limits.

Ecological Reference:

An ecological reference for the section of shoreline to be restored is difficult to characterize. Since the entire shoreline within the project limits has been historically altered with stone rip rap and dredging fill, there is little natural community to be used as a baseline. The riprap and concrete capping have been in place for many decades. Shoreline natural communities up and down river (and directly across the river) are typical inter-tidal emergent wetland systems occupying mudflats and gradual shore slopes. The wetland creation areas will recreate these conditions and live stakes and planting in the rip-rap will enhance the rock stabilization zones.

Cultural Resources:

The New York State Historic Preservation Office (SHPO) online resources were reviewed to determine whether the project area contains or is adjacent to known archaeological or historic resources that may require further evaluation under Section 106 of the National Historic Preservation Act. The project tax parcel 122.00-2-21 has one “Undetermined” site according to the CRIS system and is within an archeological buffer area. It was originally assumed that because the project will not involve activities within any previously undisturbed areas, a letter of no effect would be issued. However, following conversations with the staff from the Division for Historic Preservation, and the letter dated October 23, 2025, the project review by NYSHPO determined that the project will require a Phase IA Archaeological Survey. SHPO also provided the ‘Programmatic Agreement Among the U.S. Army Corps of Engineers, New York District, and the New York State Historic Preservation Office, Regarding the Hudson River Habitat Restoration Project’ (HRHR Programmatic Agreement), dated July 6, 2020. Appendix B of the HRHR Programmatic Agreement included a Cultural Resources Summary, a preliminary study that was completed by the USACE on several sites along the Hudson River, including Henry Hudson Park. It concluded that the potential for historic archaeological remains to exist within the area of proposed shoreline stabilization measures is low. The HRHR Programmatic Agreement indicated that the USACE is responsible for any additional studies for this site and the subsequent development of treatment plans, if necessary. Communication and coordination with the USACE during the permit application submission period is recommended.

Threatened and Endangered Species:

Desktop internet screenings of natural resource databases were conducted to prepare for field visits for review for protected species. These screenings included the NYSDEC Environmental Resource mapper (ERM), the State Environmental Assessment Form mapper (EAF), the USFWS IPaC screening tool for Threatened and Endangered species, and NOAA EFH and NMFS data. GPI environmental staff conducted a walk over of the site on May 8th, 2025, to determine the overall condition of the property and natural habitats and to search for signs or occurrence of any Threatened or Endangered species. A thorough traverse was undertaken of the shoreline corridor, including the river edge and Vroman Kill, general park lands, and nearby forest and forest edges. All of these areas were observed and documented regarding plant species, community types, wildlife signs and sightings, river and stream conditions, and conditions of trees for suitable bat and wildlife habitat. No protected species of concern were observed.

The desktop screenings completed using the USFWS IPaC website indicated that the federal protected species potentially occurring in the project area include the Northern Long-eared Bat, the Tricolored Bat, and the Monarch Butterfly. A review of the NYSDEC ERM and EAF concluded that Atlantic Sturgeon and Shortnose Sturgeon may be present near the project, and that rare dragonflies, and animals listed as Threatened or Endangered may be in the vicinity of the project. These listed animals are assumed to be protected bat species. A review of the EAF mapper indicated that the protected Short-eared Owl and Bald Eagle could exist within or near project limits. There is no suitable habitat in the park or project site for Short-eared Owls, however, Bald Eagles are frequent visitors to the park and adjacent river with an active nest directly across the river from the park.

Undiscovered or unrecorded threatened, endangered, or rare plants are highly unlikely due to the high degree of human activity and maintained nature of the parkland along the shoreline. Likewise, the manicured lawn, playground, riprap, paved access road, gravel parking areas, and fishing activity, add up to a very limited possibility of additional protected species being found within the project corridor.

The S1/S2 Mussel Waterbody layer from the NYSDEC ERM was also screened to determine the potential for protected mussels to be found within the Hudson River near the project. The database indicated the presence of a known species of mussel near the park. It is believed by GPI staff that the proposed stabilization work will not encroach on mussel presence or habitat since the work is confined to within the historic timber cribbing parallel to shore. Additionally, the project work site will be separated from the river by a cofferdam system and turbidity curtain, further protecting any mussels that may be nearby. If necessary, The Natural Heritage Program will be consulted to identify the exact species and further coordination with NYSDEC will be pursued if additional mussel analysis and survey are believed required.

Essential Fish Habitats and other Hudson River Resources:

Since the project will require in-water work to restore the bank of the Hudson River, the National Marine Fisheries Service (NMFS) on-line tools for Section 7 Consultation Species and for Essential Fish Habitat were reviewed. The screening results determined that Atlantic Sturgeon and Shortnose Sturgeon could be found within the project area, with potential critical Atlantic Sturgeon habitat nearby.

The NYSDEC ERM also indicated that the project is in the vicinity of significant natural communities, specifically the Hudson River Tidal Estuary, and Freshwater Subtidal Aquatic Beds. However, as described above, the work is limited to between the historical timber cribbing and the rocky shoreline above, not outward into the river body itself.

Any in-water work would be avoided from March 1 to June 30 of any year to avoid negative environmental impacts to anadromous fish migration and spawning. Additional details on any in-water restrictions may be requested from the NMFS/NOAA Fisheries EFH after further coordination.

Trees:

Approximately 25 trees will be removed to allow project construction and to protect the restored shoreline from future tree collapse and root upheaval. The trees to be removed are mostly Cottonwoods with scattered Silver Maples and a Mulberry. The DBH of trees ranged from 12 inches to 40 inches. Trees will only be cleared from November 1 to March 31, the inactive season for bat species.

NYSDOS Coastal Area and Coastal Policies, and LWRP.

Henry Hudson Park, adjacent to the Hudson River, is within the Department of States Coastal Area boundary and within the Town of Bethlehem's approved Local Waterfront Revitalization Program (LWRP) area. To satisfy the State Coastal Management Program regulations (under the Federal Coastal Zone Management Act) and the Town of Bethlehem's LWRP, a FCAF has been completed for the project and the resulting Coastal Policies potentially being affected have been analyzed for impacts. The Coastal Policy document is included in the Joint Application Package.

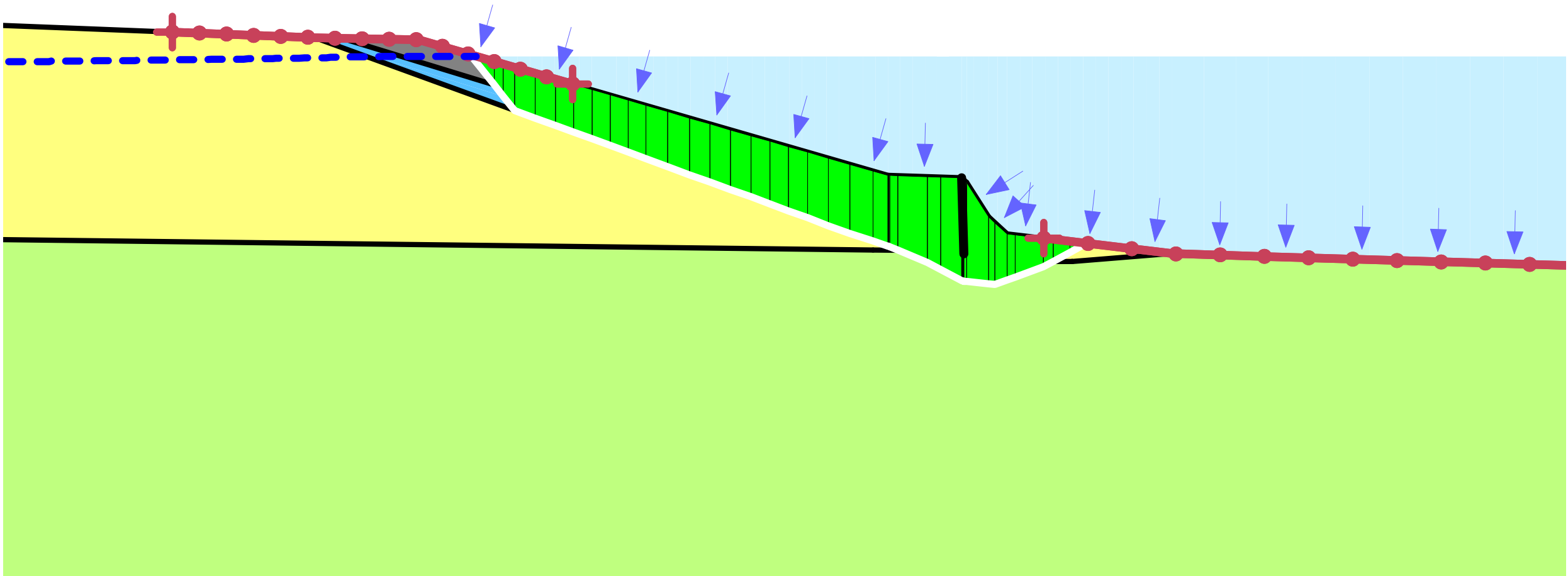
APPENDIX F:

Supplemental Geotechnical Material

Henry Hudson Slope Stability
ALB-240035.01
Analysis Name: LC1 - Slope Stability - Steady-State

Color	Name	Slope Stability Material Model	Unit Weight (pcf)	Effective Cohesion (psf)	Effective Friction Angle (°)
	A2 - Sand	Mohr-Coulomb	105	0	26
	Bedding Material	Mohr-Coulomb	125	0	38
	F2 - Sand	Mohr-Coulomb	105	0	27
	Medium Stone Fill	Mohr-Coulomb	145	0	45

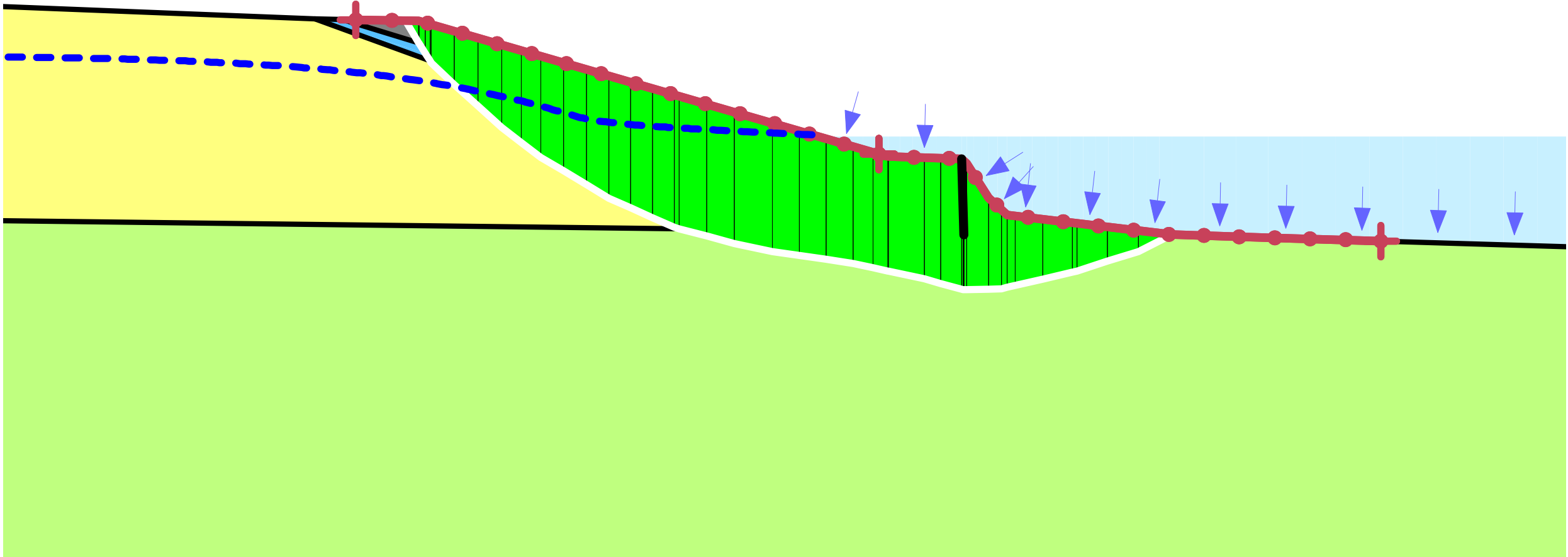
1.554



Henry Hudson Slope Stability
ALB-240035.01
Analysis Name: LC2 - Slope Stability - Transient - Circular

Color	Name	Slope Stability Material Model	Unit Weight (pcf)	Effective Cohesion (psf)	Effective Friction Angle (°)
	A2 - Sand	Mohr-Coulomb	105	0	26
	Bedding Material	Mohr-Coulomb	125	0	38
	F2 - Sand	Mohr-Coulomb	105	0	27
	Medium Stone Fill	Mohr-Coulomb	145	0	45

1.287

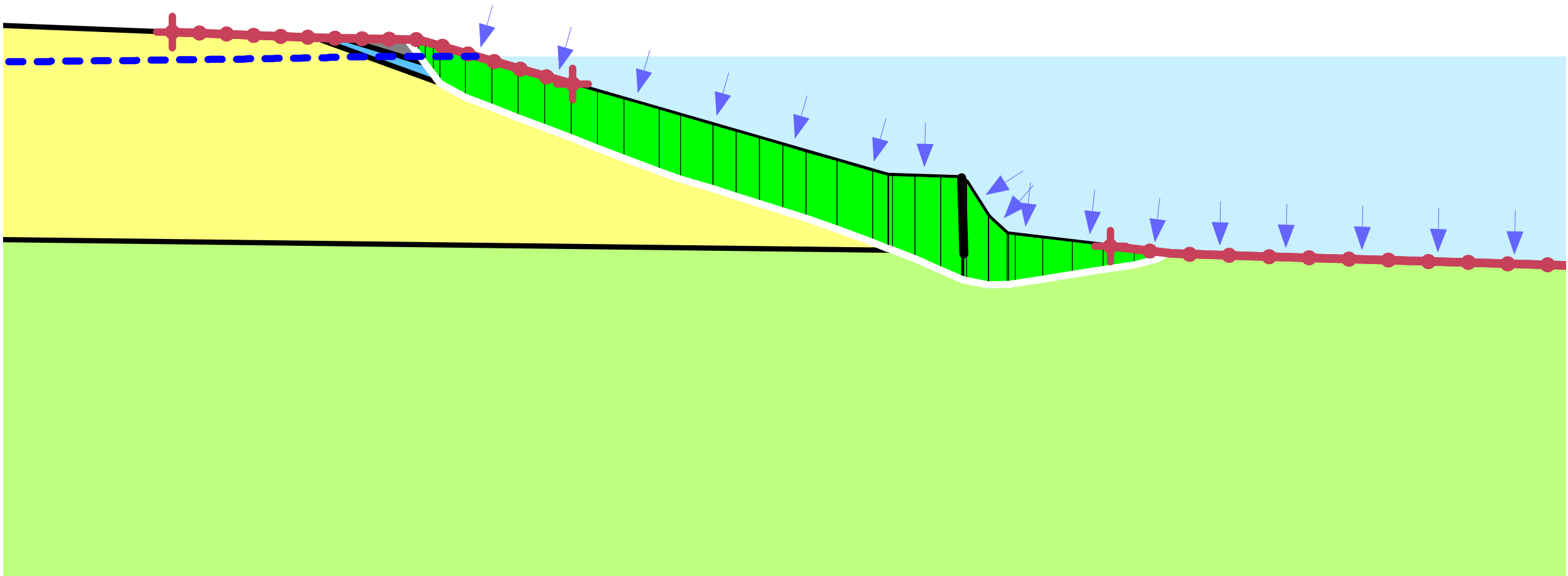


Henry Hudson Slope Stability
ALB-240035.01
Analysis Name: LC3 - Slope Stability - Seismic

Horz Seismic Coef.: 0.09

Color	Name	Slope Stability Material Model	Unit Weight (pcf)	Effective Cohesion (psf)	Effective Friction Angle (°)
	A2 - Sand	Mohr-Coulomb	105	0	26
	Bedding Material	Mohr-Coulomb	125	0	38
	F2 - Sand	Mohr-Coulomb	105	0	27
	Medium Stone Fill	Mohr-Coulomb	145	0	45

1.005



APPENDIX G:

Site Photos

PHOTO LOG



Photo Number:	1.
Location: Northern Gravel Parking Lot	
NW corner of gravel parking lot facing east toward the Hudson River.	



Photo Number:	2.
Location: Northern point of shoreline	
Erosion undercutting trees, large concrete blocks present	

PHOTO LOG



Photo Number:	3.
Location: Northern point of shoreline	
Gravel parking area eroding down to shoreline	



Photo Number:	4.
Location: Heavily vegetated portion of shoreline	
Timbers present	

PHOTO LOG



Photo Number:	5.
Location: North of Fishing Access	
Riprap has been installed to prevent erosion	



Photo Number:	6.
Location: Northern paved parking area	
Looking north at parking area located at the fishing access	

PHOTO LOG



Photo
Number:

7.

Location: Fishing Access Site

Looking south at the concrete
boat launch



Photo
Number:

8.

Location: Fishing Access Site

Looking east towards Fishing
Access sign

PHOTO LOG



Photo Number:	9.
Location: Fishing Platform	
Looking north from the fishing platform	



Photo Number:	10.
Location: Fishing Platform	
Looking south at the fishing platform. Shoreline has been stabilized with gabion wall.	

PHOTO LOG



Photo Number:	11.
Location: Lyons Road by Northern Boat Launch	
Looking east toward the gazebo located near the northern boat launch.	



Photo Number:	12.
Location: Shoreline	
Representative photo of the shoreline condition.	

PHOTO LOG



**Photo
Number:**

13.

Location: Shoreline

**Representative photo of the
shoreline condition.**



**Photo
Number:**

14.

**Location: Shoreline near
Playground**

**Looking south at the fence
and shoreline located
between the playground and
river.**

PHOTO LOG



**Photo
Number:**

15.

**Location: Shoreline near
Stone Monument**

**Looking south at stone
monument.**



**Photo
Number:**

16.

Location: Shoreline

**Representative photo of the
shoreline condition.**

PHOTO LOG



Photo Number:	17.
Location: Selkirk Fire District Boat Dock	
Looking north at the boat dock	



Photo Number:	18.
Location: Southern Gravel Parking Lot	
Looking north at the southernmost gravel parking lot	

PHOTO LOG



Photo Number:	19.
Location: NYS Kayak Rental	
Looking at the NYS Kayak Rental station located near the south point of the project site	



Photo Number:	20.
Location: Shoreline	
Representative photo of the shoreline condition.	

PHOTO LOG



Photo Number:	21.
Location: Southern Boat Dock within Vloman Kill	
Looking south at the boat dock present within the Vloman Kill	



Photo Number:	22.
Location: Shoreline	
Looking south at the southern tip of the project area.	

APPENDIX H:

Grant Funding Programs

Funding Type	Funding Agency	Grant Program Name	Due Date	Funding Program Purpose/Eligible Project Types	Funding Amounts	Local Match	Other Information
State	NYSDEC	Hudson River Estuary Grants Program	closed 12/12/24	Plans, Nature-Based Solutions, Water Quality, Nonpoint Source, Dam Removal, Culverts, Aquatic Connectivity, Land Stewardship, Climate Change, Wildlife, Community Development, Ecological Restoration, Flooding, Retrofitting, Infrastructure, Maintenance, Public Access, Waterfront Revitalization, Education, Outreach, Training, Drinking Water, Habitat Restoration, Streambank Stabilization - Shoreline Projects, Sustainability, Wastewater, Water Infrastructure, Habitat Connectivity, Conservation, Resilience, Capacity Building. (Other program information under NEIWPCC - Hudson River Estuary Grants Program)	Unknown 2024 Tributary Restoration and Resiliency - \$800,000 total 2024 River Access - \$200,000	unknown	https://dec.ny.gov/nature/waterbodies/oceans-estuaries/hudson-river-estuary-program/grants-funding-opportunities
Federal	USFWS	National Fish Passage Funds	Rolling Application	Financial and technical assistance to support projects that improve fish passage - the ability of fish and other aquatic wildlife to move freely throughout their life. Project types: Aquatic Connectivity, Dam Removal, Culverts, Fish, Habitat Loss, Water Infrastructure, Hazard Mitigation, Transportation, Community Development, Wildlife, Retrofitting	Unknown due to the current lapse of federal appropriations Last known program fact sheet listed a max of \$1,000,000	0%	https://www.grants.gov/search-results-detail/360456
Federal	USDA	Watershed Protection and Flood Prevention Program	Rolling Application	Aquatic Connectivity, Buffer Restoration, Climate Change, Community Development, Conservation, Ecological Restoration, Erosion, Flooding, Hazard Mitigation, Nature-Based Solutions, Emergency Preparedness	Unknown due to the current lapse of federal appropriations	unknown	https://www.nrcs.usda.gov/resources/guides-and-instructions/national-watershed-program-manual-and-handbook
Private	NFWF	Five Star and Urban Waters Restoration Grant Program	closed 1/31/25	Ecological Restoration, Outreach, Education, Training, Community Development, Sustainability, Wetlands, Habitat Restoration, Streambank Stabilization - Shoreline Projects , Plants, Green Infrastructure, Nature-Based Solutions, Wildlife, Water Quality, Fish, Invasive Species, Resilience, Climate Change, Forestry, Trees, Nonpoint Source	Unknown due to the current lapse of federal appropriations	unknown	https://www.nfwf.org/sites/default/files/2024-08/nfwf-five-star-20220823-fs.pdf
Private	NFWF	America the Beautiful Challenge	closed 07/18/24	Fish, Wildlife, Habitat Connectivity, Habitat Restoration, Conservation, Resilience, Flooding, Public Access, Wetlands, Ecological Restoration, Carbon Sequestration, Water Quality, Climate Change, Invasive Species, Aquatic Connectivity, Culverts, Dam Removal, Nature-Based Solutions, Green Infrastructure, Nonpoint Source, Conservation Easements, Economic Benefit, Plants, Streambank Stabilization - Shoreline Projects	Unknown due to the current lapse of federal appropriations	unknown	https://www.nfwf.org/sites/default/files/2025-01/nfwf-aeri-20250123-fs.pdf
Private	NOAA	NOAA Transformational Habitat Restoration and Coastal Resilience Grant	closed 4/16/25	Habitat Restoration, Habitat Loss, Preservation, Wetlands, Wildlife, Land Acquisition, Conservation, Erosion, Hazard Mitigation, Resilience	Min \$750,000 Max \$10,000,000	0%	https://grants.gov/search-results-detail/357559
Private	NOAA	National Coastal Resilience Fund	closed 5/6/25	Resilience, Nature-Based Solutions, Fish, Wildlife, Habitat Restoration, Wetlands, Streambank Stabilization - Shoreline Projects , Aquatic Connectivity, Dam Removal, Erosion, Flooding, Climate Change	Min \$100,000 Max \$1,000,000	0%	https://www.nfwf.org/programs/national-coastal-resilience-fund/national-coastal-resilience-fund-2025-request-proposals
State	NYSDOS	Coastal Rehabilitation and Resilience Projects	closed 6/6/25	Public Access, Conservation, Wetlands, Aquatic Connectivity, Coastal Restoration, Plants, Culverts, Nature-Based Solutions, Buffer Restoration, Resilience, Stormwater, Green Infrastructure, Retrofitting	2025 Min: \$333,000	10%	https://dos.ny.gov/system/files/documents/2025/04/revised-rfa-24-opdba-23-bondact-coastal.pdf

State	NYSDOS	Inland Flooding and Local Waterfront Revitalization Program Implementation Projects		Buffer Restoration, Wetlands, Culverts, Nature-Based Solutions, Streambank Stabilization - Shoreline Projects, Waterfront Revitalization, Runoff Reduction, Restoration, Stormwater, Flooding, Resilience, Green Infrastructure, Aquatic Connectivity	2025 Min: \$150,000	10%	https://dos.ny.gov/system/files/documents/2025/04/revised-rfa-24-opdba-22_bondact_lwrp.pdf
State	NYSDEC	Resilient Watersheds Grant (RWG) Program	closed 6/6/25	Flooding, Aquatic Connectivity, Dam Removal, Buffer Restoration, Culverts, Restoration, Resilience, Stream bank stabilization, Wetlands	2024 Min: 150,000 Max: \$10,000,000	10%	https://dec.ny.gov/sites/default/files/2025-05/rwgfactsheet.pdf
State	NYSDEC	Climate Smart Communities Grant Program	closed 7/31/25	Food Diversion or Composting, Emissions Reductions, Bridges, Culverts, Dam Removal, Aquatic Connectivity, Flooding, Erosion, Emergency Preparedness, Resilience, Green Infrastructure, Climate Change, Habitat Restoration, Wetlands, Nature-Based Solutions, Water Infrastructure, Streambank Stabilization - Shoreline Projects, Hazard Mitigation, Infrastructure, Hazardous Waste, Transportation	2025 Climate Adaptation Projects Minimum \$50,000 Maximum \$2,000,000	20%	https://dec.ny.gov/sites/default/files/2025-05/cscgfactsheet.pdf
State	NYSOPHRP	Environmental Protection Fund Grant Program for Parks Preservation and Heritage (EPF)	closed 7/31/25	Land Acquisition, Community Development, Preservation, Public Access, Habitat Restoration, Erosion, Nature-Based Solutions, Green Infrastructure, Retrofitting, Resilience, Streambank Stabilization - Shoreline Projects, Outreach, Education, Conservation	2025 cap at \$1 mil	50%	https://parks.ny.gov/documents/grants/EPF-CFAGuidanceDocument2025.pdf
State	NYSDOS	Local Waterfront Revitalization Program	closed 7/31/25	Public Access, Flooding, Erosion, Waterfront Revitalization, Ecological Restoration, Green Infrastructure, Water Quality, Resilience, Habitat Restoration, Climate Change, Culverts, Invasive Species, Wetlands, Nature-Based Solutions, Management, Nonpoint Source, Education, Harmful Algal Blooms, Streambank Stabilization - Shoreline Projects	2025 Min \$50,000 Max \$2,00,000	25%	https://dos.ny.gov/system/files/documents/2025/05/2025_lwrp_rfa.pdf
State	NYSDEC	Water Quality Improvement Project (WQIP) Program	closed 7/31/25	Wastewater, Nonpoint Source, Land Acquisition, Salt Storage, Aquatic Connectivity, Culverts, Habitat Restoration, Water Infrastructure, Green Infrastructure, Nature-Based Solutions, Ecological Restoration, Dam Removal, Wetlands, Resilience, Water Quality, Streambank Stabilization - Shoreline Projects, In-Waterbody Controls, Stormwater, Wildlife, Fish Passage, Buffer Restoration, Compliance, Conservation Easements	Project Type Dependent The 2024 round had \$222 million total	Dependent on project type	https://dec.ny.gov/sites/default/files/2025-05/wqipRFA25.pdf
State	NYSEFC	Green Resiliency Grant Program	closed 8/15/25	Water Quality, Hazard Mitigation, Infrastructure, Stormwater, Nature-Based Solutions, Green Infrastructure, Buffer Restoration, Stream bank stabilization, Wetlands, Retrofitting	2025 Min \$1 mil, Max \$10 mil	10%	Engineering Feasibility Study is required https://efc.ny.gov/recipient-resources-green-resiliency-grants
State	NYSEFC	Green Innovation Grant Program	closed 4/11/25	Green Infrastructure, Nonpoint Source, Nature-Based Solutions, Water Quality, Flooding, Public Health, Wastewater, Buffer Restoration, Trees, Wetlands	2025 Max \$3 mil	10%	https://efc.ny.gov/recipient-resources-green-innovation-grant-program
Federal	USFWS	Coastal Program	closed 9/30/25	Conservation, Habitat Connectivity, Resilience, Restoration, Wildlife, Buffer Restoration, Aquatic Connectivity	2025 Max \$500,000	0%	https://grants.gov/search-results-detail/358382
State	HRVG	Hudson River Valley Greenway Community Grants	Due 10/31/2025	For developing plans or projects consistent with the five Greenway criteria: natural and cultural resource protection, economic development, public access, regional planning, and heritage and environmental education. Higher amounts are awarded for intermunicipal projects.	\$20,000	0%	https://hudsongreenway.ny.gov/system/files/documents/2025/09/community-and-compact-grant-guidelines-sept-2025-final.pdf