

NORTH HEMPSTEAD BEACON HILL BLUFFS STABILIZATION PROJECT

August 5, 2019



What is the Beacon Hill Bluff Project?

The Beacon Hill Bluff stabilization project will stabilize the slopes located at the western end of Hempstead Harbor Woods behind Summit Road. The project will serve as a long-term solution to stabilize the Beacon Hills Bluffs, making the bluffs resistant to future erosion and permitting long-term revegetation of native grasses and trees.

The Project's History

- Harbor Links Golf Course Bluff Stabilization Project Completed in 1997
- Property North of Harbor Links Golf Course Transferred from Nassau County to Town of North Hempstead in 2007
- Town retains consultant for study of the Beacon Hill Bluff Property
- Project is funded in Town Capital Plan in 2018

This photo, taken from the Harbor Links Golf Course, illustrates the erosion that is visible on the Beacon Hill Bluffs.



VIDEO

What will the project entail?

- The project will involve removing vegetation and earthen material along the slope face
- Regrading earthen material to create a properly pitched and terraced surface that will minimize future erosion and control storm water runoff
- Re-vegetating of the slope face with native grasses.
- The residents of Summit Road may be impacted by higher than normal noise during work hours.

Your Town of North Hempstead PROJECT TEAM

Department of Public Works - Commissioner Paul DiMaria

AKRF Consulting – Design Engineer

Galvin Brothers – Proposed Contractor

More history...What is the origin of the bluffs?

These slopes remain from the former Colonial Sand and Stone Company property and land formally owned by Nassau County. This project's scope of work is similar to the work that was performed by the Town along the Harbor Links Golf Course when that property was developed.

In 1997 the bluffs adjacent to the Harbor Links golf course were stabilized. Pictured below is the result:



Why is the Project necessary?

- An engineering study was completed and it was determined that the slopes required stabilization.

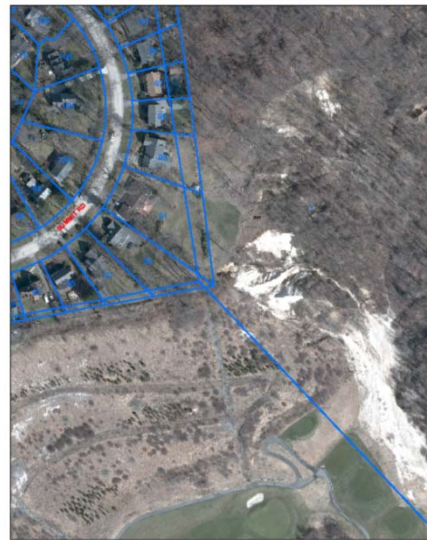
The study found the following:

- The soils at the site consist primarily of medium to fine sand
- The upper soils are typically in a less dense condition, especially along the slope face
- Similar conditions also exist at the base of the slope areas
- These soils are susceptible to erosion and near-surface slope failures are a result of their relatively loose condition and coarse grained nature
- The small percentage of fine grained (silt and clay) particles results in a lack of internal strength at relatively low confining pressures, as well as high susceptibility to erosion due to lack of cohesion.

Why now?

- Any significant weather event will continue to erode the slopes therefore, erosion will start to encroach adjacent properties.
- The Town is in the process of creating bike trails in the Hempstead Harbor Woods, adjacent to the bluffs. It is the Town's responsibility to ensure the safety of anyone using our recreational areas.
- Funding was secured for project construction in the 2018 Capital Plan.

This photo shows the flow of sand flowing down into Harbor Links Golf Course



Engineer's Report

- The following conclusions can be drawn from the subsurface investigation:
 - Based on the observations made during the subsurface investigation, considerable proportions of cobbles and boulders may be present within the native soils.
 - The native soils may be re-used as fill across the site, provided that oversized boulders are removed and the moisture contents at the time of fill placement is at or below optimum levels.
 - In summary, the slopes are considered generally globally stable with areas that have eroded due to surface and subsurface storm water runoff conditions. However, long term stability of the slope will continue to decrease and soil loss will continue as a result of erosion unless preventive measures are taken.
 - Long term stability of the slope can be achieved through a combination of activities which include diverting the surface and subsurface storm water runoff away from the slope; re-grading the site to a 2:1 slope; introducing benching to slow water flow and vegetative turf building to stabilize soil.

An aerial view showing the work to be performed by the contractor



The red line in this aerial view shows the most severely eroded section of the bluff.



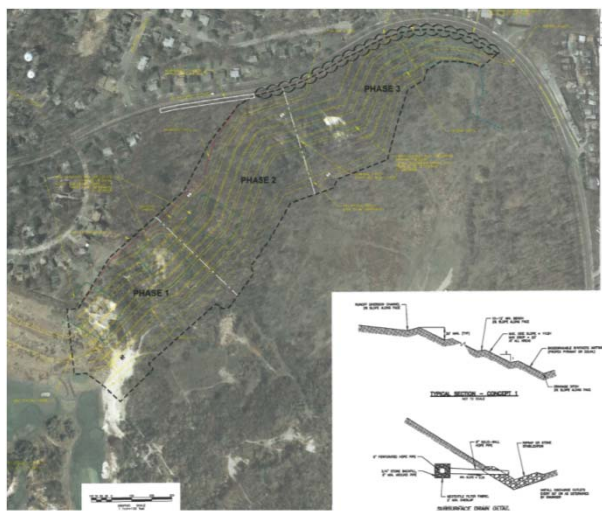
The restoration of the bluffs has been divided into multiple phases.

The first phase, which we are hoping to start this month, will stabilize the most damaged area.

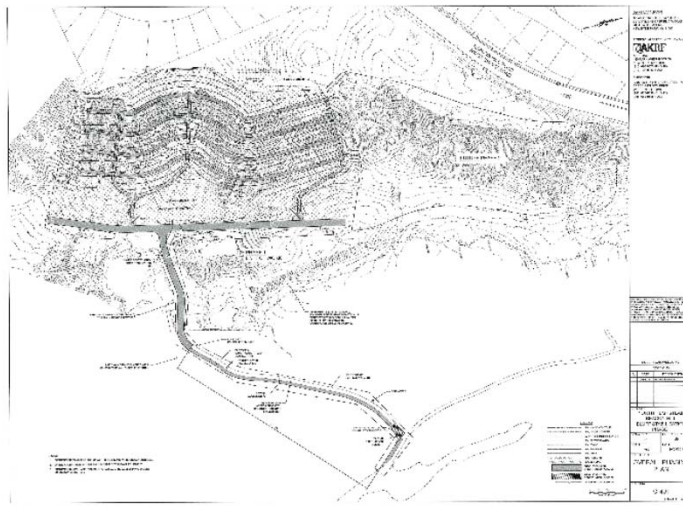
Phase 2 will address the area North of Phase 1.

Phase 2 construction is planned for next year as per the adopted 2019 Capital Plan.

Phase 3 area was determined to be safe at the moment and requires no stabilization at this time.



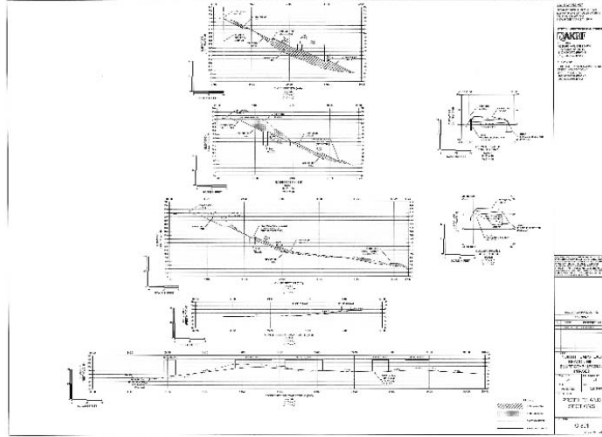
Work that will be performed by the contractor



Another aerial view showing the work to be performed by the contractor.



Drawing of a cross section view, showing existing bluff and where the contractor will be cutting and filling the bluff.



The results of the flow of eroded sand from the Beacon Hill Bluffs is shown here in this dramatic photo of a sign that once stood at 8-foot high, is now buried in about 6-feet of sand. DPW Commissioner Paul DiMaria examines the conditions.



What will be done by the Contractor?

- Site Access
- Clearing and grubbing
- 9 acres affected
- Slope will be stabilized to be terraced with a two on one; 2 horizontal:1 vertical
- Final vegetation to be native grasses
- Site will mature and re-vegetate naturally with surrounding native trees and shrubs

How long will it take?

- Town Board vote to award contractor planned for August 13
 - Start construction August (Planned)
 - Clearing and grubbing 1 MONTH
 - Construction of slope 3 MONTHS
 - Final landscaping and grading 1 MONTH

What will it cost?

- Complete Project (Phase 1,2,3) **\$9,500,000**
- Construction – Phase 1 **\$6,107,250**
- Construction Administration/Inspection **\$206,807**

Questions?