

Appendix A  
Section 404(b)(1) Evaluation

*July 2010*

*Yonkers Avenue, Tuckahoe, NY  
Section 14, Emergency Stream-bank Protection*

Section 404(b)(1)  
Yonkers Avenue, Village of Tuckahoe New York  
Section 14 Stream-bank Stabilization  
Section 404(b) (1) Evaluation

## I. PROJECT DESCRIPTION

- a. Location: Village of Tuckahoe, Westchester County, New York
- b. General Description: Installation of 240 feet of stream-bank stabilization material which includes reinforced concrete retaining wall for the first segment (80 feet) followed by a steel combination wall for an additional 105 feet. The river bend is to be protected by a steel sheet pile scour protection wall
- c. Authority and Purpose: This investigation is conducted under the Continuing Authorities Program, Section 14 of the 1946 Flood Control Act (33 U.S.C. 701r), as amended. The purpose of the Section 14 authority is to protect public works and non-profit public services from stream-bank and shoreline erosion. The purpose of this project is to protect Yonkers Avenue which contains vital public infrastructure and serves as the only emergency route between Tuckahoe and Yonkers.
- d. General Description of Fill Material: The material used to stabilize the river bend consists of steel sheetpile with. A total quantity of approximately 15 cubic yards of concrete backfill will be placed riverward of the Ordinary High Water Mark. The steel sheet piling will be brought from a reputable manufacturer and will comply with all specifications and quality standards
- e. Description of the Proposed Disposal Site: The discharge is located on the eastern Bank of the Bronx River in the Village of Tuckahoe, NY. The site is urbanized in nature, surrounded by businesses to the north and south and abuts a significant local thoroughfare. The Bronx River is listed on the New York State 303(d) list for TMDL development for the impairments of dissolved oxygen and pathogens. The stream-bank has hardened edges, a slope that is nearly 1:1 and covered with largely invasive non-native plant material.
- f. Description of Disposal Method: Not Applicable

## II. FACTUAL DETERMINATION

- a. Physical Surface Determinations
  1. Substrate Evaluation, Sediment Type and Slope: The soils in the project area include udorthents wet substratum, and urban land. Udorthents consist of very deep soils in urban areas that have been disturbed by cutting or filling. These soils are common on glacial till plains, outwash plains, and, as in the case of this site, flood plains. They are somewhat

poorly drained soils that consist of gravelly loam to very gravelly loam (USDA NRCS, 2004). Urban land includes soils in which a large portion of the area has been filled with sufficient material so as to make it impossible to identify the parent soil. In most cases the natural soil layers have been altered or mixed with manufactured materials such as brick, concrete or cinders. The stream-bank slope is approximately 1:1.

2. Dredged/Fill Material Movement: Placement of steel sheetpile and fill will result in some temporary increase in turbidity in the immediate area. Due to the small size of the project, the turbidity is not expected to exceed conditions observed following heavy rainstorms. Turbidity increases will be of a temporary nature, highly localized and will rapidly dissipate.
3. Physical Effects on Benthos: Benthos will be buried under the small area of steel sheetpile and fill. As the present benthic community consists of highly pollutant tolerant species and is moderately to severely impacted, no change in benthic community is anticipated.
4. Other Effects: Due to the small size of the project, and amount of fill to be placed in the waterway, no unique or other effects are anticipated from this project.
5. Actions Taken to Minimize Impacts: Design optimization to limit fill beneath the Ordinary High Water Mark coupled with sediment and erosion control methods such as turbidity curtains and hay bales will be placed along the shoreline.

b. Water Circulation, Fluctuation and Salinity Determinations

1. Water

- a. Salinity – No effect
- b. Water Chemistry – No effect
- c. Clarity- Clarity may be temporarily reduced during construction activities. No long term effect is anticipated.
- d. Color – No effect
- e. Odor- No effect
- f. Taste- No effect
- g. Dissolved gas levels – No effect
- h. Nutrients- No effect
- i. Eutrophication – No effect
- j. Others- No other adverse impacts are anticipated from the project

2. Current Patterns and Circulation

- a. Current Patterns and Flow- The Bronx River is non-tidal in this reach. This project will not change the stream cross section, nor deflect flow in a different direction. Protection of the toe of bank where the stream presently makes a right angle, may have a slight effect on flow in the immediate project area vicinity

- b. Velocity- The project does not involve the installation of barriers, or a change in the stream cross section that would change the velocity or direction of present currents.
  - c. Stratification: The project will not impact stratification as most of the project is above the Ordinary High Water Mark, and river depth in this area is under 3 feet.
  - d. Hydrologic Regime- No effect
3. Normal Water Level Fluctuations: The Bronx River is non-tidal, Water level fluctuations are driven by storm events, which will not be affected by this project.
4. Salinity Gradients: N/A- Freshwater System
5. Actions Taken to Minimize Impacts: Development and implementation of an erosion control and sediment control plan. Turbidity curtains and hay bales will be installed along the length of the project construction elements to prevent introduction of sediment into the Bronx River. Sheetpile additions will be tapered to provide a smooth transition into existing grade.
- c. Suspended Particulate/Turbidity Determinations:
- 1) Expected Changes in Suspended Particulates and Turbidity Levels in the Vicinity of Disposal Sites: Expected increases in turbidity and suspended sediments are expected to be highly localized, temporary and small. The long term benefits of stream-bank stabilization include the reduction of particulate matter inputs from eroding stream-banks.
- 2) Effects on Chemical/Physical Properties of the Water Column
- a. Light Penetration- No significant reduction in light penetration will occur outside the immediate vicinity of the project site. Any localized reduction will fall within the range that normally occurs following a storm event.
  - b. Dissolved Oxygen- The project is not expected to have any significant impact on the basic chemical, dissolved oxygen and nutrient attributes of the Bronx River in the vicinity of the Village of Tuckahoe. This assessment is based upon the relationship between the size of the fill area and the size of the River, and in light of the fact that there will be no discharges of dissolved nutrients or oxygen demanding wastes.
  - c. Toxic Materials and Organics- The proposed construction will not have any impacts on the levels of trace metals or organic contaminants as the soils of the area are below threshold levels for RCRA materials of concern. Any soil suspended during construction activities is likely to be similar to that resuspended during local storm events.
  - d. Pathogens- The project will not cause any changes in pathogen levels as no sewage or animal waste or treatment is involved.
  - e. Aesthetics – The aesthetics of the area are somewhat degraded due to its urbanized character, collapsing road, and hardened stream-bank dominated by invasive plant material. The project will prevent further collapse of the road. As

most of the structure is landward of the present hardened shoreline no further degradation of the aesthetic value of the river bank is anticipated.

f. Others as Appropriate – Not Applicable

3) Effects on Biota:

a. Primary Production, Photosynthesis – No submerged aquatic vegetation- not applicable

b. Suspension/Filter Feeders – All effects on the biota will be limited to the immediate environment of the project site.

c. Sight Feeders- Resuspension of sediments during construction activities may impact sight feeders who will avoid the area throughout the construction period. These biota are expected to return after construction has been completed. The impact will be temporary in nature.

3 Actions Taken to Minimize Impacts: Turbidity curtains and hay bales will be placed along the shoreline.

d. Contaminant Determinations; All fill material will be clean and will not pose a risk. No known hazardous or toxic waste is present at the site.

e. Aquatic Ecosystem and Organism Determinations:

1) Effects on Plankton: No significant effects.

2) Effects on Benthos: Change of small amount of substrate. Effects are expected to be temporary and localized with recolonization of the area after project completion.

3) Effects on Nekton: As nekton are highly mobile the project is unlikely to have significant, widespread or long lasting effects.

4) Effect on Aquatic Food Web: Given the extremely small size of the project and short duration of construction (with its associated disturbances)

5) Effects on Special Aquatic Sites:

a. Sanctuaries and Refuges- Not Applicable

b. Wetlands – Not Applicable

c. Mudflats- Not Applicable

d. Vegetated Shallows- Not Applicable

e. Coral Reefs- Not Applicable

f. Riffles and Pool Complexes- No effect

6) Threatened and Endangered Species- No effect

7) Other Wildlife- The project will not have any significant long-term impacts on waterfowl, amphibians, reptiles, upland birds or mammals in the project area. Do to their mobility these organisms will avoid the site if conditions are temporarily unsuitable.

4 Actions to Minimize Impacts: Turbidity curtains and hay bales will be placed along the shoreline.

f. Proposed Disposal Site Determinations

1) Mixing Zone- Not Applicable

2) Determination of Compliance with Applicable Water Quality Standards- Fill will be clean material and meet water quality standards.

3) Potential Effects on Human Use Characteristics:

a. Municipal and Private Water Supply- Not Applicable

b. Recreational and Commercial Fisheries- There are no commercial fisheries near the project area. The limited recreational fisheries will not be adversely impacted.

c. Water Related Recreation- The shallow water near the project site, as well as its impaired water quality offer no benefits for recreational uses, therefore no temporary or permanent adverse impacts are expected as a result of project implementation.

d. Aesthetics- The aesthetics of the area are somewhat degraded due to its urbanized character, collapsing road, and hardened stream-bank dominated by invasive plant material. The project will prevent further collapse of the road. As most of the structure is landward of the present hardened shoreline no further degradation of the aesthetic value of the disposal site is anticipated

e. Parks, National and Historical Monuments, National Seashores, Wilderness Areas, Research Sites, and Similar Preserves- Not Applicable

f. Determination of Cumulative Effects on the Aquatic Ecosystem- No cumulative effects from this project are expected on the aquatic ecosystem.

g. Determination of Secondary Effects on the Aquatic Ecosystem. - No secondary effects on the aquatic ecosystem are expected from this project.

### III. FINDINGS OF COMPLIANCE OR NON-COMPLIANCE WITH THE RESTRICTIONS ON DISCHARGE.

- e. a. No significant adaptation of the Section 404(b)(1) guidelines was made relative to this evaluation.
- b. The objective of protecting Yonkers Avenue necessitated the use of a total quantity of approximately 15 cubic yards of concrete backfill placed riverward of the Ordinary High Water Mark with steel sheet piling placed at the Ordinary High Water Mark.
- c. The proposed activity will not violate the Toxic Effluent Standards of Section 307 of the Clean Water Act.
- d. The proposed disposal operations will not harm any endangered species or its critical habitat under the Endangered Species Act of 1973 or Essential Fish Habitat under the Magnuson Stevens Fisheries Conservation and Management Act.
- e. The proposed discharge of fill material will not result in significant adverse effects on human health and welfare, including municipal and private water supplies, recreational and commercial fishing, plankton, fish, shellfish, wildlife, and special aquatic sites. The life stages of aquatic life and other wildlife will not be significantly affected. Minimal adverse effects on aquatic ecosystem diversity, productivity and stability, and recreational, aesthetic and economic values will not occur.
- f. Appropriate steps to minimize potential adverse impacts of the discharge of fill material include the implementation of an erosion and sediment control plan and judicious engineering practices.

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