Planning and Design for:

Peekskill's Southern Waterfront Park and Trail Master Plan

Final Design Report

City of Peekskill, New York

July, 2009

This report was prepared for the New York State Department of State Division of Coastal Resources with funds provided under Title 11 of the Environmental Protection Fund.
Peekskill’s Southern Waterfront Park and Trail Master Plan

City of Peekskill, Westchester County, New York
July 2009

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Summary of Plan
Planning and Design for Peekskill’s Southern Waterfront

Section 1 Summary of Plan

Introduction

This plan was prepared for the City of Peekskill and the New York State Department of State, Division of Coastal Resources, with funds provided under Title 11 of the Environmental Protection Fund. This summary describes the final schematic design that was developed for Peekskill’s Southern Waterfront, from Riverfront Green Park to Lent’s Cove. It summarizes the approach that was used and the components that were developed in creating the final product.

This report is organized into sections beginning with a narrative and maps of the six segments that comprise the final schematic design plan. The maps are followed by supporting information that describes the approach to shoreline stabilization, best management practices, anticipated phasing, preliminary cost estimates, and regulatory requirements. This summary supplements the Site Reconnaissance Report that describes the existing conditions of the waterfront area, completed in April 2008.

Summary of Waterfront Park and Trail Master Plan

The Schematic Design Plan for Peekskill’s Southern Waterfront was formulated through a collaborative process that includes the Peekskill Common Council, the City’s Parks Advisory Board, City, State and Federal agencies, and the general public. This has been accomplished through a series of public meetings that solicited input from all parties, and valuable ideas have been incorporated into the final plan.

Plan concepts are based on extensive studies and analyses that have taken place since the study commenced in late 2007, including topographic surveys, extensive site analyses, shoreline stabilization methods, and State and Federal permit regulations. The Site Reconnaissance Report dated April 2008 contains all the background information that was used to develop the concepts. Plan maps, images and renderings present the visual layout of the plan components. In addition, the Shoreline Stabilization Summary and Best Management Practices describe the erosion control methods that have been discussed extensively with the permitting agencies. Finally, a Phasing Plan and preliminary cost estimates provide guidance for plan implementation.

The primary goal of the plan is to develop a continuous multi-use waterfront walkway from Mcgregory Brook to Peekskill’s southern border with Buchanan. This walkway will be designed according to Westchester County’s RiverWalk standards. Along the walkway, public amenities will be provided, such as picnic areas, kayak launches, viewpoints, and improvements to the existing parkland. The plan recognizes that this 1.5 mile long waterfront trail does not exist in isolation. The City’s waterfront promenade will continue to the north over the existing Mcgregory Brook footbridge onto Peekskill Landing, where a pedestrian overpass is proposed to cross the railroad tracks to North Water Street with access to Central Avenue and the downtown. The shoreline trail continues to the north through Annsville Preserve Park and connects with the Paddlesport Center in Cortlandt. At its southern end, the trail will continue past Lent’s Cove along Westchester County’s planned RiverWalk.

The Peekskill Southern Waterfront study area is divided into six (6) segments. From north to south, the segments are: Riverfront Green Park, Riverfront Green South, Travis Point, Travis Cove, RESCO and Lent’s Cove. A number of alternative concepts were explored during the extensive public review period. In addition, reviews by City staff, the Parks Advisory Board, the NYS Department of State and the NYS Department of Environmental Conservation have helped shape the final plan concepts. The Master Plan
maps in section 2 illustrate the final design that has been developed as a result of extensive input from the public and agency staff.

**Riverfront Green (Map #1)**

Riverfront Green is Peekskill’s premier waterfront park, with excellent views of the Hudson Highlands and extensively used park facilities. What the park lacks, however, is a continuous path for walking and biking along the river.

To accomplish the goal of increasing recreational opportunities, the City must first focus on improving and repairing its shoreline. The plan recommends a bio-engineered stabilization method for Riverfront Green and McGregory Brook that is designed to protect the shoreline from future erosion and destructive wave action, while maintaining the natural look at the water’s edge. The permanency of this stabilization method is not guaranteed, however, and future repairs may be necessary to protect the new walkway along Riverfront Green. Its longevity will depend largely on the type and amount of vegetation that is established along the waterfront, and this will be determined during the construction document phase.

Once stabilization is undertaken, the 10 foot wide multi-use trail way can be constructed, starting at the pedestrian bridge to Peekskill Landing, overlooking McGregory Brook, and extending south to the existing walkway beyond the floating docks. An overlook sitting area with a gazebo will be developed at the mouth of McGregory Brook, and the beach area will be formalized and replenished. The floating dock will be replaced with a more formal public docking facility for daily transient boat usage. The eroding rip rap below the dock area will be repaired to prevent further erosion. A new ferry dock appears on the plan as an extension to the main pathway from Hudson Avenue to accommodate the Commander and other cruise ships contemplated for the future.
This pathway will be improved as an enhanced gateway, with inviting features such as a sculpture garden, flags, and a light tower. This entrance would be designed so as not to obscure the view to the water but to provide a sense of entry into the main park area. The Sam Oitice Heroes Remembered Memorial is located along this central spine for easy access and visibility, yet it is tucked behind a row of mature trees and faces the water for privacy and contemplation. A future concept would be to remove the little-used drop off area at the park entrance and construct a small ferry terminal that could also function as a waterfront information center, with possible supply, gift shop or beverage center. The park plan contains a series of secondary paths from one end of Riverfront Green to the other, so that the public use areas are interconnected and the park is more inviting and fully used for strolling. The entrance to the park at Hudson Avenue will be more welcoming with formalized gardens, and the plan maintains view sheds for those wishing to park and remain in their cars. A new permanent bandshell will replace the show mobile and enhance the park experience. The open air design of the bandshell with canopy is intended to compliment the waterfront nautical theme. A new seasonal recreational component includes a small spray ground located just north of the playground near the pavilion. This will be a popular attraction that will increase playground attendance on hot summer days. The cul-de-sac and parking area at the north end of the park would be improved as a drop off location for Peekskill Landing, since access will be limited to pedestrians. Existing improvements that will remain in place on Riverfront Green include the new playground, the refurbished restrooms, the picnic pavilion, and upgraded volley ball courts.
Riverfront Green South (Map #2)

The low lying area south of the boat ramp requires extensive improvements in order to be used as parkland on a regular basis. These improvements require that the shoreline receive bio-engineered stabilization and grading before park amenities are installed. The rip rap would be reshaped to raise the elevation just above the high tide line, with the ground elevation tapered upward to prevent the frequent flooding that occurs presently. Applications for permits will be submitted to State regulatory agencies for this work. Park improvements for Riverfront Green South include a continuous waterfront walkway that meanders through open lawn and picnic areas with overlook gazebos, sculpture gardens and native planting beds. The existing crescent beach near the boat launch will be re-nourished and maintained to continue as a kayak and personal watercraft launch area. In order to accommodate the waterfront trail at this location, a small section of the current roadway and parking area needs to be shifted closer to the railroad tracks with the cooperation of Metro North. A small retaining wall would be needed on the shoreline side of the multi-use trail to prevent undermining along the edge of the intertidal zone. A rendering of the overall shoreline looking northeast shows the link between Riverfront Green South and Riverfront Green as one continuous park with shoreline trail.
Travis Point (Map #3)

The trail will continue south by following the existing roadway between the railroad tracks and the Peekskill Yacht Club boat yard. A new tree-lined path will be built adjacent to the reconstructed parking lot that has been discussed by the City and yacht club for shared use. The trail will bypass the clubhouse to a new gazebo adjacent to their restroom facility; both structures are proposed for shared public use. The trail will proceed along the shoreline to a public dock in Travis Cove with a possible kayak launch and sculpture pavilion, and then on to the Travis Cove raised walkway. A viewpoint is proposed via an informal overlook path on top of the Travis Point knoll, which will offer excellent views of the Hudson with some selective clearing.

Travis Cove (Map #4)

The raised walkway (boardwalk) has been discussed with the permitting agencies and with Metro North and appears to be an acceptable concept, although permits have yet to be issued. The ten foot wide boardwalk would be approximately four feet above mean high water, and constructed on piles installed in the rocky shoreline adjacent to the railroad bed’s steep slope. The boardwalk would follow an upward slope until it parallels Louisa Street, and then continue as a paved path to the entrance of Charles Point Pier Park. Two significant features will overlook Travis Cove; an historic overlook platform on top of a steep rocky promontory with exceptional views of the Hudson Highlands, and a fishing pier that extends out into Travis Cove at the location of the former water intake structure for the Fleishmann Distillery. Both these viewpoints will offer interpretive signage.
Charles Point (Map #5)

While Charles Point Pier Park was completed several years ago, minor shoreline stabilization improvements are proposed to ensure the upper bank’s long term stability. In addition, improvements will be made to Fleishmann Pier, including partial widening, a covered shelter feature, and the restoration of the outermost section that is presently closed. A 10’ wide section of the RESCO property high above the Hudson River will be used to continue the waterfront trail around the fenced Wheelabrator facility, connecting to the Charles Point Marina. This will be an interpretive trail, with attractive signage that illustrates the history of Peekskill’s industrial waterfront.

Lent’s Cove (Map #6)

The trail will continue along the public boardwalk at the Charles Point Marina, and an improved trail will be constructed onto the City-owned peninsula in Lent’s Cove. An overlook structure is planned, as well as a kayak launch to access Lent’s Cove and Dickey Brook. The waterfront trail will continue behind the Bertoline building and along John Walsh Boulevard. This section will be constructed in conjunction with the approved Bertoline building expansion. The City will work with Buchanan officials to connect the trail to Lent’s Cove Park along John Walsh Boulevard. The roadway may need to be reconfigured slightly so that a 10’ wide multi-use path can be constructed on the western side of the roadway, overlooking Lents Cove.

Vehicular and Pedestrian Access

Vehicular access to the waterfront trail and parkland will be enhanced with directional signage that indicates the locations of accessible public parking areas. Strategic locations for signage include Hudson Avenue near Route 9 to access Riverfront Green Park, Riverfront Green South and the proposed new Travis Point parking area. Lower South Street and Louisa Street provide access to parking at Charles Point Pier Park, Fleishmann Pier, the proposed Travis Cove Walkway and the RESCO trail. Welch Avenue and John Walsh Boulevard are entry points for parking at the Charles Point Marina to access the Charles Point Boardwalk, the proposed Peninsula Trail and the walkway to Lents Cove Park. Riverwalk or other signage should be added at these entry points to indicate trailhead parking locations. Effective pedestrian access can be accomplished by adding crosswalks and signage at major roadway intersections, such as along South Water Street, Hudson Avenue, Lower South Street, Louisa Street and John Walsh Boulevard. These improvements will help regional and local residents to locate their desired starting point for their visit to the Hudson River shoreline.

Next Steps

This plan provides the concepts and methods that will guide subsequent planning and implementation of the new trail and park improvements along Peekskill’s Southern Waterfront. The next step is for more detailed design plans to be formulated for each segment in the form of construction documents. These documents are currently being prepared to stabilize the shoreline and to construct the trailway and parkland improvements for certain segments. Construction will take place as funds become available.
Tab - Section 2
Master Plan Maps
OVERLOOK GAZEBO
PUBLIC RESTROOM
MULTI-USE TRAIL
PUBLIC DOCK WITH POSSIBLE KAYAK LAUNCH
MULTI-USE TRAIL
SHARED PARKING
INFORMAL OVERLOOK PATH
SHARED TRAIL & DROP OFF / TURN AROUND
SCULPTURE/PAVILION VIEWING PLATFORM OPPORTUNITY

TRAVIS COVE

NOT FOR CONSTRUCTION
Tab - Section 3
Shoreline Stabilization
Section 3 Shoreline Stabilization Summary

This section provides a summary of shoreline stabilization measures, which in general are targeted toward ensuring a relatively stable waterfront while providing a textured, natural substrate favorable to the growth and activity of a variety of fish, macro-invertebrates and other wildlife species. The primary objective of shoreline stabilization measures is to create a variety of textures from a mix of large and small rocks, coarse fill, topsoil and vegetation that provides varied spaces for protective cover and a source of food for colonizing species and primary consumers.

The following shoreline stabilization measures will be employed for McGregory Brook and Peekskill Bay (subject to permitting):

**McGregory Brook**

The erosion along much of the brook is relatively minor and slowly progressing such that the spot treatment with supplemental trees and shrubs would suffice. In other areas, where trees and shrubs are lacking, the addition of a biodegradable Coir geotextile that protects a supplemental soil layering would provide an improved planting medium for quick-growing shrubs. Supplemental trees and shrubs would also be applied to the upper bank in these areas.

The lower segment of the channel just above the confluence with the Hudson River has experienced much more erosion, due to the mixing and churning that occurs during storm events when the tide is rising, the general tidal and wave action and the lack of woody vegetation atop the bank.

The portion of the stream bank nearest the river that has been washed out will be rehabilitated by supplementing the stone base that is presently exposed to create a barrier behind which can be placed layers of soil wrapped with geotextile fabric. A Coir log positioned at the top of the bank, protected by rip-rap at the face and underlain with a Coir wrapped soil layer, will promote the growth of herbaceous and woody vegetation immediately behind the rip-rap face. Additional live stakes will further anchor the soil layer encased with heavy Coir geotextile fabric and promote the growth of woody shrubs. The entire slope will be seeded with native grasses and the top of the bank will be planted with trees and shrubs to ensure long-term stability of the bank. The bio-engineered soil layers, while subject to a level of tidal and wave action should, with the growth of herbaceous and woody vegetation, become completely enveloped and disappear from view. Concept detail 1/L300 enclosed herewith illustrates the approach to restoring and stabilizing this portion of the McGregory Brook stream bank.

**Riverfront Green Park Shoreline**

The approach to stabilizing the shoreline just south of McGregory Brook would focus more on re-shaping the existing shoreline to the level required to stop the erosion than on restoring areas that disappeared decades ago. The approach to reclamation will incorporate existing underlying material to re-build the riverbank and will be enhanced with a combination of placing some larger pieces of rock, coir logs, finer soils and sediments and low growing woody shrubs. The
approach to stabilizing this portion of the shoreline can be similar to that for the lower end of McGregor Brook (1/L300), however if the upper surface is to remain open with only grasses and herbaceous vegetation, the use of TRM in combination with rip-rap shoreline protection may be necessary. Some minor repair work to the existing rip-rap shoreline will take place south of the ferry dock, where the underlying construction fabric has been exposed.

**Launch Area Crescent**

The crescent shaped pea stone beach situated just west and south of the boat launch has experienced periodic erosion from tidal and wave action. This has been most prevalent along the innermost stretch near the parking lot, which has a north/south bearing.

The pea stone and underlying soil placed there by the City has eroded away, exposing a utility pipe. The maintenance of this area includes the occasional clean-up of displaced beach material and rack, along with periodic re-nourishment of the pea stone surface.

A permanent retaining wall or pile will be installed at or slightly above the high tide line, avoiding the inter-tidal zone. In order to provide enough room for a minimum 10-foot wide multi-use trail, the parking lot and associated drive isle will be re-aligned. It appears there is some room available between the parking lot and railroad, but the exact amount, and ability to move it closer to the railroad will necessarily be reviewed and approved by the Metro North authorities. The retaining wall would provide protection against further erosion and avoid permanent fill within the existing inter-tidal zone. The City will continue periodic beach nourishment within the framework of this approach. Concept detail 2/L300 enclosed herewith illustrates the approach to restoring and stabilizing the launch area crescent. Other options will be considered if the roadway cannot be realigned.

**Riverfront Green South**

Nearly the entire length of the Riverfront Green South shoreline features a haphazard mix of boulders, rip-rap, concrete and other debris. The apparent result is wave action crashing over the high barriers at or near the shoreline loosening the granular material that is held loosely together by a patchwork grassy groundcover and carrying it back into the river. This has created a series of cut-out depressions where the low lying ground has been removed, leaving a coarse mix of rubble, stone and boulders where soil once existed.

Since the shoreline is already comprised of a mix of boulders, concrete and rip-rap, the approach to stabilization involves the re-shaping and infilling of the shoreline armoring that raises the elevation to just above the high tide line, or approximately five (5) feet above mean sea level. This re-build will at points along the shoreline, leave lower ground that would by virtue of wave action, be susceptible to erosion if left unprotected. In order to protect the landward area, the ground elevation will be raised to an elevation equal to or slightly higher than the armored shoreline. In order to prevent the entrapment of flood water or breaking waves, the ground surface will be tapered to meet the 100-year floodplain elevation. Concept detail 3/L300 enclosed herewith illustrates the approach to stabilizing the Riverfront Green South shoreline.
General

There have been a number of options considered for shoreline stabilization, with the general consensus being that a bio-engineered approach is preferred. The area just south of McGregory Brook would receive the least aggressive treatment, effectively restoring a previously rocky shoreline, but with some potential bio-engineered soil layers or TRM protection above the high-tide line. A similar approach to shoreline stabilization will be employed along the Riverfront Green South waterfront, whereby the rip-rap protection is rehabilitated and bio-engineered soil stabilization techniques are employed above the high tide elevation.

The approach to stabilizing the shoreline has been the subject of extensive review by the Department of State and NYS Department of Environmental Conservation, however this work has yet to receive permits. Specific shoreline stabilization details will be shown in construction documents, subject to permit requirements from the DOS, DEC and Army Corps of Engineers.
BLEND TO EXISTING. PLANT SURFACE WITH DECIDUOUS TREES AND SHRUBS TO 10.0' BEYOND TOP OF BANK.

HEAVY COIR GEOTEXTILE SURFACE PROTECTION

SOIL LAYER WRAPPED IN HEAVY COIR GEOTEXTILE FABRIC

WOOD STAKES SPACED 3.0' O.C.

LIVE WOOD STAKES SPACED 3.0' O.C.

PRE-PLANTED COIR BIO-LOG

WOOD STAKES WIRED TOGETHER

RE-SHAPE STREAM BANK WITH MEDIUM RIP-RAP AND EXISTING STONE, FILL VOIDS WITH LIGHT RIP-RAP AND ITEM 4 GRAVEL.

APPROXIMATE HIGH TIDE (4.5 FT.)

EXISTING ERODED STREAMBANK

SAND

EXISTING IRON SLAG

McGregory Brook Streambank Restoration

1 L300 SCALE: 1/2" = 1'-0"
Launch Area Crescent Beach

Scale: 1/2" = 1'-0" V
1/4" = 1'-0" H

Existing Parking
Existing Curb
Future Multi-Use Trail
Retaining Wall
Periodic Beach Re-Nourishment
Existing Rock Area
Existing Exposed Utility Pipe
Approximate High Tide (4.5 ft.)
Riverfront Green South Shoreline Stabilization

3 L300

SCALE: 1/2" = 1'-0"

HEAVY COIR GEOTEXTILE WRAPPED TOPSOIL LAYER ABOVE 100-YEAR FLOOD ELEV.

TRM WRAPPED TOPSOIL LAYER FOR TURF GROUNDCOVER;
OR HEAVY COIR GEOTEXTILE WRAPPED TOPSOIL LAYER FOR SHRUB/TREE GROUNDCOVER

CONTINUE SLOPE AT 1:5 TO MATCH EXISTING GRADE

100-YEAR FLOOD ELEV. (7')

INFILL RIPRAP SLOPE W/ MEDIUM TO HEAVY STONE. FILL Voids W/ LIGHT RIPRAP AND ITEM 4 GRAVEL

APPROXIMATE HIGH TIDE (4.5')

REMOVE BROKEN CONCRETE SLABS

EXISTING ERODED SHORELINE

APPROX. LOW TIDE (0.5')

GRANULAR FILL WRAPPED IN HEAVY COIR GEOTEXTILE FABRIC
Tab – Section 4
Best Management Practices and Impacts
Section 4 Best Management Practices and Impacts

This section provides a summary of Best Management Practices (BMPs) for shoreline stabilization and impacts to State-designated Significant Coastal Fish and Wildlife, Scenic Areas of Statewide Significance, other Coastal Management Program special management areas or other sensitive resources. Generally, the BMPs are targeted to ensuring a relatively stable waterfront while providing a textured, natural substrate favorable to the growth and habits of a variety of fish, macro-invertebrates and other wildlife species. The primary objective of shoreline stabilization measures would be to create a variety of textures from a mix of large and small rocks, coarse fill, topsoil and vegetation that provides varied spaces for protective cover and a source of food for colonizing species and primary consumers.

Best Management Practices incorporated into the concept design are relatively straightforward, with due consideration to the above-mentioned objectives. The following list of BMP’s is illustrative of those measures incorporated into the overall design of the Peekskill Southern Waterfront shoreline stabilization plan.

1. First and foremost in the design approach is the principle that the existing degraded sections of shoreline would be re-built in the same position as presently exists, avoiding the furtherance of impacts to the inter-tidal zone.
2. Vertical hardened shoreline protection devices would not be included in any component of the stabilization design.
3. A mix of textural components would be included to supplement the existing shoreline remnants.
4. Foreign objects, such as iron slag, steel and concrete slabs that do not fit within the context of a natural shoreline habitat will be buried or removed from the site.
5. Hardened shoreline stabilization measures such as rip-rap would be used sparingly as needed, with a vegetated component incorporated to the extent practicable beginning at the high-tide elevation or lower.
6. Native vegetation will be used to reclaim the impacted shoreline that is presently relatively devoid of vegetation. Areas that currently exhibit an abrupt transition from lawn to rip-rap will be replaced with a transition that includes a mix of woody and herbaceous native plant species.
7. Wherever possible, stabilization measures will incorporate bio-degradable geotextiles that are incorporated into the substrate over time.
8. Apart from the rock treatment, non-biodegradable components would be limited to sub-grade reinforcement to ensure longevity of the rooting zone.
9. The use of local material suppliers will reduce the energy consumption otherwise necessary for transport from remote supplier locations.
10. The plant selection will be coordinated with the regional NYS Department of Environmental Conservation Estuaries division personnel to ensure optimal local native vegetative species are selected and applied to the shoreline.
11. The shoreline will be maintained to ensure long-term coverage and stability of the native vegetation. Management practices will avoid the use of non-target weed killers, with invasive or non-native colonizers removed mechanically or with careful application of targeted chemical control that is deemed safe for the aquatic habitat.
12. The use of vegetated geo-lifts along the upper bank of McGregory Brook and other areas designated for complete naturalization will replace a relatively un-natural vegetative condition.

13. Native trees planted along the McGregory Brook corridor will provide a natural backup to those that may one day die or fall at the edge of the stream bank, reducing the need for artificial protection measures.

Whenever property adjacent to a water body is developed, there are inherent potential impacts associated with increased runoff, changes in water quality due to erosion and sediment deposition and possible thermal discharges. The following list of BMP’s is illustrative of those measures incorporated into the overall design of the Peekskill Southern Waterfront upland area improvements. The goal of all parkland improvements is to reduce water quality impairments from upland runoff or in-water activities and to mitigate impacts to fish and wildlife habitat areas, scenic areas and other sensitive resources.

1. The upland improvements will be protective of the aquatic environment primarily by means of maintaining and improving the vegetated buffer between actively used areas and the shoreline.
2. The use of native vegetation that includes a mix of woody and herbaceous species will reduce the present dominance of lawn grasses along the most frequently visited portions of the shoreline.
3. The re-introduction of carefully placed trees and shrubs will provide needed shade and enhance the viewshed experience that includes framing important views.
4. The additional shade provided by the proposed trees will help cool the ground and paved surfaces, reducing the thermal discharge.
5. The use of a self-contained spray park facility will eliminate the potential for additional runoff.
6. The walkway along the shoreline of Travis Cove will be positioned as close to the shoreline as possible, and not within the area of existing SAV beds.
7. The piers of the walkway will help buffer the ice scour action near the shoreline, which will improve the capacity of the substrate to support plant life.
8. Any additional building or paving improvements are subject to the requirements of the NYS Department of Environmental Conservation Stormwater Pollution Prevention Plan regulation.
9. An Erosion and Sediment Control Plan will be implemented over the course of construction, preventing excessive erosion and intercepting any mobile sediment originating from work areas.
10. An increase in shoreline and near shoreline vegetation will not only help in the filtration of water originating from the uplands, but also help in preventing erosion and sedimentation that would otherwise be generated by storm, wave and tidal action of the River itself.
11. Increasing the bio-mass along the shoreline will also improve the in-water habitat by elevating the prey species numbers.

Generally, the improvements to the waterfront park are designed for compatibility with the existing aesthetic and natural resources along the river including the Hudson Highlands Scenic
Area of Statewide Significance. The park components will add a relatively minor amount of impervious surface, as the goal would be to limit the paved trail to that which is necessary to provide multi-purpose access by the general public. Existing naturalized areas will be preserved as the improvements are primarily situated on previously disturbed or lawn areas. Increasing the textural nature of existing vegetation will enhance the park experience for visitors by providing shade and visual interest, while improving the natural environment that borders the river.

The most notable mitigating measure to the minor increase in paved surface is the cooling affect of the trees and shrubs that will be strategically placed. The shade trees will be positioned, for example, adjacent to the existing play structure, which is presently directly exposed to the sun’s rays. Additional trees will be planted at strategic locations along the paved walkway to provide needed shade. The existing shoreline condition, wherever the recently applied rip-rap armor exists, is bordered by a sparsely vegetated open grass field. The mix of trees and shrubs positioned along the rip-rap will also help cool the surfaces and reduce the thermal discharge.

Scenic areas and vistas will be preserved by strategic selection and placement of plant materials. The planting strategy will be mindful of the need to preserve existing viewsheds from parking areas, while enticing others to walk the gateway or promenade to reach a rewarding view, or position themselves where a view is framed by native trees and shrubs. Varied vegetative treatments will be used, ranging from the natural untouched, to a semi-natural managed, to a formal ornamental, to open lawn. Existing important upland resources will be preserved; as there are minimal changes proposed that would disturb any areas not already significantly altered by man’s activities. Existing in-water resources will be preserved, with minimal docking that is of the floating type. There will be no new piles or jetties installed for the purposes of mooring or docking boats.

The overall plan would avoid the furtherance of impacts on the intertidal zone and any nearby SAV beds. As such, the proposed measures would avoid adverse impacts to State-designated Significant Coastal Fish and Wildlife. The proposed measures are actually designed to restore and enhance these valuable resources while mitigating potential impacts to water quality.
Tab – Section 5
Phasing Plan and Map
Section 5 Phasing Plan for Waterfront Improvements and Stabilization

This is the preferred phasing plan based on the primary objective of creating a continuous multi-use trail along the Peekskill waterfront. However, actual phasing will depend on the availability of grant and other funding and related priorities.

Phase 1 – Riverfront Green Park Shoreline Stabilization and Walkway

All shoreline and bank stabilization measures along and adjacent to the mouth of the shoreline of McGregor Brook and Riverfront Green will be installed prior to any other site improvements. The multi-use path along McGregor Brook and Riverfront Green (up to the Ferry Dock) will be constructed in accordance with RiverWalk standards.

Phase 2 – Riverfront Green South

The Riverfront Green South (RGS) shoreline stabilization measures will be installed from south to north. Any proposed grade changes abutting and within twenty (20) feet the shoreline will be accomplished at this time. Grade changes affecting portions of RGS further inland will not be implemented until all shoreline stabilization measures are in place. The existing crescent beach near the boat launch will be re-nourished and a retaining wall installed above the intertidal zone in the vicinity of the parking area where the multi-use trail will pass. Limited space is available for the multi-use trail as a result of bank erosion at this location. The retaining wall will prevent further erosion of property lying above the intertidal zone.

The upland portion of Riverfront Green South will contain the waterfront trail, as well a secondary path system with decorative lighting, expanded launch parking, entry plaza’s, overlook deck with trellis and seat wall, overlook gazebo, trellis swings, public art installation, tree and shrub planting, picnic table installation and directional signage. All improvements within Riverfront Green South will be installed following the shoreline stabilization.

The existing roadway approach to Travis Point, which the multi-use trail will abut, will be re-graded to ensure a maximum 5% slope. This will ensure unimpeded access to Travis Point and points south along the multi-use trail system.

Phase 3 – Travis Cove Elevated Walkway

The enhancements at Travis Cove will involve an improved trail approach from the existing gravel roadway, which leads to a “boardwalk” connection to Charles Point across Travis Cove. The establishment of transitional grades at the south end of Travis Cove will facilitate a trail connection running roughly parallel with Louisa Street This trail will connect with the sidewalk approach that enters Charles Point Pier Park.

Phase 4 – RESCO Trail Construction

The multi-use trail connection extending from Charles Point Park to Charles Point Marina, behind the RESCO facility will be constructed in close coordination with RESCO management.
The existing RESCO border fence will be re-located such that the trail remains outside the RESCO area of control. This trail will be developed as an interpretive trail, with information about the industrial waterfront.

**Phase 5 – Riverfront Green Park Amenities**

All internal paths, landscaping, fences, entry plazas & gateway features, bandshell or performance platform, overlook plaza, trellis swings, public art installation, tree and shrub planting, park benches, information kiosk and directional signage, secondary path system, decorative lighting, floating dock, spray ground, bus loop/parking and ferry terminal will be installed within the confines of Riverfront Green Park extending to the existing boat launch.

**Phase 6 – Travis Point**

The enhancements at Travis Point will include the re-grading and construction of a public parking area, overlook gazebo, improved rest rooms, an elevated overlook and trail in the eastern wooded area, an overlook plaza and day-use docking at Travis Cove. An existing footpath along the shoreline from the rest rooms to the gravel roadway will be improved according to RiverWalk standards.

**Phase 7 – Travis Cove Overlooks**

A secondary trail would provide a link to an overlook atop the large boulder adjacent to Travis Cove. Additionally, a boardwalk and deck fishing pier could be constructed out to the historic foundation of the Fleischmann Factory Water Pump.

**Phase 8 – Fleishmann Pier Renovation**

Renovations to Fleishmann Pier include partial widening, a shelter feature and restoration of the outermost extension that is presently closed to the public.

**Phase 9 – Lent’s Cove Trail Connection**

Improvements will be made to connect the Charles Point Marina boardwalk to the Bertoline site property. The Peninsula Trail will be installed to access a small overlook shelter in Lent’s Cove and provide access to a kayak launch. The multi-use trail connection will connect the Charles Point Marina to a point on John Walsh Boulevard via the Bertoline property. The trail will be constructed along the north and east edge of this private property. A new sidewalk/trail connection will extend to the Buchanan border, possibly extending to Lent’s Cove Park in coordination with Buchanan officials.
Phasing Plan Map

The phasing plan map illustrates the various elements, some of which will be included in the construction documents for the current funding phase contained in the Master Plan summary. Overall, priorities include stabilizing the riverbank and extending the multi-use trail connection. It is also important to provide waterfront access where none currently exists, such as at Travis Cove and along the RESCO shoreline. Ultimately, the timing of construction will depend on the availability of grant funding and associated priorities.
PHASE 1
COMPLETE CONSTRUCTION OF RIVERFRONT GREEN SOUTH ENHANCEMENTS:
- WALKWAYS
- OVERLOOK GAZEBO
- OVERLOOK DECKING AND TRELLIS
- EXPANDED LAUNCH PARKING
- PUBLIC ART INSTALLATION
- LANDSCAPING

PHASE 2
COMPLETE CONSTRUCTION OF RIVERFRONT GREEN SOUTH ENHANCEMENTS:
- WALKWAYS
- OVERLOOK GAZEBO
- OVERLOOK DECKING AND TRELLIS
- EXPANDED LAUNCH PARKING
- PUBLIC ART INSTALLATION
- LANDSCAPING

PHASE 3
ELEVATED WALKWAY AT TRAVIS COVE TO LINK TRAVIS POINT TO CHARLES POINT

PHASE 4 (SEE MAP #5)
RESCO TRAIL CONSTRUCTION WITH INTERPRETIVE SIGNAGE

PHASE 5
COMPLETE CONSTRUCTION OF RIVERFRONT GREEN PARK ENHANCEMENTS:
- FERRY TERMINAL
- PERFORMANCE PLATFORM
- PATH SYSTEM
- SPRAY PARK
- GATEWAY
- OVERLOOK ENHANCEMENT
- BUS DROP OFF AND TURN AROUND
- PUBLIC DOCKING
- FERRY DOCKING

PHASE 6
TRAVIS POINT ENHANCEMENTS:
- OVERLOOK GAZEBO
- HILLTOP OVERLOOK AND TRAIL
- IMPROVED RESTROOM FACILITY
- TRAVIS COVE OVERLOOK AND DAY-USE DOCKING
- SHARED PARKING AREA

PHASE 7
TRAVIS COVE OVERLOOK AND BOARDWALK CONNECTION TO HISTORIC WATER PUMP STRUCTURE

PHASE 8
FLEISHMANN PIER RENOVATION (SEE MAP #5)

PHASE 9
LENTS COVE (SEE MAP #6)
- PENINSULA TRAIL
- OVERLOOK SHELTER
- KAYAK LAUNCH

CITY OF Peekskill Southern Waterfront Master Plan
May 4, 2009
Phasing Plan
Section 6 Opinion of probable cost for
City of Peekskill Waterfront Master Plan

Rough cost projections based on schematics by Synthesis:
09-19-08 (Rev. 02-10-09)(Rev. 02-22-09)(Rev. 05-08-09)(Rev. 06-12-09)
* Indicates items that can be substituted with item in alternate estimate

### PHASE 1 - Riverfront Green Stabilization and Walkway:

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### PHASE 2 - Riverfront Green South Stabilization: Path and Amenities

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### PHASE 6- Travis Point Trail, Parking and Amenities

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### PHASE 7-Travis Cove Overlooks:

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Tab – Section 7
Regulatory Requirements Summary
Section 7 Regulatory Requirements Summary

The following is a list of permits likely necessary in the event that any appreciable fill is proposed below the mean high water mark, docks, moorings or platforms are proposed, or proposed work affects the bed or banks of a classified stream channel. Special conditions may be warranted for work in the waterway that potentially impacts any threatened, endangered or special concern wildlife or special habitat areas.

All Docks, Raised Walkways, Fishing Platform, Improvements to Fleishmann Pier

- Federal Section 10 Rivers and Harbors Act for work within a navigable waterway, administered by the U.S. Army Corps of Engineers (Joint Application for Permit).
- NYS Department of Environmental Conservation Article 15 Protection of Waters Permit (Joint Application for Permit).
- NYS Department of Environmental Conservation Article 15 Title 5 Docks, Moorings or Platforms (Joint Application for Permit, Supplement D-2)

Any land disturbance within 100-feet of the NYSDEC Wetland near Lent’s Cove

- NYS Department of Environmental Conservation Article 24 Freshwater Wetlands (Joint Application for Permit).

All shoreline stabilization work affecting the intertidal zone

- NYS Department of Environmental Conservation Article 25 Tidal Wetlands Permit (Joint Application for Permit).
- NYS Department of Environmental Conservation Article 34 Coastal Erosion Control Permit (Joint Application for Permit)

General, for all land and water improvements

- NYS Department of Environmental Conservation Stormwater Pollution Prevention Plan (SWPPP) for land disturbance in excess of one acre.
- NYS Department of Environmental Conservation 6 NYCRR Part 617 State Environmental Quality Review Act (SEQRA).
- NYS Department of State Coastal Management Program, Federal Consistency Assessment Form.
- NYS Office of General Services Public Lands Law for work on underwater lands owned by the State of New York.
- Section 14.09 of the NYS Parks, Recreation and Historic Preservation Law of 1980 and Section 106 of the National Historic Preservation Act, for projects that are funded, licensed or approved by state or federal agencies. Requires NYS Office of Parks, Recreation and Historic Preservation Office (OPRHP) review.
A Joint Application for Permit would initiate review of the Federal Section 10 permit and the State Article 15, Article 25 and Article 34 permits. A Notice of Intent is required along with a Stormwater Pollution Prevention Plan for construction activity that exceeds one (1) acre of land disturbance. The permit applications would necessarily be accompanied by a narrative description of the action, its potential impacts and mitigation measures, and a set of design drawings that illustrate the prospective improvements and allow for an accurate computation of cuts, fills or other improvements within or adjacent to the regulated waterway. The NYS OPRHP would be provided the Phase 1 Archeological Survey and a copy of the plans for review under State Section 14.09 and Federal Section 106.
Site Reconnaissance Report for:

Peekskill Southern Waterfront

City of Peekskill, New York

November, 2007

This report was prepared for the New York State Department of State Division of Coastal Resources with funds provided under Title 11 of the Environmental Protection Fund.
Contents

Section 1 Introduction
- Introduction
- Project Approach

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- Zoning
- Environmental Permitting Standards
- Constraints, Needs and Opportunities
  - Constraints
  - Inter-model Connectivity
  - Focal Points
  - Shoreline Stabilization and Habitat Protection
- Conclusion

Section 3 Exhibits
- Exhibit A:
  GIS based Site Overview/Aerial Mapping – Two Images
  North and South Sections
- Exhibit B:
  Travis Cove Preliminary Survey Map
- Exhibit C:
  NRCS Soil Survey Report
- Exhibit D:
  Flood Plain Mapping
- Exhibit E:
  Phase 1A Literature Review and Archeological Sensitivity Assessment (DRAFT)
Introduction

The following information is presented as a summary of Task 1: Site Reconnaissance in accordance with the August 17, 2007 agreement between the City of Peekskill and Synthesis, LLP. Included in this report is a copy of the Travis Cove survey. This survey information will be integrated with the adjoining as-built surveys supplied by the City of Peekskill.

Task 1 includes the preparation of a site map that illustrates existing conditions including:

- Overall project boundaries
- Ownership/grant/lease status of all lands to be incorporated into the design
- All man-made structures, buildings and facilities on or adjacent to the site
- Above and below ground infrastructure
- Transportation/circulation systems that serve or are located near the site
- Adjacent land and water uses
- Topography and vegetation patterns, flood plains, drainage corridors, soils
- View corridors
- Zoning setbacks
- Other miscellaneous information

The existing conditions map is included herewith as Exhibit A. The Travis Cove survey is included as Exhibit B. The maps were assembled using the 1997 survey of Riverfront Green and Riverfront Green south, as well as GIS data provided by the City for Lents Cove, Charles Point Pier Park and Westchester RESCO. The existing conditions map and final survey will be useful in both the conceptual planning and construction document phases. Some of the information listed above (e.g. utilities, ownership) will be made available when the complete survey mapping is compiled.

Project Approach

Synthesis’ approach to this project will provide the most comprehensive and effective means for developing a master plan that would protect and enhance the riverfront environment and meet the needs of the regional Community. This existing conditions report will serve as a basis to develop land-use and slope stabilization recommendations and a realistic cost estimate for prospective park enhancements and protection measures, which will help the Community in future attempts to secure various local, state and federal funding.

Our approach to the Site Reconnaissance phase included the following tasks:

Base Mapping

Base mapping is being prepared based on aerial photographs, information supplied by the City, the Travis Cove survey and other available information from State and federal sources. The preliminary GIS and survey base maps will serve as the foundation for
developing the park master plan and Construction Documents. The preliminary base map included herewith as Exhibit A was prepared from aerial imagery and GIS topographic and boundary information. A more detailed topographic survey is being compiled using existing 1997 surveys for Riverfront Green South and Travis Point, updated topographic survey for Riverfront Green and new survey of Travis Cove.

**Site Analysis**

In addition to visiting the site, historical and natural resource information, aerial images, soils survey data and on-site photographs were reviewed along with the survey of Travis Cove. The planning process begins with gaining an understanding of the assets and constraints of the site. Synthesis first completed an examination of the site’s overall characteristics, such as existing park improvements, adjacent land and water uses, view corridors, zoning and environmental permitting standards, vegetation patterns, flood plains, drainage patterns, soils, erosion, topography and utilities. This analysis will provide a framework for determining the site characteristics that would shape the final master plan. Off-site characteristics, such as pedestrian and auto accessibility, and adjoining land uses provided an understanding of the surrounding characteristics which in turn influence the placement of trails, focal points or other recreational program items.

**Literature Review**

Research included the review of the historical/archeological survey, on-line data including the Department of State and U.S. Fish and Wildlife Service reports, local historical accounts and NYS Department of Environmental Conservation regulatory information. The review of regulatory, historical, and natural history information is helpful in the formulation of ideas for park amenities, focal points, shoreline stabilization and habitat improvements that restore, remember and celebrate the site’s man-made and natural history.

**Historical/Archeological Survey**

A Phase 1 archeological survey was completed and is included herewith as Exhibit D. The study recommends further testing in the Riverfront Green Park if improvements are planned that result in disturbance below the current ground surface. The Riverfront Green South area is relatively modern fill and thus, requires no further testing. The Travis Cove area is comprised largely of bedrock and recent fill along the shoreline, which will require no further testing. If improvements within the Yacht Club or Charles Point property result in disturbance below the current ground surface, additional testing is recommended. Improvements to the shoreline area of Charles Point Marina would not likely require further testing, although impacts below the ground surface along the top of Charles Point in the Wheelabrator property may require additional testing. Given the amount of fill and rip-rap in the Lent’s Cove area, minor disturbances below the ground surface would require no further testing. Deep disturbance however, may require additional testing. The final determination of archeological impacts will be identified once the concept master plan is complete.
General Conditions

Synthesis conducted on-site reconnaissance on October 3, 2007 to build upon the information gathered during the proposal phase. An inspection report was generated that summarized the findings and points of interest. There were a number of notable elements that will play a role in shaping the final design and layout of waterfront and park improvements. Most notable is the extent of hardened shoreline, whether natural or man-made, along the entire length of the shoreline corridor (Image 1).

Despite this hardening, the shoreline has experienced erosion due primarily to the excessive wave action during storm events, and to a lesser degree the frequency of boat wakes. Erosion taking place above the rip-rap armor is due largely to the lack of stabilizing vegetation combined with the coarseness or shallowness of the soil. Areas where brush and trees have been allowed to grow for example, exhibit significantly less erosion.

Peekskill Landing, just north of the study area across McGregory Brook, is an important component of the overall waterfront experience. A direct link across McGregory Brook already exists, and would remain as the recommended crossing point (Image 2). The historic Lincoln Depot, registered on the National Historic Registry, lies a short distance...
away across the railroad tracks, within a busy commercial area off South Water Street (Image 3). A pedestrian overpass is planned to connect Riverfront Green with the Lincoln Depot. This will allow visitors to access downtown Peekskill via Central Avenue.

Image 2: Existing footbridge over McGregory Brook. Note second bridge beyond

Image 3: The Lincoln Depot as viewed from the Riverfront Green parking lot
Nearby is the modern day railroad station off Hudson Avenue and Railroad Avenue, serving the Metro North and Amtrak passenger trains (Image 4). The photograph below, by Wikipedia, depicts an arriving train. Note the pedestrian overpass that provides access to the parking lot at Riverfront Green.

Image 4: The Peekskill Rail Station

The rail station is adjacent to a fairly busy commercial area in the vicinity of Hudson Avenue, Railroad Avenue and South Water Street. This area, a busy stopping point for commuters and tourists, represents an important gateway into the Peekskill Southern Waterfront.

Another noteworthy feature is the marina and restaurant at Charles Point. The marina accommodates a large number of boats such that the winter storage spills over into the parking lots (Image 5). A wholesale distribution building, D. Bertoline & Sons, Inc. lies just south and east of the Charles Point Marina (Image 5), and is the only privately owned parcel within the study area. Indications are that this business may be looking to expand, and may pose some limitation to trail extension toward Lent’s Cove. The restaurant itself is an upscale and apparently quite popular destination that enhances the overall waterfront experience (Image 6). It appears there is ample room along the waterfront to extend a trail along the north shore of Lent’s Cove.
Image 5: Charles Point Marina. Note boat storage spilling over into parking lots.

Image 6: Restaurant at Charles Point Marina. Note RESCO building in background.
Within the Riverfront Green Park, a variety of active and passive recreational opportunities exist. Most notable is the floating ferry dock, which is a port of call for the Hudson Highlands Cruises, Inc. with their M.V. Commander vessel (Image 7). Also notable in the foreground is the sand beach, which the City maintains for public enjoyment.

![Ferry Dock during the boarding of M.V. Commander.](image7)

Image 7: Ferry Dock during the boarding of M.V. Commander.

The park is also home to a recently improved boat launch (Image 8), play ground (Image 9), volleyball courts and picnic pavilion (Image 10). The picnic pavilion has a central fire place and appears to be a popular gathering place. The restroom facility is also being renovated. The volleyball courts appear to be frequently used, although the boundary lines are blurred and unkempt. The playing surface is mounded from the addition of sand. Preliminary recommendations would include the edging and re-grading of the playing surface. The condition of the overhead lights is not known, but they appear to be dated. Improvements to the lighting should be accomplished as needed. The nets are in fair shape but should be checked for proper height and replaced or improved as necessary.
Image 8: Boat launch and jetty. The park is also popular with geese.

Image 9: Recently renovated playground. Note the nearby picnic pavilion.

Image 10: One of two volleyball courts in need of renovation.
The shoreline between McGregory Brook and the beach is relatively inhospitable, as it is partially eroded and strewn with large pieces of iron slag (Image 11). The erosion is due largely to the waterfront’s position relative to daily and storm related tidal action, combined with the mixed nature of fill materials and lack of protective vegetation.

Image 11: Note the foreground beach, pieces of iron slag and drainage pipe. Also note the recently installed benches and volleyball courts in the distance.

Also noteworthy is that Riverfront Green South and to a certain extent Riverfront Green is an artificially created landscape. The area south of McGregory Brook was once a significant stretch of marshland, an important component of the Hudson River estuarine system. Sewer and water mains exist through the approximate center of Riverfront Green South running north and south, one of which, an approximate 8” ductile iron pipe, is exposed to the surface (Image 12). Erosion is as would be expected, most pronounced along this artificially created stretch of land.
The land on which the Peekskill Yacht Club resides, known as Travis Point, is essentially a large weathered rock outcrop through which the railroad was cut. Existing woodlands, a typical northeast oak/hickory association, exist on the portion of the point that is steep, rocky and difficult to build upon. Such woodlands would be best preserved to the extent practicable as they represent an important component of the land/water transitional biota. Notable also is a group of private homes, the owners of which lease the land from the City of Peekskill. The only access from Riverfront Green South to Travis Point is by way of the existing road that dead-ends at Travis Cove. Steep rock outcroppings along the northwest shoreline, combined with existing homes, pose a severe restriction to a trail connection at or near the waterfront. The Peekskill Yacht Club, with marina and boat storage, will be celebrating its 100th anniversary in 2008 (Images 13 and 14). A large boat storage area for the yacht club is located directly on the waterfront.

Image 12: Note the eroded banks and exposed utility line just south of boat launch
Travis Cove, formerly known as Sandy Cove, was likely assigned its original name from the alluvial nature of the substrate that was deposited by the tributary stream channel. The Cove was later named after one of the original settlers of the area, a farmer that owned considerable riverfront property. Travis Cove’s natural shoreline is very steep, with bedrock outcrops. The cove was filled on the east side to construct the railroad. Large
culverts accommodate the water originating from the east which, combined with the fill, creates a vertical or very steep slope along the east side of the Cove (Image 15).

![Image 15: Note the bedrock outcrops, railroad fill & culvert along Travis Cove shoreline](image)

North/south access is afforded only by traversing the railroad bed or by automobile via Lower Street and Louisa Street. Another feature is the newly established baseball park (visible in Image 15), accessible via sidewalk over the Louisa Street railroad overpass. The only access to the shoreline presently is a pathway to the northern most corner of the cove, the southern tip of Travis Point. A small floating dock exists at that location (See Image 30).

**Natural Resources**

Natural resources within the corridor have been influenced by the historical and contemporary manipulation of the shoreline and adjacent uplands, although the water quality and fisheries resources have undoubtedly improved since the early industrial period. The lack of natural shoreline and associated limitation to the growth of submerged aquatic vegetation (SAV) has impacted to varying degrees the species dominance and distribution. The Hudson River at Peekskill is situated within a low to moderate salinity zone, with a mix of freshwater and marine organisms, including
anadromous fish species (e.g. striped bass) that tolerate varying levels of salinity over different phases of their life cycles\(^1\). The existence of brackish sub-tidal aquatic beds is a significant factor in species survival. A large SAV complex exists within Peekskill Bay a short distance north and west of the Peekskill waterfront. These beds, combined with linear beds along the shoreline, are an important component of the estuarine biota. Consideration will be given to the means of protecting, restoring or enhancing the estuarine habitat along the shoreline.

Travis Cove is fairly shallow and gradually sloping along the base of the otherwise steep and rocky banks. Although at low tide, the exposed surface shows limited vegetative cover, the deeper portions are likely supportive of SAV. The generally shallow nature of this section of the river is evidenced by the length of the Fleishmann Pier, which was built to eliminate the need for off-loading to shallow draft vessels. The pier allowed larger vessels delivering molasses to the Fleishmann facility to dock and off-load directly. The installation of a floating or pile based walkway within Travis Cove would have little or no impact on the riverine habitat, as the work would be only marginally invasive. The piers themselves actually provide attachment points for various benthic organisms. The walkway itself would also be a source of shade for fish and other aquatic species. The review procedures associated with the State and Federal permits for work within the waterway would necessarily include an assessment of potential impacts on benthic and shoreline habitat and measures taken to minimize or otherwise offset the impact to such habitat.

### Drainage

The National Flood Insurance Program (NFIP) Flood Insurance Rate Map (FIRM) indicates that the flood Zone AE extends to 7’ above mean sea level, and corresponds roughly to Hudson Avenue in the vicinity of Riverfront Green and Riverfront Green South. Zone AE is defined as an area inundated by 100 year flooding for which the base flood elevation (7 feet above mean sea level) has been determined. The flood zone tapers back toward the river on the approach to Peekskill Yacht Club and Travis Point, where the river bank is more sharply defined. The sharply defined, generally steep topography at the riverfront continues from Travis Point to Lent’s Cove. The only significant feature that rests below the flood plain elevation is the small point at Lent’s Cove.

Primary drainage features within the study area include McGregory Brook to the north, a channel that carries significant historical meaning (Image 16). The channel was manipulated in its approach to the river, its original edge replaced by a vertical stone wall (Image 17). This hardening likely occurred in the early 1900’s when the original marsh land was filled just south of the brook to make way for expanding industrial development.
Image 16: McGregory Brook facing west

Image 17: Note the hardened stone wall that formed the bank of McGregory Brook
Another major unnamed tributary enters the river at Travis Cove, which is likely fed by stormwater flows originating from the City of Peekskill. This tributary has been manipulated as well, recently re-routed around the new baseball facility. A third major tributary, Dickey Brook enters the river at Lent’s Cove. The brook enters the Cove via three large culverts under the roadway. Additional stormwater flows are evidently directed to the river, as pipes of varying sizes daylight along the riverbank. The largest such pipes exist near the midpoint of Travis Cove and in Lent’s Cove just north of the Dickey Brook tributary.

Soils

The soil conditions within the study area vary from a moderately well drained and relatively level floodplain soils to very steep, rocky soils with a high rate of runoff. The Riverfront Green and Riverfront Green South are comprised largely of the moderately well drained gravelly loams, but are subject to flooding despite the United States Department of Agriculture Natural Resource Conservation Service Soil Survey suggesting otherwise. This soil component within the study area exists below the September 28, 2007 100-year floodplain and is comprised of a mix of natural and placed soils. The lack of ponding suggests the soils are granular, consistent with the Soil Survey report.

The Travis Point area is reported to be comprised of the Chatfield-Charlton complex, which exists on hills and ridges and is comprised of a loamy till intermingled with rock. Weathering and deposition on the relatively level portions of this map unit likely gave rise to the till component, which is relatively shallow and very granular. Exposed bedrock exists on the steep slopes, with varying degrees of soil formation in level areas and depressions.

The lower, relatively level portion of Charles Point, upon which the RESCO facility resides, is comprised of similar soils as the Riverfront Green. The upper portions are classified as an Urban Land-Charlton-Chatfield complex, similar in nature to the Travis Point highlands.

Generally, soils on the site are rocky and where bedrock is not exposed at the surface, are very granular with varied depth. The soils support upland forest and transitional vegetation but where they are sparsely vegetated and in contact with the waterfront are subject to erosion and slope failure. The rock is of course very stable but does not readily support vegetative growth. A customized NRCS soils report is attached herewith as Exhibit C.

Topography

The topographic conditions, as reflected in the survey base map, vary widely from nearly level to vertical. The Riverfront Green and Riverfront Green South is level to gently sloping, predominately made land. Water levels during high tide very nearly reach the base elevation of the park land, which is reflected in the flood plain boundary mapping.
Generally, slopes on the site are significant and well defined, with development occurring on the limited, relatively level portions of the rock outcrops, many of which are flanked by steep or nearly vertical rock faces. Rock cuts were undoubtedly accomplished by blasting, which in some areas, notably the railroad, created nearly vertical rock faces.

Aside from the Riverfront Green and Riverfront Green South, the Hudson River shoreline is very steep and protected by either rip-rap armor or native rock outcrop. Future improvements along or adjacent to the shoreline and within the upper areas will require careful planning to ensure the existing soils are protected from erosion and to limit the necessity of additional blasting and vegetative removal.

Among the notable features in the topography is the large rock outcrop on the south shore of Travis Cove (Image 18). On it is an approximate 55” x 70” concrete platform with a benchmark. Just east is another smaller outcrop, and the shoreline is composed of a sloping rock surface (Image 19). Opportunities exit to take advantage of this interesting landscape feature, either from above or at the water level.

Image 18: A view from atop the large bedrock outcrop on the south shore of Travis Cove, looking east
Vegetation

The vegetation within the study area, like the soils and topography, vary widely based upon the historical manipulation or conservation of the landscape. The Riverfront Green and Riverfront Green South sections are sparsely vegetated, with grass, pavement and structural features dominating the landscape. Specimen trees exist, along with a few native shoreline species, most of which exceed 8” diameter at breast height (dbh). The number of trees has, however, diminished substantially since the 1997 survey was completed (Image 20). The reason for this decline is unknown, but is suspected to be a combination of natural or storm related mortality, or removal to accommodate the installation of site improvements or utilities.
The McGregory Brook shoreline contains a mix of vegetation varying from shrubs to large trees, with only a relative few trees exceeding 8” dbh. The tree species include among others, maple, oak, cottonwood and locust. Some of the trees have been undermined, which can have both positive and negative implications (Image 21).

The natural undermining of trees on dynamic stream channels provides cover for fish and other stream organisms. However, such trees may eventually fall and if not replaced by nearby or successional vegetation, could result in more radical bank erosion (Image 22). The banks along McGregory Brook have a limited amount of vegetation given the adjoining landscape being largely devoid of significant cover; however the brook is largely straight and thus not subject to severe scour by the brook itself. The channel appears to be affected most during storm events and seasonal/daily tide fluctuations.
Image 21: Note the undermining where the stone wall has collapsed

Image 22: Note the lack of vegetation above the undermined stream bank
The most significant woodland vegetation exists within Travis Point, between the Peekskill Yacht Club and the Railroad. Woodland species including oak, hickory, cherry, sumac and others exist in large numbers, with oaks being the dominate species of considerable size. It appears the site may have been largely cleared in the past, with the oaks left behind to grow. Sometime after, the area was allowed to naturalize, giving rise to the other species typically found in a mid-successional oak/hickory association. Individual trees of 8” dbh or greater were not specifically located, however the forest contains a large number of such trees, which combined with the large number of smaller trees, comprise a well mixed forest habitat, an uncommon ecotype within the study area (Image 23).

Further south, along Travis Cove, the tree species are varied and generally smaller, although some larger trees exist within the transitional area between Travis Cove and Charles Point Park. These trees exist along a generally very steep bank. Conserving trees along the steep banks of the Cove is advisable regardless of size, although some selective cutting could be accomplished with little impact if care is taken to ensure the ground cover is maintained or enhanced.

Image 23: Typical wooded area occupying the high ground of Travis Point
The traversable portion of this area has been recently disturbed, likely associated with the bridge and approach construction. Trails or other improvements in this area would have a negligible impact on the woodland habitat.

Charles Point has little or no mature woodland vegetation. The perimeter is heavily vegetated, but comprised largely of early successional species such as cherry, sumac, elder and a variety of shrubs and vines including grapevine, honeysuckle, dogwoods and others. A relatively small number of medium to large trees exist, scattered along the shoreline side of the RESCO fence. Again, the most mature vegetation exists closest to the shoreline where the slopes are steep. An interior inspection was not possible and thus the extent of mature vegetation could not be determined within the confines of the RESCO facility. Aerial imagery suggests bands of forest and shrub vegetation exist within the steeper areas of the site. The successional vegetation along Charles Point Park has been subject to cutting and herbicidal control to preserve the views to the north. Alternative measures to control the height of vegetation may be possible.

The south end of Charles Point and RESCO, in the vicinity of the Charles Point Marina, has limited vegetation. A band of scrub vegetation, with the occasional large tree, exists along the shoreline of Lent’s Cove extending just south of the existing light industrial/office building. South of the main section of the building, the shoreline is again heavily vegetated, including a number of medium sized trees in the vicinity of 8” dbh. Any connection to the existing waterfront walkways on the south side of Lent’s Cove should avoid, to the extent possible, the cutting of large native hardwoods, including oak, hickory, cherry and maple (including planted Norway maples).

View Corridors

The Peekskill Bay, bordered in part by the Peekskill Southern Waterfront study area is established by the NYS DOS Division of Coastal Resources as part of the Hudson Highlands Scenic Area of Statewide Significance. The most prominent feature as viewed from the Southern Waterfront shoreline is Stony Point’s Dunderberg Mountain (Image 24).

Further north, Bear Mountain and the Bear Mountain Bridge are visible. Views to the south are less dramatic, consisting mainly of the opposite shoreline and mildly undulating topography associated with Buckberg Mountain and portions of Bear Mountain and Harriman State Parks. The RESCO facility is a prominent foreground feature in views to the south from Riverfront Green, and from Charles Point, the Indian Point nuclear facility is partially visible in the mid-ground (Image 25).
Image 24: Northwest views to Dunderberg, Bear Mountain and Bear Mountain Bridge

Image 25: Southern view from Charles Point across Lent’s Cove
Zoning

The Peekskill Southern Waterfront area is comprised of multiple parcels, including public parkland, municipally owned leased property and industrial property. The adjacency to the Hudson River and significant stream channels, combined with being part of an LWRP area, trigger various regulatory controls, the extent of which depends upon the scope of improvements.

The parcels extending from Riverfront Green to Travis Cove are zoned WF-1 Waterfront District, and from Charles Point Park south to Lent’s Cove, are zoned M-2 General Industrial.

The WF-1 District regulations require a 100-foot building setback from the water’s edge. The zoning code provides that no structure shall be erected to a height in excess of two stories or 24 feet. According to the Design Guidelines, a restaurant, clubhouse or marina structure which requires direct water access may be closer than 100 feet, depending upon its use, but shall not be more than one story or 12 feet in height. This height requirement may be waived by the Planning Commission for structures to be developed at Travis Point; however, such structures may not exceed four stories and the overall height may not exceed 45 feet.

The Design Guidelines for the WF-1 District indicate that uses should take advantage of the riverfront views without significantly altering existing topography on Travis Point such that the vegetation and tree growth is destroyed.

The setbacks in the M-2 District are defined in the zoning code as follows: No building or part thereof shall be erected nearer than 30 feet to any street line. Except as provided hereinafter, no side or rear yard is required, but, if provided, such yard shall have a minimum dimension of six feet. Where a rear or side yard abuts a residence district boundary, no building shall be erected within 100 feet of such boundary.

Environmental Permitting Standards

Any appreciable fill occurring below the mean high water mark is subject to the federal Section 10 Rivers and Harbors Act jurisdiction, administered by the U.S. Army Corps of Engineers. Work within the stream channels may require a NYS Department of Environmental Conservation Article 15 Permit. The project is also subject to the NYS Office of General Services Public Lands Law. For publicly funded projects, Section 14.09 of the NYS Parks, Recreation and Historic Preservation Law of 1980 requires projects be reviewed for their potential impact/effect on historic properties. A NYS Office of Parks, Recreation and Historic Preservation Office review would accordingly be necessary. The project must also comply with 6 NYCRR Part 502, Floodplain Management Criteria for State Projects. Local environmental review is carried out pursuant to 6 NYCRR Part 617 State Environmental Quality Review Act.
The project would necessarily be reviewed under the NYS Department of State Coastal Management Program. A Federal Consistency Assessment Form would initiate this review.

**Constraints, Needs and Opportunities**

The Peekskill Southern Waterfront area, which includes Riverfront Green, Riverfront Green South, Travis Point, Travis Cove, Charles Point and Lent’s Cove, already provides a substantial amount of shoreline access and enjoyment opportunities. However, improvements to the intermodal connectivity, linkages to the City, focal points, shoreline stabilization and natural habitat protection/enhancement will maximize the potential of this unique resource.

**Constraints**

The primary constraints to providing unbroken access along the Southern Waterfront include:

- Low lying floodplain within Riverfront Green and Riverfront Green South
- Steep rocky banks, both natural and man-made within Travis Cove, Lent’s Cove, Travis Point and portions of Riverfront Green
- Limited available land between the River and Railroad at Travis Cove and Lent’s Cove.
- Underground utilities in Riverfront Green South
- Shallow soils and bedrock outcrops
- Potential resistance from private residents and Yacht Club members
- Potential limits to trail extension across privately owned land
- Steep grades
- Separation between the Southern Waterfront and the Peekskill’s downtown area

**Intermodal Connectivity**

The Southern Waterfront’s current primary means of access is almost exclusively vehicular. Limited signage and lack of focal points along Hudson Avenue make it difficult for visitors unfamiliar with the area to locate the Riverfront Green Park. Immediately west of the railroad crossing on Hudson Avenue Extension, Park visitors can access a public parking area off the north side of the access road. A pedestrian crossing exists at the Railroad station. Approximately one-hundred five (105) parking spaces exist in this area, although as many as thirty (30) spaces in the northernmost section are cordoned off with No Parking signage, reportedly to allow for bus turn-around. Ample parking appears to exist with the Riverfront Green Park for everyday activity, although event parking necessarily spills out into the area opposite the railroad. The boat launch includes eight paved trailer parking spaces, with twelve additional turf parking spaces. Approximately fifty (50) permit only parking spaces exist south of the Hudson Avenue entry, with an additional thirty-three (33) spaces.
dedicated to the train station. The permit parking area appears to be operating at or near capacity.

Approximately one-hundred forty-five (145) parking spaces exist at the train station parking lots located immediately east of Riverfront Green and are presumably limited to use by train passengers. Additional on-street parking exists along Railroad Avenue, including approximately fifteen (15) angled parking spaces and an undermined number of parallel parking along the east side. An ill-defined private parking lot exists off the east side of Railroad Avenue, opposite the railroad station, which caters mainly to commuters. Other parking lots related to commercial land uses exist nearby. A particularly large number of spaces exist within lots situated off South Water Street that are used mainly by commuters.

Vehicular access to Charles Point is afforded via Louisa Street, which is accessed via Lower South Street or NYS Route 9 ramp. Thirty-eight (38) marked parking spaces exist in Charles Point Park, with an un-marked section large enough for about three regular or two handicap parking spaces. Pedestrian access is afforded via sidewalk along Louisa Street, which extends to the baseball field and South Street, with unimpeded connection to the Riverbend development. Charles Point Marina and restaurant are accessed via John Walsh Boulevard, but affords no pedestrian friendly access. Further south on John Walsh Boulevard is the entrance to Lent’s Park in Buchanan, which borders Lents Cove and includes a boat ramp and dock. Ample parking exists in the park, provided largely to accommodate a softball diamond. Existing trails extend to the west from Lent’s Park along the shoreline of Lent’s Cove.

Pedestrian access is made difficult by poorly marked crossing points at some major roadway intersections, particularly at the South Street, Lower South Street and South Water Street intersections along Hudson Avenue. There is no marked north/south pedestrian crossing at the intersection of South Street and Requa Street. Also, it is impossible at present to navigate other than by automobile between the Riverfront Green/Travis Point area and the Charles Point/Lent’s Cove area. Pedestrian access along Louisa Street to Charles Point is afforded via sidewalk that is in good condition. Generally, pedestrian connectivity is fairly good between Hudson Avenue and Louisa Street, east of the Railroad. However, the lack of sidewalks/paths along Riverfront Green South inhibits access to Travis Point. Existing pathways along the south side of Travis Point provide ready access to Travis Cove, although such access dead ends at the Railroad. A pedestrian connection west of the Railroad between Travis Point and Charles Point can be accomplished only by alternatives that involve a raised or floating system within Travis Cove, or a footbridge over the Railroad that connects via trail through the baseball facility.

In terms of water access, the above mentioned ferry dock within the Riverfront Green Park is a port of call for the Hudson Highlands Cruises, Inc. with their M.V. Commander vessel (Image 7). Alternative locations for this ferry dock and terminal will be explored during the schematic design phase. The final location will be based
in part on the ability to access the navigable channel within the Peekskill Bay. The
NOAA nautical chart suggests upon preliminary review that the channel would be
accessible from any location between McGregory Brook and the existing boat
launch/jetty at Riverfront Green Park. Other more southerly locations may be
possible, but would necessitate a much longer dock extension. A portion of the
NOAA nautical chart, which illustrates the Peekskill Harbor navigable channel within
Peekskill Bay, is provided as follows (Image 26).

Other existing points of nautical access include the Peekskill Yacht Club, Charles
Point Pier and Charles Point Marina. The Peekskill Landing improvements will
provide an additional point of access for boating enthusiasts.
Focal Points

Existing focal points that mark the gateways and welcome visitors to the Southern Waterfront are limited, although opportunities exist to create new points of interest that celebrate the area’s history and natural resources. Existing focal points include a large flagpole and smaller nautical signage features within the Riverfront Green Park (Images 27 and 28). The positioning and/or scale of these features however, are not optimal. Another focal point exists at Charles Point, which is a sculpture made from the original industrial pumping system (Image 29).

Image 27: Flagpole and directional signage within Riverfront Green Park
Image 28: Nautical theme signage at Riverfront Green Park

Image 29: Sculpture at Charles Point Park
Focal points need not be man-made. The large rock outcrop along the south shore of Travis Cove is a very interesting geological feature that could be incorporated into a celebratory focal point (Image 30). Access to this feature however, is presently very limited. The property just north of Louisa Street, west of the Railroad overpass has been functionally separated by the guiderail extension. Grading for the bridge and roadway improvements has created a difficult transition, which combined with the intervening vegetation, effectively obscures this feature. A lightly used pathway suggests the site is visited on occasion by individuals familiar with the area.

![Image 30: Southern view across Travis Cove with rock outcrop in the mid-ground and floating dock in the foreground. Power pole along Louisa Street is visible in background.](image30)

**Shoreline Stabilization and Habitat Protection**

Presently, shoreline stabilization techniques designed to ensure unobstructed views are not necessarily conducive to the type of habitat that would exist along an otherwise natural shoreline. It is understandably difficult to create a stable shoreline while at the same time providing unobstructed views and hardscape improvements that accommodate pedestrians, parking and boater traffic. Measures are available however, that would enhance or restore estuarine habitat along the shoreline while preserving the views that attract visitors.
Opportunities exist to maintain or improve stability of the shoreline while at the same
time enhancing or restoring a portion of the natural estuarine habitat that once existed. Habitat restoration of certain areas is limited by existing hardscape improvements, although other areas requiring additional stabilization have the potential to be included in the estuarine habitat enhancement and restoration efforts.

Recommendations for site improvements will include the restoration of estuarine communities on a relatively small scale. Such improvements will not only help absorb the impact of storm events, but also provide estuarine habitat and educational opportunities for park visitors and classrooms. Such improvements could build on the theme established by existing interpretive signage within Riverfront Green Park, which celebrates the River’s natural resources (Image 31).

Conclusion

The Peekskill Southern Waterfront is a highly diverse combination of public parks, open space, natural areas, private lease property, made land and industrial uses. The various components are separated by natural and man-made barriers, some of which can be addressed relatively simply and others that will require a more complex approach.

Many opportunities exist to enhance the Southern Waterfront and create a more holistic and inviting space for the regional community. Creative planning will combine the
pedestrian and vehicular components with the natural resource components such that they compliment one another in a manner fitting for a park like setting that includes active and passive recreational opportunities, along with educational opportunities.

Having completed the Task 1 Site Reconnaissance phase, we are prepared to initiate the Shoreline Stabilization Design for Riverfront Green, Riverfront Green South & Travis Cove and enter the overall Waterfront Plan and Schematic Design phase.

Exhibit A

GIS based Site Overview/Aerial Mapping – Two Images
North and South Sections
Exhibit B

Travis Cove Preliminary Survey Map
Exhibit C

NRCS Soil Survey Report
Exhibit D

Flood Plain Mapping
Exhibit E

Phase 1A Literature Review and Archeological Sensitivity Assessment (DRAFT)
Submitted to:

City of Peekskill, New York
Department of Planning, Development
and Code Assistance
840 Main Street
Peekskill, New York 10566
914/734-4210
State Environmental Quality Review
Notice of Intent to Act as Lead Agency
for the
Planning and Design of Peekskill's Southern Waterfront
City of Peekskill, NY

TO: All Involved and Interested Parties/Agencies
FROM: Jean Friedman, City Planner
DATE: June 11, 2009
SUBJECT: Planning and Design of Peekskill's Southern Waterfront: SEQRA Lead Agency Determination

This notice is issued pursuant to Part 617 of the implementing regulations pertaining to Article 8 (State Environmental Quality Review Act - SEQRA) of the Environmental Conservation Law.

SEQRA Status: Type I Action, pursuant to Section 617.4 of SEQRA

Description of Action: The City of Peekskill has prepared a Master Plan for its waterfront, which includes six segments: Riverfront Green Park, Riverfront Green South, Travis Point, Travis Cove, RESCO property, and Lent's Cove. The plan provides for a continuous waterfront walkway (to be designed according to RiverWalk standards), shoreline stabilization methods, docks and fishing pier, and improvements to City parkland along the waterfront. The final plan summary, concept maps, best management practices and shoreline stabilization methods are attached.

The preparation of this plan and its implementation is considered to be a Type I Action under SEQR, and therefore the City of Peekskill has prepared a full Environmental Assessment Form (EAF) Part I (attached). The City of Peekskill Common Council will make a Determination of Significance following Lead Agency determination, to be circulated to all involved and interested agencies.

Location of Action: Hudson River waterfront in Peekskill, from McGregor Brook to Lent's Cove (See attached USGS map)
The City of Peekskill Common Council will assume the role of Lead Agency for this action if no written objections are received from involved agencies within 30 days of the date of this notice.

If any involved agency has an objection to this Lead Agency determination, it must be received in writing at the following address by **July 10, 2009**:

Jean Friedman, City Planner  
Department of Planning, Development and Code Assistance  
City Hall  
840 Main Street  
Peebles, New York 10566  

Phone: 914-735-2418  
Fax: 914-735-2688  
Email: jfriedman@cityofpeeksll.com

A copy of this notice has been sent to the following Involved and Interested Parties/Agencies:

**Involved Agencies:**

1. City of Peekskill Common Council  
2. City of Peekskill, Acting City Manager  
3. City of Peekskill Planning Commission  
4. City of Peekskill Industrial Development Agency  
5. Westchester County Department of Planning  
6. Metropolitan Transit Authority/Metro North Railroad  
7. New York State Office of General Services  
8. New York State Office of Parks, Recreation, and Historic Preservation  
9. New York State Department of Environmental Conservation  
10. New York State Department of State  
11. U.S. Army Corps of Engineers

**Interested Parties/Agencies:**

1. City of Peekskill Department of City Services  
2. City of Peekskill Department of Parks and Recreation  
3. City of Peekskill Conservation and Parks Advisory Board  
4. Westchester County Department of Transportation  
5. Westchester Wheelabrator/RESCO  
6. Scenic Hudson  
7. Hudson River Valley Greenway
8. Hudson River Sloop Clearwater, Inc.
9. Riverkeeper, Inc.
10. U.S. Coast Guard
11. Village of Buchanan
12. D. Bertoline & Sons, Inc.
13. Peekskill Yacht Club
14. Charles Point Marine Inc.
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<td>Margaret Duke, Region Permit Admin</td>
<td>Region 3</td>
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<td>Rebecca Newell</td>
<td>Division of Coastal Resource</td>
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revised: 06/01/09

Brian O. Havranek, Acting City Manager

Anthony Ruggerio, AICP, Director of Planning
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<td>Seth McGee, Director of Policy &amp; Programs</td>
<td>One Civic Center Plaza</td>
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<td>Ernie Morton</td>
<td>NY Waterways Operations</td>
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Brian O. Havranek, Acting City Manager

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revised: 06/01/09
RESOLUTION OF THE COMMON COUNCIL ADOPTING
PEEKSILL’S SOUTHERN WATERFRONT PARK AND TRAIL MASTER
PLAN

WHEREAS, the City of Peekskill received a grant from the New York State
Department of State’s Environmental Protection Fund to prepare a Master Plan for
Peekskill’s Southern Waterfront; and

WHEREAS, a Master Plan was prepared for the Southern Waterfront Area, and
this document complies with the grant requirements; and

WHEREAS, the City held three (3) duly advertised Public Meetings in order to
receive and consider comments on the plan; and

WHEREAS, a Full Environmental Assessment Form has been prepared and
reviewed for the proposed action, in accordance with Article 8 of the Environmental
Conservation Law, and has been classified as a Type I action under the New York State
Environmental Quality Review Act (SEQRA); and

WHEREAS, on June 11, 2009 the Common Council declared its intent to act as
Lead Agency for environmental review of this action and circulated its intent to all
Involved and Interested Agencies;

NOW, THEREFORE, BE IT

RESOLVED, that since no written objections have been received within thirty
(30) days of circulation, the Common Council hereby assumes the role of Lead Agency
with respect to this matter; and be it further

RESOLVED, that the Common Council as Lead Agency has reviewed the
Master Plan and the complete record as required under SEQRA, and has determined that
the approval of the Master Plan will have no significant negative impacts on the
environment and therefore adopts a Negative Declaration; and be it further

RESOLVED, that the Common Council authorizes the City Manager or his
designee to take all necessary steps to complete the SEQR process; and be it further

RESOLVED, that Peekskill’s Southern Waterfront Park and Trail Master Plan is
hereby approved and adopted as the guiding principles for future improvements to this
southern waterfront area.
Purpose: The full EAF is designed to help applicants and agencies determine, in an orderly manner, whether a project or action may be significant. The question of whether an action may be significant is not always easy to answer. Frequently, there are aspects of a project that are subjective or unmeasurable. It is also understood that those who determine significance may have little or no formal knowledge of the environment or may not be technically expert in environmental analysis. In addition, many who have knowledge in one particular area may not be aware of the broader concerns affecting the question of significance.

The full EAF is intended to provide a method whereby applicants and agencies can be assured that the determination process has been orderly, comprehensive in nature, yet flexible enough to allow introduction of information to fit a project or action.

Full EAF Components: The full EAF is comprised of three parts:

Part 1: Provides objective data and information about a given project and its site. By identifying basic project data, it assists a reviewer in the analysis that takes place in Parts 2 and 3.

Part 2: Focuses on identifying the range of possible impacts that may occur from a project or action. It provides guidance as to whether an impact is likely to be considered small to moderate or whether it is a potentially-large impact. The form also identifies whether an impact can be mitigated or reduced.

Part 3: If any impact in Part 2 is identified as potentially-large, then Part 3 is used to evaluate whether or not the impact is actually important.

THIS AREA FOR LEAD AGENCY USE ONLY

DETERMINATION OF SIGNIFICANCE -- Type 1 and Unlisted Actions

Identify the Portions of EAF completed for this project: ☑ Part 1 ☑ Part 2 ☐ Part 3

Upon review of the information recorded on this EAF (Parts 1 and 2 and 3 if appropriate), and any other supporting information, and considering both the magnitude and importance of each impact, it is reasonably determined by the lead agency that:

☐ A. The project will not result in any large and important impact(s) and, therefore, is one which will not have a significant impact on the environment, therefore a negative declaration will be prepared.

☐ B. Although the project could have a significant effect on the environment, there will not be a significant effect for this Unlisted Action because the mitigation measures described in PART 3 have been required, therefore a CONDITIONED negative declaration will be prepared.*

☐ C. The project may result in one or more large and important impacts that may have a significant impact on the environment, therefore a positive declaration will be prepared.

* A Conditioned Negative Declaration is only valid for Unlisted Actions

Peekskill Southern Waterfront Master Plan

Name of Action

City of Peekskill

Name of Lead Agency

Anthony Ruggiero

Print or Type Name of Responsible Officer in Lead Agency

Signature of Responsible Officer in Lead Agency

Date

6-6-09

Page 1 of 21
PART 1--PROJECT INFORMATION
Prepared by Project Sponsor

NOTICE: This document is designed to assist in determining whether the action proposed may have a significant effect on the environment. Please complete the entire form, Parts A through E. Answers to these questions will be considered as part of the application for approval and may be subject to further verification and public review. Provide any additional information you believe will be needed to complete Parts 2 and 3.

It is expected that completion of the full EAF will be dependent on information currently available and will not involve new studies, research or investigation. If information requiring such additional work is unavailable, so indicate and specify each instance.

Name of Action  Peeksill Southern Waterfront Master Plan

Location of Action (include Street Address, Municipality and County)
Hudson Avenue, Louisa Street, John Walsh Blvd., from McGuirey Brook to Lent's Cove west of the railroad tracks in Peeksill, Westchester County

Name of Applicant/Sponsor  City of Peeksill

Address  840 Main Street

City / PO  Peeksill  State  NY  Zip Code  10566

Business Telephone  914-734-4218

Name of Owner (if different)

Address

City / PO  

State  Zip Code  

Business Telephone

Description of Action:
The City of Peeksill has prepared a Master Plan for its Southern Waterfront, from McGuirey Brook to Lent's Cove. The goal of this master plan is to develop a continuous waterfront trail along the shoreline, and to improve upon City parkland. In addition, a bio-engineered shoreline stabilization solution has been proposed for sections of the shoreline, and habitat restoration areas have been identified. Park improvements on Riverfront Green will include a ferry terminal, a spray park, public dock, ferry dock, band shell, pathways and landscaping. Riverfront Green South is proposed as parkland with lawns, planting beds, gazebo, deck and trail. The shoreline will be stabilized and the elevation raised to be above the 100 year flood elevation. Travis Point will contain trails, a gazebo, dock with kayak launch, and an improved parking lot. Travis Cove is proposed to be crossed with a boardwalk/walkway against the shoreline, an overlook, a fishing pier and trails. Fleischmann Pier will be improved and restored, and erosion control measures will be employed in Charles Point Pier Park. Charles Point/RESCO will have a trail cut along the cliff overlooking the Hudson River with interpretive signage. The existing boardwalk at the Charles Point Marina will be used to connect to the Bertoline property, where a walkway will be constructed behind the office building and along John Walsh Boulevard to the trail's end at Lent's Cove Park in Buchanan.
Please Complete Each Question—Indicate N.A. if not applicable

A. SITE DESCRIPTION
Physical setting of overall project, both developed and undeveloped areas.

1. Present Land Use: [ ] Urban  [ ] Industrial  [ ] Commercial  [ ] Residential (suburban)  [ ] Rural (non-farm)  [ ] Forest  [ ] Agriculture  [ ] Other  [ ] Waterfront parkland

   [ ] Land use does not apply

2. Total acreage of project area: 8.8 acres.

   APPROXIMATE ACREAGE
   PRESENTLY  AFTER COMPLETION
   Meadow or Brushland (Non-agricultural)  4.6 acres  4.6 acres
   Forested  2.73 acres  2.73 acres
   Agricultural (Includes orchards, cropland, pasture, etc.)  _______ acres  _______ acres
   Wetland (Freshwater or tidal as per Articles 24, 25 of ECL)  _______ acres  _______ acres
   Water Surface Area  0 acres  27 acres
   Unvegetated (Rock, earth or fill)  _______ acres  _______ acres
   Roads, buildings and other paved surfaces  1.24 acres  1.24 acres
   Other (Indicate type)  _______ acres  _______ acres

3. What is predominant soil type(s) on project site? [ ] Ub and Uc

   a. Soil drainage: [ ] Well drained 100% of site  [ ] Moderately well drained ______% of site.
      [ ] Poorly drained ______% of site

   b. If any agricultural land is involved, how many acres of soil are classified within soil group 1 through 4 of the NVS Land Classification System? ______N/A acres (see 1 NYCRR 370).

4. Are there bedrock outcroppings on project site? [ ] Yes  [ ] No

   a. What is depth to bedrock ______0 to >5 (in feet)

5. Approximate percentage of proposed project site with slopes:
   [ ] 0-10% 90%  [ ] 10-15% 10%  [ ] 15% or greater ______%

6. Is project substantially contiguous to, or contain a building, site, or district, listed on the State or National Registers of Historic Places? [ ] Yes  [ ] No

7. Is project substantially contiguous to a site listed on the Register of National Natural Landmarks? [ ] Yes  [ ] No

8. What is the depth of the water table? ______varies (in feet)

9. Is site located over a primary, principal, or sole source aquifer? [ ] Yes  [ ] No

10. Do hunting, fishing or shell fishing opportunities presently exist in the project area? [ ] Yes  [ ] No
11. Does project site contain any species of plant or animal life that is identified as threatened or endangered?  [ ] Yes  [ ] No

According to:

NYS DEC New York Natural Heritage Program - Anadromous Fish Concentration Area; Potential Endangered & Threatened or Protected Species:

Identify each species:

Bald Eagle (T), Atlantic Sturgeon (P), Shortnose Sturgeon (E) and historical records (1800's) suggest the following plants once existed: Puttyroot (E), Globe-fruited Ludwiga (T), Virginia False Cromwell (E), Hooker's Orchid (E). No confirmed presence within the study area.

12. Are there any unique or unusual land forms on the project site? (i.e., cliffs, dunes, other geological formations?)  [ ] Yes  [ ] No

Describe:

Igneous outcroppings

13. Is the project site presently used by the community or neighborhood as an open space or recreation area?  [ ] Yes  [ ] No

If yes, explain:

The project is located in Riverfront Green, the main waterfront park in Peekskill. Charles Point and Travis Point contain marinas.

14. Does the present site include scenic views known to be important to the community?  [ ] Yes  [ ] No

The entire project area has panoramic views of the Hudson River and Bear Mountain. The study area contains a variety of scenic conditions ranging from upland hardwood forest to open panoramic views.

15. Streams within or contiguous to project area:

McGregory Brook
Dickey Brook

a. Name of Stream and name of River to which it is tributary

Hudson River

16. Lakes, ponds, wetland areas within or contiguous to project area:

N/A

b. Size (in acres):
17. Is the site served by existing public utilities?  
   □ Yes  □ No
   a. If YES, does sufficient capacity exist to allow connection?  
      □ Yes  □ No
   b. If YES, will improvements be necessary to allow connection?  
      □ Yes  □ No

18. Is the site located in an agricultural district certified pursuant to Agriculture and Markets Law, Article 25-AA, Section 303 and 304?  
   □ Yes  □ No

19. Is the site located in or substantially contiguous to a Critical Environmental Area designated pursuant to Article 8 of the ECL, and 6 NYCRR 617?  
   □ Yes  □ No

20. Has the site ever been used for the disposal of solid or hazardous wastes?  
   □ Yes  □ No

B. Project Description

1. Physical dimensions and scale of project (fill in dimensions as appropriate).
   a. Total contiguous acreage owned or controlled by project sponsor:  
      □ 8.8 acres.
   b. Project acreage to be developed:  
      □ acres initially;  
      □ 6.9 acres ultimately.
   c. Project acreage to remain undeveloped:  
      □ 1.9 acres.
   d. Length of project, in miles:  
      □ 1.43 (if appropriate)
   e. If the project is an expansion, indicate percent of expansion proposed:  
      □ 0 %
   f. Number of off-street parking spaces existing  
      □ 350; proposed  
      □ +60
   g. Maximum vehicular trips generated per hour:  
      □ No change (upon completion of project)
   h. If residential: Number and type of housing units:
      
      | One Family | Two Family | Multiple Family | Condominium |
      |------------|------------|----------------|-------------|
      | Initial    | Initial    | Initial        | Initial     |
      | Ultimately | Ultimately | Ultimately     | Ultimately  |
   i. Dimensions (in feet) of largest proposed structure:  
      □ 35' height;  
      □ 40' width;  
      □ 80' length.
   j. Linear feet of frontage along a public thoroughfare project will occupy is?  
      □ 1300 lin ft.

2. How much natural material (i.e. rock, earth, etc.) will be removed from the site?  
   □ 0 tons/cubic yards.

3. Will disturbed areas be reclaimed?  
   □ Yes  □ No  □ N/A
   a. If yes, for what intended purpose is the site being reclaimed?
      □ Bio-engineered slope stabilization, landscaped areas and open parkland.
   b. Will topsoil be stockpiled for reclamation?  
      □ Yes  □ No
   c. Will upper subsoil be stockpiled for reclamation?  
      □ Yes  □ No

4. How many acres of vegetation (trees, shrubs, ground covers) will be removed from site?  
   □ 0 acres.
5. Will any mature forest (over 100 years old) or other locally-important vegetation be removed by this project?  
   □ Yes  □ No

6. If single phase project: Anticipated period of construction: ______ months. (including demolition)

7. If multi-phased:
   a. Total number of phases anticipated ______ 8 (number)
   b. Anticipated date of commencement phase 1: ______ 8 month 2009 year, (including demolition)
   c. Approximate completion date of final phase: 10 ______ month 2014 year.
   d. Is phase 1 functionally dependent on subsequent phases? □ Yes □ No

8. Will blasting occur during construction? □ Yes □ No

9. Number of jobs generated: during construction ______ 200 ; after project is complete ______ 160

10. Number of jobs eliminated by this project ______ 0

11. Will project require relocation of any projects or facilities? □ Yes □ No

   If yes, explain:

   □ □

12. Is surface liquid waste disposal involved? □ Yes □ No
   a. If yes, indicate type of waste (sewage, industrial, etc) and amount ____________________________
   b. Name of water body into which effluent will be discharged ____________________________

13. Is subsurface liquid waste disposal involved? □ Yes □ No  Type ____________________________

14. Will surface area of an existing water body increase or decrease by proposal? □ Yes □ No

   If yes, explain:

   □ □

15. Is project or any portion of project located in a 100 year flood plain? □ Yes □ No

16. Will the project generate solid waste? □ Yes □ No
   a. If yes, what is the amount per month? ______ tons
   b. If yes, will an existing solid waste facility be used? □ Yes □ No
   c. If yes, give name ____________________________ ; location ____________________________
   d. Will any wastes not go into a sewage disposal system or into a sanitary landfill? □ Yes □ No

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17. Will the project involve the disposal of solid waste? □ Yes □ No
   a. If yes, what is the anticipated rate of disposal? _____ tons/month.
   b. If yes, what is the anticipated site life? _____ years.
18. Will project use herbicides or pesticides? □ Yes □ No
19. Will project routinely produce odors (more than one hour per day)? □ Yes □ No
20. Will project produce operating noise exceeding the local ambient noise levels? □ Yes □ No
21. Will project result in an increase in energy use? □ Yes □ No
   If yes, indicate type(s)

22. If water supply is from wells, indicate pumping capacity _____ N/A gallons/minute.
23. Total anticipated water usage per day _____ 0 gallons/day.
24. Does project involve Local, State or Federal funding? □ Yes □ No
   If yes, explain:
   State funding through the Department of State for preparation of the Master Plan and construction documents. Federal funding from NOAA proposed for construction for Phase 1: Riverfront Green and Travis Cove shorelines.
25. Approvals Required:

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C. Zoning and Planning Information

1. Does proposed action involve a planning or zoning decision? [ ] Yes [ ] No

   If Yes, indicate decision required:

   - [ ] Zoning amendment
   - [ ] Zoning variance
   - [ ] New/revision of master plan
   - [ ] Subdivision
   - [ ] Site plan
   - [ ] Special use permit
   - [ ] Resource management plan
   - [ ] Other
2. What is the zoning classification(s) of the site?

WF-1: Waterfront 1

3. What is the maximum potential development of the site if developed as permitted by the present zoning?

Parks as of right.
By special permit: marinas, launches, marine supply sales, boat repair, ferry terminal, restaurant, hotel.

4. What is the proposed zoning of the site?

No change

5. What is the maximum potential development of the site if developed as permitted by the proposed zoning?

No change

6. Is the proposed action consistent with the recommended uses in adopted local land use plans?  □ Yes  □ No

7. What are the predominant land use(s) and zoning classifications within a ¼ mile radius of proposed action?

WF2: Commercial, residential
R3, R4, R6: Residential
WF-PRD: Residential
PCD: Recreation
M-2: Manufacturing

8. Is the proposed action compatible with adjoining/surrounding land uses with a ¼ mile?  □ Yes  □ No

9. If the proposed action is the subdivision of land, how many lots are proposed?  N/A

   a. What is the minimum lot size proposed?
10. Will proposed action require any authorization(s) for the formation of sewer or water districts? □ Yes □ No

11. Will the proposed action create a demand for any community provided services (recreation, education, police, fire protection)?
   □ Yes □ No

   a. If yes, is existing capacity sufficient to handle projected demand? □ Yes □ No

12. Will the proposed action result in the generation of traffic significantly above present levels?
   □ Yes □ No

   a. If yes, is the existing road network adequate to handle the additional traffic. □ Yes □ No

D. Informational Details

   Attach any additional information as may be needed to clarify your project. If there are or may be any adverse impacts associated with your proposal, please discuss such impacts and the measures which you propose to mitigate or avoid them.

E. Verification

   I certify that the information provided above is true to the best of my knowledge.
   Applicant/Sponsor Name  City of Peekskill                                      Date  6/2/09
   Signature  
   Title  City Planner

If the action is in the Coastal Area, and you are a state agency, complete the Coastal Assessment Form before proceeding with this assessment.
PART 2 - PROJECT IMPACTS AND THEIR MAGNITUDE

Responsibility of Lead Agency

General Information (Read Carefully)

In completing the form the reviewer should be guided by the question: Have my responses and determinations been reasonable? The reviewer is not expected to be an expert environmental analyst.

The Examples provided are to assist the reviewer by showing types of impacts and wherever possible the threshold of magnitude that would trigger a response in column 2. The examples are generally applicable throughout the State and for most situations. But, for any specific project or site other examples and/or lower thresholds may be appropriate for a Potential Large Impact response, thus requiring evaluation in Part 3.

The impacts of each project, on each site, in each locality, will vary. Therefore, the examples are illustrative and have been offered as guidance. They do not constitute an exhaustive list of impacts and thresholds to answer each question.

In identifying impacts, consider long term, short term and cumulative effects.

Instructions (Read carefully)

a. Answer each of the 20 questions in PART 2. Answer Yes if there will be any impact.

b. Maybe answers should be considered as Yes answers.

c. If answering Yes to a question then check the appropriate box (column 1 or 2) to indicate the potential size of the impact. If impact threshold equals or exceeds any example provided, check column 2. If impact will occur but threshold is lower than example, check column 1.

d. Identifying that an impact will be potentially large (column 2) does not mean that it is also necessarily significant. Any large impact must be evaluated in PART 3 to determine significance. Identifying an impact in column 2 simply asks that it be looked at further.

e. If reviewer has doubt about size of the impact then consider the impact as potentially large and proceed to PART 3.

f. If a potentially large impact checked in column 2 can be mitigated by change(s) in the project to a small to moderate impact, also check the Yes box in column 3. A No response indicates that such a reduction is not possible. This must be explained in Part 3.

<table>
<thead>
<tr>
<th>Impact on Land</th>
<th>1 Small to Moderate Impact</th>
<th>2 Potential Large Impact</th>
<th>3 Can Impact Be Mitigated by Project Change</th>
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1. Will the Proposed Action result in a physical change to the project site?

NO ☐ YES ☐

Examples that would apply to column 2

- Any construction on slopes of 15% or greater, (15 foot rise per 100 foot of length), or where the general slopes in the project area exceed 10%.

- Construction on land where the depth to the water table is less than 3 feet.

- Construction of paved parking area for 1,000 or more vehicles.

- Construction on land where bedrock is exposed or generally within 3 feet of existing ground surface.

- Construction that will continue for more than one year or involve more than one phase or stage.

- Excavation for mining purposes that would remove more than 1,000 tons of natural material (i.e., rock or soil) per year.

- Construction or expansion of a sanitary landfill.
- Construction in a designated floodway.
- Other impacts:

2. Will there be an effect to any unique or unusual land forms found on the site? (i.e., cliffs, dunes, geological formations, etc.)
   - NO
   - YES
   - Specific land forms:

Impact on Water

3. Will Proposed Action affect any water body designated as protected? (Under Articles 15, 24, 25 of the Environmental Conservation Law, ECL)
   - NO
   - YES
   - Examples that would apply to column 2
     - Developable area of site contains a protected water body.
     - Dredging more than 100 cubic yards of material from channel of a protected stream.
     - Extension of utility distribution facilities through a protected water body.
     - Construction in a designated freshwater or tidal wetland.
     - Other impacts:

4. Will Proposed Action affect any non-protected existing or new body of water?
   - NO
   - YES
   - Examples that would apply to column 2
     - A 10% increase or decrease in the surface area of any body of water or more than a 10 acre increase or decrease.
     - Construction of a body of water that exceeds 10 acres of surface area.
     - Other impacts:
5. Will Proposed Action affect surface or groundwater quality or quantity?

- NO    YES

Examples that would apply to column 2

- Proposed Action will require a discharge permit.
- Proposed Action requires use of a source of water that does not have approval to serve proposed (project) action.
- Proposed Action requires water supply from wells with greater than 45 gallons per minute pumping capacity.
- Construction or operation causing any contamination of a water supply system.
- Proposed Action will adversely affect groundwater.
- Liquid effluent will be conveyed off the site to facilities which presently do not exist or have inadequate capacity.
- Proposed Action would use water in excess of 20,000 gallons per day.
- Proposed Action will likely cause siltation or other discharge into an existing body of water to the extent that there will be an obvious visual contrast to natural conditions.
- Proposed Action will require the storage of petroleum or chemical products greater than 1,100 gallons.
- Proposed Action will allow residential uses in areas without water and/or sewer services.
- Proposed Action locates commercial and/or industrial uses which may require new or expansion of existing waste treatment and/or storage facilities.

- Other impacts:

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6. Will Proposed Action alter drainage flow or patterns, or surface water runoff?
   □ NO  □ YES

   **Examples that would apply to column 2**
   - Proposed Action would change flood water flows
   - Proposed Action may cause substantial erosion.
   - Proposed Action is incompatible with existing drainage patterns.
   - Proposed Action will allow development in a designated floodway.
   - Other impacts:

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   **IMPACT ON AIR**

7. Will Proposed Action affect air quality?
   □ NO  □ YES

   **Examples that would apply to column 2**
   - Proposed Action will induce 1,000 or more vehicle trips in any given hour.
   - Proposed Action will result in the incineration of more than 1 ton of refuse per hour.
   - Emission rate of total contaminants will exceed 5 lbs. per hour or a heat source producing more than 10 million BTU's per hour.
   - Proposed Action will allow an increase in the amount of land committed to industrial use.
   - Proposed Action will allow an increase in the density of industrial development within existing industrial areas.
   - Other impacts:

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   **IMPACT ON PLANTS AND ANIMALS**

8. Will Proposed Action affect any threatened or endangered species?
   □ NO  □ YES

   **Examples that would apply to column 2**
   - Reduction of one or more species listed on the New York or Federal list, using the site, over or near the site, or found on the site.
- Removal of any portion of a critical or significant wildlife habitat.  
  - Application of pesticide or herbicide more than twice a year, other than for agricultural purposes.

  Other impacts:

9. Will Proposed Action substantially affect non-threatened or non-endangered species?  
   [ ] NO  [ ] YES

Examples that would apply to column 2  
- Proposed Action would substantially interfere with any resident or migratory fish, shellfish or wildlife species.
- Proposed Action requires the removal of more than 10 acres of mature forest (over 100 years of age) or other locally important vegetation.

  Other impacts:

IMPACT ON AGRICULTURAL LAND RESOURCES

10. Will Proposed Action affect agricultural land resources?  
   [ ] NO  [ ] YES

Examples that would apply to column 2  
- The Proposed Action would sever, cross or limit access to agricultural land (includes cropland, hayfields, pasture, vineyard, orchard, etc.)
- Construction activity would excavate or compact the soil profile of agricultural land.
- The Proposed Action would irreversibly convert more than 10 acres of agricultural land or, if located in an Agricultural District, more than 2.5 acres of agricultural land.
• The Proposed Action would disrupt or prevent installation of agricultural land management systems (e.g., subsurface drain lines, outlet ditches, strip cropping); or create a need for such measures (e.g. cause a farm field to drain poorly due to increased runoff).

• Other impacts:

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**IMPACT ON AESTHETIC RESOURCES**

11. Will Proposed Action affect aesthetic resources? (If necessary, use the Visual EAF Addendum in Section 617.20, Appendix B.)
   - NO □ YES □

Examples that would apply to column 2

• Proposed land uses, or project components obviously different from or in sharp contrast to current surrounding land use patterns, whether man-made or natural.

• Proposed land uses, or project components visible to users of aesthetic resources which will eliminate or significantly reduce their enjoyment of the aesthetic qualities of that resource.

• Project components that will result in the elimination or significant screening of scenic views known to be important to the area.

• Other impacts:

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**IMPACT ON HISTORIC AND ARCHAEOLOGICAL RESOURCES**

12. Will Proposed Action impact any site or structure of historic, prehistoric or paleontological importance?
   - NO □ YES □

Examples that would apply to column 2

• Proposed Action occurring wholly or partially within or substantially contiguous to any facility or site listed on the State or National Register of historic places.

• Any impact to an archaeological site or fossil bed located within the project site.

• Proposed Action will occur in an area designated as sensitive for archaeological sites on the NYS Site Inventory.

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<td>□ Yes □ No</td>
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13. Will proposed Action affect the quantity or quality of existing or future open spaces or recreational opportunities?

- NO
- YES

Examples that would apply to column 2
- The permanent foreclosure of a future recreational opportunity.
- A major reduction of an open space important to the community.
- Other impacts:

14. Will Proposed Action impact the exceptional or unique characteristics of a critical environmental area (CEA) established pursuant to subdivision 6NYCRR 617.14(g)?

- NO
- YES

List the environmental characteristics that caused the designation of the CEA.

Examples that would apply to column 2
- Proposed Action to locate within the CEA?
- Proposed Action will result in a reduction in the quantity of the resource?
- Proposed Action will result in a reduction in the quality of the resource?
- Proposed Action will impact the use, function or enjoyment of the resource?
- Other impacts:
### IMPACT ON TRANSPORTATION

15. Will there be an effect to existing transportation systems?

- **NO**
- **YES**

**Examples that would apply to column 2**

- Alteration of present patterns of movement of people and/or goods.
- Proposed Action will result in major traffic problems.
- Other impacts:

### IMPACT ON ENERGY

16. Will Proposed Action affect the community's sources of fuel or energy supply?

- **NO**
- **YES**

**Examples that would apply to column 2**

- Proposed Action will cause a greater than 5% increase in the use of any form of energy in the municipality.
- Proposed Action will require the creation or extension of an energy transmission or supply system to serve more than 50 single or two family residences or to serve a major commercial or industrial use.
- Other impacts:

### NOISE AND ODOR IMPACT

17. Will there be objectionable odors, noise, or vibration as a result of the Proposed Action?

- **NO**
- **YES**

**Examples that would apply to column 2**

- Blasting within 1,500 feet of a hospital, school or other sensitive facility.
- Odors will occur routinely (more than one hour per day).
- Proposed Action will produce operating noise exceeding the local ambient noise levels for noise outside of structures.
- Proposed Action will remove natural barriers that would act as a noise screen.
- Other impacts:
18. **Will Proposed Action affect public health and safety?**

- Proposed Action may cause a risk of explosion or release of hazardous substances (i.e. oil, pesticides, chemicals, radiation, etc.) in the event of accident or upset conditions, or there may be a chronic low level discharge or emission.
  
  - Proposed Action may result in the burial of "hazardous wastes" in any form (i.e. toxic, poisonous, highly reactive, radioactive, irritating, infectious, etc.)
  
  - Storage facilities for one million or more gallons of liquefied natural gas or other flammable liquids.
  
  - Proposed Action may result in the excavation or other disturbance within 2,000 feet of a site used for the disposal of solid or hazardous waste.
  
  - Other impacts:

<table>
<thead>
<tr>
<th>Impact</th>
<th>Small to Moderate Impact</th>
<th>Potential Large Impact</th>
<th>Can Impact Be Mitigated by Project Change</th>
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19. **Will Proposed Action affect the character of the existing community?**

- Examples that would apply to column 2
  
  - The permanent population of the city, town or village in which the project is located is likely to grow by more than 5%.
  
  - The municipal budget for capital expenditures or operating services will increase by more than 5% per year as a result of this project.
  
  - Proposed Action will conflict with officially adopted plans or goals.
  
  - Proposed Action will cause a change in the density of land use.
  
  - Proposed Action will replace or eliminate existing facilities, structures or areas of historic importance to the community.
  
  - Development will create a demand for additional community services (e.g. schools, police and fire, etc.)

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<tr>
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<td>☐</td>
<td>Yes ☐ No</td>
</tr>
</tbody>
</table>
- Proposed Action will set an important precedent for future projects.
- Proposed Action will create or eliminate employment.
- Other impacts:

20. Is there, or is there likely to be, public controversy related to potential adverse environment impacts?
   □ NO       □ YES

If Any Action in Part 2 Is Identified as a Potential Large impact or If you Cannot Determine the Magnitude of Impact, Proceed to Part 3
April 22, 2009

Jean Friedman
City Planner
City of Peekskill
840 Main Street
Peekskill, NY  10566

Re:  Peekskill Southern Waterfront
Shoreline Stabilization Summary
SYNTHESIS Comm. #: 2007020.00

Dear Ms. Friedman:

The following is provided as a summary of the suggested shoreline stabilization measures, which in general are targeted toward ensuring a relatively stable waterfront while providing a textured, natural substrate favorable to the growth and activity of a variety of fish, macro-invertebrates and other wildlife species. The primary objective of shoreline stabilization measures would be to create a variety of textures from a mix of large and small rocks, coarse fill, topsoil and vegetation that provides varied spaces for protective cover and a source of food for colonizing species and primary consumers.

The following shoreline stabilization measures have been considered for McGregory Brook and Peekskill Bay:

**McGregory Brook**

The erosion along much of the brook is relatively minor and slowly progressing such that the spot treatment with supplemental trees and shrubs would suffice. In other areas, where trees and shrubs are lacking, the addition of a biodegradable Coir geotextile that protects a supplemental soil layering would provide an improved planting medium for quick-growing shrubs. Supplemental trees and shrubs would also be applied to the upper bank in these areas.

The lower segment of the channel just above the confluence with the Hudson River has experienced much more erosion, due to the mixing and churning that occurs during storm events when the tide is rising, the general tidal and wave action and the lack of woody vegetation atop the bank.

We are proposing to rehabilitate the portion of the stream bank nearest the river that has been washed out by supplementing the stone base that is presently exposed to create a barrier behind which can be placed layers of soil wrapped with geotextile fabric. A Coir log positioned at the top of the bank, protected by rip-rap at the face and underlain with a Coir wrapped soil layer, will promote the growth of herbaceous and woody vegetation immediately behind the rip-rap face. Additional live stakes will further anchor the soil layer encased with heavy Coir geotextile fabric and promote the growth of woody shrubs. The entire slope will be seeded with native grasses and the top of the bank will be planted with trees and shrubs to ensure long-term stability of the bank. The bio-engineered soil layers, while subject to a level of tidal and wave action should, with the growth of herbaceous and woody vegetation, become completely enveloped and disappear from view. Concept detail 1/L300 enclosed herewith illustrates the preferred approach to restoring and stabilizing this portion of the McGregory Brook stream bank.
Riverfront Green Park Shoreline

The approach to stabilizing the shoreline just south of McGregory Brook would focus more on re-shaping the existing shoreline to the level required to stop the erosion than on restoring areas that disappeared decades ago. The preferred approach to reclamation would incorporate existing underlying material to rebuild the riverbank and enhanced with a combination of placing some larger pieces of rock, coir logs, finer soils and sediments and low growing woody shrubs. The approach to stabilizing this portion of the shoreline can be similar to that for the lower end of McGregory Brook (1/L300), however if the upper surface is to remain open with only grasses and herbaceous vegetation, the use of TRM in combination with rip-rap shoreline protection may be necessary. Also recommended is some minor repair work to the existing rip-rap shoreline south of the ferry dock, where the underlying construction fabric has been exposed.

Launch Area Crescent

The crescent shaped pea stone beach situated just west and south of the boat launch has experienced periodic erosion from tidal and wave action. This has been most prevalent along the innermost stretch near the parking lot, which has a north/south bearing.

The pea stone and underlying soil placed there by the City has eroded away, exposing a utility pipe. The maintenance of this area includes the occasional clean-up of displaced beach material and rack, along with periodic re-nourishment of the pea stone surface.

The preferred alternative involves the installation of a permanent retaining wall or pile to be installed at or slightly above the high tide line, avoiding the inter-tidal zone. In order to provide enough room for a minimum 10-foot wide multi-use trail, the parking lot and associated drive isle would need to be re-aligned. It appears there is some room available between the parking lot and railroad, but the exact amount, and ability to move it closer to the railroad would necessarily be reviewed and approved by the Metro North authorities. The retaining wall would provide protection against further erosion and avoid permanent fill within the existing inter-tidal zone. The City could continue their program of periodic beach nourishment within the framework of this approach. Concept detail 2/L300 enclosed herewith illustrates the prospective approach to restoring and stabilizing the launch area crescent. Other options would need to be considered if the roadway cannot be realigned.

Riverfront Green South

Nearly the entire length of the Riverfront Green South shoreline features a haphazard mix of boulders, rip-rap, concrete and other debris. The apparent result is wave action crashing over the high barriers at or near the shoreline loosening the granular material that is held loosely together by a patchwork grassy groundcover and carrying it back into the river. This has created a series of cut-out depressions where the low lying ground has been removed, leaving a coarse mix of rubble, stone and boulders where soil once existed.

Since the shoreline is already comprised of a mix of boulders, concrete and rip-rap, the preferred approach to stabilization would involve the re-shaping and infilling of the shoreline armoring that raises the elevation to just above the high tide line, or approximately five (5) feet above mean sea level. This rebuild will at points along the shoreline, leave lower ground that would by virtue of wave action, be susceptible to erosion if left unprotected. In order to protect the landward area, the ground elevation would be raised to an elevation equal to or slightly higher than the armored shoreline. In order to prevent
the entrapment of flood water or breaking waves, the ground surface would be tapered to meet the 100-year floodplain elevation. Concept detail 3/L300 enclosed herewith illustrates the prospective approach to stabilizing the Riverfront Green South shoreline.

Additional less aggressive measures would be necessary to stabilize the slopes if the tidal pool option is selected. Figure 4/L300 illustrates the means by which the tidal pool feature slopes could be stabilized. The approach would again be targeted toward a bio-engineered solution that encourages vegetated growth throughout. Naturalized sections can be stabilized using vegetated bio-lifts, where more formalized segments can use Turf Reinforcement Mat protection, which is intended to stabilize and protect the rooting layer just below the surface.

**General**

There have been a number of options considered for shoreline stabilization, with the general consensus being that a bio-engineered approach is preferred. The area just south of McGregory Brook would receive the least aggressive treatment, effectively restoring a previously rocky shoreline, but with some potential bio-engineered soil layers or TRM protection above the high-tide line. The Riverfront Green South shoreline treatment will vary depending upon the final preferred approach to the tidal pool option and overall grading. It is suggested that if the tidal pool option is exercised, that the final grade of the adjoining parkland be raised to limit the influx of debris into the tidal pool area.

A more detailed analysis of all alternatives considered is found in our November 17, 2008 Alternatives Summary report and in our summary of Best Management Practices. The approach to stabilizing the shoreline has been the subject of extensive review by the Department of State and NYS Department of Environmental Conservation, which culminated into the above described preferred options. Once the final preferred improvement alternatives are established, the approach to shoreline stabilization can be fine tuned to fit the desired objectives. This information will accompany the materials used to apply for regulatory permits.

If you have any questions, please do not hesitate to contact me at 518/370-1576. Thank you.

Sincerely,

Michael Hale, RLA, CPESC
Director, Environmental Planning

Enclosures: Schematic Details 1/L300 to 4/L300

H:\2007 Projects\2007020.00 Peekskill Southern Waterfront\Docs\correspondence\Task 3 Reports\04-22-09 Task3_EC_Summary.doc
McGregory Brook Streambank Restoration

1 L300

SCALE: 1/2" = 1'-0"

BLEND TO EXISTING PLANT SURFACE WITH DECIDUOUS TREES AND SHRUBS TO 10.0' BEYOND TOP OF BANK.

HEAVY COIR GEOTEXTILE SURFACE PROTECTION

SOIL LAYER WRAPPED IN HEAVY COIR GEOTEXTILE FABRIC

WOOD STAKES SPACED 3.0' O.C.

LIVE WOOD STAKES SPACED 3.0' O.C.

PRE-PLANTED COIR BIO-LOG

WOOD STAKES WIRED TOGETHER

RE-SHAPE STREAM BANK WITH MEDIUM RIP-RAP AND EXISTING STONE. FILL VOIDS WITH LIGHT RIP-RAP AND ITEM 4 GRAVEL.

APPROXIMATE HIGH TIDE (4.5 FT.)

EXISTING ERODED STREAMBANK

BASE FLOW

SAND

EXISTING IRON SLAG
2
L300

Launch Area Crescent Beach

SCALE: 1/2" = 1'-0" V
1/4" = 1'-0" H

EXISTING PARKING
EXISTING CURB
FUTURE MULTI-USE TRAIL
RETAINING WALL
PERIODIC BEACH RE-NOURISHMENT
EXISTING ROCK AREA
EXISTING EXPOSED UTILITY PIPE

APPROXIMATE HIGH TIDE (4.5 FT.)
3
L300
SCALE: 1/2" = 1'-0"

Riverfront Green South Shoreline Stabilization

HEAVY COIR GEOTEXTILE WRAPPED TOPSOIL LAYER ABOVE 100-YEAR FLOOD ELEV.

TRM WRAPPED TOPSOIL LAYER FOR TURF GROUNDCOVER;
OR HEAVY COIR GEOTEXTILE WRAPPED TOPSOIL LAYER FOR SHRUB/TREE GROUNDCOVER

CONTINUE SLOPE AT 1:5 TO MATCH EXISTING GRADE

100-YEAR FLOOD ELEV. (2")

INFILL RIP-RAP SLOPE W/ MEDIUM TO HEAVY STONE. FILL VOIDS W/ LIGHT RIP-RAP AND ITEM 4 GRAVEL

APPROXIMATE HIGH TIDE (4.5")

REMOVE BROKEN CONCRETE SLABS

EXISTING ERODED SHORELINE

APPROX. LOW TIDE (0.5")

GRANULAR FILL WRAPPED IN HEAVY COIR GEOTEXTILE FABRIC

SYNTHESIS
4 Riverfront Green South Tidal Pool Option

L300 SCALE: 1/4" = 1'-0"

SYNTHESIS
Re: Peekskill Southern Waterfront
Options Assessment - Shoreline Stabilization
SYNTHESIS Comm. #: 2007020.00

Dear Ms. Friedman:

The following information is presented in accordance with Task 2b of the August 17, 2007 agreement between the City of Peekskill and Synthesis, LLP. Task 2b: Options Assessment – Shoreline Stabilization includes an analysis of all available information and data on options which might work at the sites. The information gathered in Task 2a: Data Assembly was helpful in establishing the potential options for shoreline stabilization measures. A summary of the various recommended treatment options and their respective unit costs are provided below. A more detailed overall cost of shoreline stabilization measures can be developed when the final plan for shoreline improvements is determined.

<table>
<thead>
<tr>
<th>Treatment Option</th>
<th>Est. Unit Cost</th>
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<tbody>
<tr>
<td>Turf Reinforcement Mat (TRM)</td>
<td></td>
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<tr>
<td>1) North American Green Vmax C-350</td>
<td>$8-10/S.Y.</td>
</tr>
<tr>
<td>2) North American Green Vmax C-550</td>
<td>$12-15/S.Y.</td>
</tr>
<tr>
<td>3) Maccaferi MacMat</td>
<td>$12-15/S.Y.</td>
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</tbody>
</table>
TRM’s provide permanent reinforcement to the rooting zone as plant roots intertwine with the synthetic mesh fabric. The MacMat provides an extremely strong steel mesh within the synthetic layers. The Vmax C-350 provides layers of synthetic netting with a moisture holding biodegradable interior.

**Green Gabions**

1) Maccaferi Green Gabions $150/C.Y.

Green gabions are an approximately 50/50 mixture of rock and topsoil, with a double layer biodegradable COIR geotextile lining.

**Reno Matress**

1) Maccaferi 12” Gabion Stone mattress $50-$55/S.Y.

**Rip-Rap**

1) Heavy $30/S.Y.
2) Medium $20/S.Y.
3) General (by weight) $50/Ton
4) General (per lineal foot) $30-50/L.F.

**COIR Geotextile Erosion Control Fabric**

1) Mid-weight $2/S.Y.
2) Heavy-weight $3/S.Y.

COIR Geotextile blankets are made from biodegradable coconut fiber.
Erosion Control Fabric

1) Excelsior/Curlex or equivalent $1 /S.Y.

Curlex blankets are a biodegradable wood fiber product used for temporary erosion control during the initial stages of revegetation.

Miscellaneous Items

Cost

1) Geotextile filter fabric $2.00/S.Y.
2) Aquatic Plants $2.00 ea.
3) Cuttings for brush layers/brush mattresses (bundle of 50 – 3-10 ft. long) $10.00/bundle
4) Fascines (15 ft. length) $40.00 ea.
5) Coir Logs $15/L.F
6) Live stakes $0.50 ea.

Contacts/Information Sources

Alden Research Laboratory, Inc. and ASA Analysis & Communications, Inc. (March 2006) Hudson River Shoreline Restoration Alternatives Analysis, prepared for NYS Department of Environmental Conservation Hudson River Estuary Program and New England Interstate Water Pollution Control Commission.


Approach

The approach to shoreline stabilization is outlined in the Data Assembly report. The objective would be to wherever possible, soften the shoreline in a manner that would encourage the growth of native shoreline or estuarine vegetation. The harsh nature of the waterfront, with daily tidal fluctuations, wave action from large vessels, storm tides and ice flow scour, present a challenge to stabilizing the intertidal zone with anything other than rip-rap. Nevertheless, options are being explored that would potentially replace rip-rap with a permanent turf reinforcement mat and provide a substrate for root growth while resisting the natural and man-induced forces that would otherwise erode the shoreline.

The final approach will be guided by consultation with industry experts and suppliers and the NYS Department of Environmental Conservation’s Hudson River Estuary Program (HREP). The final cost for shoreline stabilization can be determined once the final approach is established. Another consideration is the extent to which the City would support the naturalization of portions of the shoreline. The final design would incorporate a range of vegetative matrices including complete naturalization, managed natural landscape and formalized landscape. All designs however, would seek to diversify the vegetative make-up to stabilize and protect the shoreline and adjacent park land. The current mix of lawn and occasional deciduous tree is inadequate to protect the soil profile behind the rip-rap face.

The goal of the shoreline stabilization plan is to provide the means to stabilize the shoreline using methods and materials that are cost effective and that require little or no maintenance. The minimization of rip-rap above the mean high water mark and use of TRM’s wherever possible to limit the use of gabions will help control the final budget.

If you have any questions, please do not hesitate to contact me at 518/370-1576. Thank you.

Sincerely,

Michael Hale, RLA, CPESC
Director, Environmental Planning

Cc: Jamie Reppert (DCR)
April 30, 2009

Jean Friedman
City Planner
City of Peekskill
840 Main Street
Peekskill, NY 10566

Re: Peekskill Southern Waterfront
Best Management Practices and Impacts
SYNTHESIS Comm. #: 2007020.00

Dear Ms. Friedman:

The following summary is presented in accordance with Task 3 of the August 17, 2007 agreement between the City of Peekskill and Synthesis, LLP. Task 3 deliverables include a summary of Best Management Practices (BMPs) for shoreline stabilization and impacts to State-designated Significant Coastal Fish and Wildlife. Generally, the BMPs are targeted to ensuring a relatively stable waterfront while providing a textured, natural substrate favorable to the growth and habits of a variety of fish, macro-invertebrates and other wildlife species. The primary objective of shoreline stabilization measures would be to create a variety of textures from a mix of large and small rocks, coarse fill, topsoil and vegetation that provides varied spaces for protective cover and a source of food for colonizing species and primary consumers.

Best Management Practices incorporated into the concept design are relatively straightforward, with due consideration to the above-mentioned objectives. The following list of BMP’s is illustrative of those measures incorporated into the overall design of the Peekskill Southern Waterfront shoreline stabilization plan.

1. First and foremost in the design approach is the principle that the existing degraded sections of shoreline would be re-built in the same position as presently exists, avoiding the furtherance of impacts to the inter-tidal zone.
2. Vertical hardened shoreline protection devices would not be included in any component of the stabilization design.
3. A mix of textural components would be included to supplement the existing shoreline remnants.
4. Foreign objects, such as iron slag, steel and concrete slabs that do not fit within the context of a natural shoreline habitat will be buried or removed from the site.
5. Hardened shoreline stabilization measures such as rip-rap would be used sparingly as needed, with a vegetated component incorporated to the extent practicable beginning at the high-tide elevation or lower.
6. Native vegetation will be used to reclaim the impacted shoreline that is presently relatively devoid of vegetation. Areas that currently exhibit an abrupt transition from lawn to rip-rap will be replaced with a transition that includes a mix of woody and herbaceous native plant species.
7. Wherever possible, stabilization measures will incorporate bio-degradable geotextiles that are incorporated into the substrate over time.
8. Apart from the rock treatment, non-biodegradable components would be limited to sub-grade reinforcement to ensure longevity of the rooting zone.
9. The use of local material suppliers will reduce the energy consumption otherwise necessary for transport from remote supplier locations.
10. The plant selection will be coordinated with the regional NYS Department of Environmental Conservation Estuaries division personnel to ensure optimal local native vegetative species are selected and applied to the shoreline.
11. The shoreline will be maintained to ensure long-term coverage and stability of the native vegetation. Management practices will avoid the use of non-target weed killers, with invasive or non-native colonizers removed mechanically or with careful application of targeted chemical control that is deemed safe for the aquatic habitat.
12. The use of vegetated geo-lifts along the upper bank of McGregory Brook and other areas designated for complete naturalization will replace a relatively un-natural vegetative condition.
13. Native trees planted along the McGregory Brook corridor will provide a natural backup to those that may one day die or fall at the edge of the stream bank, reducing the need for artificial protection measures.

Whenever property adjacent to a water body is developed, there are inherent potential impacts associated with increased runoff, changes in water quality due to erosion and sediment deposition and possible thermal discharges. The following list of BMP’s is illustrative of those measures incorporated into the overall design of the Peekskill Southern Waterfront upland area improvements. The goal of all parkland improvements is to reduce water quality impairments from upland runoff or in-water activities and to mitigate impacts to fish and wildlife habitat areas, scenic areas and other sensitive resources.

1. The upland improvements will be protective of the aquatic environment primarily by means of maintaining and improving the vegetated buffer between actively used areas and the shoreline.
2. The use of native vegetation that includes a mix of woody and herbaceous species will reduce the present dominance of lawn grasses along the most frequently visited portions of the shoreline.
3. The re-introduction of carefully placed trees and shrubs will provide needed shade and enhance the viewshed experience that includes framing important views.
4. The additional shade provided by the proposed trees will help cool the ground and paved surfaces, reducing the thermal discharge.
5. The use of a self-contained spray park facility will eliminate the potential for additional runoff.
6. The walkway along the shoreline of Travis Cove will be positioned as close to the shoreline as possible, and not within the area of existing SAV beds.
7. The piers of the walkway will help buffer the ice scour action near the shoreline, which will improve the capacity of the substrate to support plant life.
8. Any additional building or paving improvements are subject to the requirements of the NYS Department of Environmental Conservation Stormwater Pollution Prevention Plan regulation.
9. An Erosion and Sediment Control Plan will be implemented over the course of construction, preventing excessive erosion and intercepting any mobile sediment originating from work areas.
10. An increase in shoreline and near shoreline vegetation will not only help in the filtration of water originating from the uplands, but also help in preventing erosion and sedimentation that would otherwise be generated by storm, wave and tidal action of the River itself.
11. Increasing the bio-mass along the shoreline will also improve the in-water habitat by elevating the prey species numbers.

Generally, the improvements to the waterfront park are designed for compatibility with the existing aesthetic and natural resources along the river. The park components will add a relatively minor amount of impervious surface, as the goal would be to limit the paved trail to that which is necessary to provide multi-purpose access by the general public. Existing naturalized areas will be preserved as the improvements are primarily situated on previously disturbed or lawn areas. Increasing the textural nature
of existing vegetation will enhance the park experience for visitors by providing shade and visual interest, while improving the natural environment that borders the river.

The most notable mitigating measure to the minor increase in paved surface is the cooling affect of the trees and shrubs that will be strategically placed. The shade trees will be positioned, for example, adjacent to the existing play structure, which is presently directly exposed to the sun’s rays. Additional trees will be planted at strategic locations along the paved walkway to provide needed shade. The existing shoreline condition, wherever the recently applied rip-rap armor exists, is bordered by a sparsely vegetated open grass field. The mix of trees and shrubs positioned along the rip-rap will also help cool the surfaces and reduce the thermal discharge.

Scenic areas and vistas will be preserved by strategic selection and placement of plant materials. Members of the public have expressed varying thoughts on the proposed tree plantings. The planting strategy will be mindful of the need to preserve existing viewsheds from parking areas, while enticing others to walk the gateway or promenade to reach a rewarding view, or position themselves where a view is framed by native trees and shrubs. The varied objectives of the public will be reflected in the varied vegetative treatments, ranging from the natural untouched, to a semi-natural managed, to a formal ornamental, to open lawn. Existing important upland resources will be preserved; as there are minimal changes proposed that would disturb any areas not already significantly altered by man’s activities. Existing in-water resources will be preserved, with minimal docking that is of the floating type. There will be no new piles or jetties installed for the purposes of mooring or docking boats.

The following information is taken from the original Management Options report, which reflects the goals and objectives of the overall shoreline stabilization Best Management Practices:

The objectives for shoreline stabilization have been to wherever possible soften the shoreline in a manner that would encourage the growth of native shoreline or estuarine vegetation. In order to accomplish this objective, alternatives to rip-rap on the entire bank profile are recommended that would better encourage shoreline vegetation. Geo-lifts above the high tide elevation and Coir geotextile blanket above the 100-year flood elevation would protect the upper bank during the period of vegetative re-establishment. This combination of stabilization measures would be applied to the riverbank primarily within the Riverfront Green Park and Riverfront Green South.

The prospective tidal wetland feature in Riverfront Green South would require less intensive stabilization measures with the exception of the inlet/outlet points. A combination of turf reinforcement mat and or brush layering techniques are possible, or in the event a constructed bank is to be graded as steep as 2H to 1V, vegetated geo-lifts or green gabions would provide internal stability.

Vegetated geo-lifts or geotextile layering above the intertidal zone is recommended along the McGregory Brook stream bank and tidal pool. Green gabions may be considered along portions of the stream bank, although their use would be based upon an analysis of the need for greater stability than alternative measures provide, such as at the mouth of McGregory Brook or other steep grades along the brook or prospective tidal pool. If shoreline conditions warrant their use, they can be readily fit to accommodate existing trees, preserving existing vegetation. The geo-lift or green gabin layering would necessarily rest upon a rip-rap base. Vegetated geo-lifts and geotextiles, or green gabions if needed, can provide a long-term stabilizing force that allows for the growth of woody and herbaceous vegetation. Over time, the slope faces treated with these measures disappear into the natural landscape. The re-vegetated banks would withstand the undercutting action of stream and tidal flow better than rip-rap alone.
Generally, the shoreline is best stabilized with a mix of a hard stabilizing material and an established mix of herbaceous and woody vegetation. In locations where unobstructed views are a priority, the combination of hard armoring and TRM stabilized herbaceous or low shrub vegetation can be effective in protecting the shoreline.

The overall plan would avoid the furtherance of impacts on the intertidal zone and any nearby SAV beds. As such, the proposed measures would avoid adverse impacts to State-designated Significant Coastal Fish and Wildlife. The proposed measures are actually design to restore and enhance these valuable resources while mitigating potential impacts to water quality.

If you have any questions, please do not hesitate to contact me at 518/370-1576. Thank you.

Sincerely,

Michael Hale, RLA, CPESC
Director, Environmental Planning

Cc: Rebecca Madlin Newell (DCR)
TYPICAL ELECTRICAL DISTRIBUTION SYSTEM

1. GROUNDING AND BONDING DETAIL

TYPICAL UNDERGROUND BRANCH CIRCUIT

2. CONDUIT AND WIRING INSTALLATION DETAIL

ELECTRICAL SINGLE LINE DIAGRAM - LPS

3. SITE LIGHTING CONTROL WIRING DIAGRAM (TYPICAL FOR EACH SERVICE)

SITE LIGHTING CONTROL WIRING DIAGRAM KEY NOTES:

- Site Lighting Control Wiring Diagram Key Notes
- All Lighting Controls shall be located within the building.
- Lighting Controls shall be provided for all areas requiring occupancy control.
- Lighting Controls shall be provided for all areas requiring time delay control.
- Lighting Controls shall be provided for all areas requiring manual override.
- Lighting Controls shall be provided for all areas requiring emergency lighting.
- Lighting Controls shall be provided for all areas requiring automatic testing.
- Lighting Controls shall be provided for all areas requiring maintenance.
- Lighting Controls shall be provided for all areas requiring remote monitoring.
- Lighting Controls shall be provided for all areas requiring remote control.

ELECTRICAL SINGLE LINE DIAGRAM - LPS

PSG Engineering, DPC
SOUTHERN WATERFRONT IMPROVEMENTS