Plan Enlargement

Vegetation Management and Restoration

Legend

- Bronx River
- Floodplain
- Restoration - Wet Meadow
- Restoration - Riparian Upland Forest
- Restoration - Upland Forest
- Pastoral

Vegetation Management & Restoration

The master plan recommendations look at Shoelace Park through an Ecosystems Approach, respecting the unique natural processes and ecological communities found within different areas of the park. The master plan takes the existing ecological conditions and shapes them to create four distinct landscape eco-types that can be deployed across the site: Wet Meadow, Riparian Upland Forest, Upland Forest and Pastoral Landscape. Each landscape type requires a different set of goals, implementation strategy, and management approach. Each are defined relative to the floodplain and the specific hydrological conditions dictated by that relationship.

A main goal in re-shaping the landscape at Shoelace Park is to replace a portion of existing pastoral landscapes with three landscape eco-types that are more suited to the river environment. Within the floodplain, restoration eco-types will include Wet Meadow and the Riparian Upland Forest. Outside of the floodplain, an Upland Forest eco-type will be created. Re-introducing ecologically appropriate native species in these areas will improve the park's sustainability. In addition, increasing biomass of native species will help protect against the spread of invasive species.

While a considerable amount of the pastoral landscape will be converted to these other landscape types, the master plan firmly recommends selectively retaining some of the pastoral landscape for its historic and recreational value. This landscape type was introduced with the design of the Bronx River Parkway at the turn of the 20th century, and has strong visual qualities enhanced by mature trees and gracious vistas.

Some management and restoration strategies are applicable throughout the park, regardless of the landscape eco-type. These recommendations include:

- Improve habitat by increasing communities of native plants. Native vegetation restoration planting will seek to increase biomass through the continued planting of both woodland canopy and understory species. Increased biomass has a higher habitat value, able to support more diverse plant and animal life.

- Manage invasive species. Invasive species must be minimized in Shoelace Park, particularly in areas where native planting efforts take place. The management of invasive species will be accomplished in collaboration with the Bronx River Alliance and the New York City Department of Parks & Recreation Natural Resources Group and implemented according to the *Bronx River Riparian Invasive Plant Management Plan*.

- Create a realistic plan for the maintenance of each eco-type. Routine maintenance for each area will vary slightly, but will generally include pruning and composting of collected yard waste. Additional funding sources for ongoing maintenance and landscape management needs to be secured.

Landscape Eco-types

Restoration in the Floodplain

Within the floodplain, the master plan recommends restoring Wet Meadow and Riparian Upland Forest eco-types. Within the floodplain, restored native ecosystems will aid in stormwater management and floodplain storage. For both eco-types, built structures and impervious surfaces should be removed to prepare the area for a native plants restoration.

Wet Meadow

The Wet Meadow will be located in two areas near the banks of the river (refer to the diagram on the facing page). The creation of the Wet Meadow areas will require significant regrading and the proposed locations were selected, in part, because of existing topographic conditions. Refer to the slope diagram on page 30 in the Existing Conditions section of the Master Plan for more detail. More areas of Wet Meadow are not feasible because of the narrow channel conditions and flashy flow regime of the river at Shoelace Park (see Existing Conditions section). The Wet Meadow will ultilize native wetland plants and native deciduous shade trees. The restored plant habitat will increase wildlife habitat. The Wet Meadow areas will also serve as a demonstration area for educational purposes. Within the Wet Meadow it is important to control invasive species, particularly during the establishment period.

Riparian Upland Forest

The Riparian Upland Forest will include native deciduous shade trees and dense native understory plantings tolerant of periodic inundation. Similar to the Wet M, it will be important to control invasive species, particularly during the establishment period. One of the goals of the new planting will be to prevent bank erosion and retain alluvial soils through forestation. The existing tree canopy will be maintained and fallen deadwood will be retainted for habitat.

The Riparian Upland Forest will also have benefits for visitors to Shoelace Park. This area will provide aesthetially-pleasing points of visual access to the river throughout the four seasons at several designated overlook areas, and will provide direct access at the boat launch areas. The Riparian Upland Forest will be reached by the *Park Walks* and explored through the *Nature Trails*.

Restoration out of the Floodplain

Upland Forest

The Upland Forest can be a model for healthy forest ecology at elevations above the 100-year floodplain. Similar to the Riparian Upland Forest, the Upland Forest will have environmental benefits as well as benefits for visitors to the park. A reforestation plan will include new understory plantings to create greater biodiversity and habitat value. The restoration will also focus on reducing erosion. Open site lines will be maintained in order to ensure public safety.

Maintain Existing Landscape Type

Pastoral Landscape

The Pastoral landscape eco-type is the current dominant landscape type in the park. Much of this landscape type will be transformed in order to create a Wet Meadow, the Riparian Upland Forests and the Upland Forests. However, key areas of this eco-type will be retained and its inherent qualities, excellent for park recreation, will be used for new park activities such as informal playfields and open lawns. Open space with high recreational value will require regular, on-going maintenance. Overgrown vegetation will be removed and a tree replacement plan will be put into effect, replacing mature trees in decline. New groundcover and shrub plantings will be added where necessary to protect soils and provide alternates to turf in shaded areas.

Plant maturation within vegetation restoration areas

The three images to the right show a sequential progression in the change to visual qualities that will occur as restoration plants mature.

Ongoing and Recently Completed Projects

211th Street Entrance Improvements and Greenway Connection to Magenta Avenue

Funding: Recreational Trails Program, NYS Land and Water Conservation Fund, National Fish and Wildlife Foundation Bronx River Watershed Initiative, Mayoral Funds
Status: Under Construction
Completion Date: End of 2010
Budget: $1,100,000

Riparian Invasive Species Management

Funding: WCS-NOAA Lower Bronx River Partnership Grant
Status: Ongoing
Completion Date: 2010
Budget: $80,000 +/-

222nd Street Entrance Improvements

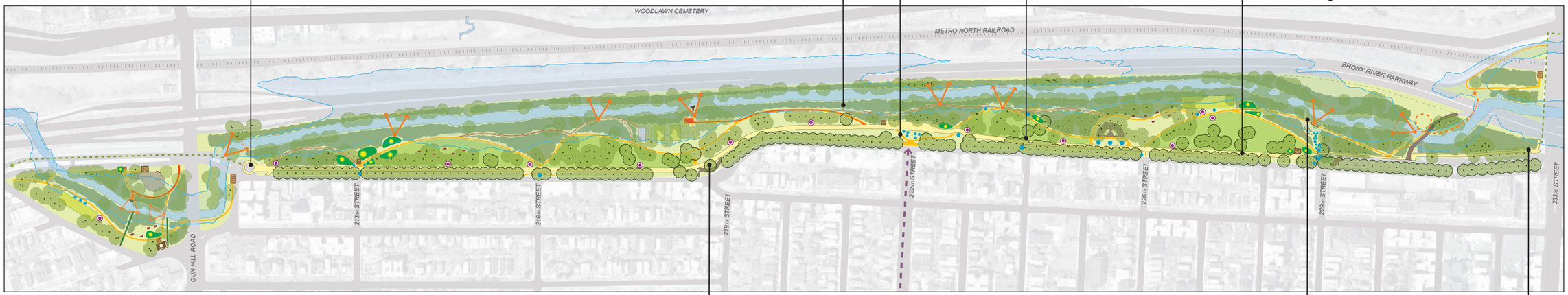
Funding: Transportation Enhancements Program, Councilmember Allocation
Status: Final Design
Completion Date: 2011
Budget: $920,000

NYC DEP Stormwater Pilot Project at 224th Street

Funding: NYC DEP
Status: Design
Completion Date: 2011
Budget: $850,000 +/-

Pathway Improvements in Shoelace Park

Funding: Councilmember Allocation
Status: Completed March 2010
Budget: $250,000



219th Street Entrance Memorial Plaza

Funding: Croton Mitigation Funds
Status: Completed Summer 2009
Budget: $362,000

Ecological Maintenance and Stormwater Management

Funding: Environmental Protection Fund, Local Waterfront Revitalization Program
Status: In Contract
Budget: $350,000

233rd Street Greenway Link to Muskrat Cove

Funding: Croton Mitigation Funds, SAFETEA-LU
Status: Design
Completion Date: 2011
Budget: $2,800,000

Potential grant sources of funding	Funding Amount	Match Requirements
Recreational Trails Program (funded by United States Department of Transportation, administered by New York State Office of Parks, Recreation, and Historic Preservation) Provides 1:1 matching funds for the acquisition, development, rehabilitation and maintenance of trails and trail-related projects.	On the order of $100,000 - $200,000.	1:1 match is required
Land and Water Conservation Fund (funded by National Parks Service, administered by New York State Office of Parks Recreation & Historic Preservation) Provides 1:1 matching funds for the acquisition, development and/or rehabilitation of outdoor park and recreation facilities.	On the order of $250,000.	1:1 match is required
Environmental Protection Fund (New York State Office of Parks Recreation & Historic Preservation) To be used for projects to preserve, rehabilitate or restore lands, waters or structures for use by all segments of the population for park, recreation or conservation purposes, including such things as playgrounds, courts, rinks, community gardens and facilities for swimming, boating, picnicking, hunting, fishing, camping or other recreational activities.	$600,000 is the maximum award amount.	1:1 match is required
Environmental Protection Fund Local Waterfront Revitalization Program (New York State Department of State) Provides funds to prepare, refine or implement Local Waterfront Revitalization Programs (LWRP). The LWRP encourages communities to plan for the future of their waterfronts and undertake improvement projects to implement their plans. The Shoelace Park Master Plan was funded by the LWRP.	No minimum or maximum grant awards. In the 2007 and 2008 grant cycles, New York City parks projects received funding varying from $75,00 to $2,200,000.	1:1 match is required
Transportation Enhancement Program (funded by United States Department of Transportation, administered by New York State Department of Transportation) Provide 80% project funding for transportation projects of cultural, aesthetic, historic and environmental significance.	Projects must have a total cost of at least $200,000 and federal participation will be limited to no more than $2.5 million per project.	20% of total budget must be covered by local funding sources
Congestion Mitigation and Air Quality (CMAQ) Improvement Program (funded by United States Department of Transportation, administered by New York State Department of Transportation) Provides funding to projects that reduce criteria air pollutants regulated from transportation-related sources.	Minimum grant award is $250,000; maximum is $1,500,000.	20% of total budget must be covered by local funding sources

Zoned Phasing of Improvement Projects

ZONE ONE: Fort Knox | **ZONE TWO: 211th -216th** | **ZONE THREE: 216th - 222nd** | **ZONE FOUR: 223rd - 227th** | **ZONE FIVE A & B: 228th - 233rd**

*Zoned Projects**

- Zone 1: Fort Knox – East and West ($5,500,000)
- Zone 2: 211th Street – 216th Street ($6,400,000)
- Zone 3: 219th Street – 222nd Street ($4,700,000)
- Zone 4: 223rd Street – 227th Street ($2,100,000)
- Zone 5 A & B: 228th Street – 233rd Street ($8,400,000)

*Independent Projects**

Fitness Stations – Ten ($100,000)

Promenade Improvements including reduction of pavement width and integration of standard design elements – Approx. 1 mile ($4,100,000)

* All figures are estimates and are subject to revision.

Phasing:

Tier I Priority Projects

- Zone 2
- Zone 5 A (Vegetation Restoration Planting & Amphitheater only)

Fitness Stations

Promenade Improvements

Coordination with RCNYC regarding potential improvements to racetrack

Tier II Priority Projects

- Zone 3
- Zone 4
- Zone 5B (Remaining Projects in Zone)
- Zone 1

Recommendations Overview

Expand the forested buffer along the riverfront

An expanded forested buffer along the river will improve the river's health, create new habitat, and offer a new park experience for users. Reforestation efforts will use native plants and will focus extensively on managing invasive species.

The hard-surface lower pathways will be removed, replaced by upland non-paved paths that will be designated as nature trails.

Relocate playgrounds and comfort stations out of the floodplain

Park features will be pulled out of the river's floodplain and relocated along the upper pathway (Promenade) to reclaim the floodplain for the river, reduce damage to high-cost infrastructure from periodic inundation, and increase community access and safety.

Reduce the upper paved path down to 17' and reuse rest of original path width for plazas, play spaces, fitness stations, and stormwater Best Management Practices (BMPs).

The width of the upper path in the park (the old road-bed of the Bronx River Parkway) will be reduced from forty-feet to seventeen-feet and designated clearly as a bike and pedestrian path with striping and signage. The Promenade path will undulate within the existing forty-foot footprint of the existing path, allowing play areas, fitness stations, rain gardens and planting beds on either side as park use and site topography dictate. The new Promenade will be the backbone for future activity nodes and ecological features that the master plan recommends along this upper pathway.

Highlight the rich history of the area

Shoelace Park is rich in cultural history, which the plan thoughtfully brings to life. The past site of a literary hotel turned tapestry mill will be traced and interpreted, a historic footbridge over the Bronx River will be recreated, the original width of the old road-bed of the Bronx River Parkway at 222nd Street will be left for a multi-use plaza, and historic viewsheds and pastoral zones that were created at the time of the Bronx River Parkway Reservation development in the 1920s will be preserved.

Improve access to the park

The plan recommends improving park access from local neighborhoods and to the north and south linkages of the Bronx River Greenway. The plan calls for a realignment of the street configuration at the northern end of the park, improved crossings into the park across Bronx Boulevard, and the development of a footbridge over the river at Fort Knox.

Provide a holistic system of stormwater management

Just as Shoelace Park suffers from stormwater runoff—as evidenced by significant erosion and gullying in the park—the Bronx River suffers the effects of combined sewer overflows that release untreated sewer and street runoff into the river during periods of heavy rains. The plan proposes a green solution to both problems through the development of stormwater Best Management Practices to capture, treat, detain, and use stormwater as a resource. The Master Plan calls for continuous stormwater BMPs along Bronx Boulevard, and the development of treatment areas in the park where stormwater can be captured and used as a resource.

Additional Resources:

Bronx River Greenway Plan, Bronx River Alliance, www.bronxriver.org/plans

Bronx River Design Guidelines are included in the Bronx River Greenway Plan and are available on the same webpage: www.bronxriver.org/plans

Bronx River Ecological Restoration and Management Plan, Bronx River Alliance, http://www.bronxriver.org/puma/images/usersubmitted/greenway_plan/

Bronx River Greenway Signage Master Plan, available upon request - see contact information below

Urban Riparian Wetland Restoration Evaluation: A Case Study for the Bronx River, Natural Resources Group, City of New York, Department of Parks & Recreation

Native Species Planting Guide for New York City and Vicinity, Natural Resources Group, City of New York, Department of Parks & Recreation

Bronx River Alliance, © 2010 ALL RIGHTS RESERVED

For more information, please contact the Bronx River Alliance
at 718.430.4665 or via email: bronxriver.info@parks.nyc.gov

For more about the Bronx River Alliance, see www.bronxriver.org