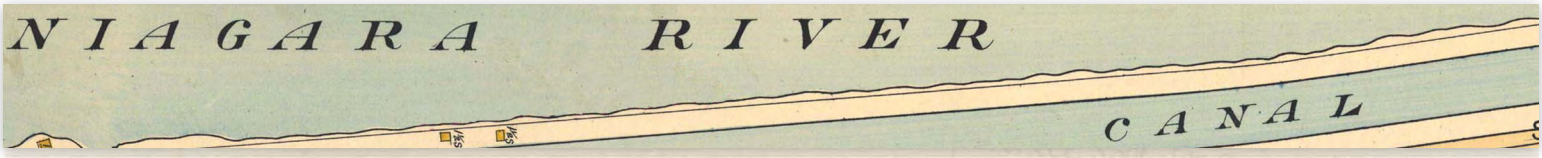
Black Rock Canal Park

Feasibility Analysis

peter j. smith & company, inc.

November 2010



Black Rock Canal Park

Feasibility Analysis

Prepared by *peter j. smith & company, inc.*
Buffalo, NY

for Erie County, NY - Department of Environment and Planning

Acknowledgments

peter j. smith & company, inc. gratefully acknowledges the assistance and input provided by the Erie County Department of Environment & Planning and members of the the project Steering Committee and Advisory Committee. Representatives participated in the feasibility analysis process and provided insight, guidance and feedback during the course of work.

Steering Committee

Tom Dearing, Erie County Dept. of Environment & Planning
Mark Rountree, Erie County Dept. of Environment & Planning
Margaret Szczepaniec, Black Rock Canal Park Steering Committee
Paul Leuchner, Black Rock Canal Park Steering Committee
Maria Whyte, Erie County Legislator
Jim Hornung Sr., Erie County Division of Parks & Recreation
Sharon Leighton, New York State Canal Corporation
Thomas Sheehan, New York State Canal Corporation
Bill Parke, City of Buffalo Office of Strategic Planning
Assemblymember Sam Hoyt - New York State Assembly
Joe MacMahon - Office of NYS Assemblymember Sam Hoyt
Senator Antoine Thompson - New York State Senate
Bill Nowak - Office of New York State Senator Antoine Thompson

Advisory Committee

All Members of the Steering Committee plus:

Gary Hall, Harry's Harbour Place
Bryan Hinterberger, US Army Corp. of Engineers
Philip Berkeley, US Army Corp. of Engineers
Rob Belue, Niagara Greenway Commission
Sharon Czajkowski, Black Rock Canal Park Steering Committee
John Bauer, Black Rock Canal Park Steering Committee
Robert Niemiec, Black Rock Canal Park Steering Committee
Joanna Dickinson, Black Rock Canal Park Steering Committee
Stevan Stipanovich, Black Rock Canal Park Steering Committee
Margaret Faircloth, Black Rock Canal Park Steering Committee
Lawrence Pernick Jr, Black Rock Canal Park Steering Committee
Caleb Basilko, Black Rock Canal Park Steering Committee
John McKee, Black Rock Canal Park Steering Committee
Warren Glover, Black Rock Canal Park Steering Committee
Julie O'Neill - Buffalo Niagara Riverkeeper
Robyn Drake - Buffalo Niagara Riverkeeper
Councilmember Joe Golombek - City of Buffalo Common Council

Contents

Executive Summary 6

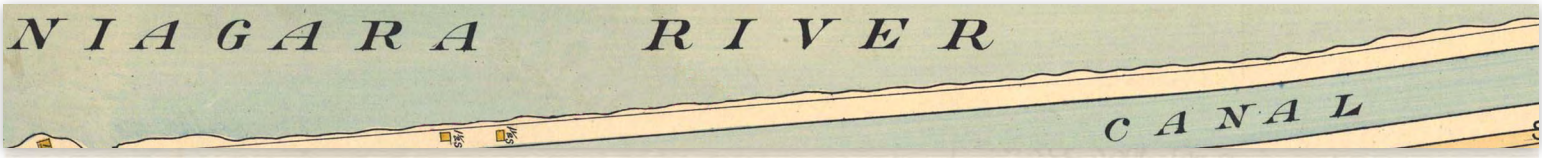
1.0 Background 8
- Feasibility Analysis 8
- Planning Process 8
- Black Rock – Riverside GNPA Concept 9

2.0 Vision 10
- Vision Statement 10
- Goals and Objectives 10
- Guiding Principles 11

3.0 The Alternatives 12
- The Challenge 12
- Evaluation Process 12
- Option 1: No Action 17
- Option 2: 2008 Black Rock – Riverside GNPA Concept 17
- Option 3: Modified Plan 18
- Common Details 20
- Sustainable Practices 22
- Interpretation Concept 24
- Maintenance and Security 25

4.0 Phases 30
- 1. The Entry Phase 32
- 2. The Central Area Phase 35
- 3. The Road and Turnaround Phase 39
- 4. The Boardwalk Phase 43
- 5. The Mixed-Use Building Phase 49
- 6. The Boat Launch and Pier Phase 53
- 7. The South End Phase 57
- 8. The Creek Phase 61
- The Big Picture 64

5.0 Context 66
- Regional Context 66
- Historic Context 67
- Potential Users 69



6.0 The Site 70
Project Limits 70
General Site Conditions 71
Surrounding Land Use 76
Circulation and Access 78
Views 80
Wind 82
Water Conditions 82
Soils 84
Utilities 85
Zoning 85
Site Opportunities and Constraints – A Summary 85

7.0 Implementation 86
Implementation Requirements 86
Funding 88

Appendices 89

Appendix 1 90
Consistency with Regional Plans 90

Appendix 2 98
Structural Report 98

Appendix 3 100
Presenting the Concept 100
Project Steering Committee 101
Project Advisory Committee 101

Appendix 4 102
Construction Cost Worksheets 102

Appendix 5 104
Meeting Summaries 104

Appendix 6 106
Flood Levels 106

Executive Summary

The Site

Black Rock Canal Park (BRCP), currently known as the Ontario Street Boat Launch and Cornelius Creek Park, is an Erie County-owned site along the Niagara River in Buffalo's Black Rock/Riverside area occupying approximately 8.3 acres, of which approximately 4.7 acres is dry land (the property lines extend into the water). The project area, however, extends beyond the property line to include approximately .4 acres of New York State Thruway Authority land under the I-190 overpass and the .2-acre park entrance road owned by the City of Buffalo to create a total project area of 5.3 acres of dry land.

Challenges

Currently the Ontario Street Boat Launch property is uninviting due to the state of disrepair, the expanses of featureless paving and the relative isolation of Cornelius Creek Park. The 2,300 –foot shoreline is monotonous, generally consisting of a simple railing and narrow walkway. The boat launch gets moderate use in spite of difficulties with floating debris that sometimes obstructs the access to the water. Another problem is that the project area is bisected by Cornelius Creek, the City's largest combined sewer overflow (CSO). By design, untreated sewage overflows into Cornelius Creek when precipitation causes a spike in sewer flows leaving an unpleasant sewer odor at the park. The Buffalo Sewer Authority is being mandated to fix the CSO problem city-wide though the date when Cornelius will be addressed is currently unknown.

Opportunities

In spite of the current difficulties, the site is well used and has a tremendous potential for improvement and warrants a significant investment resulting in increased use and a more positive image of the region. The views over the Niagara River are appreciated by numerous anglers and the many visitors that come to eat lunch or watch the sunset. Further, the views over the park toward the river are seen by the 69,000 vehicles per day that travel on I-190 directly adjacent to the site. The site contains a segment of the Erie County Riverwalk which is a continuous pathway along the Niagara River running from downtown Buffalo to the City of Tonawanda at the County's north border. This provides a link to numerous other shoreline parks and allows park visitors to not have to take their car to the site.

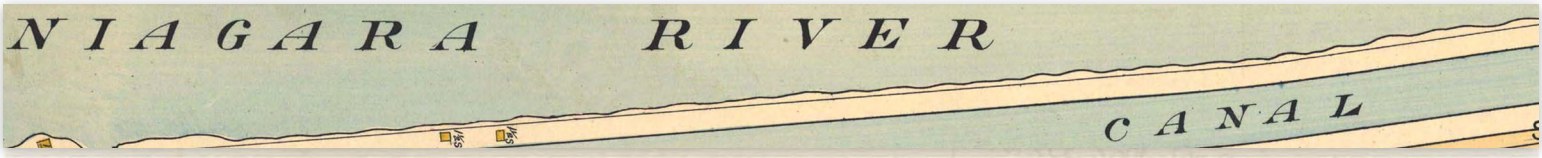
The site has historic value as public access along the New York State Canal System, given its location between Canal Gateway in Tonawanda and the City of Buffalo Inner Harbor. This park has an opportunity to represent the link between the historic past, the present Erie Canal and future developments one of New York State's most significant assets.

A Grassroots Plan for Improvements

Members of the Black Rock/Riverside community who frequent the park are keenly aware of the challenges and opportunities at the site and decided to create a plan for improvements. The organization known as the Black Rock-Riverside Good Neighbors Planning Alliance (BRRGNPA) formed a subcommittee to address the project. The group, later reformed as the Black Rock Canal Park Steering Committee, completed an award-winning plan in 2006 for the park. The BRRGNPA planning process involved extensive public input and meetings resulting in a plan that was extremely well received by the community. Major features included a mixed-use building; reconfigured parking; a dog park, playground; covered creek; improved bike path, a deck over the river; and an improved entrance road.

Erie County Feasibility Analysis

In 2009, Erie County retained the landscape architecture and planning firm, peter j. smith & company, inc. (PJS) to conduct a feasibility analysis of the BRRGNPA plan for Black Rock Canal Park. This report is the result of that effort. To guide the process, two committees were formed, the Erie County BRCP Advisory Committee and the Erie County BRCP Steering Committee. The Steering Committee, whose members represent agencies that have a role in the project's funding, schedule or maintenance, was convened three times. The Advisory Committee had a broad membership with 30 members consisting of the original GNPA members, the Erie County Steering Committee members plus representatives of several elected officials and local organizations. In addition to the committees there was consultation with representatives of the US Army Corps of Engineers, the NYS Department of Environmental Conservation, US Department of Homeland Security, Erie County Sheriff's Office, US Fish & Wildlife Service, and the Buffalo Niagara Riverkeeper.



The Options

The Feasibility Analysis scope included reviewing the BRRGNPA plan and providing alternatives to items deemed not feasible.

BRRGNPA Plan

There were several items of this proposal that were adjusted in the subsequent conceptual plans due to either input from the Advisory Committee or to address comments by government regulatory agencies. These include: elimination of parking on the creek cover which would be designed to be removable in the event water quality was restored (the creek cover was also scaled back to allow room for clean-ups at the mouth of the river); modification of the concrete deck over the river based on to concerns by regulatory agencies; the boardwalk concept was retained but pulled back adjacent to the shoreline; the road to the north was terminated part way along its length and the personal watercraft dock was changed to a paddlesports launch as a result of input from the Advisory Committee. The remaining items from this concept have been reconfigured in later plans once the adjustments suggested above were made.

Modified and Alternative Plans

The Modified Plan features a covered creek, a two-story mixed-use building; a road to the north that is terminated at two thirds of its existing length, a waterfront walkway north of the building that extends out over the water with an adjacent bike path, a dog park, a playground, an 300-foot pier extension creating a marina with slips for 35 boats. The Alternative Plan features an uncovered creek; a single-story restroom/concession building; a road to the north that is terminated at half of its existing length; a waterfront pathway build inland of the waters edge; a dog park; a shipwreck interpretive feature; a 70-foot pier extension creating a marina for 18 boats and a paddlesports launch.

No Master Plan?

Both the Modified Plan, the Alternative Plan, or a combination thereof, can move forward . there is no master plan since some issues still require study beyond the scope of this report or could not be fully defined without first determining the magnitude of funding that will be available. Unresolved items include:

- Covering Cornelius Creek – This option will require a more intensive environmental review process.

- Shoreline Trail – options for the treatment of shoreline trail system north of the existing restroom/concession building include either an overhanging walkway combined with a separate bike path or an inland multi-purpose walkway. The costs for the two options vary widely and the available funding has not been determined.

- Building Scale – whether to include a modest restroom/concession building or a larger mixed use building with facilities for a security – a related agency has not been determined. There is yet to be a commitment from a tenant and funding has not been determined.

Initial Improvements

There is funding immediately available for engineering and construction of improvements at Black Rock Canal Park. There are also a number of plan components that are widely agreed upon that will not preclude the advancement of many packages of components from either the Modified Plan or the Alternative Plan.

Phases

Though there is no definitive Master Plan, the project can move ahead in phases. The suggested phases include:

1. The Entry
2. The Central Area
3. The Road & Turnaround
4. The Boardwalk
5. The Mixed Use Building
6. The Boat Lauch & Pier
7. The South End
8. The Creek

Each phase is intended to be a stand-alone project that does not require another phase for completion. The sequence that the phases will be constructed in depends on available funding and priorities set by Erie County and the stakeholders as well as the duration of environmental reviews.

Feasibility Analysis

Erie County owns and operates an interconnected series of waterfront recreational facilities along the Niagara River. These facilities, located in the Riverside neighborhood of Buffalo, New York, include Cornelius Creek Park, Ontario Street Boat Launch and a section of the Riverwalk multi-use trail. The declining physical condition of these facilities combined with unrealized recreational potential for the site led the Black Rock - Riverside Good Neighbors Planning Alliance to prepare a Concept Plan for improvements to the facilities. Per the community concept, the facilities would be collectively called Black Rock Canal Park.

In the fall of 2007, Erie County Department of Environment and Planning requested proposals for an analysis of the feasibility of the Concept Plan. peter j. smith & company, inc., a multi-disciplinary landscape architecture and urban planning firm was selected to lead the Feasibility Analysis. The scope of the Feasibility Analysis includes a physical inventory of site conditions, evaluation of the Concept Plan, recommendations for alternative design features, a phasing plan for implementation, and preparation of New York State Environmental Quality Review documents.

Planning Process

Landscape architects from the firm of peter j. smith & company, inc. led the Feasibility Analysis, working closely with the project Steering Committee and the volunteer Advisory Committee. Members of the Feasibility Analysis' Steering Committee represent agencies that have a role in the project's funding and scheduling or in the park's maintenance. The Steering Committee provided direction on contractual requirements, project scope, schedule, maintenance, funding, and other business-related issues. The Advisory Committee was made up of members of the Black Rock Canal Park Steering Committee, a community group that prepared the Concept Plan for the park, in addition to members from the US Army Corps of Engineers, the Niagara Greenway Commission and members of this Feasibility Analysis' Steering Committee. The Advisory Committee provided input on the park, its design components, and the feasibility analysis process. See Chapter 5 for a list of committee members and their affiliation. The feasibility analysis process included eight Advisory Committee meetings and three Steering Committee meetings, as well as meetings with and interviews of other stakeholders and agencies who operations and/or decisions may affect the design or implementation of the park.

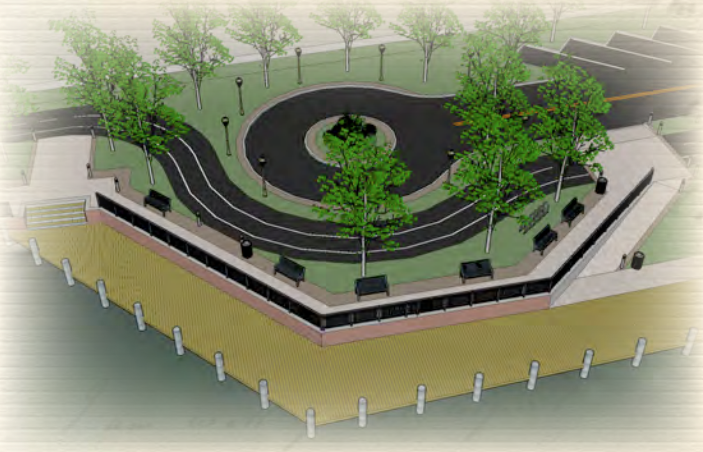
The design process started with an interactive input session with the Advisory Committee members; the input session invited feedback on the strengths and weaknesses of the proposed Concept Plan. A draft vision statement, guiding principles, and project goals were also presented to the Advisory Committee for their review and feedback. From there, the Concept Plan was evaluated based on criteria that reflected the vision, guiding principles and project goals.

Based on the evaluation, as well as inventory of site conditions and relevant local/regional planning documents, the project landscape architects made recommendations for alternative design features and produced a plan for initial implementation. Cost estimates for the design and construction of the park, summaries of best management practices and construction requirements, and a listing of potential funding sources are also included in the Feasibility Study.

Black Rock – Riverside GNPA Concept

The City of Buffalo Office of Strategic Planning initiated a neighborhood-based planning process as part of the city's ongoing Comprehensive Planning efforts. The neighborhood-based planning process, known as the Good Neighbors Planning Alliance (GNPA) seeks to actively involve citizens in the creation of community-based action plans in each of the city's GNPA areas. The Black Rock - Riverside GNPA was created in 2001 to represent the Riverside planning area, which is comprised of the Riverside, Black Rock and West Hertel neighborhoods.

In 2006, the Black Rock - Riverside GNPA prepared an award-winning Concept Plan for Black Rock Canal Park. The park, while new in name, is a synthesis of three, adjacent, waterfront recreational facilities: Cornelius Creek Park, Ontario Street Boat Launch and a section of the Riverwalk multi-use trail. The goals of the Concept Plan are to address the deficiencies in the current design of these facilities, to increase parkland along the river, and to foster usage of the park by a diversity of users.



2.0 Vision

Vision Statement

Black Rock Canal Park will be a pre-eminent public open space, a recreational destination in the county, an icon of the Black Rock and Riverside neighborhoods and a portal onto the Niagara River waterfront. It has the potential to become a regional destination, a component of the Niagara River Greenway and act as a gateway into the City.

Goals and Objectives

Promote a variety of connections with all areas of the city.

Given that Black Rock Canal Park is the most significant waterfront open space in west Buffalo it serves as an anchor and a portal on the Niagara River for the entire open space system of parks and trails. Specifically it provides links to

- Riverside High School
- the Black Rock and Riverside neighborhoods
- Olmsted system of parks
- the Niagara River

Develop a significant regional attraction in the city.

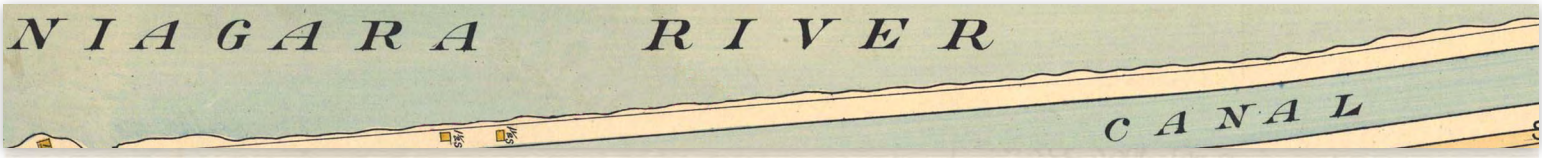
Given that Black Rock Canal Park has the largest waterfront land base (8 acres) of any open space along the Niagara River it offers amenities that make it a destination for residents and visitors.

- Promote water activities as boating, fishing, scuba
- Enhance opportunities for viewing in all four seasons for a variety of users
- Create a primary space for special events and gathering
- Develop the feature section of a future continuous waterfront promenade

Create a recognizable icon on the waterfront of the city.

The Black Rock Canal Park is a waterfront park on a world renowned river in a city with three waterfronts: the Niagara River, Lake Erie and the Buffalo River. It is a place that is unique and exemplary with a sense of place.

- Develop an park that reflects its own unique local character
- Create signature features that reflect the history and culture of the site
- Attract a wide cross section of residents and visitors
- Develop an inviting pedestrian oriented place
- Introduce art into the public waterfont



Develop a gateway entering the city from the north.

Given that Black Rock Canal Park is visible from the I-190 south entering the City of Buffalo and from the Niagara River at the northern edge of the city it will be a signature place with significant features that add to its value as a gateway to the city.

- Build a recognizable and visible signature
- Develop a green natural area of riverfront
- Set the standard for the continuity of waterfront green space

Promote and enhance nature and green development in all aspects of the park.

Black Rock Canal Park will be a vestige of publicly accessible shoreline, located along one of the most scenic rivers in the world. All aspects of design, construction and education must enhance and complement the values:.

- Manage stormwater in an environmentally responsible way
- Build green incorporating environmental design principles
- Interpret green design and construction techniques

Program the park to support community education.

Given that Black Rock Canal Park is proximate to Riverside High School and is rich in history and natural wonders, a comprehensive interpretation program will make this park a significant attraction.

- Develop a comprehensive interpretative program
- Enhance understanding of nature and ecology
- Develop an atmosphere of an outdoor museum
- Develop community/neighborhood facilities

Recognize the significance of the site's connection to the New York State Canal System

Given that Black Rock Canal Park is located between the Canal Gateway in Tonawanda and North Tonawanda and the Buffalo Inner Harbor, this park should serve to represent the link between the past Old Erie Canal and the present Erie Canal and Inner Harbor a nd the future Canal-side Project in the Buffalo Inner Harbor.

- Develop a comprehensive interpretive program educating visitors about the canal
- Improve facilities that will enable boaters to navigate to these locations

Encourage events that the recreational and historical value of the Canal System.

Enhance access to a significant public resource, the Niagara River.

Given that Black Rock Canal Park is the longest stretch of open shoreline on the Niagara River in Buffalo, the area should as water accessible as possible both physically, visually and for challenged individuals.

- Promote areas where one can touch the water
- Improve accessibility for water based activities as boating, fishing
- Apply standards to make all components accessible for challenged individuals
- Maintain waterside lands for water dependent uses

Guiding Principles

Guiding principles are fundamental obligations or tenets that are applied to the development of public waterfront open space. There are six guiding principles that cover all aspects to guide the evaluation and design of Black Rock Canal Park. The design of the waterfront open space should promote:

- the environment: stormwater, contamination remediation and general sustainability
- nature: through the use of native vegetation, and landscapes
- circulation: pedestrians, bicycles and boaters
- people activities both indoor and outdoor and for all seasons
- water use and access
- viewsheds

3.0 The Alternatives

The Challenge

Black Rock Canal Park is a significant piece of several different, but complimentary, stories: it provides access to the riverfront that was so influential to the growth of the Black Rock and Riverside neighborhoods; it is an integral part of the county, city and regional park systems; it is a connection along the Niagara River Greenway; it is located along the historic route of Erie Canal and within the Erie Canalway National Heritage Corridor; it is just downstream of the Black Rock Canal and its operating lock; and it is along the Seaway Trail National Scenic Byway .

The challenge is to develop a plan for Black Rock Canal Park that bring all of these stories together into one cohesive book – a best-seller no less. The Feasibility Study examines several options for the design of the Park. Ultimately, the Park must integrate the history of the Black Rock and Riverside neighborhoods and the Erie Canal; solidify the ties between the county parks and trails, the city's historic Olmsted parks and other waterfront parks, and the Niagara River Greenway; and reflect its presence within the Erie Canalway National Heritage Corridor and the Seaway Trail National Scenic Byway. These stories provide the framework to build a park that provides recreational opportunities and water access to a variety of users, presents a welcoming gateway into the City of Buffalo from the north, and is an attractive destination for visitors and residents alike.

Evaluation Process

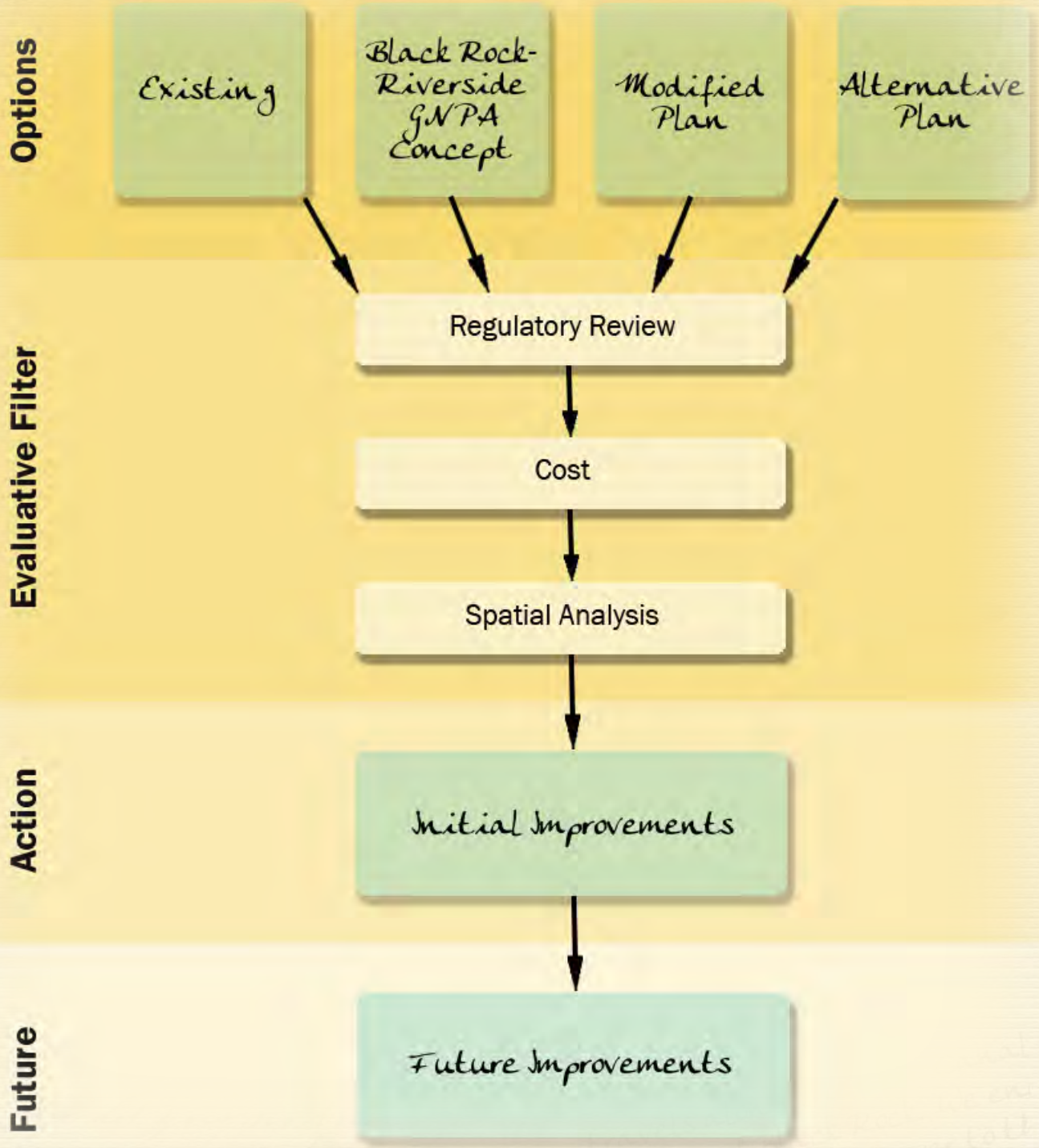
A process has been set up to understand the feasibility of developing Black Rock Canal Park as a major new park in Erie County and the City Of Buffalo. The process includes creating a vision, understanding the context and the site, looking at the plan for the park that was developed by the BRRGNPA and preparing alternatives for consideration. In this chapter, we will present four options (alternatives) for developing the park; we will evaluate the various elements of these options. The graphic at right illustrates this process.

No Action

BRRGNPA


Modified


Alternative


Options
Existing
Black Rock-Riverside GNPA Concept
Modified Plan
Alternative Plan
Evaluative Filter
Regulatory Review
Cost
Spatial Analysis
Action
Initial Improvements
Future
Future Improvements

Design Issues

Any design option developed for Black Rock Canal Park must address a series of issues that have much to do with the ultimate success of the Park. These are not general park design issues, but rather are specific to the opportunities and constraints of this site.

Recreational Activities

There are a wide variety of recreational opportunities that could be included in Black Rock Canal Park, but the question is: what type of recreation is appropriate for this site, given its limited, linear layout and its waterfront location? Priority should be given to recreational activities that advance the vision established for this project, especially those that cannot be provided by other nearby facilities, such as Tow Path Park, George Washington Park or Riverside Park.

Security and Environmental Issues

The Ontario Street Boat Launch and Cornelius Creek Park have had problems in the past with vandalism of the park amenities. The building has been spray painted, benches have been broken and railings have been damaged. In recent years the park seems to have been low on the list of priorities for maintenance, resulting in the accumulation of trash and debris in the water, which can make it difficult for boaters to launch. Cornelius Creek Park, accessible only by the Riverwalk trail and by a pedestrian bridge, is isolated from the rest of the park. All this has contributed to an atmosphere of neglect and a feeling of insecurity for park users.

The conversion of Cornelius Creek to a combined sewer overflow (CSO) by the City of Buffalo further degrades the site by producing foul odors and degrading shallow water aquatic habitat. The Buffalo Sewer Authority (BSA) admits that restoration of the water quality within the artificial confines of Cornelius Ccreek may be decades away.

There are several approaches to address this concern. An idea, brought forth early on in the Black Rock – Riverside GNPA Concept Plan, is to include a space in the park that can be occupied by a security-related agency such as the Erie County Sheriff's Office, a branch of the US Department of Homeland Security or a similar agency that uses boats and needs access to the river. Any of these agencies would create a presence in the park that would discourage vandalism and nefarious activity. During investigation for this feasibility analysis, a variety of agencies were contacted but none have committed to locating at BRCP. In spite of this, communications can continue and space can be planned, with the hope that a security-related agency will commit to locating in the park in the future.

Other options for improved security include the addition of real-time security cameras, law enforcement patrols and working with AmeriCorps to do patrols and cleanups on a regular basis. Improved maintenance by Erie County Parks Department staff would also create a more positive atmosphere. The conventional thinking among park managers is that quickly addressing vandalism deters additional vandalism.

Parking

The challenge of designing parking is to provide only the amount of parking that is necessary for normal park activity. Too much parking will waste valuable waterfront space that could be used for recreational activities or for greenspace. However, parking for special events at the park that draw large numbers of visitors also needs to be planned for. Possible solutions include designating overflow parking, shuttles to off-site parking areas or arrangements with nearby property owners to allow occasional event parking. Another challenge is creating awareness that the parking is associated with the park and providing a convenient walkway. Signage, both at the off-site parking area and on-site, would help orient the park visitor.

Given that the Ontario Street Boat Launch and Cornelius Creek Park are located in the largest, widest area of the site, it is likely that major activities such as the boat launch and the proposed building will remain in this area. And given that activities need convenient access, it will be important to provide parking within a reasonable walking distance to this part of the site. Even though the site has approximately nine acres of space available, the length is over 2,100 feet, which makes for a very linear park. Because of this linear configuration of the site, it may be necessary to look for parking areas off-site to ensure that the parking is close to the activity area.

The graphic at right illustrates various distances from the center of the existing parking area. It shows that there are several vacant properties along Niagara Street within 200 yards of the existing parking lot at the site, which should be considered for purchase. Some of these properties are currently for sale.

Of particular interest are two properties along the entrance road. The property to the south (right) is a Kwik Fill gas station. While this property is not for sale, it includes a lawn area along the park entrance road that would provide convenient parking without impacting the layout of the Kwik Fill. If approached and the terms are favorable, Kwik Fill may be willing to sell or lease this portion of their property. On the north (left) side of the entrance road is an automobile repair business. This property is also not for sale but the owners may be willing to sell if the terms are favorable and a new location for the business could be provided. A third parcel, south of Kwik Fill, is vacant and was listed for sale in the recent past, although not currently. While it is not along the entrance road, it would be relatively inexpensive and is in close proximity to the most active part of the site.

Since off-site parking depends on successful negotiations with one of the adjacent property owners, planning and layout of off-site parking cannot be completed at this time. At this point, one can only estimate the ultimate number of parking spaces needed at one time. Since the park plan will be implemented in phases, the layout of parking and overflow parking should be flexible. Ideally, space should be designated as potential parking and implemented only when needed as the build-out of the park is accomplished.

The Alternatives

Cornelius Creek

Cornelius Creek, once an urban watercourse has serious water quality problems. It is piped underground until it emerges within the park, where it is daylighted and flows approximately 275 feet to the Niagara River. It acts as a storm sewer collecting rain and snow melt runoff from the streets, but it is also a major combined sewer overflow (CSO). When the volume is too great in the North Interceptor (a major sanitary sewer line), sewage spills over a regulator weir/dam into Cornelius Creek. The Buffalo Sewer Authority (BSA) is the agency responsible for the CSOs city-wide. BSA is aware of the problem at Cornelius Creek but currently does not have adequate funding or a plan in place to make corrections.

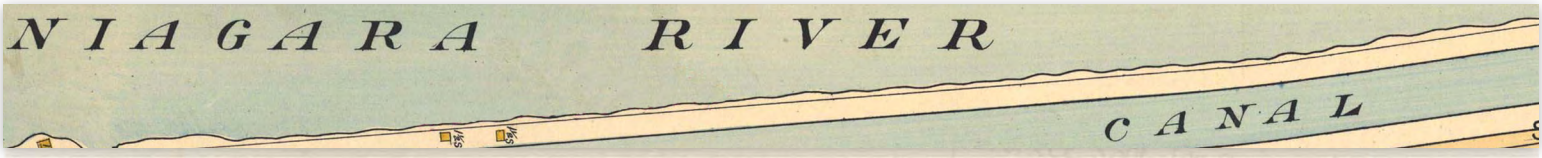
The US Environmental Protection Agency (EPA) and the DEC have mandated that the city address the CSO problem and are negotiating a consent order with BSA as of the spring of 2010. Once the consent order is in place, BSA will establish a list of priority projects based on cost effectiveness and political direction. Therefore, the issue of how to address Cornelius Creek in the Park design is a difficult one. At some point in the future, the water quality will be improved by the BSA as mandated by the EPA and DEC; but that date is an unknown.

There are two approaches about how to best plan a high quality waterfront park that includes Cornelius Creek:

- **Cover the Creek** – This approach is based on the fact that the odors emanating from the waters after a CSO spill are offensive and that the view that the creek is unattractive, so the best solution to create a quality park is to cover the creek; then at a later date, when the CSO issue has been addressed and water quality has improved, the cover can be removed. In this approach, major features of the park, such as parking, would not be placed over the creek in order to allow removal of the cover when appropriate. Supporters of this option have questioned whether Cornelius Creek is actually a "creek" and view it as nothing more than a sewer outfall. As such, it does not deserve the same degree of protection afforded for a natural creek.
- **Leave the Creek Open** – This approach is based on the concept that it is generally not a good idea to cover a creek because, in spite of the CSO, there is some wildlife benefit to the embayment created by this watercourse. Supporters of this option believe that covering the creek would cause its cleanup to become a lower priority for BSA and that continued visibility would keep the problem in the public eye, like the Hamburg Drain at the center of the redeveloped Buffalo Inner Harbor. Proponents of this option contend that the cover is likely to be very expensive, that money would be better spent on other park improvements.

Cornelius Creek is daylighted through a box culvert that passes beneath the park entrance road, above.

Standing above the box culvert, looking east along the above-ground portion of Cornelius Creek, right.



Design Options

Purpose of the Options

A series of options have been prepared for the design of Black Rock Canal Park and are presented in this report. The options represent different approaches and philosophies from the groups and individuals that participated in the design feasibility review process. The options are not mutually exclusive; ultimately, components from the various options may be implemented and intermingled based on the funding available at a future date and the priorities of the interested parties at that time. However, the outcome of this feasibility analysis is the development of an initial plan, designed to utilize the funds that are currently in place, and to present a variety of options that are available for later phases.

Four Options

There are four options for Black Rock Canal Park:

- *No Action*
- *2008 BRRGNPA Concept*
- *Modified Plan*
- *Alternative Plan*

Option 1: No Action

This option is included to act as a baseline for the comparison of other options and to demonstrate the need for making changes. The conditions at the two properties that make up the Black Rock Canal Park project (Cornelius Creek Park and the Ontario Street Boat Launch) are described in the chapter titled "The Site".

Option 2: 2008 Black Rock – Riverside GNPA Concept

This is the original plan developed by the Black Rock – Riverside Good Neighbors Planning Alliance (GNPA) (currently the Black Rock Canal Park Steering Committee), which has generated a great deal of support and enthusiasm for the development of Black Rock Canal Park. Since this plan was completed in 2006 and during the process of this Feasibility Study, the Committee has proposed a number of changes and new ideas that are not reflected in their original graphics, so it should not be taken as their current plan for the Park. However, as of early spring 2010, in the absence of new graphics, the excellent graphics developed for this award-winning plan are still being used by committee members to promote the project. Therefore, in the minds of many in the community who have not been involved this feasibility analysis, this is the plan for the park and, so, it is included as one of the options in this feasibility study.

Option 3: Modified Plan

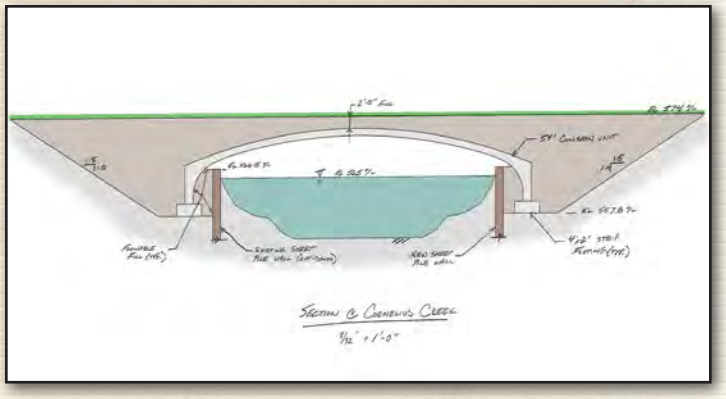
This option includes a cover over Cornelius Creek and a broad range of recreational opportunities in order to attract a wide variety of user groups. It also features expanded and improved boater facilities. The following is a summary of features that are unique to this option:

Roadway to the North - two thirds the length of the existing road; a turnaround is featured at its terminus, with angled parking located in three groups along the inland (I-190) side, maintaining open views of the water from the road. Along the road, there are two parallel pathways: an eight-foot bike path and a 12-foot waterfront walkway, cantilevered over the water due to the limited space. The walkway has areas that extend further over the water to create variation and feature areas for benches and/or interpretative panels. The walkway surface is made of a mixture of materials, including wood (or recycled wood/plastic such as Trex) boardwalk and a transparent material such as metal grating or Plexiglas panels that would allow light to reach the water below. The inland edge of the walkway has a stone seat wall to pick up the grade difference between the road and the bulkhead. North of the turnaround, the walkway continuesbehind the bulkhead wall.

Building - three stories at approximately 3,200 feet per floor; the program for the space has not been finalized, but it generally included restrooms, concessions, meeting rooms, parks department staff room, etc.

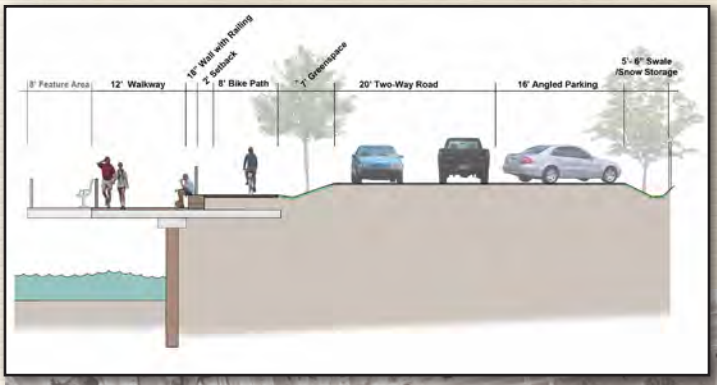
Pier Extension - a 300-foot extension of the existing pier, accomodating approximately 35 boat slips

Creek Cover - Cornelius Creek is covered in this option to reduce the sewer odor and fill the gap that bisects the park. Approximately 50 feet is left open at the mouth, as requested by DEC and BSA, so that cleanup of floating debris could occur.



Dog Park - proposed for the majority of the Cornelius Creek Park property, the dog park encompasses just under one half acre. The dog park consists of a surfaced area and a shelter, enclosed by a fence.

Estimated Cost of all Items - $13 million.



Option 4: Alternative Plan

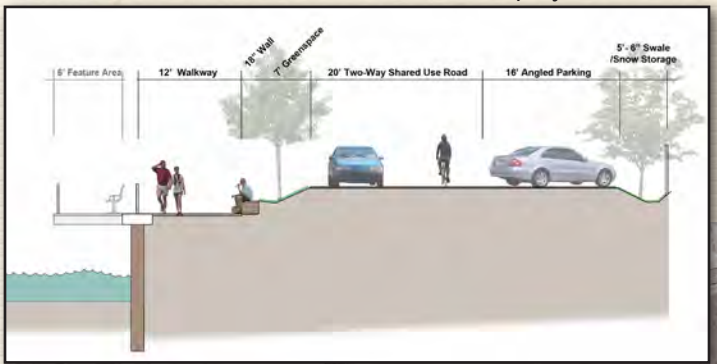
This option features water-dependent recreational uses with an uncovered Cornelius Creek. The following is a description of items that are unique to this plan:

Roadway to the North - similar to the the Modified Option, except that the road is terminated at a length of approximately one half of the existing road, with angled parking is located in two groups along the inland (I-190) side of the roadway. Terminating the road at a shorter distance provides an additional 200 feet of greenspace. Bikes can choose to share either the road or a waterfront walkway, similar to most other segments of the riverwalk. The waterfront walkway is located mostly inland, except where the layout extends over the bulkhead to create overlook areas. Space for the inland trail is made possible by eliminating the dedicated bicycle path.

Building - a single story 2,200 square foot facility that will include restrooms, a parks storage/office area and a meeting room with vending machines.

Pier Extension - the existing pier is extended by 70 feet to reduce the inflow of debris that collects at the boat launch ramp and accomodate up to 20 boat slips.

Outdoor Museum/Canal-themed Play Area - these two items are combined; the outdoor museum features include exhibits that function as informal play structures.



Shipwreck Interpretive Feature - a nautical interpretive feature in the shape of a sunken boat, providing visitors with information about the shipping industry and the HMS Detroit shipwreck from the war of 1812 believed to lie offshore. The feature emulates the shape of a sunken ship with the bow pointing towards the wreck's loaction. The paving pattern resembles a ship's structural ribs and stones protrude from the paving as if the boat were resting on the river bottom. Light poles are designed to evoke the masts of a ship.

Dog Park - very similar to that in the Modified Option.

New Pedestrian Bridge - existing pedestrian bridge is replaced in the same location with a wider bridge that is more suitable for bicycle and pedestrian traffic.

Cornelius Creek - existing sheet pile walls remain in place with riparian plantings on the south bank to soften the creek's appearance, allowing a more stream-like aesthetic and buffering visitors from direct water access.

Estimated Cost of All Items - $4.7 million

Common Details

While the alternatives presented above present different options for some park amenities, there are some common elements among the design alternatives:

Railing

There will be a significant length of railing installed at the water's edge. Rather than creating a new style of railing used only at this site, it has been suggested, where feasible, to use the style that was recently installed at the Buffalo Inner Harbor, which is constructed of metal with a wood handrail.

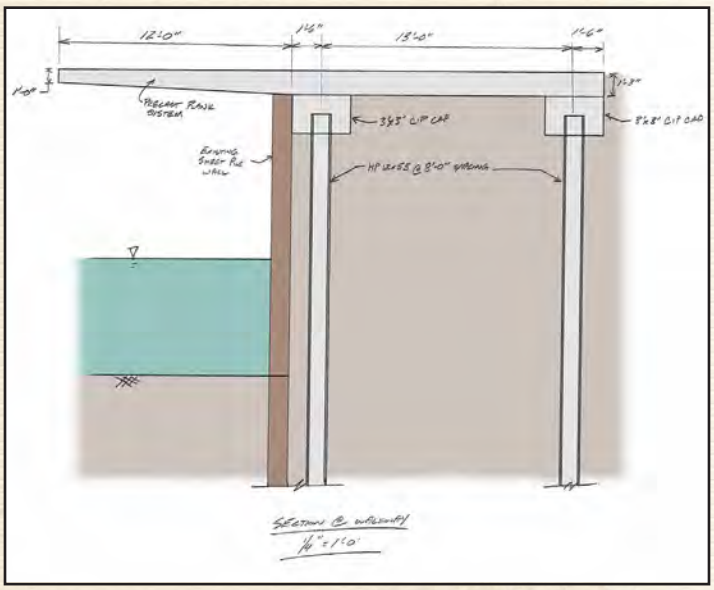
Railing at Buffalo Inner Harbor

Riverwalk at the Water's Edge

In all the options, the continuous waterfront trail along the Niagara River, known as Riverwalk, will be relocated closer to the water than its current location. This will allow Riverwalk users to enjoy the views over the water.

Walkway Cantilever

Though the options vary in the amount and width of walkway that overhangs the water, all include some amount of overhang. Structural Engineers at Fisher Associates felt that the most practical and cost effective approach would be to build the overhanging walkway with cantilevered structural members. They felt that this will be less costly than the alternative of using pilings driven into the river and would avoid the possibility of ice damage. The structural member that overhangs the water would rest on a cast-in-place concrete cap atop a metal pile driven into the ground. This would prevent the structural member from resting on the existing sheet pile, which was not designed for loading. The back (inland) end of the structural member would also be secured to a cast-in place concrete cap over another pile. The walkway deck and railing would then be attached to the structural member. Using this configuration, an overhang of 18 or more feet can be achieved without drastically increasing the cost. The estimated cost of a walkway with 12 foot overhang is $2,700 per lineal foot and an 18 foot overhang is $3,200 per lineal foot.



Fisher Associates Sketch of a Cantilevered Walkway Structure

Picnic Shelters

All of the options encourage use of the park for picnicking and group gatherings by including shelters at various locations. The shelters will have a Niagara Greenway appearance rather than a woodsy quality.

Off-site Parking

As stated in the chapter on 'Design Issues', at full build-out of both the Modified Plan and the Alternative Plan, onsite parking will not be adequate to handle to numbers of vehicles (both cars and cars with boats) that are likely to be present on peak days. It will then be necessary to provide parking either through a lease or purchase of nearby lands. Since no arrangement has been made with nearby land-owners, a design cannot be completed, however, a concept plan has been prepared to show a possible solution.

Possible Off-site Parking Configurations

Tree and Shrub Plantings

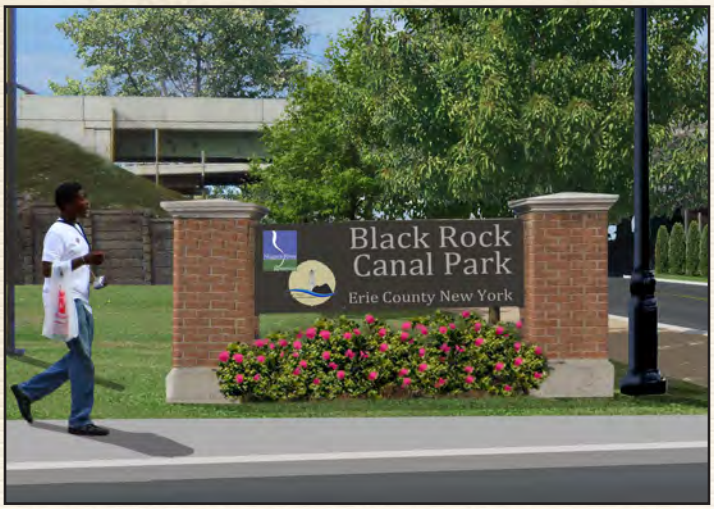
Trees, and to a lesser extent, shrubs will be used extensively to soften the harsh, open, paved quality of the site. The types of trees selected will need to be able to withstand driving winds and the salt spray from the I-190. Where feasible, native trees will be used. Trees will serve several purposes: they will provide a screen between I-190 and the park, provide shade, help break the wind, and greatly improve the appearance of the park. Trees that are located near the water's edge will have a tall trunk so as not to limit views. Shrubs will be used in areas that can be naturalized, such as along Cornelius Creek, along I-190, or in planters.

Outdoor Museum

This is a canal-themed collection of exhibits that educate visitors about the history of the canal. It would include some interpretive panels that are common in parks and some unique displays. The possibilities for displays are limitless and will be designed in the future, but possibilities include, sculptures, an imprint of a canal boat in the ground, interactive displays, maps, audio exhibits, etc.

Entrance Road

In all options, there is an improved, more welcoming entrance road off Niagara Street. The entry's visibility is improved by creating a prominent sign announcing the entry to Black Rock Canal Park. There are also tree plantings and a widened walkway. As a visitor approaches the park and goes under the I-190 overpasses, the chain link fence will be removed, opening up a view toward the Niagara River. A "Niagara Greenway" style sign will be included.



View of Possible Entrance Road Improvements, above right

Enlarged View of Entrance Sign, below right

Sustainable Practices

Based on the goals and objectives established for Black Rock Canal Park, all of the options (except the no action) will incorporate a number of practices that provide an environmental benefit over conventional practices. This project will be a showcase of environmentally friendly technology and set the standard for other park projects.

LED Lighting

This is a new technology that is just now coming into use for outdoor lighting. LED (Light Emitting Diode) lighting presents advantages over other light sources including lower energy consumption, longer life, smaller size, faster switching, and greater durability and reliability. However, they are more expensive and require more precise current and heat management than traditional light sources. Fixtures come in a wide variety of styles from traditional gas lamp styled luminaires to the ultra modern. This project can utilize LED lighting for parking and roadway illumination, for accent lighting along the waterfront walkway and inside the building.

LED light fixtures are now available in classic styles.

Solar Lighting

The technology for solar-powered lighting has come a long way in recent years though it is not yet suitable as a primary year-round lighting source. It would, however, be adequate for low-level pathside lighting allowing pedestrians to see the edge of the path without overwhelming them with brilliant light. There are a host of solar-powered bollard style lights available.

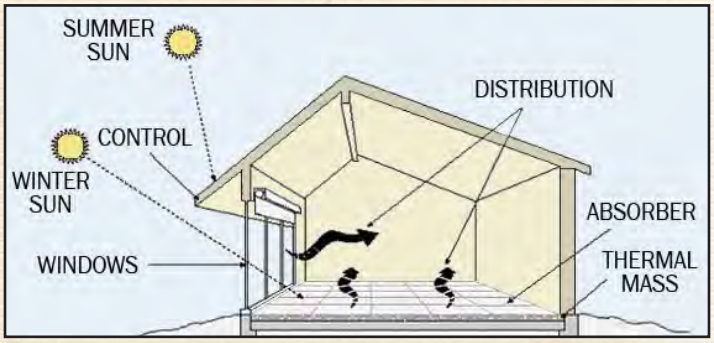
Increase of Greenspace

This project will significantly reduce the amount of existing paved surface and increase the amount of greenspace, which will include areas that are mowed lawn, un-mowed grasses, and new plantings of trees and shrubs. Where practical, native plantings will be used, as well as plantings that provide a benefit for wildlife through the creation of food or cover.

Active and Passive Solar Building Features

Technology for incorporating solar panels for the heating of air or water will be investigated for use in this project. Roof lines and windows will be designed to maximize the potential for passive solar gain during winter while shading the interior during the summer.

Geothermal Heating



Passive solar features capitalize on the warmth of the sun in winter months, above. Active solar features, like the hot water system below, use solar panels to collect solar energy.

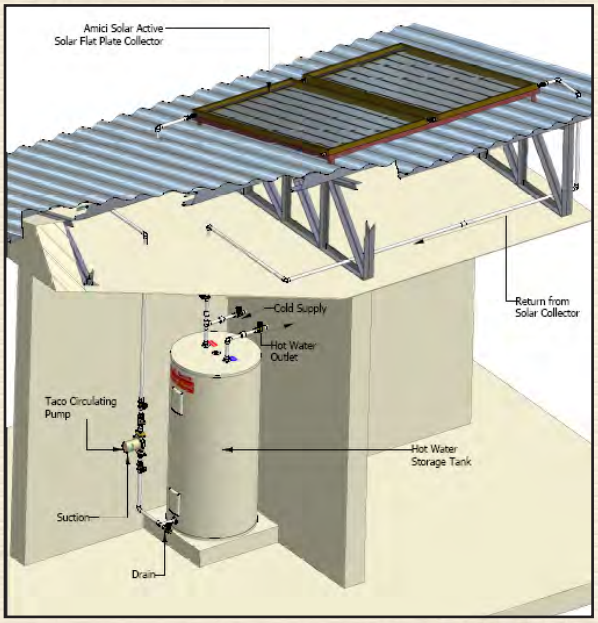


image source: www.amici.com

This is an energy efficient technology that uses the temperature of the ground as a heating and cooling source. It involves drilling wells and installing pipes to create a geothermal loop. A heat pump is then used to pump fluid through the loop to heat or cool it.

Stormwater Filtration

It is the intent of this project to meet and exceed New York State's requirements for stormwater quantity and quality controls. This project will:

- Use porous paving materials in areas where the project is not simply resurfacing existing paving
- Collect site stormwater and building roof runoff for use as irrigation water by installing an underground stormwater storage cistern
- Channel runoff from paved areas through vegetated swales, to collect sediment and other contaminants
- Feature surface stormwater temporary storage (retention) areas that are designed as site amenities rather than utilitarian necessities

Bioswales, or vegetated swales, help remove silt and pollutants from stormwater runoff (left).

image source: www.windsorheights.org

Recycled and Local Materials

Where practical, the project will use locally based materials such as stone quarried nearby, locally made building material and locally grown trees. Recycled materials could include the use of slag or flowable fill manufactured with fly ash from local industries. Sub-base stone (for use under paving) may incorporate recycled, crushed concrete. Surfacing for play areas can use wood chips derived from scrap wood such as pallets. Decking could be constructed from a recycled wood/ plastic composite product such as Trex brand decking.

Concrete Building Construction

Concrete is increasingly being used to construct new buildings. The advantages are the added durability and energy efficiency. New technology such as insulating concrete forms (ICFs) utilized pre-manufactured forms that stay in place and fresh concrete poured on site. This is considered a "green" technology since it is manufactured from local abundant natural resources and fly ash, a coal byproduct, without wood or products containing volatile organic compounds (VOCs).

Green Roof

A green roof is a roof of a building that is covered with vegetation and a growing medium, planted over a waterproofing membrane. Green roofs serve several purposes for a building, such as absorbing rainwater, providing insulation, creating a habitat for wildlife, and helping to lower urban air temperatures and combat the heat island effect.

Wind Energy

Another technology that can be utilized is the use of wind to generate electricity for the building using a wind turbine. There are several companies that make smaller non-utility turbines such as PacWind that sells a small vertical axis turbine in units that take very little space. Such turbines are a powerful tool for demonstrating wind energy technology.

Solar-powered Trash Compactors

In an effort to save resources, trash receptacles with solar-power compactors should be installed. This reduces the frequency of trash pickups saving on the labor and fuel required for more frequent pickups. According to an article in the Philadelphia Daily News, the City of Philadelphia has installed nearly 500 Big Belly solar trash compactors which eliminated the need for 24 positions since the compacting receptacles will hold five times the amount of trash than conventional receptacles greatly reducing the frequency of pickups.

Education

The sustainable practices described above will provide environmental benefits on their own, but a way to go one step further is to inform park visitors about the sustainable practices that have been employed. For example, a visitor may not be aware that the lighting is LED unless informed. The project will feature a series of interpretive panels or exhibits that will let visitors know about these practices and how they can be utilized on other projects or at their own homes.

Interpretation Concept

In all options for improvements at Black Rock Canal Park, there is an extensive interpretation program proposed. Visitors will be informed about numerous characteristics of the site that will increase their appreciation for, end enjoyment of, the park. Each option has interpretive features that are slightly different but there is a common thread in the stories to be told. Following is a description of several themes for interpretation.

Erie Canal

The very name Black Rock Canal Park raises the question; what canal? It is not apparent to the casual visitor that the Erie Canal once ran along the inland edge of the park property. The story could be told by using interpretive panels that include some of the numerous photos of the canal in this area and perhaps an aerial photo of current conditions with the historic canal route superimposed onto it. A map of the greater canal network in New York State would put the site into a larger context. Another aspect to the story is the human side of life on the canal; the canal boat captains and their families (including children) that traveled from port to port.

Shipwreck and the War of 1812

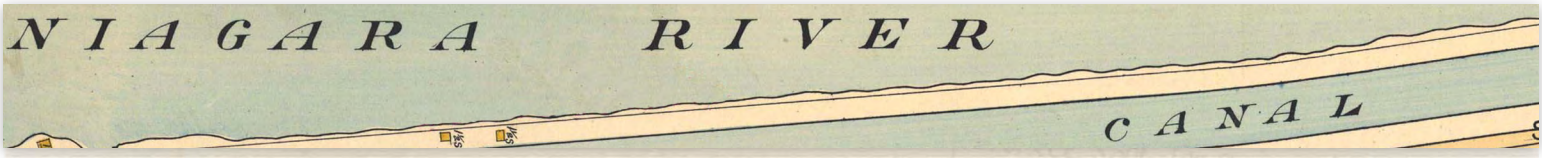
There are a number of battle sites from the War of 1812 proximate to Black Rock Canal Park. In particular, the ship (thought to be the HMS Detroit – see Chapter on Historic Context) that lies at the bottom of the Niagara just offshore from the park, provides an opportunity to inform visitors about the far-reaching events of the war that happened locally.

Seaway Trail

The Seaway Trail (a National Recreation Trail) is a roadway route that parallels 518 miles of shoreline along the St. Lawrence River, Lake Ontario, Niagara River and Lake Erie in New York and Pennsylvania. Niagara Street, at the entrance to Black Rock Canal Park, is part of the Seaway Trail. A description and map of the Seaway Trail could be included in the interpretive program for the park. Like the description of the Erie Canal system, this would put the park into a much larger context and allow visitors to see that this location is, and always has been, along a strategic route that has been used for millennia. Seaway Trail Inc. has a standard style kiosk that they install at numerous locations along the route and they may be able to install one at this site for little or no cost to the project.

Sustainability

As previously described, there is a stated desire for the development of this park to be a model of sustainable practices. From energy efficiency, to the use of local and recycled materials; this project will be a showcase of sustainable practices. And while the environmental benefits will be many, it will be equally important to inform visitors of these practices and their benefits since it may not be readily apparent.



Maintenance and Security

The issues of maintenance and security are paramount at Black Rock Canal Park. Concerns on these issues at the Ontario Street Boat Launch and Cornelius Creek Park helped bring about the whole Black Rock Canal Park initiative. It has been expressed that unless these issues are adequately addressed, there is little to be gained by making improvements to the area.

Maintenance

Since Black Rock Canal Park is part of the Erie County Park System, it will be Erie County who maintains it. The Commissioner of the Erie County Department of Parks and Recreation, James Hornung Sr., is a member of the Steering Committee for this project, has attended numerous project meetings and is familiar with the various proposals for the project. According to Commissioner Hornung, Erie County will make the provisions necessary to maintain Black Rock Canal Park. The cost for the personnel and equipment necessary will be provided for in the Parks Department's operating budget. The Department intends to work with the project designer to work out some of the design details that will make maintenance such as mowing, sweeping and weeding easier.

Security

It is the hope of the community that security will be improved through increased usage of Black Rock Canal Park. People feel more secure and there is less vandalism to public property when other people are around. Usage at Black Rock Canal Park will increase greatly when the many improvements proposed for this site are installed and security concerns will be diminished during normal hours. However, the off hours are when problems may occur and additional security measures will be beneficial.

One measure is to install a security-related organization such as the Erie County Sheriff's Marine Patrol in the mixed use building. If successful, this will provide a twenty four hour security presence that would deter illegal activity and make park users more comfortable. The site would be a desirable location for a security-related organization since it offers immediate access to the Niagara River with its boat launch and mooring slips. It also offers broad and open views of the river so that the activities of boaters can be easily monitored making this site a win for the security organization and for park users who benefit from their presence.

Another approach to security is to take advantage of Erie County's electronic surveillance system. This system would allow security camera(s) to be set up at critical locations such as the entry to the park. The cameras detect motion such as a car or pedestrian entering the site at night. When motion is detected, the camera focuses on it and sends a signal alerting an attendant at a central control facility. The attendant would check the video feed to see what the camera has detected and, if necessary, send a police officer to investigate. A desirable aspect to this approach is that cameras can be installed in an early phase of park improvements to improve security even before the mixed-use building is completed and the security-related organization moves in.

Emergency phones have been discussed as an option to improve security. These are commonly used at campuses, parking lots, and along trails. These would be placed in a prominent location with a light for visibility. A user would speak into a receiver linked to an attendant who would contact emergency services as needed. They come as hard-wired phones or can utilize wireless signals. This approach would not only address security concerns, but would be useful in the event of accidents or medical emergencies.

An entrance gate was also discussed as another security measure that would discourage vehicles from entering the park during off hours. A gate with a tilt up arm, a timer and a sensor could be installed and adjusted to operate so that it is always open during normal park hours but would swing down across the road at the end of the day. Vehicles that are in the park when the gate swings down would be able to exit freely with the use of sensors but no vehicles could enter.

Option Evaluations

The feasibility of the major components of the options for the park is evaluated below based on the following:

- *Cost*
- *Regulatory Review Requirements*
- *Spatial Analysis*

The evaluation of each option is broken down into the various park components so that they can be intermingled to create a viable Phase 1 Plan. The evaluations are not intended to be ratings of one entire option versus another.

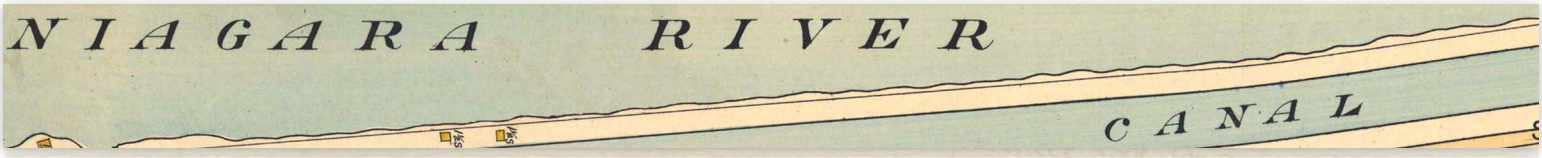
Regulatory Review Requirements

Evaluating the feasibility of the various options requires an understanding of whether or not it may be difficult to get certain actions approved by the various regulatory agencies. The chart below summarizes the actions from the options that may cause the project to be slowed or possibly to not be approved. (The No Action Option would not involve any regulatory review.)

The chart lists actions that may require a permit from the NYSDEC and/or the US Army Corps such as Section 10 or 404 permits . Permit application must include detailed plans of the work proposed for the streambed and banks; this means that the design of the project must be resolved before the application can be filed. Though the requirements for the permit are not onerous, the review time can be lengthy, often six months or more. Therefore, it is important to file as early as possible once the design is resolved.

Activities occurring in the project area are subject to the State Environmental Quality Review Act (SEQRA) process to assess potential impacts. The review will consist of the completion of an Environmental Assessment Form (EAF) and, if necessary, an environmental impact study. Actions undertaked by a state agency are subject to a State Consistency review to ensure compliance with New York State Coastal Policies. Actions undertaken by a federal agency, on behalf of a federal agency, requiring a federal agency approval or involving federal agency funding are subject to a Federal Consistency review to ensure compliance with the Coastal Zone Management Act.

Project Options	Project Features	Regulatory Authorities		
		Federal Sec. 10 River and Harbor Act 1899, US Army Corps of Engineers	Federal Sec. 404 Clean Water Act, US Army Corps of Engineers	New York State Article 15, NYS DEC
Black Rock-Riverside GNPA Concept	Concrete deck over water Covered creek 70’ pier extension	X	_	X
Modified Plan	Covered creek Overhanging Walkway 300’ Pier extension	X	_	X
Alternative Plan	New Pedestrian Bridge Walkway bumpouts 100’ pier extension	X	_	X



Cost

The cost for each of the two new options (Modified Plan and Alternative Plan) is presented by the total cost for each phase. The No Action Option has no cost and for the Black Rock - Riverside RGNPA Option, only the total estimated cost of $16 million is known; a detailed breakdown is not available. Costs are inclusive of all design, administration, contingencies, construction and materials. They are in year 2010 dollars and include New York State Prevailing Wage Rates for labor and a 20 percent contingency to cover miscellaneous contractor costs such as mobilization, stakeout and unknown complications. Detailed cost worksheets are included in the Appendix of this report.

Modified Plan

Total Cost	**$16,040,563**
1. The Entry Phase	$135,998
2. The Central Area Phase	$865,584
3. The Road and Turnaround Phase	$529,633
4. The Boardwalk Phase	$4,180,022
5. The Mixed-use Building Phase	$3,933,512
6. The Boat Launch and Pier Phase	$1,680,000
7. The South End Phase	$387,200
8. The Creek Phase	$4,328,614

Alternative Plan

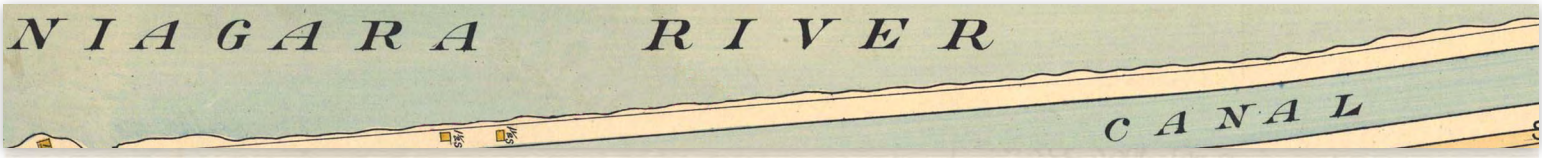
Total Cost	**$4,947,375**
1. The Entry Phase	$135,998
2. The Central Area Phase	$865,584
3. The Road and Turnaround Phase	$529,633
4. The Boardwalk Phase	$4,180,022
5. The Mixed-use Building Phase	$3,933,512
6. The Boat Launch and Pier Phase	$1,680,000
7. The South End Phase	$387,200
8. The Creek Phase	$4,328,614

Spatial Analysis

The last method used to evaluate the options for Black Rock Canal Park is a Spatial Analysis, which is simply a measurement of the various activities, areas, distances, and numbers of nearly anything that can be quantified. The Spatial Analysis is helpful to use as a reference for quantities between the options. It does not draw conclusion about which option is better based on quantities. For example it may show that one option has 50 parking spaces while another has 60 but leaves the reader to decide whether 50 or 60 is more appropriate based on a variety of other inter-related factors.

Item	Existing Conditions	2008 Black Rock - Riverside GNPA Concept
Water Surface within Property	3.5 acres	1.5 acres
Water Shoreline Length	2,990LF	2,890 LF
Water's Edge	40 LF at boat launch	40 LF at boat launch 70 LF at jet ski dock
Land Surface Total	5.6 acres	7.4 acres
Hardspace Area	3.5 acres	3.8 acres
Green Area	2.1 acres	3.6 acres (w/ 0.8 acre over lake)
Building Area	1,000 SF restroom/concession	6,000 SF mixed-use facility, 2 picnic shelters
On-Site Parking Spaces	cars ~ 78 boats ~ 9	cars - 66 boats - 18 security - 15
Boat Slips	-	2 boats (reserved) 10 jet skis
Road Length	2,050 LF	2,050 LF
Pier Length	40 LF	110 LF (70 LF extention)
Pedestrian Walk	1,850 LF	560 LF
Bike/Pedestrian Path	570	350 LF
Bike Path	0	1,310 LF
Overhanging Walk	-	1,510 LF 2 separate areas
Park Space Over Water	minimal (pedestrian bridge)	2 acres (1.1 ac grass/walk) (0.5 ac boardwalk/pier) (0.4 ac cover creek)

Note: values are approximate



Modified Plan	Alternative Plan	Notes
3.3acres	3.4 acres	As outlined by tax parcels
3,110 LF	3,580 LF	Land / water interface
35 LF at boat launch 715 LF at river access areas	35 LF at boat launch 715 LF at river access areas 50 at creek access	Where one may 'touch' the water from land
5.8 acres	5.7 acres	
3.4 acres	3.3 acres	Asphalt, concrete, etc.
2.5 acres	2.4 acres	Where 'soil' exists
6,300 SF mixed-use facility, 3 picnic shelters, fishing hut	4,200 SF mixed-use facility, 3 shelters, fishing hut	Figure is for square footage of land occupied
cars - 54 boats - 10	cars - 31 boats - 8	Parking areas on existing plan obscure & not well organized
36	20	
1,600 LF	1,400 LF	Includes entry road and road to north
340 LF (300 LF extention)	110 LF (70 LF extention)	
1,600 LF	730 LF	
920 LF	1790 LF	
1,600 LF	730 LF	
740 LF	-	
0.2 acre (creek cover)	minimal (pedestrian bridge, overlooks)	Not Including Overhanging Walkway

Eight Phases

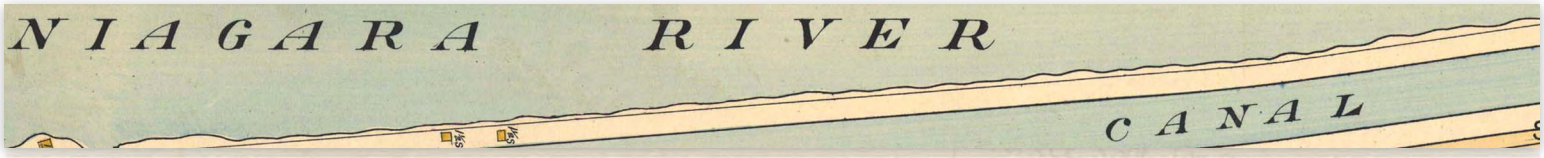
Rather than a single master plan, two plans have been presented for the development of Black Rock Canal Park (Options 3 and 4 on the preceeding pages), as defined on page seven. Both plans remain on the table with viable alternatives for the various components of the project for two reasons:

- **Funding** – the total funding available has not been determined. A single source for the entire funds needed has not been identified and monies for this project will not come in at one time. Fund raising and grant writing will instead be an on-going effort until the park is complete.
- **Environmental Reviews** – these have not been completed. Some features that require permits will move ahead quickly and others will likely go through a more thorough review process that may alter the approach or cost.

It is not feasible to wait until all funds are acquired and all environmental reviews are completed before beginning construction since there are already funds available for construction. Instead, the approach that the Black Rock Canal Park project committee and Erie County would like to take is to break the project into a series of stand-alone components (phases) to allow the park to be constructed in pieces as funds become available. Each phase is carefully selected so that it would complete a geographic area of the park and would be an asset on its own without relying on a subsequent phase to make it functional.

The eight phases are:

1. **The Entry** – the main entry road from Niagara St. to the park, passing under the Thruway bridges
2. **The Central Area** – the area from Cornelius Creek north to the existing restroom/concession
3. **The Road & Turnaround** – the road from the existing restroom/concession northward
4. **The Boardwalk** – the shoreline pathway from the existing restroom/concession northward
5. **The Mixed Use Building** – a new building, in the location of the existing restroom/concession
6. **The Boat Launch and Pier** – the launch and the northward extension of the pier
7. **The South End** – the area currently occupied by Cornelius Creek Park
8. **The Creek** - Cornelius Creek and its combined sewer outlet edges



Review of Current Site Conditions

The future Black Rock Canal Park property is currently two adjoining properties – the Ontario Street Boat Launch and Cornelius Creek Park, which are separated by Cornelius Creek. Both properties are linked by the Riverwalk, a waterfront multi-use trail that connects downtown Buffalo with Gratwick Park in North Tonawanda.

The Ontario Street Boat Launch consists of a large parking lot that is paved to all edges with only two small planters to break up the expanse. The west edge of the parking abuts the Niagara River. An access road runs north from the parking area between the river's edge and the I-190. This part of the site consists simply of a two-lane asphalt road, approximately 35' wide, with a parallel parking lane on the west side. West of the road is a narrow (10') strip of grass and a concrete walkway at the water's edge about four feet wide with a metal pipe railing. This roadway terminates in a turnaround at the north end. In this area the Riverwalk runs along the shoulders of the riverside access road and is not separated from vehicle traffic.

Cornelius Creek Park includes a pedestrian bridge, walkways and a railing along the river, but has been neglected for many years. The Riverwalk trail, which runs along the east edge of the park is buckled and heaved making it unsafe for users such as bicycles and skaters.

The key map below shows the location of each of the eight phases, in relation to the overall site.

Phases

1. The Entry Phase

Importance

The improvements in this critical phase will be most visitor's first impression of Black Rock Canal Park. It will be the landmark that they will look for in order to turn off Niagara Street and find the park. It will be their first taste of the project and the improvements to the old Ontario Street Boat Launch and Cornelius Creek Park. At first glance, visitors who have frequented the park in the past will see the improvements to The Entry and will know, by comparison with the old entry, that what is planned for Black Rock Canal Park represents new life for the park. First time visitors in vehicles, on bikes or on foot will be able to locate the park's entrance off Niagara Street much better than the old entry due to the increased visibility and the new sign.

Description

Improvements to the existing entrance road will include a generous new sidewalk on the south side of the entrance road opposite the current sidewalk. The sidewalk will be relocated so that pedestrians do not have to cross the road at a blind corner under the Thruway bridges. Dense, evergreen plantings will screen the storage yard of the car repair business north of the road. A park entrance sign will be located within easy view from Niagara Street. The sign will conform to Niagara River Greenway standards for continuity among parks along the river. As visitors pass under the Thruway bridge, they will be at the historic location of the Erie Canal, now occupied by the Thruway. To recognize this, there will be interpretive features such as small signs and/or graphics in the paving that would catch a visitor's attention and inform them of this interesting fact and provide them with other information about the history of the canal. New overhead lighting, preferably LED, will replace the existing "cobra head" lighting on wood poles.

Prior to construction, a few questions must be resolved about the specific location of the right-of-way line and the ownership of the land. It appears that most of the road is owned by the City of Buffalo except where it enters the New York State Thruway right-of-way. Once these items are tied down by a boundary survey and title search, any special permits or design standards required by the City and Thruway Authority will be addressed.

Cost

Costs shown are approximate and will change as the design is completed.

DEMO EXISTING CURB	$3,000
DEMO LIGHTS	$1,600
DEMO CONCRETE SIDEWALK	$3,300
1 1/2 " TOP COURSE ASPHALT 310 x 24	$6,555
CONCRETE CURB	$15,000
PATCH ROAD ALONG CURB	$3,000
SIDEWALK 8'	$15,000
PARKING LIGHTS - LED	$18,000
INTERPRETIVE FEATURES	$10,000
SHADE TREES	$6,400
SHRUB PLANTINGS	$2,250
TRAFFIC SIGNAGE	$1,500
ENTRY SIGNAGE	$12,000
SUBTOTAL	$97,605
20% CONTINGENCY	$19,521
CONSTRUCTION TOTAL	$117,126
BOUNDARY SURVEY	$4,817
DESIGN & CONSTRUCTION ADMIN. 12%	$14,055
PHASE TOTAL	**$135,998**

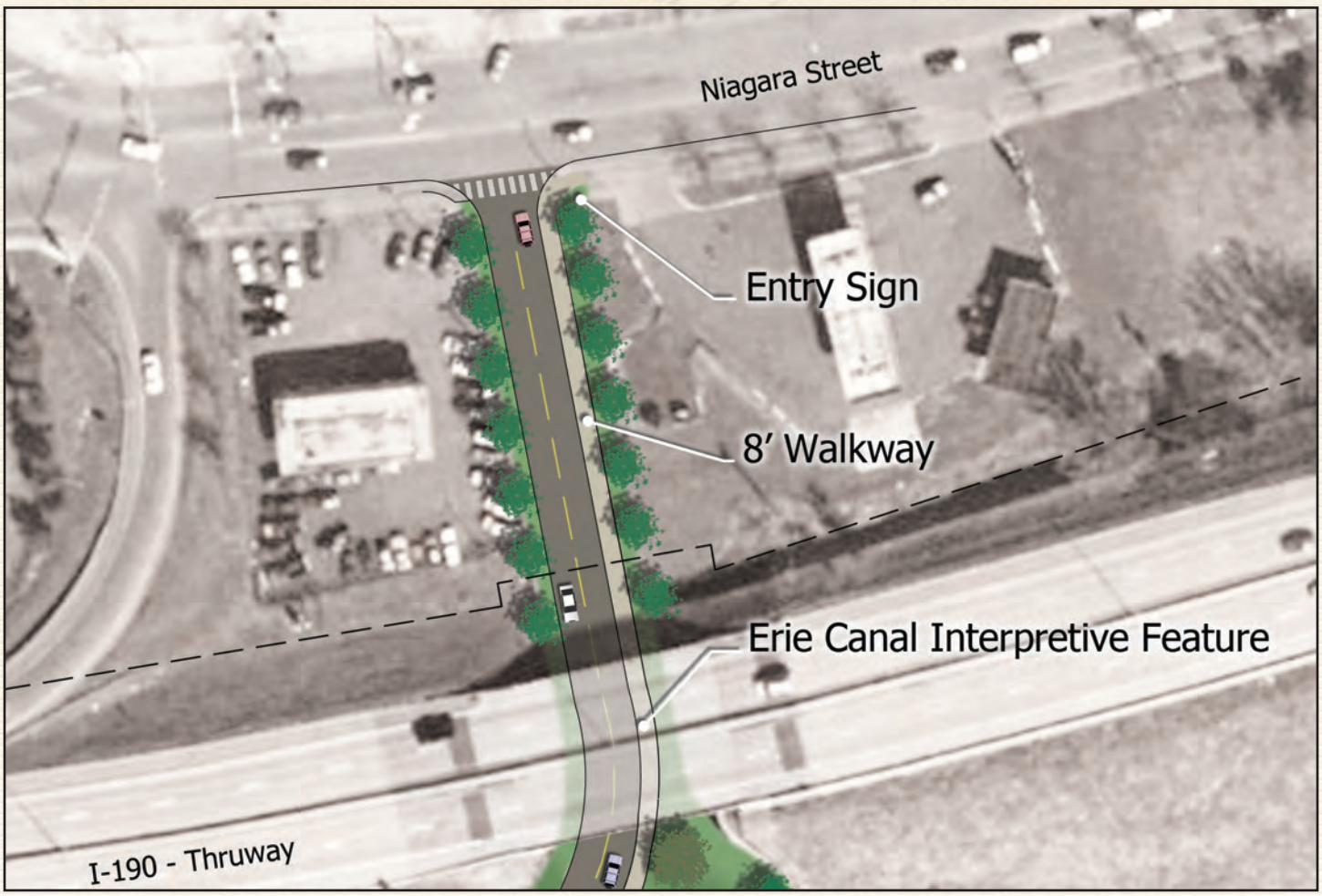
1. The Entry Phase

Maintenance

Once completed, maintenance on this part of the park will include weeding and mulching of the planting beds on the north side of the entry road, and a small area of mowing and weeding around the park entrance sign. The sidewalk will require sweeping twice annually and a weekly clearing of trash.

The illustration at right features a new park entrance sign and landscaping, which will highlight the park's entrance from Niagara Street..

The graphic below shows a plan view of the proposed Entry Phase improvements.



Phases

1. The Entry Phase

The proposed Entry Phase Improvements, pictured below, screen views of adjacent businesses and highligh the park entrance. A generous new sidewalk runs along the south side of the entrance road. Dense, evergreen plantings will screen the storage yard of the car repair business north of the road. A park entrance sign will be located within easy view from Niagara Street. New overhead lighting, preferable LED, will replace the existing "cobra head" lighting on wood poles.

existing...

proposed...

2. The Central Area Phase

Importance

This is a key area of Black Rock Canal Park where most visitors will first emerge past the Thruway bridges to get their first glimpse of the mighty Niagara River. All visitors that use the entry road will pass through this area. It is also where many visitors will park their cars to enjoy the views over the river, get out and enjoy the boardwalk or the many nearby amenities such as the dog park, the interpretive features or the picnic shelters.

Description

Features in this area include:

- **Waterfront Walkway** – There is a generous walkway in this area that connects with the Riverwalk, a continuous trail along much of the Niagara River. The walkway is wide enough to allow room for multiple uses such as fishing and viewing as well as walking and bicycling without user conflict. The paving is laid out with two materials, a brick colored unit paver and a sand colored pavers, that are laid out in an twisting wave-like pattern with occasional large stones placed for informal seating.
- **Scenic Overlook** – At the northwest corner of this area where the walkway take a right angle turn, there is a viewing overlook that extends out over the water supported by cantilevered beams. It is shaped like the bow of a ship and would have railing similar to that on a ship. This will be an ideal location for a visitor to look out over the water, observe aquatic life and fowl or to fish from. There is a small shelter here as well for shade or for refuge during periods of heavy rainfall.
- **Interpretive Feature** – This is an optional shipwreck-themed interpretation that acts as a gateway from the parking area to the walkway. It is the shape and size of the H.M.S. Detroit, a ship from the war of 1812 that lies offshore (see chapter on Historic Context). Rocks are placed in the feature those found on the bottom of the Niagara River and will provide informal seating. Paving in the interpretive feature is laid out with two contrasting colors in a pattern resembling the ribs of the ship. At the edges, the ribs appear to curve up to form the supports for benches and the posts for interpretive panels with information about the shipwreck.

Light poles in the center of the feature resemble the ships masts, making it visible from the Thruway. Depending on the exact location of the shipwreck, it may be possible to point the "bow" of the interpretive feature toward the actual shipwreck that lies on the River bottom to help visitors get oriented.

- **Car Parking** – Car parking is laid out to allow visitors to stay in their cars and enjoy the view past the walkway of the Niagara River. If the interpretive feature shown in the Alternative Plan described above is included, there is room for eleven car parking spaces. Without the interpretive feature and as shown on the Modified Plan, there is room for seventeen car parking spaces.
- **Boat Trailer Parking** - There are two alternatives shown for boat trailer parking. The Modified Plan shows ten spaces with "head in" parking. These are spaces that require vehicles to back their trailers out of the parking space before pulling around the loop to either leave or to retrieve their boat from the launch. While this option creates the largest number of spaces, it may result in some bumps and scrapes to vehicles since drivers have various abilities to back up their trailers. The Alternative Plan provides eight "pull through" spaces for boat trailers that allow vehicles to exit the parking spaces by pulling ahead rather than backing up. The choice between these options depends more on preference for numbers or safe operation since there is no significant cost difference.

2. The Central Area Phase

- **Landscaping** – Trees are placed along the edge of the car parking and in the island that separates the road from the parking area will provide shade, a wind break and improve the appearance of the area. Trees in this area will be sparsely planted, deciduous shade trees that have a high trunk and a large crown to minimize obscuring the spectacular views while maximizing shade. There will also be some low plantings of ornamental grasses near the interpretive feature but these will require little maintenance and will not obscure views. Signage will be in the "Niagara Greenway" style.
- **Lighting** – Two types of lighting will be used; there will be tall overhead lights to illuminate the parking area and adjacent road; and there will be lower level lights along the back (inland) side of the waterfront walkway. The costs for lighting are based on the use of energy-efficient LED lamps.
- **Security** – This would be the preferred location for a security camera that would monitor the area during off hours (see section on Security). The camera would be mounted on its own pole or on an existing light pole.

Prior to construction, a few questions must be resolved. The structural stability of the ground behind the bulkhead wall should be confirmed. This would be done followed by sending out a drill rig to do some test borings by a geotechnical engineering analysis. Another question is whether it would be desirable to add some utility lines under the paving in anticipation of the development of the mixed-use building. This infrastructure would be relatively inexpensive and would remain unused until the building is erected thereby avoiding future cuts in the new paving (this assumes that the parking would be built before the building).

Maintenance

Maintenance on this part of the park will include weeding and mulching of the small planting beds near the interpretive feature, a small area of mowing and weeding around the park entrance sign, sweeping the walkway and parking lot twice annually, emptying trash weekly, and picking up trash weekly. The maintenance for this area will be similar to what is currently required.

Cost

Costs shown are approximate and will change as the design is completed.

DEMO LIGHTS	$4,800
DEMO PLANTERS	$1,200
DEMO ASPHALT	$15,840
EROSION CONTROL	$4,000
CUT TOP OF SHEET PILE FLUSH	$375
CLEAN TRENCH DRAIN	$2,000
STORM PIPE 12"	$5,040
CATCH BASINS MEDIUM	$3,500
CATCH BASINS - LARGE	$5,500
SHEET PILE CAP - CONCRETE	$46,875
RAILING	$60,000
CANTILEVER OVERLOOK	$162,000
WATERFRONT LIGHTS	$20,000
WATERFRONT WALKWAY	$60,000
INTERPRETIVE SIGNAGE	$8,000
INTERPRETIVE FEATURE	$20,000
ARMOR STONE SEAT WALLS	$13,500
BENCHES	$7,200
SOLAR TRASH COMPACTORS	$7,000
TOPSOIL	$10,000
LAWN SEED	$5,500
SHADE TREES	$4,000
FLOWERING TREES	$2,800
PARKING LIGHTS - LED	$21,000
MISC GRADING	$4,000
4" SUBBASE STONE	$1,485
4" BASE COURSE	$51,680
3" BINDER COURSE	$41,040
1 1/2 " TOP COURSE	$21,660
CONCRETE CURB AT PARKING	$22,880
SUBTOTAL	$632,875
20% CONTINGENCY	$126,575
CONSTRUCTION TOTAL	$759,450
GEOTECHNICAL STUDY	$15,000
DESIGN & CONSTRUCTION ADMIN. 12%	$91,134
PHASE TOTAL	**$865,584**

2. The Central Area Phase

Above: Alternatives for the Central Area as shown in the Modified Plan. Below: Alternatives for the Central Area as shown in the Alternative Plan. The options shown in either plan can be mixed or matched during the design and construction of the Central Area Phase.

2. The Central Area Phase

The graphic below depicts the proposed Shipwreck Interpretive Feature, which could be developed as one of the options in the Central Area. It will provide visitors with information about the ship thought to be the HMS Detroit, lost during the War of 1812. The wreck lies off hte bottom of hte Niagara River. It would also provide general information about shipping on the Niagara River. This feature would tie in nicely with the "Dive the Seaway Trail" program, being developed by the Great Lakes Seaway Trail and New York Sea Grant.

The feature acts as a gateway between the parking area and the waterfront walkway. The design emulates the shape of a sunken ship with the bow pointing towards the spot in the river where the wreck is located. The paving pattern resembles a ship's structural ribs; some of the "ribs" extend out of the ground to serve as supports for benches and a series of interpretive panels. Stones protrude from the paving as if the boat were resting on the river bottom. Light poles evoke the masts of a sailing ship. Visible from the Thruway, these would likely become a well known landmark.

3. The Road and Turnaround Phase

Importance

At 1,500 feet in length, this area of Black Rock Canal Park represents the largest area of any phase by far. The area covered in this phase extends from the existing restroom/concession building, northward to the existing turnaround. This portion of the park is often used by sight seers and anglers. Because of its visibility from the Thruway, with its 69,000 vehicles per day, the appearance of this area speaks to the condition of the city and region. Upgrading this site will have numerous benefits; it will draw visitors from the Thruway to the Black Rock Canal Park to enjoy its many amenities; it will increase the usability for anglers, bicyclists, pedestrians and sight seers; it will improve the quality of the users experience; and it will create a positive first impression of the area for visitors traveling the Niagara Region via the NYS Thruway.

Description

There are two plans for this area but in both a large portion of the expansive asphalt paving will be removed, turning it into greenspace, pathways and trails. The existing road that traverses the entire length of the area will be shortened and a new turnaround provided. North of the new turnaround will be open lawn and trees with a waterfront walkway and a separate bike path. By carefully defining the roadway and parking areas, the amount of paving will be significantly reduced.

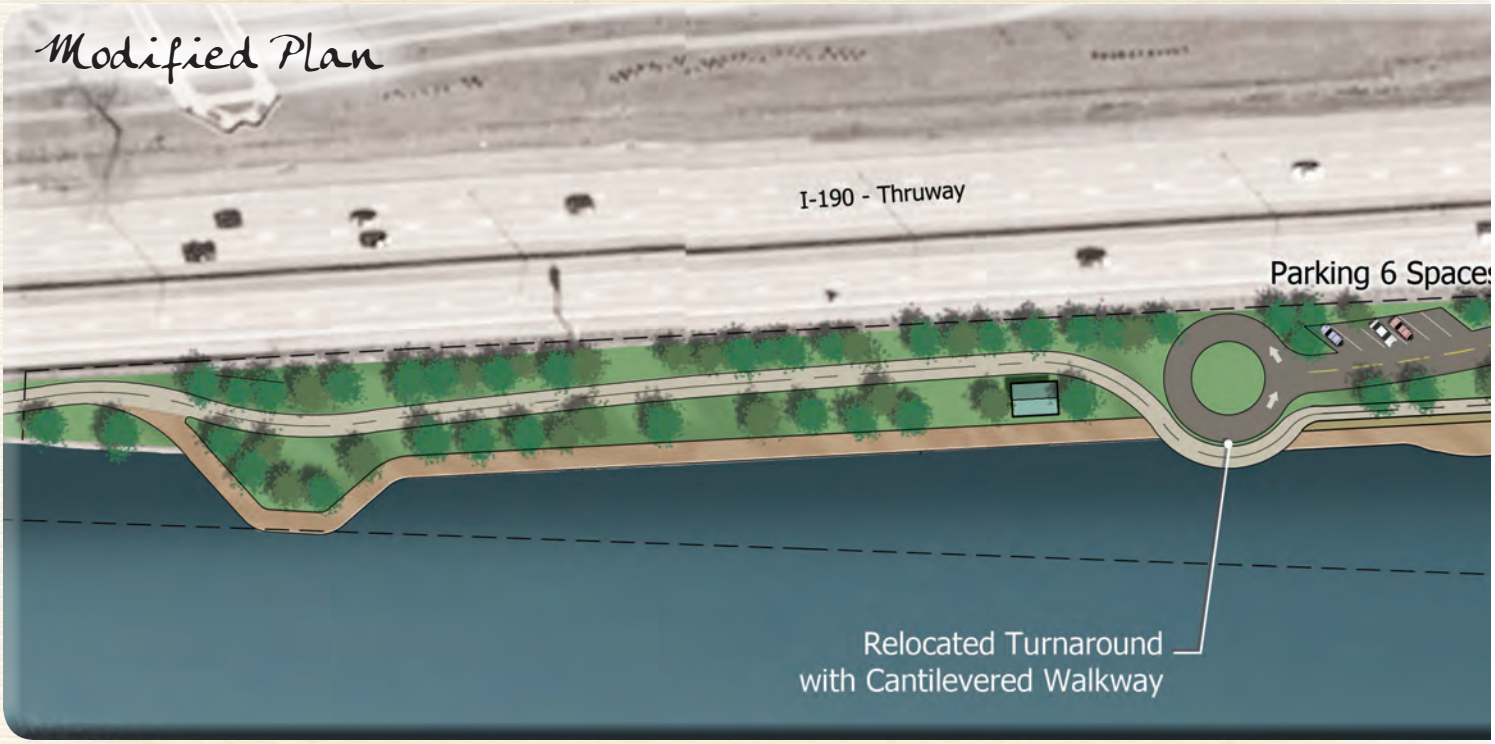
The space between the I-190 Thruway fence and the bulkhead at the water's edge is limited to about 60 feet on average. It presents some special challenges since the standard dimension for a cul-de-sac (turnaround) is also 60 feet. To accommodate the cul-de-sac, some grading and retaining wall construction may be required. The two plans differ only in the length of roadway:

- The Modified Plan includes a new turnaround approximately two thirds of the way (one third would be removed and converted to greenspace) leaving about 950 feet of roadway. This provides more roadway than the alternative plan and a shorter walk for those who wish to reach the north end to fish, etc.
- The Alternative Plan has a new turnaround approximately half of the way leaving about 740 feet of roadway. This option provides slightly more greenspace.

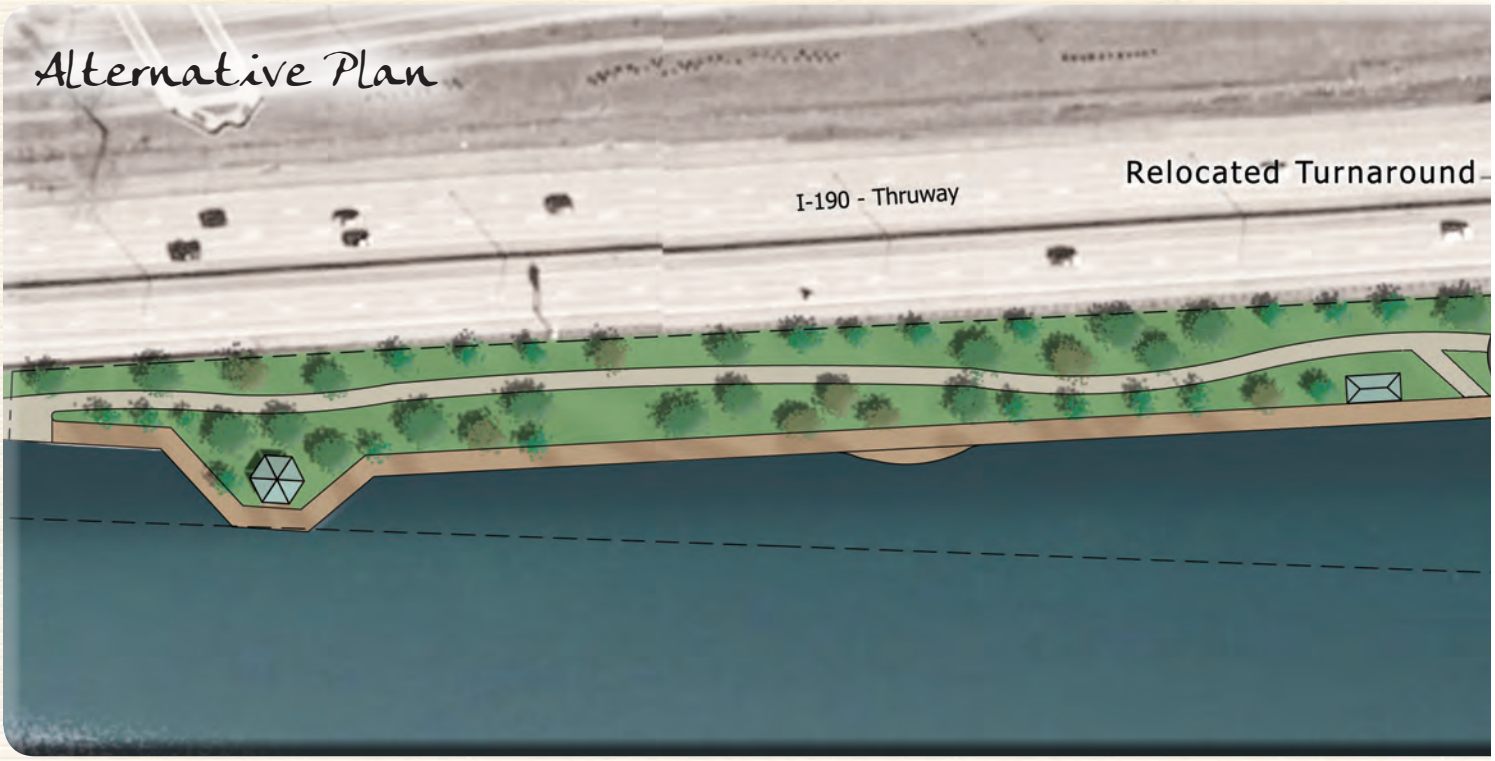
Neither option will require any special regulatory permits.

The highlighted area, below, shows the location of the Road and Turnaround Phase.

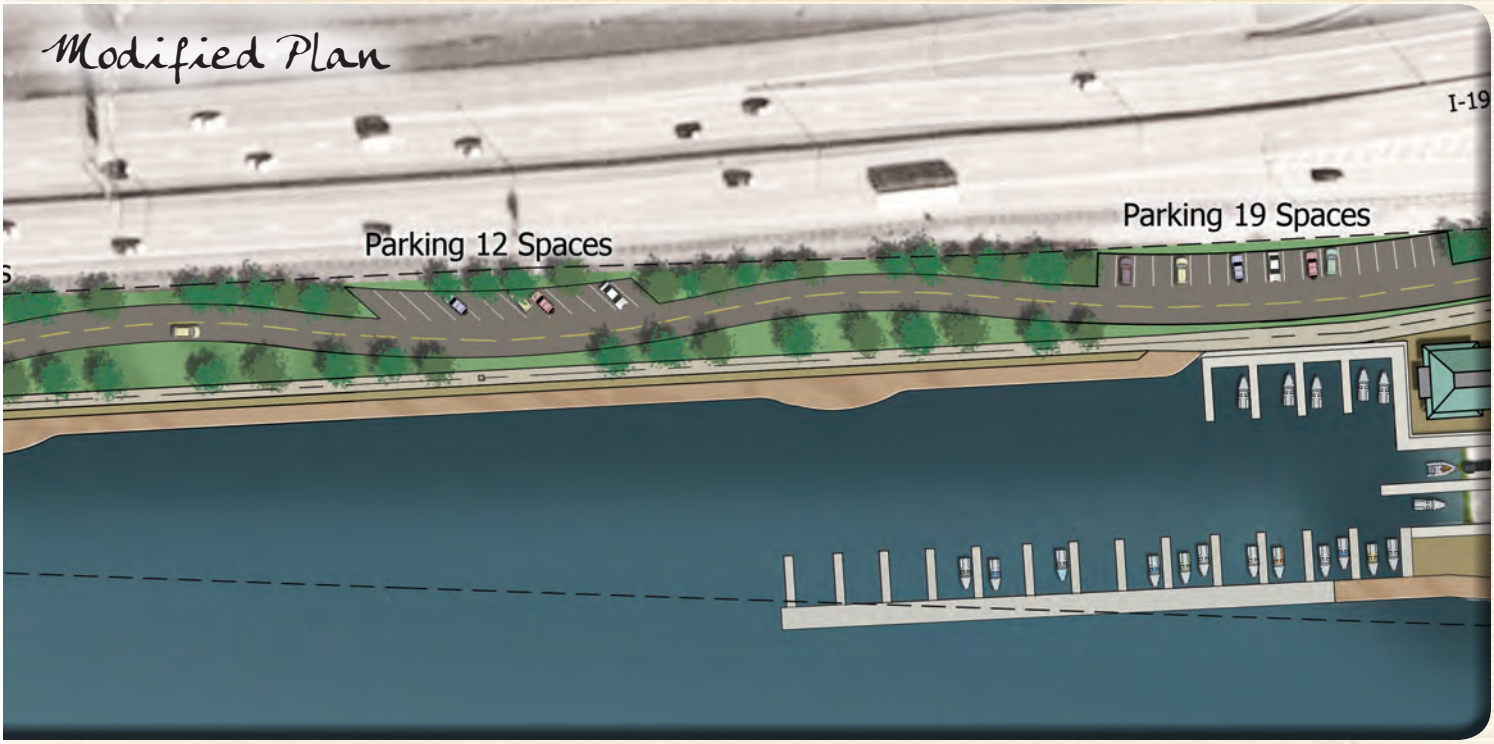
3. The Road and Turnaround Phase



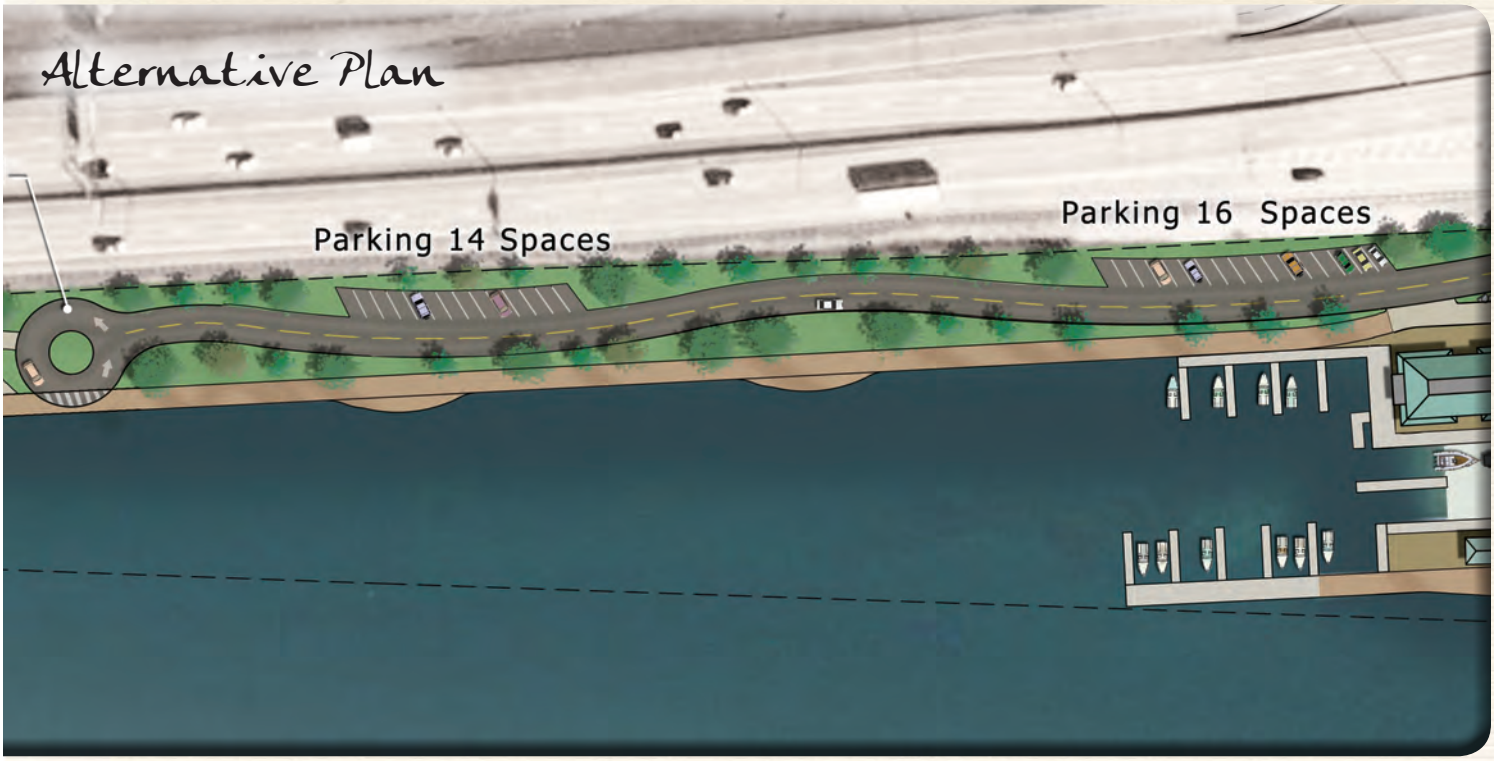
Alternatives for the Road and Turnaround Phase as shown in the Modified Plan (above) and Alternate Plan (below). The options shown in either plan can be mixed or matched during the design and construction of the Road and Tuirnaround Phase.



3. The Road and Turnaround Phase



The two plans differ only in the length of road. Above: a new turnaround at approximately the two thirds point, which provides more road and a shorter walk to the north end. Below: a new turnaround at approximately the halfway mark, which provides slightly more greenspace.



3. The Road and Turnaround Phase

Cost

The costs for the two options are very similar. The estimates provided below are approximate and may change as construction progresses.

Modified Plan

DEMO LIGHTS	$8,800
DEMO ASPHALT 6" DEPTH - 29,350SF	$10,317
SAWCUT EXISTING PAVING ON 2 SIDES	$5,920
REMOVE METAL GUARDRAIL	$11,600
EXCAVATION AND DISPOSAL	$11,200
EMBANKMENT IN PLACE	$5,000
DRAINAGE WORK	$20,000
EROSION CONTROL	$8,000
RETAINING WALL ON RIVER SIDE OF TURNAROUND	$70,000
SUBBASE STONE AT TURNAROUND	$6,760
ASPHALT BASE AT TURNAROUND 3"	$13,500
GUARDRAIL AT TURNAROUND	$12,100
ROADWAY STRIPPING	$1,300
PARKING BUMPERS	$3,325
PARKING LIGHTS - LED	$105,000
TOPSOIL	$24,000
LAWN SEED	$16,000
SHADE TREES	$36,000
FLOWERING TREES	$14,000
NATURALIZING SHRUBS	$11,250
SUBTOTAL	$394,072
20% CONTINGENCY	$78,814
CONSTRUCTION TOTAL	$472,886
DESIGN AND CONSTRUCTION ADMIN. 12%	$56,746
PHASE TOTAL	**$529,633**

Alternative Plan

DEMO LIGHTS	$8,800
DEMO ASPHALT 6" DEPTH - 29,350SF	$10,317
SAWCUT EXISTING PAVING ON 2 SIDES	$5,920
REMOVE METAL GUARDRAIL	$11,600
EXCAVATION AND DISPOSAL	$11,200
EMBANKMENT IN PLACE	$6,500
DRAINAGE WORK	$10,000
EROSION CONTROL	$8,000
RETAINING WALL ON RIVER SIDE OF TURNAROUND	$70,000
SUBBASE STONE AT TURNAROUND	$6,760
ASPHALT BASE AT TURNAROUND 3"	$13,500
GUARDRAIL AT TURNAROUND	$12,100
ROADWAY & PARKING ASPHALT 1 1/2" TOP 23,770SF	$20,900
ROADWAY STRIPPING	$1,200
PARKING BUMPERS	$3,325
PARKING LIGHTS - LED	$105,000
TOPSOIL	$23,800
LAWN SEED	$18,000
SHADE TREES	$20,000
FLOWERING TREES	$8,750
NATURALIZING SHRUBS	$11,250
SUBTOTAL	$386,922
20% CONTINGENCY	$77,384
CONSTRUCTION TOTAL	$464,306
DESIGN AND CONSTRUCTION ADMIN. 12%	$55,717
PHASE TOTAL	**$520,023**

Maintenance

The required maintenance will be nearly the same as what is required currently. Maintenance would consist of mowing the lawn area, trimming around shrubs and along the Thruway fence, weekly trash pickups, and sweeping of the road twice annually.

4. The Boardwalk Phase

Importance

The most important feature about Black Rock Canal Park that separates it from other parks is the Niagara River waterfront. It provides the views and is the center of most of the recreational uses of this area. It is critical to give visitors the chance to walk up to the river's edge and look down into the clear water or to wet a line to try and hook up with the perch or bass that frequent the shallow near shore areas fronting the park. People also enjoy strolling along the water's edge enjoying the sunset or watching passing boats. The Boardwalk Phase will provide the space for people to get close and enjoy the Niagara River. The importance of creating a comfortable, spacious walkway free of conflicts between different users groups cannot be overstated.

Description

There is limited space between the fence along the I-190 Thruway and the existing bulkhead at the water's edge, about 60 feet on average. While 60 feet is adequate for the walkway at the water's edge and the separate bike path proposed for the area north of the new vehicle turnaround, it will be tight south of the new turnaround where the same dimension must also accomodate the 18-foot wide angled parking spaces and the 24-foot wide road, leaving little space for a 12-foot wide pathway and a separate bike path.

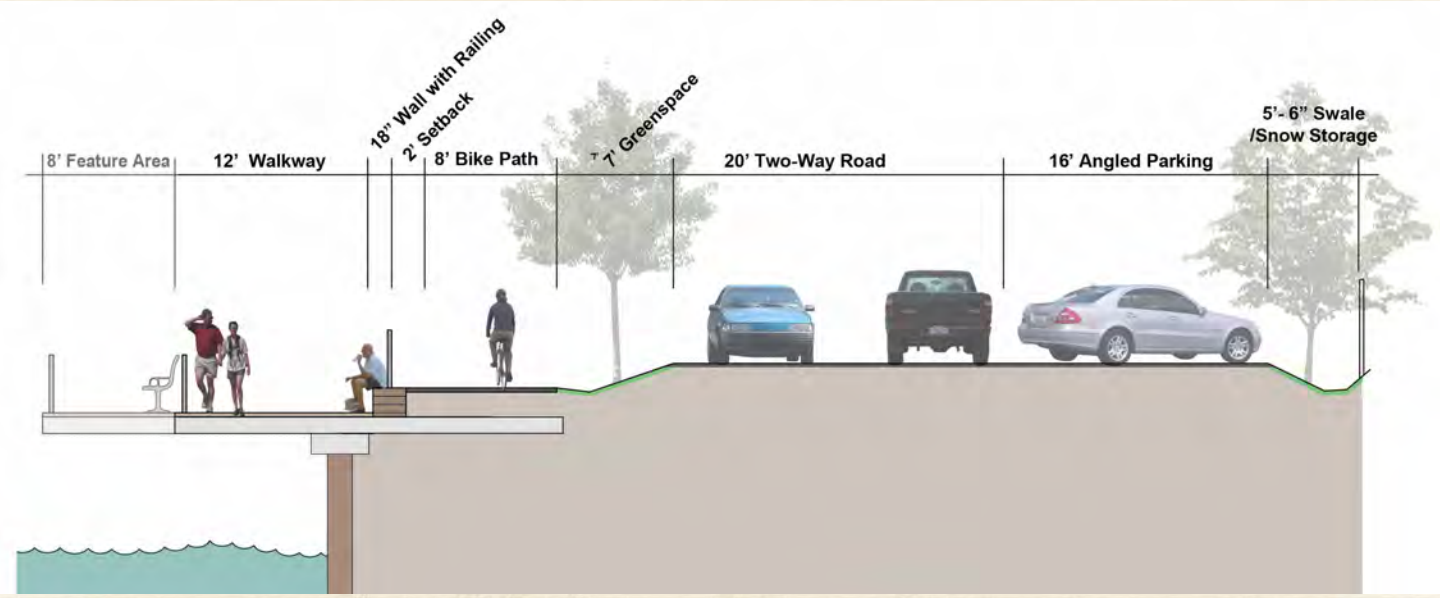
There are two plans for this area with differing solutions for the walkway:

- The Modified Plan includes a 12-foot wide waterfront waterfront walkway that overhangs the water and is supported by cantilevered beams. Part of the walkway will be constructed from a translucent material such as Lucite or metal grating to address concerns about shading the water and to provide walkway users a chance to see into the water below. There will be some feature areas that extend six feet further (18 feet total) where benches can be placed and fishing may occur. By extending the pathway over the water, room is created for a separate eight-foot wide bike path to eliminate pedestrian/bicyclist and vehicle/bicyclist conflicts. The advantage of this option is that it provides separate spaces/paths for different users.
- The Alternative Plan includes a 12 foot wide waterfront walkway built inland of the existing bulkhead at the water's edge. The walkway is for shared use between pedestrians and bicycles similar to other sections of the Riverwalk. To reduce user conflicts there will be several "bumpouts" that overhang the water's edge. Bicyclists can use either the walkway or the adjacent roadway. The advantage of this plan is that it is much more affordable than the overhanging walkway option.

Both options will require permits from the regulatory authorities since they overhang navigable waters of the Niagara River to some degree. Also, the stability of the space behind the existing sheet pile bulkhead will require further study; there is some concern that even a small opening in the bulkhead will create an area where fill behind the wall can be washed into the river undermining the walkway. To address this issue, a detailed geotechnical analysis should be undertaken.

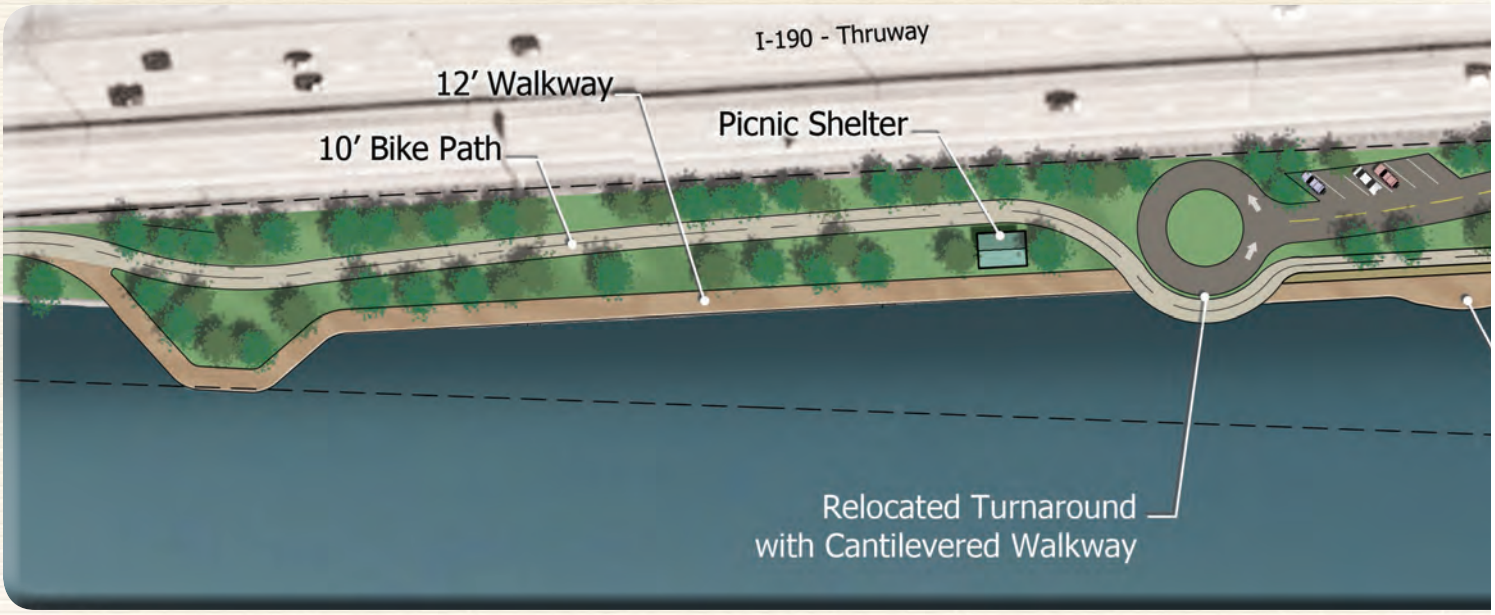
The highlighted area, below, shows the location of the Boardwalk Phase.

4. The Boardwalk Phase

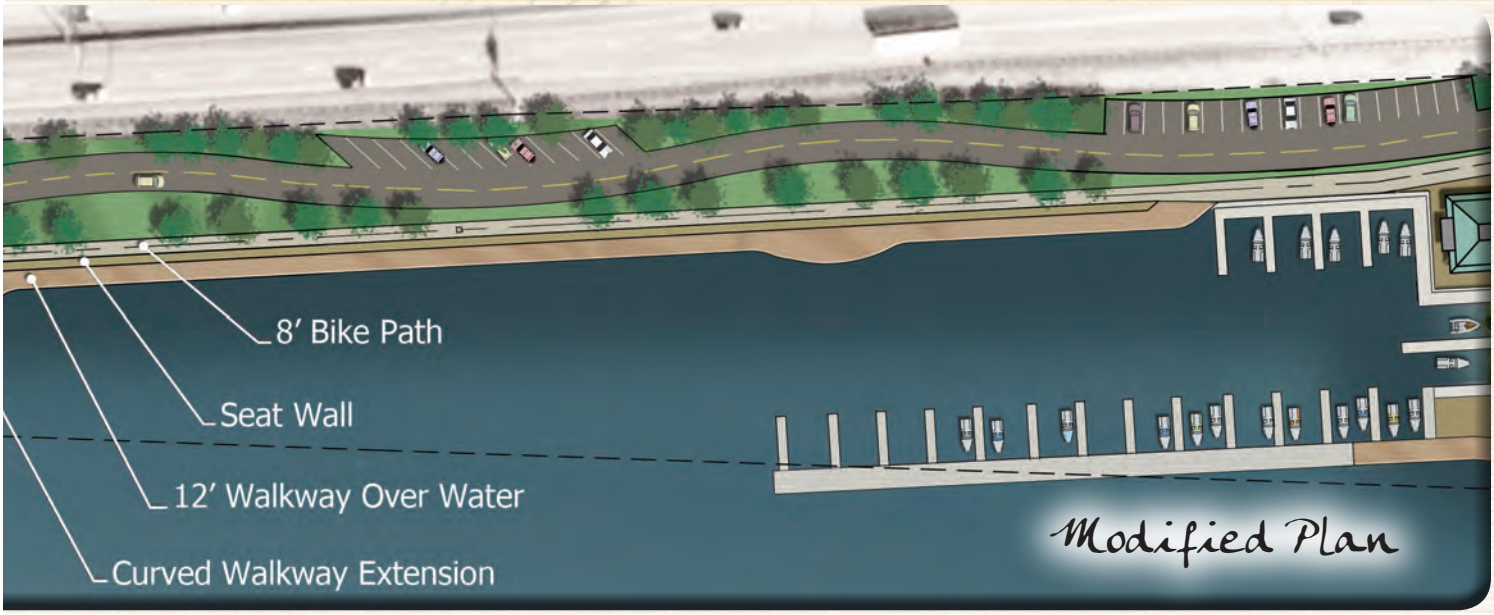


The Boardwalk Phase as shown in the Modified Plan features two parallel pathways: an 8' wide bike path, which allows cyclists to ride through the park free of conflicts with cars and pedestrians, and a 12' wide waterfront walkway. The walkway is cantilevered over the water due to the limited width of the park. Its surface is constructed from a combination of wood (or recycled wood/plastic) boardwalk and a transparent material such as metal grating or Lucite panels, that would allow light to reach the water below. A railing is located on the seat wall to prevent bicycles from toppling over the seat wall onto the walkway.

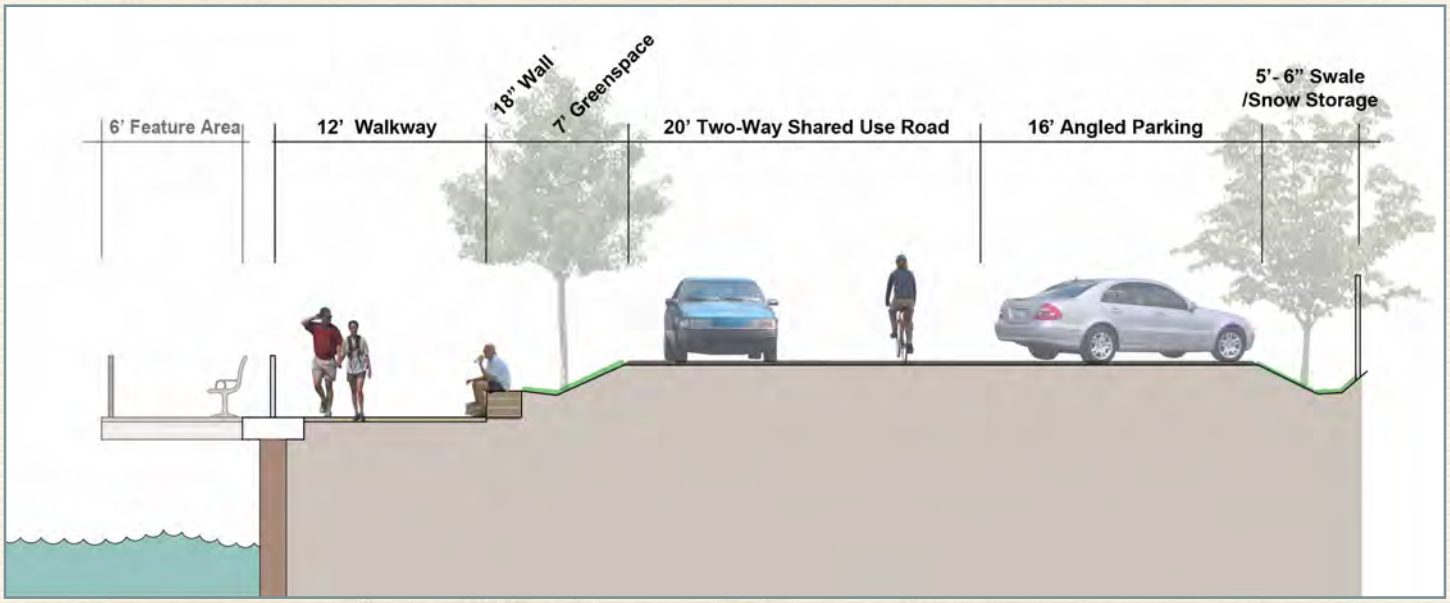
Alternatives for the Boardwalk Phase as shown in the Modified Plan are illustrated on these pages. The options shown in either the Modified Plan (these pages) or Alternative Plan (following pages) can be mixed or matched during the design and construction of the Boardwalk Phase.



4. The Boardwalk Phase

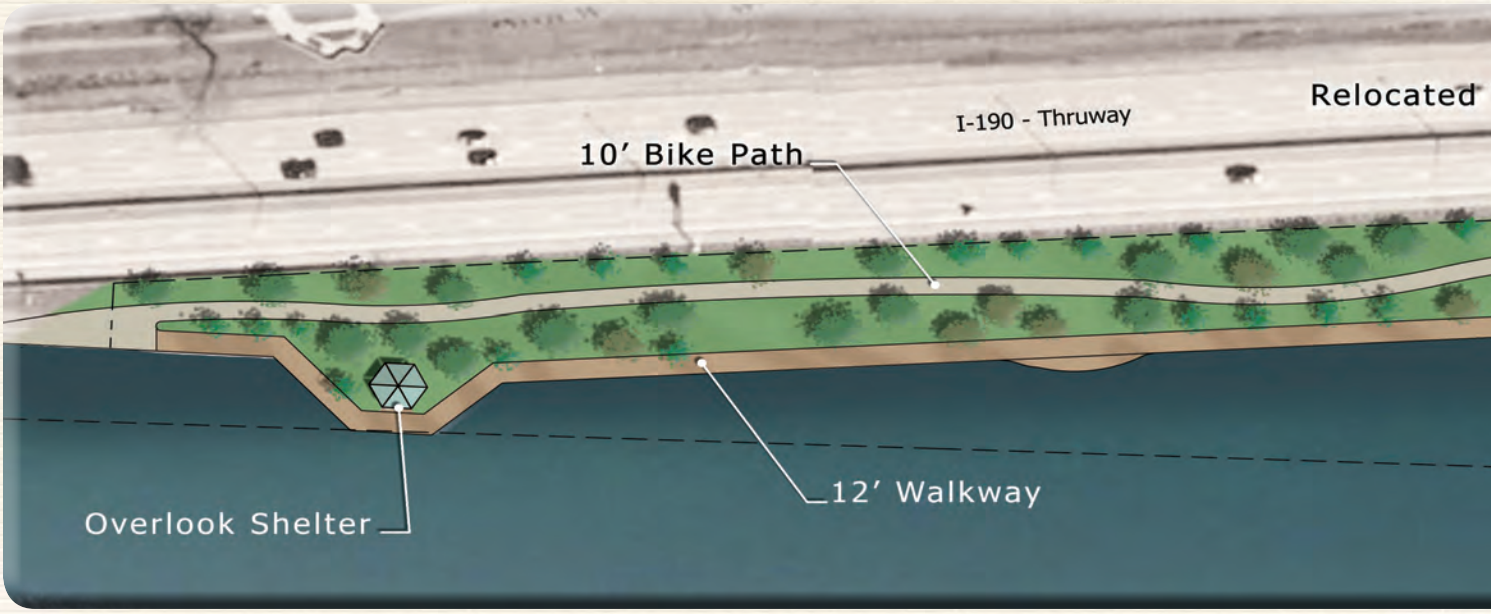


4. The Boardwalk Phase



The Boardwalk Phase as shown in the Alternate Plan is a 12' wide walkway located mostly inland from the bulkhead, except where the the walkway bumps out over the bulkhead (utilizing a cantilever system) to create a few feature overlook areas. Space to locate the walkway inland of the bulkhead is made possible by eliminating the dedicated bicycle path, which is provided in the Modified Plan. In the Alternate Plan, cyclists can either share the roadway or, similar to other segments of the Riverwalk, share the waterfront walkway with pedestrians. This alternative creates the potential for bicycle/vehicle user conflicts as vehicles back into lanes used by the cycling public. The boardwalk is constructed of a combination of wood (or recycled wood/plastic) boardwalk, and concrete that is cut to resemble stone.

Alternatives for the Boardwalk Phase as shown in the Alternate Plan are illustrated on these pages. The options shown in either the Modified Plan (previous pages) or Alternative Plan (these pages) can be mixed or matched during the design and construction of the Boardwalk Phase.



4. The Boardwalk Phase

4. The Boardwalk Phase

Cost

Costs shown are approximate and may change as the construction progresses.

Modified Plan

REMOVE ASPHALT WALKWAY 4' X 1450	$4,875
REMOVE RAILING	$15,000
18' CANTILEVERED FEATURE AREA	$448,000
12 CANTILEVERED WALKWAY STRUCTURE	$1,836,000
DECKING FOR WALKWAY	$160,200
WATERFRONT LIGHTS 100' O.C.- LED	$90,000
8' ASPHALT BIKE PATH - ALL NEW	$29,200
52" HIGH BICYCLE RAILING	$32,850
ARMOR STONE SEAT WALL	$47,450
12' WALKWAY FROM TURNAROUND NORTH	$70,000
10' ASPHALT BIKE PATH - TURNAROUND NORTH	$39,900
PICNIC SHELTERS	$30,000
RAILING	$225,000
BENCHES	$12,000
INTERPRETIVE SIGNAGE	$48,000
TRASH CONTAINERS, SOLAR COMPACTORS	$10,500
SUBTOTAL	$3,098,975
20% CONTINGENCY	$619,795
CONSTRUCTION TOTAL	$3,718,770
GEOTECHNICAL ANALYSIS	$15,000
DESIGN AND CONSTRUCTION ADMIN. 12%	$446,252
PHASE TOTAL	**$4,180,022**

Alternative Plan

REMOVE ASPHALT WALKWAY 4' X 1450	$4,875
REMOVE RAILING	$15,000
8'CANTILEVERED BUMPOUTS 3 @ 50'	$300,000
12' WALKWAY FROM TURNAROUND SOUTH	$48,750
WATERFRONT LIGHTS 100' O.C.- LED	$90,000
10' ASPHALT BIKE PATH - FROM TURNAROUND NORTH	$41,300
12' WALKWAY FROM TURNAROUND NORTH	$185,000
ARMOR STONE SEAT WALL	$40,950
PICNIC SHELTERS	$60,000
RAILING	$225,000
BENCHES	$14,400
INTERPRETIVE SIGNAGE	$48,000
TRASH CONTAINERS	$4,800
SUBTOTAL	$1,078,075
20% CONTINGENCY	$215,615
CONSTRUCTION TOTAL	$1,293,690
GEOTECHNICAL ANALYSIS	$15,000
DESIGN AND CONSTRUCTION ADMIN. 12%	$155,243
PHASE TOTAL	**$1,463,933**

Maintenance

Maintenance will consist of weekly trash pickups and sweeping the walkway twice annually. Every five years there should be an inspection of the cantilevered walkway.

5. The Mixed-Use Building Phase

Importance

The new Mixed-Use Building will be the centerpiece of Black Rock Canal Park. It will provide a venue for year round activities and events and its success is likely to spin-off into the surrounding community. It will provide numerous amenities for park users and boaters and by becoming LEED certified (Leadership in Energy and Environmental Design) and it will be a show-piece of "green" technology. Lastly it will be an attractive addition to the project being seen by both park users and by more than 69,000 vehicles that daily travel the adjacent Thruway corridor.

The site is strategically located near Canada with efficient land and water access. These characteristics make this site a desirable location for a security related government agency using land based and marine patrol units. The site can be modified to provide law enforcement dedicated boat slips and parking. the building itself can include offices with a broad and open view of the river and the Canadian Shoreline. A benefit of locating such agencies here is that it will provide a 24 hour presence that will minimize the incidence of vandalism and make visitors feel more secure.

The highlighted area, above, shows the location of the Mixed Use Building Phase.

Description

The exact scope and scale of the Mixed-Use Building is flexible since the tenants and functions have yet to be determined. However, it is the desire of the community that the building include the following:

- **Concessions** – This should be a year round function once the park is fully built out. The concessions will serve park and Riverwalk users, as well as the boating public and will serve as a community meeting space (described below).
- **Restrooms** – Again, these will serve park and Riverwalk users, as well as the boating public. Shower facilities will be provided, especially for boaters.
- **Visitor Center** – This would be an area where tourists would be able to identify areas of businesses and learn more about the area.
- **Meeting Room** – This would be a community facility where meetings or educational activities could be held in a scenic setting.
- **Park Staff Area** – This would include an office and storage
- **Security Offices** - Offices and storage for a security-related agency

Prior to construction, some tasks must be undertaken. The existing restroom/concession building must be removed. Even though the Mixed-Use Building will occupy the same location as the existing restroom/concession, it will occupy a larger footprint. The existing public has nothing that can be salvaged for use in the structure that will replace it. The structural stability of the underlying fill must be ascertained, necessitating a thorough geotechnical review. This would be done by sending out a drill rig to do some test borings and having a geotechnical engineer review them.

5. The Mixed Use Building Phase

Cost

Costs below are based on square footages and are for the enclosure of the space alone. Costs are slightly higher for a LEED Certified building than for a conventional building but there will ultimately be a payback in reduced energy costs. Since the layout of the space is still flexible, the cost of furniture, fixtures and equipment (FF&E) cannot be determined and will need to be defined at a later date. Costs shown are approximate and may change as construction progresses.

Modified Plan (3 Story)

DEMOLISH RESTROOM/CONCESSION	$7,000
BUILDING: MULTI-PURPOSE, 3 STORY 3,200 SQFT/FLOOR , LEED CERTIFIED	$2,880,000
SANITARY PUMP STATION	$4,500
PATIO AROUND BUILDING	$31,500
SUBTOTAL	$2,923,000
20% CONTINGENCY	$584,600
CONSTRUCTION TOTAL	$3,507,600
GEOTECHNICAL STUDY	$5,000
DESIGN AND CONSTRUCTION ADMINISTRATIVE COSTS 12%	$420,912
PHASE TOTAL	**$3,933,512**

Alternative Plan (1 Story)

DEMOLISH RESTROOM/CONCESSION	$7,000
BUILDING: MULTI-PURPOSE, 1 STORY	$550,000
SANITARY PUMP STATION	$2,500
PATIO AROUND BUILDING	$45,000
SUBTOTAL	$604,500
20% CONTINGENCY	$120,900
CONSTRUCTION TOTAL	$725,400
GEOTECHNICAL STUDY	$5,000
DESIGN AND CONSTRUCTION ADMINISTRATIVE COSTS 12%	$87,048
PHASE TOTAL	**$817,448**

The cost for the building shown in the second row above is based on a figure of $300 per square foot. In the event that the building is smaller, the cost would be proportionally lower.

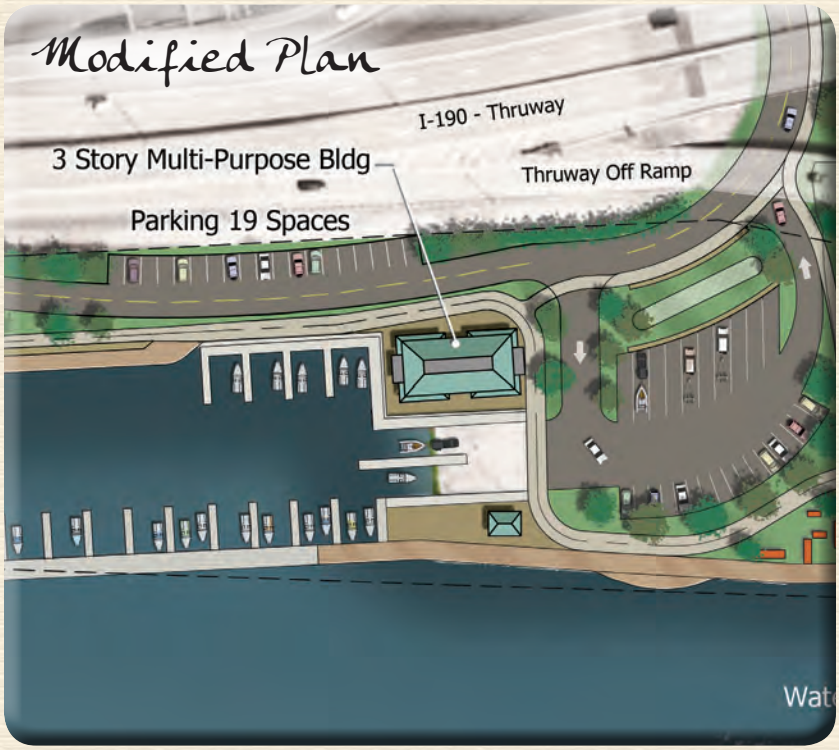
Maintenance

The intention is that the Mixed-Use Building will be self sustaining based on the income received from leased space. In the event that it is not, maintenance requirements will not be onerous and would include a daily clean-up of the restroom and showers, weekly cleaning of common areas such as the visitor center and snow removal.

The above illustration shows the three story, mixed use building proposed in the Black Rock - Riverside GNPA concept and the Modified Plan.

(image source: Stevan Stipanovish - Land Use, Zoning and Urban Design Committee, BRRGNPA)

5. The Mixed Use Building Phase



Above: Alternatives for the Mixed Use Building as shown in the Modified Plan.
Below: Alternatives for the Mixed Use Building as shown in the Alternative Plan.

5. The Mixed Use Building Phase

The proposed Mixed Use Building, pictured below, will provide a venue for year round activities and events. Uses for the building proposed by the community include concessions, restrooms, a visitor center, meeting rooms, park staff area, and security offices.

(image source (proposed building): Stevan Stipanovish - Land Use, Zoning and Urban Design Committee, BRRGNPA)

6. The Boat Launch and Pier Phase

Importance

Plans for Black Rock Canal Park have been presented to the community for years and one of the most receptive and excited groups are the boaters. There are a wide variety of boat types from paddle craft (canoes and kayaks) and personal watercraft, to fishing boats and cabin cruisers. All of these boating user groups would benefit from the amenities provided by the Black Rock Canal Park project A pier extension will create a calm water area for transient boat slips where boat owners can tie up for a short time or overnight. Boaters that are travelling long distances along the system of lakes and canals will especially appreciate the showers, concessions and visitor center components of the new building. A fishing hut and weigh station will make it possible touse this site as a base of operations for area fishing tournaments

Description

There are two plans for the Boat Launch and Pier Extension. A common element in both plans is a fishing hut and weigh station equipped with running water and sanitary sewer lines. Anglers can weigh and process fish while disposing of waste in a responsible, sanitary manner. Both plans have a pier extension that would create a protected cove allowing floating debris from the river to bypass the site. The length of the pier extension varies between the two plans:

- The Modified Plan features a 300-foot pier extension that would allow the establishment of 35 boat slips
- The Alternative Plan features a 70-foot pier extension that would allow the establishment of 18 boat slips

While the exact design of the pier extension has not been determined, initial concepts include a using a format “bin wall” construction consisting of a “curtain” of metal sheeting suspended from a framework supported by piles driven into the bottom sediment. This design would block the waves and deflect surface currents while allowing water throught the structure to maintain water quality. The environmental benefits of this design is that it provides the needed structural stability without having to fill in the shallow waters of the Niagara River.

There are a few issues to consider before beginning the design of this phase. This work will require some form of regulatory authorization from the US Army Corps of Engineers and the New York State Department of Environmental Conservation. In initial meetings with these agencies, their representatives asked for more detail about the proposal but felt the project was permittable.

The highlighted area, below, shows the location of the Boat Launch & Pier Phase.

6. The Boat Launch and Pier Phase

Cost

Costs shown are approximate and may change as construction progresses.

Modified Plan

REMOVE WOOD DOCK AND PILINGS	$5,000
REINFORCE EXISTING SHEET PILE PIER	$25,000
300' PIER EXTENSION SHEETING AND 6' WALK	$1,050,000
PIER EXTENSION - RAILING	$30,000
FINGER DOCKS (BOAT SLIPS - 3' WIDE FLOATING)	$100,000
BOATERS PUMP STATION	$10,000
FISHING HUT AND WEIGH STATION	$30,000
SUBTOTAL	$1,250,000
20% CONTINGENCY	$250,000
CONSTRUCTION TOTAL	$1,500,000
DESIGN AND CONSTRUCTION ADMINISTRATIVE COSTS 12%	$180,000
PHASE TOTAL	**$1,680,000**

Alternative Plan

REMOVE WOOD DOCK AND PILINGS	$5,000
REINFORCE EXISTING SHEET PILE PIER	$25,000
70' PIER EXTENSION SHEETING AND 6' WALK	$245,000
PIER EXTENSION - RAILING	$7,000
FINGER DOCKS (BOAT SLIPS - 3' WIDE FLOATING)	$45,000
FISHING HUT AND WEIGH STATION	$30,000
SUBTOTAL	$357,000
20% CONTINGENCY	$71,400
CONSTRUCTION TOTAL	$428,400
DESIGN AND CONSTRUCTION ADMINISTRATIVE COSTS 12%	$51,408
PHASE TOTAL	**$479,808**

Maintenance

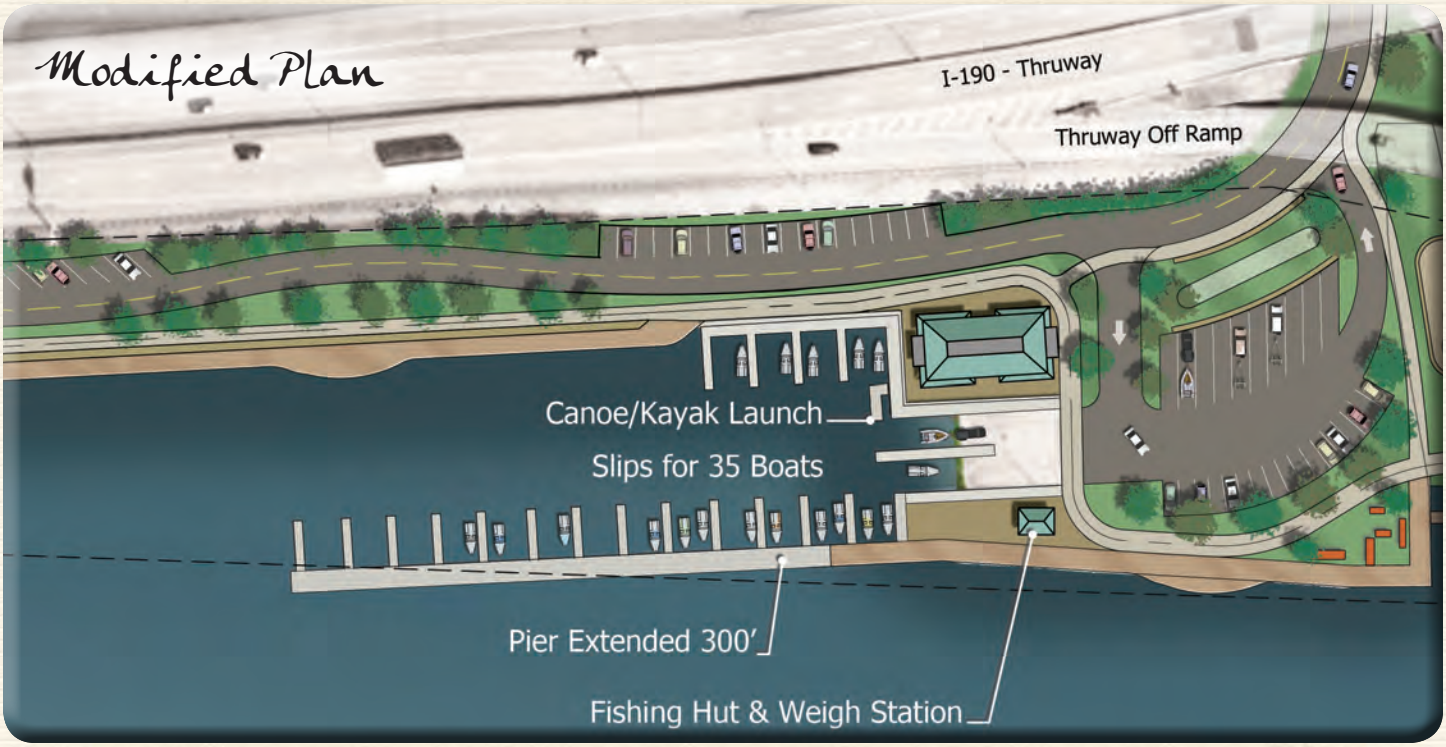
The extent of maintenance in this area will depend on how it is operated. If overnight mooring is permitted, an attendant may need to be present on a round-the-clock basis during the active boating season. If the slips are only used during normal park hours (dawn till dusk), no overnight supervision would be required. Beyond the periodic removal of debris at the boat launch that is currently required, the maintenance staff would need to clean the fishing hut on a daily basis during active use periods, which would be from ice out in the spring to approximately mid October.

Coastal Consistency

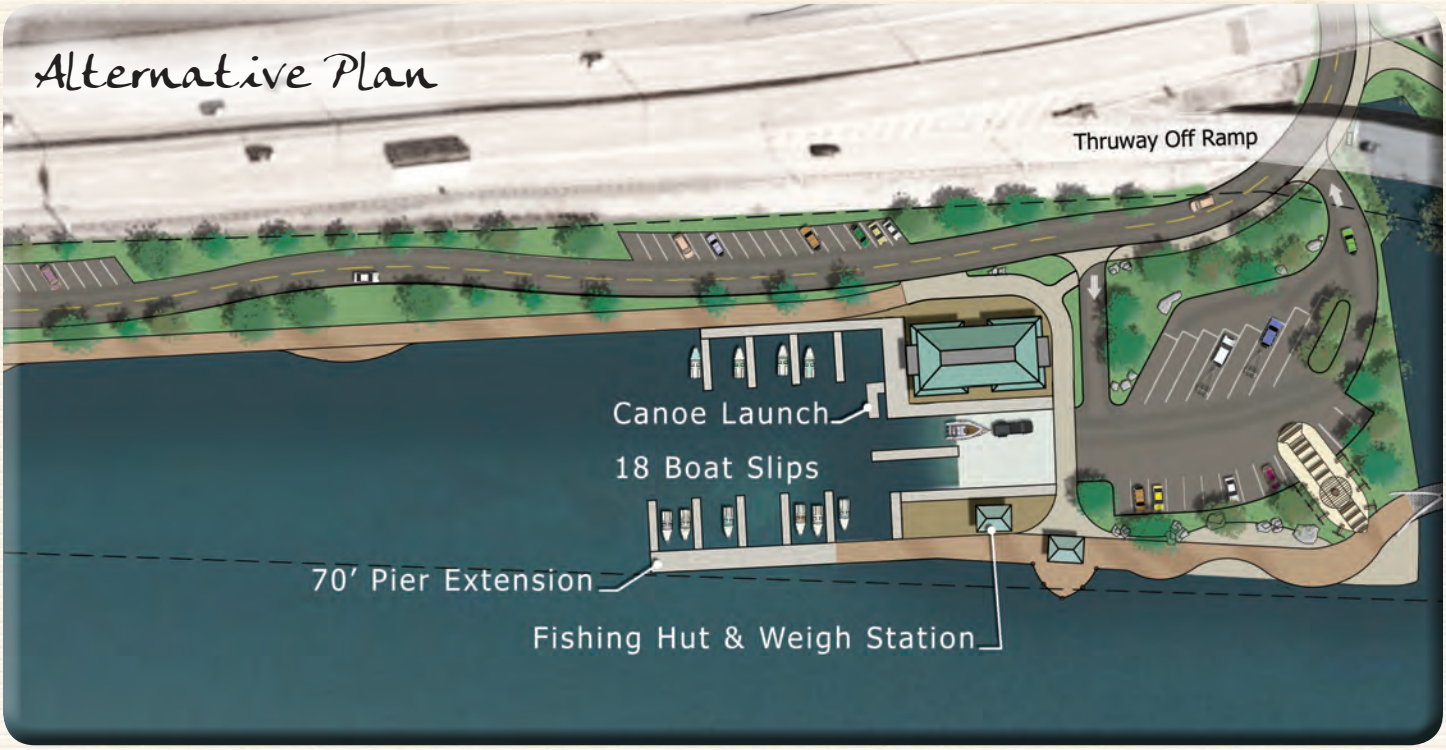
Proposed activities in the boat launch and/or pier area are subject to Coastal Consistency review by the New York State Department of State, according to the New York State Coastal Managment Program, as well as by the Federal Government, according to the Coastal Zone Management Act. The review process must be a coordinated effort between the State and Federal governments and findings must be agreeable according to the coastal regulations of each.

Currently, the Ontario Street Boat Launch lacks amenities for boaters.

6. The Boat Launch and Pier Phase



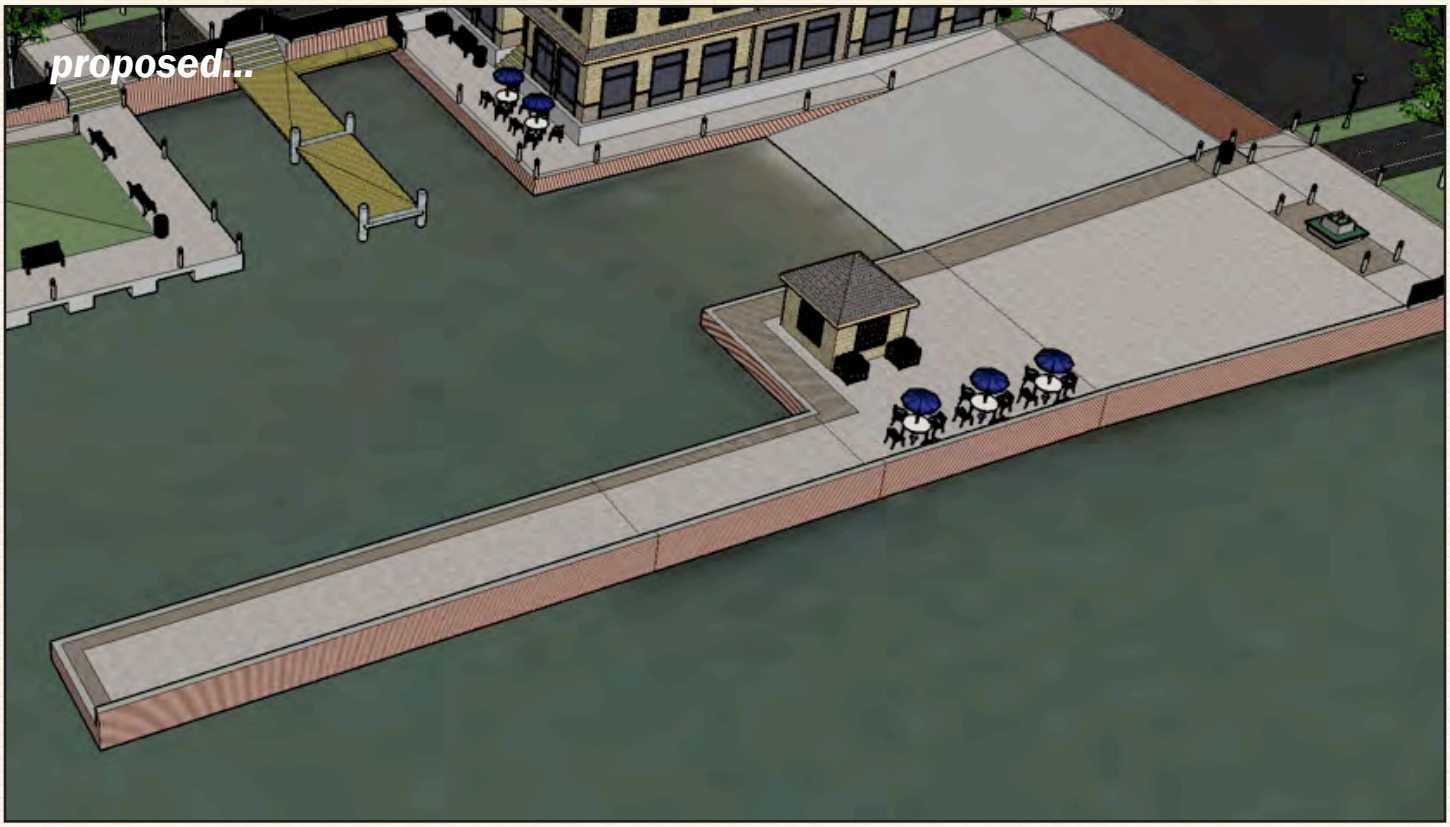
Above: Alternatives for the Boat Launch and Pier as shown in the Modified Plan. Below: Alternatives for the Boat Launch and Pier as shown in the Alternative Plan. The options shown in either plan can be mixed or matched during the design and construction of the Boat Launch and Pier Phase.



6. The Boat Launch and Pier Phase

The proposed Boat Launch and Pier, pictured below, will provide expanded launch and docking amenities for a variety of boat types. A fishing hut and weigh station will provide a convenient place for anglers to weigh and process their catch. This addition will also make it possible to hold fishing tournaments at Black Rock Canal Park.

(image source (proposed boat launch and pier): Stevan Stipanovish - Land Use, Zoning and Urban Design Committee, BRRGNPA)



7. The South End Phase

Importance

The portion of Black Rock Canal Park now occupied by Cornelius Creek Park is the largest non-linear portion of the park that is available for recreational use. It is accessible via the Riverwalk and is convenient to parking at the Central Area, described in Phase 2. A Dog Park will occupy the largest portion of this area. Dog Parks are a new use that is becoming popular in cities across the country. It gives dog owners a space to let their dogs get the exercise that is necessary for their health. A Dog Park in this location would allow users to enjoy the scenic views over the Niagara River while throwing a stick or Frisbee for their pooch to retrieve. Since the Dog Park is sure to be a popular component of the park that is heavily used year round, other park users will benefit from the improved security that comes from having people always present. Other features of the south end include an extension of the Riverwalk pathway, a viewing overlook at the water's edge and a picnic/multi-purpose shelter that takes advantages of the scenic views.

The highlighted area, above, shows the location of the South End Phase

Description

There are two plans for this area, both of which feature a Dog Park. In order to minimize the visual impact of the required perimeter fence, a four foot high vinyl coated fence is recommended. The area will be surfaced with stone, such as decomposed granite, so that it can be easily cleaned and does not become muddy from use. A shelter in the center of the Dog Park will allow users to take refuge from the sun or rain. It will also be equipped with water and a trash receptacle. Both plans include the Riverwalk extension which will be a full 12 feet in width to reduce user conflicts.

The two plans differ slightly in the location of the picnic shelter. In both, the picnic shelter is designed to offer views over the river while serving small groups such as family reunions, parties, etc. The Modified Plan shows a centralized picnic shelter with a curved overlook that extends out over the large rip rap stones. The Alternative Plan has the shelter located closer to the Central Area parking with a walkway heading east along the south shore of Cornelius Creek.

No special permits are expected to be required for the proposed work in this area.

Maintenance

Maintenance will consist of daily cleanup of the dog park, mowing along the Riverwalk trail, and sweeping of the trails twice annually.

The above illustration depicts the picnic/multi use shelter and curved overlook proposed for the South End Phase.

7. The South End Phase

Cost

Cost figures for the two plans are similar with minor variation due to the picnic shelter and overlook configuration. Costs shown are approximate and may change as construction progresses.

Modified Plan

DEMOLISH LIGHTS	$4,000
DEMOLISH CONCRETE PAVING 6250 SF	$4,940
DEMOLISH BIKE PATH TO 6" - 440 LF X 12'	$1,455
MISC CLEAR AND GRUB	$4,000
REMOVE RAILING	$2,600
EROSION CONTROL	$4,000
REMOVE THRUWAY FENCE	$2,200
WALKWAY 12' ASPHALT	$33,750
RAILING	$40,500
FENCE 6' VINYL COATED AT THRUWAY	$8,800
PICNIC SHELTER	$30,000
INTERPRETIVE SIGNAGE	$18,000
WATERFRONT LIGHTS 100' O.C.- LED	$20,000
CURVED OVERLOOK	$17,000
BENCHES	$9,600
TRASH CONTAINERS - SOLAR COMPACTORS	$10,500
TOPSOIL 10,500 SF X 6"	$7,760
LAWN SEED	$5,500
SHADE TREES	$14,000
FLOWERING TREES	$5,250
4' CHAINLINK FENCE VINYL COATED	$10,800
SIGNAGE, BENCHES	$5,000
SHELTER	$15,000
SURFACE- STONE DUST .42 ACRE @ 4"	$13,440
SUBTOTAL	$288,095
20% CONTINGENCY	$57,619
CONSTRUCTION TOTAL	$345,714
DESIGN AND CONSTRUCTION ADMIN. 12%	$41,486
PHASE TOTAL	**$387,200**

Alternative Plan

DEMOLISH LIGHTS	$4,000
DEMOLISH CONCRETE PAVING 6250 SF	$4,940
DEMOLISH BIKE PATH TO 6" - 440 LF X 12'	$1,455
MISCELLANEOUS CLEARING AND GRUBBING	$4,000
REMOVE RAILING	$2,600
EROSION CONTROL	$4,000
REMOVE THRUWAY FENCE	$2,200
ARMOR STONE SEAT WALLS	$9,000
WALKWAY 8' ASPHALT	$10,000
WALKWAY 12' ASPHALT	$33,750
RAILING	$40,500
FENCE 6' VINYL COATED AT THRUWAY	$8,800
PICNIC SHELTER	$30,000
INTERPRETIVE SIGNAGE	$18,000
WATERFRONT LIGHTS 100' O.C.- LED	$20,000
BENCHES	$9,600
TRASH CONTAINERS - SOLAR COMPACTOR	$10,500
TOPSOIL 10,500 SF X 6"	$7,760
LAWN SEED	$5,500
SHADE TREES	$14,000
FLOWERING TREES	$5,250
4' CHAINLINK FENCE VINYL COATED	$10,800
SIGNAGE, BENCHES	$5,000
SHELTER	$15,000
SURFACE- STONE DUST .42 ACRE @ 4"	$13,440
SUBTOTAL	$290,095
20% CONTINGENCY	$58,019
CONSTRUCTION TOTAL	$348,114
DESIGN AND CONSTRUCTION ADMIN. 12%	$41,774
PHASE TOTAL	**$389,888**

7. The South End Phase

Above: Alternatives for the South End Phase as shown in the Modified Plan.
Below: Alternatives for the South End Phase as shown in the Alternative Plan. The options shown in either plan can be mixed or matched during the design and construction of the South End Phase.

7. The South End Phase

The graphic below depicts the Dog Park and picnic/multi use shelter proposed for the South End Phase. Both amenities take advantage of the spectacular views across the Niagara River.

8. The Creek Phase

Importance

Cornelius Creek presents some special challenges to the development of Black Rock Canal Park. As previously described in this report, it is the largest combined sewer overflow (CSO) in the City of Buffalo. During a storm event, stormwater combines with wastewater (untreated sewage) and fills the pipes leading to the wastewater treatment plant. To avoid surcharging the pipes, which would cause basements to flood with the mixture, the system is designed so that the overflow spills over into Cornelius Creek. The City of Buffalo is negotiating a consent order with the regulatory authorities to address the CSO problem city-wide. However, it is not know when the problem at Cornelius Creek will be addressed. In the meantime, Black Rock Canal Park is left with a CSO outlet that emanates unpleasant sewage odors during and after storm events. The degration of water quality is particularly exacerbated when a significant rainstorm follows a dry spell. Raw sewage discharges in the middle of an active public park, creating public health challenges and disruption of the scenic ambiance by strong odors.

One method to address this concern is to install a temporary cover over the creek to would reduce odors that emanate and minimize public contact with raw sewage while providing usable space above. To assure that the cover is removed once the CSO problem is addressed, no permanent structures will be placed within the existing alignment of the former creek bed. Instead green space and a playground can be placed on the cover that can be relocated at a later date. Since the creek has a boom that collects floating debris, space is provided at the mouth to allow access for skimmer trucks with vacuums that periodically clean up debris.

Another approach to address the CSO issue at Cornelius Creek is to leave the area open. In spite of the CSO problem, there may be some wildlife benefit to the open, sunny embayment created at the mouth. There is also the concept among proponents of this option that keeping the creek open will hasten the date when the CSO problem is addressed making the creek an amenity rather than a liability and that the cost involved in removing a cover would prevent it from happening, effectively making the cover permanent.

The highlighted area, above, shows the location of the Crek Phase.

Description

As described, there are two plans for the creek area:

- The Modified Plan included a cover over most of the creek leaving approximately 75 feet exposed at the mouth to facilitate cleanups. The cover is constructed of pre-manufactured Con/Span arches which rest on an underground concrete footing. The arches are covered with earthen fill until it is flush with the surrounding area. Hatches would be provided to allow for access to the water below the cover. Upon completion, the area is seeded and a play structure is located atop it without the use of concrete footers.
- The Alternative Plan involves leaving the creek open and placing some riparian plantings on the slope south of the creek to discourage access.

There are a few issues to consider before beginning the design of the creek cover as shown on the Modified Plan. This work will require some permits from the US Army Corps of Engineers and the New York State Department of Environmental Conservation. In initial meetings with these regulatory authorities they did not discount the possibility of this happening but wanted to see more detail about the proposal and the existing conditions. In particular, an assessment of the biological conditions existing within the outlet channel for Cornelius creek may be required. The duration and associated cost of such a review is not known at this time.

8. The Creek Phase

Maintenance

Maintenance will not be a significant concern if either option is constructed. Maintenance for the covered creek would consist of mowing the lawn area, maintenance of the play area by weekly raking the wood chip play surface, and weekly trash pickup. Maintenance for the uncovered creek option would consist of the more difficult weekly trash pickup among the riparian plantings. No mowing, weeding or pruning would be required.

Cost

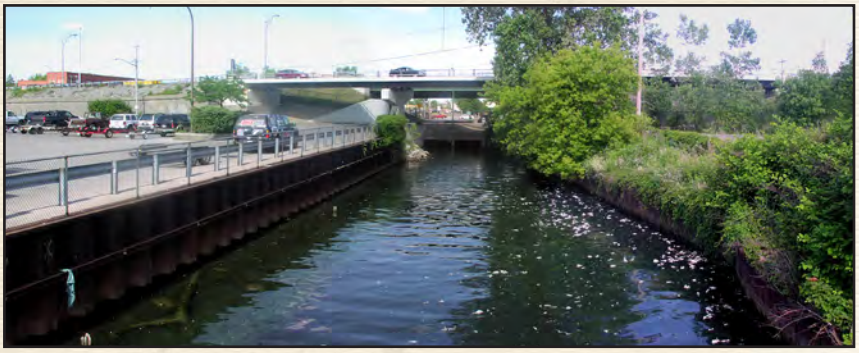
Costs shown are approximate and may change as construction progresses.

Modified Plan

CONSTRUCT/SPAN COVER	$3,150,000
FILL OVER COVER	$11,475
TOPSOIL OVER COVER	$10,000
LAWN SEED	$5,500
CANAL-THEMED PLAY AREA	$40,000
SUBTOTAL	$3,216,975
20% CONTINGENCY	$643,395
CONSTRUCTION TOTAL	$3,860,370
GEOTECHNICAL STUDY	$5,000
DESIGN AND CONSTRUCTION ADMIN. 12%	$463,244
PHASE TOTAL	**$4,328,614**

Alternative Plan

DEMO LOW SHEET PILE WALL	$5,000
MISC CLEAR AND GRUB	$4,000
GRADE SITE	$5,000
TOPSOIL 10,500 SF X 6"	$7,760
NATURALIZING SHRUBS	$2,625
PEDESTRIAN BRIDGE $100/SQFT - 70' X 12' PLUS FOUNDATION	$180,000
SUBTOTAL	$204,385
20% CONTINGENCY	$40,877
CONSTRUCTION TOTAL	$245,262
DESIGN AND CONSTRUCTION ADMIN. 12%	$29,431
PHASE TOTAL	**$274,693**



Current views of Cornelius Creek.

Cornelius Creek is an urban creek that was piped underground in the early 1900s. It runs east, through Riverside to the park, where it emerges at the west end of the park entrance road and flows into the Niagara River. The banks are a mix of concrete walls, metal sheet pile and large stone rip rap. Cornelius Creek has long existed as the discharge point of a combined sewer overflow (CSO) that significantly degrades water quality. It is the largest of the 52 permitted CSOs in the City of Buffalo, handling about 20% of the total City-wide CSO flow.

8. The Creek Phase

Above: Alternatives for the Creek Phase as shown in the Modified Plan.
Below: Alternatives for the Creek Phase as shown in the Alternative Plan. The options shown in either plan can be mixed or matched during the design and construction of the Creek Phase.

The Big Picture

The concept presented below illustrates how future planning improvements in the greater Black Rock and Riverside neighborhoods can complement the Black Rock Canal Park and vice versa. These concepts are outside the scope of the Feasibility Analysis, but are included to show local residents and community leaders additional, viable options for improving the community and furthering the goals and recommendations already put forth in many regional plans.

Community-wide Concept

The Community-wide Concept presents, in graphic form, the policies and recommendation of the relevant regional plans (see Appendix 1), as well as a few new ideas in keeping with the vision created for the Black Rock and Riverside neighborhoods. The Community-wide Concept represents a synthesis of community ideas. It illustrates that Black Rock Canal Park is an important part of the regional story: it provides access to the riverfront from the Black Rock and Riverside neighborhoods; it is an integral part of the county, city and regional park systems; it is a connection along the Niagara River Greenway; it is located along the historic route of Erie Canal and within the Erie Canalway National Heritage Corridor; it is just downstream of the Black Rock Canal and its operating lock; and it is along the Seaway Trail National Scenic Byway. The Community-wide Concept illustrates how the new Black Rock Canal Park, along with several new parks and interpretative centers, improvements to the route of the Riverwalk, and a new Cornelius Creek multi-use trail can complete the community's vision for the Black Rock and Riverside neighborhoods.

Roundabout

One possible way to address the lack of prominence for the entrance road to Black Rock Canal Park is to promote the concept of a roundabout intersection that would include Niagara Street, Ontario Street, the Niagara Thruway on-ramp and the park entry road. The roundabout project would be undertaken by the NYS Department of Transportation (DOT), rather than part of the Black Rock Canal Park improvement project, since Niagara Street is a state highway.

If and when adjustments need to be made to this intersection, the community can promote the roundabout option to the DOT who are, in recent years, receptive to considering roundabouts. In fact, the DOT is required to consider the option of a roundabout when planning a major renovation of an intersection. There are many reasons that the DOT now favors roundabouts; they are proven to have lower accident rates and less fatal accidents than conventional lighted intersections; traffic moves through roundabout more quickly than lighted intersections; and roundabouts are safe for pedestrians. The one drawback to roundabouts is that they require a larger land area than a lighted intersection. At this intersection, however, the parcels that must be required would likely not be expensive and two are currently vacant.

A roundabout would improve the entrance to Black Rock Canal Park by giving it greater visibility than it currently has. It is an option that should be considered in the future when work needs to be done at the intersection.

Pedestrian Bridge

Pedestrian accessibility to Black Rock Canal Park could be improved through the construction of a footbridge spanning I-190 from the terminus of Briggs Street, connecting into the bicycle path north of the turnaround. Such an improvement would improve neighborhood connectivity to the park and increase safety for pedestrians walking to the River.

I-190 Overpass Reconstruction

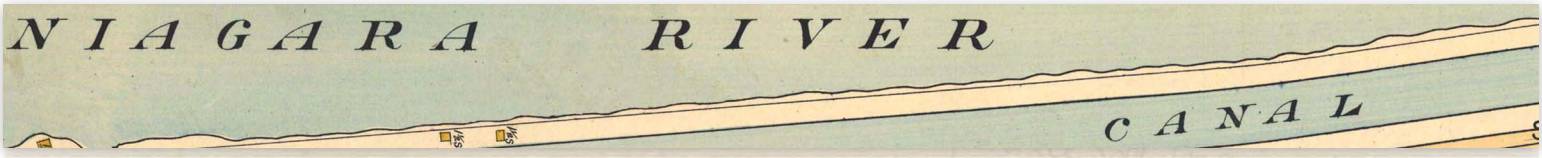
Future improvements to the I-190 expressway overpass and ramp should consider the opportunity to improve visual and physical access at the Park's primary entry point. Among the potential imrpovements should include widening the bridges spanning the entry road, increasing visibility into the park and of the River, as well as providing additional space for pedestrian access. The I-190 off-ramp could also be reconstructed with pier supports, replacing the current embankment, potentially allowing for the expansion of additional park space in the south end area. Such improvements would be the responsibility of the NYS DOT.

5.0 Context

Regional Context

The site for Black Rock Canal Park, currently occupied by the Ontario Street Boat Launch and Cornelius Creek Park, is located at a highly visible location between the Niagara River and Interstate190 (the Niagara Section of the New York State Thruway) in the vicinity of the Black Rock and Riverside neighborhoods of Buffalo, New York. According the Greater Buffalo Niagara Regional Transportation Council (GBNRTC), over 69,000 vehicles drive past the park site on I-190 each day. Many of these vehicles are driven by visitors to the area who are getting a first impression of the City of Buffalo and its waterfront. And while the mighty Niagara River is always scenic, the Ontario Street Boat Launch in the foreground leaves much to be desired.

The Black Rock Canal Park site is located along a string of waterfront parks that include the Bird Island Pier, Broderick Park, Squaw Island Park, and Tow Path Park. However, none of these parks offer the ability for members of the public to launch a boat. The nearest public launch downriver to the north is located at the foot of Sheridan Drive near Aqua Lane Park in the Town of Tonawanda, approximately two miles away. To the south, the nearest public launch is at Erie Basin Marina in downtown Buffalo, approximately five miles away.



Historic Context

The historic Village of Black Rock extended along the Niagara River from the location of the former black rock (in the vicinity of today's Niagara and School Streets) north, past Scajaquada Creek, to Austin Street. The namesake black rock was a huge wedge of dark limestone that projected at a northwesterly angle into the Niagara River. Its flat surface was 200 feet wide at its northern end and rose four or five feet above the normal level of the river, forming a natural pier and protected harbor.[1]

Settlement began in the area after New York State, in 1802, secured title from the Iroquois to a mile-wide strip of land along the length of the Niagara River. The area near the black rock became known as Upper Black Rock, while, downriver, the area north of Scajaquada Creek became known as Lower Black Rock. The Village of Black Rock was founded in 1813 and incorporated as a village in 1839. At the same time that settlement was occurring in Black Rock, the future Village of Buffalo was beginning at the mouth of the Buffalo River. The two villages became partners and rivals.

Black Rock in 1825 (shows Upper Black Rock and the south end of Squaw Island) from The Picture Book of Earlier Buffalo, Severance, Frank H., ed., Buffalo Historical Society, Vol. 16, 1912.

Several battles of the War of 1812 were fought in Black Rock and Buffalo. The war was fought between the United States and Great Britain from June 1812 to the spring of 1815, although the peace treaty ending the war was signed in Europe in December 1814. Since the end of the American Revolution in 1783, the United States had been irritated by the failure of the British to withdraw from American territory along the Great Lakes, by the British backing of the Indians on America's frontiers, and by the unwillingness of the British to sign commercial agreements favorable to the United States.[2] The United States at first attempted to change these policies by economic means, which proved unsuccessful, and so in 1812 resorted to war. Black Rock devoted most of its manpower to the defense of its naval yards on Scajaquada Creek. Both Black Rock and Buffalo were torched by British invaders in December 1813, but were rebuilt.

The Villages of Black Rock and Buffalo competed to become the western terminus of the Erie Canal. Buffalo, for reasons that included larger harbor capacity and greater distance from the shores of Canada (an antagonist during the War of 1812), eventually won the distinction and the advantages it afforded.[3] The black rock was blasted away in the early 1820s for the construction of the Erie Canal.

The Black Rock harbor and channel provided a protected waterway around the reefs, rapids and fast currents that existed in the upstream portion of the Niagara River. By 1825, a pier and lock was constructed across the channel between Squaw Island and the mainland, in conjunction with the construction of the Erie Canal. This elevated the water level in the channel to the level of Lake Erie, which was four to five feet higher than the Niagara River in that section. Mills and factories located along the Niagara River and Scajaquada Creek to take advantage of water power thus created.

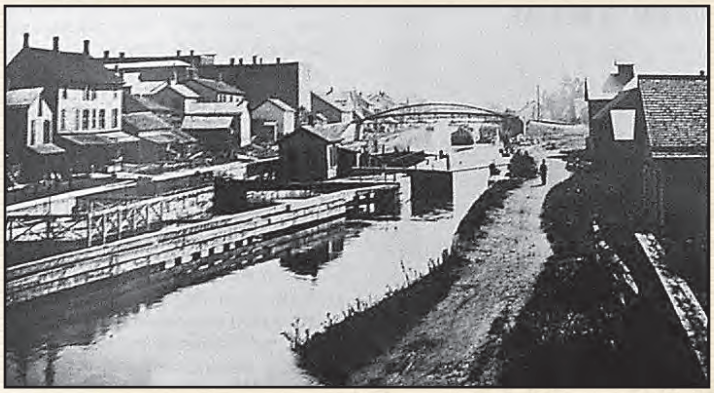
1 Suozzi, Paul. Black Rock Chronicle. Landmark Society of the Niagara Frontier. Posterlet.

2 "The War of 1812 and Black Rock's Roll". Black Rock Advocate. 28 October 2009 <http://blackrockadvocate.blogspot.com>

3 Napora, James. "Houses of Worship: A Guide to the Religious Architecture of Buffalo, New York," Pp. 123-124, 144

Context

In 1833 a lock (Lock #72) was built in the Erie Canal near the foot of Austin Street, which fostered the growth of the Black Rock community north of Scajaquada Creek. The water power from the Black Rock channel, the Erie Canal and the development of railroad corridors advanced the presence of milling and other industry in Black Rock.



Erie Canal Lock #72 in Black Rock, ca. 1900
from Diversion of Water from the Great Lakes and Niagara River, United States. Army. Corps of Engineers, James Goold Warren, United States Board of Engineers for Rivers and Harbors, 1921.

Buffalo continued to grow and prosper due to the advantages afforded by Lake Erie, the Erie Canal, and early railroads. The city annexed Black Rock in 1854. The Lower Black Rock area retained its identity and its name over time and is known as the Black Rock neighborhood today.

In the 1870s, the International Railway Bridge, an engineering marvel at the time, connected the US and Canada at Black Rock. The Black Rock Rail Yard handled passenger service and commercial transport of goods to and from Canada. Following the completion of the St. Lawrence Seaway, the construction of the US interstate highway system, Canada's Queen Elizabeth highway, and the increase of commercial air travel, the Black Rock Rail Yard lost its passenger service and later most of its commercial freight service. The railroad bridge, however, remains in heavy usage and is one of the most important rail crossings between the US and Canada.[4]

Until the late 1800s, the area north of today's Hertel Avenue was mostly farmland, except for development directly along the Niagara River and Erie Canal. With Black Rock developing as an industrial center, many

Black Rock Lock between the mainland and Squaw Island pictured ca. 1910 (above) and today (below). The International Railroad Brdige is seen in the background of each.
image sources: postcard ca. 1910 from eriecanal.org, photo of the Black Rock Lock today from buffaloh.com

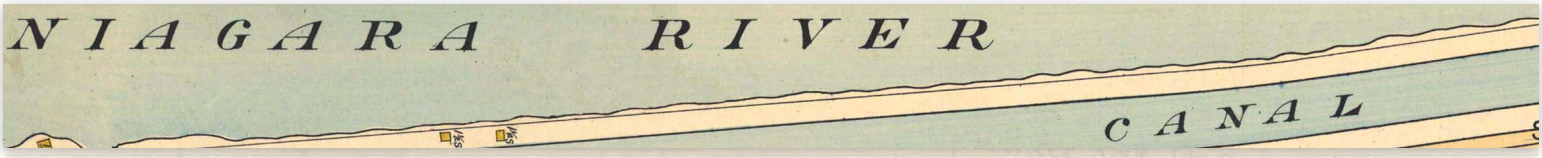
families began moving to less industrialized areas to the north. There, Buffalo's Riverside neighborhood offered a beautiful riverfront location that was a short trolley ride north of the Black Rock factories.[5]

The Erie Canal, once so busy, was abandoned in 1918. It was polluted and considered a menace to safety in the 1920s and 1930s. In the 1930-40s, the canal was filled in between Buffalo and Tonawanda.[6] The Niagara Section (I-190) of the NYS Thruway was build atop the former Erie Canal in the late 1950s. I-190 created a physical barrier between the river and the neighborhoods of Black Rock and Riverside, whose early development was so closely tied to the river.

4 "Black Rock, Buffalo, New York." Wikipedia. 28 October 2009 <http://en.wikipedia.org/wiki/ Black_Rock,_Buffalo,_New_York>.

5 Black Rock-Riverside Good Neighbors' Planning Alliance. Building a Neighborhood of Choice: A Neighborhood Plan for the Riverside Planning Community. January 2007. 17 p.

6 "Pollution, Depression, World War II, Exotics". Western New York Heritage Press. <http://wnyheritagepress.org/ features/ canalsidebar.htm>



Ship Wreck

There is a ship wreck recorded offshore from the boat launch about mid way across the Niagara River. According to nautical charts it is in about nineteen feet of water. The ship wreck is most likely one of the two known War of 1812 wrecks located in the vicinity. The vessel, which is 40 – 50 feet long, has a double planked oak hull and shows evidence of a fire on board. When divers discovered the remains in 1963, they found several cannons and 22 muskets made by John Miler, Bordentown, NJ in 1808.[7]

The wreck is most likely the 100 ton US brig Adams (later renamed HMS Detroit) built in 1802 by the US government. This vessel was lost to the British when Gen Hull surrendered at Detroit, and was renamed HMS Detroit. US Lieutenant Elliot recaptured her at Fort Erie in October 1812. The battle exhausted all Elliot's ammunition so they cut the anchor cable and drifted till they stranded on Squaw Island "near the American side". Prisoners and the Detroit's crew got to the American side in small boats. Seven British soldiers tried to burn the vessel but were driven off. The ship could not be got off so Elliot burned her.[8]

HMS Detroit
painting by E.A Hodgkinson

7 Georgann Wachter (Wachter@eriewrecks.com). "Re: FW: Shipwreck Inquiry – Niagara River". E-mail to Brendon Baillod (BBaillod@glhec.org) and Molly Vendura (mvendura@pjscompany.com). 5 October 2009.

8 Mansfield, John Brandt, ed., History of the Great Lakes. Volume I, Chicago: J. H. Beers & Co., 1899, 132 and 141 p.

Archaeology

An archaeological assessment of the Black Rock Canal Park property has not been completed as part of this project. The site has been significantly altered over the years. The first significant disturbance occurred when the Erie Canal was excavated. In the mid 1900s, the Niagara Section of the New York State Thruway was constructed over the route of the canal. The Ontario Street Boat Launch itself is constructed on fill behind the sheet pile bulkhead that forms its edge.

Potential Users

Local Residents

Black Rock Canal Park is located in a heavily populated area; per the 2000 Census, the US population within a two mile radius was approximately 38,000. The City of Buffalo itself had a population over 292,000 per the 2000 Census and the current population is estimated to be approximately 271,000.

Visitors

Black Rock Canal Park has the opportunity to attract a diversity of users. Currently the park is frequented by boaters, anglers, people seeking to view the river, and people biking along the Riverwalk. Some divers currently use the boat launch to enter the river. Proposed improvements to the park will make it more accessible to boaters, including paddlers and users of motor boats, and a proposed store on site catering to divers' and boaters' needs will provide an additional amenity. Anglers will have a more diverse choice of spots from which to fish. Sightseers currently use the park to view the Niagara River; additional amenities such as opportunities to view and learn about aquatic life, an improved physical setting, and an attractive well marked entrance will attract additional sightseers to the park. The addition of interpretative materials about the development of Black Rock, Riverside, the City of Buffalo, the Erie Canal, and the Seaway Trail will make the park marketable and more attractive to culture and heritage tourists. Promotional materials about the Erie Canalway National Heritage Corridor and the Seaway Trail (including the Dive the Seaway Trail program) could be utilized to promote the park and attract visitors.

6.0 The Site

Project Limits

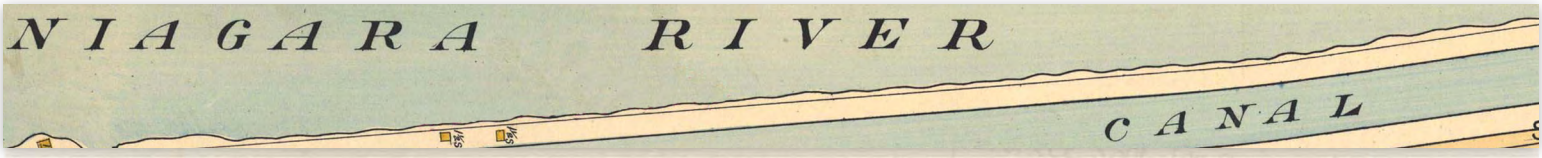
At the outset of any planning project, it is helpful to prepare a study area boundary even though it is imperative to consider the greater context; in this case the Black Rock Riverside community as well as the Buffalo Niagara region. There are two boundaries that define the Black Rock Canal Park project.

Property Boundary

The first boundary to consider is simply the limit of the publicly-owned property. There are several individual parcels that comprise the property that combine to form what we will call the Property Boundary. Proposed physical improvements will take place within this boundary with some exceptions. The specific parcels within the Property Boundary include the Cornelius Creek Park property, the entry road right-of-way, and the boat ramp property. The boat ramp was conveyed to Erie County from the City of Buffalo in an agreement dated June 20, 2000 with a stated purpose, "...to further development of the site for park and recreation purposes available to all residents of Erie County and to promote access to the region's waterfront".

Study Area

The second boundary that is part of this project is the Study Area. The Study Area includes private lands that are in close proximity to the project boundary. This boundary defines the area that will be considered for improvements that can be done with the agreement of the land-owner by leasing the property or by outright purchase if it is important enough to the success of the project. In the event that a lease or purchase of adjacent lands is completed, that property will become part of the Property Boundary described above.



General Site Conditions

The future Black Rock Canal Park property is currently two adjoining properties – the Ontario Street Boat Launch and Cornelius Creek Park, which are separated by Cornelius Creek. Both properties are in a general state of disrepair and, considering their prominent location, receive little use. Both properties are linked by the Riverwalk, a waterfront multi-use trail that connects downtown Buffalo with Gratwick Park in North Tonawanda.

Ontario Street Boat Launch

This portion of the site consists of a large parking lot that is paved to all edges with only two small planters to break up the expanse. The west edge of the parking along the Niagara River has a sheet pile bulkhead topped by a railing that is broken is several areas. It is frequently used by anglers who like to be near their vehicles and by people in vehicles just enjoying the view of the Niagara. The boat launch ramp and parking area were renovated in 1990. The actual sloped boat launch ramp is in reasonable shape despite its age.

The Site

There is a small wood dock where the bulkhead turns east toward the boat launch that should be replaced since it is warped and does not connect with the adjacent grade.

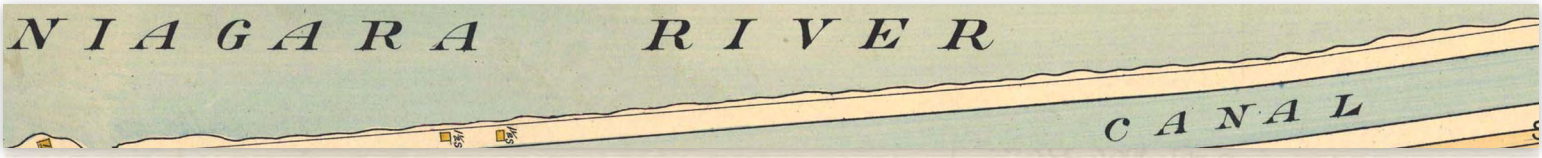
The building known as the “Snack Shack” or “Little Terks” is not open or occupied and has some signs of spray paint vandalism that has been painted over.

A quick visual inspection of the parking area shows that the paving seems to be stable and solid except immediately behind the bulkhead where it regularly sinks and is an on-going maintenance concern.

Part of the Ontario Street Boat launch is the access road known as the Riverside Access Road. This part of the site consists simply of a two-lane asphalt road, approximately 35’ wide, with a parallel parking lane on the west side. West of the road is a narrow (10’) strip of grass and a concrete walkway at the water’s edge about four feet wide with a metal pipe railing. This roadway terminates in a turnaround at the north end. In this area the Riverwalk runs along the shoulders of the riverside access road and is not separated from vehicle traffic.

Looking north along the access road, above, and south along the access road towards the boat launch, below.
Note the marked bike lanes of the Riverwalk and parking.

A view of the turn around at the north end of the access road.



Cornelius Creek Park

Like the boat launch, Cornelius Creek Park was renovated in 1990. That renovation included placement of the pedestrian bridge, walkways, railing and benches. Unfortunately that renovation did not do enough to encourage access and the park has been severely neglected in recent years. All benches and furnishings have been removed and the Riverwalk trail along the east edge of the park is buckled and heaved making it unsafe for users such as bicycles and skaters. The river's edge in this area is made up of very large stones that are carefully placed to form a roughly even slope surfaced. Other than Riverwalk users, the park gets very little use except for an occasional pedestrian walking along the river's edge.

Looking into Cornelius Creek park from the pedestrian bridge,

Looking across the pedestrian bridge from the boat launch parking area into Cornelius Creek Park

A view of the mouth of Cornelius Creek, the pedestrian bridge and Cornelius Creek Park from the Niagara River. The south end of the boat launch parking area is visible at the left side of the picture.

The Site

Cornelius Creek

Cornelius Creek is an urban creek that was piped underground in the early 1900s. It runs east, through Riverside to the park, where it emerges at the west end of the park entrance road. The creek divides the park before flowing into the NiagaraRiver. The banks are a mix of concrete walls, metal sheet pile and large rip rap stones.

The above graphic illustrates the historical alignment of the Niagara River shoreline, the Eric Canal (running north-south parallel to the Niagara River) and Cornelius Creek (running east-west) superimposed on a current aerial photograph. The Erie Canal followed the route of the I-190. Cornelius Creek emptied into the Erie Canal. The park generally occupies land that was created from fill since 1894.

Cornelius Creek is the discharge point of a combined sewer overflow (CSO) and has serious water quality problems. It is the largest of the 52 permitted CSOs in the City of Buffalo, handling about 20% of the total City-wide CSO flow. The area that it covers is about 5,000 acres and extends all the way to the SUNY at Buffalo Main Street campus. When the volume of untreated sewage is too much for the sanitary sewer system, sewage spills over a regulator weir/dam into Cornelius Creek. When the CSO does not spill, Cornelius Creek acts as a storm sewer collecting rain and snow melt runoff from the streets. The Buffalo Sewer Authority (BSA) and the DEC are called at times to contain and/or remove floatable debris and other contaminants and the creek has a strong sewer odor at times. In spite of this, it is occasionally used for fishing and by local teens that dive from the pedestrian bridge.

The future of a cleanup of Cornelius Creek is uncertain at this point. The BSA, which is responsible for the CSOs city-wide, is aware of the problem at Cornelius Creek, but currently does not have adequate funding to make corrections. The US Environmental Protection Agency (EPA) and the DEC have mandated the city to address the CSO problem and are negotiating a consent order with BSA as of the spring of 2010. Once the consent order is in place, BSA will establish a list of priority projects based on cost effectiveness and political direction.

Cornelius Creek emerges from below ground via a box culvert under the park entrance road, below.

Sheet Pile Wall

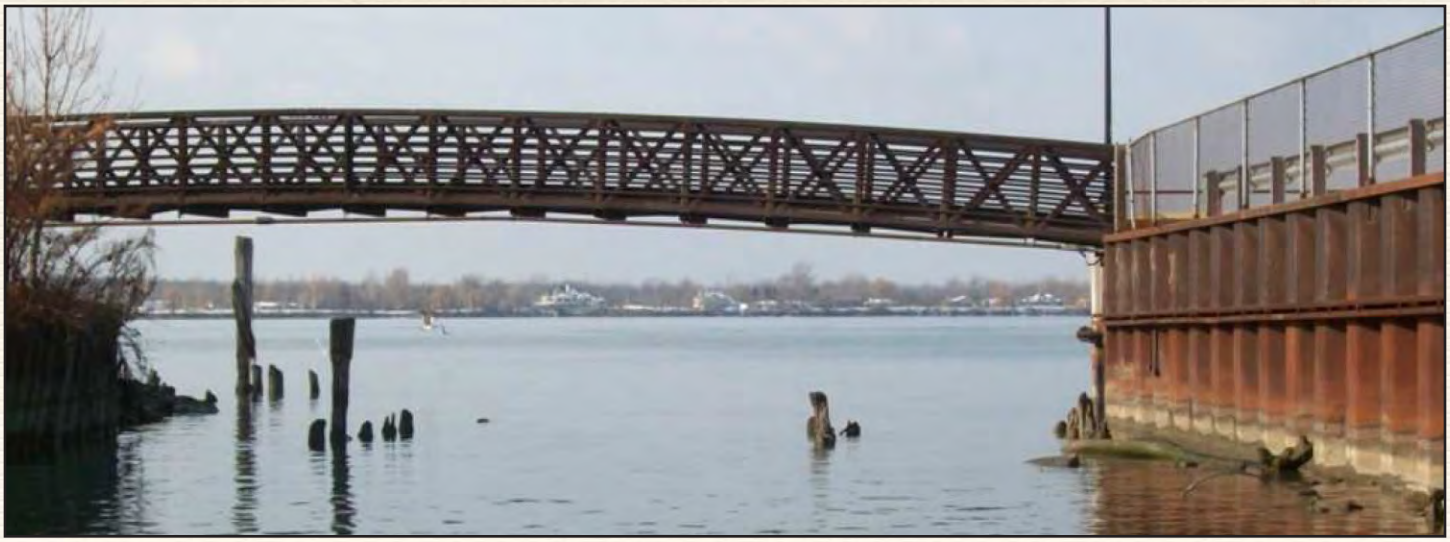
Engineers at Fisher Associates performed an above water visual inspection on December 8, 2009 to assess the condition of the sheet pile bulkhead at Black Rock Canal Park. The inspection was performed by both an engineer in a boat and an engineer walking along the top of the wall. The report indicates that the wall was generally in very good condition. An Above Water Inspection Report is included in the Appendix section of this report.

The wall consists of a Z-style 3/8 inch thick interlocked steel sheet pile cantilevered retaining wall measuring approximately 2,200 feet long. The sheet piles are generally capped using a steel channel and a concrete overlay. There is one section of wall near the boat launch that has some deflection but this appears to be an as-constructed condition and not the result of damage.

View of top of wall from north end of park looking south.

View of wall from parking lot looking north.

View of north creek wall and pedestrian bridge over mouth of Cornelius Creek.

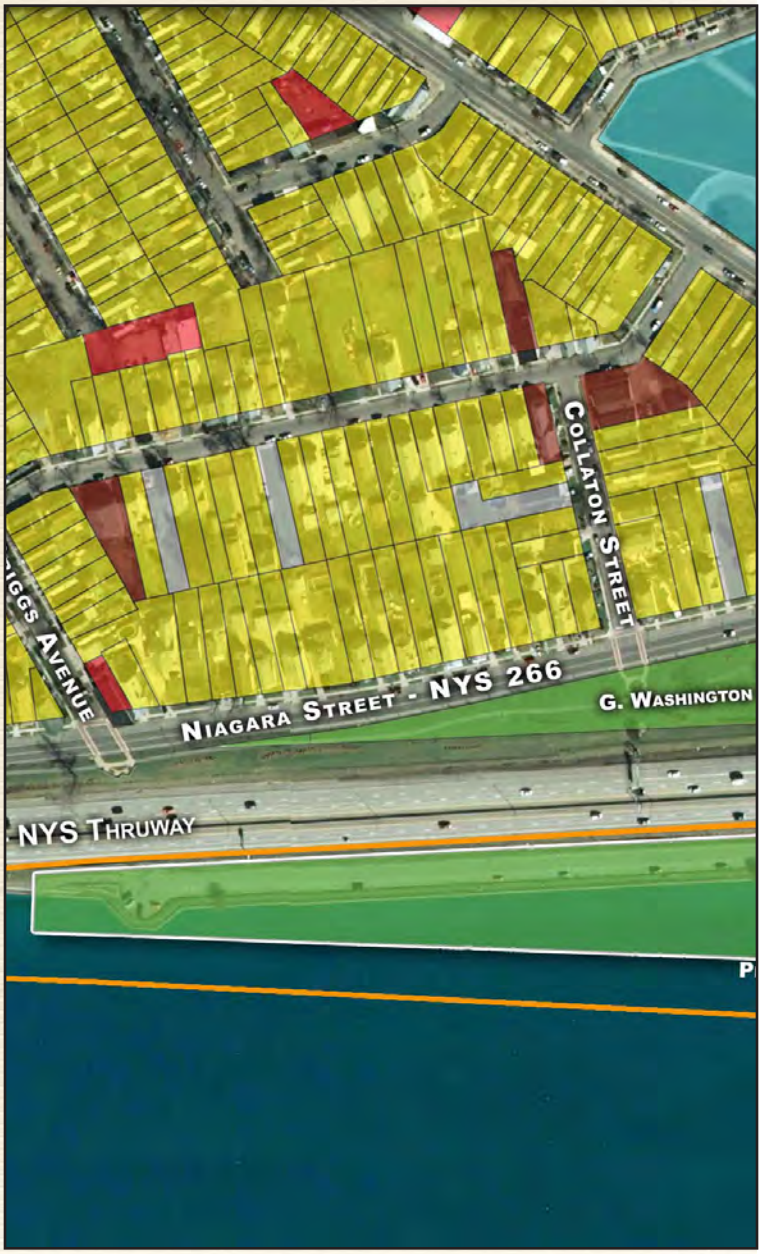


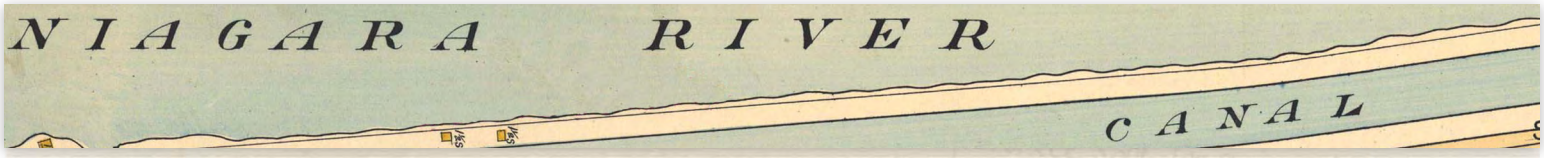
The Site

Surrounding Land Use

There are a variety of land uses around Black Rock Canal Park. Niagara Street(NYS Route 266) has predominately commercial uses in the vicinity of the park entrance, with a auto repair shop north of the park entry road and a Kwik Fill gas station to the south. On the opposite (east) side of Niagara Street, there is a commercial plaza with Tim Horton's, Advanced Auto and Family Dollar stores, among others. There are several vacant lots in the vicinity of the park's entry road that are likely to become more valuable once progress on Black Rock Canal Park begins. Outside the commercial area along the east side of Niagara Street is the Riverside neighborhood, which is comprised of mostly two story historic homes. And finally, south of the park site is Harry's Harbour Place restaurant and marina, which is a well known up-scale eatery. The marina is private and does not include transient slips for restaurant customers.

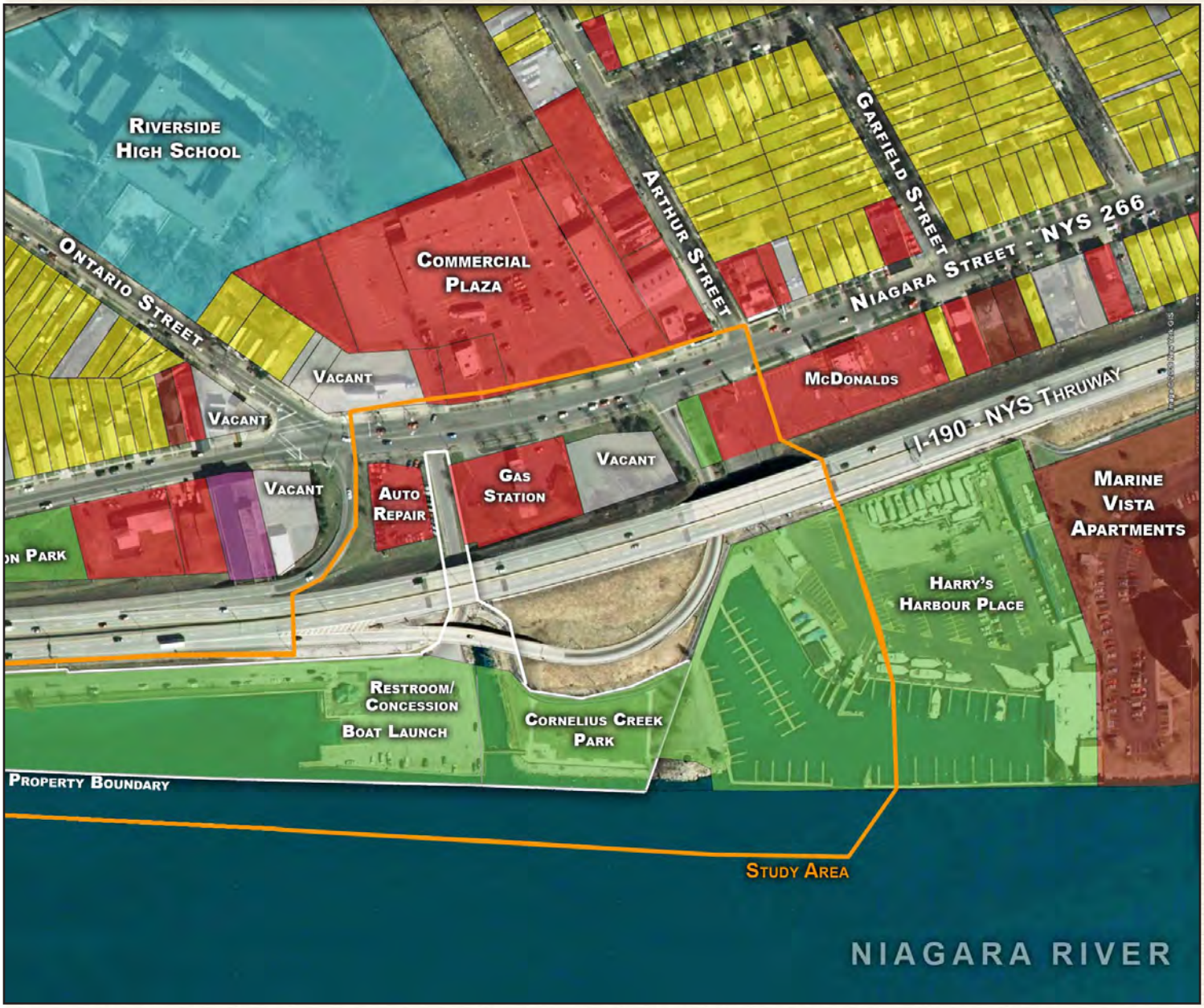
East of Niagara Street, behind the commercial plaza described above, is Riverside High School, which is undergoing a significant renovation during the writing of this report. The renovation, which is in the $30-$40 million range will create a state of the art facility and will feature a school for entrepreneurship. The project was featured in a 2008 Architectural Record Article titled Schools of the 21st Century available online at http://archrecord.construction.com/schools/0701_CH2_buffalo.asp. The article states that, "School construction projects provide an opportunity for the community to assist in moving both the school district and the community forward. Each brick laid represents a building block for both the school and region's future." The community of Black Rock/Riverside is anticipating a renewed interest in the area and an influx of population as a result of the high school project.





Land Use Legend

- Community Services
- Industrial
- Apartments
- Residential
- Vacant
- Commercial
- Recreation



Circulation and Access

Vehicle Access

While the Black Rock Canal Park site is highly visible to travelers on I-190, it can be difficult to locate from Niagara Street because its entrance road is not obvious. The entrance road is off Niagara Street between a Kwik Fill gas station and an auto repair lot and is further bracketed by on/off ramps for I-190. A visitor to the parking using I-190 southbound would exit at the Ontario Street ramp onto Niagara Street and turn left into the park; this provides direct, easy access to the park. Visitors traveling northbound on I-190 would exit at Austin Street onto Niagara Street and continue about one half mile north to the park.

The understated and poorly marked park entrance road leads west from a three-way intersection on Niagara Street.

Boat Access

In this area, the Niagara River is an ideal location for a boat launch or docks due to the slower currents. A large eddy is present offshore causing waters in front of the Ontario Street Boat Launch to curl around to the south, flowing "upriver". This slower water allow boats to pull into the launch area safely without having to gauge water speeds. One minor difficulty for boaters in this area is that the current, combined with prevailing winds, will push floating debris toward the boat launch. This situation is likely to continue to be a minor problem.

Currently, the site includes a concrete boat launch and a paved area for trailer parking. A few short term dockage spots are available for boaters to tie up their boats while they park their trailers. There is no charge for users to launch here The nearest public launch to the north is near Aqua Lane Park approximately two miles away or to the south at the Erie Basin Marina, about seven miles away.

Traveling west along the entrance road takes the park user under a series of I-190 overpasses. The entrance road bends to the right towards the parking area, while the view continues down Cornelius Creek.

Bicycle Access

The Black Rock Canal Park property is fortunate to be located along a major bicycle trail; the Riverwalk, which extends from the waterfront in downtown Buffalo to Gratwick Park in the City of North Tonawanda. In the City of Tonawanda there is a link that connects to the Tonawanda Creek Canalway Trail, which extends for ten miles to the east to New Road, near Transit Road in the Town of Amherst. A branch of connecting bike trail also crosses the south and north Grand Island Bridges, connecting via a signed bike route to the City of Niagara Falls. Just over a mile south of Black Rock Canal Park, the Scajaquada Creek Trail connects the Delaware Park area with the Riverwalk trail. There are plans to fill in some missing sections of these trails to complete an even greater network of bike trails and routes that will connect with Black Rock Canal Park and provide an alternative to vehicle travel for Erie and Niagara County residents.

from the Greater Buffalo Niagara Regional Transportation Council
2009 Bicycle Route Guide

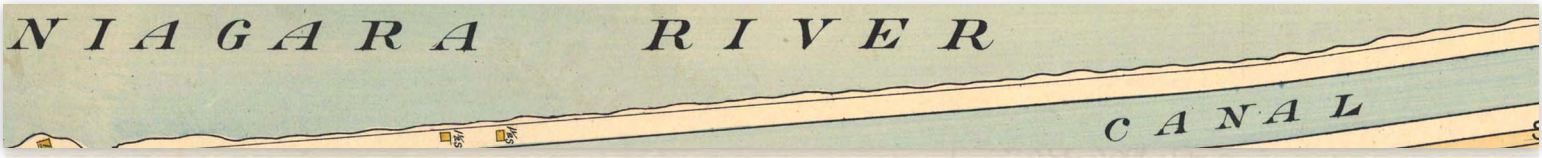
The Site

Views

One of the most compelling characteristics of the Black Rock Canal Park site is the view over the Niagara River and its importance cannot be over-estimated. Always changing, the open views across the water connect park visitors and Thruway users to the Niagara River, Lake Erie and the weather of the day; the river can be calm and smooth, choppy from winds, shrouded in fog on a cool morning, or cluttered with ice chunks. Buffalo-area commuters have been known to alter their route and drive the southbound I-190 in order to experience the view of the Niagara over the Black Rock Canal Park site.

There are other views, both good and bad, that should be considered when planning Black Rock Canal Park. Specific views are shown on the View Analysis map and are discussed below:

1. East from the Park – This view shows the neighborhood that is typical of the Black Rock and Riverside neighborhoods beyond I-190.
2. View of Cornelius Creek from the Pedestrian Bridge
3. View South in the Park – This view is typical of the view, both south and north, from the Riverside Access Road. It shows the expanse of asphalt versus the narrow strip of green to the right.
4. View of the Entrance – This is the view from the sidewalk on the opposite side of Niagara Street looking west to the narrow entry road.
5. View of Entrance – This is a view from the entrance road taken just east of the I-190 overpass. This is a view that all park visitor will experience. The entrance road turns to the right while the view continues down Cornelius Creek.
6. View West at Boat Launch Parking – This view from the parking area near the boat launch is often experienced by fisherman that frequent this park. Cars are often parked at the site with people inside just enjoying the view at lunchtime or watching the sunset.
7. View to the Park from the Niagara River – This view is looking east toward the boat launch and parking area from a boat on the Niagara River.


NIAGARA RIVER
CANAL


1

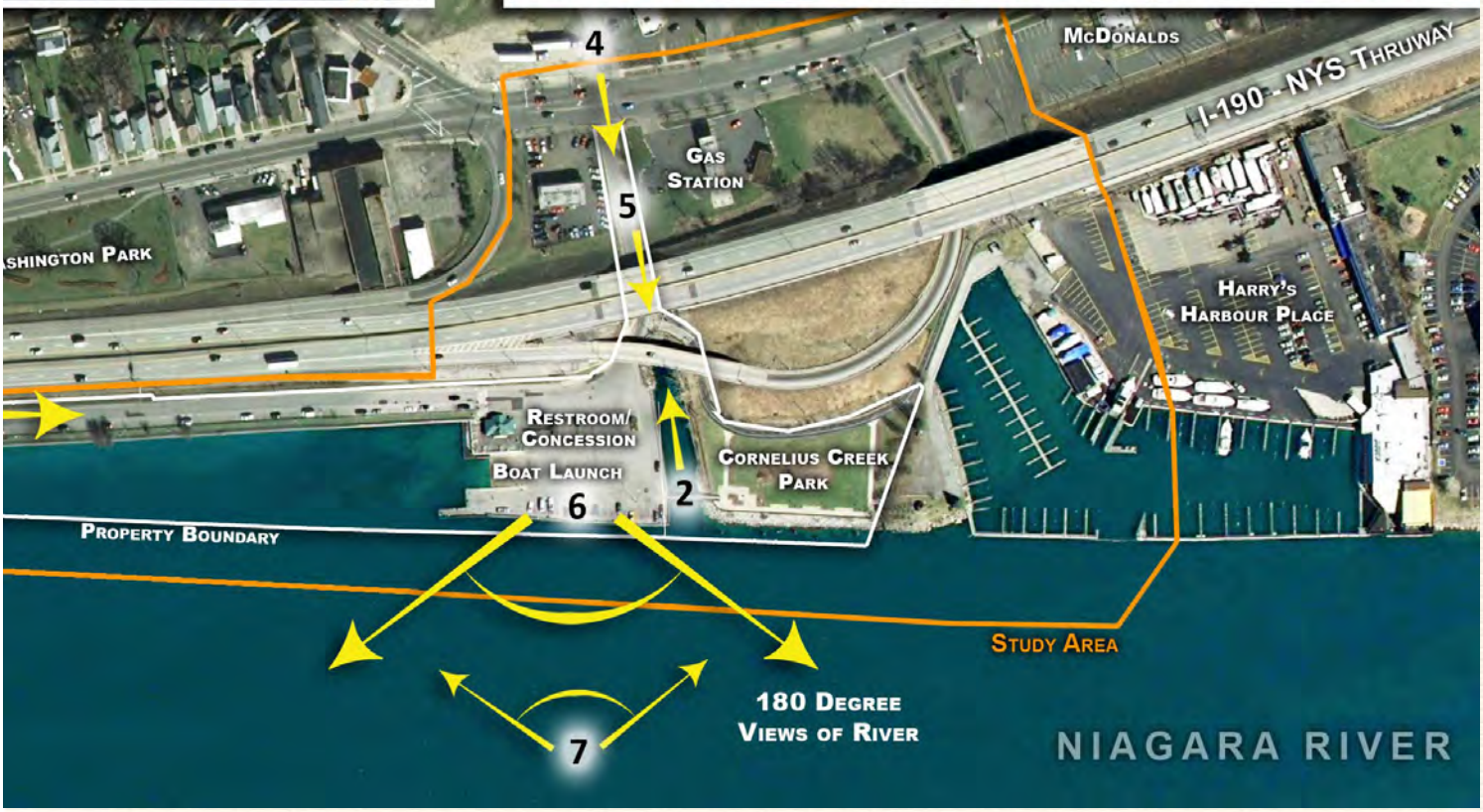

VIEW OF CREEK FROM PED. BRIDGE
2


VIEW OF ENTRANCE
4

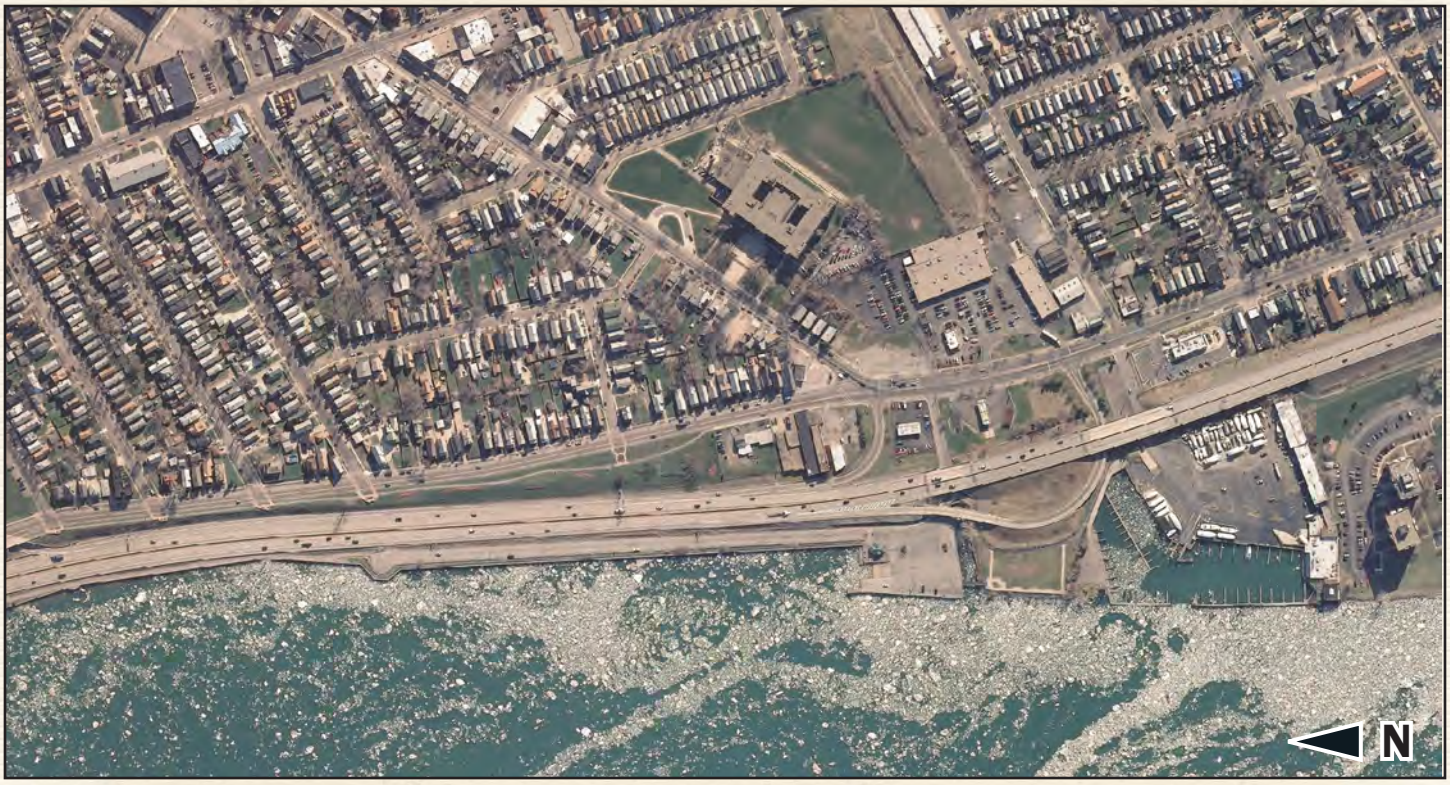

VIEW OF ENTRANCE
5


6


VIEW TO PARK FROM NIAGARA RIVER
7


4
5
GAS STATION
McDONALDS
I-190 - NYS THRUWAY
SHINGTON PARK
HARRY'S HARBOUR PLACE
RESTROOM/ CONCESSION
BOAT LAUNCH
6
2
CORNELIUS CREEK PARK
PROPERTY BOUNDARY
STUDY AREA
180 DEGREE VIEWS OF RIVER
7
NIAGARA RIVER

The Site



This aerial photo illustrates how ice, or other floating debris, that travels down the Niagara River is blown by the prevailing wind against the eastern shore of the river.

Wind

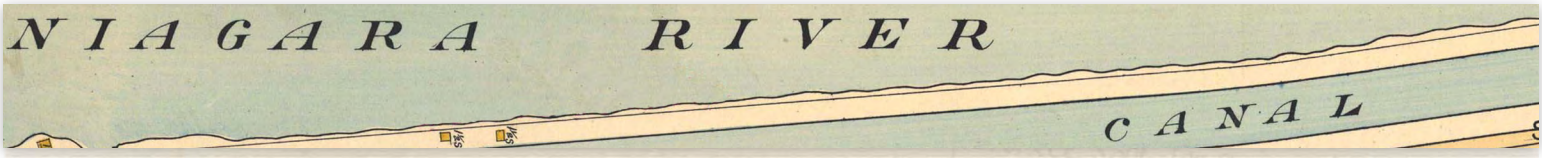
The prevailing wind direction is from the southwest. This is readily apparent to the casual observer who need only look at the condition of the existing trees that lean in a northeasterly direction. The prevailing wind direction combines with the direction of water flow (described below) pushing floating debris toward the boat launch. Wind can be extremely strong in this area due to the expanse of open water down-wind.

Another effect of the strong winds are the sieches. A sieche has been defined as rises and drops in Great Lakes coastal water levels caused by prolonged strong winds that push water toward one side of the lake, causing the water level to rise on the downwind side of the lake and to drop on the upwind side. When the wind stops, the water sloshes back and forth, with the nearshore water level rising and falling in decreasingly small amounts on both sides of the lake until it reaches equilibrium. A sieche will cause water levels at the Park site to reach their highest levels during periods of prolonged high velocity southwesterly winds.

Water Conditions

Water Flow

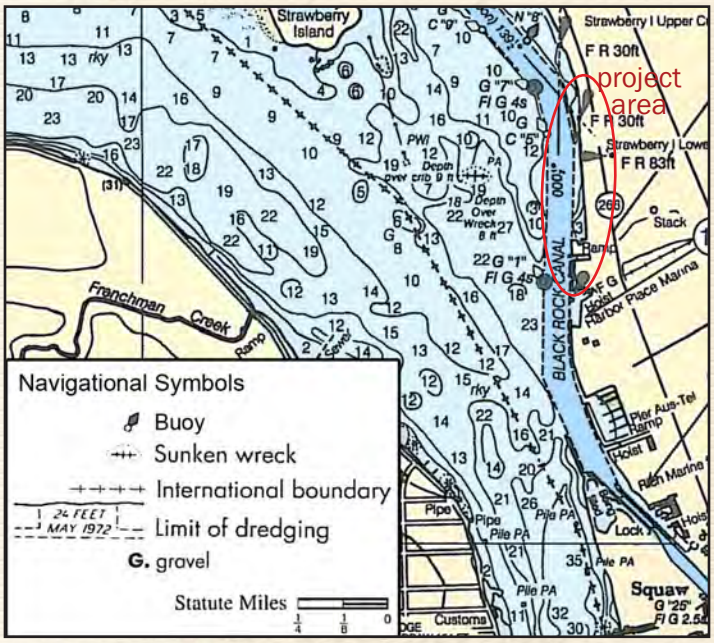
The Niagara River forms a large eddy offshore from the Ontario Street Boat Ramp that swirls around causing the water along the bulkheads to flow in the upstream direction. A similar eddy that formed behind the natural black rock formation and created a natural, calm harbor was the reason for the location of the original Village of Black Rock. This eddy also has a less desirable effect of collecting floating debris such as seaweed, trash and, in the winter, ice. The debris has been a problem at the boat launch necessitating frequent cleaning or, when it is at its worst, restricting the ability to launch boats.



Water Depth

The water close to the bulkheads is generally shallow, particularly north (downstream) of the boat launch where the bottom is easily visible when the water runs clear. However, there is a ship channel not far offshore that has a depth of approximately twenty feet and, according to nautical charts, is between 200 and 350 feet in width. Local, long-time diver and Black Rock Canal Park Advisory Committee member, Robert Niemiec, has been diving in the Ontario Street boat launch area for over fifteen years and has the following observations regarding the water and underwater conditions:

- Very little underwater debris is from recent sources
- The majority of debris is Styrofoam worm containers
- Underwater plant life has been returning steadily over the last 10 years
- The fish population is increasing – large bass are present
- The crayfish population is also increasing
- The water is generally clearer than in years past



Water depths and nautical points of interest
chart adapted from Richardsons' Chartbook + Cruising Guide, Lake Erie Including Lake St. Clair and Niagara River, 5th Edition

Water Quality

Generally, the water in the Niagara River at the Ontario Street Boat Launch runs clean and clear, presenting an attractive scene. The exception to this is when either a strong wind mixes the water with sediments, increasing the turbidity, or when a rainstorm dumps sediments and sewage overflow into Cornelius Creek, Scajaquada Creek or the Buffalo River, discoloring the water.

Submerged aquatic plants in the Niagara River
Underwater photo taken offshore from boat launch parking, courtesy Robert Niemiec, Black Rock Canal Park Steering Committee

Cornelius Creek, however, has serious water quality problems. As explained previously, a major CSO can spill untreated sewage into the creek when stormwater overwhelms the capacity of the sanitary sewer system. When the CSO spills into the creek, a strong sewer odor is emitted and the water becomes cloudy. Additionally, an oily residue can also been seen on the creek surface during periods of poor water quality. A floating boom was placed across the creek by the BSA to contain oil and floatable materials before they enter the river. Gary Hall of Harry's Harbour Place, adjacent to the park, has reported that oils and scum have floated from the creek into their marina, causing the need to clean the boats moored there. The DEC is prepared to clean-up floating material with vacuums or oil-absorbent booms when notified of a problem and, for this, they will need continued access to the creek. However, DEC is not able to clean up contaminants that are in solution, such as untreated sewage. John Otto with the DEC reports that, in 2009, there were no clean-ups necessary due to the lack of major storm events.

According to numerous sources, the solution to the

water quality problem at Cornelius Creek is not likely to be solved in the near future. John Otto reported that an estimated 25% of the runoff from the City of Buffalo flows into Cornelius Creek. Jim Egan with the BSA reported that DEC and EPA have mandated the City to fix their CSO problem city-wide, which will cost hundreds of millions. BSA is currently in negotiations with DEC and EPA to create a workable/ affordable plan to fix the CSO problem. With the City's aging infrastructure of interconnected storm and sanitary sewers, any improvement will likely be very slow and gradual.

Flood Levels

The upper Niagara River is prone to sudden flooding due to wind-driven seiches and to ice jams during the winter and early spring. Due to the river's role in hydropower production, the New York Power Authority is assigned the lead responsibility for flood-risk management. Therefore, the Federal Emergency Management Agency (FEMA), which typically establishes 100-year flood elevations throughout the US, does not maintain flood elevation data for the Niagara River. If critical services (such as law enforcement agencies) are to be located in the park building, it will be necessary to ensure that the building and park ingress/egress are not inundated in a flood event.

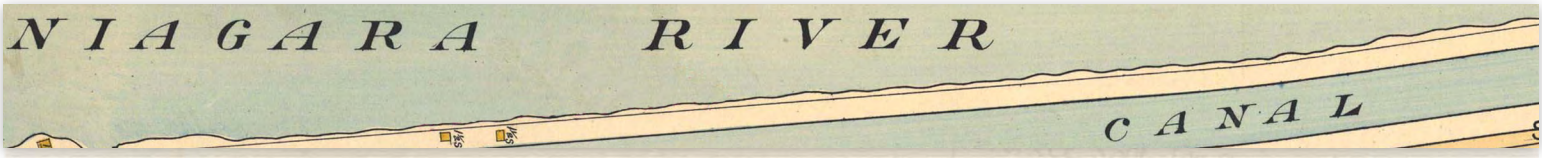
One of the tasks undertaken during the Feasibility Analysis was to determine the maximum historical flood level at the site. Historical water level data was collected from several of the water level gauges along the river nearest the park. The water level gauges include one upstream gauge at the Black Rock Canal lock, one gauge directly across the river at Frenchman's Creek, and one downstream gauge at the Niagara Intake. An analysis of the recorded data from these gauges, as well as conversations with local regulatory agencies familiar with flooding events on the river, revealed several dates of highest recorded water levels. These dates are: November 10, 1975; December 2, 1985; November 4, 2001; January 30, 2008; and October 7, 2009. The water levels at these gauges were compared to the water level at the park on two known occasions, to calculate the typical water level difference between these gauges and the park. Using the calculated water level difference between the gauges and the park, it was possible to estimate the water level at the park on the established dates of highest water levels. The resultant estimate of the flood elevation at the park is approximately 571 feet above sea level. (See Appendix 6 for water level data and estimates.) At this level, the river would reach the top of the boat launch ramp and inundate a small area of asphalt between the ramp and the river, but the remainder of the site would not be flooded.

Typical water level at the boat launch, above. High water level during a flood event, below.

Soils

Subsurface soil conditions at Black Rock Canal Park are not well known since nearly the entire area has been filled during the construction of I-190. Soil borings have not been done as part of this project but may be necessary, along with a geotechnical analysis, if structures are to be built on the site. Ideally, the planning and location of any structures should be completed so that boring can be located at the exact site of the proposed structure. A cursory examination of the road and parking areas shows no sign of settling or unstable soils and it is likely that the subgrade will be suitable for the construction of structures.

The presence of topsoil suitable to grow plants is limited at the site. Areas that are planned for greenspace should have topsoil imported in order to greatly improve the chances of success for the plantings. Another factor that must be considered is that road salt from I-190 blows onto the site and percolates into the soil (as well as blowing directly onto plants). Good subsurface drainage in planted areas may help leach salt from the soils to prevent its accumulation.



Utilities

All of the needed utilities are available at the project site but will need to be evaluated by an engineer before being re-used. The locations of utilities are based on a topographic survey of existing surface features conducted by Fisher Associates in the fall of 2009, combined with record plans for a series of improvements to Cornelius Creek Park, Riverwalk and the Ontario Street Boat Launch Site, prepared by Tallamy, Van Kuren, Gertis and Associates in 1990.

- Sanitary Sewer – There is a four inch diameter, ductile iron, sanitary sewer force main that serves the restroom/concession building at the site. The line originates at the force main pump inside the restroom/concession building, heads south for approximately 140 feet, turns 45 degrees and proceeds southeast for approximately 180 feet before turning 45 degrees and proceeding approximately 80 feet east under the park entrance road before ending at a manhole just east of the I-190 bridge.
- Water – There is a two-inch, copper, domestic water line to the restroom/concession building. The line runs from the building, paralleling the entire length of the sanitary line with a separation of 10 to 15 feet. The water line runs beyond the end point of the sanitary line, continuing eastward under the southern edge of the park entrance road before tying into an eight inch water main along the west edge of Niagara Street.
- Electric – Electricity is supplied to the building and overhead lights from a 200 amp service riser southeast of the restroom concession building on the east side of the park road. A conduit runs from the service riser to a distribution panel in a planter in the parking lot, directly south of the building. From the panel there are a variety of conduits that feed various portions of Cornelius Creek Park and the boat launch area. Since the installation of the panel in 1990, there have been some modifications to the electrical system; in particular, an overhead line has been run to some of the lights in the parking lot.

Zoning

According to the Zoning Ordinance for the City of Buffalo, the Cornelius Creek Park site is classified as M1 Light Industrial; the Ontario Street Boat Launch and Riverside Access Road do not have an assigned zoning classification, but are bordered by the M1 Light Industrial and R3 Dwelling Districts. The park site is also within the Niagara River Coastal Special Review District, which ensures that a proposed development, if it does not already have an approved development plan, is reviewed by the City Planning Board.

Site Opportunities and Constraints – A Summary

There are numerous features that make this site a worthy candidate for a significant upgrade. It is highly visible from the Niagara Section of the New York State Thruway (I-190) with its 69,000 vehicles per day. For visitors from the north, this site is the first piece of public waterfront they view, making it a gateway into the City of Buffalo and a statement on the quality of the community, or lack thereof. The presence of the Riverwalk trail provides a convenient form of access to the site for pedestrians and bicyclists. The site has a rich history with the former presence of the Erie Canal, the shipwreck offshore and with the pilings from the canal-era fishing shanties still present offshore. And one of the most important attributes of the site is, of course, the waterfront which offers scenic, ever-changing views of the Niagara River and a launch for boaters in relatively calm waters.

There are, however, a number of challenges that should be addressed when planning upgrades to the site. There is an expanse of featureless asphalt paving and a lack of greenspace. Park visitors sometimes report being concerned about security due to the isolation of Cornelius Creek Park, the boarded up restroom/concession building, the vandalized railing and the trash scattered about. Cornelius Creek, located in the widest portion of the site has serious water quality problems, since it the largest combined sewer overflow (CSO) in the City of Buffalo. In spite of these challenges, the site is currently used extensively by anglers and those who come to enjoy the view.

7.0 Implementation

Implementation Requirements

The following is an analysis of federal, state and local requirements for the implementation of the Black Rock Canal Park Master Plan.

Federal Requirements

The Corps of Engineers has jurisdiction over all waters of the United States and permits are required for all projects which involve work in the waters of the United States. There are two types of federal permits that may be required:

Section 10 of the Rivers and Harbors Act approved March 3, 1899, prohibits the unauthorized obstruction or alteration of any navigable water of the United States. The construction of any structure in or over any navigable water of the United States, the excavating from or depositing of material in such waters, or the accomplishment of any other work affecting the course, location, condition, or capacity of such waters is unlawful unless the work has been recommended by the Chief of Engineers and authorized by the Secretary of the Army. The instrument of authorization is designated a permit.

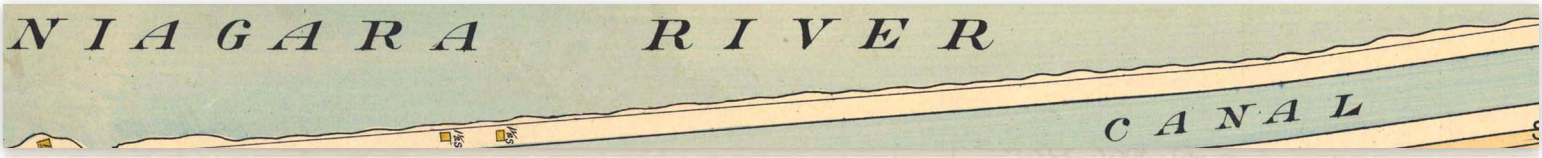
Section 404 of the Clean Water Act authorizes the Secretary of the Army, acting through the Chief of Engineers, to issue permits, after notice and opportunity for public hearing, for the discharge of dredged or fill material into the waters of the United States at specified disposal sites. The selection and use of disposal sites will be in accordance with guidelines developed by the Administrator of EPA in conjunction with the Secretary of the Army and published in 40 CFR part 230. If these guidelines prohibit the selection or use of a disposal site, the Chief of Engineers shall consider the economic impact on navigation and anchorage of such a prohibition in reaching his decision. Furthermore, the Administrator can deny, prohibit, restrict or withdraw the use of any defined area as a disposal site whenever he determines, after notice and opportunity for public hearing and after consultation with the Secretary of the Army, that the discharge of such materials into such areas will have an unacceptable adverse effect on municipal water supplies, shellfish beds and fishery areas, wildlife, or recreational areas.

New York State Requirements

Protection of Waters Permit – This permit is required for disturbing the bed or banks of a “protected stream” (disturbance may be either temporary or permanent in nature); a protected stream is one with a classification and standard of C(T) or higher. The Niagara River in the project vicinity is classified as AS, which is a higher classification than C(T)and indicates a best usage for a source of drinking water, swimming and other recreation, and fishing. This permit is also required for the excavation or placing of fill in navigable waters of the state, below the mean high water level, including adjacent and contiguous marshes and wetlands, with a water classification and standard of C or D.

This permit is a joint permit application that is filed with the New York State Department of Environmental Conservation (DEC), the US Army Corps of Engineers (USACE) and several other state agencies; the Office of General Services (OGS), and the Department of State (DOS). The permit application must include detailed plans of the work proposed for the streambed and banks. This means that the design of the project must be resolved before the application can be filed. Though the requirements for the permit are not onerous, the review time can be lengthy making it important to file as early as possible once the design is resolved.

State Environmental Quality Review (SEQR) – The basic purpose of SEQR is to incorporate the consideration of environmental factors into the existing planning, review and decision-making processes of state, regional and local government agencies at the earliest possible time. To accomplish this goal, SEQR requires that all agencies determine whether the actions they directly undertake, fund or approve may have a significant impact on the environment, and, if it is determined that the action may have a significant adverse impact, prepare or request an environmental impact statement. Since there is no master plan for the ultimate buildout of the park, SEQR must be conducted in pieces. This approach must be done with care since it can be viewed as “segmentation” which is dividing a project into smaller pieces in order to make the impact seem smaller. Conducting SEQR on the initial improvements proposed should not be viewed as segmentation since the ultimate buildout is not known



and since the initial improvements are a "stand alone" project - that is, these improvements do not depend on subsequent actions to complete the project.

State Pollutant Discharge Elimination System (SPDES) – New York State law requires a permit for constructing or using an outlet or discharge pipe (referred to as a "point source") that discharges wastewater into the surface waters or ground waters of the state. The term wastewater in this context includes stormwater. If the stormwater system at Black Rock Canal Park has a new outfall directly into the Niagara River or Cornelius Creek, then a SPDES permit will be required. The DEC has a website describing this permit and the requirements at http://www.dec.ny.gov/permits/6054.html.

Stormwater Permit for Construction Activities - This DEC-administered permit will be required for construction work at Black Rock Canal Park since it applies to construction activities that disturb one or more acres of land. The permit regulates stormwater quantity and quality both during and after construction. The permit requires best management practices, which are designed to ensure that the site's post-construction runoff quantity is equal to, or less than, the pre-construction runoff rates - If new impervious surface is added to the site, the increased runoff must be mitigated on-site using measures such as on-site stormwater retention. In addition, the permit requires a stormwater pollution prevention plan (SWPPP) to reduce sediment runoff and improve the quality of stormwater. Since the City of Buffalo is a regulated MS4 (Municipal Separate Storm Sewer System), the City must review the SWPPP and issue a MS4 SWPPP Acceptance Form which gets forwarded to the DEC along with a Notice of Intent. Measures to control stormwater pollution during construction include silt fences (or similar) at the down-slope edges of the construction area and around catch basins, etc. Post-construction stormwater quality improvement measures may include directing runoff through plant-lined swales or through sand or gravel areas to provide filtration, or installing specially designed catch basins that trap both sediment and floatable contaminants.

New York State Department of State (DOS) Federal Consistency Assessment - Since the project site lies within a designated coastal zone, any federal action, such as the review of the Protection of Waters Permit (described above), would require a Federal Consistency Assessment. NYSDEC would forward the permit application to the DOS for a review to make sure that the proposed action is consistent with coastal policies.

Local Requirements

Road Cut Permit – This permit will be required by the City of Buffalo Department of Public Works for disturbance to the park entrance road off Niagara Street. In the case of the Black Rock Canal Park project, there may need to be a gas line installed that would necessitate the road cut. This permit would be obtained just prior to construction by the project contractor.

Plumbing Permit – A permit may be needed to use the water and wastewater lines since the volume of flow may be different than the existing design rate. This permit would be obtained from the Erie County Water Authority by the project contractor.

Funding

Initial Improvements Funding

Monies from a variety of sources has been grouped into a fund for initial improvements to Black Rock Canal Park. Those funds are:

Environmental Protection Fund/NYS Department of State	$500,000
NYS Canal Corporation	$100,000
Erie County	$ 50,000

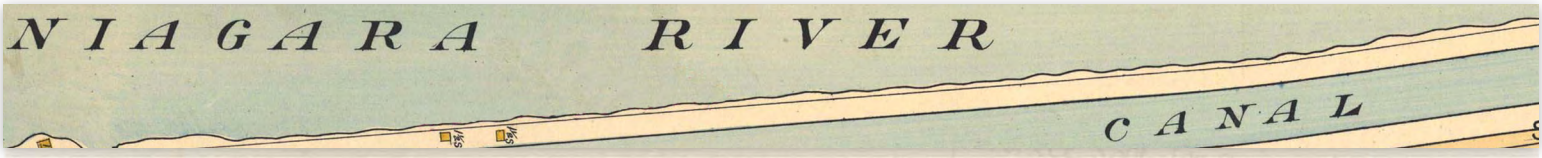
*Additional funding has been allocated to the Black Rock Canal Park Project from New York State Multimodal Transportation

New York Power Authority Funding via Niagara Greenway Process

The Niagara River Greenway Commission determines if a project is consistent with the Niagara River Greenway Plan. If an action is determined to be consistent, funding is distributed by the various Greenway Standing Committees (in the case of Black Rock Canal Park, the Erie County Standing Committee). Black Rock Canal Park should be a strong candidate for funding from this source. Once approved for funding, the actual funds are available the following year - in this case if Black Rock were approved for funding in 2010, funds would not be available until 2011 making this funding source a strong possibility for phase 2.

Other Potential Funding Sources

Other funding sources commonly used for waterfront parks is Environmental Protection Funds (EPF) that, in New York State, is administered by the NYS Department of State. The project is located within a designated coastal zone making it a prime candidate for these funds.



Appendices

Appendix 1

Consistency with Regional Plans

The Feasibility Analysis includes a review of relevant local and regional planning documents to ensure that the design of Black Rock Canal Park is consistent with the goals and recommendations of these plans. The following plans have been reviewed for consistency, which is summarized on the following pages:

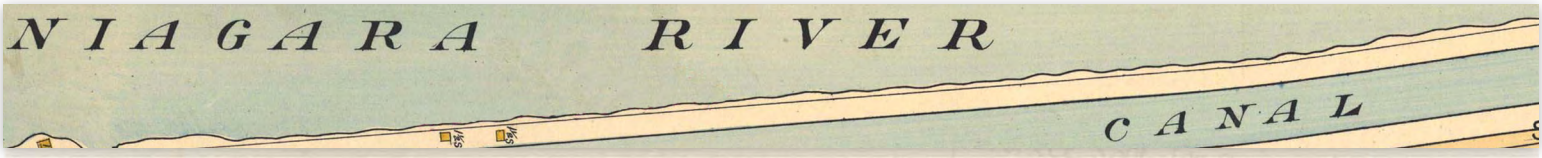
- *City of Buffalo Comprehensive Plan (2006)*
  - Documents incorporated into the Comprehensive Plan by reference:
  - *Queen City in the 21st Century: Buffalo LWRP (2007)*
  - *Queen City Waterfront: Buffalo Waterfront Corridor Initiative (2007)*
  - *The Olmsted City – The Buffalo Olmsted Park System: Plan for the 21st Century (2008)*
  - Good Neighbors' Planning Alliance Neighborhood Plans, Black Rock – Riverside Good Neighbors' Planning Alliance
    - *Building a Neighborhood of Choice: A Neighborhood Plan for the Riverside Planning Community (2007)*
    - *Historic Black Rock: War of 1812 Bicentennial Community Plan (2008)*
- *Erie County Parks System Master Plan (2002)*
- *Niagara River Greenway Plan and FEIS (2007)*
- *Erie Canalway National Heritage Corridor Preservation and Management Plan (2006)*

City of Buffalo Comprehensive Plan (2006)

The Buffalo Comprehensive Plan (2006) is a physical land use plan for the City of Buffalo. The Plan outlines four key principles and seven policies for guiding the City's development priorities and investments.

The Comprehensive Plan is driven by four key principles that help to identify future development priorities. The principles are: Sustainability; Smart Growth; and Fix the Basics, Build on Assets. The improvements to Black Rock Canal Park reinforce these principles. Elements of the park design contribute to the *sustainability* of the City through restoration the site's physical environment, reduction of stormwater runoff, promotion of energy conservation through green building design, development of waterfront resources, strengthening the Black Rock – Riverside neighborhood, and improvements to water quality. The Comprehensive Plan calls for the City to adopt ten basic principles of *Smart Growth*. The community-driven plan for Black Rock Canal Park contributes directly to the fifth Smart Growth principle: foster distinctive, attractive communities with a strong sense of place. The final two key principles of the Comprehensive Plan call on the City to fix the *basics and build on assets*. The Plan identifies the Cities assets as our Olmsted parks and parkways, our Joseph Ellicott city plan, our great waterfront, prodigious infrastructure, great public institutions of education, health care, art and culture, affordable housing and strong neighborhoods, and most of all the civic capital of active citizens and friendly neighbors. The plan for the Black Rock Canal Park builds upon the city's assets by providing improved connection between the Olmsted Parks, providing improved access to and amenities along the waterfront, strengthening the physical and social fabric of the neighborhood, and capitalizing on the energy, interest and input of the neighborhood's residents in the development of the park.

Seven policies were derived to meet the key principles of the Comprehensive Plan. The policies state that Buffalo must: (1) deliver quality public services, (2) maintain public infrastructure as fundamental to economic growth, environmental protection, and community development, (3) transform Buffalo's economy as a basis for revitalization, (4) reconstruct the schools, (5) rebuild neighborhoods, (6) restore Olmsted, Ellicott and the waterfront, (7) and protect and restore the urban fabric.



The Black Rock Canal Park reinforces these policies. The park is part of the city's municipal infrastructure; the proposed improvements provide opportunities to protect the environment and foster community development and economic growth. The park will improve the quality of living in Black Rock – Riverside, an important step in rebuilding Buffalo's neighborhoods. The park is also a key component in the city's connected system of parks and parkways, linking both to a greener and more accessible waterfront. Additionally, the proposed interpretative components of the park help to protect and restore the urban fabric by educating park visitors about the site's heritage and historical significance.

The Land Use Concept within the Comprehensive Plan identifies three Strategic Investment Corridors. Black Rock Canal Parks lies within the Waterfront/Tonawanda Corridor. The Plan emphasizes that a green setting and restored river and buffer zone, which the improvements to Black Rock Canal Park provide, will be beneficial to the new and existing enterprises that are targeted for these Corridors.

The Comprehensive Plan also emphasizes the importance of the Ellicott street plan and Olmsted park system. The location of Black Rock Canal Park along Niagara Street (one of Ellicott's radial streets), the Niagara River, and the Riverwalk (a pedestrian and bicycle path that connects the Olmsted parks and other parks along the Buffalo-Niagara waterfront) makes the park an important component of the physical structure and character of the city. The Plan states that repairs and improvements to this structure can help leverage other investments important to reversing Buffalo's decline. Specifically, the Plan calls for the redevelopment, from end to end, of each of the radial streets that emanate from Ellicott's original radial and grid plan, including Niagara Street. According to the Plan, appropriate improvements include paving, landscaping, trees, traffic calming, and redevelopment of properties along the radials. The plan for Black Rock Canal Park proposes such improvements to Niagara Street at the park's entrance.

The Comprehensive Plan incorporates by reference several other planning documents that are supported by the proposed improvements at Black Rock Canal Park. These include the City of Buffalo Local Waterfront Revitalization Plan (LWRP), the Buffalo Waterfront Corridor Initiative, the master plan for the Buffalo Olmsted Park System, and the community/neighborhood plans of the Good Neighbors Planning Alliance.

Queen City in the 21st Century: Local Waterfront Revitalization Program (LWRP) (2007)

The City of Buffalo's LWRP is a strategy to coordinate local, state and federal actions to achieve Buffalo's goals for its waterfront. The vision for the city is to reestablish the waterfront as a thriving and vital part of the community and a destination for tourism and economic activity. While the past focused on the waterfront as a center for industrial and maritime operations, the future use of this area is envisioned to include a mix of uses, with parks, recreation and tourism attractions blending with businesses, marine commercial uses and light manufacturing activities.[1]

The LWRP includes thirteen broad policies that stipulate local action to protect environmental, historic, and visual characteristics of the waterfront, promote appropriate economic uses, and expand public waterfront access. Many of these policies are directly applicable to Black Rock Canal Park. The following is a list of the LWRP policies.

Developed Waterfront Policies

- Foster a pattern of development in the waterfront area that enhances community character, preserves open space, makes efficient use of infrastructure, makes beneficial use of a waterfront location, and minimizes adverse effects of development (protecting the quality of life in Riverside and Black Rock is specifically mentioned in the details of this policy)
- Preserve historic resources in the waterfront area

1 City of Buffalo Local Waterfront Revitalization Program. IV-2 p.

- Enhance visual quality and protect outstanding scenic resources

Natural Waterfront Policies

- Minimize loss of life, structures and natural resources from flooding and erosion
- Protect and improve water resources
- Protect and restore ecological resources, including significant fish and wildlife habitats, wetlands and rare ecological communities
- Protect and improve air quality in the waterfront area
- Minimize environmental degradation from solid waste and hazardous substances and wastes

Public Waterfront Policies

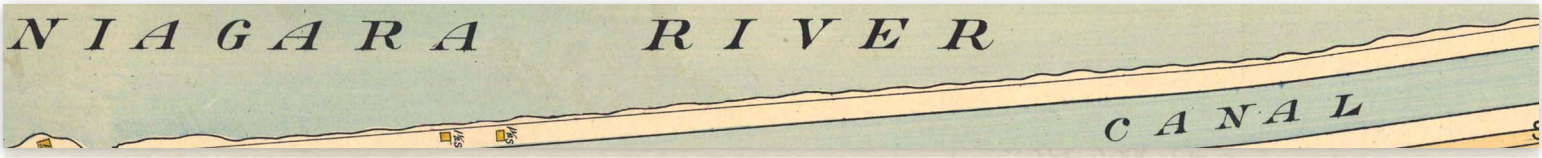
- Provide for public access to, and recreational use of, coastal waters, public lands and public resources in the waterfront area

Working Waterfront Policies

- Protect existing water-dependent uses, promote the siting of new water-dependent uses in suitable locations, and support efficient harbor operations
- Promote the sustainable use of living marine resources
- Protect existing agricultural lands
- Promote appropriate use and development of energy and mineral resources (including energy efficient design, green building principles and recycling)

General recommendations in the LWRP that apply to the city's entire waterfront include the provision of additional: water-dependent and water-enhanced facilities and amenities for public use, vehicular access and parking, boating access to local waterways, access for recreational fishing, access to public transportation opportunities, wayfinding to inform the public about waterfront attractions, wetland protection and habitat restoration, safety and accessibility, and convenient access on a year-round basis. The LWRP also acknowledges that water quality is another area of importance for maintaining a high quality waterfront area. Quality considerations include the management of both point and non-point source pollution. Water quality protection and improvement must be accomplished through a combination of managing new, and mitigating and/or remediating existing, sources of pollution. In certain areas with existing water quality impairments, aggressive remediation measures are needed.

The LWRP includes several recommended actions and projects specific to the area that includes Black Rock Canal Park. The LWRP recommends that interpretative signage is installed to recognize the historic Village of Black Rock, its efforts to be the western terminus of the Erie Canal (the Village of Black Rock lost this advantage to the Village of Buffalo), and the existing federal lock on the Black Rock Canal. The LWRP also acknowledges that the I-190 cuts this area off from the river and severely limits access; it recommends that efforts should be made to identify locations where access improvements and linkages can be created or improved. The LWRP also recommends additional signage to inform and direct people to the existing waterfront parklands. Of the recommended projects listed in the LWRP, two are relevant to the Black Rock Canal Park. These are (1) the implementation of the Buffalo Sewer Authority's Combined Sewer Outfall Long Term Abatement Plan, which identifies options for eliminating the 63 combined sewer outfalls in the City, and (2) further improvements at Ontario Street Boat Launch, including better landscaping, reinforcement of the park's entrance from the Seaway Trail, and more sensitive paving at the boat launch.



Queen City Waterfront: Buffalo Waterfront Corridor Initiative (2007)

The Waterfront Corridor Initiative (WCI) is a complimentary implementation guide for the policies and projects identified in the LWRP. The WCI provides additional detail on several long term projects in the Black Rock – Riverside neighborhood. These include: further development at Harbour Place (high-density residential, mixed-use and maritime uses); revitalization of Niagara Street north of Forest Ave.; development and support of the Seaway Trail (Niagara Street); mixed-use, public access and interpretative development at the Black Rock Canal locks; and further study into the relocation of the I-190 in Riverside.

The Olmsted City – The Buffalo Olmsted Park System: Plan for the 21st Century (2008)

The Buffalo Olmsted Park System includes six major parks, multiple parkways, circles, and small spaces. It is a tremendous resource for the people of the Buffalo-Niagara Region. The entire system, conceived of by America's most famous landscape architect, Frederick Law Olmsted, Sr., is recognized as a cultural landscape, specifically a historic designed landscape, on the National Register of Historic Places. It is also the backbone of Buffalo's park and open space system, representing nearly sixty percent of all the parkland in the city.[2] The System Plan for the Olmsted Parks includes an overview of the history and significance of the park system, recommendation for each park and the rest of the system, and an implementation plan.

In its modern day context, the Olmsted system exists within the boundaries of the Niagara River Greenway, a system of green spaces and pathways that line the Niagara River. One of the seven guiding principles for restoration and management of the Olmsted Park System calls for expansion of the system to connect to parks throughout the city and to connect to the Niagara River Greenway and other trail systems. One of the 12 projects recommended for Riverside Park is the extension of park connections to the Niagara River Greenway and Washington and Towpath Parks. The location of Black Rock Canal Park along the Niagara River Greenway between Washington and Towpath parks implies that Black Rock Canal Park would be part of this recommended project.

Black Rock – Riverside Good Neighbors' Planning Alliance

The Black Rock – Riverside Good Neighbors' Planning Alliance has prepared two neighborhood plans relevant to Black Rock Canal Park. These are Building a Neighborhood of Choice: A Neighborhood Plan for the Riverside Planning Community (2007) and Historic Black Rock: War of 1812 Bicentennial Community Plan (2008). These plans highlight the history of Black Rock and Riverside communities and identify goals/recommendations to preserve and strengthen the communities.

The Neighborhood Plan for the Riverside Community includes information on the history of the Black Rock and Riverside neighborhoods and an inventory of existing conditions. It also identifies community goals and provides an action plan for their implementation. Several of the goals relate directly to Black Rock Canal Park. These goals, along with the identified implementation strategies, are listed below:

Create and maintain clean, safe waterfront parks, with a special focus on Towpath Park, Cornelius Creek Park, the Ontario Boat Launch/Black Rock Canal Park (proposed), and access to same

Implementation strategies:

- The hiring of a full-time county employee to control boat launch usage
- Installing a playground and park benches
- Improving and increase lighting
- Adding jet ski docks
- Installing temporary speed bumps
- Improving signage for the park (on Niagara Street) and for rules of the park
- Painting the breakwall and rails more attractive colors (change from current yellow to green or other color which blends with the surroundings)
- Encouraging increased police presence/surveillance at the parks

Improve image, cleanliness of main business streets (including Niagara and Ontario Streets)

2 The Olmsted City – The Buffalo Olmsted Park System: Plan for the 21st Century. 5 p.

Implementation strategies:

- Install planters and trash cans
- Plow sidewalks

The Historic Black Rock Community Plan includes information on the history of and recent accomplishments in the Black Rock neighborhood. The plan also outlines recommendations and an implementation strategy. Recommendations of the plan that are reinforced by the recommended improvements at Black Rock Canal Park include:

Preserve and strengthen community identity

Implementation strategies:

- Develop interpretative program and materials for local and regional history
- Create a local history museum

Revitalize Niagara Street commercial area and develop and market the area's positive attributes

Implementation strategies:

- Promote maritime activities (boating, birding, fishing, etc.)
- Leverage direct bike path/multi-use trail connections to downtown, Tonawandas, and Scajaquada Pathway

Enhance community walkability while leveraging existing transportation advantages

Implementation strategies:

- Plan and implement streetscape improvements at key intersection, gateway, and commercial and cultural corridors in Historic Black Rock (e.g. Niagara and Ontario Streets)
- Plan and implement traffic calming measures, such as roundabouts, textures paving in crosswalks, etc.
- Add wayfinding signage to effectively inform travelers as to highway entrances, neighborhood gateways, park entrances, historic and cultural attractions, and other neighborhood amenities.

Realize the potential of existing recreational assets and seize opportunities for new ones within the neighborhood (parks, recreation, waterfront)

Implementation strategies:

- Support completion of planned improvements to Squaw Island Park, Tow Path Park, and the Ontario Street Boat Launch/Cornelius Creek Park.
- Support creation and maintenance of clean, safe parks, microparks, and greenway connections, and access to same.
- Add desirable community features into parks, microparks, scenic trails, etc., like lighting, seating furniture, wi-fi, game tables, skate spots, bubblers, water fountains, etc., without creating neighborhood nuisance behavior.
- Support new recreational trails/bike paths and greenway connections, and expansion and improvement of existing ones, like the Scajaquada Creek Bike Path, Seaway Trail, Riverwalk, to link parks/ recreational assets to themselves and to other neighborhoods.

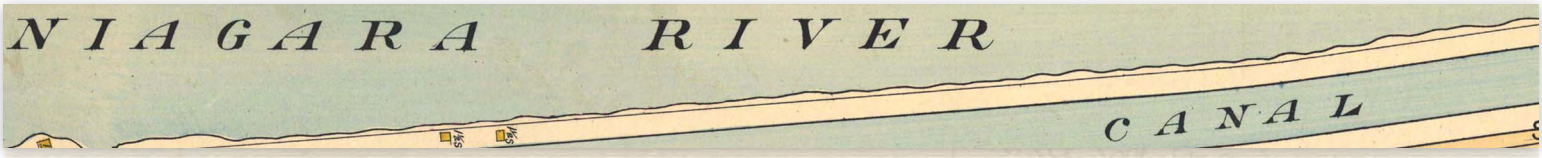
Make Distinctive Gateways and Street Themes, Leverage Land Development, and Improve Urban Design

Implementation strategies:

- Add and customize, to the extent practicable, wayfinding signage, transit shelters, street furniture, bike racks, to leverage visual cues emanating from the neighborhood and its history.
- Expand park, garden and greenspace opportunities, taking advantage of emerging vacant lots.

Erie County Parks System Master Plan (2002)

The Erie County Parks System Master Plan is a



framework for preservation and enhancement of the county parks over the next 15 to 20 years. It includes recommendations & management strategies for the parks, trails and waterfront. Recommendations & management strategies relevant to Black Rocks Canal Park include:

Niagara River Parks (Ontario St., Towpath, Isle View)

- Provide additional fishing accommodations with signage
- Strengthen connections with Riverwalk
- Provide better signage from Niagara Street

Waterfront Strategy

- Support the significant migratory bird corridor
- Ensure visibility and connectivity of waterfront parks
- Improve routing and landscaping of Riverwalk
- Add access points for fishing, canoe/kayak launches

Niagara River Greenway Plan and FEIS (2007)

The Niagara River Greenway Plan and FEIS establish a unified vision and principles for the Niagara River Greenway. The Greenway Plan sets priorities for near-term activities & discusses strategies for Greenway development. The stated vision of the Niagara River Greenway is:

> *The Niagara River Greenway is a world-class corridor of places, parks and landscapes that celebrates and interprets our unique natural, cultural, recreational, scenic and heritage resources and provides access to and connections between these important resources while giving rise to economic opportunities for the region.*

The Greenway Plan establishes 11 principles to guide greenway planning toward achieving the vision. These guiding principles include: Excellence (in projects), Sustainability, Accessibility, Ecological Integrity, Public Well-Being, Connectivity, Restoration, Authenticity (reflecting the culture/history of the location), Celebration (of history and culture), Partnerships, and Community Based (planning).

The vision for the Niagara River Greenway will become reality through hundreds of incremental steps and individual actions. Criteria for evaluating and forming projects and activities within the Greenway are established in the Greenway Plan. Projects approved for Greenway funding should help achieve the goals of the Greenway. Projects may be granted priority status if they meet the following priorities, based on the Plan's goals:

- Improved access to waterfront resources
- Development of an integrated trail and park system
- Restoration of the Niagara River ecosystem
- Interpretation and education about the region's cultural, natural and historic resources
- Revitalization of urban centers

Erie Canalway National Heritage Corridor Preservation and Management Plan (2006)

In December, 2000 the United States Congress established the Erie Canalway National Heritage Corridor. The legislation created the Erie Canalway National Heritage Corridor Commission and charged it with developing and implementing a Preservation and Management Plan for the Corridor. The Preservation and Management Plan outlines strategies for achieving six key goals:

- Protecting our heritage: the Corridor's historic and distinctive sense of place will be widely expressed and consistently protected.
- Conserving natural resources: the Corridor's natural resources will reflect the highest standards of environmental quality.
- Promoting recreation: the Corridor's recreation opportunities will achieve maximum scope and diversity, in harmony with the protection of heritage resources.
- Interpretation and orientation: the Corridor's current and future generations of residents and visitors will value and support preservation of its heritage.
- Economic revitalization: the Corridor's economic growth and heritage development will be balanced and self-sustaining.
- Tourism development: The Corridor will be a "must do" travel experience for regional, national, and international visitors.

The Preservation and Management Plan addresses the kinds of historic and cultural resources in the Corridor, describes the threats to their survival, and proposes guidelines for new and ongoing heritage development efforts by public and private actors. It mentions that Buffalo, bypassed by the Barge Canal's new terminus at Tonawanda and North Tonawanda; filled in its canals and sealed them beneath streets and the elevated I-190 and that plans are currently underway to unearth and interpret Buffalo's original connection between the Erie Canal and Lake Erie.

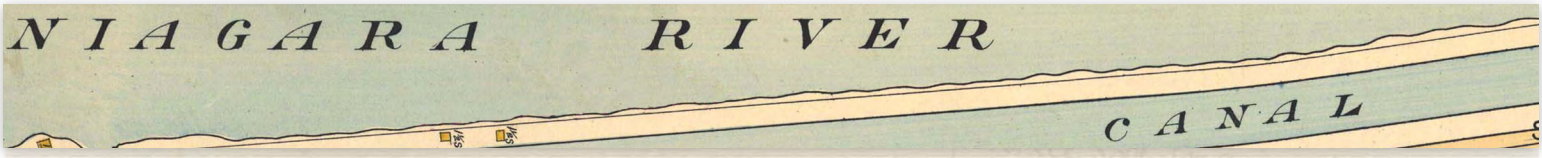
The Preservation and Management Plan envisions that the Corridor's natural resources will reflect the highest standards of environmental quality. Two objectives have been identified as milestones toward this goal:

- Increase public awareness and support for conservation and enhancement of critical natural resources through education and interpretation.
- Encourage quality stewardship practices such as open space conservation, enhancement of water and air quality, and integrated regional management of natural resources including waterfronts.

With respect to promoting recreation, the Corridor's outreach and educational efforts, technical assistance, and targeted investments seek to: increase recreational and tour boating opportunities, develop side trails off the end-to-end Canalway Trail, and encourage open space conservation and the creation of a continuous greenway along the canal system. The Corridor will also support new recreational development designed to:

- Accommodate diverse uses, maximizing the utility of investments by serving multiple users, such as a marina that offers restrooms and bicycle rentals near a trailhead;
- Capitalize on existing infrastructure, facilitating linkages between existing recreational destinations and focusing on the canals and related resources;
- Enhance accessibility to recreational facilities for people with disabilities;
- Improve access to scenic areas, creating routes or views to natural features (e.g., waterfalls, cliffs) and historic structures (aqueducts, locks) that showcase the region's heritage;
- Protect natural resources, factoring the vulnerability of habitat and ecosystem function into planning for new or enhanced facilities;
- Uphold cultural significance, avoiding or mitigating impacts to archeological sites and character-defining features of the landscape; and
- Manage visitor use, providing adequate support infrastructure and services, and safety and orientation devices, to address the concerns of private property owners and others affected by new facilities.

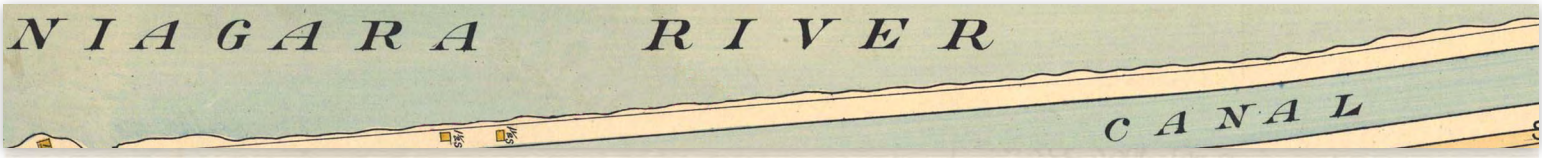
The goal of Erie Canalway National Heritage Corridor's interpretation effort is to add a Corridor "overlay" to existing or planned interpretive and wayfinding developments, acknowledging their partnership with and inclusion in the Corridor. The Corridor will also seek ways to integrate its proposed interpretive and



wayfinding frameworks and graphic identity into planned local and regional developments. Using consistent communication devices throughout the Corridor will reinforce its sense of place and help people grasp interpretive themes while meeting the needs of different audiences (e.g. local users versus Corridor travelers). Interpretive materials should be designed to humanizing the interpretative experience with specifics about real people and real communities. Major subjects that are well supported by Corridor resources and by the context of Black Rock Canal Park include engineering and technological invention and innovation; economic and labor history; commerce and industry; immigration, Euro-American settlement and community development; and cultural history.

The Corridor's economic revitalization strategy focuses on heritage development, an economic revitalization approach that respects the intrinsic value of the Corridor's assets and uses this to strengthen the Erie Canalway brand, expand upstate New York's economy, and help it compete in the market for place-based investments. Actions that strengthen an area's ability to compete for place-based investments include preservation, conservation, recreational and interpretive development, and regional partnership and community capacity-building; these actions should demonstrate respect for the people, the place, and the past. According to the Corridor Preservation and Management Plan, when communities blend a mix of heritage development and traditional economic development strategies — targeted tax incentives, infrastructure improvements, assembled and prepared commercial or industrial sites, and other techniques — they maximize their competitive advantages. Case studies in the Corridor Preservation and Management Plan revealed that while each community's experience is unique, all witnessed a similar pattern of initial public investments in quality of life infrastructure that, over time, resulted in additional private investment, a substantial increase in visitors and public activity along main streets and canals, and a stronger sense of community pride. The most successful efforts were founded on the ability to identify and coordinate community and economic development objectives, define land-use plans ahead of development, and leverage public finance to encourage private sector investments. Typically, local planning and economic development agencies, supported by citizen groups and elected officials, led the effort for public grants and financing to mitigate environmental conditions, restore waterfront access, and rebuild public infrastructure.

The Preservation and Management Plan also addresses tourism and marketing of the Corridor. The Plan seeks to balance resource protection with visitation and its economic contributions to local quality of life, recognizing that the best projects create amenities for both visitors and residents to enjoy. The Corridor's approach to marketing seeks to coordinate and focus local marketing efforts, recognizing that available activities and experiences can affect a traveler's destination decision.



Appendix 2

Structural Report

Above Water Inspection Report

Black Rock Canal Park Retaining Wall
City of Buffalo, Erie County

Fisher Associates, P.E., L.S., P.C. (Fisher Associates) performed a visual inspection of the Black Rock Canal Park Retaining Wall on December 8, 2009. Findings from this inspection are outlined in this report:

SCOPE OF WORK:

The Black Rock Canal Park retaining wall is a cantilever retaining wall located along the Niagara River waterfront north of the city of Buffalo, Erie County. The wall inspected was a Z-Style, 3/8" thick, interlocked steel sheet pile cantilevered retaining wall measuring approximately 2200 ft long. See the overall plan view for stationing of the wall. Record plans and the original date of construction are unknown for the structure. The wall includes openings for 3 small pipe culverts and a boat launch and has a return wall extension to protect a small fishing pier. (See photos 12, 13, 16, & 17)

The visual inspection included an above water inspection and water depth measurements along the wall. The above water inspection was performed with a boat and walking along the top of the wall. See Table 1 – Table of Wall Dimensions for depth of water and wall reveal.

SUMMARY OF CONDITIONS:

Overall the wall was in very good condition. From Station 0+00 to 17+15 the wall is near vertical and straight with tight interlocks. This portion of wall exhibits light surface rust and minor pitting from 1'-6" above the water surface to an unknown depth below the water. From Station 17+15 to 19+60 the wall swings from tipping toward to tipping away from the water and serpentines back and forth along its length. The interlocks are tight and one section of channel cap curves to fit the wall suggesting that tipping and curving are an as-built condition (See photo 10). There are some signs of wall deflection in the form of cracking and bulging of the asphalt pavement adjacent to the wall (See photo 8 & 10). The exact values of this deflection are unknown at this time but from the evidence appear to be minor. This portion of wall exhibits light surface rust and minor pitting from 2'-0" above the water surface to an unknown depth below the water. From Station 19+60 to 22+00 the wall is similar in condition to the first 1700 ft of wall length.

There are four locations where the wall is penetrated by a culvert buried in the backfill to an unknown extent. Three of the culverts are 18" diameter concrete pipe. (See photo 12) The concrete culverts most likely serve as drainage from I-190 or Niagara Street. These pipes are in good condition along with the penetrations through the sheet pile wall. The remaining culvert is a 12" diameter corrugated metal pipe, which serves as the storm drain for the parking lot. (See photo 13) This pipe appears to have impact damage along its exposed end, otherwise the pipe and wall penetration are in good condition.

Overall the channel cap along the top of the sheet piles is in good condition. From Station 0+00 to 15+75 the channel cap is comprised of a steel channel with a concrete overlay. The steel channel alone appears to be very good condition. The concrete overlay is in good condition with approximately 10 to 15 cracked locations and is spalled in at least 3 locations. See photo 9 for a typical view of the spalled concrete overlay. From Station 15+75 to 22+00 the channel cap is comprised of a steel channel. The steel channel appears to be in good condition except for the length between Stations 18+50 and 19+00 where the channel is missing. (See photo 10)

Overall the whaler connections are in good condition for the portions that can be seen. There are 5 to 10 locations were the 3/8" steel washer plate is missing for the connection bolt. (See photo 11) From Station 19+60

to 22+00 the whaler is located on the exposed side of the wall. All whaler connection items exhibit only minor corrosion.

Overall the pedestrian rail along the top of wall is in very good condition for the entire length of structure except for the length between Stations 18+00 and 19+40 where the rail is missing. (See photos 3, 8, & 10)

Water depth investigations revealed that the channel bottom adjacent to the wall had only one isolated location of silting or “soft bottom” with a maximum penetration of six inches. There were numerous locations of old timber piling just under the water surface adjacent to the wall providing evidence of previous structures in the vicinity. There are very small pockets of soil settlement behind the retaining wall. The maximum length of settlement parallel to the wall was one foot with a maximum length of nine inches perpendicular to the wall. There is evidence of repaving a “strip” adjacent to the concrete overlay on top of the wall. This evidence points more to soil settlement of the backfill placed behind the wall during the wall construction. Overall the soil adjacent to the wall does not exhibit any signs of overstress or settlement that would affect the wall integrity. (See photos 6, 7, 8, 10, 14, & 15)

CONCLUSIONS:

Overall this structure is in good to very good condition and does not show signs of major degradation. The missing steel channel cap and pedestrian railing should be repaired in the next year to provide the necessary safety measures along the top of the wall for pedestrian traffic. The spalls in the concrete overlay should be repaired in the next five years to prevent future degradation of the concrete overlay.

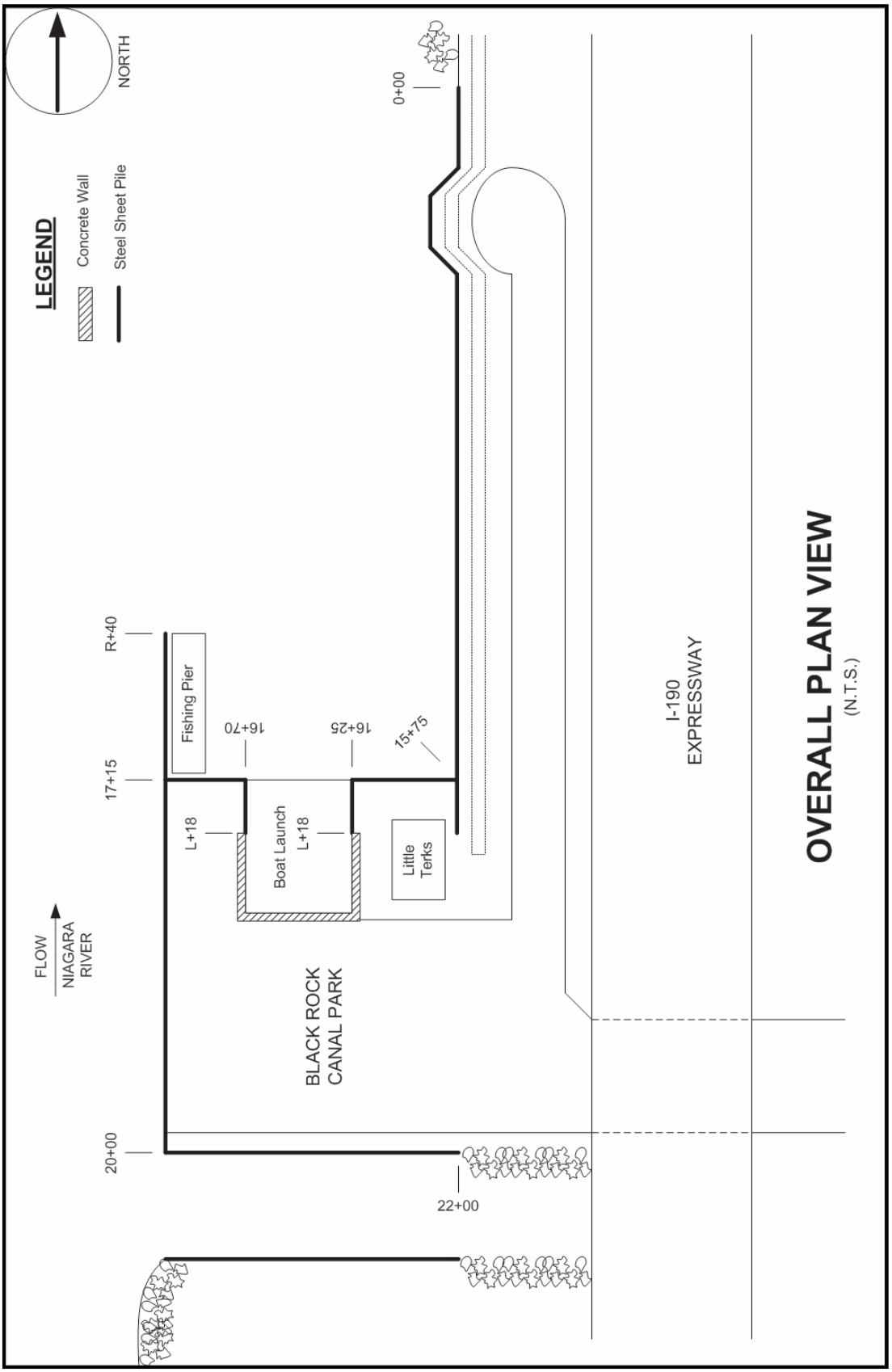

NORTH
LEGEND
Concrete Wall
Steel Sheet Pile
0+00
R+40
17+15
20+00
22+00
Fishing Pier
16+70
16+25
15+75
L+18
Boat Launch
L+18
Little Terks
FLOW
NIAGARA RIVER
BLACK ROCK CANAL PARK
I-190 EXPRESSWAY
OVERALL PLAN VIEW
(N.T.S.)

TABLE 1 – TABLE OF WALL DIMENSIONS				
Station	Depth of Water at face of wall	Reveal from water to top of wall	Depth of Silt at channel bottom	Comments
0+00	1.5 ft	8.1 ft	0.0 ft	
0+40	3.2 ft	8.6 ft	0.0 ft	
1+00	4.4 ft	8.6 ft	0.0 ft	
1+40	8.8 ft	8.8 ft	0.0 ft	
2+00	8.0 ft	8.6 ft	0.0 ft	
2+40	5.2 ft	8.8 ft	0.0 ft	
3+00	7.7 ft	8.5 ft	0.0 ft	
3+40	6.8 ft	8.5 ft	0.0 ft	Conc. Culvert (3+68)
4+00	2.3 ft	8.5 ft	0.0 ft	
4+40	6.4 ft	8.5 ft	0.0 ft	
5+00	4.8 ft	8.5 ft	0.0 ft	
5+40	3.5 ft	8.5 ft	0.0 ft	
6+00	6.1 ft	8.5 ft	0.0 ft	
6+40	5.9 ft	8.4 ft	0.0 ft	
7+00	6.5 ft	8.5 ft	0.0 ft	
7+40	6.8 ft	8.5 ft	0.0 ft	
8+00	4.1 ft	8.4 ft	0.0 ft	Conc. Culvert (8+00)
8+40	5.2 ft	8.5 ft	0.0 ft	
9+00	6.5 ft	8.6 ft	0.0 ft	
9+40	7.2 ft	8.5 ft	0.0 ft	
10+00	7.5 ft	8.4 ft	0.0 ft	Spall in Cap (10+20)
10+40	6.9 ft	8.5 ft	0.0 ft	
11+00	7.2 ft	8.5 ft	0.5 ft	Spall in Cap (11+10)
11+40	5.8 ft	8.6 ft	0.0 ft	
12+00	6.0 ft	8.6 ft	0.0 ft	Conc. Culvert (12+20)
12+40	5.4 ft	8.6 ft	0.0 ft	
13+00	5.0 ft	8.7 ft	0.0 ft	
13+40	5.1 ft	8.6 ft	0.0 ft	
14+00	4.2 ft	8.6 ft	0.0 ft	
14+40	4.5 ft	8.6 ft	0.0 ft	
15+00	3.0 ft	8.4 ft	0.0 ft	
15+40	2.5 ft	8.5 ft	0.0 ft	
16+00	1.0 ft	3.8 ft	0.0 ft	
16+25 R18	1.0 ft	3.6 ft	0.0 ft	Boat Launch
16+40	8.6 ft	3.6 ft	0.0 ft	
16+70 R18	1.0 ft	3.6 ft	0.0 ft	Boat Launch
17+00	Not Measured	Not Measured	Not Measured	
17+15 R40	16.8 ft	8.8 ft	0.0 ft	Fishing Pier Wall
17+40	4.7 ft	10.8 ft	0.0 ft	

TABLE 1 (CONT.) – TABLE OF WALL DIMENSIONS				
Station	**Depth of Water**	**Reveal from water to top of wall**	**Depth of Silt at channel bottom**	**Comments**
18+00	5.9 ft	10.6 ft	0.0 ft	CMP Culvert (18+00)
18+40	7.4 ft	10.6 ft	0.0 ft	
19+00	8.2 ft	10.8 ft	0.0 ft	
19+40	6.8 ft	10.7 ft	0.0 ft	
20+00	6.2 ft	10.7 ft	0.0 ft	
20+40	1.4 ft	8.2 ft	0.0 ft	Ped. Bridge (20+35)
21+00	0.0 ft	8.4 ft	0.0 ft	
21+40	1.0 ft	8.5 ft	0.0 ft	
22+00	0.0 ft	8.5 ft	0.0 ft	

PHOTOGRAPHS

Photo 1 – Overall view of begin of wall

Photo 2 – View of northern portion of wall looking North

Photo 3 – View of wall at parking lot looking North

Photo 4 – View of wall and pedestrian bridge over Cornelius Creek

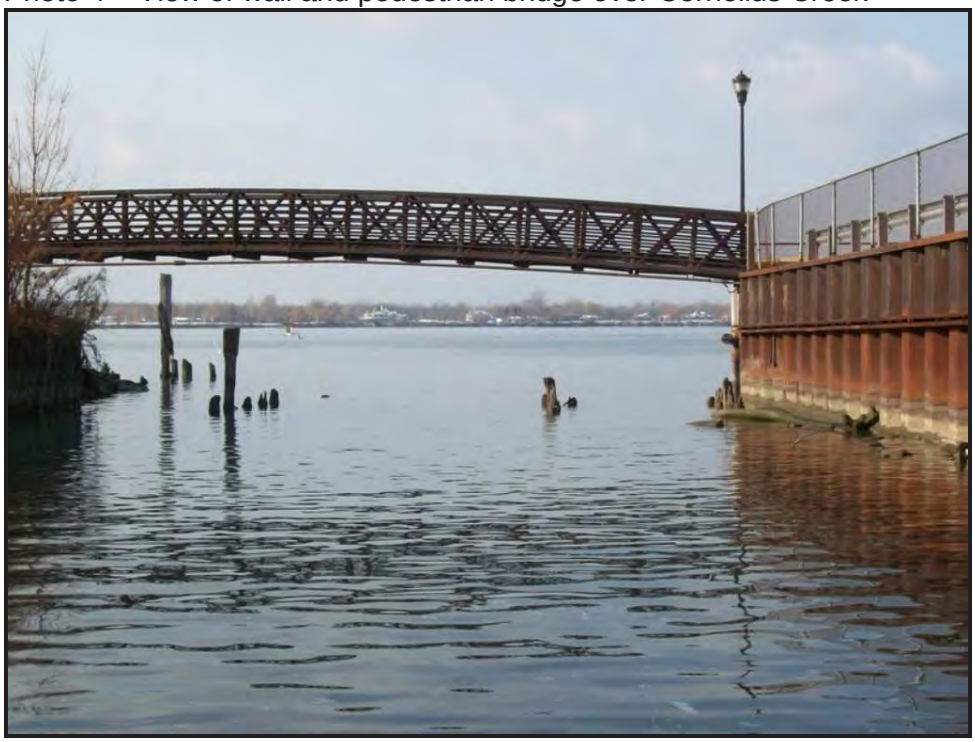


Photo 5 – Overall view of end of wall

Photo 6 – View of top of wall at begin looking South

Photo 7 – View of top of northern portion of wall looking South

Photo 8 – View of top of parking lot portion of wall looking South

Photo 9 – Typical spall in concrete overlay on steel channel cap

Photo 10 – Missing channel cap along parking lot portion of wall

Photo 11 – Missing washer plates on whaler connection bolts

Photo 12 – Concrete culvert penetration thru wall (Stations 3+68, 8+00, & 12+20)

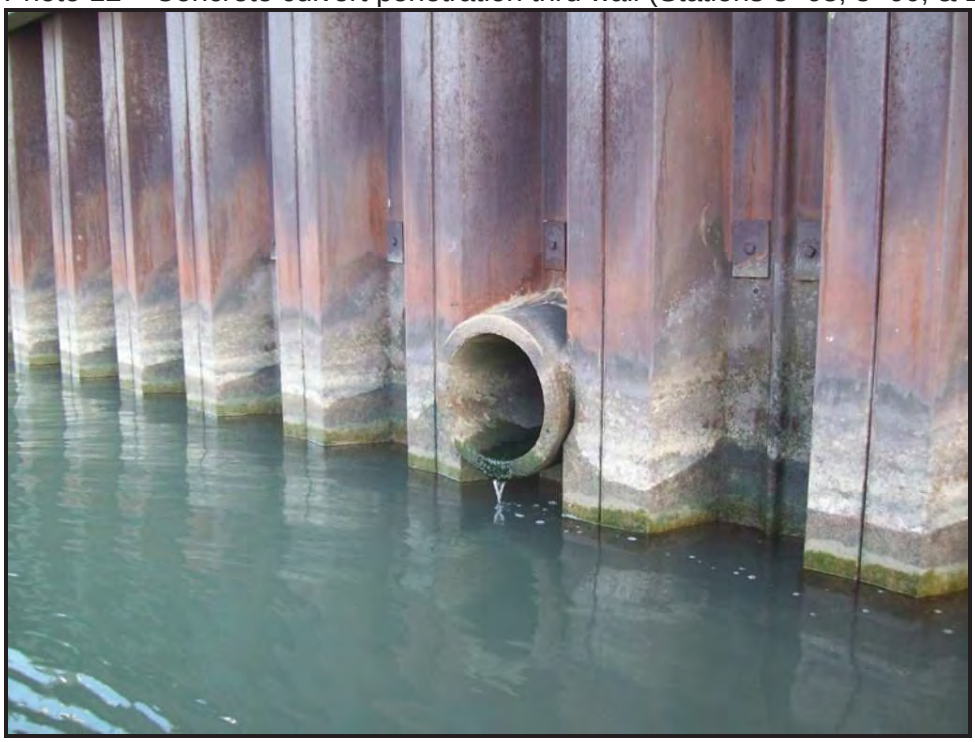


Photo 13 – Steel culvert penetration thru wall (Station 18+00)

Photo 14 – Settlement in wall backfill

Photo 15 – Typical view of backfill looking North

Photo 16 – View of boat launch

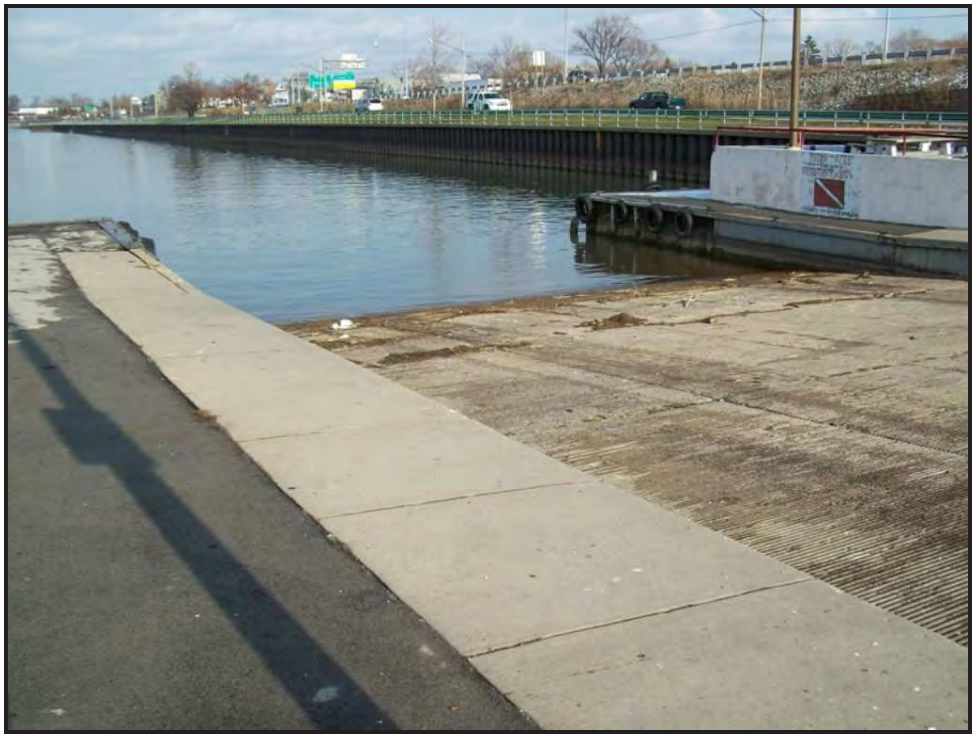
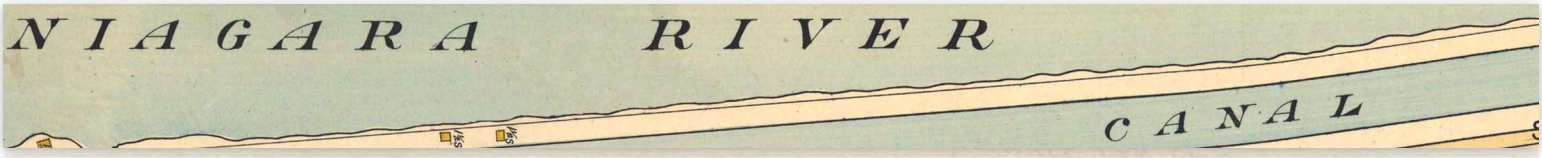


Photo 17 – View of fishing pier



Appendix 3

Presenting the Concept

The Concept Plan for Black Rock Canal Park developed by the Blackrock - Riverside Good Neighbors Planning Alliance has been presented to a long list of groups, elected officials, and agencies, giving everyone a chance to provide their comments. The following is a list of those public forums and attendees:

2006

Members	Blackrock - Riverside Good Neighbors Planning Alliance
Maria Whyte	Erie County Legislator
Sam Hoyt	NYS Assembly

2007

Julie Barret-Oneill	Buffalo Niagara Riverkeeper
Gary Hall	Harbour Place Marine Sales
Bonnie Kane Lockwood	Office of Congressman Brian Higgins
Kofi Fynn Aikens and Raymond Li	US Fish & Wildlife Service
Eric Weinreber	New York State Police
Peter Smith	US Department of Homeland Security
Martin Broniz, Scott Patronik and Rick Lauricella	Erie County Sheriff's Office
Max Willig	Grant-Amherst Business Association
Timothy Wanamaker and Bill Parke	City of Buffalo Office of Strategic Planning
Todd Kufel	US Army Corps of Engineers
Richard Sterben	New York Corporate Realty
Albert Nihill	NYS Office of Parks, Recreation and Historic Preservation
Chris Hawley	Office of Senator Charles Schumer
Andy Sedita	Erie County Parks & Recreation Commissioner
Richard Tobe	City of Buffalo Commissioner of Economic Development, Permit and Inspection Services
Antoine Thompson	NYS Senate
Tom Brodfoerer	NY Walleye Association
Dave Faccini and Danny King	Niagara River Anglers Association
Dayton Lockwood	NY Walleye Association and Niagara Muskie
Joseph Golombek Jr	City of Buffalo, Councilman
Carol Ash	New York State Office of Parks, Recreation and Historic Preservation Commissioner
Committee	Erie County Energy and Environment
Committee	Riverside Business Association
Byron Brown	City of Buffalo, Mayor
Members	North District Boaters

2008

Chris Collins	Erie County Executive
James Hornung Sr.	Erie County Parks & Recreation Commissioner
Holly Sinnott	Erie County Environment & Planning Commissioner
Michael Balboni and Denise O'Donnell	New York State Homeland Security

2009

Laura Monk	Office of United States Senator Charles Schumer
Laura Krolczyk	Office of United States Senator Kirsten Gillibrand
Dennis Kozuch	Office of New York State Senator William Stachowski
Attendees	Buffalo Area Boat Show

2010

Members	North Tonawanda Power Squadron
Members	New York Walleye Association
Members	Antique and Classic Boat Association
Attendees	Buffalo Area Boat Show
Attendees	Great Upstate Boat Show

Project Steering Committee

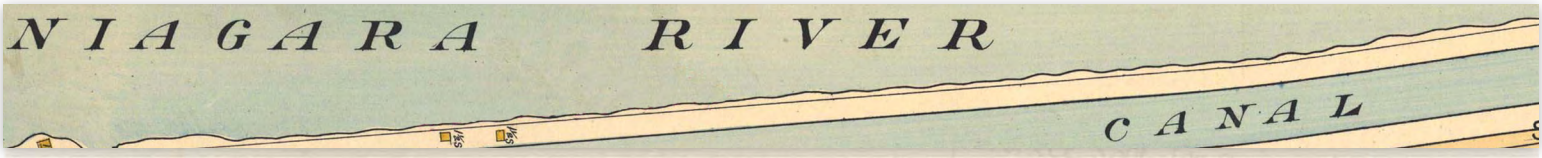
A committee was formed for this Feasibility Analysis to provide direction on contractual requirements, project scope, schedule, maintenance, funding, and other business-related issues. The committee was made up of individuals from agencies that have a direct stake in the project – they are either managing the project, funding it or will be maintaining it upon completion. The Project Steering Committee met three times during the Feasibility Analysis process. The committee was made of the following individuals:

Tom Dearing,	Erie County Dept. of Environment & Planning
Mark Rountree,	Erie County Dept. of Environment & Planning
Margaret Szczepaniec,	Black Rock Canal Park Steering Committee
Paul Leuchner,	Black Rock Canal Park Steering Committee
Maria Whyte,	Erie County Legislator
Jim Hornung Sr.,	Erie County Division of Parks & Recreation
Sharon Leighton,	New York State Canal Corporation
Thomas Sheehan,	New York State Canal Corporation
Bill Parke,	City of Buffalo Office of Strategic Planning
Joe MacMahon,	Office of New York State Assemblymember Sam Hoyt
Bill Nowak ,	Office of New York State Senator Antoine Thompson

Project Advisory Committee

A project Advisory Committee was formed to provide input on the park, its design components and project design. The committee is comprised of all project Steering Committee members (above), the following individuals from the previously-formed Black Rock Canal Park Steering Committee and other interested members of the community:

Gary Hall,	Harry's Harbour Place
Bryan Hinterberger,	US Army Corps of Engineers
Philip Berkeley,	US Army Corps of Engineers
Rob Belue,	Niagara Greenway Commission
Sharon Czajkowski,	Black Rock Canal Park Steering Committee
John Bauer,	Black Rock Canal Park Steering Committee
Robert Niemiec,	Black Rock Canal Park Steering Committee
Joanna Dickinson,	Black Rock Canal Park Steering Committee
Stevan Stipanovich,	Black Rock Canal Park Steering Committee
Margaret Faircloth,	Black Rock Canal Park Steering Committee
Lawrence Pernick Jr,	Black Rock Canal Park Steering Committee
Caleb Basilko,	Black Rock Canal Park Steering Committee
John McKee,	Black Rock Canal Park Steering Committee
Warren Glover,	Black Rock Canal Park Steering Committee
Julie O'Neill	Buffalo Niagara Riverkeeper
Robyn Drake,	Buffalo Niagara Riverkeeper
Councilmember Joe Golombek	City of Buffalo Common Council



Appendix 4

Construction Cost Worksheets

MODIFIED PLAN

TOTAL COST OF ALL PHASES: $16,040,563

	Element	Unit	Quant.	Unit Price	Amount
1. THE ENTRY PHASE	DEMOLISH EXISTING CURB	LF	600	$5	$3,000
	DEMOLISH LIGHTS	EA	2	$800	$1,600
	DEMOLISH CONCRETE SIDEWALK	CY	22	$150	$3,300
	1 1/2 " TOP COURSE 310 x 24	TON	69	$95	$6,555
	CONCRETE CURB	LF	600	$25	$15,000
	PATCH ROAD ALONG CURB	LF	600	$5	$3,000
	SIDEWALK 8'	LF	300	$50	$15,000
	PARKING LIGHTS - LED	EA	3	$6,000	$18,000
	INTERPRETIVE FEATURES	LUMP SUM	1	$10,000	$10,000
	SHADE TREE	EA	16	$400	$6,400
	SHRUB PLANTING	EA	30	$75	$2,250
	TRAFFIC SIGNAGE	LUMP SUM	1	$1,500	$1,500
	ENTRY SIGNAGE	LUMP SUM	1	$12,000	$12,000
				SUBTOTAL	*$97,605*
				20% CONTINGENCY	*$19,521*
				CONSTRUCTION TOTAL	*$117,126*
				BOUNDARY SURVEY	*$4,817*
				DESIGN AND CONSTRUCTION ADMIN. 12%	*$14,055*
				PHASE TOTAL	***$135,998***

MODIFIED PLAN

TOTAL COST OF ALL PHASES: $16,040,563

	Element	Unit	Quant.	Unit Price	Amount
2. THE CENTRAL AREA PHASE	DEMOLISH LIGHTS	EA	6	$800	$4,800
	DEMOLISH PLANTERS	EA	2	$600	$1,200
	DEMOLISH ASPHALT	CY	990	$16	$15,840
	EROSION CONTROL	LUMP SUM	1	$4,000	$4,000
	CUT TOP OF SHEET PILE FLUSH	LF	375	$1	$375
	CLEAN TRENCH DRAIN	EA	1	$2,000	$2,000
	STORM PIPE 12"	LF	180	$28	$5,040
	CATCH BASINS MEDIUM	EA	1	$3,500	$3,500
	CATCH BASINS - LARGE	EA	1	$5,500	$5,500
	SHEET PILE CAP - CONCRETE	LF	375	$125	$46,875
	RAILING	LF	400	$150	$60,000
	CANTILEVER OVERLOOK	EA	60	$2,700	$162,000
	WATERFRONT LIGHTS	EA	4	$5,000	$20,000
	WATERFRONT WALKWAY	LF	480	$125	$60,000
	INTERPRETIVE SIGNAGE	EA	2	$4,000	$8,000
	INTERPRETIVE FEATURE	LUMP SUM	1	$20,000	$20,000
	ARMOR STONE SEAT WALLS	LF	300	$45	$13,500
	BENCHES	EA	6	$1,200	$7,200
	SOLAR TRASH COMPACTORS	EA	2	$3,500	$7,000
	TOPSOIL	CY	250	$40	$10,000
	LAWN SEED	SF	13750	$0	$5,500
	SHADE TREE	EA	10	$400	$4,000
	FLOWERING TREE	EA	8	$350	$2,800
	PARKING LIGHTS - LED	EA	3	$7,000	$21,000
	MISC GRADING	LUMP SUM	1	$4,000	$4,000
	4" SUBBASE STONE	CY	33	$45	$1,485
	4" BASE COURSE	TON	608	$85	$51,680
	3" BINDER COURSE	TON	456	$90	$41,040
	1 1/2 " TOP COURSE	TON	228	$95	$21,660
	CONCRETE CURB AT PARKING	LF	1040	$22	$22,880
				SUBTOTAL	*$632,875*
				20% CONTINGENCY	*$126,575*
				CONSTRUCTION TOTAL	*$759,450*
				GEOTECHNICAL STUDY	*$15,000*
				DESIGN AND CONSTRUCTION ADMIN. 12%	*$91,134*
				PHASE TOTAL	***$865,584***

MODIFIED PLAN

TOTAL COST OF ALL PHASES: $16,040,563

	Element	Unit	Quant.	Unit Price	Amount
3. THE ROAD AND TURNAROUND PHASE	DEMOLISH LIGHTS	EA	8	$1,100	$8,800
	DEMOLISH ASPHALT 6" DEPTH - 29,350SF	CY	543	$19	$10,317
	SAWCUT EXISTING PAVING ON 2 SIDES	LF	2960	$2	$5,920
	REMOVE METAL GUARDRAIL	LF	1450	$8	$11,600
	EXCAVATION AND DISPOSAL	CY	800	$14	$11,200
	EMBANKMENT IN PLACE	CY	500	$10	$5,000
	DRAINAGE WORK	LUMP SUM	1	$20,000	$20,000
	EROSION CONTROL	LUMP SUM	1	$8,000	$8,000
	RETAINING WALL ON RIVER SIDE OF TURNAROUND	LF	200	$350	$70,000
	SUBBASE STONE AT TURNAROUND	CY	104	$65	$6,760
	ASPHALT BASE AT TURNAROUND 3"	TON	150	$90	$13,500
	GUARDRAIL AT TURNAROUND	LF	110	$110	$12,100
	ROADWAY STRIPPING	LF	1300	$1	$1,300
	PARKING BUMPERS	EA	35	$95	$3,325
	PARKING LIGHTS - LED	EA	15	$7,000	$105,000
	TOPSOIL	CY	600	$40	$24,000
	LAWN SEED	SF	40000	$0	$16,000
	SHADE TREE	EA	90	$400	$36,000
	FLOWERING TREE	EA	40	$350	$14,000
	NATURALIZING SHRUBS	EA	150	$75	$11,250
				SUBTOTAL	*$394,072*
				20% CONTINGENCY	*$78,814*
				CONSTRUCTION TOTAL	*$472,886*
				DESIGN AND CONSTRUCTION ADMIN. 12%	*$56,746*
				PHASE TOTAL	***$529,633***

MODIFIED PLAN

TOTAL COST OF ALL PHASES: $16,040,563

	Element	Unit	Quant.	Unit Price	Amount
4. THE BOARDWALK PHASE	REMOVE ASPHALT WALKWAY 4' X 1450	CY	75	$65	$4,875
	REMOVE RAILING	LF	1500	$10	$15,000
	18' CANTILEVERED FEATURE AREA	LF	140	$3,200	$448,000
	12 CANTILEVERED WALKWAY STRUCTURE	LF	680	$2,700	$1,836,000
	DECKING FOR WALKWAY	SF	10680	$15	$160,200
	WATERFRONT LIGHTS 100' O.C.- LED	EA	15	$6,000	$90,000
	8' ASPHALT BIKE PATH - ALL NEW	LF	730	$40	$29,200
	52" HIGH BICYCLE RAILING	LF	730	$45	$32,850
	ARMOR STONE SEAT WALL	LF	730	$65	$47,450
	12' WALKWAY FROM TURNAROUND NORTH	LF	560	$125	$70,000
	10' ASPHALT BIKE PATH - TURNAROUND NORTH	LF	570	$70	$39,900
	PICNIC SHELTERS	EA	1	$30,000	$30,000
	RAILING	LF	1500	$150	$225,000
	BENCHES	EA	10	$1,200	$12,000
	INTERPRETIVE SIGNAGE	EA	8	$6,000	$48,000
	TRASH CONTAINERS - SOLAR COMPACTORS	EA	3	$3,500	$10,500
				SUBTOTAL	*$3,098,975*
				20% CONTINGENCY	*$619,795*
				CONSTRUCTION TOTAL	*$3,718,770*
				GEOTECHNICAL ANALYSIS	*$15,000*
				DESIGN AND CONSTRUCTION ADMIN. 12%	*$446,252*
				PHASE TOTAL	***$4,180,022***

	Element	Unit	Quant.	Unit Price	Amount
5. THE MIXED USE BUILDING PHASE	DEMOLISH RESTROOM/CONCESSION	LUMP SUM	1	$7,000	$7,000
	MULTI-PURPOSE 3 STORY 3,200/FLOOR LEED	SF	9600	$300	$2,880,000
	SANITARY PUMP STATION	EA	1	$4,500	$4,500
	PATIO AROUND BLDG	SF	2100	$15	$31,500
	SUBTOTAL				*$2,923,000*
				20% CONTINGENCY	*$584,600*
				CONSTRUCTION TOTAL	*$3,507,600*
				GEOTECHNICAL STUDY	*$5,000*
				DESIGN AND CONSTRUCTION ADMIN. 12%	*$420,912*
				PHASE TOTAL	***$3,933,512***

MODIFIED PLAN

TOTAL COST OF ALL PHASES: $16,040,563

	Element	Unit	Quant.	Unit Price	Amount
6. THE BOAT LAUNCH AND PIER PHASE	REMOVE WOOD DOCK AND PILINGS	EA	1	$5,000	$5,000
	REINFORCE EXISTING SHEET PILE PIER	LF	50	$500	$25,000
	300' PIER EXTENSION SHEETING AND 6' WALK	LF	300	$3,500	$1,050,000
	PIER EXTENSION - RAILING	LF	300	$100	$30,000
	FINGER DOCKS (BOAT SLIPS - 3' WIDE FLOATING)	EA	20	$5,000	$100,000
	BOATERS PUMP STATION	EA	1	$10,000	$10,000
	FISHING HUT AND WEIGH STATION	EA	1	$30,000	$30,000
	SUBTOTAL				*$1,250,000*
	20% CONTINGENCY				*$250,000*
	CONSTRUCTION TOTAL				*$1,500,000*
	DESIGN AND CONSTRUCTION ADMIN. 12%				*$180,000*
	PHASE TOTAL				***$1,680,000***

MODIFIED PLAN

TOTAL COST OF ALL PHASES: $16,040,563

	Element	Unit	Quant.	Unit Price	Amount
7. THE SOUTH END PHASE	DEMOLISH LIGHTS	EA	5	$800	$4,000
	DEMOLISH CONCRETE PAVING 6250 SF	CY	76	$65	$4,940
	DEMOLISH BIKE PATH TO 6" - 440 LF X 12'	CY	97	$15	$1,455
	MISC CLEAR AND GRUB	LUMP SUM	1	$4,000	$4,000
	REMOVE RAILING	LF	260	$10	$2,600
	EROSION CONTROL	LUMP SUM	1	$4,000	$4,000
	REMOVE THRUWAY FENCE	LF	440	$5	$2,200
	WALKWAY 12' ASPHALT	LF	450	$75	$33,750
	RAILING	LF	270	$150	$40,500
	FENCE 6' VINYL COATED AT THRUWAY	LF	440	$20	$8,800
	PICNIC SHELTER	EA	1	$30,000	$30,000
	INTERPRETIVE SIGNAGE	EA	3	$6,000	$18,000
	WATERFRONT LIGHTS 100' O.C.- LED	EA	4	$5,000	$20,000
	CURVED OVERLOOK	LF	85	$200	$17,000
	BENCHES	EA	8	$1,200	$9,600
	TRASH CONTAINERS - SOLAR COMPACTORS	EA	3	$3,500	$10,500
	TOPSOIL 10,500 SF X 6"	CY	194	$40	$7,760
	LAWN SEED	SF	13750	$0	$5,500
	SHADE TREE	EA	35	$400	$14,000
	FLOWERING TREE	EA	15	$350	$5,250
	4' CHAINLINK FENCE VINYL COATED	LF	600	$18	$10,800
	SIGNAGE, BENCHES	LUMP SUM	1	$5,000	$5,000
	SHELTER	LUMP SUM	1	$15,000	$15,000
	SURFACE- STONE DUST .42 ACRE @ 4"	CY	224	$60	$13,440
				SUBTOTAL	*$288,095*
				20% CONTINGENCY	*$57,619*
				CONSTRUCTION TOTAL	*$345,714*
				DESIGN AND CONSTRUCTION ADMIN. 12%	*$41,486*
				PHASE TOTAL	***$387,200***

MODIFIED PLAN

TOTAL COST OF ALL PHASES: $16,040,563

	Element	Unit	Quant.	Unit Price	Amount
8. THE CREEK PHASE	CON/SPAN COVER	LF	225	$14,000	$3,150,000
	FILL OVER COVER	CY	765	$15	$11,475
	TOPSOIL OVER COVER	CY	250	$40	$10,000
	LAWN SEED	SF	13750	$0	$5,500
	CANAL-THEMED PLAY AREA	EA	1	$40,000	$40,000
				SUBTOTAL	*$3,216,975*
				20% CONTINGENCY	*$643,395*
				CONSTRUCTION TOTAL	*$3,860,370*
				GEOTECHNICAL STUDY	*$5,000*
				DESIGN AND CONSTRUCTION ADMIN. 12%	*$463,244*
				PHASE TOTAL	***$4,328,614***

ALTERNATE PLAN

TOTAL COST OF ALL PHASES: $4,947,375

	Element	Unit	Quant.	Unit Price	Amount
1. THE ENTRY PHASE	DEMO EXISTING CURB	LF	600	$5	$3,000
	DEMO LIGHTS	EA	2	$800	$1,600
	DEMO CONCRETE SIDEWALK	CY	22	$150	$3,300
	1 1/2 " TOP COURSE ASPHALT 310 x 24	TON	69	$95	$6,555
	CONCRETE CURB	LF	600	$25	$15,000
	PATCH ROAD ALONG CURB	LF	600	$5	$3,000
	SIDEWALK 8'	LF	300	$50	$15,000
	PARKING LIGHTS - LED	EA	3	$6,000	$18,000
	INTERPRETIVE FEATURES	LUMP SUM	1	$10,000	$10,000
	SHADE TREE	EA	16	$400	$6,400
	SHRUB PLANTINGS	EA	30	$75	$2,250
	TRAFFIC SIGNAGE	LUMP SUM	1	$1,500	$1,500
	ENTRY SIGNAGE	LUMP SUM	1	$12,000	$12,000
				SUBTOTAL	$97,605
				20% CONTINGENCY	$19,521
				CONSTRUCTION TOTAL	$117,126
				BOUNDARY SURVEY	$4,817
				DESIGN AND CONSTRUCTION ADMIN. 12%	$14,055
				PHASE TOTAL	**$135,998**

ALTERNATE PLAN

TOTAL COST OF ALL PHASES: $4,947,375

	Element	Unit	Quant.	Unit Price	Amount
2. THE CENTRAL AREA PHASE	DEMOLISH LIGHTS	EA	6	$800	$4,800
	DEMOLISH PLANTERS	EA	2	$600	$1,200
	DEMOLISH ASPHALT	CY	990	$16	$15,840
	EROSION CONTROL	LUMP SUM	1	$4,000	$4,000
	CUT TOP OF SHEET PILE FLUSH	LF	375	$1	$375
	CLEAN TRENCH DRAIN	EA	1	$2,000	$2,000
	STORM PIPE 12"	LF	180	$28	$5,040
	CATCH BASINS MEDIUM	EA	1	$3,500	$3,500
	CATCH BASINS - LARGE	EA	1	$5,500	$5,500
	SHEET PILE CAP - CONCRETE	LF	375	$125	$46,875
	RAILING	LF	400	$150	$60,000
	CANTILEVER OVERLOOK	EA	60	$2,700	$162,000
	WATERFRONT LIGHTS	EA	4	$5,000	$20,000
	WATERFRONT WALKWAY	LF	480	$125	$60,000
	INTERPRETIVE SIGNAGE	EA	2	$4,000	$8,000
	INTERPRETIVE FEATURE	LUMP SUM	1	$20,000	$20,000
	ARMOR STONE SEAT WALLS	LF	300	$45	$13,500
	BENCHES	EA	6	$1,200	$7,200
	SOLAR TRASH COMPACTORS	EA	2	$3,500	$7,000
	TOPSOIL	CY	250	$40	$10,000
	LAWN SEED	SF	13750	$0	$5,500
	SHADE TREE	EA	10	$400	$4,000
	FLOWERING TREE	EA	8	$350	$2,800
	PARKING LIGHTS - LED	EA	3	$7,000	$21,000
	MISC GRADING	LUMP SUM	1	$4,000	$4,000
	4" SUBBASE STONE	CY	33	$45	$1,485
	4" BASE COURSE	TON	608	$85	$51,680
	3" BINDER COURSE	TON	456	$90	$41,040
	1 1/2 " TOP COURSE	TON	228	$95	$21,660
	CONCRETE CURB AT PARKING	LF	1040	$22	$22,880
				SUBTOTAL	*$632,875*
				20% CONTINGENCY	*$126,575*
				CONSTRUCTION TOTAL	*$759,450*
				GEOTECHNICAL STUDY	*$15,000*
				DESIGN AND CONSTRUCTION ADMIN. 12%	*$91,134*
				PHASE TOTAL	***$865,584***

ALTERNATE PLAN

TOTAL COST OF ALL PHASES: $4,947,375

3. THE ROAD AND THE TURNAROUND PHASE

Element	Unit	Quant.	Unit Price	Amount
DEMO LIGHTS	EA	8	$1,100	$8,800
DEMO ASPHALT 6" DEPTH - 29,350SF	CY	543	$19	$10,317
SAWCUT EXISTING PAVING ON 2 SIDES	LF	2960	$2	$5,920
REMOVE METAL GUARDRAIL	LF	1450	$8	$11,600
EXCAVATION AND DISPOSAL	CY	800	$14	$11,200
EMBANKMENT IN PLACE	CY	650	$10	$6,500
DRAINAGE WORK	LUMP SUM	1	$10,000	$10,000
EROSION CONTROL	LUMP SUM	1	$8,000	$8,000
RETAINING WALL ON RIVER SIDE OF TURNAROUND	LF	200	$350	$70,000
SUBBASE STONE AT TURNAROUND	CY	104	$65	$6,760
ASPHALT BASE AT TURNAROUND 3"	TON	150	$90	$13,500
GUARDRAIL AT TURNAROUND	LF	110	$110	$12,100
ROADWAY & PARKING ASPHALT 1 1/2" TOP 23770SF	TON	220	$95	$20,900
ROADWAY STRIPPING	LF	1200	$1	$1,200
PARKING BUMPERS	EA	35	$95	$3,325
PARKING LIGHTS - LED	EA	15	$7,000	$105,000
TOPSOIL	CY	595	$40	$23,800
LAWN SEED	SF	45000	$0	$18,000
SHADE TREE	EA	50	$400	$20,000
FLOWERING TREE	EA	25	$350	$8,750
NATURALIZING SHRUBS	EA	150	$75	$11,250
			SUBTOTAL	*$386,922*
			20% CONTINGENCY	*$77,384*
			CONSTRUCTION TOTAL	*$464,306*
			DESIGN AND CONSTRUCTION ADMIN. 12%	*$55,717*
			PHASE TOTAL	***$520,023***

ALTERNATE PLAN

TOTAL COST OF ALL PHASES: $4,947,375

	Element	Unit	Quant.	Unit Price	Amount
4. THE BOARDWALK PHASE	REMOVE RAILING	LF	1500	$10	$15,000
	REMOVE ASPHALT WALKWAY 4' X 1450	CY	75	$65	$4,875
	8'CANTILEVERED BUMPOUTS 3 @ 50'	LF	150	$2,000	$300,000
	12' WALKWAY FROM TURNAROUND SOUTH	LF	750	$65	$48,750
	WATERFRONT LIGHTS 100' O.C.- LED	EA	15	$6,000	$90,000
	10' ASPHALT BIKE PATH - FROM TURNAROUND NORTH	LF	590	$70	$41,300
	12' WALKWAY FROM TURNAROUND NORTH	LF	1480	$125	$185,000
	ARMOR STONE SEAT WALL	LF	630	$65	$40,950
	PICNIC SHELTERS	EA	2	$30,000	$60,000
	RAILING	LF	1500	$150	$225,000
	BENCHES	EA	12	$1,200	$14,400
	INTERPRETIVE SIGNAGE	EA	8	$6,000	$48,000
	TRASH CONTAINERS	EA	6	$800	$4,800
				SUBTOTAL	$1,078,075
				20% CONTINGENCY	$215,615
				CONSTRUCTION TOTAL	$1,293,690
				GEOTECHNICAL ANALYSIS	$15,000
				DESIGN AND CONSTRUCTION ADMIN. 12%	$155,243
				PHASE TOTAL	***$1,463,933***

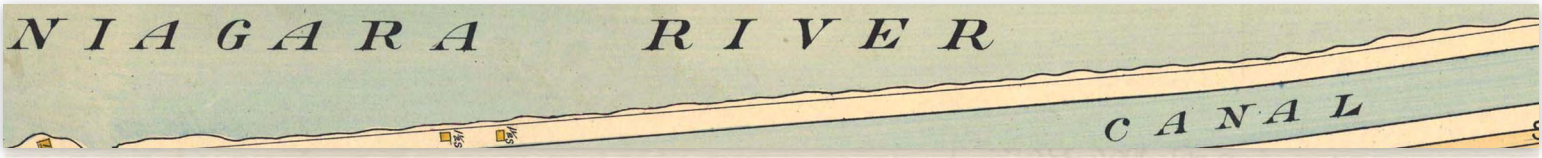
	Element	Unit	Quant.	Unit Price	Amount
5. THE MIXED USE BUILDING PHASE	DEMO BUILDING	LUMP SUM	1	$7,000	$7,000
	MULTI-PURPOSE BUILDING 1 STORY	SF	2000	$275	$550,000
	SANITARY PUMP STATION	EA	1	$2,500	$2,500
	PATIO AROUND BLDG	SF	3000	$15	$45,000
				SUBTOTAL	*$604,500*
				20% CONTINGENCY	*$120,900*
				CONSTRUCTION TOTAL	*$725,400*
				GEOTECHNICAL STUDY	*$5,000*
				DESIGN AND CONSTRUCTION ADMIN. 12%	*$87,048*
				PHASE TOTAL	***$817,448***

ALTERNATE PLAN

TOTAL COST OF ALL PHASES: $4,947,375

6. THE BOAT LAUNCH AND PIER PHASE

Element	Unit	Quant.	Unit Price	Amount
REMOVE WOOD DOCK AND PILINGS	EA	1	$5,000	$5,000
REINFORCE EXISTING SHEET PILE PIER	LF	50	$500	$25,000
PIER EXTENSION 70' SHEETING AND 6' WALK	EA	70	$3,500	$245,000
PIER EXTENSION - RAILING	LF	70	$100	$7,000
FINGER DOCKS (BOAT SLIPS - 3' WIDE FLOATING)	EA	9	$5,000	$45,000
FISHING HUT AND WEIGH STATION	EA	1	$30,000	$30,000
			SUBTOTAL	*$357,000*
			20% CONTINGENCY	*$71,400*
			CONSTRUCTION TOTAL	*$428,400*
			DESIGN AND CONSTRUCTION ADMIN. 12%	*$51,408*
			PHASE TOTAL	***$479,808***


NIAGARA RIVER
CANAL

Appendix 5

Meeting Summaries

design based PLANNING
peter j. smith & company, inc.

Urban Design
Landscape Architecture
Economic Development
Planning

Feasibility Analysis
Black Rock Canal Park
Public Meeting Summary

Meeting Date: August 24, 2010
Issue Date: August 30, 2010
Location: Northwest Buffalo Community Center
In Attendance: Margaret Szczepaniec – Black Rock Canal Park Steering Committee
Sharon Czajkowski - Black Rock Canal Park Steering Committee
Maggie Faircloth - Black Rock Canal Park Steering Committee
John Bauer - Black Rock Canal Park Steering Committee
Robert Niemiec - Black Rock Canal Park Steering Committee
Paul Leuchner - Black Rock Canal Park Steering Committee
Joanna Dickinson - Black Rock Canal Park Steering Committee
Evelyn Vossler – Black Rock–Riverside Good Neighbors Plng. Alliance, co-chair
Jim Vossler – resident
Lisa M. Czajkowski – resident
Yuri Hreshchyshyn - resident
Bryan Hinterberger – US Army Corps of Engineers
Tom Sheehan – NYS Canal Corporation
Melissa Cummings – representing Erie County Legislator Maria Whyte
Bill Nowak – representing NYS Senator Antoine Thompson
Bill Parke – City of Buffalo Office of Strategic Planning
Jim Hornung – Erie County Division of Parks and Recreation
Tom Dearing - Erie County Dept. of Environment & Planning
Mark Rountree – Erie County Dept. of Environment & Planning
Dan Sundell - peter j. smith & company, inc.
Molly Vendura - peter j. smith & company, inc.

Meeting Summary:

Tom Dearing introduced the purpose of the meeting: to review the draft Feasibility Study prepared by peter j. smith & company. He explained that the project Steering Committee has overseen the feasibility study process to date and will meet again to review comments regarding the draft report. The County would be taking comments that evening and would also accept comments by mail/e-mail/drop-off; the comment deadline is September 9, 2010. A summary of this public meeting and comments will be summarized into the final report.

Dan Sundell gave a presentation with information on the various phases, alternatives within each phase, and associated costs. He indicated that estimated costs contained in the draft included design and special study expenses, in addition to construction

Dan opened the meeting up for comments on the draft Feasibility Study:

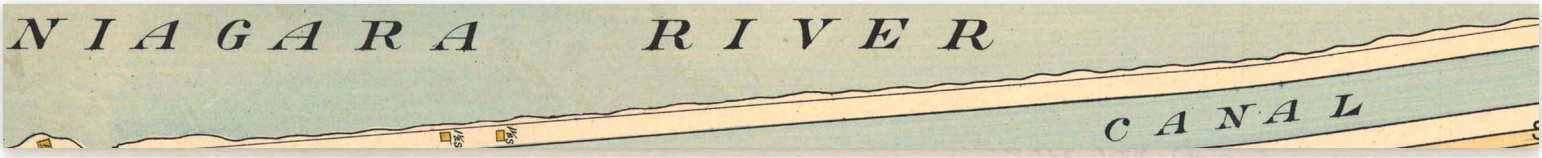
- Tom Dearing thanked Margaret Szczepaniec, the Black Rock Canal Park Steering Committee (BRCPSC) members, and Legislator Maria Whyte for their efforts in the project.
- Tom Dearing explained that the County is interested in the public's input regarding which phase(s) to construct first. He provided a summary of the existing available funding sources and amounts, and explained that the available money helps to determine what work can be done initially. He suggested that the entry road may be a logical first phase.
- There was discussion regarding details of green building/construction elements that the BRCPSC has been wanting in the project.
    - Are there grants available to help fund green building practices? Tom Dearing explained that there likely are grants that are applicable and this would be explored in the next phase of the project.
    - Are these green building/construction elements included in the costs that Dan Sundell presented (the stormwater cistern under the parking lot was cited as an example)? Dan replied that, in many cases these elements are included in the costs and that the cost summaries in the report's appendices provide more details than he presented on the slides this evening, but he would double check regarding the cistern. Tom Dearing explained that more details of the construction and costs, including green building/construction will be developed in the next phase of the project.
    - There was discussion regarding the hassle/ease of some green elements, such as solar-operated lights. Jim Hornung said that solar panels on individual park elements could create maintenance hassles and might not be feasible. Bill Nowak commented that the City Mission just completed the installation of solar panels and that the obstacles are not a great as might be perceived.
- Would more grant money be available if the separate bike path alternative was pursued vs. the shared bike path/road alternative?
- Would a shared bike path/road alternative be acceptable along the Riverwalk? Jim Hornung explained that there are existing areas of shared bike paths along the Riverwalk, so having a shared section through the park shouldn't be a problem. Melissa Cummings mentioned that Erie County passed the Complete Streets resolution [in November 2008], which may have implications on bike path design. Paul Leuchner explained the distinctions between Class I, II and II bike paths.
- An inquiry was made regarding the entry way and the idea regarding the incorporation of park elements to the I-190 abatements. Issues repairing vandalism, inclusion of element to entryway costs and land control were raised. Mr. Thomas Sheehan of the NYS Canal Corporation indicated that possibly pavers and markers could be incorporated into the design. Dan Sundell acknowledged that this was not part of the entryway costs but could possibly be added.

- There was discussion about the options available for security camera monitoring for the park. The County has a motion-activated security camera system that is monitored by staff, but Jim Hornung explained that the system is full and there are also staff limitations, so Black Rock Canal Park will not be able to be part of this system. Instead, he said that the cameras would record to a tape loop stored on the park site; the tapes would be reviewed on an as-needed basis. The security cameras would then function as a "crime deterrent". The cameras would not have trouble capturing images at night.
- Jim Hornung explained how a security gate (an arm that would raise and lower) at the entrance to the park would prevent entry after certain hours, but still allow exit.
- Does the cost estimate for the entrance road include any security items? Dan Sundell and Mark Rountree explained that it had already been decided that security costs would be added to the entry road estimate in the final version of the report.
- Confirmation was requested that all comments received regarding the draft report would be kept private and not published.
- An inquiry was made regarding any contact with the gas station owner on Niagara Street concerning property purchase. Mr. Sundell indicated that contact had not been made, but utilization of said area needs further development prior to such outreach.
- A question was raised regarding Mr. Sundell's statement that Cornelius Creek had its "good days." Sundell elaborated on his comment by noting that, periodically, fishermen can be seen on the creek banks.
- Further discussion occurred among participants relating to Cornelius Creek, including an inquiry regarding Mr. Sundell's statement that should the Creek be left open, it "could be moved up" in priority. Dan Sundell clarified by stating that this comment pertained to the cost difference of alternatives. Attendees of the meeting noted that it was not likely that the City would address the combined sewer overflow problems for many years.
- Regarding the roadway to the north, why is it shown as curved in both options rather than straight in one option? Dan Sundell explained that it was his understanding that the request for a straight road was made in order to maximize parking closest to the building; he explained that the road in one alternative (the Modified Plan) was made straighter near the building in order to accommodate a larger parking area adjacent to the building. The quantity of parking or a straighter road is something that can easily be worked out as the design progresses in the next phases of the project. A meeting participant noted that angled parking worked well at a recent public event held at the park.
- A request was made that the plan needs to include more environmental/sustainable elements such as materials used in parking lot, wind power and others.
- What are the next steps in the process? Tom Dearing explained that once the County approves moving forward with the project, his department will need to hire an engineering firm and start construction documents. Construction of the first phase would likely begin spring 2011. Margaret Szczepaniec pointed out that it will be important to keep the project moving to sustain interest.

The above is our understanding of the meeting discussion. If there are any corrections or additions needed please contact me at mvendura@pjscompany.com within two weeks of the issue date of this summary.

Respectfully Submitted,

Molly B. Vendura, RLA, LEED AP
peter j. smith & company, inc.


NIAGARA RIVER
CANAL

Appendix 6

Flood Levels

Flood Levels

One of the tasks undertaken during the Feasibility Analysis was to determine the maximum historical flood level at the site. Historical water level data was collected from several of the water level gauges along the Niagara River nearest the park. The water level gauges include one upstream gauge at the Black Rock Canal lock, one gauge directly across the river at Frenchman's Creek, and one downstream gauge at the Niagara Intake.

An analysis of the recorded data from these gauges, as well as conversations with local regulatory agencies familiar with flooding events on the river, revealed several dates with the highest recorded water levels. These dates are:

- November 10, 1975
- December 2, 1985
- November 4, 2001
- January 30, 2008
- October 7, 2009.

The daily maximum water levels at these gauges were compared to the water level at the park on two known occasions (September 15 and October 7, 2009), in order to calculate the typical water level difference between these gauges and the park. Since the water level difference between each gauge and the site was different for the two known days, the water level difference for the date of October 7 was used in the site flood level estimate. This decision was made because there was a seiche-induced flood on October 7, weather similar to the other dates of high water levels, whereas September 15 was an average, calm day.

Using the calculated water level difference between the gauges and the park, it was possible to estimate the water level at the park on the established dates of highest water levels. The resultant estimate of the flood elevation at the park ranged from 565.16' to 570.70'. Therefore, a worst case flood level of approximately 571' above sea level shall be used. At this level, the river would reach the top of the boat launch ramp and inundate a small area of asphalt between the ramp and the river, but the remainder of the site would not be flooded.

A seiche resulted in high water levels along the Niagara River on October 7, 2009. The water level at the Ontario Street Boat Launch, pictured at right, was approximately 568.4 feet above sea level on that date.

Estimate of Water Level for Niagara River at Black Rock Canal Park

gauge: Niagara Intake (National Oceanic & Atmospheric Administration) - downstream

date	gauge, daily max (IGLD85)	site actual (IGLD85)	difference	site estimate (IGLD85)	site estimate (NAVD88)
11/10/1975	565.15			570.40	569.94
12/2/1985	565.69			570.94	570.48
11/4/2001	565.91			571.16	570.70
1/30/2008	564.14			569.39	568.93
9/15/2009	562.20	566.46	4.26	567.45	566.99
10/7/2009	563.61	568.86	5.25	568.86	568.40

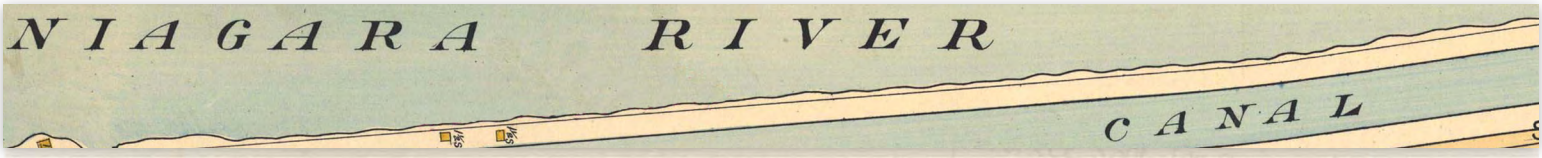
gauge: Frenchman's Creek (Ontario Power Generation) - across river to west

date	gauge, daily max (IGLD85)	site actual (IGLD85)	difference	site estimate (IGLD85)	site estimate (NAVD88)
11/10/1975	N/A				
12/2/1985	N/A				
11/4/2001	565.22			565.74	565.28
1/30/2008	569.68			570.21	569.75
9/15/2009	565.64	566.46	0.82	566.17	565.71
10/7/2009	568.33	568.86	0.53	568.86	568.40

gauge: Black Rock Canal lock at Hamilton St (US Geological Service) -upstream

date	gauge, daily max (IGLD85)	site actual (IGLD85)	difference	site estimate (IGLD85)	site estimate (NAVD88)	
11/10/1975	N/A					
12/2/1985	569.37	*		569.68	569.22	*
11/4/2001	565.31			565.62	565.16	
1/30/2008	569.88			570.19	569.73	
9/15/2009	565.79	566.46	0.67	566.10	565.64	
10/7/2009	568.55	568.86	0.31	568.86	568.40	

* the gauge value for 12/2/1985 is the MEAN daily value, not the max


NIAGARA RIVER
CANAL