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

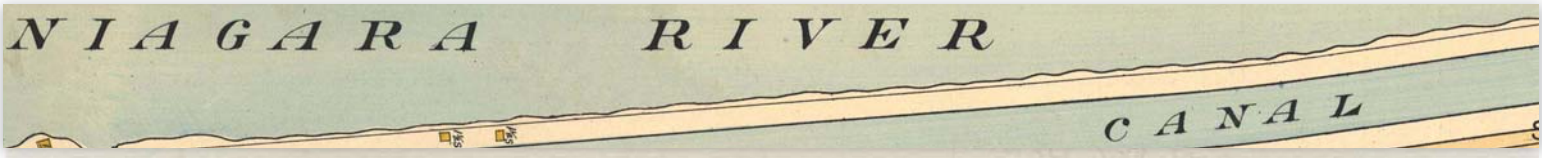
A process has been set up to understand the feasibility of developing Black Rock Canal Park as a major new park in Erie County and the City Of Buffalo. The process includes creating a vision, understanding the context and the site, looking at the plan for the park that was developed by the BRRGNPA and 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.

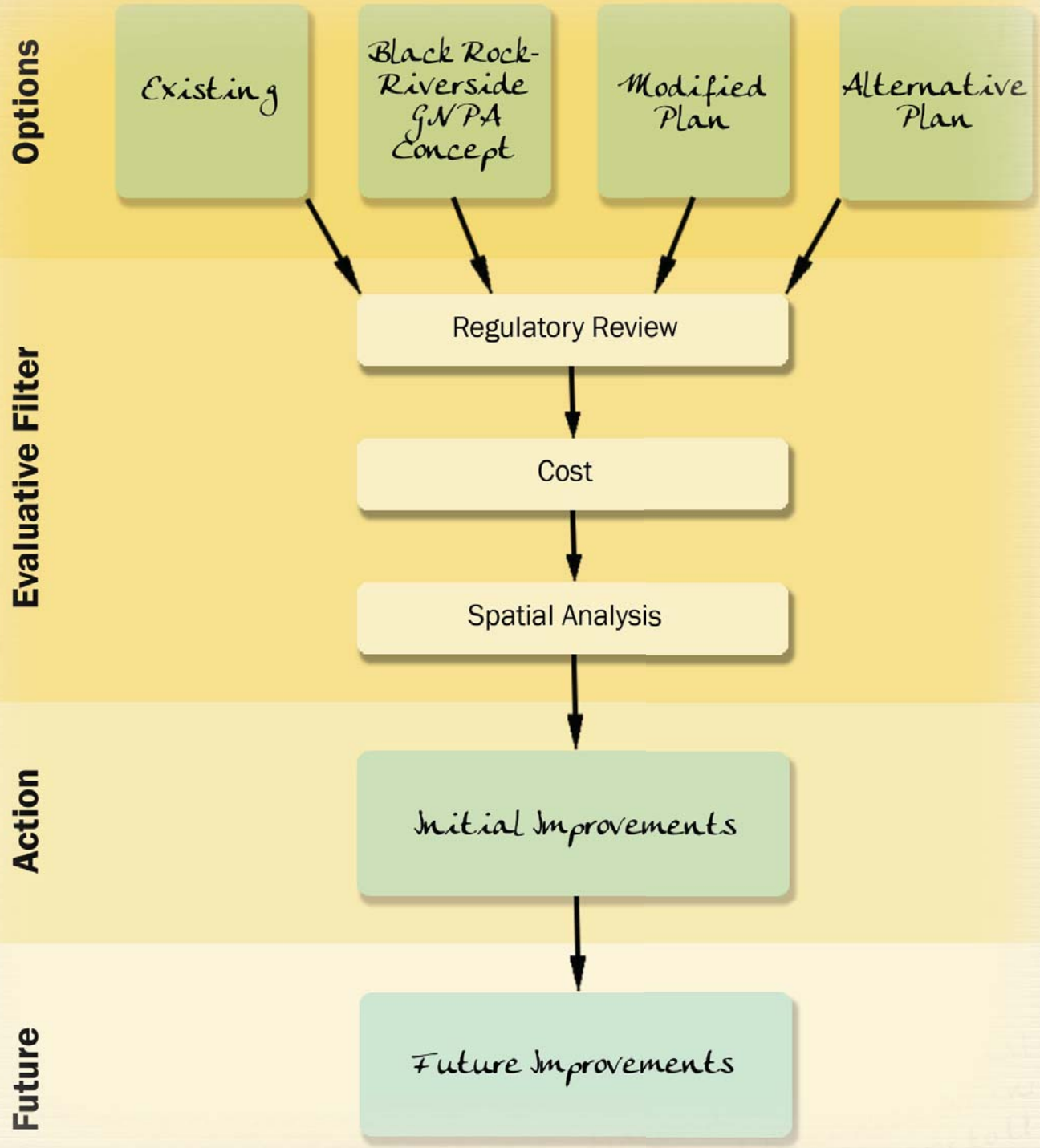
No Action

BRRGNPA


Modified


Alternative


NIAGARA RIVER
CANAL


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

The Alternatives

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.

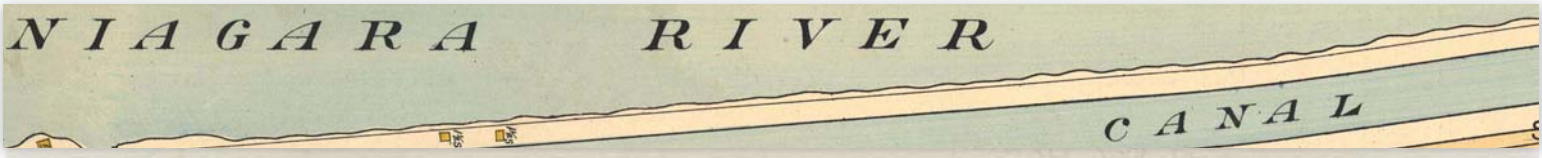
Security and Environmental Issues

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

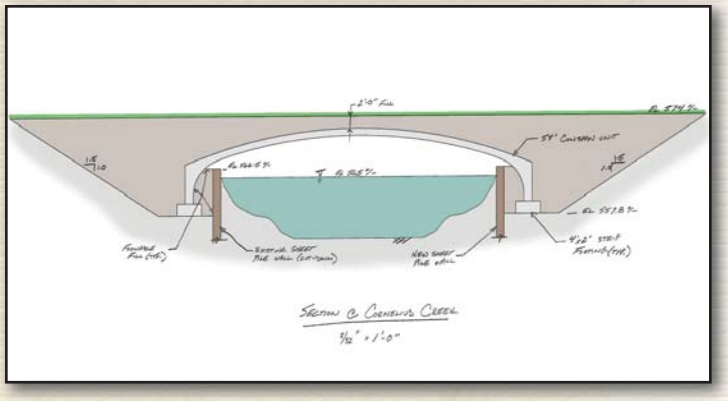
This option includes a cover over Cornelius Creek and a broad range of recreational opportunities in order to attract a wide variety of user groups. It also features expanded and improved boater facilities. The following is a summary of features that are unique to this option:

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.

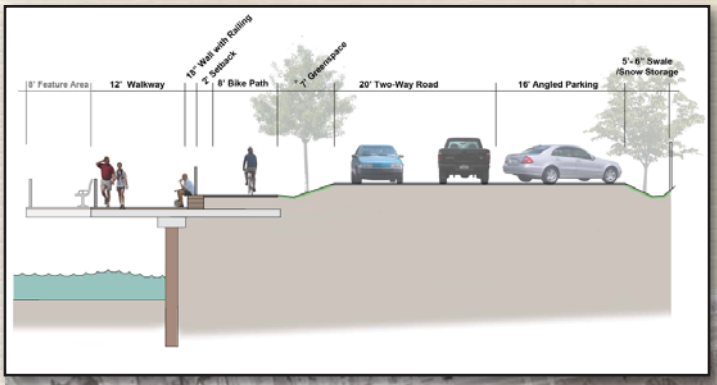
Pier Extension - a 300-foot extension of the existing pier, accomodating approximately 35 boat slips

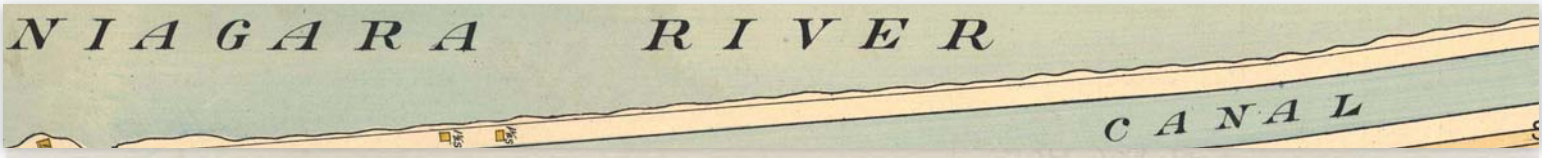
Creek Cover - Cornelius Creek is covered in this option to reduce the sewer odor and fill the gap that bisects the park. Approximately 50 feet is left open at the mouth, as requested by DEC and BSA, so that cleanup of floating debris could occur.



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

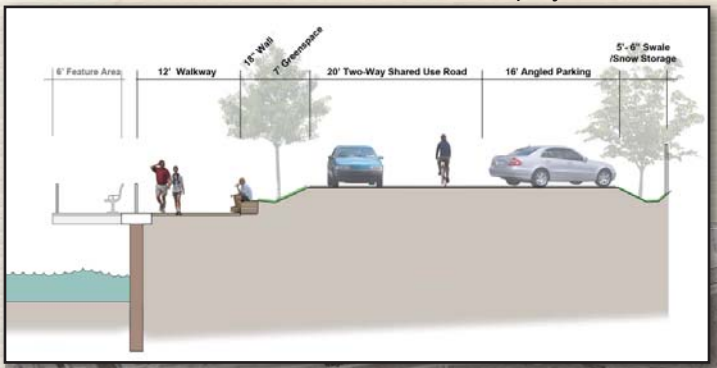
This option features water-dependent recreational uses with an uncovered Cornelius Creek. The following is a description of items that are unique to this plan:

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

The Alternatives

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.

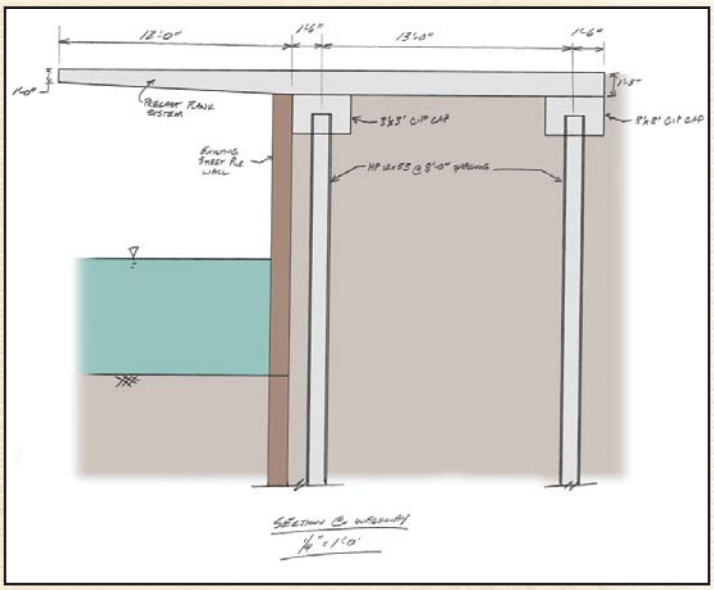
Railing at Buffalo Inner Harbor

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

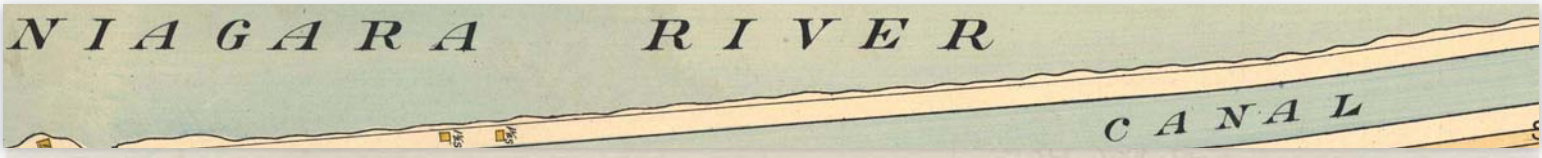
Though the options vary in the amount and width of walkway that overhangs the water, all include some amount of overhang. Structural Engineers at Fisher Associates felt that the most practical and cost effective approach would be to build the overhanging walkway with cantilevered structural members. 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.

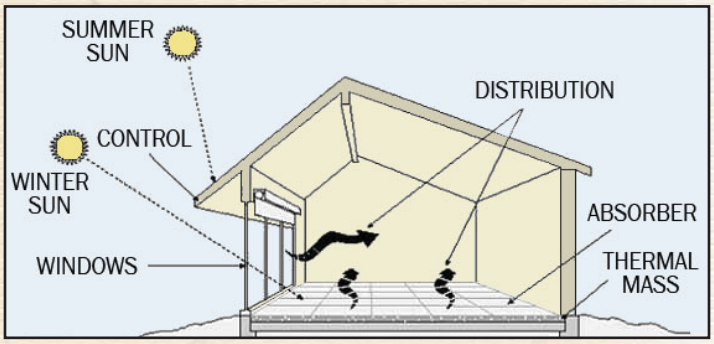
Increase of Greenspace

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.

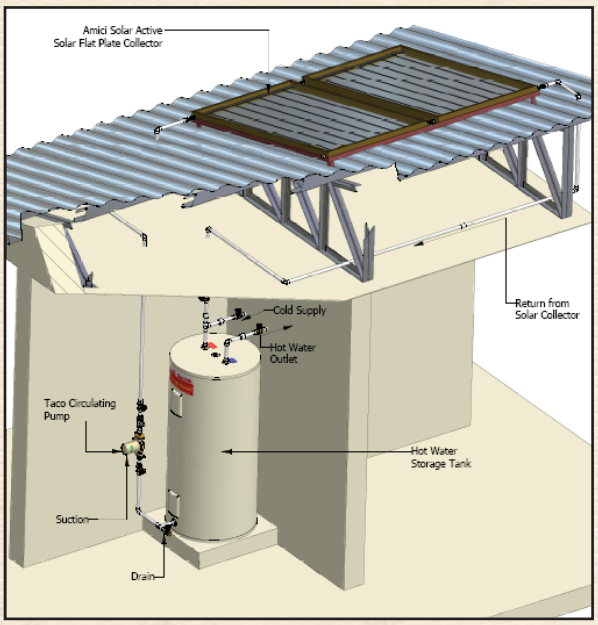


image source: www.amici.com

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

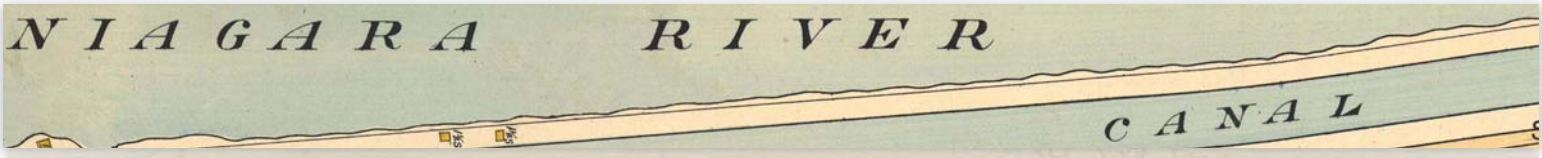
There are a number of battle sites from the War of 1812 proximate to Black Rock Canal Park. In particular, the ship (thought to be the HMS Detroit – see Chapter on Historic Context) that lies at the bottom of the Niagara just offshore from the park, provides an opportunity to inform visitors about the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

The Alternatives

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.

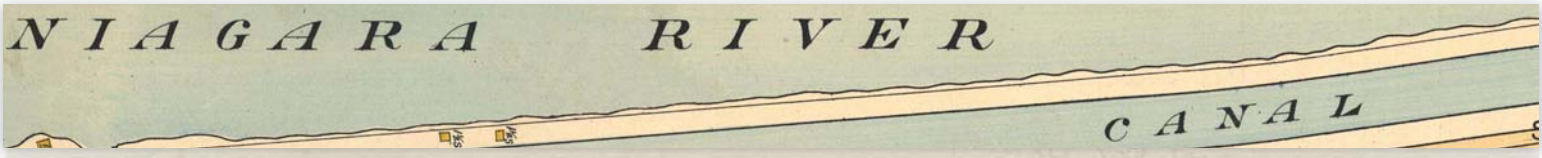
Regulatory Review Requirements

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

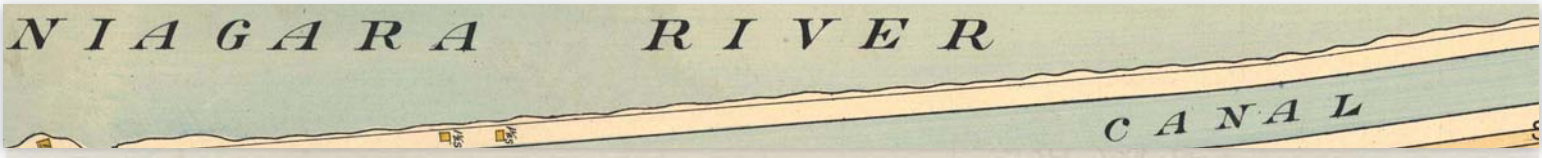
Total Cost	**$4,947,375**
1. The Entry Phase	$135,998
2. The Central Area Phase	$865,584
3. The Road and Turnaround Phase	$529,633
4. The Boardwalk Phase	$4,180,022
5. The Mixed-use Building Phase	$3,933,512
6. The Boat Launch and Pier Phase	$1,680,000
7. The South End Phase	$387,200
8. The Creek Phase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