4.0 Phases

Eight Phases

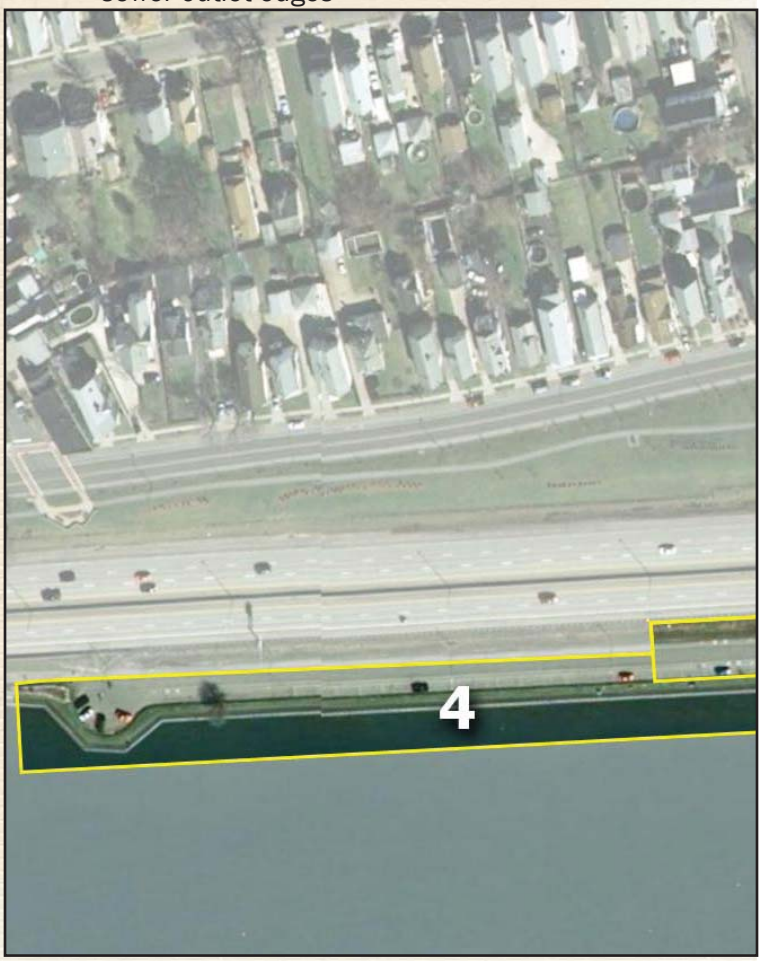
Rather than a single master plan, two plans have been presented for the development of Black Rock Canal Park (Options 3 and 4 on the preceeding pages), as defined on page seven. Both plans remain on the table with viable alternatives for the various components of the project for two reasons:

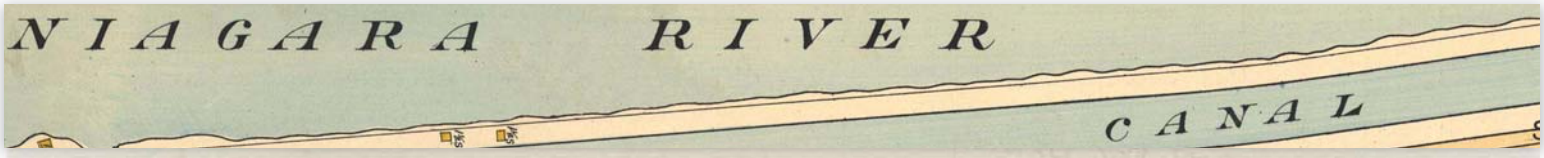
- **Funding** – the total funding available has not been determined. A single source for the entire funds needed has not been identified and monies for this project will not come in at one time. Fund raising and grant writing will instead be an on-going effort until the park is complete.
- **Environmental 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**

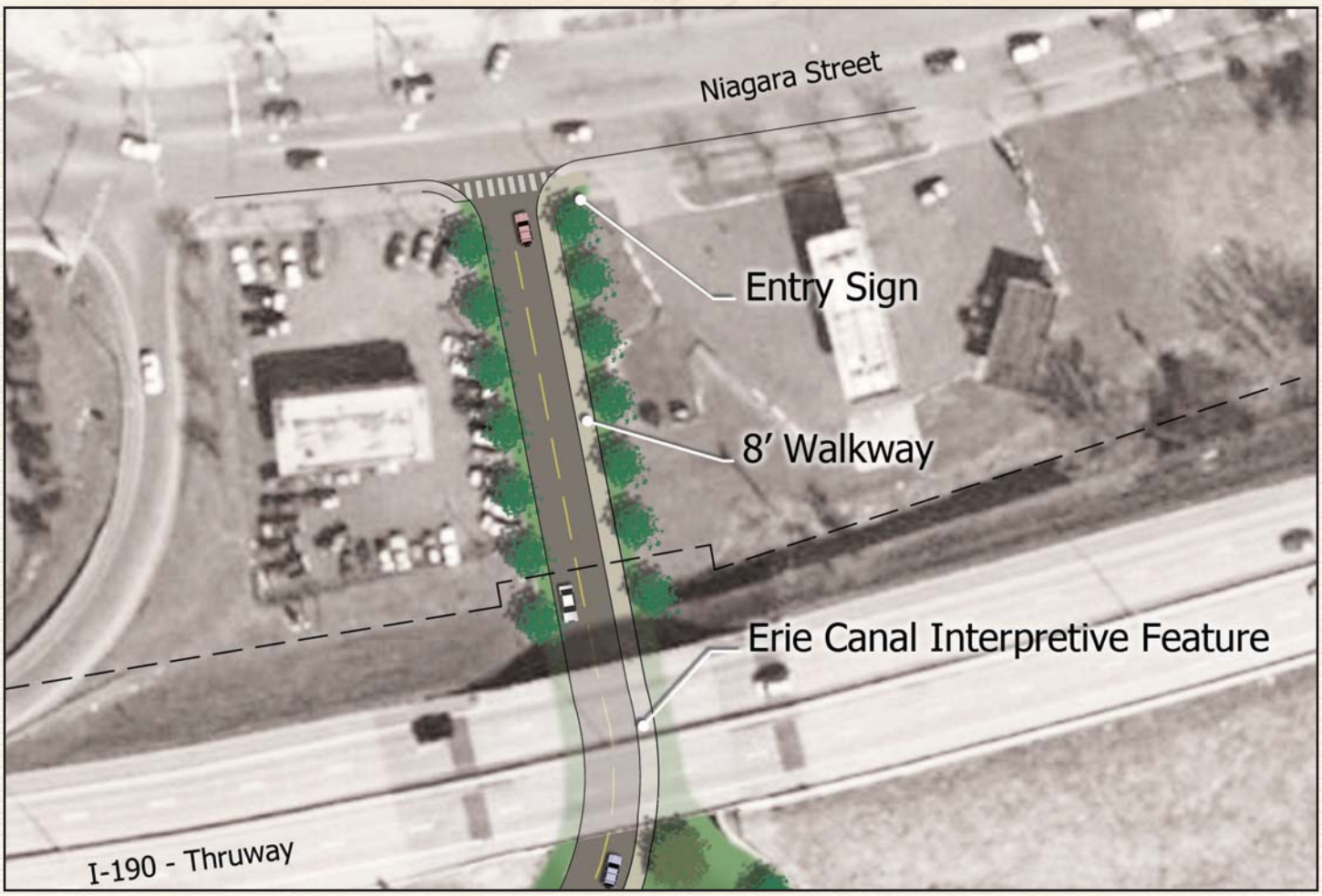
1. The Entry Phase

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.

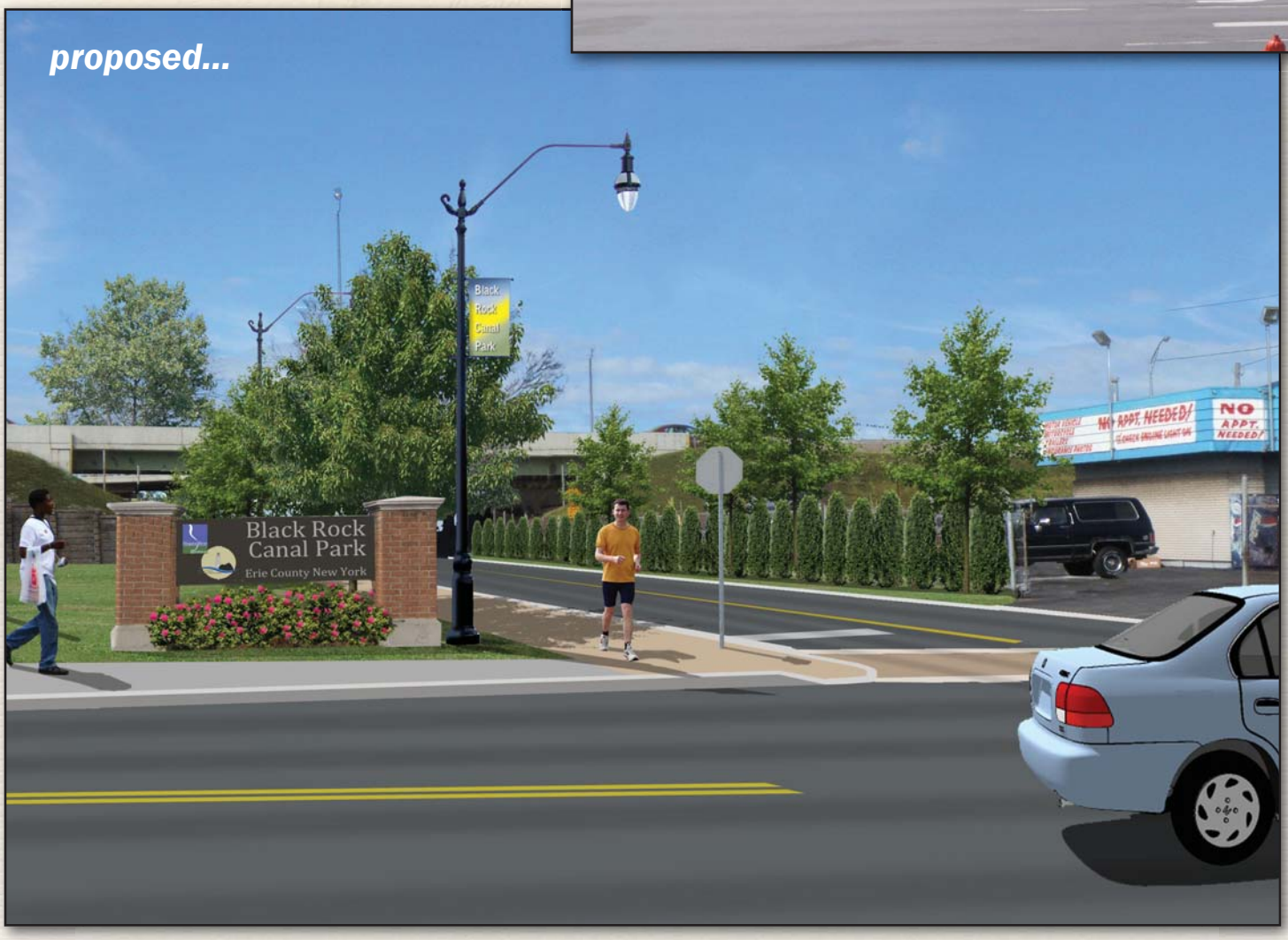


1. The Entry Phase

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.

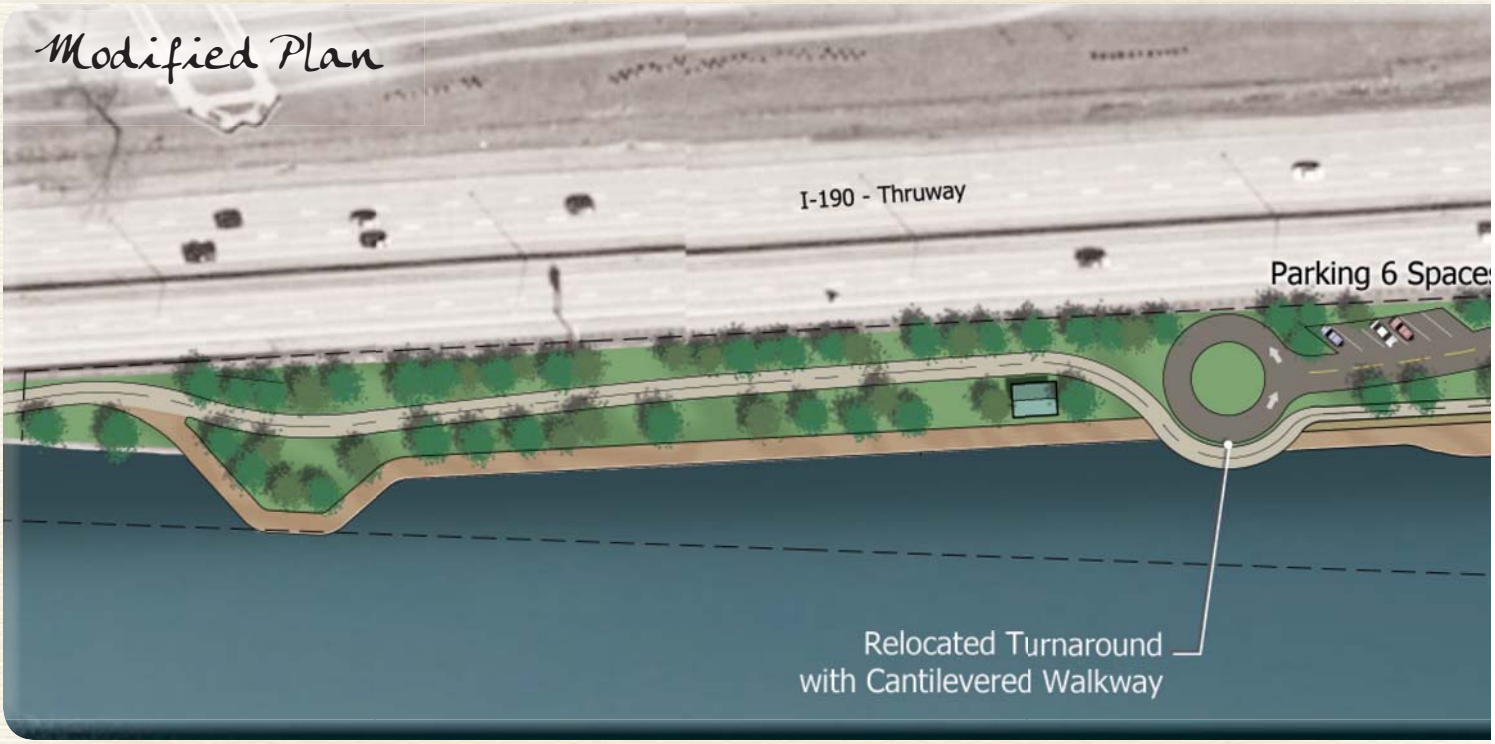
The space between the I-190 Thruway fence and the bulkhead at the water's edge is limited to about 60 feet on average. It presents some special challenges since the standard dimension for a cul-de-sac (turnaround) is also 60 feet. To accommodate the cul-de-sac, some grading and retaining wall construction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

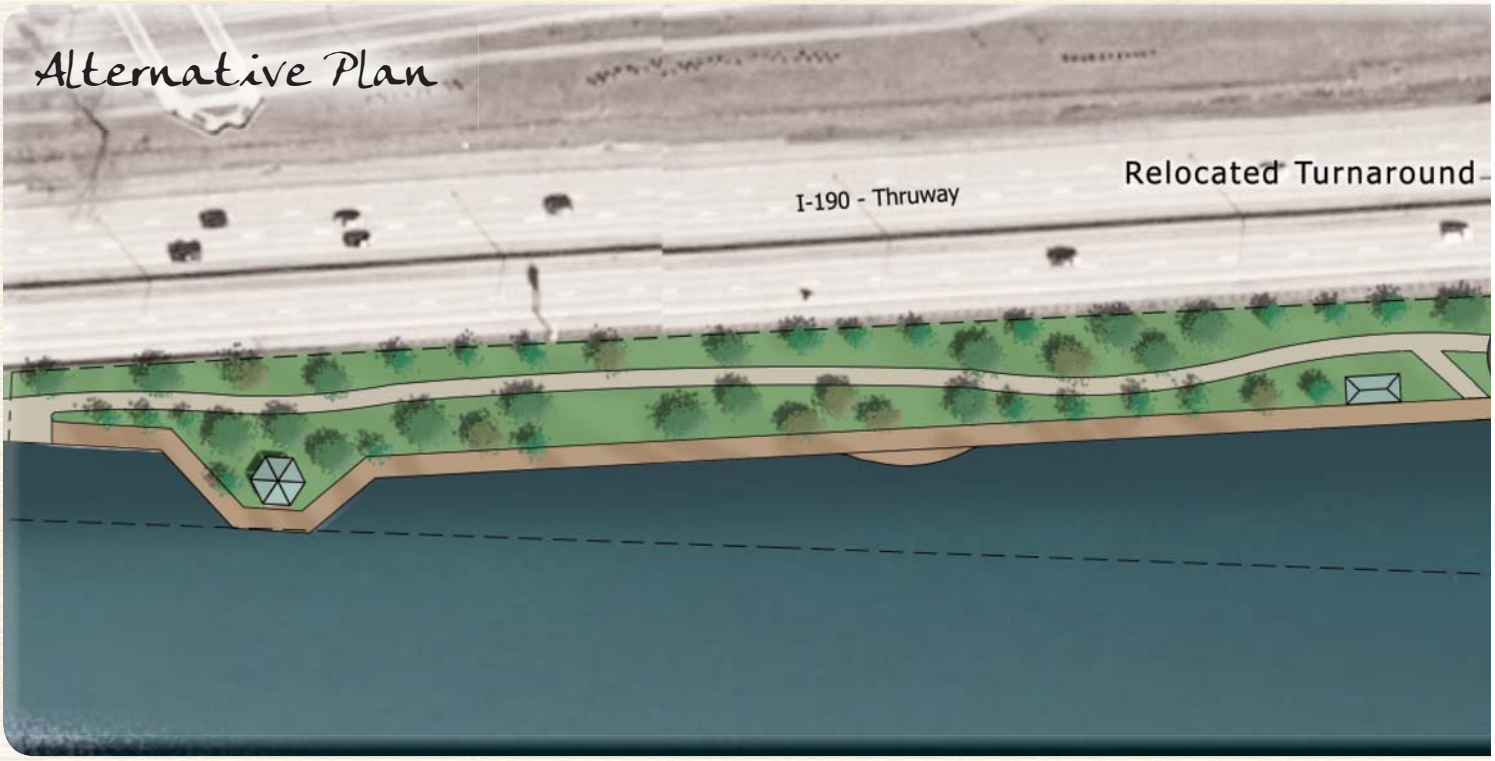
Neither option will require any special regulatory permits.

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

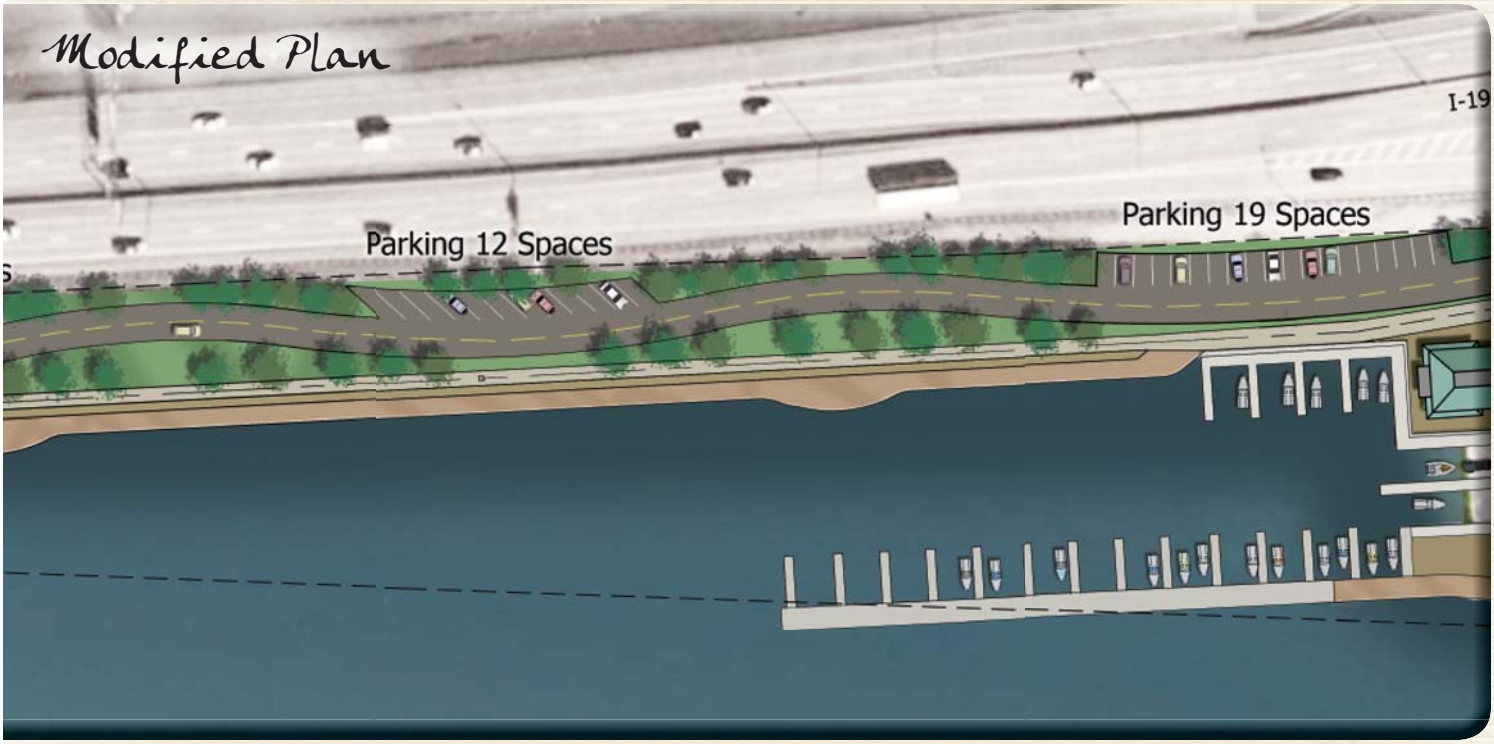
3. The Road and Turnaround Phase



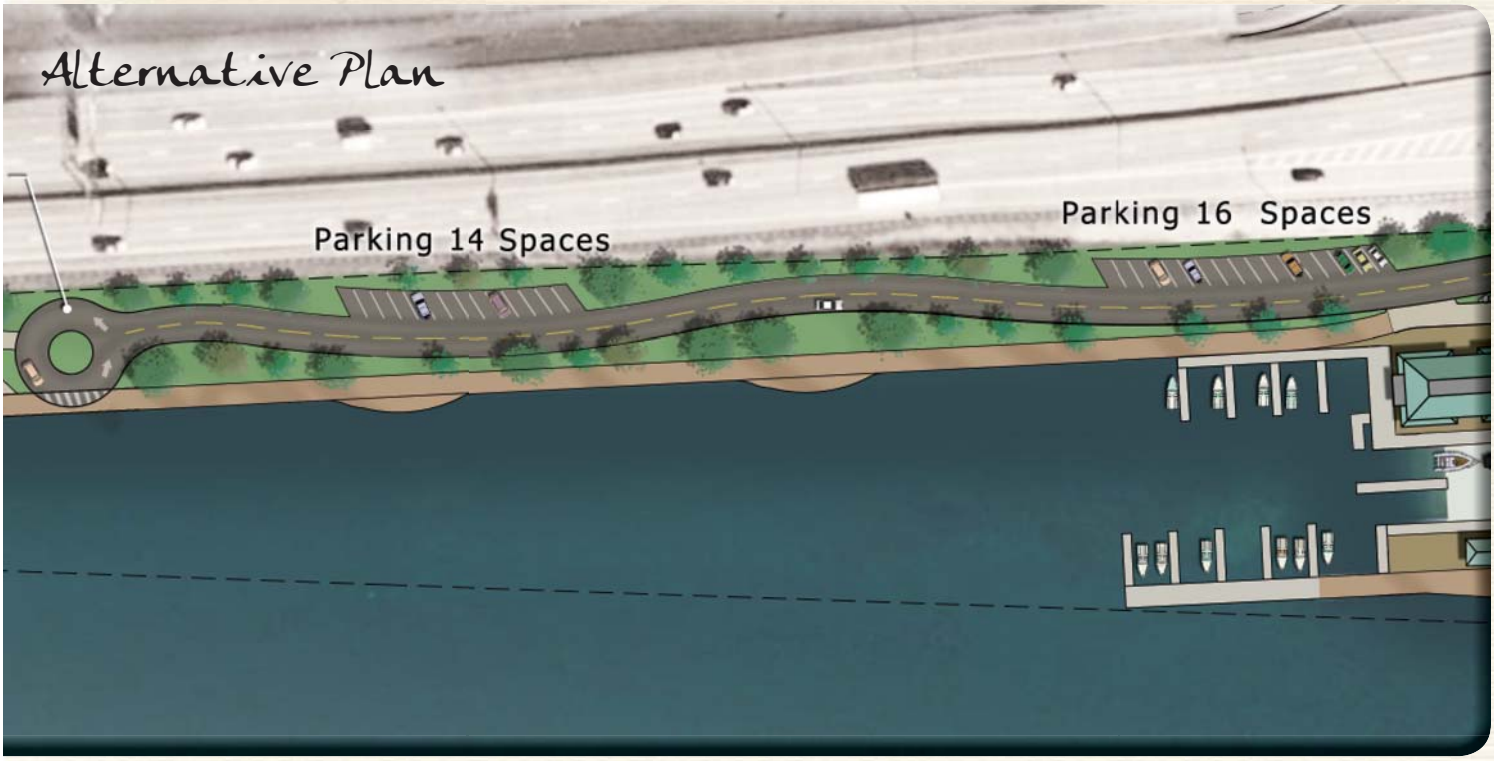
Alternatives for the Road and Turnaround Phase as shown in the Modified Plan (above) and Alternate Plan (below). The options shown in either plan can be mixed or matched during the design and construction of the Road and Tuirnaround Phase.



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.

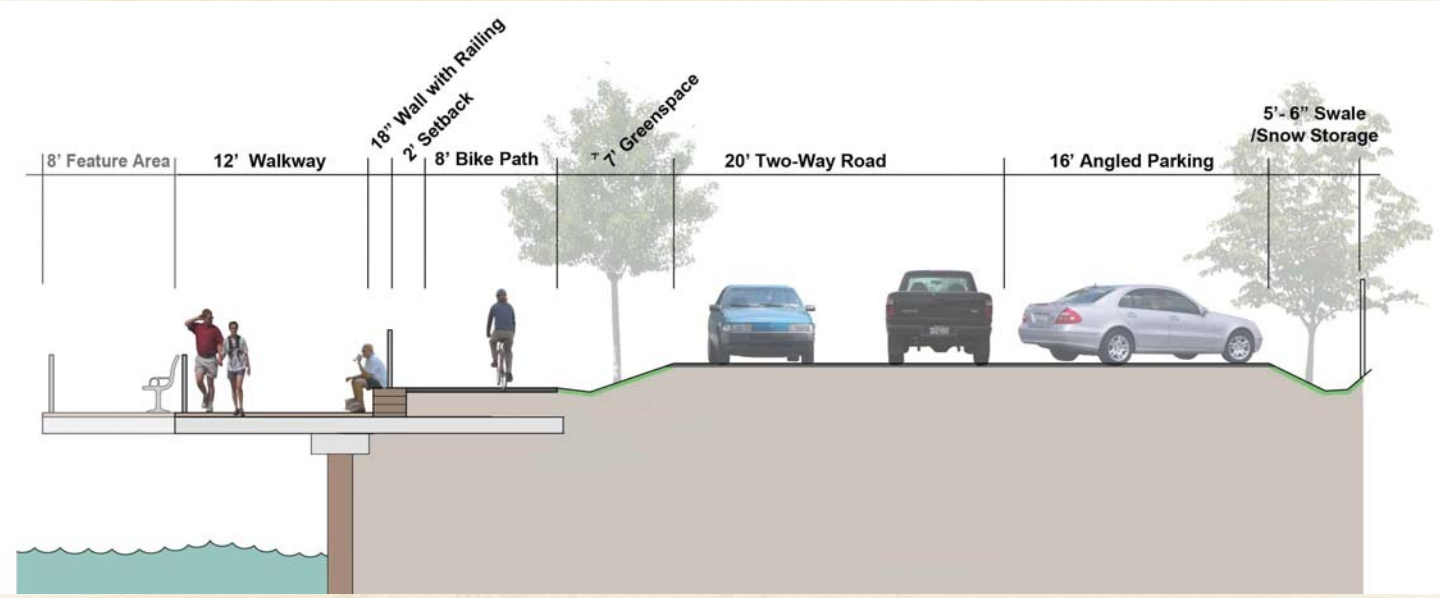
There are two plans for this area with differing solutions for the walkway:

- 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.

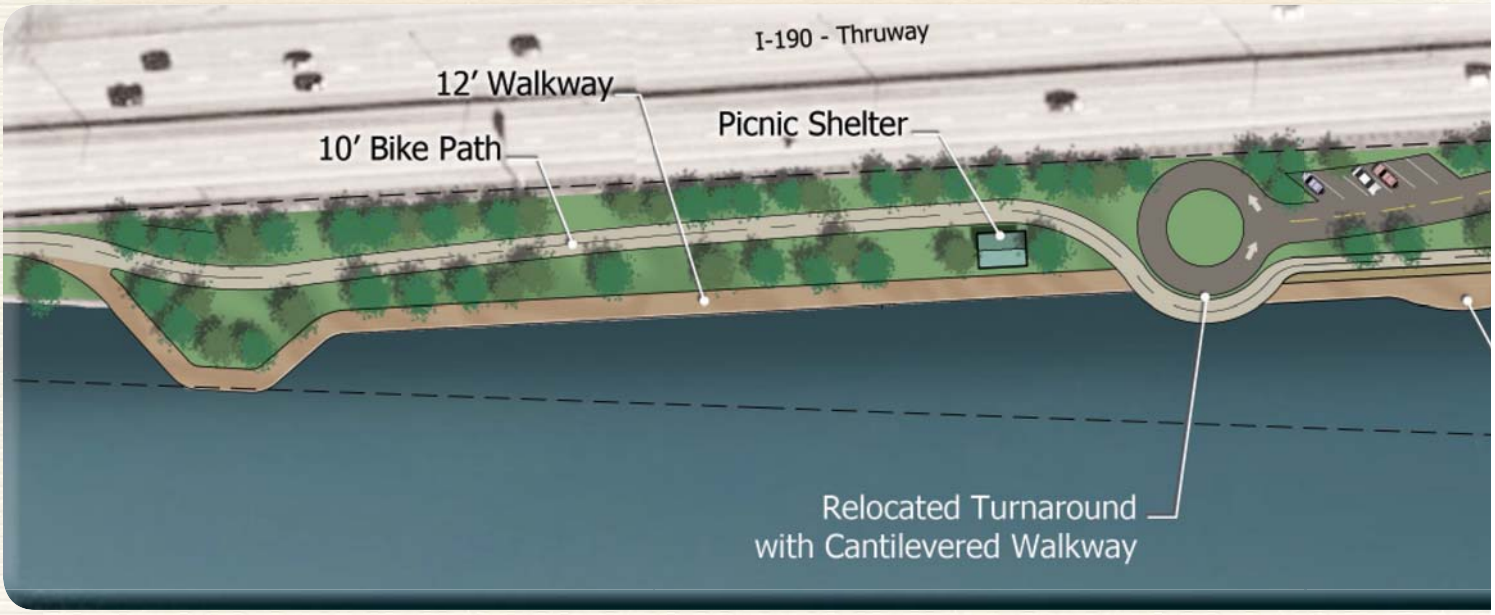
The highlighted area, below, shows the location of the Boardwalk Phase.

4. The Boardwalk Phase

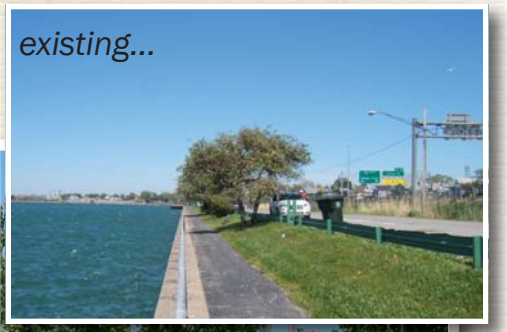


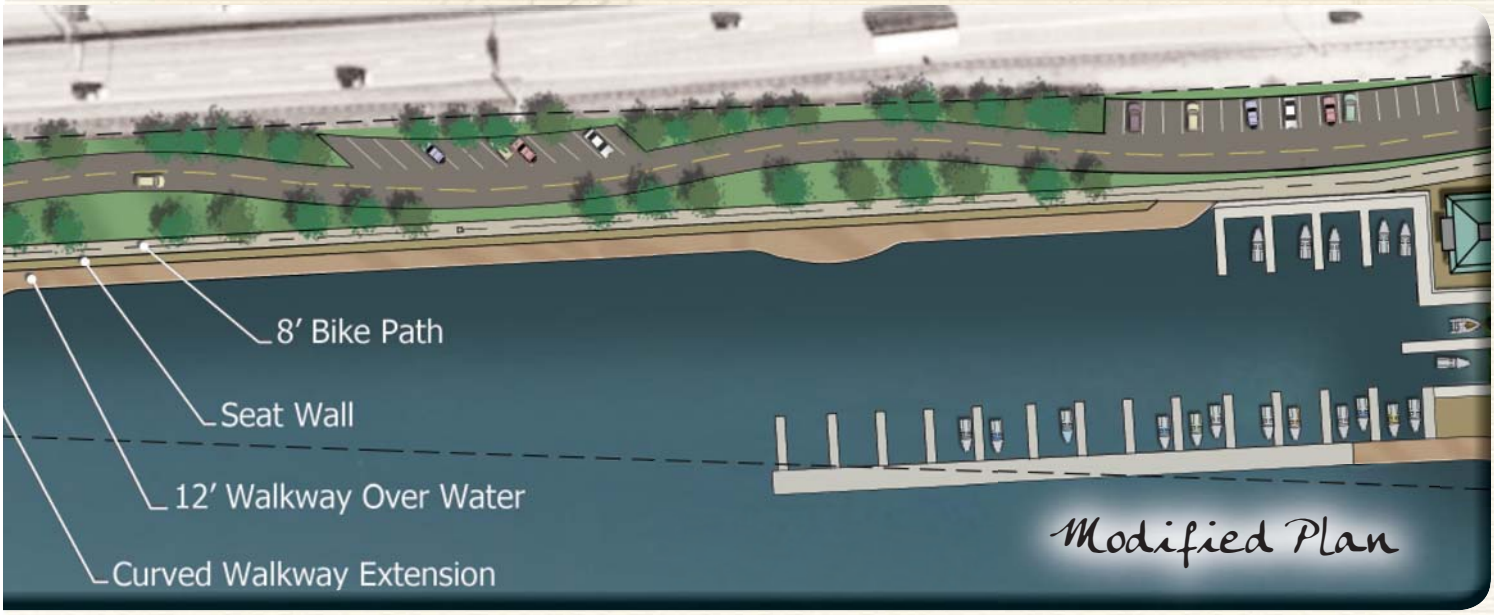
The Boardwalk Phase as shown in the Modified Plan features two parallel pathways: an 8' wide bike path, which allows cyclists to ride through the park free of conflicts with cars and pedestrians, and a 12' wide waterfront walkway. The walkway is cantilevered over the water due to the limited width of 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.

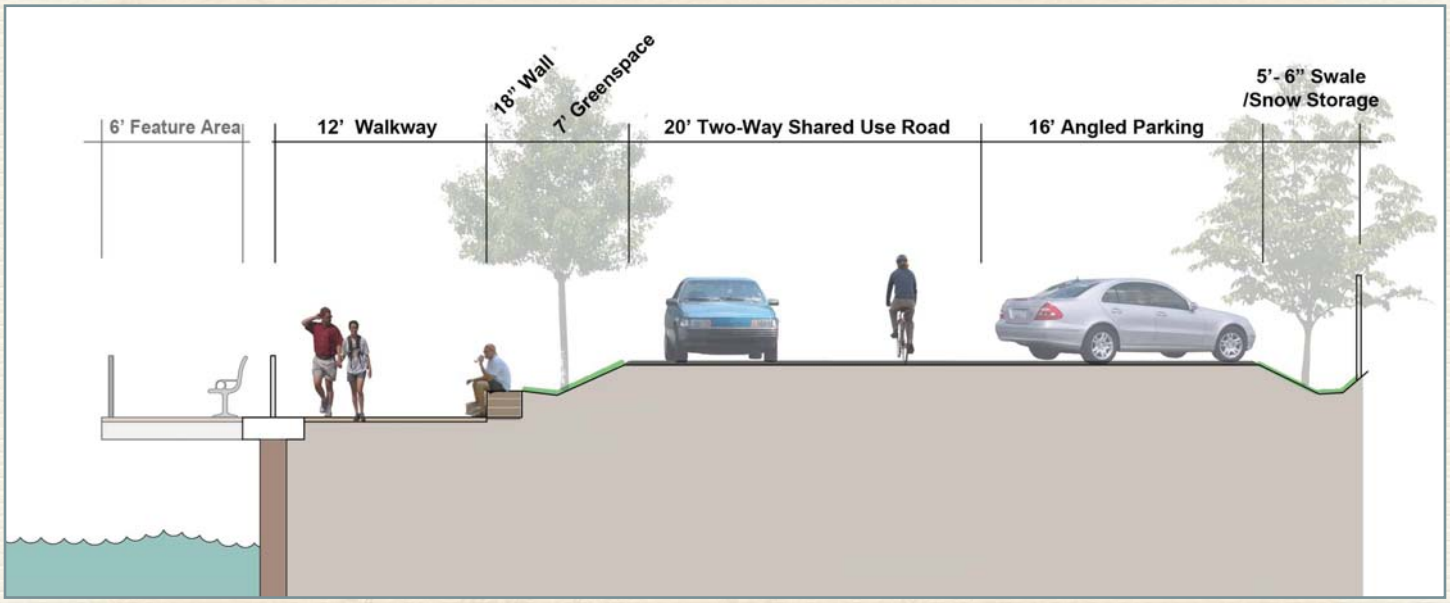


4. The Boardwalk Phase





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

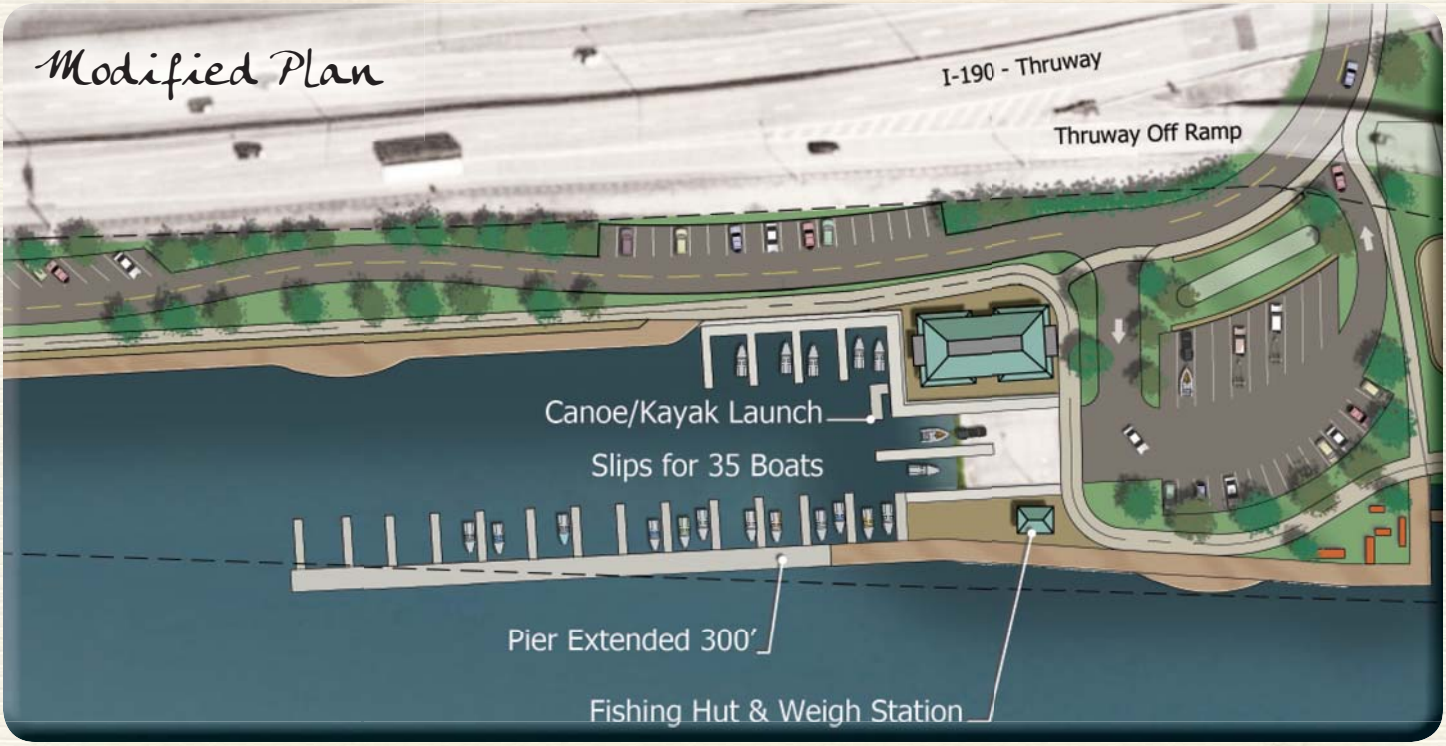
The extent of maintenance in this area will depend on how it is operated. If overnight mooring is permitted, an attendant may need to be present on a round-the-clock basis during the active boating season. If the slips are only used during normal park hours (dawn till dusk), no overnight supervision 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

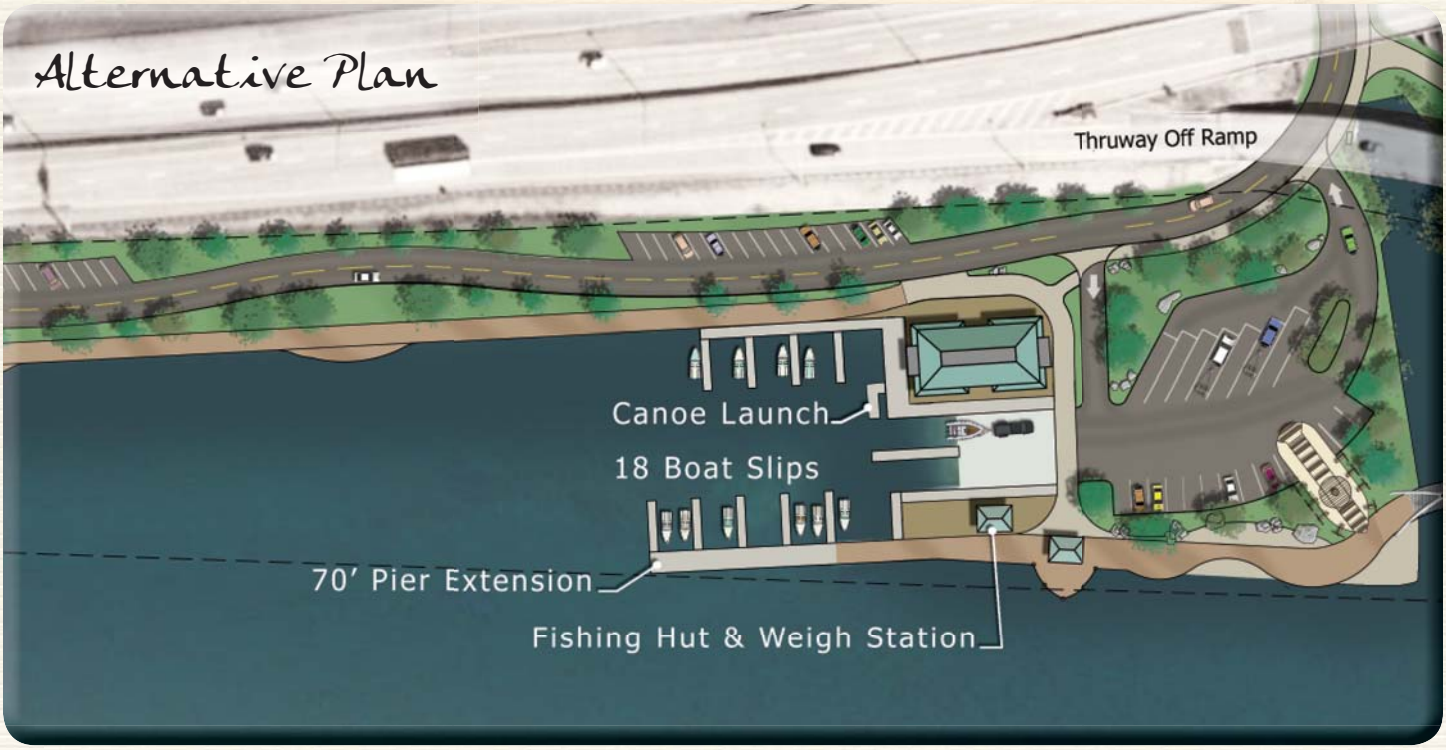
Proposed activities in the boat launch and/or pier area are subject to Coastal Consistency review by the New York State Department of State, according to the New York State Coastal Managment Program, as well as by the Federal Government, according to the Coastal Zone Management Act. The review process 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



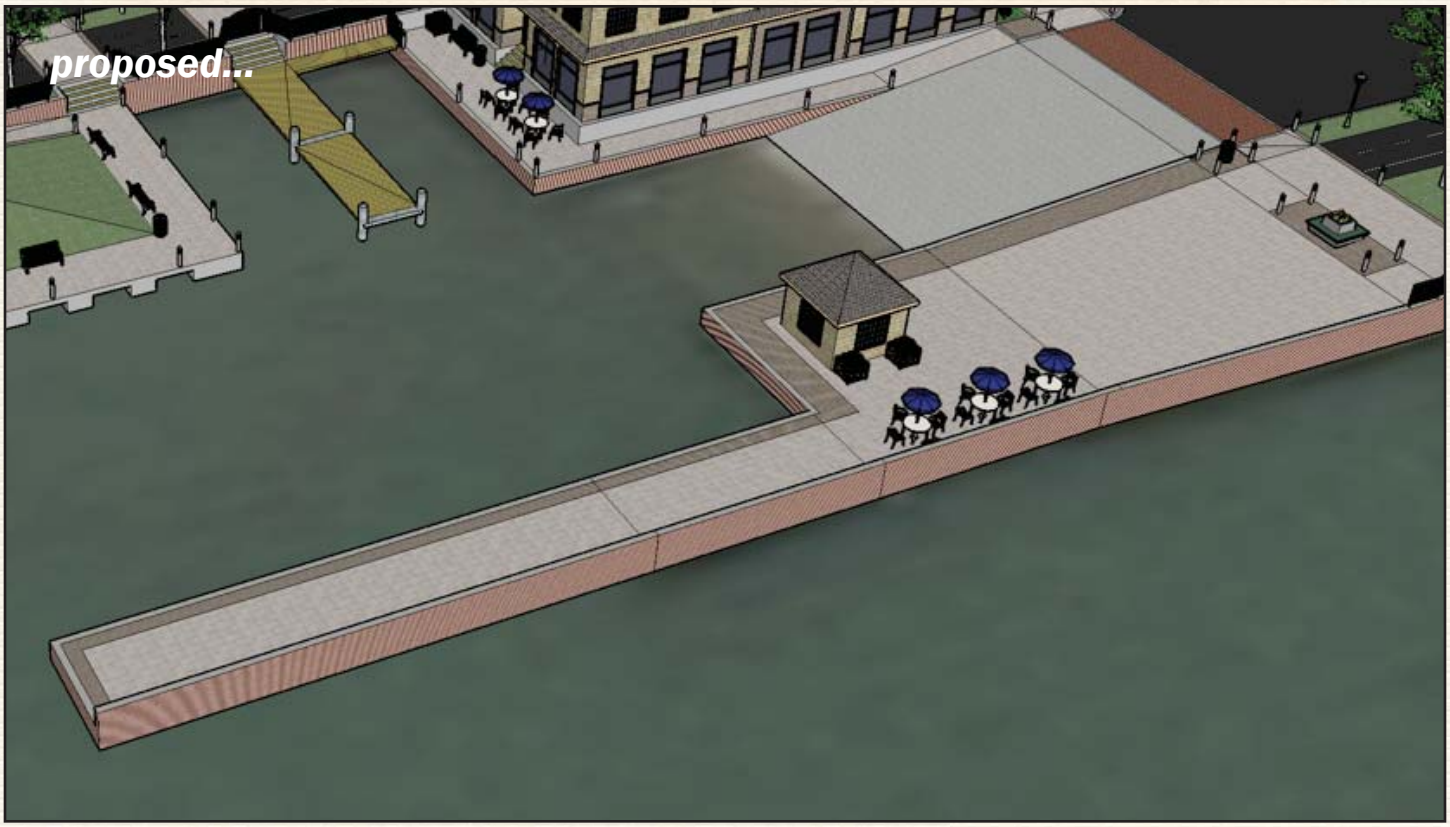
Above: Alternatives for the Boat Launch and Pier as shown in the Modified Plan. Below: Alternatives for the Boat Launch and Pier as shown in the Alternative Plan. The options shown in either plan can be mixed or matched during the design and construction of the Boat Launch and Pier Phase.



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

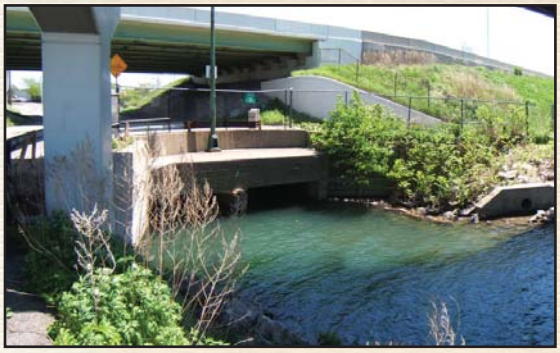
Costs shown are approximate and may change as construction progresses.

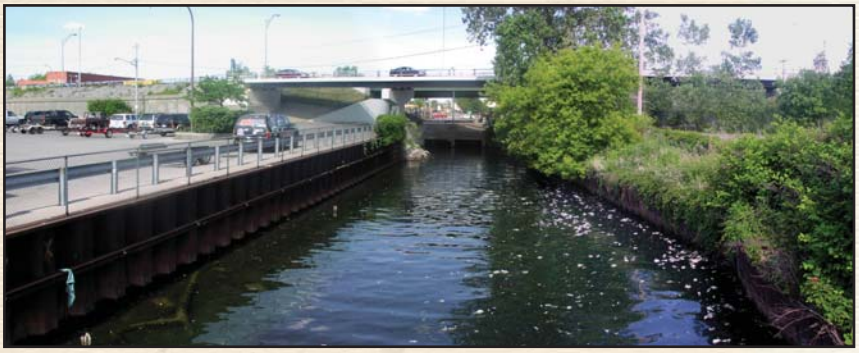
Modified Plan

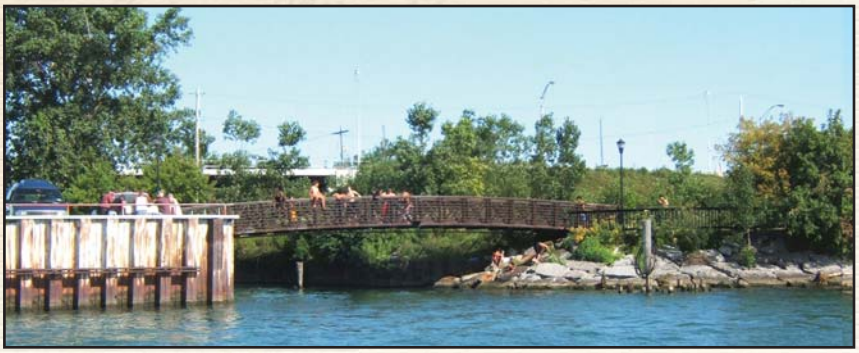
CONSTRUCT/SPAN COVER	$3,150,000
FILL OVER COVER	$11,475
TOPSOIL OVER COVER	$10,000
LAWN SEED	$5,500
CANAL-THEMED PLAY AREA	$40,000
SUBTOTAL	$3,216,975
20% CONTINGENCY	$643,395
CONSTRUCTION TOTAL	$3,860,370
GEOTECHNICAL STUDY	$5,000
DESIGN AND CONSTRUCTION ADMIN. 12%	$463,244
PHASE TOTAL	**$4,328,614**

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

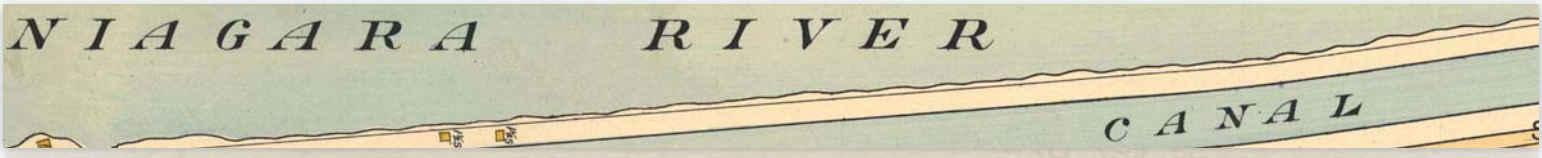
Above: Alternatives for the Creek Phase as shown in the Modified Plan.
Below: Alternatives for the Creek Phase as shown in the Alternative Plan. The options shown in either plan can be mixed or matched during the design and construction of the Creek Phase.

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.