6.0 The Site

Project Limits

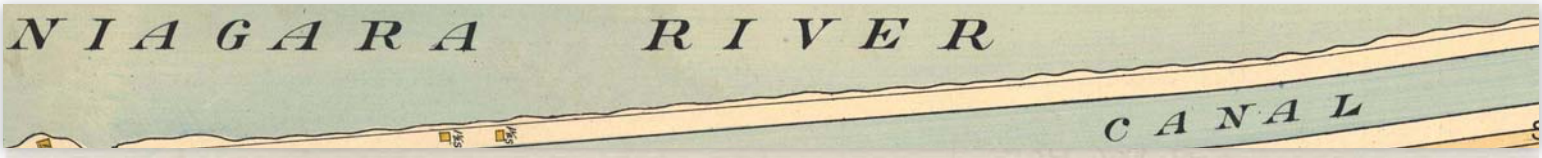
At the outset of any planning project, it is helpful to prepare a study area boundary even though it is imperative to consider the greater context; in this case the Black Rock Riverside community as well as the Buffalo Niagara region. There are two boundaries that define the Black Rock Canal Park project.

Property Boundary

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

Study Area

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



General Site Conditions

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

Ontario Street Boat Launch

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

The Site

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

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

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

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

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

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

Cornelius Creek Park

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

Looking into Cornelius Creek park from the pedestrian bridge,

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

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

The Site

Cornelius Creek

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

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

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

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

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

Sheet Pile Wall

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

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

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

View of wall from parking lot looking north.

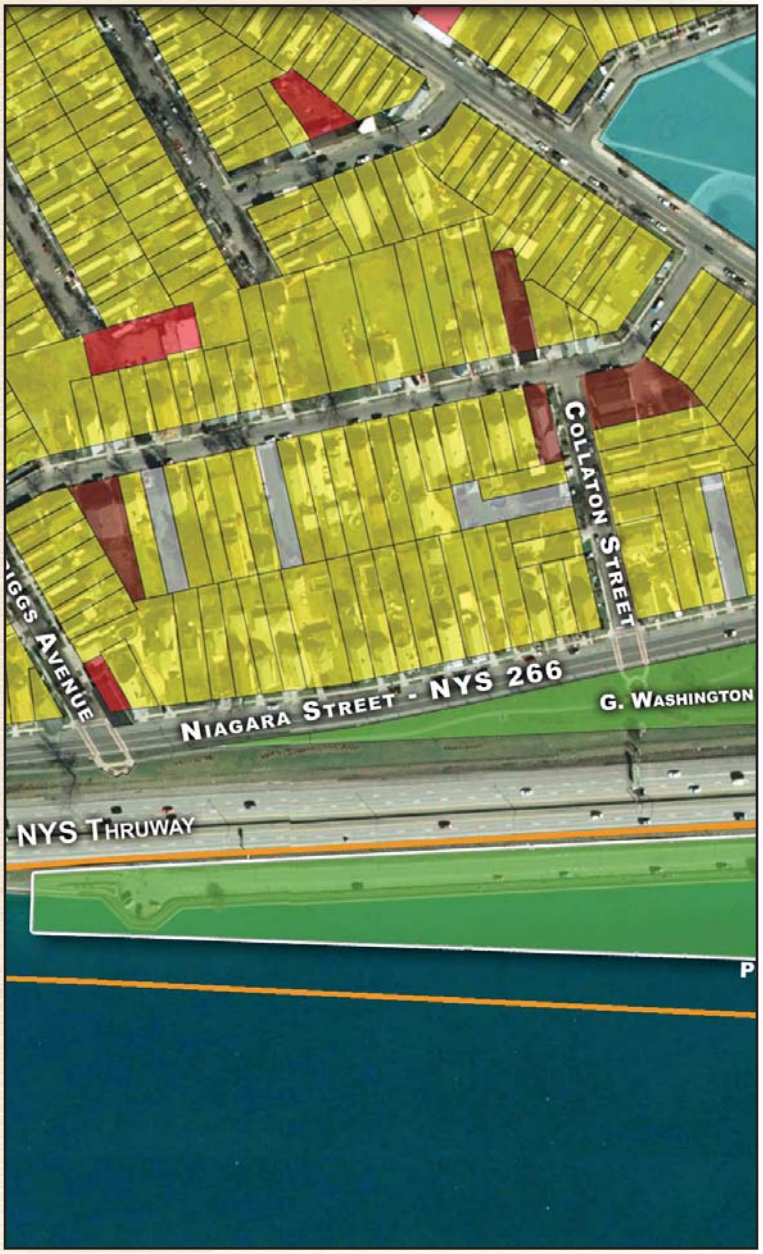
View of north creek wall and pedestrian bridge over mouth of Cornelius Creek.

The Site

Surrounding Land Use

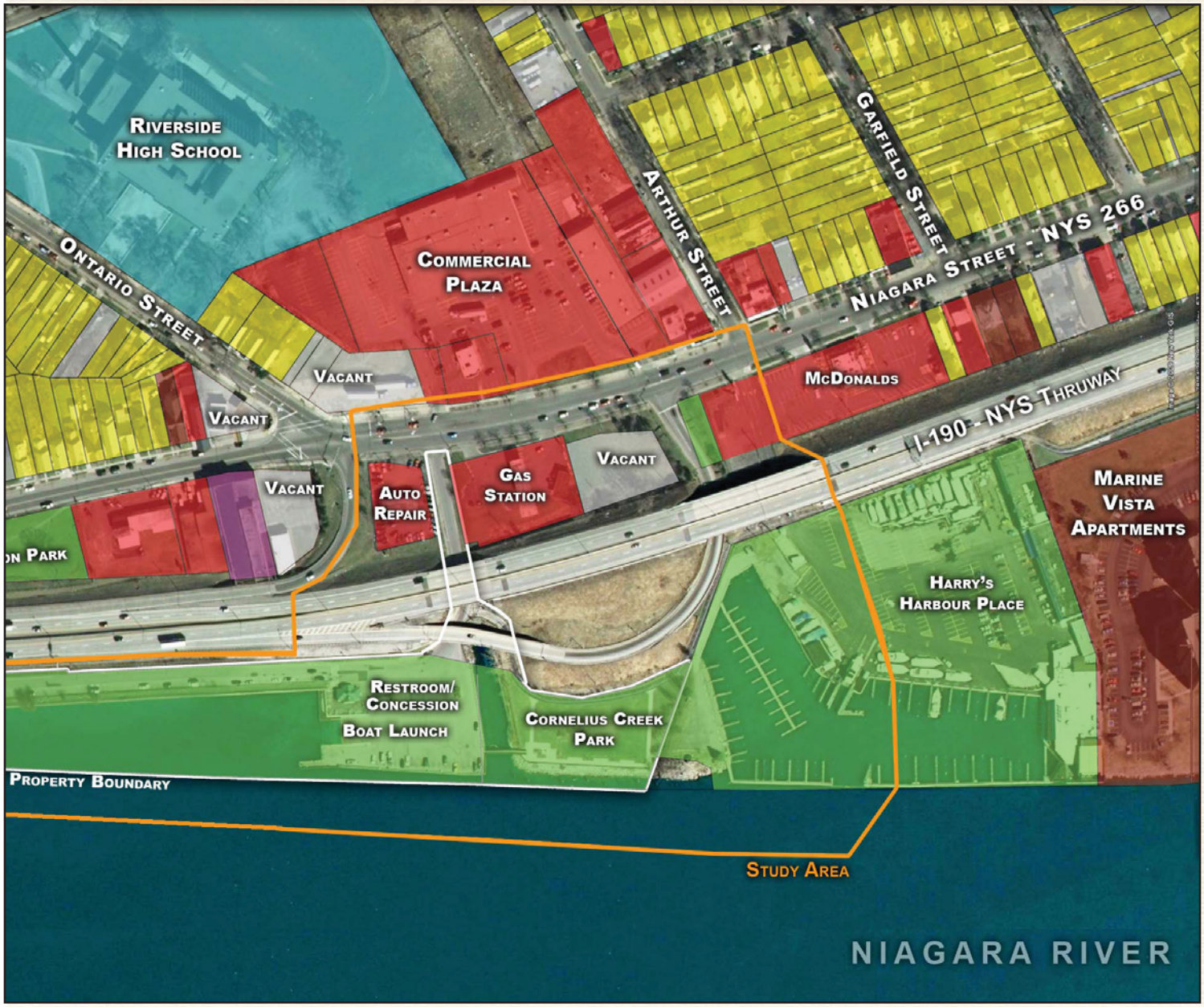
There are a variety of land uses around Black Rock Canal Park. Niagara Street(NYS Route 266) has predominately commercial uses in the vicinity of the park entrance, with a auto repair shop north of the park entry road and a Kwik Fill gas station to the south. On the opposite (east) side of Niagara Street,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

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



Land Use Legend

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



Circulation and Access

Vehicle Access

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

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

Boat Access

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

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

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

Bicycle Access

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

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

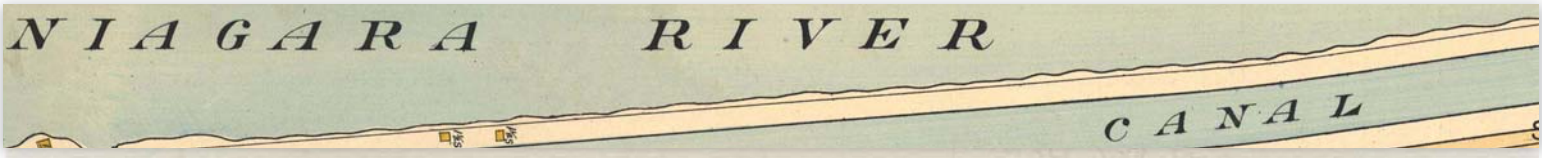
The Site

Views

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

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

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


NIAGARA RIVER
CANAL


1

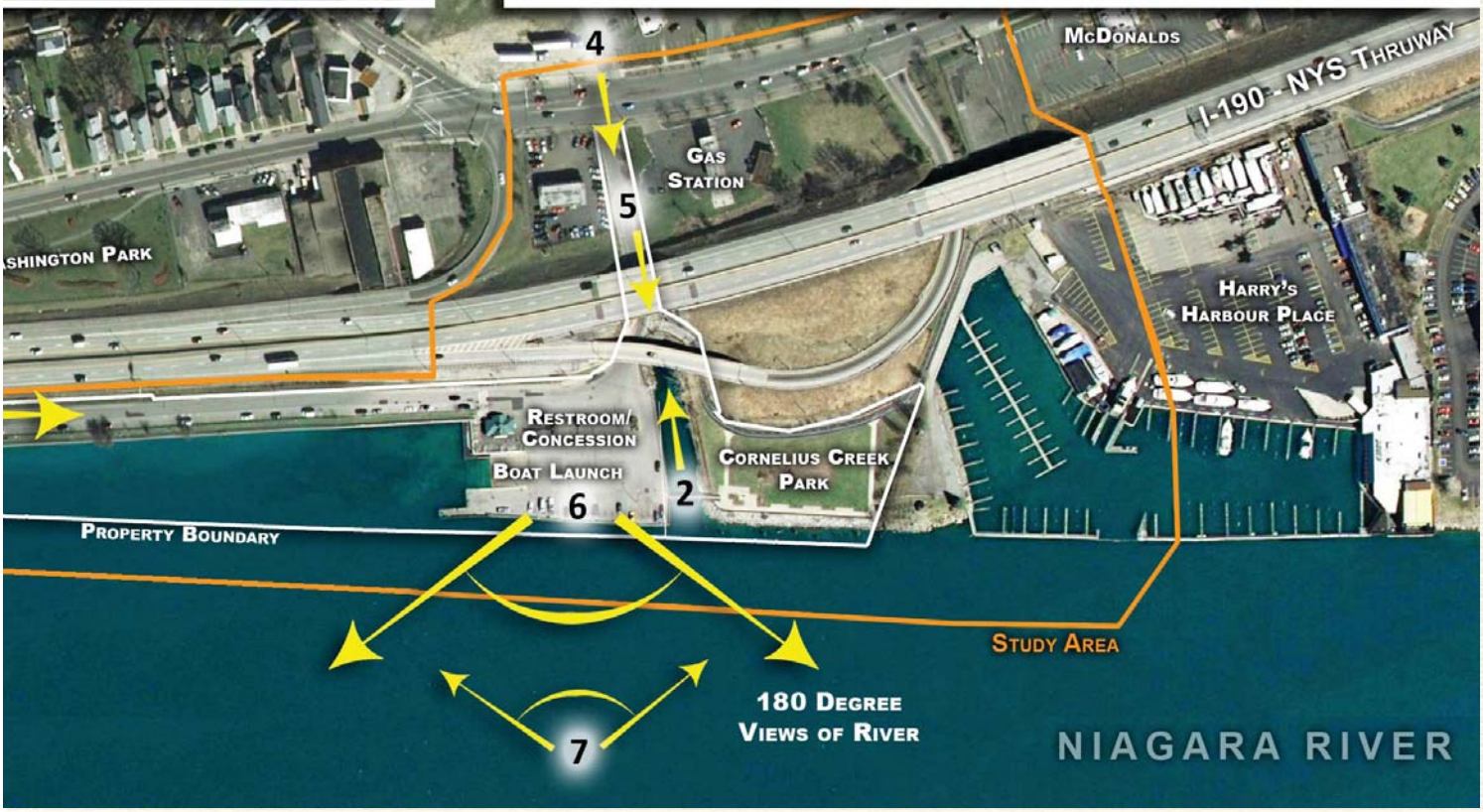

VIEW OF CREEK FROM PED. BRIDGE
2


VIEW OF ENTRANCE
4

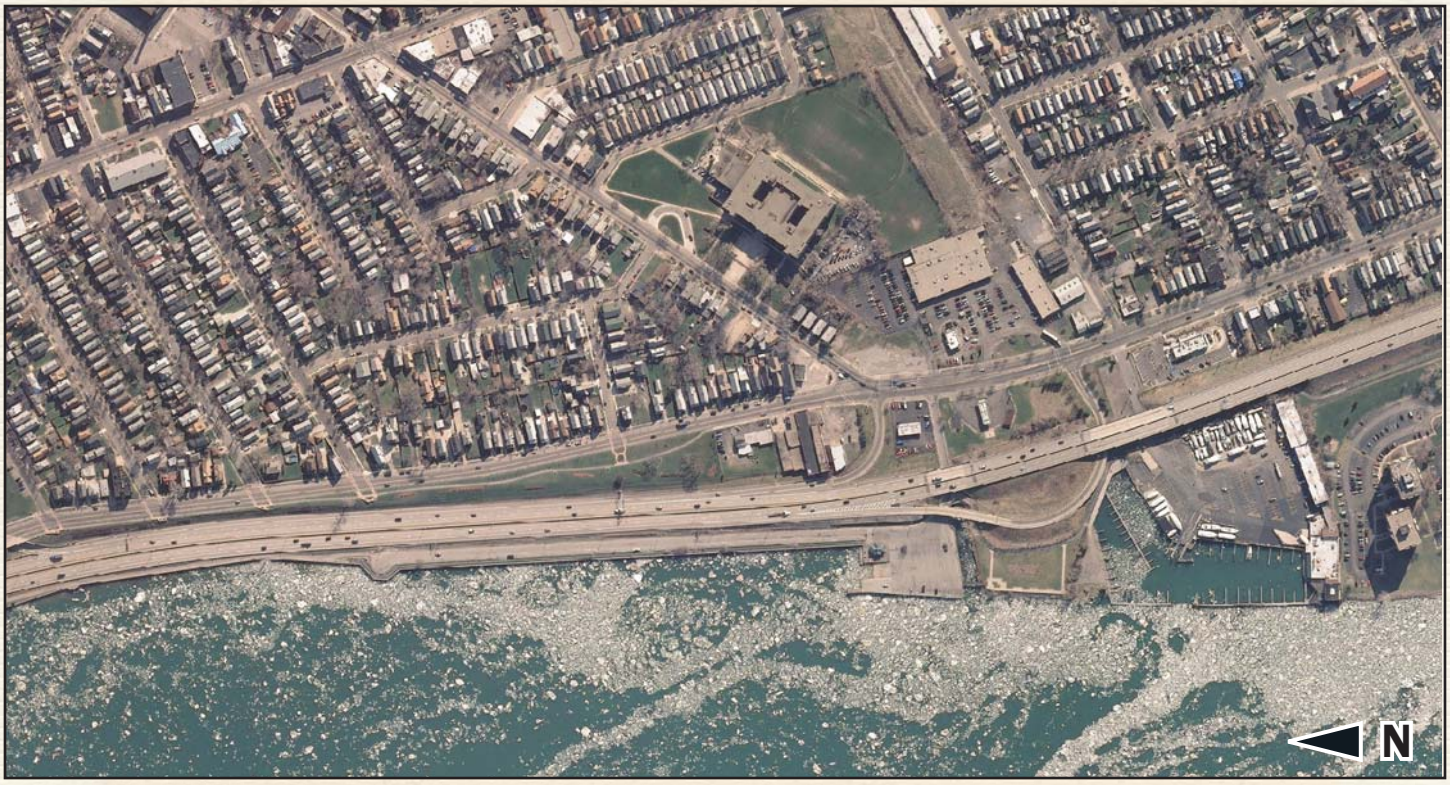

VIEW OF ENTRANCE
5


6


VIEW TO PARK FROM NIAGARA RIVER
7


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

The Site



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

Wind

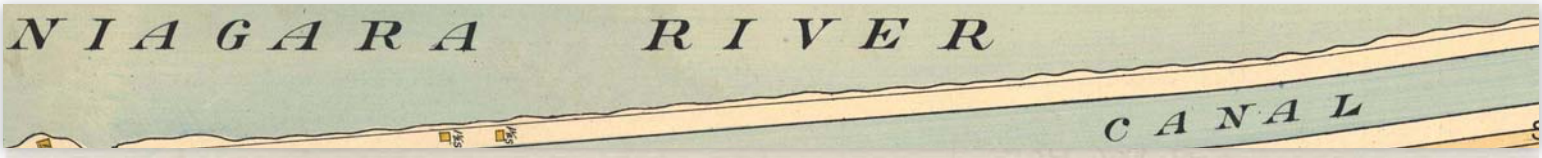
The prevailing wind direction is from the southwest. This is readily apparent to the casual observer who need only look at the condition of the existing trees that lean in a northeasterly direction. The prevailing wind direction combines with the direction of water flow (described below) pushing floating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

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

Water Conditions

Water Flow

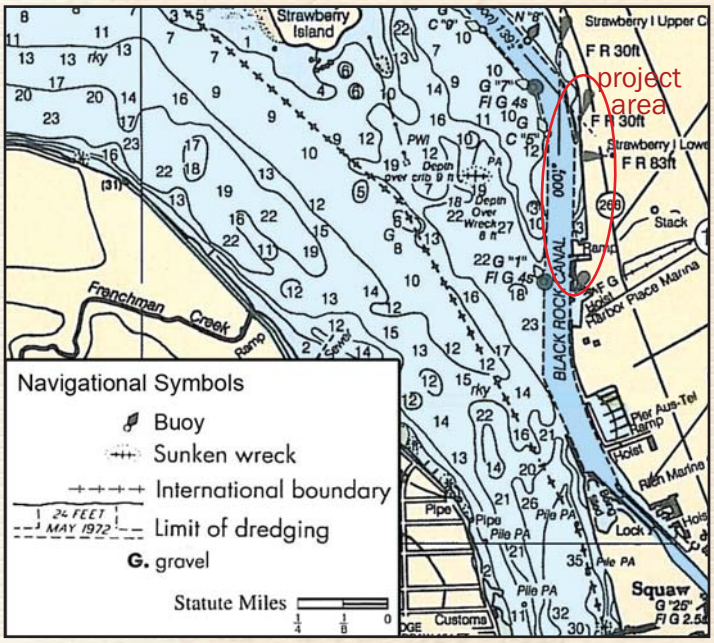
The Niagara River forms a large eddy offshore from the Ontario Street Boat Ramp that swirls around causing the water along the bulkheads to flow in the upstream direction. A similar eddy that formed behind the natural black rock formation and created a natural, calm harbor was the reason for the location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



Water Depth

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

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



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

Water Quality

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

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

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

According to numerous sources, the solution to the

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

Flood Levels

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

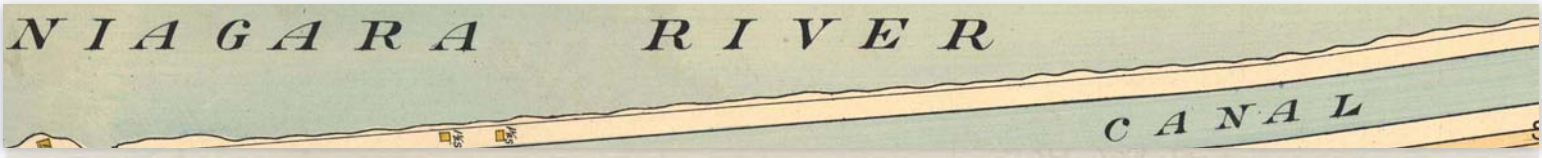
One of the tasks undertaken during the Feasibility Analysis was to determine the maximum historical flood level at the site. Historical water level data was collected from several of the water level gauges along the river nearest the park. The water level gauges include one upstream gauge at the Black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

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

Soils

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

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



Utilities

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

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

Zoning

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

Site Opportunities and Constraints – A Summary

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

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