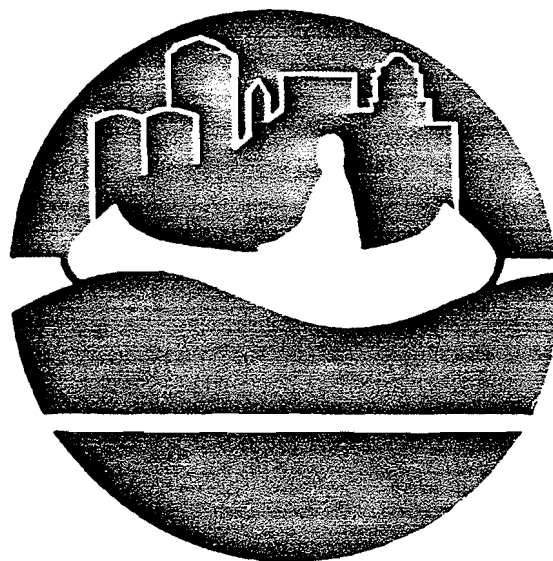


Department of Environmental Conservation

Erie County Department of Environment and Planning



Buffalo River Urban Canoe Trail



GUIDE

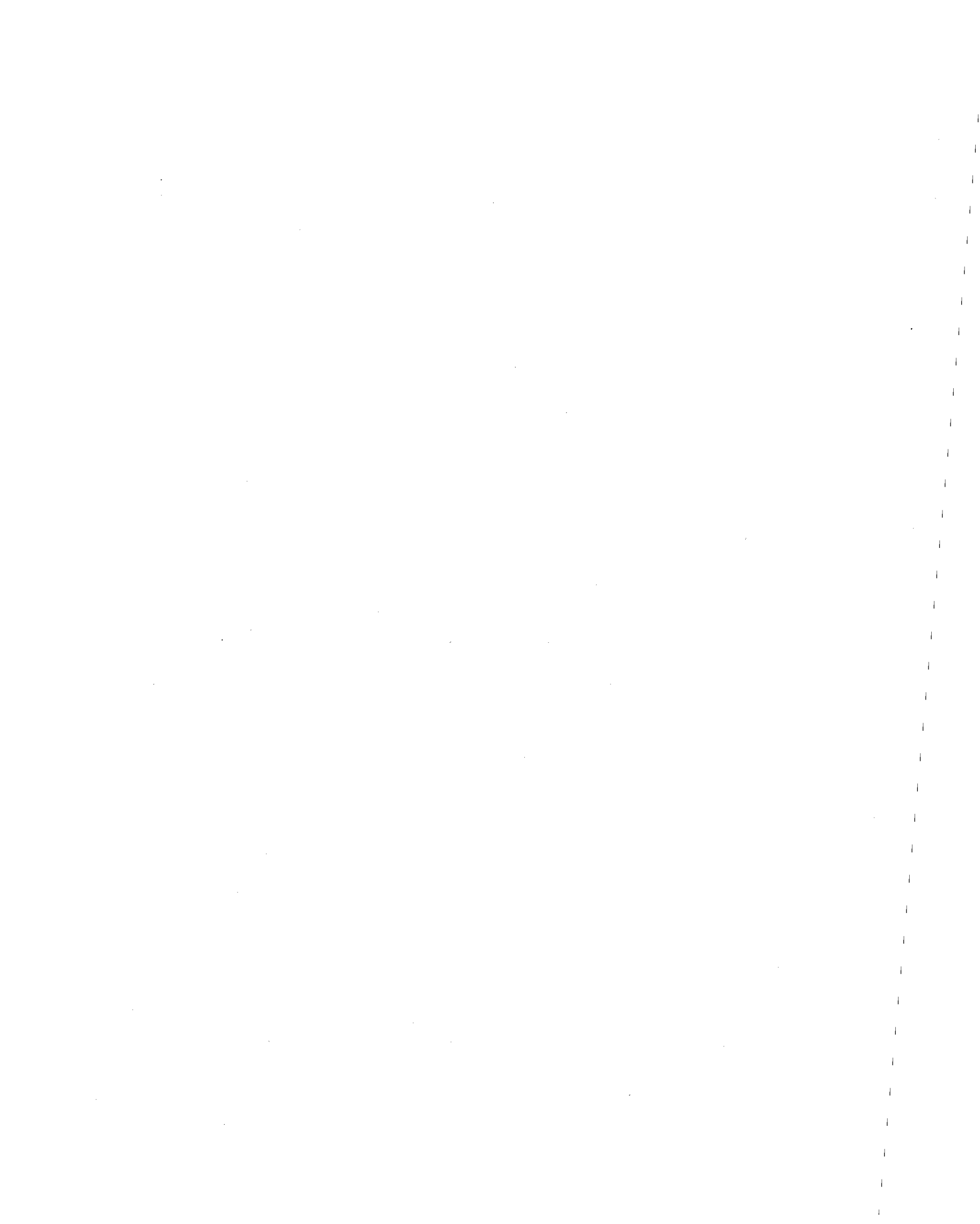


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BUFFALO RIVER URBAN CANOE TRAIL GUIDE

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- Erie County Department of Environment and Planning
- Friends of the Buffalo River
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- Industrial Heritage Committee, Inc.

We are especially grateful to the Friends of the Buffalo River for adopting the Ohio Street Access Site.

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FOR YOUR SAFETY

1. LIFE VESTS

All passengers in the canoe must wear life vests. Abide by all safety and navigational rules for boating on navigational waters.

2. SHIP TRAFFIC

Make way for lake freighters. If you see a freighter, move to the shore away from a bend or a bridge. The current from the bow or stern propellers of a lake freighter can capsize a small boat or draw it into the side of the ship. If the ship sounds five or more whistle blasts, *move to shore immediately*.

3. PARKING AND ACCESS

Parking is available at all access sites. The upstream access point is the DEC Harlem Road Access Site, located on Harlem Road between Clinton Street and Mineral Springs Road. The downstream access point is the DEC Ohio Street Access Site located on Ohio Street between Chicago and Louisiana Streets. Please lock your car.

To take a shorter trip or to leave the Trail, use the midpoint access site provided by the City of Buffalo. The site is located at the South Buffalo Pump Station of the Buffalo Sewer Authority, located downstream of the Bailey Avenue Bridge (see Site 18). Please park only where indicated.

Enter and leave the Trail *only* at these three sites.

4. TRESPASSING

Do not trespass on shore; the shore of the River is private property. Do not travel beyond the DEC Harlem Road Access Site. The area upstream from the Harlem Road Access Site is not part of this Trail.

5. REFRESHMENTS

Bring food and water with you.

6. TRASH

If you carry it in, carry it out! Please do not leave trash at the access sites or along the Trail.

7. DISTANCE AND TIME

The Trail is six miles long and takes about four hours to complete one way. Time required depends on your expertise, your direction, and weather conditions. On a windy day, the trip will take longer. The wind usually blows upstream.

USING THIS GUIDE

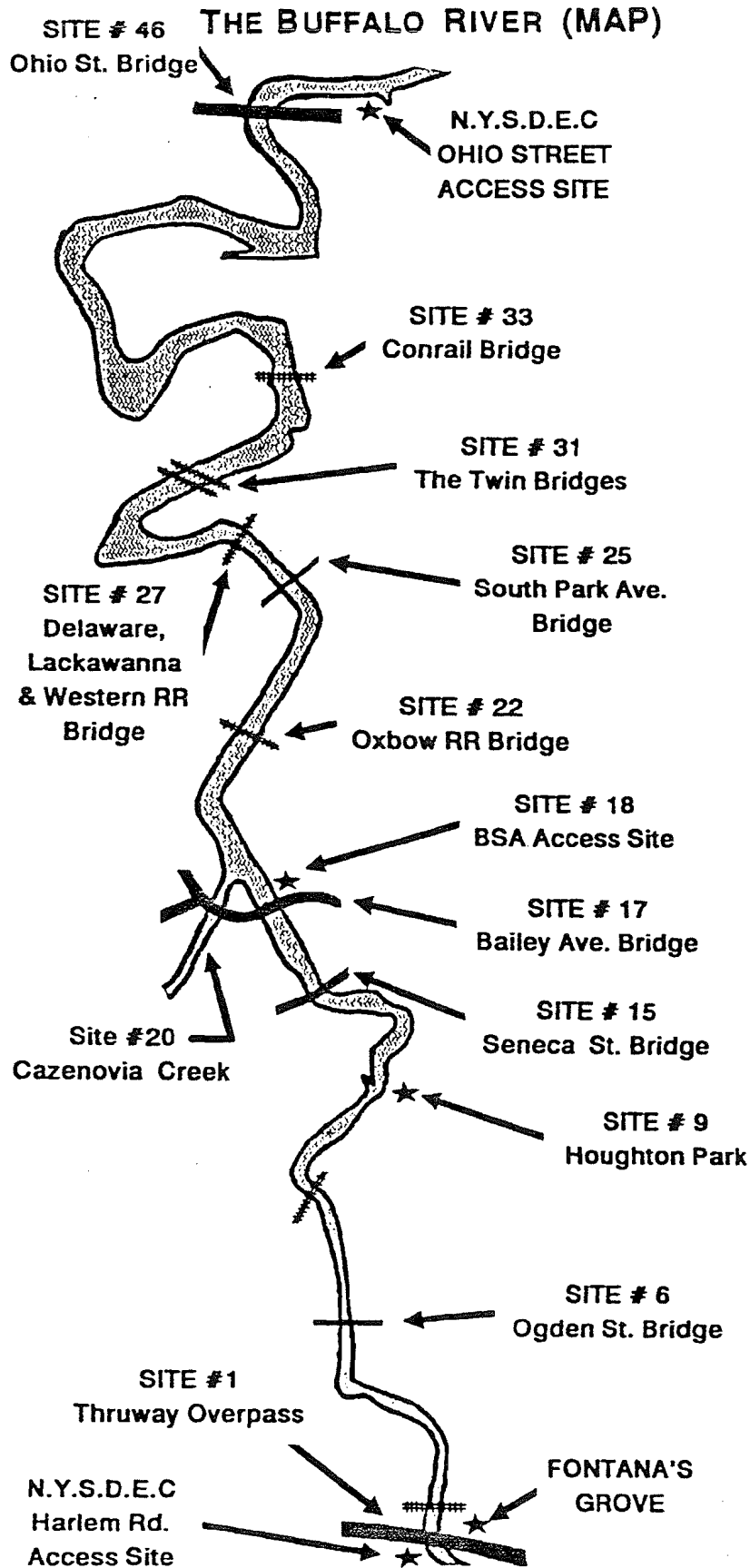
Welcome to the Department of Environmental Conservation's Urban Canoe Trail. This Trail is designed to combine a pleasant outdoor experience with an opportunity to see a part of Buffalo that is too often overlooked. From the Trail, you can see historical, environmental, and industrial sites that are not visible from any other location. We hope you enjoy your trip and return frequently.

Every effort has been made to provide accurate information about the sites. However, both natural and man-made changes along the River may make information obsolete quickly. We apologize for any mistakes. Please contact the DEC if you identify an error.

The Buffalo River Urban Canoe Trail is a self-guided experience. This Guide identifies and describes items of interest along the Trail. Each site is numbered in the Guide. A corresponding number may be found on a piling or bulkhead at the site itself. Unfortunately, not all sites have numbered markers, and other markers may be missing due to vandalism. Please use this Guide to situate yourself.

The Guide refers to the "left" and "right" side of the River. These directions assume that you are facing downstream, headed toward the Ohio Street Access Site and the lower section of the Buffalo River.

Points of interest include sites that are significant either ecologically or historically. Other sites, especially bridges, will help you locate yourself in relation to city streets. Ecologically significant sites include marshes and bird colonies as well as sewer facilities and areas targeted for remediation. Historic sites include Iroquois settlements and many examples of Buffalo's industrial heritage. You may find that the Buffalo River is much more active than you realized!



INTRODUCTION

The Buffalo River watershed (the area drained by a river system) extends over approximately 430 square miles. Runoff drains to the Buffalo River not only from Buffalo and the nearby suburbs of Cheektowaga, West Seneca, and Lancaster but also from communities in Erie County including Alden, Aurora, Colden, Elma, Holland, Marilla, and Wales, and from Bennington, Java, and Sheldon in Wyoming County. The small streams in these areas flow to the three major tributaries of the Buffalo River: Cayuga Creek, Buffalo Creek, and Cazenovia Creek.

The watershed of the Buffalo River was once part of the extensive forests of the northeast United States and home to a number of Native American peoples. As settlers moved into the Buffalo area, they cut the forests and farmed the land. The rich soil supported farming, but farming affected the River system because it increased soil erosion. Most of the soft sediment of the Buffalo River is clay washed into the River from the upland areas.

Since the 1800s, the Buffalo River has been used for industrial and commercial transportation. A number of canals once linked the River to the Erie Canal. The growth of both industry and residential neighborhoods along the shores degraded the River's water quality, sediments, and shoreline. Few of the area's natural animal, fish, bird, or plant species remained.

In the 1960s, when the River was at its worst, citizen concern brought about changes in state and federal pollution regulations. As a result, water quality improved. Citizen groups, DEC, the Fish and Wildlife Service, EPA, the U.S. Corps of Engineers, riverfront industries, Erie County, and other local governments continue to work to ensure water quality. Plans such as the Buffalo River Remedial Action Plan and the Habitat Restoration Plan, more restrictive discharge permits, Buffalo River Improvement Corporation (BRIC), and toxic site remediation all contribute to the ongoing improvement in the River's water quality.

The Urban Canoe Trail follows the Buffalo River for six miles, from the upstream Harlem Road Access Site in the town of West Seneca downstream to the Ohio Street Access Site in the City of Buffalo. Most of this stretch of the River has been modified by dredging, landfilling, and bank stabilization. Few remaining areas reflect the River in its original state, but some important natural conditions do exist. They have a positive impact on the health of the River. The River has been heavily modified and even rechanneled, so that the present riverbed is not where it was before the 1800s.

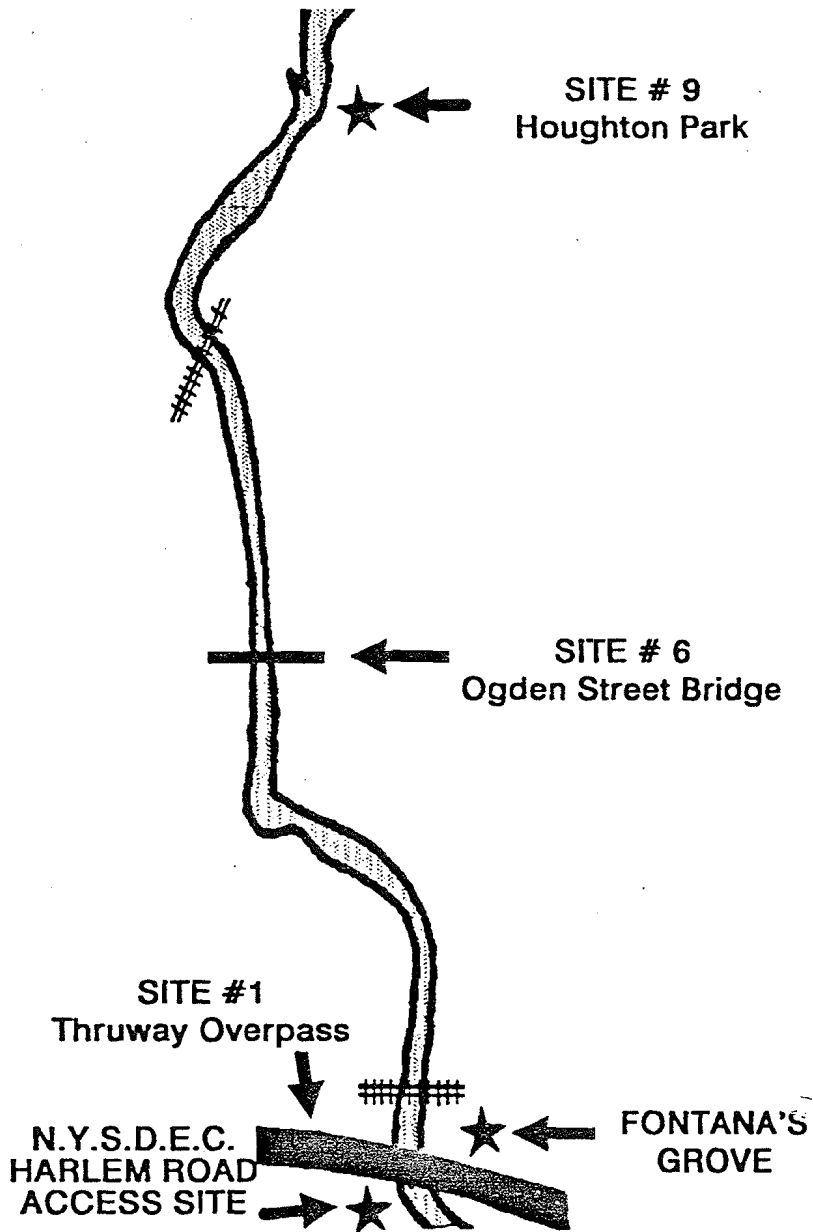
The River has also been deepened over the years. Before 1820, when Samuel Wilkeson engineered the first Buffalo Harbor, the River was only navigable by canoe. On your trip, you are recreating history!

The Trail is divided into three sections, each with its own predominant characteristics and problems. The sections are:

- I. The Natural River
- II. The Urban River
- III. The Industrial River

MAP OF THE NATURAL SECTION

The numbers on this map correspond to the Site Numbers in Section I.



SECTION I—THE NATURAL SECTION

The Natural Section stretches from the Harlem Road Access Site to Houghton Park (Site 9). Because it is the most natural, this section has the fewest sites and the most distance between sites. Much of this section is shallow. Branches that seem to be floating on the water's surface may actually indicate a submerged tree trunk.

This section contains the most heavily vegetated shoreline, the least disturbed river sediments, and the greatest amount of open space without industrial development or residential neighborhoods. As a result, the greatest variety of vegetation, including large trees, shrubby thickets, and several types of aquatic plants, is found here. The water and bottom sediments in this section offer cover, food, and habitat (living area) for a wide variety of fish, invertebrates, and some reptiles.

In this section, wildlife moves freely on the land and in the air and water. Deer and raccoons live on the upland (land away from the riverbanks). Muskrats, mink, and beaver are sometimes visible on the River's edge. Please remember these are wild animals—don't feed them!

In the air, you may see birds such as tree swallows, great blue herons, green herons, and kingfishers along the River and its edge. Birds such as great horned owls, woodpeckers, and warblers live within the woodplain forests. A mother duck followed by a flock of ducklings is a common sight during some months.

A number of fish species use this section. The year-round residents include smallmouth bass, largemouth bass, pumpkinseed sunfish, bluntnose minnows, spotfin shiner, common shiner, and johnny darter. You might also see reptiles such as water snakes and turtles.

This section also shows evidence of the nearby human population, too. Riprap (rock placed on the shore to prevent erosion) is found throughout this section. Most of this stretch of the River was straightened or moved either for flood control or in anticipation that industry would move further upstream than it actually did.

Site 1—Thruway Overpass/Riffle Habitat

Just downstream of the Harlem Road Access Site, you will pass under the New York State Thruway (Interstate 90) Overpass. Immediately downstream of the Overpass, you will paddle through a riffle. A riffle is an area of fast-moving, shallow water—sometimes only a few inches deep. Riffles are generally located between deeper areas known as pools (see Site 5). The riffle stream bottom is composed of relatively large particles such as coarse sand, gravel, and rocks that resist both erosion and stream transport. Silt and fine sand are easier to dislodge, and so they settle into the deeper, calmer pools.

A habitat is a place that contains everything necessary to sustain the plants and animals that live there. Riffle habitats are rich in oxygen, and their rough bottom provides a tremendous surface area for plants and animals to cling to and hide under. This great diversity of aquatic life—algae, invertebrates, crustaceans, worms, insect nymphs and small fish—attracts larger fish and fish-eating birds. Riffles are preferred spawning habitat for fish such as suckers, trout, and certain species of minnows.

Site 2—West Seneca Sewer District No. 6 —Overflow Retention Facility

On your left, along the south bank of the River, the West Seneca Sewer District No. 6 Overflow Retention Facility is located. The facility includes a pumping station and a 1.5 million gallon tank.

Like other Northeast communities, early Western New York communities constructed combined wastewater and stormwater collection systems in the late 1800s. These systems used the same pipes to carry wastewater and street runoff to wastewater treatment plants. The cost of building separate systems to cope with severe storms was prohibitive, so accommodations were made to relieve the existing system. This facility is such an accommodation: it receives and holds wet weather flows from this area of West Seneca.

During heavy rainfall, rainwater that enters sanitary sewers (sewers that carry wastewater) is held at this Overflow Retention Facility to prevent it from overflowing into the Buffalo River. After the rain has ended, the wastewater held in the 1.5 million gallon tank is released to the Buffalo Sewer Authority.

Further downstream on your right, you can see a storm sewer drain. Storm sewers carry runoff from rains and other groundwater, such as melting snow.

Site 3—Bank Stabilization

Along the shore on your right, the bank has been stabilized to protect the residential properties you see. The bank was graded to a moderate slope, and riprap protects the toe (bottom) and face of the slope. Riprap is not usually moved by the River and so it protects the easily eroded soil it covers.

Slow-moving rivers such as the Buffalo River contain curves, which are also known as meanders. When a river changes direction going around a curve, the outside bank of the curve receives the full eroding force of the river. When the water is high, soil, stones, and even trees are dislodged from these outside banks and transported downstream. The toe of the bank erodes, sometimes causing the upper bank to slide into the river.

Material that is dislodged from outside banks is transported by the river and deposited on the inside bank of a meander. These areas of deposition are called gravel bars. This process of erosion and deposition is a natural process that allows a river to move its bed over time. This movement creates habitat types important to wildlife species such as the killdeer. You can recognize the killdeer, an upland-inhabiting member of the plover wading bird family, by its high-pitched repeated "killdeer" call.

Site 4—Floodplain Forest

The forest community on your left is known as a floodplain forest. (A "community" is the plant and animal residents of a particular habitat.) This type of forest once grew throughout the floodplain of the Buffalo River. This forest is the largest natural forest adjacent to the City of Buffalo.

The flooding action of the River created the forest and continues to influence it. The cottonwoods and willows began to grow here in the rich alluvial soil deposited in the floodplain. Because they can tolerate frequent flooding, the cottonwoods and willows survived and are now the dominant trees of the forest. Some cottonwoods found here are more than three feet in diameter. Other members of the plant community include boxelder, silver maple, riverbank grape, and poison ivy. Unfortunately, an alien plant, Japanese knotweed, is now dominant in the ground layer of the forest. This intruder crowded out wildflowers such as spotted touch-me-not, jewel weed, and ostrich fern that should be found here.

The open canopy of the forest and numerous fallen trees provide suitable habitat for wildlife including raccoons, cottontail rabbits, white-tailed deer, chipmunks, and gray squirrels. Two birds of prey—great horned owls and red-tailed hawks—are sometimes observed here, as are smaller forest birds such as black-capped chickadees, northern flickers, and red-eyed vireos. Trees closest to the River serve as perching sites for great blue herons and kingfishers, who find their food in the River.

The low-lying area in front of the forest contains plants common to riverbanks. Further downstream, you will see marshes and swamps. A marsh is a wet area, periodically inundated with standing or slow-moving water, that has grassy or herbaceous vegetation. A swamp is similar in that it is intermittently or permanently covered with water, but the vegetation includes shrubs and even trees. Cattails on the left a little farther downstream are typical of marshes.

Site 5—Pool Habitat

This site is near the boundary between Buffalo and West Seneca, and just upstream of the small bridge at South Ogden Street. Pool habitats consist of relatively deep, slow-moving water. Pool bottoms are composed of small particles, such as silt or fine sands, which are deposited in the quiet waters. Stream debris, such as logs and tree root masses, may also be deposited in pools.

Due to their depth and slow water movement, fish frequently use pools as resting areas. The depth provides protection from predators such as kingfishers and herons. Since fish lack eyelids, the deeper water also provides shade for fish on bright days.

Site 6—Ogden Street Bridge/Combined Sewer Overflows

The second bridge you will pass under is the Ogden Street Bridge in Buffalo. Here you can see two combined sewer overflows (CSOs). One is located in the right-hand side of the bridge itself; the second is covered by a gate in the concrete wall next to the opposite base of the bridge.

The wastewater and stormwater collection system for the City of Buffalo contains a number of CSOs. They allow periodic discharge of combined stormwater and diluted wastewater during rainstorms. Twelve combined sewer overflow outlets, also called outfalls, are located on the banks of the Buffalo River along the Trail. The Buffalo Sewer Authority and DEC are reviewing the system and studying ways to reduce the frequency and volume of the overflows.

Other large CSOs located along the Trail include:

- Bailey Avenue Outfall
- Boone Street Outfall
- Babcock Street Outfall
- Smith Street Outfall
- Hamburg Street Outfall

Site 7—Overhanging Streamside Vegetation/Early Iroquois Site

Notice the vegetation hanging over the River on both shores. On bright summer days, overhanging trees and shrubs intercept the sun's rays and create shady areas on the water. The shade cools the water, allowing the water to retain more dissolved oxygen. Gill-breathing animals such as fish, frog tadpoles, and mudpuppies (a large salamander) need dissolved oxygen to survive.

On hot, sunny days, you may see fish resting in the shaded waters. They are probably responding to the cooler water and reduced light levels.

The overhanging vegetation usually shelters a community of insects and other invertebrates. These creatures frequently fall into the water. They then are available as food for fish.

Site 10—Riverine Wetlands

Downstream from Houghton Park and on your left, you will see two examples of wetlands that were once common on the Buffalo River. Beyond the sheet steel pilings is a wetland type best described as a backwater slough (pronounced "slew"). It is located within the willow-lined overflow channel just beyond the River's edge. This wetland is formed when an overflow channel or meander is partially cut off from the main river channel. The quiet shallow water of the slough provides important feeding and loafing habitat for waterfowl and shorebirds, as well as nursery areas for game and forage fish.

Further downstream, also on the left, you can see a shallow emergent marsh that has become established on a sand and gravel bar. Emergent marsh plants, such as common cattail and reed canary grass, are characteristic of this wetland type. Marshes are an important part of a river ecosystem because they provide nesting and rearing habitat for waterfowl, feeding areas for herons and other wading birds, and potential spawning areas for northern pike. Marshes also help clean the water.

Dredging and filling required for commercial development have removed other similar wetlands from the lower River.

On your right, you can see the old Worthington plant.

Site 11—Seneca Council House

The Seneca Council House stood near the old confluence of the Buffalo River and Cazenovia Creek. The old confluence was near the present intersection of Seneca and Elk Streets, which is upstream of the present confluence. At this Council House, major treaties were negotiated between 1780 and 1842—treaties that determined present-day Iroquois land holdings in Western New York. Today, Niagara Mohawk owns the land where the council fires of the powerful Seneca Nation once burned. You can see Niagara Mohawk's facility on your right.

The Buffalo Creek reservation was a 130-square-mile parcel of land as wide as present-day Erie County. It centered on the Buffalo River and its major tributaries, Cayuga and Cazenovia Creeks. It was the largest of 11 reserves that were established by the Big Tree Treaty of 1797 between the Seneca Nation and Robert Morris. Morris acted on behalf of a group of Dutch bankers who comprised the well-known Holland Land Company.

Site 12—Beaver Lodge

Good news! The beaver are back on the Buffalo River after a century-long absence. You can see their cuttings of willow, cottonwood, and maple on trees along the riverbank.

On your left, a bank den has been observed. Beaver usually build the stick and mud lodges that are commonly seen on ponds and marshes. But the beaver's usual lodge would not withstand the River's erosive forces. Therefore, beaver build their

SECTION II—THE URBAN SECTION

The Urban Section begins immediately downstream from Site 9 and continues through Site 22, the Delaware, Lackawanna & Western Bridge.

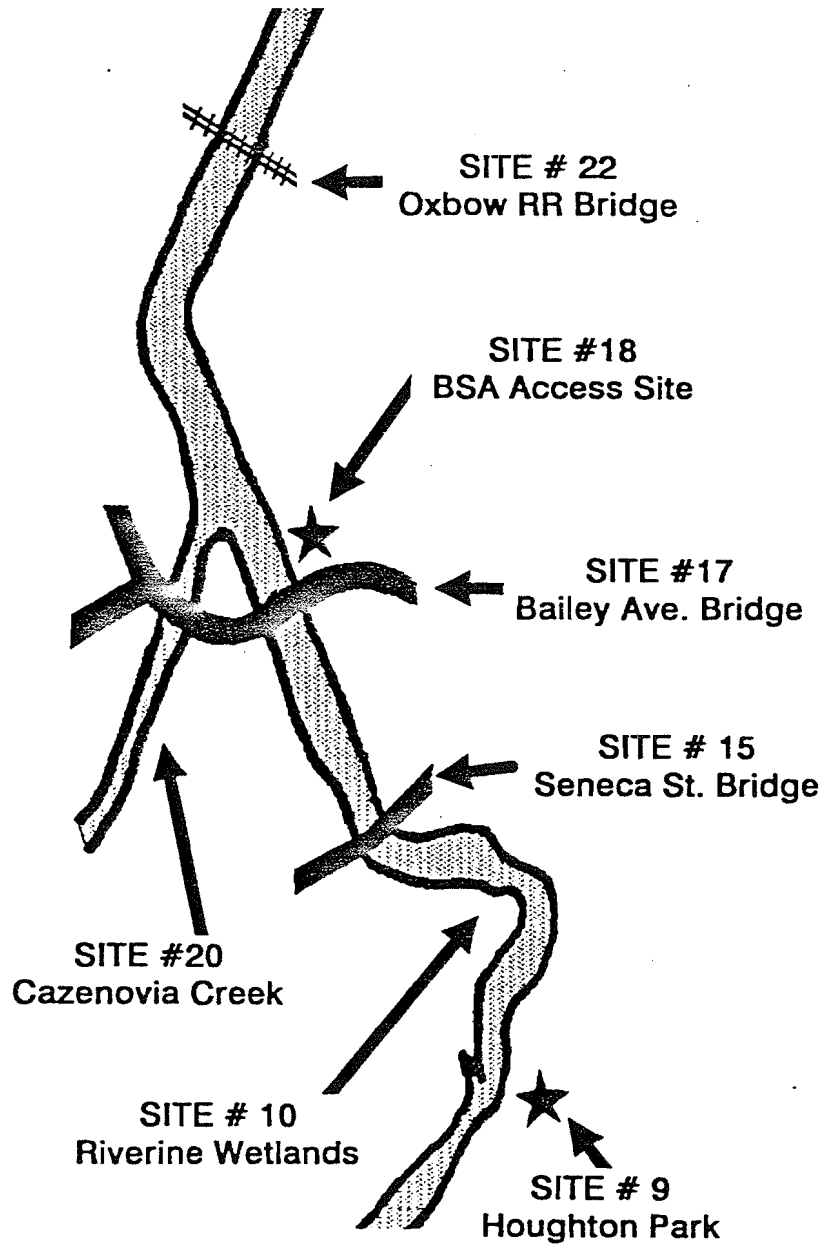
This reach of the River is a transition between the natural area upstream and the industrial area below. Here the River becomes less natural and shows more frequent signs of encroachment by homeowners and small businesses. The biological characteristics include fewer numbers and species of birds, mammals, and vegetation than are found upstream. The chemical characteristics include more influence from Lake Erie and from surface runoff.

Physically, you will see more placed stone shoreline, more residential use of the River's edge, and more channelization—in short, more evidence that the Buffalo River flows through a city. However, you can see some remnant marsh areas and habitat still suitable for wildlife. In fact, according to *Wildlife Habitat: The Disturbance Community*, a DEC publication, "...wildlife has adapted to living in areas we might not think suitable."

Like the Natural Section, much of the Urban Section is shallow. Be careful when paddling around floating debris and watch out for partially-submerged logs.

MAP OF URBAN SECTION

The numbers on this map correspond to the Site Numbers in Section II.



An early Iroquois site is also located nearby. Unfortunately, this site was largely destroyed before sufficient data could be obtained to identify its inhabitants. Judging by the mix of technologies found here, such as iron and stone tools, archaeologists speculate that the time of settlement was probably in the late 1600s.

The flats and terraces along the River, once called Buffalo Creek Valley, have a long history of human occupation. Seven known early-history village sites are located here. From 1780 through 1840, the Buffalo Creek Valley was a principal residence of the Six Nation Iroquois or Hodenosaunee ("People of the Long House"). Their villages were located upstream of the original confluence of Cazenovia Creek and the Buffalo River. A small park on nearby Buffum Street commemorates the Seneca burial ground where the Seneca leader, Red Jacket, was buried. His body now rests in Forest Lawn Cemetery.

Site 8—Conrail Bridge

This railroad bridge is a non-lifting bridge. The Pennsylvania Railroad built it for a mainline track that ran from Harrisburg, Pennsylvania, to Buffalo. The line in this area was originally double track, but is presently a single track.

Conrail owns this line now. However, most trains are switched off this line in West Seneca and connected to the Conrail mainline in Lackawanna. Thus, this portion of the line only has one or two daily local switching trains.

Site 9—Houghton Park Site

Houghton Park started on your right upstream of the Conrail Bridge and continues downstream beyond it. The entire flat, low-lying area is in the River's floodplain. The River itself once flowed through part of this area, but the original riverbed was filled in as one of many projects to straighten the River. Many of the dead-end streets off Clinton Street's south side once ended at the River. The old riverbed posed a flood threat to residential neighborhoods during high-water periods.

The eastern (upstream) end of the fifteen-acre Houghton Park was used as a landfill and open dump from 1930 to 1973. During the dump's active period, municipal refuse from the City of Buffalo and industrial waste from Worthington Compressor were discarded here. The principal industrial wastes received were foundry sands with phenolic binders, slags, and incinerator residue.

The original Houghton Park, at the western end of the present site, was originally a farm. Houghton Park features tennis courts, a track for running, and baseball diamonds. The Park is soon to be renamed after Stanley J. Stachowski, who served as City of Buffalo Parks Commissioner from 1965 to 1973.

Note the sheet steel piling on both sides. The traffic you see on your left above the piling is on Pawnee Parkway in South Buffalo.

Today, the Pipe Bridge carries two 20-inch lines that ensure a second source of gas for South Buffalo in case the major supply lines southwest of the city are disrupted. National Fuel Gas maintains the bridge in excellent condition.

Site 17—Bailey Avenue Bridge

The next traffic-bearing bridge you pass under is the Bailey Avenue Bridge.

Site 18—South Buffalo Pump Station/Midpoint Access Site

The Buffalo Sewer Authority's South Buffalo Pump Station is located on the right bank of the River downstream from the Bailey Avenue Bridge. This sewage pump station was constructed by the Buffalo Sewer Authority in 1938 and renovated in 1986-87, improving service to South Buffalo.

The Pump Station consists of two five-horsepower pumps equipped with variable-speed drive controls to match the incoming waterflows. The pumps provide the energy to lift and move the wastewater, which is eventually treated at the Buffalo Sewer Authority Bird Island Wastewater Treatment Plant.

Just downstream, you can see a mowed area leading away from the River. This is the Midpoint Access Site. For a shorter trip, enter and leave the River here.

Site 19—Floodplain Forest

On your left, on the point of land between the Bailey Avenue Bridge and Cazenovia Creek further downstream, a relatively undisturbed floodplain forest remains. Although narrow, this area of nearly natural shoreline provides several benefits to river wildlife. The willows provide perch sites for river birds such as green heron and osprey as they move along the Buffalo River corridor to habitat at the Niagara River and Tiffit Farm. Fallen trees and exposed root systems provide escape cover for species such as the muskrat, and hunting areas for species such as mink. Exposed mud and gravel banks provide feeding and resting habitat for resident and migrating shorebirds such as the spotted sandpiper.

Site 20—Cazenovia Creek

On your left, about 100 yards downstream from the South Buffalo Pump Station, you can see a large stream joining the Buffalo River. This is Cazenovia Creek.

Cazenovia Creek flows into the Buffalo River about six miles above Lake Erie. The east and west branches of Cazenovia Creek originate in southern Erie County and join near the village of East Aurora. The total drainage area of the creek is 138 square miles and includes agricultural and wooded areas. Several residential communities are located along the creek's banks, including Holland and Wales on the east branch, and Colden and West Falls on the west branch.

dens in the bank. The entrance to the den is underwater. You can recognize bank dens by the covering of sticks and mud that beaver sometimes add to the riverbank above their den. River beaver are often referred to as "bank beaver." Beaver may build bank dens at other locations along the River.

Site 13—Bank Swallow Colony

Also on your left, and just upstream of the bridge you're approaching, you can see a bank swallow colony. Often dozens of these birds may be seen at the same time, entering and leaving their nesting holes in the riverbank. Both males and females dig the nesting holes, or burrows, using their bills and feet. The burrows, ranging in depth from 18 to 36 inches, lead to a nest chamber lined with straw, grass, and feathers. As many as five young birds may be hatched here. Bank swallows usually make their colonies in soft sand and clay banks along ponds, lakes, and streams. They also make use of the steep sides of sand and gravel pits throughout their summer breeding range in the Northeast.

Site 14—Debris Bank

Just upstream of the approaching bridge, look closely at the shoreline and bank on your right below the abandoned red brick building. Notice that the bank's soil is orange-brown in color. This color is the result of rusting, a natural oxidation process. The soil contains ferrous metal chips and scraps from a machine shop.

Before zoning or environmental laws were enacted, many businesses and municipalities disposed of their hard waste (concrete, wood, dirt, and metal) in the marshes and along the shores of the Buffalo River. This metal waste site, although containing debris from past industry, is not harming the River and therefore is not a candidate for cleanup. Today, metal wastes are considered an industrial waste and must be disposed of in a DEC-permitted landfill.

Site 15—Seneca Street Bridge

The next traffic-bearing bridge you pass under is the Seneca Street Bridge. Notice the sheet steel piling overgrown with vegetation on your left.

Site 16—National Fuel Gas Pipeline Bridge

Look up! One hundred feet above you, you can see the Pipe Bridge. This truss bridge was built in 1927 and originally carried five pipelines—two 20-inch lines and three 16-inch lines. The structure is 100 feet high and 170 feet wide. The height reflects the hope that lake-going ships would navigate upstream beyond this point, but they never did.

Site 21—Disturbed Shoreline

Further downstream, landfills on both sides of the River eliminated low-lying habitats that once were located here. The shallow emergent marsh in the background on the left is only a remnant of the former, larger wetland.

**Site 22—Delaware Lackawanna and Western Bridge
(Oxbow Railroad Bridge)**

According to *Ecological Communities of New York State* by Carol Reschke, an oxbow is "a closely looping stream meander having an extreme curvature such that only a neck of land is left between the two parts of the stream." This bridge, like all the bridges downstream from this point, is a lift bridge. A lift bridge is a bridge that can be raised so that ships can pass. When the Delaware Lackawanna and Western Railroad built this bridge around 1913, planners thought the upstream River would be industrialized and boats would navigate beyond this bridge. However, the expected industrialization never happened, and the bridge was never raised except to test and exercise the machinery.

The bridge originally carried a double track mainline from rail yards along William Street to rail yards along Tiftt Street. The Delaware Lackawanna and Western merged with the Erie Railroad in 1960 and became the Erie-Lackawanna Railroad. In 1976, this railroad became part of Conrail. Conrail abandoned the line around 1980, and the bridge is scheduled for demolition.

SECTION III—THE INDUSTRIAL SECTION

This section starts immediately after the Delaware Lackawanna and Western Bridge (Site 22) and continues to the Ohio Street Access Site. During Buffalo's industrial heyday, steel and chemical manufacturing, petroleum refining, and grain transportation and milling were active along this section. Some chemical and grain industries still operate, and new industries, including recycling facilities, have developed. Today Buffalo remains the flour milling capital of the world, producing about seven million pounds of flour daily.

Most shoreline industries once used the River as a transportation corridor, a source of water, and a conduit for waste water. Three major factors have worked together to reduce industrial pollution. First, industries closed, reducing their impact by their absence. Secondly, the new air, water, and solid waste regulations of the 1970s and toxic substance regulations of the 1980s reduced the amount of contaminants released to the environment. Thirdly, many area industries take an active part in promoting the River's water quality and aesthetic appeal. Now the Buffalo River is again used as a passageway to spawning areas by many Lake Erie fishes, as an over-wintering area for a variety of forage fishes, and, most recently, as a corridor and nursery area for many larval and young fish.

Grain elevators—facilities for storing grain—dominate the shore's landscape. They are called elevators because the grain is elevated to the top of the storage bins from the holds of grain-bearing ships. The grain then flows downward for weighing and for loading onto waiting railroad cars or trucks. Buffalo was once the world's greatest grain distribution center; thousands of ships brought grain to Buffalo. From here, railroad cars and canal boats transported it to the East Coast for export.

Joseph Dart of Buffalo designed the steam-powered grain elevator. With Robert Dunbar, Dart built the world's first elevator using those principles on the Buffalo River in 1842. The site of the original Dart elevator is commemorated by the Joseph Dart Marker, erected by the Industrial Heritage Committee, Inc. near the Vietnam Veteran's Memorial at the Erie Basin Marina.

The grain elevators are important architecturally as well as historically. In *A Concrete Atlantis*, author Reyner Banham argues that North American industrial buildings, specifically grain elevators, were a significant influence on twentieth century architectural modernism.

Site 23—Mobil Oil

The Mobil Oil site on your right is marked by a long concrete wall where ships carrying petroleum products once docked. This wharf marks the furthest upstream destination for lake freighters. This site presently receives about eleven thousand barrels of oil daily from New Jersey, but the oil is transported by pipeline. Trucks transport the oil to local users such as service stations. The low round white structures are above-ground storage tanks.

The first oil refinery along this stretch of the River, the Atlas Refining Company, was built in the 1880s by the Kalbfleisch brothers. The Buffalo Lubricating Oil company operated here, too. The early refineries produced oils for lubrication and illumination; gasoline was considered a waste product.

During the 1880s, Standard Oil Trust sought to purchase both Atlas Refining and Buffalo Lubricating Oil. Atlas was sold, but Lubricating Oil resisted. In 1887, someone entered Lubricating Oil's facilities and dynamited the plant. Standard Oil employees were accused of the deed, and John D. Rockefeller, founder of Standard Oil, came to Buffalo to testify on their behalf. Eventually, both facilities became part of Standard Oil. Standard Oil merged with Vacuum Oil in 1931 to become Socony-Vacuum Oil Co. In 1955, Socony-Vacuum changed its name to Mobil Oil Corporation.

In the 1960s, the refinery processed about 11 million barrels of crude oil a year. Oil refining ceased in the early 1980s, and the plant was dismantled in the early 1990s. During the active life of the refinery, leaks and spills contaminated the soil and groundwater on this site with petroleum products. To keep this contamination from polluting the River, Mobil installed a groundwater extraction system. Recently, Mobil added additional extraction wells to improve the removal of petroleum products from the groundwater.

Mobil also owns the land just upstream of the terminal area. This area is yet another example of how the Buffalo River has been relocated for the benefit of its users. In the 1920s, a section of the River—which looped northward through this site and rejoined the present River near Bailey Avenue—was filled in to create a straighter channel.

Site 24—PVS Chemicals, Inc. (NY)

The next group of tanks on your right, downstream from the concrete dock, marks this site. In the 1880s, the recycling of spent sulfuric acid began near here as part of the Atlas Oil Company's refinery operation. Since then, several companies have produced and recycled acid at this location. They later merged into Allied Chemical Corporation. The acid plant continued as part of Allied until 1981, when the site became what it is today—PVS Chemicals, Inc. (NY), manufacturer of sulfuric acid and other related chemicals. The company is constantly updating its facilities to meet the needs of the industry.

Until the 1960s, the acid plant discharged industrial wastes directly into the Buffalo River. But the plant has undergone dramatic changes over the past 30 years.

Today, wastes from this plant are contained, collected, and neutralized on-site before being discharged under permit to the Buffalo Sewer Authority. PVS Chemicals uses water from the Buffalo River Improvement Corporation (BRIC) for non-contact cooling purposes, and discharges the water under a New York SPDES Permit to the Buffalo River.

Today, PVS produces approximately 200 tons of chemicals per day. The chemicals are used to make a variety of products such as semi-conductors, fertilizers, gasoline, detergents, and steel. A good example of its processing is the conversion of sulfur dioxide and ammonia into high-quality photo-developing solution.

Site 25—South Park Bridge

The next bridge you pass under is the South Park Avenue Bridge. This bridge opened in 1953, replacing an old jackknife bridge at this location. On your left, just upstream of the bridge, you can see a ramp going into the River. The green vehicles that look something like military tanks parked above the ramp are icebreakers, and the City of Buffalo launches them here.

Site 26—Buffalo Color Corporation

The Buffalo Color Corporation site begins on your right, just downstream from the South Park Bridge, and stretches beyond the next bridge. Manufacturing on this site dates back to 1879, when Jacob L. Schoellkopf founded the Schoellkopf Aniline and Chemical Co., one of the first chemical plants in the U.S. The facility has operated continuously since then, changing name and ownership to National Aniline, Allied Chemical, and, currently, Buffalo Color Corporation.

Buffalo Color Corporation is the largest supplier of indigo dye in the world and the only U.S. manufacturer of the dye, which is used for blue jeans. Indigo dye is shipped to domestic manufacturers in a paste form; for international trade, the dye is in a powder form. Over half a billion pounds of indigo dye have been produced here over the last 65 years. Buffalo Color Corporation also manufactures chemical intermediates used to make coatings for microchips, synthetic pharmaceuticals, fiberglass, and coatings used in the automobile industry.

After purchasing the plant from Allied Chemical in 1977, Buffalo Color spent over \$41 million improving the facility. Buffalo Color is committed to safeguarding the environment. Presently, Buffalo Color controls the Buffalo River Improvement Corporation (BRIC). BRIC is an association of industries cooperating to improve the Buffalo River. As one of its projects, BRIC built a tunnel to bring water from Lake Erie to industries along the River. Before construction of the tunnel, some riverside industries pumped water for cooling directly out of the Buffalo River. The water loss reduced the River's flow and promoted pollution. Now, the water from Lake Erie is discharged into the River after use. Since the water is used for cooling, it does not pick up any contaminants. Instead, the additional water volume improves the water quality of the Buffalo River by increasing the flow.

Opposite Buffalo Color is property once owned by Republic Steel.

Site 27—Delaware Lackawanna and Western Railroad Bridge

The next bridge you pass under, spanning only half the River, was built by the Delaware Lackawanna and Western Railroad in 1913. It once was a lift bridge, but the lift portion was removed. The bridge was used primarily by passenger trains connecting New York City and the Delaware Lackawanna and Western passenger station at the foot of Main Street. This station, which opened in 1917, closed in 1962. Freight trains also used this bridge to switch trains to a warehouse and industrial area formerly near Main Street and South Park, and to a coal dock once located near the present Erie Basin Marina.

The Delaware Lackawanna and Western Railroad merged with the Erie Railroad in 1960. Due to the closing of the passenger station and the decline of local switching, this line and bridge were abandoned.

Site 28—Republic Steel

The old Republic Steel site is on your left, across from Buffalo Color Corporation. Millions of tons of iron and steel were made here over a period spanning nearly eight decades. The first steel was produced here by New York State Steel in 1907. In 1909, the first blast furnace went into operation. In 1915, William H. Donner bought the company, changed its name to Donner Steel, and built a second blast furnace, eight open hearths, and additional bar mills. Twenty-one of New York State's blast furnaces were located in Western New York in 1926; today there are none.

Republic Steel acquired Donner in 1929. Republic manufactured steel here until June 1982. Shortly before it closed, Republic spent \$20 million upgrading the plant, but the new facilities were never used. LTV Corp. acquired the plant, but it remained idle until 1992, when it was torn down.

Site 29—Buffalo Color Corporation Remediation Site

In a joint effort with the United States Army during World War I, National Aniline manufactured poison gas (phosgene) shells and later an explosive (picric acid) in buildings located at the farthest tip of this peninsula. Shortly after World War I, and continuing for more than half a century, metal sludge from the National Aniline dye plant were brought to this tip to "weather" before being shipped to smelters for recycling. This practice ensured that the great mass of the metals handled were recycled, but it also resulted in contamination and discoloration of the soil near the River. A tank farm, containing tanks that stored liquid wastes for burning, and an incinerator for organic wastes were also located here.

In October 1991, a Remedial Action Plan was presented to the public. It included excavating contaminated River sediments, pumping and treating groundwater, capping the site, and installing a slurry wall to eliminate the discharge of contamination to the Buffalo River. A Remedial Design/Remedial Action

Consent Order and related scope of work was negotiated by DEC with Buffalo Color's parent company in 1993. When it is implemented, the remedial action will prevent over eight thousand pounds per year of toxic pollutants from migrating into the Buffalo River. Construction is expected to start in 1995 and the cost is estimated at approximately \$10 million.

Site 30—Donner Hanna Coke

Notice the warehouse on your left, with the "August Feine and Sons" sign on its roof. In 1917 on this site, Donner Hanna Coke began its process of cooking coal in the absence of air to make coke, a fuel used in steel manufacturing. From its very first year, the company was not only making coke for the local steel industry; it was also recovering thousands of tons of useful products from the waste gases produced in the coke-making process. Initially, the untreated wastewater was discharged to the River, contributing to the pollution problem. However, in the early 1960s, wastewater was treated before being discharged.

The coke plant shut down in 1982 and was demolished a few years later.

Site 31—The Twin Bridges: Conrail Bridge and the Norfolk Southern Bridge

The first bridge at this site is the Conrail Bridge. This double-track bridge carries most of the trains that cross the Buffalo River. The Buffalo Creek Railroad, a local railroad, built this bridge to connect their train yards, which were located south of the River, to other yards north of the River. The Buffalo Creek line switched trains for the many grain elevators and flour mills along the River.

Today, this line and the bridge are part of Conrail. The bridge is used by a number of railroads. It carries most of Conrail's 50 daily trains and about ten trains run daily by Norfolk Southern Railroad. Several other railroads—including the Buffalo and Pittsburgh and the Delaware and Hudson—also use this bridge to switch cars between their yards. These short switching trains may total 75 trains per day.

The second twin bridge is the Norfolk Southern Bridge. This bridge was built in the early 1900s by the New York, Chicago and St. Louis Railroad, better known as the Nickel Plate. This bridge was part of the railroad's mainline track from Cleveland to Buffalo. The Nickel Plate merged with the Norfolk and Western Railroad, which is now part of the Norfolk Southern Railroad. The Norfolk Southern Railroad closed this bridge in the raised position around 1988. Norfolk Southern trains now cross the Buffalo River on the adjacent Conrail Bridge.

Site 32—Hobo Jungle

Thousands of unemployed people lived here on your left in makeshift shacks during the Great Depression of the 1930s. People hopped on or off the railroad cars as they slowed to turn onto the railroad bridges.

Hobo Jungle residents fished the River for food, probably with poor luck. Pollution studies show that, in the 1930s, the River contained very little dissolved oxygen during the warm months of the year, making it difficult to sustain a fish population.

Buffalo tolerated Hobo Jungle for a few years, but the Buffalo Police Department finally asked the vagrants to leave.

The concrete abutment downstream on your right is the foot of Smith Street.

Site 33—Conrail Bridge

If you travel upstream from Lake Erie, this is the first railroad bridge crossing the Buffalo River. New York Central Railroad built it in 1927 to replace an earlier span. During the early 1900s, Buffalo railroads expanded or rebuilt their facilities to handle increasing traffic and heavier, larger steam engines and railroad cars.

This bridge is a lift bridge—notice the large counterweight. Counterweights balance the bridge and allow a relatively small motor to raise it. This bridge was part of the New York Central mainline from New York City to Chicago. It originally carried two tracks, but now has only one.

The bridge became part of Conrail in 1976. Conrail usually has about 50 trains crossing the Buffalo River daily. During peak times, however, there may be as many as 80 trains daily. Most of Conrail's trains use the Conrail Bridge at Site 31, the Twin Bridges, although this bridge is also used regularly.

Two daily Amtrak trains use this bridge, distinguishing it as the only bridge that carries passenger trains across the Buffalo River.

Site 34—Airco Industrial Gases

On your right downstream from the bridge, you can see Airco Industrial Gases. Airco Industrial Gases separates atmospheric air into its components to produce oxygen, nitrogen, and argon. Airco, now owned by the British firm BOC, has operated in the Buffalo area since the 1920s. It moved to this site in 1964 after Hanna Furnace moved out. Hanna Furnace produced pig iron, a crude iron that is a direct product of a blast furnace and is usually refined further.

The original air separation plant was built in 1964 to supply oxygen to the blast furnaces of local steel mills. A one-mile-long pipeline once connected Airco directly to the Republic Steel plant formerly located upstream (see Site 28). In the 1980s, in response to the decline of the local steel industry, Airco changed its focus. In 1992, an advanced \$25 million air separation plant was completed; the old plant was torn down. The present facility, one of Airco's newest, can store up to 60 million cubic feet of nitrogen and 36 million cubic feet of oxygen.

The new plant emphasizes production of liquid oxygen, nitrogen, and argon. Oxygen and nitrogen liquefy at -300° F, and both chemicals are shipped as liquids, not as gases. Nitrogen is used as a freezing agent by food manufacturers. Nitrogen can also be used in environmental spill control tasks, to clean smoke stack emissions, and to treat polluted water. Oxygen, which is also used in pollution

control, is delivered to area hospitals as breathing oxygen. Argon is an inert gas used in light bulbs and industrial radio vacuum tubes.

Site 35—Concrete Central Elevator

On your left, you can see Concrete Central. The Eastern Grain Mill & Elevator Corp. and the Central Elevator Corporation built Concrete Central (named for the concrete used in its construction) between 1915 and 1917. Upon completion, it was a quarter of a mile long with a capacity of 4.5 million bushels—the largest grain elevator in the world at the time.

It was also the only elevator that could simultaneously unload three lake freighters while loading canal boats and railroad cars. Two freighters could be unloaded at the main marine towers; the third could be unloaded at the large concrete tower, called a transfer tower, that stands separately at the downstream end of the structure. At both ends of the elevator near ground level, you can see remnants of the iron loading spouts that were used to fill canal boats destined for the Erie Canal or the Welland Canal. The prominent black structure on top of the elevator is the scale house where all the grain was weighed. The silos are 100 feet tall and eight inches thick.

Concrete Central closed in 1972. The City of Buffalo foreclosed for back taxes in 1973. This is the only elevator owned by the city; the rest remain privately owned. The cost to tear down such a huge and well-built structure has, so far, prevented demolition. Meanwhile, various reuses have been suggested, including an industrial heritage museum, a flour milling museum, and a restaurant and hotel complex. The Akron Hilton at Quaker Square in Akron, Ohio is adapted from a grain elevator and cereal mill.

Site 36—Cargill-Superior Elevator

The Cargill-Superior, commonly known as Cargill-S, is further downstream on your left. It was designed by Alfred E. Baxter of A. E. Baxter Engineering, a Buffalo firm that, in 1898, was the first to specialize in grain elevator and flour mill construction. Baxter used the "sliding" or "slip form" method of pouring concrete, which allows an elevator to be structurally complete within days. When Cargill-S was completed in 1915, it was hailed as a model of the modern fire-proof elevator. Reducing the risk of fire was important because grain dust can be highly explosive under confined conditions.

The original elevator was built at the downstream (western) end of this site in 1915. Additions were built in 1923 and 1925. Behind the large, flat concrete walls at the west end, Cargill-S kept machinery to clean and dry grain. The tall black towers on the railroad tracks along the dock are known as marine towers. They house the equipment necessary for unloading ships, including the marine leg—a structure that extends from the tower into the hold of the ship and lifts the grain into the elevator by means of a conveyor belt with buckets.

A local corporation bought Cargill-S in 1984 and is exploring possible adaptive reuses such as the storage of grain, rubber pellets, or boats.

The pilings you see on your right were once used by freighters waiting to be unloaded by the elevators. The land beyond the pilings is known as the Katherine Street Peninsula.

Site 37—Co-Steel Recycling—Advance Division

Look closely—this is not a junkyard! The cars you see on your left are flattened and stacked, waiting to be recycled. Co-Steel Recycling—Advance Division, established in 1976, is a ferrous scrap iron and metals processor. The company purchases scrap iron and metal products, processes them, and sells the product to steel mills that reuse the metals to manufacture new products.

Co-Steel Recycling—Advance Division operates an automobile shredder which can process 500 automobiles a day. The shredder rips each car into fist-sized pieces of scrap. Magnets and fans separate ferrous scrap (magnetic) iron, steel, and cast iron from non-ferrous (non-magnetic) material such as copper, brass, aluminum, and zinc. "White goods"—home appliances—can also be processed here.

Co-Steel Recycling—Advance Division is a member of the Institute of Scrap Recycling Industries, Inc., which introduced the concept "Design for Recycling." Their goal is to encourage pre-production planning for safe recycling by eliminating hazardous materials from the production process.

Site 38—Booth Oil

Since 1982, this facility on your right has been operated by Booth Oil to process waste oil. Waste oil and wastewater containing oil are shipped to the site for treatment. Booth uses emulsion agents and heat to treat the waste. The treated oil is then shipped to a re-refinery or an energy recovery unit. The treated wastewater is discharged to the Buffalo Sewer Authority.

This site was originally listed on the New York State Registry of Inactive Hazardous Waste Sites because of allegations that calcium carbonate—an industrial, non-hazardous waste mixed with water—was being dried on the site in lagoons, and that waste oil was spread on roads on the site to limit dust generation. Information gained by DEC is currently under review to determine if the waste oil spread on the site was hazardous waste.

Site 39—Marine A

The Marine "A" Elevator on your left was built around 1925, and has a capacity of slightly more than two million bushels. The most recent proposal for reuse of this elevator is to convert it into a fish hatchery or farm where freshwater

fish can be raised in a controlled environment and sold for food. Such a facility presently operates in Canada.

Site 40—Lake and Rail Elevator and Mill

The next elevator on your left was built between 1927 and 1930. The Northwest Annex at the downstream end was built in 1930. Notice that, unlike the other elevators, the Annex has flat vertical walls. These walls were built around the cylindrical bins that are used for storage. The other elevators along the River reveal the round shape of the bins themselves.

Lake and Rail is presently owned and operated by the ConAgra-Maple Leaf Milling Co. You can see ConAgra's logo on top of the structure. This elevator is the grain storage facility for the adjacent flour mill. The mill itself can produce 3.3 million pounds of flour per day, making it the largest-producing mill in the country. Freighters up to 600 feet long unload at this facility during the shipping season, which usually runs from March to December depending on the ice cover on the Great Lakes. The unloading process takes about 20 hours.

On the opposite side of the River, the large concrete structure you see is the Combined Sewer Overflow at the foot of Hamburg Street. You may also notice traffic moving on South Street. This is the first place where the Urban Canoe Trail intersects with the proposed Industrial Heritage Trail.

Site 41—Tugboat Area

The two tugboats that dock here on the right are critical to shipping on the Buffalo River. Because of the River's winding turns, lake freighters cannot travel quickly enough for the rudder (which steers the ship) to be effective. Therefore, tugboats are required to maneuver the freighters. At one time, 18 tugs operated in Buffalo.

Tugboats are very powerful. They create tremendous wake and undercurrents when maneuvering the large ships. They also require much of the River's surface in their operations. Tugboats maneuvering the freighters around the bends and up to the docks make a tremendous spectacle—but please enjoy it from a safe distance!

This site was also the location of the first blast furnace in Buffalo, built in 1860 by Union Iron Co. The long concrete dock that extends into the inlet to the south (right) of the tugs was the ore dock built for the iron works.

Site 42—Perot Elevator

This elevator on your left was built in 1907, with an annex added in 1933. The elevator serviced the adjacent malt house. Malt was produced on this site from 1907 until recently, providing malt to many Buffalo breweries. Fred W. Koch Malting was the last malt house operating on this site.

The elevator is currently owned and operated strictly as a grain storage facility by ConAgra-Maple Leaf Milling Co.

Site 43—American Elevator

This elevator, also on your left, is connected to the Perot Elevator. Built in 1906, it was the first concrete elevator in Buffalo. With a capacity of 3.6 million bushels, it was the largest concrete elevator in the world at the time. Notice the grey marine towers in front of the elevator.

Currently, this elevator is owned by ConAgra-Maple Leaf Milling Co. It stores grain processed at the flour mill at the Lake and Rail site (see Site 40). The grain elevators owned by ConAgra—Lake and Rail, Perot, and American—all serve ConAgra's flour mill.

Site 44—Pillsbury Standard Elevator

The Pillsbury Standard, on your right, is the largest elevator presently operating in Buffalo. Its history illustrates the complex pattern of ownership of the elevators. It was built in 1928 by Hecker, Jones, Jewell Milling Co., a subsidiary of Standard Milling. In 1929, the elevator was sold to the Nisbet Elevator Corporation. In 1939, Standard Milling bought the elevator back from Nisbet and operated it until 1981. In 1981, Pillsbury bought the elevator and, since then, it has been known as Pillsbury Standard. The facility was recently sold to Archer Daniels Midland (ADM) Milling, but Pillsbury flour continues to be produced at ADM's mill on Ganson Street, which can produce 2.3 million pounds of flour daily.

At the west (downstream) end of the elevator, you can see a long metal chute extending out of the elevator, supported on a metal platform. At one time, the chute loaded grain onto canal boats; later, it was used to load trucks. In 1941, Standard added an annex to the original elevator, increasing the facility to its present capacity of five million bushels of grain—enough to produce approximately 225 million loaves of bread.

Site 45—Electric Elevator

The original elevator at this site on your left, immediately upstream of the upcoming bridge, was built in 1897. It was one of the earliest elevators to replace steam power with electricity. Using electricity eliminated the need for on-site coal burning and so reduced the risk of grain dust explosions. In 1940, Cargill added the present elevator to store grain that was overflowing from elevators in the Midwest. This elevator, which consists of six large rooms each 150 feet by 90 feet, has a capacity of six million bushels, making it the largest in Buffalo. The original elevator was demolished in 1984.

In an interesting reuse of a grain elevator, Gelinmac Storage Corp.—the present owner—uses this facility to process bakery and candy products into animal feed additives. The bakery products add protein; the candy provides carbohydrates.

Site 46—Ohio Street Bridge

At one time, Ohio Street was a critical north-south industrial artery for land traffic. The Ohio Street Bridge linked the downtown business district to the foundries, grain elevators, flour and steel mills, rail yards, and docks of Buffalo's port. A bridge has been located here since the 1800s.

In 1870, a covered toll bridge was destroyed by an August storm. When the storm hit, three sand wagons and a bakery wagon, each with its own driver and team of horses, were threatened. Except for the death of one horse, there were no serious injuries. The bridge was replaced in 1871 with a new swing bridge, which was destroyed two years later by a lake-going vessel. After the accident, two temporary pontoon bridges with wooden planks were built, but they were destroyed by storms. So a steam ferry was used, and the ferry carried between 400 and 800 teams a day across the Buffalo River until another swing bridge was built.

The Ohio Street Bridge is located at a point where the River makes a sharp bend—sharp enough to make navigation difficult for lake freighters. The swing bridges swiveled from a pivot point on a pier on the middle of the River. When ships went by, the bridge was turned so that it was parallel to shore. But this style bridge reduced the navigable width of the channel significantly, so, in 1904, a bascule bridge was built. A bascule bridge remains stationary on one shore and can be raised and lowered on the other.

However, the bascule bridge still limited navigational space. Land traffic was affected, too: in 1951, the bridge was raised 4,189 times. Traffic often came to a total standstill while ships made their way slowly around this tortuous bend. Various solutions were offered, including one plan to construct a high-level fixed bridge under which ships could travel unimpeded. Planners also proposed a canal to bypass the bend, but the expense and the problems posed by moving the River away from existing waterfront facilities caused planners to leave the bend intact. After the St. Lawrence Seaway opened in 1959, ship traffic on the Buffalo River diminished considerably.

Construction of a new bridge was delayed until after the Skyway and the Niagara Section of the Thruway were completed in the late 1950s. The present bridge, a vertical lift bridge, opened in 1962. The entire span of the bridge is raised by means of counterweights (each weighing 400 tons) located in the 135-foot-tower on each side. The center span of the bridge is 250 feet long and weighs 700 tons. The bridge is operated by the City of Buffalo and, until recently, was staffed 24 hours a day. The bridge tender controls the bridge from the house-like structure on the south end of the bridge.

This is another location where the proposed Industrial Heritage Trail will intersect with the Urban Canoe Trail.

Site 47—La Farge Cement Corporation

This elevator on your left, just downstream from the Ohio Street Bridge, was built in 1928 as a storage and packaging facility for the Huron Portland Cement Co. In the late 1980s, La Farge purchased the facility, which continues to operate as a cement storage and packing facility. Fourteen large silos each hold 1,300 tons of cement; eight smaller silos each hold 300 tons. La Farge's seven-ship fleet brings the cement here from cement-making plants in Michigan and Ontario.

Although the basic elevator structure is nearly identical to a grain elevator, the process of unloading the cement from the ships is entirely different. High-pressure air blows the cement off the ship and into the elevator through the large hoses that you can see suspended in front of the building. (Grain, on the other hand, is removed from a ship by means of a conveyor belt.) The receiving capacity of the elevator is about 700 to 800 tons of cement per hour, although the average is about 450 tons per hour. Most of the facility's operations are controlled by computer from one central location.

La Farge handles five different types of cement here and packages about 200,000 tons annually.

The pleasure boats you see across from La Farge are docked at the Bison City Rod and Gun Club, a private facility.

Site 48—Great Lakes Paper Fibres Corporation

The black building on your right is Great Lakes Paper Fibres. This company, located on the waterfront since 1931, buys and sells wastepaper. The business was started by a small junk dealer on the streets of New York City in the 1870s. Now Great Lakes Paper Fibres Corp., based in New York City, has plants all over North America.

Locally, the *Buffalo News* and American Envelope are two major suppliers of scrap paper. Incoming wastepaper is compressed into 2000-pound bales and shipped out to buyers in the U.S., Mexico, and Canada. Depending on the quality and type of paper, buyers recycle it into various products including greeting cards, paper towels, plates, napkins, and toilet tissue.

FOR FURTHER INFORMATION

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Erie County Department of Environment and Planning
95 Franklin Street
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Friends of the Buffalo River
Old First Ward Community Center
62 Republic Street
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Greater Buffalo Partnership
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Industrial Heritage Committee, Inc.
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