

Chapter 3: Environmental Setting

Physical Resources

Geology

Bedrock

The bedrock underlying Midway Park consists of the Upper Devonian shales and siltstones of the Ellicott Formation.

Surficial

The surficial geology of the entire park area is a Kame Deposit of coarse to fine gravel and sand. This glacial till is the source for the soil in this area.

Topography

Chautauqua Lake and its drainage area lie in a glaciated valley. Steep slopes are typical of its shoreline. Midway State Park is located in one of the lowland areas in the Town of Ellery and has a more gentle and flat area about 100 feet wide as its shoreline. The park slopes up away from the shoreline, beginning at the water elevation of approximately 1308 feet and ending at its highest point of approximately 1365 feet in the central northern part of the park. The ground is generally rolling further from the lake and has an embankment of 20 feet and a knoll in the center of the park approximately 50 feet above lake level. (Figure 4)

Soils

The soils at Midway State Park are Chenango Gravelly Loam 0-3 percent slopes (CnA), Chenango Gravelly Loam 3-8 percent slopes (CnB), Chenango Channery Loam Fan 0-3 percent slopes (CoA) and Pompton Silt Loam (Po). The Chenango soils are more typical in the higher elevations of the park with the Pompton Silt Loam making up most of the lakefront area. Small sections of Valois Gravelly Silt Loam 3-8 percent slopes (VaB) and Red Hook Silt Loam (Rh) occur at the northern boundary of the park. (Figure 5)

The Pompton soil is moderately well drained and the Chenango and Valois soils are well drained. The Red Hook Silt Loam is somewhat poorly drained with a depth to water table of 6 to 18 inches. All these soils are formed over sandy or gravelly deposits except the Red Hook Silt Loam which is formed from loamy glacio-fluvial deposits.

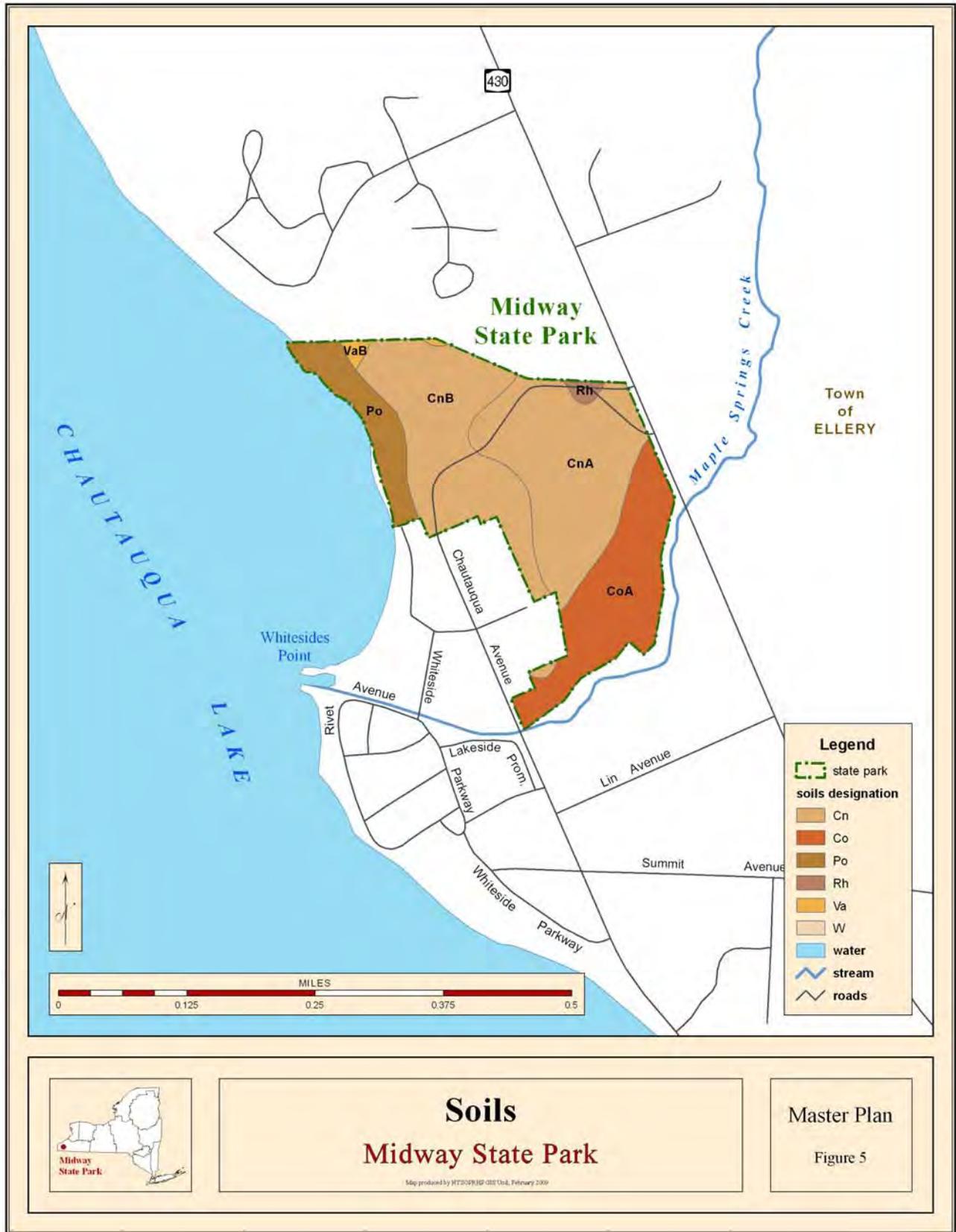
Some areas of the park have had fill added. These fill areas have been studied and found to be safe for development. (TVGA 2007)

There are no engineering or planning limitations to these soils except the Red Hook Silt Loam which has limitations due to the high water table and general wet conditions.

Figure 4 Topography



Figure 5 Soils



Soils
Midway State Park

Master Plan

Figure 5

Water

The two main water resources in the park are Chautauqua Lake and Maple Springs Creek. The park is within Chautauqua Lake's watershed, part of the Allegheny River basin and the larger Ohio River Basin. The watershed covers approximately 180 square miles of area. Water flows from Chautauqua Lake and its tributaries sequentially into the Chadakoin River, the Conewango Creek, and the Allegheny, Ohio, and Mississippi Rivers. (Figure 6)

Chautauqua Lake

The New York State Department of Environmental Conservation lists Chautauqua Lake as a Class A Potable water supply. In addition to supplying drinking water, the lake is also generally suitable for food preparation, fish propagation, fishing and contact recreational uses such as swimming. Nitrogen and Phosphorus loads in the lake are very high and can, at times, produce algal blooms in the shallow areas that limit the recreational use of the lake.

Specific conditions at the Midway State Park location vary from the general Chautauqua Lake conditions as to make bathing inappropriate. (DeLappa 2008)

A very small portion of the park near the northern portion of the lakeshore is located within the A2 100 year floodplain as identified in the United States Department of Housing and Urban Development Flood Insurance Rate Maps Panels 6 and 8 for the Town of Ellery (HUD 1980). The 100 year floodplain for this area has been established at an elevation of 1310 feet above sea level based on the National Geodetic Vertical Datum of 1929 (NGTV 1929). Parts of the former cottage area appear to be within this area. There are currently no structures in this area.

Maple Springs Creek

Maple Springs Creek runs close to the southwest boundary of Midway State Park and is classified C, suitable for fisheries and non-contact activities. While this stream is not actually in the park, it is close enough that activities occurring in the park have the potential to impact the water quality of the stream.

Wetlands

There are no mapped wetlands within Midway State Park.

Air

Air quality in Chautauqua County is monitored by the EPA and is reported as the Air Quality Index (AQI). The AQI for 2007 was good for 302 days (83%), moderate for 45 days (12%), and Unhealthy for individuals with sensitivities 18 days (5%). The majority of the moderate days and all of the unhealthy days occurred from May – October in 2007 and the pollutants were Ozone 336 days (92%), Sulfur Dioxide 2 days (0.5%) and Particulate Matter less than 2.5 micrometers 27 days (7%). (EPA 2008)

Natural Resources

Flora

Midway State Park is mostly developed land with some open field and wooded habitat. There is a small forested area along Maple Springs Creek at the southern end of the park. The dominant trees

Figure 6 Water Resources



are cottonwood, black cherry, sugar maple, elms and willows. Blackberries, elderberries, dogwoods, sumac, riverbank grape, and multiflora rose are the common shrubs and vines in this area. There is another small forested area in the northwest corner of the park that is made up of large sugar and Norway maples, American beech and red oak. Both of these forested areas are small in size and slightly degraded in quality, but they do provide a vegetated buffer from neighboring areas.

Fauna

Wildlife species that inhabit the small wooded areas of Midway State Park include small mammals such as Eastern cottontail, raccoon and gray squirrel and large mammals like white-tailed deer. This park also has approximately 1200 feet of shoreline on Chautauqua Lake which contains a diverse fish population. Walleye, small and largemouth bass, yellow and white perch, crappie and muskellunge are common species in this lake. Common freshwater mussel species include spike (*Elliptio dilatata*) and fatmucket (*Lampsilis siliquoidea*), and the non-native zebra mussel. This lake has been identified as an Audubon Important Bird Area. Waterfowl such as the tundra swan, canvasback and hooded merganser all utilize this lake as a migratory stopover site.

Endangered, Threatened and Rare Species

The Kidneyshell (*Ptychobranchnus fasciolaris*), a freshwater mussel that is considered rare, was noted along the shoreline of Chautauqua Lake by Natural Heritage Program scientists in a field survey conducted in the summer of 2008. The mussel's presence makes it very important to preserve the quality of water discharged into the lake from the park.

Ecological Communities

No significant natural communities occur within Midway State Park since most of the park has been developed. Small patches of woods that contain a mix of species reflecting past clearing and continued disturbance are present at the north and south ends of the park. These lack the diversity and structure of larger and more established forests (Lundgren 2008).

Cultural Resources

Archaeological

General

The area around Chautauqua Lake has attracted human settlement since shortly after the retreat of the Wisconsin Era glaciers, roughly 10,000 BCE. The lake ultimately became a major transportation route as well as the source of abundant and varied food resources.

The earliest postglacial human occupations are termed Paleo-Indian (ca. 10,000—7,000 BCE). Paleo-Indian peoples have been characterized as living in very small groups and relying on big game hunting for a major portion of their subsistence. While it is certain that these people did exploit the megafauna present roaming across the postglacial park tundra environment, there is little doubt that they would also have hunted any smaller game that might be present as well as utilizing whatever local floral resources were available. Paleo-Indian sites are generally quite rare but have been reported on the lake and one was recorded in the vicinity of Bemus Point.

The climate and local environment may have developed into the more modern configuration by 7,000 BCE or earlier. The variety of archaeological cultures that developed during the next ca. 6,000 years have been classified within the Archaic Stage (ca. 7,000—1500 BCE). The Archaic peoples have been characterized as highly mobile bands who frequently moved their settlements (principally

identified as camps) to take advantage of seasonally available plant and animal resources. This subsistence pattern has been identified as a generalized hunting-gathering form. Sites attributed to Archaic occupations are perhaps the most numerous recorded across the region. This is undoubtedly a function of the time span involved and the noted mobility of the populations.

The Woodland Stages (ca. 1500 BCE—1600 CE) follow the Archaic and represent a continuation of the broadly based hunting-gathering subsistence pattern. Archaeological cultures that developed during the Woodland Stages generally become more complex and there is a steady, gradual shift towards increased horticultural activity leading to the development of increasingly sedentary populations and the establishment of year-round settlements. By the end of this period there were several local manifestations of the Iroquois subsistence-settlement pattern. These local groups were eliminated and/or assimilated into the well known Five Nations Iroquois League by the middle of the 17th century.

Sites and artifacts representing almost all of the archaeological cultures identified across the region have been recorded or reported on the lands surrounding Chautauqua Lake.

Archaeological Investigations at Midway Park

The first formal archaeological examination of the current park property was conducted in 1976 and was confined to very limited areas where new sanitary sewer lines had been proposed. That investigation recorded two prehistoric sites on the park property. One of these was the Midway site. Prehistoric artifacts were visible on the ground surface at that time and included chert flakes, a chipped stone chert tool, and two ground stone tool fragments. The chert flakes and chipped stone tool are relatively common on prehistoric sites across the region. They are generally not attributable to specific archaeologically defined cultures however, unless the stone tools exhibit characteristic shapes. Ground stone tools, in this case adzes, may also occur in several cultural ages. In this instance the artifacts were attributed to an Archaic occupation.

The second site recorded in 1976 was named the Havilan site, presumably named after a previous landowner. Shovel tests excavated during the 1976 investigation recovered evidence of stone tool manufacture/ maintenance activities (chert flakes, shatter and core fragments) from plow zone soils. The investigators also reported that information obtained from local collectors indicated that a much broader range of artifact types had been present in this portion of the property. They were informed that items previously collected there included chipped stone refuse, tool fragments and projectile points as well as prehistoric ceramics, pendants, and burned stones. They suggested that this assortment of material probably represented occupations during multiple phases of the Archaic and Woodland periods.

A Phase 1 archaeological investigation was conducted across the forty-three acre park property in the fall of 2008. This level of investigation entailed the excavation of a series of small test units. These tests are known as shovel tests, shovel test pits or probes. They generally measure 40cm to 45cm (16 in to 18 in) square and are excavated into the subsoil. All of the soil removed from these tests is sifted through ¼-inch mesh screens in an attempt to recover any artifacts that might be present.

Standards for Phase 1 archaeological investigations in New York state require that subsurface tests be excavated no more than 15m (49ft) apart in areas covered by vegetation. In locations such as Midway Park, where considerable prior disturbance and development have occurred, there are many spots where the test grid is interrupted by existing buildings, roadways, utilities, and a host of other modern features. The existence of specific conditions (e.g. extremely stony lands, steep slopes, inundated terrain, etc.) may also eliminate areas from testing.

Three hundred fifteen shovel tests were excavated across the park during the 2008 investigation. One hundred thirty-one of those tests were positive for cultural material. The prehistoric artifacts recovered consisted solely of chert debitage (waste flakes and shatter, which are the result of lithic reduction/tool production/tool maintenance) and could not be assigned to any specific archaeologically defined culture. The majority of historic items would best be rated as of modern to very recent manufacture. No prehistoric material was noted on any exposed ground surface but an historic midden area was identified along a short slope in the northwestern part of the project area and very near the park's northern boundary. The midden contained a variety of household debris including bottle fragments, other glassware, ceramics, and enamelware. It probably dates to the late-19th or early-20th century. (Dean 2008)

Historic

The history of the park is well documented. A summary of that history can be found in *A Century of Fun* by Ron Gustafson (Gustafson 1996). To summarize, the original park was officially opened on leased land in 1898 by the Jamestown and Lake Erie Railway. The parkland consisted of 12 wooded and 5 cleared acres, a beach, dancehall, dining room and various court and field games. In 1907, a 450-foot dock was built to accommodate steamboats. After a number of changes to the railway company the land was bought in 1915 and the lakeside pavilion (The Hippodrome) was built. The pavilion had a dance hall and skating rink on the second floor with spectacular views of the lake, and dining room, kitchen, concessions, shooting gallery and dressing rooms for bathers on the first floor. Many buildings, a wooden roller coaster (later removed) and other amusement rides were added up to 1951.

In 1951 the park was purchased by the Walsh family who bought more land and expanded the park to its present size. The Walsh's added many new amusement rides, including the present Dragon roller coaster, go carts, miniature golf and an historic Hershell Carousel. The Walsh family also permitted informal cabins to be built at the northern end of the property on the lakeshore. These cabins formed an impromptu colony that was removed after OPRHP acquisition.

Historic resources at the park were evaluated by the State Historic Preservation Office and the park was listed on the National and State Registers of Historic Places during the writing of this plan.

Scenic Resources

Vistas

The vistas at Midway State Park offer the public a unique opportunity of access to spectacular views of Chautauqua Lake from the shoreline and various vantage points within the park. This exceptional view shed includes the entire northern portion of the lake and its western shore including the historic Chautauqua Institution, background upland areas and a distant view of the village of Mayville. Views of any part of the southern portion of the lake are obscured by natural land features and the Route 86 bridge.

Recreational Resources/Activities

(Figure 7)

Hippodrome

Currently, the Hippodrome building is undergoing engineering studies and renovations in order to make it safe and suitable for the accommodation of recreation activities. At present the building houses roller skating, the park museum and gift shop, a restaurant and food concessionaire.

Rides and amusements

Over the history of the park various amusement rides have been installed and removed. At one time there was a large roller coaster (the “Jack Rabbit”) which has since been removed. There has also been a Ferris wheel, flying swings and others. The present configuration includes a Tilt-a-Whirl, two smaller roller coasters, Tubs-o-Fun, train rides, go carts, miniature golf, bumper cars, boat ride, Roto Whip ride, sky fighter ride, super slide, helicopter ride, climbing wall and tidal wave ride.

The emphasis on the rides at Midway has always been toward family “fun” rides which can be enjoyed by many age groups.

Arcade

The Arcade is a collection of various types of coin operated games. The collection of games spans many years and includes a gypsy “Fortune Teller” machine, ski ball machines and early electronic video games such as “Pac Man.”

The arcade building housing these games is in very poor condition, needing to be “propped up” in the winter to avoid collapse due to snow loads.

Picnic Shelters

Midway park has six picnic shelters ranging in age, condition and size. The shelters are available for rental. When not rented the public may use them on an informal basis. At the beginning of the 2008 summer season there were eight shelters but two of them (#’s 2 and 3) were subsequently heavily damaged by fallen trees and had to be taken down. The picnic shelters are very popular for family, organization and corporate events. Shelter #1 is the oldest and was originally called the Dance Pavilion. This shelter has a structure attached to it that is currently not used but could be renovated to serve current park functions.

Fishing

Fishing is permitted at Midway State Park from the shore or from boats.

Ice fishing is available on Chautauqua Lake and could possibly be accommodated from the lakeshore at Midway.

Trails

There are no designated trails at Midway State Park, however a gravel road on the north side of the park can be used for walking.

Miniature Golf

A miniature golf course was added to the amusement rides in the 1950’s. The course has no theme but several of the 18 holes have animal characters. There are flower beds decorating the course.

Figure 7 Recreational Resources



Carousel

Midway State Park has had two carousels. The first was built by Gustav Dentzel and was housed in the roundhouse built in 1928. This carousel was replaced in 1968 with the current Herschell Carousel, built in 1946 in North Tonawanda. This carousel has 30 horses and 2 chariots. The carousel is situated centrally between the Hippodrome and the picnic areas and is still housed in the original 1928 roundhouse.

Interpretive/Educational Programs

There are currently two staffed interpretive/educational programs at Midway. The “Heritage Tour” discusses the history of the park during a walking tour of the park and museum. “The World In Motion” applies Newton’s laws of gravity and motion to amusement park rides. Participants ride specific amusement rides and then participate in a discussion of the forces experienced while riding and those that make the ride operate.

Small Craft Boat Dockage

Small craft transient boat dockage is currently provided from late May through early September by an “alumidock” system purchased and installed in 2008. This T-shaped dock can accommodate approximately 28 boats at a time. There are approximately 90 wooden poles for mooring at the dock. Current usage varies on weekdays and is often near capacity on weekends during July and August. The dock is installed and removed by seasonal staff. The poles are usually installed by a local contractor and removed by seasonal staff.

Events and Entertainment

The park currently holds two large events each year, the first being an Independence Day celebration. A band usually plays for several hours preceding a spectacular fireworks display. This event results in the highest attendance and revenue for a single day in the season, drawing people from miles around who usually stay for the entire day.

The second event is a car show held on Labor Day. This event is produced in partnership with a local car club that organizes and promotes the show. Vehicles are brought for display from hundreds of miles away and there are typically over 500 entries. There are prizes given to winners of the various judged categories. Thousands of car enthusiasts and families come to enjoy the event which also includes a chicken barbeque put on by the park concessionaire.

The park has a small covered performance stage that is used for family entertainment bookings during June, July and August. Performance bookings usually include musicians, groups and bands, magicians, and other performers.

Emergency Plans and Services

Fire

The park is located within the Maple Springs Fire District. Dispatch for the district is done through the Chautauqua County 911 system. Neighboring districts include Bemus Point and Dewittville.

The Hippodrome building does not currently have an evacuation plan. The regional safety officer will be consulted regarding development of this plan and recommendations on whether plans for other buildings are needed.

Police

The park is under the jurisdiction of the Allegany Region State Park Police, headquartered at Allegany State Park. The Park Police are contacted regarding all incidents. 911 is contacted first in the event of emergencies in order to have local responders dispatched quickly. Park Police are kept informed of scheduled large events and expected crowds in order to provide proper security and police coverage.

The park is also located within the jurisdiction of the Chautauqua County Sheriff's Department in Mayville, NY and the New York State Police in Jamestown, NY. Both are dispatched via the county 911 system.

Ambulance/Rescue/Ice Rescue

Ambulance and Rescue services are provided by the Maple Springs Fire Department. Dispatch for these services is done through the Chautauqua County 911 system. Neighboring Ambulance and Rescue units include Bemus Point and Dewittville.

Emergency Response

In the event of a hazardous spill DEC, spill response is contacted immediately. Action would be taken based upon DEC recommendations. A spill response kit is maintained on site.

Infrastructure

Water Supplies

The park's water supply is an on-site well. New storage facilities and distribution system were installed in 2008 and 2009. The system will have a capacity of 30,000 gallons of storage and a combined source of 30 gpm at peak loads and 70 gpm well capacity, which is sufficient to meet the park's expected water demand.

Waste Water and Sewerage

The park is served by municipal sewer service in the South and Central Chautauqua Lake Sewer District.

Capital Improvements

Some capital improvements have been made to the park since OPRHP acquisition. They are listed below with the approximate cost.

- **Midway Water System Replacement** \$770,000
- **Dodgem Roof Replacement** \$145,000
- **Hippodrome Upgrades:** \$63,000
 - Electrical Upgrades
 - Concessions Improvements and Upgrades
 - Restroom Improvements
 - Floor Restoration/Rehab to part of First Floor

- **Removal of Cottages and Associated Site Work** \$294,000
 - New Concrete Pads for some Rides
 - Repairing Go-Cart Track
 - Repaving Parking Areas
 - Lighting Improvements
 - New Transient Fishing Dock

Utilities

The park is serviced by standard utilities (electricity, phone and data lines, and natural gas service) which are all adequate for the facility's needs.

The furnaces in the office, restrooms, and existing houses operate on gas, along with all hot water tanks, and some of the concession equipment.

Roads

The park currently has two entrances on the Route 430 side which converge into one central blacktop road. The road continues through the middle of the park, past the rides and parking, and past the park office to the south corner of the park where a gate controls access to Chautauqua Avenue.

A secondary gravel road comes off of the central road to serve the picnic areas and north lakeshore area.

Parking lots are off of the central road in the middle of the park and at the southern end. Additional parking is available in front of the Arcade building.

Accessibility

The park strives to comply with current indoor and outdoor accessibility standards.

Food and Beverage Concession

The concession stands and vending machines are operated by an outside company. The concession contract is generally for either 3 or 5 years and a "Request for Proposal" type bid process is conducted at the end of each contract. The concession offers traditional "fair type" products like hotdogs, hamburgers, cotton candy, pizza, etc. There are two locations where concession operations are conducted. The main concession is located in the Hippodrome and has a full food preparation kitchen and a small indoor dining area. The second location is a small shed in the ride area that offers drinks, cotton candy, slush puppies and other "pre-prepared" foods.

Support Buildings

Park Office

The Park Office is approximately 624 sq.ft. It was previously a seasonal use building and currently has inadequate heat, windows, and insulation for winter operations. It is also slightly undersized for all needed functions during the operating season.

Gift Shop

There is a small "Carousel Gift Shop" that offers a wide variety of items including candy, souvenirs, apparel, and park related items.

Ticket Booth

The ticket booth, located in the ride area, is approximately 28 sq.ft. and is used for ride ticket sales during the operating season. It is undersized for this function.

Contact Station

The ticket booth and park office act as contact stations.

Operations

Park Staffing

There are three permanent year round staff positions at the park.

- Park Manager I – 1st in command at the park.
- General Mechanic – Head of park maintenance operations.
- Park Worker III – Head of park office operations

There are 60 - 75 seasonal staff positions at the park:

- Grounds Maintenance: Two to three person crew, responsible for all grounds work including mowing, trimming, flower beds, landscape work, tree work
- Rides. A Ride Department Supervisor and approximately 35 ride operators and 3 cashiers. A ride supervisor manual has been completed. Extensive documentation of employee training is kept in a training manual by the department supervisor
- Arcade. An Arcade Department Supervisor and 6 to 8 seasonal employees. Cashiers, Redemption Counter, redemption set-up, machine collection and accounting, machine maintenance and repair. An arcade supervisor manual has been completed which serves as a reference for the arcade supervisor
- Cleaning. Two seasonal employees
- General Maintenance. Approximately 5 employees that oversee building and Arcade maintenance and repairs, and ride set-up and tear down, as well as assist other departments
- Office. Approximately 5 employees (secretaries and cash handlers). An office manual has been completed which serves as a reference for office operations
- Mechanics. Approximately 4 skilled employees, responsible for ride maintenance, repairs and inspections
- Gift Shop. Two employees responsible for cashiering, merchandising, set-up, tear down, and accounting

Annual Operating Budget

Midway State Park's current annual operating budget is approximately \$608,50. Permanent and seasonal staffing account for approximately \$350,000 of annual operating costs. The remainder are non-personal service costs such as equipment, utilities, service contracts, etc.

The park generates approximately \$710,000 in annual revenues, including \$670,00 in user fees (rides, arcades, etc.), \$10,000 in annual concession fees and \$30,000 in NHT gift shop revenues.

Ride Inspection

The NY State Department of Labor is responsible for inspecting all amusement rides and devices operated in New York State. DOL issues an annual "Amusement Device Permit" and performs an annual inspection of all rides at Midway State Park. Extensive record keeping is required by DOL, including load tests and employee training documentation. Consistent with state policy for all state-owned facilities, New York State self insures the operation of Midway State Park.

Operating Season and Hours

The park is open to the public from 8:00AM to 10:00PM from Memorial Day to Labor Day and from 8:00AM to dusk the rest of the year. Beginning Memorial Day weekend the rides operate weekends only and from late June to Labor Day weekend they operate from Wednesday through Sunday (typical hours of operation are late-morning to early evening).

Petroleum/Gas Bulk Storage

There is one 500 gallon gasoline tank at the park. There is a 50 lb. propane tank at each pavilion (currently 6 on site).

There is no hazardous waste storage on site. All waste motor oil is transported to Allegany Region Park Headquarters for recycling.

Solid Waste Management and Recycling Program

The park contracts with a private firm for the removal of garbage and recycled material.

Maintenance Facility

Currently maintenance functions are spread out and decentralized due to lack of an appropriate building for these functions. Most of the ride repairs take place in the shed located at the go-cart track, which is where the mechanics are based. Some ride repair work is done in the small room attached to the back of the bumper car building. Ride parts and accessories are stored in a variety of small sheds located throughout the ride area. In the off season, most of the rides are stored in the Bumper Car building. This building is not adequate for off season maintenance and repairs due to poor lighting, low ceiling height, lack of heat, and damage to the steel floor from ride storage. Grounds maintenance and equipment storage is currently located in the Hippodrome on the lakeside ground floor. There is ample room for this function here, however this type of activity in a wood framed building is not good practice and the area is better suited for other functions.

Nuisance Animals

Little Brown Bats (*Myotis lucifugus*) currently use the area under the roof of the Hippodrome as a nursery colony and roosting site during the summer months. This is a result of the loss of the clerestory and its replacement with a standard roof peak. A contributing factor is the installation of a dropped ceiling over the roller skating rink, resulting in an even more secluded, dark roosting site. The bat colony in the Hippodrome causes unsanitary conditions due to the bat droppings as well as the danger of bat borne diseases. Replacement of the clerestory would let in more light, making the area less desirable for bats. The Carousel building is also heavily used by roosting bats during the summer. Bats are very beneficial, however, as they consume large quantities of insects. Any program to batproof the park buildings should also take into consideration the provision of alternative roosting sites (e.g. bat houses).

Gulls use the boat docks all along the shoreline of Chautauqua Lake. Their presence on the dock at Midway State Park has become a nuisance due to droppings. An effective measure of building a “web” of monofilament fishing line above the dock has reduced this problem.