

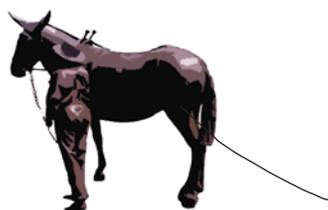
National Park Service
U.S. Department of the Interior

Chesapeake & Ohio Canal



GREAT FALLS TAVERN

Cultural Landscape Report



U.S. Department of the Interior
National Park Service
National Capital Region
Cultural Landscapes Program
Washington, D.C.
September 2009

Great Falls Tavern

Chesapeake & Ohio Canal

Cultural Landscape Report



Cover Photo NCR CLP 2006

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Project Number NPS 412/100571

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Acknowledgements

Executive Summary

The Great Falls Tavern (GFT) property has been under the management of the National Park Service since 1938 when the federal government purchased land from the Baltimore and Ohio Railroad. The tavern is a component landscape of the Chesapeake & Ohio (C & O) canal, and was officially designated the Chesapeake & Ohio Canal National Historical Park in 1971 (Fig.1).

The historic C & O canal comprises a linear tract that runs 184.5 miles from the Georgetown region of the District of Columbia to Cumberland, Maryland. The Great Falls Tavern is located in the Maryland piedmont approximately 15 miles north of Washington, D.C. (Figs 2, 3). Currently the site is a center for recreation, demonstration and interpretation. Historically the site has been a working industrial and commercial landscape. Under specifications established by the newly formed Chesapeake & Ohio Canal Company, the tavern at Great Falls was built in 1828 to house a Lock Keeper and his family. The structure rapidly expanded into a tavern and hotel after additions to the original stone structure were completed in 1831.

The Army Corps of Engineers sited the Washington Aqueduct Dam on the Potomac River adjacent to Lock 20 in the mid-1800s. The Corps installed a dam, an intake structure and a control gatehouse, which enabled the diversion of drinking water, through a series of underground conduits and aqueducts, from the Potomac River to the District of Columbia. Along with the dam-related structures, the Corps improved roadway access to the site, as well as several support structures to accommodate workers and equipment.

Withstanding flooding and fluctuations in canal commerce, a small community grew around the tavern. The community serviced both working canalers and recreation seekers who valued the area for its natural beauty and engineering feats. The area was one of the primary access points to the river's falls. Bridges to mid-river islands facilitated sightseeing as early as 1880¹ (Fig. 4). After the canal closed in 1924, and despite plans for an automobile parkway along the canal, the area was primarily used for tourism and recreation.

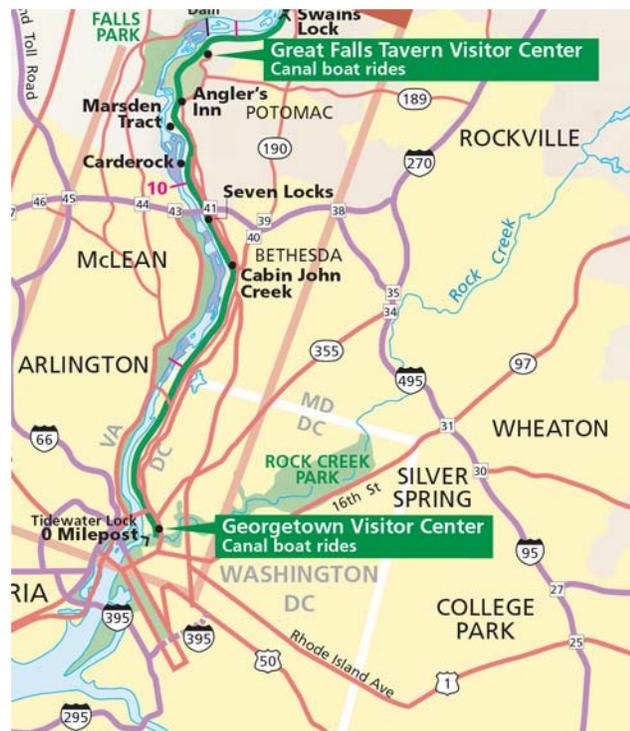


Figure 1 The C & O Canal from Georgetown to Swain's Lock (Lock 21), (NPS).

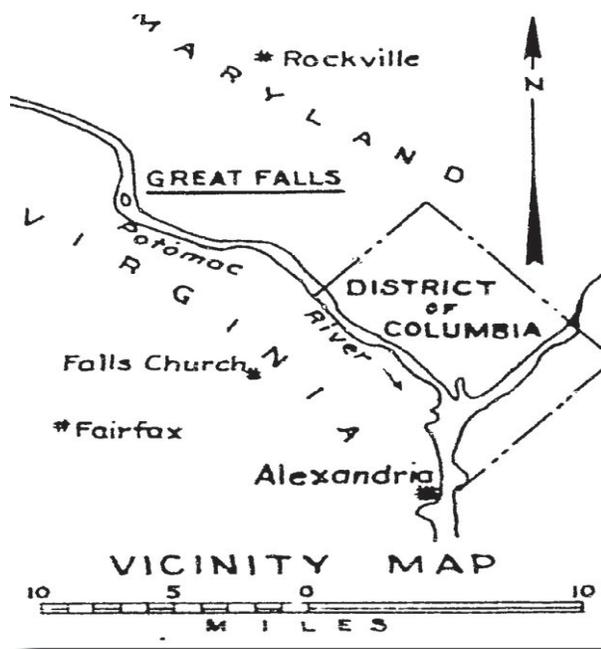


Figure 2 Map of the location of the Great Falls area (DSC TIC 412_80432).

The Great Falls Tavern site, along with the entire canal, escaped plans for parkway development initiated in the 1930's Capper-Crampton act. The act provided means for funding a massive parkway alongside, and on top of, the canal. In large part, the preservation of the site was due to the efforts of local and regional conservationists, notably Supreme Court Justice William O. Douglas, who brought national attention to protecting the canal from roadway construction during the mid-1950s.

Today, the site's past is revealed through the spatial organization, structures and circulation patterns related to the tavern and aqueduct functions. Among the most prominent historic features are the entrance road, the tavern, the original control gatehouse and the canal and lock system. Today, visitors come to the park continue to enjoy the area's scenic and recreational opportunities, just as they have been doing since the 19th century.

This Cultural Landscape Report (CLR) proposes a period of significance for the park of 1828-1942, this period encompasses the ascent and ultimate decline of canal-based transportation in nineteenth-century America, as well as early federal involvement in the area.

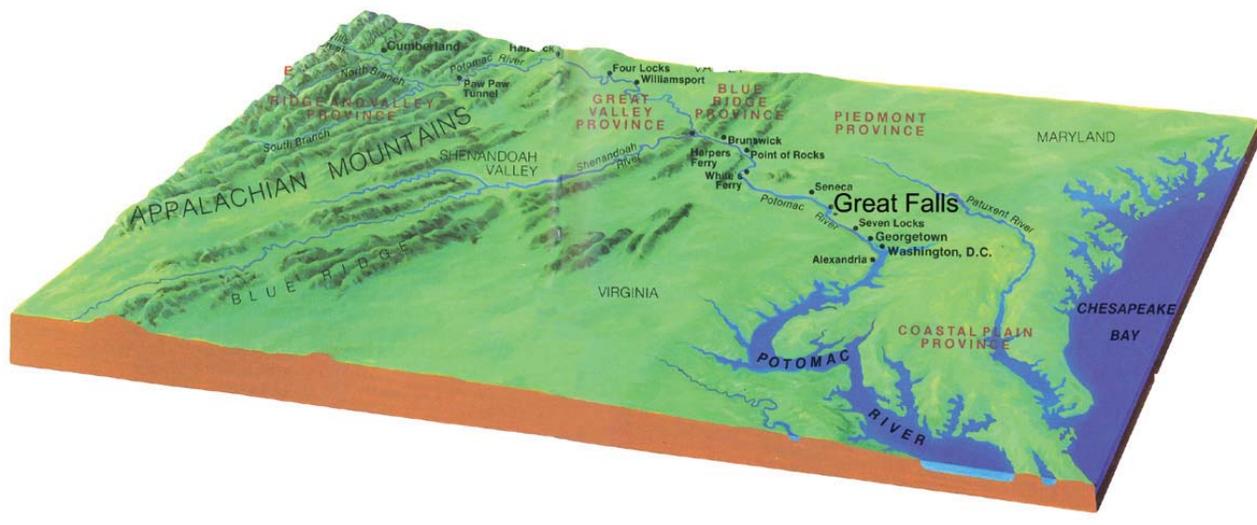


Figure 3 Illustration of the general topography from the Chesapeake Bay to the Allegheny Mountains (Chesapeake & Ohio Canal: Official National Park Handbook, NPS, 30,31).



Figure 4 Shawnee Canoe Club photograph, 1904. Three men seated on Maryland bank, viewing falls (CHOH Sharpsburg, NPS collection).

The period of time from 1828-1924, is significant for its association with broad events and patterns of American history (National Register Criterion A). It is illustrative of vernacular and industrial stone construction, and the landscape contains individual resources that embody the distinctive characteristics of a type, period or method of construction (Criterion C).²

The period of time from 1938-1942 is based on early federal involvement in the area. The year 1938 reflects the year of acquisition and the onset of NPS recreational and transportation planning efforts for the once industrial and commercial

landscape of the GFT. The period encompasses pedestrian and vehicular circulatory patterns on the GFT site deriving from early planning efforts by NPS landscape architects and planners. The year 1942 is the last year in which African American Civilian Conservation Corps (CCC) enrollees, under Roosevelt's federal "New Deal" relief program, were involved with the site. Some of the extant structures, both architectural and landscape, on the site reflect this period.

Much of the original circulation system, including the topography, canal, towpath and river remains intact. The tavern structure, as well as the original red Seneca sandstone control gatehouse and the lock, continue to function as they did historically, and reflect the style and achievement of artisans of the time. Small-scale features, including concrete survey and mile markers and gravestones, remain as relics of the historic landscape.

Despite changes to the landscape, including the disappearance of the canal industry, the razing of many period structures, and current ownership led by the NPS, the site retains the integrity of its periods of significance.

General Description

Cultural Landscape Reports (CLR) have two objectives: they explore and recommend treatments of cultural landscapes in the National Park Service (NPS), and they provide a basis for long-term or on-going interpretation and management of those landscapes.³ Generally, CLR's are divided into two parts. Part I explores a site's history and evaluates the condition of existing landscape features to determine integrity and historical significance. Part II focuses on developing a management philosophy, treatment alternatives and specific treatment recommendations. The recommendations developed in Part II evolve from the findings of Part I, park management objectives and the Secretary of the Interior's guidelines for the treatment of historic properties.

Recommendations for treatment derive from federal guidelines specific to the treatment of cultural landscapes. Cultural landscapes are defined by these guidelines as "a geographic area (including both cultural and natural resources and the wildlife or domestic animals therein) associated with a historic event, activity, or person or exhibiting other cultural or aesthetic values."⁴

This report generally follows the content guidelines suggested in *A Guide to Cultural Landscape Reports: Contents, Process and Techniques*.⁵ These guidelines result from evolving research into cultural landscape assessment and treatment by the NPS over many years.

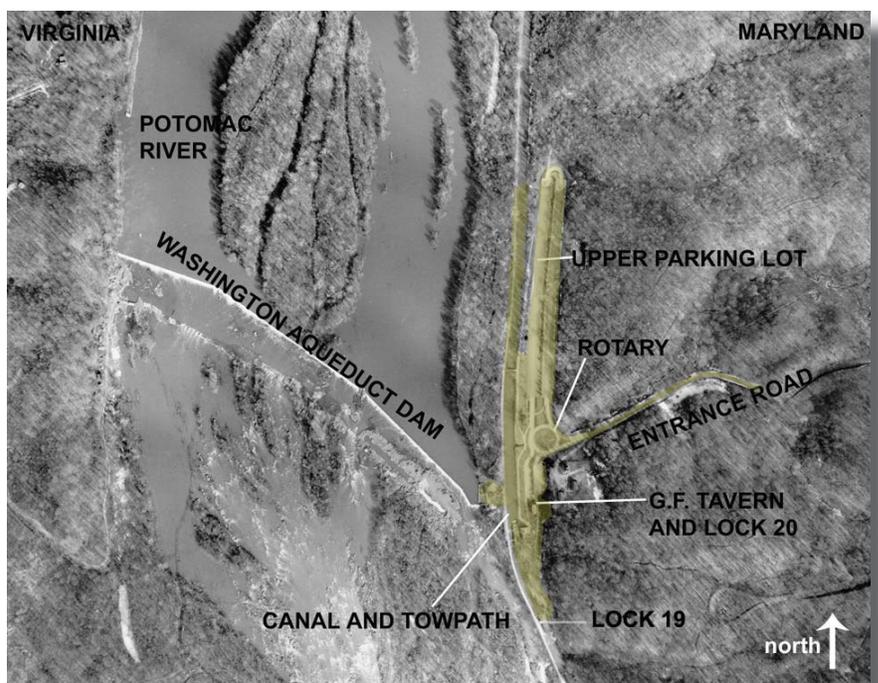
Project Definition

The intent of the project is to identify and evaluate significant cultural landscape features and provide treatment recommendations that focus on preservation and rehabilitation of those landscapes.

Study Boundaries

Study boundaries established for the Great Falls Tavern (GFT) CLR include the immediate area surrounding the tavern, the parking areas, the canal prism, towpath and the entrance road. It is bounded to the north by the end of the upper parking area, and to the south by Lock 19 (Fig. 5). Areas excluded from the CLR include Olmsted Island, the Gold Mine Tract, the administrative area and the Palisades maintenance area.

Figure 5 Plan view of Great Falls Tavern area. Study area is highlighted in yellow (CHOH aerial 1963).



Cultural Landscape Reports and Cultural Landscape Inventories

The Cultural Landscape Inventory (CLI) is an important information base for a CLR. The inventory provides preliminary analysis and evaluation of landscape features, broadly summarized for the entire site including the Gold Mine Tract, Olmsted Island, the Administrative area and the Palisades Maintenance area. Background information for a CLI is typically derived from secondary sources and may highlight needs for further research and documentation from primary sources. The CLI does not explore treatment alternatives; instead, it records the site's general condition and documents presumed threats and impacts.

The Great Falls Tavern CLI was entered into the CLI database in 2001 and revised in 2004. Researchers documented existing landscape conditions and investigated historical records. Since site-specific secondary resources were scarce, review of primary resources, such as historical photographs, maps, drawings and texts, was necessary. Key landscape features, such as circulation, structures, small-scale features and others, were described or itemized and assessed. Many of these existing features were considered to be contributing to the significance and integrity of the cultural landscape, while some were not. The CLI also includes a chronology of events and a narrative of the physical history of the GFT site.

Park Planning Efforts: Past and Present

A park's plans, such as a General Plan and Site Development Plan, provide the basic framework for treatment and management of cultural and natural landscapes. The specific treatment recommendations in a CLR guide physical implementation for specific landscape areas. Often, cultural landscape treatments have not been addressed or updated since general management or site development plans were first adopted. In this instance, the CLR augments them to shape physical design and management.

Past

The NPS had been involved in plans for the canal and GFT landscape since the 1930s, when the NPS purchased the canal property from the Baltimore and Ohio Railroad. After establishment of the Chesapeake & Ohio Canal National Historical Park as a National Park in 1971, the NPS embarked on broad management planning for its entire 184-mile length. Working with a citizens' advisory commission, the park service adopted a General Plan in 1976. At the time, more specific action plans, called sectional development plans, were to be created for smaller areas of the park.

The General Plan specified several development standards related to cultural resource protection. They included:

- Stabilization and restoration of historic resources should be given higher priority than new development.
- All development in the park should be compatible with the natural and historic environment.
- The towpath experience is an important aspect of the park and it should be protected. Non-historic or new facilities should not be readily visible from the towpath.
- No new development would be located between the canal and river unless it was effectively buffered.
- New structures were to be located outside of the fifty-year floodplain.⁶

The General Plan followed in the destructive wake of Hurricane Agnes in 1972. In 1976, the National Park Service was committed to repairing the flood damage, estimated at \$45 million. According to the General Plan of 1976; “no new visitor facilities will be constructed until emergency flood rehabilitation and aqueduct stabilization work has been funded and further research on stabilization and restoration of the cultural resources has occurred.”⁷ Furthermore, an inventory of natural and historic resources would be completed for each section before planning proceeded. The List of Classified Structures (LCS) was underway, but not complete, nor were analyses of structural stabilization and restoration needs.⁸

A Sectional Development Plan would determine “number and locations of visitor facilities” for each of the 32 sections identified in the General Plan. The first plan was to address an existing situation at Great Falls: “An in-depth visitor study will address these questions and lend insight into whether there is a ‘problem’ at Great Falls, what it is, and how to correct it.”⁹ A sectional development plan would also coordinate road access to park facilities with local officials “to ensure that a development proposal within the park would not overload the design capacity of the existing access roads.”¹⁰

In 1979, alternatives were assessed for a Development Concept Plan (the name given to the sectional development plans) at Great Falls. Problems identified and addressed centered on providing adequate facilities, stabilizing historic structures, mediating conflicting uses and providing improved circulation for vehicles and pedestrians. Five alternatives, including one of no action, were described. The final preferred alternative, after review by the Chesapeake & Ohio Canal National Historical Park Commission, included plans to remove the parking lot near the tavern (lower parking area) to provide a more historical setting, to construct a boat dock for the canal barge below Lock 20, and to keep the extant circulation system.¹¹ Since that time, the boat dock was constructed. The parking lots, roads and pedestrian walkways, however, remained in the same configuration.

In the General Plan, GFT in the Six Locks area was designated as a National Interpretive Center, Zone A, one of 32 different management areas of the park. It is comprised of 4.2 linear canal miles from Anglers Inn below Lock 15 to Lock 21. According to the general plan, Zone A:

...defines areas containing major historic restoration opportunities where the park visitor will be able to see a functioning canal in a historic setting. The areas were also selected for accessibility, availability of parklands for development of visitor facilities, and the compatibility of the surrounding environment outside the park. These interpretive centers are expected to support the largest density of visitor use. Most of that use is considered to be short-term (1 to 2 hours). The concept of development of these areas is that of any outdoor living museum. Historical accuracy is imperative in these re-creations of historic scenes.¹²

Present

A line item construction project at the GFT was completed in 2008. It included work both in and around the tavern and construction of a new comfort station. This project included the removal of the brick patio and redefinition of the yard area, and the addition of an outline of the historic kitchen to the tavern’s southeast side. (A restoration of fencing and a reconstruction of the Lockkeeper’s shanty will also occur.)

Another project is planned with the Federal Highway Administration under the Federal Lands Highway Program which provides funding for a coordinated program of public roads and transit facilities serving Federal and Indian lands. This project includes work on the entrance road, construction of wheelchair ramps and new paths in the concession stand area, milling and overlaying of the paving in the upper parking area, construction of a walkway between the upper parking lot and the tavern and re-alignment and paving of an access road between the rotary and the east side of the tavern.



Scope of Work

Part I of the report, *Site History, Existing Conditions and Analysis & Evaluation*, reviews prior research developed in these areas as found and reported in the CLI. Supplemental and additional details are also included. In this section, site history is documented, and the existing conditions of landscape features are measured against their historic character to determine which of them are contributing elements, and how non-contributing elements may or may not be compatible with the site during its assigned periods of significance.

Part II, *Treatment*, discusses a broad approach to treatment and management applicable to cultural landscapes, and defined by standards set by the Secretary of the Interior. From these, further expansion of treatment recommendations, both for the site overall, and in an area-by-area format is reviewed.

Methodology

Preparation of this report required several different approaches. Since it encompasses site history that was not discussed in the CLI, primary documents – maps, drawings, photographs, National Park Service reports and correspondence – were examined. Secondary sources, such as books, web-based information and recent reports, provided context and background for the CLR. Site analysis and evaluation relied in part on the analysis conducted for the CLI. In order to determine which landscape features are contributing, or of the historic period, both the CLI and the LCS were consulted. Additional site-specific data were used for scrutiny of certain landscape areas. Field studies were conducted primarily during the spring of 2004 and the summer and fall of 2006. Existing site data in two forms suitable for geographic information systems (GIS) were reviewed and additional data was mapped on these base levels.

The treatment recommendations were developed based on several meetings with park personnel in the spring and summer of 2004. Recommendations were based on federal standards and pre-existing park planning documents. Meetings included a broad discussion of management issues and more specific problem-solving. While evaluating construction proposals, general alternatives were suggested for major new site developments. Specific recommendations were then developed to address certain issue areas. These recommendations were then used to inform final construction plans for a line-item construction (LIC) project and a Federal Highway Administration (FHWA) project.

Terminology

- **Aqueduct:** A bridge for carrying a canal over an intersecting watercourse or valley.
- **Bank Run Gravel:** Unwashed varied size natural aggregate, usually intermixed with fine sand and clay.
- **Berm Bank:** A horizontal space about one to two feet wide and located about one foot above the water surface on the side slope of the canal. This space protects the upper part of the interior side slope of the canal.
- **Bypass Flume:** A channel, flume, or pipe at or near surface level around the berm side of a lock to provide water to the canal levels below the lock and to pass excess water so as to avoid flooding the canal level upstream of the lock. Stop-planks at the head of the bypass regulated the depth of the water level upstream of the lock. A bypass was used in conjunction with overflows and waste weirs.
- **Canal Prism:** The trapezoidal cross-sectional shape of the canal's channel.
- **Culvert:** A covered channel or pipe for carrying a water course or road under the canal.
- **Entrance Road / Conduit Road:** Road built by the US Army Corps of Engineers in the 1870s that still serves as the only roadway access to the Great Falls Tavern.
- **Feeder Dam:** A dam built across a stream to create a reservoir that supplied water to a canal though a feeder (canal). Dams were the most common feeders and could feed several locks below.
- **Gates:** Gates made of wood and wrought iron used to control the level of water in the lock.
- **Lock:** The general term for a stone, concrete, brick, or, rarely, earth-sided chamber, fitted with water-tight gates at each end, through which boats could be raised or lowered when passing from one level of a canal to another.
- **Locking through:** The act of getting a boat through a lock.
- **Mule Drink:** A low area in the towpath to void excess water. It was easier for a mule to drink at this spot than from the canal, hence the term. Also an overflow. A "mule drink" is sometimes edged with a raised walkway allowing mule drivers to follow along without wetting their feet.
- **Rotary:** Circular traffic feature at the intersection of the entrance road and parking areas.
- **Spillway:** A device built in, or at, the river-side of the towpath to carry off excess water from rain or the improper control of the water level downstream. Also an overflow. At Great Falls Tavern, the spillway and mule drink were the same feature.
- **Towpath:** The path beside a canal used by animals towing canal boats. It was usually about 12 ft. wide. If the canal was near a river, the towpath usually was on the side nearer the river. Sometimes it was called a mule path or horse path. It was usually made of packed earth.
- **Waste Weir:** A stone, concrete, or wooden structure built in the towpath bank of the canal with gates or stop planks, the lifting of which enabled the draining of the level of a canal for repairs, cleaning, or protection from ice in the winter.



Endnotes

¹ Temkin, Martha et al. Cultural Landscape Inventory: Great Falls Tavern, Chesapeake & Ohio Canal National Historical Park. Washington, D.C.: United States Department of the Interior, 2004. P 85.

² Temkin. p 16.

³ Page, Robert R., Cathy A. Gilbert, and Susan A Dolan. A Guide to Cultural Landscape Reports: Contents, Process, and Techniques. Washington, D. C.: U. S. Department of the Interior, National Park Service, 1998. xi.

⁴ Birnbaum, Charles A., and Christine Capella Peters. Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes. Washington, D. C.: U. S. Department of the Interior, National Park Service, 1996. 4.

⁵ Page, et al.

⁶ Parsons, John G. Chesapeake & Ohio Canal: National Historical Park District of Columbia/Maryland General Plan. Washington, D.C. National Park Service, 1976. pp 24-39.

⁷ Ibid. 24.

⁸ Ibid. 36.

⁹ Ibid. 23,24

¹⁰ Ibid. 31.

¹¹ Denver Service Center, National Capital Team. June 1979. Assessment of Alternatives, Development Concept Plan, Great Falls, C & O Canal National Historical Park, Montgomery County, Maryland U. S.

¹² Parsons. 21.

Part I
Chapter I
Site History





Site History

The Cultural Landscape Report contains a review of the physical history of the Great Falls Tavern (GFT) site from before 1820 (pre-history) through 2009. This history is divided into seven principal sections:

- Pre History-1608 - Pre- European Settlement
- 1608 - 1820 - Early European Exploration And Settlement
- 1820 - 1889 - The Construction of the C & O Canal
- 1889 - 1938 - The Decline of the Canal and Community at Great Falls and the Rise of Tourism
- 1938 - 1954 - Initial Acquisition by National Park Service
- 1954 - Preservation of the Canal: the Douglas Walk
- 1955 - 2009 - NPS Management



PRE HISTORY - 1608

Pre-European Settlement

The pre-history of the Mid-Atlantic Region can be divided into three broad periods: Paleo-Indian (c. 12000B.C.-7000B.C.), Archaic (c. 7000B.C.-1100 B.C.) and Woodland (c. 1100 B.C.-A.D. 1600). The region is thought to have been inhabited for approximately 14,000 years.¹³

According to research completed for the Great Falls Tavern CLI, the impact of humans upon the landscape of the GFT site before canal construction in the 19th century was minimal. The steep topography, dense forests, and flood activity of the landscape made it unsuitable for agriculture or settlements. It is likely that the resources of the Great Falls Tavern area were adapted for use by Native Peoples for centuries. Little archaeological evidence survives to support this theory because many of the resources in the vicinity of GFT have been compromised by natural and cultural forces.

The earliest inhabitants of the Potomac River Valley relied on plant material, fish, shellfish and large game for sustenance. Evidence of human use of the site and the importance of fishing in the area is apparent in the existence of a prehistoric petroglyph located on a river boulder at the base of the falls. The methods used to create the petroglyph are thought to have derived from the late Archaic Period. "The design, created by pecking the rock with a stone gouge, consists of three concentric diamond-shaped designs, which enclose four circular depressions within the central diamond. Extending from the outermost diamond is a line that forks into a v-shape. Some (not all) Archaeologists believe the design represents a stylized fish, possibly the split-tail alewife."¹⁴ Around 4,000 years ago, as the Chesapeake Bay became saltier, fish, specifically anadromous fish (fish that live in salt water but spawn in fresh water) gathered in large numbers at the base of the falls, especially in late winter and early spring. These fish supplied an abundance of food for Native Peoples. A further indication of Native American activity in the Great Falls area is the existence of steatite stone, found primarily along the fall line region. Native Americans used steatite in the creation of early ceramics.

The fall line that divides the Piedmont province from the Coastal Plain province was also a cultural dividing line between the Piedmont and Coastal Indian groups during the Middle Woodland period. In support of this theory is the fact that Algonquian speakers were of the coastal plain and the Siouan speakers of the Piedmont. It is likely that the area was a seasonal resource procurement center as well as a component of a migratory route.

Figure 6 Englishman George Beck's (1748-1812) rendering of the Great Falls of the Potomac from 1802 is among some of the first professional landscape art in America (Library of Congress Prints and Photographs Division).



1608 - 1820

Early European Exploration and Settlement

Captain John Smith began his exploration of the Potomac River (Fig. 6) in June of 1608. His two-ton barge was able to navigate to just north of Little Falls, but the 'Falls of the Patowmack were an effective barrier.¹⁵ Henry Fleet, a fur trader, arrived in the Potomac River Valley in 1624 and made his way upriver within "two leagues" of Great Falls. He described the area as having "soil as rocky and mountainous like Cannida [sic]."¹⁶

By the early eighteenth century, settlement moved westward along Watts Branch, a stream that empties into the Potomac approximately three miles north of the Great Falls. William Offutt was issued a 200-acre patent, called "Bear's Den," on April 4, 1729. The patent included the land immediately adjacent to Great Falls.¹⁷ "Bear's Den" may refer to hunting within the patent area. The existence of bears and hunting leads historians to believe that the area was forested during most of the eighteenth century. Patents were issued to individuals after the prospective owner made a claim, issued a warrant, then surveyed and mapped the land. Only after the completion of this work was the claimant granted ownership.



Figure 7 Patowmack Company logo.

too dangerous to navigate. The Patowmack Canal Company operated until 1828, when its rights were transferred to the newly-created Chesapeake & Ohio Canal Company. Surveys of the GFT area began in the 1820s.

Engineers designed the canal locks at Great Falls to negotiate the 76-foot drop in the Potomac River from the north end of Conn's Island to Sherwin Island in what is known today as Mather Gorge (Fig. 8). This area, known now as Six Locks, comprises Locks 15, 16, 17, 18, 19 and 20. The locks and retaining walls were considered a grand feat of modern engineering.

Figure 8 Mather Gorge and the "Six-Locks" area of the C & O canal (NPS).

1820 - 1889

The Construction of the C&O Canal

George Washington was the first President of the Patowmack Canal Company in 1785 (Fig. 7). By 1802, the company had constructed canals allowing boats passage up and down the river valley on the Virginia side of the river in places where the Potomac was



The canal was called a prism because it was about six feet deep and it was wider at the water's surface. Water levels and flow were controlled with feeder dams, which brought water in from the Potomac River. Culverts diverted streams under the canal to the Potomac. Bypass flumes helped to alleviate water pressure on lock gates. Waste weirs, built at the lower end of certain levels, allowed excess water to drain from the canal, and the locks themselves. Canal company specifications directed construction of all canal features. A towpath was built, generally on the river side of the canal, to allow passage of the mules or horses used for towing the canal boats. The surface of the towpath was constructed of six inches of packed broken stone to support pack animals pulling canal boats. Under the original design specifications, it was recommended that no wagons, carts or other wheeled vehicles were to traverse the pathway. Retaining walls of earth or stone were often constructed to separate the land and water. The opposite side of the canal was usually bermed (Fig. 9). A local exception to this rule was the area from Lock 18 downriver to the area known as Widewater, where a former river channel was used as a bypass route. Widewater had historically been susceptible to flooding and, along with the other parts of the canal and towpath, would flood several times in the future.

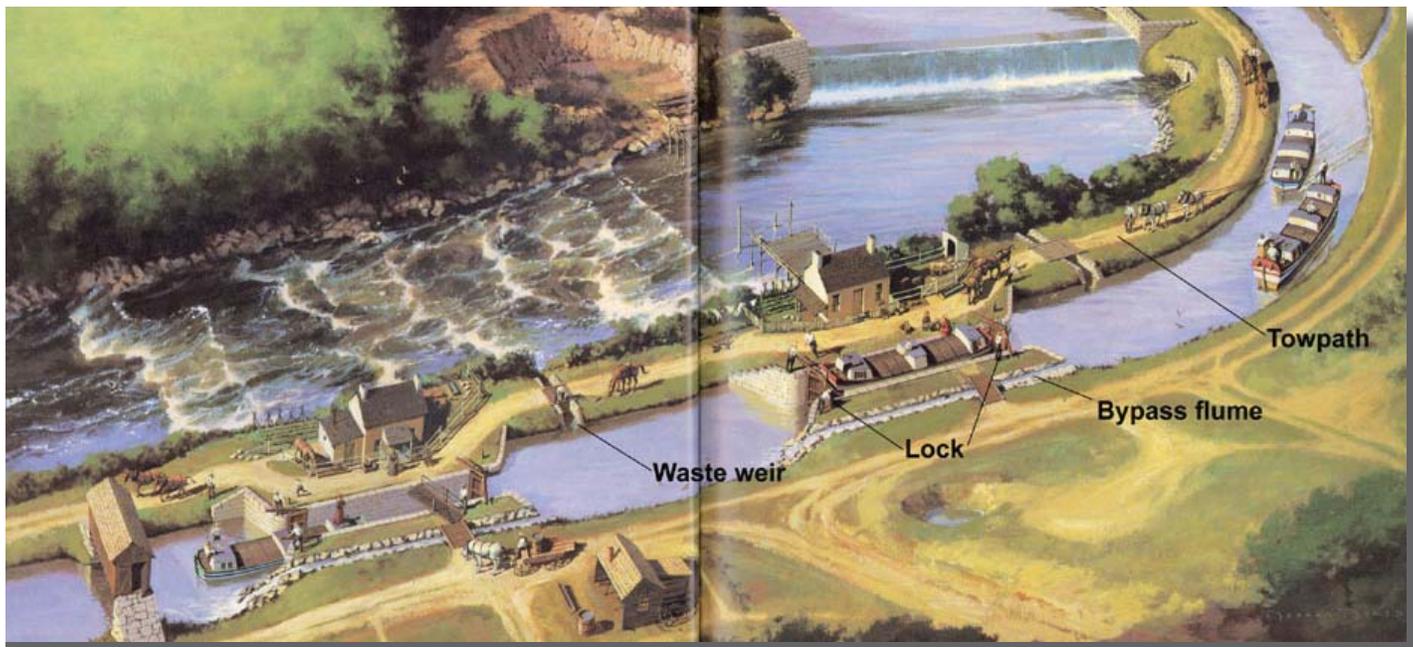


Figure 9 To maintain a 2-3 mph current and a 6' depth, canal builders used a precise system of building and water management (Chesapeake and Ohio Canal: Official National Park Handbook #142).

Local natural resources were useful in canal and community construction. Building the canal structures necessitated quarrying and transporting local stone, such as the durable red Seneca sandstone, rafted in from nine miles upriver. Establishment of a number of small quarries near Great Falls provided stone building materials, and local oak timbers were sawn to construct the lock gates and walls. Workers also used nearby wood for firewood. Little by little, clusters of structures in the area of the tavern were built to support canal construction. The building and quarrying activities occurring at this time facilitated a significant change in the natural landscape, which was most likely covered by dense forest.

Tavern Construction

The Great Falls Tavern was initially built in 1828 as a Lockkeeper's house known as Lock House 12. It was a stone structure built to the specifications established by the C & O Canal Company. In November 1830 the company appointed W. W. Fenlon, a canal construction contractor, keeper of Locks 19 and 20. Additions to the Lockkeeper's house were constructed from 1830 to 1831 on both the north and south sides of the structure (Fig.10). During that year, the house was expanded to include a tavern. Further, the canal company granted Fenlon monies to construct a kitchen and an unspecified number of additional buildings.



Figure 10 The Tavern at Great Falls (seen here c. 1900) was originally built in 1828 as a Lockkeeper's house. It was expanded into a Tavern in 1830 when additions were built on both the north and south sides of the stone core (CHOH Sharpsburg, Young and Jett, 5).

As written in a 1976 Historic Resource Study of the C & O Canal: "In September (1830) the board approved a resolution requiring that at least one acre be attached to each lock for the use of the tender. On their plot the tenders were to raise gardens for their supply of fresh vegetables and to raise chickens, hogs and cows for their supply of eggs, milk, and meat. The grounds set aside for these purposes were to be fenced...."¹⁹

Visitors and canal workers alike utilized the new facilities. Some canal boats moored overnight near the tavern before transiting Six Locks, since canalers considered it a dangerous undertaking after dark. The only known reference made to the Tavern at the time was by Colonel John J. Abert and James Kearney, United States Topographical Engineers. When they came upon Lock 20, in June 1831, they reported:

*At this lock we found an excellent hotel kept by Mr. Fenlon. The house is built upon the ground of the company, and with the company's funds, and is a necessary and great accommodation to those who visit this interesting work.*²⁰



The canal company built another lock house at Lock 18 at about the same time as the construction of the GFT. Upon the river terraces at Locks 18, 19 and 20, a small community of canal travelers and workers grew along the berm bank (the opposite side of the canal from the river and towpath), a few remaining markers in a small graveyard documents their existence today. A shop made of heavy pine timbers was constructed about one thousand feet north of the tavern on the berm side, and a wooden pivot bridge at Lock 20 provided access to the towpath from the berm side of the canal. All of these structures were in place by 1835. It was also during this time of expansion and building that an access road running behind the tavern towards Lock 19 was added to the GFT landscape.

By the early 1850s, several structures accommodated the small community of people who lived, worked and visited the tavern area. In 1848, the tavern staff was prohibited from selling alcohol after several disruptive alcohol-related incidents took place in the small community. The former "Ball Room" at the tavern (commonly referred to at this point in history as the "Crommelin House," "Crommelin Hotel," or "Crommelin Tavern" in honor of the Crommelins, the canal's Dutch financiers) was rented for use as a grocery store in 1851. Use of the structure as a hotel started and stopped intermittently during the mid and late 1800s.

Because the GFT area was an industrial and commercial area, descriptions of the landscape during the canal period are scarce. Rogers Young and Sutton Jett reviewed the Canal Company's records in the National Archives and other sources during canal rehabilitation and stabilization from 1938 to 1940. From their research, they created a document titled *A Preliminary Historical Study on the Area Along the Maryland Shore of the Potomac at Great Falls During the Heyday of the Chesapeake and Ohio Canal 1858-1880*. They chose this period because it post-dated the canal's completion as far as Cumberland, and predated the canal's devastation caused by the 1889 Johnstown flood. The 22-year period, they argued, was the height of canal commerce, when transported tonnage tripled, net revenue climbed and lines of canal boats waited at Georgetown to be unloaded.

Young and Jett surveyed an area from Lock 15 to about ¼ mile north and northeast of Great Falls Tavern, starting with a detailed description of construction, renovations and uses of the tavern structure. They also described fences and walks around the tavern, using historical photographs and an oral statement from the tavern's most recent occupant at that time, William H. Case as documentation. Other canal-related structures, such as the waste weir, snubbing posts, a pivot bridge at Lock 20 and the lock shanty were included. Young and Jett also reviewed the canal company structures to the northeast, including a carpenter's shop on the berm bank about 1,000 feet north of the tavern. Descriptions of Washington Aqueduct structures included those that had been razed after the Aqueduct's initial construction. The study is still the best single source of documentation about Great Falls' historic structures and landscape.

Washington Aqueduct Construction 1853 - 1867

The 1850s brought further change to the landscape of the GFT site, with the construction of the Washington Aqueduct, led by Lieutenant Montgomery C. Meigs of the United States Army Corps of Engineers. During his lifetime, Meigs was a well-known U.S. Army officer, civil engineer, and construction engineer recognized for his work on the dome and wings of the U.S. Capitol building, his Civil War service and his design of the Pension Building (current National Building Museum), among others. The aqueduct would provide water from the Potomac River to Washington, D. C., located approximately 15 miles away (Fig. 11).



Figure 11 Construction of the Washington Aqueduct c.1870 (GFT Library).

The Corps extended a masonry dam to Olmsted Island in order to impound and direct water into the aqueduct. An intake dam was located on the riverbank directly across from Lock 20 where a deep channel and gravity directed water into a tunnel under the canal, and through a 1,432-foot tunnel blasted through the rock east of the tavern. The tunnel terminated at Angler's Inn at Conduit Road (modern MacArthur Blvd.). From there, water traveled through a sturdy aqueduct of brick, stone and mortar along the Palisades and to reservoirs in Georgetown.

Aqueduct construction greatly altered the buildings, spatial organization, land use, vegetation, circulation and population of the GFT area.

In addition to the dam and intake structure, a number of temporary "sheds and shanties" were built in conjunction with the aqueduct project between 1853 and 1863. Most, including a barracks for 300-400 aqueduct workers located near the intersection of the Old Rockville Road and Carroll Branch, as well as tool houses and cement (storage) houses, were razed between 1874 and 1880²¹ (Fig. 12). During this period The Corps built a stone and brick gatekeeper's house on top of the hill to the east of the canal (to the south of the modern entrance kiosk). The gatekeeper's house still exists today but is outside of the scope of this CLR.





Figure 12 This 1858 map illustrates the locations of buildings along the Old Rockville Road (H Neilson Fisheries Map, 1858).

The Corps built a red Seneca sandstone “Gatehouse” in 1877 to house the valves used to control water flow. The building was located approximately 80 feet to the northeast of the tavern. The Control Gatehouse building still stands in its original location and is designated a National Historic Landmark.

The rock blasting, gatehouse and tunnel construction for the aqueduct cleared most of the remaining trees from the tavern area and destabilized the original tavern structure. Damages to the tavern cost the U.S. government more than one-thousand dollars in repairs.²² Corrective rehabilitation returned the tavern building to good condition in 1862.

Before aqueduct construction, transportation to and from the site occurred via the canal, ferry or “Old Rockville Road.” The road ran northeasterly and connected Great Falls with Offutt’s Crossing, River Road and Rockville, the Montgomery county seat. River Road was an early 18th-century route serving as a vital link between Maryland and Washington, D.C. The road was situated upon the Canaya Indian’s pre-historic “Tehoggee Trail.” A trace of the Old Rockville Road, now existing as a flat, open area, is visible to the northeast of the current entrance circle.

According to the CLI, Conn’s Ferry was located just north of the aqueduct dam and connected the tavern to Virginia. It existed by the early nineteenth century and operated at least through the Civil War period. Another nineteenth-century ferry, at Sandy Landing, south of the project area, provided a route to Virginia for the Great Falls inhabitants.²³

During the late 1800s, The Corps built a road on top of the aqueduct to aid in construction and maintenance of the aqueduct. It was named “Conduit Road.” By 1861 the road extended from Georgetown to a tunnel where Angler’s Inn is now located. By 1875 it extended to Great Falls. The road replaced the Old Rockville Road as the main route in and out of the Great Falls area.

Before the construction of the aqueduct and its associated buildings, the existing structures were oriented towards the canal, and in a linear pattern. The aqueduct construction created a new organization focused along the terminus of the Old Rockville Road. “Whereas before, the

tavern would have been the primary structure in the project area, now it sat at the end of a row of buildings loosely arranged to face one another. The location and orientation of the aqueduct buildings, clustered along the Old Rockville Road, may have derived in part from the road's proximity to a spring located on the Carroll Branch, just northeast of the tavern. This spring was the only source of potable water available at the site until the late 1870s."²⁴

The Civil War and Gold Mining

"The Civil War apparently had little effect on the landscape of Great Falls Tavern. The GFT area occasionally hosted Union troop encampments. Soldiers were stationed in the area to protect the aqueduct and canal. The area came under battery fire in 1861, but, according to official reports, most of the shells fell short of their target."²⁵ Records from Maine State Museums Collections show that, for a brief period, The 23rd Regiment Maine Volunteer Infantry was on guard duty along the Potomac River in 1863.²⁶

While stationed in the woods near the GFT, a Civil War soldier by the name of William A. Clears discovered gold. The legend of his find alleges that he kept the location of the strike a secret until he had completed his tour of duty and could purchase the land and mine properly.²⁷ He later purchased property near the intersection of Falls Road and Conduit Road, and, in 1867, sank a one hundred-foot mine shaft. This mine (later known as the Maryland Mine) worked successfully for two years, and then was abandoned.²⁸

Continued Growth After The Aqueduct 1870-1889

1870 to 1889 were considered the canal's "Golden Years." Individuals and families spent years transporting goods up and down the canal (Fig. 13). Some would make one trip from Cumberland to Georgetown, sell the load of coal and the lumber from their deconstructed boats, and walk back to Cumberland, buy or build new boats, and start again. During this time the canal, towpath, locks, weirs, bypasses and flumes were well-maintained (Fig. 14). In 1880, there was a post office and a population of one hundred and nine in "Great Falls Village." From the onset of the Civil War in 1861, and for the next 30 years, several (over 27) of the structures in the GFT area were let by the canal company for use as commodity stores, provided that the commodities sold at the time did not include alcohol.³⁰



Figure 13 Family life on a canal boat (Chesapeake and Ohio Canal: Official National Park Handbook #142).





*Figure 14 A canal boat makes its way along the canal route
(Library of Congress Prints and Photographs division).*

From 1884 to 1885, the local population boomed, when five hundred workers were stationed at the GFT area. They worked to extend the dam to the Virginia side of the Potomac, in order to raise it to 148 feet above sea level to divert enough water to supply the growing D.C. metropolitan area. Workers also raised the towpath and built fish ladders, which are said to have never worked properly, to the east of the falls (Fig. 15).



*Figure 15 The intake at the Washington Aqueduct c. 1900 with
Great Falls Tavern in the background (GFT library).*

Additional growth occurred within the GFT study area when Howard Garrett built a grocery and feed store on the towpath side of the canal in 1869. In 1870, 800 boats were operating on the canal and the GFT area was a substantial supplier of merchandise along the route.³¹ Garrett leased both the tavern and, adjoining land. He built a kitchen wing at the tavern's southeast corner, and, between 1873 and 1884, he built three structures on the berm side of the canal, south of the tavern and north of Lock 19. Garrett is also credited with bringing water to the tavern via a well he had dug in 1877.³²

During the late 1800s, guests came to the area by stage line, steam packet, canal boat and ferries. The 1865 extension of the Conduit Road (currently known as the Entrance Road) increased the influx of tourism to the GFT area. In 1880, a wooden semi-suspension bridge led visitors to Falls Island (modern Olmsted Island) from the southern end of Lock 20 (Fig. 16). Some of the favorite visitor activities were fishing for shad and bass, viewing the falls by moonlight, or watching the winter ice traverse the falls in early spring. High waters washed the footbridge away but it was quickly replaced to please visitors and to keep up the area's reputation as an extraordinary destination.



Figure 16 A photograph from the late 1800s shows one of the many bridges that were frequently destroyed in floods leading from the canal to the falls. On the right-hand side of the picture, Garrett's store, which was on the towpath side of the canal and part of the Tavern, can be seen (CHOH Shoup collection).

Whenever floods washed out sections of the canal embankment and towpath, the canal company repaired the breaches. Still, frequent floods, or "freshets" caused damage that strained the company's finances. During a relatively flood-free and productive trade era, the company prospered. They added flood control structures, such as concrete waste weirs and improved locks. The waste weir north of the tavern is estimated to have been built in 1882.



1889 - 1938

The Decline of the Canal and Community at Great Falls and the Rise of Tourism

In June of 1889, disaster struck the canal with immense flooding. The rains and high water wiped out the basement of Garrett's store, damaged the tavern and aqueduct, and washed away the bridge to Falls Island (Fig. 17, 18). The canal company could not afford to fix the damages and went into receivership to the Baltimore & Ohio Railroad (B & O), who completed needed repairs by 1891. Due to the nation-wide growth and speed of rail conveyance, general canal trade diminished in the late 19th century with the exception of the transportation of coal.



Figure 17 The canal at Lock 20 after a flood event. Notice Garrett's store on the topath side of the canal (CHOH Sharpsburg Young and Jett, 2).

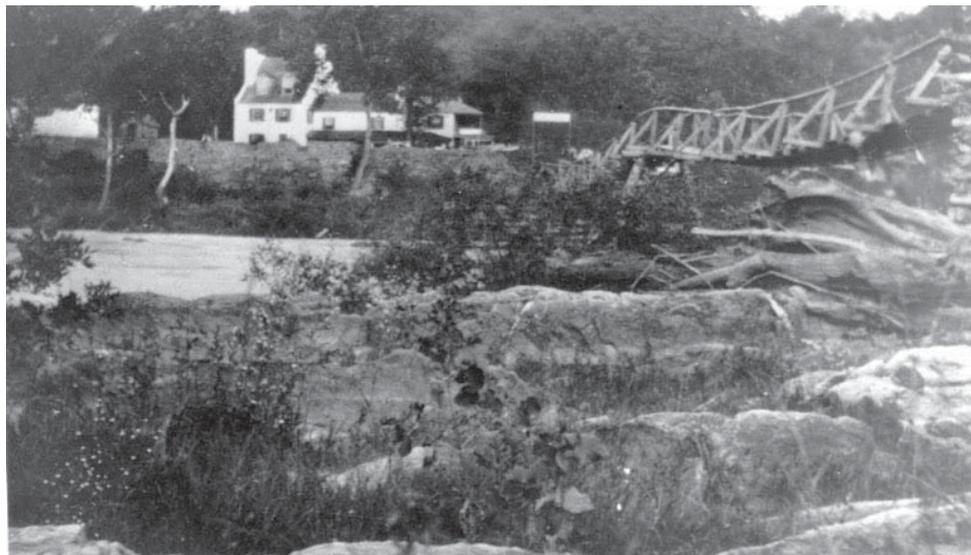


Figure 18 New foot-bridge to views of the Great Falls from Lock 20 c. 1900. Note, Garrett's store no longer extant (CHOH L20-19).

Great Falls had always been a popular place for the public to visit, and with the decline of canal commerce in the late 19th century, tourism grew in importance in the 20th century (Fig. 19). Canal packets frequently brought day travelers to the GFT area from Georgetown. Sometime near the year 1913, the canal company leased the tavern to a private club and it was renamed “Old Lock Tavern,” and then, under new lessees, the “Lock Tavern Club” in 1914 until around 1923.³³ Lessees built an eight-foot fence around the west yard to keep uninvited guests from peeking in. A Lockkeeper’s shanty was built at Lock 20 to accommodate the Lockkeeper who now resided in a log house near the tavern. During this time, a dance hall was also built on the north side of the entrance road. With the advent of vehicular travel, the Entrance Road was widened in 1893, macadamized in 1904-1906, and resurfaced in 1915.



Figure 19 Recreational use of a restored section of canal near Great Falls
(*Report on Joint Reconnaissance Survey and Study by the BPR and NPS, p. 24*).

During this time, vehicles licensed within Washington, D.C. could not leave the District. However, the federally-owned Conduit Road provided a route for District residents who wanted to travel into and through Maryland.³⁴ The drive to Great Falls on Conduit Road was considered by many to be superb. The Senate Park Commission in its 1901 report (the McMillan Plan) stated that the road was the second most popular pleasure drive in the Washington area, ranking only behind the driveways of Arlington Cemetery. Conduit Road was the only way to reach the falls from the District by private vehicle in the early 20th century. The narrow highway was frequently held up by back-

ups stemming from heavy traffic at the Falls which was a very popular regional destination.³⁵

From 1913 to 1921, the Washington and Great Falls Railway and Power Company operated a 10.2-mile trolley line from Bradley Boulevard at Wisconsin Avenue to the hillside above the tavern and Lock 18. Known as “The Loop,” the turnaround for the single-track line was located on the hillside just above the tavern. From the Loop, footpaths and trails led down to the tavern and to the falls where a new footbridge brought visitors to Falls Island.

The closing of the trolley in 1921 brought on a new phase of construction at the GFT. With the exception of the large stone gatehouse and the brick and stone gatekeeper’s dwelling on the hillside above the tavern, all of the structures constructed by the Corps during the initial aqueduct construction were gone by 1900. From 1921 to 1928, the Corps returned to the area to construct a new intake building at the riverbank to accommodate a new conduit located approximately 100 feet north of the old one. New project-related shops and houses were built on the berm bank near the tavern north of Lock 20.

Changes in the early 1900s in the GFT area included a buggy shed and stable near Lock 20, which existed from 1900 to 1913, and construction of a wooden frame Lockhouse adjacent to Lock 17. A permanent bridge structure replaced the pivot structure at Lock 20 in 1924, and the tavern returned to the public realm when it became a restaurant in the same year.

Two years later, the trolley tracks, which served the Washington and Great Falls Railway and Power Company, were removed from the site. Later, in 1936, the footbridge to Falls Island was washed away again, and replaced within the same year (See Fig. 18).

Between 1891 and 1924, the B&O railroad company limited repairs of the canal primarily to the Georgetown area. After the floods of 1924, the canal was no longer operational and was not a profitable enterprise. The company was chiefly interested in keeping the canal right-of-way out of the hands of competitors. When the disastrous 1924 flood struck, The Evening Star Newspaper stated that “in many places the waters of the Potomac and the C&O Canal have merged and for miles the canal cannot be seen.” After yet another large flood event in 1936, towpath breaks were left in disrepair, the second pedestrian bridge to Falls Island was destroyed, the canal lost water, and trees started to grow in the canal prism.³⁶

The McMillan Plan

The 1901-1902 McMillan plan, (formally known as The Improvement of the Park System of the District of Columbia) named for Michigan Senator James McMillan, was a park system improvement initiative for the District of Columbia. Daniel H. Burnham, architect, and former Director of Construction of Chicago’s 1893 World’s Columbian Exposition; another noted Chicago architect, Charles McKim, of McKim, Mead, & White, New York City; sculptor Augustus Saint-Gaudens; landscape architect Frederick L. Olmsted, Jr. and Congressional liaison Charles Moore created a plan that would build upon and expand Pierre L’Enfant’s 1791 plan for the city. The plan drew upon the Beaux-Arts style and the City Beautiful Movement (Fig. 20). Plan designers received inspiration from visits to European landscapes. From the McMillan Plan, the District gained the Lincoln Memorial, the bridge to Arlington National Cemetery and Union Station. The plan made mention of several

scenic parkways including one which might navigate the Potomac gorge.



Figure 20 Chicago’s World’s Fair of 1893 was an inspiration for the future look of Washington, D.C.’s architectural style (Portland State U. Dept. of History).

The Corps built the existing Conduit Road (modern-day MacArthur Boulevard) during the mid-1800s in conjunction with the installation of 12 miles of aqueduct that channeled drinking water from the Washington Aqueduct to Washington, D.C. Due to its manageable grades and views of the river, the McMillan plan proposed that Conduit Road become a more permanent “Cliff Drive” along the Potomac. In part, the proposal would be a way to “prevent objectionable occupancy” of the unoccupied land along the steep river bluffs, and to preserve the scenic qualities of the corridor.³⁷

Citing New York's Riverside Drive as a precedent, particularly concerning land acquisition, they went on to suggest the construction of scenic roads and trolley lines along the river's edge extending from the reservoir at Georgetown, past Cabin John and on to the Great Falls. According to the McMillan Plan:

*The falls form one of the greatest cataracts of our Atlantic watershed....Without interfering with the future utilization of the water power, the surroundings of the Great Falls on both sides of the river should, in our opinion be converted into a national park to be connected with the city by a continuous river drive.*³⁸

While the "Cliff Drive" did not become a reality, the idea of a scenic passage through the valley did evolve as the George Washington Memorial Parkway (GWMP) through legislation introduced during the 1930s. The subject is discussed in the next section of this report.

Administrative History in the Early 1900s

The Capper-Crampton Act and the George Washington Memorial Parkway

Based in part on the aforementioned McMillan Plan of 1901-1902, in 1930, Congress enacted the Capper-Crampton Act. By means of this act, land purchase powers were given to the National Capital Park and Planning Commission, enabling the acquisition of large tracts of land, destined for future park development. The act greatly increased the national parklands in the D.C. area.

An act of Congress authorized the establishment of the George Washington Memorial Parkway (GWMP) on May 29, 1930. Proposed parkway property included the shores of the Potomac and the adjacent lands from Mount Vernon to a point above the Great Falls and across the river to Maryland, except within the boundaries of the city of Alexandria and the District of Columbia. The parkway act included a specific provision to protect and preserve the natural scenery of the Gorge, the Great Falls of the Potomac and the historic Patowmack Canal.

Other parkways under this notion were built to protect and preserve scenic values and were intended for passenger car and recreational travel use. Parkway, as advocated by NPS since the design of the Mount Vernon Memorial Highway (later absorbed into the GWMP), were a way to combine recreational development and highway improvements with preservation by incorporating trails, picnic grounds, resource protection and improvements.

Specific to the GFT area, the Capper-Crampton Act "established the funding and planning for the parkway, creating the means for design and construction between 1930 and 1966."³⁹ Some of the funds that the federal government used to purchase the canal property came from monies allocated for parkway creation under the Capper-Crampton Act.

Partially motivated by the idea that the canal and canal property would be integrated into a parkway, land acquisitions were made, and zoning changes were granted over the next several years to preserve the area's scenic value and deter construction. One of the first parcels acquired near the GFT site that was not part of the canal property, was the terminus of the Washington and Great Falls Railway and Power Company. According to Land Transfer Order number 77, dated June 16, 1934, "National Capital Park and Planning Commission acquired for the development of the park and parkway system of the National Capital in the environs of Washington, 39.08 unimproved acres of land in the vicinity of Great Falls, Maryland."⁴⁰ This included a 30-foot-wide right-of-way from Conduit Road to the railway terminus.



The federal government paid half of the \$7,000 total cost of the project. The property was added to the GWMP, and is still under its ownership.

The government purchased the entire 184.5-mile canal and towpath from the B&O Railroad for 2.5 million dollars in 1938. Monies designated for parkway construction provided means for the purchase. The land was to be converted to a parkway, and the Park Service was eager to improve its condition and to begin Civilian Conservation Corps (CCC) work on the canal.

In 1939, the Bureau of Public Roads (BPR) rejected upgrading the Entrance Road (formerly known as Conduit Road), for the highway, proposed by the National Capital Park and Planning Commission (NCPPC). Expanding on the NCPPC plans, the BPR proposed plans for a modern 4-lane highway along the canal (Fig. 21). Oscar L. Chapman, then Secretary of the Interior, stated in a December 19, 1949 letter to J. Hardin Peterson, Chairman, Committee on Public Lands, House of Representatives:

...with the passing of the years this parkway will become increasingly famous and will amply demonstrate the vision and foresight of those who conceived it.

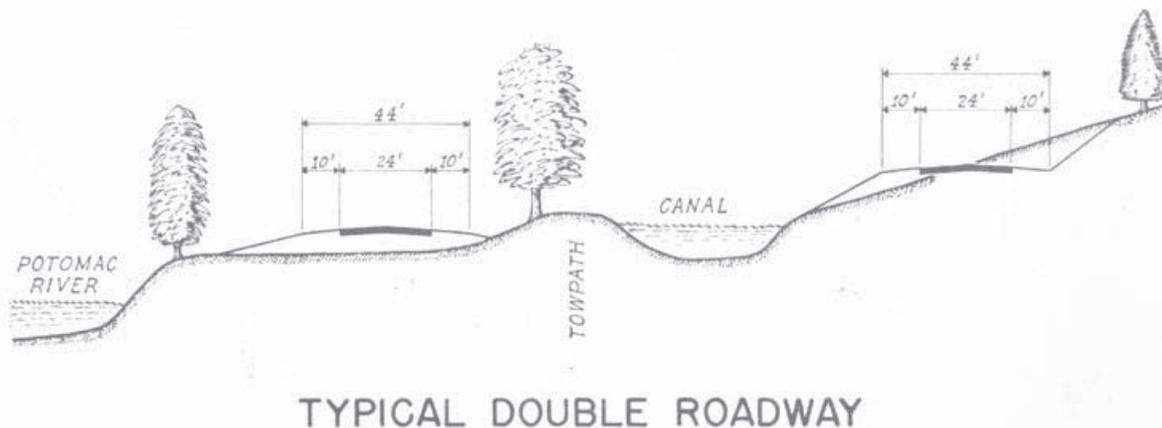


Figure 21 Sketch from 1948 report by the NPS and the Bureau of Public Roads on advisability and practicability of constructing a parkway along the canal route (Report on Joint Reconnaissance Survey and Study by the BPR and NPS p. 53).

Pressure, largely applied by conservationists, put a stop to plans for a proposed bridge over the Great Falls. Despite this setback, parkway plans moved ahead and the Virginia side of the parkway was completed from Mt. Vernon to fifteen miles south of Great Falls in Virginia by 1962. Construction of the Maryland side of the parkway was not as expeditious. Difficulties with land purchases and donations led to consideration by the NPS of filling in and paving the historic canal above Seneca. In the 1940s the NPS and BPR did a study to determine the suitability, cost and practicability of constructing a road on top of and along the side of the canal. The results of the study supported construction, and plans were developed for a \$17 million dollar project. A wide array of conservationists, concerned that the parkway would have detrimental effects on the game, wildlife, forests, waterways, parks and historical sites of the canal property, urged the NPS not to go through with the plans.

Historic Research, Preservation and Development in the NPS

When the National Park Service acquired the C & O Canal from the Baltimore and Ohio railroad in 1938, historic research, preservation and development were becoming important NPS activities. The NPS created The Branch of Historic Sites and Buildings in 1935. The Historic Sites Act directed the NPS to conduct research, develop education programs and “restore, reconstruct, rehabilitate, preserve and maintain historic structures, sites and objects of national importance.”⁴¹ This act led to the eventual establishment within the National Park Service of the Historic Sites Survey, the Historic American Building Survey (HABS 1934), and later the Historic American Engineering Record (HAER 1969) and the Historic American Landscapes Survey (HALS 2000).

In the 1930s, research had become so extensive that in the 17 months ending June 1, 1936, over 300 reports had been prepared. “The reports made as a result of inquiries from the field and other branches of the Park Service...are indispensable to the authentic development of the sites under Federal Administration. Accurate restoration of historic buildings is often made possible only by data uncovered in the Library of Congress and other governmental agencies...”⁴² (Fig. 22).

Documentation of the C & O Canal and the Great Falls Tavern Area

The C& O Canal was a unique example of site development and restoration informed by historical research. Research was to comprise field studies and archival studies of original documents of the canal company. Researchers collected and catalogued photos and prints and created a base map that showed the historic locations of the canal and all locks, dams, warehouses, Lockkeepers’ houses, and other structures. Studies of the canal’s traffic, boats and road connections were to be included. Researchers compiled the data for use by architects, engineers, museum managers and interpreters.⁴³

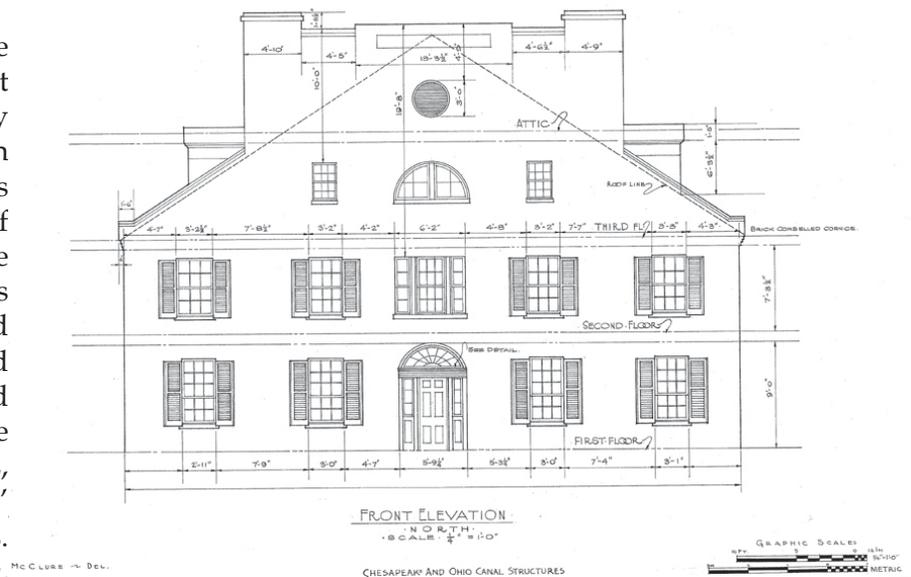


Figure 22 Historic American Building Survey (HABS) drawing of the Great Falls Tavern c.1930 (Library of Congress American Memory Collection).

Research technicians Rogers Young and Sutton Jett reviewed the Canal Company’s records in the National Archives and other sources while canal rehabilitation and stabilization proceeded from 1938 to 1940. Short memoranda describing the canal prism and construction, the lock houses and general development from Georgetown to Seneca were prepared. A longer study on “canal commerce in Georgetown to 1860” was written, as was a study of Great Falls from 1858 to 1880.⁴⁴ Jett and Young were able to give expert advice on many phases of the restoration of the canal, which was intended to be historically accurate.

Basic to restoration is the task of historical research. This research is but the first step in a series. ...specialists must cooperate, so that the result will be a successful restoration. The Chesapeake and Ohio Canal was an example of this cooperation. Preparatory to the construction of a bridge, spillway, or lock, the historian would gather and evaluate the historical data on the subject.

Experts in planning and design would then give advice as to the best way to effect this construction and restoration. Engineers and architects would be needed to lend their technical advice. Finally, actual construction would be undertaken. The result was the construction and restoration of locks, spillways, and lock houses along the canal, all conforming as closely as possible to those of the original Chesapeake and Ohio Canal when in actual operation.⁴⁵

Recreational Development Proposals

In 1939, the National Park Service began assessment and planning for recreational use in the Great Falls section of the canal. NPS personnel photographed and drew several of the existing structures. A report from the office of Thomas Vint, Chief of Planning in the Office of Plans and Design, by Dallas McGrew, Associate Architect stated, "In 1938 the Canal was bought by the Government and placed under the jurisdiction of the National Park Service, to be restored for use as a recreational waterway...it was at once evident that the section of the canal nearest Washington would be most accessible to the greatest number, that section was chosen for the present restoration project."⁴⁶

The NPS surveyed needed architectural work in 1939. No use had yet been determined for the tavern, which was in poor condition. Vint wrote: "Until the best use for this building that has provided food and shelter on the canal for the greater part of a century is determined, only the most sorely needed repairs to save the building from further dilapidation are to be made."⁴⁷ A log house to the southeast of the tavern was to be "put into good condition" and used as a "tender's dwelling", "its original purpose". Evidently, the log house was well built. The current resident "consider(ed) it comfortable, as the thick log walls keep it cool in summer and warm in winter."⁴⁸ Two late 19th c. frame houses were considered to be of "no importance, either historically or economically to the canal." They were to be razed and the salvaged material applied to other buildings (Fig. 23).⁴⁹



The Office of Plans and Design also produced a report on the "Proposed Concessions Structures for the Recreational Use of the Restored Canal from Washington, D. C. to Seneca, Maryland." This report included a master plan for locating large and small canoe rentals and concessions along this 23-mile segment of the canal that was to be re-watered. Shelters and comfort facilities were "mandatory." Concession buildings would be located at intervals where the area was "sufficiently large to warrant the establishment of picnic grounds, canoe and bicycle rentals and dining space."⁵⁰

Figure 23 Historic photograph of wooden structures on the berm bank south of the Tavern between Locks 19 and 20 (Library of Congress American Memory Collection.).

Shortly after NPS acquisition, the Office of Plans and Design drafted architectural plans for several new structures. According to a master plan accompanying the proposal, these were to be located at various points: Key Bridge, Fletcher’s Boat House, Glen Echo, Carderock and Great Falls. A sketch of a small, adaptable concessions building that would also serve as shelter and comfort station in other areas was included. Apparently, NPS was taking a cautious, phased approach to recreational development. Additional structures and facilities could be added later as they gauged visitor demand. The smaller units would also help to spread visitor use more uniformly along the canal, instead of concentrating heavy use in a few places.

Great Falls was one of the nodes planned for heavy visitor use, year-round. Planners estimated the area would accommodate 2,000 people, all of whom were expected to drive there. Adequate parking was “imperative.” Acquisition of additional land for parking and buildings would “realize the maximum use” of the Six Locks area. The proposed buildings included a two-story stone structure resembling the tavern, with separate men’s and women’s lockers, toilets below, and kitchen and dining room above. Attached to this was a one-story frame building with a roof deck for dining, promenades or games. It would store 100 canoes and bicycles. Drawings show that the NPS planned to build these on the berm northeast of the tavern (Fig. 24).

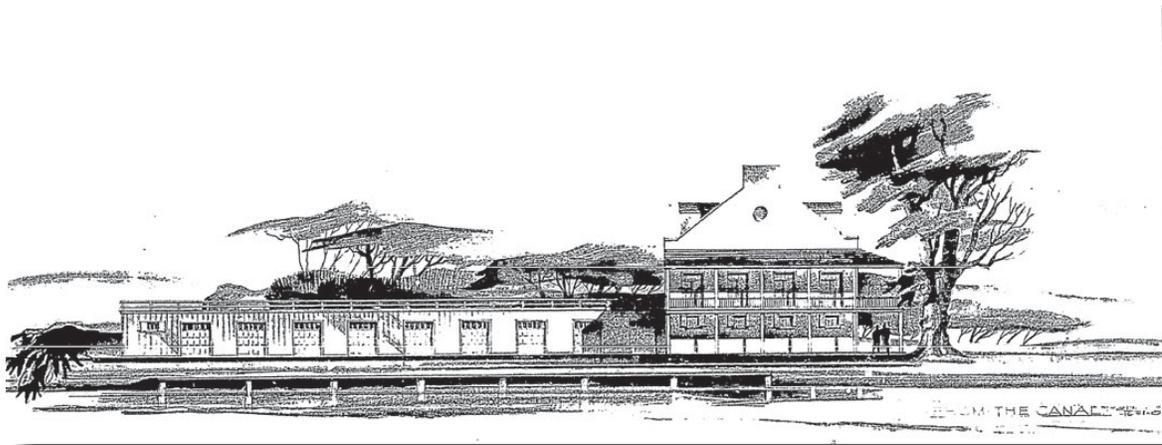


Figure 24 1939 drawing of a proposed Canoe house and Concessions at Great Falls, MD by the Washington, D.C. Office of Plans and Design (DSC TIC 412_80489).

It is during this era of NPS planning that landscape features such as the pedestrian walkway, or “promenade,” along the berm side of the canal, the traffic rotary and the large-scale parking accommodations were first envisioned and sketched by planners.

Opening the canal to public access posed increased potential for damage, especially from wildfires. Over 5,000 Sunday visitors were expected at Great Falls alone. Vegetation management by the CCC played a large role in fire suppression at the site (see appendix for additional information on historic vegetation).

1939 - 1954

Initial Acquisition by National Park Service

The federal government purchased the Baltimore and Ohio's rights to the canal in a landmark deal approved by President Franklin Roosevelt in 1938. Under Roosevelt's "New Deal," The Civilian Conservation Corps (CCC) emerged. The organization was an unemployment relief program, or a sort of peacetime army. The CCC offered vocational training for young men between the ages of 17 and 23 (age requirements were extended and reduced as the need for men fluctuated), along with self-improvement opportunities, pay, shelter, food and a uniform, in return for service. Two camps were set up in the Six-Locks area to restore the canal and its related structures, from Georgetown to Seneca.

Great Falls Development and the Civilian Conservation Corps

Critical to the restoration of the canal were the contributions of the African American men of the two Civilian Conservation Corps (CCC) camps established along the C & O Canal. The goals of the CCC on the canal were to restore the canal and structures that were badly damaged during the storms of 1924 and 1936, and to work towards returning the canal to a condition where it could be re-watered. Camp NP-1-MD, Company No. 325, was established on September 19, 1938 and existed until April 1, 1942. The camp was located near Cabin John. Camp NP-2-MD, Company No. 333, was established on October 5, 1938 and existed until November 15, 1941. It was located close to the current Carderock picnic facility (Fig. 25).⁵¹

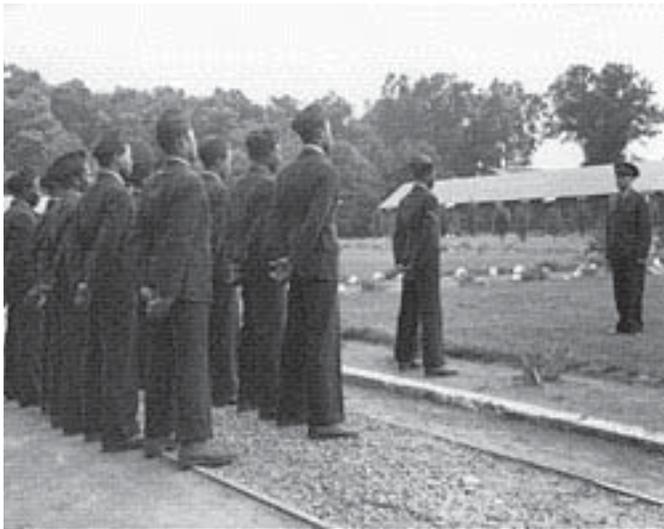


Figure 25 African American CCC enrollees on detail (location unspecified, photo source: New Deal Network).

10 percent of all CCC enrollees were black, a disproportionately small amount compared to the number of African Americans who were in need of relief in the early part of the 20th century. The year 1933 saw the number of unemployed African Americans double that of the national average.⁵² Despite the specification that eligibility for enrollment in the CCC would not be limited by race or creed, many men were excluded from the CCC, especially in the South. Black camps were not welcome in many communities. While some camps were integrated, due to traditions of segregation practiced in Washington, D.C. at the time, three of the twelve CCC camps in the Washington, D.C. metropolitan area were comprised of African American enrollees. One camp was located at the National Arboretum, and two were in the C & O canal area.⁵³ Keeping with the tradition of segregation, white U.S. Army Reserve officers regimented enrollees' daily lives,

and the canal work was overseen by NPS personnel. For thirty dollars per month, the CCC men received a uniform, work, food, shelter and the opportunity to attend classes to expand their own educations.⁵⁴

From Georgetown to Seneca, the CCC reconstructed and repaired lock walls and gates. The men cut brush from the canal prism and repaired the towpath, notably where it had washed out in the Widewater area in 1936. By the summer of 1940, the 22 locks below Violettes Lock (Lock 23) were finished and the canal was ready for rewatering. A listing of the canal work the men performed includes: pumping and draining water; cleaning the locks and canal of debris; stocking fish; snow removal; mosquito control;

rebuilding of retaining walls between locks; rebuilding and grading of sections of the towpath; repairing lock walls; removing, building and installing lock gates; repairs to stop sills and floors of locks; and repairs to lock houses. Later summaries of canal restoration work showed that 50,700 cubic yards of material were excavated, 200 acres of underbrush were cleared (to suppress fires) and 4,000 cubic yards of crushed stone were brought in for roads.⁵⁵

Among the CCC GFT projects were the building of the L-shaped mule barn / garage on the hill above the tavern, a 450-foot long, 16-foot wide crushed stone access road, a 3,960 square-foot service court, and a 1,494 square-foot parking area. Additionally, a new water distribution system comprised of 2,185 feet of 1 1/2" to 4" diameter cast iron pipe was installed, along with a sewer system of 1,850 feet of 6" to 8" diameter terra cotta pipe and a septic tank. The last building constructed was a 12-foot by 8-foot boiler's House, that also housed chlorinating equipment. Also constructed was a two-story brick water filtration plant or Pump House building, 25 feet-4 inches by 15 feet-10 inches with mechanical equipment, such as a coagulating basin, a steel pressure tank and a concrete "clear well" as part of the new water system. The men also completed a 29 feet-5 inches long by 20 foot wide wood frame board and batten latrine building.⁵⁶ In 1942, enrollees may have also assisted with the mule-driven canal boat rides.⁵⁷

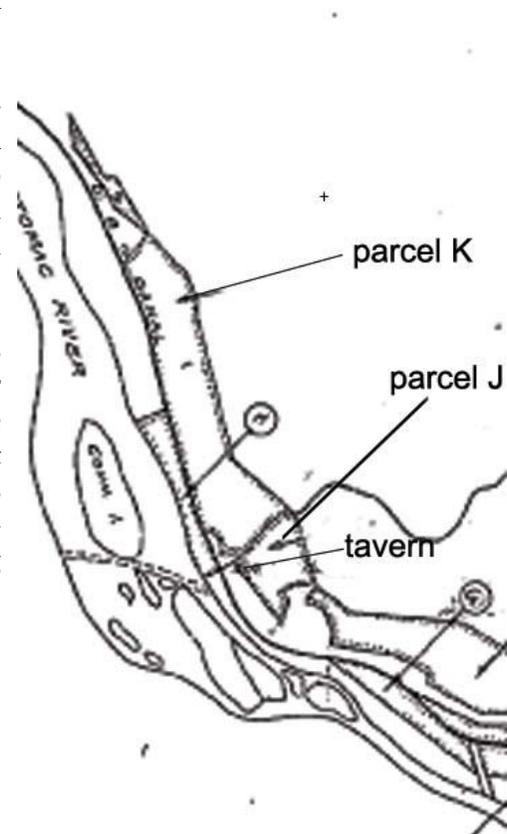
GFT Post CCC -1940s & 1950s

Water was re-introduced to the prism in 1940 and the area was designated as the Chesapeake & Ohio Canal Recreational Waterway.⁵⁸ During 1941 - 42, as part of Great Falls Development, a project by NPS and the Maryland National Capital Park and Planning Commission extended recreational amenities beyond the District of Columbia. Another flood in 1942 undid much of the work that the CCC had completed. This, in addition to wartime restrictions, closed the canal. Planning and construction resumed in 1946, when the NPS repaired most of the towpath from Georgetown to Seneca, except for the Widewater area.

In 1940, the tavern building was declared structurally unsound and closed. After a small fire threatened the tavern in 1948, the NPS considered tearing down the building. Two years later, the NPS and Montgomery County Historical Society opened the tavern as a museum after a substantial renovation.

In addition to the towpath repair of 1946, the late 1940s and 1950s were a busy time at the GFT. The NPS, under the guidance of chief Landscape Architect, later chief of the Design and Construction Division of the NPS, Thomas Vint and others, planned large-scale recreational improvements to the GFT site, which would include a comfort station, tavern rehabilitation, water supply and sewer system, parking and roads.

Figure 26 Parcels J and K were part of a land acquisition transacted by the GWMP division of the NPS in the mid 1940's (Land order deed 11/14/1944).



In the 1940s, the NPS approved plans and commenced construction of the parking lots, the circular drive and other site elements. A long, thin strip of land on the east bank of the canal just north of the aqueduct parcel (Fig. 26 [previous page], parcel K) had been acquired for the parkway by a deed recorded in 1944. This parcel provided the basis for the design of the parking along the canal. The long, linear parking lot could accommodate approximately 600 cars; it was made of compacted gravel, and remained unpaved until 1963. (Fig. 27)

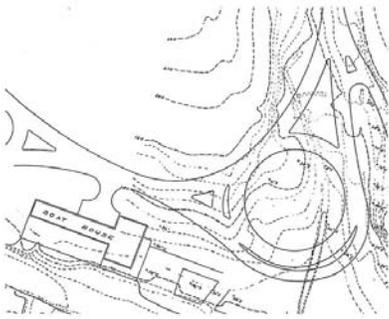
Near the tavern itself, a concrete-paved road was constructed when the landscape around the Tavern and Old Gatehouse was graded in the 1950s. Originally serving as an access road to the 19th c. wood - framed Garrett houses and Canal Company stable, it curved from between the Tavern and Gatehouse, southeast along the hill slope. The south, unpaved portion may be more closely aligned with the road's original arrangement. Since the early 20th century, visitors have used a roadway here to reach areas south of the tavern. In addition, the NPS added extensive brick paving around the tavern in the 1950s, and the paving was expanded or rehabilitated in the 1970s. (Details of these installations can be found in the "Analysis and Evaluation" section of this document).



Figure 27 Parking lots at Great Falls Tavern alleviated long back-ups and visitor parking along the entrance road. This is a photograph from the 1950's, before the parking lots were paved (CHOH).

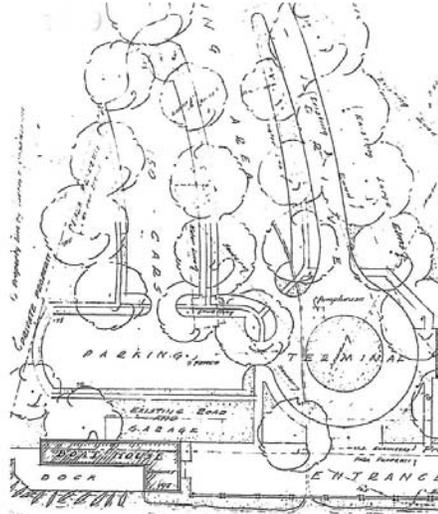
By the end of the 1950s, the NPS completed construction of the traffic rotary, marking the terminus of the Entrance Road at GFT. NPS designers envisioned the rotary as a principal terminus of the C & O Canal Parkway, the project that was never realized. The terminus design grew out of several iterations from 1938 through the 1950s, as shown in NPS plans of that era (Fig. 28).

Park road design principles derived during the first days of the automobile, when planners foresaw the inevitable inclusion of cars in parks and designed roads in parks to harmonize with, and complement the scenery. As early as the 1870s, the Corps incorporated a row of elms along Conduit Road. Road design principles in the parks included curves, gentle grades and the use of naturalistic landscaping among others (Fig. 29). Loop developments, borrowed from the English estate garden tradition, were typical of the design of park road systems. Locally, NPS planners implemented rotary patterns in park road designs at the Mount Vernon terminus of the GWMP, as well as along the parkway at Alexandria, Va. At the time, they were a sophisticated traffic circulation feature that also marked transitions between spaces. The purpose of their existence was to "...lead automobiles on and off a main road without altering the flow of traffic and without introducing right angles and tangents into the design of a road."⁵⁹ Circular designs in parking lots were intended to facilitate the easy flow of traffic, in part by directing drivers to avoid, or lessen maneuvers such as stopping, backing up, or making sharp turns.



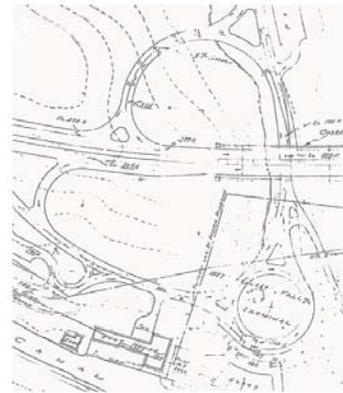
1938

The 1938 plan is one of the first drawn up for the rotary feature at the Great Falls Tavern.



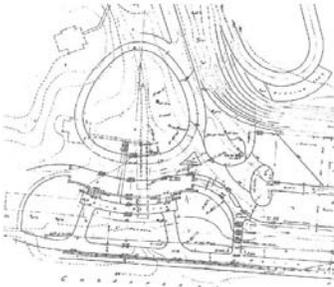
1939

The parcel of land upon which the current parking lot lies was not yet owned by the parks in 1939. Planners proposed an east, west oriented lot buffered from the entry road by large trees



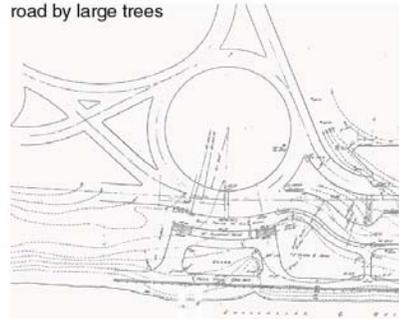
1940

The 1940 plan includes the relationship between the rotary and a proposed parkway.



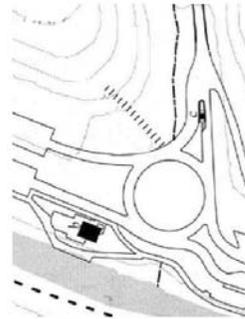
1942

In 1942 the rotary took on an egg-shaped form.



1948

By the Late 1940's, the rotary design reverted back to a circular arrangement.



2006

The current rotary design is based on a plan conceived in 1948.

Figure 28 (above) The notion of a rotary at the GFT parking lot was conceived long before it was realized. Several design iterations showed the rotary in many forms (DSC TIC files 412_80434, 412_80491, 1940 Plan Parkway, 412_80462, 412_80473, NPS).

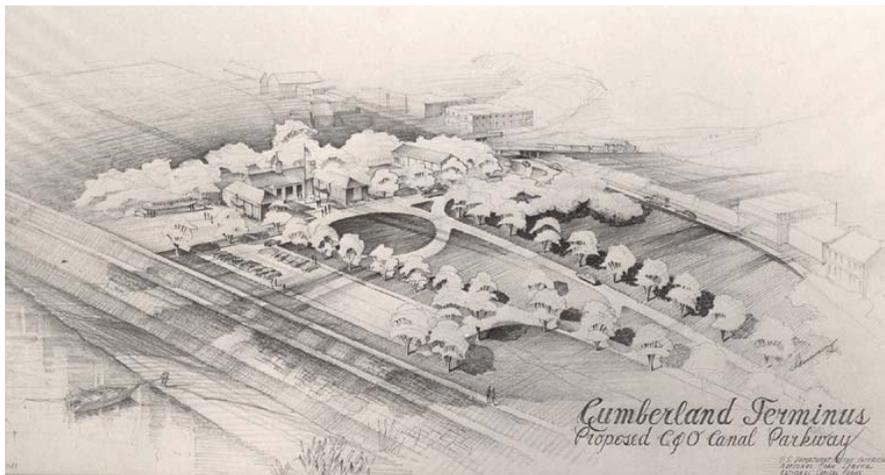


Figure 29 (left) Proposed parkway terminus at Cumberland, Maryland was never realized since the proposed parkway was defeated by conservationists (Report on Joint Reconnaissance Survey and Study by the BPR and NPS p. 46).



During this period of recreational improvements, the park built the extant concession stand just north of Carroll Creek, a utility building in the maintenance yard to the northeast of the project area and two brick ranch houses near the stone and brick gatekeeper's house on the hill to the east of the control gatehouse. The location of the concessions building next to the Rotary was determined during numerous design modifications between 1939 and the early 1950s, as the canal parkway recreational concept developed (Fig. 30). The NPS originally designed a brick terrace on the north side of the concession stand to preserve existing silver maples that lined the berm bank. Landscape designs for the nearby picnic grounds and promenade were developed and constructed shortly after concession building was built (Fig. 31). Many larger existing trees and some shrubs date from these designs. Many others, including several around the concession building, are volunteers.



Figure 30 Photo of the Concession stand at Great Falls Tavern shortly after construction (CHOH).



Figure 31 Visitors enjoyed picnicking on the south side of the tavern in 1949 (CHOH).

Plantings were installed around the tavern along with the addition of the brick-paving sometime shortly before 1953. Trees, shrubs and groundcover were also planted in conjunction with the parking and roadway islands, as well as around the new concession building, the brick ranch houses and the comfort station.

On March 5, 1942, Conduit Road was renamed in an effort by Palisades residents to “upgrade the image of our community.” President Roosevelt signed the bill to officially change the name to MacArthur Boulevard in honor of General Douglas MacArthur’s “gallant defense” of the Philippines.⁶⁰

1954 **Preservation of the Canal: The Douglas Walk**

In 1954, the editors of the Washington Post published opinions endorsing plans for creating the canal parkway. United States Supreme Court Justice William O. Douglas submitted an editorial opposing the plan, and challenged the editors of the paper to join him on a hike along the length of the canal. Supporters, photographers and interviewers, who had spread word of the cause nationwide, intermittently joined the hiking party over the course of the event. Each night the group of hikers would add a verse to a song they called “The Canal Song.” One of the verses declared:

*Oh, the towpaths licks are standing And the tunnel's still intact;
We know our friends will fight like hell To stop the Cadillacs.⁶¹*

The epic journey ended with a turn of opinion by the Post editors, and a wealth of public support for saving the canal. On the last night of the hike, Douglas appointed himself head of a committee that would protect and preserve the canal’s resources. Congressional legislation granted the 184.5-mile corridor National Historical Park status in 1971, and in 1977, it was dedicated to Douglas, who is credited with saving the canal from development.

1955-2009 **NPS Management**

In 1960, Falls Island was re-named Olmsted Island in honor of both Frederick Law Olmsted Jr., and his father Frederick Law Olmsted Sr. As an acknowledgement of Olmsted Jr’s contribution to the development and preservation of the Great Falls area and member of the National Capital Park and Planning Commission, The American Society of Landscape Architects installed a plaque to commemorate the dedication and naming of the island in 1965 (Fig. 32).

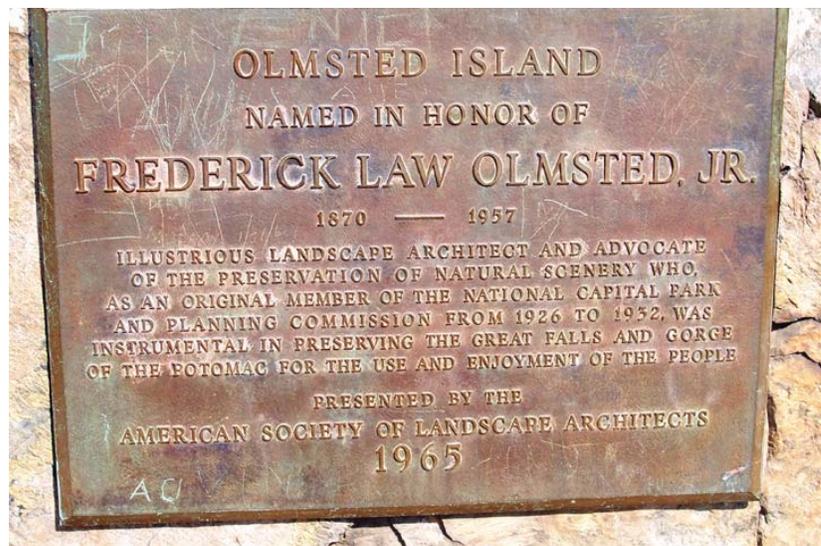


Figure 32 Contemporary photograph shows plaque at Olmsted Island in good condition (NCR CLP 2006).



In 1967, an improved steel and concrete version of the historically wooden bridge to the newly-named Olmsted Island was complete. Floods generated by hurricane Agnes washed away the bridges and sections of the towpath in June of 1972. It was the most damaging flood in the Potomac River valley since 1936. The canal was re-watered in 1976 after extensive restoration work.

In the years 1967 through 1970, the Corps built a new intake on the riverbank adjacent to the old structure. The building with four “gates” allows water to be diverted behind the dam before entering the two conduits by gravity flow. An aggregate roof serves as a helicopter-landing pad and observation platform to provide visitors with broad views of the Potomac River, the dam and the 19th c. inlet. By using native stone and other materials, the design of the structure attempted to be compatible with the historic setting and design of the GFT.

In the 1970s, the Great Falls area was the most heavily-used part of the canal outside of Georgetown. To keep up with high use, the NPS altered the tavern landscape again. The Entrance Road, still the primary access road to the park, was widened to 20 feet with 3-4-foot stabilized shoulders, and several sections containing paved drainage swales. During the resurfacing and paving, remnants of the trolley tracks (which ran from 1913 to 1921) were removed from the roadbed. (Resurface Entrance Road, drawing #412-80027).

In 1975 The landscape around the tavern was rehabilitated to try to recreate a historic setting. A white picket fence, designed to replicate one shown in historic photos was installed along the north, east and south sides of the tavern to create an enclosed yard; a walk from the parking area to the tavern area was removed and a new walk was built to direct visitors to a gate in the picket fence that led to the main (north) entrance door to the tavern; grassed areas and plantings were added to frame the entrance door; the brick terrace on the east side of the tavern was realigned; and new perennial planting beds, an herb garden, lawn, and flowering trees and shrubs were added in the yard area. Plantings added were either those that could have been grown during the historic period or that could have occurred naturally in the area.

After 1974, the towpath was to be managed as a “continuous historical resource,” maintained to a width of twelve feet and an elevation of two feet above the historic water line. In an effort to reduce a “road-like” feel, it was surfaced with shale, bank run gravel and other indigenous materials as opposed to non-native materials like bluestone.⁶²

With the continuous use and popularity of the park through the 1970s, the National Capital Team of the Denver Service Center completed a draft of a development concept plan in 1980.⁶³ The draft identified problems such as overcrowding, conflicting uses and damage to the towpath. The plan suggested a series of alternatives to solve these issues. Within this draft was the first mention of removing the lower GFT 40-car parking lot.

The NPS acquired the brick houses on the hillside to the east of the tavern from the Corps and converted them to employee housing and ranger stations during the 1980s. The Corps also transferred the stone gatekeeper’s house to the NPS. In 1990, the park built an entrance station east of the rotary to collect visitor fees. In 1991, restoration of the bridges, based on the old design began. The new bridges were fitted with railings which could be removed for storm events thus limiting the surface area of the bridges and decreasing the chances that debris would jam up against the bridge, act as a dam and eventually break them. Boardwalks were also constructed on the islands to reduce visitor contact with rare and sensitive mid-river island vegetation. The five steel-and-concrete bridges, and the boardwalk system were complete by 1992. Wayside markers were installed along the boardwalks to explain and illustrate the rare flora of the flood-swept river island.

Existing portions of the Old Rockville Road are now known as Falls Road, and several Army Corps structures including the gatehouse, intake and viewing platform are evident in the modern landscape. The Aqueduct produces 300 million gallons of filtered water per day, has a storage capacity of 44 million gallons and serves 1.1 million customers. It provides public water for all of the District of Columbia, Arlington County and the city of Falls Church, Va.; 50 square miles of Fairfax County; and federal installations, including the Pentagon, Fort Meyer, Andrews Air Force Base, the Defense Mapping Agency and National (Reagan) Airport.⁶⁴

The GWMP Parkway construction on the Maryland side of the Potomac reached only as far as MacArthur Boulevard, just north of Carderock, and about 3.5 miles south of the GFT site. In 1989, the Maryland side of the GWMP was designated as the Clara Barton Parkway to distinguish it from the GWMP on the Virginia side, and lessen confusion among motorists.

The park put the canal freight boat “Canal Clipper III” into service in 1979 to demonstrate canal transportation at the site of the GFT, by providing mule-driven rides for visitors to experience aspects of canal travel such as passing through the locks and along the canal. In 1989, the park added a dock between Locks 19 and 20 to provide a more defined access point to the canal boat. Within the cluster of buildings on the hillside to the south of the rotary, The CCC-built garage was converted to a mule barn and a fenced paddock was added to house the mules used in conjunction with the Canal Clipper. A small wood-fenced corral to temporarily hold the mules between trips was installed on the north side of the intake structure on the towpath side of the canal. (In 2003, the Clipper was retired due to wire-mesh deterioration within its ferroconcrete technique of construction).

In 2004 an effort led by the Friends of the Historic Great Falls Tavern raised \$545,000 for the purchase of a new, double-decker canal boat named the Charles F. Mercer in honor of Mercer who was the President of the canal company from 1828-1833. The brightly-colored 57-foot “packet” boat built by the Scarano Boat Builders of Albany, NY, came by truck to the canal near Lock 20 in August of 2006. A 300-ton crane placed the 7.5-ton boat into the canal. According to the manufacturer, 10 years is not an unreasonable life expectation for the vessel (Fig. 33).

The boat takes visitors on a short mule-drawn trip upstream approximately $\frac{1}{2}$ to $\frac{3}{4}$ of a mile from Lock 20 while interpretive staff in period costume explain canal life during the heyday of the canal.

In 2006, a repair and rehabilitation project began at the GFT visitor center. It included construction of a new comfort station, improvements to the electrical and HVAC of the tavern and landscape improvements. It was completed in 2007. Changes to the landscape included removal of the brick paving and realignment of the paths and patio areas around the tavern, a re-paving of these areas with exposed aggregate and installation of a stone outline of the former kitchen building



Figure 33 This photo, taken in early winter of 2006, is of the Charles F. Mercer docked for the season to the south of Lock 20 (NCR CLP 2006).



on the southeast side of the tavern.

Visitors to the GFT area number in the several thousands annually, including walkers, hikers, bikers, kayakers, picnickers, birders and many more who enjoy the canal, the falls, the trail and the proximity of the natural setting to the busy city and suburbs of the Washington, D.C. metropolitan area.

The landscape at Great Falls Tavern today comprises numerous layers that demonstrate a history of evolving uses. It has been transformed continuously by canal construction and by the management of both the Washington Aqueduct and the National Park Service.

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- Another mine opened in 1880 and may have remained in operation through the early twentieth century. Known as the Ford Mine, the main works were located outside the project area, northeast of the upper parking lot. These activities resulted in the creation of landscape features such as trenches, adits (horizontal mine entrance) and spoil heaps. The Maryland Mine operated off and on until the property was sold in 1922. The new owners reopened the mine in 1935 and sank new vertical mine shafts. Adjacent to the new shafts, they constructed several structures, including a 25,000-gallon water tank, blacksmith shop, hoist house, mine office, mill and assay laboratory. The mine was closed permanently in 1940. The NPS acquired the land in the mid 1960's for the sum of \$1.825 million dollars. The land would be used for the planned George Washington Memorial Parkway. The Maryland Mine was condemned in 1965. In addition, several trenches from the Ford Mine operation are still visible within the project area, east of the maintenance yard."
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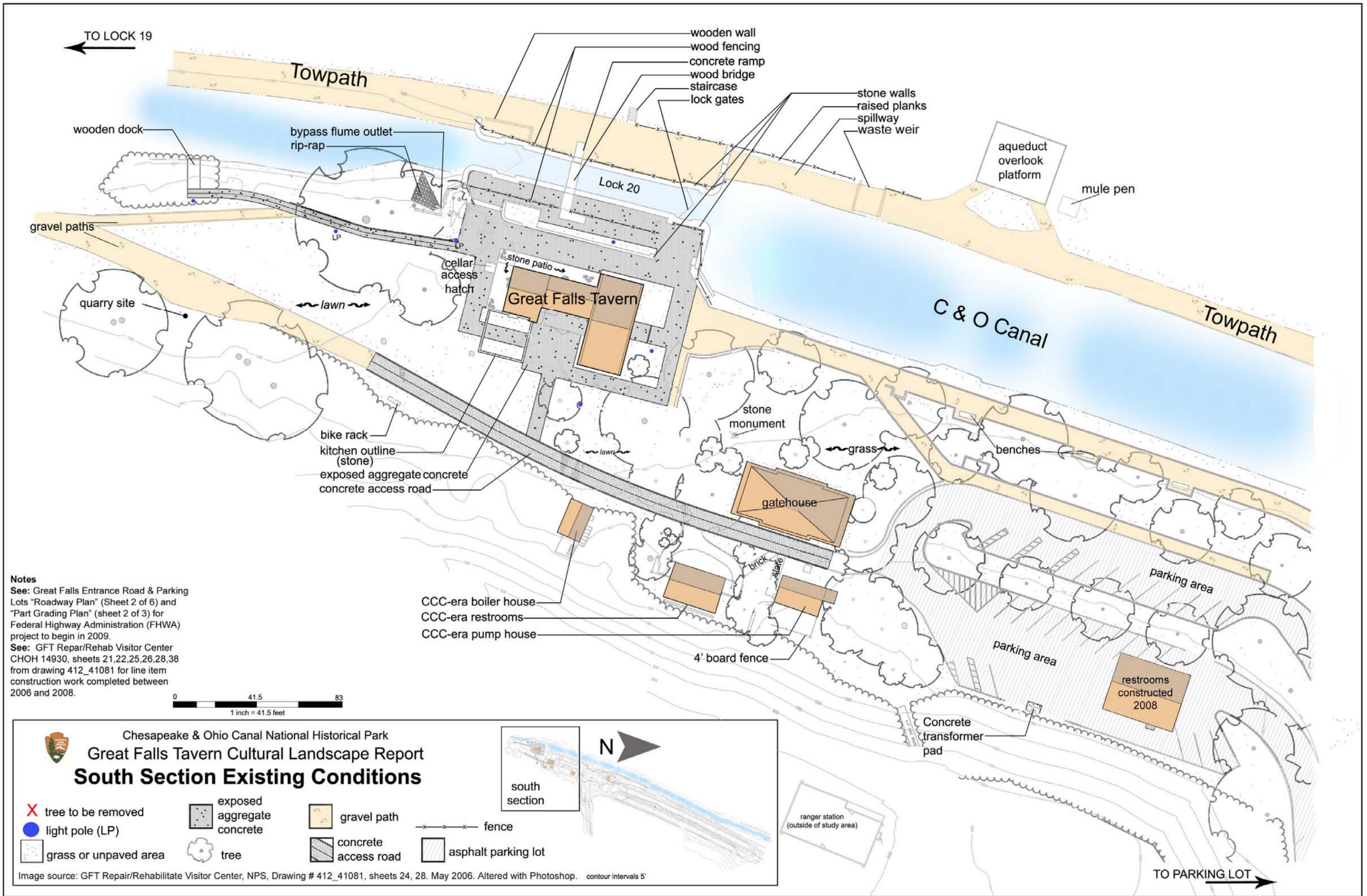
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64 Conditions of the entrance road and parking lots were assessed by the Federal Highway Administration's Roadway Inventory Program in August 2002 according to their methods and standards. The results are discussed in the Environmental Assessment for the Rehabilitation of the Great Falls Entrance Road, Lower Parking Lot and Tavern Yard Area, prepared by the Federal Highway Administration in 2004.

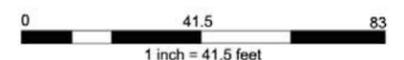
Part I
Chapter 2
Existing Conditions, Analysis and Evaluation







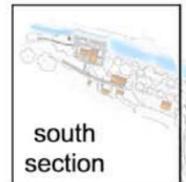
Notes
 See: Great Falls Entrance Road & Parking Lots "Roadway Plan" (Sheet 2 of 6) and "Part Grading Plan" (sheet 2 of 3) for Federal Highway Administration (FHWA) project to begin in 2009.
 See: GFT Repair/Rehab Visitor Center CHOH 14930, sheets 21,22,25,26,28,36 from drawing 412_41081 for line item construction work completed between 2006 and 2008.



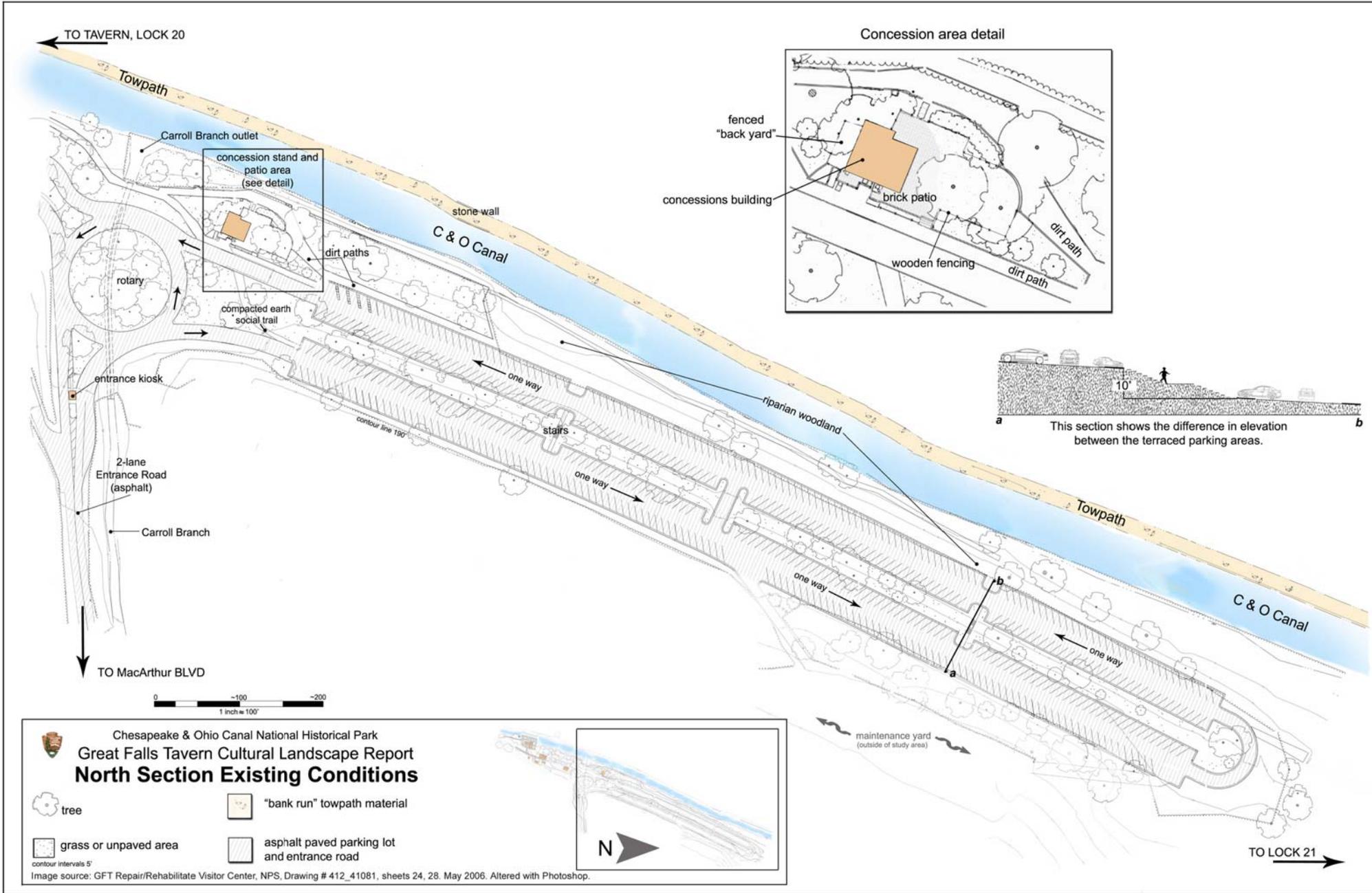
Chesapeake & Ohio Canal National Historical Park
Great Falls Tavern Cultural Landscape Report
South Section Existing Conditions

tree to be removed	exposed aggregate concrete	gravel path	fence
light pole (LP)	tree	concrete access road	asphalt parking lot
grass or unpaved area			

Image source: GFT Repair/Rehabilitate Visitor Center, NPS, Drawing # 412_41081, sheets 24, 28. May 2006. Altered with Photoshop. contour intervals 5'



TO PARKING LOT →



TO TAVERN, LOCK 20

Concession area detail

concession stand and patio area (see detail)

fenced "back yard"
 concessions building
 brick patio
 wooden fencing
 dirt path



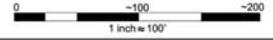
This section shows the difference in elevation between the terraced parking areas.

entrance kiosk

2-lane Entrance Road (asphalt)

Carroll Branch

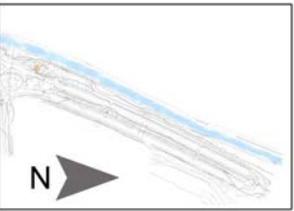
TO MacArthur BLVD



Chesapeake & Ohio Canal National Historical Park
 Great Falls Tavern Cultural Landscape Report
North Section Existing Conditions

- tree
- grass or unpaved area
- asphalt paved parking lot and entrance road
- "bank run" towpath material

contour intervals 5'
 Image source: GFT Repair/Rehabilitate Visitor Center, NPS, Drawing # 412_41081, sheets 24, 28, May 2006. Altered with Photoshop.



TO LOCK 21

Existing Conditions, Analysis and Evaluation

Summary

The Great Falls Tavern (GFT) is listed on the National Register as a contributing component of the 184.5 mile-long Chesapeake & Ohio Canal National Historical Park. The GFT site is also the home to the Washington Aqueduct, a National Historical Landmark designated in 1973. This analysis and evaluation section is essential for determining appropriate treatment recommendations of existing features at the GFT site. By comparing the results of the investigation of the GFT site history to the integrity of existing conditions, we determine which landscape characteristics have historical significance. The evaluation is performed with a focus on condition, patterns, relationships and landscape features, to determine the state of their integrity within the context of the landscape as a whole. These are then evaluated within the framework of the site's periods of significance.

In order to be eligible for the National Register of Historic Places, a site must have integrity as well as being representative of an important historical context. Integrity is the ability of the property to convey its significance and it is comprised by seven features: location, design, setting, materials, workmanship, feeling and association, not all of which may be present or applicable in a historic cultural landscape.

In the case of the GFT landscape, all are important since this site is associated with events that have contributed to patterns of history, and it embodies distinctive characteristics of construction.

Great Falls Tavern is located in Montgomery County, Maryland about 15 miles to the northeast of Washington, D.C. The project area is a component landscape of the Chesapeake & Ohio Canal, and is owned and managed by the National Park Service. Situated on the eastern bank of the Potomac River, the GFT area includes floodplain and rocky river bluffs, as well as mid-river islands. Several intermittent streams are contained within the project area, in addition to Carroll Branch, a first-order tributary of the Potomac River. The historic structures and roads relating to the C&O Canal and the Washington Aqueduct dominate the modern landscape. The remains of the gold mining industry, though less visible, and outside of the scope of this report, nevertheless contribute to the understanding of the landscape's significance. Currently the site is used for historical interpretation of the tavern, canal and the surrounding natural resources, as well as for visitor recreation. In the nineteenth century, GFT was mainly an industrial and commercial site. The proximity of the site to the geologic feature known as the Great Falls of the Potomac has been fundamental to its development and place in history. Based on a comparison between the contemporary character of the project area and its historic character within the periods of significance, the landscape retains partial historical integrity.



Statement of Significance

The period of significance for the landscape of the Great Falls Tavern, a component landscape of the Chesapeake & Ohio Canal Historical Park, is 1828-1942. Within the period of significance there are two dates of significance; 1828-1924 and 1938-1942.

The first dates within the period of significance, 1828-1924, represent the ascent and decline of canal-based transportation in America. The landscape and its related features are associated with events that have made a significant contribution to the broad pattern of history (National Register Criterion A). Illustrative of vernacular and industrial stone construction, the industrial landscape contains individual resources that embody the distinctive characteristics of a type, period or method of construction (Criterion C).

The dates of significance 1828-1924 for the Great Falls Tavern component landscape period include the construction and operation of the C&O Canal and the Washington Aqueduct, as well as the rise of the site as a tourist destination. The watered canal and its associated features, such as the canal locks, the towpath and lockhouses clearly convey the technology of nineteenth-century canal construction. The expansion of Lockhouse 12 into a tavern illustrates the economic, technological and social importance of the Six Locks area to the canal. Several of the nineteenth-century Washington Aqueduct structures remain, and the aqueduct itself is still in operation. The area of Great Falls Tavern was, in the mid-nineteenth century, an industrial and commercial landscape. Following the major flood of 1889, however, this aspect of the site began to decline and tourism became more prominent.

After the flood of 1924, the canal was not repaired and no longer functioned as a viable commercial enterprise. Although the Falls had drawn visitors eager to enjoy the sublime views of the rushing water for over one hundred years, as the economic feasibility of the canal lessened, industrial elements in the landscape began to give way to those that supported a more picturesque aesthetic. Hiking trails, a trolley line and bridges out to the mid-river island facilitated visitor recreation. The tavern became a private social club. The impressive view of the Falls, some historic trails and remnants of the trolley track bed at Great Falls Tavern, illustrate the importance of the area as a tourist destination, and therefore contribute to the significance of the site. This period is reflected in the extant structures, both architectural and landscape, on the site deriving from that period. It can also be seen in the spatial orientation, or linear north to south pattern of built structures on the site.

The second period, 1938-1942, is based on early federal involvement on the site. It begins in 1938 with acquisition of the canal property and the onset of NPS recreational and transportation planning efforts for the once industrial and commercial landscape of the GFT. Although planning efforts continued to progress on the site, the second set of dates of significance ends in 1942, the last year in which African American Civilian Conservation Corps (CCC) enrollees, under Roosevelt's federal "New Deal" relief program, were involved with the site. One way this period is reflected on site is in the existence of CCC-built structures. Another reflection of early federal involvement is in the pedestrian and vehicular circulatory patterns on the GFT site and other recreational developments that derive from early planning efforts by NPS landscape architects and planners.

In addition, the landscape setting of Great Falls Tavern includes a National Historic Landmark, the Washington Aqueduct -a major nineteenth-century engineering feat.

The Chesapeake & Ohio Canal National Historical Park was listed on the National Register of Historic Places in 1979. Great Falls Tavern is included in the listing as a contributing site. The landscape of the tavern, however, is not adequately documented or evaluated within the nomination.

Landscape Characteristics and Features

Each characteristic or feature is classified as contributing or non-contributing to the site's overall historic significance. Landscape characteristics are comprised of landscape features. Landscape features are classified as contributing if they were present during the property's period of significance. Non-contributing features (those that were not present during the historical period) may be considered "compatible" when they fit within the physical context of the historic period and attempt to match the character of contributing elements in a way that is sensitive to the construction techniques, organizational methods or design strategies of the historic period. Incompatible features are those that are not harmonious with the quality of the cultural landscape and, through their existence, can lessen the historic character of a property. For those features that are listed as undetermined, further primary research is necessary to determine the feature's origination date. Landscape characteristics and features, individually, and as a whole, express the integrity and historic character of the landscape and contribute to the property's historic significance.

This section provides an evaluation of the physical integrity of the GFT cultural landscape by comparing landscape characteristics and features present during the periods of significance with current conditions. Landscape characteristics date from the periods of significance and are the tangible and intangible aspects of a cultural landscape that define and characterize the landscape. They also aid in understanding its cultural value. Collectively, they express the historic character and integrity of a landscape. Landscape characteristics give a property cultural importance and comprise the property's uniqueness.

The following narrative analyzes and evaluates the cultural landscape's integrity by comparing landscape characteristics and features present during the periods of significance with existing conditions.



Integrity-Defining Features

Historic integrity, as defined by the National Register, is the authenticity of a property's identity, evidenced by the survival of physical characteristics that existed during the site's historic period. The findings in the following seven "integrity-defining features" are partially derived from the Cultural Landscape Inventory (CLI) of the GFT site, which was completed in 2001 and revised in 2004. Several or all of these aspects must be present for a site to retain historic integrity. To be listed on the National Register, a property must not only be shown to have significance under one of the four criteria, but must also retain integrity. The CLR finds that the GFT site retains integrity in all seven categories.

Location: The primary features of GFT are in their nineteenth-century locations. These include the Potomac River, the riverside bluffs, the Carroll Branch drainage, the C&O Canal, the Washington Aqueduct and some of the circulation patterns of the area. However, many nineteenth-century structures and circulation features are no longer extant. A few structures which were constructed by the CCC, also remain in their original locations (Fig. 35).

Design: A large percentage of the original spatial organization of the landscape, based on patterns of functional use relating to the canal and aqueduct, is still evident today. Individual elements of both the canal and aqueduct areas exhibit features of vernacular and pragmatic design used historically to transform the area into a commercial and industrial community. Designs implemented by the NPS based on both transportation and recreational needs, such as the circular rotary drive and pedestrian paths, are still evident in the landscape.

Setting: The setting of GFT retains integrity in relation to its periods of significance. The portion of the property immediately adjacent to the canal has integrity due in large part to the well-preserved nature of the canal locks and towpath. This is especially true of the area near Lock 20 and the tavern, as well as and the meandering Entrance Road (Fig. 36).

Materials: Historic materials are evident in many of the extant structures. These include the brick tavern, the CCC structures, the Seneca sandstone aqueduct gatehouse and the gatekeeper's residence. The canal locks, retaining walls, culverts, waste weirs and bypass flumes also contain historic and non-historic materials that have been necessary to stabilize and repair structures on site. Materials in the CCC-constructed structures retain a high degree of integrity (Fig. 37).

Workmanship: The remaining building clusters and individual historic structures reflect, for the most part, their 19th and 20th century origins and functions (Fig. 38). The integrity of the original workmanship has been somewhat compromised due to the need to accommodate NPS and visitor needs, and by repairs made over the years to correct flood damage.

Feeling: The Great Falls Tavern possesses a distinct character related to the canal systems of the nineteenth century. The ability to "lock through" at Lock 20 and travel up the canal on a mule-drawn boat contributes to the industrial landscape feeling associated with the canal (Fig. 39). However, the feeling of an industrial landscape, one that included mining and aqueduct-related activities, has been partially compromised. Feelings associated with recreational values at the site are very much intact.

Association: The association between the GFT landscape and the industrial and commercial aspects of the site has been diminished due to altered site function. However, the ongoing use of the Washington Aqueduct to supply water to Washington, D.C., along with the continuing use of the site for recreation, contributes to the association aspect of integrity.

Integrity is the ability of a property to convey its significance. The following photographs illustrate some of the seven categories of integrity described on the preceding page.



Figure 35 (left) WORKMANSHIP/LOCATION: CCC-built structures at the GFT (NCR CLP).



Figure 36 (below) DESIGN: East side of the rotary looking south towards the tavern (NCR CLP 2006).



Figure 38 (above) MATERIALS: Seneca Sandstone was sent by canal boat downstream to the GFT area to construct the Control Gate House for the Washington Aqueduct in the mid 19th century (NCR CLP 2006).



Figure 37 (left) MATERIALS: Despite the inclusion of modern materials on site, the existence of original materials is substantial enough to retain a high degree of integrity (NCR CLP 2006).

Figure 39 (below) ASSOCIATION: The Great Falls Tavern site is associated with the ascent and decline of canal-based transportation in America. The existence of a working canal boat and lock play an integral role in conveying the historic workings of the landscape (NCR CLP 2006).



Spatial Organization

Historic Condition

The GFT and the features related to the Washington Aqueduct were situated in a linear north to south pattern along the C & O Canal. The flattened topography of the river terrace, as well as the confines of the river to the west and the steep hills to the east, all played a role in the spatial organization. This, coupled with the existence of Carroll Creek and the pre-historic path which became known as the Old Rockville Road, led to a system of spatial organization in the area that took advantage of the both the natural and the commercial setting created by the establishment of the canal (Fig. 40).

The tavern was situated, as was customary of Lockkeepers houses, within very close proximity to Lock 20. Tending to the lock was a 24-hour-a-day job, and it would not serve the Lockkeeper to be far away from his charge. Even the orientation of the tavern was towards the canal.

The area near the lock supported one grouping of buildings. Some of these developed in response to the functional needs of the area, such as the kitchen addition that was built on the southwest side of the tavern. Houses were located on the relatively flat area of the berm side of the canal to the south of the tavern, between it and Lock 19. Support structures developed in response to the commercial aspects of the site, such as Garrett's store on the towpath side, which was located close to Lock 20 in order to serve canalers efficiently.

Later, adding to the density of structures in the lock area, the stone aqueduct gatehouse was installed. By the time that the CCC was established and working in the area in the 20th century, many of the structures in the Lock 20 area were no longer extant. The CCC did, however build a boiler house, a pump house and a comfort station to the northwest of the tavern at the base of the hill. All of the CCC structures exist today and lend integrity to the historical spatial organization of the Lock 20 area (see Fig. 35).

During the initial construction in the GFT area, the orientation of the built landscape was towards the canal, towpath and river. The tavern, and later the aqueduct gatehouse, were constructed and oriented to support and maintain activities towards the river and towpath. Later, the constructed elements at Carroll Branch and the Old Rockville Road, which no longer exist, strayed from canal orientation. These were situated towards both the Old Rockville Road and the Entrance Road to ease transportation, and to access water from the well near Carroll Branch (see Fig. 12).

Existing Condition

During the period of significance, varied usage and ownership led to "internal patterns of separation."⁶⁵ This refers to the use of fences and posts to demarcate property and ownership rights within the study site. Existing post and chain barriers installed along walkways by the NPS do not contribute to historical separation of uses on the site as fences once did. (Fig. 41).

Due to development patterns, and the topographical limitations created by the river to the west and the bluffs to the east, the linear orientation of the canal itself is echoed even in the layout of site elements, such as the parking areas and pedestrian paths that generally run north-to-south on the property.

Summary

The elimination of the structures near the Old Rockville Road trace and Carroll Branch decreases the overall integrity of spatial organization in the GFT landscape. Due to the similarity in spatial organization on-site from the period of significance to the present, the linear north-south orientation of built elements in relation to the canal and towpath, internal patterns of separation and the subsisting positions of the woodland and floodplain habitats, an intermediate degree of integrity can be attributed to spatial organization at the GFT site.

Feature Name	Status
Linear development pattern	Contributing
River terrace/hillslope topography	Contributing
Carroll Creek orientation	Contributing



Figure 40 (above) Aerial view (1959) from the north looking south towards the Great Falls Tavern Site (CHOH Sharpsburg, Washington Aqueduct Collection).



Figure 41 (above) Post and chain fencing as seen along the promenade between the concession stand and the tavern (NCR CLP 2006).

Topography

Historic Conditions

The general topography of the GFT site consists of high river bluffs, floodplain and gently-graded to steep woodland. The Great Falls themselves are a dynamic geologic feature resulting from the physiographic change occurring in the fall line between the farmed and forested Piedmont Province, and the Coastal Plain Province.

The majority of topographical changes to the cultural landscape occurred in the early 19th century during the initial canal construction when the channel and associated features, including berms, building platforms and quarry sites, were created. Significant topographical changes occurred with the construction of the Washington Aqueduct which included the construction of the conduit tunnel, the Conduit Road (modern "Entrance Road"), the intake structure and the dam. More changes occurred when parking lots were added to the site and cuts into the earth created slopes seen at the eastern edges of the parking lots.

In the area of the site characterized by river bluff and floodplain, there is a distinct difference between the shoreline above the dam, and the shoreline below it. Upstream, the shoreline is relatively flat and located approximately ten feet below the elevation of the towpath. Below the dam and including Lock 20, the shoreline is steep with no floodplain fringe. Below Lock 19, the canal corridor constricts; steep slopes are very close to the canal and towpath on both the river shore and berm bank sides. This difference in local shoreline reflects the swift changes in topography that the canal builders had to respond to. The canal, retaining wall and lock system near the GFT were built in response to the steep shoreline within the area known as the "six locks" (Locks 15-20) area, where several locks were built in succession in order to gain the elevation needed to bypass the falls.

Existing Conditions

The forested land that includes the Entrance Road corridor is characterized by varied topography penetrated by internal drainage to the river shore. The elevation at the entrance at Falls Road is about 380 feet, dropping to about 180 feet at the entrance kiosk. The major drainage system north of the Entrance Road is Carroll Branch, which also accommodates drainage locally and from an area of low-density housing to the east of the site. South of the Entrance Road, several steeply-graded swales flow toward Carroll Branch. These suggest that the lower, western end of the road was built in line with the Carroll Branch floodplain. The western end of Carroll Branch flows through a double culvert, under the rotary, and outlets into the canal. The culvert was constructed in the mid-1950s. (Fig. 42).

Across Carroll Branch from the rotary, there is a prominent ridge extending roughly to the northeast behind the Palisades maintenance building. This topographical element was created by the terraced two-level parking lot construction in the mid-20th century when the grading cut into the hillsides and created flat areas upon which structures and access roads are currently located. Lot elevations extend from 190 feet at the northeast side of the upper parking area to about 155 feet at the bank on the south side of the tavern, a gradient of 2 percent in a little less than a half mile. The lanes on the east side of the terraced parking lots are generally on a higher grade than the lanes found closer to the canal creating appropriate grades on what was formerly about a six to ten percent slope.

Most drainage on this site, notably in natural woodland areas, is sheet flow or surface runoff into open swales and channels that merge to become flowing stream channels, such as at Carroll Branch. Developed portions of the site, particularly those developed in the mid-20th century when the Rotary and parking lots were constructed, drain into catch basins and release directly into the canal. Runoff from the tavern

roofs falls either through downspouts directly into storm drains, under the plaza, or into conduit channels near the tavern foundation. Because of their size and location, both sub-surface and surface drainage are susceptible to clogging from debris such as leaves. Other drainage swales flow toward the river shoreline. One flows out of the hillside between Lock 19 and Lock 20; another flows out between Lock 18 and Lock 19. In this area, former springs and wells are denoted on early NPS master plans of the tract.

Currently, the tavern, yard, canal and towpath areas are predominantly flat due to their initial design and long-term use; this area is likely to have been filled in at the time of the canal’s construction.

Summary

The overall integrity of the topography at the GFT is partially intact and can be traced back to changes that took place during the site’s first period of significance.

Feature Name	Status
Canal channel/ associated features (berm, platform, quarry site)	Contributing
Fall line topography	Contributing
Entrance Road topography	Contributing
Parking area terraces/slopes at eastern edges of lots	Non-Contributing



Figure 42 (above) Carroll Branch enters a culvert to the north of the Entrance Kiosk and runs under the Rotary to exit into the canal (NCR CLP 2006).

Land Use

Historic Conditions

Since the initial building of the canal, land use has been varied. While it may appear that industrial and commercial canal-related business dominated the site, this was only part of the truth. During the operational period of the canal, the simple existence of the tavern and hotel, built shortly after construction of the stone Lockkeeper's house, represent an important history of visitation and leisure on the site. The activities that we call "tourism" in modern times have been integrated into the GFT site since its earliest days. During the period of significance, packet boats filled with tourists traveled the canal at the same time as the canal was being used to transport goods (Fig. 43).

Land use on site also includes the primary intake center of drinking water from the Potomac River for Washington, D.C. The Army Corps of Engineers (USACE) built the dam across the river and other support features when the site was a working industrial landscape in the mid-1800s (Fig 44).

Existing Conditions

Currently, the GFT is a popular destination for people seeking both passive and active recreation in a rural setting that is conveniently located within close proximity to their urban addresses. Active uses (which can be defined as activities that involve playing fields, team participation, or, as in this case, activities requiring a lot of movement, such as kayaking or long distance hiking) are focused on the Potomac River shoreline and canal towpath. Passive uses (which can be defined as recreation without use of major facilities, such as walking, sitting, viewing and picnicking) center on the canal banks and the tavern at the south end, as well as the picnic and concession area at the north end.

The GFT, a component landscape of the C & O canal, is bordered on the east by low-density residential development. On the west is the Potomac River, with its mid-river islands. The park, intermittently bordered by residential development, continues to the south and north. Within the Great Falls site, land use and even ownership vary. Most of the acreage immediately east of the canal corridor is naturalized as woodland in the Gold Mine Tract, and other associated land tracts administered by the GWMP unit of the NPS. These hilly tracts are threaded with hiking trails upon which bicycles and motorized vehicles are prohibited (Fig. 45).

Visitors can experience the feeling of the site's commercial and industrial history through Park Ranger-led interpretive canal boat tours. The displays in the museum, located in the tavern structure, educate and inform the public by illuminating both the natural and cultural history of the area. According to the definition in the previous section, these, along with walking and picnicking activities, are examples of the site's passive recreational uses. Active recreational uses of the site include hiking, biking and kayaking. As a recreational destination, the GFT site serves as an access point to the canal towpath, which is now a well-used local trail.

Kayakers are often seen at the site, which is a popular and easy "put in" site, since it is not permitted to "put in" above the falls on the Virginia side. Kayakers usually put in at "Catfish Cove," located outside of the study area and south of the series of fish ladders built by the corps in the 1880s. Kayakers have a long-standing relationship with the park and are encouraged to traverse the class 5+ rapids quickly, in small groups, and during times when there is a low visitor volume in the park.⁶⁶ This is to attract the least amount of attention to river activities, and discourage other visitors from wandering off-trail where they may imperil ecological habitats and risk their own safety. Visitors also come to the site to access Olmsted Island where they can experience views of the Great Falls, the Potomac River and Mather Gorge, as well as the unique ecology of the river islands.

Summary

Due to the loss of industrial activity at the site, the integrity of land use at GFT is diminished. Tourism, recreational use, canal boat demonstrations and activities relating to the management of the Washington Aqueduct intake structure are the only remaining uses from the site’s periods of significance.

Feature Name	Status
Canal boat tours	Contributing
Recreational use	Contributing
Visitation/Tourism	Contributing
Aqueduct workings	Contributing

Figure 43 (left) At one time, visitors paid a fee to cross the bridge which led them to views of the falls from the mid-river islands (CHOH Sharpsburg 17-2).



Figure 44 (above) Modern photo of the dam at the Washington Aqueduct as seen from the roof of the intake structure (NCR CLP 2006).



Figure 45 (right) Contemporary photo of the Gold Mine Tract, a rural buffer zone between the tavern and developed lands, as seen from the Entrance Road (NCR CLP 2006).

Views

Historic Conditions

Since the Great Falls site is considered a vernacular landscape, composed of contributing elements that accrued over the period of time from its primary industrial and commercial land uses, the site was not purposefully designed to reveal particular views. Rather, some important views have evolved during the 20th century, especially with the popularization of photography. Today, several different perspectives are important enough to be considered for view preservation at the site.

Along with the primary function of the GFT area as a commercial and industrial landscape, is the use of the area as a visitor destination. The word “tourism” was not commonly used until the mid-20th century. One of the main reasons for public visitation was the views of the “Great Falls” cataract of the Potomac River (Fig. 46).

Visitors in the 19th century enjoyed the view of the falls by both daylight and moonlight. It was a popular destination in the early spring when people would come to watch the ice crash and melt as it made its way over the falls. Proof of the importance of the views at the GFT site is in the construction of a foot-bridge in 1880 to mid-river islands, which lent visitors better access to views of the river. More proof lies in the fact that after the bridge was washed away by flood events, it was (usually) quickly replaced.

In addition to the view of the falls, auxiliary views of the site evolved and are evident in photographs taken of the site over its history. Antecedent photographs of the area were often views captured from the upstream direction of the canal, south, towards the north façade of the tavern (Fig. 47). The linearity of the canal and towpath were commonly included in early pictures of the site. Views from the north from Lock 20 and below which include the canal, tavern and related structures are also found in early photos.

Existing Conditions

One of the most significant and historic views on the site is that of the Great Falls of the Potomac River from the bridge, boardwalk and overlook system currently located below Lock 18. Although the boardwalk is just outside of the CLR study area, it is considerable enough to make note of here. The overlook and boardwalk at Olmsted Island have been constructed to offer visitors closer views of Great Falls while restricting access to sensitive areas of the rocky island.

Along with the river views and the view of the tavern from towpath, another noteworthy view of the setting that has evolved along with its changing uses is that of the landscape as one enters the site from the entrance road, particularly from the entrance kiosk. This perspective provides the first clear views of the canal and its features.

Summary

Although the GFT site is not designated significant because of its views, views do play an important role in the specific evolution of recreational sightseeing here.

Feature Name	Status
View of falls from mid-river islands	Contributing
Views of tavern from upstream	Contributing
Views of river from intake observation platform	Non-Contributing



Figure 46 (above) Modern image of the Great Falls of the Potomac (NCR CLP 2006).



Figure 47 (left) Image from 1953 of Tavern from the towpath north of Lock 20 (CHOH).



Buildings and Structures

Historic Conditions

The GFT site has a history of building construction and demolition. Many buildings and structures have been built and razed in concurrence with changes in land use and ownership needs over time. Barracks, grocery stores and storage facilities have been constructed as needed, and taken down when they were no longer useful. This section examines the buildings and structures (excluding small-scale features) that currently exist on the site, retain much of their integrity, and contribute to the overall significance of the GFT cultural landscape.

Constructed water features are particularly significant within the GFT landscape because it was out of the construction of the canal that the landscape evolved. The largest of the features, the canal prism and walls, exists at the GFT site within its original alignment (Fig. 48). Associated water features are the (non-functioning) bypass flume at Lock 20, which prevents flooding and allows water to bypass the canal while the lock is closed, culverts, the locks themselves and the waste weir at Lock 20, which lets water out of the canal into the Potomac. An additional historic water feature is the mule drink, or spillway, located along the towpath across from the tavern.

The Great Falls Tavern and the Washington Aqueduct gatehouse buildings exist in their original locations and reflect the period of significance of the landscape from 1828-1924, through their existence, methods of construction, materials and their ability to evoke associations with the past in the present. Even the ruin of the lockhouse at Lock 18 (though outside of the CLR site boundary) contributes to the overall integrity of built elements on site (Fig. 49).

Construction of the Great Falls Tavern structure began in 1828. First, its stone core was built to serve as a simple gatekeepers house. It was expanded shortly after construction to include two brick wings to the north and south sides of the stone core. It is two and a half stories high and made of plastered stone and brick which was historically whitewashed to maintain its white color.

The Control Gate House was constructed by the Army Corps of Engineers to house the Washington Aqueduct control mechanisms that shut off the flow of water to the conduit. It is a sandstone structure constructed from materials shipped downstream from the Seneca quarry.

Other historic structures include a wooden chlorination shed at lock 19, A masonry spillway (covered with towpath material and edged with a wooden fence and walk) extending 70 feet from the upper towpath wingwall of Lock 20 to the lower wall of the wasteweer, a bypass flume, which is constructed out of a 150 foot concrete pipe (replacement of original material) which runs under the tavern's patio area from the upper to the lower wingwall of Lock 20. A concrete wasteweer to the west of Lock 20 which is ten feet long with four openings controlled by cast-iron wickets on a stone foundation. The concrete slab on top of it was added in the 1930s. Lock 20 itself and the accompanying retaining walls have endured a series of repairs and do not retain their original building materials but are in the same location and serve the same purposes as they have since their original construction.

Existing Conditions

Currently, existing on site are the historic tavern, gatehouse and the CCC-constructed comfort station, pump house and boiler's house, an entrance kiosk, maintenance structures and a concession building have been added to the site since the period of significance. Modern constructed water features on the site include drain inlets, catch basins, grates, manholes, manhole covers, storm drains, channels and downspouts.

The pump house, boiler house and comfort station also exist in their original locations and reflect the period of significance of the landscape during the time of the CCC from 1938 to 1942. All three of these buildings are listed, and considered to be contributing features, on the NPS's List of Classified Structures (LCS). The LCS is an evaluated inventory of all historic and prehistoric structures that have historical, architectural and/or engineering significance within parks of the NPS system.

The CCC-era boiler's house is a one story concrete and brick structure on a concrete foundation with a wood-shingled roof. It has a large brick chimney on its back side that is approximately 15 feet tall.

Another CCC-era structure, the pump house, is a two story brick structure with a wood-shingled roof. The structure houses pumps to supply the area with water.

Finally, the CCC-era comfort station is a one story wood-framed structure on a concrete foundation with a wood-shingled roof.

Summary

Outside of the immediate study area of the CLR, the integrity of the alignment of the dam, the ruins of the lockhouse at Lock 18, the remnants of the Maryland mine, the trolley track earth work remains, Locks 17, 18 and 19, and canal-related retaining walls, contribute to the significance of the overall canal cultural landscape.

The contributing buildings and structures found on the GFT site are the tavern, the control gatehouse, the CCC-built pump house boiler's house and comfort station, the chlorination shed, the spillway, the bypass flume at Lock 20, Lock 20 itself, the canal walls and the wastewear. Through their existence and artisanship, they lend a high degree of integrity to the site despite the existence of non-contributing structures.



Feature Name	Status
Great Falls Tavern	Contributing
Washington Aqueduct Control Gatehouse	Contributing
Pump House	Contributing
Comfort Station	Contributing
Boiler House	Contributing
Chlorination shed at Lock 19	Contributing
Spillway	Contributing
Bypass flume at Lock 20	Contributing
Lock 20	Contributing
Canal retaining walls	Contributing
Wasteweir	Contributing
Concession stand	Non-Contributing
Entrance kiosk	Non-Contributing



Figure 48 (left) The canal prism and walls at Lock 20 exist in their original alignment (NCR CLP 2006).



Figure 49 (right) While outside of the immediate environment of the tavern, the ruins of the lockhouse at Lock 18, seen here, contribute to the significance of the overall integrity of the cultural landscape (NCR CLP 2006).

Circulation

Overall Historic Conditions

Modern trails and parking areas have been introduced to the GFT site, but many of the pedestrian and vehicular circulatory routes on the GFT were established during the site's period of significance. The river, the canal, the towpath and the Old Rockville Road provided the earliest visitors access to the site.

Pre-dating the Entrance Road (Conduit Road) was the Old Rockville Road. The remnants of the road (possibly the Canaya Indian's pre-historic "Tehoggee Trail."), entered the site just to the north of Carroll Branch, and can be observed in modern times as a flat area on the northeast side of the modern rotary (Fig. 50). Currently, the GFT site is accessed via the Entrance Road which exists essentially within its original alignment and width of 1875. The Entrance Road extends 1.2 miles from the intersection with Falls Road to the fee collection kiosk near the traffic rotary. The Old Rockville Road was abandoned, around 1875, when the (Conduit) Entrance Road extension was established. Most of the existing circulatory patterns of the towpath, the river and the canal are within the same alignments as during the period of significance.

Existing Conditions: Vehicular Circulation

Vehicular circulation is ubiquitous over most of the GFT site; it poses conflicts with pedestrians and intrudes on other site elements. Three principal roads characterize the GFT site - the park entrance along the Entrance Road; the access road east of the tavern and towpath, which is used by NPS, the Corps and emergency vehicles; and the parking lots and traffic rotary.



Figure 50 Panoramic view of the Old Rockville Road trace. The Entrance Kiosk can be seen to the right and the Concession Stand can be seen in the distance to the left (NCR CLP 2006).

The road was only 16 feet wide when it was macadamized in 1916; it was expanded to 20 feet in the 1950s. Graded shoulders, paved drainage ditches and concrete culverts were installed in the 1970s. Due to the dissected topography of the Gold Mine Tract, the road winds through a succession of curves and grades before emerging at the GFT parking lots.

This roadway is currently composed of two travel lanes, with undesignated paved or unpaved shoulders that drain to adjacent paved or vegetated swales (Fig. 51). The existing road surface is generally good, except in areas where freezing and thawing of surface water has started to break up the pavement.

Figure 51 Steep banks, narrow travel lanes and curving paths are characteristic of the historic Conduit Road alignment (NCR CLP 2004).



The road speed is posted at 25 mph for the first 0.95 mile and at 15 mph in the next segment through to the rotary. Most of the road is curved to follow existing topography in the Gold Mine Tract. Some curves cut through steep banks, especially in the lower end near the canal.

The Entrance Road retains much of its historic character through its adjacent land features, alignment, grades, design speed and narrow width. Although parking is prohibited along the sides of the road, some use the shoulders for this purpose. Since this road is the only public vehicular access to the GFT site, visitors, NPS and US Army Corps of Engineers employees, local emergency vehicles, busses, bicyclists and others use it. Because visitor fees are charged from April through October, passenger vehicles may be stacked up in line for a short distance along the road at the entrance fee kiosk. Although the road is surfaced with non-historic materials, and has been altered slightly, it retains a high degree of integrity.



Figure 52 (left) The tavern, as seen from the southern portion of the access road. (right) South, towards Lock 19 from the access road (NCR CLP 2006).

Beyond the lower parking area, to the south, is the second principal road system. This is restricted to service vehicles such as NPS staff, the Corps, and emergency vehicles. This access road extends from the lower parking area south to Lock 19. It is 10' wide and constructed of concrete with curbs from the parking lot to just south of the tavern. The remainder is unpaved and undefined. The width in this southern section varies from 12 feet to more than 30 feet. The widest section of the road is due primarily to its use to store materials (Fig. 52). Also connected to the road are the wood plank bridge across the canal at Lock 19, and the towpath itself (Fig. 53).



Figure 53 (below) The crossing at Lock 19 (NCR CLP 2006).

The crossing at Lock 19 is one of the few that can support vehicular traffic. It is a crucial access point for emergency and maintenance vehicles. The Corps and the NPS occasionally transport small cranes and other necessary heavy equipment used in aqueduct, canal, towpath and boat maintenance along this route. The access road, bridge and towpath are also used to haul and repair the interpretive canal boats used in the park.

The third vehicular circulation system includes the upper (north) and lower (south) parking areas and the traffic rotary. After proceeding past the entrance station, cars and trucks have been able to either veer to the right and enter the upper parking area, or circle a curbed traffic rotary counter-clockwise to enter the lower parking area.

The upper parking area consists of two parallel levels of parking, with a tree-lined sloping grass median in between. Each level contains a one-way driving lane with diagonal parking spaces on both sides. The upper level where cars travel north, gains up to 10 feet in elevation above the lower lane along the 1,300 foot length of the lot. Both lots are approximately 57 feet wide; they are connected by a drive that runs between them at the north, and by a vehicular ramp in the middle. Two sets of steps for pedestrians connect the upper and lower levels. The pavement of the upper parking area is in fair to poor condition: a large portion at the north end is severely deteriorated; other sections suffer from poor drainage. Rehabilitation of the upper parking lot is part of the Federal Highways construction project. Except on the busiest visitor days, the upper lot is often empty, except for service vehicles. The north end has often been used for storing maintenance equipment and materials (Fig. 54).



Figure 54 The north end of the Upper Parking Area is often used to store materials used for maintenance (NCR CLP 2006).

The terraced two-level lower (south) parking lot located south of the rotary is approximately 200 feet long and is set 25 feet north of the old Washington Aqueduct Gatehouse and about 180 feet north of the tavern. Like the upper parking area, it has two one-way travel lanes with diagonal parking spaces on both sides. A new comfort station has been built in the parking lot and the demolition of the lot is currently underway. (Fig 55).

Figure 55 A view of the Lower Parking Area (NCR CLP 2004).

Service drives leading from the rotary and parking lots are restricted to access for maintenance and emergency vehicles and the Corps and park employees. One drive extends from the entrance station up the hill to the south where there is a garage, three buildings and a staff parking area. Cars and trucks parked here are easily visible from the lower parking area. Another pair of drives run from the northeastern side of the upper parking area into the Palisades district maintenance yard, another restricted access area.



Pedestrian Circulation

Historically, traffic (predominantly mule) on the site circulated on the extant towpath, and presumably upon various trails and routes that have not been found in the maps or other resources used to compile data for this report.

Modern pedestrian circulation additions include paths conceived in the 1930s, and constructed during the 1950s when the NPS implemented a large renovation of the landscape to accommodate what was justifiably expected to be an increase of recreational usage. These paths include those near the tavern, the concession stand and the promenade leading to the tavern. CCC-built walkways that connect the comfort station, pump house and boiler's house were added to the landscape before the 1950s-era NPS design implementation. Contemporary pedestrian walks that lead visitors from parking areas to visitor services, and to the tavern and canal are of varying design and condition. These are concentrated in two areas: the tavern yard, and the concession stand area.

The first is the tavern yard area, including the berm bank promenade, a path from the rotary to the promenade, a path from the tavern to the boat dock on the canal and paths around the tavern, comfort station and pump house.

The second is the concession stand area, including paths around the concession stand and to and from the promenade and upper parking area. Pedestrians walking from the upper parking area toward the tavern generally walk in the roadway until they reach the concession area, where they may walk the Promenade or continue directly across the rotary.

Currently, many portions of the walkways are curbed. Many unpaved walks that are composed of compacted bank run sand and gravel are edged with treated timbers including the path located north of the concession terrace (Fig. 56). All paths were initially designed and built without curb ramps. Since then some ramps have been added.

Figure 56 North of the concession stand, the path is edged with timbers and would be difficult for a visitor in a wheelchair to negotiate (NCR CLP 2006).

Surfaces nearest the tavern had, until recently, been paved in a brick basket weave pattern which was in poor condition due to uneven settling and compaction of the sand base. At least two pathways near the tavern were too steep to meet current accessibility standards. These included the brick path from the tavern to the comfort station, and the bank run path from the parking lot to the promenade. In 2007 the area around the tavern was paved with exposed aggregate concrete which eliminated the problem of the uneven surfaces and created an accessible entrance on the north side of the tavern.



Several volunteer trails have evolved on the site, resulting in erosion and compaction. One of the most prominent is from the upper parking lot to the concession stand, tracking across a grass area that is visually conspicuous from the rotary (Fig. 57). Another is used as the service access route across the lawn south of the tavern. Since materials are temporarily stored here and the area is used by vehicles and pedestrians, this area has become a large, non-vegetated compacted area stretching between the tavern and Lock 19. A third conspicuous social trail connects the observation roof of the inlet structure to the towpath.

Summary

Historic patterns of circulation are primarily via the Entrance Road and along the canal and towpath. A shift in usage from commercial and industrial to a recreational destination created new circulation routes to accommodate a larger number of passive activities. These changes do not detract from or alter the historic pattern enough to drastically diminish the integrity of GFT's historic circulation patterns.

Feature Name	Status
Canal	Contributing
Towpath	Contributing
Entrance Road	Contributing
Access Road east of tavern	Contributing
Old Rockville Road trace	Contributing
Rotary	Contributing
Paths near tavern	Non-Contributing
Paths near concessions	Non-Contributing
Promenade	Non-Contributing
Parking areas and trails	Non-Contributing
Volunteer trails	Non-Contributing

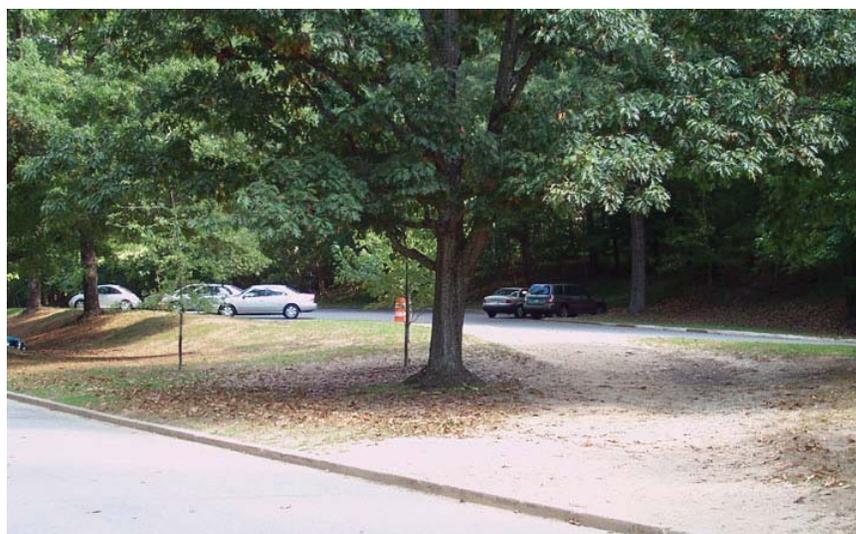


Figure 57 A heavily used volunteer trail leading from the Upper Parking Area to the Concession Stand (NCR CLP 2006).



Vegetation

Historic Conditions

Three historical vegetation types existed at the GFT site before and during canal construction. These were river floodplain forest, upland woodland forest and the plant community of the mid-river islands. The predominant historic native river floodplain species are sycamore (*Platanus occidentalis*) and green ash (*Fraxinus pennsylvanica*). Also included are elm (*Ulmus* sp.), boxelder (*Acer negundo*), silver maple (*Acer saccharinum*), cottonwood (*Populus deltoides*), American hornbeam (*Carpinus caroliniana*), river birch (*Betula nigra*) and common serviceberry (*Amelanchier arborea*).

Historic upland woodland species observed on the site in modern times include white and black oak (*Quercus alba*, *Q. velutina*), red, scarlet, and chestnut oak (*Q. rubra*, *Q. coccinea*, *Q. prinus*), Eastern red cedar (*Juniperus virginiana*), tulip tree (*Liriodendron tulipifera*), American beech (*Fagus grandifolia*), black walnut (*Juglans nigra*), maple (*Acer* sp.), choke cherry (*Prunus virginiana*), sumac (*Rhus* sp.), mountain laurel (*Kalmia latifolia*), black locust (*Robinia pseudoacacia*) and sassafras (*Sassafras albidum*).

Between the river floodplain forest and the upland woodland is a unique plant community that has made a home out of the canal prism and towpath. Depending on the location along the canal and the degree of disturbance of the bank, the canal prism contains herbaceous and low level woody vegetation along moisture and shade gradients. Closest to the water in shallow areas, such as near the entrance to the bypass flume at Lock 20, are submersion-tolerant species like arrow arum (*Peltandra virginica*) (Fig. 58). The bank above the water level may contain native and nonnative grasses, wildflowers, such as woodland phlox or wild sweet william (*Phlox divaricata*) and Japanese honeysuckle (*Lonicera japonica*), which is mown to grass height. Historically, grass and Arrow arum were planted along some areas of the towpath to stabilize and protect it from erosion. These plants are still found along the towpath today.

Existing Conditions

There are two principal forest types in these areas: upland woodland and river floodplain forest, as described in the Cultural Landscape Inventory. A field survey (2000) also revealed wild grape (*Vitis* sp.) and blueberry (*Vaccinium* sp.), barberry (*Berberis* sp.), boxwood (*Buxus* sp.), forsythia (*Forsythia* sp.) and holly (*Ilex* sp.) within the upland area. Some of these species are suspected to have escaped into the woods from the tavern area or these trees, shrubs and vines may mark abandoned dwelling sites. Further research is needed in order to determine whether they were planted during the period of significance.



Figure 58 Arrow arum (*Peltandra virginica*) in the canal at the bypass flume inlet at Lock 20 (NCR CLP 2003).

Diminished integrity of the upland woodland is due to several factors. One, overgrazing, due to an extremely large deer population, has led to sparse understory growth below eight feet high, under a full tree canopy (Fig. 59). Secondly, the significant decline of native plant material has opened the door to the introduction of non-native species, especially the highly invasive annual Japanese stilt grass (*Microstegium vimineum*) (Fig. 60). Also known as Nepalese browntop, this sprawling grass grows slowly through the summer months to about three feet tall. Since it grows prolifically in shady and moist habitats, such as along the shoulders of the Entrance Road and the slopes of the Gold Mine Tract, it out-competes native understory plants and seedling trees and quickly spreads out like a carpet while interrupting the natural sequence of plant succession and making it difficult for native species to repopulate the forest. Third, sections of the upland woodland were impacted by the installation of the water conduits in the tavern hillside during USACE construction in the mid 19th century. The area was cleared and graded at least twice to accommodate the immense conduits.



Figure 59 (left) Sparse understory growth, due in part to overgrazing by deer, is characteristic of the upland woodland at the Great Falls Tavern site (NCR CLP 2005).



Figure 60 Japanese stilt grass.

Tavern areas were completely replanted in the 1970s in conjunction with an overall site rehabilitation plan. Historic period plantings such as lilac (*Syringa* sp.) and Rose of Sharon (*Hibiscus syriacus*) were added to the tavern yard area along with various perennials. An herb garden was added near the southwest corner of the house at the request of the Acorn Garden Club which was to maintain it. Two grass panels were added along the brick walk at the main entrance (north side) of the tavern and shrubs were added so supplement the existing boxwood that flanked the entrance door. Few shrubs remain from 1950s and 1970s landscape plans. A large multi-stemmed Rose of Sharon (*Hibiscus syriacus*) was removed during construction in 2007 near the fence along the access road in the “back yard.” A single boxwood remains in the yard.

Areas around the canal and tavern that have been in constant use since the early days of the canal contain an assortment of trees that were either introduced by landscape plans in the 1950s or have volunteered. An example is the berm bank south of the tavern that contains a large sycamore (*Platanus occidentalis*) approximately 42-inches in diameter,(Fig. 61) which appears in photographs predating landscape improvements of the 1970s. This sycamore is shown as an existing tree on a NPS planting plan prepared in 1950 (NCP 110.5 86-2), and possibly on a 1942 plan (NCP 110.5 59).

Figure. 61 Large sycamore southwest of the tavern (NCR CLP 2008).



Two other similarly large sycamores are across the south lawn at the base of the hillside near the former quarry. Near the sycamore are several small, naturalized paper mulberries (*Broussonetia papyrifera*). Unspecified mulberries are shown elsewhere on the site south of the tavern on the NPS plans of the 1940s and 1950s. In this region of the country, paper mulberry, native to Japan and Taiwan, is considered an invasive plant. Trees such as box elders dominate the hillside east of the tavern.

Under the management of the NPS, in the 1950s, plantings were added to the site, including trees planted to screen developments on the hillside, plantings around the tavern and trees and shrubs around and inside of the medians of the parking areas.

The medians in both parking areas, the rotary and areas near the concession building contain large trees including pin oak (*Quercus palustris*), willow oak (*Quercus phellos*), red oak (*Quercus rubra*) white oak (*Quercus alba*), red maple (*Acer rubrum*) white pine (*Pinus strobus*), linden or basswood (*Tilia cordata*, formerly *T. parviflora*), sycamore and others. A specimen yellowwood tree (*Cladrastis kentukea* [lutea]) was planted east of the tavern within the fenced garden in the 1970s; it is shown on a 1975 landscape plan.

Plantings were installed around the tavern in conjunction with the addition of the brick-paving sometime shortly before 1953. Trees, shrubs and groundcovers were also planted in conjunction with the parking and roadway islands, as well as around the concession building and the comfort station. Areas near the tavern and parking lots have been planted in grass (*Festuca*, etc.) and are regularly mown. These areas include the parking medians, the rotary, the lawn south of the tavern, the sides of the access road east of the tavern, the area between the tavern and the lower (south) parking lot near the Old Gatehouse and areas near the upper parking area. Many areas are eroded and bare, especially under the oak trees north of the tavern and in areas compacted by pedestrians. Recent construction necessitated the removal of several plants, and the herb garden in the tavern area that was planted during a 1970s rehabilitation project.

Mid-River Islands

Although outside of the study area, it is worth mentioning the rare indigenous plant community found on the mid-river islands. As the Potomac River cut a gorge into the formerly broad river plain, a microenvironment of high rock terrace developed. Periodic floods that remove soil and stunt tree growth scour mid-river islands, such as Olmsted Island. The typical trees of the floodplain top out at 30-40 feet, which allows small open glades to develop. These glades support plant life similar to that found on mid-western prairies and in Canadian forests. Species found on the islands include Indian grass (*Sorghastran nutans*), and wild oats (*Chasmanthium latifolium*). The island's dominant oak species, post oak (*Quercus stellata*) grows well in dry areas with poor soil. In addition to the prairie-like microenvironment, a wetland environment also exists on Olmsted Island. Depressions on the island trap rain and floodwaters and the standing water creates a wetland habitat. Swamp-loving species such as pin oak (*Quercus palustris*), swamp white oak (*Quercus bicolor*), river birch (*Betula nigra*), Halberd-leaved rosemallow (*Hibiscus militaris*), buttonbush (*Cephalanthus occidentalis*) and water-hyssop (*Mecardonia acuminata*) thrive. As with the upland and floodplain vegetation, the island vegetation would have been the same during the period of significance.

Summary

The specific plantings around the tavern during the time of the period of significance are not known. The fact that the surroundings are fairly open and remain cleared of forest vegetation does lend a limited degree of integrity to the tavern area. The existence of two historic forest types and the retention of the mid-river island vegetation around the GFT also retain a degree of integrity to the period of significance. These factors contribute enough to account for a degree of integrity for vegetation at the Great Falls Tavern site.

Feature Name	Status
River floodplain forest	Contributing
Upland woodland forest	Contributing
Grass along towpath	Contributing
Arrow arum on canal wall north of Lock 20	Contributing



Natural Systems and Features

The GFT site has a high degree of integrity in the category of natural systems and features. With the exception of the extraction of ore during gold mining and quarrying activities, the geological composition of minerals and soils in the area has remained relatively unchanged. The naturally-formed series of cascades comprising the great falls and the river itself are still intact, and in good condition.

Carroll Branch, an intermittent first-order stream located within the GFT landscape, has been affected both on and off-site by the addition of culverts, streamside development, and runoff from suburban developments. These factors have changed temperatures, flow rates and other values of the stream.

Potomac River flood cycles have continued to impact the site, causing major damage to buildings and sections of the towpath. Hurricane-related damages (most recently “Fran” of 1996) are also part of the natural cycle of weather-related effects that have historically influenced the area.

Cultural landscape features at the GFT have evolved in response to natural systems and features on the site and the integral connection between the two still exist.

Feature Name	Status
Carroll Branch	Contributing
Potomac River and Falls at GFT	Contributing

Cluster Arrangements

Two main cluster arrangements can be found within the study area at the GFT site. The first is the historic cluster along the canal. This includes the tavern, and aqueduct gatehouse, as well as the structures across the concrete access road, built in the 1940s. These are the comfort station, the pump house and the boiler house, and the small shed built in the 1950s near Lock 19 to house chlorination equipment for sewage discharged to the canal. While not all of the structures are considered contributing, the distribution of the built elements does reflect the historic pattern of arrangement and tradition of building along the canal, and so the cluster is considered to be contributing.

A second cluster, which is non-contributing, centers on the concession building at the northwest side of the rotary. Although there is only one building, the area includes a picnic ground, a brick-paved terrace and an array of walkways that connect the concession building with the upper parking area and the berm bank promenade (Fig. 62).

Summary

The existence of the historic canal cluster does lend some integrity to the cluster arrangement at the GFT site. However, overall cluster arrangement is assigned a low degree of integrity because the ordering of clusters is based on modern alterations to the landscape, rather than on historical patterns.

Feature Name	Status
Tavern Cluster	Contributing
Concession Cluster	Non-Contributing

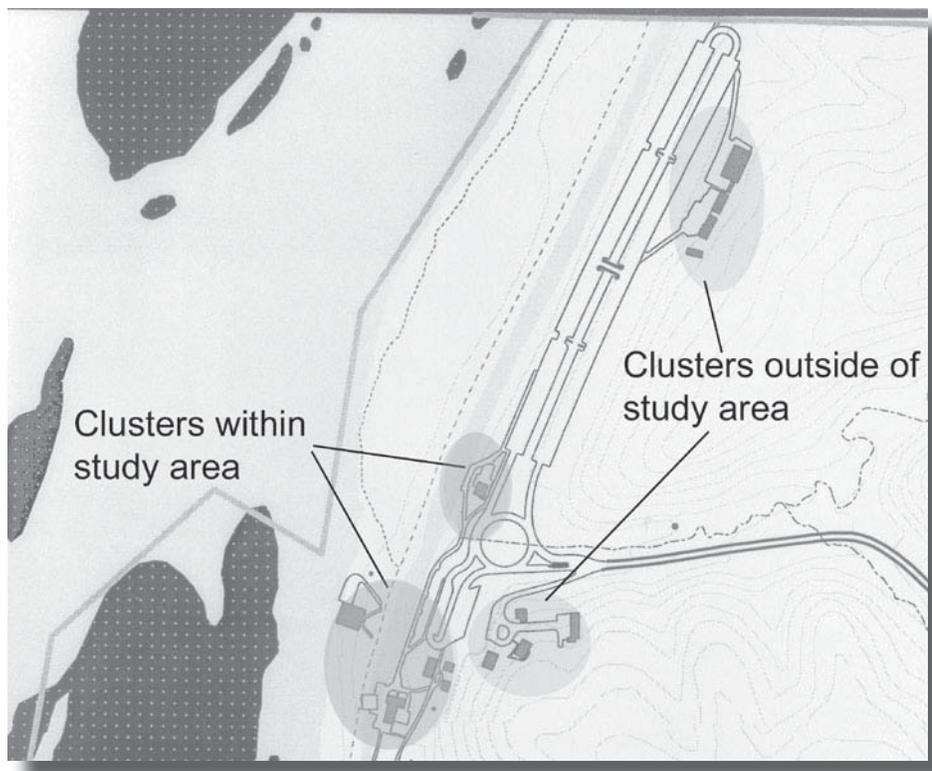


Figure 62 Building clusters within the GFT area



Small-Scale Features

Small-scale features existing on the GFT site have been numerous and transitory. Factors such as flooding and change of ownership and management led to an impermanence of many of the objects on site that were not as functional as the canal, as embedded as the Entrance Road, or as sturdy as the stone walls of the tavern.

Historic or contributing small-scale features on the GFT site include concrete boundary markers, fence posts and mile markers. Historic gravestones, quarry sites, mining features and historic graffiti from the canal-related period of significance can also still be found on the site

Many non-contributing or non-historic small-scale features exist on the site, such as signs, posts, curbs, lights, benches picnic tables, fences, barriers and kiosks (Fig. 63).

Signs

Signs at the GFT are limited in number so they minimally intrude on the historic landscape. Types of signs found on the site include directional, interpretive and regulatory types.

Summary

The limited number of small-scale features from the historic period of the GFT lends a low degree of integrity to this particular landscape characteristic. This, however, does not detract from the importance of the preservation and documentation of the few remaining features, or the overall integrity of the site.

Feature Name	Status
Washington Aqueduct, Engineer Marker, W.A.E. XIII	Contributing
Washington Aqueduct, Concrete Mile Marker, DC 10 M	Contributing
Washington Aqueduct, Headstone	Contributing
Washington Aqueduct Survey Markers	Contributing
Benches	Non-Contributing
Lighting	Non-Contributing
Signs	Non-Contributing
Water fountains	Non-Contributing
Post and Chain fencing	Non-Contributing
Trash Receptacles	Non-Contributing
Message kiosks	Non-Contributing



a.



b.



c.



d.



e.

Figure 63 Some of the small scale features on site include a. Washington Aqueduct Engineer marker next to the gatehouse to the north of the tavern; b. fences and barriers such as those near Lock 20 as seen here; c. outdoor furnishing including benches and picnic tables; d. signage; e. lighting. Not pictured are the Washington Aqueduct survey and mile markers found along the entrance road (NCR CLP).



Endnotes Chapter 2

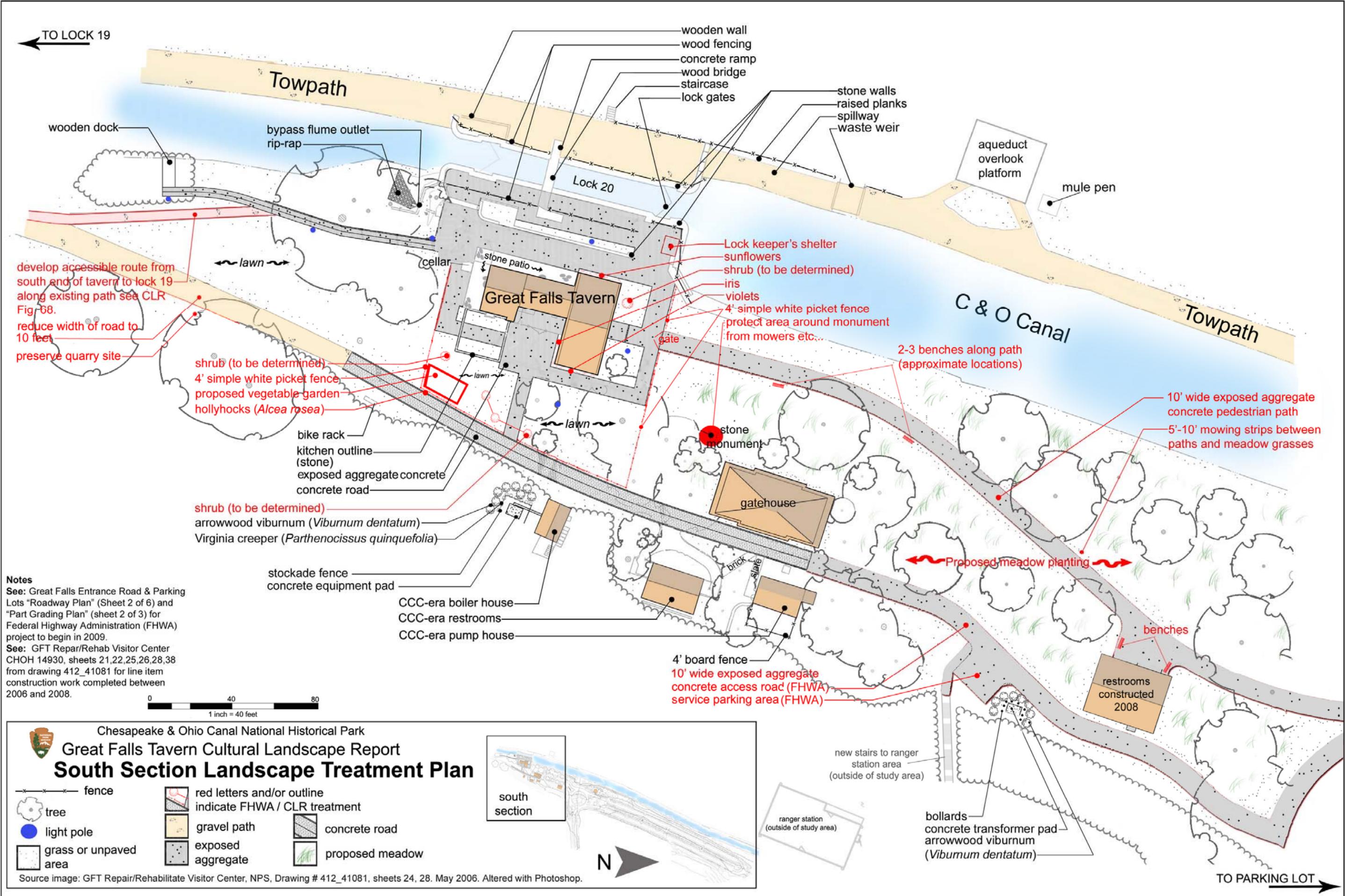
⁶⁵ Temkin, Martha et al. Cultural Landscape Inventory: Great Falls Tavern, Chesapeake & Ohio Canal National Historical Park. Washington, D.C.: United States Department of the Interior, 2004. P 81.

⁶⁶ Robertson, Jason. "American Whitewater: Guidelines for Running Great Falls of the Potomac (MD)." (April, 18, 1999). <http://www.americanwhitewater.org/archive/article/2/> (accessed Aug. 5, 2009).

Part II
Chapter 1
Treatment Recommendations



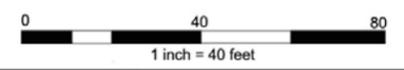




← TO LOCK 19

develop accessible route from south end of tavern to lock 19 along existing path see CLR Fig 68.
 reduce width of road to 10 feet
 preserve quarry site

Notes
See: Great Falls Entrance Road & Parking Lots "Roadway Plan" (Sheet 2 of 6) and "Part Grading Plan" (sheet 2 of 3) for Federal Highway Administration (FHWA) project to begin in 2009.
See: GFT Repair/Rehab Visitor Center CHOH 14930, sheets 21,22,25,26,28,38 from drawing 412_41081 for line item construction work completed between 2006 and 2008.



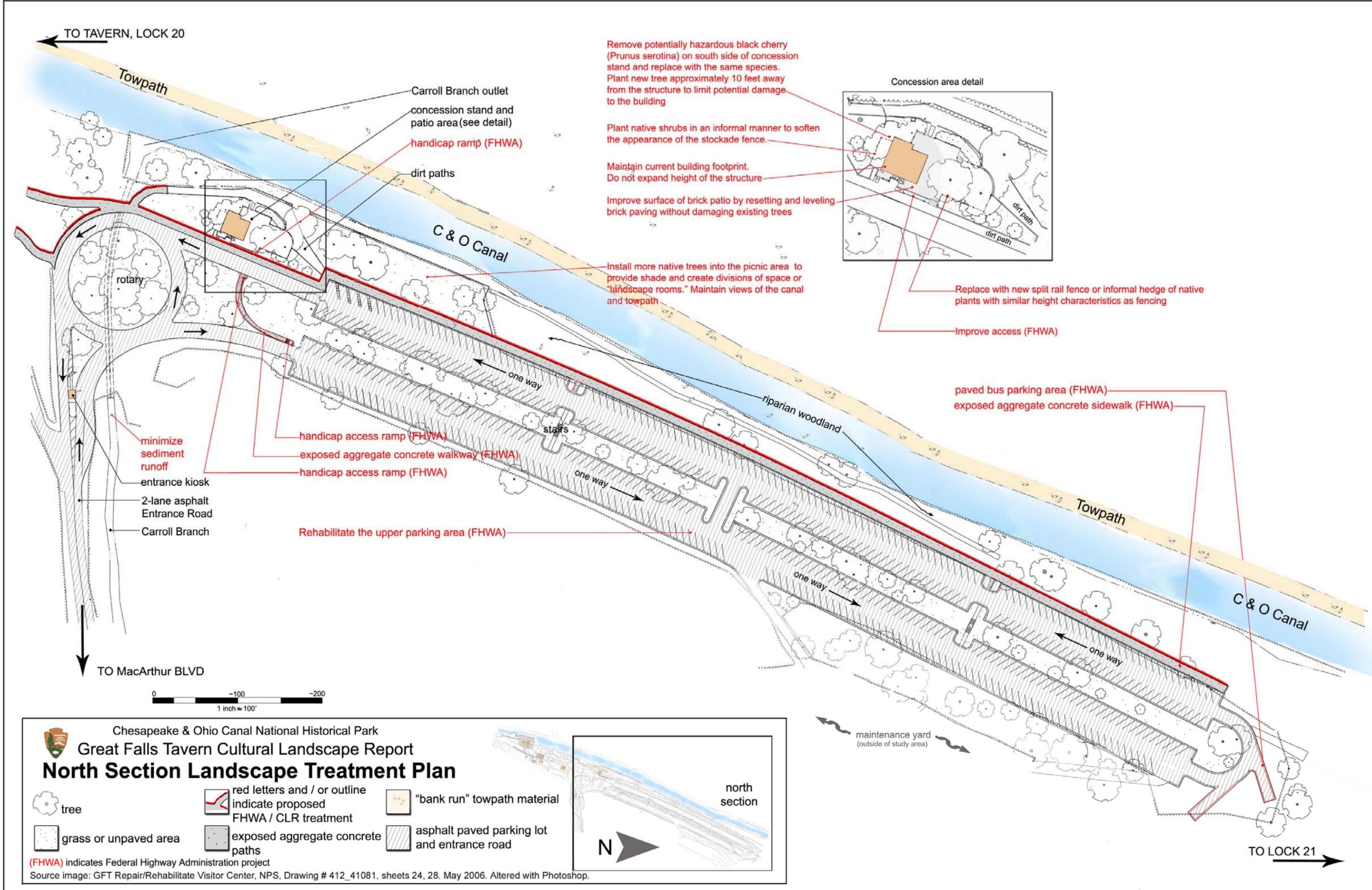
Chesapeake & Ohio Canal National Historical Park
Great Falls Tavern Cultural Landscape Report
South Section Landscape Treatment Plan

fence	red letters and/or outline indicate FHWA / CLR treatment	concrete road
tree	gravel path	proposed meadow
light pole	exposed aggregate	
grass or unpaved area		

Source image: GFT Repair/Rehabilitate Visitor Center, NPS, Drawing # 412_41081, sheets 24, 28. May 2006. Altered with Photoshop.

- wooden wall
- wood fencing
- concrete ramp
- wood bridge
- staircase
- lock gates
- stone walls
- raised planks
- spillway
- waste weir
- aqueduct overlook platform
- mule pen
- Lock 20
- Great Falls Tavern
- cellar
- stone patio
- lock keeper's shelter
- sunflowers
- shrub (to be determined)
- iris
- violets
- 4' simple white picket fence protect area around monument from mowers etc...
- gate
- stone monument
- gatehouse
- 2-3 benches along path (approximate locations)
- 10' wide exposed aggregate concrete pedestrian path
- 5'-10' mowing strips between paths and meadow grasses
- Proposed meadow planting
- benches
- restrooms constructed 2008
- 4' board fence
- 10' wide exposed aggregate concrete access road (FHWA)
- service parking area (FHWA)
- new stairs to ranger station area (outside of study area)
- ranger station (outside of study area)
- bollards
- concrete transformer pad
- arrowwood viburnum (*Viburnum dentatum*)
- shrub (to be determined)
- arrowwood viburnum (*Viburnum dentatum*)
- Virginia creeper (*Parthenocissus quinquefolia*)
- stockade fence
- concrete equipment pad
- CCC-era boiler house
- CCC-era restrooms
- CCC-era pump house
- bike rack
- kitchen outline (stone)
- exposed aggregate concrete road
- lawn
- lawn
- lawn
- brick
- slate
- wooden dock
- bypass flume outlet
- rip-rap

→ TO PARKING LOT



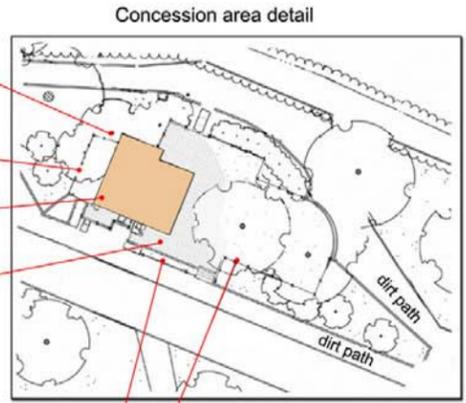
Remove potentially hazardous black cherry (*Prunus serotina*) on south side of concession stand and replace with the same species. Plant new tree approximately 10 feet away from the structure to limit potential damage to the building

Plant native shrubs in an informal manner to soften the appearance of the stockade fence.

Maintain current building footprint. Do not expand height of the structure

Improve surface of brick patio by resetting and leveling brick paving without damaging existing trees

Install more native trees into the picnic area to provide shade and create divisions of space or "landscape rooms." Maintain views of the canal and towpath



Replace with new split rail fence or informal hedge of native plants with similar height characteristics as fencing

Improve access (FHWA)

paved bus parking area (FHWA)
exposed aggregate concrete sidewalk (FHWA)

Rehabilitate the upper parking area (FHWA)

minimize sediment runoff

entrance kiosk
2-lane asphalt Entrance Road
Carroll Branch

Carroll Branch outlet
concession stand and patio area (see detail)

handicap ramp (FHWA)

dirt paths

C & O Canal

riparian woodland

Towpath

C & O Canal

TO LOCK 21

TO TAVERN, LOCK 20

TO MacArthur BLVD



Chesapeake & Ohio Canal National Historical Park
Great Falls Tavern Cultural Landscape Report
North Section Landscape Treatment Plan

tree	red letters and / or outline indicate proposed FHWA / CLR treatment	"bank run" towpath material
grass or unpaved area	exposed aggregate concrete paths	asphalt paved parking lot and entrance road

(FHWA) indicates Federal Highway Administration project
Source image: GFT Repair/Rehabilitate Visitor Center, NPS, Drawing # 412_41081, sheets 24, 28. May 2006. Altered with Photoshop.

Treatment Recommendations

The treatment section of the Cultural Landscape Report (CLR) makes treatment recommendations to provide guidance in achieving a more appropriate historic setting at the Great Falls Tavern (GFT) site. This can be achieved by limiting modern intrusions in the historic landscape, eliminating non-contributing features, and recreating elements from the site's historic period of significance. With proper guidance and implementation, the tavern's "sense of place" relative to the historic period will become more apparent and can then be interpreted.

The CLR bases treatment recommendations on the analysis and evaluation of character-defining features that contribute to the historic vernacular landscape, as well as those that do not, but may be compatible.

The historic vernacular landscape of the GFT evolved through use of the area by people whose activities and occupancy shaped it. Forces that shaped the landscape of the GFT are numerous and occurred over a wide span of time. The lockkeepers and aqueduct workers of the 19th century, the planners of the early 20th-century and the conservation efforts deriving from the 1950s all had an impact on the contemporary setting.

Treatment recommendations for the GFT utilize the following guides: The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes, A Guide to Cultural Landscape Reports: Contents, Process, and Techniques and National Park Service Director's Order #28: Cultural Resource Management. The federal preservation guidance standards are preservation, rehabilitation, restoration and reconstruction.

Primary recommended preservation strategies for treatment of the GFT site are preservation and rehabilitation. The act of preservation applies "...measures necessary to sustain the existing form, integrity and materials of an historic property." Preservation recognizes and respects remaining historic features and characteristics, and encompasses protection, stabilization and limited replacement-in-kind of historic features that may be extensively damaged. The second strategy, rehabilitation is "the act or process of making possible a compatible use for a property through repair, alterations and additions, while preserving those portions or features which convey its historical, cultural, or architectural values." Rehabilitation incorporates new and future uses, while respecting places on site where historic events have occurred. These preservation and rehabilitation treatment options are preferable to overall replacement and/or new construction.

Two other approaches for treatment under the guidelines for cultural landscapes set up by the Secretary of the Interior include reconstruction and restoration. Reconstruction is defined as "the act or process of depicting, by means of new construction, the form, features, and detailing of a non-surviving site, landscape, building, structure, or object for the purpose of replicating its appearance at a specific period of time and in its historic location." Restoration is defined as "the act or process of accurately depicting the form, features, and character of a property as it appeared at a particular period of time by means of the removal of features from other periods in its history and reconstruction of missing features from the restoration period."

Treatment recommendations in this document are partially derivative of discussions with park and regional staff. Three alternatives were presented to NPS staff and discussed in 2004. These were presented and reviewed for a 2005 environmental assessment for the Rehabilitation of the Great Falls Entrance Road, Upper & Lower Parking Lots and Tavern Yard Area in which a finding of "No Significant Impact" was issued. Consequently, many treatment recommendations were actually codified in this approved document.



The draft CLR was the basis for the development of landscape rehabilitation plans that were incorporated in two construction contracts. One project, completed in 2007, included removal of paving around the tavern and installation of new walkways and work both in the tavern, and construction of a new comfort station. Another, in conjunction with the Federal Highway Administration under the Federal Lands Highway Program, includes work on the Entrance Road, removal of the lower parking area and installation of new paths, and rehabilitation of the upper parking area, and is scheduled to begin in 2009.

In this section, treatment recommendations are labeled with the word “**complete**” when the construction work that was completed in 2007 has addressed the recommendations, and “**FHWA**” if the action will be implemented in the Federal Highway Administration project that is scheduled to begin in 2009.

The interpretive opportunities at GFT are numerous. The site supports a museum and a mule-drawn working canal boat that transports passengers along the canal and through canal locks. The historic structures, including the tavern, gatehouse, canal, towpath, and smaller features, such as the concrete survey marker near the old gatehouse and the mule drink along the towpath, which also serve as interpretive devices. CCC-built structures reflect early federal involvement with the site. Proper management of these resources is crucial in preserving the historic integrity and interpretive opportunities on the site.

Treatment recommendations in this section are usually presented in two parts: “Overall Site” and “Landscape Character Areas.” The Overall Site section addresses the landscape as a whole, and makes more generalized treatment recommendations than the Landscape Character Area section, which divides the site into areas of similar character and management objectives, and prescribes treatment on a more specific level.

Landscape Character Areas

Landscape character areas include the Canal, the Great Falls Tavern and Yard, the Washington Aqueduct and Paths, Concessions, Parking and Rotary and the Entrance Road (Fig. 64).

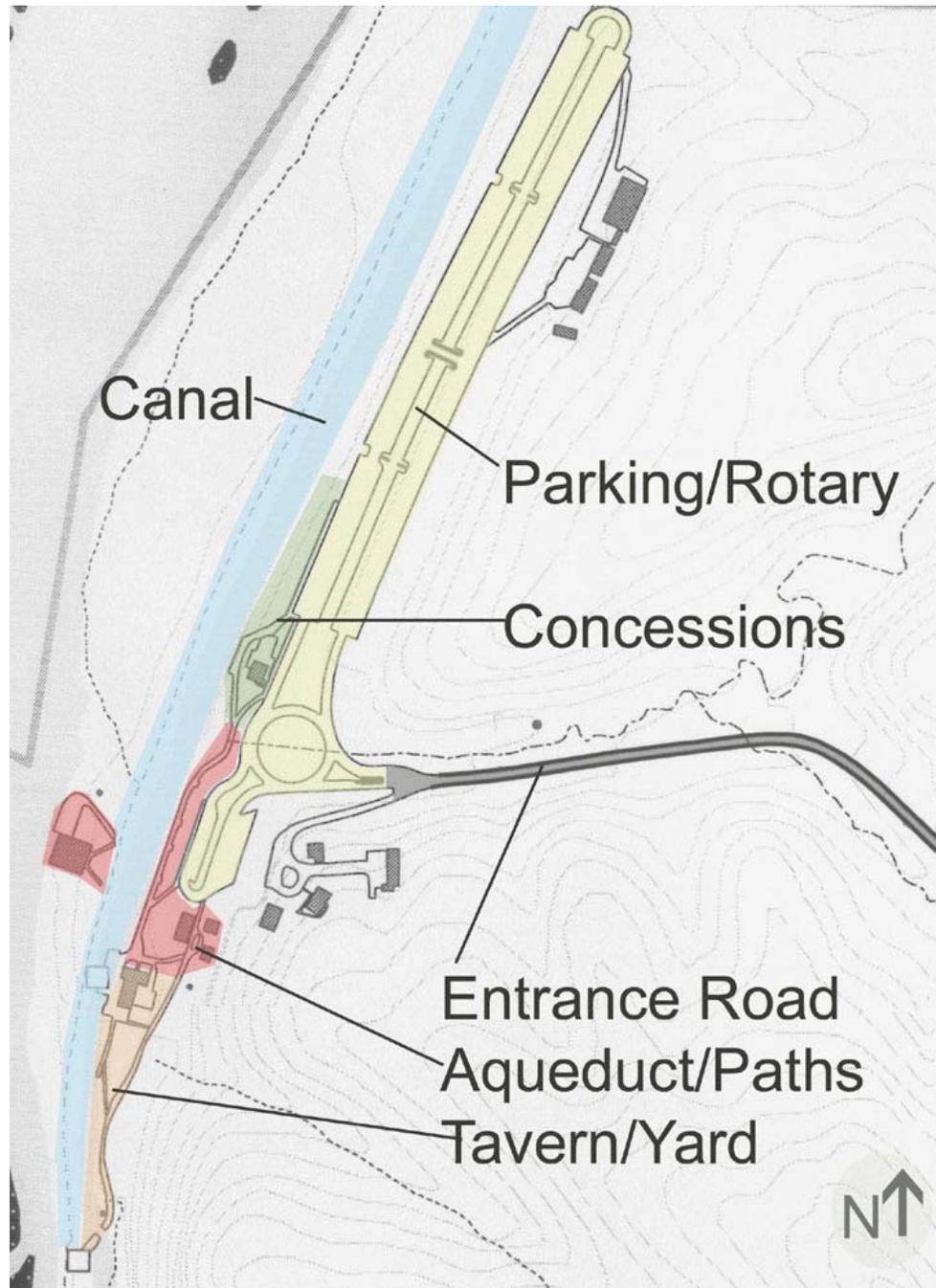


Figure 64 Landscape Character Areas (NPS).

Canal

The canal area is comprised of the historic canal alignment, lock structures, towpath and berm bank north from Lock 19 to Lock 21, terminating at the north end of the upper parking area.

Great Falls Tavern and Yard

This area includes the tavern, surrounding walks, adjacent access road and lawn extending from Lock 20 to the north end of Lock 19.

The northern boundary of the GFT and yard area is the northern edge of the exposed aggregate paving that runs parallel to the north façade of the tavern. Also included is the west façade of the tavern, which has a covered porch extending to a plaza between the tavern and Lock 20; the south porch, which faces Lock 19, and is paved with fieldstone on concrete, level with the adjacent plaza; and the east side of the tavern, including the “back yard” and the access road along the east side of the yard.

Washington Aqueduct and Paths

This landscape character area includes the area (excluding the parking area) from the northern edge of the paving parallel with the north side of the tavern, to the south end of the concession stand, and the walkways and landscape features therein. It includes the aqueduct gatehouse, the intake structure and viewing platform, the mule corral, the comfort station, the pump and boiler’s house, surrounding paths and related features.

Concessions

This area includes the concession stand and terrace area around it, as well as the picnic area north of the concession stand. It is bounded on the east side by the parking lot and on the west by the canal. It terminates on the north side, where the cleared picnic area meets the riparian forest.

Parking and Rotary Entry

This area includes the lower portion of the entry road east of the entrance station, the entrance station itself, the traffic rotary, the upper and lower parking areas and related features.

Entrance Road

This area includes the 1.15 mile-long Entrance Road from its eastern intersection with MacArthur Boulevard to the east side of the entrance station.

Treatment Recommendations:

By Overall Site

Overall Site: Spatial Organization and Land Use

The Chesapeake & Ohio Canal Company built the tavern structure in 1828 on the east side of the C & O Canal at Lock 20 to house a Lockkeeper and his family. It was situated near Carroll Branch, a freshwater stream, and the Old Rockville Road, a thoroughfare that had been used for years by the area's Native Peoples and early settlers. As the house was enlarged into a tavern and hotel, a small community grew up around the tavern which supply goods and services to canalers.

In the 1850s, the US Army Corps of Engineers (USACE) located the Washington Aqueduct dam and intake structures on the Potomac River at Lock 20. From here, underground conduits piped drinking water into the city of Washington, D.C.

Built structures in the tavern vicinity increased to house aqueduct workers, equipment and a control gatehouse to regulate water flow. The aqueduct structures were concentrated to the north of the tavern near the Old Rockville Road where a spring served as the main source of water (until a well was excavated near the tavern in 1877). During the historic period, divisions between aqueduct and tavern properties were demarcated by fencing.

After the decline of canal transport, due to the efficiency of the railroads and with a series of devastating flood events, the community in the GFT vicinity diminished.

The federal government purchased the canal in the 1930s. Its linear nature and scenic views along the corridor were driving forces in parkway plans generated within the 1901 McMillan Plan, and authorized by the Capper-Crampton act of 1930. Modern-day evidence of this parkway use is in the existence of the rotary terminus feature which separates the upper and lower parking areas. Rotary designs were a popular design element at the time and this is highlighted by the rotary at Mount Vernon in Virginia, along the George Washington Memorial Parkway (GWMP) near Alexandria and in plans for the canal's terminus at Cumberland, Maryland (see Figs 28, 29).

Members of the Civilian Conservation Corps (CCC) worked in the tavern area after federal acquisition of the property in the late 1930s and early 1940s. Among their duties was the repair of the towpath and canal after flooding where storm damage had rendered the canal unnavigable. In addition to canal repairs, the CCC built a pump house, a boiler's house and a comfort station to the east of the tavern, and the gatehouse on the same river terrace. The arrangement of these buildings echoes the idea of historic clusters of buildings found on this part of the site in the past. This remains true even though the CCC buildings were built up to a hundred years after construction of the tavern, and many years after there was a community in the area.

Management Issues

Due to a series of layers of unrelated uses of the landscape, organization of the site is chaotic.

General Recommendations: Spatial Organization, Land Use

- Preserve and maintain overall historic towpath and canal alignment and their relationship to the tavern.
- Manage tavern and aqueduct features and landscapes as separate entities.
- Retain the historic linear nature of the upper parking area and the rotary design.



- Continue the site's use as a public park suitable for both passive and active recreational opportunities, while informing users of the site's history as a working canal.

Overall Site: Circulation

Although the canal and towpath serve as the original circulation-related features along which the historic tavern is oriented, a modern circulation system with a series of fence-lined walkways constructed in the 1950s by the NPS have conveyed visitors from parking lots and the concession stand to and around the tavern and beyond since the 1950s. Even though some changes were made during the 1970s landscape rehabilitation, their alignment was less than sensitive to the historic circulation patterns on the site. Treatment recommendations to improve the flow of movement within the park are based on historic patterns.

Management issues

The circulation system of paths and parking areas implemented in the 1950s and adapted in the 1970s is not based on historic patterns, and is not responsive to needs of visitors with limited mobility.

General Recommendations: Circulation

- Preserve historic circulation patterns, including orientation of canal, towpath, entry road, linear parking lot alignment, rotary terminus and access road south of tavern to Lock 19.
- Evaluate and reduce "desire paths" created by visitors cutting through the landscape.
- Reduce or enlarge paths to historic widths where possible and known, and use path widths and materials to differentiate between historic public and private spaces.
- Incorporate universal accessibility standards into new path alignments.
- Investigate direct and accessible route from the tavern to Lock 19 from the tavern.

Overall Site: Vegetation

Historically and currently, vegetation on the site was a mixture of native riparian, upland woodland types and non-native ornamentals near the tavern and in the tavern yard. Several non-native plant specimens currently exist on the site. These include both exotic volunteer growth and planted. Most of the latter installed in accordance with NPS-designed planting plans.

General Recommendations: Vegetation

- Remove and monitor invasive vegetation.
- Evaluate non-natives planted by the NPS to determine their appropriateness to the historic period.
- Non-historic plants and plant groupings are recommended to be removed and replaced with plants that will reflect the historic vegetation (see Great Falls Tavern and Yard area: Vegetation).
- Invasive species should be removed and monitored to prevent regrowth, with special attention paid to Japanese stilt grass (*Microstegium vimineum*), which is an increasing problem within the park's boundaries, especially along the Entrance Road.
- Control erosion on site with vegetation on slopes and by using appropriate erosion control methods during construction.
- Maintain vegetation in good condition by using proper watering and pruning practices. Train staff and volunteers/or specify techniques and schedules for contractors.
- Develop a landscape preservation maintenance plan to ensure that vegetation is removed, preserved, replaced and/or maintained on an appropriate schedule.

Overall Site: Buildings and Structures

The specific care and maintenance of existing buildings and structures is outside the scope of this CLR. The NPS Historic Structures Report (HSR), entitled *Historic Structures Report; Great Falls Tavern, Chesapeake and Ohio Canal National Historical Park* which was drafted in 2000, provides some information specific to the Great Falls Tavern building. However, it is within the scope of this report to assess the integrity of existing structures in relation to the landscape.

General Recommendation: Buildings and Structures

- Preserve and maintain buildings and structures in good condition.

Overall Site: Small-Scale Features

Fences and Barriers

Historically, fences were used around the tavern to define private and public spaces. During the historic period, a more elaborate picket-type of fence was used for the formal west and north side of the tavern area. A less elaborate and inexpensive picket fence was probably used for the east and south sides.

There is often a need to direct park visitors within the landscape and to provide historical spatial definition. Fences and barriers of several types have periodically been installed to perform these functions, resulting in a confusing variety of fence and barrier types on the site.

Two styles of fences are desired at the site to delineate property lines and site activities: interpretive fences, evocative of historic types, and safety fencing, or barriers, used mainly in the lock area, between the lock and the visitors during canal boat demonstrations.

Site furnishings

Site furnishings currently include picnic tables with attached benches in picnic areas and benches with backs that have been installed along the promenade walk between the concession stand and the tavern. Non-historic seating can be found on the tavern patio and several picnic tables are placed within the historic core.

Lighting

Lighting on site includes the three existing light posts that are within the historic core, and one in the rotary terminus.

Signs

Signs on site should be kept to a minimum. Currently, signs are of three types; directional, interpretive and regulatory.

General Recommendations: Small Scale Features

- Preserve and maintain existing historic small-scale features on site.
- Attempt to create a cohesive palette of sign styles for each type, as signs are added or improved.
- Maintain continuity in site furnishing choices.
- Choose site furnishings that are compatible with the historic setting by referencing historic photographs, Historic Furnishing Report and other sources.



Overall Site: Visitor Access and Safety

Providing visitor safety is a top priority at any NPS site and an integral part of the Service's core values. GFT presents a particular challenge to safety issues with its miles of open canal next to a towpath that experiences high pedestrian and bicycle use for many months of the year. In general, the public is usually aware of safety issues while visiting the park. Special precautions need to be taken in the lock area during demonstrations, or when the park is visited by large groups of children who observe and/or participate in lock and canal related activities.

Few walkways in the park are fully accessible to visitors who have disabilities. Where accommodations have been made, they have been added as afterthoughts, and several walkways are too steep, exceeding current standards for universal access. Universal accessibility standards should be implemented into park design wherever possible, without significantly damaging the historic fabric of the site.

Nearly all paved surfaces in the park are in poor condition due in part to deferred maintenance. Some areas, particularly those affected by runoff or flooding, are eroded, or are buckled, causing safety hazards to visitors who may trip or fall.

Management Issues

Access to the GFT site is difficult and often impossible for many visitors with disabilities. Safety issues, especially with groups of children near and around the lock and canal, must be a top priority for park managers.

General Recommendations: Visitor Access and Safety

- Continue to provide barriers and other safeguards where appropriate for lock demonstrations.
- Incorporate universal access principles in future design.

Overall Site: Topography and Drainage

The topography of the gatehouse, tavern and yard area is generally flat. Water is conveyed from storm drains directly into the canal in this area of the site.

The slope from the control gatehouse to the tavern and berm bank was smoothed and flattened in the 1950s by the NPS to create the visitor promenade along the edge of the canal. However, this required a retaining wall at the north side of the tavern yard and a step down into the tavern exhibit room. By reestablishing the northern pedestrian approach to the tavern in a location farther up the berm bank, a smoother transition will be made.

General Recommendations: Topography and Drainage

- Minimize surface water runoff into the canal.
- Provide smooth grade transitions between parking lots, walkways and buildings.

Overall Site: Stormwater/Flood Management

Management issues

Stormwater influx into the canal and river has increased due to upstream development. Consequently, as in the case of runoff from parking lots, the canal has to accommodate a larger volume of water now than when it was constructed in the 1800s. Direct runoff from both pervious and impervious surfaces in many areas within the park influences adjacent natural and cultural resources by eroding the berm bank and degrading the quality of the water emptying into the canal. On-site stormwater flow and drainage into the canal must be mitigated to avoid unnecessary flood events caused by clogged culverts, inlets, channels and features such as the bypass flume at Lock 20.

The area around Great Falls Tavern is historically susceptible to short-term flooding from the canal. These floods impair the tavern's structural integrity, damage existing walkways and weaken vegetation.

General Recommendations: Stormwater

- Include, in a preservation maintenance plan, a schedule for inspecting and managing features related to stormwater conveyance on-site.

General Recommendations: Flood Management

- Preserve and maintain historic canal features, such as the canal retaining walls, lock walls, waste weir, wing walls, lock gates, towpath, the berm bank and culverts in operable condition to preserve their historic integrity ensure their continued use as functional interpretive tools, and flood prevention.
- Protect structures, walks and plants from deleterious effects of flooding while preserving cultural landscape features. Give preference to short-term temporary methods of flood control such as the use of reversible sand-filled lines of gabions, instead of long-term or permanent flood control structures.

Overall Site: Views

Unlike many NPS sites, the GFT component landscape has a commercial, industrial and recreational background. Significant views to and from the core area of the site are minimal. Nevertheless, a few views are significant enough to warrant recommendations for treatment. The view of the north face of the tavern from upstream on the towpath side of the canal is seen frequently in historic photographs and drawings and is considered an important contribution to the historic integrity of the site. Additionally, the view of the historic core and canal and towpath from the entrance kiosk where the Entrance Road opens up onto the rotary should remain unobstructed.

General Recommendations: Views

Historic Core Area

- Preserve the historic view of the tavern's north façade from the towpath.
- Preserve historic views from along the towpath to the berm bank, river and towpath. Do not impede views by constructing new features or structures on either side of the towpath.
- Preserve and maintain views of Potomac River and aqueduct-related structures from the rooftop of the Washington Aqueduct intake structure.
- Preserve series of views leading from the rotary area to the historic tavern landscape; do not obstruct with new construction.



Entrance Road

- Preserve views along the road by retaining existing historic road alignment and grades.
- Do not construct new features that block views of the historic core, canal and towpath from point of entry at kiosk.

Overall Site: Natural Systems

Carroll Branch, formerly a stream draining from the hillside along the entry road west of the canal, flows through twin 48" concrete culverts that direct its flow under the rotary and into the canal. Stormwater flow increases rapidly during rain events, overflowing and pooling on paved areas. Stormwater flows directly into the canal from parking areas, paths and paving surrounding buildings, aggravating flooding and threatening the integrity of the canal's structures.

General Recommendations: Natural Systems

- Continue to investigate measures to improve infiltration and reduce direct runoff into the canal to alleviate pressures on canal and lock structures, and other significant historical resources.

General Recommendations: Carroll Branch outlet

- Preserve and maintain outlet in good condition.
- Establish schedule for monitoring and cleaning debris from outlet.
- Rehabilitate vegetated berm bank at Carroll Branch outfall to minimize erosion. Use low-growing native vegetation to maintain open view of outlet. Preserve closed tree canopy cover at outfall.
- Consider sediment traps upstream along Carroll Branch to reduce silt runoff into canal.
- Implement desiltation program where silt from Carroll Branch builds up in the canal.

Overall Site: Archeology

Repeated development, rehabilitation and maintenance near the tavern have greatly altered this landscape. Extant windows in the basement of the tavern reveal that the elevation of the ground outside of the tavern has been raised considerably from historic levels. Consequently, archaeological resources may be extant in undisturbed areas. For instance, despite historical photographs, little is known about the alignment and structure of the original bypass flume and other probable features that may have existed in the tavern yard and gatehouse area during the historical period. Even though several investigative archeological test pits have been dug near the tavern, these were not correlated with the probable locations of canal-related structures.

General Recommendations: Archeology

- Establish measures to preserve canal-related water features and other structures, and potential archeological resources during all construction activities. Conduct appropriately-designed archeological investigations when needed to document and describe former uses and structures, especially in the tavern yard area.

Treatment Recommendations: By Landscape Character Areas

In this section, individual recommended treatment actions will be followed by the word “**complete**,” when the construction work that was completed in 2007 implemented these recommendations.

Individual recommended treatment actions will be followed by the term “**FHWA**” if the action is intended to be addressed in the Federal Highway Administration project that is scheduled to begin in 2009.

Canal

Canal: Spatial Organization and Land use

The canal area is comprised of the historic canal alignment, lock structures, towpath and berm bank north from Lock 19 to Lock 21, terminating at the north end of the upper parking area.

The historic spatial organization, or three dimensional association of physical forms and visual associations in the park retain a high degree of integrity due in large part to the canal. The canal’s linear spatial character and vertical and horizontal alignment are as historically constructed. The alignment of the canal dictated the location of buildings and other features during the development of the area in the 1800s. The towpath has undergone some surface treatment changes since the site’s first period of significance, but none that have altered its historic intended use as a mule path and its current use as a recreational trail.

Recommended Treatment Actions

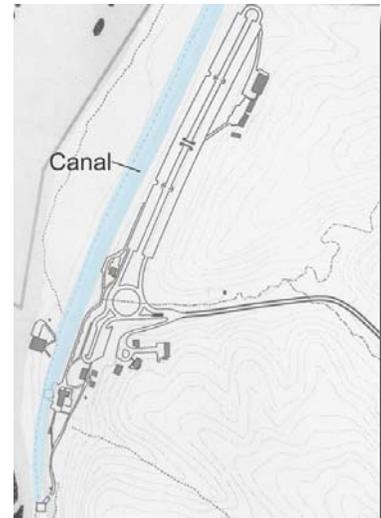
- Preserve and maintain historic canal and towpath alignment.
- Preserve and maintain working canal features to continue the site’s use as a historical park and recreation area while informing users about the history of the canal.

Canal: Circulation

The primary pedestrian and vehicular circulation feature of the canal at Great Falls Tavern is the towpath, which retains its historic alignment and grade. However, the pedestrian promenade on the berm edge of canal installed by National Park Service in the 1950s competes with it and intrudes on visitors’ experience of the historic towpath and canal.

Recommended Treatment Actions

- Remove 1950’s promenade to reestablish the importance of the towpath as the only walkway near the canal prism (**FHWA**).
- Preserve the towpath surface by continued routine or cyclic maintenance, including filling, compacting and maintaining a 12-foot width, with the bank run material specified by the park for use on the towpath.



- Preserve and maintain current pivot-style bridge across the canal at Lock 20. Despite the fact that there is no precedent for this type of bridge here, historic documents show that a bridge did exist across Lock 20 during the canal operations. The historic bridge type would not be safe for modern use. The current bridge is based on a design precedent from another location in the park and is desirable for site interpretation and safe pedestrian crossing of Lock 20.

Canal: Vegetation

The towpath side of the canal retains the degree of vegetative cover that it had during the canal's operation. The berm bank south of Carroll Branch, however, needs to be carefully thinned and re-vegetated when it is re-graded to return it to a more historic appearance. Elimination of vegetation in the canal prism is necessary to avoid interference with canal operation.

Recommended Treatment Actions

- Minimize disturbance to trees on berm bank north of Carroll Branch and to wetland areas at north end of upper parking area during FHWA parking lot construction. These trees act as screens to obscure views of parking lot from towpath.
- Restore vegetative buffers along the berm bank behind the concession and picnic areas and up the swale toward the parking lot. Use native riparian or upland woodland species where appropriate.
- When necessary, restore vegetation by supplementing existing native trees and understory shrubs with the same species along the berm bank.
- Preserve and maintain character of canal with vegetative bank stabilization where appropriate. Restore vegetated berm bank north of the tavern after removing the promenade (FHWA).
- On the towpath side of the canal, use vegetation to help screen the intake structure roof edge from the towpath and berm bank.

Canal: Constructed Water Features

Some of the most significant cultural resources in the Great Falls Tavern area are found here. Canal structures include the lock walls and wing walls, lock gates, the waste weir, culverts and other associated features. Lock 20 also contains modern features, such as the pedestrian bridge, barge dock, snubbing posts, paving and fencing along the historic alignment of the lock's bypass flume on the east, to the river wall on the opposite side of the towpath.

Short-term storm events cause flooding of the canal when excess water is not drained from the canal north of Lock 20, and when excessive amounts of water enter the canal via Carroll Branch. The waste weir, if properly maintained, retains much of this original function by relieving the pressure that water exerts on the lock gates. The park conducted an extensive survey of historic structures after flooding in 1996. After appropriate evaluation and approval, the survey recommended to preserve and maintain canal the structures.

Recommended Treatment Actions

- Preserve and maintain canal structures such as lock walls, waste weir, berm bank, and others in good condition.
- During normal operating levels and conditions, if appropriate, use water control structures to eliminate excess water pressure on lock gates.

Canal: Small-Scale Features

Historically there were few small-scale built features along the canal, with the exception of whitewashed (See figures 65,) rocks and trees. Current extant small-scale features include directional and interpretive signs, lighting, outdoor furnishings and fencing.

Recommended Treatment Actions

- Evaluate advisability of whitewashing or painting rock outcrops, lock walls and trees in canal near locks as was done during historic canal operations (Fig. 65). (See appendix D).
- Remove all fencing along the canal north of the tavern (FHWA).
- Retain the lantern-style site lighting (wood post, replicated gas glass lantern).
- Remove all other light posts (**complete**).
- Minimize of use of signs along the canal.

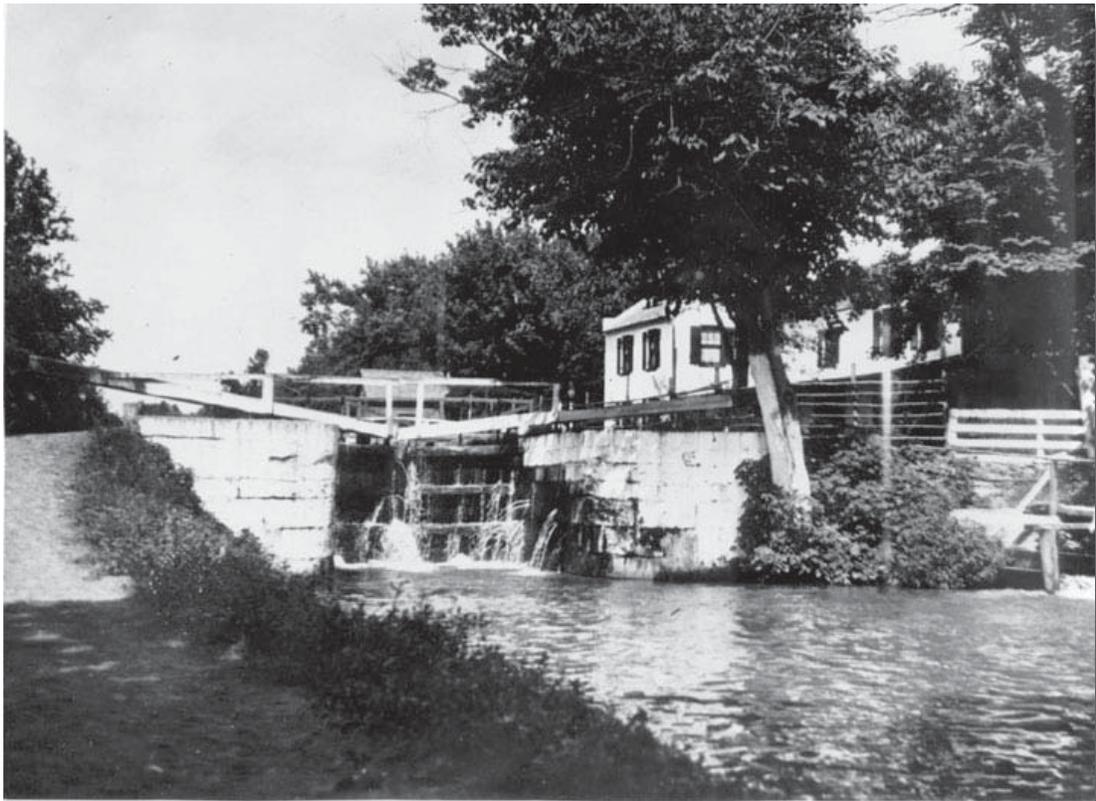


Figure 65 Whitewash is seen on both the lock and trees near the canal in this historic photo c. 1913 (CHOH Sharpsburg, Young and Jett).



Great Falls Tavern and Yard Area

This area includes the tavern, surrounding walks, adjacent access road and the lawn extending from Lock 20 to the north end of Lock 19.

Tavern/Yard: Spatial Organization

Two zones, one, a public area in the front of the tavern on the west side facing the lock, and two, a more private enclosed zone on the east side of the tavern, reflect the spatial organization and land use of the historic period, from the late 19th and early 20th centuries. The “back yard” area is a more private zone than the canal, and by replicating traces of the private family yard, garden and kitchen of former residents of the lock house, and by reducing the sizes of the walks through this area, the private nature of the back yard will become evident to visitors.



Recommended Treatment Actions

-
- Reestablish the former relationship of the north façade to the berm bank north of Lock 20 by creating a smoother transition by re-grading, re-orienting walkways and the use of native vegetation (see recommendations in *Washington Aqueduct and Path* section [FHWA]).
- Reestablish and interpret the east yard or “back yard” as a private family or service space by realigning pathways and reducing plaza area to create a more intimate setting (**complete**).
- Depict the historic kitchen at the southeast corner of tavern with a stone outline laid flush with ground (**complete**).

Tavern/Yard: Circulation

The general layout of the brick plaza, walks and access road within the vicinity of the tavern, dating from the 1950s or contradicted historic circulation patterns. A new pathway system should help delineate spaces, provide visitor safety and universal access, and adequately support vehicular loads for maintenance and flood protection.



Figure 66 In the fall of 2006 the southern end of the access road was used to store the retired Canal Clipper and other items (NCR CLP 2006).

Walkways of different widths, i.e. wider paths in public zones and narrower walks in private zones, help to differentiate the hierarchy of paths defining public and private zones around the tavern.

The access road behind the Control Gatehouse was added in the 1940s and 1950s by the NPS. To the south of the tavern it appears to follow an earlier alignment of a path that led to structures (no longer standing) along the berm or at Lock 19. The southern portion of the access road is not paved and is in fair condition. The primary users of this road are local emergency and maintenance personnel whose vehicles cross the canal at Lock 19 to reach the towpath and riverbank (Fig. 66). Frequently, sand, cut branches and other items are stored in piles in the level area at the base of the hill to the east of the road.

Recommended Treatment Actions

General

- Remove all brick pavers from plaza and lock area (**complete**).
- Widen the pedestrian walkways on the north, west and south sides of the tavern to emphasize these as the historically public spaces of the tavern area associated with the canal operations. Narrow and reduce paving on the east side of the tavern, to represent its use as the private informal yard of the lockkeeper (**complete**).
- Pave walks with a reinforced exposed aggregate concrete that mimics a gravel or dirt appearance and provides a stable surface for universal access (**complete**).
- Repair surfaces as needed after heavy use by vehicles.

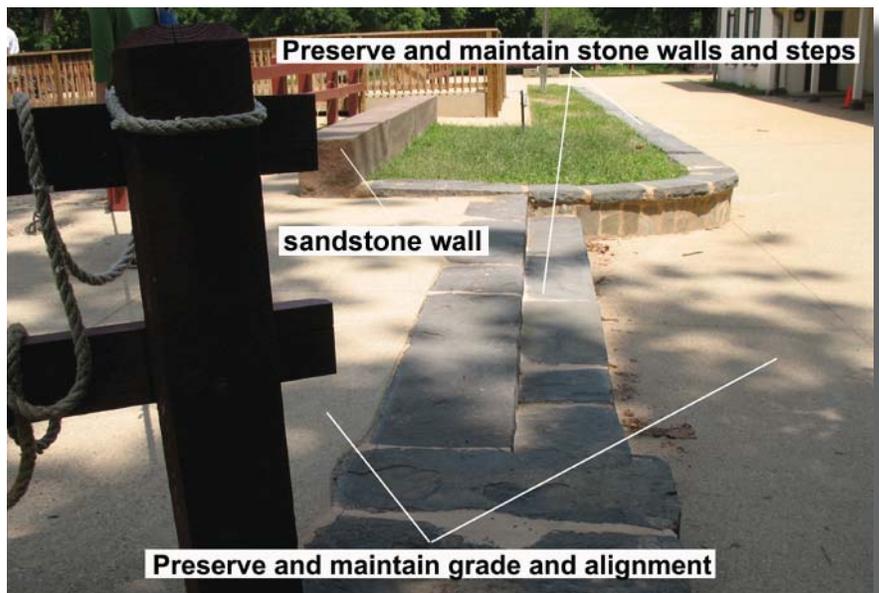
North Side

- Re-grade the north pedestrian walks, removing the stone step at the north tavern entrance to make this entrance to the tavern more accessible (**complete**).
- Remove the non-historic walk that connects the northeast corner of the tavern yard to the access road and existing comfort station (**complete**).
- Install stabilized turf within a designated corridor to provide adequate support and to prevent damage from vehicles entering the tavern yard from the access road to install temporary flood protection measures, such as sand-filled gabions.

West Side

- Preserve and maintain existing stone wall and steps along by-pass flume alignment and elevation changes adjacent to the lock wall. Preserve and maintain red sandstone block wall (Fig. 67).

Figure 67 The grade, alignment, stone wall and steps are significant cultural resources at Lock 20 (NCR CLP 2006).



South Side

- Reduce pavement width of plaza to 12-feet across the front of the south porch (**complete**).
- Re-align path south to canal boat dock to ensure pedestrian access; remove timber curbing (**complete**).
- Remove the volunteer path across the lawn south of the tavern. If this route is needed for temporary movement of storage materials, repair it quickly to minimize erosion and loss of ground cover.
- Collaborate with regional landscape architects to develop an accessible path from south side of tavern to lock 19 so visitors can cross canal when lock 20 crossing is unavailable.

East Side

- Reduce the open “plaza” in the tavern’s back yard to create a more intimate space, in keeping with the historic uses of the space (**complete**).
- Reestablish the 8 foot wide walkway in alignment with a former path from the east façade of the middle section of the tavern to the access road (**complete**).
- Install an 8-foot wide pathway through the back yard to the area north and south of the tavern (**complete**).

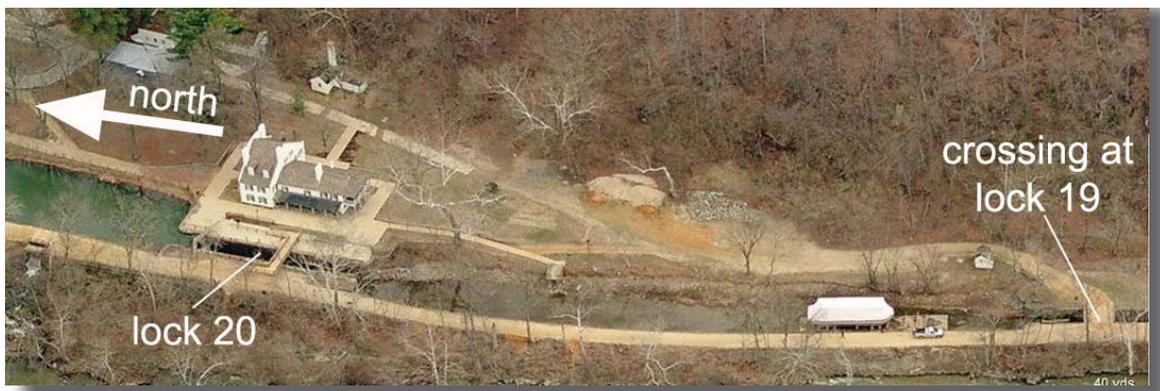


Fig 68 Great Falls Tavern is situated at lock 20. An accessible path from the south side of the tavern to lock 19 would allow visitors to cross the canal when lock 20 is unavailable (source bing.com/maps 2009).

Access Road

- Preserve and maintain extant alignment and maximum width of 10 feet in paved section.
- Confine storage of materials to maintenance areas and northern end of upper parking area when possible. Minimize or eliminate temporary storage of materials along the access road south of the tavern.
- The unpaved section of road south of the tavern yard should be maintained to a uniform width, and ruts and damage by vehicles should be minimized.

Tavern/Yard: Vegetation

During the historic period, most lockhouse yards were not heavily planted, but built on sites that were generally cleared of trees and shrubs. Foundation planting was not a popular concept of American landscapes during the canal period and lockhouse landscapes were largely utilitarian, based on usefulness and sustenance rather than beauty or ornamentation. Being a public destination, Great Falls Tavern was a different type of lockhouse landscape than most others on the canal. No definitive proof has been found to-date, but it is likely that a vegetable garden may have existed near the tavern to provide food for the family, guests at the inn, or to sell to canalers.

In 1830, before the canal was watered, annual wages for lock keepers were designated by the canal board. Wages were less than originally promised, and as compensation, lock tenders were allowed to use company land for gardening purposes. In September of 1830, the canal board required that at least one acre of fenced land was required to be kept at each lock to raise gardens, chickens, hogs and cows.⁶⁷ Lock-keepers were on call 24 hours a day, 7 days a week. If they had families, the family members were kept busy tending to the everyday business of cooking, cleaning, and, in the case of the GFT, inn-keeping.

In 2008 a Great Falls Tavern Lock House Planting Project was developed by the Cultural Landscapes Program of the National Capital Region. The plan provided information on the history of landscape settings for inns, gardens on the C & O Canal, a list of plants used in the region during the historic period, historic photographs to illustrate the use of those plants and a planting plan to guide site managers who are making decisions on which are the right plants and where they should be planted on the site to create a more accurate historic setting for the inn. The plan also recommends where an interpretive vegetable garden could be located. This plan, which is still in the process of being finalized is featured as Appendix E in this document.

Historically, there were scattered trees with whitewashed trunks in the public spaces north and west of the tavern. The ground under these trees appears in historic photographs to be mostly compacted earth with sparse vegetation. Photographs reveal various trees including mulberry (*Morus* sp.) and boxelders (*Acer negundo*) along the bypass flume west of the tavern. Trees were reported to have existed on the bypass flume as recently as the 1970s. One remaining tree appears to date from 1940 or earlier. This is the (approx.) 48" sycamore on the edge of the berm bank south of the tavern yard near the bypass flume outlet.

Recommended Treatment Actions

- Collaborate with natural resource specialists to explore the possibility of whitewashing trunks of trees to approximately six feet above the ground in the public zone of the yard north and west of tavern, as documented by photographs (See Appendix D).
- Maintain vegetative cover and prevent erosion, especially after flood protection operations in disturbed areas, and on slopes northeast of the tavern yard.
- Do not plant trees that will “frame” or “screen” structures. It is not a typical planting arrangement that was found in this location during the historic period. If necessary, use local, native vegetation to act as a screen for HVAC structure to be installed during tavern renovation (FHWA).



- Maintain lawn in the tavern/yard area in good condition.
- Preserve and maintain large floodplain trees such as large sycamores at base of hill east of the tavern.
- Plant a small interpretive kitchen garden within the fenced east lawn, or “back yard” area using plant materials that could have historically been planted during the tavern’s period of significance. Regional landscape architects, in collaboration with natural resource specialists and on-site managers will use historical documentation of other Lockkeeper’s gardens on the canal for reference, as well as regional plants common to the historic period to design a plan.

Tavern/Yard: Buildings and Structures

Within the GFT tavern area, excluding the tavern itself, the majority of built elements are on a small scale. There is an opportunity to build two interpretive structures of the historic period in the tavern area to replicate the historic scene and increase interpretive interest: a lock shanty at the north end of Lock 20, and the outline of the former tavern kitchen addition at the southeast corner of the tavern.

Recommended Treatment Actions

- Construct historic kitchen “footprint” in tavern’s east yard by outlining the former location with stone that is laid flush with the ground. This will provide a better sense of the spatial arrangement of this private working space to visitors (**complete**).
- Construct a replica of the Lockkeeper’s shanty to recreate the historic scene. It should be placed at the upstream, north-east corner of Lock 20 where the former building stood (See Fig. 69).



Figure 69 1946 photograph of the Lockkeeper’s shanty at Lock 20 (NPS, CHOH Sharpsburg. Abbie Rowe).

Tavern/Yard: Small-Scale Features

After use of the canal was discontinued and it was purchased by the federal government, numerous small-scale features were added to the tavern area to expand its use and interpretation such as lighting, outdoor furnishings, fencing and signs. Most of the small-scale features in this area are non-contributing or, incompatible with the historic setting.

Historically, furniture in the outdoor spaces around the tavern would have been simple pieces that were moved out from the inside of the house.

Although the park is closed after dark, site lighting is desirable in selected locations for special functions and employee safety. Various types of fixtures exist on the site; some are in poor condition and inconsistent with historical documentation or interpretation of the site.

Fencing was used to delineate property lines during the historic period. Current use of rope and post and chain barriers is not based on a historical precedent. Historic photographs show a series of picket fences in the tavern area during the late 19th century, and picket fences were added to the site during 1970s rehabilitation. Although the alignments of the fences did not follow historic fence locations, ropes and wooden barriers keep visitors away from the canal edge during locking through demonstrations.

Recommended Treatment Actions

Lighting

- Within the historic core, the wood base/lantern-type light fixtures should be maintained in their current location.
- Remove lighting such as the residential-style metal post lantern along the pathway to the boat dock (**complete**).
- Evaluate lighting to ensure safety lighting for pedestrians is adequate without intruding on the historic landscape. Lighting standards for highways are not appropriate for this site.
- Use of any additional lights for special evening events should only be temporary (e.g., kerosene lanterns or battery-operated lanterns hung from shepherd's hooks and placed along walkways).

Site Furnishings

- Remove picnic tables from tavern area and place them in the designated picnic area located north of the concession stand west of the upper parking area.
- Use movable simple ladder-back or chairs compatible with the historic setting that could easily be moved in, out and around the tavern and yard area.

Fences and barriers

- Install picket style fencing around the north, east and south sides of the yard area. If appropriate, styles that are more ornate will be used in public and formal locations. Simpler styles will be used in private areas around the tavern.
- Maintain existing post and rope barriers to provide adequate and safe space around the lock walls during interpretation and demonstrations by park rangers of the lock's operation.
- Install fencing along the north side of the tavern yard that can be removed temporarily during flood protection operations.

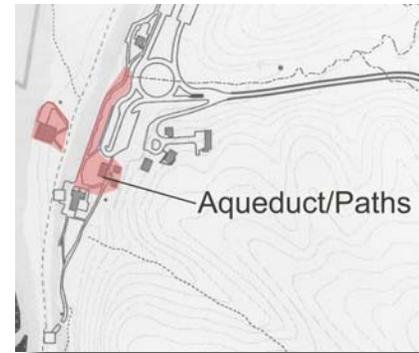
Signs

- Keep signs in the tavern/yard area to a minimum, installing only critical directional, prohibitory, or interpretive signs at an appropriate scale.
- Create a cohesive palette of sign styles for each type, as signs are added or improved.



Washington Aqueduct and Path

This landscape character area includes the area of the site between the north edge of the walkway parallel to the tavern façade and the south end of the concession stand and the walkways therein, excluding the lower parking area and rotary. It comprises the aqueduct gatehouse, the intake structure and viewing platform, the mule corral, the comfort station and the pump and boiler's houses, surrounding paths and related features.



The US Army Corps of Engineers built the workings of the Washington Aqueduct in the mid 1800s when the Washington Aqueduct dam was constructed in the Potomac River near Lock 20. Although the canal and aqueduct industries were two separate entities, the buildings that supported those industries were within close proximity to each other. Historically, fences demarcated property lines and defined boundaries between competing uses on the site.

After the NPS re-graded the slopes from the north of the tavern to the canal in the 1950s, the historic demarcation that set this parcel off from the tavern landscape was lost. However, because of its architecture and location, the area around the Control Gatehouse retains a character that is separate from the tavern or the canal.

Aqueduct/Path: Spatial Organization, Land Use

Despite the National Park Service's re-grading of the berm bank for walkways and parking areas in the 1950s, and the installation of non-historic landscaping, the berm bank, canal prism, towpath and associated structures retain integrity in their historic linear spatial character. The relationship of the gatehouse and the CCC built structures evoke the historic pattern of placement of building clusters in the area during the active days of the canal.



Figure 70 Northern approach to viewing platform atop intake structure (NCR CLP 2006).

The roof of the intake control structure is adjacent to the towpath. It is open to park visitors, and allows views to the dam and the Potomac River. Although the intake structure on the west side of the towpath was designed to minimize intrusions on the historic landscape, it is a prominent feature when viewed from the berm bank on the opposite side of the canal (Fig. 70).

Recommended Treatment Actions

- Clarify, through memoranda of agreement with the Corps or other means, the maintenance responsibilities for the area adjacent to towpath. Incorporate universal accessibility standards in all path, parking and road construction.

Aqueduct/Path: Circulation

Pathways installed in the 1950s by the NPS are the primary circulation systems along the berm side of the canal in the aqueduct/path sub-area of the GFT site. The main pathway from the concession area to the tavern is evocative of a utilitarian spur road seen on maps from the mid-1800s. However, this pedestrian promenade (installed in the 1950s) that led to the tavern and ran adjacent to the canal, would not have been the historic approach to the tavern. It is set too close to the canal and distracts from the fact that the canal and towpath are the primary circulation routes on the site.

On the towpath side of the canal, just north of the tavern, pedestrians accessing the roof deck from the towpath have created two worn paths.

Also, located on the towpath side of the canal, just south of the roof deck, is a staircase that descends to a landing and path at the riverside (outside of the study area). The path is not regularly maintained but occasional repairs are made to the stairs when needed.

Recommended Treatment Actions

- Remove promenade walkway on the berm side of the canal and re-grade the area to blend into the adjacent grades. Restore the affected area with appropriate meadow, seed or sod.
- Reestablish the main approach to the tavern by installing a gently curving 12 foot wide accessible path to lead visitors from the rotary to the north entrance of the tavern. Path should have an appearance mimicking gravel or dirt (FHWA).
- Do not construct any paved pedestrian walkways to provide access to the control gatehouse structure.
- Rehabilitate the approach to the roof deck from the towpath. Establish clear patterns of approach using paved surfaces or vegetated edges to define a path. Use methods that will minimize erosion on the bank.
- Designate areas restricted to visitors with vegetation, screening or signs (sign use throughout the area should be kept to a minimum, and used only where necessary).
- Repave the existing access road east of the gatehouse with exposed aggregate concrete; preserve existing alignment and 10-foot width (FHWA).
- Preserve and maintain riverside landing trail and staircase south of intake structure for user safety. Use precautions to minimize erosion and vegetation disturbance.
- Incorporate universal accessibility standards in all path, parking and road construction.

Aqueduct/Path: Vegetation

The deciduous plant material around the structures east of the access road have naturalized on soils disturbed by successive periods of natural flooding and construction over a long period. Historic construction began with canal building and continued with the blasting necessary to place the Washington Aqueduct conduit through the adjacent hillside. It is recommended that native vegetation on these slopes of the hillside adjacent to the tavern area be preserved and managed to maximize canopy cover and to minimize erosion.



During the removal and re-grading of the lower parking area and promenade, most existing trees will be preserved and protected. When trees do need to be removed, the remaining ground should be regraded and restored with topsoil and vegetative matter. This presents an opportunity to re-vegetate the area with a small meadow area using native grasses and herbaceous plants that would increase the integrity of vegetation on the site, and provide a transition between the modern landscape of the rotary and parking lot's paved surfaces into the historic core of the tavern area proper. A meadow, as opposed to a lawn, would likely be found during the canal era.

A new path leading from the rotary and concession area will call for the removal of some of the existing trees in this area. The landscape was sparsely vegetated so any tree removal will not create a setting that is incompatible with the historic scene.

Development of a vegetation management plan will be a useful tool for preservation and maintenance of vegetation in this area. Strategic vegetation placement near the intake structure along the towpath side of the canal could be useful in blending the structure into the environment and in delineating paths to access the overlook.

Recommended Treatment Actions

- Native vegetation on the slopes of the hillside adjacent to the tavern area should be preserved and managed to maximize canopy cover and to minimize erosion.
- Remove trees as necessary to re-grade area to enable construction of a new path leading from the rotary to the tavern (see also *Parking and Rotary Entry* section).
- Preserve and maintain existing trees and tree roots between rotary and tavern as per construction documents.
- Plant deciduous native shrubs to screen service structures and HVAC equipment east of the access road.
- On towpath side of canal, install vegetation to help screen intake structure roof edge from tow-path and berm bank.

Meadow (see also *Parking and Rotary Entry* section)

- After removal and re-grading of lower parking area and promenade walk, and the installation of the new walk from the rotary to the tavern, restore the area with topsoil and native grasses.
- Sow native meadow grass seeds, herbaceous plants or plant plugs in the ground.
- Develop management plan to keep new plantings watered and weed free.
- Specify a 5-10 foot mowing edge along the path and around the rotary between meadow and path edges, intersections of paths and the rotary and the canal and the tavern walkway in a management plan.
- Consult with regional landscape architect and natural resource managers to establish a meadow mowing schedule to maintain the meadow's appearance and preserve local natural resources.

Aqueduct/Path: Buildings and Structures

A number of built structures can be found in this landscape character area, including the control gatehouse, pump house, comfort station, boiler's house and dam intake structure.

The control gatehouse is a significant structural feature of this site with a high degree of integrity. It is a National Historic Landmark that retains its character as a building that houses the industrial/engineering works of the Washington Aqueduct. It has never been adapted for other uses. The pump house, comfort station and boiler's house are significant for their association with early federal involvement on the site and its association with the African-American CCC camp members who built the structures.

Numerous features from the historical period can only be observed from the intake structure roof deck, which help to associate this newer structure with the underlying structures beneath. These include the Washington Aqueduct dam and the red sandstone intake gates designed by Montgomery Meigs in the 1850s, which can be seen adjacent to the south wall and stairs.

Recommended Treatment Actions

- In cooperation with the U. S. Army Corps of Engineers, preserve and maintain historical sandstone intake gates and gatehouse structure. Confirm clear accountability from the Corps.
- Investigate means of interpreting features seen from the observation rooftop deck or adjacent towpath.
- Preserve and maintain CCC-built pump house, comfort station and boiler's house buildings in good condition.
- Discontinue use of CCC-era comfort station and build new comfort station structure that utilizes universal accessibility standards in a location that does not obscure significant views of the tavern from the rotary (**complete**).

Aqueduct/Path: Small Scale Features

There are several small-scale features in the Washington Aqueduct and Paths landscape character area including signs, benches, fences and barriers.

During the late 19th century and through the 1930s, white-painted picket fences surrounded and set off property managed by the U. S. Army Corps of Engineers, including the control gatehouse. One of the most historically significant features on the entire site is located within this sub-area. It is an inscribed mile marker related to construction of the aqueduct, and is thought to derive from the original aqueduct construction period of 1853-1867 (Fig. 71). A smaller inscribed concrete survey marker believed to have been installed between the years of 1853 and 1877 accompanies the marker. Both structures are listed on the List of Classified Structures (LCS) as National Historic Landmarks.

Figure 71 (below) Survey marker and stone mile marker near the Control Gate House (NCR CLP 2003).



Recommended Treatment Actions

- Conserve the survey and stone mile markers near the gatehouse, including the grades around them.
- Mow grass within at least a 3-foot radius around stone mile markers and maintained it at a low height so markers will be visible to visitors and maintenance personnel.
- Remove all picnic benches and non-contributing furniture from the vicinity of the gatehouse.
- Remove non-contributing fencing (**FHWA**).
- Minimize use of signs in area; use vegetation or varied path widths and materials to guide visitors through this area.
- Install historically appropriate benches along new pathway facing the canal.

Concessions

This area includes the concession stand and adjacent terrace area, as well as the picnic area north of the concession stand and east of the upper parking area. It terminates to the north of the concession area where the cleared picnic area meets the riparian forest edge.

The picnic ground, located directly north of the concession stand, is a fairly open space edged by forest canopy on the north and west sides, and the concession stand and terrace to the south. To the east is a pedestrian walkway that separates it from the parking area. Within the grounds are a limited amount of tall trees above a compacted ground plane. There are no formal paths within the area.



The concession building and surrounding terrace were designed and built by the NPS in the 1950s. Both remain in the same location as when they were built and are highly visible from the park entrance.

Recommended Treatment Actions

- Preserve and maintain use of current concession and picnic area as such.
- Maintain and rehabilitate brick terrace of concession building to improve use of area.
- Minimize erosion of berm bank along canal.
- Incorporate universal access to the terrace from the adjacent walkway.
- Rehabilitate extant pedestrian walks to protect natural resources, safely accommodate visitors at road crossings, and to provide for universal access.
- Make the picnic area more user friendly and discourage visitors from using non-programmed spaces for picnicking by planting more trees to create shade and division of space within the large area.
- Provide paths and picnic tables in the area that meet universal access standards.

Concessions: Buildings and Structures

The existing concession building and terrace area exist in the same form as when they were built in the 1950s. There is a service area on the southeast corner of the building that faces the rotary and roadway. Visitor sales on the north side face the terrace and picnic areas.

Recommended Treatment Actions

- Maintain current building footprint. Do not expand height of the structure.
- Improve service area access to minimize conflicts with visitors.



- Improve surface of brick patio by resetting and leveling brick paving without damaging existing trees.
- Re-orient visitor walkway on east side of concession building. Eliminate steps at southwest corner of terrace, replace with ramp.
- Consider replacing split rail fencing around terrace with new fencing, or with an informal hedge of plants that would have a height similar to that of the fence.

Concessions: Vegetation

Trees have been preserved in areas west of the rotary. The concession building and its adjoining terrace trees create shade and buffer views from the berm bank and towpath. Before the concessions and rotary were constructed, several silver maples lined the berm bank in front of a garage structure used by the Corps. Photos of this area of the berm bank taken before 1950 show lines of trees and picket fences that separated residences and engineers' operations from the canal. Later, the concession building was constructed and the terrace was laid out to preserve four large silver maples that lined the berm bank to the west.

Recommended Treatment Actions

- Preserve and maintain trees to the west of the concession building which screen undesirable views of the structure and parking lot beyond from the berm bank and towpath.
- Install more native trees into the picnic area in order to provide shade and create divisions of space or "landscape rooms." Maintain views of the canal and towpath.
- Remove potentially hazardous black cherry (*Prunus serotina*) on south side of concession stand and replace with the same species. Plant new tree approximately 10 feet away from the structure to limit potential damage to the building.
- Plant native shrubs in an informal manner to soften the appearance of the stockade fence located on the south side of the concession stand. Native varieties such as northern spicebush (*Lindera benzoin*), blackhaw viburnum (*Viburnum prunifolium*), witch-hazel (*Hamamelis virginiana*), ninebark (*Physocarpus opulifolius*), or other shrubs considered medium in height, or close to the height of the fence, would be appropriate choices.

Concessions: Small-Scale Features

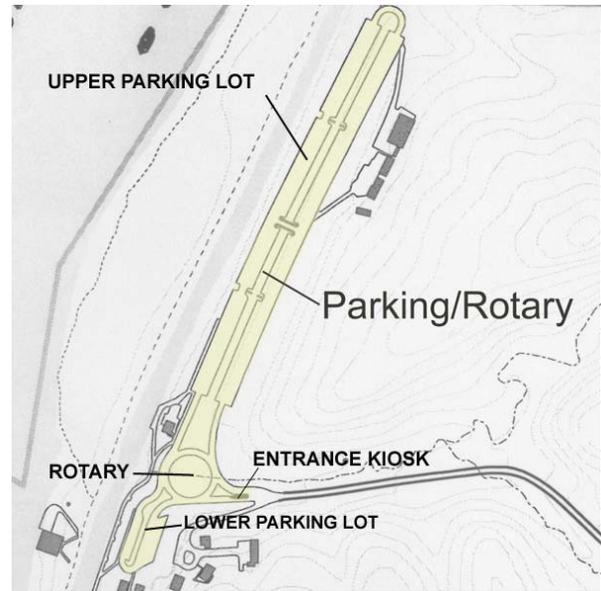
Recommended Treatment Actions

- Move "Trash Free Park" sign and dispenser to concession terrace area east of building near walkway and road.
- Replace wooden fence on south side of concession stand with similar stockade fence or native shrubs that grow to fence height.
- Consider replacing terrace rail on the north side of the concession stand with new fencing, or with an informal hedge of plants that would have a height similar to that of the existing fence.
- Maintain all picnic tables in picnic area north of concessions. Add universally accessible tables.

Parking and Rotary Entry

This area is comprised of the lower portion of the Entrance Road to the east of the entrance kiosk, the entrance kiosk itself, the traffic rotary, the upper and lower parking areas and related features.

The parking areas were designed by the NPS in the 1940s on two levels each with one-way aisles to fit within the shape of the original parcel purchased by NPS as an extension of the George Washington Memorial Parkway (GWMP) in 1944 (See Fig 26). The layout and dimensions of the lots are the same now as when they were paved and graded in the mid 20th century. Lot elevations extend from 190 feet at the northeast side of the upper parking area to about 155 feet at the bank on the south side of the tavern with a gradient of 2 percent in a little less than a half mile.



The rotary design derives from plans for a parkway along the canal. The rotary feature is seen in several forms in numerous preliminary iterations of landscape development for the site prepared by the NPS during the 1940s (See Fig. 29). Rotaries had been a popular element of NPS planning since the late 1920s, when loops and rotaries were tools used by NPS planners to manage traffic flow and promote safety. Within the parks, they are found at the end of roads, overlooks and viewpoints, parking areas and inter-sections.

The parking areas and rotary currently serve as undesignated drop-off or collection points for visitors who bring personal watercraft such as kayaks or canoes. Busses and other vehicles often park within the rotary near the existing concession stand in conflict with pedestrian and vehicular circulation.

Parking/Rotary: Spatial Organization and Circulation

The parking lots on site were built in response to an overwhelming need to supply the public with sufficient parking at the GFT site. Previously, lack of parking spaces led to problems with erosion and chaos when visitors were forced to park their cars in undesignated parking areas, most notably along the side of the Entrance Road. The handicapped parking spaces were located in the lower parking area. In order to apply a transitional experience between parking and the historical scene is it necessary to remove the lower parking area. After removal, handicapped parking spaces will be reinstalled on the south end of the upper parking area.

Recommended Treatment Actions

- Retain and rehabilitate the rotary feature as an organizing feature of the site that joins and serves as a transition between the visitor services areas of the upper parking area and concessions, the historical setting to the south (FHWA).
- Rehabilitate the upper parking area (FHWA).
- Preserve and maintain linear alignment of upper parking area, and the walkway on its west side.



- Establish designated parking for busses that does not conflict with passenger cars and trucks (FHWA).
- Establish handicapped parking spaces that have been lost due to the removal of the lower parking lot to the upper parking lot (FHWA).
- Provide painted pedestrian crosswalks in upper parking lot where appropriate (FHWA).
- Develop a minimalistic sign plan for a bus drop-off area. Maintain views around rotary to canal and do not designate drop off area in crosswalk.

Parking/Rotary: Vegetation

Recommended Treatment Actions

- Preserve and maintain selective trees inside the rotary. Replace with trees in-kind as they die. (American beech [*Fagus grandifolia*], sugar maple [*Acer saccharum*], white oak [*Quercus alba*] and red oak [*Quercus rubra*] were initially specified on planting plan) Limb up trees to allow view of canal from Entrance Road across the rotary.

Parking/Rotary: Buildings and Structures

The entrance kiosk and the new comfort station are the only existing structures or buildings within the parking and rotary sub-area. The entrance kiosk is situated at the western terminus of the Entrance Road and is used for fee collection. The new comfort station was originally sited near the concession stand. However, the building would interfere with views into the site from the entrance road. Several factors drove the decision to place it in the former upper parking area: the ground was already disturbed, the utilities were available, it would not compete with views of the canal upon arrival into the park, its close proximity to the pick-up and drop-off zone of the rotary and the fact that it would draw people towards the tavern as many tend to use the facility as they enter the site.

Recommended Treatment Actions

- When the entrance kiosk building requires replacement, construct new structure in the same location and, as much as possible, do not expand size of building.
- Place new comfort station in former lower parking lot area near base of hill, by rotary (complete).

Entrance (Conduit) Road

This area includes the approximate 1.15 miles of the Entrance Road, from its eastern intersection with MacArthur Boulevard and Falls Road to the park entrance kiosk. The road is the only vehicular access to the Great Falls Tavern area.



Originally built to serve the Washington Aqueduct, and long known as Conduit Road, this popular historic roadway has carried tourists to Great Falls since 1875, replacing the earlier Old Rockville Road. The road measured 16 feet wide when it was macadamized in 1916. In the 1970s, the road width was expanded to 20 feet. Graded paved shoulders, paved drainage ditches and concrete culverts were also installed during this time. Several sections of the road were designed to drain to adjacent forested wetlands which feed Carroll Branch. The road is also a favorite bike route for a circuit ride along MacArthur Boulevard to the tavern and back.

The road retains the historic alignment of the early to mid- 20th century and blends in with the rolling topography and forested slopes of the adjacent Gold Mine Tract. Important adjacent historic resources including the Maryland Mine and the rail bed of the Chevy Chase to Great Falls Trolley Line can be easily viewed from the road corridor, and are historically associated with it. Most of the following recommendations are being followed by the pending FWH A project.

Recommended Treatment Actions

- Preserve and maintain the historic horizontal and vertical alignment of the Entrance Road, ensuring visitor safety while preserving the road's historic resources.
- Preserve and maintain the width of the road as much as possible to avoid altering side slopes.
- Refrain from adding bike lane markings upon road.
- Minimize enlarging of road curve radii. This will help to maintain the road's historic character and it will help to maintain lower and safer vehicular speeds.
- Preserve and maintain design speeds at or below 25 mph.
- Enforce limits on roadside parking and other measures to minimize shoulder disturbances.
- Minimize use of guardrails, retaining walls and other intrusive roadside elements that screen adjacent cultural and natural resources that are significant to the site.
- Preserve and maintain vegetated drainage swales and embankments.
- Repave Entrance Road; repair base as needed; stabilize shoulders; provide updated positive drainage using best management practices to prevent erosion.
- Provide narrow paved shoulder that can be used by bicycle riders and pedestrians, but do not use signs or road markings to designate as "bicycle lanes."
- Maintain travel lane width of 10-13 feet on each side with shoulders; overall pavement width should not exceed 26 feet. Install curbs where needed to help retain slopes; use material suitable to context.



- Minimize runoff into adjacent forested wetlands through road drainage design and best management practices.
- Improve drainage under road near entrance kiosk to minimize overflow on road surface. Minimize sediment runoff into Carroll Branch.

Entrance Road: Small-scale Features

Entrance Road is lined with a single early 20th century Washington Aqueduct concrete mile marker (National Historic Landmark), and approximately 20 survey markers. These historic features were installed between 1875 and 1915 by The Corps to guide road construction. They are among the few historic small-scale features on site and they contribute greatly to the historical integrity of the site.

Recommended Treatment Actions

- Preserve historic survey markers and concrete mile marker in place. Minimize changing embankment grades that would disturb features.

Entrance Road: Vegetation

Currently, the spread of the invasive annual grass Japanese stilt grass (*Microstegium vimineum*) is rapid along the Entrance Road corridor. The grass spreads quickly and inhibits the growth of native species in this area.

Recommended Treatment Actions

- Monitor spread of invasive Japanese stilt grass. (See appendix C).
- Incorporate management of weed into on-site vegetation management plan.

Endnotes Part 2 Chapter 1

⁶⁷ 39 Unrau, Harlan D. and G. Frank Williams. *Historic Resource Study: Chesapeake & Ohio Canal*. U.S. Department of the Interior, National Park Service, Hagerstown, Maryland. 2007. 785.



Appendices





APPENDIX A.

Historic Fences and Walks at the Great Falls Tavern

NPS Historians Rogers Young and Sutton Jett reviewed many sources including the Canal Company's records in the National Archives during canal rehabilitation and stabilization from 1938 to 1940. From their research, they created a document titled *A Preliminary Historical Study on the Area Along the Maryland Shore of the Potomac at Great Falls During the Heyday of the Chesapeake and Ohio Canal 1858-1880*.

Young and Jett surveyed an area from Lock 15 to about ¼ mile north and northeast of Great Falls Tavern, starting with a detailed description of construction, renovations and uses of the tavern structure. They also described fences and walks around the tavern, using historical photographs and an oral statement from the tavern's most recent occupant, William H. Case as documentation.

The following is a description from the report of fences and walks at the Great Falls Tavern:

Fences and walks around the Great Falls tavern have undergone several changes during their existence. Prior to the Civil War, and in the post war era, a breast high white picket fence enclosed a small rectangular yard along the northern wing, being located about 25 feet from the line of the building. At a point on a line with the eastern side of the northern wing, the northern fence formed a right angle, and extended southward to the edge of the building. The western end of the northern fence was joined at a right angle by another section of pickets, which extended southward along the western side of the building, about mid-way between it and the lock. Another picket fence enclosed the space between the northern and southern wings on the eastern side of the building. Between 1913 and 1925, while the tavern served as a private club, a head high post and rail fence enclosed the entire tavern lot; and the existing board fences are of more recent origin. The original walks around the tavern, of which there is one remaining example extending from the western portion to the lock, were of brick. The slate or stone walls on the eastern side of the tavern were laid between 1913-1925....¹



Picket fences were commonly seen along the canal during its heyday. On the left, a whitewashed picket fence is seen in this 1902 photograph taken on the north side of the tavern. The photo on the right is an image of Lock 56 in 1890 ([left] CHOH Sharpsburg, Young and Jett, 4 [right] CHOH archives).

¹ Case Statement; cf., contemporary photographs of the tavern fences in the Chesapeake and Ohio Canal file, Branch of Historic Sites, National Park Service. (Appendix, Photographs 2-8). Footnote 36 as cited by Young and Jett, op. cit., p.17.



APPENDIX B

Historic Vegetation

A 1940 report by forester Raymond Sydanski Jr, has the first known detailed expert description of local forest conditions. His assessment of conditions in 1940 revealed extensive past disturbance, some deriving from the onset of canal construction activities in the early nineteenth century.

Sydanski reports that Olmsted Island was “littered with charcoal piles, the remnants of past camp fires. All woody vegetation that has survived recent floods on the island is severely burned and rotting badly around burn scars.”¹ “The combination of fire, flood, wood chopping, hacking and indiscriminate building of fires has left this rocky, charcoal patched island almost barren, the few trees that are still standing, fire scarred, rotted and ready to fall in the next flood.”²

The report identified two forest cover types. One, a river bottom on “low flat sections” and mixed oak on south and west facing slopes. Sycamore (*Platanus occidentalis*) and American elm (*Ulmus americana*) comprised the major species in the bottomland, or floodplain. Other species included black locust (*Robinia pseudoacacia*), box elder (*Acer negundo*) and soft maple (*Acer rubrum* and *A. saccharinum*). The mixed oak community was “predominantly white oak” (*Quercus alba*). Other oaks were black (*Q. nigra*) and red (probably *Q. rubra*) and other red oaks. Mixed with the oaks were “hickories” (*Carya* spp.) and Virginia pine (*Pinus virginiana*). Both communities also included tulip poplars (*Liriodendron tulipifera*).

Protecting forests from fire, insects, disease and over-use within a recreational context was another goal of early planning and research after the National Park Service’s acquisition of the C & O Canal, especially in the Georgetown to Seneca section. The 1940 report by forester Raymond Sydanski, Jr. acknowledged that the park’s planners were challenged by its nature and proximity to over a million people in a metropolitan area. Its “long ribbon-like strip of property with a river on one side of it and a canal longitudinally through it are indeed unique and without precedent,” Sydanski said. Opening the canal to public access posed increased potential for damage, especially from wildfires. Over 5,000 Sunday visitors were expected at Great Falls alone. “The heavy increase in number of campfires that will result from accelerated use, coupled with the complete lack of fireplaces, increases still further the risk on this entire area.”³

*The spectacular beauty of the Great Falls area is not now enhanced by natural vegetation cover as it was originally or as it will be again if given adequate protection....Scenic values at stake along this entire section of the Canal from the District of Columbia to Seneca are very high. A strong and efficient protective organization is therefore necessary to provide the area an opportunity to naturally re-vegetate itself and regain its health, vigor, and normal resistance to flood damage....*⁴

Many trees succumbed to Dutch elm disease (spread by Scolitus beetles) in the 1950s. Sydanski noted that the disease was as close as Harpers Ferry in 1940. The beetles which spread the disease were “common in many of the dying elms along the Canal although so far no symptoms of the disease have been observed in Scolitus infected trees.”⁵ Sydanski recommended annual reconnaissance surveys in late spring or early summer. “Washington’s ornamental elms” were particularly susceptible because of the nearly continuous floodplain “fringe” that connected the city to Harpers Ferry, where the disease had been observed.

According to the report, “much of the original cover has been cleared off for farming, especially north of the Canal.”⁶ Ridge tops above steep slopes were being cultivated or grazed. In places where the canal was bounded on its north or west side by gentler slopes, such as north of Lock 20 in contrast to Lock 18, farm lands came to the canal’s edge.

The oak forest on the Gold Mine tract was susceptible to fire. Two fires had burned through “Gold Mine Hill” in late 1938 consuming 25 and 20 acres. Another “large area between Conduit Road and Wide-water” burned in 1937 and 1938. Great Falls to Lock 16 between the canal and Conduit Road was one of six areas (Lock 16 to Angler’s Inn was another) where fire hazard should be specifically managed by removing woody debris. Sydansk advocated cutting or flattening snags and downed trees to accelerate decomposition and fuel loading. The Great Falls maintenance crews and equipment were important keys to successful fire prevention in the western district. The “regular maintenance” crews at Great Falls and Chain Bridge were to be trained, organized and equipped to respond during fire season “with a minimum of delay.”⁷ In addition, a pumper truck and pickup trucks would be stationed at Great Falls.

At the time of the report, the towpath was “sod-covered.”⁸ After hard rains, it was too slippery and unstable for vehicular traffic, Sydansk noted.

A significant parkway purchase was made in 1944 with the acquisition of over 390 acres in eleven separate parcels. The land had been part of Great Falls Farms Development Corporation and stretched along the river and canal from north of the Washington Aqueduct dam south to Stubblefield Falls between locks 14 and 15. Near GFT, parcel “J” (Fig. 27) comprised about 27 acres north of the old Washington and Great Falls railway terminus, opposite Lock 20.

1 Sydansk, Raymond Jr. Forest Protection Requirements Report for the C. & O. Canal Recreational Waterway Georgetown to Seneca Section, Forest Protection Report. April 1940 Washington, D.C.: U. S. Department of the Interior, National Park Service, Office of National Capital Parks, 1940. 3.

2 Ibid., 32.

3 Ibid., 3.

4 Ibid., 4.

5 Ibid., 31.

6 Ibid., 4.

7 Ibid., 24.

8 Ibid., 19.

APPENDIX C

Japanese Stiltgrass

The presence of Japanese Stiltgrass is a pervasive problem at the Great Falls Tavern site, notably along the park entrance road. The following is a description of the plant as well as management options.

Microstegium vimineum (Trin.) Camus
Grass family (Poaceae)

The following information is from: Plant Conservation Alliance®s Alien Plant Working Group: Weeds Gone Wild: Alien Plant Invaders of Natural Areas <http://www.nps.gov/plants/alien/> accessed 9 April 2007.

Native Range

Japan, Korea, China, Malaysia and India.

Description

Japanese stiltgrass, or Nepalese browntop, is an annual grass with a sprawling habit (see fig 60 page 55). It germinates in spring and grows slowly through the summer months, ultimately reaching heights of 2 to 3½ ft. The leaves are pale green, lance-shaped, asymmetrical, 1 to 3 in. long and have a distinctive shiny midrib. Slender stalks of tiny flowers are produced in late summer (August through September-early October) and dry fruits called achenes are produced soon afterwards.

Ecological Threat

Japanese stiltgrass is especially well adapted to low light conditions. It threatens native plants and natural habitats in open to shady, and moist to dry locations. Stiltgrass spreads to form extensive patches, displacing native species that are not able to compete with it. Where white-tail deer are overabundant, they may facilitate its invasion by feeding on native plant species and avoiding stiltgrass. Japanese stiltgrass may impact other plants by changing soil chemistry and shading other plants. The interaction between stiltgrass and the Northern Pearly Eye (*Enodia anthedon*), a member of the brush-footed butterfly family Nymphalidae, is unclear. This butterfly is rare to uncommon along the Potomac River in the Washington, DC area. Its caterpillar eats grasses. Dr. Robert Robbins, a Smithsonian entomologist and butterfly specialist takes weekly walks at Great Falls, Maryland, and made the following observations. The Northern Pearly Eye occurs uncommonly at Great Falls from May to October (maybe 2-15 individuals seen over the entire flight period). Adults were especially common during the summer of 2004. The butterfly became exceedingly common during the summer of 2005 when about 20 adults were seen during a 2 hour walk, especially in the vicinity of stiltgrass, on which a female was observed placing an egg. In May 2006, the butterfly was again common, but the population then crashed, and only 2-3 individuals were seen from June to October 2006. Further investigation is needed to study the potential impacts of stiltgrass on this and possibly other butterflies or other insects that utilize stiltgrass as an alternative host plant.

Distribution in the United States

The current distribution of Japanese stiltgrass includes 25 eastern states and it has been reported to be invasive in natural areas in 15 of these (Connecticut, Delaware, Georgia, Indiana, Kentucky, Maryland, Massachusetts, New Jersey, New York, North Carolina, Pennsylvania, Tennessee, Virginia, West Virginia) and Washington, D.C.

Habitat in the United States

Stiltgrass occurs in a wide variety of habitats including moist ground of open woods, floodplain forests, wetlands, uplands, fields, thickets, paths, clearings, roadsides, ditches, utility corridors and gardens. It readily invades areas subject to regular mowing, tilling, foot traffic and other soil disturbing activities as well as natural disturbances such as the scouring associated with flooding. Stiltgrass appears to prefer moist, acidic to neutral soils that are high in nitrogen.

Background

First documented in Tennessee around 1919, stiltgrass may have accidentally escaped as a result of its use as a packing material for porcelain. (Page 2 of 4 Plant Conservation Alliance's Alien Plant Working Group Weeds Gone Wild: Alien Plant Invaders of Natural Areas <http://www.nps.gov/plants/alien/>).

Biology and Spread

Japanese stiltgrass is an annual grass, with all plants dying each fall. It is a colonial species that spreads during the summer and fall by rooting at stem nodes that touch the ground. Individual plants may produce 100 to 1,000 seeds that fall close to the parent plant from both self-fertilizing and crossfertilizing flowers. Seed may be carried further by water currents during heavy rains or moved in contaminated hay, soil, or potted plants and on footwear and vehicles. Stiltgrass seed remains viable in the soil for five or more years and germinates readily. Deer and other grazers reportedly do not browse it, though they have been found to spread the seeds. Stiltgrass leaves a thick layer of thatch after dieback each year in heavily invaded areas, and while leaves decompose quickly, stems do not. Like other invasive species, stiltgrass is physiologically adaptive. For example, it is able to withstand low light levels where nutrient levels are sufficient, and able to withstand low nutrient levels where light levels are sufficient. While stiltgrass can photosynthesize in low light conditions and respond quickly to the changing light conditions typically found on the forest floor, the very low light conditions found beneath a multilayered forest canopy will limit its growth.

Management Options

A variety of control methods are available for stiltgrass, depending on the extent of the infestation, the type of habitat and the availability of labor and other resources. Preventing the introduction of stiltgrass from infested to non-infested areas should be a priority. Early control of new infestations will also reduce the likelihood of establishment.

Biological

No biological controls are currently available for this plant.

Chemical

For extensive stiltgrass infestations, use of a systemic herbicide such as glyphosate (e.g., Roundup Pro®) is a practical and effective method. Roundup Pro® is surfactant-loaded (no additional surfactant needed) and the surfactant is not lethal to amphibians and aquatic invertebrates like the polyoxyethyleneamine surfactant in Roundup Classic® is. Roundup Pro® carries the 'Caution' signal word while Roundup Classic® carries 'Warning'. Herbicide use avoids disturbance to soil which can result in additional germination of stiltgrass seed. When treating stiltgrass in wetland sites, use Rodeo® or other formulation

labeled for wetlands. Apply a 2% solution of Roundup® or Rodeo® mixed with water (8 oz. per 3 gals. mix) and a surfactant in late summer. Be careful to avoid application to non-target plants. Glyphosate is a non-specific herbicide that will kill or damage almost any herbaceous plant and possibly some woody plants it contacts. Some researchers have also found success using preemergent herbicides like imazapyr (e.g., Plateau® for government use only, or Journey® for all other applicators) which is very effective against stiltgrass when applied in March in the Mid-Atlantic states. The best rate for maximum selectivity is 4 oz. per acre, applied as a broadcast application with backpack sprayers. Sprayers should be fitted with an 8003E flat fan nozzle and calibrated at 15 to 20 gpa. Plateau® and Journey® can be applied continually through germination of the stiltgrass and throughout the summer during its peak growth. No surfactant is necessary for pre-emergent applications. As germination nears, begin to add 1/4% non-ionic surfactant to the mixture. Another option that may be appropriate for certain situations is to apply a pre-emergent (only) treatment with Pendulum® Aquacap™ at 2.4 qts. to 4.8 qts. per acre (15 to 20 gpa). The higher rates have provided season long control. Note: Calibration of spray equipment will ensure that the correct rate of herbicide mix is actually applied to the plants. Actual rate of application can vary widely based on different skills and techniques of applicators. These differences can lead to under-application or over-application of herbicide mix which can affect the efficacy of the treatment. For this reason, it is important to calibrate spray equipment before conducting herbicide applications.

(Page 3 of 4 Plant Conservation Alliance's Alien Plant Working Group Weeds Hone Wild: Alien Plant Invaders of Natural Areas <http://www.nps.gov/plants/alien/>).

Manual

Stiltgrass is a shallow-rooted annual that can be pulled by hand throughout the growing season, especially when the soil is moist and entire plants with roots can be removed. Pulling is easier and probably more effective in mid-to-late summer when the plants are much taller and more branched. At this stage, entire plants can be easily removed by grabbing the basal portion of a plant and pulling firmly. In short time, a fair amount of stiltgrass can be pulled and piled up to dehydrate on site. If plants are already in the fruiting stage, they should be bagged and disposed of offsite to prevent dispersal of seed. Also, try to avoid pulling native grasses like Virginia cutgrass (*Leersia virginia*) that often grow intermingled with stiltgrass and may be difficult to distinguish from it. Because hand pulling plants disturbs the soil and may expose stiltgrass seed from previous seasons, late season pulling will avoid the likelihood of seed germination. Hand pulling of plants will need to be repeated and continued for many seasons until the seed bank is exhausted.

Mechanical

Stiltgrass can be mowed in late summer (i.e., August through September) when the plants are flowering but preferably before seed is produced. This can be done using a lawn mower or "Weed Whacker" type machine or a scythe. Because stiltgrass is primarily an annual plant, cutting late in the season before the plants would die back naturally avoids the possibility of regrowth. Recent information suggests that stiltgrass plants that are cut early in the summer respond by regrowing and flowering soon after cutting, much earlier than they would normally flower. This is another reason to consider cutting in late summer to fall rather than during the early summer months.

USE PESTICIDES WISELY: Always read the entire pesticide label carefully, follow all mixing and application instructions and wear all recommended personal protective gear and clothing. Contact your state department of agriculture for any additional pesticide use requirements, restrictions or recommendations.

NOTICE: Mention of pesticide products on this page does not constitute endorsement of any material. Check list of approved pesticides for use in parks before proceeding.

LINKS

- <http://www.invasive.org/search/action.cfm?q=Microstegium%20vimineum>
- <http://www.lib.uconn.edu/webapps/ipane/browsing.cfm?descriptionid=12>

APPENDIX D

Whitewash Information

Whitewashing buildings, trees and canal works was common practice during the operational days of the canal. Some accounts of the canal claim that the practice was to increase visibility along the canal, and some say it was done because it simply looked nice.

“Water lime for the lockhouses, as well as the other masonry structures, was obtained from the Potomac Mills at Shepherdstown, Virginia. Stone of a suitable quality for hydraulic lime had been discovered there early in 1828, and a mill and kiln had been erected to grind and burn the lime. Subsequently canal officials found a better grade blue stone nearby and adopted it. On March 17, 1829, Leckie was ordered by the Board to contract with Boteler and Reynolds, the operators of the Potomac Mills, for the delivery of 50,000 bushels of water lime.”¹

Resources for Whitewash information and products:

Websites:

- Whitewash information- <http://chicora.org/whitewash.pdf>
- Basic info on lime- <http://www.lime.org/faqs.html>
- Basic Limewash pdf- <http://www.heritage.vic.gov.au/pages/pdfs/Limewash.pdf>
- Technical Q&A 18 - Limewash: <http://www.spab.org.uk/html/advice/technical-qas/technical-qa-18-limewash/>
- Bob Bennet and John Spewick, Limewash Returns- <http://www.usheritage.com/mortars15.htm>
- Virginia Lime Works. Introduction to Traditional Building Limes- www.virginalimeworks.com.

Books:

- John Ashurst and Nicola Ashurst, Practical Building Conservation: English Heritage technical handbook. Vol. 3 Mortars, Plasters, and Renders, (Aldershot: Gower, 1988).
- Scottish Lime Centre, “Limewash Finishes for External Lime Coatings,” Technical Advice Note 15: External Lime Coatings on Traditional Buildings,(Edinburgh: Historic Scotland, 2001).
- Stafford Holmes and Michael Wingate, Building with lime a practical introduction, Rev. ed. (London: ITDG, 2002).

1 Unrau, Harlan D. Historic Structure Report The Lockhouses Historical Data Chesapeake and Ohio Canal National Historical Park MD – DC – WV. Denver, Colorado, National Park Service, United States Department of the Interior, 1978. 4

APPENDIX E

Great Falls Tavern Lock House Planting Plan

Historic Character of the Great Falls Tavern

After inspecting several historic photographs of the tavern area and other lock houses on the C & O Canal, we see that during the historic period, most lock house yards were not heavily planted, but were built on sites that were cleared of trees and shrubs. In keeping with the tradition of the times, trees were planted or retained where they provide shade to humans, and removed where they shaded gardens.

Inspection of historic photographs shows that yards around the Lock Keeper's houses appeared "naked" by today's standards. There are several reasons why this may have been the case.

- First, foundation planting was not a popular concept of American landscape during the heyday of the canal. Monitor spread of invasive Japanese stilt grass (See appendix C).
- Second, many of the lock houses were frequently whitewashed, which would not have been a very easy task if there were plants in the way.
- Third, the lock house yards were utilitarian landscapes, having regard to utility or usefulness rather than beauty or ornamentation.
- Fourth, salaries were minimal and Lock Keepers were expected to supplement their needs on their own. According to the canal board, at least one acre of fenced land was required to be attached to each lock to raise gardens, chickens, hogs and cows.
- Finally, Lock Keepers were on call 24-hours a day, 7 days a week. If they had families, those-family members were kept busy tending to the everyday business of cooking and cleaning, as well as gardening to provide food for the family or to sell to canalers. Priority may have been given to sustenance rather than ornament. Third, the lock house yards were utilitarian landscapes, having regard to utility or usefulness rather than beauty or ornamentation.

It is likely that a vegetable garden existed near the tavern. It would have provided food for both the Lock Keeper and his family as well as people who stayed overnight. In 1972's C & O Canal Memories, Lavenia Waskey, daughter of a mule driver and former lock house resident recalled: "I remember that every lock house had a garden. It's produce was for the Lock Keeper and the boatmen."

Landscape Settings for Inns

According to *Landscapes and Gardens for Historic Buildings* by Rudy and Joy Favretti, a well-regarded book on reproducing and creating authentic landscape settings, "Innkeepers were very busy people and did not usually plant an ornamental garden for their visitors...we may be quite sure that in a majority of cases, no flower gardens adorned the grounds of a tavern. Vegetable gardens, on the other hand, would have been an important part of the grounds of an inn because vegetables were necessary for food for the innkeeper, his family and his guests." (Favretti, 58).

Gardens on the C&O Canal

A handwritten multi-volume Historic Resource Study (HRS) of the C & O Canal was produced in 1976 by Harlan D. Unrau, and recently made widely available through both typewritten hard copies and on the National Park Service history web page. The 849-page document is a study of the design, economics, construction, maintenance, and other aspects of the canal. Section twelve of the document focuses on Lockkeepers and Boatmen. It is from this section that the following information was found.

Great Falls was not a typical Lock House, it was also a tavern and scenic destination. With the Washington Aqueduct dam and intake located within close proximity to the tavern, the site was sometimes host to the Army Corps of Engineers. Throughout the history of the canal years, a small but significant population of people could be found in and around the site which created a demand for supplies. According to the 1976 Historic Resource Study of the C & O Canal:

In September (1830) the board approved a resolution requiring that at least one acre be attached to each lock for the use of the tender. On their plot the tenders were to raise gardens for their supply of fresh vegetables and to raise chickens, hogs and cows for their supply of eggs, milk, and meat. The grounds set aside for these purposes were to be fenced....

Most everything that was needed in the way of groceries or feed could be purchased along the canal. There were numerous stores at many of the locks and in the villages in the vicinity of the canal that catered to the needs of the boatmen. In addition, most of the lock tenders raised milk cows, chickens, and gardens, the surplus of which was sold to the 'canallers.' Some of the boat-men, however, carried some chickens and one or two pigs on their boats to cut their expenses. The boatmen's diet was supplemented with fish taken from the canal.

The boatmen on the canal required large quantities of staples, groceries, and vegetables for them-selves, their families, and their hired hands. Among the items that the boatmen needed were flour, sugar, coffee, smoked meats, dry salt belly, and bread. The 'canallers' also were in need of large amounts of hay, feed, and provender for their mules employed on the waterway. The mules con-sumed [sic] an annual minimum of 25,000 barrels of corn, 3,840 bushels of oats, and several thousand tons of hay at a cost of some \$60,000.... Up until 1850s the boatmen generally purchased their food and feed in Georgetown or Cumberland before beginning their journey. Along the way, they would procure additional supplies in the small towns adjacent to the canal. Often they would buy vegetables from the Lockkeepers, some of whom raised large gardens, and local farmers would sell the boatmen hay and feed.

...grocery and feed stores were built along the line of the canal. Most of them were built in the decade after the Civil War. The location, type, pro-prietor [sic], and date of these stores were as follows: Lock No. 20 – On June 24, 1851, the board authorized the General Superintendent to rent the Ball Room at Crommelin House for the use of the company in return for allowing Daniel Collins, the tender at Locks Nos. 19 and 20, to operate a grocery store in the building. Lock No. 20 – On October 12, 1869, Howard A. Garrett was granted permission to erect a feed store on the towpath side of the canal and to lease a plot of ground (50 x 28 feet and 16 feet from the lock wall) for ten years at an annual rent of \$20. The lease was re-newed [sic] at least once, because the Montgomery County Circuit Court records indicate that Garrett was still operating feed and provision store as late as 1887. (Unrau 786, 819, 831, 832).



This photograph, presumably from near the turn of the century was taken at Lock 48. Behind the child on the lawn, and in front of the white picket fence, is a lilac bush. The potted plant in the foreground is a geranium (CHOH archives).



This 1890 image is of Lockkeeper Thomas F. Donegan and family at Lock 56. The lockhouse landscape is stark and it is partially divided by a white picket fence. In the foreground, hollyhocks flutter in the breeze (CHOH archives).



This photograph of the north entrance of the tavern from 1902 illustrates the stark nature of the tavern. Behind the white picket fence, a whitewashed tree is surrounded by turf, and the walkways appear to be composed of compacted soil (CHOH Sharpsburg, Young and Jett, 4).



This 1915 photograph of the tavern was likely taken shortly after a 1914 flood. The ground plane appears uneven and the whitewash on the tree in the foreground appears to have been washed off (CHOH archives).



The 1917 photograph above shows vines on trellises, sunflowers along the west wall of the tavern and plantings of flowers or vegetables on the north side of the tavern. While the image was taken outside of the period considered the "heyday" of the canal, sunflowers could be considered for a modern tavern planting plan (CHOH archives).



The photograph to the left is not dated but pre-dates the 1917 photograph above. Plantings on the west side of the tavern can be seen more clearly in the enlargement below. Whitewashed trees line the canal and landscaping is minimal, even "weedy." The enlarged section below shows, sunflowers may have been growing in the bed of soil along the west side of the tavern (MLK library HIC 154403).



When adding plants to the landscape, consideration should be taken to avoid blocking the northern face of the tavern from the entry walk. Pots set on the grass on either side of the door filled with period annuals and / or perennials would provide foliage and flowers without obstructing views or access to the tavern door (NCR CLP 2008).





The grass in the bed on the west side of the tavern should be removed and a leaf mulch, gathered on-site, should be used both as a soil amendment and a top-mulch. Sunflowers could then be planted in the bed as they have been in the past (NCR CLP 2008).



Without blocking the view of the southern façade of the tavern from the towpath or from the service drive, the addition of a limited number of shrubs would evoke the historic landscape.

This photograph also shows the general location of a proposed interpretive vegetable garden. The garden would be planted with heirloom vegetable varieties that would likely have been grown during the historic period (NCR CLP 2008).

Great Falls Tavern Lock House Planting Plan and Vegetable Garden Locator

West side planting strip: remove grass, mulch with local leaf material and plant sunflowers. Avoid planting sunflowers directly in front of the windows.

Remove grass, amend soil with compost and plant one Chinese lilac (*Syringa X Chinensis*) or Carolina allspice (*Calycanthus floridus*). (To be determined).

Remove grass, amend soil with compost and plant violets (see plant materials list for species).

Remove grass and amend soil with compost. Plant Siberian iris (*Iris sibirica*).

Amend soil with compost, plant (to be determined).

Remove grass and amend soil with compost. Plant hollyhock (*Alcea rosea*) along fence.

Remove grass, amend soil with compost and plant one lilac Chinese lilac (*Syringa X Chinensis*) or Carolina allspice (*Calycanthus floridus*). (To be determined).

Vegetable garden location.

Fill 7-9 plain terra cotta pots (pot sizes can vary from 10"-14") with potting soil and plant with red geraniums and pot marigolds. Fill with potting soil to no more than 2 1/2 inches from top rim of pot. Place pots around tavern on patios and porches. Water as needed through growing season.

Background image taken from Great Falls Tavern Repair/Rehabilitate Visitor Center, NPS, Drawing # 412_41081, sheets 24, 28. May 2006.

Great Falls Tavern
Chesapeake And Ohio Canal
Plant Materials List
Tavern Plantings
Spring 2008 Planting

QUANTITY	BOTANICAL NAME	COMMON NAME	PLANTING DEPTH	SPACING	DESCRIPTION/SIZE
2 pk	<i>Alcea rosea</i>	Hollyhock	See package	See package	Heirloom variety If avail. In pots, buy largest specimen.
12ea	<i>Calendula officinalis</i>	Pot Marigold	Same as in pot	1-2 per pot*	Mix in pots with geraniums.
1 pk	<i>Helianthus</i> sp. (to be determined)	Sunflower	See package	See package	Heirloom variety, 8-12' tall. If avail. In pots, buy largest specimen.
3 ea	<i>Shrub</i> <i>To be determined</i>	Shrub to be determined	Same as in pot	N/A	B & B or Cont. Min height 2-3' Single flower
30 ea	<i>Iris sibirica</i>	Siberian Iris	Plant with the top of the rhizome 1 to 2 inches below the surface.	6-8" for massing**	Top size rhizomes
15 ea	<i>Pelargonium</i>	Geranium	Same as in pot	2-3 per Pot*	Red color 4" pot size
2 ea	<i>Syringa X chinensis</i>	Chinese lilac	Same as in pot	N/A	B & B or Cont. Min height 2-3' Single lavender blooms
50 ea	<i>Viola soraria</i> or <i>Viola canadensis</i> or <i>Viola pedata</i> ***	Common blue violet (soraria), Common violet (canadensis), Bird-foot violet (pedata)	Same as in pot	6" apart	6" apart for 4" pot size.



Notes for Plant Materials List (previous page)

*Use 7-9 plain terra cotta pots (not plastic) sized 10-14" in diameter. Plant geraniums and / or pot marigolds in potting soil and fill to no higher than 2 1/2" from the rim of the pot after planting.

The use of Soil Moist or other brands of water-retaining polymers in the potting soil will reduce the chances of plants drying out. Use polymers at root level, rather than as a top dressing (as specified on package label).

**Rhizomes may need to be divided every four to five years or as needed.
Amend soil with compost to create good drainage. Pack soil firmly around roots to avoid air pockets.

***If sources for recommended plants are limited, contact NCR CLP landscape architect to discuss alternatives.

Commercial sources for historic irises
www.hips-roots.com/visitors/v-comm-src.html

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