CULTURAL LANDSCAPE REPORT

CHESAPEAKE & OHIO CANAL

· NATIONAL HISTORICAL PARK ·

WILLIAMSPORT, MARYLAND

• NATIONAL PARK SERVICE •

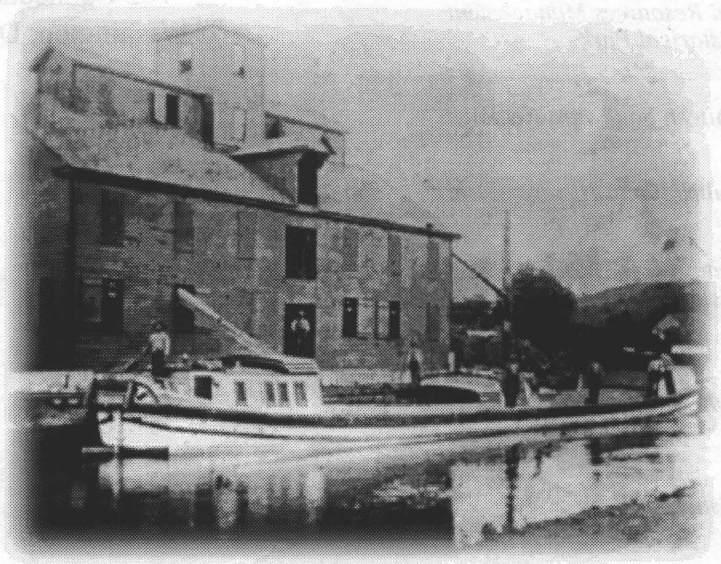
CULTURAL LANDSCAPE REPORT

CHESAPEAKE & OHIO CANAL

· NATIONAL HISTORICAL PARK ·

WILLIAMSPORT, MARYLAND

MILEPOST 98.96 – 99.85



Prepared by
Land and Community Associates
for
Oehrlein and Associates Architects

Prepared for
National Park Service
Department of the Interior
C&O Canal National Historical Park
National Capital Region

1994

Bibliography

AUTH: Land and Community Associates
TITL: Cultural Landscape Report, Chesapeake & Ohio Canal National Historical Park, Williamsport, Maryland
DRFT:
BIBN: 017751
ALPH: «CHOH»
PROG:
STTY: «63»
CLUS: NC
GRPH: «13»/«14»
HOLD: «WASO»
PLPU:
PUBL:
DATE: 1994
LCS#:
NTCT:
CSI#:
REST:
PAGS:
VOLS:
CRD#:
BUID:
SRTI:
SRVO:
CHAD:
NTIS:
DSC#:
GPO#:
SHLF:
NOTE:
ABST:

CREDITS

U.S. Department of the Interior
National Park Service

Rebecca Stevens
Regional Historical Architect
National Capital Region

Susan E. Winter
Chief, Branch of Cultural Resources Management
C&O Canal National Historical Park

Barbara Zook
Regional Historical Architect, Southwest Region

John Frye
Park Ranger, C&O Canal National Historical Park

Gordon Gay
Chief, Branch of Interpretation and Visitor Services
C&O Canal National Historical Park

Doug Hicks
Deputy Chief
Williamsport Preservation Training Center

Thomas O. Hobbs
Superintendent
C&O Canal National Historical Park

Terrie Savering
Assistant Superintendent
C&O Canal National Historical Park

Dick Marshall
Conococheague Maintenance District Foreman

Sam May
Chief of Maintenance
C&O Canal National Historical Park

Dave Trail
Compliance Officer
C&O Canal National Historical Park

Land and Community Associates
P.O. Box 92
Charlottesville, Virginia 22902

Oehrlein and Associates Architects
1702 Connecticut Avenue, NW
Washington, D.C. 20009

TABLE OF CONTENTS

1 Management Summary

1.1 Project Background and Purpose 1-1
1.2 Historical Context Abstract 1-2
1.3 Study Boundaries 1-3
1.4 Methodology and Scope of Project 1-3
1.5 Administrative Context for the Work 1-5
1.6 Summary of Findings 1-6

2 Site Physical History

2.1 Development of Williamsport Prior to the Arrival of the C&O Canal, 1787-1828 2-1
2.2 Canal Construction, 1828-1850 2-7
2.3 Opening of the Canal to the Outbreak of the Civil War, 1850-1861 2-15
2.4 The Civil War, 1861-1865 2-16
2.5 Post-War Reconstruction to the Flood of 1889, 1865-1889 2-20
2.6 Canal Re-Opening After the Flood of 1889 to the Abandonment of the Canal, 1889-1924 2-25
2.7 Deterioration of the Canal, 1924-1937 2-33
2.8 NPS Acquisition and Management, 1937-1993 2-34

3 Site Analysis and Evaluation

3.1 Significance 3-1
3.2 Cultural Landscape Characteristics 3-4
3.3 Related Information 3-33
3.4 Comparison of Selected Historic and Contemporary Photographs 3-38
3.5 Landscape Character Areas 3-41
3.6 Condition and Integrity Assessment of Cultural Landscape Features 3-43
3.7 Cultural Landscape Inventory of Missing and Surviving Features 3-55

4 Treatment Recommendations and Phasing

4.1 Overview and Background 4-1
4.2 C&O Canal Cultural Landscape Management Philosophy 4-4
4.3 ManagementActions: A Phased Treatment Approach 4-8
Phase One 4-12
Phase Two 4-21
Phase Three 4-27

5 References

6 Appendices

A Chronology of Historic Landscape Periods 6-1
B 1993 Vegetation Inventory 6-10
C Management Planning Background 6-11
D Existing Conditions Photographs 6-15

List of Figures

1. Context Map 1-1
2. Study Boundary Map ..... 1-4 / 1-5
3. C&O Canal interpreter leading walk along the canal in Williamsport 1-6
4. Map of the Town of Williamsport, 1877, Drawn from the Original 1786 Plat Map in *An Illustrated Atlas of Washington County, Maryland* 2-3
5. Map of the Basin at Williamsport, Report of G.W. Rodgers, December 15, 1838 2-7
6. Conococheague Aqueduct, circa 1900 2-9
7. Cushwa Loading Basin at Williamsport, early twentieth century 2-11
8. Lockkeeper's House and hay press/carpenter's shop at Lock 44, circa 1919 2-14
9. Ferry Crossing at Williamsport, circa 1860 2-16
10. "War in the Shenandoah Valley—Division of the National Army Under Gen. Banks Recrossing the Potomac from Williamsport, Maryland, to Attack the Rebel Army Under Gen. Jackson—the Band of the 46th Pennsylvania Volunteers Playing the National Airs on the Virginia Shore." 2-18
11. Lithographic Perspective of Aqueduct, Cushwa loading basin, Embrey and Cushwa Warehouse, and Western Maryland Railroad, circa 1872 2-21
12. Cushwa Loading Basin on the C&O Canal at Williamsport Showing Miller Brothers Lumber Mill, Cushwa's Cement and Phosphate Factory, Cushwa's Warehouse, and Western Maryland Railroad Line Spur, 1916 2-22
13. View of DeFrehn Chair Factory, 1880-1889 2-23
14. Sanborn Map Company, Portion of Map of Williamsport, Maryland, Showing the Area Surrounding the Cushwa Loading Basin, October 1918 2-26
15. Washington-Berkeley Bridge, circa 1915 2-27
16. C&O Canal, Williamsport, showing Bollman Bridge in foreground, Steffey and Findlay Lumber Mill and associated buildings in background, circa 1900 2-28
17. C&O Canal, Williamsport, showing farm northwest of the Conococheague Aqueduct, circa 1903 2-29
18. Berm side of the Conococheague Aqueduct with wood parapet, circa 1939 2-30
19. Potomac Edison Company Plan and Profile of Transmission Line Crossing the C&O Canal and Cushwa Loading Basin at Williamsport, circa 1929 2-31
20. Lockkeeper's House at Lock 44, circa 1960 2-36
21. Overall Landscape Organization 3-4

22. Section of valley at Williamsport 3-5
23. 1787-1828 Land Use 3-6
24. 1828-1850 Land Use 3-7
25. 1850-1861 Land Use 3-8
26. 1861-1865 Land Use 3-9
27. 1865-1889 Land Use 3-10
28. 1889-1924 Land Use 3-11
29. 1924-1937 Land Use 3-12
30. 1937-1993 Land Use 3-13
31. 1787-1828 Circulation Systems 3-14
32. 1828-1850 Circulation Systems 3-15
33. 1850-1861 Circulation Systems 3-15
34. 1861-1865 Circulation Systems 3-16
35. 1865-1889 Circulation Systems 3-17
36. 1889-1924 Circulation Systems 3-17
37. 1924-1937 Circulation Systems 3-18
38. 1937-1993 Circulation Systems 3-19
39. 1850-1861 Vegetation 3-20
40. 1861-1865 Vegetation 3-21
41. 1865-1889 Vegetation 3-21
42. 1889-1924 Vegetation 3-23
43. 1924-1937 Vegetation 3-24
44. 1937-1993 Vegetation 3-25
45. Structural Materials: 1993 Buildings and Structures Map ..... 3-28 / 3-29
46. Aqueduct east parapet wall stones in canal prism north of aqueduct 3-30
47. Metal railing ornament at aqueduct 3-30
48. Wood spacers between structural aqueduct stones 3-31
49. Bolts on side and top of aqueduct west wall 3-31
50. Western Maryland Railroad tracks 3-31

51. Stone abutment at Bollman Bridge and wood bollards 3-31
52. Railroad track fixture 3-31
53. Bollman Bridge clearance fixture above railroad tracks 3-31
54. Iron joinery of former lock gate post 3-31
55. Chains embedded in wall between the flume and Lock 44 3-31
56. 1787-1828 Historic Base Map ..... 3-32 / 3-33
57. 1828-1850 Historic Base Map ..... 3-32 / 3-33
58. 1850-1861 Historic Base Map ..... 3-32 / 3-33
59. 1861-1865 Historic Base Map ..... 3-32 / 3-33
60. 1865-1889 Historic Base Map ..... 3-32 / 3-33
61. 1889-1924 Historic Base Map ..... 3-32 / 3-33
62. 1924-1937 Historic Base Map ..... 3-32 / 3-33
63. 1937-1993 Historic Base Map ..... 3-32 / 3-33
64. Historic Synthesis Map ..... 3-32 / 3-33
65. Missing Features Map ..... 3-32 / 3-33
66. Overall Canal North Section
1993 Existing Conditions Map ..... 3-34 / 3-35 and in back pocket
67. Overall Canal South Section
1993 Existing Conditions Map ..... 3-34 / 3-35 and in back pocket
68. Town of Williamsport Zoning Map, 1980 3-37
69. View of aqueduct looking towards holding basin, circa 1900 3-38
70. View of aqueduct looking towards holding basin, August 1993 3-38
71. View of DeFrehn Chair Factory, 1880-1889 3-38
72. View of DeFrehn Chair Factory site, August 1993 3-38
73. View across aqueduct toward Cushwa loading basin, circa 1920 3-39
74. View across aqueduct toward Cushwa loading basin, August 1993 3-39
75. View into Cushwa loading basin, unknown date 3-39
76. View into Cushwa loading basin, May 1993 3-39
77. View from Riverview Cemetery northwest to Potomac River, unknown date 3-39
78. View from Riverview Cemetery northwest to Potomac River, May 1993 3-39

79. Looking southwest along canal, circa 1900 3-40
80. Looking southwest along canal, August 1993 3-40
81. Looking northeast from Lock 44 toward Steffey and Findlay Mill, unknown date 3-40
82. Looking northeast from Lock 44 toward former mill site, August 1993 3-40
83. View of cemetery hillside, unknown date 3-40
84. View of cemetery hillside, August 1993 3-40
85. Lockkeeper's House, carpenter's shop , lock, and flume, circa 1919 3-41
86. Lockkeeper's House, lock, and flume, August 1993 3-41
87. Landscape Character Areas Map ..... 3-42 / 3-43
88. Conococheague Aqueduct 3-45
89. Holding basin north of Conococheague Aqueduct 3-45
90. Road crossing holding basin leading to Fenton Avenue 3-45
91. Towpath at holding basin 3-46
92. Cushwa loading basin under construction showing Cushwa Warehouse 3-47
93. Canal prism and towpath at Cushwa loading basin showing Washington-Berkeley Bridge 3-47
94. Power Generation Station beyond Cushwa loading basin 3-47
95. Canal-North Section showing railroad tracks and arborvitae hedge 3-48
96. Canal-North Section showing Riverview Cemetery and railroad tracks 3-48
97. Washington-Berkeley Bridge, Railroad Lift Bridge, and Bollman Bridge 3-48
98. Railroad Lift Bridge with Western Maryland Railroad tracks 3-48
99. Control station 3-48
100. Bollman Bridge 3-49
101. Canal wall remnants 3-49
102. Lock walls and lock gate (lock gate recently removed) 3-50
103. Flume outline 3-50
104. Lockkeeper's House and shed 3-51
105. Former truck access to Potomac Edison Company power plant 3-51
106. Sluice gate in earthen causeway north of Lock 44 3-51
107. Canal and towpath of south canal section 3-52

108. Four high water mark tablets on the Cushwa Warehouse 3-53
109. Recent planting of arborvitae hedge by Potomac Edison Company power plant 3-53
110. Integrity threatening parking adjacent to historic structures 3-53
111. Canal prism desilting 3-54
112. Aqueduct wing wall repointing using non-historic materials and techniques 3-54
113a/b. Phase One: Overall Canal Recommendations ..... 4-20 / 4-21
114. Phase One: Cushwa Loading Basin Recommendations ..... 4-20 / 4-21
115a/b. Phase Two: Overall Canal Recommendations ..... 4-26 / 4-27
116. Phase Two: Cushwa Loading Basin Recommendations ..... 4-26 / 4-27
117a/b. Phase Three: Overall Canal Recommendations ..... following page 4-30
118. Phase Three: Cushwa Loading Basin Recommendations ..... following page 4-30

1 MANAGEMENT SUMMARY

1.1 PROJECT BACKGROUND AND PURPOSE

In the fall of 1992, the National Park Service (NPS) developed a scope of work for preparation of a Cultural Landscape Report (CLR) for the Chesapeake & Ohio (C&O) Canal National Historical Park (NHP) at Williamsport, Maryland. NPS contracted with Oehrlein & Associates, Architects of Washington, D.C., and Land and Community Associates (LCA) of Charlottesville, Virginia, to undertake the project. The CLR would supplement the 1976 *General Plan,* which discusses treatments for individual structures and buildings but does not address a long-range vision for the park's cultural landscape.

The C&O Canal NHP is presently undertaking an extensive rewatering project at Williamsport from the Cushwa loading basin to Lock 44. (Historically, the basin has been referred to by various names; in this report, it will be referred to as the Cushwa loading basin for ease of identification). Current plans also call for visitor facility development in Williamsport. The purpose of this CLR is to assist park management in making informed decisions concerning the future use and rehabilitation/restoration of the Cushwa loading basin and related structures from the Conococheague Aqueduct to Lock 44, as well as to determine the cultural landscape impacts of visitor facility development.

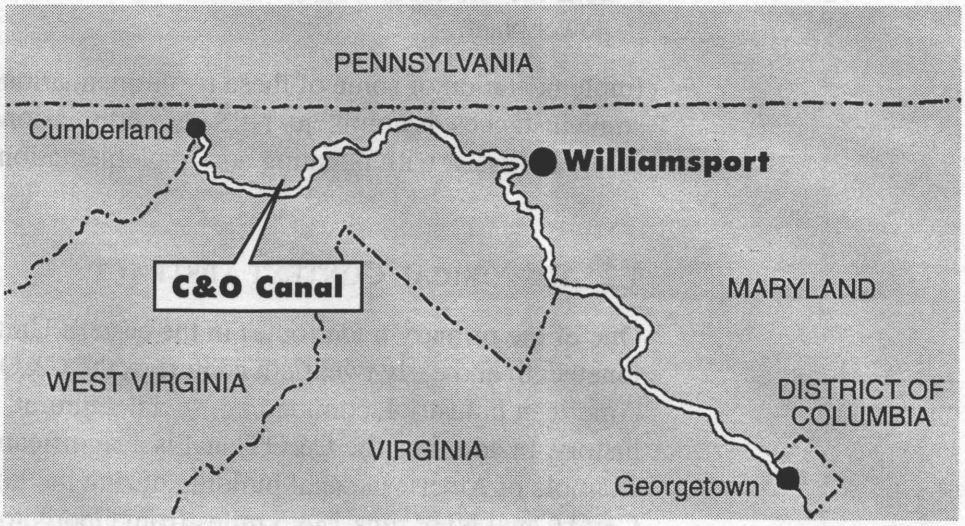


Figure 1. Context Map

The 1976 *General Plan* for the entire park identified Williamsport as one of the canal's six "National Interpretive Center Zones." The plan defined it as follows:

> This zone defines areas containing major historic restoration opportunities where the park visitor will be able to see a functioning canal in an historic setting. The areas were also selected for accessibility, availability of parklands for development of visitor facilities, and the compatibility of the environment adjoining the park. These interpretive centers are seen as supporting the largest density of visitor use. Most of that use is considered to be short-term (one to

two hours). The concept of development of these areas is that of an outdoor living history museum. Historical accuracy is imperative in these re-creations of historic scenes.[1]

The 1983 *Development Concept Plan* (DCP) for the canal at Williamsport outlined a methodology for accomplishing this goal. The plan recommended the following:

- reconstruction of the stone wall at the Cushwa loading basin
- stabilization of the Conococheague Aqueduct
- restoration of Lock 44 and the Lockkeeper's House
- restoration of the exterior of the Cushwa Warehouse and Power Generation Station
- landscaping of the area near the Cushwa Warehouse, Power Generation Station, and historic town square
- location of visitor parking areas and access roads in areas where their impact on historic resources is mitigated
- relocation of NPS maintenance structure
- removal of the former Potomac Edison Company power plant access road across the canal
- construction of a new truck access route to the Potomac Edison Company power plant.

Implementation of some of these recommendations has begun, and in some instances, is complete. NPS has commissioned several separate studies to assist with planning and implementation of these projects.

1.2 HISTORICAL CONTEXT ABSTRACT

One of the primary trade routes in the eastern United States in the late nineteenth and early twentieth centuries, the C&O Canal is significant in American industrial, commercial, social, cultural, and transportation history. In addition, the C&O Canal is a significant nineteenth-century example of American canal building during the historic canal era. The C&O Canal NHP runs 184.5 miles from Georgetown in the District of Columbia northwest to Cumberland, Maryland, and generally parallels the Potomac River. Williamsport, located in Maryland at the confluence of the Conococheague Creek and the Potomac River, was a major center of trade, commerce, and industry associated with the C&O Canal. Land adjacent to the Williamsport canal segment possesses historic resources that range in dates of construction from the 1800s through the early twentieth century. The canal at Williamsport also has associations with Civil War military history and prominent local entrepreneurs, industrialists, and businesses. Williamsport, along with Cumberland and Georgetown, was a primary center of trade.

1.3 STUDY BOUNDARIES

The Williamsport study area of the C&O Canal NHP is an approximately 15-acre site located in the center of the 184.5 mile canal. The Town of Williamsport abuts the canal site to the east, occupying a knoll above the confluence of the Conococheague Creek and the Potomac River between Hagerstown, Maryland, and Martinsburg, West Virginia. Approximately three miles from the Route 11 exit of Interstate Route 81, Williamsport is linked with West Virginia via U.S. Route 11 and the Washington-Berkeley Bridge.

The study area is defined as the approximately one-mile section of the C&O Canal NHP between mileposts 99.85 and 98.96, adjacent to Williamsport, Maryland. Located east of the Potomac River, the study area is bounded on the west by the Potomac Edison Company power plant and River Bottom Park; to the east by the Town of Williamsport and Riverview Cemetery on the knoll above the site; undeveloped woodland to the south; and an undeveloped woodland, residential neighborhood, and the Garden State Tannery and its waste ponds on the north. Refer to Figure 2, the *Study Boundary Map*.

Extant within the study boundary are the canal prism and related historic, cultural, and natural features and elements. This area possesses a variety of landscape, architectural, and archeological resources that represent both the canal's and Williamsport's physical evolution. Given the number and diversity of resources in good condition found in this short segment of the canal, Williamsport has considerable potential for development as an interpretive site for visitors.

1.4 METHODOLOGY AND SCOPE OF PROJECT

This report contains four major components:

- management summary
- site physical history
- site analysis and evaluation
- treatment recommendations and phasing

Four operational phases were completed to fulfill these requirements:

- research
- site documentation
- analysis and evaluation
- schematic design

Research was conducted at the C&O Canal NHP, National Archives, Library of Congress, Maryland State Archives, U.S. Geological Survey, Washington County Historic Society, Western Maryland Room of the

Washington County Free Library, Williamsport Town Hall, and Alderman Library at the University of Virginia. Historic maps and photographs and a variety of primary and secondary written resources were consulted as well. Previously prepared reports that supplemented the research included historic structure reports conducted in the Cushwa loading basin area, such as those evaluating the Cushwa Warehouse, Power Generation Station (also known as the power station), Bollman Bridge, and Lift Lock 44, along with a preservation study of the Railroad Lift Bridge, a restoration study of the Cushwa loading basin, a stabilization study of the Conococheague Creek Aqueduct and archeological studies of the Power Generation Station and the Miller Brothers Lumber Mill site.

The project area's small size—approximately one mile long and averaging a few hundred feet wide—enabled thorough documentation of both large- and small-scale features. Using 1937 and 1992 aerial photographs, a base map supplied by NPS, and the 1979 U.S.G.S. Williamsport, MD, 7.5-minute quadrangle map as points of departure, LCA developed an updated base map reflecting current conditions at the scale of one inch equals eighty feet (1" = 80'). This map provided a foundation for additional field work. Photographic documentation occurred in both winter and summer seasons to provide more comprehensive representation of the site.

The photographic resources used to prepare this document were collected from a variety of sources and, consequently, vary considerably in condition and quality. Every effort has been made to reproduce these images with the greatest degree of clarity and consistency, including—in some instances—the use of computerized image enhancement.

During the site analysis and evaluation phase, available resources were reviewed, and the canal's history was divided into the following eight distinct periods of landscape development:

1787-1828	Development of Williamsport prior to the arrival of the C&O Canal
1828-1850	Canal construction
1850-1861	Opening of the canal to the outbreak of the Civil War
1861-1865	The Civil War
1865-1889	Post-war reconstruction to the flood of 1889 (known as the "Great Flood")
1889-1924	Canal re-opening after the flood of 1889 to the abandonment of the canal
1924-1937	Deterioration of the canal
1937-1993	NPS acquisition and management.

Historic base maps depicting the site's landscape development periods were created, and existing conditions compared and contrasted with the site's appearance during these periods.

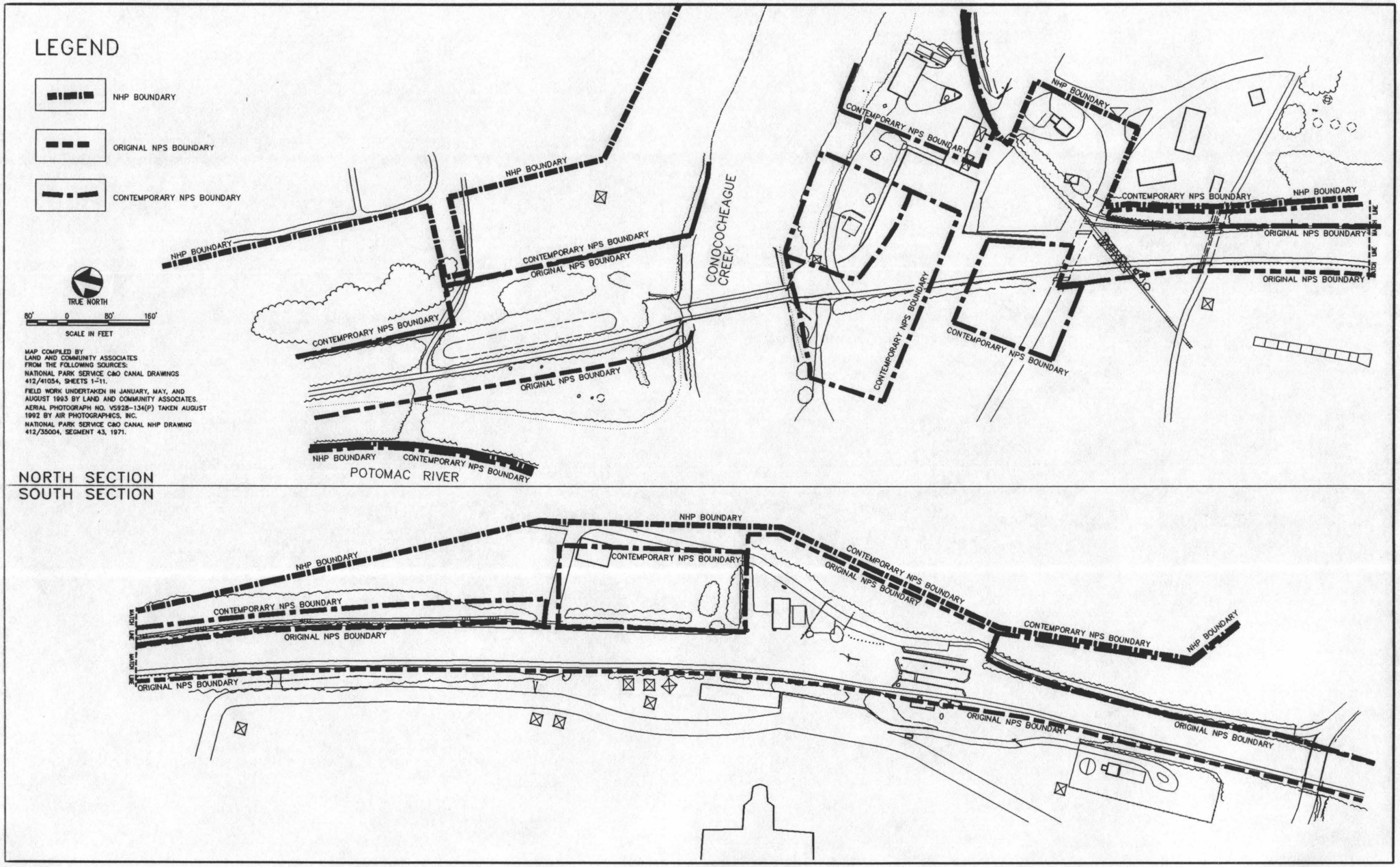


Figure 2. Study Boundary Map

Individual landscape components, including buildings and structures, archeological resources, circulation systems, vegetation, and small-scale features, were evaluated using the National Register of Historic Places criteria for significance and integrity. Landscape Character Areas—areas with concentrations of significant historic values, patterns, and features and that possess integrity, or areas that have clearly defined programmatic roles in the landscape—were identified and became the basis for analysis and evaluation. These areas were identified in accordance with the guidance concerning evaluation established in *National Register Bulletins 18* and *30*.

Treatment recommendations were developed for the NHP that can be implemented in three phases. Chapter Four presents the primary goals of the landscape management philosophy, long term goals for the phased treatments, and the specific recommendations. The three phases accommodate current, interim, and future uses of the canal and adjacent areas. In each phase the recommendations are presented on three maps—Overall Canal North Section, Overall Canal South Section, and Cushwa Loading Basin. The recommendations are organized according to the same landscape components cited above. The treatment recommendations and phasing plans were reviewed by the park and regional staff.

Preparation of additional design drawings or construction documents is not within the scope of this project. Prior to further implementation of adaptive reuse of historic structures, however, assessments of the structures and their materials and additional documents will be necessary.

1.5 ADMINISTRATIVE CONTEXT FOR THE WORK

The 19,390-acre C&O Canal NHP possesses a variety of features including canal-based resources such as aqueducts, dams, the towpath, lockkeepers' houses, culverts, holding and loading basins, associated resources such as warehouses, mills, bridges, and railroad-related buildings and structures.[2] A small portion of the park, approximately 124 acres, lies in West Virginia; the remainder is in Maryland and Washington, D.C.

In September 1938, NPS purchased the 184.5-mile C&O Canal right-of-way between Georgetown and Cumberland, Maryland, using funds allotted by the Federal Emergency Administrator of Public Works. Immediately following this purchase, NPS initiated restoration and rehabilitation of the 23-mile stretch between Washington, D.C., and Seneca, Maryland, to be maintained for public recreation. North of Seneca, however, the canal and canal-related resources received minimal attention. According to a 1948 survey of the canal area, "the canal and the structures in this area have received little or no maintenance attention, have become overgrown, are inadequately policed, in some areas constitute unhealthful conditions and give rise to constant problems of administration."[3] Despite its condition, the canal was declared a National Historical Monument in 1961.

A new phase of NPS management began in 1971 with Congressional passage of Public Law 91-664, which created the C&O Canal NHP to preserve and restore the canal's resources for historical interpretation and public recreation. Known as the "Chesapeake and Ohio Development Act," the law authorized the Secretary of the Interior to maintain and restore the canal for recreational purposes. The act also provided for acquisition of specific lands in the canal corridor by the State of Maryland. Existing utility easements, special use permits, and other rights were protected by the act. Almost three-quarters of the park's lands are owned by NPS; the remainder are divided equally between state and local areas and private property.[4]

Figure 3. C&O Canal interpreter leading walk along the canal in Williamsport

1.6 SUMMARY OF FINDINGS

The C&O Canal NHP at Williamsport retains many significant features that represent the development, growth, and decline of the C&O Canal over a one-hundred-year period. Surviving features represent the evolution of an industrial landscape spanning the entire period of significance—from the beginning of canal construction in 1828, to the opening of the canal at Williamsport in 1835, to the collapse of the Conococheague Aqueduct in 1920, and, finally, to the ultimate closing of the canal in 1924. Both the canal and its setting retain considerable integrity. Williamsport's historic buildings and their proximity to the canal enhance the site's character by providing an appropriate setting that emphasizes the historic association between canal and town. Treatments detailed in Chapter Four, and outlined below, are intended to preserve, maintain, and enhance this historically significant landscape.

Summary of Treatment Plan Recommendations and Phasing

Rehabilitation, which can accommodate new compatible designs and uses while preserving the historic setting and extant structures, is the proposed landscape treatment recommendation for the Williamsport segment of the C&O Canal National Historic Park. The following is a summary of the recommendations presented in more detail in Chapter Four for each of the three phases.

PHASE ONE

Phase One (years one to five) consists of temporarily *accommodating* the needs of the current users of the facilities, primarily the Williamsport Preservation Training Center. The primary recommendations for the first phase are to

- protect the known historic resources along the canal by limiting vehicular access to the site, pedestrian access to sensitive areas, and by establishing a cyclical maintenance program that promotes preservation,
- provide parking spaces for daily and weekly employees and visitors in the area between the Cushwa Warehouse and Power Generation Station, but prohibit parking beyond the eastern wall of Cushwa loading basin,
- establish a universally accessible vehicular entrance to the site,
- establish a visual connection between the canal and the sites discussed in Chapter Four through selective removal of vegetation,
- undertake archeological investigations (in order of priority) for the canal prism and towpath, Miller Brothers Lumber Mill, Cushwa Cement and Phosphate Warehouse, the Lockkeeper's House landscape, the carpenter's shop and pivot bridge site, the area south of the Cushwa Warehouse, the mill sites north of Lock 44, the holding basin and DeFrehn Chair Factory area, and the house site southwest of the Bollman Bridge to allow for interpretation in future phases,
- interpret sites discussed in Chapter Four using a walking tour brochure, and incorporate existing interpretive sign at Lock 44,
- evaluate the aqueduct, the bridges, Lock 44, the flume, the Cushwa Warehouse, the Power Generation Station, canal wall remnants, the Lockkeeper's House and all other related elements to determine stabilization and rehabilitation needs,
- remove existing earth causeways that cross the canal as indicated in the rewatering sequence,
- encourage Town of Williamsport to limit building activities in River Bottom Park to maintain views between the canal and the Potomac River,
- negotiate with Town of Williamsport to acquire the maintenance yard and the gas station, and to discuss additional visitor parking needs,

- protect the Conococheague Aqueduct from further deterioration by stabilizing arches and limiting access to the eastern side of the structure; construct a replica wood parapet wall on its eastern side,
- protect historic signs and newly repainted signs,
- negotiate with C&O Canal Days Inc. for use of the current C&O Canal Museum on Potomac Street as an interpretation center during the first phase,
- rehabilitate the YACC building for the relocation of park maintenance facilities until a decision can be made about off-site relocation,
- develop an interpretive plan for displays and exhibits to be installed in phase two, and
- develop a site furnishings plan for the NHP.

PHASE TWO

Phase Two implementation (years five to ten) is anticipated to begin after the relocation of the Williamsport Preservation Training Center. The primary recommendations in the second phase are to

- rehabilitate the Power Generation Station to accommodate a proposed visitor contact facility housing exhibits and restroom facilities,
- provide a new design for vehicular access to the Cushwa loading basin area that includes handicapped parking, a drop-off and orientation plaza in front of the visitor contact station (newly rehabilitated Power Generation Station), and limited visitor parking,
- provide a planting design for the visitor contact station that incorporates a limited palette of native plant materials,
- remove the temporary trailers east of the Power Generation Station,
- construct a visitor parking area at the end of Fenton Avenue,
- rehabilitate the Cushwa Warehouse for use as a park ranger station, administrative offices, and, possibly, a small library for park interpreters,
- relocate maintenance activities to the YACC building,
- install new interpretive signs based on the interpretive plan, findings of the archeological investigations and historic research developed in phase one,
- conduct archeological investigation of former farm site, and Williamsport maintenance yard if acquired in phase one,
- repoint the aqueduct wing walls,
- develop a lighting plan for the park, including security lighting around visitor facility areas,

- establish a preferred pedestrian circulation route based on the interpretive plan, including a pivot bridge at Lock 44 if this area is rewatered, and
- incorporate a canal boat concession in the Cushwa loading basin area after the canal is re-watered. Refer to the section of Chapter Four, titled Rewatering of the Canal for specific recommendations.

PHASE THREE

Phase Three recommendations are not time sensitive. The proposed implementation schedule (years eleven and twenty) reflects current realities of funding and staffing. Increases in funding or programmatic changes could result in earlier implementation. The primary recommendations in the third phase are to

- negotiate with C&O Canal Days Inc. to use the current C&O Canal Museum building as an accessory visitor contact facility in case of emergency during a flood,
- rehabilitate the Lockkeeper's House into a ranger station and/or visitor contact facility for supervision of the rewatered canal and lock operation,
- use a portion of the Lockkeeper's House for displays of artifacts and period furnishings,
- install and display artifacts and exhibits in the Power Generation Station to interpret its historic function,
- rehabilitate the gas station or construct a new building on its site as a permanent visitor contact facility on higher ground, thereby increasing the amount of available space for interpretive displays and site orientation, and relocate existing interpretive displays to the new space,
- interpret additional areas according to the findings of continued archeological investigation and historical research, and
- relocate maintenance facilities and any other functions not tied to the park to a building off-site as determined in phase two.

---

[1] National Park Service, National Capital Team, Denver Service Center, *Development Concept Plan and Assessment: C&O Canal Williamsport* (May 1983), v.

[2] *Chesapeake and Ohio Canal National Historical Park: Statement for Management* (April 1991). Acreage referred to was as of June 30, 1990. When the land acquisition program is complete, the park will include a total of 20,781 acres.

[3] Bureau of Public Roads and the National Park Service, *Report on Joint Reconnaissance Survey and Study of the Chesapeake & Ohio Canal* (Authorized by Public Law 618, 80th Congress, 2nd Session, June 1948), 1.

[4] *Chesapeake and Ohio Canal National Historical Park: Statement for Management* (April 1991), 7.

2 SITE PHYSICAL HISTORY

2.1 DEVELOPMENT OF WILLIAMSPORT PRIOR TO THE ARRIVAL OF THE C&O CANAL, 1787-1828

(Reference Figure 56: *1787-1828 Historic Base Map*, following page 3-31)

Introduction

The Town of Williamsport, first incorporated in 1786 under the name "Williams Port," and incorporated again in 1823 under its present name, lies at the southern extremity of the Hagerstown Valley, a fertile land mass in the same valley system as the Shenandoah and Cumberland valleys. The valley is bounded on the west by the North Mountain range, the east by the South Mountain range, the south by the Potomac River and Shenandoah Valley of Virginia, and the north by the Cumberland Valley of Pennsylvania. The area's rich soils, abundant water supply, diverse native animal and plant life, and temperate climate attracted first Native American and then European settlers to the region. Although prone to flooding and of little value for permanent development, the Potomac River basin possesses some of the area's richest agricultural lands.[1]

The Potomac River, which over time cut approximately thirty feet through a broad and fairly level landscape, created the broad floodplain and steep hillsides upon which the Town of Williamsport was founded. Prior to European settlement, large and superior quality timber covered the greater part of the ridges and bottoms in this area.[2] The region's natural geomorphology influenced the town's siting above the floodplain created by the juncture of the Potomac River and the Conococheague Creek.

This location, which ensured river access, provided the settlement with natural advantages in transportation and commerce. Both Native American and European inhabitants depended on the area's river corridors for transportation; the rivers' navigability not only influenced the siting of Williamsport but also affected land use in the area. More than 12,500 years before the European settlement at Williamsport, Native Americans inhabited the area near the confluence of the Conococheague Creek and the Potomac River, establishing a large village in the region during the Late Woodland Period, circa 900 to 1600 A.D.[3] European settlers found the area attractive for similar reasons, and a shallow point in the river to ford or ferry cargo made the area an ideal location for a town.

European Settlement of Washington County

The first known Europeans, most likely trappers, passed through the Washington County area prior to 1730. Permanent settlement of the region, called Conococheague, began around 1732. Most early settlers were of German and Scotch-Irish descent, and had migrated southward from Pennsylvania to the Monocacy Valley, east of the Catoctin Mountains in the early 1730s. By 1748, the region contained a population large enough, albeit dispersed, to justify creation of a new county. Frederick County was formed and included present-day Washington, Montgomery, Allegany, Garrett, and part of Carroll counties. Washington County was created in 1776.

The Frederick County Court appointed Edward Wyatt to keep a ferry across the Potomac in 1749, just south of its juncture with the Conococheague Creek.[4] Located on a major north-to-south road leading from Hagerstown into the Shenandoah Valley, the ferry proved to be a major Potomac River crossing for more than a century and became an important strategic crossing during the French and Indian and Civil wars.

Throughout this period, settlers acquired land rapidly. Originally, the area known as Lord Baltimore's Manor of Conococheague and Reserve extended over much of Frederick County and included the area at the mouth of the Conococheague Creek. Lord Baltimore apparently leased the property near the creek and other areas to a number of individuals. In 1739 Charles Friend, upon purchasing a 260-acre parcel named "Sweed's Delight" on the north side of the creek, became the first settler to obtain legal title to land near Williamsport. A series of individual purchasers followed; and in 1780 Jacob Friend purchased the area's last tract, a 1 3/4-acre parcel which he named "None Left."[5]

The Creation of Williamsport

In the 1780s, General Otho Holland Williams, known for his leadership in the American Revolution, began assembling a series of parcels near the mouth of the Conococheague Creek. He gained title to all of the land near the mouth of the creek upon purchasing a 569.5-acre tract called Ross's Purchase, which had been his childhood home, and an adjacent 160-acre parcel called Leeds. In November 1786, Williams recorded the deed that created the town of William's Port, located south of the Conococheague Creek overlooking the Potomac River. The same month, the Maryland General Assembly passed the first act of incorporation for the Town of William's Port; both the town's name and the general assembly act's language indicated the river's importance to trade in the area.[6]

According to a plat map included with the deed creating the town, Williamsport was divided into a series of rectangular lots separated by the main streets of Potomac, Salisbury, Church, and Frederick running east to west, and Vermont and Conococheague streets running south to north. Commerce Street ran diagonally, from the western edge of Church Street, northwest to the area "laid off for a public square" that contained approximately four town lots. The town also featured a number of small alleys. The plat did not show the Potomac River basin, although it appears that only Potomac, the northernmost street, extended into this region and thus to Wyatt's Ferry.[7] Potomac Street later provided access to warehouses and other facilities that would be built near the river.

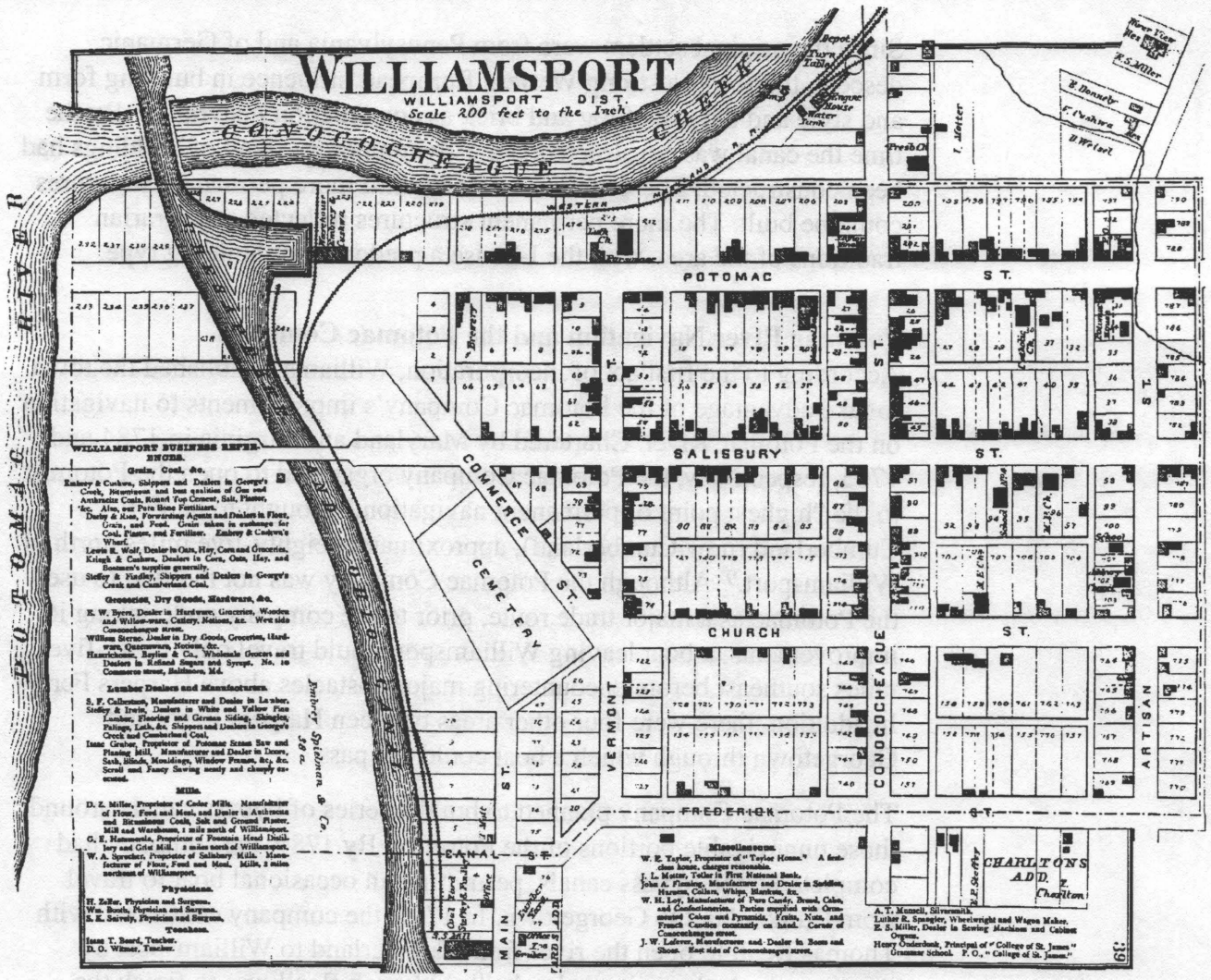


Figure 4. Map of the Town of Williamsport, 1877, Drawn from the Original 1786 Plat Map in An Illustrated Atlas of Washington County, Maryland

Williams' subdivision largely determined the organization of the town's landscape according to a grid layout and promoted Williamsport's close physical and commercial/industrial relationship with the Potomac River. Yet development of the town on the plain overlooking the Potomac River differentiated it from the steep hillsides along the river's bank below the town. These regions remained distinct spatial entities until the development of the C&O Canal, which forced a merging of the two areas.

Williams' layout also facilitated use of the road network between Williamsport and other local and regional centers. Roads leading to Hagerstown, Frederick, Sharpsburg, and Martinsburg, as well as numerous other smaller towns, all revealed the crossing at Williamsport as a critical trade juncture. In fact, the primary road between Williamsport and Hagerstown ran from the ferry access point on the Potomac. Smaller roadways ran parallel to the river, connecting numerous towns to the trade center. In addition, traffic from inland mills on the Conococheague Creek accounted for considerable circulation up and down the Potomac River.

Since the original settlers were from Pennsylvania and of Germanic descent, there was a strong Western European influence in building form and style and the use of log and brick as construction materials.[8] By the time the canal was constructed, a mostly temporary stand of buildings had been constructed. These structures stood until more permanent structures could be built. The more permanent structures reflected the agrarian traditions of the area, with the I-house a predominant building type.

Potomac River Navigation and the Potomac Company

According to the first act of incorporation, Williams established the town to take advantage of the Potomac Company's improvements to navigation on the Potomac River. Chartered by Maryland and Virginia in 1784 and 1785, respectively, the Potomac Company organized to open the Potomac to the "highest point of permanent navigation," thought to be Fort Cumberland (now Cumberland), approximately eighty-five miles north of Williamsport.[9] Although the Potomac Company was not the first to use the Potomac as a major trade route, prior to the company undertaking its improvements, a boat leaving Williamsport could travel only thirty-five miles southeast before encountering major obstacles above Harpers Ferry. In addition, there were four other areas between Harpers Ferry and Georgetown through which a boat could not pass.

The Potomac Company planned to build a series of bypass canals around those unnavigable portions of the Potomac. By 1789, the company had completed three bypass canals, permitting an occasional boat to travel from Cumberland to Georgetown. In 1792, the company contracted with Thomas Beall to open the river from Cumberland to Williamsport by creating canals through all shoals.[10] Although Beall was to finish the work in one year, a final settlement was not reached until 1799. Some doubt exists as to whether the work was completed.[11]

In addition to constructing canals for passage through difficult areas on the Potomac, the Potomac Company attempted to improve several of the river's tributaries, including the Conococheague Creek at Williamsport. Around 1810, workers widened and deepened approximately fifteen miles of the Conococheague north from the Potomac to accommodate the passage of larger boats. Yet, according to historian Walter S. Sanderlin, these efforts diverted resources from the company's main objective—clearing the Potomac for navigation—and eventually contributed to the company's decline.[12]

Despite the Potomac Company's continued financial difficulties, improvements to the Potomac River caused Williamsport to prosper as a center for trade, with wheat and flour its main commodities. By 1800 Williamsport possessed a number of diversified businesses including taverns, merchants, physicians, wood suppliers, distillers, shoemakers, brewers, weavers, tanners, and coal suppliers.[13] Charles Varlé's 1808 map of Washington

and Frederick counties showed Williamsport as a medium-sized town surrounded by several plantations owned by different members of the Williams family. The map depicted several grist and merchant mills along the Conococheague Creek; all were north of the town. Along the Potomac River, in the area where the canal eventually would be constructed, only Watkins' Ferry (previously Wyatt's Ferry) was visible, crossing the Potomac River to Virginia (now West Virginia) just south of the river's junction with the Conococheague. An extensive road system connected Williamsport with major towns to the north, south, and east. The number of roads declined substantially west of Williamsport, indicating its significance as a community on the edge of the frontier.[14]

During the town's early development, a warehouse, presumably part of the present building known today as the Cushwa Warehouse, was constructed on land along the Potomac River basin. The building's original date of construction is not known. Architectural evidence indicates that part of the brick portion of the building was constructed between 1790 and 1810. There may have been earlier buildings on or near its site. Harlan D. Unrau suggested that the warehouse originally may have been the town's market house, which opened in 1810.[15]

The Coming of the C&O Canal

Construction of New York's Erie Canal in the early 1800s initiated an era of canal building in the United States. In 1823, several efforts were made to charter a company to construct a canal along the Potomac River. When these attempts failed, canal supporters looked to Congress for federal aid. In December 1823, President James Monroe, in his annual message to Congress, mentioned the first C&O Canal convention, which had met in Washington, D.C., the previous month to stimulate support for canal construction. Monroe urged Congress to consider appropriations for "the employment of a suitable number of the officers of the corps of engineers, to examine the unexplored ground, during the next season," and to report their findings.[16] Congress responded by appropriating $30,000 for a survey of the proposed canal route by the U.S. Board of Engineers.

An 1824 map created by Lieutenant E. H. Courtenay of the Army Corps of Engineers showed the proposed canal route following closely the northern bank of the Potomac River. Courtenay recommended following a straight, inland line of approximately nine miles between Sharpsburg and Williamsport rather than staying parallel to the river, which wound through slate for approximately twenty-three miles between these two points.[17] When constructed, the canal closely followed Courtenay's recommended route, although it remained parallel to the Potomac rather than taking a straight line between Sharpsburg and Williamsport.

On January 27, 1824, the Commonwealth of Virginia passed an act that would incorporate the C&O Canal Company. Maryland confirmed the act

on January 31, 1825, and the federal government followed on March 3, 1825. Pennsylvania was hesitant, but eventually confirmed the Virginia act in the early months of 1826. On February 14, 1825, the United States Board of Engineers released its preliminary report on the C&O Canal, with the findings that a canal could connect the upper Potomac with the Youghiogheny or Monongahela rivers.[18]

Yet the final report of the Board of Engineers estimated that the cost of building the canal could exceed $22 million. This estimate shocked canal supporters, who had anticipated a cost of approximately one-fourth that amount. A second canal conference was organized to discredit the Board of Engineer's estimate and call for a new survey to provide a more accurate construction cost estimate. Convention participants formed a committee to investigate costs assessed in the original proposal and found inflated prices for labor, masonry, and excavation. President Adams then agreed to investigate the conflicting figures and appointed James Geddes and Nathan Roberts to conduct the survey. Completed in 1827, the survey revealed that a larger canal could be constructed from Georgetown to Cumberland at an approximate cost of $4.5 million. Canal supporters embraced this figure as more accurate than the Board of Engineers' estimate.[19] Following Congressional passage of an act subscribing $1 million to the company's stock, the canal company organized formally on May 24, 1828.

From the start, the canal company encountered difficulties implementing its plans. In particular, competition from the Baltimore and Ohio (B&O) Railroad Company hindered rapid completion of the canal as originally conceived. During the 1820s, both railroad and canal supporters had chosen the Potomac Valley as the course for reaching western markets. The C&O Canal Company—convinced of its authority over the route since its predecessor, the Potomac Company, had received rights in this area—secured an injunction to prohibit railroad construction beyond Point of Rocks, where it was to enter the Potomac Valley. The B&O Railroad Company, however, argued that the Potomac Company's rights were no longer valid, and that the railroad had received rights to locate in the area in 1827 when it received its charter in Maryland. Although the canal company's rights were upheld eventually, the dispute, which was resolved by an 1832 Maryland Court of Appeals decision, resulted in a costly four-year delay in canal construction.

2.2 CANAL CONSTRUCTION, 1828-1850

(Reference Figure 57: *1828-1850 Historic Base Map*, following page 3-31)

Introduction

According to the canal company's original charter, 100 miles of the project were to have been completed by 1833. When the court issued its ruling in January 1932, construction had been completed to Point of Rocks, slightly less than half the distance. Contracts to complete work to Williamsport were negotiated quickly; however, severe winter weather suspended work above Harpers Ferry. Still, the requirements of the charter were met in spirit by June when water was let into the first 100 miles of the canal, with slackwater navigation at some points.[20] Boats actually were not able to reach Williamsport, just below the one hundred-mile marker, until 1834; and then they were traveling on slackwater above Dam 4, approximately fifteen miles below the town.[21]

Williamsport's location encouraged the belief that the canal would transform the town into a major commercial and industrial center. The area's reliable water sources—the Potomac River and Conococheague Creek—set the stage for the establishment of mills and supporting enterprises in town. Because the B&O Railroad did not extend this far into Western Maryland, Williamsport was seen as a potential hub for the area, particularly because of its proximity to Hagerstown, the county seat. Although it never became the envisioned regional trading center, Williamsport did become an important center for local trade.[22]

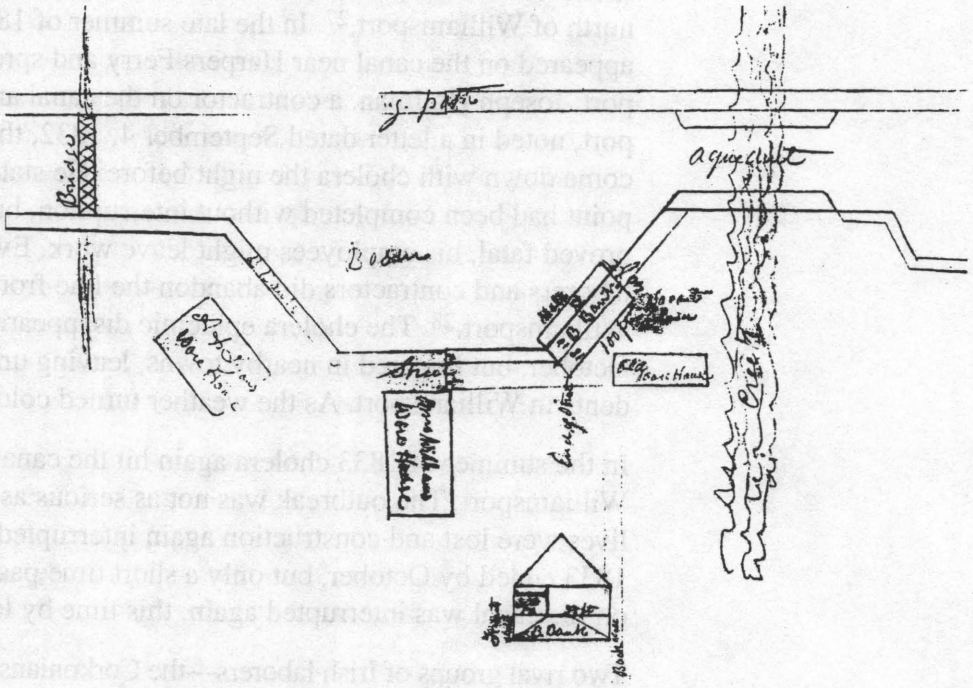


Figure 5. Map of the Basin at Williamsport, Report of G.W. Rodgers, December 15, 1838. (National Archives)

Residents expected the canal to promote rapid commercial development in the Town of Williamsport. Already the shipping business had proved prosperous, as is evident from the number of businesses that developed to take advantage of the convenient location for shipping goods. Peter and Christian Ardinger ran a business from their warehouse on the Conococheague Creek, near the Conococheague Bridge upstream from its confluence with the Potomac River. James Shoaff, who owned a tavern on the Williamsport public square, took over the Ardinger's Warehouse and boating business by 1828.[23] The lumber business also developed into a major industry at this time. Charles A. Warfield and his brother, Dennis, operated a lumber company and also sold general merchandise near the town center.

Anticipating that the canal would continue to improve the town's economy, other businesses opened in Williamsport. By 1828, Joseph Hollman had established a warehouse and boating business "situated near the mouth of Conococheague creek," in what may have been the 1790-1810 brick building. (This warehouse may have been later known as Ann Williams' Warehouse.)[24] Hollman, who later worked as a contractor on the canal, was the keeper of Lock 44, and owned a tavern and a mill near the lock.[25] Other businesses in Williamsport included several taverns, a distillery, merchant shops, a blacksmith shop, two doctors' offices, an attorney's office, a private school, and a bank.[26]

Construction of the C&O Canal at Williamsport

Construction of the approximately one-mile stretch of the canal within Williamsport began in 1832. Disease and violence, however, continuously interfered with construction on sections 186-188, which encompassed land south of Williamsport, Lock 44, the Conococheague Aqueduct, and land north of Williamsport.[27] In the late summer of 1832, Asiatic cholera appeared on the canal near Harpers Ferry and spread upriver to Williamsport. Joseph Hollman, a contractor on the canal and resident of Williamsport, noted in a letter dated September 4, 1832, that one of his men had come down with cholera the night before. He stated that all work to this point had been completed without interruption, but that if the cholera proved fatal, his employees might leave work. Eventually most of his laborers and contractors did abandon the line from Point of Rocks to Williamsport.[28] The cholera epidemic disappeared from Williamsport by October, but lingered in nearby towns, leaving uneasy workers and residents in Williamsport. As the weather turned cold, the epidemic ended.

In the summer of 1833 cholera again hit the canal, first appearing in Williamsport. The outbreak was not as serious as the year before; although lives were lost and construction again interrupted. The cholera epidemic of 1833 ended by October, but only a short time passed before construction on the canal was interrupted again, this time by labor violence.[29]

Two rival groups of Irish laborers—the Corkonians and the Fardowners of Longfords—worked on the canal near Williamsport. The Corkonians were employed in the area of Dam 5, approximately seven miles north of Williams-

port, and the Longfords were employed south of Williamsport at Dam 4. On January 20, 1834, the two groups clashed below Williamsport. Several people were wounded and many more arrested by militia from Hagerstown. Both sides began to amass more arms for a future confrontation. Despite efforts of Williamsport residents to separate the two groups by patrolling the aqueduct, the Corkonians soon marched along the canal, committing several acts of violence.[30] On January 24, 1834, Williamsport citizens stopped 300 Longfords—armed with clubs and guns—at the aqueduct. After convincing the residents that they intended no harm, the Longfords were allowed to cross the Conococheague. The Longfords joined with hundreds more of their group on the other side of the aqueduct, however. The combined force encountered about 300 Corkonians near Dam 5. The Corkonians, outnumbered, were forced to retreat. The following day, Williamsport citizens organized a militia, called the Williamsport Riflemen. The Clear Spring Militia and two Hagerstown troops arrived to maintain order until the U.S. Army arrived from Fort Henry. Once leaders of the rival Irish groups were brought together and a peace agreement signed, construction on the canal resumed.

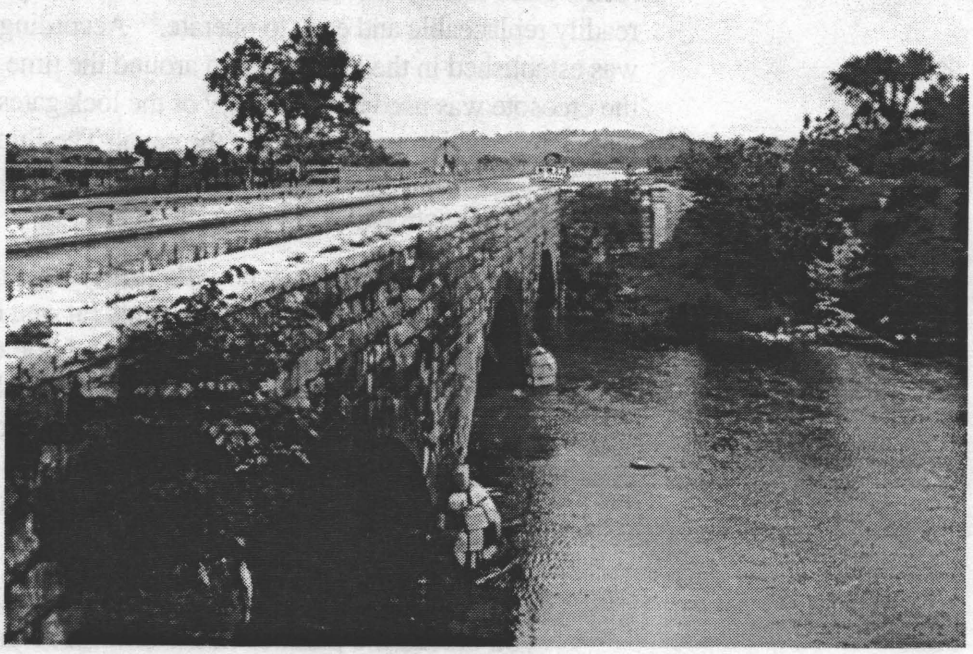


Figure 6. Conococheague Aqueduct, circa 1900. (Robert G. Merrick Collection, Maryland State Archives, Annapolis, Maryland)

When the canal officially opened in 1835, the C&O Canal Company had several structures on its property near Williamsport including the Conococheague Aqueduct, Lock 44, the canal prism, the towpath, and the Cushwa loading basin.[31] A private contractor by the name of Michael Byrne received contracts for the building of the aqueduct and lock in 1832. He is believed to have completed construction on both by the end of 1834.[32] The three-span, stone aqueduct, constructed of compact, blue limestone from a local quarry, traversed the Conococheague Creek near its mouth at the Potomac, taking the canal approximately 260 feet over the creek.[33] The

towpath occupied the aqueduct's downstream or west side, and a decorative, wrought-iron railing prevented mules and pedestrians from stumbling into the creek.[34] Canal company and Town of Williamsport records indicate that a waste weir, or type of dam used to regulate the flow of water, also was constructed along the Conococheague Creek near the aqueduct at the time of the canal's development; the exact location of this structure is not known.

Construction of Lock 44 appeared to follow general specifications for lock construction as outlined by the canal company. These specifications called for construction of a rock or hewn-timber foundation; excavation of a pit for the lock; placement of masonry walls—"the entire length of which, measured in the continuation of the lock walls, from end to end of the wings, shall be 143 feet, viz; 22 feet above the upper side of the main sill—100 feet between the upper side of the two main sills—and 21 feet below the upper side of the lower sill. The wings shall splay 12 feet each in eight feet, measured in the direction of the lock, and shall be connected with the main walls by a radius of four feet."—and a flume, the length of which "shall be as great as in the judgment of the Engineer."[35] Like the Conococheague Aqueduct one-half mile north of the lock, Lock 44 was constructed primarily of limestone. The lock's gates were constructed of wood, a material prone to deterioration but readily replaceable and easy to operate.[36] According to NPS, a creosote vat was established in the Lock 44 area around the time of canal construction, and the creosote was used to treat many of the lock gates and wood members used in the construction and upkeep of the canal. The flume was constructed the next year. Harvey Brant, keeper of Lock 44 from 1916 to 1924, described how the structure functioned:

> There's a wicket … when it's turned around, it turns the paddles in the bottom of the gates [at one end of the lock]. There's two square paddles on each [side of the gate], down at the bottom. That leaves some water in there and the lock fills up. When the lock fills up, you get against the beam and push the gates open on each side. The beam is about 20 feet long and 12 by 12 inches. You push them gates back open, the boat could pull in the lock.
>
> The lock would be full. Then you closed these gates and you closed the paddles in the bottom of them so no more water could get in. You went down to the lower end of the lock—you had to go down to the other end to cross—and you got wickets to open the paddles in the *lower* gate. You turn them paddles and you leave the water out of the lock down to the lower level. Then you open them gates down there and the mules will pull the boat right out.[37]

Although the building of a lockkeeper's house often accompanied construction of a canal lock, records indicate that this was not the case at Lock 44. The company also commonly included construction of a pivot bridge

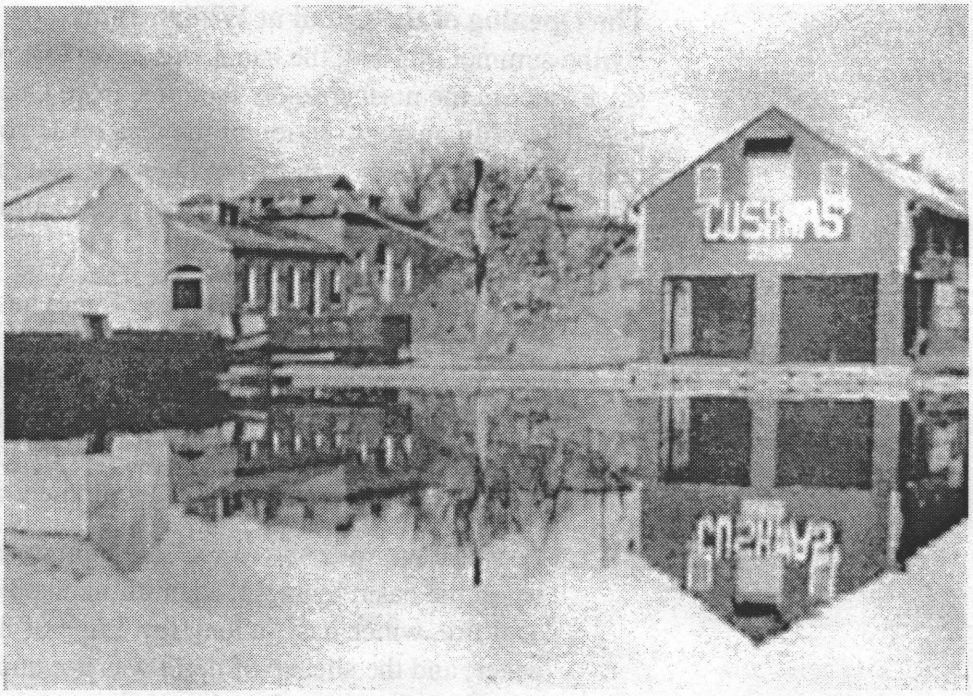


Figure 7. Cushwa Loading Basin at Williamsport, early twentieth century. (From George "Hooper" Wolfe's I Drove Mules on the C&O Canal)

for pedestrian access over the lock. At Lock 44, this structure was completed in 1838 by Byrne and Company at a cost of $662.[38]

The canal prism was approximately 60 feet wide at the water line and 42 feet wide at the base, with a depth of 6 feet.[39] Clay was used to line the prism walls initially; stone walls, remnants of which still exist along the east, or berm, side of the canal, may have been constructed at a later date. The ten- to-twelve-foot-wide, dirt and crushed stone towpath followed the western, or river, side of the canal prism.[40] Most later development took place on the berm side of the canal in the areas directly south of the Conococheague Aqueduct and north of Lock 44. On the berm side of the canal, between these two developed areas, a steep hillside led to the town. On top of the hill, Riverview Cemetery overlooked the canal and river.

The Cushwa loading basin, an extension of the canal prism located south of the aqueduct, allowed a number of canal boats to load and unload goods without disrupting the flow of traffic and provided an area to store canal boats not in use during the winter months. Ann Williams' Warehouse stood directly on the Cushwa loading basin's approximately 150-foot-long eastern wall. The northern and southern walls were approximately 180 and 115 feet long, respectively. Material used to construct the original walls is not known. The existing stone walls, however, do not date from this early period, and Williamsport town officials rejected a canal company recommendation to build such walls in 1836.[41] The basin's elevation was at 350 feet, the same as that of the canal proper.[42] An early-twentieth-century photograph of the Cushwa loading basin shows the close relationship between the basin and surrounding buildings, in particular the William's Warehouse, called "Cushwas" by the turn of the century.

The Opening of the Canal at Williamsport

By the summer of 1834, the canal was navigable, with the aid of slackwater in the northernmost sections, from Georgetown to Williamsport. The Williamsport section of the canal was not completed officially until April 1835, when water from Dam 5 was let into section 187. The *Williamsport Banner* described the Cushwa loading basin after the canal's official opening at Williamsport:

> The basin at the foot of Potomac Street has been for upwards of a week past, crowded with boats, arks, & c. laden with coal and flour, and that the busy, bustling appearance which the arrival of the boats has given to that part of the town, in the vicinity of the canal, is truly gratifying, and brings to mind the wharves of a commercial city.
>
> "It was a glorious site to see" the numerous boats as they lay in the basin by night, each illuminated by a glowing coal fire, which cast "a long level rule of light" across the water; and the silence of night was not unpleasantly interrupted by the cries of the hoarse boatmen, as they were disturbed from their moorings by new arrivals, and driven to closer contact with their neighbors.[43]

Despite the canal's dominance as Williamsport's commercial transportation route, ferry service continued to be important for transport across the Potomac River. On October 4, 1833, prior to the official opening of the canal at Williamsport, Eli Stake proposed construction of a bridge over the canal, near the location of the present-day Bollman Bridge. His probable intention was to accommodate access to the ferry. An 1838 sketch of the Cushwa loading basin area showed the location of this bridge south of the basin.[44] Yet a significant amount of traffic on the Conococheague and the Potomac transferred to the canal, with considerable emphasis on the Cushwa loading basin and Lock 44, where the construction of warehouses, residences, and sheds created focused centers of commerce and trade. Roadways within the town continued to improve and were kept repaired during this period.

Private Development Along the Canal

The opening of the canal at Williamsport spurred a series of requests for water rights, building permits, and other commercial-based privileges from local citizens and merchants. These requests were placed before the canal company's board of directors, who approved or denied the applications. Documents discussing the various requests indicate whether or not the board approved them but not whether construction actually occurred. While some of the buildings and structures are known to have been constructed, other approved requests may or may not have been implemented. Most construction occurred directly adjacent to the Cushwa loading basin south of the Conococheague Aqueduct and on the berm side of the canal just above Lock 44.

Cushwa Loading Basin

In February 1835, Elie Beatty, who owned property adjacent to the waste weir near the Conococheague Aqueduct, filed an application requesting use of the aqueduct's water. The board approved his request, stipulating that the water was "to be applied only to the use of grinding plaster, sawing and a planing machine."[45] For this privilege, Beatty paid an annual fee of $150. Apparently, water from the waste weir later caused "serious injury to this land," and the canal company agreed to construct walls to protect Beatty's property.[46] A member of the canal company's board of directors, William Price, also received permission to use water on his property located "on the towpath side of the canal opposite the above mentioned waste weir."[47]

In December of 1838, the J. A. Magruder Company of Georgetown announced its intention to open a store in Williamsport. The canal company superintendent recommended granting Magruder permission to run boats on the canal and lease a parcel of canal company land between the Cushwa loading basin and the Conococheague Creek to build a warehouse. The warehouse is believed to have been built.[48] Between 1835 and 1840, increased trade along the canal led to the enlargement of Ann Williams' Warehouse located near the Cushwa loading basin to the present two-story, brick and frame building. This warehouse later was owned by Charles Embrey and then Victor Cushwa, two prominent members of the canal trade.[49]

In late December 1847, Charles Embrey requested permission from the C&O Canal Company board of directors to build a wharf on company-owned land along the berm side of the Cushwa loading basin, where "the county Road leading from Sharpsburg strikes the canal."[50] For several years Embrey had been leasing a warehouse at this site, possibly the Williams' Warehouse, from John Dovenberger, who may have managed the Williams' property. The board granted Embrey permission to build the wharf and it probably was completed by the spring of 1848.[51] Another approved application indicating the increase in trade in the late 1840s was submitted by John M. Stake. Stake notified the board that he was expecting a large shipment of produce and needed to relocate his new warehouse from the public square to the southeast edge of the Cushwa loading basin. In return for allowing him to move the warehouse, Stake promised to incorporate an office in the building, free of charge, for the canal company's collector of tolls.[52]

Lock 44

In 1835, Charles Warfield received permission to build a large produce warehouse and a basin on his property immediately above Lock 44. In a letter Warfield wrote to the canal company, this basin was described as requiring "an excavation of 15 to 20 feet fronting the Canal, running back parrellel [sic] with the Western line of the Company's lot, not less than 120 feet to a street, and to the debth [sic] of the Canal."[53] The Warfield basin remained a focal point of development along the canal in Williamsport throughout the nineteenth century.

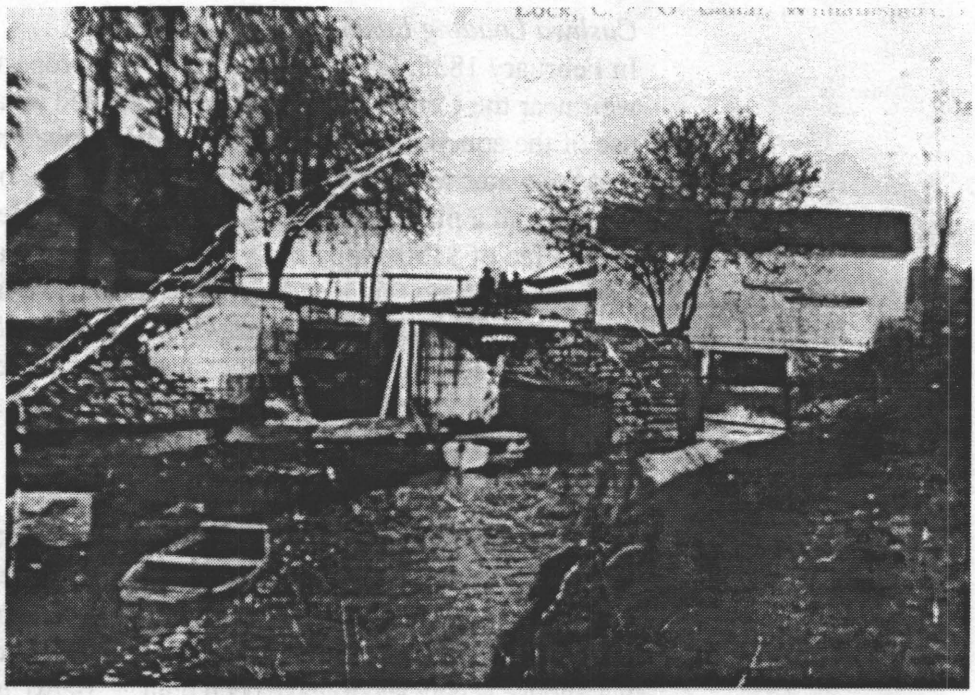


Figure 8. Lockkeeper's House and hay press/ carpenter's shop at Lock 44, circa 1919. (C&O Canal National Historical Park Photo Library)

In 1835, Joseph Hollman requested permission to construct a flume around Lock 44 and build a lockkeeper's house of brick or stone for the canal company. The flume, built parallel to the lock and separated from the lock by about 25 feet, was approximately 145 feet long with an interior width of about 9 feet.[54] Hollman also requested permission to construct a dry dock for boat repairs and paid $150 annually for the use of the water. The canal company appointed Hollman keeper of Lock 44, with $150 annual compensation; the Lockkeeper's House, however, apparently was not begun at that time.[55]

Increased trade along the canal in the late 1840s may have led the company to order construction of a lockkeeper's house at Lock 44 on December 8, 1848, but it is not known if the board's 1848 order was satisfied. [56]

In June of 1848, Charles Embrey requested permission to construct a building and landing on the canal company's vacant lot adjacent to Lock 44 "for the purpose of Pressing Hay."[57] This request was granted, and the building was believed to have been built directly over the flume to take advantage of the water power. A circa 1919 photograph of Lock 44 is the only known image of the hay press. Later the canal company used the press as a carpenter's shop. The photograph also indicates Lock 44's relationship to the flume and depicts the post-1867 Lockkeeper's House.

Additional Requests for Construction

During the 1840s, the board received additional applications to build and improve businesses, prompted by the expected opening of the canal from Georgetown to Cumberland. In conjunction with his intention to build a boat yard at Williamsport, Eli Stake requested permission "to cut the Berm Bank of

the Canal for the purpose of passing boats into" the yard.[58] Edward Greene Williams Stake requested permission to build a warehouse on company land. Canal company proceedings, however, do not indicate if these requests were granted.[59] In October 1847, the board granted Owen Ardinger permission to build and maintain a dry dock on the east side of the canal near Williamsport. It is not known whether the dock was ever constructed.

Despite the anticipation of increased trade along the canal following its expansion, the canal company did not prosper. Revenues were reinvested immediately to complete the unfinished portion of the canal north of Williamsport. The severe national recession of the late 1830s further contributed to the canal company's financial vulnerability. The State of Maryland attempted to sell bonds to subscribe $3 million to the canal company, but the bonds did not sell. Maryland then forced the canal company to improve its financial situation by ordering it to sell all excess lands. Between 1842 and 1844, the company sold excess lands along the canal; none, however, appeared to be within the town of Williamsport.[60]

2.3 OPENING OF THE CANAL TO THE OUTBREAK OF THE CIVIL WAR, 1850-1861

(Reference Figure 58: *1850-1861 Historic Base Map*, following page 3-31)

Despite the company's setbacks, the canal eventually was completed to Cumberland, and opened officially on October 10, 1850. With the canal opened to the west, merchants saw an opportunity to tap into the region's vast coal resources. The canal company hoped to increase revenues and possibly end its financial problems. By 1851, coal had replaced wheat and other agricultural products as the main article of trade on the canal and the primary source of canal revenue. The increase in tons of coal shipped on the canal between 1849 and 1852 was in excess of 77,000 tons.[61]

Some Williamsport residents may have anticipated the extent of the coal trade in their town, as evidenced by a number of requests to increase and improve commercial facilities. In July 1850, Henry Beatty asked to use a small strip of land on the north side of the Cushwa loading basin for a coal yard. After Beatty's death, two or three years later, the canal company purchased his hay press, presumably that constructed by Embrey in 1848, and converted it into a carpenter's shop. In 1852, the board allowed Charles Embrey to build stocks, partially on the canal company's land, to repair boats. These stocks were located "above Lock 44 in a ravine about 400 feet above the lock. The ravine is most on a lot in my possession, the Bal[ance] on the Ground of the Ches & O C Co."[62] Embrey also requested permission to construct a wharf along the canal; this wharf probably replaced his earlier wharf.[63]

Yet between 1852 and 1853, three major events occurred that significantly impeded the canal's success. In April 1852, a tremendous flood damaged the canal from Georgetown to Dam 6, with serious damage occurring in the twenty-mile segment between Dam 4 and Dam 5 that included

Williamsport. Estimates indicated that repair would take three months and cost $100,000. All navigation would be halted and revenue would be lost during the repair period. Around this time, the canal also was incorporated into the state's political spoils system, allowing the ruling political party to remove canal officials, including the lockkeeper, with each change of administration. This system promoted instability in local canal operations.

In addition, another major cholera epidemic struck the Potomac Valley; at least thirty-two persons in Williamsport died.[64] During the 1850s, "no year passed without some interference with navigation."[65] As a result many people lost confidence in the canal for safe and reliable transportation.

2.4 THE CIVIL WAR, 1861-1865

(Reference Figure 59: *1861-1865 Historic Base Map*, following page 3-31)

Introduction

The Civil War period witnessed destruction and damage along the canal in Williamsport. The only reference to new construction in this period was the establishment of entrenchments by Union forces on the hillside east of the canal and a wharf repair by a private citizen.

An early 1860s' photograph best represents this period. Buildings include a wooden house and outbuilding, perhaps a small warehouse, near the ferry crossing. Aside from this photograph, nothing is known about these structures. Only the original warehouse appears near the Cushwa loading basin; other buildings in this vicinity are presumed to have been destroyed early in the Civil War. Piles of coal await loading outside the warehouse.[66]

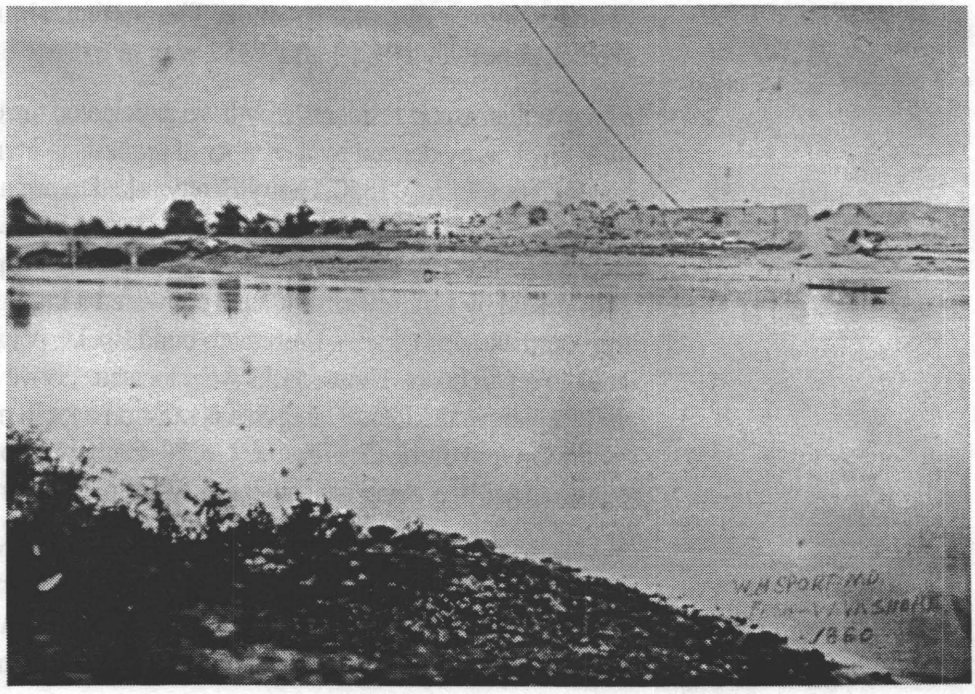


Figure 9. Ferry Crossing at Williamsport, circa 1860. (Chesapeake and Ohio Canal National Historical Park Photo Library)

The Civil War limited circulation on the canal; Union forces dominated control of the canal with occasional intervention by Confederate troops. The ferry and ford across the Potomac River were used heavily during the war, with both sides crossing numerous times. Damage to and destruction of vital areas such as dams, aqueducts, and locks limited commerce and trade along the canal throughout the war.

Harper's Weekly sketches of military crossings at Williamsport indicate bands of vegetation both along the Conococheague Creek and the Potomac River, with a large open area at the ferry crossing and along the banks of the C&O Canal. Trees are apparent in the background town, with the hillsides covered in a low grass, and three trees, of varying ages, are apparent in the open canal/ferry area.[67]

Military Action Near Williamsport

The canal's physical and financial condition declined throughout the Civil War, with the worst damage occurring during the first years. Positioned between the opposing states of Maryland and Virginia, where much of the fighting occurred, the canal became a vulnerable and frequent target for Confederate troops either trying to seize control of the waterway or render it useless for Union activity. Within a month after Virginia's withdrawal from the Union in April 1861, the opposing forces met in Williamsport. Approximately 1,000 Confederate troops stationed on the West Virginia side of the Potomac River opposite Williamsport temporarily seized Lemen's (previously Watkins') Ferry. There was an exchange of gunfire, but no casualties. Confederate forces soon left the area heading toward Martinsburg.[68]

The first major attack on the canal occurred in the summer of 1861 when a small group of Confederate soldiers was ordered to destroy the canal between Harpers Ferry and Williamsport.[69] The same month, heavy rains seriously damaged the canal, with repair time estimated at two months.

Before the repairs were completed, Union General Banks ordered the First Maryland Infantry under Colonel Kenly to establish a post at Williamsport on the hillside east of the canal, and entrenchments were constructed in the Riverview Cemetery. Viewpoints for military strategy most likely were important since this site often was contested. This post was responsible for the defense of the canal and river around Williamsport. By October, the First Maryland Infantry was relieved by two troops, the 13th Massachusetts and the 12th Indiana regiments. The 13th Massachusetts was responsible for defending the area from Harpers Ferry to Oldtown. The 12th Indiana posted units at canal dams 4 and 5, both Confederate targets, as well as at Sharpsburg.

During the winter of 1861-1862 military operations were curtailed along the canal. The Williamsport section opened to boats in February and, through the spring and up to mid-summer, trade along the canal at Williamsport seemed normal, although heavy rains as well as dry spells disrupted navigation on the canal for short periods. In the spring of 1862, Charles Embrey requested and received permission to construct a dry dock above Lock 44 on the same lot as his older repair site.[70]

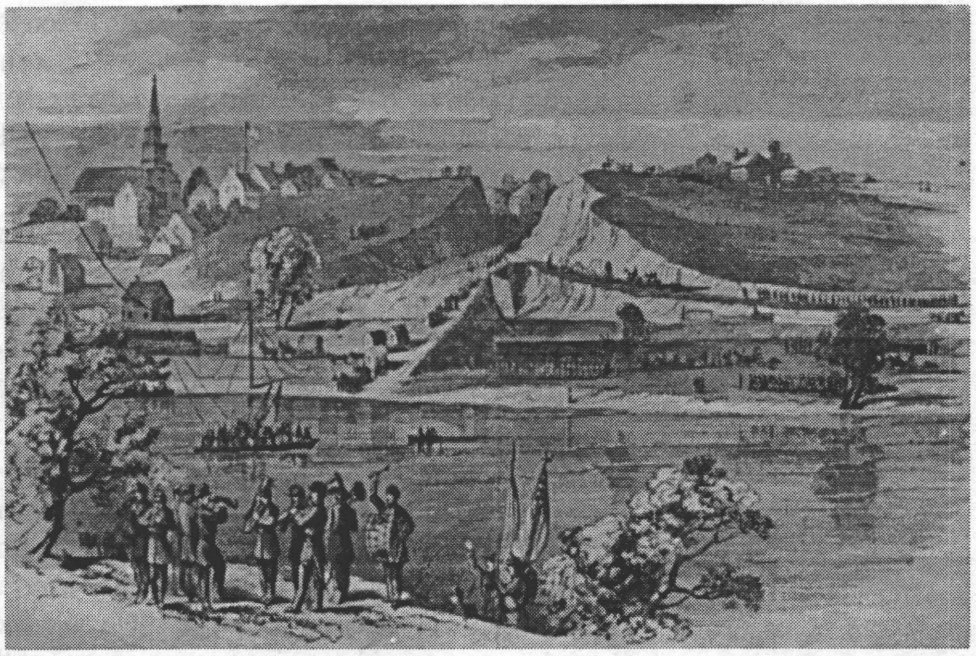


Figure 10. "War in the Shenandoah Valley—Division of the National Army Under Gen. Banks Recrossing the Potomac from Williamsport, Maryland, to Attack the Rebel Army Under Gen. Jackson—the Band of the 46th Pennsylvania Volunteers Playing the National Airs on the Virginia Shore." (Edwin Forbes, postcard reproduction of Harper's Weekly *sketch)*

In September, following the battle of Antietam, more severe military activity occurred at Williamsport. Union General McClellan ordered Captain Charles H. Russell's First Maryland Cavalry to burn the canal bridge and destroy the Conococheague Aqueduct at Williamsport to stop retreating Confederate troops. Russell's men destroyed the pivot bridge at Lock 44 and the main canal bridge near the Cushwa loading basin, but were unable to destroy the aqueduct. Some members of a Pennsylvania Militia, already stationed in Williamsport, helped the cavalry by burning about eleven canal boats. Confederate General Robert E. Lee's retreating troops planned to cross the river at Shepherdstown and created a diversion by sending General "Jeb" Stuart and his cavalry through Williamsport. When Stuart and his men arrived in Williamsport, they found the canal bridges had been destroyed. Stuart's cavalry was able to cross the canal by opening a road under the Conococheague Aqueduct, but before crossing, burned a canal boat and damaged the Lockkeeper's House at Lock 44.[71]

During the military operations of September 1862, both canal- and non-canal-owned properties sustained damage. The most serious damage to the canal was the burning of the lock gates at Lock 44, and these were repaired by mid-October. Damage to personal property may have been more extensive. A mill owned by Shoop and Lefevre at Lock 44 was burned.[72] Some buildings and warehouses were burned at the Cushwa loading basin. Charles Embrey stated in a letter to the board in May of the following year, that his two buildings were the only two left standing in the Cushwa loading basin area, and that all others had been burned.[73] Embrey also mentioned that he wanted to repair or replace his 1847 wharf.

Navigation during the following months was limited. Dam 5 developed a leak and the level of water in the canal became too low for a loaded boat.

Although the dam was repaired, severe winter weather conditions limited canal use. As requested by many Williamsport citizens, the bridge that had been burned by troops in September was replaced during this slow period on the canal. The canal reopened for spring navigation in mid-March.[74]

The Town of Williamsport saw no military action in the winter of 1862-1863, although Confederate soldiers occasionally conducted raids across other sections of the canal. On July 4, 1863, however, Lee's defeated army retreated from Gettysburg to Washington County where heavy rains made it impossible to ford the Potomac River at Williamsport. General Meade followed Lee's troops and several skirmishes occurred in the county at this time.

The canal suffered severe damage during Lee's retreat. The aqueduct's four corners were torn down and all coping and railing thrown into the Conococheague Creek. The gates at Lock 44 again were burned and one of the lock walls destroyed and thrown into the lock. Confederate troops also constructed four roads through the banks of the canal which required removal. Yet within a month the canal was repaired and navigation restored.[75]

In the spring of 1864 Confederate troops occasionally used the ferry at Williamsport to cross the Potomac River and raided Williamsport's stores and boats for provisions; they also damaged the aqueduct and parts of the canal. The raids which continued through the summer of 1864 damaged canal trade since most businesses feared their boats would be raided. In 1864, Mary Williams White, daughter of Anne Williams, and her husband moved to New York and sold their warehouse at the Cushwa loading basin to Charles and Thomas Embrey. The canal trade was back to normal, by fall, however, and actually rose slightly from the previous year.[76]

When the canal opened for spring traffic in March of 1865, navigation was halted almost immediately: the upper or north side of the aqueduct had fallen into the Conococheague Creek. The suspected cause of the collapse was thought to be years of freezing and thawing in the cracks of the aqueduct, with the additional effects of blasting during the war. By mid-March the aqueduct was repaired with a "wooden trunk" and the canal resumed operations again.[77]

Although operational at the end of the war, the Williamsport segment of the canal desperately needed repairs and improvements. The board ordered the dredging of parts of the canal, including the Cushwa loading basin. The board also ordered that the bridge over the canal be restored. In December 1867, the board ordered that a lockkeeper's house be built at Lock 44. It is possible that this house was to replace an existing lockkeeper's house; according to historian Edwin C. Bearss, "Jeb" Stuart's cavalry had damaged the Lockkeeper's House at Lock 44 after the Battle of Antietam,[78] but no other concrete evidence of this early Lockkeeper's House has been found. Finally, in 1869, the board authorized the repair of the Conococheague Aqueduct.

2.5 POST-WAR RECONSTRUCTION TO THE FLOOD OF 1889, 1865-1889

(Reference Figure 60: *1865-1889 Historic Base Map*, following page 3-31)

Introduction

Following reconstruction of canal features and private property damaged during the Civil War, the canal resumed operation as a major transportation corridor. New construction of lumber and grain mills near the Cushwa loading basin and Lock 44, the creation of coal yards adjacent to canal banks, building of the Power Generation Station for the power supply of the trolley to Hagerstown, and the installation of Western Maryland Railroad track spurs to warehouses and mill lots increased the density of use along the canal. Facilities remained on the eastern side of the canal between the town and the canal; the creation of the holding basin/dry dock area north of the aqueduct extended industrial growth to that region. (No information was discovered that gave an historic name for the feature referred to here as the holding basin.) Construction of the Bollman Bridge in 1879 created an important transportation route from the town to the river.

The end of the war prompted many Williamsport residents to file applications for construction with the canal company board of directors. In September 1865, Harry Grovel requested permission to use one of the canal's inlets. A. J. Potts, who informed the board in November 1865 that he had built a feed store at Lock 44 and was considering other improvements such as a hay shed, was granted a lease for the land for a period of at least ten years. The store soon was leased to Isaac Sharpless, and then to Theodore Embrey and his brother, sons of Charles Embrey. Benjamin Long, who operated the store for the Embrey brothers, obtained the lease to the property on February 14, 1867.[79]

Arrival of the Western Maryland Railroad and Prosperity for the Canal

In November 1873, the first passenger train of the Western Maryland Railroad reached Williamsport; the line officially opened in Williamsport on December 17, 1873. Great anticipation had accompanied the railroad's opening at the juncture of the canal and railroad. Both canal and railroad officials hoped the railroad line would provide fast and inexpensive access to Baltimore, thereby making Williamsport a regional trade center. Coal, in particular, was seen as a potentially lucrative product. A *Baltimore Sun* article conveyed this sentiment:

> A new avenue will be opened from Baltimore to the extensive coal fields in and around Cumberland. The intention is to transport coal from Cumberland to Williamsport by canal and there transfer it to the cars of the Western Maryland for shipment to Baltimore. For this purpose large and extensive transfer machinery is being erected at Williamsport by the company. By this arrangement the vast amount of coal which goes by canal to Alexandria, Va., and from there to New York and Boston … will have a tendency to come to this market. The canal boats will find it more profitable to make short trips down to Williamsport between where and

> Cumberland there are few locks, than to make trips to Alexandria which distance has a much larger number of locks.[80]

As constructed, the railroad arrived in Williamsport from Hagerstown to the northeast. Before crossing the Conococheague Creek, a spur led to the canal, east of the Cushwa loading basin, and followed the canal prism to Lock 44. Shorter spurs, probably constructed later, ran through Embrey and Cushwa's Warehouse and to Embrey's Wharf, on the Cushwa loading basin's southwest corner. The "large and extensive transfer machinery" consisted of a steam loader, a wood frame shed with an attached crane used to transfer coal between canal boats and railway cars.

Railroad access resulted in increased business in Williamsport; the 1870s became one of the canal's most prosperous decades. Despite its successes, however, the communion of the C&O Canal and Western Maryland Railroad never prompted the level of trade envisioned. The railroad did not have direct access to Baltimore and was charged heavy fees to ship on other lines, dramatically reducing the amount of shipping that occurred.[81]

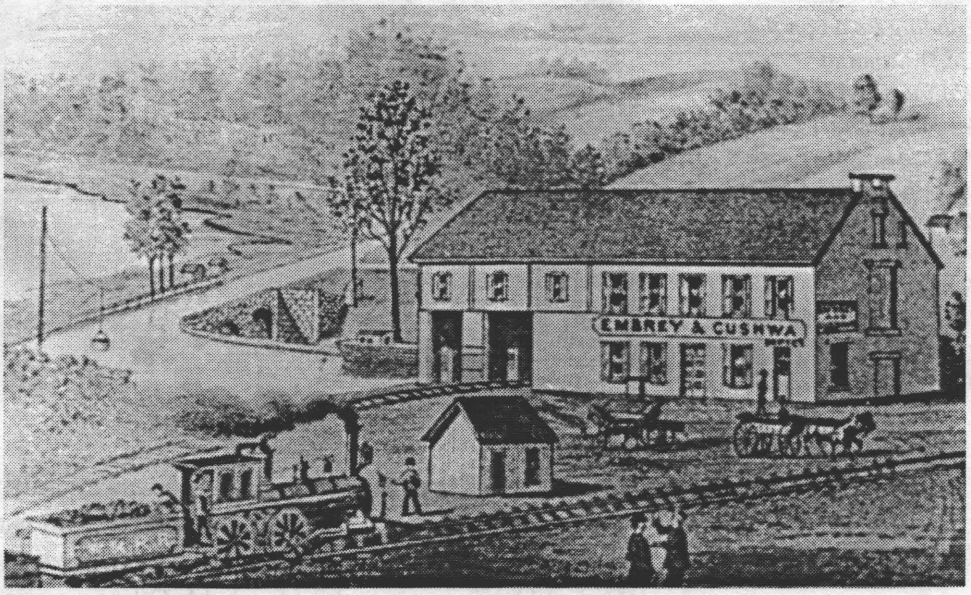


Figure 11. Lithographic Perspective of Aqueduct, Cushwa loading basin, Embrey and Cushwa Warehouse, and Western Maryland Railroad, circa 1872. (Chesapeake and Ohio Canal National Historical Park Photo Library)

Private Development Along the Canal in Williamsport

Cushwa Loading Basin

During the 1870s, several important figures in Williamsport business emerged. Victor Cushwa had moved to Williamsport to operate a tannery, but by 1870 had accepted a job in Hagerstown managing the Washington County Leather Manufacturing Company. He left that position in 1872 and by 1873 had returned to become involved in the coal trade at Williamsport. In 1874, Cushwa and Charles Embrey and Sons entered a partnership that would become one of the most prosperous businesses in Williamsport dealing in coal, cement, salt, plaster, and fertilizers. In 1880, Cushwa became the sole owner of the firm and named it Victor Cushwa. By 1888, he entered a partnership with his son-in-

law and changed the firm name to Cushwa and Sons.

In 1879, John A. and George A. Miller leased a parcel of land along the basin's north side from Victor Cushwa in order to build a plaster grinding mill. The mill was a two-and-a-half-story, frame building, and was powered in the summer months by water that Victor Cushwa leased from the canal company. During the winter, when the Cushwa loading basin was drained for repairs, the brothers moved the mill facilities uphill to the corner of West Potomac Street and the old Market Square, the present location of the Miller Brothers Lumber Company.[82]

Figure 12. Cushwa Loading Basin on the C&O Canal at Williamsport Showing Miller Brothers Lumber Mill, Cushwa's Cement and Phosphate Factory, Cushwa's Warehouse, and Western Maryland Railroad Line Spur, 1916. (Chesapeake and Ohio Canal National Historical Park Photo Library)

Lock 44

In 1873, another important partnership was established when Edward Steffey and James Findlay began a coal and lumber firm named Steffey and Findlay. The firm was located on the east side of the canal immediately above the 1835 Warfield basin, just north of Lock 44. Other significant businesses emerged in the early 1870s. Darby and Rice, dealers in flour, grain, and feed established their business immediately south of the Steffey and Findlay Coal Yard and used the wharf owned by Embrey and Cushwa at the Cushwa loading basin south of the Conococheague Aqueduct. By 1880, F. H. Darby had probably become sole owner of the firm and changed the name to the Undine Milling Company.[83] (See title page for photograph of mill.)

Also in the early 1870s, Isaac Gruber established a saw and planing mill near the Warfield basin. His steam sawmill was located immediately below and adjacent to the Steffey and Findlay Coal Yard. In 1877, the name of the firm was changed to the Potomac Steam Saw and Planing Mill. Their major trade was in doors, sashes, blinds, moldings, and window frames. In 1878, Gruber

rented his mill to a Mr. DeFrehn who, for a short while, manufactured chairs. Gruber's Mill was demolished around 1880, forcing DeFrehn to find an alternate building for his chair factory. F. H. Darby of the Undine Milling Company built a new flour mill near the Gruber Mill site.[84]

North of the Conococheague Aqueduct

DeFrehn reopened his chair factory in the abandoned Culbertson Mill north of the Conococheague Aqueduct. Although little is known about the Culbertson Mill, it may have been constructed during the building boom that followed the Civil War: no evidence of its existence prior to or during the war has been found. The mill remained in use at least until 1877, when the flood led to a large loss in materials, after which it may have been abandoned.[85] A photograph taken after the mill's 1880 conversion into a chair factory shows a large, two-and-a-half-story, wood-frame building on the east bank of the canal, directly adjacent to the holding basin north of the Conococheague Aqueduct. Water turbines using canal water provided power for the mill's operation. Two smaller and apparently associated buildings also are shown—one along the Conococheague Creek upstream from the main building and the other northeast of the main building. Mature, deciduous trees flank the aqueduct's northern end, but little other vegetation exists within or surrounding the mill complex, making it visible from the creek's southern bank from where the photograph was taken.[86] The DeFrehn Chair Factory was forced out of business after the flood of 1889 destroyed much of its inventory.

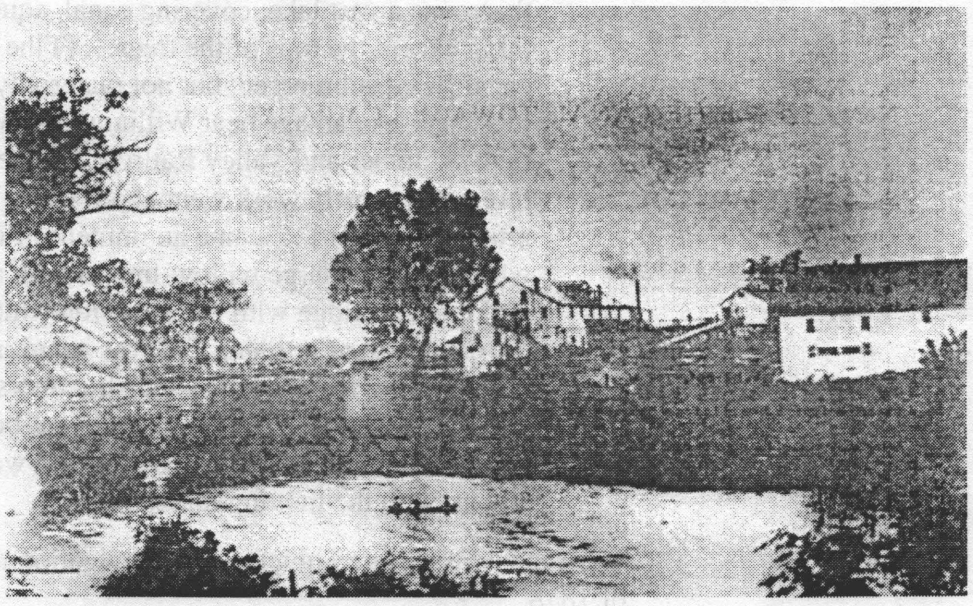


Figure 13. View of DeFrehn Chair Factory, 1880-1889. (Washington County Historic Society)

Photographic sources during this period indicate that spotty vegetation had begun to establish along the edge of the towpath, with natural shrubbery and the occasional clump of trees taking root. The floodplain, which continued to be covered with a low grass, was used primarily as pasture and occasionally for horse racing, according to long-time resident Melvin Kaplan.[87]

Fields appeared to be bounded by fences that provided areas where shrubs and trees could take root. Between the Potomac River and the canal there appeared to be areas of open land with little tree growth. One large tree was apparent at the western edge of the Bollman Bridge; at the Lockkeeper's House two large trees stood directly in front of the house with a third and fourth behind and immediately south of the house. Another smaller tree stood near the hay press/ carpenter's shop on the middle island at the south end of the flume. Later photographs in the 1890s and 1920s show thicker vegetation along the edge of the Potomac River north of the aqueduct.

Lean Years on the Canal

Canal trade began to decline following a nationwide depression that reached the area in 1876. A boatman's strike from June to August of 1877 also contributed to a decrease in trade. However, the event that most significantly hindered trade in the 1870s was the flood of November 1877. This flood was the greatest Williamsport had encountered to date, and severely damaged dams 4 and 5, significantly affecting trade in Williamsport. Damage in the immediate Williamsport vicinity was limited, although the Cumberland Valley Railroad bridge, which crossed the Potomac north of its confluence with the Conococheague Creek, washed completely away. J. Thomas Scharf described the flood at Williamsport in his work *A History of Western Maryland*:

> At the junction of the Conococheague and the Potomac there was a vast lake, covering canal, aqueduct, and everything except the tops of the trees… [T]he aqueduct on the canal [was] submerged, but not materially injured. The most serious damage near Williamsport was the injury done to the Cumberland Valley Railroad bridge. The superstructure of this costly work went about five o'clock on Sunday afternoon [when] … came an immense float of drift-wood, which cut off a large willow-tree as with a knife, and, striking the bridge with a concussion which sounded like the discharge of artillery, and was heard in Williamsport, bore off with it the whole superstructure save only that which spanned the canal, and the canal-boat which was held in suspense was thus released and went down the stream with the moving mass.[88]

The canal was repaired quickly with navigation resuming in the spring of 1878.

In 1879, Wendell Bollman constructed a new bridge—the Bollman Bridge—over the canal and the river, just south of Cushwa's Wharf, above Lock 44.[89] The single-lane, vehicular bridge featured rubble-stone abutments, an iron truss system, and a wooden deck.

While the first years of the 1880s were profitable for the canal, overall the decade was characterized by "trade stagnation, financial depression, physical deterioration, political interference, and outside intrigue."[90] An even more severe flood that hit the Potomac Valley in 1889 caused significant damage to the town of Williamsport and the canal. Many blamed the so-called Great Flood of 1889 for sending the canal company into bankruptcy. Local businesses also suffered: the DeFrehn Chair Factory was forced to close because of the extensive damage caused by the flood; the Miller Brother's Lumber Mill was flooded and much of its lumber washed away; and the Cushwa Warehouse was flooded, although not badly damaged.[91]

2.6 CANAL RE-OPENING AFTER THE FLOOD OF 1889 TO THE ABANDONMENT OF THE CANAL, 1889-1924

(Reference Figure 61: *1889-1924 Historic Base Map*, following page 3-31)

B&O Railroad Ownership of the Canal

The Great Flood of 1889 created a debate regarding the future of the canal. Individuals associated with the canal supported restoration; those not involved in the canal trade supported its sale to the Western Maryland Railroad. Other options were considered, but the restoration movement eventually won the most support. The canal company's weak financial position placed its majority bond holder and long-time competitor—the B&O Railroad Company—in a position to decide the outcome of the canal. The railroad ultimately supported restoration, fearing that if it did not, a forced sale could allow a competing railroad to buy it.

The Washington County Circuit Court and the District of Columbia Court quickly appointed receivers for the canal company to oversee the canal's restoration and operation. A shadow company—the Chesapeake and Ohio (C&O) Transportation Company—was created to ensure a profit be shown each year. In essence, the B&O Railroad Company loaned the C&O Transportation Company funds to cover operational expenses, and on paper the canal appeared to operate at a profit. The transportation company agreed to operate boats along the canal as long as the B&O kept the canal in good working order. The railroad was able to extend the contract from year to year as long as a profit was shown. The canal was fully restored in September 1891.[92]

The B&O Railroad managed to keep the canal in operation through the turn of the century. To guarantee profits, the Consolidation Coal Company, a subsidiary of the B&O, organized the Canal Towage Company to control freight rates. The towage company supplied boats, personnel, and equipment for the canal operations and established a regular schedule for boatmen to follow. To allow the towage company to reduce costs, almost all coal was to be provided by the Consolidation Coal Company; this situation forced many independent boatmen out of business.[93]

Development Along the Canal at Williamsport

Cushwa Loading Basin

In 1896, the first county trolley line was established from Hagerstown to Williamsport. Victor Cushwa donated land to the Hagerstown Railway Company for a Power Generation Station to be located northeast of the Cushwa Warehouse along the Conococheague Creek.[94] The location provided several advantages: the creek provided water to generate power, coal and other supplies were readily available from the Cushwa Warehouse and canal, and proximity to Potomac Street made the building easily accessible to traffic from the town. Construction of the Power Generation Station took less than four months. On August 8, 1896, the first trolley traveled the six-mile route from Williamsport to Hagerstown. The station provided electricity to the trolley and was responsible for the beginning of the local electric industry; it was used for only a few years until a larger station was built in Hagerstown.[95]

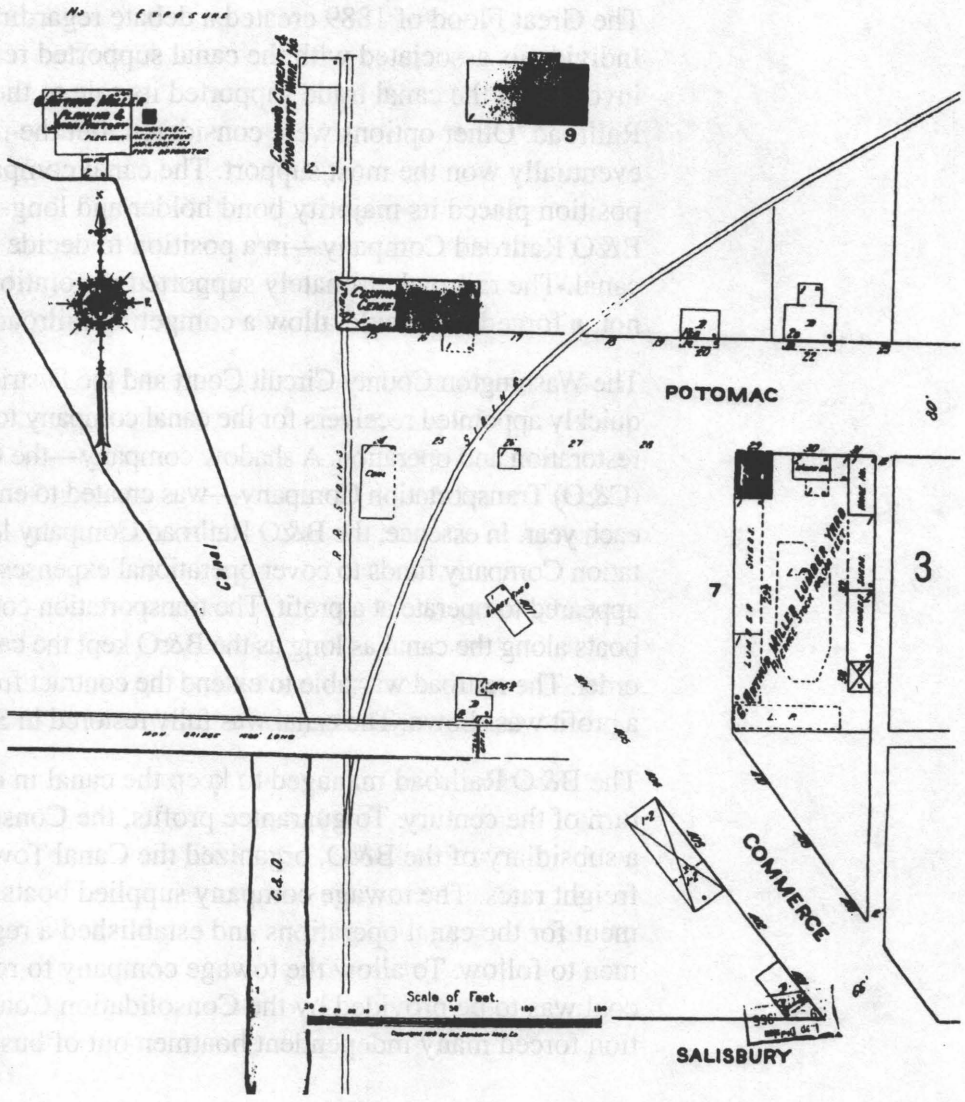


Figure 14. Sanborn Map Company, Portion of Map of Williamsport, Maryland, Showing the Area Surrounding the Cushwa Loading Basin, October 1918

Cushwa and Sons, still operating from their warehouse on the Cushwa loading basin, continued to grow. In April 1909, Victor Cushwa turned the business over to his sons and son-in-law. In 1911, they purchased the Power Generation Station to use for storage. In 1912, Victor M. and David K. Cushwa asked the Town of Williamsport to sell or lease to the Cushwa firm the part of the Public Square situated west of the Western Maryland Line. The Town Council agreed to lease the firm the property in question.[96]

The Cushwa Cement and Phosphate Warehouse probably was constructed during the late nineteenth or early twentieth century. The building appears on a 1918 Sanborn Insurance Map and in several period photographs.[97] Located on the Cushwa loading basin's northeast corner, north of the railroad siding leading through the Cushwa Warehouse, the large, two-story, wood-frame building replaced large trees in the area, and completed the triad of buildings surrounding the basin during this period, reinforcing its industrial character.[98] According to the 1918 Sanborn Map, however, the Cushwa loading basin appears to have been partially filled by this date. Industries and warehouses located here most likely relied on the railroad for most transport at this time.

The Miller Brothers Lumber Mill remained in operation next to the Cushwa Warehouse until 1917 when George Miller gained sole ownership of the mill and permanently moved the company to its winter location on Commerce Street. His brother John converted the mill into an ice plant and added a two-story ell to the south side of its main block. The ice stored by Miller was cut from rivers, ponds, and lakes. In 1921, Miller's ice house burned. Sawdust insulation may have been responsible for the fire. Although plans were made to construct a new ice house, it never was replaced. Around 1928, a concrete slaughterhouse replaced the ice house, and may have been built directly on the ice house foundation.[99]

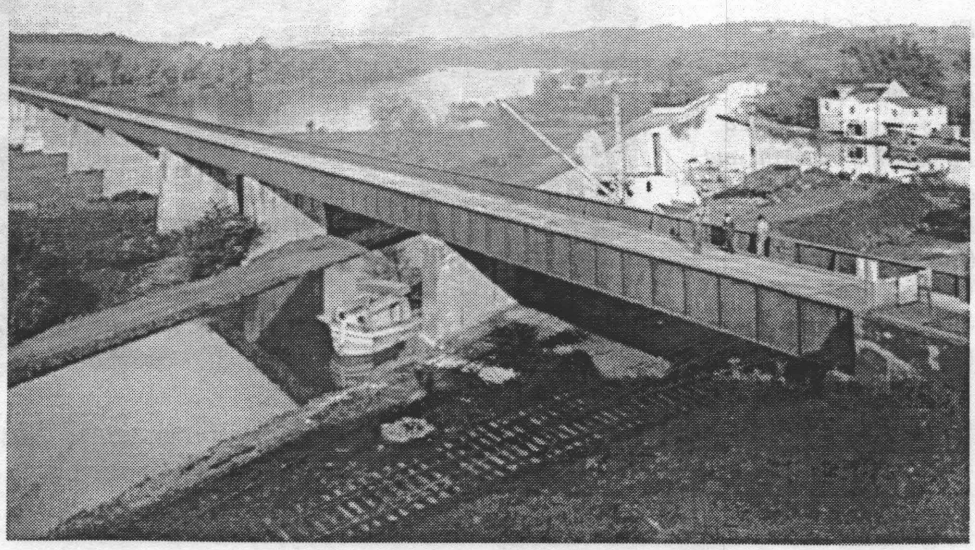


Figure 15. Washington-Berkeley Bridge, circa 1915. (Chesapeake and Ohio Canal National Historical Park Photo Library; photo is hand dated "1920" but image portrays earlier landscape features)

Another significant, early-twentieth-century event was construction of the Washington-Berkeley Bridge below the Cushwa loading basin and above the Bollman Bridge. The bridge replaced the ferry that had taken traffic across the Potomac River since 1749.[100] Efforts to build a vehicular bridge across the Potomac River began in 1907, and by 1908 construction had begun. An accident that killed some workers delayed construction; the bridge opened to traffic on August 10, 1909.

The modern steel and concrete bridge followed an alley that led to Potomac Street into the center of town. The bridge cleared the canal by approximately twenty feet, allowing easy passage for the low canal boats. Evenly spaced concrete abutments stood on canal company lands, but did not interrupt canal traffic.

Lock 44

In the first decade of the twentieth century, three major distributors were involved in Williamsport's coal trade: Victor Cushwa and Sons, Steffey and Findlay, and the A. C. Gruber Company. The B&O granted a lease to Cushwa and Sons and Steffey and Findlay north of Lock 44 for a large coal wharf. The wharf, located between the Undine Milling Company and the canal company's carpenter yard, was leased previously to Stanhope and Embrey.[101] The Undine Milling Company, owned by F. H. Darby, was destroyed by fire in 1904.

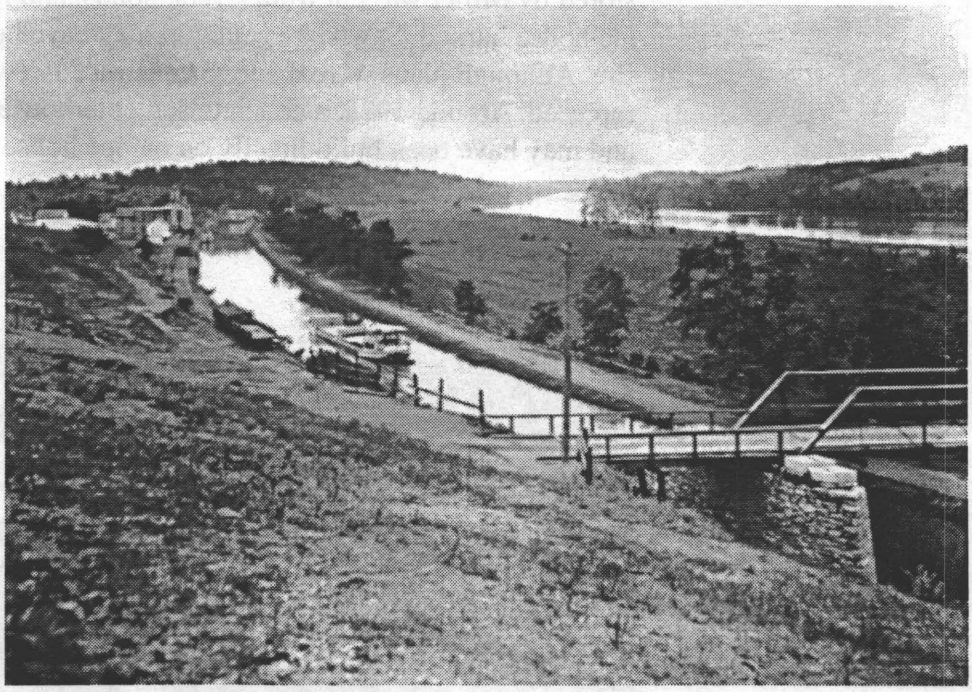


Figure 16. C&O Canal, Williamsport, showing Bollman Bridge in foreground, Steffey and Findlay Lumber Mill and associated buildings in background, circa 1900. (Robert G. Merrick Collection, Maryland State Archives, Annapolis, Maryland)

The canal and towpath were well maintained during this period. Theodore Lizer, whose family operated a boat on the canal, described some of the company's efforts:

> It was a good scene, with all the trees—and the canal company kept them trimmed so the boats wouldn't get into them. The towpath was cut, the weeds kept down. It was pretty. They kept it clean. They'd cut the weeds with scythes. Cut them down along the water so the towlines wouldn't get fastened.[102]

Harvey Brant, keeper of Lock 44, indicated that each foreman maintained an area, and competition arose as to whose area was the best maintained:

> The canal was *beautiful.* They kept the grass mowed just as pretty, and the trees trimmed even. If you'd get on a long straight line say, a mile or two, the trees would be trimmed and it looked just like a straight line on the trees. It was kept up beautiful. Each foreman tried to make his division look better than the other one did.[103]

The Lockkeeper's House stood on the towpath side of the canal, directly adjacent to Lock 44. The two-story, wood frame dwelling had a stone foundation and was surrounded by a series of residential and agricultural outbuildings including a privy, shed, corn crib, and hog pen. Deciduous trees surrounded the house in keeping with traditional siting practices, and a large garden area was located behind the building.[104]

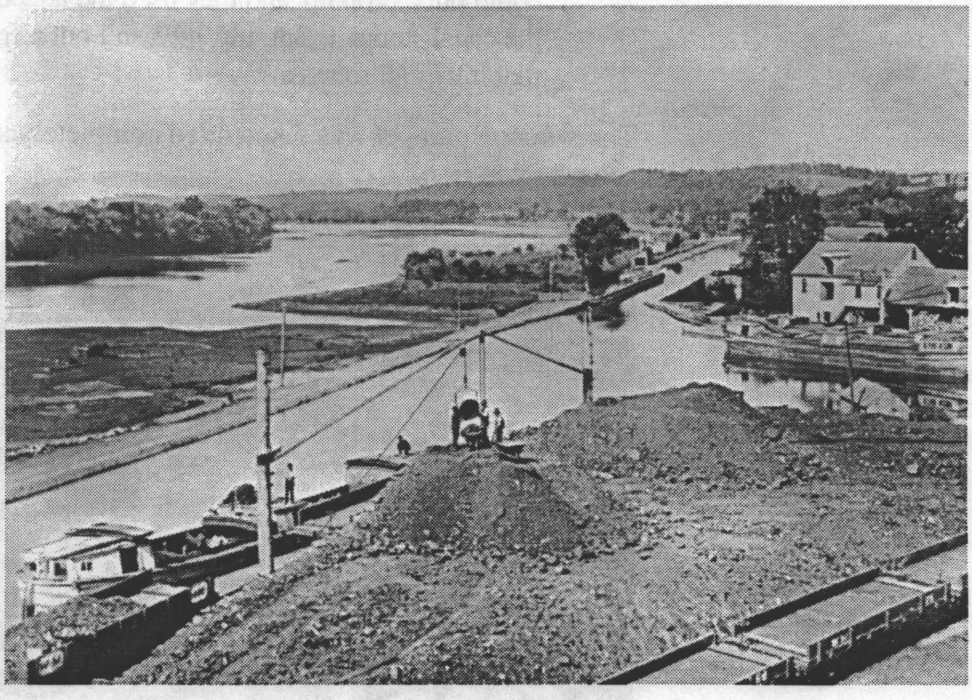


Figure 17. C&O Canal, Williamsport, showing farm northwest of the Conococheague Aqueduct, circa 1903. (See cover for detail of this photograph.) (Courtesy Melvin Kaplan)

North of the Conococheague Aqueduct

Photographs from this period indicate that the lands north of the aqueduct, between the canal and the Potomac River, were used for crop cultivation. A photograph taken around the turn of the century showed sparse vegetation lining the northern bank of the Conococheague Creek downstream of

the aqueduct. North of the aqueduct, a fence ran parallel to the towpath. These lines seemed to define the southern and eastern boundaries of a privately owned property, for within their margins stood a building, apparently a dwelling, surrounded by a cultivated field.[105]

The W. D. Byron Tannery also was established during this period and located northeast of the holding basin above the Conococheague Aqueduct. A series of waste ponds used by the tannery were constructed directly adjacent to the canal property. Factory buildings were constructed further east.

Final Years of the Canal Era

Many significant events occurred during the last four years of the canal's operation, including the collapse of the aqueduct's upstream wall, construction of the Potomac Edison Company power plant, and the partial or complete filling of the Cushwa loading basin. In 1920, the Conococheague Aqueduct's east parapet collapsed. Although there was a boat passing through at the time, no one was injured and the parapet was replaced by a wooden structure. According to Brant:

> They put a board siding in the aqueduct, planks 5 to 6 inches thick and 14 inches wide. They put logs down in there, from one side to the other, and concreted them in and let these logs stick out on one side. These logs run out far enough that they could put a prop up, and they used the aqueduct that way until the canal stopped. But, my, it wasn't but a couple of years after that it was all rotted away.[106]

The wooden parapet was dismantled completely some time after the canal ceased operation.

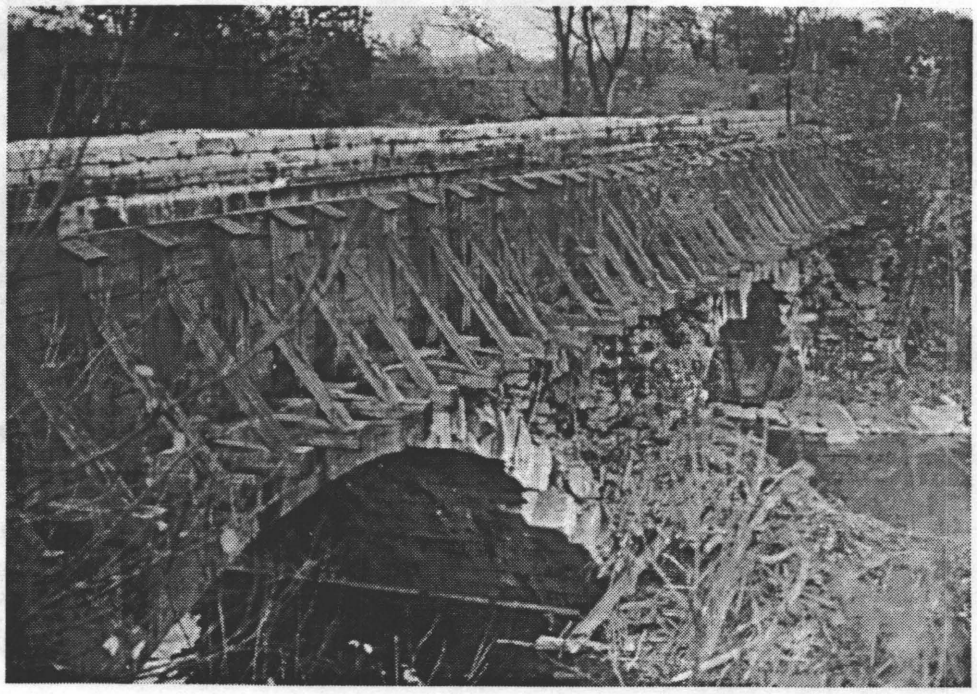


Figure 18. Berm side of the Conococheague Aqueduct with wood parapet, circa 1939. (Chesapeake and Ohio Canal National Historical Park Photo Library)

In 1922, the Potomac Public Service Company and its new subsidiary, the Williamsport Power Company, began construction of a power plant on the Potomac River, northwest of Lock 44 between the canal and the river. In addition to the main facility, the company received permission to construct a temporary track over the canal so that building materials could be carried from the Western Maryland Railroad to the power plant site. The Williamsport Power Company eventually signed an agreement that allowed permanent construction of a railroad lift bridge over the canal. The lift bridge was to be lowered only when there was no canal traffic.

The railroad spur crossed the canal and the iron lift bridge was constructed south of the Cushwa loading basin between the Washington-Berkeley and Bollman bridges. The metal truss system above the tracks remained stationary at all times, its pulleys and weights lifting the deck approximately 12 to 15 feet. The bridge and deck crossed the canal diagonally, with the approximately 15-foot deck just long enough to traverse the prism. The bridge was controlled from a small masonry control station located near its southwest corner on the towpath side of the canal. Completed on June 11, 1923, the lift bridge was used only once and the canal closed soon after its construction.[107]

By 1924, the company, which had changed its name to Potomac Edison, installed transmission towers along the canal to provide electricity to adjacent areas. The metal towers were spaced evenly and varied in height, although all were around 50 feet. A circa 1929 sketch showed the plans for electric wires crossing the canal over the Cushwa loading basin.

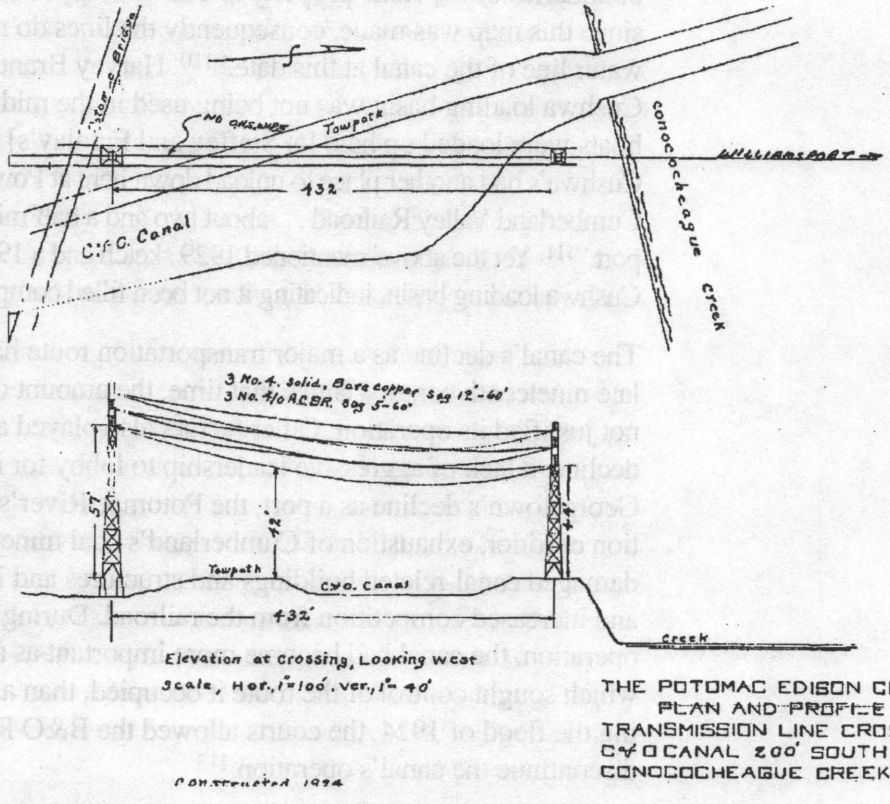


Figure 19. Potomac Edison Company Plan and Profile of Transmission Line Crossing the C&O Canal and Cushwa Loading Basin at Williamsport, circa 1929. (Potomac Edison Engineering Department Records)

Construction of the power plant had a major impact on the lockkeeper's residential complex near Lock 44. While the residence was retained, the power plant facilities came within 100 feet of the building, overpowering the scale of the house and destroying a significant portion of its surroundings. As described by Brant:

> My garden was behind the house. But when Potomac Edison bought these bottoms over here and started to build the power plant—that was just about the time the canal stopped—they got a bulldozer in there and just covered up my garden, and knocked down my fruit trees and my grape vines and everything. I had a hog pen back there. They knocked it down. And they never said a word to me.[108]

Brant continued to live in the Lockkeeper's House after the canal closed in 1924: "I stayed there [for thirty-seven years] and I only had to pay a dollar a month rent—just to show who it belonged to. A dollar a *year*, I believe it was."[109] Many of the buildings he described as part of the complex—an outhouse, log shed, and corn crib—remained around the Lockkeeper's House during his tenure.

The canal's closing also was preceded by the partial or complete filling of the Cushwa loading basin near Cushwa's Warehouse. A letter dated January 9, 1924, from the general manager of the canal company to the vice president of the Potomac Edison Company indicated that the Cushwa loading basin recently had been filled: "I am enclosing a pencil sketch of the Canal and boundaries of the canal property ... The basin up near Cushwa's has been filled since this map was made, consequently the lines do not correctly represent the water line of the canal at this date."[110] Harvey Brant also indicated that the Cushwa loading basin was not being used in the mid-1920s, and instead "the boats were loaded up here [at Steffey and Findlay's] for Cushwa's.... And then Cushwa's had another place to unload down here at Powell's Bend, down at the Cumberland Valley Railroad ... about two and a half mile [sic] below Williamsport."[111] Yet the above-mentioned 1929 sketch and a 1933 map showed the Cushwa loading basin, indicating it not been filled completely.[112]

The canal's decline as a major transportation route had been coming since the late nineteenth century. Since that time, the amount of trade on the canal had not justified its operation. Other factors also played a major role in the canal's decline: a lack of aggressive leadership to lobby for its continued operation, Georgetown's decline as a port, the Potomac River's decline as a transportation corridor, exhaustion of Cumberland's coal mines, recurring floods that damaged canal-related buildings and structures and interrupted navigation, and increased competition from the railroad. During its last few decades of operation, the canal had become more important as a pawn of the railroads, which sought control of the route it occupied, than as a tool for trade. Following the flood of 1924, the courts allowed the B&O Railroad Company to discontinue the canal's operation.[113]

2.7 DETERIORATION OF THE CANAL, 1924-1937

(Reference Figure 62: *1924-1937 Historic Base Map*, following page 3-31)

Introduction

With the abandonment of the canal in 1924, there was little use or circulation in the area except for those warehouses that remained in operation and depended on either rail or trucking to continue trade. The loading basins had been filled either naturally from flooding deposits or through deliberate intervention. Generally the canal was not used, stagnant pools of water had formed in the prism, and deterioration began. Natural vegetative succession occurred rampantly along the towpath, in the canal prism, on the floor of the aqueduct and in the adjacent unused lands during this period. Photographs of the 1936 flood showed a thick, unmanaged band of vegetation along the Conococheague, the towpath, the floodplain and the southern portion of the hillside.[114]

Closing of the C&O Canal

The canal finally ceased operation after the flood of March 1924, although no serious damage was attributed to it. The canal, left to deteriorate for almost fifteen years, was host to a number of hazardous and unhealthy conditions. When a typhoid epidemic struck Williamsport in 1928, the mayor requested state health officials to determine what risk the canal posed to Williamsport residents. It was determined that the canal posed a serious health hazard. The unhealthy conditions were caused by stagnant pools of water along the canal that were optimum breeding grounds for mosquitoes. State health officials also mentioned that abandoned canal boats provided shelter for "disorderly persons of various sorts."[115] The general manager of the canal was directed by the health officials to remedy unhealthy conditions.

Despite the general manager's assertion that conditions along the canal had been corrected by October 1928, all hazardous conditions had not been eliminated. It was decided ultimately that the only way to eliminate unhealthy conditions was to flush sections of the canal in the summer. Flushing the canal required repair of breaks in the canal at a cost of $10,000. The first flushing of the Williamsport section occurred in the summer of 1929. The Department of Health also warned that the abandoned canal boats must be removed. By September 1929, apparently, all conditions were corrected.[116]

Although the canal had closed, business continued near the Cushwa loading basin. Lester Cottrill and Percy Murray, who owned a meat shop in Williamsport, rented the lumber mill/ice house site from Victor Cushwa and constructed a concrete building to be used as a slaughterhouse. This business remained operational until it was washed away by the flood of 1936.[117] A Mr. Obits later leased the site from Victor Cushwa and built a storage shed.

Unhealthy conditions created by the canal again became an issue in 1933. The Washington County Board of Public Health made an effort to have the canal cleaned; the canal company, however, would not pay for the cleanup and

requested help from the Civil Works Administration. The Civil Works Administration agreed to drain stagnant pools of water and clear debris, weeds, and brush.[118]

In February 1936, flooding again damaged the canal. A 40-foot section of Dam 4 was carried away by an ice jam caused by the flood. Cushwa's lime storage shed, probably another name for the Cement and Phosphate Factory, and Cottrill's slaughterhouse washed away completely.[119] According to Conococheague Maintenance District Foreman Dick Marshall, Harvey Brant related how he built the shed behind the Lockkeeper's House from the remains of the carpenter's shop, which was damaged beyond repair in the 1936 flood. Another flood struck Williamsport in February of 1937, but no serious damage was reported. The Bollman Bridge survived these two floods; however the general manager had received complaints about its safety. Apparently the bridge was beginning to wash out and the deck was in very poor condition. In June 1937 the bridge was refinished.

Between the years of 1924 and 1938, the general manager heard many complaints about the condition of the canal and objectionable activities occurring along the canal. There were reports of people using the canal for illegal business, such as moonshining, and persons were found living in the abandoned canal company buildings. One woman, for example, was residing in the old collector's office. In 1936, the general manager received a report that an individual had laid claim to a portion of the towpath.[120] The presence of these and other squatters led to concerns that careless smokers in the area of the lumber yard and carpenter's shop could start fires.

The general manager also received letters from persons wishing to use materials that had been left along the canal. At first, no materials were sold or given away, but it is known that in 1935, the general manager received a letter requesting permission to use some "more than Half Rotten" old lumber from the carpenter shop for heating.[121] It is known also that in 1937 some scrap iron at the hay press/carpenter's shop was sold for 32 cents per 100 pounds.[122]

2.8 NPS ACQUISITION AND MANAGEMENT, 1937-1993

(Reference Figure 63: *1937-1993 Historic Base Map*, following page 3-31)

In September 1938, the C&O Canal officially became the property of the United States under the maintenance of NPS. The canal was declared a National Monument in 1961, and a National Historical Park ten years later. Park boundaries incorporated a combination of private and public land. In Williamsport, NPS was able to purchase the majority of canal-related property; however, the Town of Williamsport retained several significant parcels. A right-of-way continues to run from Potomac Street through the Cushwa loading basin to the shore of the Potomac River. The western wall of the Cushwa Warehouse may stand in the Water Street right-of-way, also controlled by the town.

The initial years of management were slow, with minimal clean up and removal of health hazards; however, in recent years management goals have instigated the restoration, stabilization, reconstruction, and rehabilitation of various structures and sites. The primary uses of the site currently include recreational activities such as hiking, walking, and cycling along the towpath, and visitor interpretation.

New development along the canal was minimal during this period; however, the concrete-block Young Adult Construction Corps (YACC) building, now used for NPS storage, was constructed in 1968 by the Town of Williamsport on the berm side of the canal north of Lock 44. In 1968, a wastewater treatment facility was constructed adjacent to the park, southwest of Lock 44. Originally owned and operated by the Potomac Edison Company, the facility included a pumphouse and a pit. The property is now used by the Town as a collecting bin. In 1964, NPS built two maintenance sheds north of Lock 44, one of which was removed except for its concrete foundation, in 1974. Finally, a bridge was built across a creek near Lock 44 in 1986 by NPS, and the Potomac Edison Company power plant built an access road across the canal in 1986. According to NPS, most of the wood used by Harvey Brant to construct the shed behind the Lockkeeper's House has since been replaced.

Photographs taken between 1956 and 1961 indicate that much of the site had become overgrown with vegetation by that time. Grasses had invaded the majority of the canal prism, and tree saplings and shrubs grew in many areas. Trees and shrubs occupied the hillsides and towpath margins, as well as the area surrounding the Lockkeeper's House. These photographs indicate that extensive cutting of the brush occurred within the canal prism and along the towpath, and that the landscape around the Lockkeeper's House was altered dramatically during this period. In a circa 1960 photograph of the Lockkeeper's House, two large deciduous canopy trees, most likely silver maples, appear on either side of the building's entryway. These trees appear in photographs as early as 1865-1889; however they are no longer present in a 1961 view. Between 1956 and 1961, the configuration of planting beds and the species present also changed in the vicinity of the Lockkeeper's House. The flume and the lock were barely visible because of the dense grasses growing in the prism. Vegetation also grew between the stones in the lock, flume, and aqueduct walls. Some vegetation appeared to have been removed from these areas in conjunction with the removal of the two large canopy trees and the reconfiguration of the planting beds in the vicinity of the Lockkeeper's House in the 1961 photograph.

The Power Generation Station used to provide electricity to the Hagerstown Railway Trolley system was sold by David Cushwa III to NPS in 1974. It was rehabilitated in 1987; the Cushwa Warehouse was rehabilitated in 1981; the Cushwa loading basin and the flume were reconstructed in 1993. In addition, the Lockkeeper's House was stabilized in 1981, as was the Conococheague Aqueduct in 1983. The storage shed used by Mr. Obits (built on the foundation of the Miller ice house) was

Figure 20. Lockkeeper's House at Lock 44, circa 1960. (Chesapeake and Ohio Canal National Historical Park Photo Library)

demolished in 1976 after the Cushwa loading basin was acquired by NPS. The State of Maryland Highways Department made extensive repairs to the Washington-Berkeley Bridge between 1984 and 1986, including new steel and concrete work.

In 1993, vegetative growth north of the Conococheague Creek along the canal is comprised predominantly of boxelders and silver maples. Saplings and young to medium-aged trees occur in all areas of the site except for the towpath and including the canal prism. Grasses, composites, and some woody shrubs are evident along the aqueduct floor and within the decaying arches. Low grasses line the canal prism at the Cushwa loading basin. A variety of deciduous canopy and understory trees of various ages flank the Conococheague Creek. Vegetation along the creek has grown up to such a degree behind the Power Generation Station that the branches of some trees have almost come into contact with the building. Several medium-sized deciduous canopy trees—silver maple, tree-of-heaven, sycamore, and boxelder—have been maintained in the former lumber mill/coal warehouse and coal yard area. The treeline along the towpath at the Cushwa loading basin is relatively thick and includes red mulberry, tree-of-heaven, honeylocust, black locust, sycamore, hackberry, boxelder, multiflora rose, Japanese honeysuckle, and grape vines. The towpath margin opens up just south of the Washington-Berkeley Bridge, the Railroad Lift Bridge, and the Bollman Bridge. Two large trees—a sycamore and a honeylocust—surround the control station and the lift bridge. The remainder of the area is maintained in open grass and ground covers.

In 1984, the Potomac Edison Company planted a line of arborvitae south of the Bollman Bridge; the arborvitae replaced a deteriorated wooden

privacy fence. South of this planting, the vegetation increases in density on both sides of the canal, except where broken by structures and circulation systems. Species found in this area include red elm, boxelder, black cherry, hackberry, silver maple, tree-of-heaven, honeylocust, sycamore, white oak, sumac, multiflora rose, and Japanese honeysuckle. In the areas where the canal retains water, hydrophytic plants such as reeds, cattails, and sedges dominate. In the early 1990s, four or five trees, maples and spruce, were cut out of the middle island between the flume and the lock to protect the flume walls from deterioration by the tree roots.[123] A dense thicket of vegetation occurs behind the Lockkeeper's House. It is composed of deciduous species of trees and shrubs such as silver maple, red elm, hackberry, tree-of-heaven, black locust, boxelder, multiflora rose, and Japanese honeysuckle. Two breaks occur in this thicket of vegetation, to the north and to the south of the building, where access roads to the Potomac Edison power plant previously existed.

---

[1] J. Thomas Scharf, *History of Western Maryland*, vol. I (1882; reprint, Baltimore: Regional Publishing Co., 1968), 33.

[2] Scharf, *History of Western Maryland*, vol. I, 36.

[3] Several archeological studies of canal-associated resources in Williamsport have been prepared for the National Park Service. For more information on the area's archeological resources, see Douglas Comer, "Preliminary Archeological Report, Excavations at Cushwa's Warehouse" (1977); William Andrefsky, "Archeological Investigation of the By-Pass Flume at Lock #44" (1978); Steven J. Phillips, "Archeological Excavation at the Power Station, Williamsport, Maryland" (1978); and Ellen M. Seidel, "Archeological Investigations at the Miller Brothers Lumber Mill Site" (1981).

[4] Scharf, *History of Western Maryland*, vol. I, 419.

[5] Thomas John Chew Williams, *History of Washington County, Maryland*, 2 vols. (Hagerstown, Maryland: Runk and Titsworth, Publishers, 1906), I: 22.

[6] Edward D. Smith, "Historic Resource Study: Williamsport, Maryland" (Report prepared for the National Park Service, Denver Service Center, National Capital Team, July 25, 1979), 17-18.

[7] Washington County Land Records, Liber E, Folio 421, November 1786. Circuit Court, Hagerstown, Maryland.

[8] Preservation Associates, Inc., "National Register of Historic Places Nomination: Williamsport Historic District" (Prepared for the Maryland Historical Trust, Annapolis, 1980), 2.

[9] Smith, "Historic Resource Study," 18.

[10] James W. Thomas and T. J. C. Williams, *History of Allegany County, Maryland*, vol. I (1923; reprint, Baltimore: Regional Publishing Company, 1969), 203. In the mid-eighteenth century, Beall's family moved from southern Maryland to the part of Washington County that eventually would become Allegany County. He owned a large amount of land in Allegany, was responsible for laying out plans for Cumberland in 1786, and played a role in the creation of Allegany County in 1789. (Ibid, 444-445.)

[11] Smith, "Historic Resource Study," 20.

[12] Walter S. Sanderlin, *The Great National Project* (Baltimore: The Johns Hopkins Press, 1946), 37-38.

[13] Smith, "Historic Resource Study," 44.

[14] Charles Varlé, *A Map of Frederick and Washington Counties, State of Maryland*, engraved by Frederick Shallus, Philadelphia, 1808 (Historic Society of Frederick County, Frederick, Maryland).

[15] Smith, "Historic Resource Study," 46.

[16] *Cumberland Maryland Advocate*, December 15, 1823. From Smith, "Historic Resource Study," 55.
[17] E.H. Courtenay, *Map of the Country Between Washington and Pittsburg Showing the Proposed Routes of the Chesapeake and Ohio Canal*. 1824 (Washington, D.C.: National Archives Cartographic Division, call no. G3842.C4 1824 .C6)
[18] Smith, "Historic Resource Study," 56.
[19] Sanderlin, *The Great National Project*, 55-56.
[20] Sanderlin, *The Great National Project*, 91.
[21] Sanderlin, *The Great National Project*, 113.
[22] Sanderlin, *The Great National Project*, 166.
[23] Smith, "Historic Resource Study," 59.
[24] *Hagerstown Torch Light and Public Advertiser*, February 28, 1828. From Smith, "Historic Resource Study," 60. This property was owned by Ann Williams when the canal company was in the process of purchasing lands on which to build the canal. A search of land records failed to reveal information regarding the property and the possible transfer of a portion of it to the C&O Canal Company.
[25] Smith, "Historic Resource Study," 61.
[26] Scharf, *History of Western Maryland*, vol. II, 1224-1229.
[27] Profile maps of sections 186-188, found in drawings and other records concerning construction, 1828-1937, C&O Company. Reproduced in Smith, "Historic Resource Study," 259-261.
[28] Smith, "Historic Resource Study," 85.
[29] Smith, "Historic Resource Study," 86-88.
[30] Smith, "Historic Resource Study," 88.
[31] For the purposes of this report, the basin south of the Conococheague Aqueduct will be referred to as the "Cushwa loading basin." In previous studies, it has also been referred to as the main basin and the turning basin.
[32] Smith, "Historic Resource Study," 84.
[33] John Milner Associates and Edward H. Richardson Associates, "Stabilization Study: Conococheague Aqueduct" (Prepared for the National Park Service, Denver Service Center, September 1978), 1.
[34] Milner and Richardson, "Conococheague Aqueduct," 3.
[35] National Archives, RG 79, Records of the C&O Canal Company, specifications of locks, n. d. From John Milner Associates, "Preliminary Historic Structure Report, Lift Lock No. 44, Chesapeake and Ohio Canal National Historical Park, Williamsport, Maryland" (Study prepared for the National Park Service, Denver Service Center, C&O Canal Restoration Team, August 1978), 20-22.
[36] Sanderlin, *The Great National Project*, 163.
[37] Elizabeth Kytle, *Home on the Canal* (Cabin John, Maryland: Seven Locks Press, 1983), 205-206.
[38] Edwin C. Bearss, "Historic Structure Report: C&O Canal—The Bridges," (Report prepared for the National Park Service, Historical Data Section, Division of History, Office of Architecture and Historic Preservation, January 31, 1968), 109.
[39] Letter from E. K. Burlew, Acting Assistant Secretary of the Interior, to Sam Rayburn, Speaker of the House of Representatives, "Chesapeake & Ohio Canal Report" (81st Congress, 2d session, House Document No. 687, August 16, 1950), 4.
[40] Sanderlin, *The Great National Project*, 161.
[41] Smith, "Historic Resource Study," 111-112.
[42] John Milner Associates and Keast and Hood Company, "Turning Basin Restoration Study: Chesapeake and Ohio Canal National Historical Park, Williamsport, Maryland" (Study prepared for the National Park Service, Denver Service Center, Chesapeake and Ohio Canal Restoration Team, September 1978), 1.
[43] *Williamsport Banner* as quoted in the *Niles' Register* XLVIII (April 11, 1835), 89. From Smith, "Historic Resource Study," 93-94.

[44] Sketch map of basin area, 1838, from Rogers' report to Ingle, December 28, 1838, letters received, C&O Canal Company. From Smith, "Historic Resources Study," 84, 262.
[45] National Archives, RG 79, Proceedings of the President and Board of Directors of the C&O Canal Company, D, 230, 314. From Smith, "Historic Resource Study," 97.
[46] National Archives, RG 79, Proceedings of the President and Board of Directors of the C&O Canal Company, E, 98, 155. From Smith, "Historic Resource Study," 112-113.
[47] National Archives, RG 79, Proceedings of the President and Board of Directors of the C&O Canal Company, D, 314-315. From Smith, "Historic Resource Study," 97.
[48] Smith, "Historic Resource Study," 114.
[49] Smith, "Historic Resource Study," 98.
[50] National Archives, RG 79, Letter from Charles Embrey to President and Board of Directors of the C&O Canal Company, December 30, 1847. From Smith, "Historic Resource Study," 129.
[51] Smith, "Historic Resource Study," 127-129.
[52] Smith, "Historic Resource Study," 130-131.
[53] National Archives, RG 79, Letter from Charles Warfield to President and Board of Directors of the C&O Canal Company, July 27, 1835. From Smith, "Historic Resource Study," 107.
[54] John Milner Associates and Edward H. Richardson Associates, "Historic Structure Report: Lift Lock No. 44" (Prepared for the National Park Service, Denver Service Center, August 1978), 11.
[55] Smith, "Historic Resource Study," 96. According to Smith, Hollman, who died in 1848, never fulfilled his agreement to construct a house at Lock 44.
[56] Smith, "Historic Resource Study," 131-132.
[57] National Archives, RG 79, Letter from Charles Embrey to President and Board of Directors of the C&O Canal Company, June 13, 1848. From Smith, "Historic Resource Study," 129-130.
[58] National Archives, RG 79, Proceedings of the President and Board of Directors of the C&O Canal Company, F, 207. From Smith, "Historic Resource Study," 120.
[59] Smith, "Historic Resource Study," 120.
[60] Smith, "Historic Resource Study," 123.
[61] Smith, "Historic Resource Study," 135.
[62] National Archives, RG 79, Proceedings of the President and Board of Directors of the C&O Canal Company, H, 525. From Smith, "Historic Resource Study," 137.
[63] Smith, "Historic Resource Study," 143-144.
[64] Smith, "Historic Resource Study," 139.
[65] Sanderlin, *The Great National Project*, 210.
[66] Photograph of the Williamsport ferry crossing looking from the West Virginia side of the Potomac River, facing Williamsport, c. 1860, National Park Service, C&O Canal National Historical Park Photo Library, Sharpsburg, Maryland.
[67] Theodore R. Davis, "Williamsport, Maryland, and the Ford Across the Potomac." Sketch in *Harper's Weekly*, October 18, 1862. Edwin Forbes, "War in the Shenandoah Valley—Division of the National Army Under Gen. Banks Recrossing the Potomac from Williamsport, Maryland, to Attack the Rebel Army Under Gen. Jackson—the Band of the 46th Pennsylvania Volunteers Playing the National Airs on the Virginia Shore." Postcard reproducing sketch from *Harper's Weekly.*
[68] Smith, "Historic Resource Study," 149-150.
[69] Smith, "Historic Resource Study," 151.
[70] Smith, "Historic Resource Study," 158.
[71] Smith, "Historic Resource Study," 164.
[72] National Archives, RG 79, C&O Canal Company Records, Proceedings of the President and Board of Directors, K, 323. From Smith, "Historic Resource Study," 166.
[73] National Archives, RG 79, C&O Canal Company Records, Letters Received, Embrey to President and Board of Directors, May 2, 1863. From Smith, "Historic Resource Study," 166.

[74] Smith, "Historic Resource Study," 168-169.
[75] Smith, "Historic Resource Study," 176-177.
[76] Smith, "Historic Resource Study," 179.
[77] National Archives, RG 79, Chesapeake and Ohio Company Records, letter from Masters to Ringgold, March 6, 1865. From Smith, "Historic Resource Study," 181.
[78] Smith, "Historic Resource Study," 189.
[79] Smith, "Historic Resource Study," 185-187.
[80] Harold A. Williams, *The Western Maryland Railway Story* (Baltimore: Western Maryland Railway Company, 1952), 50.
[81] Williams, *The Western Maryland Railway Story*, 3.
[82] Ellen M. Seidel, "Archeological Investigations at the Miller Brothers Lumber Mill Site, Williamsport, Maryland" (Study prepared for the National Park Service, Denver Service Center, Branch of Historic Preservation, July 1981), 1.
[83] Smith, "Historic Resource Study," 195-196, 202.
[84] Smith, "Historic Resource Study," 196, 202.
[85] Smith, "Historic Resource Study," 200.
[86] Photograph of DeFrehn Chair Factory, Williamsport, Maryland, circa 1880-1889. Washington County Historical Society Vertical Files, Hagerstown, Maryland.
[87] Melvin Kaplan, conversation with Cari Goetcheus and Julie Gronlund, June 1993.
[88] Scharf, *History of Western Maryland*, vol. II, 1201.
[89] Smith, "Historic Resource Study," 198.
[90] Sanderlin, *The Great National Project*, 248.
[91] Smith, "Historic Resource Study," 204.
[92] Sanderlin, *The Great National Project*, 266-267.
[93] Smith, "Historic Resource Study," 213-214.
[94] For the purposes of this report, this building will be referred to as the "Power Generation Station." Previous studies have called it the power station, generation station, generating station, and trolley power station.
[95] Phillips, "Archeological Excavation of the Power Station," 5-6.
[96] Smith, "Historic Resource Study," 217.
[97] National Archives, Geography and Mapping Division, Sanborn Map Company of Williamsport, October 1918.
[98] Washington County Historical Society, Photograph Files, Canal Boat in front of Cushwa's Wharf, circa 1885.
[99] Seidel, "Archeological Investigations at the Miller Brothers Lumber Mill Site," 2.
[100] Smith, "Historic Resource Study," 216.
[101] National Archives, RG 79, Leases and Other Records, lease, Joseph Bryan, John K. Cowen, and Hugh L. Bond, Jr., Trustees to Victor Cushwa and Sons and Steffey and Findlay, January 1, 1901. From Smith, "Historic Resource Study," 215.
[102] Kytle, *Home on the Canal*, 219.
[103] Kytle, *Home on the Canal*, 203.
[104] Photograph showing the Lockkeeper's House, Lock 44, and the hay press/carpenter's shop, circa 1919. C&O Canal National Historical Park Photo Library. Also Kytle, *Home on the Canal*, 211.
[105] Maryland State Archives, Robert G. Merrick Collection, MSA SC 1477-4758, Photograph of the C&O Canal, Williamsport, circa 1903.
[106] Kytle, *Home on the Canal,* 209.
[107] John Milner Associates and Keast and Hood Company, "Railroad Lift Bridge, Chesapeake and Ohio Canal National Historical Park, Williamsport, Maryland: Preservation Study" (Study prepared for the National Park Service, Denver Service Center, Chesapeake and Ohio Canal National Historical Park, September 1978), 1.
[108] Kytle, *Home on the Canal*, 211.
[109] Ibid.

[110] National Archives, RG 79, letter from the general manager to Harris, January 9, 1924. From Smith, "Historic Resource Study," 224-225.
[111] Kytle, *Home on the Canal*, 205.
[112] National Archives, RG 79, blueprint accompanying letter of proposal to drain stagnant water from the canal at Williamsport, December 1, 1933. From Smith, "Historic Resource Study," 325.
[113] Sanderlin, *The Great National Project*, 272, 277.
[114] Kelley's Studio and Camera Shop, "Bridge at Williamsport, Maryland." Washington County Free Library, Hagerstown, Maryland, Vertical files—Williamsport.
[115] National Archives, RG 79, Correspondence of the C&O Canal Company, Wolman to Office of Trustees, October 2, 1928. From Smith, "Historic Resource Study," 227.
[116] Smith, "Historic Resource Study," 230.
[117] Seidel, "Miller Brothers Lumber Mill Site," 2.
[118] Smith, "Historic Resource Study," 231.
[119] Smith, "Historic Resource Study," 242.
[120] Smith, "Historic Resource Study," 237.
[121] National Archives, RG 79, C&O Canal Company Records, Letters Received, Wine to Nicolson, September 4, 1935. From Smith, "Historic Resource Study," 239.
[122] National Archives, RG 79, C&O Canal Company Records, Letters Received, Wine to Nicolson, March 13, 1937. From Smith, "Historic Resource Study," 239.
[123] Conococheague Maintenance District Foreman Dick Marshall, in conversation with Liz Sargent, January 1994.

3 SITE ANALYSIS AND EVALUATION

3.1 SIGNIFICANCE

The significance of the C&O Canal is tied to its role in the transportation, industrial and commercial history of both Williamsport and the entire canal.

The National Register of Historic Places stipulates that in order to be eligible for the National Register, a designed historic landscape must "possess the quality of significance in American history, architecture, archeology..., engineering and culture and integrity of location, design, setting, materials, workmanship, feeling, and association, and

> A. be associated with events that have made a significant contribution to the broad patterns of our history; or
>
> B. be associated with the lives of persons significant in our past; or
>
> C. embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
>
> D. have yielded or be likely to yield information important in prehistory or history."[1]

The C&O Canal segment in Williamsport meets all the above criteria.

Criterion A

The landscape of the Williamsport segment of the C&O Canal contributes to the broad historic patterns associated with transportation, industrial development, and European immigration in the eastern United States during this period. Several factors contributed to the development of the Williamsport area as a significant center for transportation, industrial and commercial activities. Site specific natural features, such as the confluence of the Conococheague Creek and the Potomac River, a shallow portion of the river allowing a ford crossing, the availability of building materials, such as wood and stone, and buildable lands contributed to the development of Williamsport. A variety of inter-related transportation types and industries grew up around the Williamsport segment of the C&O Canal during its years of operation including canal boats, a ferry, the railroad, an electric trolley, and vehicular roads and bridges. Industries such as lumber and grain mills were established to take advantage of water-driven power sources; others, such as coal and lumber yards, furniture factories, warehouses, and wharves, were established in Williamsport, a convenient location for the railroad to unload raw materials and pick up finished goods to be transported to the markets in Washington, D.C.

Construction of the C&O Canal created an important link between two major commercial centers—Georgetown in the District of Columbia and Cumberland, Maryland, which, as the western terminus of the National Road, itself provided an important link with the developing American west and its rural production areas. Employment associated with the canal and adjacent commercial and industrial development provided jobs for many immigrants, particularly the Irish. This segment of the C&O Canal also is associated with labor conflicts that occurred during construction.

The use of the Williamsport area—a major crossing point of the Potomac River—by both opposing armies during the Civil War is significant in military history as part of the strategic campaigns that occurred during the war. Considered a vital strategic location by the Confederate and the Union armies, the canal was damaged by both sides. Union generals Stone, Banks, and Doubleday and Confederate generals Jackson and Stuart had key engagements in the Williamsport area.

Finally, upon restoration of the canal following the Civil War, a construction boom occurred during this period that was related to similar economic and transportation trends and events elsewhere in the United States. The decline and eventual abandonment of the canal in the twentieth century parallels similar trends that occurred throughout the United States due to the introduction of the automobile. Associated developments such as road construction and technological improvements led to significant changes in American transportation, industry, and commerce.

Criterion B

The canal and its landscape possess significant associations with local industrialists, retailers, and wholesalers, including Victor Cushwa, Charles Embrey, Christian and Owen Ardinger, Joseph Hollman, Charles Warfield, Elie Beatty, Edward Steffey, James Findlay, F. H. Darby, and John and George Miller.

Criterion C

The transportation system initiated by the construction of the C&O Canal reflects an important work of engineering and provides substantial insights into nineteenth-century canal construction in the United States. The use of limestone in large scale construction, custom stone cutting, and iron fittings are significant characteristics of this relatively well-preserved system. Study of the surviving lock, flume, Cushwa loading basin, and aqueduct may yield significant information concerning historic canal design and construction. More than fifty years of NPS ownership has protected the landscape in and around the canal from some of the modern encroachments that many other canal environs have suffered. The spatial relationship between the canal and the town of Williamsport that developed through the period of canal operation is still evident and reflects the significant interrelationships between nineteenth-century canals and the commercial and industrial lives of adjacent communities. In addition, entrenchments constructed on the eastern hillside

above the canal during the Civil War reflect the manipulation of the canal environs during this important period in military history, and its strategic location and role during the war. Structures built during the period 1865-1924 represent contemporary technology, such as the iron Railroad Lift Bridge, the iron vehicular bridge (Bollman Bridge), and the concrete and steel vehicular bridge (Washington-Berkeley Bridge).

Criterion D

Limited archeological investigations of the C&O Canal and environs in the Williamsport vicinity have yielded, and indicate that the canal will continue to yield, important historic and prehistoric information. Future study is likely to provide additional information related to the canal's cultural landscape, in particular, historic land uses, building locations, construction techniques, plant materials, and site details and special features.

Period of Significance

Review of the C&O Canal's landscape development chronology indicates that the period of significance for the Williamsport segment of the C&O canal extends from the initial period of construction in 1828 to the canal's abandonment in 1924. Significance is tied to the segment's role in the transportation, industrial, and commercial history of both Williamsport and the entire canal. In addition, the engineering feats involved in the planning and construction of Lock 44 and the Conococheague Aqueduct represent significant examples of nineteenth-century materials, craftsmanship, and design.

The overall period of significance can be divided into five subperiods:

1828-1850	Canal construction
1850-1861	Opening of the Canal to the outbreak of the Civil War
1861-1865	The Civil War
1865-1889	Post-war reconstruction to the flood of 1889
1889-1924	Canal re-opening after the flood of 1889 to the abandonment of the canal

During these subperiods, the organization and development of the canal's cultural landscape was influenced in the following ways:

- 1828-1850 (the period of canal construction and early operation): Circulation systems, land uses, and spatial organization of commerce and transportation activities established.
- 1850-1861 (the period following the official opening of the entire canal): Land uses and circulation routes solidified by increased use and additional construction.
- 1861-1865 (the period of the Civil War): Regular canal operations limited and ultimately stopped, portions of the canal and surrounding landscapes damaged, and most commercial and industrial activities limited as a result of Civil War activity.

- 1865-1889 (the period of the canal's heyday): Numerous mill businesses open along the canal and thrive, the railroads arrive in the area, and prosperity abounds until the great flood of 1889.
- 1889-1924 (the period of canal reopening after the flood of 1889 to the abandonment of the canal): Modern construction materials and technologies appear in the additions to the Williamsport segment of the canal.

3.2 CULTURAL LANDSCAPE CHARACTERISTICS

Introduction

The information acquired through evaluation of primary and secondary sources, historical research, and analysis of historic maps and photographs is organized according to the landscape characteristics addressed in *National Register Bulletin 30*, and within these, by the eight historic periods. Three of the landscape characteristics (land use, circulation systems and vegetation) are depicted graphically for each historic period, as seen in figures 23-44.

Overall Landscape Organization

The Williamsport segment of the C&O Canal is located in the Potomac River floodplain; the river stands to the west and the Town of Williamsport to the east. Running generally parallel to the Potomac River, the canal was sited between thirty and eighty feet from the shore of the Potomac, depending on the existing topography. Within the Williamsport section, the steep hillside north of Lock 44 limited the alignment of the canal. The Town of Williamsport, laid out prior to canal development, is located above the hillside. Access to the canal occurs via Potomac Street, where the grades slope gently to the Potomac River.

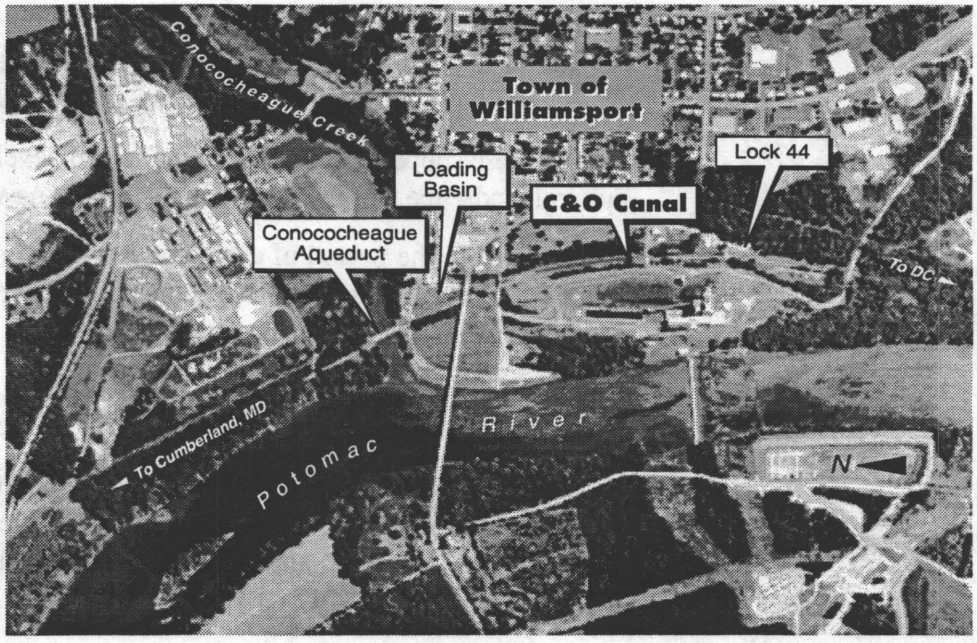


Figure 21. Overall Landscape Organization. (Aerial photograph by Air Photographics, Inc.)

The canal is a linear corridor that includes three primary features: Lock 44 at the southern end of the site; the Cushwa loading basin, an historic connection point to the Town of Williamsport nearly one-half mile north of the lock; and an aqueduct that crosses the Conococheague Creek one-tenth of a mile north of the Cushwa loading basin. Three other features provide cross-canal circulation routes, including the Bollman Bridge, the Railroad Lift Bridge, and the Washington-Berkeley Bridge, all located approximately two-tenths of a mile north of the lock near the Cushwa loading basin. The Bollman Bridge provides access to the lower Potomac River floodplain area, once the site of the ferry and ford crossing, the Railroad Lift Bridge provided rail access to the Potomac Edison Company power plant in the 1920s, and the Washington-Berkeley Bridge connected the Town of Williamsport with West Virginia via Route 11.

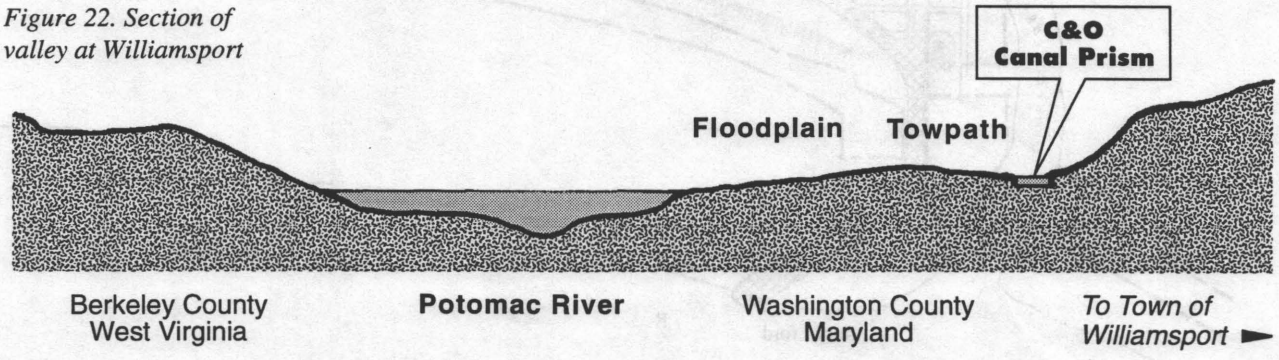
Residential and commercial areas occur predominantly east of the canal in the town; industrial activity occurred historically around the Cushwa loading basin, Lock 44, north of the Conococheague Aqueduct, and occurs now on what was once pastureland in the form of the Potomac Edison Company power plant west of the lock.

Response to Natural Features

The growth and development of Williamsport is attributable directly to natural features that promoted development of a ferry crossing near the mouth of the Conococheague Creek and the existence of an easily fordable area adjacent to the ferry on the Potomac River. The C&O Canal alignment was influenced by the historic travel route along the Potomac River, with the already commercially active Town of Williamsport located approximately halfway between the termini of Cumberland and Georgetown. Local physiography influenced the specific location of the canal; some areas of the canal are edged by steep hillsides cut by the Potomac, while other portions of the canal cut across the broad floodplain at the confluence of the Potomac and Conococheague.

Naturally available construction materials also facilitated construction of the canal and its related structures. Regional brickyards produced construction-

Figure 22. Section of valley at Williamsport



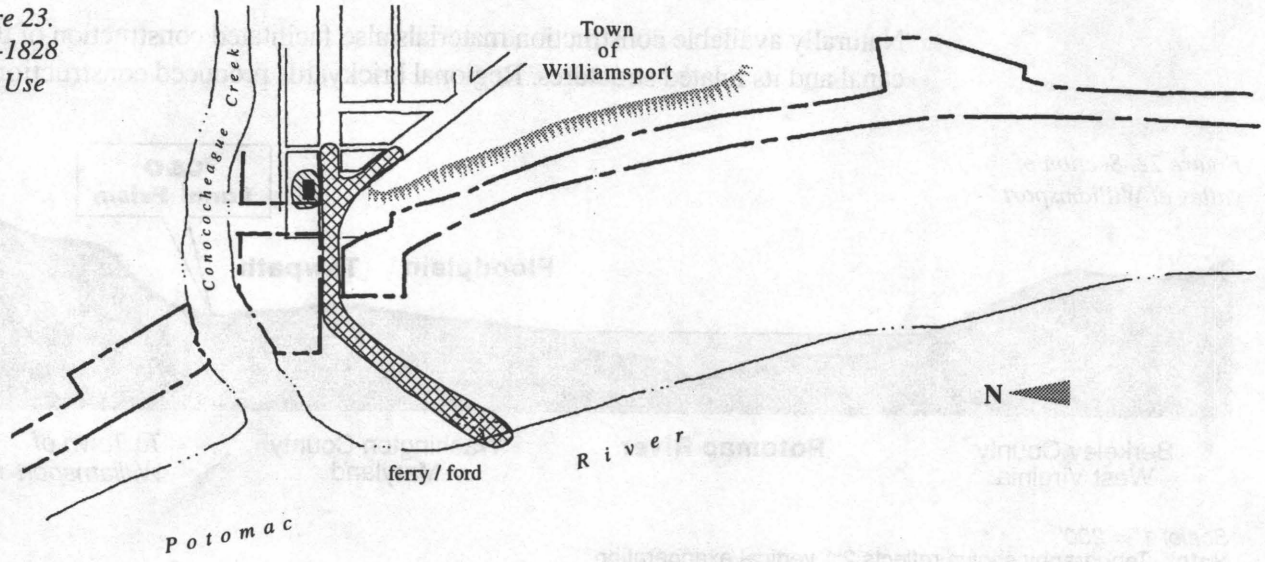
Scale: 1" = 200'
Note: Topography shown reflects 2:1 vertical exaggeration

quality brick; plentiful supplies of wood were available locally for residential, commercial, and industrial construction; and local deposits of blue limestone were used in construction of the canal walls, aqueduct and Lock 44. While the alignment of the canal prism was designed to take advantage of the level, buildable lands located alongside and within the Potomac River floodplain, the canal has subsequently been exposed to frequent damaging floods. The impacts of flooding on the C&O Canal have ranged from minimal to devastating in the nine major floods, and numerous minor floods, that have occurred since canal construction. Numerous structures have been washed away, and often all canal trade has been forced to cease, sometimes for weeks, due to severe flooding. While early Williamsport settlers chose elevated areas on which to build their homes and businesses, many canal buildings, warehouses, and industries were sited in proximity to the canal prism, and suffered devastating losses when flooding occurred.

Land Use

Various land uses have occurred along the C&O Canal, including industrial, residential, agricultural, transportation, mixed uses, and recreation. Located at the confluence of the Potomac River and Conococheague Creek, the Williamsport area traditionally has been used as a transportation corridor for mixed industry, trade, and commerce. Canal and railroad development in the nineteenth and early twentieth centuries near that confluence continued to support industrial and commercial uses that could take advantage of the area's accessibility to transportation. The decline of river, canal, and rail transportation in the mid twentieth century resulted in less intense commercial and industrial activities in the years following the closing of the canal. In recent years, Interstates 81 and 70 have become strong transportation routes that intersect in the Williamsport area.

Figure 23.
1787-1828
Land Use

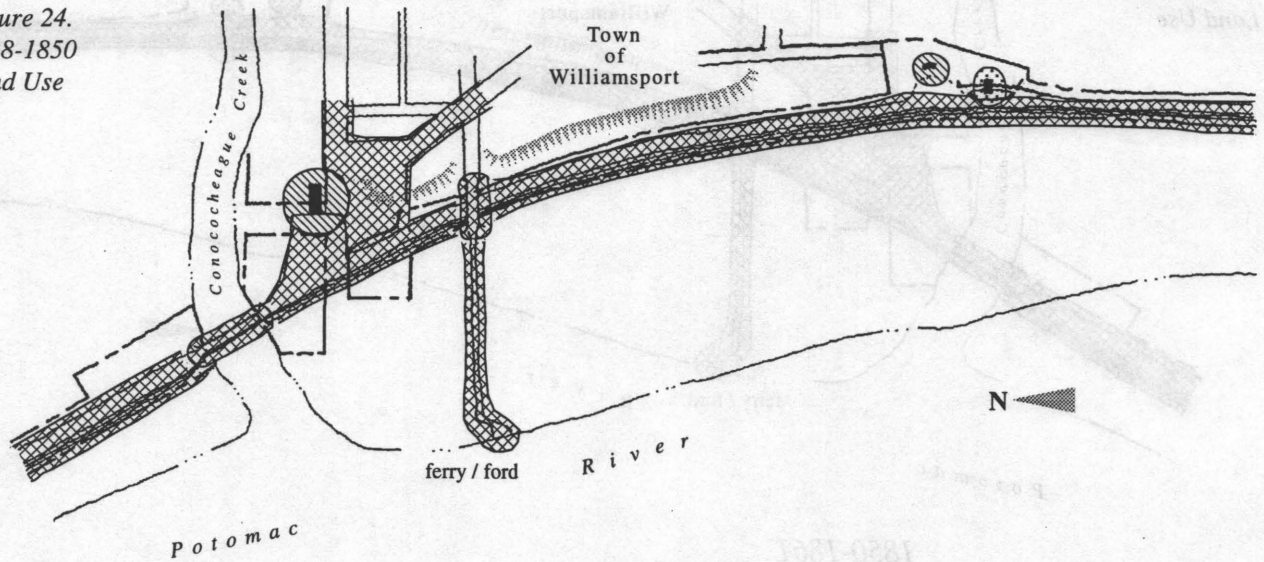


1787-1828

During early Williamsport settlement, Potomac River access was a primary determinant in area land use development. The creation of a ferry crossing at the mouth of the Conococheague Creek in 1749, the existence of an easily fordable area adjacent to the ferry, and a landform providing easy access to the crossing site established the primary river access route. This river access route was of prime significance to the area's transportation corridor for the following seventy-five years. Subdivision of General Otho Williams' parcels of land and sale of the individual lots in the 1780s determined the organization of the Town of Williamsport and promoted its close relationship with the Potomac River. In particular, Potomac Street provided a connection to the primary river access route. The building of a warehouse at the western end of Potomac Street emphasized the influence of this river access on land use. Access to the Conococheague Creek was also important to provide additional trade routes from the upstream mills to Washington, D.C., and, circa 1810, the Potomac Company cleared fifteen miles along the creek.

Future archeological investigations, in conjunction with research projects that are beyond the scope of this project, may reveal additional information concerning land use during this early period.

Figure 24.
1828-1850
Land Use



LAND USE LEGEND

- Study Area Boundary
- Transportation
- Warehousing
- Industrial
- Steep Slopes

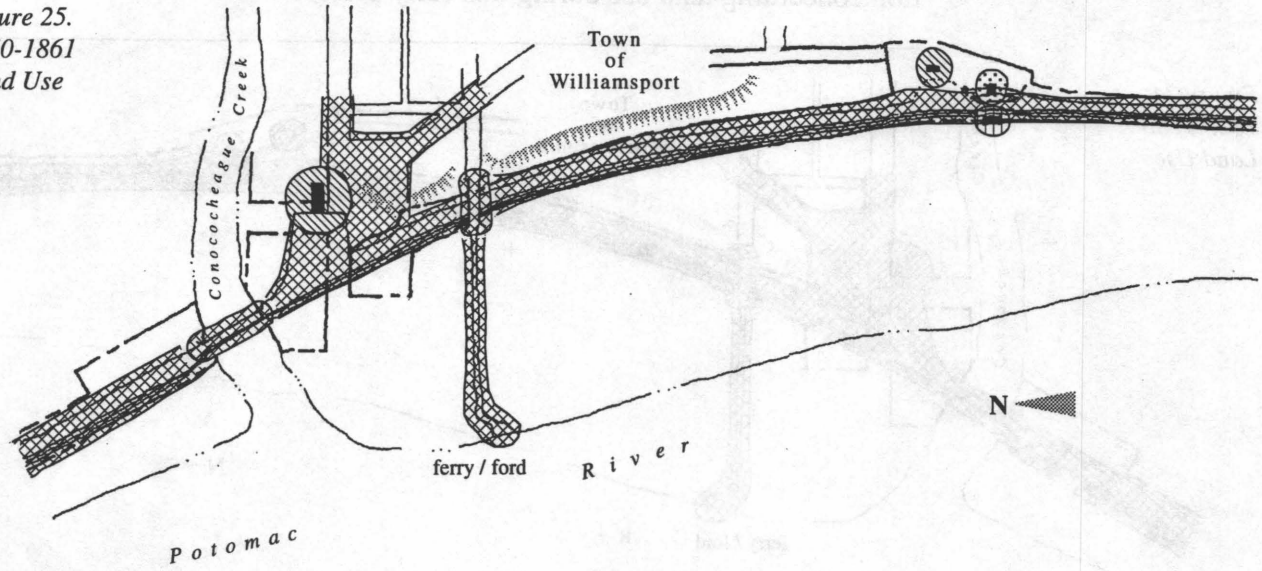
1828-1850

From initial canal construction in 1828 until abandonment in 1924, the C&O Canal was used for the transport of goods and materials between Cumberland, Maryland, and Georgetown in the District of Columbia. Although the canal had been in operation south of Williamsport for some time, the official opening of the canal did not occur in Williamsport until 1835. Almost immediately, the opening of the canal led to the relocation of existing land uses and the creation of new land uses. With construction of the canal prism, Lock 44, the aqueduct, and the Cushwa loading basin for canal purposes came associated

private construction including an addition to the original warehouse on Potomac Street, a new warehouse and wharf at the Cushwa loading basin, and a new warehouse, a hay press, and a landing and holding basin (hereafter referred to as the Warfield basin) at Lock 44. Historic documents mention the presence of a mill near Lock 44, although information related to the type of milling or the physical location has not come to light. For the most part, activities were concentrated either in the vicinity of the Cushwa loading basin or Lock 44.

Other adjacent land uses included a cemetery on the hillside southeast of the Cushwa loading basin and horse racing on the floodplain of the Potomac River where the Potomac Edison Company power plant is currently located. The ferry and ford continued to provide transportation across the Potomac River near its confluence with the Conococheague. A wooden bridge was constructed in 1835 to cross the canal prism at West Salisbury Street and provide a direct route from the town to the ferry/ford that by-passed the earlier route now blocked by busy canal industries and the Cushwa loading basin at the end of Potomac Street.

Figure 25.
1850-1861
Land Use

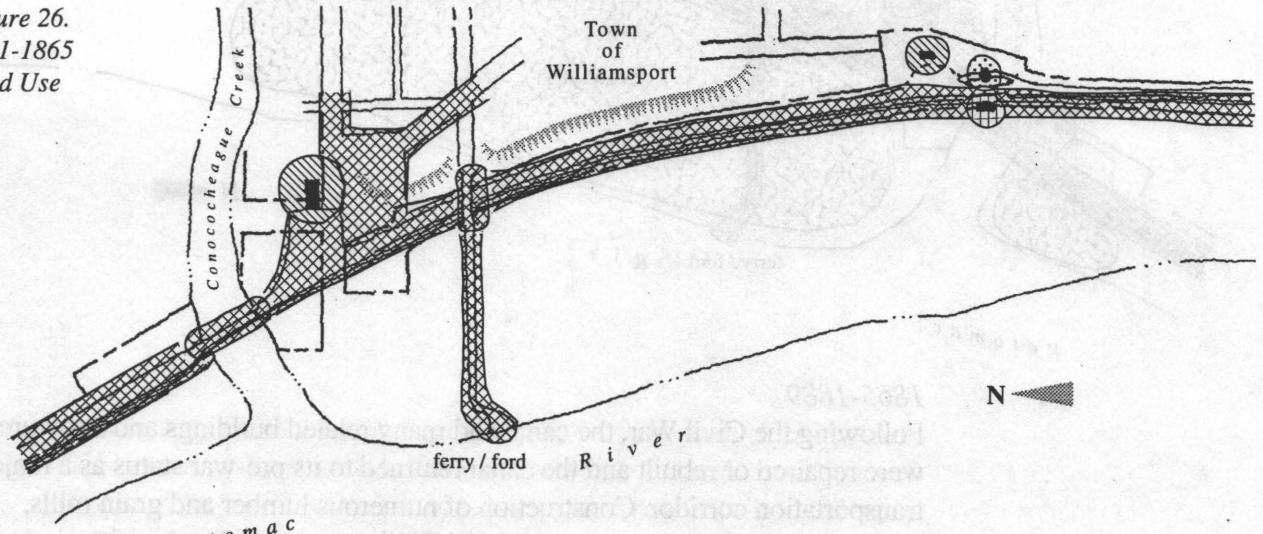


1850-1861

With the official opening of the entire canal in 1850, the predominance of existing transportation routes for goods and also for people relocated from the Potomac River and Conococheague Creek to the canal. The Williamsport area already had been thriving for almost fifteen years by the time of the official opening. Between 1850 and 1861, existing land uses persisted, and additional land uses were established. The ferry and ford were still the primary means for crossing the Potomac. The two primary activity centers, the Cushwa loading basin and the Lock 44 area, continued to attract the majority of the commercial transport and industry endeavors. The only known new construction during this period was a lockkeeper's house

adjacent to Lock 44. The West Salisbury Street Bridge was repaired following flood damage from the 1857 flood. A photograph from the period indicates that there was a house and shed located near the ferry. Little is known about these structures.

Figure 26.
1861-1865
Land Use



LAND USE LEGEND

- Study Area Boundary
- Transportation
- Warehousing
- Industrial
- Residential
- Steep Slopes

1861-1865

Military actions and occupations interrupted use of the canal during the Civil War; each side of the confrontation attempted to gain strategic control of the area and to limit movement of the opposing force. Throughout the war, both Confederate and Union forces damaged portions of the canal, aqueduct, and lock. Consequently, commercial transport, which continued initially along the canal, decreased and ultimately halted during the course of the war. In addition, private property was destroyed, including several warehouses in the Cushwa loading basin, portions of Embrey's Wharf, portions of the aqueduct, the pivot bridge, the Shoop and LeFevre Mill at Lock 44, the West Salisbury Street Bridge leading to the ferry, and apparently, the Lockkeeper's House (see Chapter Two). Numerous accounts relate use of the ferry to transport both Confederate and Union forces between West Virginia and Maryland. Union occupation of Williamsport early in the war and the establishment of defensive entrenchments on the hillside near the cemetery limited civilian use of the canal and adjacent lands.

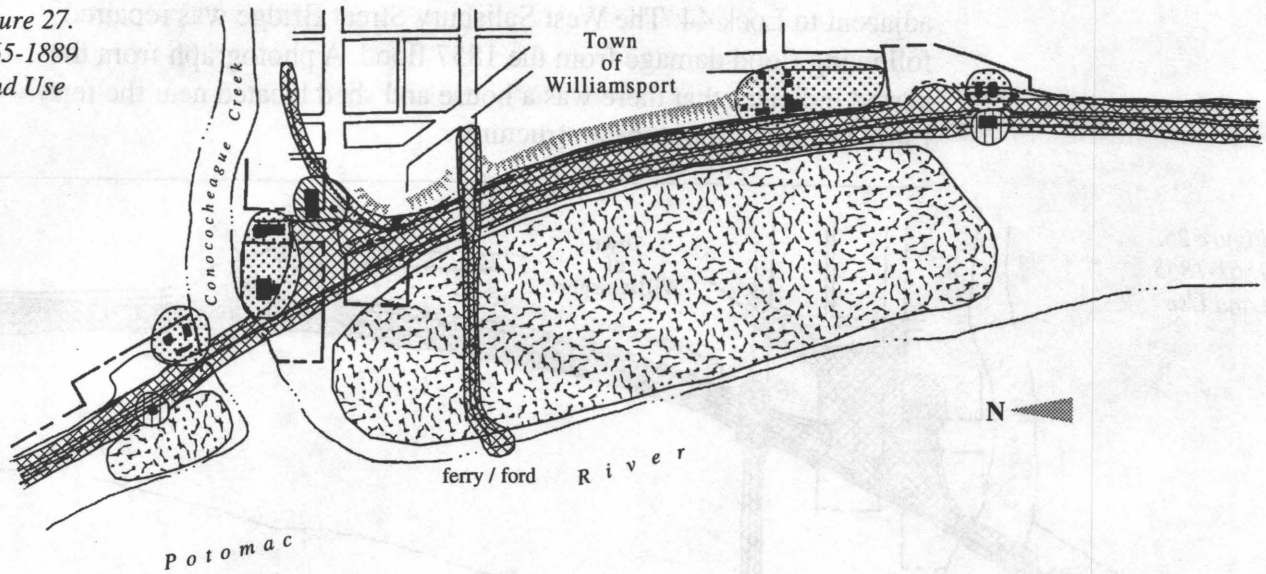


Figure 27.
1865-1889
Land Use

1865-1889

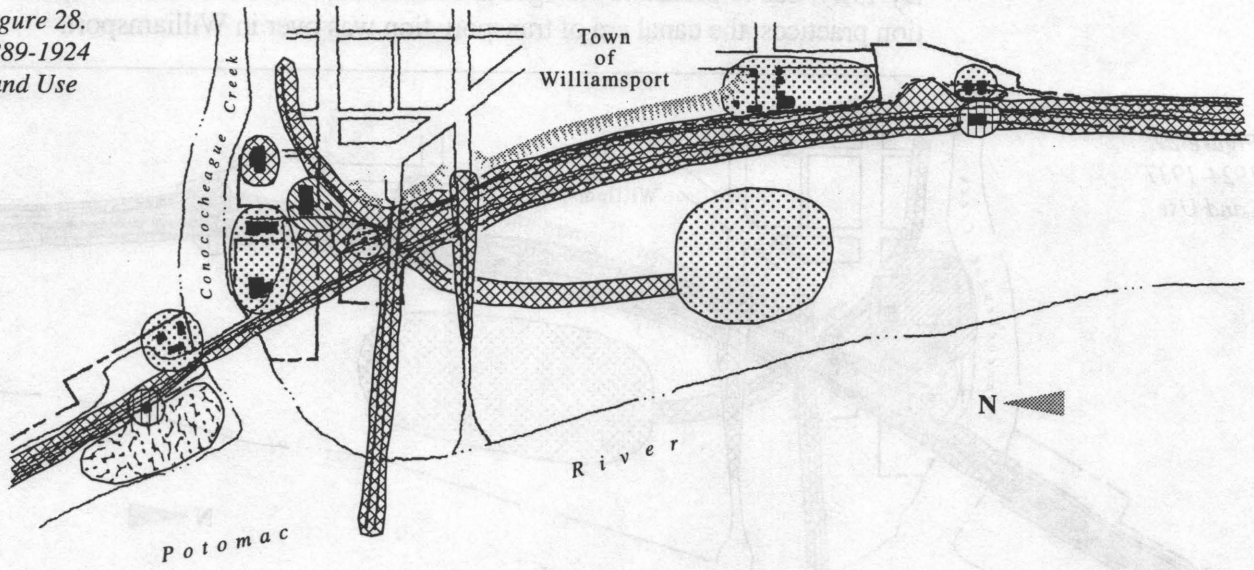
Following the Civil War, the canal and many related buildings and structures were repaired or rebuilt and the canal returned to its pre-war status as a major transportation corridor. Construction of numerous lumber and grain mills, factories, and warehouses consolidated Williamsport's role as a prime industrial/commercial center along the canal. Buildings constructed near the Cushwa loading basin include the Cushwa and Embrey Grist, Plaster and Sawmill (later leased as the Miller Brothers Lumber Mill), and the Cushwa Cement and Phosphate Warehouse. The Culbertson Mill is also assumed to have been built north of the aqueduct during this period although little documentation exists about this building. The mill building was converted to the DeFrehn Chair Factory in 1880.

Numerous mills were constructed near Lock 44 including the Gruber Saw and Planing Mill (converted to the DeFrehn Chair Factory in 1878, prior to the factory's 1880 move to the Culbertson mill), the Steffey and Findlay Coal and Lumber Mill, and the Darby Mill. The A.J. Potts Feed Store and a new lockkeeper's house were constructed adjacent to Lock 44. Additionally, Cumberland Valley Railroad rail lines reached Williamsport in 1872, and in 1873 the Western Maryland Railroad arrived. In 1879 the iron Bollman Bridge was erected over the canal to replace the wooden West Salisbury Street Bridge that was burned during the war. These mills, factories, bridges and rail lines, in addition to newly created coal yards, increased the number and density of uses along the canal. Except for the Lockkeeper's House, these activities were sited exclusively along the eastern side of the canal between the town/cemetery and the canal. This commercial boom period was cut short by the devastating flood of 1889.

Additional land uses along the canal included a farm site northwest of the aqueduct, a house site southwest of the Bollman Bridge and open pastureland between the Potomac River and the canal. Photographs from this period indicate that there were two buildings associated with the farm

site, and fencing that delineated the extent of the agricultural field along the canal. The land appears to have dropped-off beyond the fence near the confluence of the Conococheague Creek and Potomac River.

Figure 28.
1889-1924
Land Use



LAND USE LEGEND

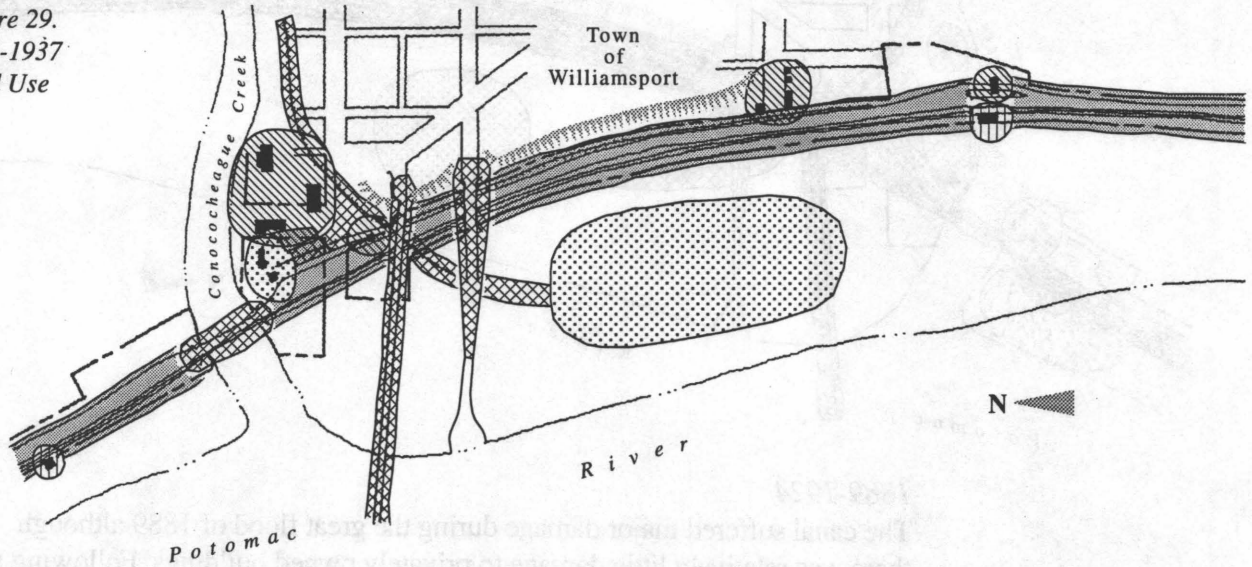
- Study Area Boundary
- Transportation
- Warehousing
- Industrial
- Residential
- Agricultural / Pasture
- Steep Slopes

1889-1924

The canal suffered major damage during the great flood of 1889 although there was relatively little damage to privately owned buildings. Following the flood, reconstruction of the canal was delayed for several years due to a lack of canal company funds. The reconstruction efforts coincided with the availability of new technology and construction techniques. New technology introduced along the canal after the flood included the Power Generation Station in 1896 that served an electric trolley line between Hagerstown and Williamsport, the concrete and steel Washington-Berkeley Bridge in 1909, and power and telephone lines all along the canal. Construction of the Washington-Berkeley Bridge across the Potomac resulted in the abandonment of the ferry. Also, more industrial activities focused on the holding basin/dry dock area north of the aqueduct during this period. Construction of the Potomac Edison Company power plant in the floodplain between the canal and the Potomac River in 1923 converted a rarely used pasture and horse racing area into a highly industrial site, and wood and metal transmission towers, built in 1924, began to crisscross the site. A railroad spur provided access to the power plant in 1922, and a Railroad Lift Bridge was constructed in 1923 to accommodate traffic flow along the canal. A harbinger of the future importance of the automobile, a gas station was constructed along Potomac Street near the Cushwa warehouse in 1920. Adjacent land uses include billboard advertisements on the hill between the Bollman and Washington-Berkeley bridges, and some remnant agricultural and pasture land in the current River Bottom Park.

There were also losses during this period. A fire destroyed the Darby Mill near Lock 44 in 1904, and a fire in 1921 destroyed the Miller Brothers Lumber Mill, converted into an ice house in 1917. A boat accident in 1920 destroyed the north wall of the aqueduct; a wooden wall was erected as a replacement. By 1924, due to profound changes in commercial, industrial and transportation practices, the canal era of transportation was over in Williamsport.

Figure 29.
1924-1937
Land Use



LAND USE LEGEND

- Study Area Boundary
- Transportation
- Warehousing
- Industrial
- Residential
- Utility
- Recreation
- Undeveloped / Mixed Non-Conforming Uses
- Steep Slopes

1924-1937

The cessation of canal operations had a major impact on land use. Abandonment of the canal did not result in an abandonment of construction in the area. A road was constructed near the canal in 1927 that provided access to a nearby quarry, and a slaughterhouse was constructed in 1928 on the site of the burned ice house. Many uses became informal; some people began to live in canal boats along the canal, for example. Some of the adjacent canal industries remained operational, such as the relocated Miller Brothers Lumber Mill, but these became oriented towards the railroad and the growing trucking industry. A lack of canal area maintenance allowed natural vegetative growth to become established, rendering use of the canal difficult. In addition, the basins were either actively filled, or became filled with debris from floods during this period, and earlier. A severe flood in 1936 washed away the slaughterhouse and the Cushwa Cement and Phosphate Warehouse and also damaged the abandoned canal prism and its related structures.

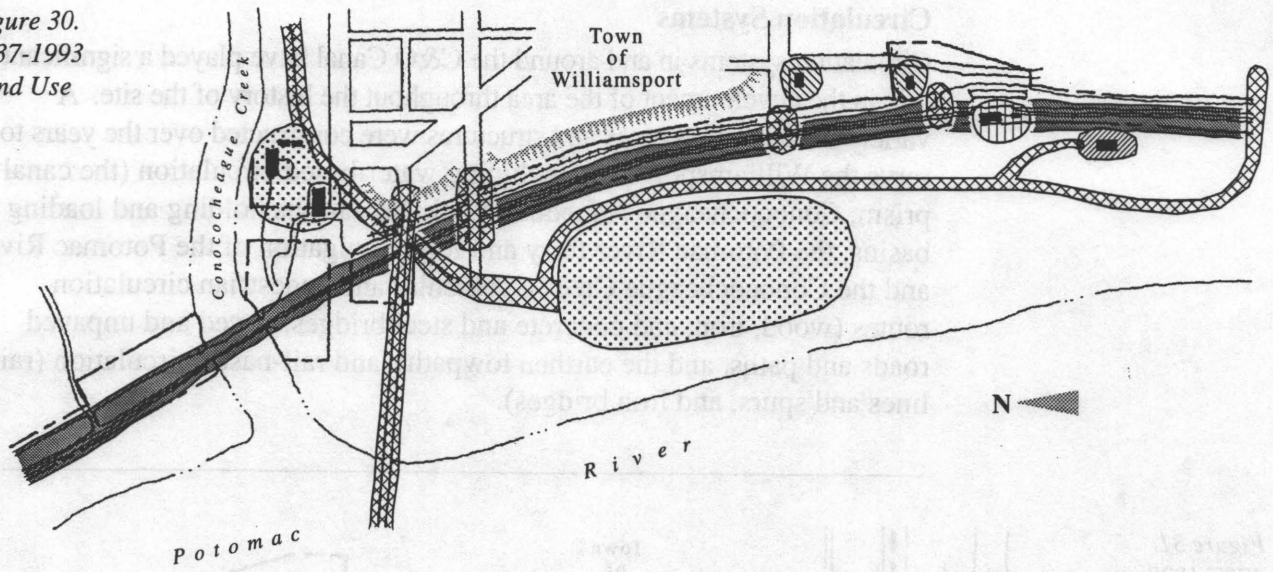


Figure 30.
1937-1993
Land Use

1937-1993

NPS acquisition of the canal in 1938 transferred the land to federal ownership. During the initial years of management, minimal maintenance occurred and health hazards such as stagnant water sources were removed. In recent years, however, management goals were established that have led to the restoration, stabilization, reconstruction, and rehabilitation of various structures and sites in the Williamsport area, including the Cushwa Warehouse as NPS administrative offices and the Power Generation Station as the Williamsport Preservation Training Center, and the stabilization of the aqueduct, Lockkeeper's House, Bollman Bridge, Cushwa loading basin, flume, and installation of interpretive signage.

Other construction during this period has included two maintenance sheds on the site of the former mills adjacent to Lock 44 circa 1964, one of which was razed circa 1974, a building to house the activities of the Young Adults Construction Corps circa 1968, a bridge near the maintenance sheds circa 1986, and a Town of Williamsport Wastewater Treatment Facility adjacent to the Potomac Edison Power Plant circa 1968. The site, in particular the towpath, primarily serves a recreational function today. The C&O Canal at Williamsport also provides interpretation of a significant historic site.

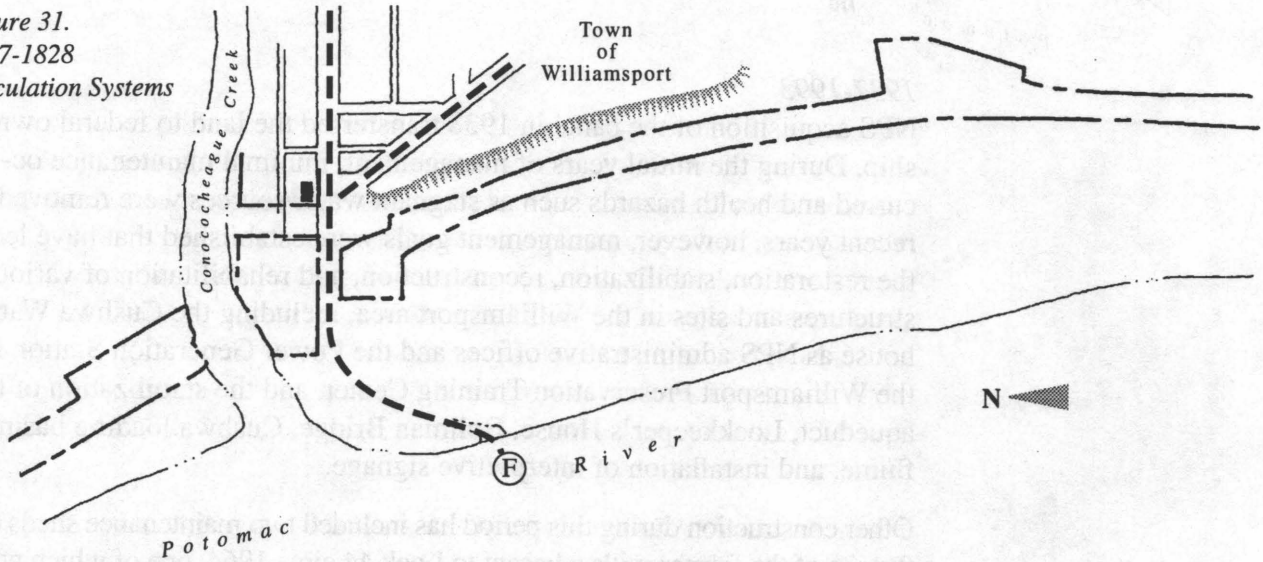
Summary

Land use in Williamsport initially responded to the existence of a Potomac River crossing point near its confluence with Conococheague Creek. After construction of the canal, development began to occur in nodes, especially around the loading and holding basins and the lock where industrial and commercial uses were best served. Later, the abandonment of the canal allowed for deterioration of the resources, although some adjacent industries remained operational. NPS management of the site as an historic park established a pattern of passive, non-intrusive uses such as recreation that are in marked contrast to the original active uses that occurred along the canal.

Circulation Systems

Circulation systems in and around the C&O Canal have played a significant role in the development of the area throughout the history of the site. A variety of circulation types and structures were constructed over the years to serve the Williamsport area, including water-based circulation (the canal prism, Conococheague Aqueduct, Lock 44, various holding and loading basins, the Potomac River ferry and ford, navigation of the Potomac River and the Conococheague Creek), vehicular and pedestrian circulation routes (wood, iron, and concrete and steel bridges, paved and unpaved roads and paths, and the earthen towpath), and rail-based circulation (rail lines and spurs, and iron bridges).

Figure 31.
1787-1828
Circulation Systems



CIRCULATION LEGEND

- Study Area Boundary
- Canal and Towpath
- (A) Aqueduct
- (B) Bridge (L) Lock
- (F) Ferry / Ford
- Primary Vehicular / Pedestrian
- Steep Slopes

1787-1828

The 1786 plat of Williamsport established lot lines, four named east/west roads, three named north/south roads, and a connection to the existing thirty-year-old ferry crossing and natural ford of the Potomac River. Williamsport was a popular destination for those traveling from inland areas to points across the Potomac River. This transportation route was one of the primary reasons for the establishment of Williamsport at the confluence of the Conococheague Creek and the Potomac River because it also served to connect circulation from inland mills on the Conococheague up and down the Potomac River. Roads leading to Hagerstown, Frederick, Sharpsburg, and Martinsburg, as well as numerous other smaller towns, all led to the crossing at Williamsport to take advantage of this critical juncture for trade. In fact, the primary road to Hagerstown ran from the ferry access point on the Potomac.[2] Smaller roads ran parallel to the river, connecting numerous other towns to the trade center.

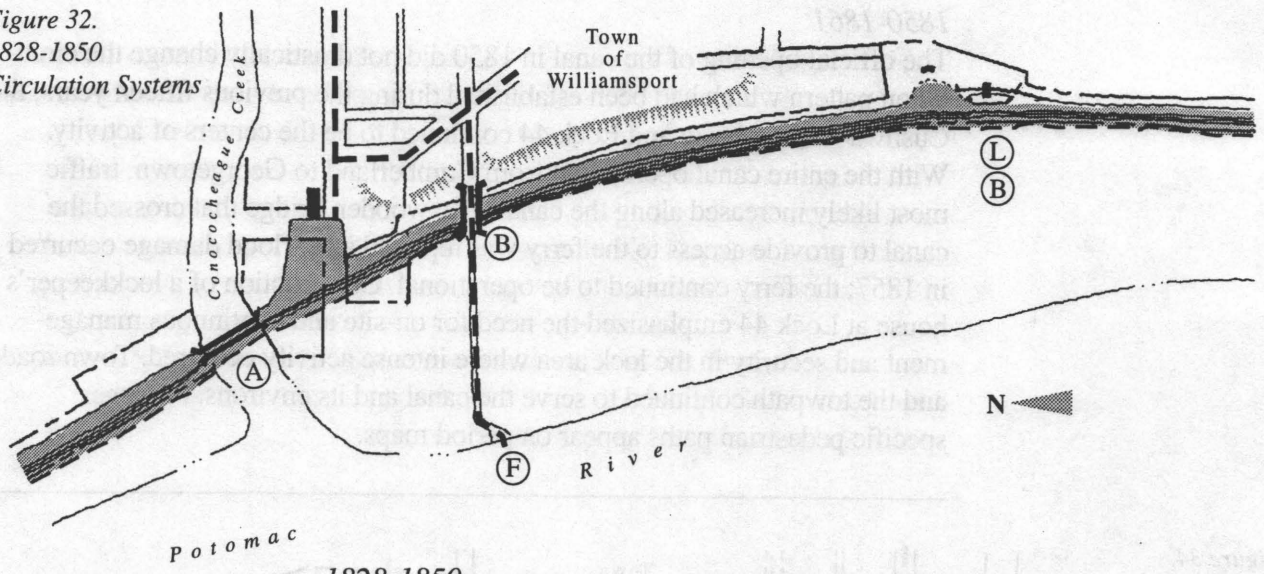


Figure 32.
1828-1850
Circulation Systems

1828-1850

Between 1828 and 1850, the ferry service continued to be a major circulation element. Completion of the Williamsport segment of the canal in 1835 led water-based transportation traffic to transfer to the canal from the Potomac and Conococheague. The construction of the canal prism and towpath, aqueduct, and lock system allowed transportation to occur more freely along the canal than on the Potomac River. The construction of warehouses, several homes, and outbuildings at the Cushwa loading basin and Lock 44 created concentrated centers, or nodes, of commerce and trade. Other related features were also constructed related to circulation such as a pivot bridge at Lock 44. Town roads and the towpath also served these areas. According to town minutes from this period, roadways were regularly improved and repaired within the town and a bridge was constructed over the canal to accommodate traffic moving to the river's edge.[3]

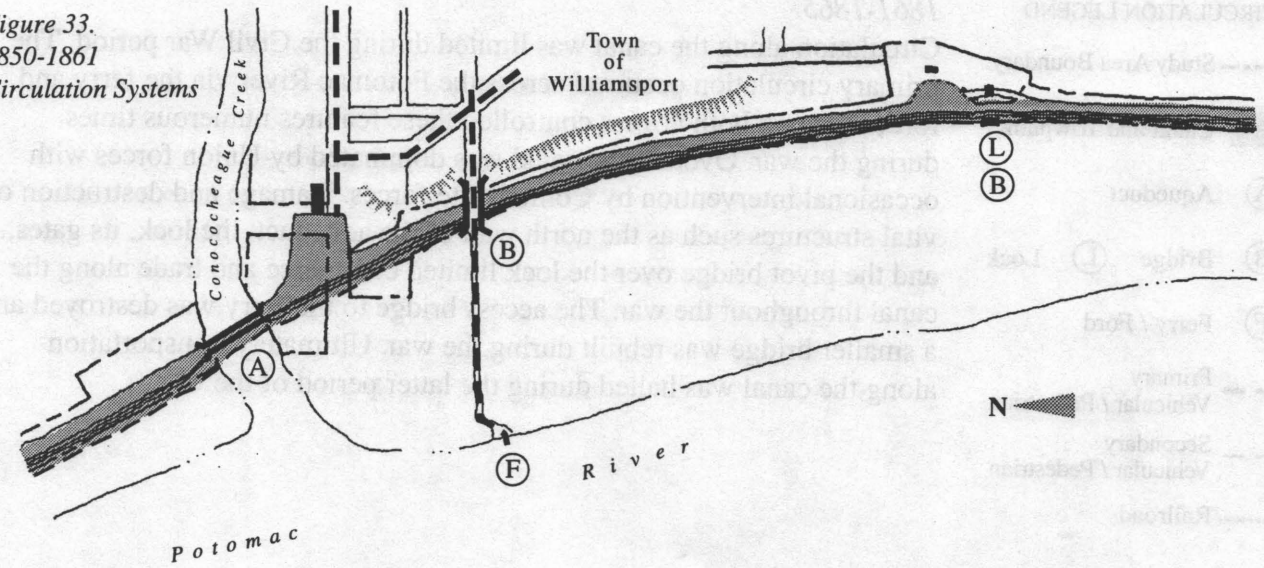
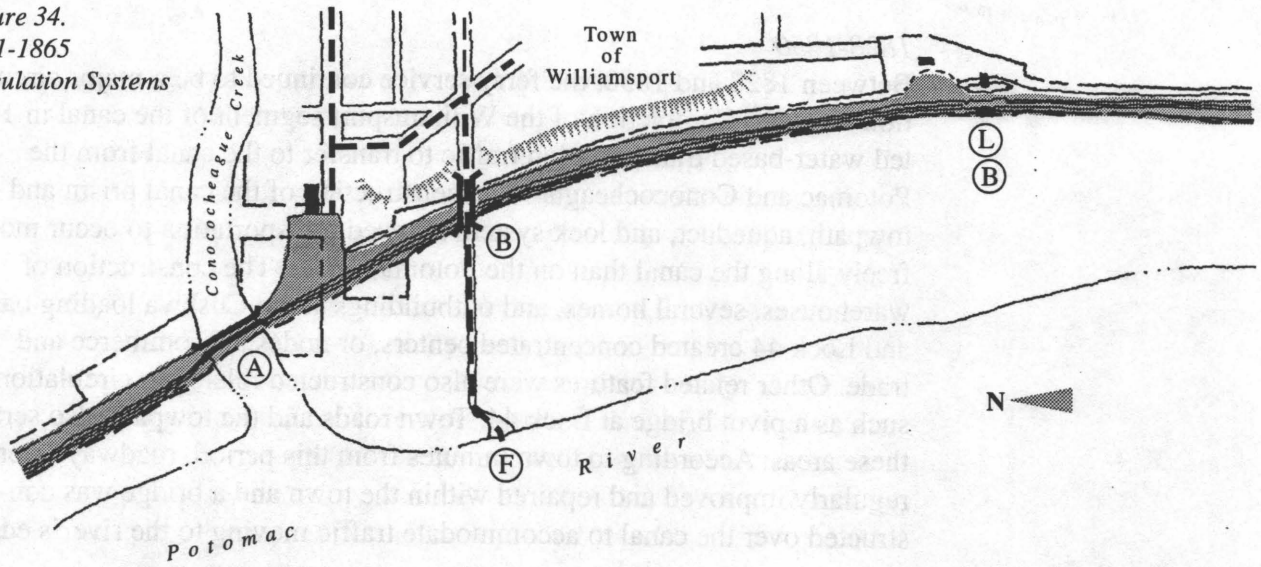


Figure 33.
1850-1861
Circulation Systems

1850-1861

The official opening of the canal in 1850 did not drastically change the circulation pattern which had been established during the previous fifteen years; the Cushwa loading basin and Lock 44 continued to be the centers of activity. With the entire canal operational from Cumberland to Georgetown, traffic most likely increased along the canal. The wooden bridge that crossed the canal to provide access to the ferry was repaired after flood damage occurred in 1857; the ferry continued to be operational. Construction of a lockkeeper's house at Lock 44 emphasized the need for on-site and continuous management and security in the lock area where intense activity occurred. Town roads and the towpath continued to serve the canal and its environs. No other specific pedestrian paths appear on period maps.

Figure 34.
1861-1865
Circulation Systems



CIRCULATION LEGEND

- Study Area Boundary
- Canal and Towpath
- (A) Aqueduct
- (B) Bridge (L) Lock
- (F) Ferry / Ford
- Primary Vehicular / Pedestrian
- Secondary Vehicular / Pedestrian
- Railroad
- Pedestrian

1861-1865

Circulation along the canal was limited during the Civil War period. The primary circulation occurred across the Potomac River via the ferry and ford, although both armies controlled these features numerous times during the war. Overall, the canal was dominated by Union forces with occasional intervention by Confederate forces. Damage and destruction of vital structures such as the north wall of the aqueduct, the lock, its gates, and the pivot bridge over the lock limited commerce and trade along the canal throughout the war. The access bridge to the ferry was destroyed and a smaller bridge was rebuilt during the war. Ultimately transportation along the canal was halted during the latter period of the war.

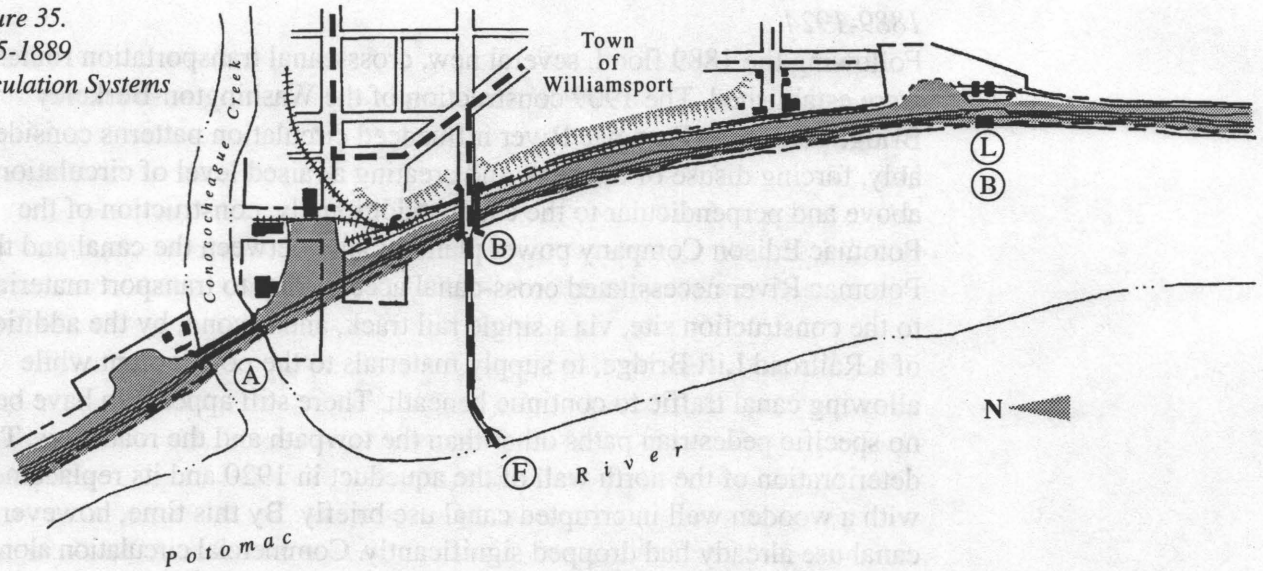


Figure 35.
1865-1889
Circulation Systems

1865-1889

Following the war and reparation to damaged canal areas, the canal resumed its linear circulation pattern between Cumberland and Georgetown. Several mill and warehouse complexes were built, primarily in the Cushwa loading basin and Lock 44 areas. An additional area developed north of the aqueduct, extending the concentration of uses along the canal. In 1879, a permanent iron bridge, the Bollman Bridge, was constructed across the canal on the site of the former access bridge to the ferry. The expansion of Western Maryland Railroad tracks onto the eastern edge of the canal from Potomac Street towards Lock 44 in 1873 further established the circulation pattern along the canal by creating mechanized access to mill sites. Once again there appear to have been no specific pedestrian paths in the area besides the towpath.

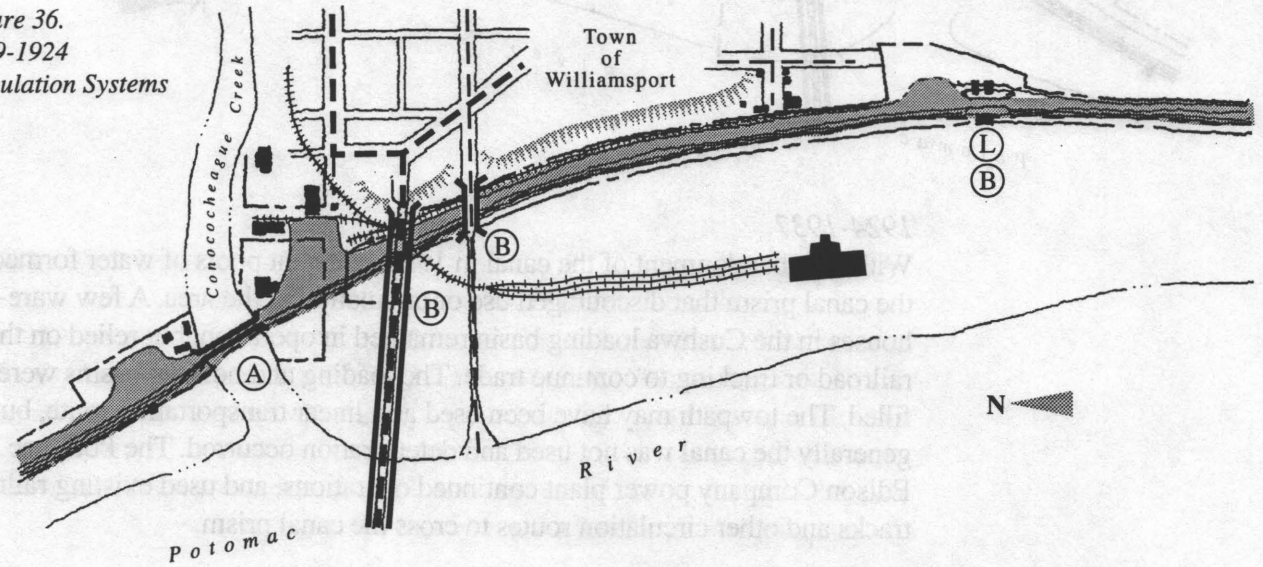


Figure 36.
1889-1924
Circulation Systems

1889-1924

Following the 1889 flood, several new, cross-canal transportation routes were established. The 1909 construction of the Washington-Berkeley Bridge across the Potomac River influenced circulation patterns considerably, forcing disuse of the ferry and creating a raised level of circulation above and perpendicular to the canal. Additionally, construction of the Potomac Edison Company power plant on land between the canal and the Potomac River necessitated cross-canal access; first to transport materials to the construction site, via a single rail track, and second, by the addition of a Railroad Lift Bridge, to supply materials to the power plant while allowing canal traffic to continue beneath. There still appears to have been no specific pedestrian paths other than the towpath and the roadways. The deterioration of the north wall of the aqueduct in 1920 and its replacement with a wooden wall interrupted canal use briefly. By this time, however, canal use already had dropped significantly. Commercial circulation along the canal stopped completely following the flooding in 1924. A 1918 Sanborn map illustrates partial filling of the Cushwa loading basin by this time.

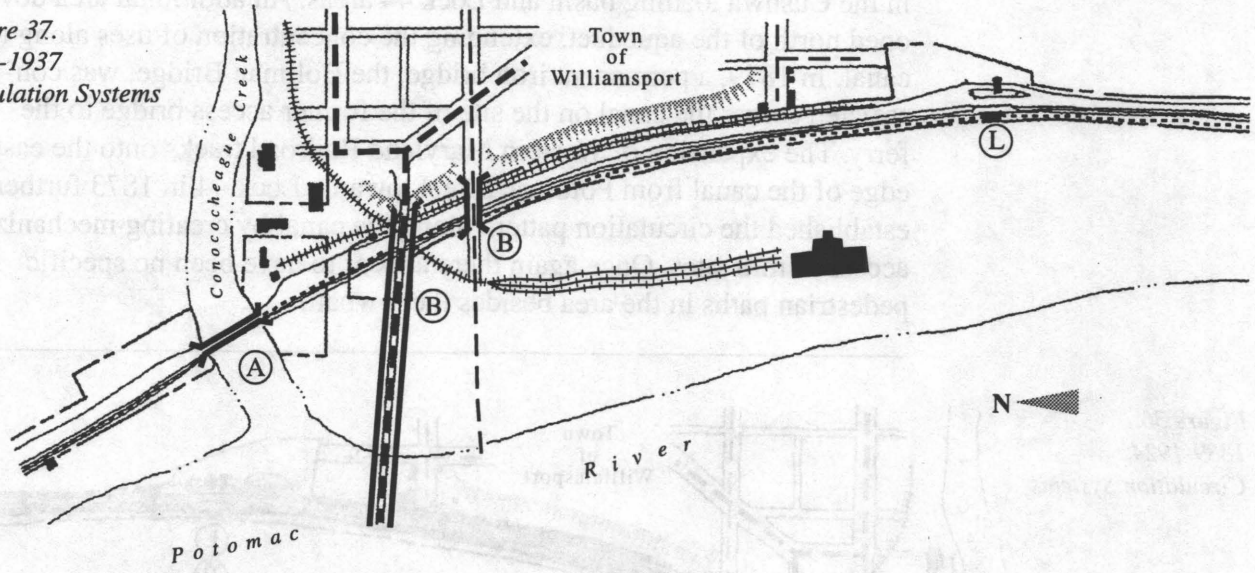


Figure 37.
1924-1937
Circulation Systems

1924-1937

With the abandonment of the canal in 1924, stagnant pools of water formed in the canal prism that discouraged use or circulation in the area. A few warehouses in the Cushwa loading basin remained in operation, but relied on the railroad or trucking to continue trade. The loading and holding basins were filled. The towpath may have been used as a linear transportation route, but generally the canal was not used and deterioration occurred. The Potomac Edison Company power plant continued operations, and used existing railroad tracks and other circulation routes to cross the canal prism.

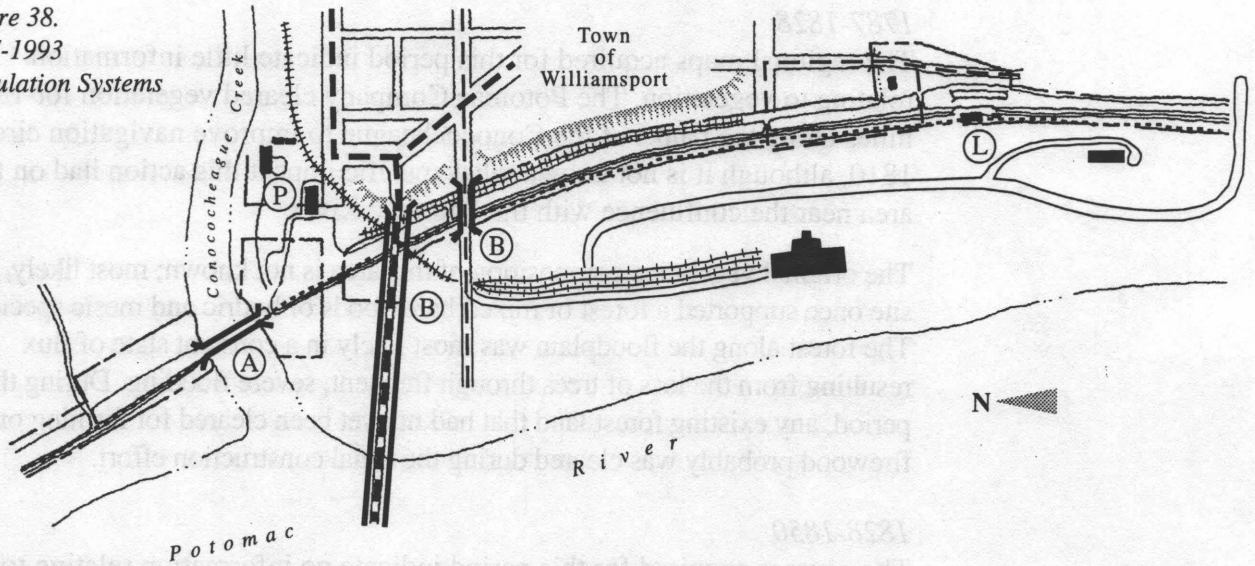


Figure 38.
1937-1993
Circulation Systems

CIRCULATION LEGEND

- Study Area Boundary
- (A) Aqueduct
- (B) Bridge
- (L) Lock
- (P) Parking
- Primary Vehicular / Pedestrian
- Secondary Vehicular / Pedestrian
- Railroad
- Pedestrian

1937-1993

Following federal acquisition, the canal was maintained to control areas of stagnant waters, vegetation was removed, and structures threatening the safety of visitors were either removed, stabilized or rehabilitated. Earthen berms and a bridge at the southern end of the segment were constructed to allow Fenton Avenue, and NPS and Potomac Edison Company vehicles, to cross the canal. The towpath came to be used for recreation, in particular hiking and cycling.

Summary

Circulation in the canal area initially was influenced by the ford/ferry site located at the confluence of the Conococheague Creek and the Potomac River. This site was used for eighty years before construction of the canal. The canal had a major influence on circulation along the Potomac River by diverting trade from the river to the canal. Construction of the Washington-Berkeley Bridge across the Potomac River in 1909 reduced the need for the ferry service. The Western Maryland Railroad spur along the eastern edge of the canal also influenced local circulation patterns. With the closing of the canal in 1924, traditional use of the canal prism, towpath, and Western Maryland Railroad spurs ceased; commercial circulation came to rely upon inland trucking and vehicular routes. Post NPS acquisition, the C&O Canal towpath became useful as a recreational area.

Vegetation

Limited documentation has been identified that illustrates vegetative change around the canal over time. Historic photographs and sketches constitute the most significant analytical resource in any study of this characteristic. Analyses of these media are limited, however, by the difficulties inherent in their review, such as variations in print quality, viewpoints, determination of spatial relationships, lack of comprehensive coverage, and details such as size, species and type of vegetation. Historic sketches also present the problem of information verification, as images often represent an artistic ideal. This vegetation analysis also relies, in part, on an understanding of the local ecology and of landscape management practices over time.

1787-1828

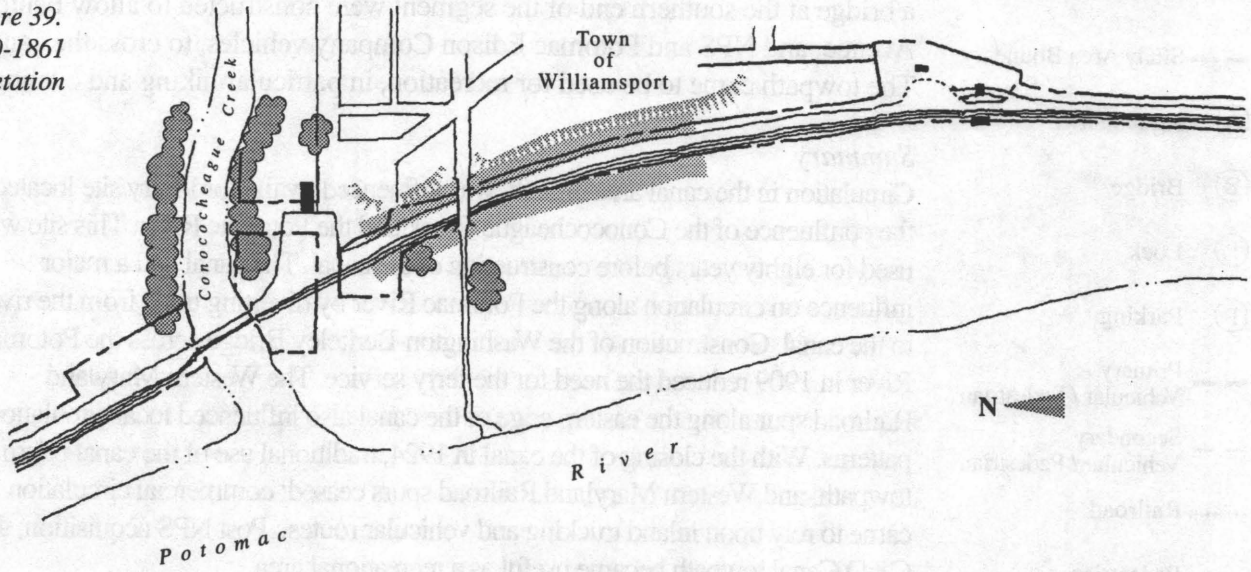
The regional maps acquired for this period indicate little information relating to vegetation. The Potomac Company cleared vegetation for 15 miles along the banks of the Conococheague to improve navigation circa 1810, although it is not known what specific impact this action had on the area near the confluence with the Potomac River.

The original vegetative composition of this area is not known; most likely, the site once supported a forest of mixed hardwoods of hydric and mesic species. The forest along the floodplain was most likely in a constant state of flux resulting from the loss of trees through frequent, severe flooding. During this period, any existing forest land that had not yet been cleared for farming or firewood probably was cleared during the canal construction effort.

1828-1850

The sources acquired for this period indicate no information relating to vegetation.

Figure 39.
1850-1861
Vegetation



VEGETATION LEGEND

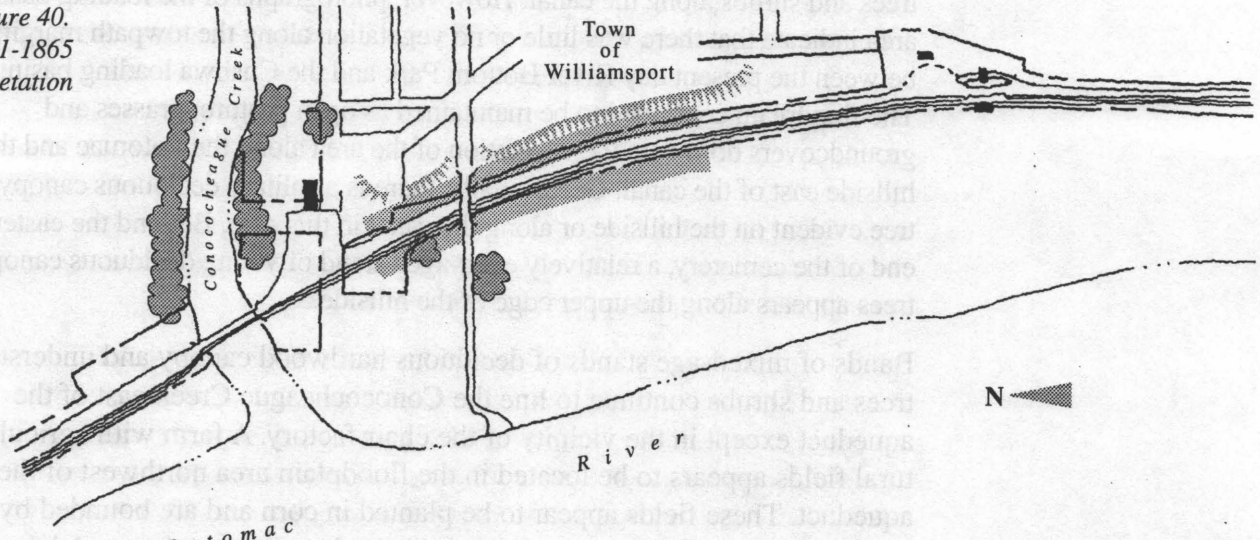
- Study Area Boundary
- Tree Cover
- Ground Cover: Maintained in perennial grasses, low herbaceous plant materials
- Steep Slopes

1850-1861

The only known photograph of this period, dated 1860, indicates that bands of mature deciduous canopy and understory trees existed along both banks of the Conococheague Creek. A few large deciduous canopy trees are also evident in the Town of Williamsport. Along the canal bank, however, little vegetative growth except grass and other herbaceous materials, and perhaps small shrubs, is evident. Two medium-sized deciduous canopy trees are evident adjacent to the canal, one at the southwest edge of the juncture of the canal and West Salisbury Street, and the other on the southwestern edge of the canal halfway between the West Salisbury Street/ canal juncture and the aqueduct. The vegetation on the hillside between the

Cushwa loading basin and Lock 44 appears to be dominated by grasses or ground covers. The photograph shows expanses of open space in the vicinity of the town. This appearance would be consistent with maintenance practices of the day.

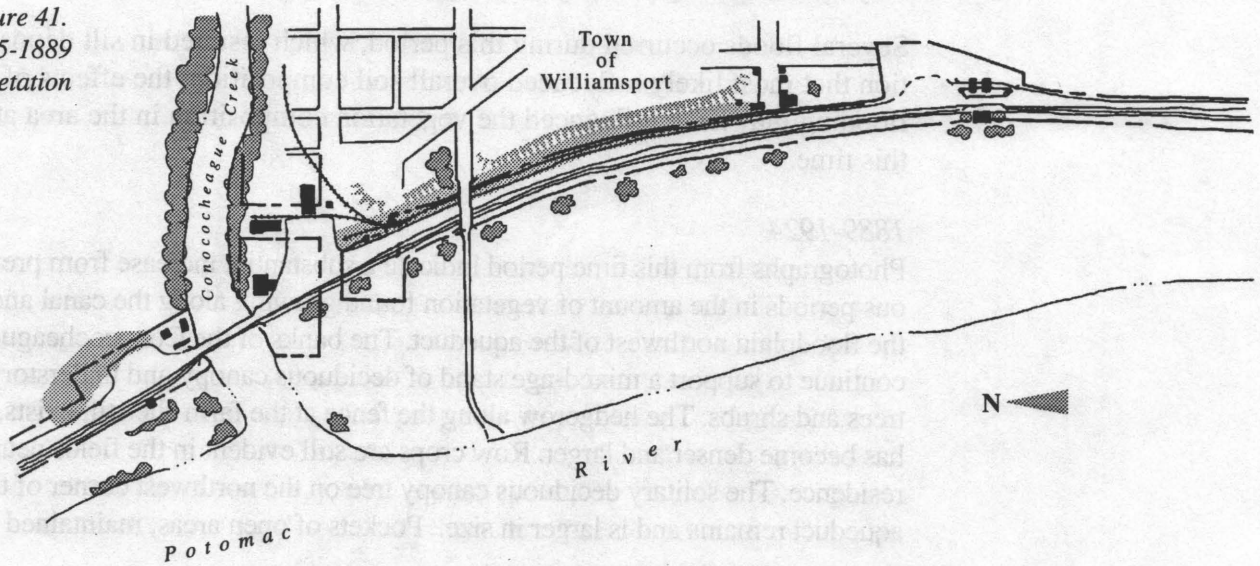
Figure 40.
1861-1865
Vegetation



1861-1865

Sketches of military crossings at Williamsport published in *Harper's Weekly* indicate bands of vegetation along both the Conococheague Creek and the Potomac River, with a large open area at the ferry crossing and along the banks of the C&O Canal. In the sketches, deciduous canopy trees are apparent in the background near the town; the hillsides are covered in low grasses or other ground covers, and three deciduous canopy trees of varying sizes are apparent in the open area near the ferry crossing. The accuracy of the information presented in these sketches cannot be determined due to the possibility that the artist may have taken license with his portrayal of the site.

Figure 41.
1865-1889
Vegetation



1865-1889

Several photographic sources during this period indicate an increase in the number of trees along the edge of the towpath. Photographs depict medium-sized deciduous canopy trees interspersed with colonies of shrubby understory trees and shrubs along the canal. However, photographs of the loading basin area indicate that there was little or no vegetation along the towpath margins between the present day River Bottom Park and the Cushwa loading basin. The floodplain continued to be maintained as open pasture; grasses and groundcovers dominate the vegetation of the area along the Potomac and the hillside east of the canal. Occasionally, there is a solitary deciduous canopy tree evident on the hillside or along the canal in this area. Beyond the eastern end of the cemetery, a relatively even-aged stand of young deciduous canopy trees appears along the upper edge of the hillside.

Bands of mixed-age stands of deciduous hardwood canopy and understory trees and shrubs continue to line the Conococheague Creek east of the aqueduct except in the vicinity of the chair factory. A farm with agricultural fields appears to be located in the floodplain area northwest of the aqueduct. These fields appear to be planted in corn and are bounded by a wooden fence. A hedgerow of trees and shrubs edges the fence. A large deciduous canopy tree stands along the northwest corner of the aqueduct between the field and the wing wall. Southwest of the aqueduct, between the Potomac River and the canal, there are vast areas of open land with little tree growth. The land appears to be in agricultural use; rows of crops are visible, bounded by worm fencing. One large deciduous canopy tree and a cluster of smaller deciduous trees are apparent on the southwestern edge of the Bollman Bridge adjacent to a two-story, wooden residence. At the Lockkeeper's House, two large deciduous canopy trees appear to be located directly in front of the house with a third and fourth visible behind and immediately south of the house. While the canopies of these trees do not appear on the photograph, the appearance of the bark indicates that they are silver maples, a common species in the area.

Several floods occurred during this period, which resulted in silt deposition that most likely influenced overall soil composition; the effects of flooding may have influenced the vegetation composition in the area at this time.

1889-1924

Photographs from this time period indicate a substantial increase from previous periods in the amount of vegetation found growing along the canal and on the floodplain northwest of the aqueduct. The banks of the Conococheague continue to support a mixed-age stand of deciduous canopy and understory trees and shrubs. The hedgerow along the fence at the farm site still exists, but has become denser and larger. Row crops are still evident in the fields near the residence. The solitary deciduous canopy tree on the northwest corner of the aqueduct remains and is larger in size. Pockets of open areas, maintained in

grasses and other groundcovers, also occur along the canal. Between the Cushwa loading basin and the Potomac floodplain, for example, only one young deciduous tree appears along the towpath. A cluster of medium-sized deciduous canopy trees are clustered around the house site, southwest of Bollman Bridge. At the time the Washington-Berkeley Bridge was opened, several trees are well established along the towpath across from the Cushwa loading basin. These trees blur the view to the Potomac River. One tree, located alongside the railroad bridge and the towpath, is depicted in some detail in one of the photographs. The fine texture of the foliage indicates that this tree is a honey locust. The specimen shown is a young to medium-aged tree. The large deciduous canopy trees, possibly silver maples, described in the period 1865-1889 that surround the Lockkeeper's House are still apparent. A smaller, multi-stemmed deciduous tree appears on the island near the carpenter's shop, between the lock and the flume at the south end of the flume. The area east of the canal near the carpenter's shop looks relatively open, with few deciduous trees and shrubs in the area. Much of the area appears to be maintained in grass and other ground covers.

Throughout the period, the vegetation along the towpath continues to thicken. It is difficult to determine whether this vegetation along the towpath represents a line of material planted for aesthetic reasons or climatic amelioration, or simply a lack of maintenance in this area between the more highly maintained adjacent landscapes of the towpath/ canal and agricultural fields.

Many of the photographs from this period illustrate the difficulty the canal companies must have had in keeping the canal prism and related structures free of vegetation. In many photographs, trees, shrubs and herbaceous materials are visible growing up through the cracks in the stone work of the canal walls and structures.

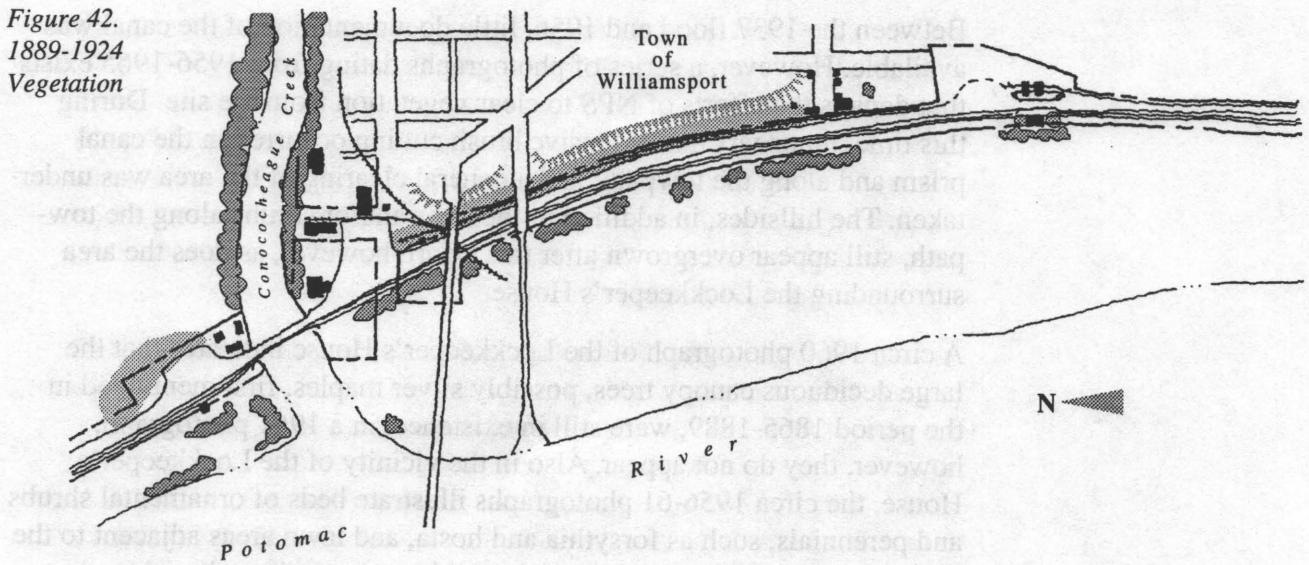
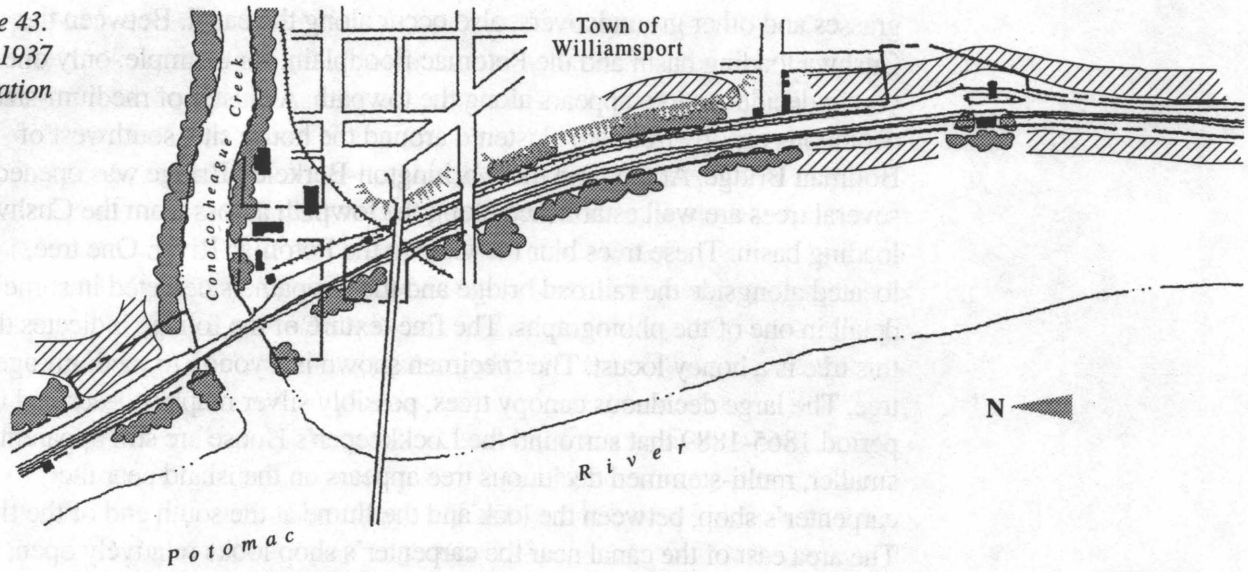


Figure 42. 1889-1924 Vegetation

Figure 43.
1924-1937
Vegetation



1924-1937

Natural succession occurred along the towpath, in the canal prism, on the floor of the aqueduct, and on adjacent unused lands during this period. Photographs of the 1936 flood indicate that the band of vegetation along the Conococheague, the towpath, the floodplain, and the southern portion of the hillside is thicker and less managed than shown in earlier photographs. A thin row of trees also appears along the rail spur leading to the Potomac Edison Company power plant near the Railroad Lift Bridge. Evergreen trees, most likely planted ornamentals, appear in and around the cemetery.

1937-1993

Photographs from this period indicate a general increase in the density of vegetation along and within the canal. Photographs indicate invasion of the canal prism by grasses and other herbaceous materials; substantial shrubs/trees and wetland species also occur in some areas.

Between the 1937 flood and 1956, little documentation of the canal was available. However, a series of photographs dating from 1956-1965 exists that depicts the efforts of NPS to clear vegetation from the site. During this time, it appears that extensive brush cutting occurred in the canal prism and along the towpath, and a general clearing of the area was undertaken. The hillsides, in addition to the trees and/or shrubs along the towpath, still appear overgrown after this effort, however, as does the area surrounding the Lockkeeper's House.

A circa 1960 photograph of the Lockkeeper's House indicates that the large deciduous canopy trees, possibly silver maples, first mentioned in the period 1865-1889, were still in existence; in a 1961 photograph, however, they do not appear. Also in the vicinity of the Lockkeeper's House, the circa 1956-61 photographs illustrate beds of ornamental shrubs and perennials, such as forsythia and hosta, and lawn areas adjacent to the house and along the lock. It is not possible to determine when these

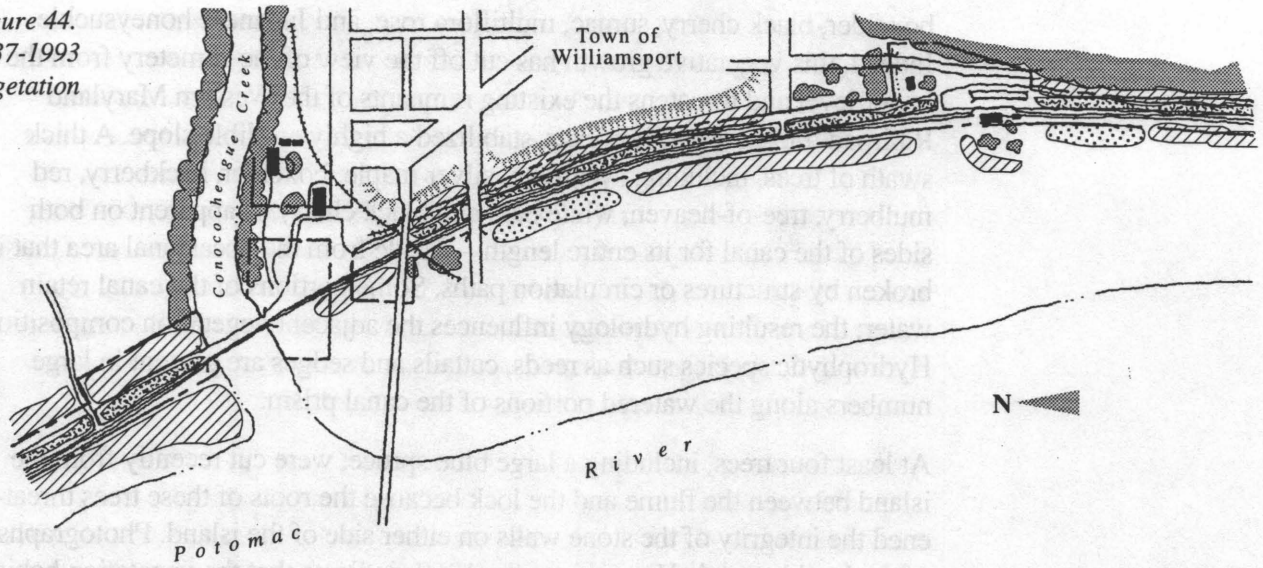


Figure 44.
1937-1993
Vegetation

ornamental plantings were installed. The flume and lock are barely visible due to the dense grasses growing in the canal prism. In the lock, flume, and aqueduct walls vegetation has grown between the stones. The 1961 photograph of the Lockkeeper's House indicates that the canal prism, lock walls, towpath and general vicinity were managed more conscientiously; little overgrown vegetation is apparent in this area.

In 1993, north of the aqueduct, the vegetative growth is dense, with young and middle-aged trees occupying all areas, including the canal prism, except for the maintained towpath. The aqueduct floor and deteriorating arches still show signs of some vegetative growth, including both herbaceous and woody materials. Low grasses also occupy the canal prism at the holding basin. The woodland along the Conococheague Creek, consisting primarily of riparian vegetation-deciduous canopy, and understory trees and shrubs such as red elms, silver maples, red maple and boxelder, has begun to encroach on the Power Generation Station. There are several medium-to-large-sized deciduous canopy trees, including a silver maple, sycamore, boxelder, and tree-of-heaven, that have been maintained in the former Miller Brothers Lumber Mill/ coal yard area. The treeline along the towpath at the Cushwa loading basin is relatively thick with specimens of red mulberry, boxelder, silver maple, black cherry, tree-of-heaven, honeylocust and hackberry, but opens past the Washington-Berkeley Bridge, the railroad lift bridge, the Bollman Bridge, and power plant. Two large trees, a sycamore and a honeylocust, are located next to the control station of the lift bridge, but the remainder of the area is open. A long row of arborvitae exists that was planted circa 1984 by the Potomac Edison Company between the towpath and the power plant along the western edge of the canal just past the Bollman Bridge. The existing Town of Williamsport maintenance yard is surrounded by a chain link fence that supports a profuse growth of vines, including Japanese honeysuckle and grape. The hillside east of the canal has become overgrown with many shrubs and trees, including red elm, paper mulberry, tree-of-heaven, black locust,

VEGETATION LEGEND

- Study Area Boundary
- Tree Cover
- Ornamental tree planting
- Probable site of secondary succession due to lack of maintenance, including ruderal and riparian species and invasive exotics
- Herbaceous & woody wetland species
- Steep Slopes

boxelder, black cherry, sumac, multiflora rose, and Japanese honeysuckle. Indeed, this vegetative growth has cut off the view of the cemetery from the lower level and threatens the existing remnants of the Western Maryland Railroad tracks; it has, however, stabilized a highly erodible slope. A thick swath of trees, including sycamore, silver maple, boxelder, hackberry, red mulberry, tree-of-heaven, white oak, and black cherry, is apparent on both sides of the canal for its entire length — aside from the occasional area that is broken by structures or circulation paths. Some portions of the canal retain water; the resulting hydrology influences the adjacent vegetation composition. Hydrophytic species such as reeds, cattails and sedges are present in large numbers along the watered portions of the canal prism.

At least four trees, including a large blue spruce, were cut recently from the island between the flume and the lock because the roots of these trees threatened the integrity of the stone walls on either side of the island. Photographs of the Lockkeeper's House since the 1960s indicate that the vegetation behind the house may have been quite thick at one time. The photographs also indicate a break in the vegetation that occurs north of the Lockkeeper's House where a Potomac Edison Company power plant entry once existed. A second break in the existing vegetation occurs south of the Lockkeeper's House where a view of the smaller plant facilities is visible through a chain link fence. Thickets of vegetation that occur alongside the towpath are made up of trees, shrubs, vines and herbaceous species typical of either hydric, poorly drained soils or open areas undergoing the early stages of secondary succession. The majority of the species are deciduous, and relatively young in age. A few specimens of canopy trees closer to maturity occur within the thickets or hedgerows. Invasive exotic trees, shrubs and vines such as tree-of-heaven, multiflora rose and Japanese honeysuckle are also present. (Refer to Appendix B for an inventory of existing vegetation.)

Summary

It appears that vegetation was not a primary cultural landscape feature in the design of the canal in the Williamsport area. In fact, the efficient functioning of the canal most likely dictated that vegetation be carefully maintained to stay non-intrusive. Frequent flooding of the Potomac has probably served to discourage the installation of ornamental plantings. Since 1924 and the decline of the canal, vegetation along the canal has reasserted itself. Change over time, due to the natural processes of secondary vegetative succession, has included a general increase in the density and diversity of the vegetation present along the canal. This increase in vegetation has also resulted in a deterioration of views from the canal to other points of interest. The presence of various invasive exotic species such as tree-of-heaven is reminiscent of unmaintained or abandoned sites. The mass planting of an arborvitae hedge has also altered the character of this formerly industrial corridor.

Cluster Arrangements

The grouping of buildings and landscape features into cluster arrangements along the Williamsport segment of the C&O Canal was influenced both by natural landscape features and by the physical layout of the canal. The major characteristic of cluster arrangements dating from the period of significance is their strong orientation toward the canal. There is no other apparent, dominant arrangement or pattern besides the inherent linearity of the canal itself. Instead buildings appear to have been arranged in informal concentrations or clusters around the commercial and transportation nodes along the canal. The strongest extant cluster occurs at the Cushwa loading basin with the Cushwa Warehouse and the Power Generation Station. However, the cluster arrangement was much more apparent in the early 1900s when numerous warehouses, outbuildings, and storage yards surrounded the Cushwa loading basin. A strong linear cluster also existed historically near the Lockkeeper's House where sheds, outbuildings, and a carpenter's shop were sited to face the canal. Additionally, two smaller holding basins north of the lock and north of the aqueduct supported clusters of mills, warehouses, and sheds. Further archeological research will be necessary to identify the actual cluster arrangements in each of these areas.

Views and Viewsheds

Historically, it appears that the Potomac River was visible from the C&O Canal and towpath throughout the study area. Although the first photograph dates from 1860, it indicates that the canal, Riverview Cemetery, and all the functional aspects of the canal were quite visible from the Potomac River and the West Virginia shore. Today, it is barely possible to catch a glimpse of the river from the canal except at the Cushwa loading basin south of Conococheague Creek. Vegetation has been allowed to grow along both sides of the canal, blocking views of both the river and the Riverview Cemetery hillside. Near the power plant, the Potomac Edison Company installed a screen planting of arborvitae that blocks views for quite a distance. The existing bluff between the town and the canal basin remained unchanged throughout the period of significance, and it appears that no significant views between the two areas ever existed. It has not been possible to determine whether or not there were any specific designed views from points along the canal, or to the canal from adjacent areas. Refer to figures 69-86 for images relating to views along the canal during the period of significance.

Buildings and Structures

1787-1828

The only extant building from this period is the original portion of the Cushwa Warehouse built circa 1800. This brick warehouse is in use as a NPS administrative facility. The original, two-story warehouse is characteristic of an industrial building of this period and follows the vernacular antecedents of the region. Local residential and agricultural building typologies are also apparent in the architecture. No other information has been found to substantiate other existing buildings, structures, or objects from this period.

1828-1850

After construction of the canal in 1835, additional structures were built around the canal in the Williamsport area, including the Warfield Warehouse at Lock 44, the Stake Warehouse, and an addition to the Cushwa Warehouse at the Cushwa loading basin. In addition, canal structures such as the aqueduct, loading and holding basins, and the lock were built during this period. A wooden bridge was built over the canal to access the Potomac River ferry, and a pivot bridge was built at Lock 44 to provide access to both sides. The extant structures from this period include the aqueduct, Lock 44, the creosote vat, some of the Cushwa loading basin walls, and the addition to the Cushwa Warehouse. The canal prism was constructed using a clay liner as the primary technology for water retention in the canal. Other known building materials used for construction during this period are the wooden addition to the Cushwa Warehouse and the local blue limestone used in the aqueduct and lock walls.

1850-1861

From 1850 to 1861, buildings constructed during the previous time period were used heavily, and little new construction occurred on the canal aside from a lockkeeper's house circa 1855. (This early Lockkeeper's House is no longer standing, and no information is known about the building materials used in its construction.) The wooden ferry access bridge was repaired after being damaged in a flood. An 1860 photograph indicates a wooden house and outbuilding near the ferry crossing, but no other information is known about those structures. They appear to be plain, gable-roofed structures. Since the photograph only shows the town in the distance, the image is not clear or detailed enough to identify other stylistic elements.

1861-1865

This period focused more on the destruction and damage of previously built elements than on the construction of new buildings. The only known reference to building was for the repair of Embrey's Wharf in the Cushwa loading basin. Earth entrenchments constructed by Union forces on the hillside east of the canal, which are located within the bounds of the Riverview Cemetery, may have been reconstructed. The Civil War is memorialized today on the site of the entrenchments with a plaque. A road constructed beside the aqueduct, assumed to have been created for the purpose of inconspicuous crossings of the Conococheague Creek, may be extant, but further archeological research is necessary to determine its alignment.

1865-1889

Following the rebuilding of the canal after the Civil War, numerous buildings, structures, and objects were constructed, yet few remain intact today. Lumber mills and sawmills were erected north of the aqueduct and along the Cushwa loading basin with associated warehouses. A new wooden Lockkeeper's House was built on the towpath side of the canal adjacent to Lock 44. Adjacent to these new mills, stone walls were built to accommodate easy access and provide a place

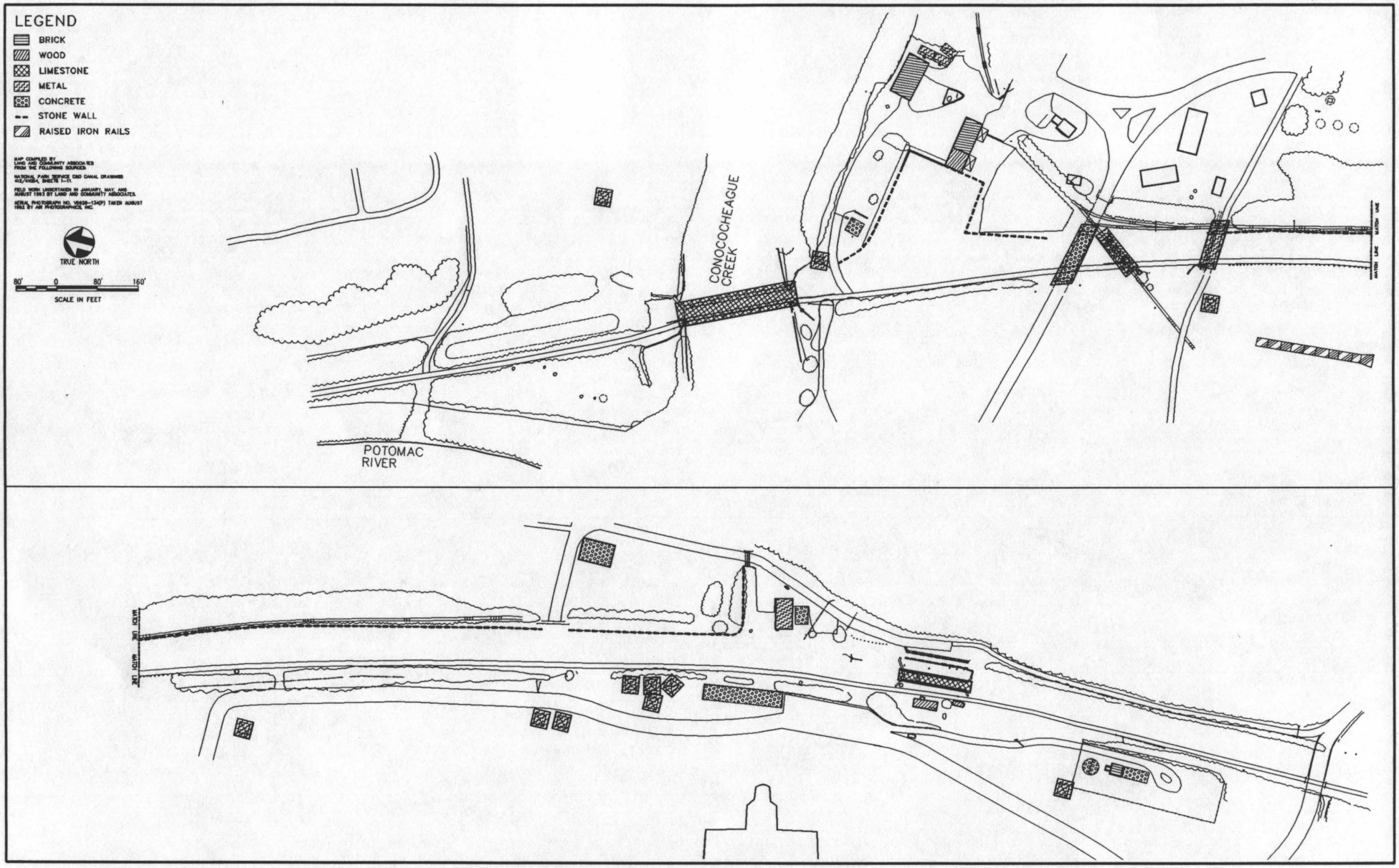


Figure 45. Structural Materials: 1993 Buildings and Structures Map

for boats to tie up and load and unload. Remnants of canal stone walls at these former mill locations are evident along the length of the canal prism but most are concentrated near Lock 44. Wood was the major construction material for buildings during this period. The Bollman Bridge, constructed of iron in 1879, and the addition of Western Maryland Railroad tracks in 1873 introduced new types of construction and materials along the canal.

1889-1924

A new era of construction began along the canal following the flood of 1889. The use of iron and concrete predominated as evidenced in the iron Railroad Lift Bridge, the concrete and steel Washington-Berkeley Bridge, and the metal transmission towers of the Potomac Edison Company power plant. In addition, the brick Power Generation Station was built. Some of the features that were lost during this period include wooden billboards adjacent to Bollman Bridge, a wood and steel steamloader, the Warfield basin at Lock 44, the holding basin north of the aqueduct, and the Cushwa loading basin. Heavy flooding during this period had an impact on several buildings and contributed to the eventual closing of the canal in 1924. Additionally, wood poles carrying utility lines were dotted along the length of the towpath.

1924-1937

Following the closing of the canal, the structures that had not been destroyed by floods were left to deteriorate. A slaughterhouse was constructed in 1928 on the site of the Miller ice house but was washed away in the 1936 flood, as was the Cushwa Cement and Phosphate Warehouse. Photographs indicate that the warehouse was constructed of wood; nothing is known about the materials used to construct the slaughterhouse, and all that remains is a square, concrete foundation pad. Also during this period, a road was constructed to provide access to a local quarry, a shed (unknown material) was constructed on the foundation of the slaughterhouse, and a shed was built near the Lockkeeper's House. It is thought that Harvey Brant built it from the remains of the carpenter's shop.

1937-1993

Federal acquisition of the property did not lead directly to construction of new structures but focused on stabilization, rehabilitation, and reconstruction of existing structures. The shed constructed on the slaughterhouse foundation was removed by NPS circa 1976, while two new metal storage sheds for NPS maintenance facilities were built near Lock 44 circa 1964 to house maintenance equipment. One of the sheds was removed circa 1974. The concrete block YACC building was constructed by the Town of Williamsport circa 1968, the brick Williamsport Wastewater Treatment Plant was built on adjacent land circa 1968, and a steel and concrete bridge with stone facing was built over the creek near the NPS maintenance shed circa 1986.

Summary

Several buildings, structures, and objects remain from the canal's period of significance, including stone canal wall remnants, a brick warehouse, a wooden lockkeeper's house, the limestone aqueduct and the lock. Much of the construction along the canal is utilitarian, with little regard to architectural style or pretension. Materials used in residential and industrial construction were typically wood and brick, and most of the buildings sported gable roofs; stone was used primarily in the construction of the canal and related structures. Future architectural and archeological studies may yield additional information concerning buildings and structures associated with the canal throughout its history. Refer to Figure 45, *Structural Materials: 1993 Buildings and Structures Map*.

Small-scale Features

The Williamsport segment of the C&O Canal contains relatively few extant small-scale features. Historically and in the present, small-scale features serve both a functional and aesthetic purpose while contributing to the quality of the landscape. Some of the extant small-scale elements identified within the corridor include:

- building stones from the damaged north wall of the aqueduct currently scattered in the canal prism north of the aqueduct
- concrete pad and remnant concrete foundation wall of the former Cottrill slaughterhouse
- Western Maryland Railroad spur track remnants
- Lock 44 iron joinery remnants
- original and repainted signage on the south facade of the Cushwa Warehouse
- Bollman Bridge stone abutments
- wood bollards at the Railroad Lift Bridge Control Station
- loading/unloading structures over Western Maryland Railroad tracks
- concrete foundations and portion of wooden pole from former billboards on hill between Bollman Bridge and the Washington-Berkeley Bridge
- turbine intake for sawmill at Cushwa loading basin
- creosote vat, with concrete base, metal tube, and concrete vat near Lock 44, one of the few remaining from the period of canal construction

Figure 46, right. Aqueduct east parapet wall stones in canal prism north of aqueduct

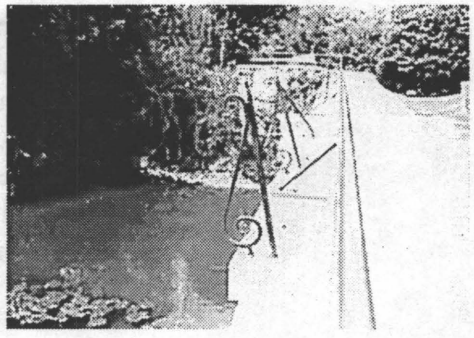


Figure 47, far right. Metal railing ornament at aqueduct

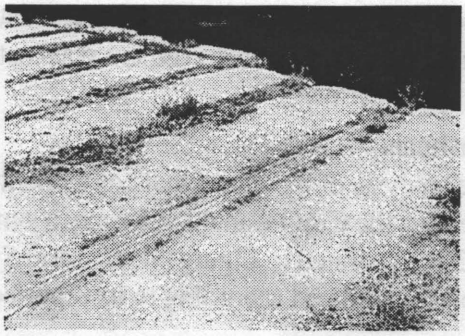


Figure 48, right. Wood spacers between structural aqueduct stones

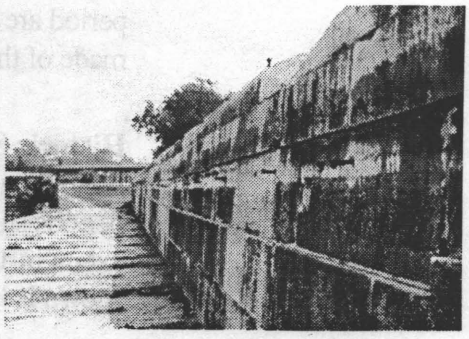


Figure 49, far right. Bolts on side and top of aqueduct west wall

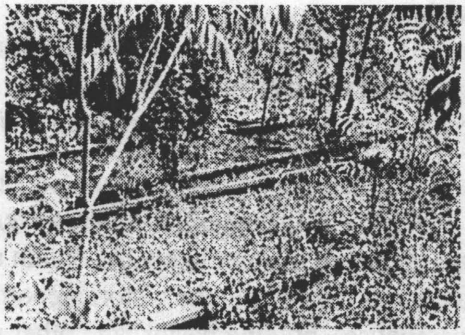


Figure 50, right. Western Maryland Railroad tracks

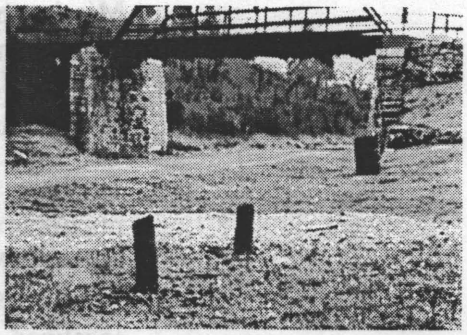


Figure 51, far right. Stone abutment at Bollman Bridge and wood bollards

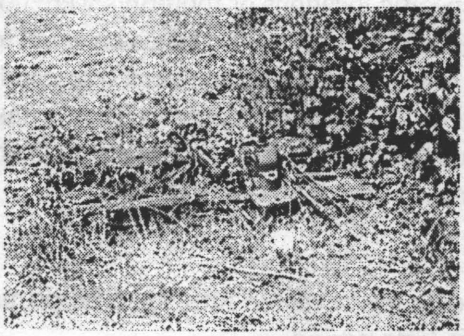


Figure 52, right. Railroad track fixture

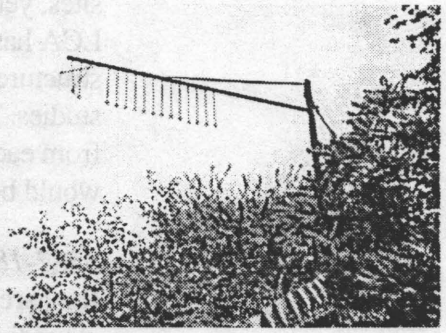


Figure 53, far right. Bollman Bridge clearance fixture above railroad tracks

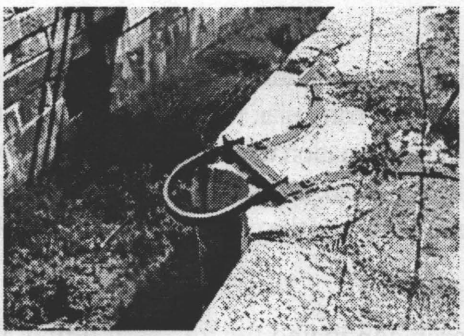


Figure 54, right. Iron joinery of former lock gate post

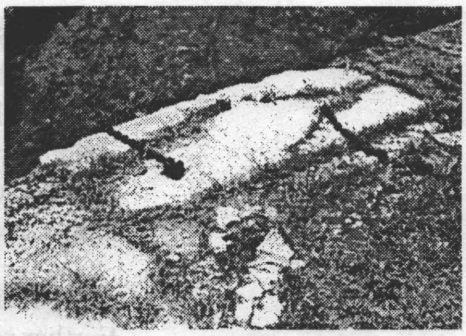


Figure 55, far right. Chains embedded in wall between the flume and Lock 44

Historic Base Maps

Historic base maps, figures 56-63, were prepared for each period, reflecting composites of the individual components of land use, circulation, buildings and structures, and a variety of other components. Elements that appear for the first time during the period studied are illustrated with a hatched graphic, a large label, and a date of construction. Elements that persist from an earlier

period are labeled in smaller type, and without a date of construction. Note is made of the manner in which each element was lost from the site.

Historic Synthesis

Following the analysis of the individual components through the eight time periods studied for the C&O Canal landscape, a synthesis of the features extant in 1993 is illustrated in Figure 64, *Historic Synthesis Map.* Each feature shown is labeled, and dated according to its reported year of construction.

Missing Structures

A map illustrating the location of historically significant landscape features that no longer exist was also created following the analysis of the site through the eight time periods (see Figure 65, *Missing Features Map*).

On the basis of information derived from historic documents (including maps, photographs, and historic resources), there are several areas of the Williamsport C&O Canal segment that are likely to contain archeological resources. Numerous statements throughout the historic record refer to the general locations of warehouses, holding basins, and other miscellaneous building sites, yet no specific locations or footprints were noted on maps. As a result, LCA has chosen to identify general sites believed to be locations of buildings, structures, or objects based on documented research and existing archeological studies. The following section identifies known missing structures or sites from each time period for which further research and additional information would be useful to interpretation of the site.

1787-1828

Research to date has revealed little specific primary source material regarding this time period.

1828-1850

Much of the development during this period occurred near the Cushwa loading basin and Lock 44. In particular, further research and investigation related to this period may yield information regarding the Stake Warehouse and Embrey Wharf at the Cushwa loading basin, and the Warfield Warehouse and basin, the Beatty hay press/carpenter's shop, and the pivot bridge at Lock 44.

1850-1861

Further research conducted for this period may yield information regarding the location, configuration, and materials used in the construction of a lockkeeper's house built circa 1855 near Lock 44.

1861-1865

Further research targeting this period should focus on the Cushwa loading basin, where numerous warehouses were burned during the Civil War, and the aqueduct area where a road was constructed by Confederate forces.

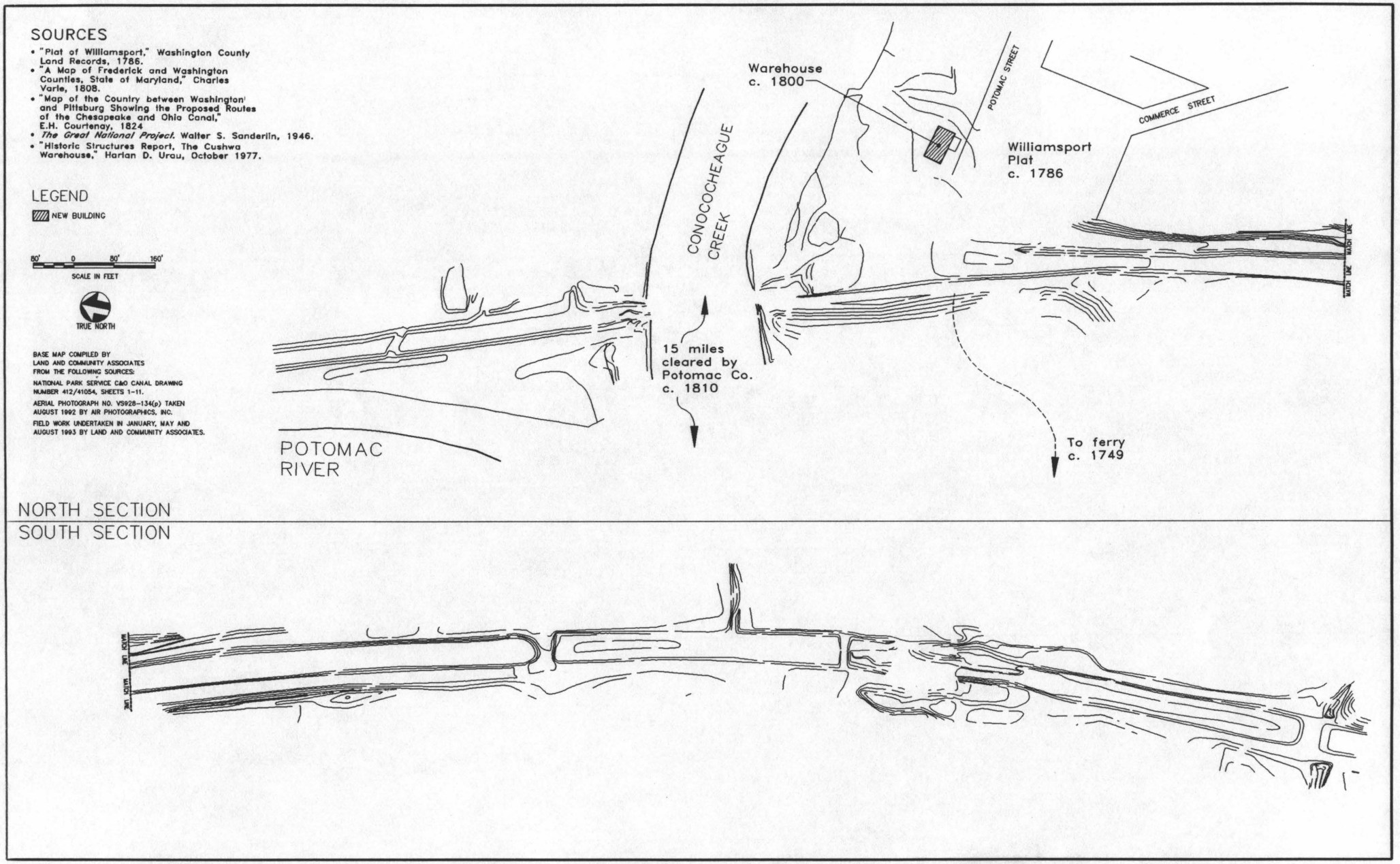


Figure 56. 1787-1828 Historic Base Map

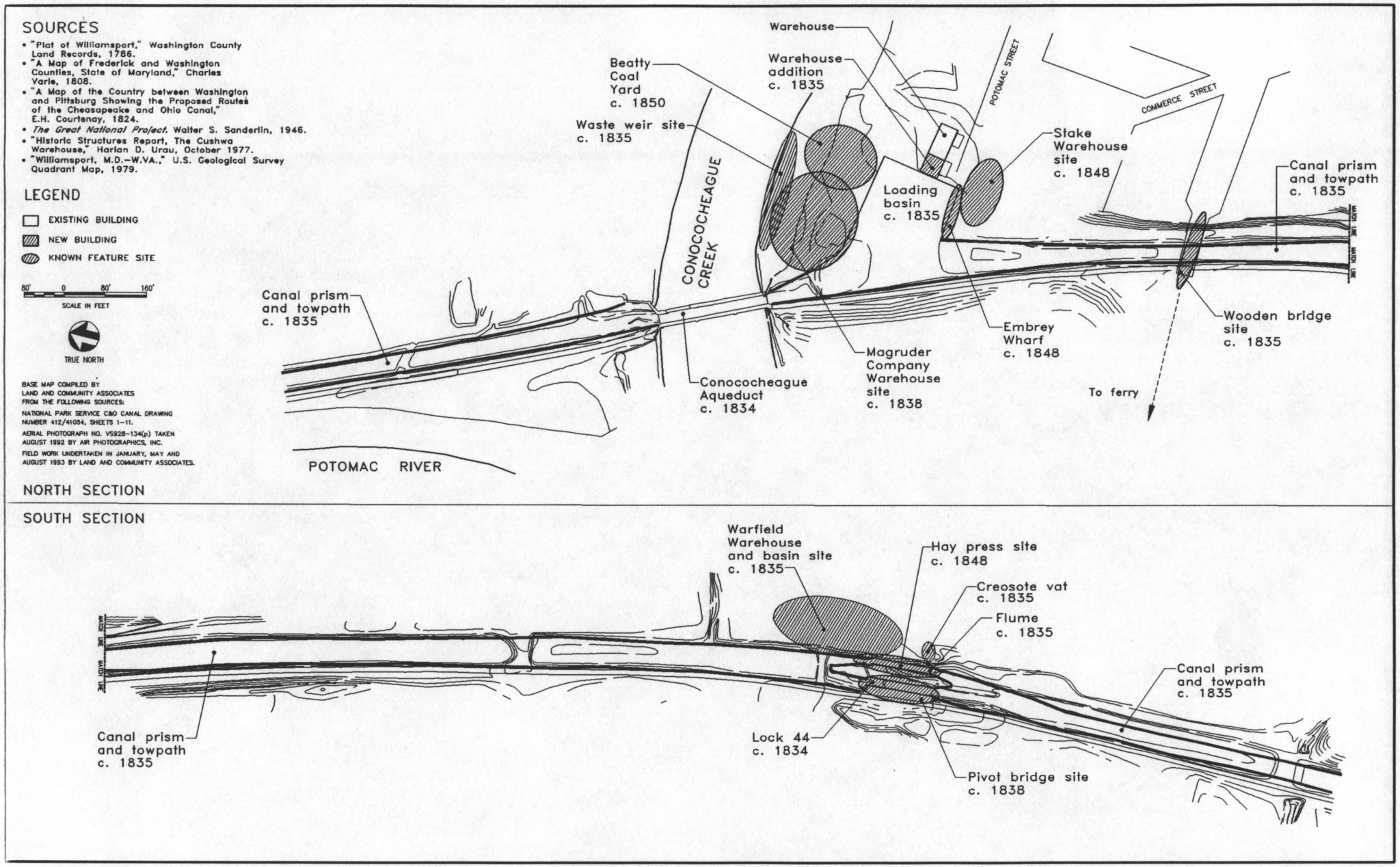


Figure 57. 1828-1850 Historic Base Map

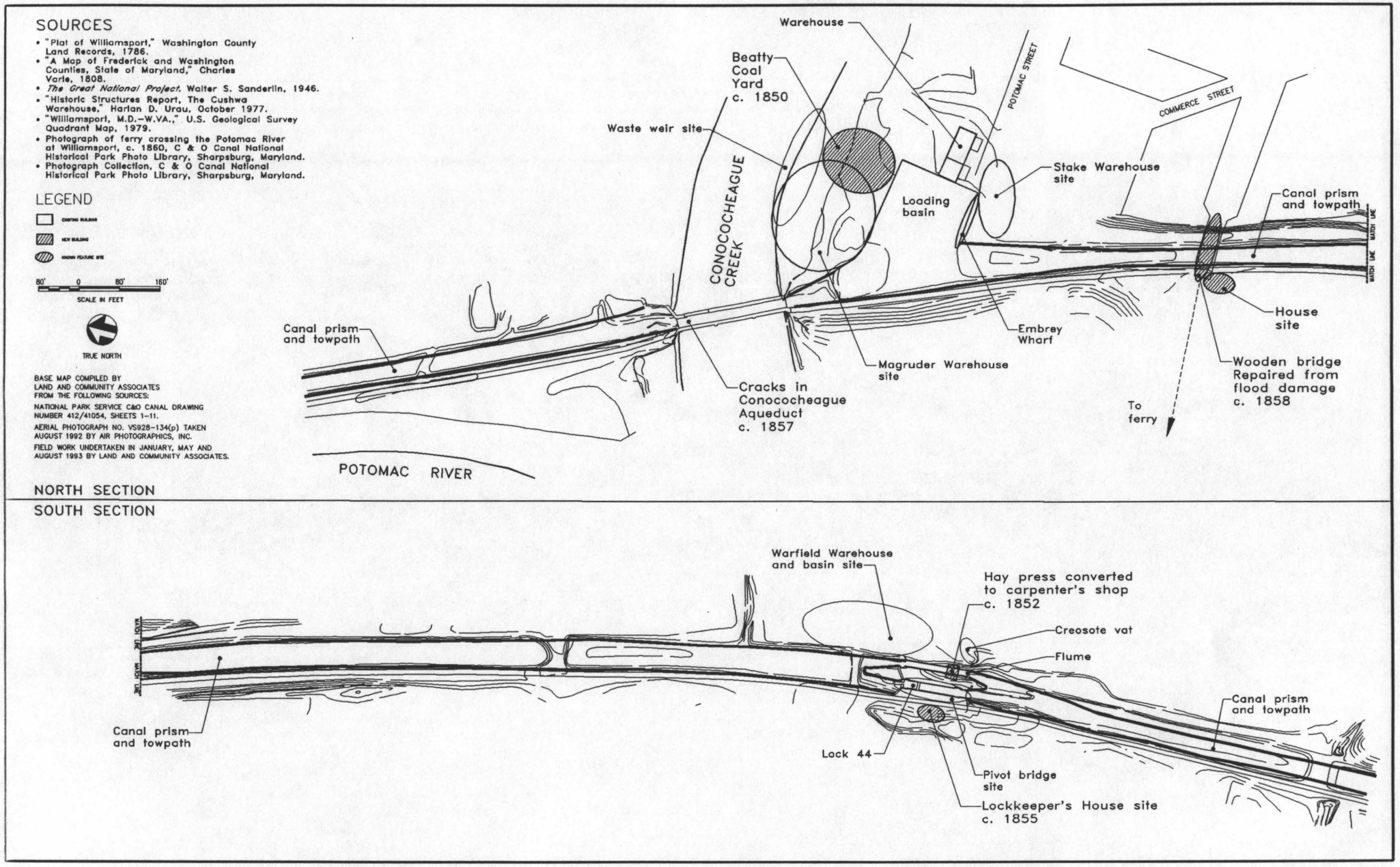


Figure 58. 1850-1861 Historic Base Map

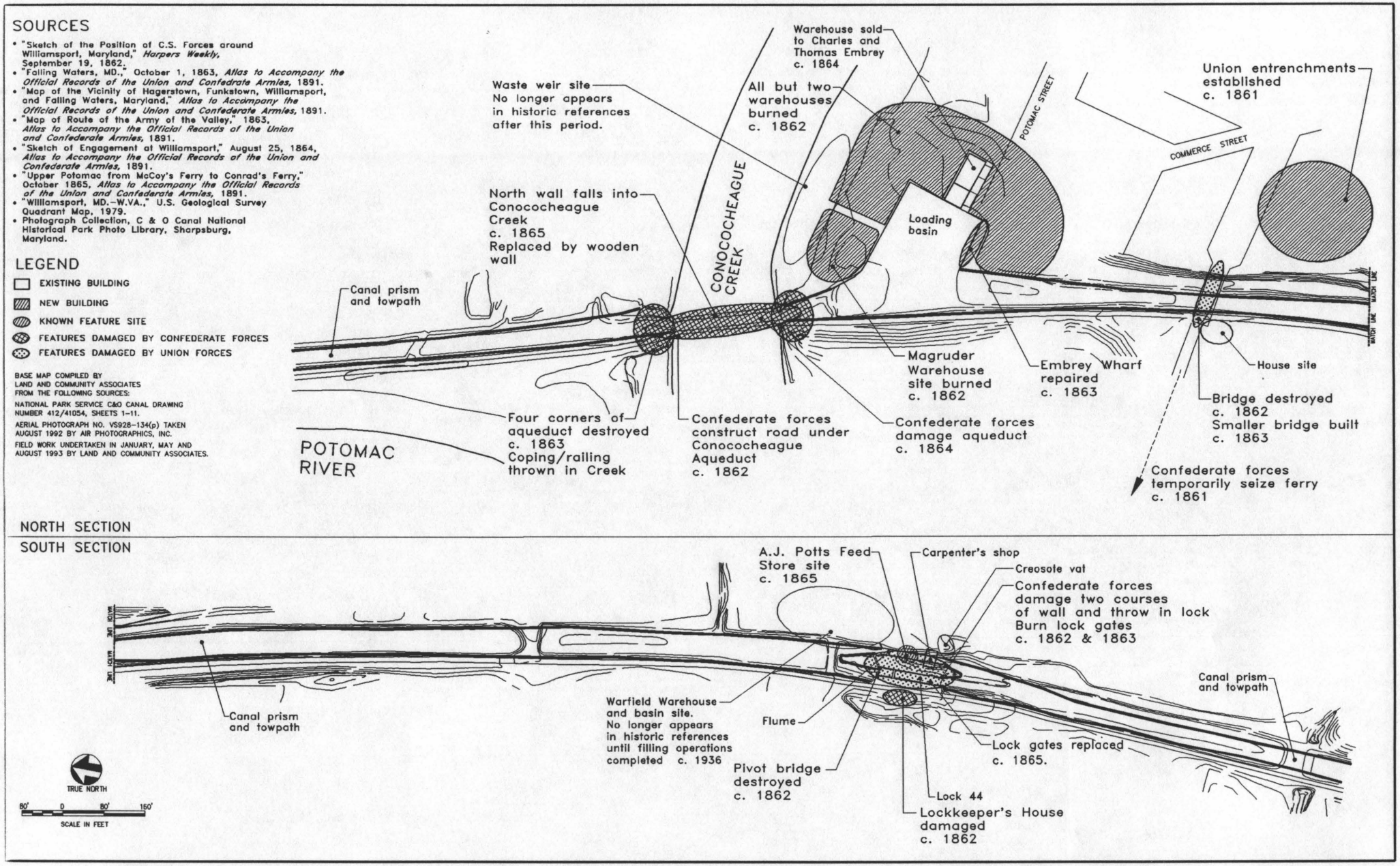


Figure 59. 1861-1865 Historic Base Map

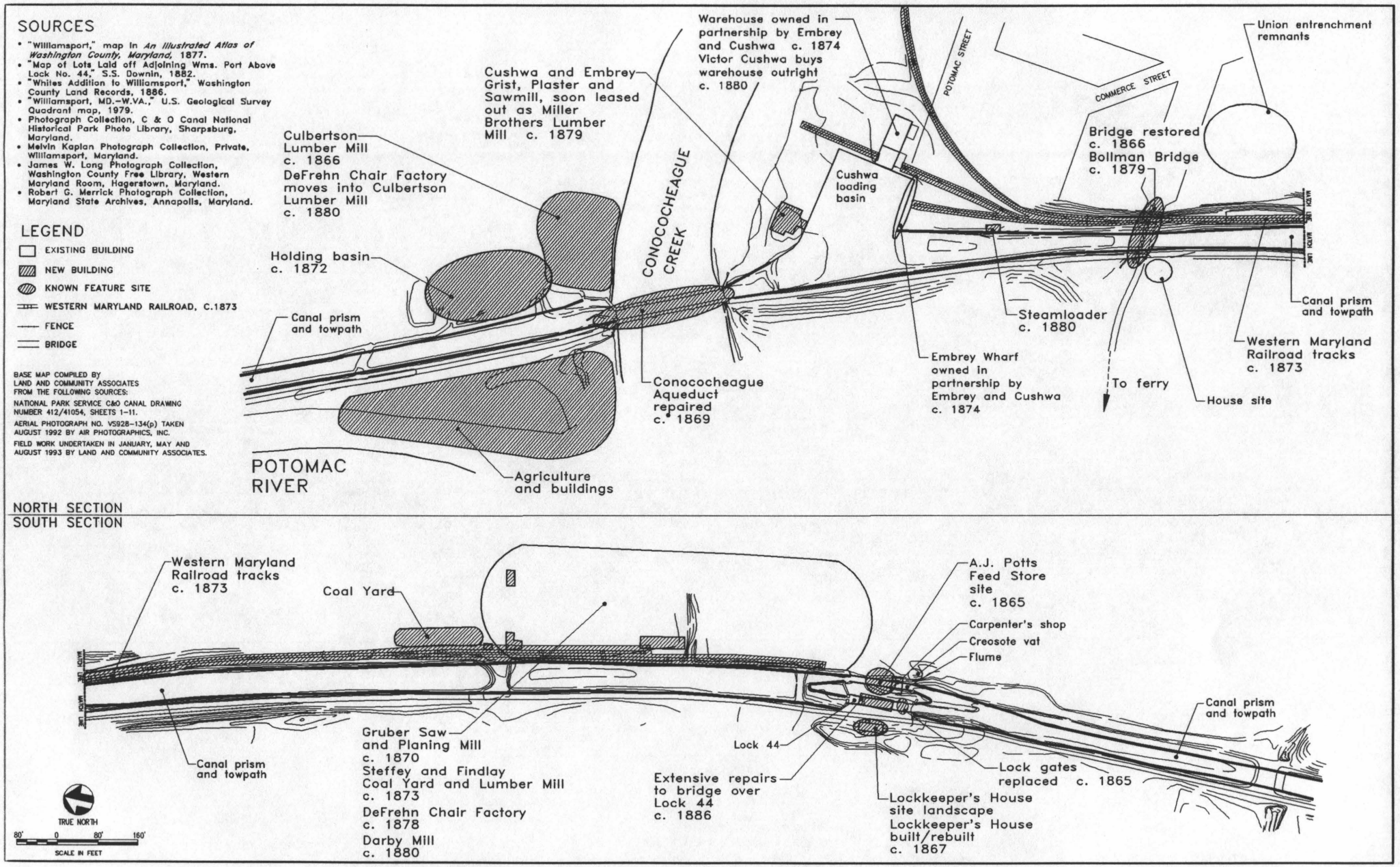


Figure 60. 1865-1889 Historic Base Map

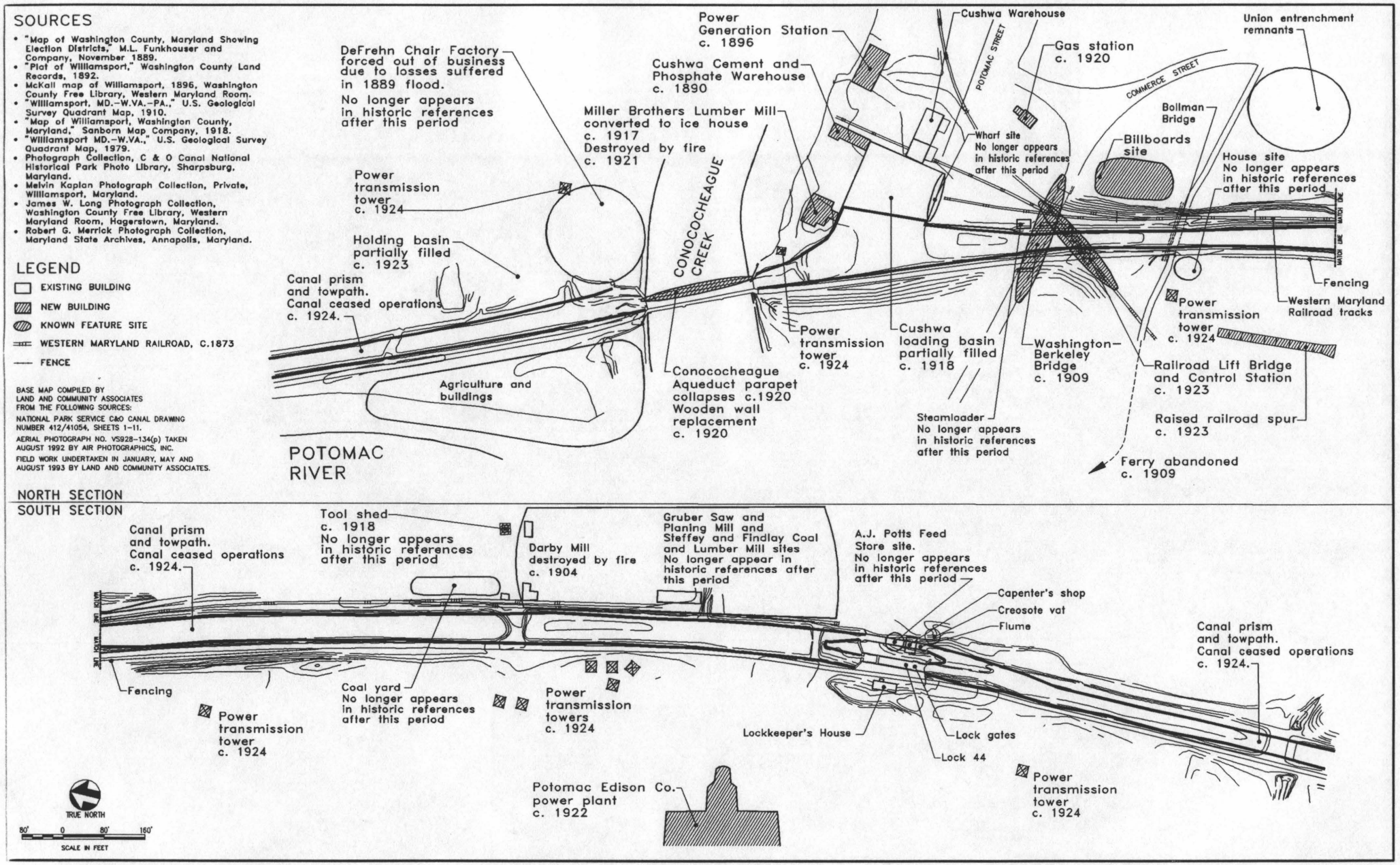


Figure 61. 1889-1924 Historic Base Map

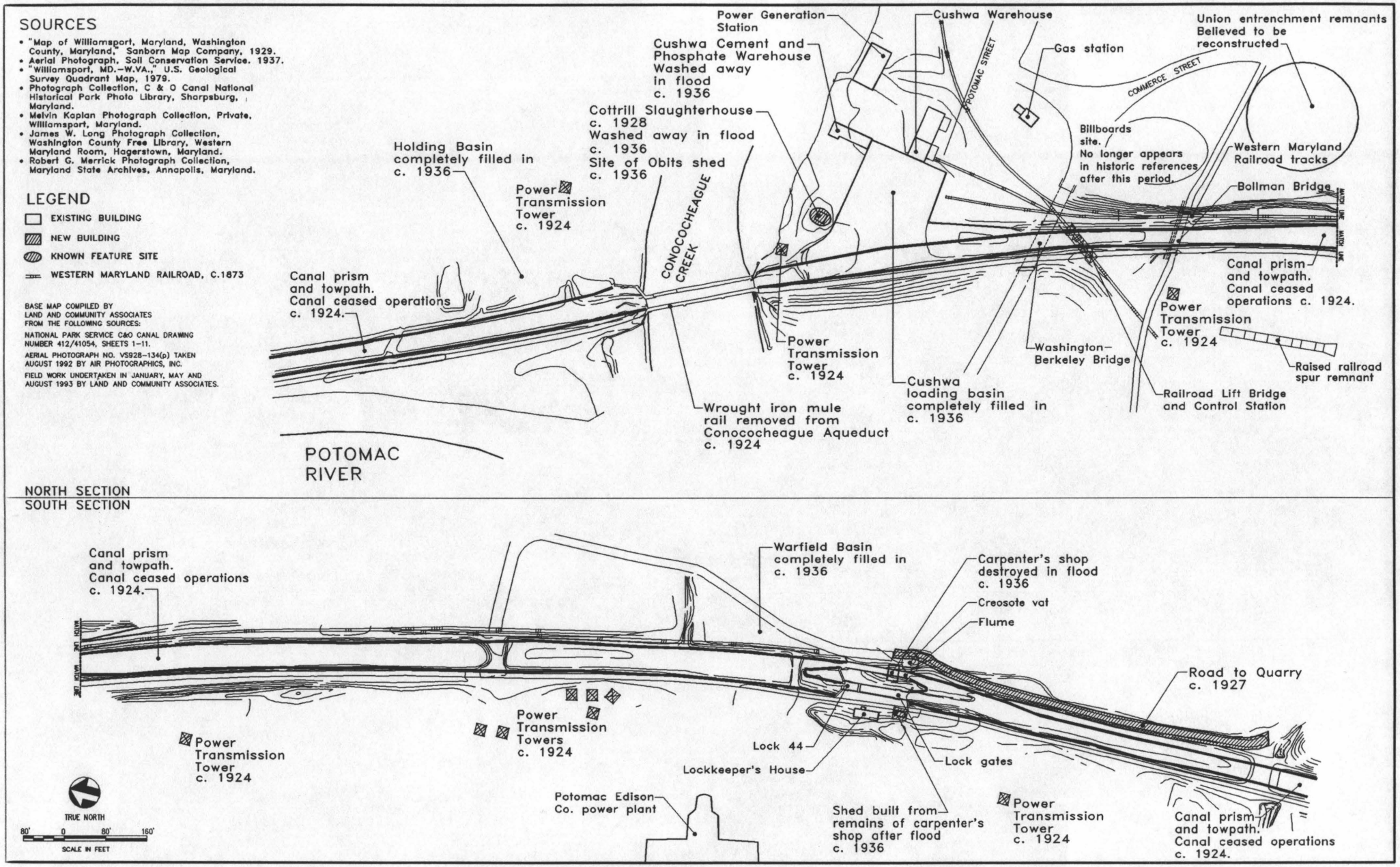


Figure 62. 1924-1937 Historic Base Map

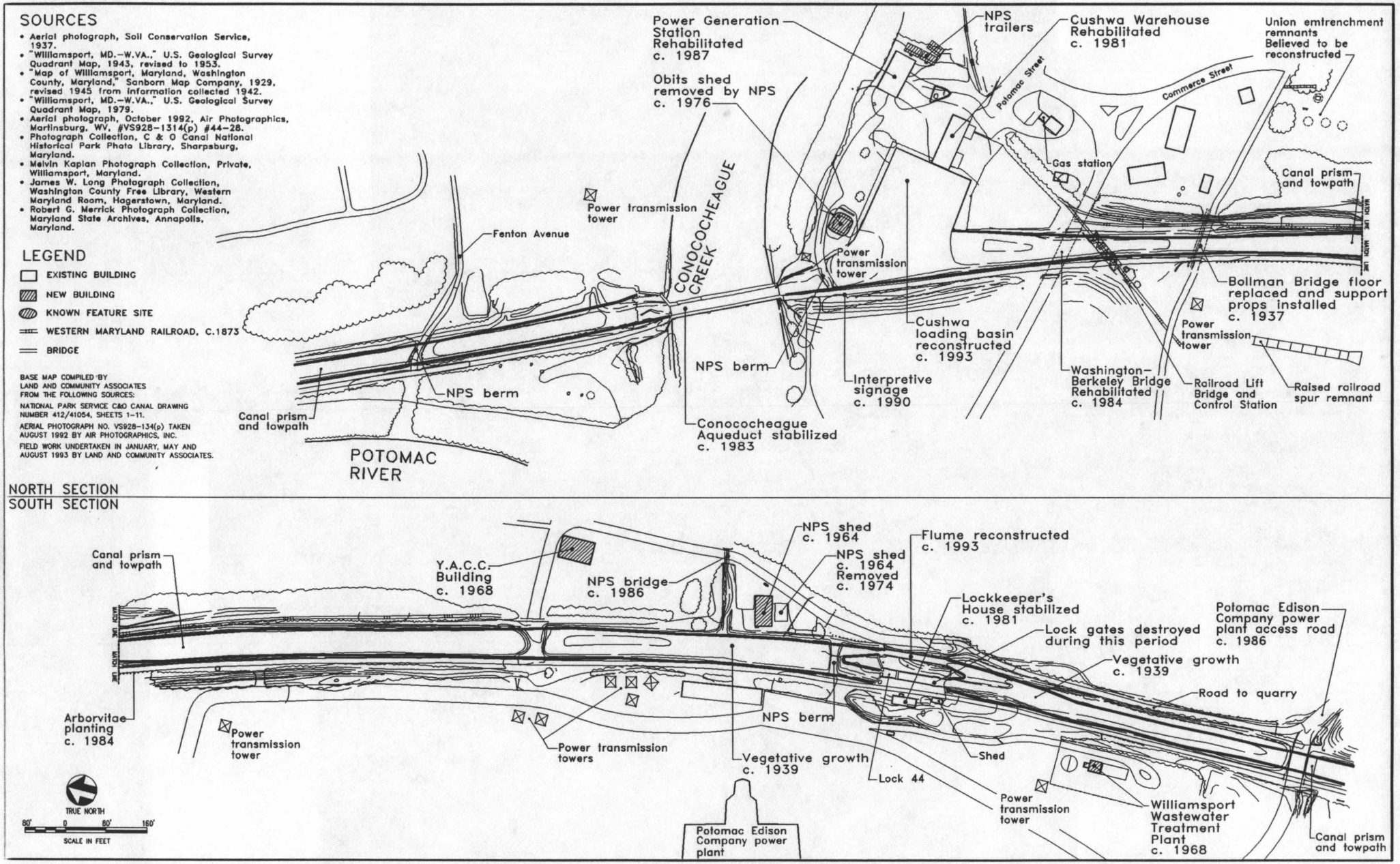


Figure 63. 1937-1993 Historic Base Map

EXTANT FEATURES BY TIME PERIOD

- 1787–1828
- 1828–1850
- 1861–1865
- 1865–1889
- 1889–1924
- 1924–1937
- 1937–1993

80' 0 80' 160'
SCALE IN FEET

TRUE NORTH

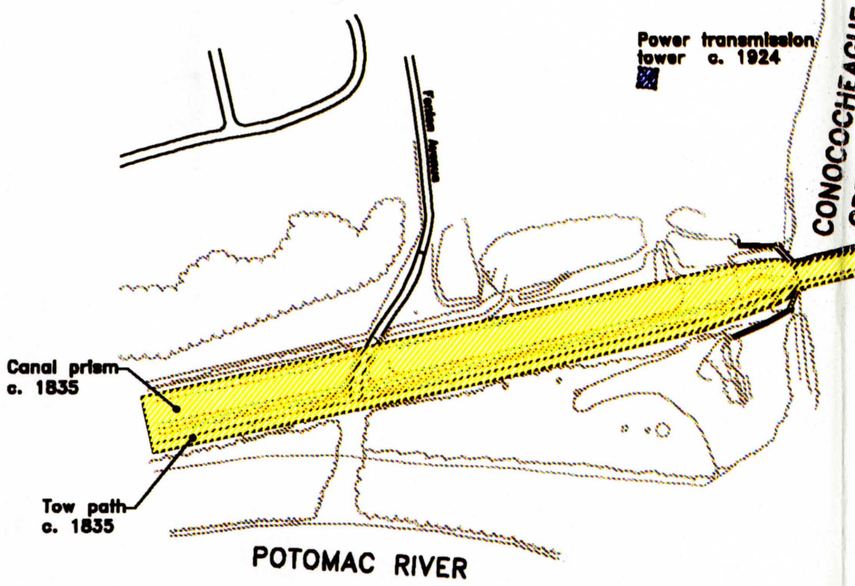
HISTORIC SYNTHESIS MAP COMPILED BY LAND AND COMMUNITY ASSOCIATES FROM THE FOLLOWING SOURCES:

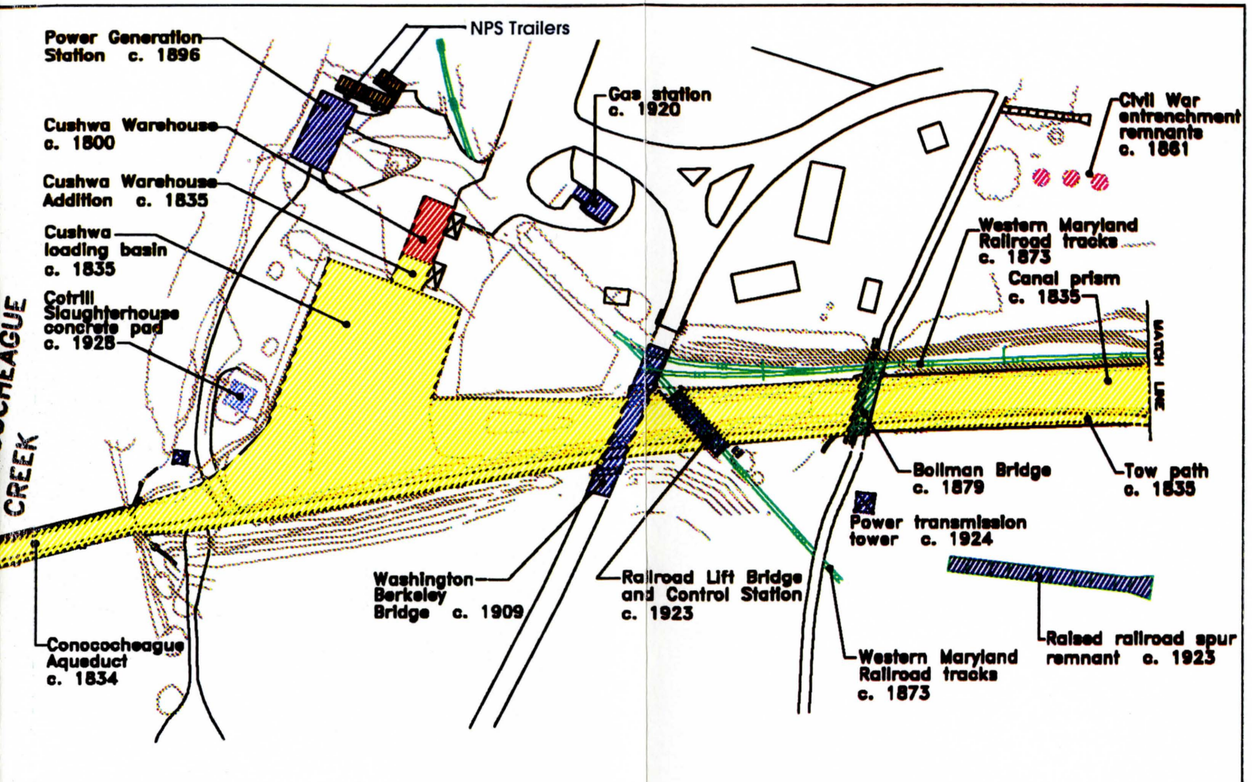
NATIONAL PARK SERVICE C&O CANAL DRAWINGS 412/41054, SHEETS 1–11.

FIELD WORK UNDERTAKEN IN JANUARY, MAY AND AUGUST 1993 BY LAND AND COMMUNITY ASSOCIATES.

AERIAL PHOTOGRAPH NO. VS92B–134(P) TAKEN AUGUST 1992 BY AIR PHOTOGRAPHICS, INC.

NORTH SECTION





SOUTH SECTION

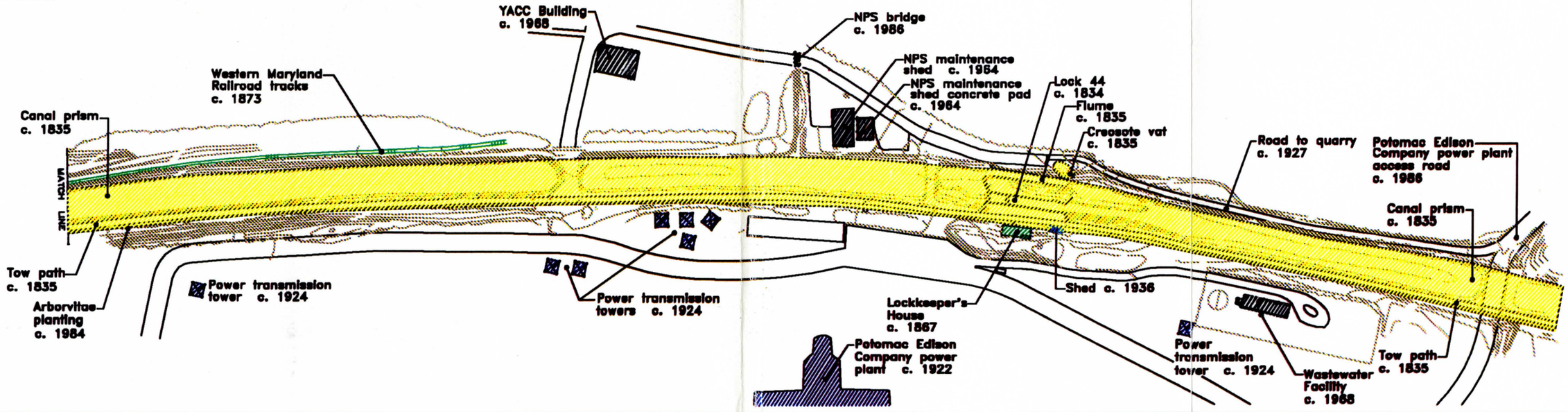


Figure 64. Historic Synthesis Map

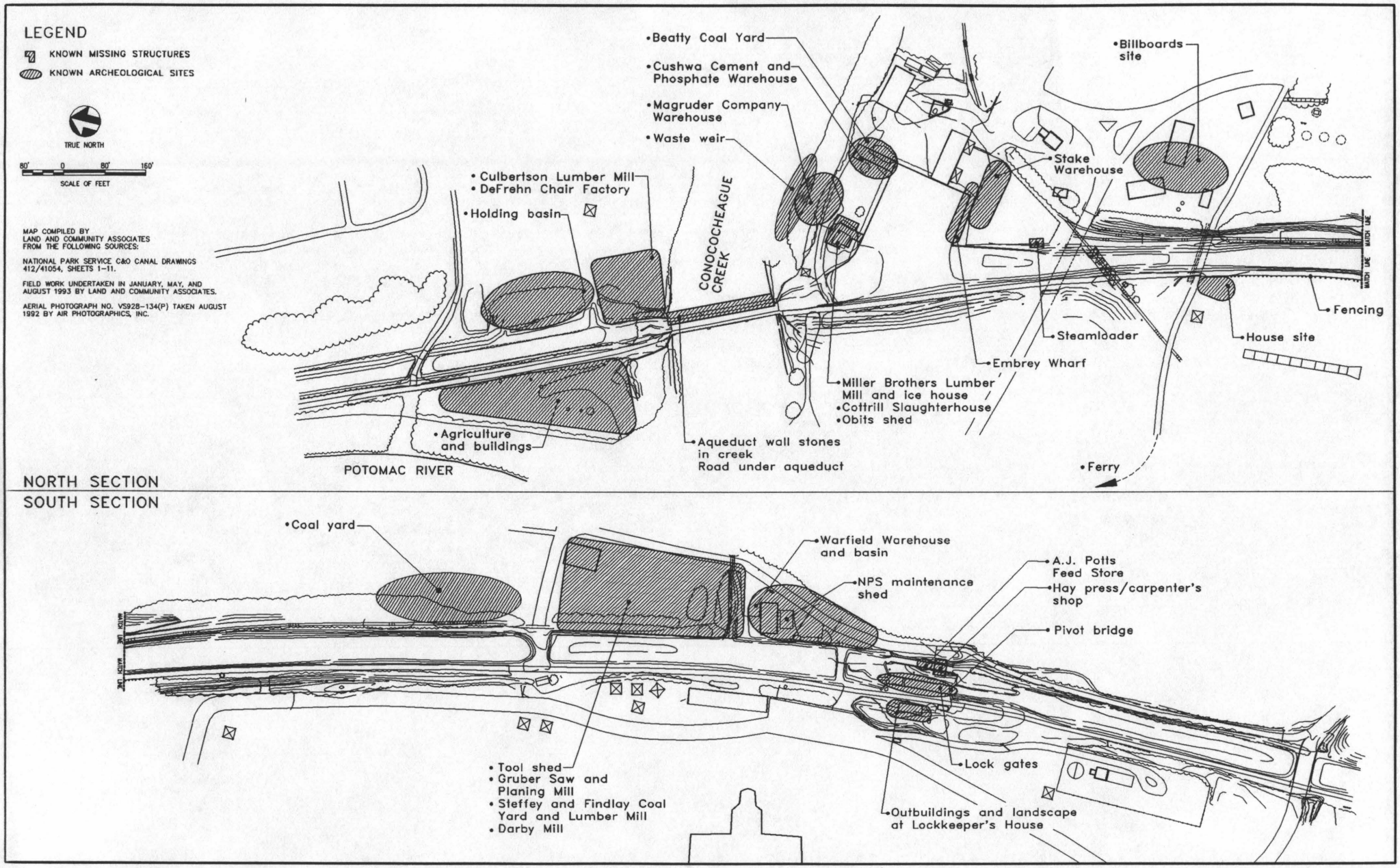


Figure 65. Missing Features Map

1865-1889

A considerable number of buildings, structures, and objects built during this period are no longer standing. Archeological investigations in the Cushwa loading basin area may yield information about the Miller Brothers Lumber Mill and ice house and the Cushwa Cement and Phosphate Warehouse. Features adjacent to the holding basin north of the aqueduct that merit additional research include the Culbertson Mill and DeFrehn Chair Factory, as well as the farm area opposite the holding basin. In addition, the Gruber Mill, Shoop and LeFevre Mill, Darby Mill, and Steffey and Findlay Mill sites north of the Lock 44 should be included in the archeological investigations.

1889-1924

The majority of the structures built during this time period are extant and require no additional archeological research. However, other non-extant elements from this period, including a steamloader, the holding basin north of the aqueduct and its associated outbuildings, numerous outbuildings, fences, and plants in the area surrounding the Lockkeeper's House warrant further research.

1924-1937

The only known building constructed during this time period that is non-extant is the slaughterhouse located on the site of the Miller Brothers Lumber Mill and ice house in the main Cushwa loading basin area.

3.3 RELATED INFORMATION

Existing Site Conditions

Currently a gravel parking area located at the southern end of Potomac Street provides access to the study area. Visitors to the site currently gain access to the canal prism from the parking area by walking past the Cushwa Warehouse and Power Generation Station at the Cushwa loading basin, crossing the canal prism via an earthen causeway, and heading north or south along the historic towpath.

The Conococheague Aqueduct, while in a state of partial disrepair, provides pedestrian passage across the creek. A wooden footbridge allows pedestrians to cross onto the fragment of land between Lock 44 and the flume. Three bridges cross the canal within the study area boundary: the Route 11/Washington-Berkeley Bridge carries traffic between the West Virginia side of the Potomac River and Commerce Street in Williamsport; the Bollman Bridge is a nineteenth-century vehicular and pedestrian bridge that crosses the canal at West Salisbury Street; and an abandoned steel Railroad Lift Bridge built in 1923 connects the Western Maryland Railroad spur line with the Potomac Edison Company power plant. Power

plant access that formerly cut through the canal site recently has been rerouted to alleviate vehicular/pedestrian conflicts.

Adjacent land uses and conditions that influence the character and use of the site include Garden State Tanning, the W. D. Byron plant and its associated mill housing and waste ponds to the north and northwest of the study area; the town of Williamsport, including its downtown commercial district, a maintenance yard, residential neighborhoods, and Riverview Cemetery to the east; a quarry and wastewater facility to the south and southeast; and the Potomac Edison Company power plant and River Bottom Park to the west. Although the largely industrial and commercial character of these adjacent land uses and structures is consistent with the historic nature of the canal site, many of the structures and features associated with these uses were constructed at the end of or following the canal era.

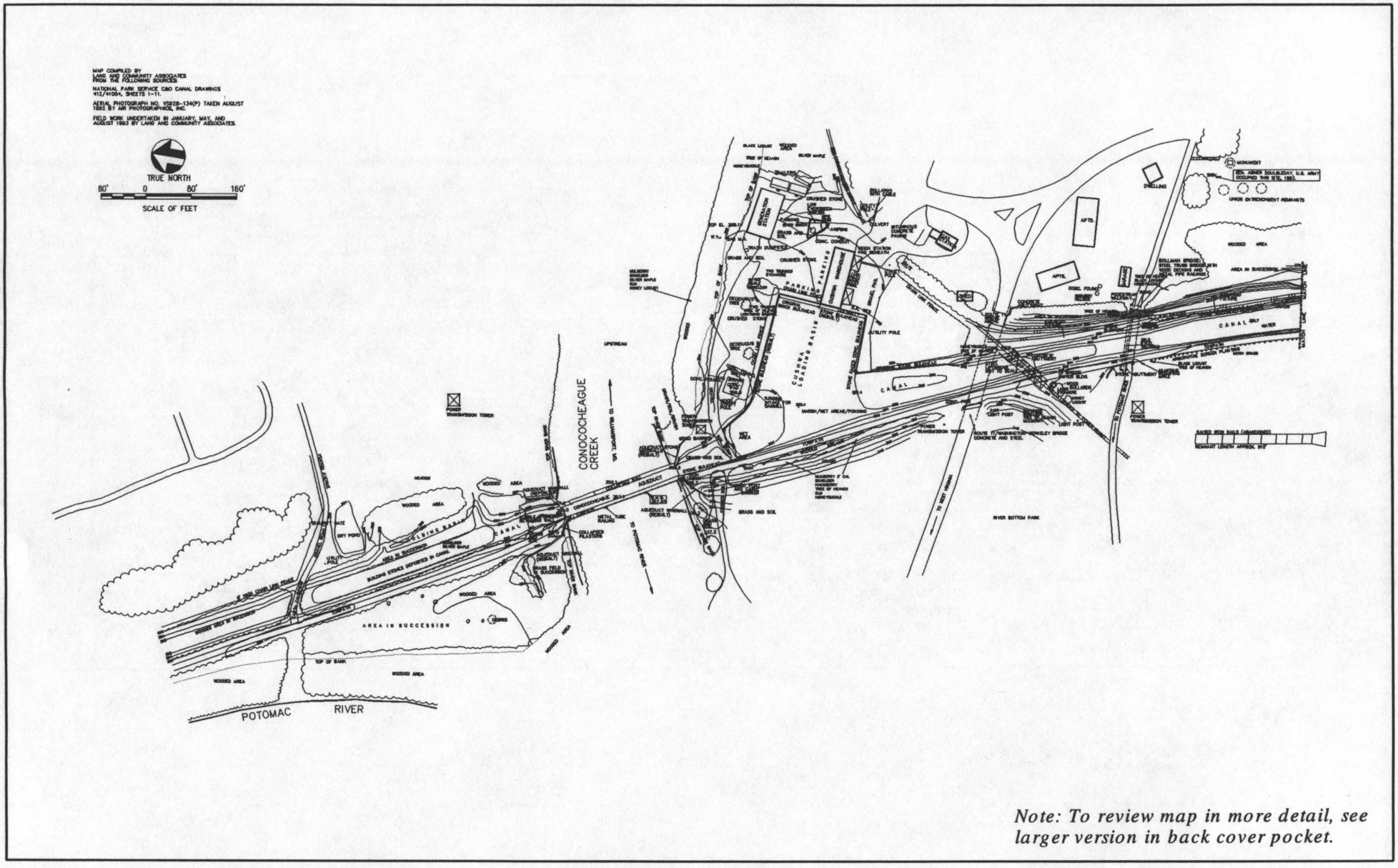
Figures 66 and 67, *Overall Canal North Section 1993 Existing Conditions Map* and *Overall Canal South Section 1993 Existing Conditions Map*, illustrate the contemporary canal features and elements (see next two pages and enlargements in back pocket). Refer to Appendix D for existing conditions photographs of the study area.

Floodplain

The Williamsport area of the C&O Canal NHP occupies a relatively level plateau between the lower floodplain and banks of the Potomac River and the sometimes steep slopes of the knoll on which the Town of Williamsport is located. The study area lies entirely in a natural floodplain zone of the Potomac River and Conococheague Creek. This region falls within Zone A of the Department of Housing and Urban Development Federal Insurance Administration, *Flood Hazard Boundary Map, 1974, revised 1977, Town of Williamsport, Maryland*, and is described as an "Area of special flood hazards (SFH) and without base flood elevations determined." Historically, the site has been subject to severe flooding on many occasions. Major floods recorded since the opening of the canal in Williamsport in 1835 include the following:

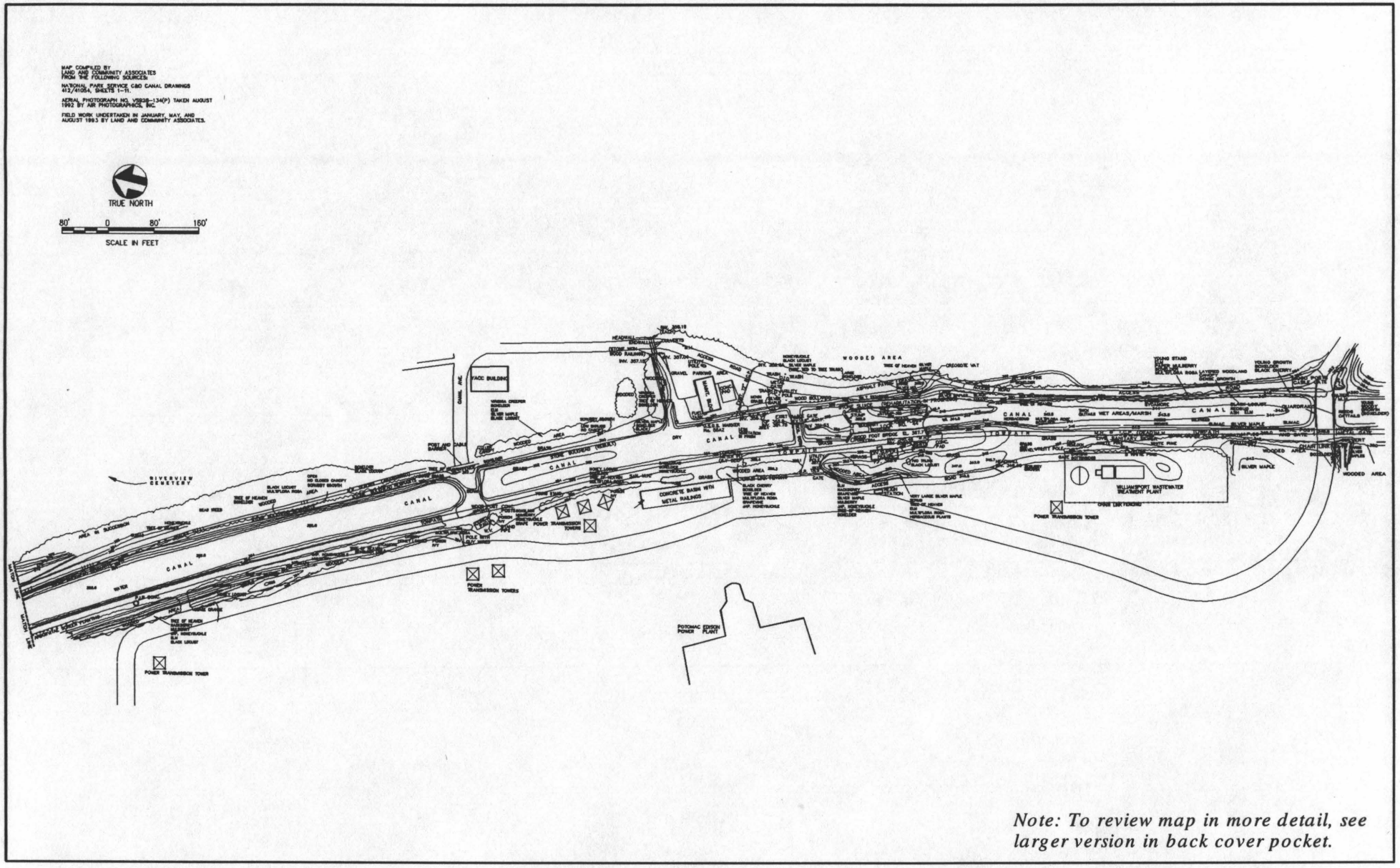
1852	Considered the worst flood since 1816
1857	Various floods
1861	Damaging heavy rains
1877	Huge flooding
1889	Referred to as the "Great Flood"
1924	Flooding, year of canal closing
1936	Severe flooding
1972	Hurricane Agnes
1985	Severe flooding

All structures, features, elements, and vegetation located within the special flood hazard area, including the extent of the study area, are potentially subject to the ravages of future flooding.



Note: To review map in more detail, see larger version in back cover pocket.

Figure 66. Overall Canal North Section
1993 Existing Conditions Map



Note: To review map in more detail, see larger version in back cover pocket.

Figure 67. Overall Canal South Section
1993 Existing Conditions Map

Existing Vegetation

Much of the existing vegetation found within the study area is typical of hydric soils, wet or perennially wet locations, and/or sites recently abandoned or disturbed and undergoing secondary succession. Vegetation types include canopy and understory trees, shrubs, herbaceous materials, vines and grasses. Vegetative cover types include the following: medium to dense canopy layer in conjunction with understory species and ground covers; young stands of fast-growing native and exotic successional species of trees, shrubs, herbaceous materials, and vines typical of disturbed and abandoned sites; and managed ground cover areas including mown grasses and mixed stands of woody and herbaceous wetland species perennially cut by NPS. If not managed, many thriving, invasive, exotic species threaten to dominate in certain locations.

Observed vegetation includes the following:

MESIC/UPLAND SPECIES
Cercis canadensis (Eastern Redbud)
Cornus florida (Flowering Dogwood)
Gleditsia triacanthos (Honey Locust)
Morus alba (White Mulberry)
Morus rubra (Red Mulberry)
Parthenocissus quinquefolia (Virginia Creeper)
Prunus serotina (Black Cherry)
Quercus alba (White Oak)
Robinia pseudoacacia (Black Locust)
Rhus toxicodendron (Poison Ivy)
Sassafras albidum (Sassafras)
Vitis riparia (Riverbank Grape)

HYDRIC SPECIES
Acer negundo (Boxelder)
Acer saccharinum (Silver Maple)
Celtis occidentalis (Hackberry)
Hydrangea arborescens (Smooth Hydrangea)
Platanus occidentalis (Sycamore)
Populus deltoides (Eastern Cottonwood)
Ulmus rubra (Slippery Elm)

ORNAMENTAL/PLANTED SPECIMENS
Betula nigra (River Birch)
Forsythia x intermedia (Forsythia)
Juniperus spp (Juniper)
Malus spp (Apple)
Pinus strobus (White Pine)
Thuja occidentalis (Eastern Arborvitae)
Tsuga canadensis (Canadian Hemlock)

INVASIVE EXOTICS
Ailanthus altissima (Tree of Heaven)
Rosa multiflora (Multiflora Rose)
Lonicera japonica (Japanese Honeysuckle)

Zoning

The Town of Williamsport prepared a comprehensive plan effective April 27, 1975. The plan and its related zoning categories are still in existence and have been updated periodically. Based on a February 1980 map, the canal area is zoned Historic-Recreation. This zoning district provides for the preservation of the C&O Canal and the historic character associated with adjacent development. Refer to Figure 68, *Town of Williamsport Zoning Map, 1980*, for zone delineations.

The uses that may occur within the Historic-Recreation designated area include:

PERMITTED USES

Forests and forest conservation
Fish and wildlife preserves
Agriculture
Single family detached dwellings
Cluster residential developments
Non-commercial parking
Parks
Temporary signs

CONDITIONAL USES

Conversion of a single family dwelling to two units
Conversion of a single family dwelling to an apartment with more than two units
Home occupations
Areas for non-commercial active outdoor recreation
Commercial swimming pool
Churches
Cemeteries
Essential utility equipment
Electric power generating stations
Civic buildings
Governmental buildings
Off-premise directional signs

In addition to these regulations there is a special review process for land lying in, or within a horizontal distance of 100 feet from the 100 year floodplain areas or the area of alluvial and high water table depicted on the accompanying map.

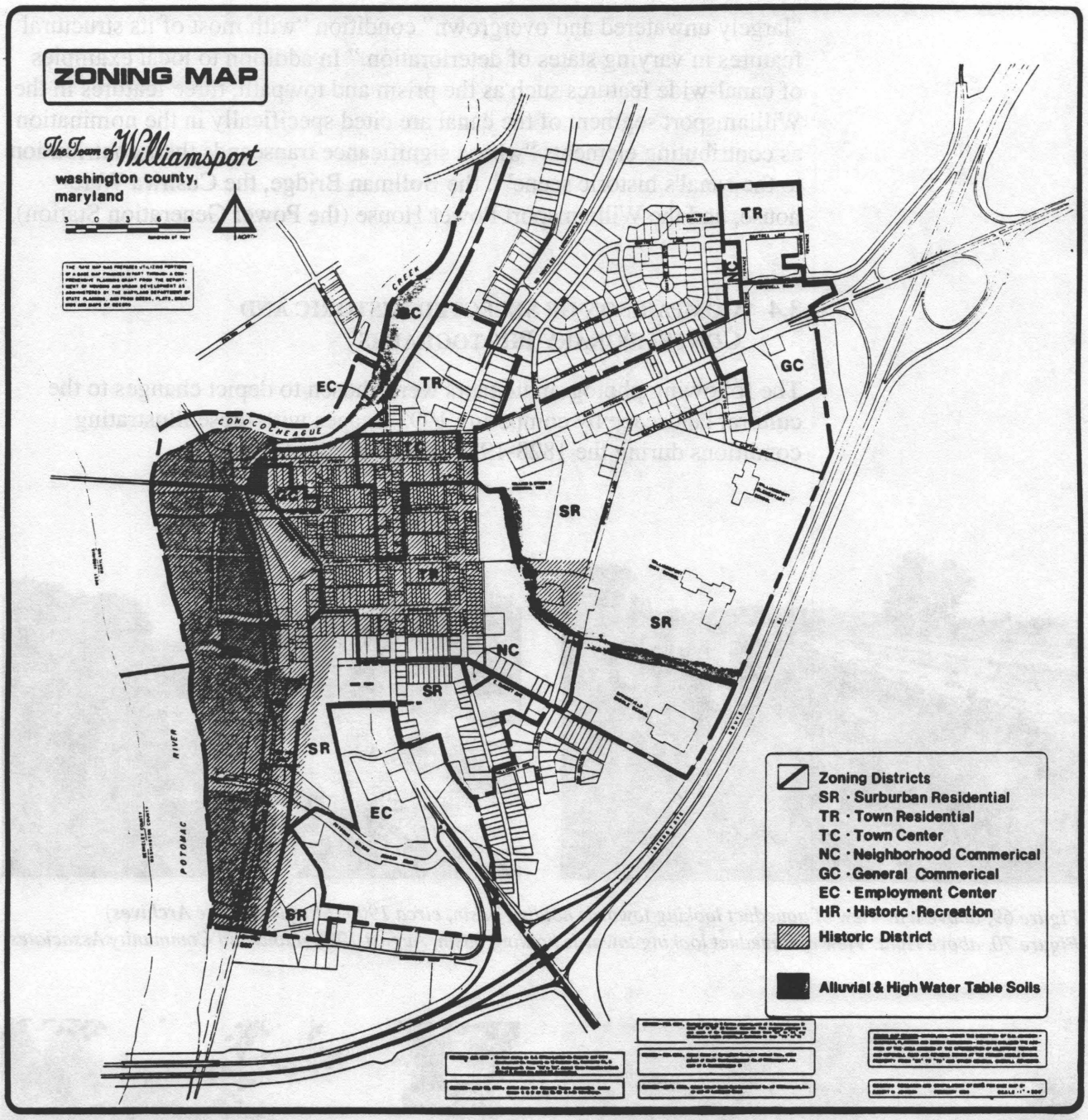


Figure 68. Town of Williamsport Zoning Map, 1980

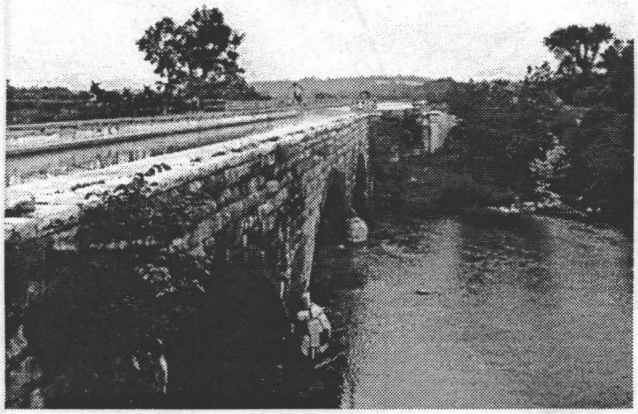
National Register of Historic Places

A National Register nomination for the C&O Canal National Historical Park was approved in August, 1979. According to National Register personnel, the entire canal was listed as an historic site under the National Historic Preservation Act of 1966, before extensive research had been done on the canal and its environs. The 1979 nomination includes research information prepared by NPS professional personnel, including an historian and an architect. The statement of significance for the canal included in the 1979 nomination finds the C&O Canal to be "one of the most intact and impressive survivals of the American canal-building era" despite its

"largely unwatered and overgrown" condition "with most of its structural features in varying states of deterioration." In addition to local examples of canal-wide features such as the prism and towpath, three features in the Williamsport segment of the canal are cited specifically in the nomination as contributing elements "whose significance transcends their contribution to the canal's historic scene"[4]: the Bollman Bridge, the Cushwa Warehouse, and the Williamsport Power House (the Power Generation Station).

3.4 COMPARISON OF SELECTED HISTORIC AND CONTEMPORARY PHOTOGRAPHS

The following photographic pairs were chosen to depict changes to the cultural landscape by comparing 1993 images with those illustrating conditions during the 1828-1924 period of significance.



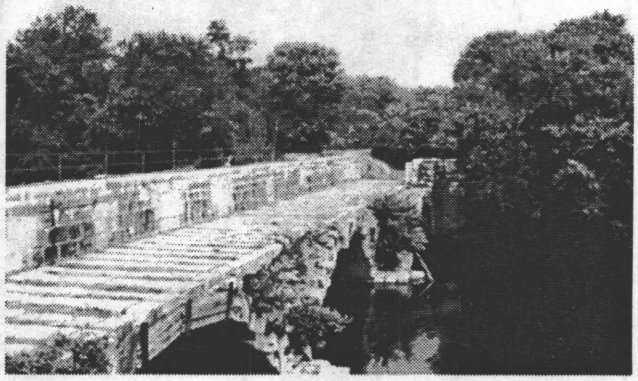


Figure 69, above left. View of aqueduct looking towards holding basin, circa 1900 (Maryland State Archives)
Figure 70, above right. View of aqueduct looking towards holding basin, August 1993 (Land and Community Associates)

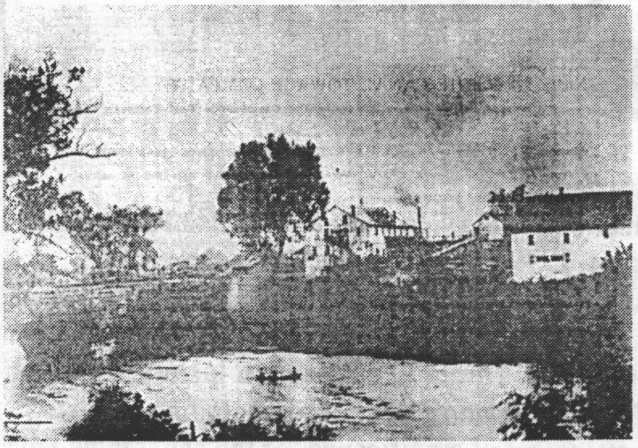
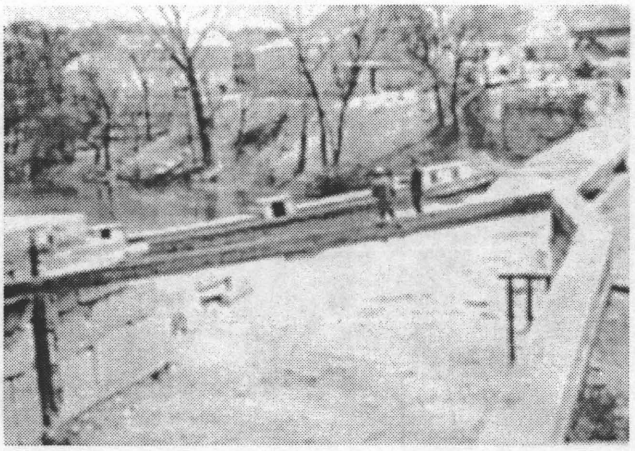


Figure 71, above left. View of DeFrehn Chair Factory, 1880-1889 (Washington County Historic Society)
Figure 72, above right. View of DeFrehn Chair Factory site, August 1993 (Land and Community Associates)



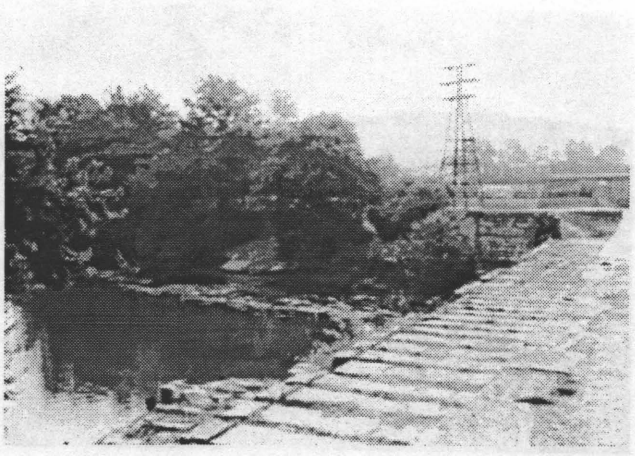
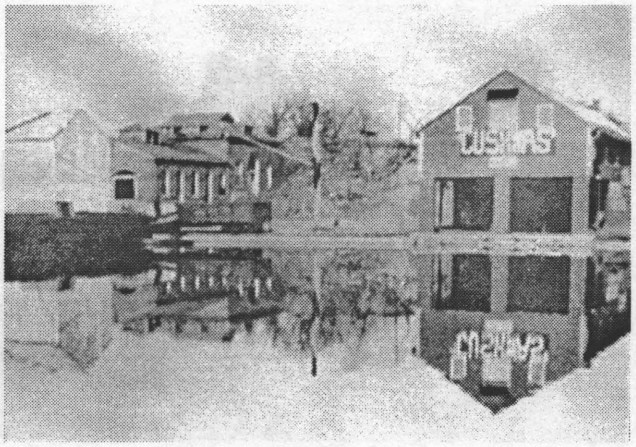


Figure 73, above left. View across aqueduct toward Cushwa loading basin, circa 1920 (James W. Long Collection, Western Maryland Room, Washington County Free Library, Maryland)
Figure 74, above right. View across aqueduct toward Cushwa loading basin, August 1993 (Land and Community Associates)



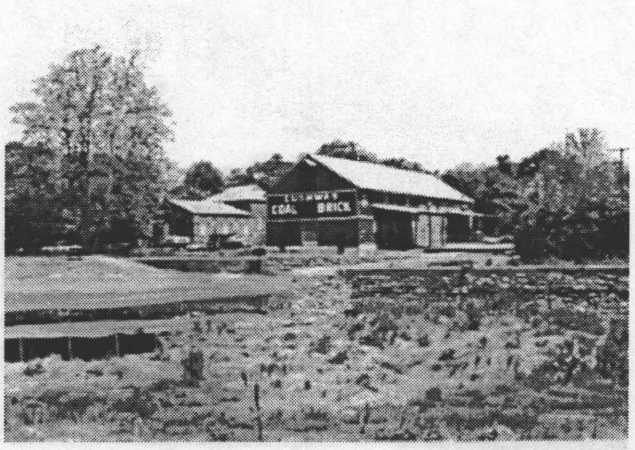
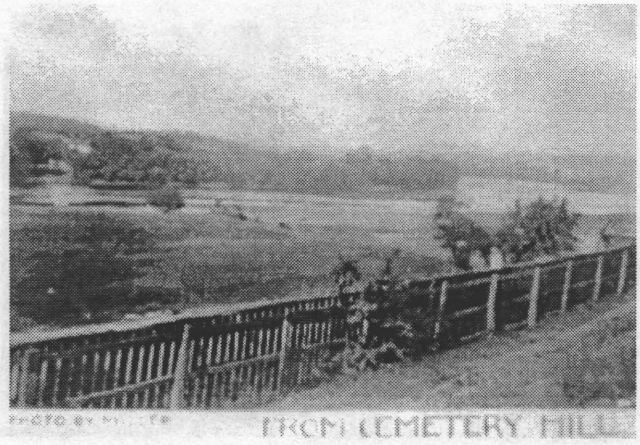


Figure 75, above left. View into Cushwa loading basin, unknown date (George 'Hooper' Wolfe book - I Drove Mules on the C&O Canal)
Figure 76, above right. View into Cushwa loading basin, May 1993 (Land and Community Associates)



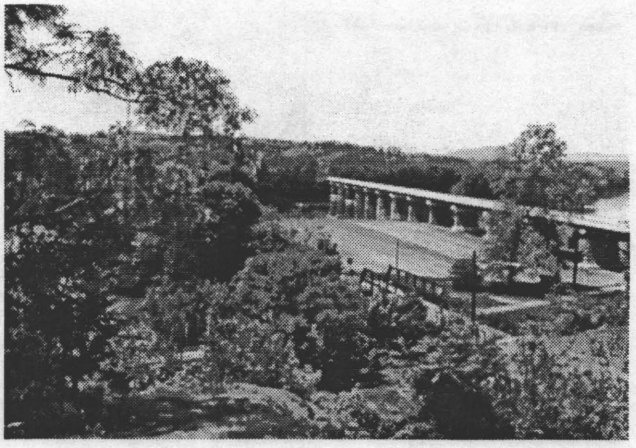
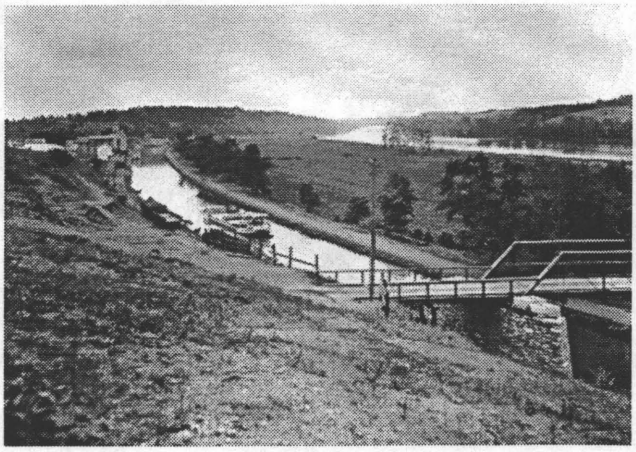


Figure 77, above left. View from Riverview Cemetery northwest to Potomac River, unknown date (Williamsport vertical file, Western Maryland Room, Washington County Free Library, Maryland)
Figure 78, above right. View from Riverview Cemetery northwest to Potomac River, May 1993 (Land and Community Associates)



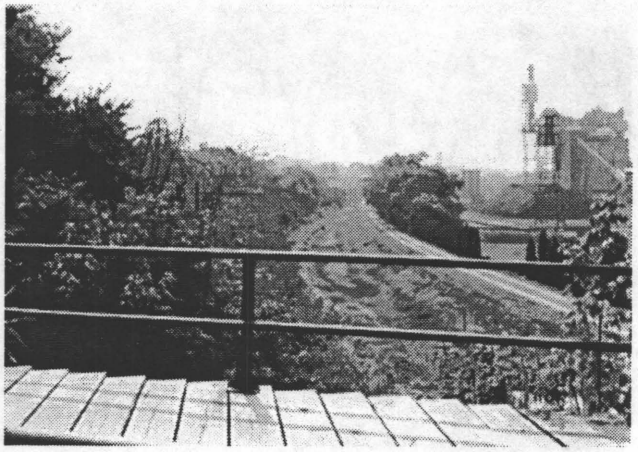


Figure 79, above left. Looking southwest along canal, circa 1900 (Maryland State Archives)
Figure 80, above right. Looking southwest along canal, August 1993 (Land and Community Associates)

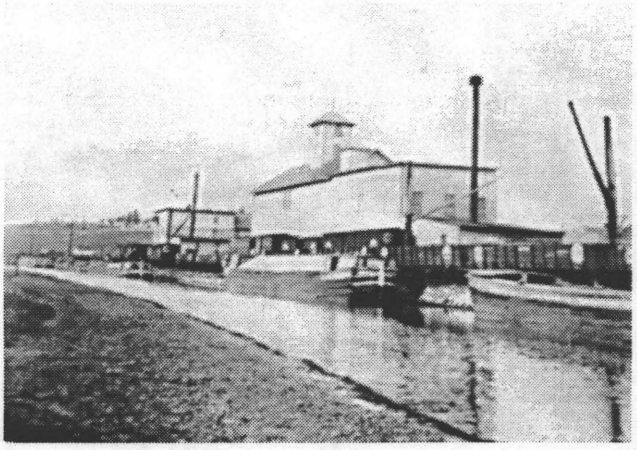
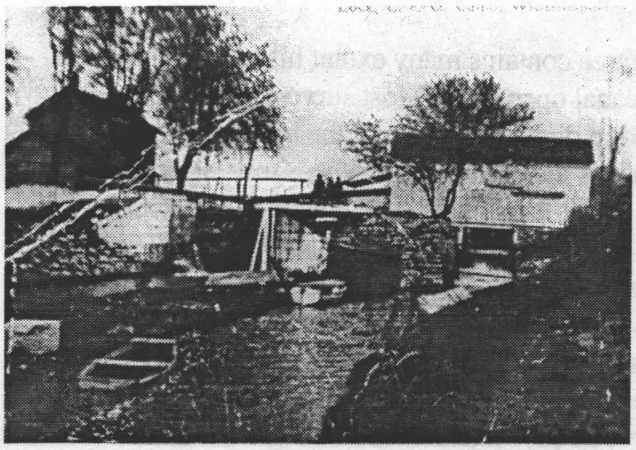


Figure 81, above left. Looking northeast from Lock 44 toward Steffey and Findlay Mill, unknown date (C&O Canal vertical file, Washington County Historical Society)
Figure 82, above right. Looking northeast from Lock 44 toward former mill site, August 1993 (Land and Community Associates)

Figure 83, above left. View of cemetery hillside, unknown date
Figure 84, above right. View of cemetery hillside, August 1993 (Land and Community Associates)



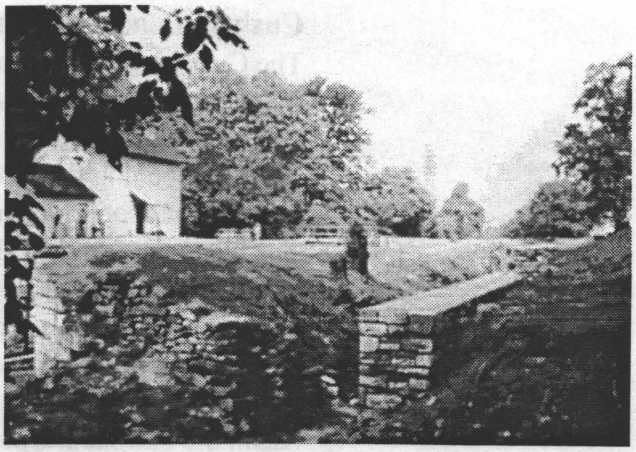


Figure 85, above left. Lockkeeper's House, carpenter's shop, lock, and flume, circa 1919 (C&O Canal National Historical Park Photo Library)
Figure 86, above right. Lockkeeper's House, lock, and flume, August 1993 (Land and Community Associates)

3.5 LANDSCAPE CHARACTER AREAS

After analysis of existing historical and contemporary site information, including maps, photographs and texts, five landscape character areas have been identified within the Williamsport study area. Each of the landscape character areas represents a discrete section of the canal that may be defined by a combination of physical landscape characteristics, the type and concentration of historic features and elements present, and the contemporary land uses of adjacent areas as they influence and have been influenced by circulation, views, and operational activities. The five landscape character areas, from north to south along the canal prism, are the Holding Basin, the Cushwa Loading Basin, the Canal-North Section, Lock 44, and the Canal-South Section, see *Landscape Character Areas Map*, Figure 87. Each area is described below.

Holding Basin

The Holding Basin area is comprised of the canal prism and towpath north of the Conococheague Creek Aqueduct, including its stone wing walls, remnant grades from a filled holding basin east of the canal prism, a remnant farm site currently undergoing vegetational succession, and a road that crosses the site and leads to the Potomac River. The canal north of the aqueduct currently contains substantial vegetative growth in the form of hydric trees and shrubs. Additionally, stones from the eastern wall of the aqueduct that collapsed in 1920 were rescued from the Conococheague Creek in the mid-1980s and are currently stored in the prism here. This landscape character area is bounded by the earth causeway and gravel road leading to Fenton Avenue near the Garden State Tanning operation and its residential development to the north; the Potomac River to the west; the remnant holding basin to the east; and the Conococheague Creek and the aqueduct to the south.

Cushwa Loading Basin

The Cushwa Loading Basin area contains many extant historic features and remnants related to historic canal operations. Most surviving landscape elements in this area are sited in direct proximity to the basin. Historically, the Cushwa Loading Basin area was a hub of activity where several transportation systems interconnected and served local industrial structures and warehouses. The loading basin served as a loading and unloading facility as well as a point where canal boats could line up to cross the aqueduct or turn back towards Georgetown. The Western Maryland Railroad maintained a spur line alongside the canal to carry goods and materials to and from the mills and loading areas. Structures such as the Cushwa Warehouse were built alongside the basin; the railroad tracks served both systems.

This area is bounded by the Conococheague Creek and aqueduct to the north; the Power Generation Station and the end of Potomac Street to the east; chain link fencing surrounding the Town of Williamsport maintenance yard along the southern margin of the Cushwa loading basin to the south; and the River Bottom Park to the west.

Canal—North Section

The Canal-North Section landscape character area is a relatively homogeneous section of the canal bounded by the hillside of the Riverview Cemetery to the east; the chain link fence of the Town of Williamsport maintenance yard to the north; the Potomac Edison Company power plant to the west; and the earthen causeway at Canal Street to the south. The towpath and canal prism in this landscape character area are in relatively good condition. Thick stands of vegetation screen views of adjacent areas and serve to focus attention on the linear canal. Transportation features dominate this landscape character area which includes the Bollman Bridge, Railroad Lift Bridge, and Route 11/ Washington-Berkeley Bridge.

Lock 44

The Lock 44 landscape character area, like the Cushwa Loading Basin area, is a collection of different structures and systems that historically formed a node of commercial and industrial activity. While many of the industrial and warehouse structures and buildings that existed within this area, as well as the Warfield basin, have been lost over time, extant features from the period of significance include Lock 44, the remnants of a water flume, the Lockkeeper's House, and a creosote vat. The Lock 44 landscape character area also includes the confluence of a creek and the canal, edged with a stone retaining wall, a relatively new metal building, and two earthen causeways that allow for canal crossing. The boundaries of this landscape character area include the earthen causeway at Canal Avenue to the north; a residential area and successional woodland area to the east; the end of the water flume to the south; and the Potomac Edison Company power plant and the related wastewater treatment facility to the west.

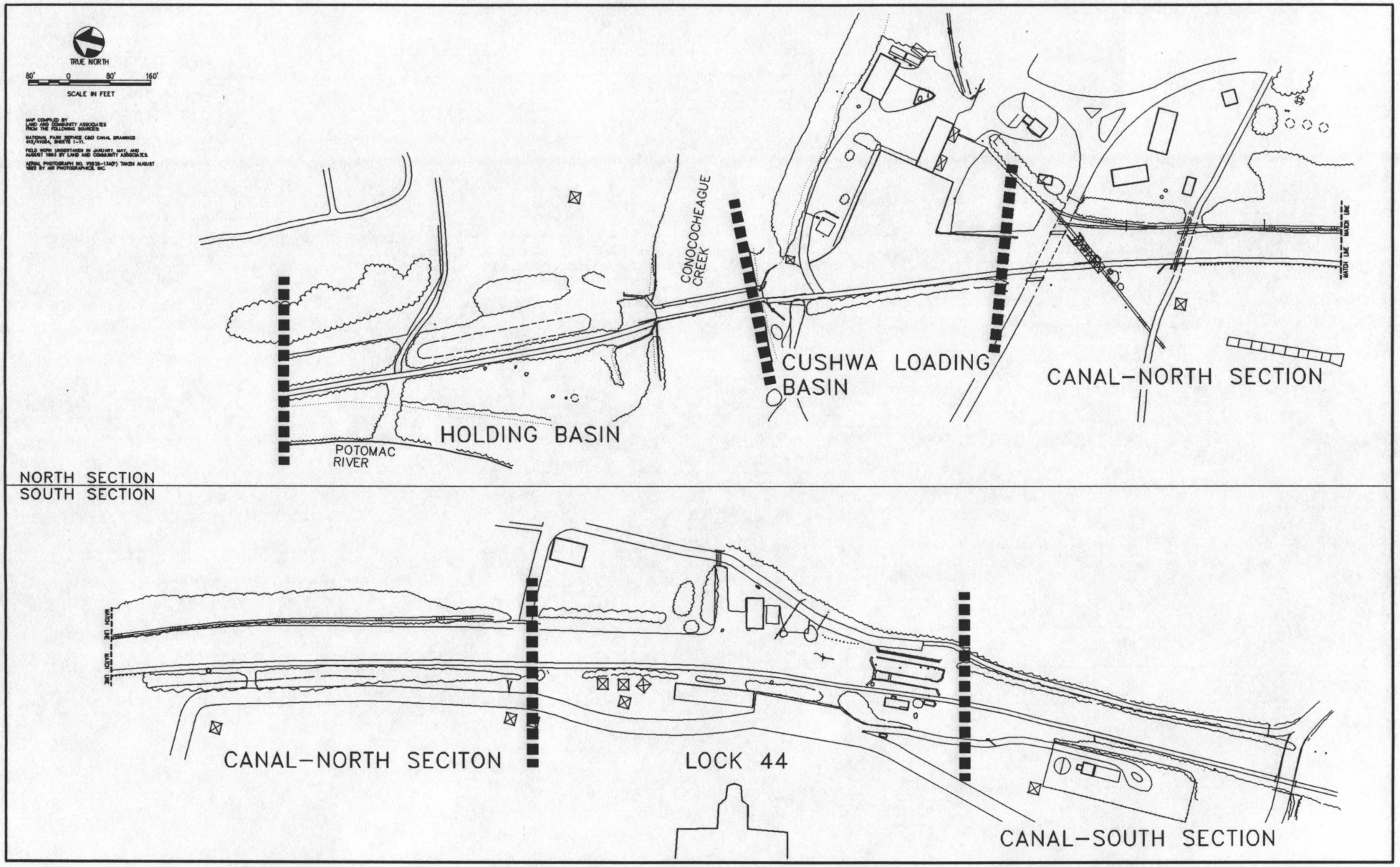


Figure 87. Landscape Character Areas

Canal—South Section

The Canal-South Section landscape character area, like the Canal-North Section, is a relatively enclosed area with thick stands of vegetation along the margins of the canal and towpath. There are few structures or features in this landscape character area. Adjacent elements and features that bound the Canal-South Section landscape character area include the end of the water flume to the north; the wooded hillside to the east; the new Potomac Edison access roadway across the canal to the south; and the wastewater treatment facility to the west.

3.6 CONDITION AND INTEGRITY ASSESSMENT OF CULTURAL LANDSCAPE FEATURES

The Williamsport C&O Canal segment and its related structures retain much of the general character and feeling from the period of significance, 1828-1924. Many of the physical characteristics that reflect development and use of the site still exist. The lush feeling evoked by contemporary stands of vegetation, however, does not represent the true character of the landscape during its significant period as a commercial and industrial landscape. It should be noted, also, that change is not altogether undesirable, as the cultural landscape along the canal has undergone dynamic changes throughout time.

Most actions that have diminished the integrity of the site are a result of losses or alterations of historic buildings and structures; natural succession of the vegetation that has obscured historic views; and the abandonment of historic uses, such as the canal itself and several warehousing businesses. A management philosophy and approach that encourages integrity enhancement of individual cultural landscape characteristics and features is outlined in Chapter Four of this report.

Extant cultural landscape components are discussed topically below in terms of integrity and condition. (For non-extant resources along the canal, refer to an earlier discussion of Missing Features and the *Missing Features Map*, Figure 65, in this section of the report.) Condition has been assessed based on a visual examination of the site. Structural engineers, architects, horticulturists and other professionals were not part of the CLR team and exhaustive condition assessments of structural and horticultural materials have not been undertaken. Integrity has been evaluated by comparing the current and historic appearance and composition of each feature in relation to the qualities of integrity as per the National Register of Historic Places process. These qualities of integrity include:[5]

Location—the place where the significant activities that shaped a property took place.

Design—the composition of natural and cultural elements, comprising the form, plan, and spatial organization of a property.

Setting—the physical environment within and surrounding a property.

Materials—the construction materials of buildings, outbuildings, roadways, fences, and other structures of cultural landscapes.

Workmanship—exhibited in the ways people have fashioned their environment for functional and decorative purposes.

Feeling—although intangible, is evoked by the presence of physical characteristics that reflect the historic scene.

Association—the direct link between a property and the important events or persons that shaped it.

A characteristic is considered to possess integrity if it can be shown that the various qualities and conditions cited above that shaped the land during the historic period are present today in much the same way that they were historically. Where appropriate, the reversibility of the current condition is discussed. Refer to Figure 87, *Landscape Character Areas Map* and Figure 65, *Missing Features Map* for more information regarding the topical components discussed below.

Holding Basin (Milepost 99.85 - 99.8)
The extant features in the Holding Basin area consist of the aqueduct and its wing walls, the canal prism and towpath, and the remnant grades of the holding basin.

The Conococheague Aqueduct was damaged severely during floods in 1924 and 1936. Since the loss of the east parapet wall, the aqueduct no longer holds water. The exposure of the structural elements beneath the broken east parapet wall has allowed natural elements to penetrate the structure and promoted decay and deterioration. The remainder of the structure, however, appears to be in fair condition. The wing walls have been repointed recently by NPS. A metal tube handrail, added for safety on the western side of the structure, is in good condition. Remnants of the former metal handrail are still visible but are in poor condition The aqueduct retains integrity of location, setting, and association. Its structural losses have contributed to a loss of some integrity of design, materials, workmanship, and feeling.

The canal prism location appears to be in fair condition. The prism itself, however, is in poor condition; large stands of trees and shrubs currently grow through the base of the canal prism. Some standing water is visible in this portion of the canal, but it is unlikely that the canal is still water-tight after being breached by numerous tree roots. The towpath generally is in good condition aside from minor vegetation patches and the beginning of ruts where cyclists and automobiles have used the path fairly regularly. A gravel road has been constructed across the canal prism at the northern end of the site for access from Fenton Avenue to the river's edge. This road has had a major

Figure 88. Conococheague Aqueduct

visual and functional impact on the canal. The canal prism and towpath retain integrity of location and association. Although some aspects of integrity of design, setting, and feeling are present, the presence of intrusive vegetation and vehicular damage to the towpath have diminished integrity significantly. Integrity of material and workmanship are absent.

The holding basin north of the Conococheague Creek Aqueduct is in poor condition because of vegetative growth within the basin, alteration of the original basin grades as a result of filling, erection of transmission towers, and the loss of the view to the basin from the towpath because of vegetative growth. However, some of these changes are reversible; in particular, historic grades could be reestablished.

The holding basin retains integrity of location, materials, workmanship, and association. It retains some aspects of integrity of design, although disturbance of the grades has diminished this aspect of integrity significantly. The setting and feeling of the holding basin differ from the period of significance owing to the presence of vegetation in the prism and basin

Figure 89, right. Holding basin north of Conococheague Aqueduct

Figure 90, far right. Road crossing holding basin leading to Fenton Avenue

and the loss of industrial buildings and structures. The Holding Basin area, overall, appears to retain some aspects of integrity.

Figure 91. Towpath at holding basin

Cushwa Loading Basin (Milepost 99.8-99.7)
The extant features in the Cushwa Loading Basin area consist of the basin, the canal prism and towpath, the Cushwa Warehouse, the Power Generation Station, and the Western Maryland Railroad tracks.

NPS currently is reconstructing the Cushwa loading basin at the end of Potomac Street. Dredging operations, rebuilding of walls with original materials and new masonry constitute the majority of the reconstruction effort. Non-historic construction materials such as stone-faced concrete walls and repointing techniques have diminished the integrity of material and workmanship. Portions of an older brick wall in the Cushwa loading basin area may retain integrity of materials, workmanship, design, and location. A specific record of previous treatment is not available to determine the extent of replacement and reconstruction operations. It is also not possible to assess fully the condition and integrity of the structure at this time.

The canal prism and towpath appear to be in fair condition with minimal invasive vegetative growth. Without archeological investigations, however, their original configurations are uncertain. The canal prism and towpath retain integrity of location, design, setting, feeling, and association.

The Cushwa Warehouse has been rehabilitated for use by NPS. The condition of both portions of the warehouse is good. Interior rehabilitation has occurred primarily through division of space via sheetrock walls. The warehouse possesses all aspects of integrity on the exterior.

Figure 92. Cushwa loading basin under construction showing Cushwa Warehouse

NPS currently uses the Power Generation Station as a training center for artisans and craftsmen. The structure, which is in good condition, possesses all aspects of integrity.

The Western Maryland Railroad tracks located in this section are only fragments of the original rails. Although their condition varies from fair to poor (they have not been in use since the 1940s), they possess interpretive value. They retain integrity of setting, feeling, and association. The tracks possess some integrity of location, design, materials, and workmanship although these aspects of integrity are diminished by the loss of some sections of track.

The Cushwa Loading Basin area retains considerable integrity.

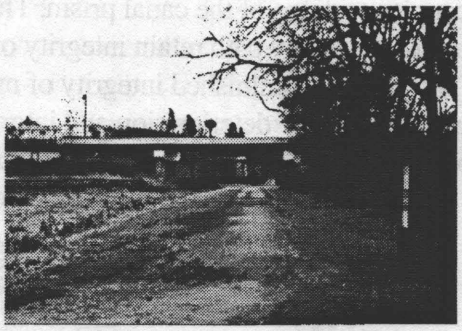


Figure 93, right. Canal prism and towpath at Cushwa loading basin showing Washington-Berkeley Bridge

Figure 94, far right. Power Generation Station beyond Cushwa loading basin

Canal—North Section (Milepost 99.70 - 99.43)
The extant features in the Canal-North Section consist of the canal prism and towpath, the Washington-Berkeley Bridge, Bollman Bridge, Railroad Lift Bridge and Control Station, remnant stone canal walls, and the Western Maryland Railroad tracks.

Figure 95, right. Canal—North section showing railroad tracks and arborvitae hedge

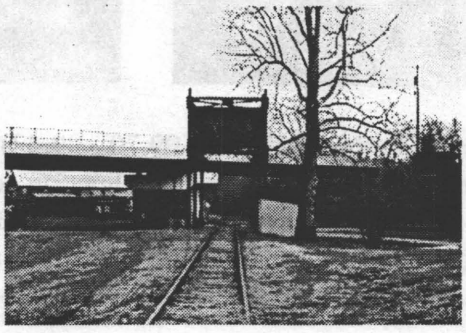
Figure 96, far right. Canal—North section showing Riverview Cemetery and railroad tracks

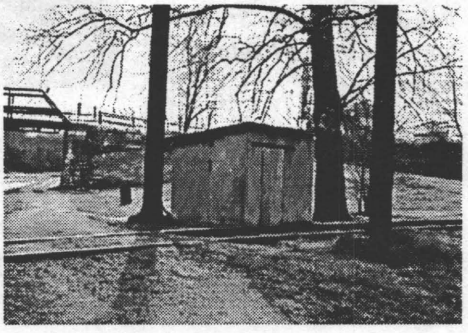
Figure 97. Washington-Berkeley Bridge, Railroad Lift Bridge, and Bollman Bridge

The canal, which is watered naturally by springs and drainage, was partially filled with water in 1993, and appears to be in good condition. Herbaceous vegetation occupies sections of the canal prism. The towpath is in fair condition. The canal prism and towpath retain integrity of location, design, and association. They possess diminished integrity of materials, workmanship, setting, and feeling owing to deterioration and intervention; the Potomac Edison Company arborvitae hedge screens views that were an integral aspect of the setting and feeling of the period of significance.

Figure 98, right. Railroad Lift Bridge with Western Maryland Railroad tracks

Figure 99, far right. Control station





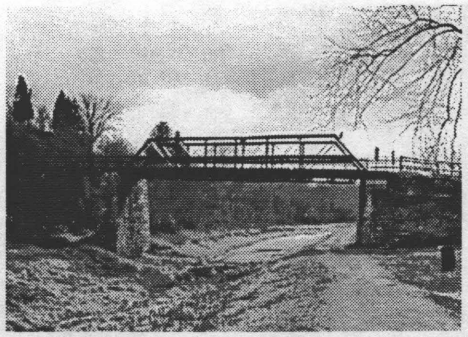


Figure 100, right.
Bollman Bridge

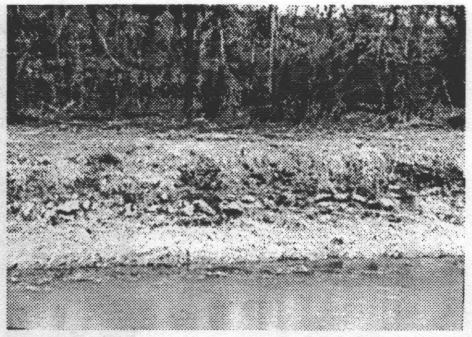


Figure 101, far right.
Canal wall remnants

The Washington-Berkeley Bridge retains its original use. Although it underwent a structural overhaul by the Maryland Department of Transportation between 1984-1986, the improvements did not threaten the integrity of the structure. The abutments, which are the most visually prominent in the study area, appear to be in good condition. The bridge retains all aspects of integrity aside from the graffiti on the concrete abutments.

Although both the Railroad Lift Bridge and the Control Station exhibit signs of decay, they contribute to the character of the transportation/ industrial corridor. The structural condition of these features is not known. They retain all aspects of integrity.

The Bollman Bridge, which has had its floor replaced and structural props installed for stabilization, exhibits some signs of rusting. Its structural condition is not known; the bridge remains in use and retains all aspects of integrity.

Remnants of the original stone canal walls survive and are in fair condition; some sections of the wall are highly deteriorated while only mortar is missing in other places. The presence of the stone canal walls contributes to the integrity of the canal prism since the majority of other areas do not possess wall remnants. The stone canal walls retain integrity of location, setting, and association; they also retain some integrity of design, material, workmanship, and feeling.

Western Maryland Railroad tracks, similar to those in the Cushwa Loading Basin area, contribute to integrity of association as a transportation corridor. Rusting portions of track and heavy growth of vegetation between the tracks are an expected result of non-use. They retain all aspects of integrity.

Lock 44 (Milepost 99.43 - 99.20)
The extant features in the Lock 44 area consist of the lock, the flume, the Lockkeeper's House, the creosote vat, and the canal prism and towpath.

The individual stones of the lock walls are in excellent condition with little vegetation growth between the stones. They appear to possess integrity of design, material, and workmanship, although this evaluation has been made without benefit of the treatment record. The walls, slated for reconstruction by

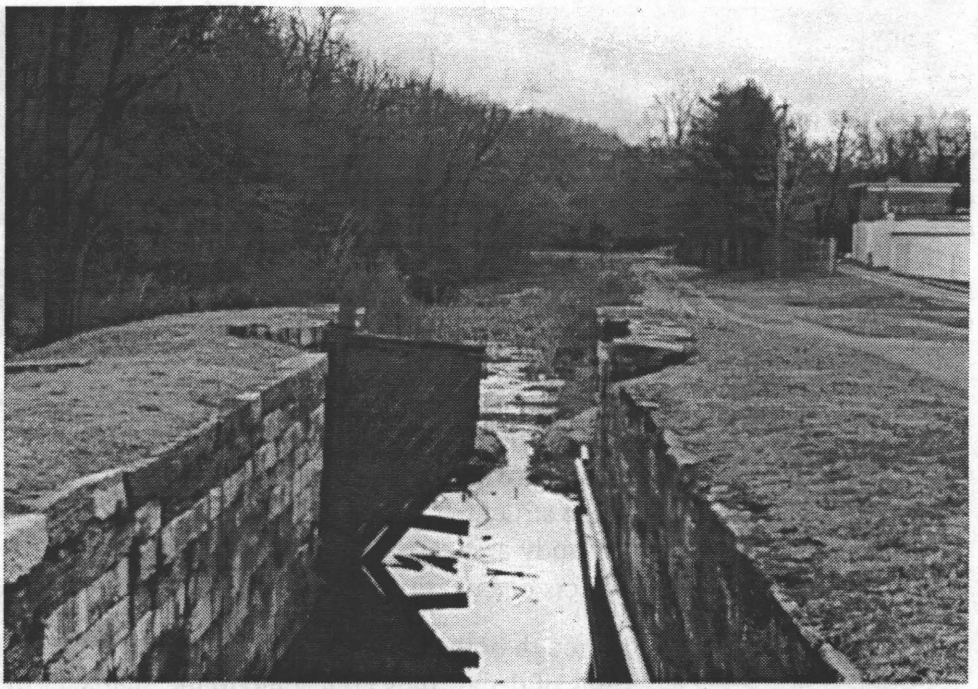


Figure 102. Lock walls and lock gate (lock gate recently removed)

NPS in their entirety, retain integrity of location, setting, feeling, and association. Non-historic reconstruction techniques and materials used in the reconstruction of Lock 44 would adversely affect integrity.

NPS recently reconstructed the eastern wall of the flume. The flume possesses integrity of location and setting; other aspects of integrity are absent or have been diminished as a result of the reconstruction. A creosote vat that was used to treat wooden construction materials is located across the flume. It appears to be in good condition, and retains all aspects of integrity.

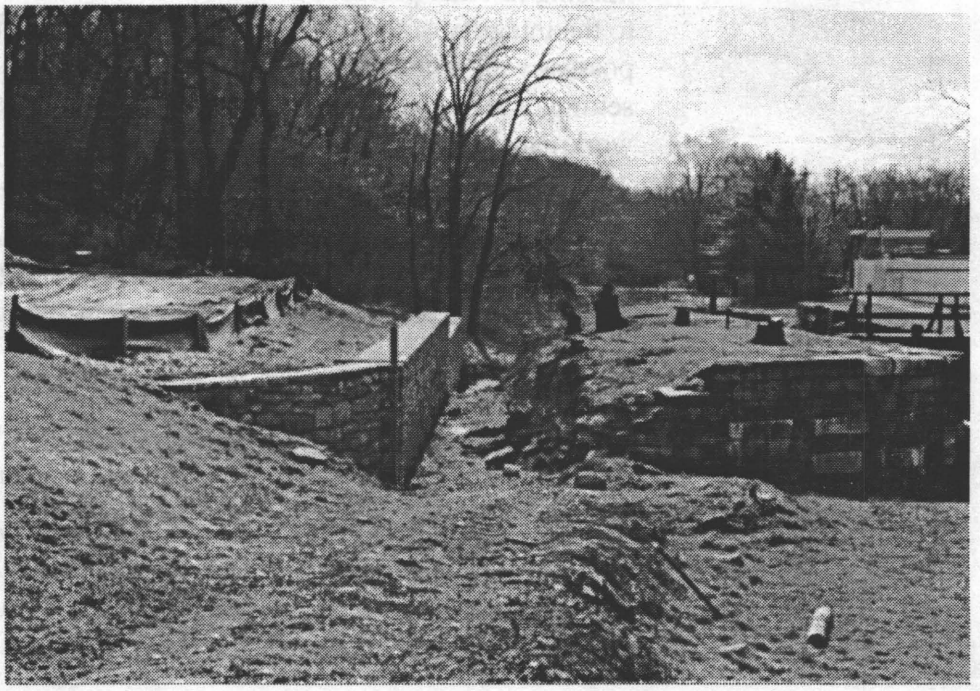


Figure 103. Flume outline

Figure 104. Lockkeeper's House and shed

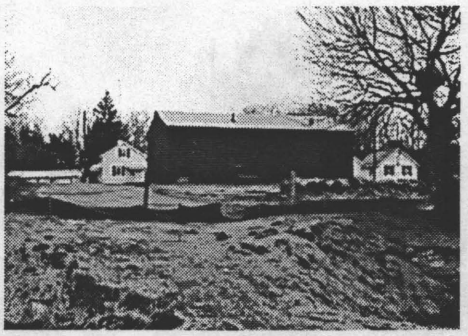


Figure 105, right. Former truck access to Potomac Edison Company power plant

Figure 106, far right. Sluice gate in earthen causeway north of Lock 44

The Lockkeeper's House is in good condition. Portions of the Lockkeeper's House were stabilized in 1981 by the Preservation Training Center and the maintenance personnel of the C&O Canal. The windows have been boarded shut; limited access is allowed, via a keylock. The interior appears in fair condition although some stabilization may be necessary. The Lockkeeper's House appears to retain all aspects of integrity.

Two earthen causeways cross the canal prism and towpath in this area. One was the former access road to the Potomac Edison Company power plant, and the other contains a sluice gate for water control. Both have had a negative functional and visual impact on this portion of the canal. They retain integrity of location but other aspects of integrity have been diminished by road construction.

Canal—South Section (Milepost 99.2-98.90)
The extant features in the south canal section consist of the canal prism and towpath, and the quarry road; the quarry road postdates the period of significance and has not been evaluated for integrity.

The canal prism and towpath in this area contain more wetland vegetation than other areas of the canal since they are not used heavily, and water from the adjacent creek empties into the canal here. The access road constructed for the Potomac Edison power plant in 1986 disrupts canal flow; the new road also disrupts the functional and visual continuity of the canal prism. The wastewater treatment facility constructed adjacent to the towpath and the Potomac Edison Company power plant diminishes the integrity of the canal corridor. The industrial character of its function, however, maintains the feeling of the canal corridor. The canal prism and towpath retain all aspects of integrity to the point where the access road crosses the canal; integrity is not present for the section between the access road and the study boundary edge.

Figure 107. Canal and towpath of south canal section

Summary
The condition of the historic features identified in the Williamsport C&O Canal segment ranges from good to poor. Although deterioration, neglect, and alterations have affected some aspects of integrity, the segment retains considerable integrity overall as a significant historic resource related to the transportation, industrial, and commercial history of the United States.

Threats to Integrity

There are numerous and varied threats to integrity—both current and potential—that derive from natural forces, neglect, or human intervention. Threats to integrity include both identified specific threats as well as potential threats to characteristics and features of the cultural landscape.

Because the entire study area lies within a Special Flood Hazard Area as shown in the most recent available mapping, *Flood Hazard Boundary Map/Flood Insurance Rate Map H & I, 01-05, 1977, Town of Williamsport*, the potential for catastrophic flooding threatens the canal basin as it has historically. In fact, past flooding often has resulted in serious damage to sections of the canal. All elements, features and systems within the study area are susceptible to this threat.

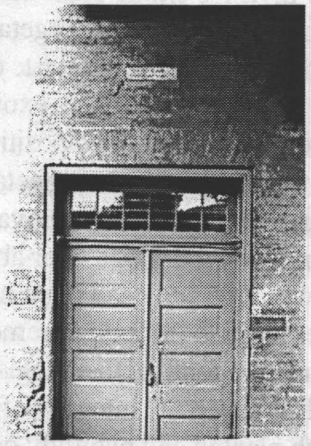


Figure 108, right. Four high water mark tablets on the Cushwa Warehouse

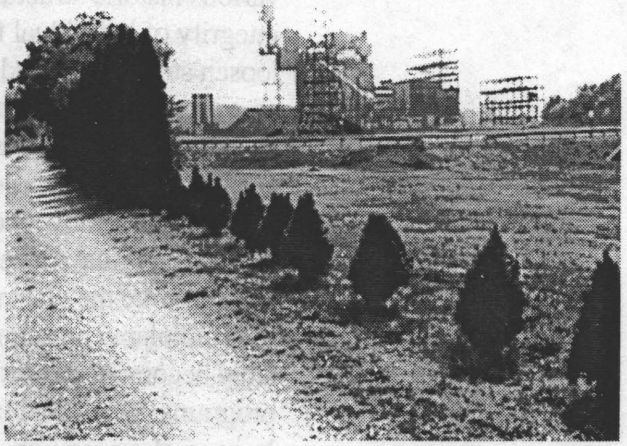


Figure 109, far right. Recent planting of arborvitae hedge by Potomac Edison Company power plant

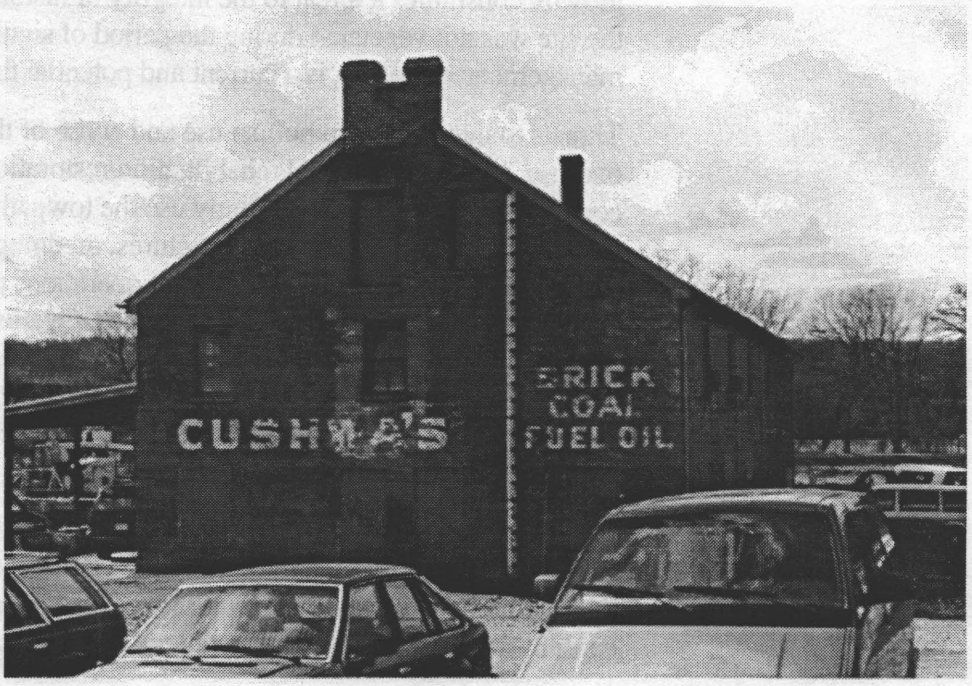


Figure 110. Integrity threatening parking adjacent to historic structures

Figure 111, right. Canal prism desilting

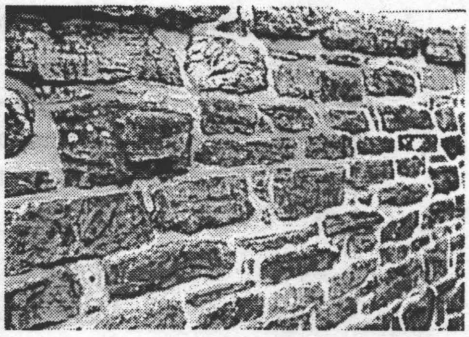


Figure 112, far right. Aqueduct wing wall repointing using non-historic materials and techniques

In many locations within the study area, individual plants as well as entire plant communities currently threaten the historic fabric of the study area. The potential for tree limbs or trunks to fall onto historic resources threatens various historic structures. Invasive exotic plant materials also threaten the integrity of individual features. For instance, vegetation has the potential to loosen stone work, and root structures may insinuate themselves into vulnerable areas where removal may be difficult. Invasive exotic plants currently interfere with historic viewsheds. The current composition of the vegetation on the site does appear to reflect the composition of vegetation during the period of significance. Native wetland species as well as invasive exotic water plants are a potential threat to the canal prism through their ability to colonize the prism, and to choke the channel with live and dead plant material. Once established, wetland plant communities are also difficult to remove, because they immediately become protected under Federal wetland legislation. In addition, planting programs of adjacent lands threaten the integrity of historic views and settings. In general, vegetation, both planted and naturally occurring successional growth, constitutes a threat to the integrity of historic viewsheds since most of the site was not vegetated during the period of significance. Lack of vegetative management, therefore, is a current and potential threat to integrity.

Threats to integrity from human use and abuse of the site include vandalism, overuse, and possibly canal rehabilitation/restoration efforts. The presence of construction vehicles that currently use the towpaths to travel between work sites and that park near historic structures, dredging operations at the loading basins, and non-historic reconstruction operations pose threats to the integrity of the site and individual historic resources. Overuse and inappropriate recreational and other uses of the site potentially threaten integrity through soil and slope erosion, damage to and loss of important vegetation through physical damage and soil compaction, and physical damage to features. Vandalism also threatens the site with damage and defacement.

Other potential threats to the historical integrity of the study area include the construction and installation of inappropriate structures, site elements, circulation, lighting, or vegetation, further loss of historical resources, significant earth moving operations, and the alteration of significant historical views.

3.7 CULTURAL LANDSCAPE INVENTORY OF MISSING AND SURVIVING FEATURES

Introduction

The following list of existing cultural landscape features along the Williamsport segment of the C&O Canal was compiled based on a site survey conducted in August 1993. The elements are organized into the five landscape character areas. Within the landscape character areas, characteristics and elements are organized according to the following three categories:

- known buildings, structures, and landscape features extant during the period of significance
- buildings, structures, and landscape features that survive from the period of significance
- buildings, structures, and landscape features that post-date the period of significance

Features are organized according to the guidance offered by *National Register Bulletin 30.*

HOLDING BASIN

KNOWN BUILDINGS, STRUCTURES, AND LANDSCAPE FEATURES EXTANT DURING THE PERIOD OF SIGNIFICANCE

Buildings and Structures
- Conococheague Aqueduct (stone and wood parapet wall)
- Culbertson Mill/DeFrehn Chair Factory
- building on west side of canal, north of aqueduct, set back from canal
- building on west side of canal, north of aqueduct, adjacent to canal
- outbuildings west of canal, north of aqueduct, adjacent to canal
- outbuildings east of canal, north of aqueduct, adjacent to holding basin
- metal transmission towers

Circulation Systems
- canal prism and towpath

Topographic Modifications
- canal prism
- holding basin (natural or man-made)

Vegetation
- clump of trees/individual tree at northwest and northeast corners of aqueduct
- individual trees and hedgerow along fenceline north of aqueduct; fenceline parallel to Conococheague Creek

- individual trees and hedges along fenceline surrounding field on west side of canal, north of aqueduct
- field on west side of canal, north of aqueduct
- low hedge along east side of canal

Small-scale Features
- utility poles
- wood post and rail fencing
- wood post and metal fencing
- electric poles and wires on wood parapet of aqueduct
- wood rail on aqueduct (towpath side)
- metal rail on aqueduct (towpath side)

Views and Viewsheds
- from aqueduct looking north along canal, view to open fields, farmland

Natural Systems and Features
- the banks of Conococheague Creek

Land Use
- industrial: factory/mill works northeast of aqueduct
- agricultural: farm/cropland northwest of aqueduct

BUILDINGS, STRUCTURES, AND LANDSCAPE FEATURES THAT SURVIVE FROM THE PERIOD OF SIGNIFICANCE

Buildings and Structures
- house foundation west of canal, north of aqueduct, set back from canal
- Conococheague Aqueduct
- metal transmission towers

Circulation Systems
- canal prism and towpath

Topographic Modifications
- canal prism

Vegetation
- clump of trees at northwest corner of aqueduct (original trees do not survive; existing trees are younger successional trees)

Small-scale Features
- aqueduct stones in canal prism

Views and Viewsheds
- none identified

Natural Systems and Features
- banks of Conococheague Creek

Land Use
- industrial: Garden State Tanning, W. D. Byron Plant adjacent to canal prism (set back)

BUILDINGS, STRUCTURES, AND LANDSCAPE FEATURES THAT POST-DATE THE PERIOD OF SIGNIFICANCE

Buildings and Structures
- none identified

Circulation Systems
- Fenton Avenue access road to Potomac River
- miscellaneous earthen paths throughout the area

Topographic Modifications
- none identified

Vegetation
- successional vegetation in the canal prism, along the towpath to the Potomac River on the west, and along the canal prism on the east. Vegetation encloses the canal and creates a significantly different feeling from that experienced during the period of significance

Small-scale Features
- chain link fencing around waste ponds
- utility poles along Fenton Avenue

Views and Viewsheds
- from aqueduct looking north along canal, view up towpath along heavily forested edges

Natural Systems and Features
- none identified

Land Use
- recreational: linear towpath in successional vegetation zone

CUSHWA LOADING BASIN

KNOWN BUILDINGS, STRUCTURES, AND LANDSCAPE FEATURES EXTANT DURING THE PERIOD OF SIGNIFICANCE

Buildings and Structures

- Cushwa Warehouse (original section and later addition)
- Cushwa Cement and Phosphate Warehouse
- Embrey Wharf
- Stake Warehouse
- steamloader
- Power Generation Station
- Cushwa and Embrey Grist, Plaster and Sawmill
- Miller Brothers Lumber Mill
- Miller Brothers ice house
- Slaughterhouse
- Obits' Shed
- Cushwa loading basin
- gas station
- stone canal walls
- brick canal walls
- metal power transmission towers

Circulation Systems

- numerous Western Maryland Railroad tracks along the eastern edge of the canal for loading/unloading, and leading to buildings
- Potomac Street leading into Cushwa loading basin area
- open space around Cushwa loading basin

Topographic Modifications

- Cushwa loading basin
- cut and level grades along hillside for Western Maryland Railroad tracks
- cut and level grades along Cushwa loading basin for construction of warehouses and use as stockpile sites

Vegetation

- a few individual trees along towpath
- vegetation along Conococheague Creek
- individual trees southeast of Cushwa Warehouse along hillside between residences and warehouse area
- individual tree and grassy vegetation along hillside southeast of stockpile area

Small-scale Features

- steamloader
- utility poles

- wooden booms for loading canal boats
- Western Maryland Railroad tracks
- poles carrying electrical wires
- original signage on Cushwa Warehouse
- turbine intake for sawmill

Views and Viewsheds
- view from Cushwa loading basin to Potomac River
- view to aqueduct and Washington-Berkeley Bridge

Natural Systems and Features
- Conococheague Creek to the north

Land Use
- industrial: Cushwa loading basin
- agricultural: between canal and Potomac River

BUILDINGS, STRUCTURES, AND LANDSCAPE FEATURES THAT SURVIVE FROM THE PERIOD OF SIGNIFICANCE

Buildings and Structures
- Cushwa Warehouse (original section and later addition)
- Power Generation Station
- concrete base of slaughterhouse and remnant concrete foundation wall
- gas station
- stone canal walls
- brick canal walls
- metal power transmission towers

Circulation Systems
- Western Maryland Railroad tracks
- Potomac Street leading into Cushwa loading basin area
- open space around Cushwa loading basin

Topographic Modifications
- Cushwa loading basin (adjustments during reconstruction of walls)
- cut and level grades for Western Maryland Railroad tracks
- cut and level grades for stockpile area (now used as Williamsport maintenance yard)

Vegetation
- vegetation along Conococheague Creek

Small-scale Features
- Western Maryland Railroad tracks

Views and Viewsheds
- view from Cushwa loading basin to Potomac River (thick vegetation currently obstructs the view)
- view to aqueduct and Washington-Berkeley Bridge (thick vegetation and Williamsport maintenance yard fence currently obstruct the view)

Natural Systems and Features
- Conococheague Creek to the north

Land Use
- storage: stockpile areas used as Williamsport maintenance yard
- recreational: linear towpath
- interpretation: industrial heritage displays in existing buildings

BUILDINGS, STRUCTURES, AND LANDSCAPE FEATURES THAT POST-DATE THE PERIOD OF SIGNIFICANCE

Buildings and Structures
- temporary trailers adjacent to Power Generation Station

Circulation Systems
- earthen causeways across canal
- parking on former mill sites adjacent to Cushwa loading basin and between buildings
- tractor-trailer access between buildings and on former mill sites

Topographic Modifications
- earthen causeways across canal
- gabion filled area for water intake/culvert to Conococheague Creek

Vegetation
- individual trees in parking area between Cushwa loading basin and warehouses
- trees in front of Power Generation Station
- planting bed around signs at Williamsport Preservation Training Center

Small-scale Features
- Williamsport Preservation Training Center signs
- Town of Williamsport maintenance yard chain link fence
- concrete post and wood barrier
- trash dumpster
- trash receptacle
- interpretive signs
- repainted Cushwa Warehouse sign
- utility poles
- metal pole and cable barrier

- chain link fencing around Cushwa loading basin
- wood railroad tie wheel stops

Views and Viewsheds
- none identified

Natural Systems and Features
- none identified

Land Use
- industrial: maintenance yard used by Town of Williamsport
- recreational: River Bottom Park

CANAL—NORTH SECTION

KNOWN BUILDINGS, STRUCTURES, AND LANDSCAPE FEATURES EXTANT DURING THE PERIOD OF SIGNIFICANCE

Buildings and Structures
- Railroad Lift Bridge and Control Station
- Bollman Bridge
- Washington-Berkeley Bridge
- house on southwest corner of Bollman Bridge
- Potomac Edison Company power plant
- stone canal walls
- metal power transmission towers

Circulation Systems
- canal prism and towpath
- Western Maryland Railroad tracks along east edge of canal and across Railroad Lift Bridge
- U.S. Route 11 across the Washington-Berkeley Bridge
- West Salisbury Street across the Bollman Bridge to River Bottom Park

Topographic Modifications
- canal prism and towpath
- deep cut through hillside for Bollman Bridge and previous bridges on same site
- cut through hillside for Washington-Berkeley Bridge
- cut and level grade for railroad tracks east of canal

Vegetation
- individual trees southwest of Bollman Bridge adjacent to house site
- scattered individual trees and grassy vegetation on cemetery hillside
- individual trees along towpath, little to no understory

- grassy, scrubby vegetation along both edges of canal
- minimal hedging along fencing

Small-scale Features
- wood post and rail fencing
- billboards on hillside between Washington-Berkeley Bridge and Bollman Bridge
- stone abutments for Bollman Bridge
- concrete abutments for Washington-Berkeley Bridge
- Western Maryland Railroad tracks
- poles for electric lines running east of canal
- utility poles along west edge of towpath
- metal clearance fixture over Western Maryland Railroad tracks on both sides of Bollman Bridge

Views and Viewsheds
- from Bollman Bridge along canal in north and south directions
- from cemetery along canal in either direction and to Potomac River
- from towpath along canal in either direction

Natural Systems and Features
- hillside east of canal

Land Use
- cemetery: Riverview Cemetery east of canal on hillside
- agricultural: farmland between canal and Potomac River
- recreational: horse racing on land between canal and Potomac River
- industrial: along railroad tracks
- storage: coal pile east of railroad tracks

BUILDINGS, STRUCTURES, AND LANDSCAPE FEATURES THAT SURVIVE FROM THE PERIOD OF SIGNIFICANCE

Buildings and Structures
- Railroad Lift Bridge and Control Station
- Bollman Bridge
- Washington-Berkeley Bridge
- Potomac Edison Company power plant
- stone canal wall remnants
- metal power transmission towers

Circulation Systems
- canal prism and towpath
- Western Maryland Railroad tracks along east edge of canal and across Railroad Lift Bridge

- U.S. Route 11 across the Washington-Berkeley Bridge
- West Salisbury Street across the Bollman Bridge

Topographic Modifications
- canal prism and towpath
- deep cut through hillside for Bollman Bridge and previous bridges on same site
- cut through hillside for Washington-Berkeley Bridge
- cut level area for railroad tracks east of canal

Vegetation
- individual trees along towpath

Small-scale Features
- railroad track switching device
- stone abutments for Bollman Bridge
- concrete abutments for Washington-Berkeley Bridge
- Western Maryland Railroad tracks (remnants)
- metal clearance fixture over Western Maryland Railroad tracks on both sides of Bollman Bridge

Views and Viewsheds
- from Bollman Bridge along canal
- from towpath along canal in either direction

Natural Systems and Features
- hillside east of canal

Land Use
- cemetery: Riverview Cemetery east of canal on hillside
- industrial: Potomac Edison Company power plant on land between canal and Potomac River
- recreational: River Bottom Park

BUILDINGS, STRUCTURES, AND LANDSCAPE FEATURES THAT POST-DATE THE PERIOD OF SIGNIFICANCE

Buildings and Structures
- none identified

Circulation Systems
- former access road to Potomac Edison Company power plant adjacent to canal
- earthen causeways across canal

Topographic Modifications
- earthen causeways across canal

Vegetation
- tree massings and thick understory plantings on cemetery hillside
- thick understory plantings along towpath
- tree massings and thick understory plantings in portions of former farmland areas
- arborvitae hedge alongside Potomac Edison Company power plant

Small-scale Features
- wood bollard near Railroad Lift Bridge Control Station
- concrete conduit
- concrete meter pit with metal cap

Views and Viewsheds
- none identified

Natural Systems and Features
- none identified

Land Use
- recreational: River Bottom Park

LOCK 44

KNOWN BUILDINGS, STRUCTURES, AND LANDSCAPE FEATURES EXTANT DURING THE PERIOD OF SIGNIFICANCE

Buildings and Structures
- Lockkeeper's House
- Numerous outbuildings adjacent to Lockkeeper's House
- Hay Press/carpenter's shop and creosote vat
- outbuilding adjacent to Hay Press/carpenter's shop and creosote vat
- Gruber Mill
- Shoop and LeFevre Mill
- Darby Mill
- Steffey and Findlay Mill
- numerous outbuildings in Steffey and Findlay Mill complex
- Lock 44
- flume
- stone canal walls at mill sites
- metal power transmission towers

Circulation Systems
- canal prism and towpath
- Lock 44
- flume
- Canal Street and Main Street leading into mill complex area

- Warfield basin northeast of flume
- pivot bridge

Topographic Modifications
- canal prism and towpath
- Warfield basin northeast of Lock 44
- Lock 44
- flume

Vegetation
- two individual mature trees in front of Lockkeeper's House
- individual trees with little understory plantings along towpath
- two mature trees, one on either side of the carpenter's shop
- ornamental plantings around Lockkeeper's House

Small-scale Features
- picket fence surrounding Lockkeeper's House
- Western Maryland Railroad tracks
- wooden booms for loading canal boats
- wooden lock gates
- wood bollards around Lock 44
- iron joinery at lock gates

Views and Viewsheds
- none identified

Natural Systems and Features
- none identified

Land Use
- industrial: mills, railroad, stockpile coal on east side of canal
- residential: Lockkeeper's House and houses adjacent to mills
- agricultural: farmland on land between Lockkeeper's House and Potomac River
- industrial: on land between Lockkeeper's House and Potomac River

BUILDINGS, STRUCTURES, AND LANDSCAPE FEATURES THAT SURVIVE FROM PERIOD OF SIGNIFICANCE

Buildings and Structures
- Lockkeeper's House
- Lock 44
- flume
- metal power transmission towers
- stone canal walls at former mill sites

Circulation Systems
- Main Street leading into residential and maintenance area

Topographic Modifications
- canal prism and towpath
- Lock 44
- flume

Vegetation
- individual trees along towpath

Small-scale Features
- portion of one wood lock gate (removed since preliminary inventory in January, 1993)

Views and Viewsheds
- none identified

Natural Systems and Features
- none identified

Land Use
- industrial: Potomac Edison Company power plant
- recreational: linear towpath

BUILDINGS, STRUCTURES, AND LANDSCAPE FEATURES THAT POST-DATE THE PERIOD OF SIGNIFICANCE

Buildings and Structures
- YACC Building
- metal NPS maintenance building
- shed adjacent to Lockkeeper's House

Circulation Systems
- earthen causeways across canal
- former access road to Potomac Edison Company power plant
- wooden footbridge to island between flume and Lock 44
- access road to former quarry
- new access road to Potomac Edison Company power plant

Topographic Modifications
- former access road to Potomac Edison Company power plant across canal
- new access road to Potomac Edison Company power plant

Vegetation
- masses of trees and thick understory plantings along towpath

Small-scale Features
- stone-faced concrete bridge over creek
- pole with guy wires
- concrete posts
- security gate
- silt fence
- gravel parking area
- U.S.G.S. marker
- concrete meter pit
- fuel tank
- metal gate barrier
- sluice gate
- utility manhole covers
- trash receptacles

Views and Viewsheds
- none identified

Natural Systems and Features
- creek flowing into canal, northeast of Lock 44

Land Use
- industrial: Williamsport maintenance yard east of Lock 44 and flume
- utility: wastewater treatment plant southwest of Lockkeeper's House

CANAL—SOUTH SECTION

KNOWN BUILDINGS, STRUCTURES, AND LANDSCAPE FEATURES EXTANT DURING THE PERIOD OF SIGNIFICANCE

Buildings and Structures
- stone canal wall remnants

Circulation Systems
- canal prism and towpath

Topographic Modifications
- canal prism and towpath

Vegetation
- individual trees along towpath

Small-scale Features
- none identified

Views and Viewsheds
- none identified

Natural Systems and Features
- hillside east of canal beyond road to quarry

Land Use
- none identified

BUILDINGS, STRUCTURES, AND LANDSCAPE FEATURES THAT SURVIVE FROM THE PERIOD OF SIGNIFICANCE

Buildings and Structures
- stone canal wall remnants

Circulation Systems
- canal prism and towpath

Topographic Modifications
- canal prism and towpath

Vegetation
- individual trees along towpath

Small-scale Features
- none identified

Views and Viewsheds
- none identified

Natural Systems and Features
- hillside east of canal

Land Use
- industrial: adjacent use of Potomac Edison Company power plant

BUILDINGS, STRUCTURES, AND LANDSCAPE FEATURES THAT POST-DATE THE PERIOD OF SIGNIFICANCE

Buildings and Structures
- none identified

Circulation Systems
- road to former quarry, east of canal
- new access road to Potomac Edison Company power plant crossing canal

Topographic Modifications
- none identified

Vegetation
- wetland plants in canal prism
- pine screen planting around wastewater treatment facility

Small-scale Features
- chain link fencing around wastewater treatment facility

Views and Viewsheds
- none identified

Natural Systems and Features
- creek emptying into canal

Land Use
- utility: wastewater treatment facility adjacent to site

Further Historical Research

The following research sources and individuals living in the Williamsport area may verify and reveal further information concerning the buildings, structures, and landscape features that existed in the area during the period of significance. The information also may contribute to interpretation of the site.

Civil War Insurance Claims

Local Period Newspapers (in particular, papers that have ceased publication)

Census Records

Tax Records

C&O Canal records at the National Archives, Washington, DC

Western Maryland Railroad/B&O Railroad records

Samuel Listen, whose wife rode the canal boats as a child

Adam Harsh, whose wife lived in the Lockkeeper's House as a child

Michelle Drury, whose husband is the grandson of George 'Hooper' Wolfe and who owns Wolfe's photographic collection

Captain Tice, former canal boat captain

---

[1] J. Timothy Keller, Genevieve P. Keller, *National Register Bulletion 18: How to Evaluate and Nominate Designed Historic Landscapes* (National Park Service), 6.
[2] Charles Varlé, *A Map of Frederick and Washington Counties, State of Maryland,* 1808 (Historic Society of Frederick County, Frederick, Maryland).
[3] Williamsport City Hall, Williamsport Town Council Minutes, June 11, 1874.
[4] Romigh, Philip S., and Barry Mackintosh, "National Register Form: Chesapeake and Ohio Canal," November 1978.
[5] Linda Flint Mc Clelland, J. Timothy Keller, Genevieve P. Keller, Robert Z. Melnick, *National Register Bulletion 30: Guidelines for Evaluating and Documenting Rural Historic Landscapes* (National Park Service), 22-23.

4 TREATMENT RECOMMENDATIONS AND PHASING

4.1 OVERVIEW AND BACKGROUND

A concise, three-page summary of the Treatment Plan Recommendations and Phasing is located in Section 1.6 Management Summary, (see pages 1-7 to 1-9).

The information included in this chapter is divided into the following sections:

4.1 Overview and Background

4.2 C&O Canal Cultural Landscape Management Philosophy

4.3 Management Actions: A Phased Treatment Approach

Phase One Treatments

Phase Two Treatments

Phase Three Treatments

Background

A review of the C&O Canal management documents produced between 1976 and 1993, in conjunction with discussions undertaken with NPS, National Capital Region and C&O Canal NHP personnel, provides an understanding of the direction and philosophy of NPS administration of the C&O Canal. The three primary documents that were used to establish a background for management decisions are the 1976 *General Plan*, the 1983 *Development Concept Plan (DCP)*, and the 1990 *Statement for Management* (See Appendix C).

From a cultural landscape perspective, two major areas of concern arise from review of the *DCP* proposals:

- The *DCP* recommends development of a parking area behind the Power Generation Station. This location for a parking area could be expected to diminish the integrity of setting for the Power Generation Station.
- The report proposes to "landscape the core area encompassing the Power Generation Station, Cushwa Warehouse and the Town Square." It further recommends that "Plant materials be used to screen the houses and power plant from the view of towpath users," and that "River Bottom Park will be integrated with the canal restoration projects and appropriately landscaped." The report proposes that these actions will "create an integrated and esthetic park environment," and "minimize visual intrusions within the historic scene and improve esthetics." Proposing the use of ornamental plant materials to beautify an area that historically was not intended to be aesthetically pleasing,

however, creates a landscape aesthetic that is in direct contrast with the historic and cultural landscape. In addition, some of the adjacent uses for which screening is proposed are in keeping with the landscape character established during the period of significance; views to these structures and features may actually enhance the park experience rather than detract from it.

Alternatives to these proposals are discussed in more detail in the phased treatments sections of this chapter.

DCP proposals[1] that have been implemented since publication of the plan in 1983 are outlined below.

- Stabilize the Conococheague Aqueduct.
  - Partial stabilization of the aqueduct including dismantling and rebuilding of wing walls occurred in 1983-84;
  - removal of approximately 875 aqueduct wall stones from Conococheague Creek occurred in 1984 (stones currently stored in the canal prism north of the aqueduct);
  - dismantling and rebuilding of retaining wall on upstream side of aqueduct, north side of creek occurred in 1986.

- Restore the Power Generation Station for use as a combination visitor contact facility and management facility.
  - Rehabilitation of the Power Generation Station for use by the NPS Williamsport Preservation Training Center occurred in 1987-88.

- Restore the exterior of the Cushwa Warehouse to period appearance and use interior for storage.
  - Rehabilitation of the Cushwa Warehouse for administrative offices and storage occurred in 1981-82;
  - southern facade was restored to period appearance in 1992.

- Outline the turning basin in stone for interpretive purposes.
  - Reconstruction of portions of original brick-faced stone walls and stone walls at the Cushwa loading basin occurred in 1992-93;
  - reconstruction of the top of the original Cushwa loading basin north wall, repointing of existing masonry, construction of new stone-faced concrete wall on the south side of the Cushwa loading basin, and stabilization of the original Cushwa loading basin wall under the Cushwa Warehouse also occurred in 1992-93.

- Restore the canal prism and towpath west of the aqueduct to mile 100.9.
  - Desilting of canal prism between the Cushwa loading basin and former Potomac Edison Company truck access road occurred in 1980-81 and 1993 (desilting has effectively steepened the prism walls, and made them more angular).

- Restore Lock 44 and Lockkeeper's House.
  - Reconstruction of the east wall of the flume for Lock 44 on improved footers occurred in 1991-92;
  - stabilization of the upper wing wall of Lock 44 occurred in 1985;
  - reconstruction of rear foundation wall at the Lockkeeper's House including repointing of existing masonry and manufacture of new window sills occurred in 1981-83.
- Conduct an engineering feasibility study of canal rewatering. Restore and rewater the Cushwa loading basin, if feasible from an engineering standpoint.
  - Production of a rewatering study for the canal and Cushwa loading basin (no further information available).
- Close the dike road across the C&O Canal to the power plant. Relocate the power plant access road, using a potential exit from I-81 and crossing the presently undeveloped quarry property.
  - Establishment of a new truck access road to the Potomac Edison Company power plant on the southern edge of the study area, leaving the former dike abandoned, occurred in 1985-1986.

Additional actions that are needed to complete many of these proposals are addressed in the Phased Treatment Recommendations of this CLR. Additional DCP recommendations addressed in the CLR include:

- Develop a Williamsport self-guiding interpretive walk with wayside exhibits at the Conococheague Aqueduct, the Cushwa loading basin and the holding basin, the Power Generation Station, Cushwa Warehouse, the Railroad Lift Bridge, the Bollman Bridge, and Lock 44 and the Lockkeeper's House.
- Rewater canal to its historic level from Lock 44 to the Conococheague Aqueduct.
- Should the canal be rewatered, a canal boat could be used for interpretive demonstrations.
- The NPS maintenance structure will be removed and the existing structure formerly used by the Young Adult Construction Corps (YACC) will be converted to maintenance use.
- The Potomac Street vehicle access will be limited to use by the handicapped.
- Visitor vehicles will be directed to a new parking area behind the Trolley Barn.
- Pedestrian access to the interpretive center will be across the Conococheague Aqueduct.
- A new road to the proposed parking area will be constructed within the park boundaries.

4.2 C&O CANAL CULTURAL LANDSCAPE MANAGEMENT PHILOSOPHY

The significance of the C&O Canal at Williamsport derives from the commercial and industrial nature of the canal, and from Williamsport's role as a major center of trade at the halfway point on the canal. The Phased Treatment Recommendations emphasize contemporary uses for the park that are compatible with extant cultural landscape resources ranging in periods of origin from circa 1800 to the present. The treatment recommendations stress adaptive use of existing buildings, that new development should be sensitive to the area's past and present industrial character, compatible with extant buildings and features, simple in design, and differentiated from historic features. In addition, links between the canal and the Town should be strengthened, views to the River enhanced and interpretive programs established or strengthened.

The following management goals for the C&O cultural landscape have been established to guide the phased treatment recommendations.

Primary Goals

- Protect the extant cultural resources, especially during the rewatering effort and reconstruction of the canal prism.
- Reestablish the link between the C&O Canal and the Town of Williamsport by encouraging collaboration in protecting components and features of the park and in providing vehicular parking for park visitors.
- Maintain the industrial character of the cultural landscape along the canal in Williamsport and avoid presenting an over-sanitized visual image. It is acceptable to acknowledge and incorporate current, adjacent industrial uses into the continuum of an active industrial and recreational corridor.
- Keep to a minimum the number of new elements introduced onto the site. New elements should be simple in design, compatible with the historic fabric, and differentiated from it.
- Increase the availability of visitor contact and interpretive facilities.
- Enhance the visual link between the canal, the Potomac River, and the river floodplain through vegetation management and sensitive use of resources during interpretation.

Treatment Recommendation

The Department of the Interior currently acknowledges four appropriate treatments for historic resources: preservation, rehabilitation, restoration and reconstruction. The range of these treatments is defined in the *Secretary of the Interior's Standards for Historic Preservation Projects*. Given the above primary goals, as well as the three NPS management plans for the C&O Canal NHP, rehabilitation is the proposed management approach of this CLR. Rehabilitation, which includes stabilization and preservation, provides for the protection of extant historic landscape resources, while

allowing for the introduction of new, compatible uses and design features within the park. These recommendations also address enhancement and interpretation of missing historic features as part of the design program for the site as a whole. In addition, as a compatible effort, sustained development, specifically in relation to vegetation management practices, is proposed in those areas of the canal where physical conditions currently limit the type of use that may occur. All proposed recommendations should be implemented in accordance with the *Secretary of the Interior's Standards for Historic Preservation Projects*, the most recent *Draft Management of Cultural Landscapes, Cultural Resource Management,* Draft NPS-28, and the most recent *DRAFT Guidelines for the Treatment of Historic Landscapes*. Sustainability issues should be implemented in accordance with *Draft Sustainability Guidelines.*

Rehabilitation of a landscape is defined in the *DRAFT Guidelines for the Treatment of Historic Landscapes* as a process that "retains the landscape as it has evolved historically by maintaining and repairing historic features, while allowing additions and alterations for contemporary and future uses."[2] *Draft Management of Cultural Landscapes* (Draft NPS-28) states, "Rehabilitation improves the utility or function of a cultural landscape, through repair or alteration, to make possible an efficient compatible use while preserving those portions or features that are important in defining its significance."[3]

In rehabilitation of a historic landscape, the physical work should focus on the maintenance and repair of existing features and materials. Rehabilitation should be undertaken only after preservation concerns have been addressed and comprehensive documentation of the site completed. In addition to maintenance and repair, the following actions that require new, compatible construction may be appropriate:

- replacement of an entire feature that is too deteriorated to repair in kind
- replacement of an entire feature that is too deteriorated to repair with substitute materials
- replacement of a vanished feature based on historic documentation
- replacement of vanished features with a new feature that is contemporary in design but compatible with the historic character of the landscape
- additions and alterations for new use.

Draft NPS-28 outlines the following rehabilitation standards for historic landscapes:

- New additions or alterations do not destroy features, materials or physical or visual relationships that characterize the cultural landscape. New work is differentiated from the old and is compatible with the massing, size, scale, compositions, and physical or visual relationships of the landscape's features to protect the integrity of the property.

- Additions and adjacent or related new construction are undertaken in such a manner that if removed in the future, the essential form and integrity of the cultural landscape would be unimpaired.[4]

In accordance with the *Secretary of the Interior's Standards for Historic Preservation Projects,* new designs should not create false historical impressions.

Additional Investigations Necessary for Rehabilitation

This CLR contains general recommendations for treatment and approximate locations for proposed new uses. NPS can determine specific locations following additional historic research, archeological investigations, land surveys, and comprehensive site design. The following studies should be undertaken before implementing any construction activities:

1) further historic research concerning specific landscape sites

2) archeological research at historic building and landscape sites

Proposed and In-Progress Rehabilitation Projects

The following rehabilitation projects are currently proposed or in-progress at the park:

Rewatering of the Canal
Aqueduct Reconstruction
Lock and Flume Reconstruction.

General cultural landscape treatment recommendations for these projects are included below.

Rewatering of the Canal

Rewatering of the canal is currently in progress. The Cushwa loading basin has been reconstructed recently, and the canal prism is being readied for rewatering through the removal of earthen dikes and rerouting of water to drain from future construction areas such as the lock and flume area. It is imperative that every effort be taken to protect the extant historic resources along the canal during the rewatering. Several recommendations need to be addressed prior to, during, and following the rewatering process:

- Prior to the rewatering, the Railroad Lift Bridge should be assessed for structural stability. A decision must be made as to whether the Railroad Lift Bridge can be made operational so canal boats can pass between the Cushwa loading basin and the lock area.
- During the rewatering process, the management goals presented in the CLR should be used as guidelines so that the rewatering effort contributes to the overall canal rehabilitation effort.

- During the rewatering process, the park cultural resource specialist must be an integral part of the effort to ensure resource protection.
- Following the rewatering, the park cultural resource specialist should direct the investigation and protection of the archeological resources along the canal.
- NPS has recommended that a canal boat concession operate on the canal following the rewatering. If this recommendation is implemented, the departure point should be along the south wall of the Cushwa loading basin, in keeping with the historic location of Embrey's Wharf.

Aqueduct Reconstruction

There is a strong possibility that the east wall of the aqueduct will be reconstructed in the next few years. If this reconstruction occurs, the most appropriate replacement wall would be a replication of the wooden wall design that replaced the stone wall in the 1920s. This replication would respond to one of the primary goals of the landscape management philosophy—protecting the extant resources—by avoiding an intervention that would threaten the integrity of the existing structure. More documentary and photographic evidence is available for a faithful recreation of the wooden parapet than for the stone wall. Also, it would be extremely difficult to reconstruct the aqueduct using the stones currently stored in the canal prism in their original order. Finally, the aqueduct currently houses the broken parapet wall. Consequently, it is appropriate—not only for interpretive purposes and economy, but for historical accuracy—that if the wall is reconstructed, the wooden parapet wall design be used as the replacement.

It also is recommended that access to the eastern side of the aqueduct be limited with the installation of a security gate until a decision is made concerning the rebuilding of the aqueduct east wall. Pedestrian circulation should be directed across the western side of the aqueduct. Consideration should be paid to the fact that pedestrian traffic across the aqueduct will increase considerably once a parking lot is established to the north. Until rewatering of the canal, pedestrian circulation will follow the route illustrated on figures 115a, 115b, and 116.

If the aqueduct is rewatered, it will be necessary to build a permanent dike for water retention on the northern edge of the site and to provide pedestrian access across the canal in this area. The current Fenton Avenue causeway is the recommended dike location. Rewatering of the aqueduct will necessitate an evaluation of the options for providing a contemporary pedestrian circulation overlay, including a non-historic canal crossing. Options may include: installation of a pivot bridge at the causeway near the Cushwa loading basin; or construction of a pedestrian bridge across the Conococheague to cross between the parking area and the visitor contact facility, use of the Railroad Lift Bridge and the Town of Williamsport maintenance yard to cross the canal, and continued use of the Fenton Avenue dike to return to the parking area.

Lock and Flume Reconstruction

According to Conococheague Maintenance District Foreman Dick Marshall, little work has been done to date on the lock aside from flood damage repairs to the northern wing wall. NPS plans to remove the silt from the lock and to check to see if the timber foundation is in good condition. If necessary, the lock will be rebuilt and a new footer constructed.

The flume is in the process of being reconstructed, with its east wall having already been reconstructed. The west wall appears to have little integrity, since few stones are extant and its original form is not recognizable. It is recommended that reconstruction of the west wall of the flume be undertaken with materials and construction techniques similar to those used for the east wall. If there are stone remnants, they should be used in the reconstruction. It is recommended that a pivot bridge, similar to those used historically in the area, be built for pedestrian access across the lock and flume.

4.3 MANAGEMENT ACTIONS: A PHASED TREATMENT APPROACH

The treatment recommendations outlined in this document for the Williamsport C&O Canal segment are based on research and analysis of historical documents and on specific design concepts and objectives developed for the cultural landscape as a whole. While there is some flexibility in the implementation of the plan, alteration to the design or isolated modifications of the individual features within the plan could be expected to have a negative effect on the design as a whole and should be avoided.

The purpose of these recommendations is to provide an appropriate framework and programmatic basis for preservation, rehabilitation, maintenance and interpretation of the historic canal and Cushwa loading basin site. The recommendations are divided by five landscape characteristics (four of which are discussed in Chapter Three), including Buildings and Structures, Archeological Resources (a category not used in Chapter Three), Circulation Systems, Vegetation, and Small-scale Features.

Long-Term Goals of the Phased Treatments

- Develop an overall site design and specifications for the historic landscape.
- Prepare and implement a comprehensive maintenance plan based on these guidelines.
- Review the proposed canal rewatering sequence document for coordination with the proposed rehabilitation efforts. Reduce damage to historic structures during the rewatering sequence by limiting access to them.
- Retain the integrity of the historic landscape by protecting individual elements as well as the character of the overall landscape.
- Base all treatments on historic documentation and/or appropriately respond to the historic character of the canal site to ensure compatibility.

- Provide a visitor contact facility with comfort stations and permanent (yet portable due to flooding potential) interpretive displays.
- Consider delineating non-extant structures as a means of enhancing visitor understanding of the scale and extent of the site through the periods of significance.
- Develop an interpretive program of permanent panels and displays (to replace a temporary walking tour brochure employed during Phase One), with wayside exhibits that discuss the Conococheague Aqueduct, Cushwa loading basin, holding basin, the Power Generation Station, the Cushwa Warehouse, the Railroad Lift Bridge, the Bollman Bridge, the Washington-Berkeley Bridge, Lock 44, the canal segments, the Lockkeeper's House, and selected off-site areas such as Riverview Cemetery. In addition, it is desirable to interpret areas undergoing archeological investigations.
- Prepare a detailed CLR for the Lockkeeper's House and the Lock 44 area.
- Due to potential site flooding, the following recommendations relate to interpretive exhibits that will occur on the site: The interpretive exhibits should be constructed and installed so they are easily movable, and should be as water- and flood-resistant as possible. Additionally no artifacts that are one-of-a-kind or considered irreplaceable should be displayed on site .

Long-term Goals for Buildings and Structures

- Maintain all historic structures on the site and include them in a cyclical maintenance program that addresses long-term preservation requirements for individual buildings, structures, and objects.
- If new structures are necessary, design them to be simple, and compatible with existing features in siting, orientation, massing, texture, color, and materials. New work should be differentiated from the old.
- Consider the landscape setting when planning treatments associated with the adaptive reuse of individual buildings. Consider fenestration, accessibility, matching adjacent grades, the placement of utilities, and the appropriate use of plant materials and site furnishings.

Long-term Goals for Archeological Resources

- Conduct archeological investigations to determine the historic dimensions of the canal prism, historic dimensions and grade of the towpath and canal prism before the canal prism is desilted, the towpath is restored, and Lock 44 and the flume are restored to historic specifications. Document and verify existing conditions. Use historic construction documents and specifications to guide accurate historic reconstruction efforts.
- Conduct additional archeological research and investigations to support the general studies conducted in the past that do not contain adequate detail to guide future reconstructions. Refer to Figure 65 *Missing Features Map* as a reference for other areas of archeological investigation.
- In areas of known archeological features, develop management treatments in collaboration with the park cultural resource specialist.

Long-term Goals for Circulation Systems

Vehicular

- Maintain existing vehicular access via Potomac Street.
- Limit vehicular access to those areas specifically indicated as parking or roadway.
- Plan new roads only after considering the potential effect of the development on the cultural landscape and the historic character of the site as a whole.

Pedestrian

- Retain and use historic paths and pedestrian systems (historically the towpath and roadways) and keep them free of construction activity. Keep the towpath free of vegetation. Provide consistent maintenance.
- Add new pedestrian paths only as needed for interpretive or functional purposes. Base them on historic usage with special attention to form, alignment, and materials.
- Encourage pedestrian access along the towpath, western side of the aqueduct, the parking areas and roadways. Discourage pedestrian access to critical steep slopes east of the canal and non-NPS lands.
- Develop handicap accessibility in accordance with ADA standards, and in a manner compatible with the site's historic character. Reduce the visual and physical cultural landscape impact from the addition of new ramps, railings, signs, and curb cuts. Design site access paths by using the natural topography of the site. Consider alternative means of interpretation and visual accessibility in areas that would suffer detrimental effects through direct ADA access requirements. Where ADA access compliance would have a negative effect on the historic character of the site or feature, develop interpretative areas adjacent to the site or feature. Plan and develop comprehensive interpretation of features not directly accessible to the interpretive area.

Long-term Goals for Vegetation

- Selectively clear and remove plant materials following consultation with an historical landscape architect who has become familiar with the site and this study. Selective removal refers to the removal, by pruning, of invasive exotics such as multiflora rose, Japanese honeysuckle, and tree-of-heaven. Allow native understory, mid-level, and canopy vegetation to survive. Thin the native understory every third year by pruning lightly along the towpath, except in indicated areas where maintaining a screen is desirable.
- Do not remove plants without careful documentation of their location, species, and historic or non-historic nature. Remove plants determined to be non-historic, invasive exotics, or incompatible with the historic scene as noted above. Have a plant specialist conduct additional field investigations to identify and document existing and remnant plant material to verify location, design, function, condition, and maintenance

requirements of historic plant materials in areas where known structures and uses occurred.
- Conduct additional research concerning plant materials, usage, and their locations along the canal.

Long-term Goals for Small-scale Features
- Assess the condition of remnant stone, metal, and other small-scale features in collaboration with the regional historical architect, historical landscape architect, and cultural resource specialist. Determine an appropriate strategy for stabilization and maintenance.
- Design and carefully locate all signs—whether interpretive or informational—to preserve the historic integrity of the site. Signs should be straightforward, vandal-resistant, and accessible.
- Select site furnishings (light fixtures, trash receptacles, signs, interpretive displays, benches, etc.) that are simple, visually compatible with the identified character of the site, and differentiated from historic features. Furnishings should meet all applicable codes and regulations. Complementary design rather than replication is the preferred treatment for rehabilitation and/or replacement of site furnishings. Consider location carefully to maintain the overall character of the site.

Phased Treatments

The three phases of the treatment plan are described in narrative text and illustrated using site plans. The recommendations are divided into three phases; an overview of each phase is provided below. In the text of the report, the recommendations are arranged according to their relationship to the five landscape characteristics used above to organize the long-term goals: Buildings and Structures, Archeological Resources, Circulation Systems, Vegetation, and Small-scale Features. General recommendations for each phase precede those arranged by landscape characteristic. On the maps, the recommendations are organized by location and illustrated on one of three maps: Overall canal north section, Overall canal south section, and Cushwa loading basin (figures 113a, 113b, 114, 115a, 115b, 116, 117a, 117b, 118). Area-wide recommendations precede those tied to a specific location.

Phase One (years one to five) consists of temporarily accommodating the needs of the current users of the facilities, primarily the Williamsport Preservation Training Center. The Training Center will continue to occupy the Power Generation Station during this phase and interpretive programs will need to be located elsewhere. Negotiations are currently underway to use the C&O Canal Days Inc. Museum building for Phase One interpretive activities. During the first phase the majority of activities will be preliminary in nature, focusing on archeological investigation and the redirection of visitors to new use areas. Vegetation management activities will be initiated.

Phase Two (years five to ten) focuses on accommodating interpretive facilities in the newly rehabilitated Power Generation Station and related parking for employees and visitors. Vegetation management practices established in phase one will continue, while a continued redirection of users into the new parking and interpretative facilities will occur.

Phase Three (years ten to twenty) focuses on the refinement of established visitor uses and vegetation management practices. The use of existing buildings for interpretive, administrative and storage facilities generally continues. If possible, acquisition of the circa 1920 gas station should occur. Through construction of a new building on the site, or rehabilitation of the existing gas station, a facility would be established that has a reduced possibility of flood damage by taking advantage of the highest elevation on the site. The resulting structure could be used to house NHP interpretive displays.

PHASE ONE (YEARS ONE TO FIVE)

PHASE ONE OVERALL CANAL RECOMMENDATIONS

Refer to Figure 113a/b, *Phase One: Overall Canal Recommendations*.

General Recommendations

NOTE: The 1983 *DCP* recommends that River Bottom Park be incorporated into the canal restoration project and landscaped. The incorporation of the parkland into the project is appropriate since the canal, ferry, and ford were integral to early transportation in the area. However, caution is suggested when planning landscape improvements. Historically this area was mostly open and used as pasture and for horse racing. Consequently, it is recommended that the area be returned to a more open appearance and receive minimal improvements beyond selective removal of the existing vegetation.

- Monitor any proposed changes in the park to ensure that they comply with the guidelines to protect extant resources.
- Provide an interpretive walking tour brochure that includes the sites and concepts identified for interpretation in the recommendations (See Phase One Cushwa Loading Basin Recommendations for additional sites and concepts to be included): canal and towpath; holding basin and associated outbuildings; the history of the holding basin; the retrieved aqueduct wall stones in the canal prism; successional vegetation in the canal prism; the history of the farm site along the Potomac River; effects of the neighboring tannery and other industry on the landscape; Conococheague Aqueduct; the 1920s aqueduct accident; stone canal wall remnants; River Bottom Park as former area of pasture and horse

PHASE ONE

racing; the ferry and fords; railroad tracks and related fixtures; Washington-Berkeley Bridge; Bollman Bridge; the Railroad Lift Bridge and Control Station; the bridge clearance fixtures over the railroad tracks on both sides of the Bollman Bridge; Riverview Cemetery; Civil War entrenchments; the coal yards; life along the canal; history of flooding; power transmission towers; history of industry and warehousing; Lockkeeper's House; flume; Lock 44; creosote vat; life on the canal in the Lock 44 area and the Warfield basin; canal milepost and distances to canal termini at Georgetown and Cumberland; and all other historic site features. Undertake additional historic research and archeological investigation (see Recommendations for Archeological Resources, Phase One) that will yield additional interpretive information.

- NPS interpretive personnel should begin design of the permanent panels and displays that will replace the walking tour brochure. Consider establishing exhibits that interpret significant cultural landscape resources from historic periods to the present. Examples of potential new exhibits may include billboard advertisements along the canal, exhibits that discuss the technological significance of the variety of bridges along the segments, archeological delineation of non-extant features to help the visitor understand the physical or spatial character of an area, and illustrations of the historic operations of the canal. Maintain existing sign at Lock 44 for interpretation. Include interpretation of archeological investigations.
- Discuss additional parking options with the Town of Williamsport. Determine if fifty parking spaces may be used in River Bottom Park for visitor parking facilities.
- Determine the historic significance of the creek.

Recommendations for Buildings and Structures

- Conduct field investigations to identify and document existing and remnant structural remains to verify location, design, function, condition, and maintenance requirements.
- Include structural ruins such as canal wall remnants in a cyclical maintenance program that promotes preservation. In addition, assess the condition and stability of each structure for which there is no Historic Structure Report (i.e. Lockkeeper's House).
- Evaluate and, if necessary, stabilize the Lockkeeper's House, creosote vat, aqueduct, flume, Lock 44, canal wall remnants, bridge abutments and all bridges in addition to other significant structures on the site to determine structural and maintenance needs. Using appropriate materials and rehabilitation techniques, stabilize all bridges and their abutments, and exposed arches of aqueduct if necessary.
- Retain, protect, and maintain existing condition of historic masonry and metal buildings and structures, including aqueduct, aqueduct wing walls, power transmission towers, stone canal wall remnants, Lockkeeper's House, lock, lock gates, flume, canal wall remnants,

PHASE ONE

creosote vat, Western Maryland Railroad tracks, Railroad Lift Bridge, Control Station, Bollman Bridge, Washington-Berkeley Bridge, other bridges, bridge abutments, and railings, along with any other related historic elements.

- Check canal wall mortar for stability. If necessary, replace missing or damaged mortar using the proper materials.
- Rehabilitate YACC building by adding utilities for future use as a maintenance storage space as recommended in the 1983 *DCP*.
- Determine additional square footage needs for general park operations, including maintenance and contemporary site functions or those that do not relate to the historic site, that eventually will be located in a structure outside the park. This structure will be identified after park needs have been outlined.
- Remove all buildings and structures that are constructed of newer materials that are not related to the overall character of the canal corridor during the period of significance, including the metal maintenance structure and the adjacent concrete pad, after the maintenance equipment has been relocated into the rehabilitated YACC building. Document buildings and structures to be removed in accordance with Historic American Buildings Survey (HABS) standards and conduct necessary archeological investigations prior to removal.
- Use a wood parapet wall to interpret the aqueduct from the period of the 1920 canal boat collision. In addition, interpret the retrieved aqueduct wall stones in the canal prism. Refer to the Aqueduct Reconstruction recommendations found earlier in this chapter for more information.
- Retain and stabilize Lock 44, which is slated for reconstruction. If rewatering occurs, refer to the archeology report and historic construction documents of the area for guidance. Refer to the canal rewatering sequence for timing of the reconstruction.

Recommendations for Archeological Resources

- Identify sites of demolished historic structures as a part of the comprehensive plan.
- Protect significant archeological resources, including those identified on Figure 65, *Missing Features Map*.
- Undertake archeological investigations to locate historic towpath and canal prism; once located, align and regrade if necessary.
- Undertake archeological investigations in the canal prism at the points where stone canal walls remain to determine if additional canal wall remains are extant; identify their approximate locations.
- Undertake archeological investigations of the DeFrehn Chair Factory site and the holding basin area, the house site located on the river side of the canal near Bollman Bridge, and former mill sites near YACC building, carpenter shop and pivot bridge location.
- Undertake archeological investigations in Lockkeeper's House vicinity to identify former fence location, vegetation, and outbuildings.

PHASE ONE

Recommendations for Circulation Systems

Vehicular

- Maintain the alignment, materials, and character of the Western Maryland railroad tracks, towpath, bridges, and related circulation structures.
- Permit vehicular access onto the towpath only to NPS maintenance personnel, and allow only local traffic and C&O Canal visitors on the Bollman Bridge. Allow vehicular access to only those areas identified as parking or roads.
- Limit all vehicular circulation in natural areas or areas with high erosion or disturbance potential such as the critically steep slopes east of the canal along Riverview Cemetery.
- Construct a security gate barrier at the Fenton Avenue extension, as noted on plan, to prohibit vehicular access to the canal.
- Remove former access road (and post and cable barrier) to Potomac Edison Company site, protecting adjacent original canal wall remnants.
- Remove asphalt from the access road to the maintenance area just beyond the bridge over small creek as noted on plans. Replace with gravel or hardpacked earth. Relocate wood bollards to terminate the asphalt road.
- Prohibit vehicular access to former maintenance area and quarry road.

Pedestrian

- Establish pedestrian paths that connect historic resources. Follow historic circulation routes whenever possible. The canal and towpath should be pedestrian-oriented.
- Maintain compacted earth as preferred towpath material.
- Provide for and limit pedestrian access to existing gravel parking areas, designated earthen causeways, and the towpath. Limit use of Fenton Avenue extension to pedestrian traffic.
- Limit all pedestrian circulation in natural areas and areas with considerable erosion and/or steep or loose soil such as the critically steep slopes east of the canal along the Riverview Cemetery.
- Evaluate the stability of the existing earthen causeway north of Lock 44 as a potential temporary pedestrian access route to the other side of canal.

Recommendations for Vegetation

NOTE: The 1983 *DCP* recommends that plant material be used to screen residences and the power plant from the towpath. Vegetation such as the arborvitae hedge near the power plant conflicts with the historic, industrial character of the corridor. The openness of the canal corridor and its lack of vegetation is evident in numerous historic photographs and sketches. This documentation should influence decisions concerning the placement and choice of vegetation species along the canal.

"Selective removal" refers to the removal, by pruning, of invasive exotics such as multiflora rose, Japanese honeysuckle, and ailanthus. Allow native under-

PHASE ONE

story, mid-level, and canopy vegetation to survive. Thin the native understory every third year by pruning lightly along the towpath, except in those areas indicated where maintaining a screen is desirable. Selective removal along the cemetery hillside refers to thinning of understory material every fifth year, and maintaining a base vegetation. Selective removal should occur under the supervision of an historical landscape architect familiar with the history of the site and this report. Where noted on plans, maintain ground plane in mown grasses.

- Conduct field investigations to identify and document existing and remnant plant material. Verify location, design, function, and condition. Determine maintenance requirements.
- Stabilize and protect steep critical slopes with existing species of native vegetation.
- Selectively remove vegetation adjacent to the canal, along the towpath, between the canal prism and the quarry road, and along the railroad tracks to reestablish the appearance and character of the former industrial corridor. Prune the vegetation along the towpath to remove the understory growth. Consider natural resource concerns and historic viewsheds of the canal and river as an aspect of vegetation management. Allow vegetation to continue successional process in areas noted on plans.
- Remove vegetative growth, including grasses, shrubs, and trees, from the canal prism between the aqueduct and the Fenton Avenue extension.
- Selectively remove vegetation in the canal north of the Fenton Avenue extension causeway that crosses the canal.
- Remove vegetation from the canal prism as noted on plans.
- Retain and maintain vegetation between the canal towpath and Wastewater Treatment Facility.
- Discuss removal of the arborvitae hedge with Potomac Edison Company power plant.
- Provide views of Riverview Cemetery while selectively removing vegetation while maintaining critical slopes, and bank stabilization.
- Manage existing vegetation on the hillside east of the canal bounding Riverview Cemetery as a biotic resource that contributes to the cultural landscape of the Williamsport segment of the C&O Canal. Coordinate management of the biotic resource with the reestablishment of historic views. Selectively remove and maintain vegetation on the hillside east of the canal bounding the Riverview Cemetery.

<u>Lockkeeper's House:</u>

- Prior to removal of any existing plant material or installation of any new plant material, undertake landscape archeology to identify species and locations of historic plant materials directly adjacent to the Lockkeeper's House
- Selectively remove vegetation behind Lockkeeper's House. Maintain some native understory, mid-level, and tree canopy vegetation between the Potomac Edison Company power plant and the house.

PHASE ONE

- Consider re-establishment of the historic landscape based on historic documentation at the Lockkeeper's House if compatible with interpretive goals.

Recommendations for Small-scale Features

- Develop a site furnishing plan based on the recommendations presented in this CLR. The plan should address the character of street furniture, signs, facade treatments, and small-scale features. Furnishings should meet all applicable codes and regulations. Contemporary compatible design is the preferred treatment for site furnishings since there were no designed site furnishings during the period of significance.
- Protect and maintain existing light fixtures.
- Install temporary fencing around the archeological investigation areas.
- Remove existing earthen causeways that cross the canal (as indicated in rewatering sequence). Two causeways to remain as shown to provide pedestrian access across the canal until rewatering occurs.
- Protect and maintain the aqueduct stones in canal prism.
- Protect and maintain the masonry work of the aqueduct and its wing walls along with any other related historic elements.
- Provide improvements for pedestrian safety at the intersection of the towpath and the Potomac Edison Company power plant truck access road. For example, paint a crosswalk at the intersection.

PHASE ONE CUSHWA LOADING BASIN RECOMMENDATIONS

Refer to Figure 114, *Phase One: Cushwa Loading Basin Recommendations.*

General Recommendations

- Stabilize eroded area of soil west of canal near aqueduct.
- Provide an interpretive walking tour brochure that includes the sites identified for interpretation in the recommendations (See Phase One Overall Canal Recommendations for remainder of topics to be addressed): Cushwa loading basin, Cushwa Warehouse, Power Generation Station, railroad tracks, ferry and ford sites, and sites of archeological investigations. Undertake additional historic research and archeological investigation (see Recommendations for Archeological Resources) that will yield additional information. NPS interpretive personnel should begin design of the permanent panels and displays for installation during Phase Two that will replace the walking tour brochure. Include interpretation of archeological investigations.
- Encourage Town of Williamsport to donate the Williamsport maintenance yard to the park. If it is not possible to acquire the property, establish a cooperative agreement between NPS and the Town for maintenance of the site.
- Encourage Town of Williamsport to limit building activities in River Bottom Park to maintain views to and from the Potomac River. It is

PHASE ONE

recommended that the area be returned to a more open appearance and receive minimal improvements beyond selective removal of existing vegetation.
- Consider acquisition of the circa 1920 gas station as part of a program to establish a site to house interpretive resources in a structure less prone to flood damage.
- Retain temporary trailers until Phase Two.
- Negotiate with C&O Canal Days Inc. for use of the current C&O Canal Museum on Potomac Street as an interpretive center during Phase One.

Recommendations for Buildings and Structures
- Remove all buildings and structures that are constructed of newer materials and are not related to the overall character of the canal corridor during the period of significance, including the slaughterhouse concrete pad. Document buildings and structures to be removed in accordance with (HABS) standards and conduct necessary archeological investigations prior to removal.
- Stabilize former slaughterhouse concrete pad until its removal.
- Protect and maintain, evaluate and, if necessary, stabilize the Cushwa Warehouse and Power Generation Station. Continue existing uses and existing conditions.
- Protect and maintain, evaluate and, if necessary, stabilize the power transmission towers. Continue existing uses and existing conditions.

Recommendations for Archeological Resources
- Undertake archeological investigations of Miller Brothers Lumber Mill and Cushwa Cement and Phosphate Warehouse sites to determine interpretive potential.
- Undertake archeological investigations of the area between Cushwa Warehouse and existing Williamsport maintenance yard to determine interpretive potential.
- Identify original wall sections (brick walls and portions of others) in the Cushwa loading basin area for interpretation.

Recommendations for Circulation Systems

Vehicular
- Maintain the primary vehicular entrance to the site via Potomac Street, maintaining the historic connection between the town and the canal.
- Establish a universally accessible vehicular entrance and three (3) universally accessible parking spaces near the Power Generation Station.
- Realign vehicular access to site as shown in plan. Establish a gravel parking area for employees and visitors as shown on plans. Use wooden railroad ties to act as barriers and wheel stops that limit vehicular access to the Cushwa loading basin.

PHASE ONE

Pedestrian

- Maintain the earthen causeway south of the aqueduct as a pedestrian access route until the aqueduct is rewatered. The causeway has met Maryland State Permitting requirements and has received a permit for use.
- Encourage pedestrian circulation on the western side of the aqueduct.

Recommendations for Vegetation

- Selectively remove vegetation growing in close proximity to the Conococheague Creek side of the Power Generation Station to reduce deterioration of the historic resource.
- Remove shrubs, trees, and invasive exotics from the canal prism.
- Provide views toward Potomac River and River Bottom Park by selectively removing vegetation (understory) along towpath between Washington-Berkeley Bridge and the aqueduct.

Recommendations for Small-scale Features

- Evaluate and stabilize former Western Maryland Railroad tracks.
- Remove post and cable barrier at soil erosion area west of the canal near the aqueduct following stabilization. Replace with a security gate with concrete posts similar in design to the one located near the slaughterhouse pad.
- Install a security gate barrier to prevent visitor access to the eastern side of the aqueduct until a decision is made concerning the rebuilding of the aqueduct east wall. See Phase Two for pedestrian circulation route.
- Remove concrete post and wood barrier near transmission tower.
- Install a new temporary park identification sign adjacent to the Cushwa Warehouse that includes directional information.
- Relocate trash dumpster as noted on plan.
- Maintain existing lighting.
- Protect and maintain historic painted and newly repainted signs on Cushwa Warehouse.
- Upon completion of the Cushwa loading basin reconstruction, remove the existing perimeter chain link fencing.

The accompanying Phase One Area-wide Recommendations are to be used in conjunction with the Phase One Recommendations Maps, Figures 113a/b and 114, *which follow.*

Phase One Area-wide Recommendations

Overall Canal

- Monitor any proposed changes in the park to ensure that they comply with the guidelines to protect extant resources.
- Provide an interpretive walking tour brochure that includes the sites identified for interpretation. Include interpretation of archeological investigations.
- NPS interpretive personnel to begin design of the permanent panels and displays that will replace the walking tour brochure. Consider establishing exhibits that interpret significant cultural landscape resources from historic periods to the present. Examples of potential new exhibits may include billboard advertisements along the canal, exhibits that discuss the technological significance of the variety of bridges along the segment, archeological delineation of non-extant features that help the visitor understand the physical or spatial character of an area, and illustrations of the historic operations of the canal.
- Develop a site furnishing plan based on the recommendations presented in this CLR. The plan should address the character of street furniture, signs, facade treatments, and small-scale features. Furnishings should meet all

applicable codes and regulations. Contemporary compatible design is the preferred treatment for site furnishings since there were no designed site furnishings during the period of significance.

- Undertake archeological investigations to locate historic towpath, canal prism and canal wall alignments.
- Restore towpath, canal prism and canal wall alignments as necessary.
- Undertake archeological investigations in the canal prism at the points where stone canal walls remain to determine if additional canal wall remains are extant; identify their approximate locations.
- Conduct field investigations to identify and document existing and remnant structural remains to verify location, design, function, condition, and maintenance requirements.
- Include structural ruins such as canal wall remnants in a cyclical maintenance program that promotes preservation. In addition, assess the condition and stability of each structure for which there is no Historic Structure Report (i.e. Lockkeeper's House).
- Limit all vehicular circulation in natural areas or areas with high erosion or disturbance potential such as the critically steep slopes east of the canal along Riverview Cemetery.
- Protect and maintain existing light fixtures.
- Install temporary fencing around the archeological investigation areas.
- Retain, protect, and maintain, and evaluate and stabilize Western Maryland Railroad tracks.
- Retain, protect, and maintain, and evaluate and stabilize stone canal wall remnants. Check canal wall mortar for stability. If necessary, re-mortar using the proper materials.
- Evaluate and stabilize the structural integrity of all bridges and their abutments, using appropriate materials and rehabilitation techniques.
- Determine additional square footage needs for general park operations, including maintenance and contemporary site functions or those that do not relate to the historic site, that eventually will be located in a structure outside the park. This structure will be identified after park needs have been outlined.
- Discuss additional parking options with the Town of Williamsport. Determine if fifty parking spaces may be used in River Bottom Park for visitor parking facilities.
- Remove all buildings and structures that are constructed of newer materials and are not related to the overall character of the canal corridor during the period of significance. Document buildings and structures to be removed in accordance with Historic American Buildings Survey (HABS) standards and conduct necessary archeological investigations prior to removal.
- Identify sites of demolished historic structures as a part of the comprehensive plan.
- Protect significant archeological resources, including those identified on the *Missing Features Map.*
- Establish pedestrian paths that connect historic resources and follow historic paths and uses. The canal and towpath should be pedestrian-oriented.
- Maintain compacted earth as preferred towpath material.
- Pedestrian access should occur only in/along existing gravel parking areas, designated earthen causeways, and the towpath.
- Limit all pedestrian circulation in natural areas and areas with considerable erosion and/or steep or loose soil such as the critically steep slopes.
- Permit vehicular access onto the towpath only to NPS maintenance personnel. Permit visitor vehicular access only in those areas identified as parking or roads.
- Selectively remove vegetation adjacent to the canal, along the towpath, between the canal prism and the quarry road, and along the railroad tracks to reestablish the appearance and character of the former industrial corridor. Prune the vegetation along the towpath to remove the understory growth. Consider natural resource concerns and historic viewsheds of the canal and river as an aspect of vegetation management.
- "Selective removal" refers to the removal, by pruning, of invasive exotics such as multiflora rose, Japanese honeysuckle, and tree-of-heaven. Allow native understory, mid-level, and canopy vegetation to survive. Thin the native understory every third year by pruning lightly along the towpath, except in those areas indicated where maintaining a screen is desirable. Selective removal along the cemetery hillside refers to thinning of understory material every fifth year, and maintaining a base vegetation. Selective removal should occur under the supervision of an historical landscape architect familiar with the history of the site and this report.
- Conduct field investigations to identify and document existing and remnant plant materials. Verify location, design, function, and condition. Determine maintenance requirements.
- Stabilize and protect steep critical slopes with existing species of native vegetation.

Cushwa Loading Basin

- Encourage Town of Williamsport to limit building activities in River Bottom Park to maintain views to and from the Potomac River. It is recommended that the area be returned to a more open appearance and receive minimal improvements beyond selective removal of the existing vegetation.
- Negotiate with C&O Canal Days Inc. for use of the current C&O Canal Museum as an interpretive center.
- Maintain existing lighting.

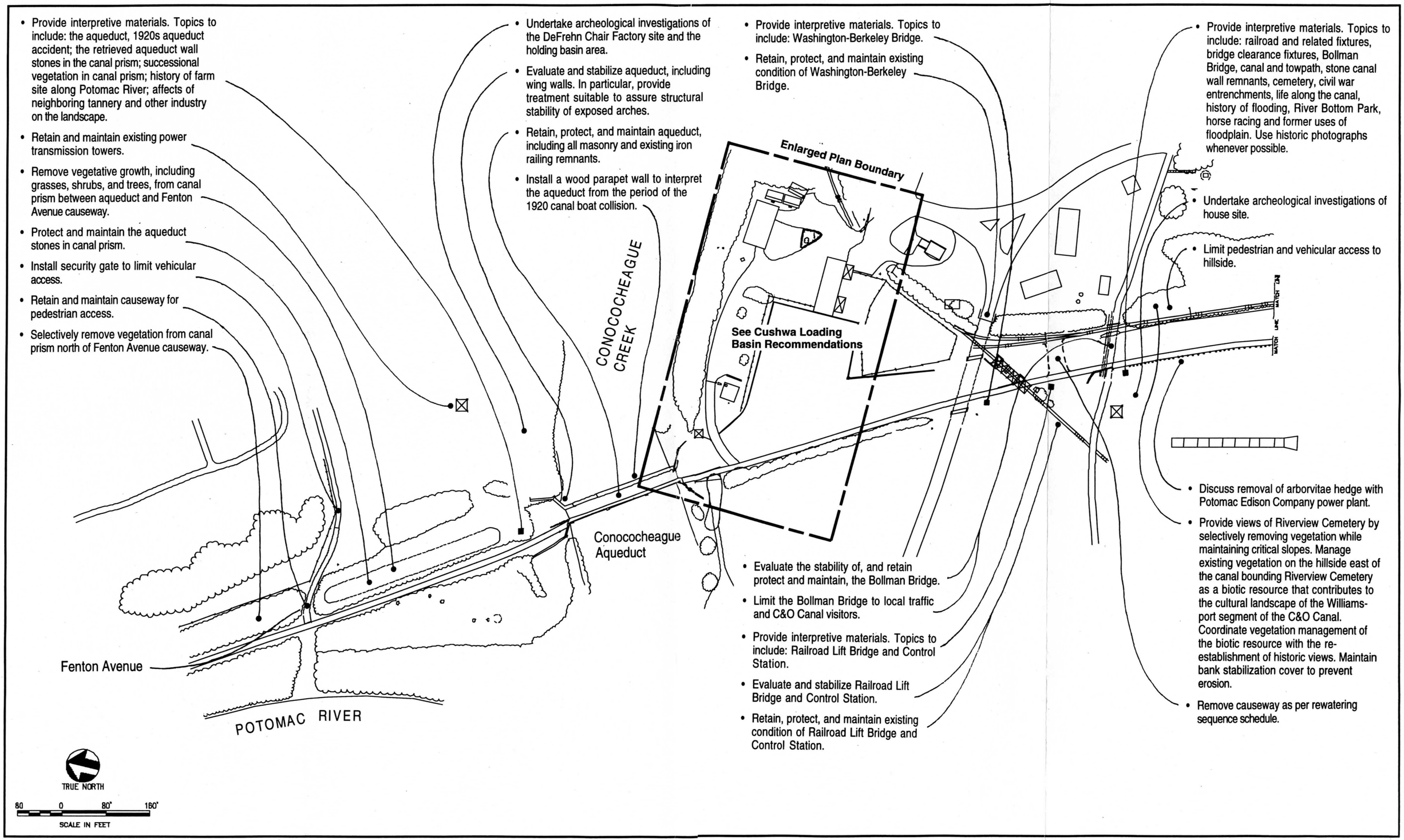


Figure 113a. Phase One:
Overall Canal North Section Recommendations

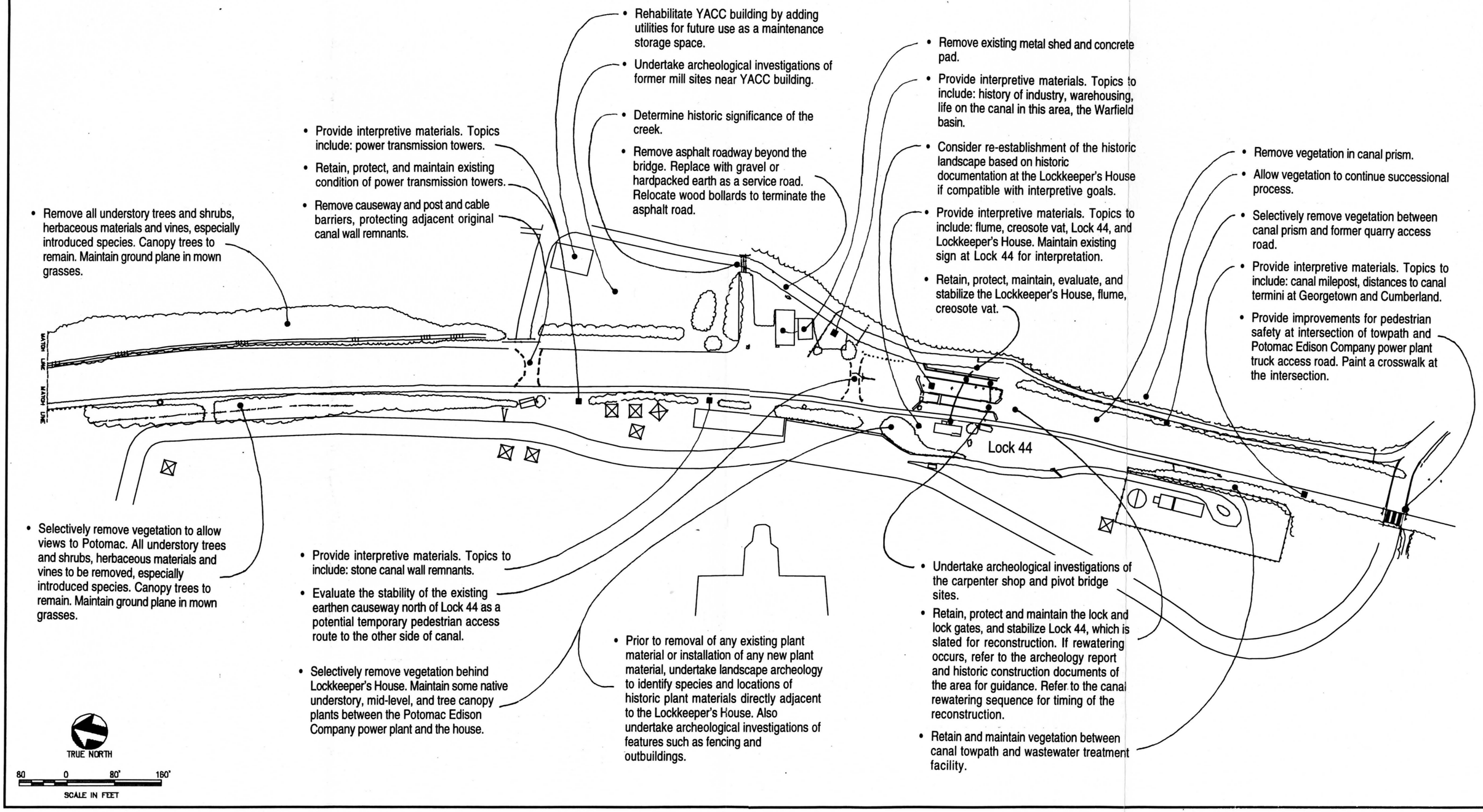


Figure 113b. Phase One:
Overall Canal South Section Recommendations

- Install a security gate barrier to limit visitor access to the eastern side of the aqueduct until a decision is made concerning the rebuilding of the aqueduct east wall. Encourage pedestrian circulation on the western side of the aqueduct.
- Remove concrete post and wood barrier.
- Maintain historic structure and use of power transmission tower.
- Stabilize former slaughterhouse concrete pad until its removal. Remove concrete pad along with other non-historic buildings and structures to be removed once identified.
- Upon completion of the Cushwa loading basin reconstruction, remove the existing perimeter chain link fencing.
- Undertake archeological investigations of the Miller Brothers Lumber Mill and Cushwa Cement and Phosphate Warehouse sites. Include findings in Phase Two interpretive displays.
- Relocate the trash dumpster.
- Provide interpretive materials. Topics to include: the Cushwa loading basin, Cushwa Warehouse, railroad tracks, and the archeological investigations at the Miller Brothers Lumber Mill and Cushwa Cement and Phosphate Warehouse sites.
- Use railroad ties as wheelstops to limit vehicular access beyond the limit of the new gravel parking area.
- Selectively remove vegetation growing in close proximity to the Conococheague Creek side of the Power Generation Station to reduce deterioration of the historic resource.
- Provide interpretive materials. Topics to include: the history of the Power Generation Station.
- Retain three (3) temporary trailers until Phase Two.

Power Generation Station

Chain Link Fencing

- Maintain the causeway south of the aqueduct as a pedestrian access route until the aqueduct is rewatered.
- Protect, retain and maintain, evaluate and, if necessary, stabilize the Cushwa Warehouse and the Power Generation Station. Continue existing uses and conditions.
- Identify original wall sections (brick walls and others) in the Cushwa loading basin area for interpretation.
- Protect and maintain historic painted and newly repainted signs on Cushwa Warehouse.
- Undertake archeological investigations of the Cushwa Warehouse area, and north of the existing Williamsport maintenance yard. Determine interpretive potential.

Twelve (12) Employee Parking Spaces

Eight (8) Employee Parking Spaces

Cushwa Warehouse

- Stabilize eroded area of soil.
- Provide interpretive materials. Topics to include: horse racing, the ferry and ford.
- Provide views toward Potomac River and River Bottom Park by selectively removing vegetation (understory) along towpath between Washington-Berkeley Bridge and the aqueduct. Maintain the ground plane in mown grasses.
- Undertake archeological investigations to locate the historic towpath, canal prism and canal wall alignment.
- Restore towpath, canal prism and canal wall alignments as necessary.
- Remove shrubs, trees, and invasive exotics from the canal prism.
- Remove post and cable barrier at soil erosion area following stabilization. Replace with a security gate and concrete posts similar in design to the one located near the slaughterhouse pad.
- Provide interpretive materials. Topics to include: coal yards.
- Negotiate with the Town of Williamsport to donate the Williamsport maintenance yard to the park. If it is not possible to acquire the property, establish a cooperative agreement between NPS and the Town for maintenance of the site.
- Consider acquisition of the circa 1920 gas station as part of a program to establish a site to house interpretive resources in a structure less prone to flood damage.

- Establish a universally accessible vehicular entrance, and three universally accessible parking spaces for the site that concentrates vehicular activity south of the Power Generation Station.

Potomac Street

- Maintain the primary vehicular entrance to the site via Potomac Street, maintaining the historic connection between the town and the canal.
- Install a new temporary park identification sign adjacent to the Cushwa Warehouse that includes directional information.
- Establish twelve (12) visitor parking spaces after completing archeological investigations.
- Remove chain link fencing.

TRUE NORTH

20' 0 20 40'

SCALE IN FEET

Figure 114. Phase One: Cushwa Loading Basin Recommendations

PHASE TWO (YEARS SIX TO TEN)

PHASE TWO OVERALL CANAL RECOMMENDATIONS

Refer to Figure 115a/b, *Phase Two: Overall Canal Recommendations.*

General Recommendations

- Continue communications with the Town of Williamsport that promote cooperation in the protection of cultural landscape resources.
- Continue to interpret the elements listed in Phase One. Install interpretive panels and displays designed by NPS team during Phase One, covering all sites listed in Phase One as well as the sites that yielded important documented findings during the archeological investigations and further historical research. Begin new archeological investigations as noted in the Recommendations for Archeological Resources section below, to provide additional interpretive materials during Phase Three.
- Install alternative interpretive displays that accommodate ADA regulations when direct access to sites is impossible or would have a detrimental effect on an historic resource, such as the holding basin, the chair factory site, the interior of the Lockkeeper's House, and possibly the mill sites across the lock.
- Additionally, interpret DeFrehn Chair Factory location, filled holding basin north of aqueduct, tannery waste ponds, warehousing in the area, landscape around the Lockkeeper's House, quarry road that post-dates period of significance, and former mill, warehouse, and outbuilding locations as identified during archeological investigations and historic research.

Recommendations for Buildings and Structures

- Continue to protect and maintain the integrity of all historic elements in the Park, including the canal prism and towpath, canal wall remnants, Western Maryland Railroad tracks, Washington-Berkeley Bridge, Bollman Bridge, Railroad Lift Bridge, Lockkeeper's House, lock, flume, creosote vat, and any other historic elements on the site.
- Repoint aqueduct wing walls using appropriate materials and techniques.
- Relocate maintenance equipment into the YACC building following rehabilitation of the building and installation of utilities.

Recommendations for Archeological Resources

- Undertake archeological investigations of the agriculture and buildings site.
- Undertake archeological investigations of the site of the removed NPS maintenance sheds for evidence of Darby Mill and other building footprints and the Warfield basin.
- Outline the footprints of the buildings as determined during Phase One archeological investigations.

PHASE TWO

Recommendations for Circulation Systems

Vehicular

- Continue primary vehicular access from Potomac Street for drop-off and arrival. Public access to the Park should occur via the new Fenton Avenue parking area or the parking area in River Bottom Park across the Bollman Bridge.
- Maintain access to the towpath for NPS maintenance vehicles only.
- Construct a gravel parking area for 100 cars on NPS property at the end of Fenton Avenue to accommodate both cars and recreational vehicles. Use wooden railroad tie wheel stops and minimal security lighting for this area. Do not fence the parking area. Continue to limit vehicular access to canal by using the existing security gate barrier between the parking lot and the Fenton Avenue extension causeway installed in Phase One.
- Interpret quarry road (1927) as postdating the period of significance.
- Continue to limit vehicular access to the Lock 44 area, except for NPS maintenance vehicles.

Pedestrian

- Use Fenton Avenue extension and causeway beyond the new parking area for pedestrian access to the canal and towpath system.
- Install temporary fencing around the areas under archeological investigation to limit pedestrian access.
- Establish a preferred interpretation route as noted on plan. Consider establishing a secondary pedestrian path along the Western Maryland Railroad tracks.
- If the rewatering of the lock area is accomplished, build a pivot bridge across the lock and flume, based on historic documentation, to provide pedestrian access.

Recommendations for Vegetation

- Continue vegetation management practices established in Phase One along the towpath, railroad tracks, and cemetery hillside.
- Continue to stabilize and protect steep critical slopes using the native vegetation established in Phase One, and to limit pedestrian and vehicular access to the hillside.
- Maintain access route to Potomac River in grass and ground covers at end of Fenton Avenue extension and causeway.
- Continue to selectively remove vegetation between canal prism and quarry road.

Recommendations for Small-scale Features

- Protect and maintain the integrity of all historic materials in the park.
- Provide additional interpretive displays based on archeological and historical investigations conducted during Phase One.
- Develop a park-wide lighting plan.

PHASE TWO

- Install appropriate lighting fixtures for security in and around the visitor contact facilities and the parking areas as noted on the plan. Light fixtures should be simple, compatible in design with the historic scene, non-intrusive, and differentiated from the historic fabric of the site. The fixture height should be similar to that of historic utility poles in order to reestablish the character of the former corridor and to avoid glare in pedestrians' eyes.
- Coordinate an effort to develop appropriate security lighting in conjunction with bridges with the appropriate agencies.
- Install security lighting that is compatible with the historic character of the area in proximity to the YACC building and Lock 44 as noted on plan.
- Interpret fencing around Lockkeeper's House either through a reconstruction or as an outline of a former landscape feature.

PHASE TWO CUSHWA LOADING BASIN RECOMMENDATIONS

Refer to Figure 116, *Phase Two: Cushwa Loading Basin Recommendations.*

General Recommendations

- Continue to encourage the Town of Williamsport to restrict construction in River Bottom Park to maintain views between the canal and the Potomac River.
- Continue to negotiate with Town of Williamsport for use of at least twenty-five parking spaces at River Bottom Park; in addition, negotiate use of on-street parking spaces for visitor use.
- Continue to interpret railroad tracks, ferry and ford sites, Cushwa loading basin, Cushwa Warehouse and Power Generation Station. Install interpretive panels and displays designed by NPS team during Phase One, addressing all sites listed in Phase One as well as the sites that yielded important documented findings during the archeological investigations and further historical research. Begin new archeological investigations as noted in the Recommendations for Archeological Resources section below.
- Additionally, interpret Miller Brothers Lumber Mill building and other known building footprints by identifying their locations, as well as the coal yard and Embrey Wharf sites.

Recommendations for Buildings and Structures

- Continue to protect and maintain the Cushwa loading basin, Cushwa Warehouse and the Power Generation Station.
- Rehabilitate the Power Generation Station to accommodate a visitor contact facility with interpretive exhibits and restrooms.
- Rehabilitate the Cushwa Warehouse as a park ranger station, storage facility, administrative offices and possibly a small library for park interpreters.
- Remove the three temporary trailers east of the Power Generation Station.

PHASE TWO

Recommendations for Circulation Systems

The 1983 *DCP* recommends development of a parking area behind the Power Generation Station. This location for a parking area could diminish the integrity of the setting of the Power Generation Station. Consequently, this CLR recommends a departure from the 1983 *DCP*, although some parking is included for NPS needs.

The 1983 *DCP* also recommends construction of a parking area within park boundaries. Presently NPS estimates that it will need between 200-300 parking spaces for the park. However, after reviewing the buildable characteristics of the site, including its linear configuration, numerous areas of steep slopes, and locations of cultural, historic and natural resources, it is estimated that only 137 spaces can be accommodated currently on site. One hundred of these would be located near the Fenton Avenue extension, and 37 east of the Cushwa loading basin. Additional parking areas to be considered for overflow parking include River Bottom Park, and on-street parking in the Town of Williamsport.

Vehicular

- Vehicular access to the site will be limited to the Potomac Street entrance and the Fenton Avenue parking area. Establish a new universally accessible parking area, orientation plaza, drop-off, and limited parking area at the Potomac Street entrance location. Provide 37 visitor and employee parking spaces. See plan for conceptual design. Roads should be paved with asphalt. Sidewalks should be constructed of concrete and connected to existing Town of Williamsport sidewalks.
- Maintain wooden ties used during Phase One as wheel stops in parking area.

Pedestrian

- Create a pedestrian circulation route that connects the new parking area north of the Conococheague Aqueduct and the visitor contact station at the Cushwa loading basin using the Fenton Avenue extension causeway, the towpath, the western side of the aqueduct, and the earthen causeway north of the loading basin. If the aqueduct is rewatered, alternatives for canal crossings should be considered. These would include construction of a pedestrian bridge over the Conococheague Creek, in conjunction with use of the Railroad Lift Bridge and the Town of Williamsport maintenance yard, or a pivot bridge north of the loading basin.

Recommendations for Vegetation

The 1983 *DCP* recommends landscaping the core area encompassing the Power Generation Station, Cushwa Warehouse, and Town Square. Planting bed locations are included in the schematic design for a new drop-off, arrival plaza and handicap parking area illustrated on the Phase Two Cushwa Loading Basin Recommendations Map.

- Limit the use of ornamental plantings to maintain the integrity of the park as an industrial area.
- Continue vegetation management practices established in Phase One.

PHASE TWO

- Incorporate native vegetation in the landscaping of the visitor contact facility. Consult the following plant list, which includes native vegetation endemic to hydric and mesic soils.

** NOTE: These plants require good drainage.*

EVERGREEN TREES
Ilex opaca (American Holly)
Magnolia virginiana (Sweetbay Magnolia)
**Tsuga canadensis* (Canadian Hemlock)
**Tsuga caroliniana* (Carolina Hemlock)

DECIDUOUS CANOPY TREES
Acer rubrum (Red Maple)
Betula nigra (River Birch)
Fagus grandifolia (American Beech)
Fraxinus pennsylvanica (Green Ash)
Liquidambar styraciflua (Sweet Gum Tree)
Platanus occidentalis (Sycamore)
Quercus phellos (Willow Oak)

DECIDUOUS UNDERSTORY TREES
Carpinus caroliniana (Hornbeam)
Cornus florida (Flowering Dogwood)
Viburnum prunifolium (Blackhaw)

DECIDUOUS SHRUBS
Clethra alnifolia (Sweet Pepperbush)
*Hamamelis virginiana (*Common Witchhazel)
Hamamelis vernalis (Vernal Witchhazel)
Hydrangea arborescens (Smooth Hydrangea)
Ilex verticillata (Winterberry Holly)
Rhododendron nudiflorum (Pinxterbloom Azalea)

EVERGREEN SHRUBS
Ilex glabra (Inkberry Holly)
**Kalmia latifolia* (Mountain Laurel)
**Leucothoe fontanesiana* (Drooping Leucothoe)
Myrica cerifera (Southern Wax Myrtle)

Recommendations for Small-scale Features

- Continue to protect and maintain historic signs.
- Incorporate a canal boat concession area at former Embrey Wharf. See Rewatering of the Canal section for more information.
- Install new security lighting in visitor contact facility and parking areas as noted on plan. Incorporate lighting fixtures that are compatible with the historic character of the area.
- Install permanent NPS and directional signage near the Potomac Street Park entrance.

The accompanying Phase Two Area-wide Recommendations are to be used in conjunction with the Phase Two Recommendations Maps, Figures 115a/b and 116, *which follow.*

Phase Two Area-wide Recommendations

Overall Canal

- Continue communications with the Town of Williamsport that promote cooperation in the protection of cultural landscape resources.
- Continue to interpret the features identified in Phase One. Install interpretive panels and displays designed by NPS team during Phase One, covering all sites listed in Phase One as well as the sites that yielded important documented findings during the archeological investigations and further historical research. Begin new archeological investigations as noted to provide additional interpretive materials during Phase Three.
- Install alternative interpretive displays that accommodate ADA regulations when direct access to sites is impossible or would have a detrimental effect on an historic resource, such as the holding basin, the chair factory site, the interior of the Lockkeeper's House, and possibly the mill sites across the lock.
- Continue to protect and maintain the integrity of all historic elements in the Park including the canal prism and towpath, canal wall remnants, Western Maryland Railroad tracks, Washington-Berkeley Bridge, Bollman Bridge, Railroad Lift Bridge, Lockkeeper's House, lock, flume, creosote vat, and any other historic elements on the site.
- Continue primary vehicular access from Potomac Street for drop-off and arrival. Public access to the Park should occur via the new Fenton Avenue parking area or the parking area in River Bottom Park across the Bollman Bridge.
- Establish a preferred pedestrian circulation route in conjunction with installed interpretive displays. The proposed circulation route includes: Fenton Avenue parking area, Fenton Avenue causeway, towpath, western edge of the Conococheague Aqueduct, and either earthen causeway to Cushwa loading basin area, or continue on towpath. Consider establishing a secondary pedestrian path along the Western Maryland Railroad tracks.
- Install temporary fencing around the archeological investigation areas to limit pedestrian access.
- Maintain access to the towpath for NPS maintenance vehicles only.
- Continue vegetation management practices established in Phase One, including areas along the towpath, railroad tracks, and cemetery hillside.
- Continue to stabilize and protect steep critical slopes using the native vegetation established in Phase One.
- Develop a park-wide lighting plan.
- Install appropriate lighting fixtures for security in and around the visitor contact facilities and the parking areas as noted on the plan. Light fixtures should be simple, compatible in design with the historic scene, non-intrusive, and differentiated from the historic fabric of the site. The fixture height should be similar to that of historic utility poles in order to reestablish the character of the former corridor and to avoid glare in pedestrians' eyes.
- Coordinate an effort to develop appropriate security lighting in conjunction with bridges with the appropriate agencies.

Cushwa Loading Basin

- Continue to encourage the Town of Williamsport to restrict construction in River Bottom Park to maintain views between the canal and the Potomac River.
- Continue to negotiate with Town of Williamsport for use of at least twenty-five parking spaces at River Bottom Park; in addition, negotiate use of on-street parking spaces for visitor use.
- Continue to interpret railroad tracks, ferry and ford sites, Cushwa loading basin, Cushwa Warehouse and Power Generation Station. Install interpretive panels and displays designed by NPS team during Phase One, addressing all sites listed in Phase One as well as the sites that yielded important documented findings during the archeological investigations and further historical research. Begin new archeological investigations as noted to develop additional interpretive materials to be installed in Phase Three.
- Continue to protect and maintain historic signs.
- Limit the use of ornamental plantings to maintain the integrity of the park as an industrial area.

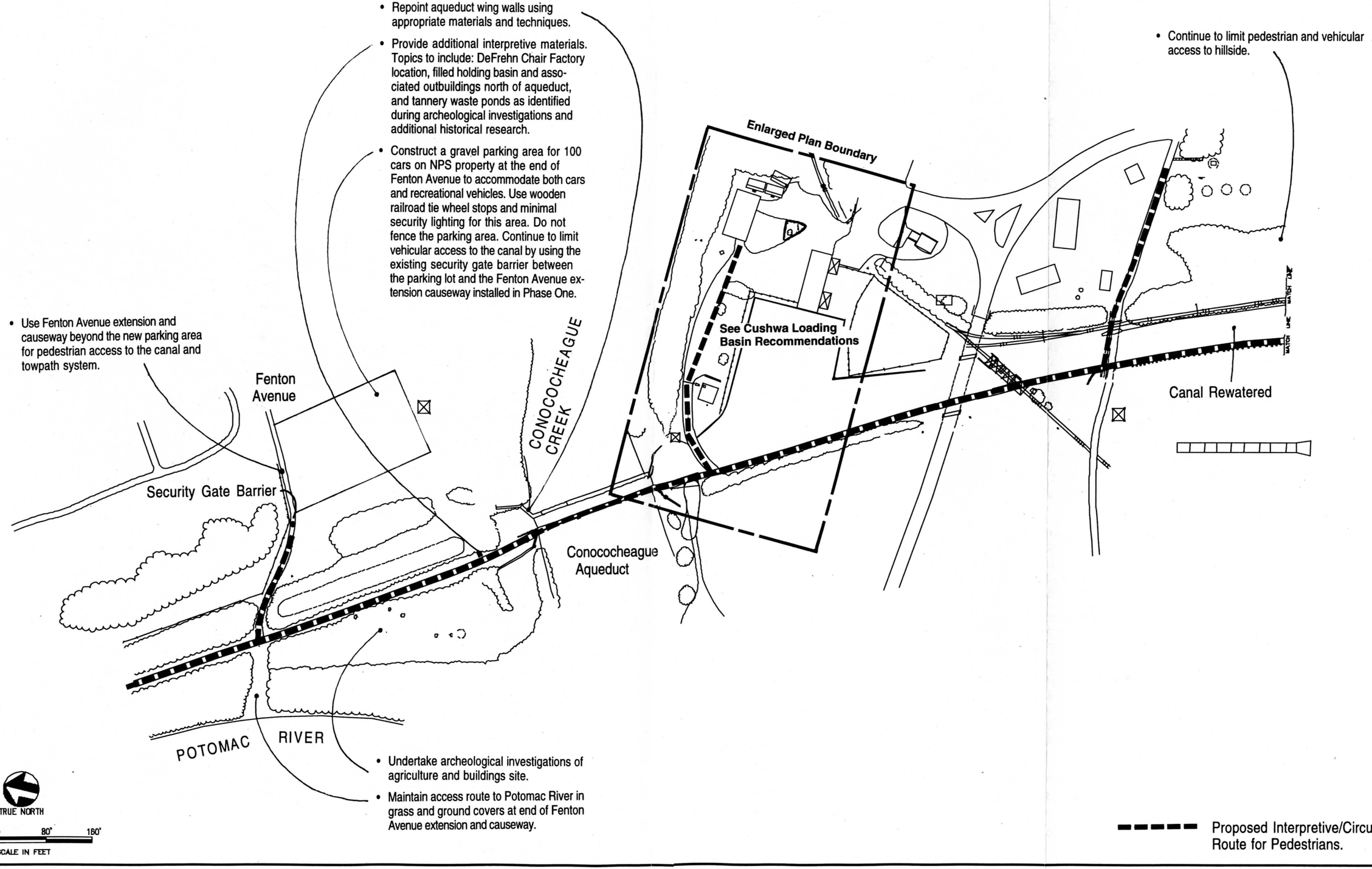


Figure 115a: Phase Two:
Overall Canal North Section Recommendations

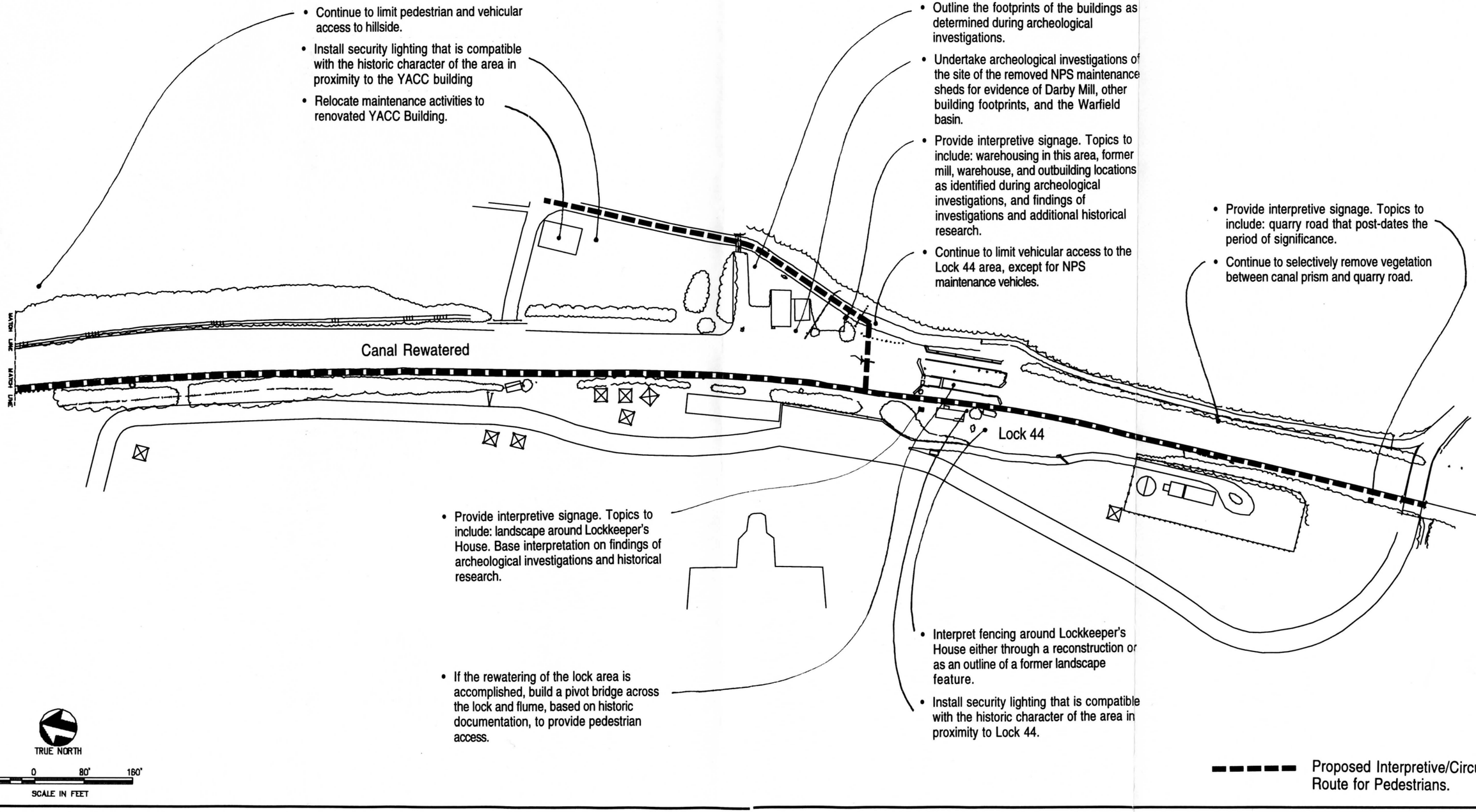


Figure 115b: Phase Two: Overall Canal South Section Recommendations

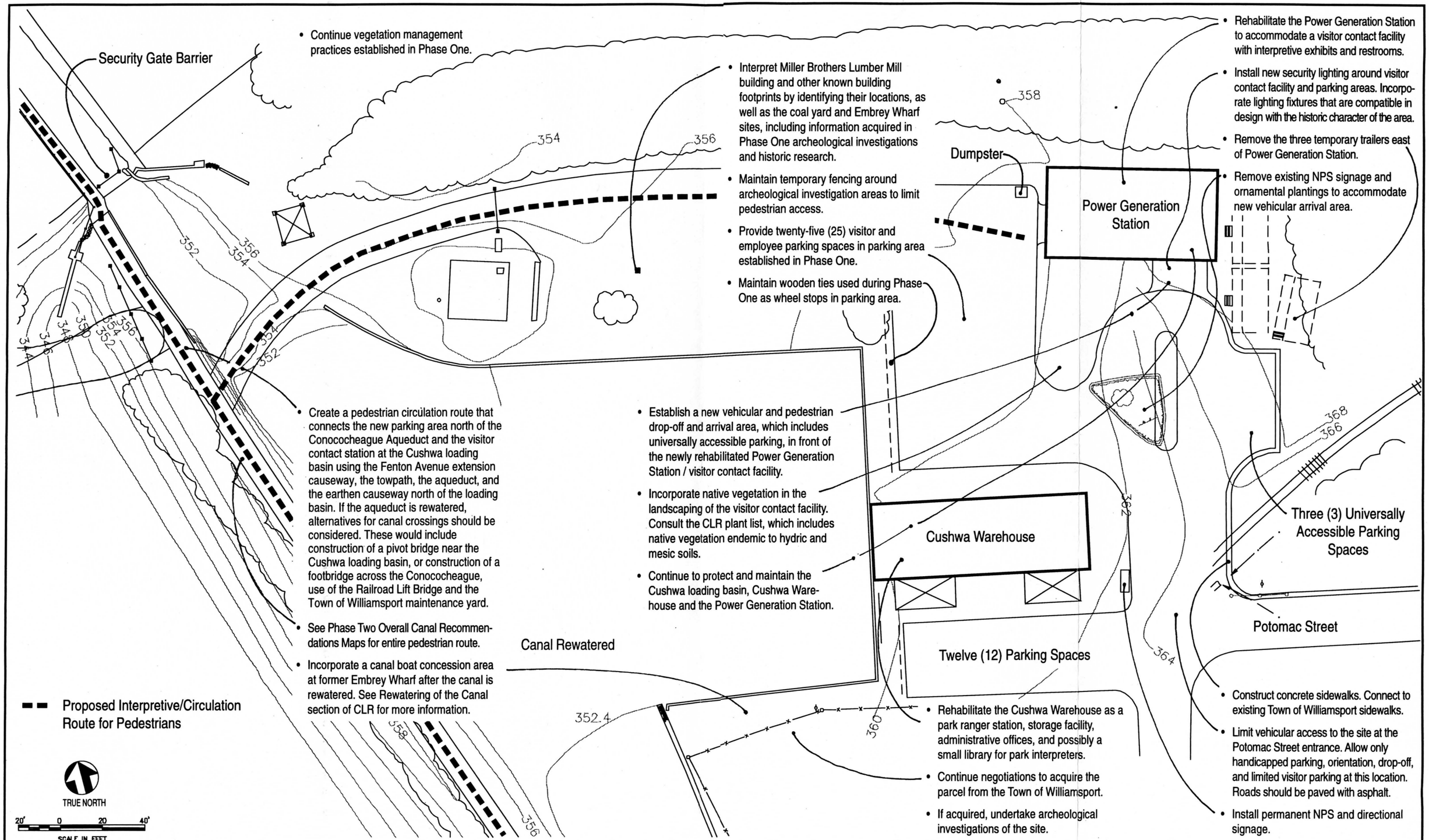


Figure 116. Phase Two: Cushwa Loading Basin Recommendations

PHASE THREE (YEARS ELEVEN TO TWENTY)

PHASE THREE OVERALL CANAL RECOMMENDATIONS

Refer to Figure 117a/b, *Phase Three: Overall Canal Recommendations.*

- Continue open communications with Town of Williamsport that promote cooperation in the protection of cultural landscape resources.
- Interpret farm site along Potomac River, Gruber Mill, Steffey and Findlay Mill, and Darby Mill sites, and the Potomac Edison Company power plant including information acquired through archeological investigations and historical research.
- Retain and maintain the interpretive displays installed in Phase Two.

Recommendations for Buildings and Structures

- Continue to protect and maintain the Cushwa Warehouse, the Power Generation Station, the Lockkeeper's House, lock, lock gates, flume, creosote vat, aqueduct, stone canal wall remnants, Western Maryland Railroad tracks, and all other historic landscape site features and archeological sites along the canal.
- Rehabilitate 1920s gas station or construct a new building on the site as an orientation center with interpretive displays.
- Rehabilitate Lockkeeper's House as a ranger station and visitor station for supervision of the rewatered canal and lock operation if the lock is rehabilitated to become operational. Consider establishing visitor interpretive displays in one room of the Lockkeeper's House.
- Relocate maintenance functions to a site outside the park as planned by NPS. Remove the YACC building that currently houses maintenance functions.

Recommendations for Archeological Resources

- Undertake archeological investigations of the site of the YACC building. Interpret area first as an archeological site and later according to the information acquired during the investigation.

Recommendations for Circulation Systems

Vehicular

- Maintain vehicular circulation systems established in previous phases.
- Provide additional parking (ten employee spaces) on the upper level behind the gas station and incorporate the area into established circulation routes.

Pedestrian

- Maintain pedestrian circulation systems established in previous phases.
- Maintain temporary fencing around archeological investigation sites to limit pedestrian access.

PHASE THREE

Recommendations for Vegetation

- Continue to stabilize and protect steep critical slopes through the use of native vegetation.
- Continue vegetation management practices established in Phases One and Two.
- Install additional native planting schemes at rehabilitated gas station, or newly constructed building on the site, as needed, using native plants listed in Phase Two recommendations.
- Undertake further investigations of plant materials at former farm site, especially around farmhouse foundation.
- Continue to selectively remove vegetation between canal prism and former quarry access road.

Recommendations for Small-scale Features

- Continue to protect and maintain historic materials, canal walls, metals, aqueduct wall stones in canal prism, metal railing remnants, and other historic site elements.
- Provide additional interpretive panels on site based on findings of archeological investigations and historical research accomplished in Phases One and Two, including the Darby Mill site, and in the permanent visitor contact facility location.
- For the permanent visitor contact facility, provide site furnishings that are compatible with the historic character of both the building and setting.
- Install security lighting at new facility and parking area. Light fixtures should be compatible in design with the historic character of the area.

PHASE THREE CUSHWA LOADING BASIN RECOMMENDATIONS

Refer to Figure 118, *Phase Three: Cushwa Loading Basin Recommendations.*

General Recommendations

- Continue to interpret sites identified in Phases One and Two. Retain and maintain the interpretive displays during Phase Two.
- Additionally interpret coal yard, Miller Brothers Lumber Mill site, and rewatered Cushwa loading basin, Power Generation Station, 1920s gas station, and C&O Canal Museum Building.
- Continue to encourage the Town of Williamsport to restrict construction in River Bottom Park to maintain views between the canal and the Potomac River.
- Continue vehicular and pedestrian circulation routes established in earlier phases. Incorporate access from gas station.

Recommendations for Buildings and Structures

- Continue to protect and maintain the Cushwa Warehouse and the Power Generation Station.
- Continue to protect and maintain all historic structures along the canal.

- Rehabilitate a portion of the Power Generation Station to more accurately portray the historic function of the building.

Recommendations for Archeological Resources

- Continue to protect and maintain all archeological sites along the canal.

Recommendations for Circulation Systems

Vehicular

- Continue to limit vehicular access to sensitive areas as designated in Phases One and Two.

Pedestrian

- Continue to limit pedestrian access to sensitive areas as designated in Phases One and Two. Maintain temporary fencing around archeological investigation areas.
- Redirect pedestrian route to include gas station and Power Generation Station as visitor contact facilities.
- Stabilize existing steps leading to Riverview Cemetery.
- Redirect pedestrian access to gas station and Power Generation Station as visitor contact facilities.
- Based on archeological investigations, establish a pedestrian path north of the Cushwa loading basin that minimizes the impact of visitation on existing resources.

Recommendations for Vegetation

- Continue vegetation management practices established in Phases One and Two.

Recommendations for Small-scale Features

- Maintain and protect all historic site elements.
- Continue canal boat concession at historic Embrey Wharf site.
- Install additional ADA signs where necessary.

---

[1] Dick Marshall, Conococheague Maintenance District Foreman. Telephone conversation with Cari Goetcheus, 12 July 1993.

[2] United States Department of the Interior, National Park Service, Preservation Assistance Division, Technical Preservation Services Branch, Washington, D.C. *Draft Guidelines for the Treatment of Historic Landscapes.* May 1992, 7.

[3] *Management of Cultural Landscapes*, Cultural Resource Management, NPS-28, Release No. 4 Draft, 108.

[4] Romigh and Mackintosh, "National Register Form: The Chesapeake and Ohio National Historical Park." November 1978.

[5] *Management of Cultural Landscapes*, Cultural Resource Management, NPS-28, Release No. 4 Draft, 100.

The accompanying Phase Three Area-wide Recommendations are to be used in conjunction with the Phase Three Recommendations Maps, Figures 117a/b and 118, *which follow.*

Phase Three Area-wide Recommendations

Overall Canal

- Continue open communications with the Town of Williamsport that promote cooperation in the protection of cultural landscape resources.
- Retain and maintain the interpretive displays installed during Phase Two.
- Provide additional interpretive signs on site based on further archeological and historical research including the Darby Mill site, and in the permanent visitor contact facility location.
- Continue to protect, retain, and maintain the integrity of all historic elements in the park including the Lockkeeper's House, lock, lock gate, flume, creosote vat, aqueduct, stone canal wall remnants, Western Maryland Railroad tracks, and all other historic landscape site features and archeological sites along the canal.
- Maintain vehicular and pedestrian circulation routes established in previous phases.
- Maintain temporary fencing around archeological investigation sites to limit pedestrian access.
- Continue established vegetation management practices.
- Continue to stabilize and protect steep critical slopes through use of native vegetation.

Cushwa Loading Basin

- Continue to protect and maintain the Cushwa Warehouse, the Power Generation Station, and all historic structures and archeological sites along the canal.
- Continue to encourage the Town of Williamsport to restrict construction in River Bottom Park to maintain views between the canal and the Potomac River.
- Retain and maintain the interpretive displays installed during Phase Two.
- Provide additional interpretive signs on site based on further archeological and historical research.
- Maintain temporary fencing around the archeological investigation areas to limit pedestrian access.

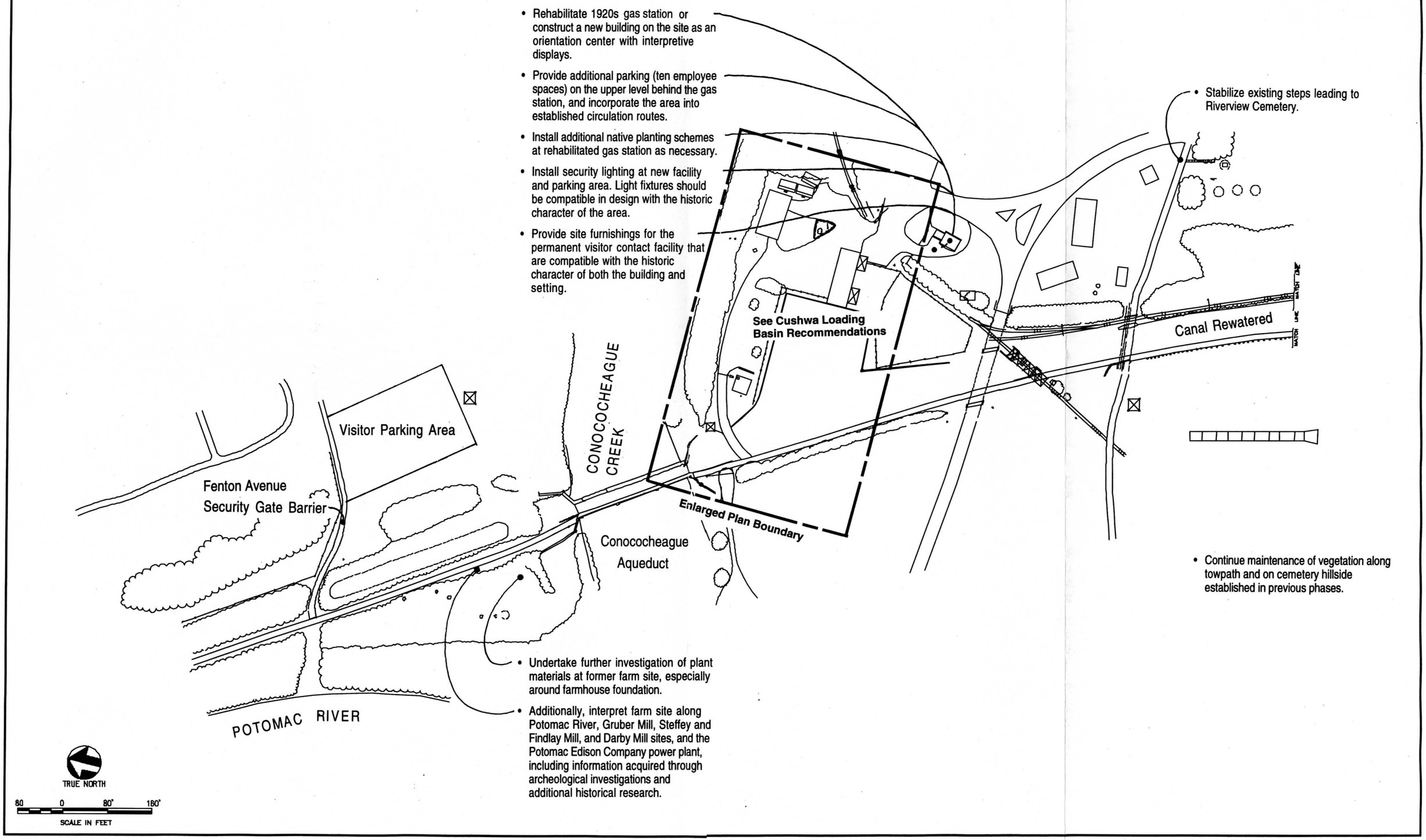


Figure 117a. Phase Three: Overall Canal North Section Recommendations

- Relocate maintenance functions to a site outside the park as planned by NPS. Remove the YACC building that currently houses maintenance functions.
- Undertake archeological investigations of the YACC Building site. Install temporary fencing to limit pedestrian access to the site.
- Interpret the area as an archeological site, and add documented findings to interpretive display program

- Provide interpretive materials based on documented findings of archeological investigations at the Darby Mill site.

- Continue to selectively remove vegetation between canal prism and former quarry access road.

Canal Rewatered

Lock 44

- Rehabilitate Lockkeeper's House as a ranger station for supervision of the rewatered canal and lock operation.
- Consider establishing visitor interpretive displays in one room of the Lockkeeper's House.

TRUE NORTH

80 0 80' 160'

SCALE IN FEET

Figure 117b. Phase Three: Overall Canal South Section Recommendations

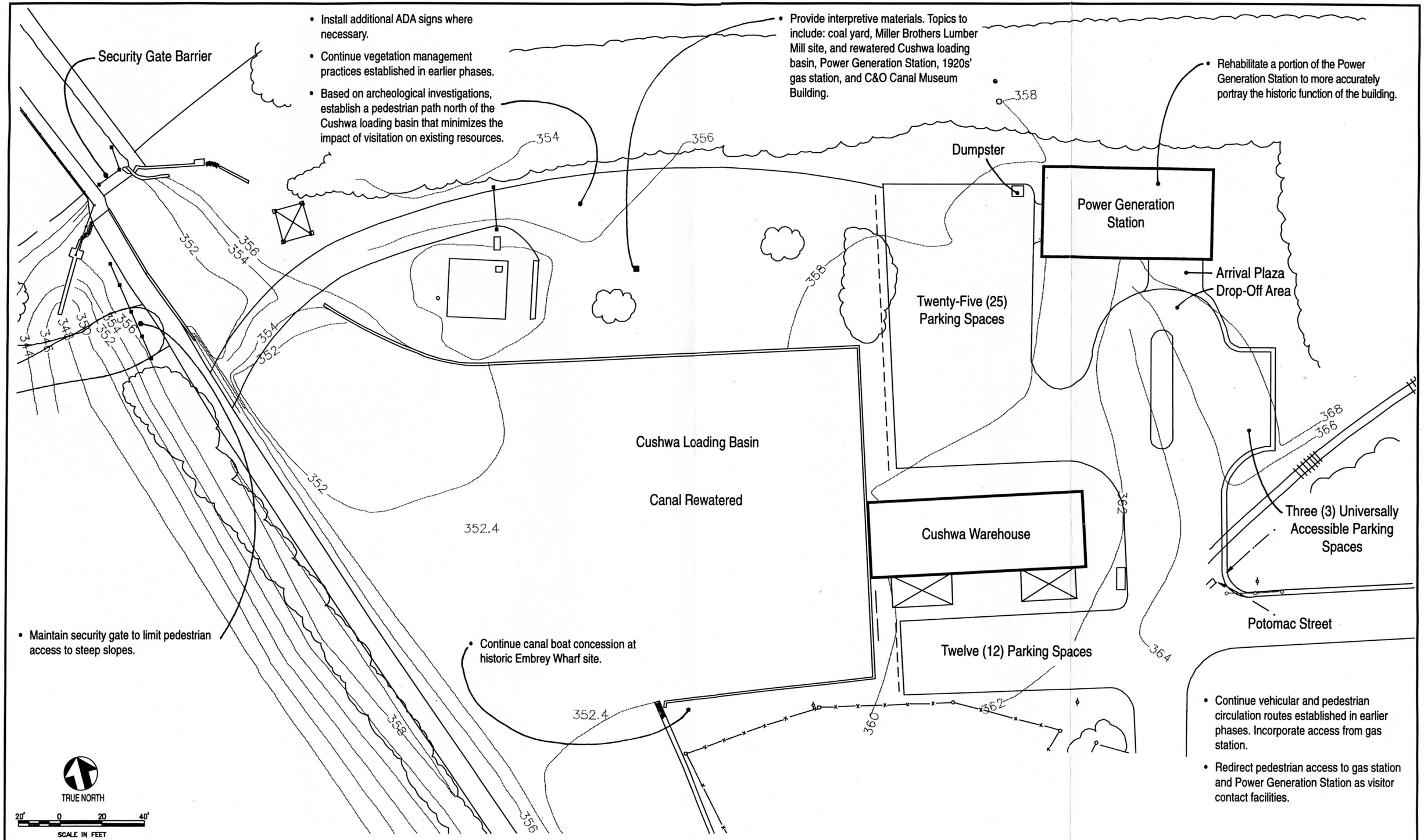


Figure 118. Phase Three:
Cushwa Loading Basin Recommendations

5 REFERENCES

Books, Newspapers, and Periodicals

The Baltimore Sun.

Cook, Roger. *The Western Maryland Railway: Fireballs and Black Diamonds.* San Diego: Howell-North Books, 1981.

Harper's Weekly, 1861-1865.

Kytle, Elizabeth. *Home on the Canal.* Cabin John, Maryland: Seven Locks Press, 1983.

Sanderlin, Walter S. *The Great National Project.* Baltimore: The Johns Hopkins Press, 1946.

Scharf, J. Thomas. *History of Western Maryland.* 2 vols. 1882. Reprint. Baltimore: Regional Publishing Company, 1968.

Thomas, James W. and T.J.C. Williams. *History of Allegany County, Maryland.* 2 vols. 1923. Reprint. Baltimore: Regional Publishing Company, 1969.

Williams, Harold A. *The Western Maryland Railway Story.* Baltimore: Western Maryland Railway Company, 1952.

Wolfe, George "Hooper". *I Drove Mules on the C&O Canal.* Dover, Delaware: Dover Graphic Associates and Woodwend Studio, 1969.

Maps

Courtenay, E.H. "Map of the Country between Washington and Pittsburg Showing the Proposed Routes of the Chesapeake and Ohio Canal, Internal Improvement Map: Pennsylvania, Maryland and Virginia," 1824. National Archives Cartographic Division, Alexandria, Virginia, G3842.C4 1824.C6.

Cowles, Calvin D. *Atlas to Accompany the Official Records of the Union and Confederate Armies*. Washington, D.C.: Government Printing Office.

Downin, S.S. "Map of Lots Laid off Adjoining Wms. Port Above Lock No. 44." 1882. Hagerstown, Maryland: Washington County Courthouse, Land Records, Liber 81, Folio 704.

Downin, S.S. "Map of Williamsport." 1876. Hagerstown, Maryland: Washington County Courthouse, Land Records, Liber 75, Folio 722-3.

Downin, S.S. "Plat of Williamsport." 1891. Hagerstown, Maryland: Washington County Courthouse, Land Records, Liber 97, Folio 698.

Downin, S.S. "White's Addition to Williamsport." 1867. Hagerstown, Maryland: Washington County Courthouse, Land Records, Liber 89, Folio 168.

Lake, Griffing, and Stevenson. *An Illustrated Atlas of Washington County, Md.* Philadelphia: H. J. Toudy, 1877.

M.L. Funkhouser and Company. "Map of Washington County Maryland Showing Election Districts." 1889. In *Real Estate Journal*, vol. X, no. 1, 1889. Hagerstown, Maryland.

"McKall's Map of Williamsport." 1896. Hagerstown, Maryland: Washington County Free Library, Western Maryland Room.

Potomac Edison Company Engineering Department. "Plan and Profile of Transmission Line Crossing C&O Canal." c. 1929. Williamsport, Maryland: Potomac Edison Company files.

"A Plat of Williamsport." 1786. Hagerstown, Maryland: Washington County Courthouse, Land Records, Liber E, Folio 421.

Sanborn Map Company, "Map of Williamsport, Washington County, Maryland, 1918." Broadway, New York: Sanborn Map Company, 1918.

Sanborn Map Company, "Map of Williamsport, Washington County, Maryland." Information gathered in 1942, revised in 1945 using 1929 map. New York: Sanborn Map Company, 1945.

U.S. Geological Survey, Williamsport, W.VA.-MD.-PA. 7.5 Minute Series Quadrangle Map, 1910.

U.S. Geological Survey, Map of Williamsport. 7.5 Minute Series Quadrangle Map, 1943, revised in 1953.

U.S. Geological Survey, Williamsport, MD.-W.VA. 7.5 Minute Series Quadrangle Map, 1979.

Varlé, Charles. "A Map of Frederick and Washington Counties, State of Maryland." 1808. Engraved by Frederick Shallus, Philadelphia. Historical Society of Frederick County, Frederick, Maryland.

Miscellaneous

Kaplan, Melvin. Interview with Cari Goetcheus and Julie Gronlund at Kaplan's Store in Williamsport, Maryland, June 22, 1993.

Town Council of Williamsport, Meeting Minutes. 1825-1900. Town Hall, Williamsport, Maryland.

Washington County Historical Society Vertical Files. Hagerstown, Maryland.

Washington County Land Records. Washington County Courthouse, Hagerstown, Maryland.

Washington County Register of Wills. Washington County Courthouse, Hagerstown, Maryland.

Photographs/Sketches

Chesapeake and Ohio Canal National Historical Park Photo Library

c. 1860. View of Williamsport from the West Virginia shore showing the C&O Canal and related resources (WM-10)

c. 1872. Lithographic Perspective of Aqueduct, Cushwa loading basin, and Embrey and Cushwa Warehouse from southeast, circa 1872 (WM-11)

c. 1900. Overview of Cushwa loading basin and holding basin areas, view from southeast (WM-18)

c. 1900. Western Maryland Railroad tracks along the C&O Canal at Williamsport (WM-12)

c. 1916. Cushwa Coal Wharf and Cushwa loading basin (WM-14)

1919. Lock 44 with lockkeeper Harvey Brant's wife and family (L44-2)

1920. Collapse of the Conococheague Aqueduct berm parapet (CA-2)

1920. Conococheague Aqueduct following collapse of berm parapet (CA-4)

1920. Canal boat in water below aqueduct following collapse of berm parapet (CA-3)

c. 1920. Conococheague Aqueduct with people following collapse of berm parapet (CA-5)

c. 1920. Conococheague Aqueduct following collapse of the berm parapet (CA-6)

c. 1920. Washington-Berkeley Bridge and Cushwa loading basin. From collection of Consolidation Coal Company (WM-6)

c. 1922. Temporary Western Maryland Railroad tracks over canal to Potomac Edison Company power plant. By Hiedwohl, Hagerstown, Maryland (WM-4)

1924. Flood with view of Washington-Berkeley Bridge, steamloader, and Cushwa loading basin. Donated by Jack Sanderson (WM-2)

1939. Berm side of the Conococheague Aqueduct showing wood parapet wall (CA-7)

1961. Lock 44 in Williamsport

c. 1978. Power Generation Station-north elevation from northwest (Plate H.12) (WM-19)

c. 1978. Power Generation Station-partial north elevation (western section) (Plate H.11) (WM-19)

c. 1978. Power Generation Station-partial north elevation (eastern section) (Plate H.10) (WM-19)

c. 1978. Power Generation Station-east elevation (Plate H.9) (WM-19)

c. 1978. Power Generation Station-west elevation (Plate H.8) (WM-19)

c. 1978. Power Generation Station-south elevation (facade) (Plate H.7) (WM-19)

c. 1978. Power Generation Station from southwest (Plate H.6) (WM-19)

c. 1978. Power Generation Station and warehouse from west (Plate H.5) (WM-19)

c. 1978. Power Generation Station and warehouse from southeast (Plate H.4) (WM-19)

c. 1978. Power Generation Station-truss system in eastern section (Plate H.13) (WM-19)

c. 1978. Power Generation Station-truss system in western section (Plate H.14) (WM-19)

n.d. View of Cushwa loading basin from southeast (WM-15)

n.d. Lockkeeper's House at Williamsport, occupied by Avery A. Brant, lockkeeper (L44-4)

n.d. Cushwa loading basin, view from southeast (WM-13)

n.d. View of Cushwa coal yard, steamloader, and canal from southeast (WM-16)

n.d. Williamsport steamloader and Washington-Berkeley Bridge (WM-3)

n.d. View of canal toward Cushwa loading basin from southwest (WM-7)

n.d. View of Warfield basin and Lock 44 from northeast (Lock 44-11)

n.d. Railroad Lift Bridge over canal (WM-9)

n.d. View of Lock 44 and Lockkeeper's House. Photograph by Abbie Rowe (LH44-7)

n.d. Canal prism showing stone walls (L44-8)

Harper's Weekly
Bonwill, C.E.H. "Invasion of Maryland—Lee's Army Crossing the Potomac at Williamsport in Scows Guided by Wires." Maryland State Archives, Annapolis.

Bonwill, C.E.H. "Invasion of Maryland—Lee Retreating Across the Potomac to Virginia, above Williamsport, July 13." Maryland State Archives, Annapolis.

"Colonel Thomas's Brigade Crossing the Potomac at Williamsport, Md." July 6, 1861. Maryland State Archives, Annapolis.

Davis, Theodore R. "Williamsport, Maryland and the Ford across the Potomac." October 18, 1862. Maryland State Archives, Annapolis.

Kaplan, Melvin Collection, Private Collection, Williamsport, Maryland
n.d. View of Cushwa loading basin from southeast. Photograph taken by Detroit Photographic Company.

Long, James W. Collection, Washington County Free Library, Western Maryland Room
Numerous photographs from the memory books kept by James W. Long, Jr., June 1915-Sept. 1923 and Sept. 1923-Fall 1924.

Merrick, Robert G. Collection, Maryland State Archives, Annapolis, Maryland
c. 1890. Darby Mill (MSA SC 1477-5111)

c. 1903. View of Bollman Bridge and Darby Mill looking south (MSA SC 1477-4757)

c. 1903. View of Cushwa loading basin from southeast (MSA SC 1477-4758)

c. 1903. C&O Canal Boat in Conococheague Aqueduct (MSA SC 1477-4759)

Miscellaneous
1937. Aerial photograph of Williamsport area, Soil Conservation Service. National Archives Cartographic Division, Alexandria, Virginia.

1993. Aerial photograph of Williamsport area, Air Photographics, Inc., Martinsburg, West Virginia.

n.d. "The Ferry, Williamsport, Maryland."

n.d. Williamsport, Md.-Ferry, first operated in 1775 across Potomac River-from and to Maryland and W.Va. (picture/postcard).

n.d. View of Cushwa loading basin published in Dec. 12, 1956, *The Morning Herald*, Hagerstown, Maryland.

n.d. NPS photo steamloader and tracks in coal yard.

Postcards
"C&O Canal, Williamsport; Collapse of the Conococheague Aqueduct; *Harper's Weekly* Sketch; Cemetery and Canal." Four views of the canal at Williamsport, n.d.

"Lock No. 44, Williamsport." n.d.

"General Banks Division Recrossing the Potomac from Williamsport, MD. to attack the rebel army under General Jackson." n.d.

"War in the Shenandoah Valley." Taken from *Harper's Weekly*, 1862.

Washington County Historical Society, Hagerstown, Maryland
1880-90. DeFrehn Chair Factory, Williamsport, Maryland. Photocopy from George "Hooper" Wolfe collection, vertical files.

c. 1890. Steffey and Findlay Mill, C&O Canal, Williamsport, Maryland.

n.d. Photo by Miller from Cemetery Hill Showing Potomac River Basin.

n.d. View of Cushwa loading basin, Cushwa Warehouse, Power Generation Station, and Cushwa Cement and Phosphate Warehouse.

Unpublished Documents

Bearss, Edwin C. "Historic Structure Report Part II: C&O Canal, the Bridges." Study prepared for the National Park Service, Historical Data Section, Division of History, Office of Architecture and Historic Preservation, January 31, 1968.

Chick, Drew W. Jr. "Report of Justice Douglas-Washington Post Hiking Trip Along the Chesapeake and Ohio Canal, March 20-27, 1954." Article prepared for the United States Department of the Interior, National Park Service, 1954.

John Milner Associates and Edward H. Richardson Associates. "Historic Structure Report: Lift Lock 44." Study prepared for the National Park Service, Denver Service Center, Chesapeake and Ohio Canal Restoration Team, August 1978.

John Milner Associates and Edward H. Richardson Associates. "Historic Structure Report: Railroad Lift Bridge." Study prepared for the National Park Service, Denver Service Center, Chesapeake and Ohio Canal Restoration Team, September 1978.

John Milner Associates and Edward H. Richardson Associates. "Stabilization Study: Conococheague Creek Aqueduct." Study prepared for the National Park Service, Denver Service Center, Chesapeake and Ohio Canal Restoration Team, September 1978.

John Milner Associates and Keast and Hood Company. "Historic Structure Report: Generation Station." Study prepared for the National Park Service, Denver Service Center, Chesapeake and Ohio Canal Restoration Team, September 1978.

John Milner Associates and Keast and Hood Company. "Restoration Study: Turning Basin." Study prepared for the National Park Service, Denver Service Center, Chesapeake and Ohio Canal Restoration Team, September 1978.

Mackintosh, Barry. "C&O Canal. The Making of a Park." Report prepared for the National Park Service, U.S. Department of the Interior, 1991.

Maryland Department of State Planning. "Comprehensive Plan for the Town of Williamsport, Washington County, Maryland." April 27, 1975.

National Park Service and Department of Commerce. "Chesapeake and Ohio Canal Report." 81st Congress, 2nd Session, House Document No. 687, August 16, 1950.

Phillips, Steven J. "Archeological Excavation of the Power Station, Williamsport, Maryland." Study prepared for the National Park Service, Denver Service Center, Branch of Historic Preservation, January 1978.

Preservation Associates, Inc. "Historic Preservation Survey and Planning Project, Williamsport, Maryland." Study Prepared for the Washington County Department of Housing and Community Development, 1980.

Seidel, Ellen M. "Archeological Investigations at the Miller Brothers Lumber Mill Site, Williamsport, Maryland." Study prepared for the National Park Service, Denver Service Center, Branch of Historic Preservation, July 1981.

Smith, Edward D. "Historic Resource Study, Williamsport, Maryland." Report prepared for the National Park Service, Denver Service Center, National Capital Team, July 25, 1979.

United States Congress. House. "Chesapeake and Ohio Canal Report." 81st Congress, 2nd session, 1950. House Document No. 687.

United States Department of the Interior. "Environmental Assessment: General Plan. Chesapeake and Ohio Canal National Historical Park." February 1975.

United States Department of the Interior, National Park Service. National Register Nomination for the Chesapeake and Ohio Canal, November 1978.

United States Department of the Interior, National Park Service. National Register Nomination for the Williamsport Historic District, 1980.

United States Department of the Interior, National Park Service. "Development Concept Plan and Assessment: C&O Canal, Williamsport." May 1983.

Unrau, Harlan D. "Historic Structure Report: The Cushwa Warehouse." Report prepared for the National Park Service, Denver Service Center, Chesapeake and Ohio Canal Restoration Team, October 1977.

"Williamsport and Vicinity Reminiscences." Compiled by the Williamsport Chamber of Commerce, Washington County, Maryland. Washington County Historical Society, Hagerstown, Maryland.

APPENDICES

APPENDIX A: CHRONOLOGY OF HISTORIC LANDSCAPE PERIODS

Development of Williamsport Prior to the Arrival of the C&O Canal in 1828

1749	Frederick County Court appoints Edward Wyatt to keep a ferry at mouth of Conococheague Creek.
1786	Maryland General Assembly passes first act of incorporation for the Town of Williams' Port; town established as an economic and commercial center associated with Potomac River trade.
1787	General Otho Holland Williams holds lottery for sale of lots in Williamsport.
1790-1810	Original brick section of Cushwa Warehouse constructed near the Potomac River Basin.
1792-1802	Contractor Thomas Beall constructs canals to bypass unnavigable or dangerous portions of Potomac River, substantially improving access to Williamsport.
c. 1810	Potomac Company clears fifteen miles of the Conococheague Creek, upstream from it confluence with the Potomac River, for navigation.
1817	Construction of New York's Erie Canal begins.
c. 1820	Joseph Hollman opens his shipping industry in a large warehouse near mouth of Conococheague Creek, believed to be the original section of the Cushwa Warehouse.
1823	A second Act of Incorporation establishes a new name: Town of Williamsport.
1825	Maryland passes act incorporating C&O Canal Company.
	U.S. Board of Engineers releases preliminary report on C&O Canal indicating that connecting upper Potomac with Youghiogheny or Monongahela rivers by canal was possible and practical.

Canal Construction, 1828-1850

1828	Congress passes act subscribing $1 million to C&O Canal Company's stock.
1832	Williamsport marketplace slated for replacement/improvement.
	William Price, member of Board of Directors of the C&O Canal Company, authorized to proceed with acquisition of land in Washington County.

Contracts for the construction of Lock 44 and the Conococheague Aqueduct awarded to private contractor Michael Byrne.

1833 Canal company acquires large part of right-of-way below Williamsport.

August 1833 slated as scheduled completion date for section 187—from Lock 44 to south side of the Conococheague Aqueduct—of the C&O Canal.

1834 Michael Byrne completes construction of Lock 44.

Michael Byrne completes construction of Conococheague Aqueduct.

First canal boats able to reach Williamsport using slackwater formed by Dam 4.

Eli Stake proposes construction of a bridge over the canal to provide access to the ferry. Wooden bridge constructed prior to 1838.

1835 Construction of canal prism and towpath completed in Williamsport; canal officially opened in Williamsport with water from Dam 5 let into Williamsport level of canal.

Waste weir constructed to regulate flow of water.

Wrought iron railing installed on Conococheague Aqueduct.

Loading basin (hereafter referred to as the Cushwa loading basin) south of the Conococheague Aqueduct completed, allowing access for a number of boats at any one time for loading and unloading supplies.

Joseph Hollman proposes to construct a flume parallel to and build a lockkeeper's house near Lock 44 in exchange for water rights and permission to build a dry dock for repair of boats. Flume built; dry dock presumably built; creosote vat presumably built to treat wood members; construction of lockkeeper's house delayed indefinitely.

Eli Beatty granted use of water at Conococheague Aqueduct to be applied to the use of grinding plaster, sawing, and planing machine for an annual fee of $150. Also requests approval to exchange land in Williamsport for permission to construct a warehouse on margin of the Cushwa loading basin.

Charles A. Warfield constructs a warehouse and basin, the Warfield basin, immediately above Lock 44.

	Wooden bridge built across the canal to provide access to ferry/ford site.
1835-1840	Cushwa loading basin enlarged.
1835-1840	Cushwa Warehouse, owned by Ann Williams, enlarged.
1838	J.A. Magruder Company of Georgetown granted permission to construct a warehouse on canal company's lot north of Cushwa loading basin in Williamsport.
	Pivot bridge constructed over Lock 44.
1847	Owen Ardinger granted permission to construct a dry dock on earth causeway side of canal near Williamsport; presumably constructed shortly thereafter.
1848	Charles Embrey builds wharf along canal bank opposite Cushwa Warehouse.
	Board grants Embrey permission to construct building for pressing of hay, later known as the Beatty Hay Press, and landing on canal company's vacant lot adjacent to Lock 44.
	John M. Stake establishes a produce warehouse adjacent to the Cushwa loading basin with one room in warehouse set aside for toll collector.
	Board orders superintendent of Williamsport Division to construct a lockkeeper's house on company land at Lock 44. Records do not indicate whether or not this order was carried out.
Pre 1850	Canal used mainly for transportation of agricultural goods, primarily flour, wheat, corn, lumber, and lime.
1850	Opening of canal at Cumberland. Coal becomes principal commodity traded on canal, and coal tolls become chief source of revenue.
	Beatty Coal Yard established north of Lock 44, on the berm side of the canal.

Canal Opening to Outbreak of the Civil War, 1850-1861

1850	Canal severely damaged in flood and rewatered after repairs.
	Board grants Charles Embrey permission to build stocks (partially on canal company land) for repair of boats at Williamsport.
c 1852-53	Series of floods strike canal, all but destroying the company's financial viability.

1852 The canal company converts the Beatty Hay Press into a carpenter's shop for company use.

c. 1855 First lockkeeper's house built at Lock 44.

1857 Crack begins forming in upper wall of Conococheague Aqueduct.

c. 1858 Wooden bridge near Cushwa loading basin repaired after having been severely damaged by flood.

The Civil War, 1861-1865

1861 Civil War begins. Most of Washington County loyal to Union.

Small body of Confederate troops temporarily seize Lemen's (previously Watkin's) Ferry.

Confederate troops sent to destroy canal between Harpers Ferry and Williamsport.

Heavy rains damage canal. Repairs completed within two months.

Union army establishes post at Williamsport to guard Potomac River and canal. Entrenchments constructed in Riverview Cemetery overlooking the canal.

1862 Magruder Warehouse burned: All but two warehouses—both run by Charles Embrey—burned in Cushwa loading basin area.

A mill owned by Shoop and LeFevre at Lock 44 burned.

Board of canal company gives Charles Embrey permission to build dry dock above Lock 44.

Union General Banks' troops retreat to Williamsport, using ferry and canal bridge to cross Potomac.

Union soldiers destroy pivot bridge at Lock 44 and main canal bridge near Cushwa loading basin to prevent use by retreating Confederate soldiers after Battle of Antietam. Attempts to destroy Conococheague Aqueduct are unsuccessful.

Confederate General Stuart's troops establish road under Conococheague Aqueduct and damage lockkeeper's house.

Temporary road under aqueduct repaired, but not usable in high water.

1863	Charles Embrey builds wharf, probably replacement for 1847 wharf.
	A new, smaller bridge completed to replace one burned in September 1862 near Cushwa loading basin.
	Confederate soldiers retreating from Gettysburg destroy four corners of aqueduct; throw coping and railing into creek; destroy opening of one arch; burn gates on Lock 44; tear down two courses of wall at Lock 44 and throw stone into lock; and make four roads through banks of canal.
1864	Confederate troops damage Conococheague Aqueduct and damage canal during skirmish with federal troops stationed in Williamsport.
	Mary Williams White and husband sell the original warehouse at the Cushwa loading basin to Charles and Thomas Embrey.
1865	All of upstream parapet of Conococheague Aqueduct falls into creek except for two corners that had been repaired in 1863.
	Aqueduct repaired with "wooden trunk."
	Civil War ends.

Post-War Reconstruction to the Great Flood of 1889, 1865-1889

1865	Lock 44 gates reconstructed.
	A.J. Potts builds feed store at Lock 44.
1866	Cushwa loading basin cleaned.
	Board orders Engineer and General Superintendent to have bridge over canal at Williamsport restored.
c. 1866	Culbertson Mill constructed north of Conococheague Aqueduct.
1867	Board orders construction of a lockkeeper's house at Lock 44. Current building presumably erected.
1869	Goudy, Grove, and Gorman appointed to supervise reparation of Conococheague Aqueduct.
c. 1870	Isaac Gruber establishes saw and planing mill near Warfield basin north of Lock 44.
1873	Western Maryland Railroad officially opens in Williamsport.

Edward Steffey and James Findlay establish a coal and lumber yard and office on east side of canal immediately above Warfield basin near Lock 44. A Western Maryland Railroad line runs to firm's coal yard.

1874 Victor Cushwa and Charles Embrey and Sons enter into a partnership dealing in coal, cement, salt, plaster and fertilizers.

1877 Flood severely damages canal.

Culbertson Mill closed.

1878 DeFrehn opens chair factory in Isaac Gruber's mill.

1879 Iron Bollman Bridge erected over canal by Wendell Bollman.

John A. and George A. Miller lease mill from Victor Cushwa to operate plaster grinding (later lumber) mill to be powered by water leased by Cushwa from C&O Canal.

c. 1880 Isaac Gruber's mill demolished. F.H. Darby builds new flour mill at same location.

DeFrehn relocates chair factory to the abandoned Culbertson Mill north of Conococheague Aqueduct.

Steamloader constructed adjacent to Western Maryland Railroad tracks near Embrey Wharf for loading and unloading of coal.

Victor Cushwa becomes sole owner of the partnership and renames the enterprise Victor Cushwa.

F.H. Darby changes the name of his flour mill to the Undine Milling Company.

1882 Board grants permission to Embrey and Stanhope to build wharf on company's land near Cushwa loading basin.

1886 Extensive repairs made to bridge over Lock 44.

1889 The flood of 1889 devastates canal, but does not severely damage associated buildings. Canal company lacks funds necessary to rebuild.

Canal Reopening After the Flood of 1889 to Abandonment of the Canal, 1889-1924

c. 1890 Cushwa Cement and Phosphate Warehouse constructed on northeast corner of Cushwa loading basin.

1891	Canal fully restored with funding from B&O Railroad Company.
1896	Washington County's first trolley line established between Williamsport and Hagerstown; Power Generation Station built behind Cushwa Warehouse.
1898	Power Generation Station no longer used as a result of construction of larger facility in Hagerstown.
1901	Canal trustees (B&O Railroad Company) grant lease to Victor Cushwa and Sons and Steffey and Findlay for use of large coal wharf located on east side of canal between Undine Milling Company's mill and C&O Carpenter's Yard above Lock 44.
1904	F.H. Darby's grain mill adjacent to canal destroyed by fire.
1909	Washington-Berkeley Bridge opens to traffic, replacing ferry.
1909-1920	Billboards placed on hillside above canal, near Riverview Cemetery.
	Utility poles placed at entrance to bridge.
1916	Victor Cushwa and George Nicholson, canal manager, each donate $200 to construct sewer to divert water which had been running from Commerce and Potomac Streets into canal basin to the Conococheague Creek.
c. 1917	Miller Brothers Lumber Mill converted into an ice house by John M. Miller and renamed Miller's Ice House. A two-story ell is attached to south side of main block of lumber mill. A two-story addition is added to the ice house.
c. 1918	Tool shed constructed near mill sites north of Lock 44.
1919	Feed store visible atop bypass flume at Lock 44.
1920	Conococheague Aqueduct's east parapet collapses, making canal inaccessible in Williamsport area.
	Aqueduct's east parapet replaced with a wooden wall.
	Gas station constructed in Williamsport public square.
1921	Fire completely destroys Miller's Ice House.
1922	Potomac Edison Company receives permission to erect a temporary track over canal so building materials can be carried from Western Maryland Railroad to new power plant site. Power and telephone lines extended across canal to the new plant. Construction destroys a significant portion of the landscape surrounding the Lockkeeper's House.

1923	Railroad Lift bridge and adjacent Control Station completed for permanent access to power plant.
	Potomac Edison Company power plant begins operation.
	Holding basin north of Conococheague partially filled.
1924	Cushwa loading basin partially filled.
	Power transmission towers constructed along the canal by the Potomac Edison Company.
	Canal ceases operations.

Deterioration of the Canal, 1924-1937

1924-1939	Vegetation allowed to grow on aqueduct; wrought-iron mule rail removed.
	A number of stagnant pools of water occupy the canal prism. Canal basin littered with abandoned boats.
1927	Edgar T. Hayman establishes road along canal east bank to carry stone from his quarry on Stake property.
1928	Lester Cottrill and Percy Murray, meat shop owners, rent Miller Brothers Lumber Mill site from Victor Cushwa and construct a concrete building to be used as slaughterhouse, probably on remaining mill foundation.
1929	Canal flushed at Williamsport to remove stagnant water; abandoned canal boats removed.
1930	Water system installed at Williamsport with lines running under canal to power plant.
1933	Civil Works Administration to do cleanup of canal area, including drainage of stagnant pools, cleanup of weeds, brush, and debris.
1935	Williamsport sewer system installed with portion running along towpath and across canal.
1936	Cottrill Slaughterhouse and Cushwa's Cement and Phosphate Warehouse, washed away by flood.
	Mr. Obits, a local resident, builds equipment shed on site of slaughterhouse.
c. 1936	Cushwa loading basin, holding basin, and Warfield Basin completely filled.
	Harvey Brant builds a shed near the Lockkeeper's House from the remains of the carpenter shop.

1937	Floor of Bollman Bridge replaced and props installed for support. Floor and stringers treated with creosote.

NPS Acquisition and Management, 1937-1993

1937-38	NPS assumes maintenance of the C&O Canal.
1956	Towpath cleared of vegetation. Vegetation and underbrush remain dense in and around canal prism.
c. 1960	Chain link fence installed, blocking railroad spur from warehouse.
1961	Canal proclaimed a National Monument
c. 1964	NPS Maintenance sheds constructed north of Lock 44.
c. 1968	YACC Building constructed above Lock 44.
	Town of Williamsport Wastewater Treatment facility built on lands adjacent to the canal.
1971	Canal named a National Historical Park
1972	Tropical storm Agnes causes major destruction on canal from Hancock to Georgetown.
1974	David Cushwa III sells Power Generation Station to NPS.
c. 1975	Archeological excavation conducted in area of Cushwa Warehouse and Power Generation Station. Windows and doors in Power Generation Station and warehouse boarded up.
1976	Obits shed demolished.
1979	Canal approved for listing on the National Register of Historic Places.
1981	Lockkeeper's House stabilized.
	Cushwa Warehouse rehabilitated.
1983	Conococheague Aqueduct stabilized.
1985	Major flood damages approximately 120 miles of park.
c. 1986	Bridge constructed over stream above Lock 44. Potomac Edison Company power plant access road built.
1987	Power Generation Station rehabilitated.
1990	NPS interpretive signs installed along Williamsport segment of the C&O Canal.
1993	Cushwa loading basin walls reconstructed.
	Flume reconstructed.

APPENDIX B: 1993 VEGETATION INVENTORY

Trees

Acer negundo (Boxelder)
Acer saccharinum (Silver maple)
Ailanthus altissima (Tree-of-heaven)
Betula nigra (River birch)
Broussonetia papyrifera (Paper mulberry)
Celtis occidentalis (Common hackberry)
Cercis canadensis (Eastern redbud)
Fraxinus pennsylvanica (Green ash)
Gleditsia triacanthos (Honeylocust)
Malus spp. (Apple)
Morus spp. (Red and white mulberry)
Pinus strobus (Eastern white pine)
Platanus occidentalis (Sycamore)
Populus alba (White poplar)
Prunus serotina (Black Cherry)
Quercus alba (White oak)
Robinia pseudoacacia (Black locust)
Sassafras albidum (Common sassafras)
Thuja occidentalis (Eastern arborvitae)
Tsuga canadensis (Canadian hemlock)
Ulmus rubra (Red elm)

Shrubs

Forsythia x intermedia (Border forsythia)
Juniperus chinensis 'pfitzeriana' (Pfitzer juniper)
Rhus typhina (Staghorn Sumac)
Rosa multiflora (Multiflora rose)

Vines and Ground Covers

Lonicera japonica (Japanese honeysuckle)
Parthenocissus quinquefolia (Virginia creeper)
Rhus radicans (Poison ivy)
Vitis spp. (Grape vine)

Herbaceous Plant Materials

Asclepias incarnata (Swamp Milkweed)
Cyperus rivularis (Shining Cyperus)
Eupatorium perfoliatum (Boneset)
Juncus spp. (Rush)
Polygonatum spp. (Smartweed)
Typha latifolia (Common cattail)

APPENDIX C: MANAGEMENT PLANNING BACKGROUND

C&O Canal NHP General Plan

The C&O National Historical Park General Plan (GP) of 1976 established an overall management philosophy for the park. The plan addressed the purpose of the park, three management objectives, a land use plan with five management zones, development standards, an administrative approach, resource protection data, environmental impacts of the proposal, and alternatives to the proposed actions.

The management objectives of the C&O Canal NHP include historic preservation; imparting an understanding and appreciation of a historic way of life within the natural setting of the Potomac Valley; and developing the park's recreational resource potential within the limits of the two other management objectives. Recreational uses along the C&O Canal are intended to include hiking, biking, and camping. The GP identified the Williamsport area, Section 19 of the C&O Canal, as Zone A, a National Interpretive Center Zone. This designation implies that the property be accessible, that there be room for visitor facilities, and that there be compatibly developed adjacent land. It also implies short-term visitor usage (from one to two hours) and potential for future development as an outdoor living history museum. The zone abutting the southern portion of the Williamsport segment has been identified as a Short-term Remote Zone. This designation is applied to areas with limited access and a resultant lower density of use. The objective for this zone is to provide short-term experiences for those who wish to spend an undisturbed day in a semi-natural setting. The zone abutting the northern section of the Williamsport segment has been identified as a Short-term Recreation Zone. This designation is applied to an area that is limited in historic resources and that can serve as a link between two zones of more intense use. The objective for this zone is to provide the user with a leisurely recreational experience in an outdoor setting. A sectional concept was proposed for the Williamsport segment which included a restoration of the historic resources, with the Cushwa Warehouse acting as a base for interpretive activities. Following the release of the GP, each of the thirty-two segments along the canal was to have had a Development Concept Plan (*DCP*) prepared. Only a few of the segments have had *DCP*s prepared to date.

C&O Canal Williamsport Development Concept Plan and Assessment

The National Capital Team and the Denver Service Center prepared a *DCP* for the Williamsport segment of the canal in May of 1983. The *DCP* further defined plans beyond the 1976 GP. The report had three primary goals with the following actions defined under each goal:

Goal One: Provide an interpretive focal point for visitors at the C&O Canal which highlights the peak period of the canal era.

Actions

- Stabilize the Conococheague Aqueduct.
- Restore the Power Generation Station for use as a combination visitor contact facility and management facility.
- Restore the exterior of Cushwa Warehouse to period appearance and use interior for storage.
- Landscape the core area encompassing the Power Generation Station, warehouse, and town square.
- Outline the Cushwa loading basin in stone for interpretive purposes (archeology was not mentioned).
- Restore the canal prism and towpath west of the aqueduct to mile 100.9.
- Restore Lock 44 and the Lockkeeper's House.
- Develop a Williamsport self-guiding, interpretive walk with wayside exhibits at the Conococheague Aqueduct, the Cushwa loading basin, the Power Generation Station, Cushwa Warehouse, the Railroad Lift Bridge, the Bollman Bridge, Lock 44, and the Lockkeeper's House.
- Conduct an engineering feasibility study of canal rewatering.
- Rewater canal to its historic level from Lock 44 to the Conococheague Aqueduct.
- If cost-effective, rewater the canal east of Lock 44 to permit locking of a canal boat.
- Should the canal be rewatered, a canal boat could be used for interpretive demonstrations.
- If feasible from an engineering standpoint, restore and rewater the Cushwa loading basin to its historic depth.

Goal Two: Preserve the historic scene.

Actions

- Use plant materials to screen residences and power plant from the view of towpath users.
- Integrate River Bottom Park with the canal restoration projects and appropriately landscape.
- Remove NPS maintenance structure and convert the existing YACC Building to maintenance use.

Goal Three: Provide safer access to the park and better circulation within it for both vehicles and pedestrians.

Actions

- Limit Potomac Street vehicle access to use by the handicapped.
- Direct visitor vehicles to a parking area behind the trolley barn.
- Guide pedestrian access across the Conococheague Aqueduct from the remote parking area off of the tannery road to the interpretive center.
- Direct all power plant traffic across the canal at the existing coal truck access, but alternatives will be sought by the Town of Williamsport and the Potomac Edison Power Company.
- Construct a new road to the proposed parking area behind the Power Generation Station within the park boundaries.
- Redirect existing power plant traffic patterns when access is needed for the canal boat.

Statement for Management

The April 1991 Statement for Management, which serves as a guideline for the park until the GP is revised, includes expanded management goals. In addition to the previously stated goals, the following goals were added:

> To preserve, protect and maintain the historic resources and to prevent further deterioration and decay based on a level of stabilization, restoration or reconstruction through a practical preservation program.
>
> Interpret for the visitor the canal's history, its construction, and role in transportation, economic development and westward expansion; including the way of life which evolved upon it and the history of the region through which it passes and to give an insight into the era of canal building in the United States, specifically the C&O Canal.
>
> Through cooperation with outside interests, to assure adequate public access to the park's information, orientation, and recreation facilities and to minimize, through appropriate regulation, the adverse effects associated with public use of numerous minor access roadways leading to the park.
>
> To manage the park in the most energy efficient manner using the best technology available.

Management influences also were indicated in relation to legislative and administrative constraints, regional influences, and influences within the park itself. In addition, an itemization of several rehabilitation and stabilization efforts, implemented following the 1983 *DCP*, were listed. Special

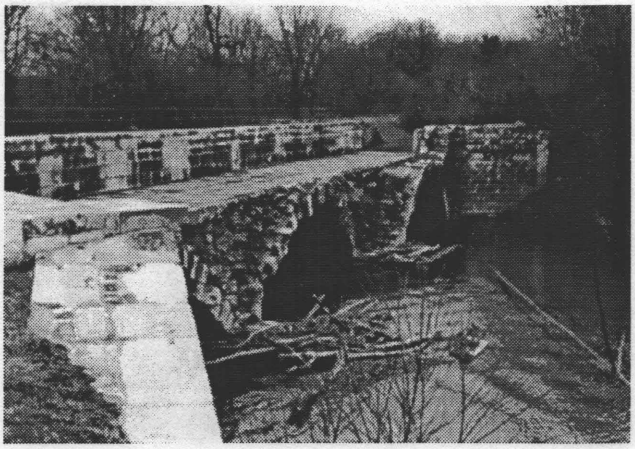
agreements that have occurred between private land owners, volunteer organizations, and the C&O Canal NHP also were identified.

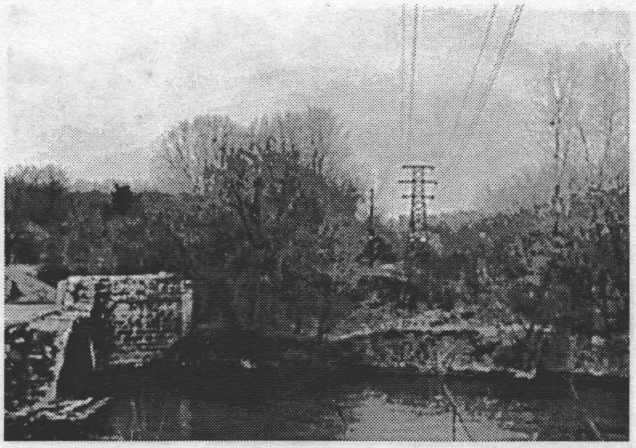
The first visitor use analysis, undertaken in 1990, revealed an estimated two million visitors in that year, with 75 percent concentrated in the southern twenty miles of the park. The analysis also confirmed that use is seasonal, with heavy concentrations of visitation in the spring and fall. Visitor origination is primarily local and regional. Durations of stays vary. The most popular recreational area is along the towpath, where hiking, biking, and horseback riding are the principal means of travel.

The Statement for Management presented no change to existing mapping. The statement identified seven major issues relative to the entire canal park with the priority placed on serving the park visitor and preserving the park's historic resources.

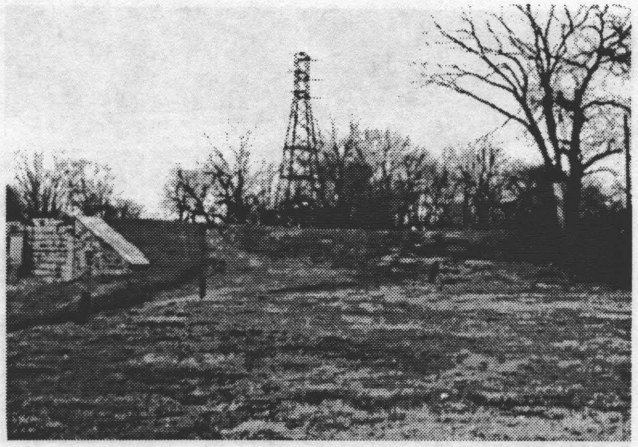
APPENDIX D:
EXISTING CONDITIONS PHOTOGRAPHS

Above. Looking north along towpath beyond Fenton Avenue extension.

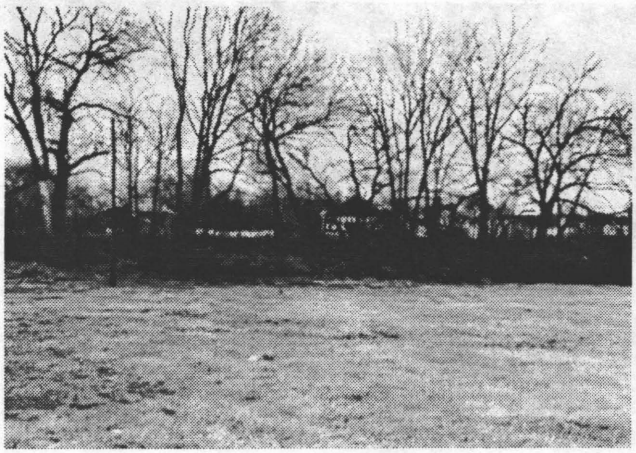


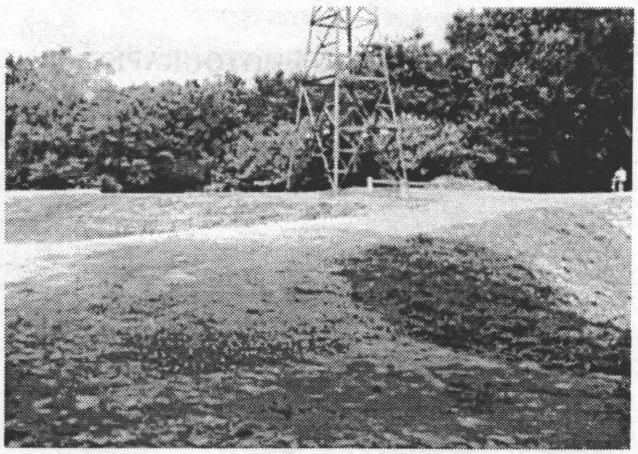


Above left. View of aqueduct and deteriorated arches under former east parapet wall.
Above right. Looking north along transmission tower and power line right of way.

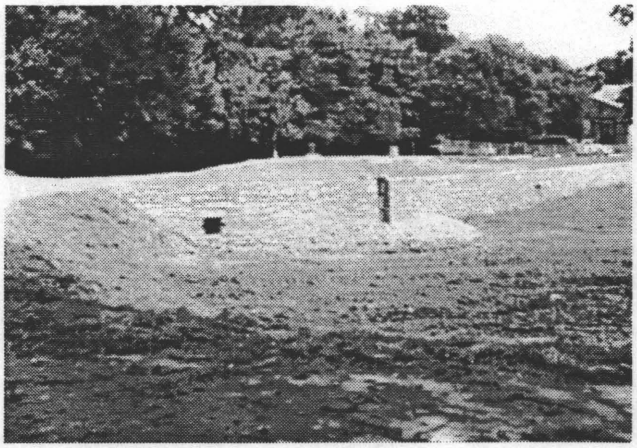


Above left. Looking northeast toward west parapet wall of aqueduct and former farm site. Note different levels of former fields.
Above right. Looking east, eroded area in River Bottom Park leading towards Cushwa loading basin parking area.

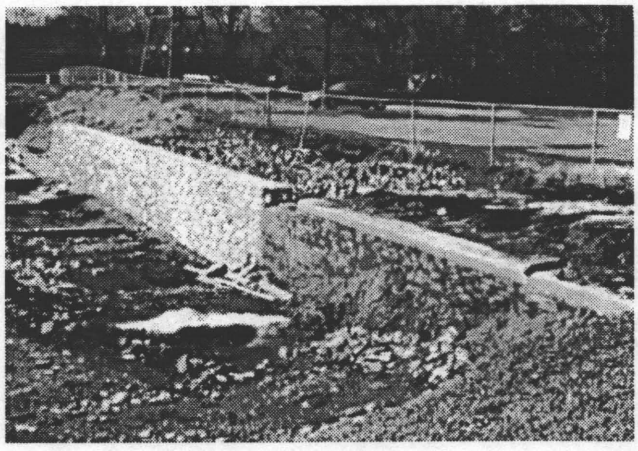


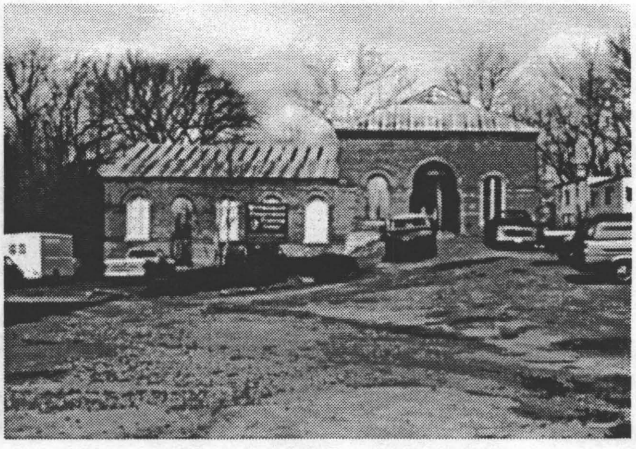


Above left. Looking east from River Bottom Park through trees to Cushwa loading basin.
Above right. Permanent dike in Cushwa loading basin area. Dike will act as containment for rewatering of canal.



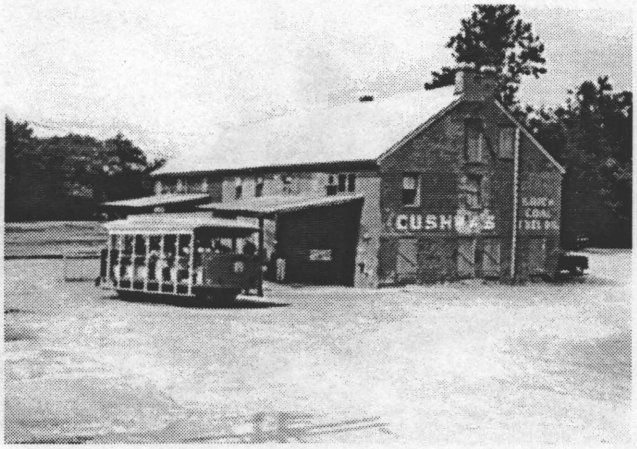
Above left. Reconstructed Cushwa loading basin wall with water intake to rewater Cushwa loading basin.
Above right. Gravel parking area looking west from Power Generation Station.



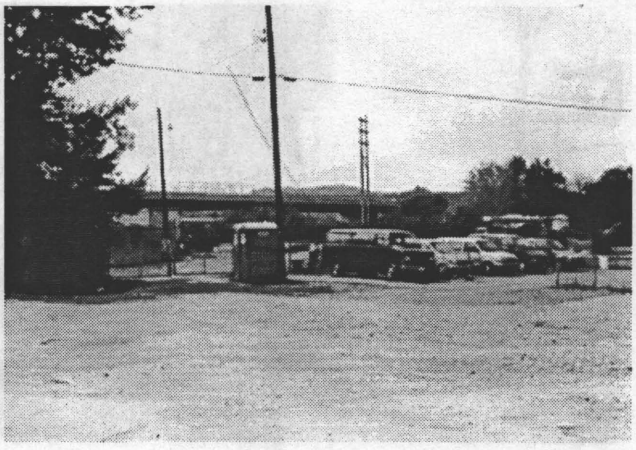


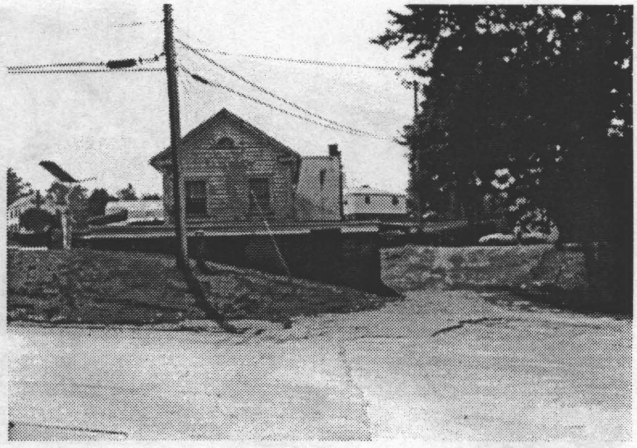
Above left. North wall in Cushwa loading basin. Note original brick wall abutted by a reconstructed wall.
Above right. Power Generation Station looking north.

Above left. Temporary trailers east of Power Generation Station.
Above right. Vegetation along north elevation of Power Generation Station.

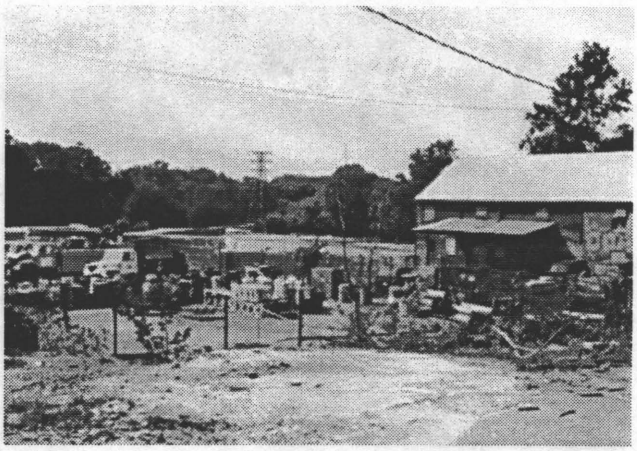


Above left. Cushwa Warehouse looking northwest.
Above right. Cushwa Warehouse looking southwest. Note brick and wood building materials.

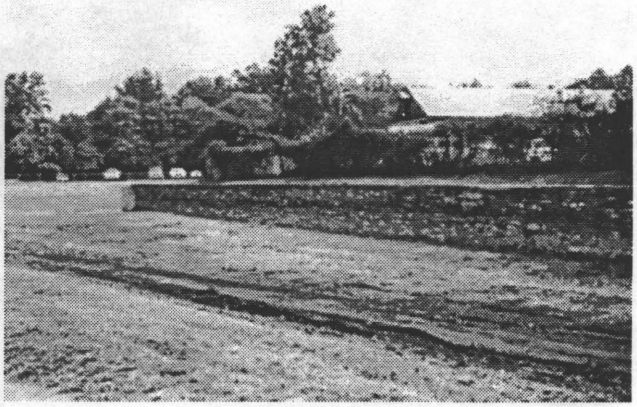




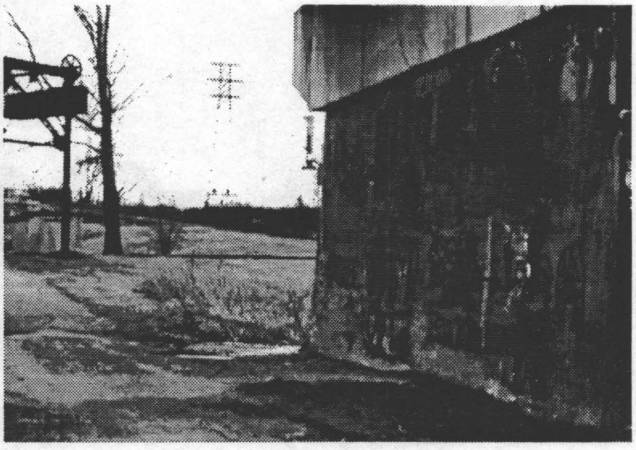
Above left. Town of Williamsport Maintenance Yard looking southwest.
Above right. Looking south toward the 1920s gas station.



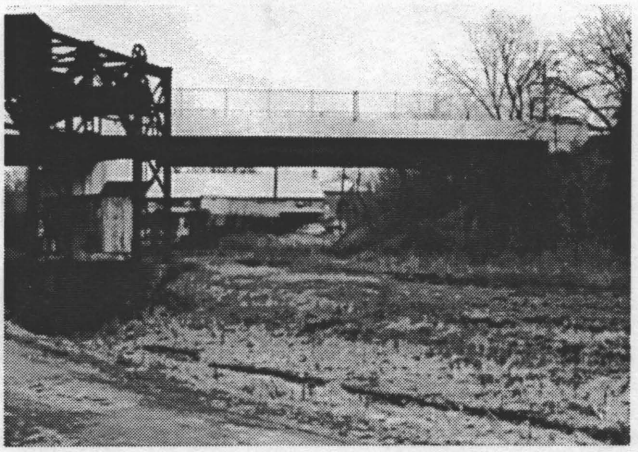
Above left. Looking west toward the 1920s gas station.
Above right. Looking northwest from behind the gas station toward the Cushwa loading basin.

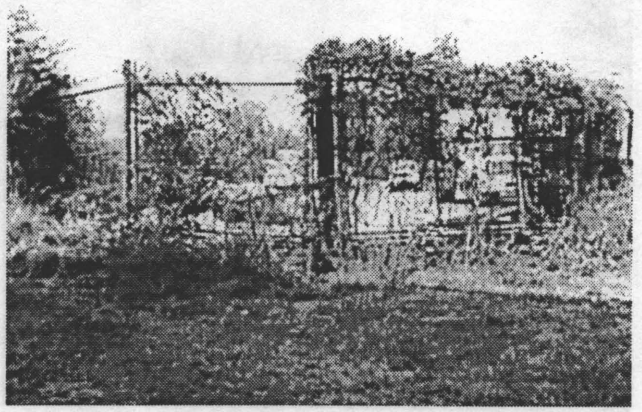


Above left. Looking east into the Cushwa loading basin and up Potomac Street.
Above right. Original Cushwa loading basin wall.

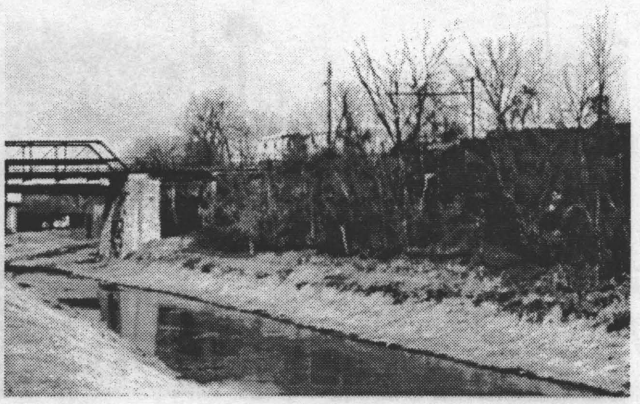


Above left. Looking south along towpath at Washington-Berkeley Bridge and Railroad Lift Bridge juncture.
Above right. Concrete abutment of the Washington-Berkeley Bridge looking southwest toward Potomac Edison Company power plant.

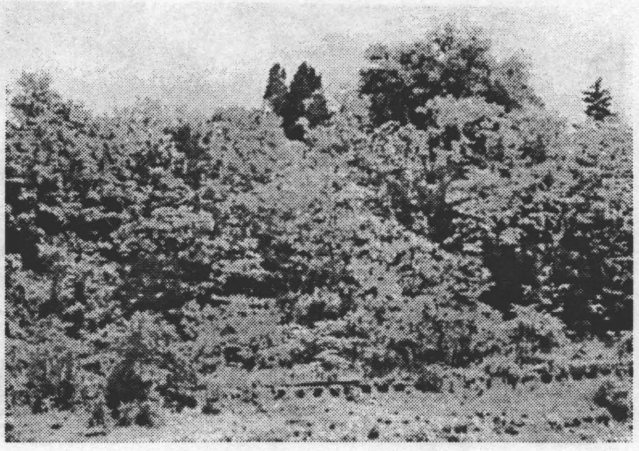


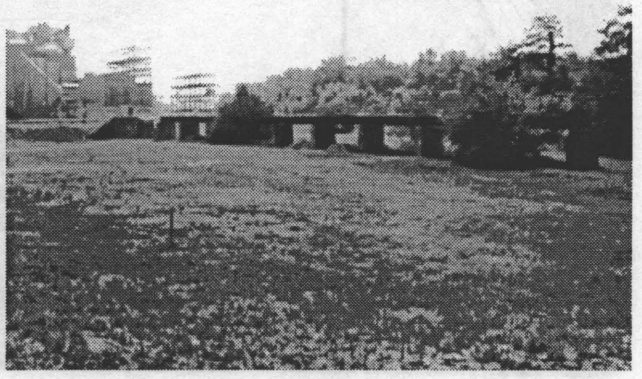


Above left. Looking northeast to former rail line toward Cushwa Warehouse.
Above right. Looking north into Town of Williamsport Maintenance Yard.

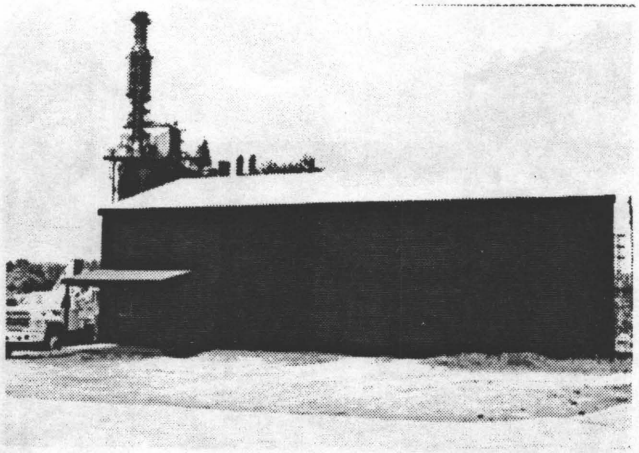


Above left. Looking southeast from under Bollman Bridge toward the Potomac Edison Company power plant and down canal prism.
Above right. Looking northeast toward Riverview Cemetery hillside and Bollman Bridge.

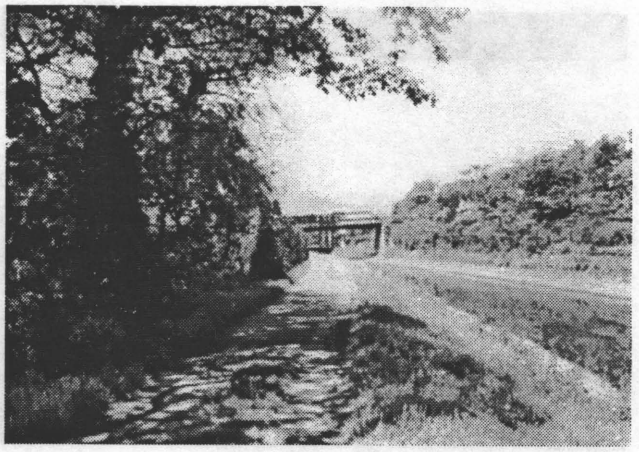




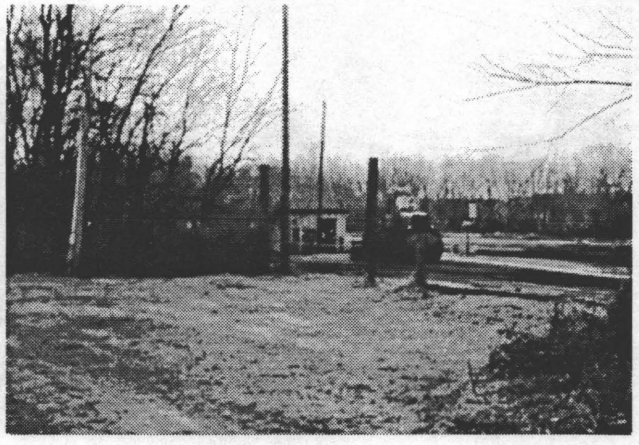
Above left. Western Maryland Railroad tracks at base of Riverview Cemetery hillside, looking east.
Above right. Looking southwest toward railroad spur line leading to Potomac Edison Company power plant.



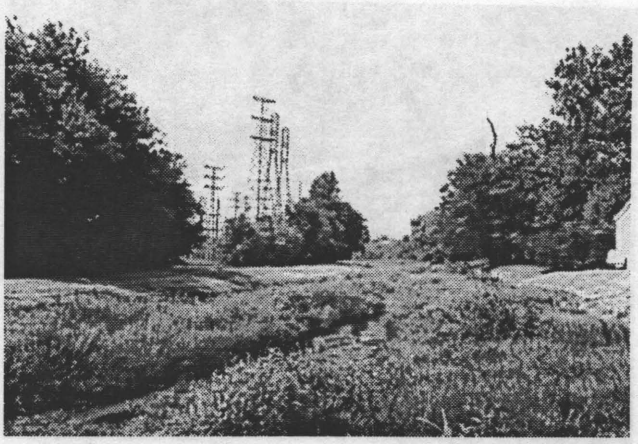
Above left. Looking southeast toward YACC Building and former access road to Potomac Edison Company power plant.
Above right. YACC Building, east elevation.



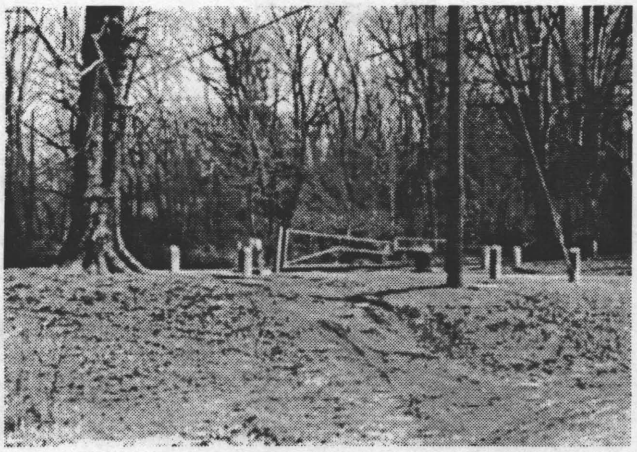
Above left. Looking east toward stone canal wall remnants.
Above right. Looking north along towpath towards Bollman Bridge.



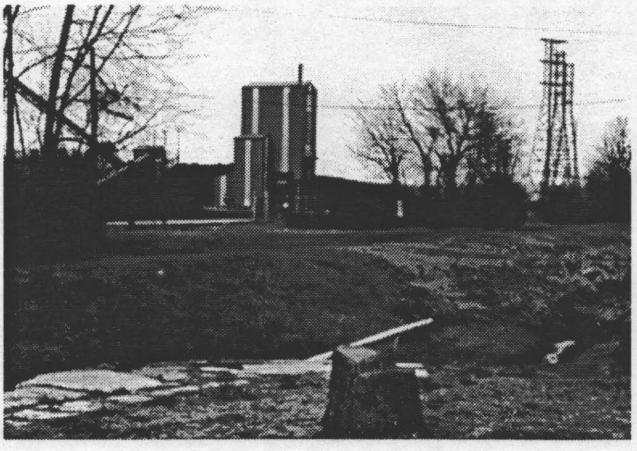
Above left. Former entry to Potomac Edison Company power plant.
Above right. Creek and new stone-faced concrete bridge designed by NPS above Lock 44.



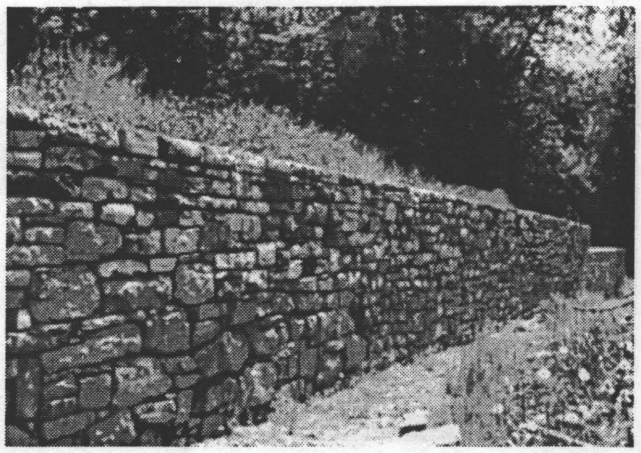
Above left. NPS metal maintenance building.
Above right. Looking north along canal prism from Lock 44. Note transmission towers.

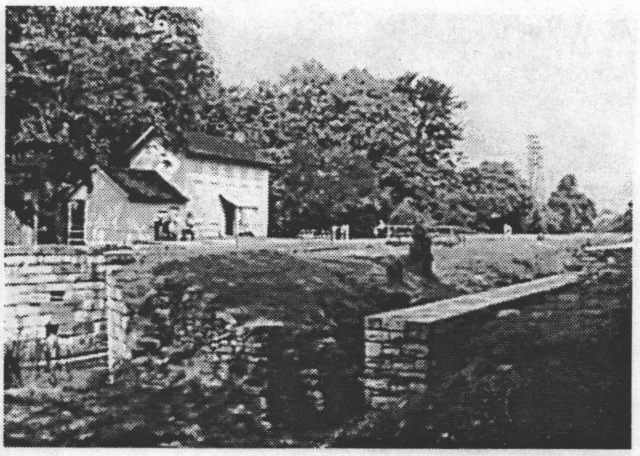


Above left. Metal gate limiting access to former quarry access road.
Above right. Looking south through Lock 44.

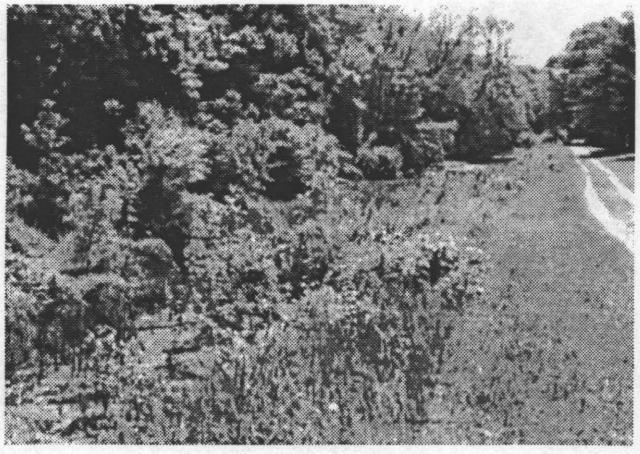


Above left. Looking northwest from Lock 44 to Potomac Edison Company power plant.
Above right. Looking northeast from Lock 44 toward NPS maintenance building.





Above left. Reconstructed eastern flume wall.
Above right. Looking northwest across flume and Lock 44 toward the Lockkeeper's House.



Above left. Looking south along the canal prism from Lock 44. Note the dense wetland vegetation.
Above right. Rewatering sign at study boundary on the southern end of the site.

MAP COMPILED BY
LAND AND COMMUNITY ASSOCIATES
FROM THE FOLLOWING SOURCES:

NATIONAL PARK SERVICE C&O CANAL DRAWINGS
412/41054, SHEETS 1-11.

AERIAL PHOTOGRAPH NO. VS92B-134(P) TAKEN AUGUST
1992 BY AIR PHOTOGRAPHICS, INC.

FIELD WORK UNDERTAKEN IN JANUARY, MAY, AND
AUGUST 1993 BY LAND AND COMMUNITY ASSOCIATES.

TRUE NORTH

80' 0 80' 160'

SCALE OF FEET

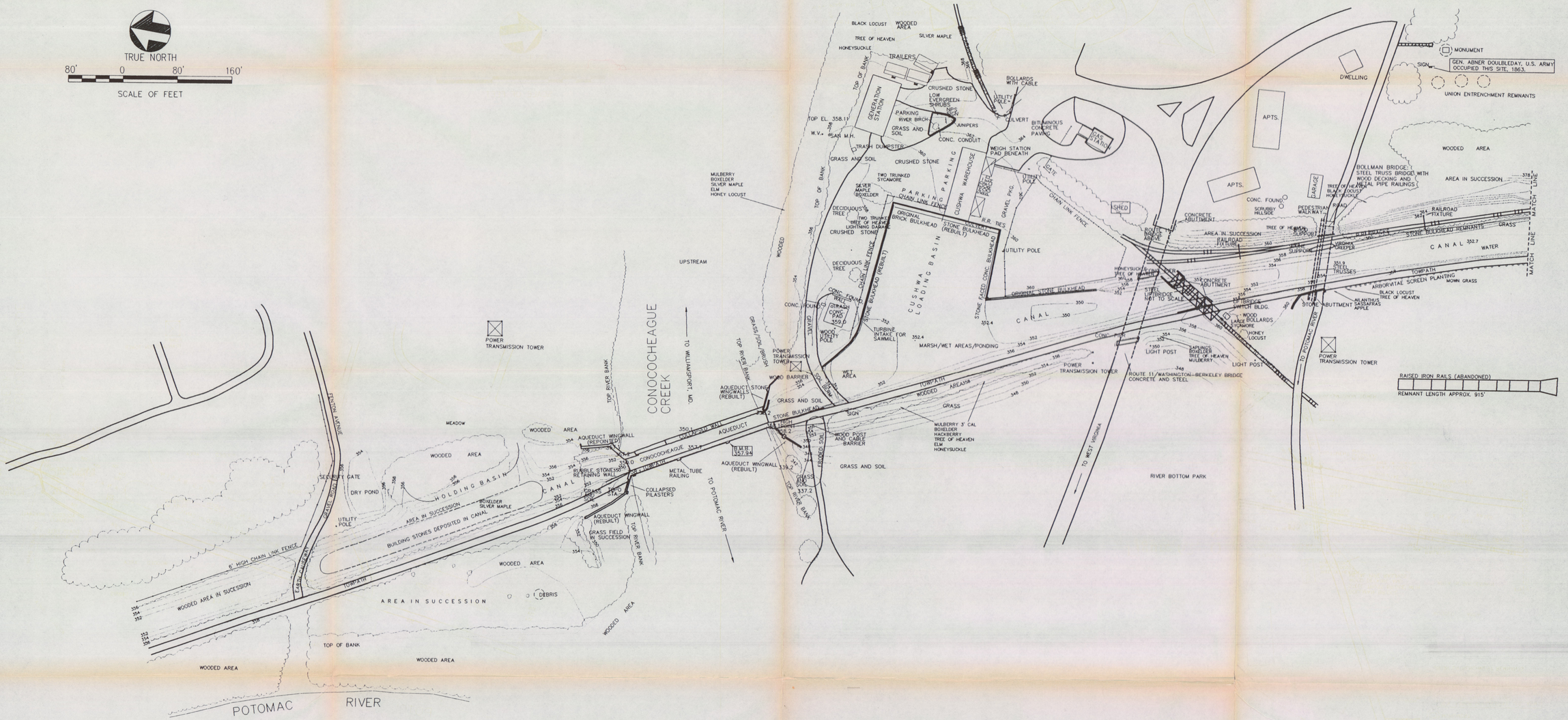


Figure 66. Overall Canal 1993 Existing Conditions Map – North Section

MAP COMPILED BY
LAND AND COMMUNITY ASSOCIATES
FROM THE FOLLOWING SOURCES:

NATIONAL PARK SERVICE C&O CANAL DRAWINGS
412/41054, SHEETS 1-11

AERIAL PHOTOGRAPH NO. VS928-134(P) TAKEN AUGUST
1992 BY AIR PHOTOGRAPHICS, INC.

FIELD WORK UNDERTAKEN IN JANUARY, MAY, AND
AUGUST 1993 BY LAND AND COMMUNITY ASSOCIATES.

TRUE NORTH

80' 0 80' 160'

SCALE IN FEET

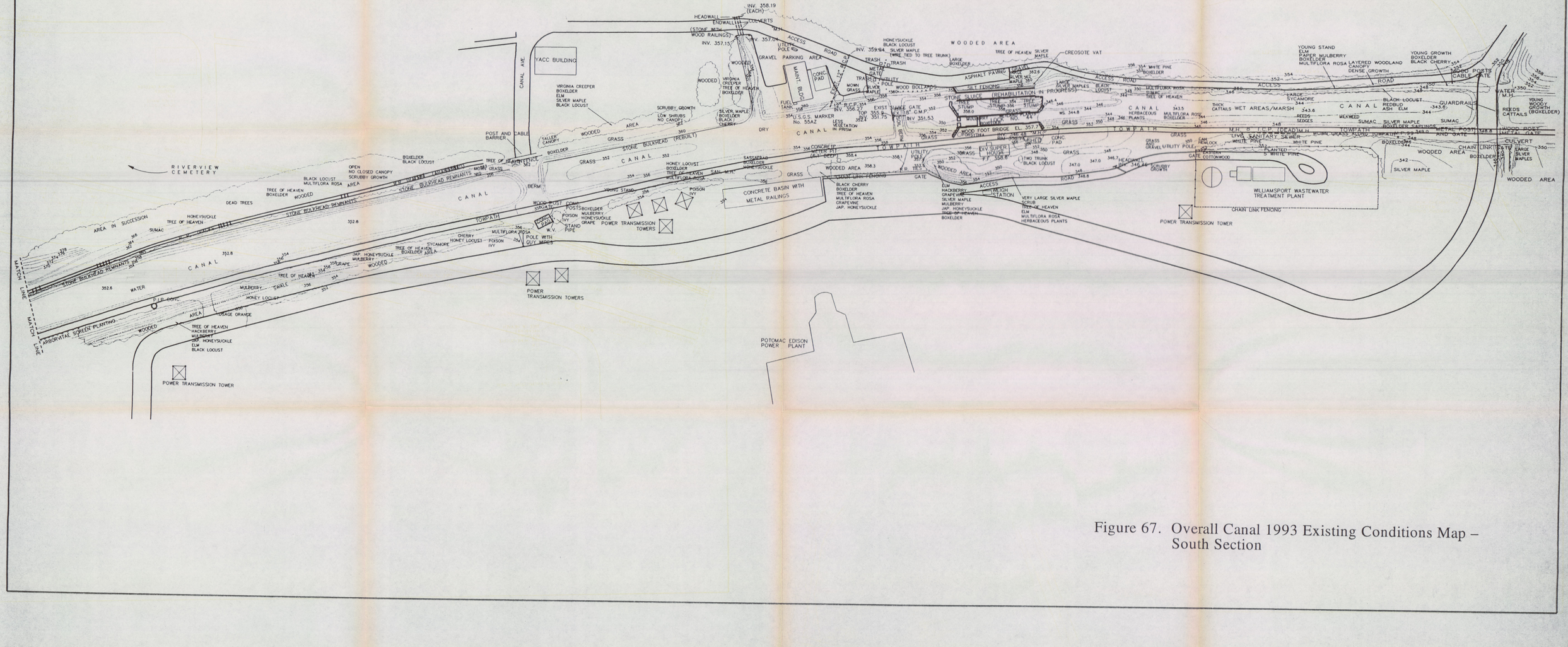


Figure 67. Overall Canal 1993 Existing Conditions Map – South Section