PART II: HANCOCK TO CUMBERLAND
MILEPOST 60.7 TO 184.5

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Cupler, Margaret D.
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Lowdermilk, William Harrison
1971 *History of Cumberland, (Maryland) from the Time of the Indian Town Caiuctucuc, in 1728 to the Present Day.* Reprint. Baltimore: Regional Publishing Company.

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1847 *Annals of the West.* Cincinnati: J.R. Albach.

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1994 *Legends of Allegany County.* Cumberland, Maryland: H.L. Scott, Sr.

Stegmaier, Harry, et al.
1976 *Allegany County: A History.* Parsons, West Virginia: McClain Print Company.

Thomas, James W. and T.J.C. Williams
1969 *History of Allegany County, Maryland.* Baltimore: Regional Publishing Company. Originally published in 1923.

Thurston, Myrna
1923 *Colonel Thomas Cresap.* Shepardstown, Maryland: M. Thurston; Washington, D.C.: The Association.

Allegany County Public Library
Cumberland, Maryland

Western Maryland Room

Allen, Irvin G.
1983 *Historic Oldtown Maryland.* Oldtown, Maryland: I.G. Allen.

Andrews, Matthew Page
1929 *History of Maryland.* New York: Doubleday and Company, Inc.

Barron, Lee
N.D. *Canal Terms: History of the Locks and Aqueduct Feeders.*

Site locations, drawings, and historic maps from Georgetown to Cumberland.

1973 *The Chesapeake and Ohio Canal: As It Is and As It Was.* Lee Barron.

Documentary history of the Chesapeake and Ohio Canal from Washington, D.C. to Maryland with illustrations.

Clark, Ella E.
1960 "Life on the Chesapeake and Ohio Canal: 1859." Edited by Ella E. Clark. *Maryland Historical Magazine.* Baltimore: Maryland Historical Society, Vol. 55, pp. 82 – 122.

Reminiscences of canal boat trip circa 1859 completed by an anonymous crew member. The account describes the canal, the people who worked on the canal, and the towns located along the canal. Though a first-person account, the book was written thirty-three years after the man's experiences on the canal.

Di Lisu, James E.
1978 *Maryland Geography.* Boulder: Westview Press.

Fieldstein, Albert L.
1983 *Historic Postcard Album of Allegany County.* Cumberland: Commercial Press Printing Company.

Grede, Gilbert
1984 *Where the Potomac Begins: A History of the North Branch Valley.* D.C.: Seven Locks Press.

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1949 *The Potomac.* New York/Toronto: Rinehart and Company.

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Hattery, Thomas H., Editor
1980 *Western Maryland: A Profile.* Mt. Airy, MD: Lomind Books.

High, Mike
1997 *The Chesapeake and Ohio Canal Companion Guide.* Baltimore: Johns Hopkins University Press.

Mile-marker guide to the history of the Chesapeake and Ohio Canal in Maryland and Washington, D.C. (269 pages). Similar to other towpath and hiker's guides.

Hulbert, Archer Butler
1902 – 1905 *Historic Highways of America.* Cleveland: Clark.

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

Narrative depicting life on the canal through the stories of barge owners, captains, and residents along the Chesapeake and Ohio Canal. The book is divided into two parts, the first centering on the history of the canal inclusive of labor problems and the structures built along the canal. The second half of the book centers on interviews conducted with persons associated with the canal circa 1900 – 1925 and presents views on canal life for the boatmen and their families.

Lantz, Emily Emerson
1929 *The Spirit of Maryland.* Baltimore.

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1991 *The Chesapeake and Ohio Canal: The Making of a Park.* Washington, D.C.: United States Department of the Interior, History Division.

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1882 *History of Western Maryland: Frederick, Montgomery, Carroll, Washington, Allegany and Garrett Counties.* Philadelphia: Louis H. Everts.

Springer, Ethel M. and Thomas F. Hahn
1977 *Canal Boat Children on the Chesapeake and Ohio Canal.* Shepherdstown: American Canal and Transportation Center.

Forty-page depiction of life for children on the Chesapeake and Ohio Canal and the Pennsylvania and New York canals.

Stegmaier, Harry, et al.
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Tanner, Henry S.
N.D. *Description of the Canals and Railroads of the United States.*

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1968 *A History of Washington County from the Earliest Settlement to the Present Time Including a History of Hagerstown.* Baltimore: Regional Publishing Company.

Wolfe, George Hooper
1969 *I Drove Mules on the Chesapeake and Ohio Canal.* Dover, Delaware: Dover Graphix Associates, 3rd printing.

Frostburg State University
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Armstrong, Edith Martin
1958 *Days at Cabin John: A Story of Maryland Neighbors Along the Chesapeake and Ohio Canal.* Illustrated by Florence Martin. New York: Vantage Press.

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1975 *Ferry Hill Plantation: Life on the Potomac River and the Chesapeake and Ohio Canal, 4 January 1838 – 15 January 1839.* Edited by Fletcher M. Green and Thomas F. and Nathalie W. Hahn. Shepherdstown, WV: American Canal and Transportation Center.

Originally published by the University of North Carolina Press as Volume 43 of the James Sprunt studies in history and political science in 1961. Blackford lived circa 1771 – 1839; his account discusses plantation life in Maryland, the canal, and Ferry Hill Plantation.

Boy Scouts of America – Baltimore Area Council
1970 *184 Miles of Adventure: Hiker's Guide to the Chesapeake and Ohio Canal.* BSA Baltimore Area Council.

Chesapeake and Ohio Canal Company
1881 Recommendations in regard to lengthening locks of the Chesapeake and Ohio Canal Company. Annapolis: s.n.

1877 Report of the Committee of the Chesapeake and Ohio Canal Company. Annapolis: L.F. Colton and Company. January 9.

Report made to the stockholders along with engineers' reports of survey and estimates recommending additional feeders to the canal at Cumberland.

1837 Annual report of the President and Directors of the Chesapeake and Ohio Canal Company to the stockholders. Washington: The Company.

1824 General Harper's speech, to the citizens of Baltimore, on the expediency of promoting a connection between the Ohio at Pittsburgh, and the waters of the Chesapeake, at Baltimore, by a canal through the District of Columbia. With his reply to some of the objections of Mr. Winchester. Delivered at a meeting held at the Exchange on the December 20.

Clague, William
1977 *A Collection of Maps of the Chesapeake and Ohio Canal.* Potomac Area Youth Hostels, Inc., 5th edition.

Provides a brief historical narrative of the Chesapeake and Ohio Canal, as well as historic photographs from the second decade of the twentieth century and various maps of the canal. The maps depict hiker trails, campsites, historic standing structures, and ruins.

Clark, Ella E.
1960 "Life on the Chesapeake and Ohio Canal: 1859." Edited by Ella E. Clark. *Maryland Historical Magazine.* Baltimore: Maryland Historical Society, Vol. 55, pp. 82 – 122.

Reminiscences of canal boat trip circa 1859 completed by an anonymous crew member. The account describes the canal, the people who worked on the canal, and the towns located along the canal. Though a first-person account, the book was written thirty-three years after the man's experiences on the canal.

Fradin, Morris
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1908 teenager visits from England and explores the Chesapeake and Ohio Canal.

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The Chesapeake and Ohio Canal: Pathway to the Nation's Capital. Metuchen, NJ: Scarecrow Press.

1980 *The Chesapeake and Ohio Canal Boatmen, 1892 – 1924.* The American Canal and Transportation Center, Shepherdstown, West Virginia.

History of canals and the Chesapeake and Ohio Canal. Also the histories of various boatmen who operated canal boats and barges along the canal. Based on interviews and oral family histories both taped and written; many of the taped interviews/oral histories are located in the C&O Canal National Historical Park Museum/Library. Primarily focuses on canal workers in Georgetown and Cumberland.

Hahn, Thomas F. (Cont'd)
1976 *Chesapeake and Ohio Canal Old Picture Album.* Shepherdstown, West Virginia: The American Canal and Transportation Center Maryland.

Pictorial history of the Chesapeake and Ohio Canal. Photographs from the mid-nineteenth century to the early twentieth century of the locks, barges, and canal-related buildings and structures, ruins and towns located along the canal.

1974 *Towpath Guide to the Chesapeake and Ohio Canal.* The American Canal and Transportation Center Maryland, Shepherdstown, West Virginia.

Georgetown to Seneca (Volume 1), Seneca to Harper's (Volume 2), Harper's to Ft. Fred (Volume 3), and Ft. Fred to Cumberland (Volume 4). Description of points of interest and physical descriptions of the ruins of buildings and structures associated with the canal on a mile-marker-by-mile-marker basis.

Hansrote, Hazel Groves
197- *Cumberland, Md. Terminus of the C&O Canal, 1850 – 1924: Scrapbook.* Cumberland, MD: Preservation Society of Allegany County.

High, Mike
1997 *The Chesapeake and Ohio Canal Companion Guide.* Baltimore: Johns Hopkins University Press.

Mile-marker guide to the history of the Chesapeake and Ohio Canal in Maryland and Washington, D.C. (269 pages). Similar to other towpath and hiker's guides.

Hulbert, Archer Butler
1904 *The Great American Canals.* Volume 13 of Historic Highways of America. Cleveland, Ohio: Arthur H. Clark Company.

Early-twentieth-century account of the Chesapeake and Ohio Canal, as well as the Pennsylvania and Erie Canals.

Hutton, William Rich
1872 Report of W.R. Hutton, Chief Engineer. Annapolis: L.F. Colton and Company.

Report on the condition of the C&O Canal and the cost estimate of major repairs required during 1872.

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

Narrative depicting life on the canal through the stories of barge owners, captains, and residents along the Chesapeake and Ohio Canal. The book is divided into two parts, the first centering on the history of the canal inclusive of labor problems and the structures built along the canal. The second half of the book centers on interviews conducted with persons associated with the canal circa 1900 – 1925 and presents views on canal life for the boatmen and their families.

Pousson, John F.
1983 *Archeological Excavations at the Moore Village Site, Chesapeake and Ohio Canal National Historical Park, Allegany County, Maryland.* Washington, D.C.: U.S. Department of the Interior, National Park Service.

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1972 *The Cumberland Chronicle*: "Saga of the Western Terminus 1833-197?" Reprinted for the 1976 Bicentennial by the Preservation Society of Allegany County, Inc. Cumberland, Maryland. Cumberland, Md.: The Chronicle, 1972, 1976 printing.

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Springer, Ethel M. and Thomas F. Hahn
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Forty-page depiction of life for children on the Chesapeake and Ohio Canal and the Pennsylvania and New York canals.

Swift, William Henry and Nathan Hale

1846 *Report on the recent state of the Chesapeake & Ohio Canal: The estimated cost of completing the canal to Cumberland and the prospects of income to be derived from the transportation upon it of coal and iron ore mines in Allegany County; with estimates of the comparative cost of transporting coal by the canal, and by the Baltimore and Ohio Railroad. Made at the request of Thomas W. Ward. Esquire, agent for Messrs. Baring, Brothers and Company.* Boston: Dutton and Wentworth Printers.

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1980 *The Chesapeake and Ohio Canal Boatmen, 1892 – 1924.* The American Canal and Transportation Center, Shepherdstown, West Virginia.

History of canals and the Chesapeake and Ohio Canal. Also the histories of various boatmen who operated canal boats and barges along the canal. Based on interviews and oral family histories both taped and written; many of the taped interviews/oral histories are located in the C&O Canal National Historical Park Museum/Library. Primarily focuses on canal workers in Georgetown and Cumberland.

1976 *Chesapeake and Ohio Canal Old Picture Album.* Shepherdstown, West Virginia: The American Canal and Transportation Center Maryland.

Pictorial history of the Chesapeake and Ohio Canal. Photographs from the mid-nineteenth century to the early twentieth century of the locks, barges, and canal-related buildings and structures, ruins and towns located along the canal.

Hahn, Thomas F. (Cont'd)
1974 *Towpath Guide to the Chesapeake and Ohio Canal.* The American Canal and Transportation Center Maryland, Shepherdstown, West Virginia.

Georgetown to Seneca (Volume 1), Seneca to Harper's (Volume 2), Harper's to Ft. Fred (Volume 3), and Ft. Fred to Cumberland (Volume 4). Description of points of interest and physical descriptions of the ruins of buildings and structures associated with the canal on a mile-marker-by-mile-marker basis.

History and Museum Board
N.D. *Williamsport and Vicinity Reminiscences – Early 18th Century to the Early Part of 1933.* Williamsport, Maryland: History and Museum Board.

Wolfe, George Hooper
1969 *I Drove Mules on the Chesapeake and Ohio Canal.* Dover, Delaware: Dover Graphix Associates, 3rd printing.

One-hundred-and-ninety-two-page history of George Hooper Wolfe's experiences on the canal. Includes oral histories and recollections of various canal workers, barge captains, lockkeepers, and business owners.

Washington County Historical Society
Hagerstown, Maryland

Card Catalogue

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1910 *Chesapeake and Ohio Canal Report.* United States Congress. Washington, D.C.: Government Printing Office.

Clark, Ella E.
1960 "Life on the Chesapeake and Ohio Canal: 1859." Edited by Ella E. Clark. *Maryland Historical Magazine.* Baltimore: Maryland Historical Society, Vol. 55, pp. 82 – 122.

Reminiscences of canal boat trip circa 1859 completed by an anonymous crew member. The account describes the canal, the people who worked on the canal, and the towns located along the canal. Though a first-person account, the book was written thirty-three years after the man's experiences on the canal.

Fradin, Morris
1974 *Hey-ey-ey, Lock!* Cabin John, Maryland: See-and-Know Press.

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

Narrative depicting life on the canal through the stories of barge owners, captains, and residents along the Chesapeake and Ohio Canal. The book is divided into two parts, the first centering on the history of the canal inclusive of labor problems and the structures built along the canal. The second half of the book centers on interviews conducted with persons associated with the canal circa 1900 – 1925 and presents views on canal life for the boatmen and their families.

Vertical Files

Centennial Observer and *Chesapeake and Ohio Chronicle*
1961 – 1962 Ten Volumes.

Various articles on the past history of the Chesapeake and Ohio Canal, its locks, lockhouses, boats, and workers. Some articles detail Civil War activity centered on the canal.

Chesapeake and Ohio Canal File 1962

Newspaper articles on canal park, Hancock Canal Club cards, Mark All Map of Paw Paw Tunnel by Elwood Morris, chart with depth of piers at Paw Paw Tunnel, chart with depth of packing at Paw Paw Tunnel, two NPS drawings of Paw Paw Tunnel by Bernstein, and tunnel facts sheet.

Chesapeake and Ohio Canal File 1961

Newspaper articles on Bender's Tavern, the Douglas hike (5/61), Eisenhower declaring the C&O Canal a National Historic Shrine, appropriation of land for park, NPS attack on proposed dam above Great Falls, and the Army Corps of Engineers plans for two dams.

Chesapeake and Ohio Canal File 1960

Newspaper articles on the C&O Canal National Historical Park and mention of a National Geographic article (March 1960) on Ralph Bender, former canal boat captain.

Chesapeake and Ohio Canal File 1959

Newspaper articles concerning the C&O Canal National Historical Park.

Chesapeake and Ohio Canal File 1958

Newspaper articles on a planned hike by Douglas, the C&O Canal Park bill, a water rodeo in Cumberland, and a canal club.

Chesapeake and Ohio Canal File 1957

Newspaper articles on the Beall-Hyde Bills, memories of canal boat captains, opposition to the 85-foot Potomac River Dam, rewatering the canal, a condensed mileage chart, and bulletins from the Potomac Appalachian Trail Club.

Chesapeake and Ohio Canal File 1955 – 1956

Newspaper articles on mule bells, the Douglas hike, the lack of locks in Frederick County, the parkway issue, stonework repair, and the creation of a national park encompassing the canal.

Chesapeake and Ohio Canal File 1953 – 1954

Various newspaper articles on Douglas's hike along the canal, the C&O Canal being converted into a parkway from Washington, D.C. to Cumberland.

History Folder:

Newspaper articles on Paw Paw Tunnel, Monocacy Shantytown and Burnside Bridge, Monocacy River Aqueduct, Lockhouse at Four Locks, Lock and Lockhouse 75 (Conococheague Aqueduct), Lockhouse 51, Lockhouse 47, Leatherman House at Clear Spring, Culvert 47, Dam 4, and Lockhouse 25. Review of NPS C&O Canal park historic structures survey report, Charles Morrison essay "Waterway to History," Peterson's official report records of the C&O Canal, Musey's "The C&O Canal: Watering of the 19th Century," and "Canals in Maryland."

Map Collection

Canal and Railroad Row Near the Square at Williamsport

Description of Property Owners

Hancock, Maryland Overlay of Properties

1910 Map of the Ferry Lot by Ferguson

Ferguson Property Survey

Magnetic Course of Tunnel

Property Maps without titles

Leaks through Dam #4 by Potomac Edison Company 1930

Map of C&O Canal Properties near Hancock 1895 redrawn 1910

Map 60 – C&O Canal Lock Drawings
Map 61 – same oversized

Mason Marks at Lock 33 – rubbing

Map 28 – Plat of Property – Tobias Johnson to C&O Canal Company

Map 68- 1808 Map of Frederick and Washington Counties

Lake, Griffing, and Stevenson Illustrated Atlas of Washington County, Maryland 1877

Reports

Bearss, Edwin C.
1967 *Tonoloway Aqueduct – C&O Canal Historic Structures Report Part II.* National Park Service.

Danz, Jonathan, et al.
1999 *Shepherdstown Bridge: Phase I Archaeological Report – Draft Management Report.* For West Virginia DOT by Michael Baker, Jr. Inc.: Charleston, WV.

Harris, Kathy (Principal Investigator)
2000 *Identification of Historic Properties – Determination of Eligibility for Standing Structures: Shepherdstown Bridge Project.* For West Virginia DOT by Michael Baker, Jr. Inc.: Charleston, WV.

Miscellaneous

Report on progress of Chesapeake and Ohio Canal

C&O Canal Bill of Lading #125, 1906

Three C&O Canal notes, 1842

Stock certificate, 1848

C&O Canal report, 1950

Washington County Public Library
Hagerstown, Maryland

Western Maryland Room

N.D. *The Chesapeake and Ohio Canal.* College Park, MD.

Bacon-Foster, Corra
1912 *Early Chapters in the Development of the Potomac Route to the West.* Mrs. Corra Bacon-Foster

Detailed review of the Patowmack Company's records of company transactions and meetings. Reprinted by B. Franklin Research and Source Works Series, New York, 1971.

Ball, Rosamund Ann
1995 *Index to the Atlas of Washington County, Maryland 1877.* Hagerstown: R.A. Ball.

Barron, Lee
N.D. *Barron's Chesapeake and Ohio Canal Directory.* Sharpsburg, MD: Barron.

1973 *The Chesapeake and Ohio Canal: As It Is and As It Was.* Lee Barron

Documentary history of the Chesapeake and Ohio Canal from Washington, D.C. to Maryland with illustrations.

Bearss, Edwin C
1968 *The Composite Locks: Chesapeake and Ohio Canal National Monument.* Washington, D.C.: United States Department of the Interior, March 31.

1967 *Tonoloway Aqueduct: Chesapeake and Ohio Canal National Monument.* Washington, D.C.: United States Department of the Interior, June 30.

Bicentennial Commission
1986 *Shepherd's Town.* Hagerstown, MD: Hagerstown Bookbinding and Printing Company.

Blackford, John
1975 *Ferry Hill Plantation Journal: Life on the Potomac River and the Chesapeake and Ohio Canal, January 4, 1838 to January 15, 1839.* 2nd Edition. Shepherdstown, WV: American Canal and Transportation Center.

Observations by John Blackford (1780 – 1839) from Ferry Hill Plantation during the period 1839 – 1839.

Chesapeake and Ohio Canal Folder
1954 – 1979 Newspaper clippings from the mid-twentieth century on the Chesapeake and Ohio Canal.

Clague, William
1977 *A Collection of Maps of the Chesapeake and Ohio Canal.* Potomac Area Youth Hostels, Inc., 5th edition.

Provides a brief historical narrative of the Chesapeake and Ohio Canal, as well as historic photographs from the second decade of the twentieth century and various maps of the canal. The maps depict hiker trails, campsites, historic standing structures, and ruins.

Clark, Ella E.
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Reminiscences of canal boat trip circa 1859 completed by an anonymous crew member. The account describes the canal, the people who worked on the canal, and the towns located along the canal. Though a first-person account, the book was written thirty-three years after the man's experiences on the canal.

Cooper, Esther R.
1959 *Of Dreams and Reality.* S.l.: s.n.

Cowan, John P.
1916 *Sometub's Cruise on the Chesapeake and Ohio Canal: The Narrative of a Motorboat Vacation in the Heart of Maryland.* Pittsburgh: Pittsburgh Printing Company.

Narrative of a motorboat vacation in the heart of Maryland.

Fradin, Morris
1974 *Hey-ey-ey, Lock!* Cabin John, Maryland: See-and-Know Press.

1908 teenager visits from England and explores the Chesapeake and Ohio Canal.

Frantz, William W.
1894 The Chesapeake and Ohio Canal trip of the new "Rudger Grange," August 23. Clear Spring, MD.

Garrett, Wilbur
1987 "George Washington's Patowmack Canal." *National Geographic*, Volume 171, No. 6, pp. 716 – 753.

Hahn, Thomas F.
1984 *The Chesapeake and Ohio Canal: Pathway to the Nation's Capital.* Metuchen, NJ: Scarecrow Press.

1981 *An Illustrated History of the Chesapeake and Ohio Canal.* 1st edition. Shepherdstown, West Virginia: The American Canal and Transportation Center Maryland.

1980 *The Chesapeake and Ohio Canal Boatmen, 1892 – 1924.* The American Canal and Transportation Center, Shepherdstown, West Virginia.

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1976 *Chesapeake and Ohio Canal Old Picture Album.* Shepherdstown, West Virginia: The American Canal and Transportation Center Maryland.

Pictorial history of the Chesapeake and Ohio Canal. Photographs from the mid-nineteenth century to the early twentieth century of the locks, barges, canal-related buildings and structures, ruins and towns located along the canal.

C&O Canal Association Clippings. Shepherdstown, West Virginia: The American Canal and Transportation Center Maryland.

1974 *Towpath Guide to the Chesapeake and Ohio Canal.* The American Canal and Transportation Center Maryland, Shepherdstown, West Virginia.

Georgetown to Seneca (Volume 1), Seneca to Harper's (Volume 2), Harper's to Ft. Fred (Volume 3), and Ft. Fred to Cumberland (Volume 4). Description of points of interest and physical descriptions of the ruins of buildings and structures associated with the canal on a mile-marker-by-mile-marker basis.

Hahn, Thomas F. and Orville W. Crowder
1971 *Towpath Guide to the Chesapeake and Ohio Canal.* Fort Meade, MD: Level Walkers of the Chesapeake and Ohio Canal Association.

Harris, Donald J.
N.D. *Background and Development of the Chesapeake and Ohio Canal.*

High, Mike
1997 *The Chesapeake and Ohio Canal Companion Guide*. Baltimore: Johns Hopkins University Press.

Mile-marker guide to the history of the Chesapeake and Ohio Canal in Maryland and Washington, D.C. (269 pages). Similar to other towpath and hiker's guides.

Hulbert, Archer Butler
1902 – 1905 *Historic Highways of America*. Cleveland: Clark.

Klitch, Edward
1983 Oral Interviews with the Residents of the Homewood Retirement Center conducted from February 27, 1983 to December 25, 1983.

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

Narrative depicting life on the canal through the stories of barge owners, captains, and residents along the Chesapeake and Ohio Canal. The book is divided into two parts, the first centering on the history of the canal inclusive of labor problems and the structures built along the canal. The second half of the book centers on interviews conducted with persons associated with the canal circa 1900 – 1925 and presents views on canal life for the boatmen and their families.

Lake, Griffing and Stevenson
1872 *An Early Atlas of Washington County, Maryland*. Evansville, Indiana: Unigraphics.

Land and Community Associates
1994 *Cultural Landscape Report Chesapeake and Ohio Canal National Historical Park Williamsport, Maryland.*

Luzander, John F.
N.D. *Historic Structure Report Historic Data Part I Tunnel, Chesapeake and Ohio Canal.*

Mackintosh, Barry
1991 *The Chesapeake and Ohio Canal: The Making of a Park*. Washington, D.C.: United States Department of the Interior, History Division.

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Martin, Edwin M.
1984 *A Beginner's Guide to the Wildflowers of the C&O Canal Towpath*. Washington, D.C.: Smithsonian Institution Press.

Maynard, Peter
1996 *Wever of the B&O Railroad and Weverton: His Early Industrial Village Failed.* Brunswick, MD: Brunswick Historical Press.

Morrow, Dale Walton and Deborah Jensen Morrow
1983 *Washington County, Maryland Complete Census 1800.* D.W. Morrow.

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Mulligan, Kate
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Nagy, Suzanne
1979 *Williamsport: A Canal Town.* Research Basics, March 14, 1979.

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1991 *Chesapeake and Ohio Canal Official National Park Handbook.*

1984 *Widewater: An Assessment for Historic restoration Chesapeake and Ohio Canal National Historical Park.*

1980 *Environmental Assessment Chesapeake and Ohio Canal National Historical Park Cumberland/North Brunswick.*

1977 *Historic Structure Report: Historical Data on the Masonry and Locks of the Chesapeake and Ohio Canal Columbia/West Virginia.* Washington, D.C.: Department of the Interior, January.

1976 *Historic Preservation Division Chesapeake and Ohio Canal National Historical Park Structure.* Washington, D.C.: Department of the Interior, May.

1975 *Environmental Assessment General Plan Chesapeake and Ohio Canal National Historical Park.*

1974 *Draft Environmental Impact Statement.*

1971 *Chesapeake and Ohio Canal National Historical Park Master Plan.*

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"Synthesis of History of Potomac River Valley" – Sanderlin
"Broad Run Trunk" – Sanderlin 1961

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"Architectural Data" – Archie Franzen 1969
"Dam #4" – Archie Franzen 1969
"Warehouse and Granary at White's Ferry" – Luzander
"Shepherdstown West Virginia" – Luzander 1962
"Lock #40" – John R. Miele 1964
"Lockhouse #8" – Steven H. Lewis 1969

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"Culverts 114, 115, 116, 118, 126, and 127" – Dale 1964
"Antietem Aqueduct" – Dale 1964
"Paw Paw Tunnel" – Dale and Robert W. Bell 1965
"Dam #3" – Luzander

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Phillips, Steven J.
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ARCHEOLOGICAL OVERVIEW AND ASSESSMENT
C&O CANAL NATIONAL HISTORICAL PARK

WORK ORDER #21
CONTRACT NO. 1443CX300094063

Prepared for:

National Capital Region
National Park Service

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June 2002

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I. INTRODUCTION

This draft report presents the results of an archeological overview of the C&O Canal National Historical Park (NHP), extending from Washington, D.C. to Cumberland Maryland, prepared by URS Corporation (URS). The focus of this report is a review of existing data relevant to both prehistoric and historic sites that fall within the C&O Canal NHP, outlining in broad terms avenues along which further research and investigations may be conducted. A major goal in conducting the overview of the C&O Canal NHP was to produce a management document that outlines directions for such investigations and briefly considers ways to predict additional resources; in particular, buried archeological sites. A significant part of this report lies in the presentation of historic contexts for both the prehistoric and historic resources of the C&O Canal NHP. In terms of prehistory, the contexts outline the relevant chronology for each of the three sections and a preliminary description of the property types (or, in more conventional terms, archeological site types) that exist within the park. A similar approach is presented for the historic record of the C&O Canal NHP.

An extensive, annotated bibliography accompanies this report, containing relevant historic maps, canal-engineering documents, and other pertinent archival materials currently housed in a diverse range of repositories. This bibliography will serve as a valuable tool for those interested in pursuing historic research on many aspects of the canal. While not claiming to list all documents related to the canal, the bibliography will serve as a jumping off point for any archival investigations of historic resources within the C&O Canal NHP.

This project represents completion of Work Orders #13, 17, 20, and 21, conducted under Contract No. 1443CX300094063. Work Orders 13 and 17 pertained to Phase I, Part 1 and 2, from the canal's beginning in Georgetown to milepost 59, just downstream from Harper's Ferry. Work Order 20 pertained to the middle section of the canal from milepost 59 to 123. Work Order 21 encompassed the third section from milepost 123 to 184.5 in Cumberland Maryland. These three work orders correspond to 1) the Coastal Plain and Piedmont, 2) Ridge and Valley, and 3) the Allegheny Plateau sections of Maryland. The overview and assessment was conducted prior to undertaking an archeological survey and identification study of the C&O Canal NHP. This overview was conducted in compliance with certain requirements of the 1966 National Historic Preservation Act, as amended, Executive Order 11593 (Protection and Enhancement of the Cultural Environment) and the 1979 Archeological Resources Protection Act, as amended. It is important to note that no fieldwork was conducted for this overview. The research followed the procedures as outlined in Section C of the National Park Service (NPS) contract noted above. Originally, the three separate work orders would have resulted in the production of three separate reports. However, URS in consultation with the NPS suggested that a single report containing the results of all work orders would be a more readily usable product.

The C&O Canal NHP is unique in that it extends for 184.5 miles in length, paralleling the Potomac River, though it is only several hundreds of feet in width for most of its length. Chartered in 1825, the canal was built between 1828 and 1850. In total, the C&O Canal contains approximately 22,032.57 acres (699.70 of which fall within the George Washington Memorial Parkway), although in view of uncertain boundaries along parts of the canal, this figure may be subject to revision. One hundred and fifty-nine archeological sites are documented in the C&O

Canal NHP that, when computed by area, total 670.9 acres of the park. The information for these sites is quite variable, most detailing little more than simple location data, others casual information regarding materials recovered. Other sites have been subjected to extensive testing or mitigation excavations and provide significant categories of data regarding a number of research topics.

Few systematic surveys of the C&O Canal NHP have been conducted. To date, only about 30 acres have been systematically surveyed. This total includes 20 acres surveyed at the Chick Farm Site complex in Frederick County (18FR102 and 18FR335), six acres at North Branch in Allegany County (18AG214), approximately 3 acres at the Moore Village Site (18AG43), and about one acre at the Fletcher's Boathouse Site (51NW13). Certainly more systematic surveys need to be conducted to evaluate the archeological resources of the C&O Canal NHP. Additionally, apart from Larrabee's work (Larrabee 1961), no complete assessment of the park has been conducted. This report is a preliminary, system-wide attempt at an overview of the archeological resources of the C&O Canal NHP.

An important component of this overview is the digital product, a map of the canal depicting all previously-documented archeological sites, historic structures, and potential historic archeological sites. This digital map also shows floodplain areas that have potential for yet undocumented archeological sites. Archeological site records were obtained from the Maryland Historical Trust (MHT), which has only recently digitized the state's entire master site file. Only data pertinent to the four counties crossed by the C&O Canal NHP were obtained. Historic structures that appeared on a series of historic maps were digitized, their location being the probable setting for regions where historic archeological deposits can be expected.

This report is organized according to the outline previously submitted to the NPS. Following this introduction, a chapter on the environmental setting of the C&O Canal NHP details aspects of the physiographic provinces covered in the park's length. A third chapter provides a detailed prehistoric and historic context for the park, identifying relevant chronological subdivisions and their representative cultural remains. Distinct property types and research themes are identified that can be addressed through the sites in the park. A fourth chapter presents an overview of the known sites and their potential for addressing research issues or themes identified in Chapter III. A final chapter presents a summary and direction for future investigation. This chapter also briefly discusses the potential locations of additional archeological sites.

Mr. Terry Klein and Mr. Stephen Tull served as the Project Managers for the overview and assessment. Dr. William P. Barse served as Principal Investigator and co-author. Ingrid Wuebber authored sections on the historic context and analysis of known historic sites, while E. Madeline Scheerer conducted the archival research and compiled the annotated bibliography.

II. ENVIRONMENTAL SETTINGS OF THE C&O CANAL NATIONAL HISTORICAL PARK

This chapter outlines the environmental setting of the C&O Canal National Historical Park from its inception in Washington, D.C. to its terminus in Cumberland. In this stretch, the canal extends from the inner edge of the Western Division of the Maryland Coastal Plain to the Allegheny Plateau, crossing both the Piedmont and Ridge and Valley provinces in its course (cf. Vokes and Edwards 1957 for descriptions of these provinces, as well as Fenneman 1938). Each of these physiographic provinces offered varying kinds of settings for both prehistoric and historic archeological sites. These provinces also include a diverse range of historic land use related to the canal, as well as to agrarian and rural industrial industries.

MILE MARKERS 0 TO 59 (COASTAL PLAIN AND PIEDMONT)

The C&O Canal NHP begins at the confluence of Rock Creek with the Potomac River. Rock Creek enters the river directly across from the northeast side of Theodore Roosevelt Island, just below Key Bridge. This portion of the canal is characterized as part of the inner Coastal Plain province, composed of unconsolidated sands and gravels of marine or riverine origin pre-dating the Pleistocene. Given its location at the inner edge, the Coastal Plain deposits are thin, forming a shallow veneer over the crystalline rocks that make up the Piedmont physiographic province. The excavations at Georgetown Wall adequately demonstrate this depositional situation by 33rd Street.

From its inception up until Seneca Creek State Park (just upstream from the confluence of Seneca Creek with the Potomac), the river is geologically entrenched. Massive walls of schistose rock border the channel, forming a true gorge in the last mile before reaching Great Falls. Floodplain development in this section of the river's channel is limited, composed of small parcels close to the confluence of tributary streams. Although limited, some of these floodplain parcels may contain stratified archeological deposits. This situation was more than adequately demonstrated by the 1998 excavations at the Fletcher's Boathouse Site in Washington, D.C., located just above Georgetown, near Mile Marker 3. Although limited in extent, this particular floodplain contained deposits that dated at least as early as the Middle Archaic, and potentially earlier. Additionally, younger (though still buried paleosols) were present in the floodplain, clearly showing that considerable variation in depositional history may be preserved in such small and horizontally-limited packages of alluvium.

Upriver from Seneca Creek State Park, close to Mile Marker 22, the river's channel enters the Triassic Lowlands of western Montgomery County, a formation also present on the Virginia side of the river. This continues up to the Monocacy River, at which point it enters the Frederick Valley, a formation comprised of limestone. Much broader and lengthier stretches of floodplain are exemplified by the McKees-Beshers Wildlife Management area, the floodplain directly across from Harrison Island, and the more-limited floodplain within the Dickerson Conservation Park. The higher bluffs of the Piedmont are farther removed from the immediate floodplain of the river from this point on. Although there are many recorded sites in these floodplains (see

below) the potential for deeply-buried and/or stratified deposits has not been evaluated at all except in a most cursory fashion. The excavations conducted by the Archeological Society of Maryland in the 1950s and 1960s at several large Late Woodland village sites, in particular the Winslow Site (18MO9, situated just outside of the park's current boundary) and the Shepard Site (18MO3), yielded Late Archaic and Early Woodland components beneath Late Woodland period components. At the time, most of these investigations focused primarily on the latter period. The stratigraphic potential of these floodplain areas is still largely untapped. Recent (1999 – 2000) excavations at comparable floodplain packages on the Virginia side—just south of Goose Creek in Loudoun County, conducted by Thunderbird Archeological Associates—have shown that deep deposits containing Early, Middle, and Late Archaic components are present beneath Early and Late Woodland period paleosols (W. M. Gardner, personal communication, 2001).

The Monocacy River marks the Frederick-Montgomery County divide. Upstream from the Monocacy is a large, broad stretch of floodplain that continues to Tuscarora Creek. Discontinuous sections of floodplain are found up to Mile Marker 48, just above Heaters Island. The stratigraphic potential of the floodplain in this portion of the C&O Canal NHP is, with the exception of one site, unknown. Excavations at the Monocacy Site (18FR100) by American University and Catholic University in the late 1960s revealed a deep, stratified deposit extending from the Late Archaic up to the Late Woodland period. The site is of particular importance for the radiocarbon dates on Early Woodland Accokeek ceramics. Comparable deposits are likely, though as yet unknown in the floodplain parcels upstream from the Monocacy and south of Heaters Island.

From Heaters Island up to Harper's Ferry (Mile Markers 48 to 59), the Potomac River cuts through Cactoctin Mountain and South Mountain, narrow formations that mark the outer or western edge of the Piedmont physiographic province. Floodplain development is constrained in this section, forming only a narrow ribbon of alluvium in places. As with the beginning section of the park, this area is largely untapped in terms of its archeological potential for buried sites.

MILE MARKERS 59 TO 123 (HARPER'S FERRY TO HANCOCK)

At about Mile Marker 59, the C&O Canal NHP enters into the Blue Ridge and Great Valley region of Maryland. This section is located in Washington County, within the Great Valley division of Maryland's Ridge and Valley physiographic province. The Hagerstown Valley is a part of the Great Limestone Valley system of the Eastern United States. Vokes and Edwards distinguish between the Hagerstown or Great Valley section of the Ridge and Valley physiographic province and the Allegheny Ridge and Valley section of the same province (Vokes and Edwards 1957:69). This area is known as the Great Valley in Virginia, where it encompasses the Shenandoah River drainage. Elevations in this region range from 600 to 700 above mean sea level (amsl) within the interior of the valley, while closer to the Potomac they drop to about 400 to 470 feet amsl. Relief in this vicinity is gentle, characterized by low-lying limestone outcroppings that range in size from slight swells in the landscape to abrupt, prominent ridges that cut through the surrounding agricultural fields. To the northeast and east, the Hagerstown Valley is bordered by a number of parallel ridges, with South Mountain being the

main boundary. More pronounced ridges border the valley to the west, beginning especially at Sidling Hill, near Hancock.

The major part of the underlying geology of the Washington County region is composed of the Rockdale Run Formation. This formation is an Ordovician deposit containing a gray, mottled, cherty dolomite and dolomitic limestone in the upper third of the deposit, and a gray, cherty argillaceous calcarenite and algal limestone in the lower two thirds of its extent (Cleaves, Edwards, and Glaser 1968). Local chert sources occur in nodular deposits within these limestones, some undoubtedly exploited by the Native-American occupants of the region.

Major streams that enter the Potomac within this region include, from south to north, Antietam Creek, Conococheague Creek, Little Conococheague Creek, Licking Creek, Tonoloway Creek, and Little Tonoloway Creek. Smaller streams are present as well, though they do not extend as far into the interior as the above-named Potomac River tributaries. Drainage patterns are generally trellis in form, given the limestone substrate that characterizes the region. Compared to the first section of the park, far fewer sections of broad floodplain exist along the Potomac River in the Great Valley region. Those present are limited in extent, though as noted in Chapter 4, this does not rule out the possibility for deeply-stratified archeological deposits. Stewart's excavations at 18WA42, situated immediately upstream from Marsh Run (a small tributary stream draining into the Potomac River), effectively demonstrate this possibility.

Major floodplain formations are found at the mouth of Antietam Creek (parcels 45 and 46 on the GIS map), immediately upstream from Williamsport, just above the confluence of Conococheague Creek (parcel 68 on the GIS map), immediately upstream from McCoys Ferry within Fort Frederick State Park (parcels 72 and 73 on the GIS map), north and south of Licking Creek's confluence with the Potomac (parcels 75, 76, and 77 on the GIS map) at the mouth of Tonoloway Creek, downstream from Hancock (parcels 81 and 82 on the GIS map) and at Loner Siding, just upstream from Hancock (parcels 85, 86, and 87 on the GIS map). Smaller parcels, longer and narrower in shape, are present as well, though those just listed are the major floodplains where deep stratigraphic sections may exist.

MILE MARKERS 123 TO 184.5 (HANCOCK TO CUMBERLAND)

Upstream from Hancock, the Potomac River and C&O Canal NHP cuts through several major ridge formations. Tonoloway Ridge, a long northeast-southwest trending ridge, is located immediately west of Hancock and effectively forms the boundary between the second and third parts of the park. Sideling Hill is the second major ridge to the west and closely parallels Tonoloway Ridge. Elevations on both are between 1200 to 1400 feet amsl, though elevations drop to about 420 feet amsl at the river's edge. This section marks the Allegheny Ridge and Valley section of the Ridge and Valley province, and is marked by extremely-folded ridge formations composed of shale, sandstone, and limestone.

Due to parallel ridges, the Potomac and C&O Canal pass through a variety of formations between Hancock and Cumberland (refer to Cleaves, Edwards, and Glaser 1968). Theses geological formations in this section include 1) the McKenzie Formation (Sm); 2) Wills Creek

Shale and Bloomsburg Formation (Swb); 3) the Hampshire Formation (Dh); 4) the Chemung Formation (Dch); 5) the Oriskany Group (Do); and 6) the Hamilton Group (Dhn). Of interest for local lithic resources is the Oriskany Group, composed of the Ridgeley Sandstone and Shriver Chert members. The Shriver member is characterized as a fossil-laden, cherty siltstone, while the upper part, the Ridgeley member, is a conglomeratic sandstone (cf. Berryhill et al. 1956).

A variety of lithic resources exist in Allegany County, as summarized by Wall (1981, 1992), based on his survey of the coal-bearing regions of Western Maryland. Lithic sources were provided mostly by chert beds of variable quality found in the Shriver member of the Oriskany Formation, noted above, as well as from the New Scotland member of the Helderberg Formation. These two chert varieties, which actually grade into one another, form the principal local lithic raw material utilized in the past in the Allegany County region. These two cherts accounted for most of the lithic materials recovered not only from the North Branch Site, tested in 1996 (Barse 1996), but also from the Mexico Farms Site (18AG168), near Cumberland.

Leaving the Hancock area, the channel of the Potomac above Fifteenmile Creek is characterized by a short section of strongly-developed meanders popularly known as the Goosenecks. This section of the river is situated between Sideling Hill to the east and Town Hill to the west. As typical of sine wave channels, floodplain development is, alternately, on the slower current or slackwater side of the river. Above the town of Paw Paw, the channel is relatively straight with significant floodplain development close to the South Branch's entrance into the main channel of the Potomac River. From Hancock to the South Branch, the major tributary streams on the Maryland side include Long Hollow, Sideling Hill Creek, Fifteenmile Creek, and Town Creek. Above Oldtown, the Potomac maintains broad floodplain development, especially in the vicinity of Green Spring, West Virginia. Major tributaries on the Maryland side include Seven Spring Run, Mill Run, Collier Run, and, in Cumberland, Evitts Creek. Larger tributaries are found on the West Virginia side and include the Cacapon River, Little Cacapon River, Green Spring Run, and Patterson Creek.

To the west, beyond Cumberland and the C&O Canal, lies the Allegheny Plateau. The Eastern Continental Divide is located near Grantsville, Maryland, and separates drainage systems that flow into the Atlantic and the Gulf of Mexico.

III. PREHISTORIC AND HISTORIC CONTEXTS AND PROPERTY TYPES

This chapter provides the prehistoric and historic contexts applicable to the C&O Canal National Historical Park (NHP). The first part of this chapter explores those issues related to the prehistoric record. The first section outlines a series of themes, or research frameworks, that can be explored with the archeological record preserved within the C&O Canal NHP. This section is followed by a definition of specific property types, those archeological sites that are eligible (or potentially eligible) for listing in the National Register. Physical and associative attributes are defined for each property type, as well as links to specific themes adumbrated below. The second part of this chapter then discusses the contexts (or research frameworks) used for approaching the historic record. Again, this section includes a discussion of specific property types, identifying physical and associative attributes and the links between property types and specific themes.

HISTORIC CONTEXTS FOR EVALUATING THE PREHISTORIC RECORD OF THE C&O CANAL NHP

This section defines a number of separate contexts that can provide a means for evaluating the potential significance of the archeological sites in the C&O Canal NHP. Following Hardesty and Little (2000:13), the historic context is "...the analytical framework within which the property's importance can be understood." In other words, the context(s) identifies the kinds of things or data sets that render a specific site or property significant. For example, a stratigraphically sealed Late Archaic site is not significant simply because it is A) Late Archaic and B) may be buried beneath Early Woodland components in a floodplain setting; rather, it is significant because it may preserve categories of data relevant for understanding one or more events or processes that took place in the past. Thus, identifying the various contexts, or frameworks, or research perspectives allows identification of the kinds of information that must be present (or preserved) within a site/property for it to be of use in furthering our knowledge of the past.

Prehistoric Context A: Chronology and Environmental Change

For a property to be considered of value in terms of its research potential, it must first be placed in time. Many (if not most) research issues incorporated into the contexts defined herein are time-transgressive; that is, they are part of long-term processes that manifest themselves over centuries and millennia. In this sense, these processes may straddle not only accepted period divisions, but stage divisions (Archaic to Woodland or Paleo to Archaic) as defined in the Eastern United States. Identifying the age of a site is, of course, predicated on the presence (or recovery) of known chronological diagnostics, either projectile points or ceramics, from sealed archeological contexts.

Environmental change is linked to chronology in this context for one simple reason: Placing a site into a known chronological framework also places it into one or more models (or scenarios) of climatic reconstruction developed for the Middle Atlantic and greater Eastern United States (cf. Carbone 1974). If a site contains datable artifact assemblages from sealed contexts, it almost

certainly preserves categories of data (e.g., pollen, depositional evidence in the form of paleosols or lack thereof, phytoliths, carbonized floral remains) that would directly inform models of climatic stasis or change. For instance, identifying a site containing intact Paleo or Early Archaic components immediately places it into a climatic framework spanning the Late Pleistocene-Early Holocene transition, when marked changes in temperature, prevailing vegetation, river dynamics, sea level, and mammalian and non-mammalian fauna were taking place. Similarly, identifying a Late Archaic property with sealed contexts (either pits, hearths, or buried paleosols) places it into an environmental regime characterized by development of estuarine settings in the coastal plain tied to sea level rise, stabilization of a climax forest vegetation similar to those found today, and an advance of anadromous fish runs further up the Potomac River. Other climatic events, such as the Mid-Holocene Xerothermic and the Little Ice Age, marked effects on human adaptation during the Middle to early Late Archaic periods and the Late Woodland period, respectively. Less visible on a continental scale are minor environmental fluctuations that may be preserved locally in the form of paleosols or massive depositional events. Dating an archeological site thus dates phenomena that tie directly into environmental change.

Prehistoric Context B: Adaptation, Subsistence, and Settlement

While it may be useful to consider each of these topics as a separate context, the position taken here is that all three are linked and should be considered as a broadly-defined context for analysis. Adaptation of course refers to the means by which a human group accommodates itself to both the natural and social world. In a sense, adaptation refers to a series (or set) of decisions and/or solutions that enable a certain degree of "fitness" to a particular environment. In basic terms, a successful adaptation is one that allows continuing survival and propagation of the group in question. A core component of an adaptive system is a means for the procurement of sufficient sustenance—meeting nutritional goals—to enable continuation and propagation of a group. Thus, subsistence, or the suite of foodstuffs exploited, is intimately linked to adaptation as a component of this context. Subsistence as a component of this context refers to the range of foodstuffs (both plant and animal) procured and consumed, and the social organization and associated technology necessary for procurement and subsequent processing. In very brief terms, the C&O Canal NHP can be said to have witnessed three major subsistence regimes throughout the course of its Native-American prehistory: 1) procurement of faunal species (via hunting and fishing); 2) procurement of plant species through collection and seasonal harvesting; and 3) horticulture, or systematic propagation of specific plant species for consumption.

Each of these broadly-writ regimes encompasses a wide variety of strategies and range of species procured. For instance, during the Paleoindian stage, hunting probably focused on the exploitation of now-extinct Pleistocene fauna, a strategy that likely entailed a different kind of technology and organization than seen in the Archaic, when hunting was re-directed to the procurement of essentially modern species. Fishing, while undoubtedly important throughout a wide range of the prehistoric record, becomes especially notable as a strategy during the Late Archaic period, when rising sea levels created conditions that fostered the development of estuaries and associated anadromous fish runs. Collection of plant resources was also varied, depending on whether seasonal nut species or other resources (e.g., roots from riverine floodplain settings) were procured. Development of stable horticultural societies was part of a

pan-Eastern process involving the introduction of various cultigens into a subsistence system that had tremendous ramifications for social organization, technology, settlement, and other realms.

As subsistence is linked to adaptation, so is settlement linked to subsistence. Settlement refers to the organization of dwelling loci and related specialized procurement or exploitative sites across the landscape. The procurement and processing of various foodstuffs is predicated to a large extent on the placement of habitation (or satellites of habitation) in the vicinity of resources to be exploited, collected, and processed. In other words, settlement and the range of sites (both habitation and specialized procurement loci) are placed to take advantage of resources, amongst other criteria (e.g., defense). Habitation sites, which can be divided into various stage and/or period-specific (e.g., Archaic or Woodland) base camps (see discussion under property types below), are the loci where domestic groups processed and consumed various food items. Exploitation of a wide variety of subsistence items (plant, animal, and mineral resources) was conducted by individuals representing subsets of the main social group residing in the principal habitation or base camp. The temporary loci where these smaller groups resided while procuring various resources are small, though recognizable, features of the archeological landscape. Settlement thus cannot be removed from considerations of subsistence, if the premise outlined above is accepted. Discussing settlement is a dialogue about the placement of sites in regard to resources directly or indirectly used for the purposes of subsistence related matters.

A minor issue also must be considered. Adaptation, subsistence, and settlement are linked to contexts discussing chronology and environmental (climatic) change. What is available for consumption in the plant and animal world is affected by climatic change through time. The distribution of resources (seasonal and otherwise) and availability in terms of actual biomass are dependent on climatic factors known to have been variable through time.

Prehistoric Context C: Technology

Technology refers to the tools and organization of behaviors in which tools and tool systems are employed. From the archeological standpoint, evidence of technology resides in the lithic and ceramic artifacts. However, procurement and production of both stone tools and ceramics, as well as many materials long since perished, involve organization on a social level and considerable knowledge of material location and properties. Lithic technology encompasses not only aspects of raw material selection, but specific protocols for material use in the production of various stone tool kits. It has been demonstrated that specific methods of reduction were employed at various times in the past, methods that can be inferred from specific categories of debitage (or waste-flaking debris) as well as finished products: differences are observable between Paleoindian and Early Woodland lithic technology, for instance. Additionally, the kinds of raw materials exploited can have bearing on specific methods used for stone tool manufacture. Cobble sources in the lower portion of the C&O Canal usually leave a very specific and distinct reduction signature compared to lithic sources removed from tabular or vein sources in the Piedmont, Ridge and Valley, and Allegheny Plateau regions of the C&O Canal NHP. Specific tasks related to lithic use may vary through time and from site to site. For instance, were lithic sources exploited casually during the course of hunting-fishing-collecting forays? Or were special lithic procurement sites part of a settlement system? These are legitimate questions that can be addressed within the context of technology.

Ceramics, which come into the archeological record at the onset of the Early Woodland period and indeed form the signature material category of the period, require extensive technological know-how in their production. Ceramic making is clearly a household activity in the Middle Atlantic region, with production geared towards consumption, not trade, exchange in market settings, etc. Ceramic production at the household level implies not only equal access to the raw materials, but more-or-less equivalent knowledge of their properties. Clay, its preparation, tempering materials, and thermal properties (as well as the process of firing and firewood required) all require detailed knowledge of physical properties. As an aspect of technology, ceramics are excellent indicators of a number of different sociocultural realms that change through time during the Woodland stage.

Other categories of material culture can be subsumed within technology, though most are either not preserved or poorly preserved.

Prehistoric Context D: Exchange and Trade

Trade and exchange refers to the transferal of commodities, individuals (mostly marriage partners), and information from one group to another. Exchange is one of the primary means by which links are established between separate groups of people from the most basic unit, the family, to separate, geographically-distant communities. Within most egalitarian societies, exchange is conducted on a reciprocal basis—gifts given are expected to be balanced out with comparable returns. Trade, in anthropological terms, refers more to the obtainment of non-local or distant material commodities, though for our purposes here it can be subsumed under exchange. An extensive body of ethnographic literature deals with aspects of exchange and trade in general (cf. Sahlins 1972 for a discussion of exchange within economic contexts, Malinowski 1922 for the classic discussion of material items being traded in the Kula ring, and Butt-Colson 1985 for exchange of ritual knowledge along with material goods). Aspects of exchange and trade in the Middle Atlantic region have been reviewed by Stewart (1989).

Archeologically, evidence for exchange and trade relationships is based on the recovery of materials (usually lithics) in contexts far from their natural source. Additionally, evidence may reside in the presence of stylistically-distinct artifacts, again usually lithic items (projectile points, typically of non-local materials), in archeological deposits far removed from the known distribution of the type. Copper is one non-lithic material that indicates far-ranging trade (or exchange) links in the Middle Atlantic region. Small fragments of copper have been recovered in the Middle Atlantic region, almost all from early Middle Woodland contexts. Most native copper is thought to have come from the Great Lakes region, where it outcrops in a cold, malleable state.

The presence of these exotic items in archeological contexts is indirect evidence for established networks of exchange and trade. Such items can have significant implications for drawing inferences concerning sociocultural complexity. Some authors (Stewart 1980) have made the suggestion that exotic items found in archeological contexts within the Middle Atlantic imply the existence of ranked societies, in which certain individuals have greater access to specific raw materials than others. However, such inferences have to be drawn carefully, as the gradation between egalitarian and ranked societies is difficult to define readily from archeological materials (cf. Marcus and Flannery 1995).

The evidence for exchange and trade in the C&O Canal can be used to explore not only the ties that Potomac Valley groups had with other areas of the Middle Atlantic region and greater Eastern United States, but also to pursue issues related to assessing sociocultural complexity.

Prehistoric Context E: Socio-Political Organization

This context could also be termed "sociocultural complexity," the particular avenue of research concerned with how societies are organized and how such organization changed through time in response to both internal and external changes in the surrounding natural and social environment. Anthropologists recognize three basic types of society: 1) egalitarian groups; 2) ranked groups; and 3) state level societies marked by the presence of discrete classes (cf. Fried 1967). Band or family-level groups, as defined by Service (1962) and Steward (1939, 1955), are subsumed under egalitarian societies. Given the known archeological record for the Potomac River Valley, it is clear that most properties in the C&O Canal NHP represent egalitarian societies. This level of sociocultural complexity characterized not only the Paleoindian stage, but the Archaic and most of the Woodland stage as well. It is clear from both historical documents and the archeological record that some Late Woodland societies may have been minimally ranked, wherein status of individuals was established at birth and maintained through the lifetime of the individual. This departs from differentiation in egalitarian societies, where status is achieved through accomplishments and not conferred through birth into certain kin groups.

Prehistoric Context F: Physical Anthropology

The physical attributes of Native-American burials can provide significant data concerning disease, mortality rates, genetic relationships between groups, and the general health of a population. Additionally, the study of internment practices and placement of associated goods can be the basis for generating inferences about belief systems and status within a particular group.

Prehistoric Context G: Ideological Realms

This is the most difficult theme to explicate, both logistically and in terms of providing cogent accounts of ideological systems based on inferential data. Most of the data pertinent to ideological issues is obtained from burials. Given the present climate regarding excavation and analysis of Native-American interments, this theme may never be fully explored, unless access to this category of information is made readily available. However, burials potentially can reflect not only aspects of socio-political organization, but, in a very direct sense, the belief systems associated with treatment of the dead, its implications for the living, and a world view that encompasses both.

DEFINITION OF PROPERTY TYPES

Reviewing the known sites recorded for the C&O Canal allows the preliminary definition of several property types, described below. Clear definition of these property types is dependent on

a level of site (or archeological) integrity that allows for the identification of various classes of information relevant to both context and assemblage.

Paleoindian Sites

In many ways, the Paleoindian property type is at once one of the easiest and most difficult to define. Given the rarity of sites (base camps, quarry sites, or small hunting stations) dating to this period, evidence for Paleoindian occupation of any kind is of special significance. For purposes of this overview, a Paleoindian site property type is defined as *any* site that has produced evidence of occupation dating to this time period. Certainly this property type as defined will be found to include a number of discrete site types that, hopefully, will be identified as separate properties.

Physical Characteristics. Most of the evidence that connects a site to this period is limited to the classic Clovis fluted points or the Mid-Paleo and Dalton-Hardaway types. These points serve as "index fossils" in a real sense, as they are limited to this period alone. Various kinds of scrapers are usually associated with these points; by themselves such items cannot be taken as unequivocal evidence for Paleoindian occupation, as they continue into the Archaic stage. In a general sense, Paleoindian lithic assemblages exhibit a high level of skill in the production of flaked stone tools, a level rarely obtained in subsequent periods. Although diagnostic tools should ideally be recovered from sealed stratigraphic contexts for identification of Paleoindian sites, the reality is that such contexts are rare and identification mostly rests on the presence of the classic point types found in surface contexts. In view of research conducted to date in Virginia and Maryland, Paleoindian occupations have revealed several kinds of sites for this period, including floodplain base camps, quarry sites, lithic-reduction sites in the vicinity of quarries, and smaller hunting or specialized extractive sites (cf. Gardner 1974). However, lacking sealed contexts or archeological integrity, defining these sites is difficult, especially as many sustain later Archaic occupations. Criteria for defining the period is, as noted above, based on the recovery (or presence) of the classic point types. Defining the various kinds of sites that form a Paleoindian settlement system is certainly a task for future investigations.

Associative Characteristics. The Paleoindian stage is associated with a number of unique events, including 1) an association with the end of the Pleistocene and onset of the Holocene; 2) the initial occupation of previously-inhabited regions; and 3) a sociocultural organization characterized by nomadic, hunter-gather adaptation.

Link to Specific Themes. The principal theme to note here is chronology. This period is the earliest known for the region. As noted above, its presence within a site or property is marked by classic fluted projectile points, usually manufactured from high-quality lithic materials such as jasper, chert, or chalcedony. The date range for this stage, sub-divided into three separate periods, spans from about 13,000/12,500 to about 8000 B.P. The three-stage sub-divisions, based on work conducted at the Thunderbird Site in the Front Royal, Virginia area, are: 1) Clovis; 2) mid-Paleo; and 3) Dalton-Hardaway. Climatic change is tied to chronology, as noted above. The Paleoindian period is significant in that it represents an adaptation to the close of the Pleistocene and onset of the Holocene, when environmental conditions were markedly different from subsequent periods.

Archaic Riverine Base Camps

Previously-documented sites in the C&O Canal NHP contain Archaic components (either Early, Middle, or Late Archaic periods) in floodplain settings. Rather than define separate property types for each period division of the Archaic stage, a single type was defined—the Archaic riverine base camp. In a sense, this definition reflects a common thread that runs through all known Archaic period base camps, both in the Potomac Valley and in the greater Eastern United States culture area.

Physical Characteristics. As defined herein, an Archaic base camp should include a cluster of hearth features and a diverse assemblage reflecting both food-preparation tasks as well as maintenance of a stone tool kit and shallow pit features that may have served as earth ovens or other kinds of processing facilities. Debitage, if recovered from sealed contexts, should include both primary-reduction debris and smaller flakes resultant from curation or maintenance of a hunting tool kit. Identifying any particular base camp to a specific time period will be predicated on the recovery of specific chronological indicators noted in the previous prehistoric context section. A time-sensitive trend throughout the Archaic stage is for base camps to increase in size. Identification of period-specific base camps (Early, Middle, or Late Archaic) is based on the recovery/presence of specific projectile points that serve as "index fossils" for these periods.

Associative Characteristics. Broadly speaking, Archaic base camps (and other Archaic property types) are associated with broad trends in climate and cultural change. From the close of the Pleistocene to the emergence of essentially modern conditions, Archaic stage base camps were associated with a shift from boreal-type environmental regimes to more seasonal ones. These changes fostered the development of deciduous forest elements, emergence of hunting patterns based on the procurement of smaller and more solitary game species, development of intensive harvesting of seasonally-available plant resources (both nuts and tubers amongst others), and the development of intensive riverine adaptations as a result of continuing sea level rise.

Links to Specific Themes. Again, chronology constitutes the most critical theme. The basic framework used to encompass the Archaic record in the C&O Canal and Potomac Valley in general is presented below. All three periods are briefly discussed.

Early Archaic Period (10,000 – 8,500 B.P.)

This period pertains to all physiographic regions in the C&O Canal NHP. This is the first period of the Archaic stage, and is marked by corner-notched projectile points such as Palmer and Kirk variants. These points, as well as those marking the earlier Paleoindian stage, have a pan-Eastern distribution. Although this period can be subdivided into separate sub-phases, stratigraphic work in the Potomac Valley has not been conducted to determine if models developed in the Southeast are applicable. Generally, the sequence would have corner-notched variants (Palmer and Kirk) preceding stemmed Kirk variants with serrated blades. In a sense, the earliest part of the Early Archaic is a continuum from the Paleoindian stage in terms of lithic technology and settlement patterns. Climatic conditions were different, however, and act as a key factor in re-adaptation marking the shift from one stage to the next. Subsistence is based on hunting various game species and harvesting of seasonally-available plant resources. Settlement patterns are

characterized by seasonal, macro-band base camps in riverine settings and smaller hunting or task-specific sites in interior localities.

Middle Archaic Period (8,500 – 5,000 B.P.)

This period pertains to all physiographic regions in the C&O Canal NHP. It is marked by the widespread proliferation of bifurcate-based projectile points that enter the archeological record around 6500 – 6000 B.C. These points, including the classic LeCroy type, are found in a far greater range of ecological settings compared to the earlier Paleo and Early Archaic period sites. This pattern may reflect, on a gross scale, a new adaptation to changing environmental conditions marked by gradual development of seasonal, deciduous forests. Later phases of the Middle Archaic are represented by the stemmed Stanley projectile points and, at the end of the period, the side-notched Halifax-Brewerton variants. Ground-stone tools became common, including gorgets, grooved axes, and bannerstones. The Middle Archaic signifies a widespread adaptation to growing deciduous forest conditions that gradually replaced the late Pleistocene environments experienced by Paleoindian and Early Archaic groups. Subsistence is based on hunting and the harvesting of seasonally-available plant resources. Settlement is characterized by macro-band base camps in riverine settings and smaller, task-specific sites located in interior settings.

Late Archaic Period (5,000 – 3,000 B.P.)

Again, this period is pertinent to all physiographic regions of the C&O Canal NHP. The change to the Late Archaic period is marked by increasing sea level rise and the development of intense riverine and estuarine adaptations. The Late Archaic stage is represented on a geographically widespread scale by its association to contracting-stem Savannah River points. This period is well represented in riverine settings and smaller tributaries in the Potomac Valley. Stratigraphic excavations in a number of Middle Atlantic and Southeastern states show the period's placement immediately after the side-notched Halifax-Brewerton period, and prior to the early ceramic complexes of the region. Typically associated with the period, especially in riverine base camp settings, are carved steatite, oval-shaped bowls with flat bases. These vessels served as precursors for a number of Early Woodland wares in the Middle Atlantic region. Other tool categories, such as ground-stone items, continue from the earlier Middle Archaic period. The final part of the Late Archaic period (also known as the Transitional period) is marked by Susquehanna Broadspear points and their variants. Whether these points evolved (developed) from the Savannah River type is a matter of debate; however, they are found in all three physiographic provinces crossed by the canal. Subsistence in this period was predicated on hunting, exploitation of seasonal fish runs, and harvesting of seasonally-available plant resources. Larger riverine base camps characterized settlement, though smaller, task-specific sites are still found in interior settings.

Additional themes that can be approached through the analysis of base camps dating to the Archaic include exchange, issues of physical anthropology (if burials are present), and ideological realms. Themes such as socio-political organization can also be studied,

given the presence of excellent site contexts preserving habitation areas. Preserved stratigraphic contexts will also provide the data necessary to study aspects of climatic change.

Early to Middle Woodland Riverine Base Camps

Defining this property type follows the same logic used in defining Archaic riverine base camps. As a property type, Early or Middle Woodland riverine base camps are similar to those dating to the Archaic, with the additional presence of specific ceramic wares and identifiable projectile points reviewed in the prehistoric context section.

Physical Characteristics. An Early to Middle Woodland riverine base camp will contain a cluster of hearth and pit features, a diverse assemblage reflecting food preparation and processing tasks (including ceramics), and circular-to-elliptical-shaped post-in-ground structures. One of the trends through time from the Archaic through to the Woodland is the growing use of pit features and an increase in size of these facilities. Early and Middle Woodland base camps usually have a number of such pit features, which may have served a variety of purposes including food storage, shallow pit hearth cooking, clay borrow pits, and ritual practices (including burial). Recent work in the C&O Canal NHP has revealed large pit features at the Fletcher's Boathouse Site dating to an early Middle Woodland time frame. Other Early and Middle Woodland sites in the greater Potomac drainage system (not necessarily in the C&O Canal NHP) have also revealed medium-to-large-sized pit features. These facilities are clearly not present in Archaic base camps. Lithic use during the Early and Middle Woodland periods was variable, focusing alternatively on local and non-local materials. The suite of debitage from an Early or Middle Woodland base camp will include materials reflecting primary manufacture (or reduction from cobble or tabular lithic sources) and maintenance or curation tasks.

Associative Characteristics. Early and Middle Woodland period base camps are associated with a number of broad trends in Eastern United States prehistory. These trends include the introduction and proliferation of ceramic technology, a move towards settlement patterns involving more-sedentary base camps, the manipulation and cultivation of native (indigenous) plants, and the introduction of several tropical species. A continued trend, first noted during the Late Archaic period, was the intensive use of riverine and estuarine environments. This pattern of riverine exploitation is a direct result of rising sea levels and the resultant creation of new kinds of ecotonal settings.

Links to Themes. The critical theme, again, is chronology. The chronological framework for the Early to Middle Woodland periods is outlined below. Note that these two periods are discussed in terms of relevant physiographic sections of the C&O Canal NHP.

Early Woodland Period (3,000 – 2,750 B.P.)

The inception of the Early Woodland period is marked traditionally by the advent of ceramics. Regional variants can be seen between the lower half of the park in the Coastal Plain, Piedmont, Ridge and Valley, and the Allegheny Plateau region. In each area, phases are characterized by distinct ceramic traditions or ware groups. These ware groups serve to organize the period.

Coastal Plain, Piedmont, and Ridge and Valley Provinces (Georgetown to Hancock). In the Coastal Plain, Piedmont, and Ridge and Valley sections of the canal, the earliest phase (of short duration) is marked by Marcey Creek, a flat-bottomed ware that is more or less a direct copy of the Late Archaic stone bowls. This earliest part of the period likely dates from about 1000 B.C. to about 750 B.C., after which Marcey Creek is superseded by conoidal-based vessels identified as Accokeek ware and its variants. Accokeek has an almost horizon-like (*sensu* [Willey and Phillips 1958]) distribution, being found throughout the Tidewater area of the Chesapeake Bay region, up the Potomac and Shenandoah into the Blue Ridge, and into the lower Delaware River Valley. Lithic artifacts include small stemmed points that developed from Savannah River variants. Various categories of ground-stone tools are present as well. These early phases follow Late Archaic patterns of settlement and, perhaps, lithic exploitation. Subsistence included hunting, harvesting of seasonal fish runs, and collecting of seasonally-available plant resources.

Allegheny Plateau (Hancock to Cumberland). The Early Woodland period in the upper part of the C&O Canal, roughly corresponding with the Allegheny Plateau province beginning at Hancock, is marked by interior and exterior cordmarked, thick-walled vessels related to Fayette Thick. This ware is found distributed throughout the Upper Ohio Valley and its related drainage systems. As with Accokeek, it forms a horizon-like marker for the period. This ware can date as early as the beginning of the final millennium B.C., lasting as late as about 400 – 300 B.C. Although not known in the Potomac Valley of the Plateau region, Fayette Thick and related wares are associated with Early Woodland Adena sites. Subsistence in this area is similar to that known for the other Early Woodland phases in the lower part of the canal. Settlement is also characterized by riverine base camps with smaller sites located in interior settings and rock shelters.

Middle Woodland Period (2,500 – 1,000 B.P.)

Identifying the Middle Woodland period becomes more complex as material culture diversifies by geographic region. Clear differences are seen between the lower part of the park and the sections beyond Hancock. As in the Early Woodland period, ceramic ware groups define distinct phases of the period.

Coastal Plain, Piedmont, and Ridge and Valley Provinces (Georgetown to Hancock). The Coastal Plain, Piedmont, and, in part, the Ridge and Valley provinces are marked by the early net-impressed wares identified as Popes Creek and cognate forms. This ware, beginning about 400 B.C., supersedes Accokeek and its variants. Popes Creek develops into Mockley, more or less a shell-tempered variant, which enters the archeological record around the B.C. – A.D. division. Contemporaneous with Mockley in the upper Piedmont and the Ridge and Valley is Albemarle ware, a well-made pottery with quartz temper and cordmarked surfaces. This ware likely evolves out of earlier Accokeek-based phases in the Piedmont and Ridge and Valley provinces of Virginia. It is not well known in the Coastal Plain of Maryland or the Potomac Valley below Washington, D.C.

Albemarle and its cognate wares are associated with the later Middle Woodland throughout the Ridge and Valley province, traversed by of the C&O Canal. Other materials associated with the Middle Woodland include a variety of stemmed and side-notched projectile point styles. Diagnostic ground-stone tools include gorgets and grooved axes. Subsistence strategies included hunting, exploitation of annual fish runs, and collecting of seasonally-available plant resources. Settlement includes base camps in riverine settings, larger than those documented during the Early Woodland period, and occupied for longer periods of time throughout the year. A definite semi-sedentary settlement pattern emerges in this period.

Allegheny Plateau (Hancock to Cumberland). The Middle Woodland period of the Plateau region, beyond Hancock, is not well known. It is likely represented by a series of limestone-tempered wares related to the Upper Ohio Valley Watson Plain and Watson Cordmarked ceramics. The relationship that these wares have with the quartz-tempered Albemarle ceramics, found throughout the Ridge and Valley region of the canal, is unknown and a matter for research. Distinctive corner and side-notched projectile points are common to this phase as well, being related to Snyders and Mankers types in the Midwest. Subsistence was likely similar to contemporaneous phases in the lower canal area; settlement was also most likely similar to contemporary phases in the area.

Apart from chronology, Early and Middle Woodland period base camps serve as the primary source of information for themes related to subsistence, settlement patterns, exchange, as well as physical anthropology and ideological realms. Presence of houses and burials showing differential treatment of the deceased may also contribute to an understanding of socio-political organization.

Late Woodland Village Sites

As a property type, the Late Woodland village is one of the best known and archeologically most visible manifestations in the C&O Canal NHP. Most of the early avocational work conducted in what is now the C&O Canal NHP focused on testing or excavating Late Woodland village sites in western Montgomery County, Maryland.

Physical Characteristics. As a property type, the Late Woodland village is represented by a circular configuration of houses and refuse pits either contained within a palisade or without. Burials are present, as well as a marked concentration of ceramics, flaking debris, and, depending on preservation factors, bone remains. Late Woodland villages within the first 59 miles of the C&O Canal NHP are marked either by Potomac Creek ceramics, Keyser ceramics, or Page ceramics. These villages are the remains of permanent or sedentary occupations lived in throughout the course of several years and not occupied on a seasonal basis, appearing in the archeological record circa A.D. 1000. As a property type, they supersede the Early or Middle Woodland riverine base camp.

Associative Characteristics. Late Woodland village sites are associated with the adoption of a nearly-complete sedentary lifestyle tied to the cultivation of both native and introduced cultigens. The sedentary village development pattern is part of a widespread Eastern United States phenomenon that began at the close of the Middle Woodland period. The Late Woodland period

is also associated with minor climatic fluctuations known as the Little Ice Age, a period of lowered temperatures that lasted several hundred years. This period may have resulted in settlement shifts, as well as modifications to prevailing patterns of subsistence.

Links to Themes. A number of themes can be tied to Late Woodland village property types. The chronological theme, also applicable to Late Woodland hamlet sites (see below), provides the framework in which other issues are considered. An extended discussion of the chronological framework for the Late Woodland is presented in the sections below.

Late Woodland Period (1,000 – 400 B.P.)

The final Native-American period is marked by a number of ceramic wares with variable distributions in space between the lower part of the canal and its end in Cumberland.

Coastal Plain, Piedmont, and Ridge and Valley Provinces (Georgetown to Hancock). The Late Woodland in the Coastal Plain and Piedmont of the C&O Canal are characterized by Potomac Creek ceramics and, to a lesser extent, the shell-tempered Townsend ware ceramics. The latter two wares are commonly found together in sites below the Fall Line, suggesting strong relationships between Potomac Valley societies and Patuxent and Chesapeake Bay groups. Potomac Creek ware is well developed by about A.D. 1250 – 1300, and characterizes most Late Woodland sites in the Potomac below Washington, D.C. In the upper Piedmont, from about the Triassic Basin of Montgomery County to just beyond the Monocacy River, Potomac Creek is found along with Shepard Cordmarked ceramics and the fine, shell-tempered Keyser Ware ceramics. The latter is a downstream variant of the Upper Ohio Valley Monongahela ceramics that characterize the immediate pre-Contact phases of the Late Woodland in the Upper Ohio Valley. Subsistence here reflects a marked break with earlier periods, in that cultigens such as corn and squash became prevalent. Hunting and exploitation of seasonal fish runs remained important in subsistence activities. Settlement included larger floodplain homesteads or hamlets and, towards the end of the period, sedentary village communities.

Allegheny Plateau (Hancock to Cumberland). Beyond the Ridge and Valley, Keyser (or, more properly, Monongahela) identifies the final Late Woodland period in the C&O Canal and Potomac River area. Proto-Historic Susquehannock ceramics with collared rims are found in the Plateau region of the canal as well. Earlier phases of the Late Woodland in this area are poorly known. Settlement and subsistence were comparable to that documented in the lower regions of the canal.

Other themes that can be explored through Late Woodland villages include those of socio-political organization, aspects of physical anthropology, and ideology.

Late Woodland Hamlet Sites

One aspect of Late Woodland settlement that is obvious from a perusal of John Smith's map of 1608 is the apparently dispersed nature of long houses or individual houses as opposed to actual village sites. In anthropological terms, this pattern is interpreted as a static image of isolated nuclear or extended family households, residing in a common domicile, placed in close

proximity to a slash-and-burn field. This pattern of dispersed households tied to scattered plots of cultigens is one documented for Mississippian period sites in other areas of the Eastern United States.

Physical Characteristics. Defining this property type for the Potomac Valley is a difficult task, as no clear examples have been thoroughly excavated. The several horizontally discrete Late Woodland ceramic clusters at the Chick Farm Site were interpreted as evidence of individual households. It is assumed that the archeological signature for a Late Woodland hamlet would be characterized by the remains of a small structure with several associated features (such as refuse pits and hearths). Archeologically, the site would not contain abundant quantities of ceramics and lithic debris needed to characterize a village. In terms of socio-political organization, individual hamlets may have been tied to either a larger household occupied by a higher-status headman or a village settlement.

Associative Attributes. These aspects would be comparable to those discussed for Late Woodland villages above.

Links to Specific Themes. Again, these would be comparable to issues discussed for the Late Woodland Villages above.

Contact Period Occupations

Contact period sites refer to Late Woodland or post-Late Woodland occupations that co-existed with the initial European exploration and habitation of the area. Rather than define separate types, all properties relating to this period are defined as Contact period occupations.

Physical Attributes. Contact period sites are frequently identified by the presence of European trade goods and other items of material culture in contexts associated with terminal Late Woodland period occupations. Ceramics denoting the latter may include Potomac Creek as well as Keyser and related wares. Given the dislocation of populations and subsequent amalgamation of formerly-discrete ethnic groups, other wares may be present, such as Susquehannock derived ceramics. New wares reflecting a degeneration of Native-American ceramic technology came into the record at this time, as well. One Contact period Native-American pottery is Camden ware, which may have evolved (devolved) from Potomac Creek ceramics. Population dislocation during this period also led to the fragmentation of larger village groups. Many Contact period sites may represent nothing more than isolated hamlet sites marked by the presence of a single domestic structure and an assemblage combining both native and European technology.

Associative Attributes. Contact period occupations are associated with culture-contact situations, depopulation, amalgamation of distinct ethnic groups into single socio-political entities, and the development of a "peasant" type community organization that eventually lost most material aspects of the Native-American identity.

Links to Themes. The chronological theme is discussed first in the section below.

Initial Contact Period (400 – 250 B.P.)

This period is relevant to all physiographic provinces of the canal. The close of the Late Woodland is marked by the advent of European settlement into the Potomac Valley. This period witnessed the demise of traditional Native-American technology, as it was gradually replaced with introduced goods, and as the native populations abandoned the area. The Contact period is one of the least known of the temporal divisions in this context. Initially, the period is marked by the development of various Colono wares (such as Camden) and the manufacture of projectile points from iron and brass. Ceramics were eventually replaced with European introduced wares, while projectile points vanished, having been replaced by firearms. Trade beads and other items (such as copper pots and various pieces of adornment) are sometimes found in association with the earliest part of the Contact period. However, too few sites have been investigated to make concrete statements about this period. Known tribal groups in the Coastal Plain and lower Piedmont would have included the Piscataway and related groups. Susquehanna groups were also present, moving south from the Pennsylvania area. Other tribal groups documented for the C&O Canal NHP include Tuscarora- and, to the west, Shawnee-related groups.

HISTORIC CONTEXTS FOR EVALUATING THE HISTORIC RECORD OF THE C&O CANAL NHP

The C&O Canal functioned as an intraregional carrier; its principal significance lies in the economic impact it exerted on the Potomac Valley itself. The directors of the C&O Canal Company stimulated local agriculture by providing cheap rates to transport manure and fertilizer. Local farmers found a ready market for their farm products in the steady stream of boat crews and families that traveled the 184.5 miles between Georgetown and Cumberland or settled in towns along the canal. Industry, which had a strong foothold in the area before the canal, was nurtured by the judicious distribution of water rights. The directors also fostered the establishment and expansion of commercial centers as focal points of local trade (Sanderlin1946:292, 295).

The following historic contexts provide a framework that organizes information based on a cultural theme and its geographical and chronological limits. These contexts describe the significant broad patterns of development in the Potomac Valley, and provide a mechanism for identifying a full range of associated property types (a property type is a group of individual resources that illustrate the historic context's theme). Description, locational patterns, and a sampling of known properties are presented.

Historic Context A: Early Settlement and Navigational Improvements in the Potomac River Valley

Pennsylvania German and Scotch-Irish farmers began migrating into the Monocacy Valley, east of the Catoctin Mountains, in the 1730s. Settlers established farmsteads along the Potomac River at the confluence of creeks and at fording places in the Frederick and Washington County

areas. Settlement in the Allegany County area began in the following decade (Wheelock 1997:10). Enough settlers had moved into the area by 1748 to justify the formation of Frederick County. Georgetown was laid out in 1751 and became an important tobacco port (Werner 1968:13).

One of the best known of the early settlers on the far western frontier was Thomas Cresap. In 1741 he arrived at Shawnee Oldtown, an abandoned Native-American village at a crossing on the Potomac River, to establish a trading operation reaching westward into the Ohio Valley. The Cresap family remained in residence at Oldtown until the beginning of the nineteenth century (Wheelock 1997:35).

Other early settlements were made at Conococheague (later Williamsport) and Wills Creek, the nucleus of Cumberland. Like Oldtown, early settlers of Conococheague adopted a Native-American crossing, establishing a ferry by 1755 (High 1997:194). Wills Creek, a trading post of the Ohio Company of Virginia, was selected as the site of a fort and named Fort Cumberland by General Braddock. Braddock's defeat in 1755 increased the threat of attack by Native Americans and caused many settlers in western Maryland to flee eastward to safety (Stegmaier et al. 1976:50).

In the period between the French and Indian War and the Revolutionary War, settlers poured into western Maryland. Navigational improvements of rivers got underway in the late 1780s and early 1790s. In many cases, short canals were dug to bypass rapids. George Washington's interest in improving internal water communication resulted in the formation of the Potomac Company and the James River Company, predecessors of the Chesapeake and Ohio Canal and the James River and Kanawha Canal, respectively. The Potomac Company was established in 1784 under the leadership of George Washington, with the mission to establish year-round transportation of boats able to carry 50 barrels of flour. In all, five canals were built: the Little Falls Skirting Canal, the Great Falls Skirting Canal, the Seneca Canal, the Shenandoah Falls Canal, and the Houses Falls Canal (Hahn 1984:1, 14 – 17; Kytle 1983:10).

All five canals were begun simultaneously, but the three not requiring locks (House's Falls near Harper's Ferry, Payne's Falls on the Shenandoah, and Seneca Falls) were completed first. The greatest difficulties were encountered at Great Falls, where the river dropped 76 feet for 1,200 yards between vertical stone cliffs. Five locks were required. The five canals were completed in 1802. Although the costs of construction were high, it had already been proven that water transportation was much cheaper than long distance overland hauling (Kytle 1983:10 – 14).

For 26 years, rivermen poled their rafts and boats down to Georgetown, bringing Western Maryland's furs, grain, lumber, flour, and whiskey to market. The major drawback to this enterprise was the inconsistency of the river's flow, which prevented a large volume of trade. The Potomac Company found itself in recurring financial distress. Overtures to the Virginia and Maryland legislatures met with little response, and debts piled up until profits could not cover the interest on them. Fervor shifted to building a canal all the way from tidewater through to the Ohio Valley (Kytle 1983:12 – 15).

Property types

Colonial Homesteads. The vernacular architecture incorporated into these early farmsteads reflected the cultural traditions of the settlers. German settlers built 2½-story log houses with four rooms. Simple crib outbuildings gave way to German bank barns by the mid-eighteenth century. These 2½-story barns were built with prominent forebays on stone foundations at the base of a slope; they were often used to store grain and shelter livestock. The cluster of outbuildings might have included spring houses or wells, ice houses, wood sheds, privies, root cellars, dry houses, smoke houses, bake ovens, and hay barracks. Rail fences enclosed crop fields and the farmyard to keep livestock out (Wheelock 1997:15).

Forts. Thomas Cresap arrived at Oldtown in 1741 and built a fortified house and trading post of stone surrounded by a stockade fence. The site of Thomas Cresap's homestead is located at mile 166 (Land and Community Associates 1994:2 – 1).

In 1756, construction began on Fort Frederick (mile 112). The fort protected the Maryland frontier and served as a staging area and supply base for the English during the French and Indian War (1756 – 1763). Fort Frederick was sold for agricultural purposes after the Civil War. In 1922, Fort Frederick was repurchased by the State of Maryland to develop the present Fort Frederick State Park (High 1997:208; Maryland Division of Natural Resources web site).

Historic Context B: Construction of the C&O Canal

The eastern seaboard's merchants were tantalized by the promise of untapped agricultural trade with the Ohio and Mississippi Valleys, while the mineral riches of the Appalachian Mountains and the upper Great Lakes beckoned manufacturers (Way 1993:47 – 48). In 1808, Albert Gallatin, the U.S. Secretary of the Treasury, formulated a plan for a comprehensive network of artificial waterways and roads to integrate most of eastern North America. Congressmen, however, were unwilling to allow the federal government to undertake such a program. It was left to the entrepreneurial vision of the merchants and politicians on the state and regional level to attempt to breach the Appalachian barrier with internal improvements.

In 1820, a preliminary survey was made for a canal from Georgetown to the coal banks near Cumberland. The Chesapeake and Ohio Canal Company was formally organized eight years later to carry on the work of the Potomac Company. Construction was begun in Georgetown on July 4, 1828; President John Quincy Adams turned the first spade of dirt. That same day, construction began on the canal's rival for Ohio trade, the Baltimore and Ohio Railroad in Baltimore (Hahn 1984:5). The C&O Canal Company was obligated to complete 100 miles within 5 years and complete the entire project within 12 years (Kytle 1983:20).

The C&O Canal was built by contractors in half-mile sections working along the Maryland side of the Potomac River, starting from Georgetown (Wheelock 1997:22). Benjamin Wright, chief engineer of the Erie Canal, was chosen to be the C&O's chief engineer (Kytle 1983:22). The canal was built to be 60 feet wide at the surface of the water, 48 feet wide at the bottom of the prism, and 6 feet deep (Kytle 1983:24). During July and August 1828, contracts were let for the

17 miles between Little Falls and Seneca and for the 34 sections above Little Falls (Kytle 1983:31). Wright and his engineers used surveys to determine the placement of aqueducts, the positions of locks, and elevation changes. Measurements, materials, and methods of construction for canal structures were gradually formalized into specifications between 1829 and 1832 (Kytle 1983:64).

Labor shortages were a problem from the beginning, as the pool of laborers in the Potomac Valley was small and predominantly agricultural. C&O Canal Company President Charles Mercer lamented "laborers are difficult to be had, at high prices, that is 10 and 12 dollars the month, besides their board and whiskey and a supply of necessary tools" (as quoted in Way 1993:55). Agents were sent abroad to recruit laborers, predominantly Irish. These immigrant laborers were offered meat three times a day, plenty of bread and vegetables, "a reasonable allowance of whiskey," and from $8 – $12 a month in wages, $20 for masons (Kytle 1983:31 – 32).

The canal company also needed to contend with maneuvering by the Baltimore & Ohio Railroad to delay and block the canal's construction. The railroad had garnered rights to the land at the narrow Point of Rocks. The C&O Canal Company spent four years in court before being given permission to go forward. By this time, the company had become bankrupt, and was subsequently bailed out by the State of Maryland. Problems continued for the beleaguered company: rock and cement were in short supply, delaying masonry work; land owners demanded unexpectedly high compensation for their loss of property; labor troubles were endemic; the Paw Paw Tunnel took twelve years to build; and contractors in financial straits absconded with payrolls (Kytle 1983:39, 53).

The canal came into use as each section was completed: first, from Georgetown to Seneca in 1831; then to Harper's Ferry in 1833; and close to Hancock in 1839. With 134 miles completed, the canal entered a period of serious financial problems that delayed completion of the remaining 50.5 miles to Cumberland until 1850—eight years after the B&O Railroad reached that point. Plans to continue the C&O Canal to the Ohio River (Pittsburgh) were dropped (Hahn 1984:6 – 7).

Property Types

Shanty Towns. Laborers built the canal with shovels, picks, wheelbarrows, and carts. They were predominantly Irish immigrants, but Germans, Dutch, English, and Welsh workers were also hired. Each contractor had his own workforce. Contractors usually threw up shanties at the work site, either bunkhouses shared by fifteen or twenty men or crudely built cabins and huts of all sizes and materials, where men lived with their families. Set off on its own in tangled woods bordering rivers, each section or group of sections constituted a community of workers and assorted family members. Each shanty town included a company store. The inhabitants ate, caroused, worshipped, and, of course, worked together, and the contractor was involved in most facets of his workers' lives (Kytle 1983:35; Way 1993:66 – 67).

One visitor to the Erie Canal construction site described a shanty (roughly 14 x 10 feet) that housed an Irishman, his wife, and family, who all shared one bed, and seven young male boarders who slept on planks without mattresses or even straw (Way 1993:144).

Graveyards. Cholera appeared among the Irish workers in Washington County in September 1832. Four workers died the first week. The only Catholic cemetery was at Hagerstown; frightened townspeople forced the canal company to establish its own cemetery near the canal. The onset of cold weather brought an end to the epidemic (Kytle 1983:42). Canal laborers who died from the cholera outbreak were buried in Roby Cemetery near Lock 60, about five miles below the Paw Paw Tunnel, and in another graveyard about a mile above the tunnel at Sulphur Springs. Laborers who died in the cholera outbreak of 1833 at Williamsport were buried on Hospital Hill, in the northeast corner of the Friend estate along the Clear Spring Road. Grave stones dedicated to the victims of the cholera epidemic were also reported to have been placed near Great Falls (Kytle 1983:44).

Historic Context C: Operation of the C&O Canal

The canal was divided into large segments, each with its own superintendent. Work details were assigned to each section to expedite repairs. Lockkeepers were on duty 24 hours a day, 7 days a week. They were required to keep their lock in good working condition and help all boats pass in and out of the lock. The lockkeepers tended to be men with large families (ready-made assistants). The C&O Canal was divided into six divisions: Georgetown, Monocacy, Antietam, Williamsport, Hancock, and Cumberland (Sanderlin 1946:184 – 185, 203).

The canal reached its highpoint in 1875, when 500 boats passed through its locks. Coal made up about 98 percent of the cargo. The remainder was divided between lumber, corn, flour, and miscellaneous products (Hahn 1984:7). The canal's decline was precipitous; a boatmen's strike and a flood crippled canal operations in 1877. A series of strikes and droughts followed. While the canal tried to reinstall normal operations, it found itself on the losing end of competition with the B&O Railroad. Railroad transportation sharply reduced any savings in transportation costs engendered by the canal (Segal 1961:244).

By the mid-1880s, coal shipments on the canal were down to a third of their former high mark (Hahn 1984:8). The final blow came in the form of a devastating flood in 1889. In addition to the damage incurred by the canal itself, many canal-related structures were also affected (Hahn 1984:9). The company did not have enough capital to make the repairs and declared bankruptcy. The B&O Railroad Company bought the canal in order to prevent a rival railroad from acquiring it. The canal was put back into operation in 1892. The C&O Canal was operated through a subsidiary corporation, the Canal Transportation Company (Hahn 1984:9).

The era of the boatman as independent operator ended with the flood. Many boatmen left the Potomac Valley or turned to other occupations. The Canal Towage Company was established in 1902 to manage boating operations. Boatmen could actually make more money working for the company rather than bear the expenses of hiring boats and mules to haul cargo as an independent operator. Coal remained the primary cargo, but flour, lime, and building materials were transported as well. The canal continued to function at ever-decreasing capacity until 1924,

when another flood caused serious damage. In 1938, the canal and its property were sold to the United States and placed under the stewardship of the National Park Service. The canal became the Chesapeake and Ohio Canal National Historical Park on January 8, 1972 (Hahn 1984:9 – 11).

Only a small percentage of historic sites within the C&O Canal National Historical Park have been recorded on the Maryland State Inventory of Historic Sites, as presented in the following table.

Table 3.1 Historic Sites Recorded Within the C&O Canal National Historical Park

Site Number	Site Name	Location	Description
18MO101	Seneca Sandstone Quarry	Mile 23	19th c. quarry complex
18MO106	First Road	Mile 28	19th century site
18MO126	Goose Flight	Mile 26	Unknown historic site
18MO139	Fort Sumner	Mile 5	19th c. fortification
18MO141	Unnamed	Mile 5	18th c.? historic unknown
18MO143	Unnamed	Mile 5	Unknown historic site
18MO146	Unnamed	Mile 5	Unknown historic site
18MO147	C&O Canal 1-7	Mile 11	Late 19th c. gold prospecting pit
18MO148	C&O Canal 5-18	Mile 5	Historic quarry complex
18MO149	C&O Canal 5-17	Mile 5	Historic quarry complex
18MO150	C&O Canal 5-19	Mile 5	Historic quarry complex
18MO156	Marsden Tract	Mile 11	20th c. house site
18MO157	Dog House	Mile 6	Historic stone structure
18MO161	C&O Canal 5-1	Mile 6	19th c. canal dam
18MO162	C&O Canal 5-2	Mile 5	19th c. feeder canal
18MO163	C&O Canal 5-5	Mile 5	19th c. feeder canal lock
18MO164	C&O Canal 5-6	Mile 5	19th c. feeder canal lock
18MO166	Washington & Great Falls Electric R.R.	Mile 6	Late 19th-20th c. electric railroad
18FR15	Warfield	Mile 42	Late 18th-early 20th c. structure
18FR335.5	Chick II	Mile 43	19th c. house site

Property Types

Lockkeepers' Houses/Section Houses. Lockkeepers were given a house and an acre of land for a garden. Each could supplement his salary by selling boatmen bread, eggs, butter, and other groceries (Sanderlin 1946:184 – 185).

The lockkeepers' houses on the C&O Canal varied architecturally. Generally, those built between Georgetown (mile 0) to the Monocacy Aqueduct (mile 24) were built of stone. The houses built on the upper sections of the canal were built with a mixture of building materials: stone, brick, wood-frame, and logs. Building stone was not as readily available on the upper sections of the canal and financial troubles had necessitated cutbacks. Lockhouses were generally 18-x-30-foot I-houses; i.e., one-room deep, two rooms over two rooms on stone foundations. Aside from building materials, variation occurred in the placement of the chimney and the size of basements. Outbuildings might include a privy, wood shed, corn crib, and hog pen. Floods and fire have destroyed

many of the C&O's lockhouses (Hahn 1996:1; Land and Community Associates 1994:2 – 29).

Each section of the canal was the charge of a superintendent. His house was referred to as the "section house." Research on the C&O's section houses indicate that these structures were well built. The section house at mile 156 was a two-story, "L"-shaped frame house on a brick foundation (Hahn 1996:35).

Wait Houses. Wait houses were also referred to as a "dog houses," "shanties," or "huts," and were small, frame buildings alongside locks. They were often equipped with a stove and some odd bits of furniture. Lockkeepers kept records there and sometimes spent nights in wait houses to avoid disturbing the sleep of their families when boats locked through (Kytle 1983:272).

Feed and Grocery Stores. Before completion of the canal in 1850, boatmen supplied themselves in Georgetown or Cumberland and added to their stock from grocery stores in the small towns near the canal. Boatmen could also obtain fresh vegetables from the lockkeepers (who often cultivated large gardens) and buy hay and feed from farmers along the way. During the 1850s, many people applied to the canal company for permission to operate feed and grocery stores, which turned out to be one of the most lucrative canal-related businesses.

Storekeepers had to pay a ground rent to the canal company, were prohibited from selling alcohol, could not interfere with navigation, and could have their privileges revoked with thirty days notice. During the 1860s, 1870s, and 1880s, at least 27 grocery and feed stores were built along the line of the canal at locks. Most were built in the decade following the Civil War (1865 – 1875). The stores came in a variety of sizes, from small wooden buildings to a large two and one-half story brick building. Staples stocked by these canal-side stores included flour, sugar, coffee, smoked meats, dry salt belly, and bread. Everything from black powder and kerosene to candy and clothing was also available. Corn, oats, and hay were on hand for the mules (Hahn 1996:57 – 62; High 1997:203; Sanderlin 1946:293).

Mule Stables/Barns. Mules were stabled at locations where boats waited to be loaded (Hahn 1984:92). The need to care for mules resulted in the establishment of a veterinary hospital in a converted foundry building in Georgetown (Hahn 1996:58).

Blacksmith Shops. Blacksmith shops located near the canal were kept busy replacing the mules' shoes, which generally wore out every other trip (Hahn 1984:92).

Carpenter Shops. At least one large frame carpenter shop with a metal roof was established by the company to fabricate lock gates. The shop was located beside Lock 66 near the Paw Paw Tunnel, and burned down in the 1960s (Hahn 1996:34).

Historic Context D: Agriculture in the Potomac River Valley

The earliest farms were established on relatively open bottomlands. Upland forest was gradually cleared for additional fields to plant cereal and other grains. Thus smaller, more manageable farms were carved out of large landholdings (Wheelock 1997:10, 15).

Farms of only fifty to one hundred acres in Allegany County and one hundred to five hundred acres in Washington and Frederick Counties could be profitable thanks to fertilization practices that increased crop yields. The number of farms gradually increased: by 1850, forty-two percent of Allegany County was devoted to agriculture, while Frederick and Washington Counties had nearly eighty percent of their respective territories in farmland (Wheelock 1997:19).

Although it was anticipated that the C&O Canal would have a positive effect on the local agricultural economy, its construction had a negative impact on local millers, farmers, and ferrymen. The canal's route was clear-cut and leveled. Any existing structures, fences, or other features were removed. Farmers requested that the C&O Canal Company relocate wagon road crossings, rebuild their fences, build culverts to access the river, dig additional drainage ditches in their fields, and build private boat basins and ferries (Wheelock 1997:23).

Farmers brought their grain to local custom mills or used agents in Point of Rocks, Brunswick, Harper's Ferry, and Williamsport to ship their flour, wheat, and corn to commission merchants in Georgetown via the canal. The growth of eastern urban centers coupled with the speed of railroad transportation enabled farmers in the Potomac Valley to alter their production. Wheat and corn remained important cash crops, while livestock, dairy production, and market-garden produce became the prime focus (Wheelock 1997:25).

The increase in livestock meant greater amounts of fodder were needed throughout the year. Silos developed in the 1870s and were quickly adopted by dairy farmers in the valley. Many different types of silos were tried, such as rectangular wooden, covered pits, and circular fieldstone. Round wooden silos became common by the mid-1890s, and masonry silos first appeared after World War I. Tall metal "Harvestore" silos were developed soon after World War II. Milk houses, chicken coops, pig pens, and sheep folds were added to the farmyard. Fencing was removed from around fields and instead used to contain livestock (Wheelock 1997:25 – 26).

The replacement of horses with engine-powered farm machines meant lessened the need for grazing land. As a result, the average farm size decreased to a range of 100 to 175 acres. Yet the actual number of farms increased in Washington and Allegany Counties during the first three decades of the twentieth century, reaching their highest level in 1930. Frederick County experienced a slight decrease in the number of farms during the same period. Changes to smaller farmsteads were minimal, but larger commercial operations enlarged existing barns and added buildings to house machinery, store products, and maintain livestock (Wheelock 1997:29).

Property Types

Farmsteads. Cultural resources associated with farmsteads are evident in land-use activities, spatial organization, responses to the natural environment, circulation patters, cultural traditions, boundary lines, buildings, and vegetation (Wheelock 1997:31).

Guano Factories. Nineteenth-century farmers had a fascination with exotic and relatively expensive foreign fertilizers. Until the 1850s, almost all guano came from Peru. Then the U.S. Congress passed a law allowing guano mining in the Pacific and Caribbean. Baltimore became the main importer of guano (High 1997:103). Guano factories were located at Georgetown and Little Falls (Hopkins 1879). It was one of the few products shipped up the canal to farmers.

Sporting Clubhouses. As the C&O Canal declined as a transportation corridor, it developed as a recreational destination. Touring the canal's length by barge, tug, and motorboat became a popular pastime. Several structures adjacent to the canal were converted into private hunting or fishing clubs (Wheelock 1997:28). An example of one such club is the Woodmont Rod and Gun Club, founded in 1870 by a transplanted Virginian. Its membership roles included politicians, celebrities, and businessmen from Eastern cities (High 1997:224).

Historic Context E: Industry and Commerce in the Potomac River Valley

Economist Harvey H. Segal has demonstrated that the Erie Canal brought about a rapid increase in the percentage of the population engaged in commerce or manufacturing in the rural counties traversed by the canal (Segal 1961:235). The same holds true for the C&O Canal.

Merchants in canal towns profited greatly from the people the canal brought into the valley—boatmen and their families, travelers, and those employed directly by the canal company. The canal company received revenue from toll charges, but greater profits were earned from the coal and grain trade by the merchants who established wharf and warehouse facilities at transshipment points (Sanderlin 1946:293 – 294).

The original charter had granted the canal company water rights for navigation only. Mounting financial problems had prompted Congress and the Virginia and Maryland legislatures into allowing the canal company to sell off water rights to mills and manufacturing plants along its line. The powerful Baltimore millers blocked the canal's right to sell water to gristmills until the 1870s (High 1997:70).

Loading basins, such as the Cushwa Loading Basin south of the Conococheague Aqueduct, became focal points for industrial and commercial development. Directors of the C&O Canal Company gave water rights for a plaster mill and a saw-and-planing mill. Building permits were given for a warehouse, a wharf, a hay press, and a coal yard. In the years following the Civil War, industrial use of the area near the basin increased. Lumber and grain mills, coal yards, a chair factory, an ice plant, a slaughterhouse, a tannery, and an electric power plant were all built in the area between the canal and the town of Williamsport (Land and Community Associates 1994:2 – 20).

Potomac valley industry faced an inevitable decline. The iron industry gave way to steel mills. The natural cement industry was supplanted by Portland cement. Obsolescent water-powered mills closed down. The Cumberland coal fields (that had sustained much of the industrial economy of the valley) never recovered from a massive labor strike in the 1920s. Even the B&O Railroad, which had dominated transportation in the valley for so many years, entered into a decline (High 1997:41).

Property Types

Warehouses. Warehouses were located along the canal at villages, focal points for agricultural districts, and where valleys broke through the mountains. They stored mule feed and goods required by the boatmen. Goods could be received and delivered by boats. Some warehouses were situated on basins where several boats could tie up or turn around (Hahn 1984:46).

Boatyards. The canal spawned profitable boat building and repair businesses. Mertens Boatyard in Cumberland was the canal's principal boatyard, and operated until 1905 (Hahn 1984:91).

Mills. Grist and saw mills were common sites along the canal, especially once the 1870 ban on selling canal water rights to grist mills was lifted. The Charles Mill ground both grain and plaster on Big Spring Run, north of Williamsport. The mill was in operation as early as 1790, but closed after the 1924 flood. Middlekauff's Mill near Williamsport also predated the canal (High 1997:200 – 202).

Tannery. A tannery was located at Williamsport and provided work for some boatmen during the winter months (Hahn 1984:129, 152).

Railroad-Related Structures. The Cumberland Valley Railroad ran from Harrisburg, Pennsylvania to Winchester, Virginia through the Cumberland Valley, reaching Hagerstown in 1841. During the Civil War, the railroad was used to supply the Union army and, as such, became a target of Confederate raiders. After the war, the line was extended across the Potomac River, tapping into the coal trade by connecting with the B&O Railroad at Martinsburg. The Cumberland Valley Railroad was eventually subsumed by the Pennsylvania Railroad system (High 1997:191 – 192). Related resources might include railroad stations and railroad bridges.

Despite the B&O's best efforts against competition in the Potomac Valley, the Western Maryland Railroad was able to extend its line to Hagerstown in 1906. The railroad followed the canal berm, except where it crossed the river at the Paw Paw bends. Western Maryland's track was abandoned after it merged with the B&O and Chessie systems (High 1997:227).

Cement Works. When construction of the C&O Canal began in 1828, the builders found themselves in short supply of hydraulic cement needed to mortar together the masonry locks, aqueducts, culverts, and other canal structures. Hydraulic cement had the

necessary property of being able to harden under water. Hydraulic cement (known as natural cement) was made from naturally occurring limestone. Deposits of this limestone were discovered at Shepherdstown, Virginia (now West Virginia) (Hahn 1981:45).

To convert the limestone into cement, pieces of the rock were broken down to a manageable size using an "iron cracker." These nut-sized pieces of limestone were then fed into the top of a kiln in alternating layers with coal of similar size. The burnt limestone was removed from the bottom of the kiln and crushed between millwheels. The resulting powder was packed into sacks or barrels (High 1997:72).

Cement was manufactured at the Potomac Mill (also called Botelor's Mill) near Shepherdstown and used by the C&O Canal until about 1838, when the Round Top Cement Company became the principal supplier. Round Top Mill, above Hancock, began operations about 1837. The mill produced more than 2,000 barrels of cement per week, which was boated downstream to a cement company in Washington, D.C. Each of the eight kilns was 10 feet in diameter and 21 feet deep (Hahn 1984:128; 1981:68 – 69).

Another cement mill was opened on the Maryland side of the Potomac River opposite the Shepherdstown complex. Known as the Antietam Cement Company (and later the Potomac Cement Company), it was established by William Blackford on his Ferry Hill Plantation in 1888. Cement was shipped by both canal and railroad to Washington, D.C. Each kiln was 11 feet in diameter and held 500 barrels of cement stone. The average output was 200 barrels of cement per day. The plant ceased operations in 1903, when the demand for natural cement was taken over by Portland cement (Hahn 1981:46).

These cement works included quarries, kilns, a mill for grinding, and a cooperage shop for making barrels to store the cement (Hahn 1984:237 – 240). One cement mill alternately functioned as a grist mill, using the same grinding stones (Hahn 1981:44).

Lime Kilns. Numerous lime kilns associated with the valley's cement industry were established close to the canal. The product of the lime kilns was also marketed to local farmers as fertilizer (Hahn 1984:128). The Potomac Mills lime kilns were built in a bank of six kilns, each seven feet wide and 20 feet high. The lime was transported to the cement mill in boats via a raceway. In later years, the raceway was supplanted by a tramway and small railway cars (Hahn 1981:45). The Potomac Mill was located on the Virginia (now West Virginia) side of the river. It began as a flour mill and adapted its grinding stones to cement production (High 1997:177).

The Godey lime kilns are located on Rock Creek at the intersection of the Whitehurst Freeway and Rock Creek Parkway. Canal boats carried limestone from Knotts Quarry near Shepherdstown to these lime kilns between 1833 and 1908. The building trades of Washington used the lime (Hahn 1981:4; High 1997:101). The Shinhan lime kilns and limestone quarry near Harper's Ferry operated through the 1960s, probably to produce plaster or fertilizer (High 1997:171 – 172).

Furnaces/Foundries. The Potomac Valley had all of the necessary ingredients to enable the iron industry to get established: timber for charcoal, iron ore, limestone deposits, and waterpower, with the added benefit of water transportation. Layers of iron ore, charcoal, and limestone (used as flux) were dumped into the top of a blast furnace. The impurities in the molten ore were blown out by a blast of air coming from bellows driven by a waterwheel. The resulting molten iron was poured out of the base of the furnace and cast in a mold that resembled a row of piglets. Hence the bars are known as "pig iron." The pig iron was then shipped to a foundry or forge. Reheated iron at a foundry was cast into anything from cookware to cannons. At a forge, iron was reheated and beaten out into wrought iron or bar iron (High 1997:74).

Completion of the skirting canals in 1802 enabled the Potomac Valley iron industry and quarries to flourish. Iron was produced at the Antietam Iron Works as early as 1769; the ironworks remained in operation until 1886. At its peak, the ironworks kept more than two hundred workers busy at its various enterprises: a blast furnace, nail factory, a forge, a sawmill, a rolling mill, a slitting mill, a woolen mill, a hemp mill, a saw mill, and a grist mill. Much of the iron ore came upstream from the ore banks above Harper's Ferry, and the resulting pig iron was shipped down to Harper's Ferry and Georgetown (Hahn 1981:40; High 1997:174 – 175; Lake, Griffing, and Stevenson 1877).

The Green Spring Furnace at Green Spring Run and Potomac Furnace were also active at an early date along the river. The first Green Spring Furnace was constructed in 1765 on Green Spring Run, but only operated for 10 years. The pig iron was either hauled overland to Winchester or poled downstream to Georgetown. One of the owners, Thomas Johnson, attempted another iron furnace in the 1790s at a more convenient location: 60 miles downriver at Point of Rocks. Johnson had been Maryland's first governor and one of the first directors of the Patowmack Company. As the C&O Canal neared completion, a second furnace was built at Green Spring in 1848, and operated until 1874 (High 1997:206).

Pig iron was shipped downstream to foundries such as Duvall's or Foxall's. Duvall's Foundry opened on 30th Street in Georgetown in 1836 and closed after the Civil War. The foundry was later converted into a veterinary hospital that cared for canal mules (High 1997:102). Foxall's Foundry was located near Georgetown. It began operations in 1801 and was particularly active during the War of 1812 casting cannon. The foundry operated until the end of the nineteenth century (High 1997:110).

Quarries/Stonecutting Mill. A marble quarry was located opposite Mason's Island (Martenet 1865). The quarry predated the canal and was said to run along the river for over a mile. Marble from this quarry was referred to as "Potomac marble" and used in the rebuilding of the capital after the British burned the city in 1814 (High 1997:141 – 143).

Sandstone quarries were located at Seneca and Little Falls. A stonecutting mill was established near the sandstone quarries at Seneca in 1837. It cut Seneca sandstone used

in the Smithsonian Castle building, along with other stone. The toothless saw used to mill the stone cut about an inch an hour (High 1997:134).

Stationed at Great Falls at the beginning of the Civil War, a Union private found veins of gold running within the boulders at this place. He bought farmland in the area and after the war began a mining venture. Three major mineshafts were sunk: the Ford Mine, the Watson Mine, and the Maryland Mine. Although gold was found, the amount was not sufficient to cover the cost of extraction. The Maryland Mine was the last to close just before World War II (High 1997:126).

Power Plants. The natural successor to the water-powered mills along the river were electric power plants. In 1909 the Martinsburg Power Company built a power plant on the West Virginia side of the river at Dam No. 4 and leased water rights from the C&O Canal. The plant is currently owned by Potomac Edison and still produces electricity (High 1997:187).

The R. Paul Smith Power Station, owned by Potomac Edison, was built between the canal and river at Willliamsport in 1923. It is a coal-fired, steam-electric plant, using coal brought in by railroad and water from the Potomac River (High 1997:193).

Historic Context F: Civil War Along the Canal

John Brown's raid on the federal armory at Harper's Ferry in 1859 foreshadowed the role the Potomac region would play in the upcoming conflict. In fact, one of Brown's co-conspirators took a job as a locktender on the C&O Canal to gather information. Two years later, Harper's Ferry was under the control of Confederate forces, which seized a great deal of the B&O's rolling stock.

The Potomac River was the dividing line between the North and the South, and witnessed a number of troop crossings, raids, and battles. As the C&O Canal and the B&O Railroad were major supply lines to the capital, they became especially vulnerable to Confederate raids. In October of 1861, seventeen hundred Union soldiers crossed the Potomac River to the Virginia side at Edward's Ferry and Conrad's Ferry (now White's Ferry). At the top of Ball's Bluff, the union force was met with enemy fire, driving them back into the river, where many escaping soldiers were easily picked off (High 1997:31).

The Potomac became the battle line again in September 1862 when Robert E. Lee led his army across the river into Maryland and skirmished with Union forces at Monocacy and Point of Rocks. A few days later, armies under Lee and McClellan met in the bloodiest single day of the war a few miles from the Potomac, at Sharpsburg and Antietam creek. Lee retreated with his army across the river into Virginia, but sent his cavalry under the command of J.E.B. Stuart into Maryland in early October to blow up a railroad bridge near Chambersburg (High 1997:32 – 33).

The Army of the Potomac built Fort Duncan in 1862 to protect Harper's Ferry (High 1997:171). The Union army also built fortifications to guard the approach to the Chain Bridge; i.e., Fort Marcy and Fort Ethan Allen. A covered wooden bridge was originally built at this location in 1797 (the earlier bridge was washed away, as was its successor). The third bridge on this site

was a chain suspension bridge built in 1808 and destroyed by a flood in 1810. Several other chain bridges occupied this site until an uncovered wooden truss bridge was built on the site by the time of the Civil War. Sentries for the North and South guarded each side (High 1997:112).

Lee's armies crossed the Potomac again in June 1863 near Shepherdstown and Williamsport. Union forces followed and the two armies met at Gettsyburg, Pennsylvania. After its defeat, Lee's army slowly retreated to the Potomac River at Williamsport. There the Army of Northern Virginia dug defensive earthworks as they waited several days for floodwaters to subside. Under cover of darkness, Lee's army crossed the Potomac and alluded capture (High 1997:35).

In the summer of 1864, General Jubal Early crossed the Potomac at Shepherdstown with 8,000 men, intending to advance on Washington, D.C., which was lightly defended. Early got as far as the outskirts of Washington, but did not have enough men for a serious assault. The Confederates returned to Virginia, but another raid across the Potomac was launched two weeks later. After burning down Chambersburg, Pennsylvania and sparing Hancock, Maryland, Confederate forces were marching on Cumberland when they were met by Union defenders at Folck's Mills. The Confederates withdrew downriver to Oldtown. Anticipating this action, Union forces had taken up positions on Alum Hill, a narrow hillock between the canal and river, and burned several bridges that crossed the canal. Confederate troops outflanked the Union troops by advancing down the towpath side of the canal. Union forces retreated across the river and eventually surrendered. The raiders returned to western Virginia, but were caught by Union cavalry. By October 1864, Union forces were in control of the Potomac Valley, and the war had shifted to Virginia (High 1997:38).

Use of the canal was curtailed during the Civil War. It remained under Union control, but witnessed a number of incursions by Confederate forces. Brunswick became the site of a Union supply depot (Hahn 1984:214). Harper's Ferry was made famous by the John Brown raid in 1859. In September 1862, on the eve of the battle of Antietam, General "Stonewall" Jackson captured Harper's Ferry (Hahn 1984:220). Williamsport was situated at a strategic crossing of the Potomac River, and became the focus of repeated attempts by Confederate troops to control or damage the canal (Land and Community Associates 1994:2 – 17). Fort Frederick was resurrected during the Civil War when two companies of Union infantry were stationed there.

Entrenchments. Union entrenchments were dug in the hillside east of the canal, near Williamsport (Land and Community Associates 1994:2 – 16).

IV. PREVIOUSLY-DOCUMENTED SITES IN THE C&O CANAL NATIONAL HISTORICAL PARK

This chapter reviews the known or previously-documented sites present within the C&O Canal NHP. Information concerning these sites is quite variable, some having been investigated in detail, while most were simply recorded. The information present in the site files held at the MHT was summarized to elicit as much data as possible in order to determine the specific archeological contexts (as discussed in Chapter 3) that could be approached in future investigations. This chapter is broken into three general sections corresponding to the three sections of the C&O Canal NHP. For each section, a brief discussion of the more important sites is presented, reviewing the potential implications for the various contexts discussed in Chapter 3. Sites are also categorized by property type when possible. However, as presented in the tables below, most sites fall into categories such as lithic scatters (or artifact scatters), or simply designated "unknown."

REVIEW OF KNOWN SITES IN SECTION 1, MILE MARKERS 0 TO 59 (COASTAL PLAIN AND PIEDMONT)

This section reviews the known archeological sites present within the first 59 miles of the C&O Canal NHP, comprising that part of the park falling within the inner edge of the Coastal Plain and the entire extent of the Piedmont. According to the ASMIS files conveyed to URS from the C&O Canal NHP office, 91 sites exist in this section, two in Washington, D.C., 71 in Montgomery County, and 18 in Frederick County, Maryland. As expected, there is a great deal of variation in terms of the information available for these sites. Some have been extensively tested and yielded large collections (housed in various repositories), potentially available for further analysis, while others have simply been recorded and lack basic data concerning existing chronological periods and site type represented. This dearth of data prohibits outlining succinct research directions apart from conducting basic investigations to corroborate site location and test for the range and types of occupations present. Similarly, the number of sites in this section of the C&O Canal NHP—compared to the second (Ridge and Valley) and third (Plateau) portions—is, in essence, a reflection of the great deal of work conducted between the 1950s and early 1970s by the Archeological Society of Maryland (ASM). The ASM, a Washington-area-based avocational group, conducted test excavations and surveys in many parts of the Potomac River Valley, including portions of the C&O Canal, in that time period. One focus of the ASM was the exploration of several large, Late Woodland period sites in the broad floodplain parcels found in western Montgomery County.

The following tables present basic data for sites in Montgomery and Frederick Counties. These tables summarize information present both on the ASMIS files and other information available in the Maryland Historical Trust's site files. Discussion of the sites and their research potential, in light of the contexts discussed in Chapter 3, is presented in sections following the tables.

Table 4.1 Montgomery County Sites

Site	Prehist-Hist	Name	Periods	Collections	Work Conducted	Site Type
18MO1	Prehistoric	Hughes	LA-LW	NM, JPP	Excavated	LW Village
18MO3	Prehistoric	Shepard	LA-LW	NM, JPP	Excavated	LW Village
18MO4	Prehistoric	Shepard Barrack	A-W	NM, JPP	Tested	Habitation (Village?)
18MO5	Prehistoric	Seneca Hotel	U	JPP	Tested	Habitation (Village?)
18MO6	Prehistoric	Beshers	Archaic	JPP	Tested	Habitation (?)
18MO8	Prehistoric	Alnutt	Archaic	JPP	Collected	Camp
18MO9	Prehistoric	Winslow	LA-LW	NM, JPP	Excavated	LW Village
18MO10	Prehistoric	Turf Farm	Archaic	JPP	Collected	Temporary Camp
18MO14	Prehistoric	WF-1	W	JPP	Collected	Temporary Camp
18MO15	Prehistoric	WF-2	M-LW	JPP	Collected	Village
18MO16	Prehistoric	WF-3	M-LW	JPP	Collected	Village
18MO17	Prehistoric	Hailstone	U	JPP	Collected	Undetermined
18MO18	Prehistoric	Carter-Wingate	Archaic	JPP	Collected	Temporary Camp
18MO19	Prehistoric	Beshers Quarry	U	JPP	Collected	Quarry
18MO26	Prehistoric	Ruppert Island	A-W	JPP	Tested	Camp
18MO34	Prehistoric	Olmstead Is.	W	JPP, AU	Tested	Temporary Camp
18MO37	Prehistoric	Hopkins Farm	U	AU, JPP	Collected	Lithic Scatter
18MO38	Prehistoric	Limekiln	Archaic	JPP	Collected	Lithic Scatter
18MO41	Prehistoric	Pierpoint	P-LW	JPP, AU	Collected	Paleo etc
18MO43	Prehistoric	Longshot	W	JPP	Collected	Lithic Scatter
18MO44	Prehistoric	Feeder Canal	U	JPP, AU	Collected	Lithic Scatter
18MO46	Prehistoric	WF-4	W	JPP, AU	Collected	Sherd Scatter
18MO49	Prehistoric	Patton	U	JPP, AU	Collected	Lithic Scatter
18MO54	Prehistoric	Cochran Farm	Archaic	JPP, AU	Tested	Archaic Lithic Scatter
18MO55	Prehistoric	Aqua Club	Archaic	JPP, AU	Tested	Archaic Camp
18MO79	Prehistoric	Sycamore Lndg	A-W	JPP, AU	Tested	A&W Lithic Scatter
18MO88	Prehistoric	Canal Site H-2	A-W	JPP, AU	Tested	A&W Lithic Scatter
18MO93	Prehistoric	Summit Hall	Paleo	JPP	Collected	Paleo Lithic Scatter
18MO101	Historic	Seneca Quarry		Unknown	Recorded	19th Century Quarry
18MO104	Prehistoric	Easter Site	A-W	JPP, AU	Collected	Undetermined
18MO106	Prehistoric	First Road	A-W	JPP, AU	Collected	Undetermined
18MO108		Bluff Gulley	L.A.	JPP, AU	Collected	Lithic Scatter
18MO120		High/High Seneca	U	JPP, AU	Collected	Lithic Scatter
18MO122	Prehistoric	M6	U	JPP, AU	Collected	Lithic Scatter
18MO123	Prehistoric	High Seneca	U	JPP, AU	Collected	Lithic Scatter
18MO124	Prehistoric	Mill Keeper	Paleo	JPP, AU	Collected	Lithic Scatter
18MO125	Prehistoric	Mill Keeper North	Archaic	JPP, AU	Collected	Undetermined
18MO126	Pre & Hist	Goose Flight	A & 18th	JPP, AU	Collected	Undetermined
18MO127	Prehistoric	Mill Keeper West	U	JPP, AU	Collected	Undetermined
18MO134	Prehistoric	Great Falls	U	Unknown	Recorded	Petroglyph
18MO135	Prehistoric	Abel	A-W	JPP	Collected	Undetermined
18MO137	Prehistoric	Hopkins	Archaic	JPP	Collected	Lithic Scatter
18MO139	Historic	Fort Sumner	19th	Unknown	Recorded	Military
18MO140	Prehistoric	C&O 5-23	M&LW	JPP, AU	Collected	Lithic Scatter
18MO141	Prehistoric	C&O 5-22	LW	JPP, AU	Collected	Lithic Scatter
18MO142	Prehistoric	C&O 5-24	A-W	JPP, AU	Collected	Lithic Scatter
18MO143	Prehistoric	C&O 5-25	A-W	JPP, AU	Collected	Lithic Scatter
18MO144	Prehistoric	C&O 5-26	A-W	JPP, AU	Collected	Lithic Scatter
18MO145	Prehistoric	C&O 5-27	U	JPP, AU	Collected	Undetermined

Table 4.1 Cont'd

Site	Prehist-Hist	Name	Periods	Collections	Work Conducted	Site Type
18MO146	Prehistoric	C&O 5-28	U	JPP, AU	Collected	Undetermined
18MO147	Historic	C&O 1-7	U	Unknown	Recorded	Quarry
18MO148	Historic	C&O 5-18	U	Unknown	Recorded	Historic Structure
18MO149	Historic	C&O 5-17	U	Unknown	Recorded	Historic Structure
18MO150	Historic	C&O 5-19	U	Unknown	Recorded	Historic Structure
18MO151	Prehistoric	Gregory Franklin 1	U	JPP, AU	Collected	Temporary Camp
18MO155	Historic	C&O 1-1, 1-2, 1-3		Unknown	Recorded	Retaining Walls
18MO156	Historic	Marsden Tract	20th C	Unknown	Recorded	Historic Structure
18MO157	Historic	Dog House	U	Unknown	Recorded	Historic Structure
18MO161	Historic	Canal Dam 1	19th C	Unknown	Recorded	Historic Structure
18MO162	Historic	C&O 5-2	U	Unknown	Recorded	Historic Structure
18MO163	Historic	C&O 5-5	19th C	Unknown	Recorded	Canal Lock
18MO164	Historic	C&O 5-6	19th C	Unknown	Recorded	Canal Lock
18MO166	Historic	C&O 4-5	19th C	Unknown	Recorded	Rail Road
18MO216	Prehistoric	Shoofly Site	Archaic	JPP, AU	Collected	Lithic Scatter
18MO217	Prehistoric	Michelle Site	A-W	JPP, AU	Collected	Habitation Site
18MO233	Prehistoric	Rainy Day	LA	JPP, AU	Collected	Lithic Scatter
18MO241	Prehistoric	Israel Quarry	U	JPP, AU	Collected	Quarry

Abbreviations for all "Collections" columns are as follows: NM=National Museum (Smithsonian); JPP=Jefferson Patterson Park; AU=American University; and P=private collections.

Table 4.2 Frederick County Sites

Site	Prehist-Hist	Site Name	Periods	Collections	Work Conducted	Site Type
18FR007	Prehistoric	Catoc-Lander rock shelter	W	JPP	Tested	Woodland Rock Shelter
18FR008	Prehistoric	Kanawha Spr.	LW	NM, JPP	Tested	Village/Habitation
18FR015	Prehistoric	Warfield	LW	Unknown	Recorded	Village/Habitation
18FR032	Prehistoric	L. Catoct. Creek	M-LW	JPP	Tested	Sherd Scatter
18FR033	Prehistoric	Catoc Aqueduct	U	Unknown	Recorded	Undetermined
18FR035	Prehistoric	Lander-1	W	Unknown	Recorded	Undetermined
18FR036	Prehistoric	Lander-2	U	Unknown	Recorded	Undetermined
18FR037	Prehistoric	Lander-3	LA	JPP	Recorded	Undetermined
18FR049	Prehistoric	Gum Site	A-W	JPP	Recorded	Artifact Scatter
18FR060	Unknown	Rock Hall	U	Unknown	Recorded	Undetermined
18FR077	Prehistoric	Upper Bruns.	W	JPP	Recorded	Village/Habitation
18FR078	Prehistoric	Lower Bruns.	U	JPP	Recorded	Lithic Scatter
18FR100	Prehistoric	Monocacy	LA-EW	JPP, AU, NM	Tested	Base Camp etc
18FR102	Prehistoric	Chick Farm	EW&LW	NPS	Tested	Base Camp/Hamlets
18FR165	Prehistoric	Noland Frry-2	M-LW	JPP	Tested	Village/Habitation
18FR335	Prehistoric	Chick Frm-2	EA-LA	NPS	Collected	Base Camps
18FR335a	Historic	Chick Frm-2	19th	NPS	Collected	Hist Tenant Hse
18FR413	Prehistoric	Knoxville Paleo	Paleo	Unknown	Recorded	Paleo + Lithic Scatter

As the tables indicate, information concerning work on sites in this section has been limited to only a handful of those listed. In order to convey some sense of the level of data available, the following table breaks the sites down into differing kinds of occupation types. Note that this table does not include the 14 known historic sites present in this section of the canal.

Table 4.3 Sites by Occupation Type

Villages	Scatters	Base Camps	Transient Camps	Quarries	Rock Shelters	Paleo Indian	Unknown
13	27	3	8	3	1	3	14

It is noteworthy that the two largest categories are scatters (variably listed as artifact scatters, sherd scatters, or lithic scatters), most of which have only general-stage chronological indicators. In the case of the three sites with known Paleo Indian components (or diagnostic artifacts), it is likely that other categories of materials at the sites pertain to later Archaic and possibly Woodland occupations. In fact, no known intact Paleoindian components are documented for this (or any) stretch of the C&O Canal. Whether or not intact components exist relative to the stray point finds is unknown.

A number of the sites in this section of the C&O Canal NHP can provide data relevant to the research issues outlined in the contexts presented in Chapter 3. For example, the thirteen villages can potentially help address the entire suite of contexts discussed in Chapter 3.

Table 4.4 Sites Providing Data Relevant to Historic Contexts

Site Number	Site Name	Potential Contexts
18MO1	Hughes Site	A through E
18MO2	Selden Island III Site	A through E
18MO4	Shepard Site	A through E
18MO5	Shepard Barracks Site	A through E
18MO9	Winslow Site	A through E
18MO15	Whites Ferry 2 Site	Unknown
18MO16	Whites Ferry 3 Site	Unknown
18MO217	Michelle Site	A through E
18FR8	Kanawha Springs Site	A through E
18FR15	Warfield Site	A through E
18FR77	Upper Brunswick Site	A through E
18FR165	Nolands Ferry Site	A through E

Several of the sites in the above table are notable for their impact on Maryland (and thus Potomac Valley) prehistory. The Hughes, Shepard, Shepard Barrack, and Winslow Sites are notable for the presence of Late Woodland village occupations tested (and looted) periodically from the late 1930s through the 1960s. Notably, all four sites are in the same floodplain parcel immediately adjacent to Selden Island. The Shepard Site (18MO4) was the subject of the ASM's first monograph (*Bulletin Number 1*) published in 1957 (MacCord, Slattery, and Schmitt 1957). Data from the early excavations at the Shepard and Hughes Sites provided the basis for Karl Schmitt's definition of the Montgomery Focus. Excavation materials from the Hughes Site, along with data from the Keyser Farm Site in the Shenandoah River Valley of Virginia, provided the basis of Schmitt's Luray Focus. Descriptions of both were published in the Cole Anniversary volume in 1952 (Griffin 1952), as well as in Schmitt's dissertation at the University of Chicago,

dated 1942. The Montgomery Focus was eventually synthesized in a subsequent volume published by the Archeological Society of Maryland (*Bulletin Number 2*), originally authored by Richard Slattery and Douglas Woodward. This volume remained in a draft form for nearly 30 years prior to being published in 1992. A history of the various editors who worked with the volume is noted in the author's preface (Slattery and Woodward 1992:*xii*). Briefly, as noted in the context section, the Montgomery Focus refers to Late Woodland occupations characterized by sand/quartz-tempered wares (Shepard Cordmarked), while the Luray Focus is denoted by shell-tempered Keyser ware, ultimately related to cognate ceramics found in the Western Maryland region and Upper Ohio Valley.

Excavations conducted by the ASM at the Shepard Barrack Site revealed several pits, sherds, and a fluted point fragment (Clyde 1959). Excavations in the early 1960s, yet to be published, revealed an assemblage dominated by shell-tempered Keyser ware ceramics, Clarksville points, and burials. This site clearly represents a Late Woodland village similar to the Hughes Site, about a mile downstream (see discussion in Slattery and Woodward 1992:167).

Several other notable sites exist within the first 59-mile section of the canal that merit discussion on a general level. One is the Monocacy Site (18FR100), situated at the confluence of the Monocacy River and the Potomac. It is on a high terrace formation on the right bank (north side) of the Monocacy, situated between the canal and the Potomac River. Excavations were conducted at the site by American University and Catholic University in the late 1960s and into the early 1970s. This site is significant for its deep stratigraphic column, containing an Early Woodland occupation. Accokeek ceramics were found deeply buried in Zone V between 7.0 and 8.2 feet beneath the surface at the site. Dates of 950 B.C. and 545 B.C. bracketed, respectively, the bottom and top of this zone (Gardner and McNett 1971:43). This occupation capped a Late Archaic component, though problems with the water table prevented extensive testing. It is likely that this stratigraphic column would be duplicated at other floodplain parcels, a possibility discussed in a later section of this report.

A significant site with a well-preserved Middle Woodland component was recently documented along the canal in Washington at Fletcher's Boathouse. This site, 51NW131, is about one mile south of the Maryland-Washington, D.C. line, situated on a terrace adjacent to a small stream that drains west from the Palisades bordering the canal. Excavations here revealed a number of large, deep refuse pits with Albemarle, Popes Creek, and Mockley ceramics (Barse et al. 2002). These features, all markedly stratified with separate fill horizons, were situated on an upper terrace that contained stratified Archaic deposits, albeit of low artifact density. Testing on portions of the lower terrace in the area revealed buried Late Archaic to Early Woodland components.

The Fletcher's Boathouse Site is important not only for demonstrating a chronological overlap between three separate ware groups (Albemarle, Popes Creek, and Mockley), but for its implications for finding other stratified sites in comparable floodplain settings within the C&O Canal NHP. The large size of the pits, not documented in previous investigations within the Middle Atlantic area, point to seasonal storage at repeatedly occupied sites on the part of small, single to extended-family domestic groups.

REVIEW OF SPECIFIC CONTEXTS AND APPLICABLE SITES, MILE MARKERS 0 TO 59 (COASTAL PLAIN AND PIEDMONT)

A number of the known sites in the C&O Canal NHP can be used to address the several contexts outlined/discussed in Chapter 3. The more salient of these contexts, and the relevant sites, are reviewed below.

Chronology and Environmental Change

Establishing the chronological placement of any site is a preliminary step necessary for providing a framework for considering other issues. Developing a local chronology relies on sound buried and/or stratified contexts and dateable materials from such contexts. Initial investigations at several sites clearly show great potential for expanding knowledge of the local Potomac River sequence. Key sites include the Monocacy Site (18FR100), as well as the large floodplain sites in Montgomery County—such as Winslow (19MO9), Hughes (18MO1), Shepard (18MO3), and Shepard Barracks (18MO5)—provide excellent data on Late Woodland period occupations dating to two separate phases (Montgomery and Luray). Additionally, Winslow, Hughes, and Shepard have deeper occupations dating to the Late Archaic and Early Woodland periods.

Some of the excavations conducted at the Winslow Site (18MO9) clearly show great potential for stratification and development of a local site sequence. Moderately-deep units at this site revealed four separate horizons. This profile is illustrated by Figures 8 and 9 in Slattery and Woodward's 1992 monograph. Both Zone A and Zone B in those figures refer, respectively, to a plow zone and a dark humus layer. Zone B, which extended to about 24 inches below surface (or to 61 centimeters below surface), is likely a plowzone, with Zone A (0 to 10 inches; or 0 to 25.5cm) a recently formed humus or A horizon. Zone C, which extended from 24 to 29 inches (or 61 to about 73.5cm) was defined by Slattery and Woodward as "a light yellow-tan silty clay subsoil" (1992:13), probably best described as a B1 horizon. This zone contained not only Early Woodland Marcey Creek and Selden Island/Accokeek wares, but a number of Late Archaic Savannah River points. A sample of these points is illustrated in Figure 39 of their monograph (Slattery and Woodward 1992:63). Information on the extent of the Late Archaic component identified via the Savannah River points is unknown. As discussed below, more information on the horizontal extent of the Early Woodland components is documented at the site.

Stratified below the Zone C light clay horizon was an unnamed layer (in terms of zone definition) simply denoted on Figure 9 as a "Pre-pottery horizon, light clay." No data on soil color or texture is offered to differentiate it from Zone C. Of particular interest for local chronology was the recovery of a rhyolite Kirk point with a serrated blade element from a depth of 38 centimeters below surface, in what the authors identified as Zone C. An ascription of the Early Archaic Kirk point to this zone contrasts to the strata definitions in Figure 9, which has Zone C ending at 29 inches (about 74 centimeters) below surface. Although stratigraphic work has not been conducted to any depth at this site, it is clear that these deposits potentially contain significant Archaic stage occupations. Deeper excavations may well reveal intact Archaic horizons.

MacCord's excavations at the Shepard Site (18MO3), not too far from the Winslow Site, also demonstrated cultural stratigraphy (MacCord, Slattery, and Schmitt 1957). Below a plowzone enhanced by spoil from excavation of the C&O Canal, MacCord found an undisturbed A horizon marking an unplowed surface. This horizon contained shell-tempered Late Woodland pottery of the Keyser complex. At the base of the horizon and in the upper several inches of the underlying subsoil, interpreted here as a B1 horizon, Late Archaic points were found, as well as Marcey Creek and Accokeek (noted in the report as Stoney Creek) pottery. Clearly, more detailed excavations could refine this cultural stratigraphy.

A number of other sites in the area probably contain multiple occupations spanning the Archaic and Woodland stages, yet lack the necessary work to elucidate the nature of individual components.

Donald Peck's testing of the Noland's Ferry Site (18FR17) revealed ceramic stratigraphy that may span the late Middle Woodland through to the end of the Late Woodland periods (Peck 1980). The latest component here is marked by shell-tempered Keyser ware. Earlier components are marked by both Shepard and Page Cordmarked ceramics. This sequence is also duplicated on Mason Island, adjacent to the park. Although not within the park, the Mason Island Site (18MO13) is significant, as it revealed excellent potential for providing detailed cultural stratigraphy. Tested by Franklin in the early 1970s, this site provided an Early to Late Woodland stratigraphic sequence. Ceramics cognate to Page Cordmarked were found stratified beneath shell-tempered Keyser ceramics. Beneath the Page horizon were steatite-tempered sherds dating to the Early Woodland period.

Other sites likely to yield additional information concerning Woodland stage chronology include the Jenkins Site (18MO96) and the Seneca Hotel Site (18MO5). According to the site form for 18MO96 filed at the MHT, Early Woodland period Accokeek sherds were collected from an eroding bank approximately 2 meters below the surface. If so, this may suggest the presence of deposits comparable to those documented at the Monocacy Site (18FR100). The Seneca Hotel Site produced a radiocarbon date of 1 B.C. ±160 from a feature (Tidwell 1959), placing the feature in the Middle Woodland period. ASM's testing of the site produced both steatite- and quartz-tempered pottery; given the lack of publication, exact associations are unclear.

Sites such as Gum (18FR49) and Warfield (18FR15) have extensive collections of Archaic and Woodland points, as well as ceramics. Although most of this material is derived from surface collections, the assemblages do suggest the possibility of large, moderately-dense, multi-component occupations (Peck 1980). The Pearson Site (18MO23) produced several Archaic cache blades, which may reveal information not only about chronology but trade and exchange (Croney 1978). The Beshers Site (18MO6) yielded extensive Archaic materials in the vicinity of the Winslow and Shepard Sites. Notably, the Beshers Site produced a fluted point manufactured from chalcedony.

Other sites with possible Paleo components include the Pierpoint Site (18MO41), which produced three fluted point fragments—as well as 16 LeCroy bifurcate points and a Hardaway side-notched point—and the Knoxville Site (18FR413). A fluted point was also recovered from the Noland's Ferry Site noted above.

While most of the above discussion focused on chronology, sites with deep profiles can provide data relevant to environmental change. Rates of weathering and depositional processes are directly tied to climatic events. Analysis of buried contexts, including pedological as well as palynological studies, can provide baseline data for better understanding Holocene environments and their impact on Native-American groups in the Potomac Valley.

Subsistence and Settlement

It is clear from existing sites that great variability exists in the kinds of occupations for known periods. Regarding settlement, interesting patterns can be perceived if one compares the Late Woodland large-village occupations (present at Shepard, Hughes, and Winslow) with the smaller, less-dense occupations documented recently at the Chick Farm Site (18FR102). At the latter site, testing across the 20-acre parcel revealed small clusters of co-occurring, shell-tempered Keyser ware and Potomac Creek ware, suggesting the presence of small, single-family, hamlet-type occupations. Single-family house sites are depicted on Smith's map of the lower Potomac River, and probably can be used as a template for Late Woodland settlement patterns.

Settlement patterns for earlier periods are not as clear and probably not as well represented as the Late Woodland. Sites such as 18FR335, within the Chick Farm property, point to a series of repeated occupations during the Archaic. The principal component, or components, at the site date(s) to the Late Archaic and may be a riverine base camp. The earlier Middle and Early Archaic periods at the site could well represent smaller base camps, short term in nature, by smaller family groups. The exact nature of such components needs to be established by excavations at the site and others with indicated Archaic occupations.

Early Woodland period sites probably include both riverine base camps and smaller occupations. The excavations at the Winslow Site pointed to an extensive Early Woodland component characterized by Marcey Creek ceramics, as well as Selden Island steatite- and grit-tempered wares (cf. Slattery and Woodward 1992:28 – 32 for discussion of these ceramics and their distribution). The ceramics, limited in count and identified by the authors as Selden Island grit-tempered, are most likely Accokeek, the first major Early Woodland period ware group with a horizon-like distribution throughout the Middle Atlantic period. Indeed, the steatite, cordmarked sherds identified as Selden Island are probably Accokeek as well. Comparable sherds were recovered from a leached-out feature at 18FR102 (Barse et al. 1999). Early Woodland riverine base camps may be present within the C&O Canal NHP, as indicated by the location of the 522 Bridge Site in Warren County, Virginia along the Shenandoah River. Directly across from Selden Island, on the Virginia side, recent work by William Gardner has disclosed the location of a well-stratified Archaic through Late Woodland site immediately south of the mouth of Goose Creek, containing an Early Woodland base camp component. Ceramics from the site were identified as Accokeek ware, some recovered from a large refuse pit. These two Virginia sites are directly relevant to the C&O Canal NHP, as comparable landforms are present that would sustain such sites. The above-noted component at 18FR102, as well as the buried deposit containing Accokeek ceramics at 18MO96, could well be indicative of riverine base camp locales.

Subsistence for the sites within the first 59 miles is not well documented in a systematic way. It is clear that pit contents from Late Woodland sites will produce a wealth of carbonized floral

remains as well as faunal specimens. Corn is present in the Late Woodland sites within the C&O NHP; it is certainly present in the Shepard and Winslow Sites of the Montgomery Focus, and has been documented at later, Keyser-related components. With the exception of the Fletcher's Boathouse Site (51NW13), little effort has been made to examine subsistence in Middle Woodland period components. Extensive flotation of the pit contents from the nine refuse pits dating to that period revealed hardwood nut species and wood charcoal. Faunal remains were not preserved to any identifiable extent. Thus, subsistence practices for periods pre-dating the Late Woodland are not well documented within the C&O Canal NHP.

Other research contexts (such as technology and exchange/trade) can be explored at almost any level with excavated data from sites within the park. Socio-political organization is more difficult, depending on inferences based on various associations of material goods, site patterning, and burial practices. As noted in Chapter 3, Stewart has argued that the presence of ranked societies can be inferred based on patterns of raw-material exchange within the Middle Atlantic region. Burials bring to the fore context issues of physical anthropology and socio-political organization/ideological practices. Human skeletal remains from Late Woodland sites within the C&O Canal NHP can be analyzed for a variety of concerns (such as demographic data and pathologies) and compared to well-documented skeletal populations studied in the lower Potomac Valley (cf. Ubelaker 1974). Socio-political/ideological issues may be studied through the treatment of individuals at death (preferential and otherwise) and the kinds of items placed within the grave. Also, the placement of burials within a site's total universe could be of value for discerning certain aspects of the ideological realm.

REVIEW OF KNOWN SITES IN SECTION 2, MILE MARKERS 59 TO 123 (HARPER'S FERRY TO HANCOCK)

This section reviews the known sites within the second section of the C&O Canal NHP, extending from mile marker 59 to 123, near Hancock, Maryland. As the following table shows, there are much fewer sites documented in this section than in the first. This section corresponds, broadly speaking, with the Great Valley section of Maryland, a region characterized by a limestone substrate bedrock, numerous sink holes and solution caverns, broad, flat valleys, and subterranean drainage systems. Nearly all of this section falls within Washington County. Forty-one sites are documented in this section of the canal; 40 of these are prehistoric. The lone historic sites is Antietam Furnace (18WA27), a nineteenth-century structure. These sites are listed in the following table.

Table 4.5 Washington County Sites

Site Number	Preh-Hist	Name	Periods	Collection	Work Conducted	Site Type
18WA2	Prehistoric	Hancock 1	LW	Unknown	Recorded	Lithic Scatter
18WA3	Prehistoric	Hancock 2	M-LW	Unknown	Recorded	Village
18WA4	Prehistoric	Hancock 3	W	Unknown	Recorded	Artifact Scatter
18WA5	Prehistoric	Ditch Run	W	Unknown	Recorded	Undetermined
18WA6	Prehistoric	Millstone 1	A-W	Unknown	Recorded	Undetermined
18WA7	Prehistoric	Millstone 2	M-LW	Unknown	Collected	Artifact Scatter
18WA8	Prehistoric	Parkhead 1	U	Unknown	Collected	Undetermined

Table 4.5 Cont'd

Site Number	Prehist-Hist	Name	Periods	Collection	Work Conducted	Site Type
18WA9	Prehistoric	Parkhead 2	U	Unknown	Collected	Lithic Scatter
18WA10	Prehistoric	Licking Ck 1	U	Unknown	Collected	Lithic Scatter
18WA11	Prehistoric	Licking Ck 2	U	Unknown	Collected	Artifact Scatter
18WA12	Prehistoric	Cloverleaf	U	Unknown	Collected	Artifact Scatter
18WA14	Prehistoric	Conococheague Creek Site	M-LW	JPP	Excavated	Artifact Scatter
18WA15	Prehistoric	None	U	Unknown	Collected	Lithic Scatter
18WA24	Prehistoric	Mt. Lock	U	Unknown	Tested	Lithic Workshop
18WA25	Prehistoric	Ernstville	U	Unknown	Tested	Artifact Scatter
18WA27	Historic	Antietam Furnace	19th C	Unknown	Recorded	Historic Structure
18WA42	Prehistoric	Stine Farm	A-W	P, JPP	Excavated	Habitation Site
18WA42B	Prehistoric	Stine Farm	W	P, JPP	Collected	Lithic Scatter
18WA62	Prehistoric	Smith-Schaeffer	W	P, JPP	Tested	Burial/Habitation
18WA62B	Prehistoric	Smith	W	P, JPP	Tested	Hearth
18WA62C	Prehistoric	Antietam Furnace Coke Yard	LW	P, JPP	Tested	Village/Habitation
18WA69	Prehistoric	Pinesburg Station	LW	P, JPP	Collected	Village/Habitation
18WA74	Prehistoric	Bikle Home Site	W	Private	Collected	Lithic Scatter
18WA75	Prehistoric	Bikle Collecting Area	LA	Private	Recorded	Hunting/Processing Camp
18WA88	Prehistoric	S-2	A-W	Unknown	Recorded	Undetermined
18WA129	Prehistoric	Dargan Transect	U	JPP	Tested	Hunting-Processing
18WA130	Prehistoric	A-P Transect	A-W	Unknown	Recorded	Hunting-Processing
18WA131	Prehistoric	A-P Transect	U	Unknown	Recorded	Hunting-Processing
18WA132	Prehistoric	A-P Transect	LW	P, JPP	Collected	Hunting-Processing
18WA133	Prehistoric	A-P Transect	EW	P, JPP	Collected	Hunting-Processing
18WA153	Prehistoric	(S. Marsh Run Transect)	U	JPP	Tested	Undetermined
18WA154	Prehistoric	(S. Marsh Run Transect)	LA	JPP	Tested	Hunting-Processing
18WA155	Prehistoric	(S. Marsh Run Transect)	EW	JPP	Tested	Hunting-Processing
18WA168	Prehistoric	FB-6	U	Unknown	Recorded	Lithic Scatter
18WA169	Prehistoric	FB-7	U	Unknown	Recorded	Lithic Scatter
18WA170	Prehistoric	FB-8	Archaic	Unknown	Recorded	Lithic Scatter
18WA180	Prehistoric	Scharf-Miller	W	Unknown	Recorded	Mound
18WA182	Prehistoric	SH-2	A-W	Unknown	Recorded	Lithic Scatter
18WA183	Prehistoric	SH3A-B	A-W	Unknown	Recorded	Lithic Scatter
18WA186	Prehistoric	SH6	U	Unknown	Recorded	Lithic Scatter
18WA194	Prehistoric	Taylor' s Landing	U	Unknown	Recorded	Lithic Scatter

As in the first section, most of the sites in the above table are lithic scatters or hunting-processing stations. The following table breaks the sites down into component/occupation type.

Table 4.6 Sites by Occupation Type

Village or Habitation Sites	Scatters	Hunting-Processing	Mound	Quarry/Lithic Workshop	Unknown
5	19	8	1	1	5

As in the first section, most of the sites are classed as scatters. Some yielded materials (now in private collections) that point to Archaic or Woodland components, or both. The class of site designated hunting-processing derives from the ASMIS site files. In most cases, it is likely that hunting-processing sites are equivalent to lithic or artifact scatters. These sites are maintained separately in the above table to reflect the level of discrimination evident in the NPS ASMIS files. Such sites likely correspond to those identified by Stewart as periodically revisited hunting/exploitation camps or short-term hunting camps (Stewart 1980:104). These two site types (as well as others described by Stewart, stray point finds and individual hunting stations) could encompass many of the lithic/artifact scatters noted in the table above.

Site 18WA180 is described as a mound in the MHT site files. This is based on nineteenth-century sources (Scharf 1882) and has not been adequately field checked. As drawn on the site maps, 18WA180 encompasses a large area both within and outside of the C&O Canal NHP, straddling both sides of a small stream entering the Potomac River. The site is about one mile upstream from the mouth of Antietam Creek. The one site identified as a lithic workshop, 18WA24, was identified by Stewart as a jasper quarry, an assessment corroborated by limited testing during his survey of the Hagerstown Valley.

The five village or habitation sites yielded varied quantities of information. Most of the information is not adequately documented. Site 18WA2, situated on the floodplain by Hancock, has only been recorded; it is adjacent to 18WA3 and 18WA4, listed as lithic scatters. Additional work may show that all are village sites.

Site 18WA42, the Stine Farm Site, is significant given its deep stratigraphic column exposed by Stewart (1980:301 – 309) with Late Archaic through Late Woodland components. This site is discussed further below. Site 18WA62 and 18WA62C are other significant village sites, located close to the Antietam Creek aqueduct. Two amateur archeologists, Bill Smith and Jerry Schaeffer, excavated the sites in 1954. Their work is summarized by Stewart in his dissertation (1980:71 – 73). Smith and Schaeffer's field work revealed several burials intruding into earlier deposits containing Early Woodland ceramics. Late Woodland ceramics from the site included Shepard, Keyser, Page, and Potomac Creek cognate ceramics. Across the creek, Smith exposed a buried hearth with Marcey Creek ceramics and other materials. This site, 18WA62B, can probably be classed as an Early Woodland riverine base camp, as outlined in Chapter 3. Stewart's testing of 18WA62C, on the downriver side of Antietam Creek's confluence with the Potomac, showed that most of the former village was likely destroyed by the Antietam Furnace coke yard and the C&O Canal. Given the reference to burials in historic references, it was probably a Late Woodland village site.

Although listed as a lithic scatter, it is clear that Site 18WA14, the Conococheague Creek Site, was probably a Late Woodland village with, perhaps, earlier components as well. Stewart reviews the work conducted at the site by Ralph Fout and Nicholas Yinger in 1954 (both of whom worked in the Hughes Site area of Montgomery County). Apparently, this site—now largely destroyed—supported a Late Woodland occupation marked by Keyser ceramics and perhaps earlier Middle Woodland materials as well (cf. Stewart 1980:73 – 74).

REVIEW OF SPECIFIC CONTEXTS AND APPLICABLE SITES, MILE MARKERS 59 TO 123 (HARPER'S FERRY TO HANCOCK)

Several sites can address basic contexts, such as chronology, subsistence, and settlement research issues, amongst others. These are briefly discussed below.

Chronology and Environmental Change

Notable amongst the sites in this stretch is the moderately-deep stratigraphic column exposed by Stewart in Test Pit 22 at 18WA42. This site has potential to provide an excellent Late Archaic to Late Woodland sequence for this stretch of the C&O Canal NHP. Additionally, Stewart reviews the environmental implications of the paleosols revealed in the excavated strata cut (Stewart 1980:306 – 307). Periods of climatic stability are marked by excellent paleosol development, evident in the pre-Early Woodland levels, horizons that may correlate with the sub-Boreal climatic episode. Rapid sedimentation, tied to drier climatic conditions, pertains to the Early Woodland and would correlate with the circa 1000 B.C. Xerothermic period. Other dry periods are present at about A.D. 250 to 650 and between A.D. 1000 to 1250. Further work should be able to refine this stratigraphic sequence and its bearing on both culture sequence and climatic change. Additional buried sites are likely present as well, comparable to 18WA42. The buried Early Woodland hearth at 18WA62B is indicative of this potential for buried components. Testing could also focus on the potential offered by Site 18WA69, which may have an Early Woodland component along with the Late Woodland village occupation (Curry 1978, Stewart 1980:84).

Adaptation, Subsistence, and Settlement

The potential for understanding Late Woodland subsistence is manifest in the presence of sealed features at several of the village sites; this potential remains largely untapped. Additionally, distribution of sites for all periods shows close correlation with locations close to the mouth of large streams that drain the interior. Base camps for Archaic and Woodland stage occupations are situated close to the confluence of streams such as Antietam Creek, Licking Creek, and Conococheague Creek.

Technology and Trade/Exchange

The presence of at least one quarry site, 18WA24, would offer an excellent chance to investigate aspects of primary lithic procurement and subsequent reduction tasks. Additionally, many of the sites are close to primary outcrops of rhyolite and may be able to provide information not only

on reduction strategies, but also of the dynamics of this material's movement through the Potomac Valley. Stewart discusses rhyolite usage and its role in regional exchange in several publications (1980, 1989). Clearly, this issue can be explored with data from sites in this stretch of the C&O Canal NHP.

Other contexts for inquiry include physical anthropology, socio-political organization, and ideology. As in the first section, these contexts can be approached primarily through burial data. However, given the paucity of available skeletal material and a lack of contextual associations, these contexts will not be immediately accessible.

REVIEW OF KNOWN SITES IN SECTION 3, MILE MARKERS 123 TO 184.5 (HANCOCK TO CUMBERLAND)

The third section of the C&O Canal NHP has the fewest recorded sites. The following table presents data on 27 sites. Twenty-four of these are prehistoric sites, the other three historic structures. The level of work conducted on these sites is generally lower than work documented in the first two sections of the park. Three sites, however, have been subjected to intensive investigations: the Moore Village Site (18AG43), the Paw Paw Site (18AG144), and the Mexico Farms Site (18AG168). The latter is now destroyed through construction of an industrial park.

Table 4.7 Allegany County Sites

Site Number	Prehist-Hist	Name	Periods	Collection	Work Conducted	Site Type
18AG9	Historic	Oldtown 1	18th C	Unknown	Collected	Historic Structure
18AG10	Prehistoric	Oldtown 2	U	JPP	Collected	Undetermined
18AG18	Prehistoric	Spring Gap	Archaic	JPP	Collected	Lithic Scatter
18AG19	Prehistoric	Frog Run	W	Unkown	Recorded	Artifact Scatter
18AG20	Prehistoric	South Branch	LW-PH	Unknown	Collected	Village
18AG25	Prehistoric	Smith Site	W	Unknown	Collected	Artifact Scatter
18AG43	Prehistoric	Moore Village	LW	JPP, NPS	Excavated	Village
18AG46	P&H	Lock 71-1	LW&H	Unknown	Recorded	Artifact Scatter
18AG47	Prehistoric	Lock 71-2	U	Unknown	Recorded	Lithic Scatter
18AG48	Prehistoric	Lock 71-3	A&W	Unknown	Recorded	Artifact Scatter
18AG50	Prehistoric	Steinmans Foot	U	Unknown	Recorded	Lithic Scatter
18AG51	Prehistoric	Oldtown School	U	Unknown	Recorded	Lithic Scatter
18AG105	Prehistoric	Bittinger	A-W	Unknown	Recorded	Lithic Scatter
18AG108	Prehistoric	Miltenberger 2	U	JPP	Collected	Lithic Scatter
18AG109	Prehistoric	Miltenberger 3	U	JPP	Collected	Lithic Scatter
18AG110	Prehistoric	Bernard	Proto H	Unknown	Collected	Village/Habitation
18AG110A	Prehistoric	Bernard	LW	Unknown	Collected	Lithic Scatter
18AG111	Prehistoric	Bierman	U	Unknown	Collected	Lithic Scatter
18AG118	Prehistoric	Pollack	A-W	Unknown	Collected	Artifact Scatter
18AG120	Historic	Emerick House	18th C	JPP	Tested	House
18AG144	Prehistoric	Paw Paw	LW	JPP	Tested	Village
18AG163	Prehistoric	Dorsey 1	U	JPP	Tested	Lithic Scatter
18AG165	Prehistoric	None	U	JPP	Tested	Temporary Camp
18AG168	Prehistoric	Dorsey 6	LA	JPP	Tested	Base Camp
18AG169	Prehistoric	Dorsey 7	U	JPP	Tested	Undetermined
18AG173	Prehistoric	Dorsey 10	A-W	JPP	Collected	Undetermined
18AG176	Historic	Dorsey 12	19th C	Unknown	Recorded	Structure

The following table offers a breakdown of the above sites by occupation as listed on ASMIS forms.

Table 4.8 Sites by Occupation Type

Village/Habitation	Scatters	Undetermined	Temporary Camp
5	15	3	1

The one temporary camp, 18AG165, may be comparable to the lithic scatters. Conversely, most of the lithic scatters may represent temporary camps. Three significant sites are present, and likely will contribute to a number of different contexts: the Moore Village Site, the Paw Paw Site, and the Mexico Farms Site.

The Moore Village Site (18AG43) has been subjected to two differing investigations. Russell Handsman conducted excavations in the early 1970s through the University of Maryland (Handsman 1977). John Pousson of the NPS subsequently carried out work at the site (Pousson 1983). This important site has an extensive Late Woodland occupation dominated by Keyser ceramics. Earlier Woodland, and possibly Archaic, components are present, though most of the work focused on the Late Woodland occupation. Radiocarbon dates obtained from feature contexts at the site for the Keyser component cluster near A.D. 1450.

The Paw Paw Site (18AG144) was tested by the Maryland Geological Survey for the Maryland State Highway Administration in the late 1970s (Kavanagh 1984). Work here revealed a late Middle Woodland to Late Woodland component. Three pit features were identified that produced limited quantities of floral remains, including corn. Ceramics recovered from the site were compared to the Buck Garden series of West Virginia, a late Middle Woodland ware. This chronological assessment was supported by a radiocarbon date of A.D. 730 ± 150 (Kavanagh 1984:44). Sherds related to the Late Woodland Keyser phase, common at the Moore Village Site not too far upstream, were lacking from the Paw Paw assemblage.

Louis Berger & Associates, Inc. (LBA) conducted mitigation excavations at 18AG165, the Mexico Farms Site, in 1990. Work here revealed a possible Middle Woodland base camp and a late Middle Archaic component (Wall 1993). This site is now destroyed by construction of an industrial park. Sites close to the Mexico Farms Site within the C&O Canal NHP include 18AG163, 18AG168, and 18AG169, originally recorded by Mike Dorsey (cf. discussion in Wall 1993).

A group of sites in this section were recorded by Wall during his survey of the coal-bearing region of Allegany and Garrett Counties, Maryland (Wall 1981). These sites include 18AG105, 18AG108, 18AG109, 18AG110, 18AG111, and 18AG118. All are based on collector information. The collections from Sites 18AG105 and 18AG118 contain Early Archaic and Late Woodland points. Site 18AG110 may represent a Late Woodland village noted by Fowke in 1887.

REVIEW OF SPECIFIC CONTEXTS AND APPLICABLE SITES, MILE MARKERS 123 TO 184.5 (HANCOCK TO CUMBERLAND)

Chronology and Environmental Change

Clearly, a great amount of basic data is missing from the third section of the C&O Canal NHP. No deeply-stratified sites (such as 18FR100 and 18WA42) have been documented. The Barton Site, located just beyond Cumberland and the C&O Canal NHP, contains deep deposits including both Archaic and Early Woodland components stratified beneath a Late Woodland component with shell-tempered Keyser ceramics (Wall 1981). Early Woodland and earlier Archaic components may also be present at the Moore Village Site (18AG43). Although not deeply stratified, given its location on a Pleistocene terrace, 18AG165 contained a scattered Middle Archaic component. The Paw Paw Site (18AG144) potentially offers significant data regarding terminal Middle Woodland to Late Woodland period components.

Settlement Patterns and Subsistence

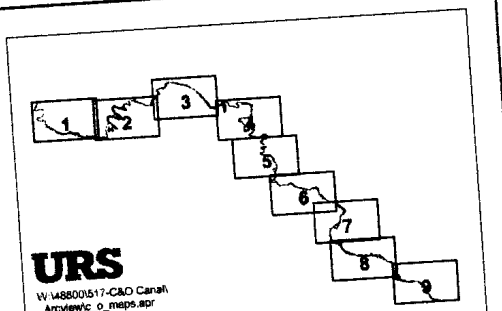
Again, most of the data pertaining to these two contexts derives from the Late Woodland. Floodplain village sites are present and appear to be close to the confluence of streams and the Potomac River. It is probable that earlier periods would follow similar patterns as well. Testing at the Paw Paw Site revealed not only corn, but other Native-American seed crops important in subsistence practices. Corn was also recovered from the Moore Village Site.

Technology and Trade/Exchange

These two contexts can be addressed by assessing the kinds of raw materials present and their contexts within sites. In this section of the park, lithic sources are derived primarily from chert outcrops found in the local bedrock; however, other raw materials are found that suggest widespread exchange networks. Excavations at the Mexico Farms Site, for instance, revealed several flakes of Flint Ridge chert associated with the Middle Woodland component. This is far removed from the source of the material, and suggests that this portion of the Upper Potomac Valley stood on the eastern edge of an Ohio Valley-based exchange system.

Physical Anthropology, Socio-Political Organization, and Ideology

As noted in the previous two sections, these contexts are based largely on burial data. However, the available material for addressing these contexts is slim compared to the first two sections of the C&O Canal NHP. Additional samples would need to be available to suitably address such contexts.



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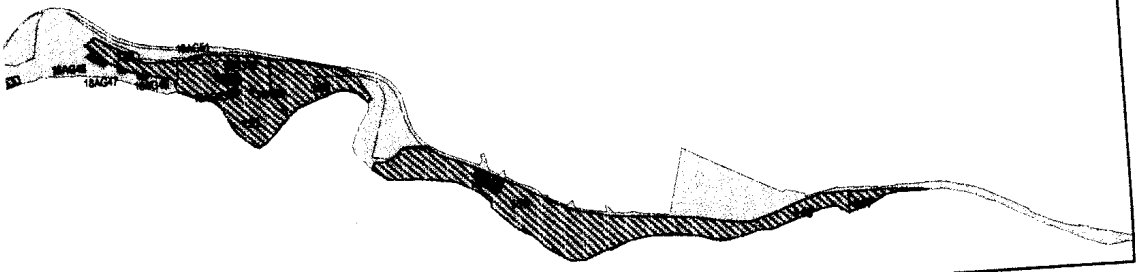
Archeological Sites
Floodplain
George Washington Memorial Parkway
C&O Canal NHP

C&O Canal Archeological Sites
Map 1



V. SUMMARY AND RECOMMENDATIONS

This chapter briefly summarizes the known archeological resources in the C&O Canal NHP and suggests recommendations for additional work at both the survey level and individual site level. Clearly, many of the sites lack basic categories of information. At the same time, several of the sites within each section have been tested and provide significant baseline data for the region. Recommendations for additional survey and testing are given for each of the three sections of the C&O Canal NHP

SECTION 1, MILE MARKERS 0 TO 59 (COASTAL PLAIN AND PIEDMONT)

This portion of the park has the greatest number of sites and, as outlined in Chapter 4, has received the greatest attention in terms of archeological investigations. Still, as in the other two sections, the most significant work yet to be done involves systematic survey and testing to provide 1) an accurate assessment of the sites within the park and 2) the chronological range and site types represented. Chronological issues remain important, as they establish the primary framework in which other context issues are explored. More information is known about the Late Woodland period in this section than the earlier periods, although the recent (1998) excavations at 51NW13, the Fletcher's Boathouse Site, have provided critical data regarding the Middle Woodland period.

Recommendations at this stage address the basic contexts discussed in Chapter 3: chronology, environmental change and adaptation, subsistence, and settlement patterns. Any work directed towards chronological issues will indirectly address the latter three-tiered context. This recommendation is in part concerned with determining the location of additional sites within the C&O Canal NHP, especially those not visible at the surface.

Initial geomorphological investigations are recommended at selected floodplain parcels that potentially contain buried or stratified deposits, such as those exposed at the Fletcher's Boathouse Site (51NW13). These floodplain parcels are depicted in the GIS-based map accompanying this document. This work could take the form of surface reconnaissance and systematic bucket augering to determine the nature of the local geomorphology. Given the degree of landform resolution on the available map data, it is difficult to rank landforms in terms of their potential to contain deep deposits. Most of the floodplain parcels will have to be subjected to reconnaissance fieldwork.

For the floodplain parcels upstream from Mile Markers 22 to 59, similar recommendations are offered. Here, where broader floodplain deposits exist, the underlying geomorphology can be complicated. For instance, work at the Chick Farm property showed that Site 18FR102 was situated on a high Pleistocene terrace formation that offered little chance for deeply-buried deposits. However, to the north and west of the site area, younger terrace formations (one of which contains the Monocacy Site, 18FR100) offer excellent potential for containing buried sites. These formations must be subjected to extensive reconnaissance.

As noted earlier, information concerning the known archeological sites in this section is variable. Most of the sites have poorly-defined boundaries along both their vertical and horizontal dimensions. Their potential to contain significant deposits in many cases is simply unevaluated. Exceptions have been noted above, at sites where systematic work has been carried out. In order to evaluate their potential for listing in the National Register, survey and evaluation investigations (Phase I/Phase II level) need to be conducted.

Period-specific chronological issues need to be addressed at this stage. Little data exists concerning the Paleoindian Stage within the entire park. However, three fluted points have been recovered from the Pierpoint Site (19MO41). Systematic survey work and test excavations should be formulated at this site to explore any possible component dating to this period. Additionally, Archaic stage occupations (for Early, Middle, and Late period divisions) can potentially be addressed with further work at a number of sites. For example, controlled surface collection at 18FR335, within the Chick Farm Site, complex revealed diagnostic materials dating to all three Archaic periods. Test excavations may reveal the presence of intact features associated with any of these components. Site 18MO6, the Beshers Site, should also be tested for its potential to yield information concerning the Archaic. Although containing deep deposits, work should be conducted at the Monocacy Site, 18FR100, combined with intensive geomorphological analysis.

Early Woodland components appear to be common, having been encountered during the work directed towards the Late Woodland components at Winslow (18MO9) and Shepard (18MO3). Early Woodland components at both sites appear to be contained within the upper subsoil, and potentially cap yet earlier deposits dating to the Late Archaic. The stratigraphic potential of these sites is not yet tapped. Site 18MO96, the Jenkins Site, may contain significant buried Early Woodland, and perhaps other components. Accokeek sherds collected from an eroded bank were found two meters below surface, suggesting that significant buried contexts exist. Site 18FR102, located within the Chick Farm Site complex, sustains an Early Woodland component marked by steatite-tempered Accokeek ceramics. These sherds were recovered from a leached refuse pit. Nearby, a well-defined postmold suggesting the presence of structures. Work should be directed to further explore this Early Woodland component, as it has the potential to provide data on domestic structures.

Sites with known Middle Woodland components are rare, though probably extant. It is of interest to note that a number of the cordmarked sherds without collared rims—illustrated in Slattery and Woodward (1992: xx)—appear markedly similar to Albemarle ceramics recovered from pit contexts at the Fletcher's Boathouse Site, 51NW13. These sherds may represent a Middle Woodland component, incorporated into the Late Woodland during the ceramic analysis; the existing collections at the National Museum of Natural History should be re-examined from this standpoint. Also, the radiocarbon date from the Seneca Hotel Site (18MO5) is Middle Woodland in age. However, as Tidwell's brief article notes, few of the sherds clearly point to a Middle or Late Woodland period component (Tidwell 1959).

SECTION 2, MILE MARKERS 50 TO 123 (HARPER'S FERRY TO HANCOCK)

Fewer sites are present in this section of the C&O Canal NHP, relative to Section 1. Forty-one sites are present in this section, all but one prehistoric. Most of the sites are lithic or artifact scatters, though several Late Woodland villages have been documented as well. Work comparable to that completed in Montgomery and Frederick Counties has not been performed at these Late Woodland sites.

Recommendations for the second section should begin with systematic survey and geomorphological testing of floodplain deposits for their potential to yield information concerning cultural stratigraphy and environmental data. Such floodplain areas include areas near 1) the mouth of Antietam Creek (parcels 45 and 46); 2) the mouth of Conococheague Creek (parcels 66, 67, and 68); the mouth of Marsh Run (parcels 53 and 54); 4) the section upstream from Green Spring Run on Fort Frederick (parcels 72, 73, and 74); 5) the mouth of Licking Creek (parcels 75, 76, and 77); 6) the mouth of Tonoloway Creek (parcels 80 and 82); and 7) the mouth of Little Tonoloway Creek (parcels 83, 84, 85, and 86). All are broad floodplain deposits and potentially contain stratified deposits. Stewart's excavation at 18WA42, at the mouth of Marsh Run, clearly demonstrated the potential of these floodplains to contain deeply-buried materials.

Recommendations for specific sites are, at this point, limited to boundary definition and defining the range of occupation. Village sites—such as 18WA180, 18WA4, 18WA62, and 18WA69—should be investigated to determine a) the Late Woodland phase present and b) the presence or absence of earlier components. Additionally, testing should be conducted at 18WA62C to assess the level of disturbance imposed by the Antietam Coke Furnace.

Site 18WA42, situated at the mouth of Marsh Run, should be tested with a combined program of geomorphological testing and deep site excavation to expand upon Stewart's initial work. This site has the potential to yield as much (if not more) data regarding chronological issues and environmental change than obtained from excavations conducted at the Monocacy Site, 18FR100.

SECTION 3, MILE MARKERS 123 TO 184.5 (HANCOCK TO CUMBERLAND)

This final section has the least number of documented sites in the C&O Canal NHP. Twenty-seven archeological sites are listed, 24 prehistoric in age. Information concerning known sites is more limited as well, though extensive testing and/or excavations have been conducted at several—most notably the Moore Village Site (18AG43), the Paw Paw Site (18AG144), and the Mexico Farms Site (18AG168). Basic issues of chronology, settlement, and other contextual concerns remain to be addressed for this section of the park.

Unlike the first two sections, no site with a deep stratigraphic sequence has been tested. Floodplain parcels along this stretch of the canal should be investigated for their potential to provide depositional contexts capable of sustaining cultural stratigraphy and environmental data. In particular, the following areas should be investigated for their stratigraphic potential: 1) near

the mouth of an unnamed stream across the Potomac River from St. John's Run upstream to Cohill (parcels 88, 89, 90, and 91); 2) the mouth of Sideling Hill Creek (parcels 100 and 101); 3) the mouth of Fifteenmile Creek (parcel 103); 4) the section from Devil's Alley to Roby Hollow (parcels 105, 106, 107, and 108); 5) the mouth of Purslane Run (parcels 114, 115, and 116, including the Paw Paw Site area, 18AG144); and 6) the mouth of Town Creek to Spring Gap and Collier Run (parcels 119, 120, 121, and 122, including the Moore Village Site area).

The stratigraphic potential of these floodplain areas remains unknown. However, Wall's work at the Barton Site, just beyond the limits of the C&O Canal NHP, have demonstrated that deeper deposits with Early Woodland and Archaic components can be present. Some of the sites within this section of the park have cultural materials dating to the Middle and Late Archaic periods and Early Woodland periods. Pousson, for example, noted the presence of a bifurcate point, as well as Stanley, Brewerton, and Savannah River types at the Moore Village Site, 18AG43. Additionally, several thick, grit-tempered sherds, possibly identifiable as Fayette Thick variants, were recovered from the site. Previous efforts of Handsman (1977) and Pousson (1983) were directed to the Late Woodland component at the site; its potential for buried earlier materials remains untapped. The presence of the Archaic materials could indicate intact deposits waiting to be uncovered.

The Paw Paw Site, tested by the Maryland Geological Survey (Kavanagh 1984) may provide significant data regarding the terminal Middle Woodland period in this section of the C&O Canal NHP. The presence of Buck Garden-like ceramics has not been previously documented in Maryland. Work should be focused on defining the nature of this component at the site, and at other sites within the park.

The potential village occupations at Sites 18AG20 (South Branch) and 18AG110 (Bernard) need to be examined. No work (other than recording and casual, non-systematic collecting) has taken place at these sites.

POTENTIAL FOR ADDITIONAL SITES IN THE C&O CANAL NHP

One question that remains to be addressed is the number of undiscovered archeological sites within the entire C&O Canal NHP. Although it is difficult to answer this with any degree of certainty, an order of magnitude estimate may be offered here. Given the lack of systematic survey work for any part of the park, apart from the 30 odd acres noted in Chapter 1, such estimates must remain rough at this level.

Survey of 20 acres in Frederick County at the Chick Farm complex revealed two sites, 18FR102 and 18FR335. Survey of six acres at North Branch resulted in the discovery of one site, 18AG214, while the survey of the Moore Village Site, approximately 2 acres, was limited to one site. It is difficult to develop a relationship between pure acreage and number of archeological sites, other than to suggest that one site per 10 acres seems a low estimate, a high estimate being one site per two acres. For our purposes here, it is suggested that an estimate of one site per 10 acres serve as a preliminary formula for estimating undiscovered archeological sites. Given that the park consists of about 22,003 acres, this formula suggests that approximately 2,200

additional sites remain undocumented in the park. If the estimate of unknown sites takes into account only the floodplains as depicted on the GIS map, a total of 1,345 additional sites are yet undocumented, since floodplains comprise 13,450 acres of the total C&O Canal NHP. These two estimates, one high and one low, are provisional, though they do provide an order of magnitude for considering the potential for archeological resources in the C&O Canal NHP.

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RESUMES OF KEY PERSONNEL

Education:

B.A. /1973/University of Maryland/Anthropology
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Society for American Archaeology
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Dr. Barse has over twenty-eight years of experience in archaeological investigations. He has taught, sponsored field schools, and served as Principal Investigator on numerous projects. Dr. Barse has done extensive research on the prehistory of Eastern North America, with particular emphasis on the Middle Atlantic region and the Southeast. In addition, he has conducted extensive archeological research in Venezuela, having developed and continued a program of archeological survey and site testing along the Orinoco River in Amazonas State. His work in Venezuela has been funded by the National Science Foundation, National Geographic Society and the Heinz Family Foundation.

1996-Present * Senior Archaeologist, URS Corporation. Archaeology and Historic Architectural Group. Key projects include:

Phase I Archeological Survey of the Wagenberg Property, Palm Beach County Florida. Principal Investigator for a Phase I survey of a 331 acre parcel that is the preferred alternate for development of the Florida National Cemetery. Conducted for the Department of Veterans Affairs.

Indefinite Quantities Contract Maryland State Highway Administration. Principal Investigator for Phase I and II archaeological studies throughout the state for the Maryland State Highway Administration.

Wilmington Bypass Corridor. Principal Investigator Phase III archaeological data recovery associated with the proposed bypass within New Hanover County, north of Wilmington. Project involved investigation of several Woodland period prehistoric sites. Conducted for the North Carolina Department of Transportation.

Phase I Archaeological Survey for the WV-1 Power Station Site, Dominion Energy and Consolidated Natural Gas, Pleasant County, West Virginia. Principal Investigator for Phase I investigations on Site 46PL44, a prehistoric site with Late Woodland and Adena associations. Conducted for Dominion Energy and Consolidated Natural Gas.

Phase I Archaeological Survey, Route 5, Hughesville Bypass, Charles County, Maryland. Principal Investigator for Phase I study of proposed bypass and roadway widening within and the vicinity of Hughesville. Project involved the evaluation of an historic brick clamp site. Conducted for the Maryland State Highway Administration.

Phase I Archaeological Survey, Route 5, Brandywine Interchange, Prince George's County, Maryland. Principal Investigator for Phase I survey of proposed bypass of Brandywine. Conducted for the Maryland State Highway Administration.

Archaeological Data Recovery, Phase III, Fletcher's Boathouse Site (51NW13), Washington, D.C. Principal Investigator for Phase III investigations of a Middle Woodland occupation site along the C&O Canal. Conducted for the National Park Service.

C&O Canal National Historic Park. Principal Investigator for archaeological survey, identification, and evaluation study of the North Branch Site located in the Chesapeake and Ohio National Historic Park in Allegheny County, Maryland. Conducted for the National Capital Area of the National Park Service.

Daniel Island Marine Terminal, Charleston, South Carolina. Principal Investigator for: 1) construction of inter-modal rail and roadway facilities, 2) construction of terminal facilities, 3) dredging of berthing areas, and 4) associated improvements to existing channels. Development of predictive model for prehistoric resources, in association with the execution of a Programmatic Agreement that stipulates the process for integrating NEPA and Section 106 requirements, for this complex, multi-agency project. Conducted for the U.S. Army Corps of Engineers, Charleston District (USACE).

Sandy Island Survey Intensive archaeological survey of Sandy Island Uplands, Georgetown County, South Carolina. Principal Investigator for a project included survey of approximately 3500 acres. Work resulted in the discovery of 49 archaeological sites ranging in age from the Early Archaic through the Late 19th Century. Conducted for the South Carolina Department of Transportation.

Wilmington Bypass, Wilmington, North Carolina. Principal Investigator for Phase I investigations associated with proposed bypass within New Hanover County, north of Wilmington. Project involved investigation of several Woodland period prehistoric sites.

Baltimore/Washington International Airport. Principal Investigator for Phase I and II investigations associated with proposed Mid-Field Cargo Facility. Project involved testing of nineteenth-century farmstead. Conducted for the Maryland Aviation Administration.

1992 to 1995 * Senior Archaeologist, KCI Technologies, Inc., Mechanicsburg, Pennsylvania. Key projects include:

Phase I Survey, Bevard Wetland Mitigation Site, Prince Georges County, Maryland. Principal Investigator for Phase I investigations at a wetland mitigation site, focusing on evaluations of

several prehistoric sites. Conducted for Maryland State Highway Administration.

Phase II Investigations for the Mon/Fayette Corridor, Pittsburgh Area. Principal Investigator for Phase II investigations of five archeological sites along the Mon/Fayette corridor, Pittsburgh to Rte 68. Sites contained buried Archaic and Woodland stage components. Conducted for the Pennsylvania Department of Transportation.

Data Recovery Excavations at the Clifton Site (18CH358), Charles County, Maryland. Principal Investigator, Phase III data recovery excavations at a stratified Archaic site on Mattawoman Creek. Conducted for Maryland State Highway Administration.

1990 -1992 * Staff Archaeologist, Louis Berger & Associates. Served as Principal Investigator on a number of Phase II and III projects. Key projects include:

Iroquois Gas Transmission Pipeline. Principal Investigator for Phase III data recovery excavations conducted along the Iroquois Gas Transmission System Pipeline, Canada to Long Island. Excavations focused on data recovery at three upland Archaic sites and one riverine Late Woodland hamlet.

Transco Woodbury Lateral Loop Project, Gloucester County, New Jersey. Principal Investigator, Phase III data recovery excavations at three sites along Transco's Woodbury Lateral Loop. Work focused on data recovery excavations at three multi-component sites (Archaic and Woodland) along the Woodbury Loop right -of-way. One site contained a sealed Early Woodland occupation.

Monongahela National Forest, West Virginia. Principal Investigator for the testing of 10 rockshelters in the Monongahela National Forest, West Virginia. Work focused on testing two stratified shelters that had been partially looted, and sampling eight smaller shelters situated in remote ridge-top settings.

1976 -1990 * Staff Archaeologist, Thunderbird Archeological Associates, Inc., Woodstock, Virginia. Served as Principal Investigator and Field Supervisor on a wide variety of Phase I, II, and III investigations. Key projects include:

Monongahela National Forest, West Virginia. Principal Investigator for an archeological reconnaissance of 12,000 acres within the Red Oak Opportunity Area, Monongahela National Forest, Webster County, West Virginia.

Site 18CV272, Calvert County, Maryland. Principal Investigator for Phase III data recovery excavations of a Middle Woodland site in Calvert County, Maryland. Conducted for Maryland State Highway Administration.

Site 44PW441, Prince William County. Principal Investigator for Phase III data recovery excavations at a mid-nineteenth century house and associated midden areas. Conducted for Virginia Power.

Phase I, Survey, Virginia Power, North Carolina and Virginia. Principal Investigator, Phase I archeological reconnaissance of four fossil-fuel power plants. Work involved survey and site locating in four Coastal Plain settings (one in North Carolina, three in Virginia). Conducted for Virginia Power.

Site 44HR118, Henry County, Virginia. Principal Investigator, Phase II investigations at an upland Late Woodland site. Conducted for Appalachian Power Co.

Phase III Data Recovery, Burlington County, New Jersey. Co-Principal Investigator, Phase III data recovery excavations at four sites. Work involved placing block excavation at sites containing Late Archaic and Early Woodland components on Rancocas Creek. Conducted for New Jersey Department of Transportation.

Ryceville-Loveville Transmission Line, Charles and St. Mary's Counties, Maryland. Principal Investigator, Phase I archeological reconnaissance. Work involved locating sites along the ROW of a proposed transmission line. Conducted for Southern Maryland Electrical Cooperative.

Richard B. Russell Reservoir Region, South Carolina/Georgia. Co-Principal Investigator/ Site Supervisor, Phase II testing of 19 archeological sites. Work focused on testing a range of Archaic and Woodland sites eventually inundated by the reservoir created by the Richard B. Russell Dam. Conducted for the Army Corps of Engineers.

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Education:

Graduate Work/1991/University of Delaware/Architectural History
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Preservation Delaware
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Ms. Scheerer has over eleven years of experience in conducting historic architectural surveys and evaluations. Ms. Scheerer also has extensive experience in the photography of historic properties, including large-format photography.

1996 to Present Assistant Architectural Historian, Archaeology and Historic Architectural Group, URS Corporation, Inc. Key projects include:

Phase I/II Archaeological Investigations, Wilson Tract, Tredyffrin Township,Chester County, Pennsylvania. Assistant Historian, for an historic architectural survey and evaluation for the proposed highway improvements to S.R. 202. Project conducted for the Pennsylvania Department of Transportation, District 6-0.

Phase I/II Archaeological Investigations, Germantown Avenue Bridge, Chestnut Hill, Pennsylvania. Historian for the historical research for the preparation of the Phase I/II Archaeological Investigations report for improvements to the Germantown Avenue Bridge. Conducted for the Fairmount Park Commission and the City of Philadelphia.

Phase I Archaeological Survey of the Lansdale Slip Ramp, Pennsylvania Turnpike, Route 476, Montgomery County, Pennsylvania. Historian for Phase I Archaeological Survey of the Lansdale Slip Ramp. Conducted for the Pennsylvania Turnpike Commission.

Phase I Archaeological Survey for the Virginville Bridge Replacement, Berks County, ***Pennsylvania.*** Historian for Phase I Archaeological Survey for the replacement of the Virginville Bridge. Conducted for the Pennsylvania Department of Transportation.

Phase IA Archaeological Documentary Research Study for Clearview and 24th Avenue Pumping Stations, Borough of Queens, New York City. Historian for the Phase I archaeological documentary research study for proposed reconstruction and improvement of Clearview and 24th Avenue pumping stations. Conducted for the Department of Environmental Protection, City of New York.

Phase IA Archaeological Documentary Research Study for Oakland Ravine Storm Water

Treatment System Project, Borough of Queens, New York City. Historian for the Phase I archaeological documentary research study for the proposed re-routing of storm water and the restoration and creation of wetlands within the Oakland Ravine. Conducted for the New York City Department of Environmental Protection.

Reconnaissance Survey for Sikorsky Memorial Airport, Stratford, Connecticut. Assistant Architectural Historian and Historian for cultural resource survey. Performed research for the preparation of an environmental assessment for Master Plan Improvements to Sikorsky Airport. Conducted for Sikorsky Memorial Airport.

Historic Architecture Survey for Lambert-St. Louis International Airport, St. Louis, Missouri. Assistant Architectural Historian and Historian for historic architecture research and survey for the proposed Master Plan Improvements for the Lambert-St. Louis International Airport. Conducted for the Federal Aviation Administration.

Cultural Resources Report of the New Jersey Department of Motor Vehicles Inspection Stations. Assistant Architectural Historian and Historian for the historic research and architectural survey for the proposed improvements to the New Jersey Department of Motor Vehicles Inspection stations statewide. Conducted for the New Jersey Department of Transportation.

Little Basin Bulkhead and Walkway, Jersey City, New Jersey. Historian for historical research of the Morris Canal's Little Basin, for the preparation of a report for the renovation of the basin bulkhead and the construction of a walkway along the basin. Conducted for the New Jersey General Service Administration, Division of Building and Construction.

Categorical Exclusion Document, Route 31 and I-95, Ewing Township, New Jersey. Assistant Architectural Historian and Historian for proposed improvements of highway interchange. Conducted for the New Jersey Department of Transportation.

Cultural Resources Survey, Freehold, New Jersey. Assistant Architectural Historian and Historian for proposed improvements involving the intersections of Route 9/Route524, Route33/Route 79, Route 9/Route 79 and Route 33/Halls Mill Road. Conducted for the New Jersey Department of Transportation.

Maryland Route 30/Manchester Bypass, Carroll County, Maryland. Assistant Architectural Historian and Historian for expedited inventory of more than 80 individual resources and farmsteads, and four historic districts, including the towns of Manchester, Melrose and Greenmount. Conducted for the Maryland State Highway Administration.

Level of Action Assessment, Dover Township, New Jersey. Assistant Architectural Historian and Historian for a survey of an intersection improvement project in Toms River, Dover Township, New Jersey. Conducted for the New Jersey Department of Transportation.

Route 21 Extension Cultural Resource/Mitigation, Clifton, Passaic County, New Jersey. Assistant Architectural Historian and Historian for project involving a multi-year cultural

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Phase I Archaeological Survey, Maryland 331 Dover Bridge Replacement Across the Choptank River, Talbot and Caroline Counties, Maryland. Assistant Architectural Historian for the Phase I archaeological survey. Project conducted for the Maryland Department of Transportation, State Highway Administration.

Phase I Assessment, Route 28, Improvements, Westfield Borough, Union County, New Jersey. Assistant Architectural Historian, Level of Action Assessment for New Jersey Route 28 improvements, Westfield Borough, Union County. Conducted for the New Jersey Department of Transportation.

Route 206 Widening and Climbing Lanes Project, Sussex County, New Jersey. Assistant Architectural Historian, historic architectural survey and evaluation for the proposed widening of Route 206, Sussex County. Conducted for the New Jersey Department of Transportation.

Level of Action Assessment, Marlton Circle, Burlington County, New Jersey. Assistant Architectural Historian, Level of Action Assessment for improvements to the Marlton Circle, Burlington County. Conducted for the New Jersey Department of Transportation.

Publications:

1990 (Contributor) *Diaries of Benjamin Henry Latrobe.* American Philosophical Society, Philadelphia, Pennsylvania.

1979 *Johannes Kelpius and the Frankford Land Company.* Report submitted to British Library, London; Fairmount Park Commission, Philadelphia, Pennsylvania.

1979 *Aerial Infra-Red Photography in Conjunction with Architectural Investigation.* Paper presented to the Atwater Kent Museum, Philadelphia, Pennsylvania.

Education:

B.A., Archaeology, Douglass College, Rutgers University, 1979.

Professional:

Society for Industrial Archaeology
New Jersey Archaeological Society
National Genealogical Society

Experience:

Ms. Wuebber has over 20 years experience researching, analyzing, and writing contextual and site-specific histories for industrial, military, transportation, commercial, and residential properties in the Northeast, Mid-Atlantic, Southeast, and Midwest.

1999 to Present *Research Historian, URS Corporation. Archaeology and Historical Architecture Group. Key projects include:

Phase I Archaeological and Historic Architectural Survey of a section of State Route 9, New Castle County, Delaware. For the Delaware Department of Transportation.

West Virginia Historic Bridge Study. Historic Context of pre-1955 Highway Bridges. Conducted for the West Virginia Division of Culture and History, State Historic Preservation office.

King of Prussia Inn, S.R. 0202, Section 400, King of Prussia, Montgomery County, Pennsylvania. Conducted documentary, cartographic, and photographic research for the ca.1719-1952 King of Prussia Inn. For the Pennsylvania Department of Transportation.

Phase I/II Archaeological Surveys for Proposed the Route 54 Truck Climbing Lanes between Boyd and Elysburg in Northumberland County, Pennsylvania. Conducted general background research on the Route 54 project corridor and site specific historic research on three areas selected for Phase II excavation. For the Pennsylvania Department of Transportation, District 3.

Route 21 Cultural Resources Mitigation, Passaic County, New Jersey. Researched and wrote walking tour brochure for an ethnically diverse industrial neighborhood in Passaic. For the New Jersey Department of Transportation.

Phase I Investigation for Proposed Electric Generating Facility in Cass Township, Muskingum County, Ohio. Compiled archaeological and historical background data and wrote historical context for the project area. For the Dominion Resources, Inc. and Consolidated Natural Gas (DRI-CNG).

1983 to 1999 Louis Berger. Projects include:

Georgetown Incinerator Site, Square 1189, Washington, D.C. Intensive historical research for the eastern half of a block located along the historic waterfront area. For Millennium Partners of Washington, D.C., Inc.

Edison National Historic Site, West Orange, New Jersey. Ethnographic overview and assessment for the Thomas Edison National Historic Site. For the U.S. National Park Service.

Randolph BRF 0241(29) Project, Bridge Number 42, Vermont Route 12, Town of Randolph, Orange County, Vermont. Phase I archaeological and historical investigations of industrial sites in the village of Randolph, Vermont. For the Vermont Agency of Transportation.

Philadelphia, Pennsylvania, Metropolitan Detention Center. Intensive historical investigation of half a city block in Center City, Philadelphia. For the U.S. Department of Justice, Federal Bureau of Prisons.

New Jersey Route 21(2N), City of Newark, Essex County, New Jersey. Phase II historical investigations for Route 21(2N) bridge replacement and roadway improvements. For the New Jersey Department of Transportation.

Clarksburg, West Virginia, proposed federal facility. Phase I archaeological survey at 306-344 West Pike Street, West Clarksburg. For the U.S. General Services Administration, Region 3.

Houston, Texas, Metropolitan Detention Center. Intensive historical investigation of two city blocks in downtown Houston. For the U.S. Department of Justice, Federal Bureau of Prisons.

Clark-Cochran Farm at the Appoquinimink North Site (7NC-F-13), New Castle County, Delaware. Phase III investigation of a multicomponent prehistoric and historic site. For the Delaware Department of Transportation.

Greater Sandy Run Acquisition Area, Marine Corps Base, Camp LeJeune, North Carolina. Archaeological and architectural study of Camp Davis, a World War II military facility. For the U.S. Department of the Army, Wilmington District Corps of Engineers.