

MARYLAND STATE HIGHWAY ADMINISTRATION
PROJECT PLANNING DIVISION
ENVIRONMENTAL EVALUATION SECTION
ARCHEOLOGICAL REPORT NUMBER 289

INTENSIVE PHASE I ARCHEOLOGICAL SURVEY OF THE
PROPOSED WIDENING OF I-70 OVER THE GREAT TONOLOWAY
CREEK AND PHASE II SITE INVESTIGATION OF BOWLES MILL
(18WA498), HANCOCK, WASHINGTON COUNTY, MARYLAND

CONTRACT NUMBER WA130B21

BY

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Submitted to

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December 2002

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Abstract

The Maryland State Highway Administration, with partial funding from the Federal Highway Administration, proposes widening of the I-70 bridge over the Great Tonoloway Creek in Hancock, Washington County, Maryland (Maryland Archeological Research Unit 20). The proposed work includes construction of two new piers on the north side of the westbound bridge span, retaining walls, and two stormwater management ponds. In the shadow of this high, four-lane interstate bridge are the Old National Road and a mill site (the Bowles mill, 18WA498), as well as the remains of the Julia B. Lynn House (18WA499; possibly the miller's house), and the 1950-1955 Hancock Drive-in.

Gibb Archaeological Consulting undertook a Phase I intensive archeological survey of the I-70 Widening project area to determine whether proposed construction will have any affect on archeological resources that may be eligible for the National Register of Historic Places. Preliminary assessment of the project area by the State Highway Administration revealed submerged timbers and a stone wall in the north part of the highway right-of-way and in the vicinity of a grist mill identified on an 1878 map as that of S. Bowles. Intensive archival research clearly demonstrated that the creek had been used to power mills at least as early as 1763 and continued until after 1880, probably soon after the death of Samuel Bowles. Fieldwork conducted on July 15 and 17, 2002, revealed that the right-of-way beyond the mill was too steep to warrant testing and the proposed construction would not affect surviving portions of the National Pike (now Tollgate Ridge Road), the Julia B. Lynn House (18WA499), or the projection booth of the 1960s outdoor cinema, the Hancock Drive-in.

Remains of the milldam and mill were mapped and Phase II site examination was undertaken between August 12 and 15, 2002. Nine excavation units and additional mapping delineated the mill, dam, headrace, probable wheel pit, and the likely route of the tailrace, none of which will be effected by proposed construction. Excavations also revealed that the mill had been cannibalized for much of its stone. The Bowles Mill site meets Criteria C and D for inclusion into the National Register of Historic Places. The State Highway Administration will take measures to insure protection of the site during road construction.

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Chapter 1. Introduction

The Maryland State Highway Administration proposes widening and repair of the I-70 bridge over the Great Tonoloway Creek in Hancock, Washington County, Maryland (Maryland Archeological Research Unit 20), widening of its approaches, and construction of two new piers on the north side of the existing westbound bridge span, retaining walls and two stormwater management ponds. In the shadow of this high, four-lane interstate bridge are the Old National Road and the remains of a 19th-century gristmill site, a 19th-century house site (possibly that of the miller), and a 1950s drive-in movie theater. This federally and state-funded project requires environmental evaluation to determine what, if any, effects proposed construction will have on National Register of Historic Places eligible archeological sites, as per the Federal Highway Act of 1966 (as amended), Section 106 of the National Historic Preservation Act of 1966 (as amended), and Article 83B, Sections 5-617 and 5-618 of the Annotated Code of Maryland. Under the provisions of an open-end contract,¹ MSHA—after completing its in-house assessment—asked the consultant to undertake a Phase I archeological survey of the area of potential effects. They subsequently requested Phase II site examination of the Bowles Mill site (18WA498) to determine its boundaries, integrity, and eligibility for listing on the National Register. The site of Hancock Drive-in theater and that of the Julia B. Lynn House (18WA499) lie outside of the I-70 right-of-way.

Phase I fieldwork was conducted on July 15 and 17, 2002, and Phase II fieldwork occurred between August 12 and 15, 2002.

This report, consisting of seven sections, documents the methods and results of both phases of archeological investigation of the area of potential effects:

- 1) Introduction
- 2) Project Location and Environment
- 3) Culture History
- 4) Research Design and Methods
- 5) Field and Laboratory Results
- 6) Summary, Interpretations, and Recommendations
- 7) Supporting Documentation

All of the work described herein was conducted in accordance with the *Standards and Guidelines for Archeological Investigations in Maryland* (Shaffer and Cole 1994), the *Specifications for Consulting Engineers Services Manual—Section IV* (Maryland Department of Transportation 1986), and the *Consultant Specifications for Archeological Procedures* (Maryland State Highway Administration 1992).

¹SHA Contract 94-129.

Chapter 2. Location and Environment

Location

The MSHA proposes widening the I-70 Bridge over the Great Tonoloway Creek, about one mile (1.6 km) east of the incorporated village of Hancock, Washington County, Maryland (Maryland Archeological Research Unit 20; Figures 2-1 through 2-3). Hancock and its environs lie within the Great (a.k.a. 'Big') Tonoloway and Little Tonoloway Creek drainages of Maryland's Appalachian Province in Western Washington County, on the north bank of the Potomac River and about 1.5 miles (2.4 km) south of the Maryland-Pennsylvania border. The community straddles a riverside highway that appears on Griffith's 1794 map and that likely dates to the second quarter of the 18th century. The road was incorporated into the National Turnpike during the first quarter of the 19th century. Hancock lies just south of Interstate US 70 (hereinafter I-70), which parallels the old National Road while circumventing many of the towns that grew along that early 19th-century road. The project area straddles the Great Tonoloway Creek on the north side of the old National Pike (now Tollgate Ridge Road), about one-half mile (0.8 km) north of the creek's confluence with the Potomac River.

The MSHA will confine construction to the existing right-of-way, much of it comprised of the fill upon which I-70 was erected. Only the bed and banks of the Great Tonoloway Creek escaped extensive disturbance during construction of I-70, although there too construction of the four bridge piers and rerouting of a farm road (now Rayloc Drive) and the old National Pike (now Timber Ridge Road) have resulted in some cutting and filling of the banks and streambed within the I-70 right-of-way.

Environment

Hancock lies within the narrow floodplains of the Potomac River and two of its tributaries, the Great and Little Tonoloway creeks, all subject to severe periodic floods (e.g., the flood of March 1936 [Rubin 2001: 24-25]). Unlike eastern Washington County, the Hancock vicinity exhibits high relief, the ridges dominating the intervening valleys in height and, in many places, breadth. The ridge and valley constructs are products of extensive folding and erosion of the limestones and softer shales of Devonian and Silurian age (Cloos 1951; Schmidt 1993; Vokes 1957). Hancock and the project area lie within the plunging Timber Ridge syncline, the village at the base of Cove Ridge and the project area between the Cove and Orchard ridges. Elevations range from 400 to 700 ft above mean sea level, although stream gradients are relatively low, 3 ft to the mile for the tightly meandered Potomac River, less than 2 ft for the southward tending tributaries (Cloos 1951). Stream channels are well-entrenched and meander little, although they may have meandered considerably prior to the uplift of the peneplain and subsequent downcutting of the streams. Soils are stony and the streams and roads expose bedrock throughout the area. Lithic materials are composed largely of limestones, sandstones, shales, and silicified shales, although cherty limestones and some metamorphics (e.g., quartzites) also occur naturally.

Hancock, which occupies the southern portion of the thin neck of Maryland's panhandle, contrasts with the broad fertile lands of the Hagerstown Valley, which are well-suited to grain crops and dairy (Higgins 1867). Local farmers relied increasingly on orchards, beginning in the late 19th century, taking advantage of the steeper lands and shorter growing season of Washington County's uplands. Limestone deposits, particularly those at Round Top Hill just west of Hancock, are well-suited for making hydraulic cement (Higgins 1867:99) and have been mined and milled in town since the 1830s and used in the construction of the Chesapeake & Ohio Canal. The cement mills closed in 1909. Extensive hillside forests yielded lumber and bark, the latter used to make tannic acid for the leather tanning industry. If one had to identify a single, preeminent industry in Hancock, however, it would have to be transportation: transportation by road (the National Turnpike and its private precursors east of Cumberland, early 19th century), by canal (the C & O Canal since 1839), by rail (the B & O Railroad since c. 1840 and the Western Maryland Road from c. 1900), and by interstate highway (the new US 40, followed by I-70; Schlereth 1997).

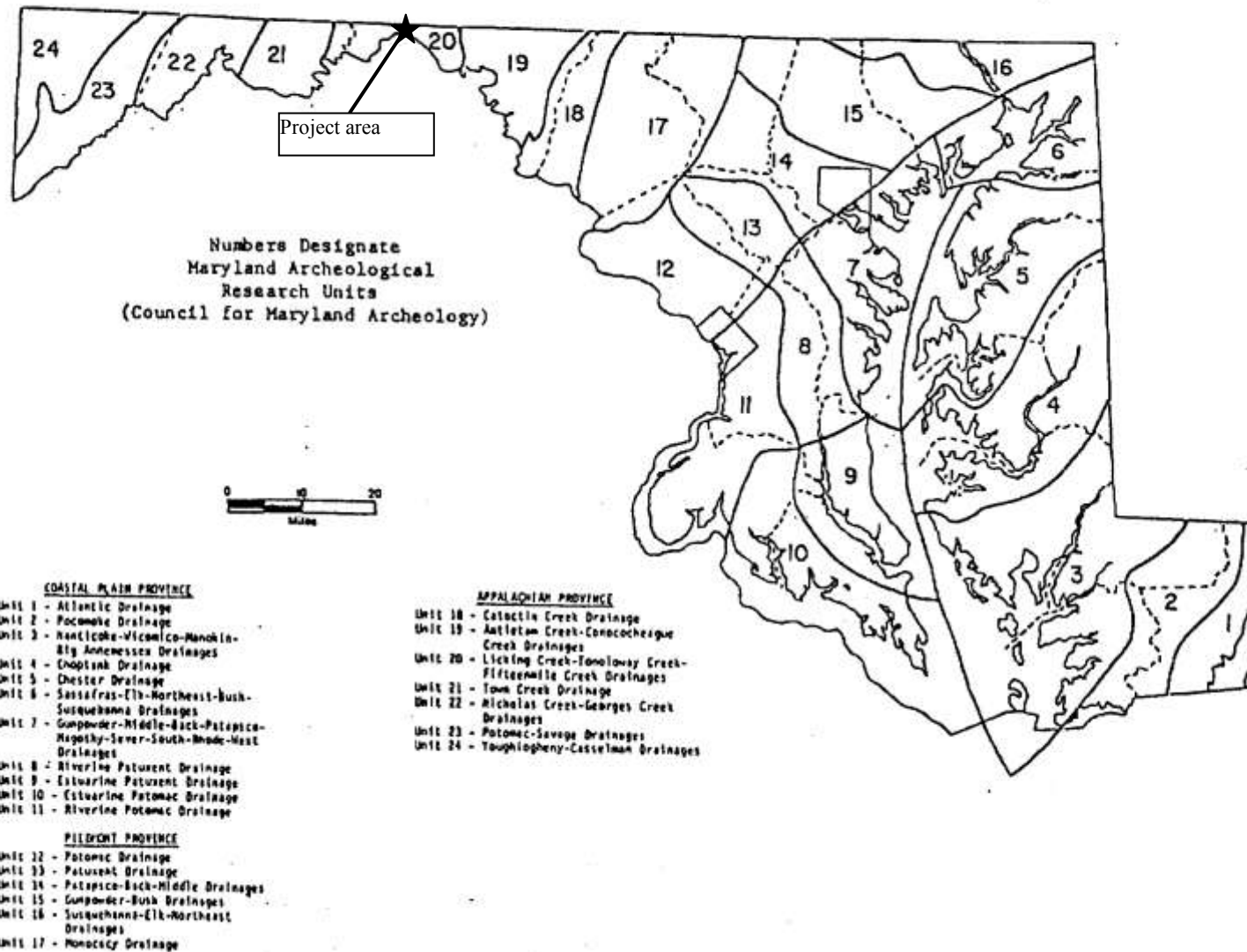


Figure 2-1. Maryland Archeological Research Unit map.
(Source: Shaffer and Cole 1994)

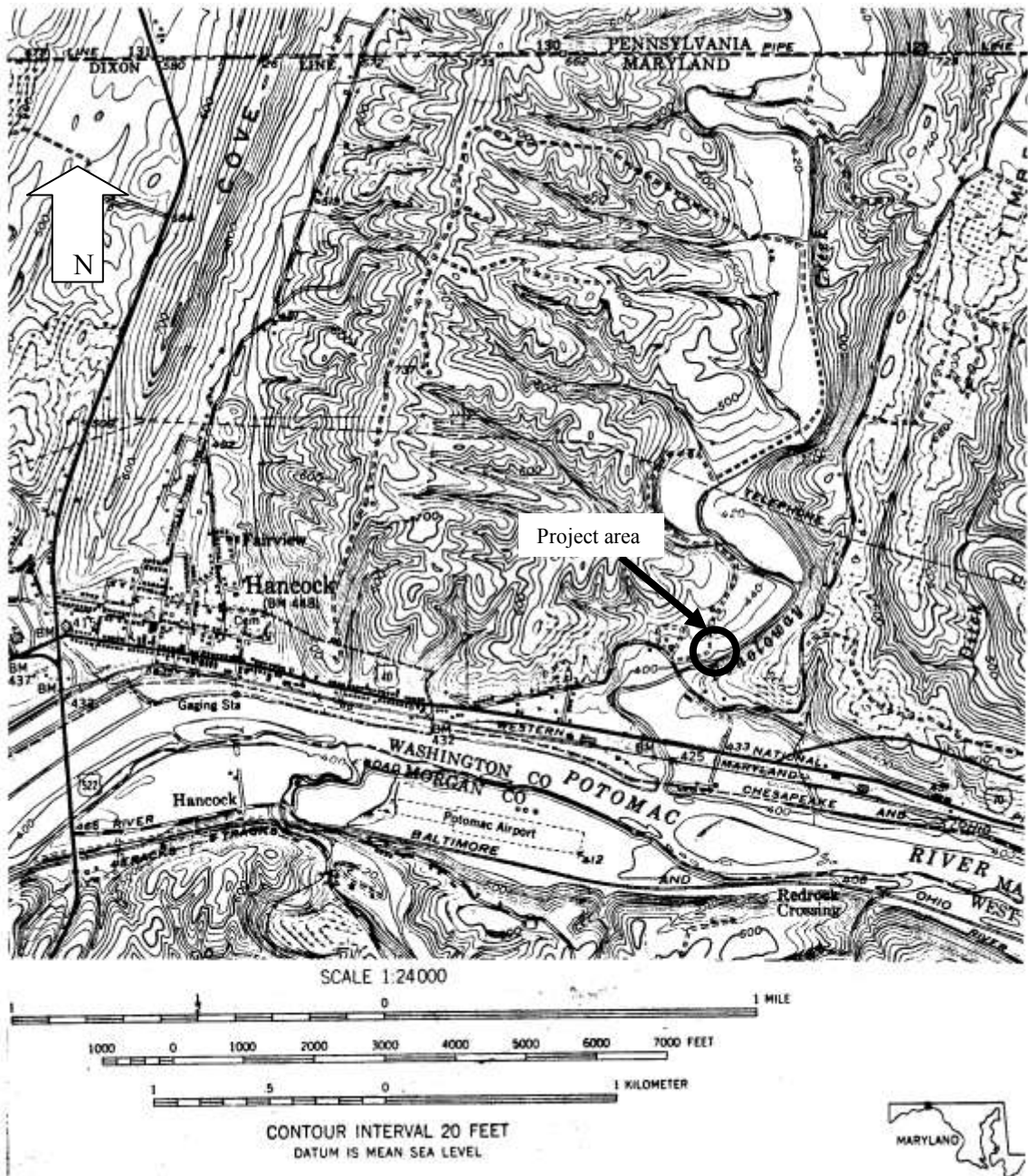


Figure 2-2. USGS Topographic map, Hancock, MD., detail (1996).



Figure 2-3. Aerial view of project area, 1995.
(N.B. Sites 18WA498 and 499, discussed in Chapters 3-7)

Chapter 3. Culture History

Prehistoric

REGIONAL PREHISTORY

Western Washington County and most of Allegany County might best be characterized, archeologically speaking, as *terra incognita*. The state-sponsored surveys and syntheses conducted during the late 1970s and early 1980s covered the coastal plain and piedmont, including the Monocacy and Hagerstown valleys to the east (e.g., Stewart 1980, Kavanagh 1982). Wall (1981) has reported on two phases of survey work to the west in the coal-mining region of the Allegheny Plateau—sp., Garrett and western Allegany counties—although he has drawn heavily on Stewart's (1980) work in the Great Valley and that of scholars in the adjoining states of Virginia, West Virginia, Ohio, and Pennsylvania for projectile point typologies, chronology, and settlement and subsistence pattern models. The project area lies within this rugged bit of Maryland, sandwiched between two states and between two very different physiographic zones, squarely within the picot of scholarly synthesis tatted for the state's prehistory. To add to the problem, very little systematic archaeological research has been undertaken within the Hancock quadrangle. The following material cobbles together data and syntheses from other parts of the state, but draws most heavily on the work Stewart (1980) and Wall (1981).

Archeologists typically divide Eastern Woodlands prehistory into three stages—Paleoindian, Archaic, and Woodland—further dividing each into early, middle, and late periods (Table 3–1). Maryland archeologists are not exceptional in this regard. The scheme combines evolutionary theory (a paradigm from which scholars nationwide had been distancing themselves, but which is enjoying a resurgence of interest), accounting for successively more complex cultures (stages), and ecological theory, which attributes specific cultural traits and cultural variability to environmental change and adaptation (periods). Exceptions, such as the Adena Complex in Maryland, scholars often view as incursions of foreign peoples; i.e., as historical discontinuities. The nested triads form the foundation of the principal synthetic works on the prehistory of Maryland: Custer (1984) for Delaware and the Eastern Shore of Maryland, Hughes (1980) for the Lower Eastern Shore, Steponaitis (1980; 1983a,b; 1986) and Wanser (1982) for Southern Maryland, Stewart (1980) for the Great Valley, Kavanagh (1982) for the Monocacy Valley, Wall (1981) for Western Maryland, and Dent (1995) for the larger Chesapeake Basin.

Stewart (1980), in his doctoral dissertation, outlined many of the details for each of the evolutionary stages and their constituent cultural–historical periods for the Great Valley. Stewart's work is relevant to this study because it focuses on the Hagerstown Valley (a.k.a. the Maryland portion of the Great, or Cumberland, Valley) east of the project area and an important point of reference for Wall's (1981) work to the west. Stewart had three research goals:

1. test models of prehistoric settlement and subsistence patterns using an ecological approach;
2. identify specific patterns in his research area; and

3. develop a planning document that would guide future research and preservation efforts.

Table 3–1. Sequence and traits of prehistoric cultural periods.

PALEO INDIAN PERIOD	
Date Range:	13,000-7,500 B.C.
Diagnostic Points:	CLOVIS, HARDAWAY-DALTON
Diagnostic Vessels:	NONE
Climate:	Gradual warming
Vegetation:	Succession of spruce, then pine
Fauna:	Megafauna, replaced by modern fauna
EARLY ARCHAIC PERIOD	
Date Range:	7,500-6,000 B.C.
Diagnostic Points:	KIRK-PALMER, WARREN
Diagnostic Vessels:	NONE
Climate:	Warming, increased rainfall
Vegetation:	Pine replaces spruce, oak increases; expansion of swamps
Fauna:	Modern fauna; swamp species
MIDDLE ARCHAIC PERIOD	
Date Range:	6,000-4,000 B.C.
Diagnostic Points:	LECROY, STANLY, MORROW MT., GUILFORD
Diagnostic Vessels:	NONE
Climate:	Warm and wet, drying
Vegetation:	Oak-Hickory association dominates
Fauna:	Modern; interior wetland species established
LATE ARCHAIC PERIOD	
Date Range:	4,000-1,000 B.C.
Diagnostic Points:	BROADSPEAR, SAVANNAH R., BREWERTON
Diagnostic Vessels:	STEATITE
Climate:	Warm and dry, cooling after 2,300 B.C.
Vegetation:	Climax oak-hickory; mature estuarine/wetlands
Fauna:	Modern terrestrial and marine
EARLY WOODLAND PERIOD	
Date Range:	1,000-300 B.C.
Diagnostic Points:	ROSSVILLE, CALVERT
Diagnostic Vessels:	MARCEY CREEK, SELDON ISLAND
Climate:	Mild and damp
Vegetation:	Modern, stable
Fauna:	Modern, stable
MIDDLE WOODLAND PERIOD	
Date Range:	300 B.C.-A.D. 900
Diagnostic Points:	SELBY BAY/JACKS REEF
Diagnostic Vessels:	MOCKLEY POTTERY
Climate:	Modern, stable
Vegetation:	Modern, stable
Fauna:	Modern, stable
LATE WOODLAND PERIOD	
Date Range:	A.D. 900-A.D. 1720
Diagnostic Points:	SELBY BAY/JACKS REEF, TRIANGULAR
Diagnostic Vessels:	SHEPARD/ROSENSTOCK AD 900–1300 PAGE/NOLANDS FERRY AD 1300–1500 KEYSER/MONONGAHELA AD 1450–1720
Climate:	Modern, stable
Vegetation:	Modern, stable
Fauna:	Modern, stable

Stewart's sampling approach consisted of a series of survey transects running across sample areas characterized by variation in one or more variables, particularly landform

and elevation. Among his sample areas was a portion of Conococheague Creek, a portion of the western Hagerstown Valley floor with a high order stream and shale lithology.

Stewart characterized the Conococheague sample area as having:

1. moderate density of low order streams;
2. broad, low relief floodplain;
3. broad, moderately dissected drainage divides; and
4. poor lithic potential; i.e., naturally occurring cryptocrystalline stone is scarce and found largely in glacially or fluvially redeposited contexts.

Stratified floodplain deposits survive in this area. There is, therefore, the possibility of locating single component prehistoric sites and studying adaptation to locally changing ecological conditions (e.g., 18WA54).

Stewart examined several variables, including: distribution of naturally occurring lithic raw materials (including chert), availability and type of surface water, degree of habitat overlap, and maximum southern exposure. He considered distance to high order streams and availability of high quality lithic material the most important of these variables. His Conococheague sample area rates high in terms of the water variable and low in terms of lithics, the local bedrock consisting largely of shales and redeposited sediments. By contrast, the Hancock area rates very high in terms of water, habitat overlap, and southern exposure, and low to moderate in terms of lithics. The project area rates very low in terms of exposure (the creek valley being narrow above the old National Road), but otherwise is similar to the general Hancock area.

Stewart provides the distribution data for all nine of his sample areas, supplemented with some site-specific data from outside of the sample areas. Table 3–2 summarizes these data.

Table 3–2. Summary of site and projectile point data, Great Valley.

(Compiled and adapted from Stewart 1980)

Period	Number of Sites	Number of Points	Duration (Years x100)	Sites/ Century	Points/ Century
Paleo-Indian	6	7	55	0.11	0.13
Early Archaic	22	76	15	1.47	5.07
Middle Archaic	23	56	20	1.15	2.80
Late Archaic	63	417	30	2.10	13.90
Early Woodland	48	221	6	8.00	36.83
Middle Woodland	33	173	13	2.54	13.31
Late Woodland	42	313	7	6.00	44.71

The Hagerstown data suggest continuous growth in population, and perhaps significant reorganization and accelerated cultural change during the Late Archaic/Early Woodland transition. There are problems, however, in determining periods of occupation based on surface finds of projectile points and pottery. Stewart (1982), for example, suggested continuity of Early Woodland pottery types into the Middle Woodland, a surmise supported by the recovery of Popes Creek-like and Mockley-like pottery sherds

(both common Middle Woodland types on the Coastal Plain) from Early Woodland sites. Middle Woodland sites may be poorly represented in Table 3–2 because of typological problems. The trends in ‘sites per century’ and ‘points per century’ for the Early and Middle Archaic periods also may be artifacts of existing typologies, borrowed as they are from those developed in neighboring states:

For the Early and Middle Archaic Periods archeologists working in Virginia [and by extension Maryland] continually look to areas outside the region for our basic chronology. We either look south to Coe's North Carolina Piedmont sequence or Chapman's sequence from Eastern Tennessee, west to Broyle's West Virginia sequence, or north to the work of Ritchie and Funk in New York, or Dincauze in New England (Custer 1990: 165).

Custer (1990) might also have noted that ‘Brewerton’ points, originally described and classified as Middle to Late Archaic in New York and New England by William A. Ritchie (1961), have been found in Maryland and association with pottery in Georgia (Cambron and Hulse 1975). Could these widely dispersed points really have been used by culturally affiliated groups at the same time?

Wall (1981) also has observed the problems incurred through the use of typologies from neighboring areas, particularly for the Late Archaic, and has noted that resharpening of tools made from scarce cryptocrystallines further exacerbates the problem as point classifications become more tenuous.

Without well–defined chronologies based on carefully excavated material from intact strata, conclusions drawn from data such as those in Table 3–2 are tentative at best. While the prehistoric population of the Hagerstown Valley may have blossomed during the Late Archaic or Early Woodland, declining or reorganizing in subsequent periods, the pattern of site location appears not to have changed. Stewart, of course, notes some changes in the distribution of various types of sites throughout the prehistory of the region. But most sites within the Conococheague Creek drainage still occur within 1000 ft (305m) of the creek and the lower portions of its various tributaries, primarily on the lower terraces at 400 to 420 ft (122 to 128m) above mean sea level. Stewart summarized his findings for the Conococheague sample area as follows:

Site locations within the Conococheague transect can be correlated with proximity to surface water, distance away from a high order stream, proximity to swamp or marsh areas, distribution of well drained areas with low topographic relief, and stream junctions. Concerning the latter factor, site size and the nature of occupations seems to vary depending on whether junctioning (sic) streams are both active year–round. Local lithic sources seem unimportant in determining site locations. It is difficult to evaluate the factors of exposure to weather and the distribution of areas of maximum sunlight as the entire transect area possesses a favorable southern exposure (Stewart 1980:225–226).

Wall (1981), in his study of the extreme western portion of Allegany County and the entirety of Garret County, attempted a predictive model based on data from 173 prehistoric sites. In general, his findings correspond to Stewart’s and those of William M. Gardner for Virginia’s Shenandoah Valley. Wall (1981:35) noted settlement patterns on the Allegheny Plateau that are similar to those identified by Stewart for the Hagerstown

Valley. Wall suggests, however, that there was a marked reduction in upland hunting during the Early Woodland, in contrast to the continuation of Late Archaic patterns of broad-spectrum resource utilization posited by Stewart. (Kavanagh [1982:43] notes lower site densities in riverine settings than in the foothills of the Monocacy Valley, but the latter are larger and denser.) Where correspondences are less than perfect, Wall warns about the insufficiency of his sample and the need for further data collection and analysis.

Gallivan (2002), writing about the James River Valley in Virginia—including the Blue Ridge, piedmont, and coastal plain—has recently contributed to the discussion of *sedentariness* (an awkward, but useful term) in Middle Atlantic prehistory, supporting the model of population growth and expansion into new environments during the Late Archaic, followed by a continuation of settlement patterns into the early part of the Late Woodland. Increasing reliance on cultigens after A.D. 1200, in his estimation, led to the development of settlement hierarchies. Gallivan also contributes to the general discussion some ideas about what sedentary means and by explicitly locating primary social and economic activities in the household; viz., specifying that households, and by extension houses, should serve as the unit of analysis in studies of sedentism. His study, which draws disparate data into a variety of statistical analyses (sometimes without adequate consideration of variable dependency), also articulates a point made by a number of scholars over the years—by Steponaitis (1986), for example—but that researchers often neglect in characterizing prehistoric sites: classifications of sites in terms of duration of occupation and place in a settlement hierarchy are hypothetical constructs that draw a direct connection between the richness and heterogeneity of the features and artifacts recovered from a site and the nature of its occupation. Researchers must justify their attributions (e.g., village, camp, or resource procurement site) with objective descriptions and analyses of the data underlying those categories; specifically, the ranges and representation within categories of features and artifacts represented at a site.

LOCAL PREHISTORY

Archeological surveys in and around Hancock have been limited to five roadside surveys conducted for the Maryland Department of Transportation (M/DOT 20–001 through 004 and 20–013) and recent Phase IA and monitoring work conducted by and for the Maryland State Highway Administration in conjunction with streetscape improvements within the Hancock Historic District, WA–VI–040 (Ebright and Capozzola 1997; Ebright 2001a, b; Scholl, Eichinger, Scheerer, and Klein 1999). The M/DOT surveys to the east (20–004) and north and northwest of Hancock (20–001 through 20–003 and 20–013) were low intensity surface reconnaissances, with limited subsurface testing at 150 ft (45m) intervals in areas with low surface visibility. MHT surveyors (Wesler et al., 1981) found mostly cut and fill areas and recorded no archeological sites. Given the methodology employed—close adherence to the highway rights-of-way (mostly disturbed road shoulders) and limited, wide interval shovel testing—these surveys have virtually no scientific value; viz., neither local nor regional patterns of prehistoric or historic settlement can be inferred from their results, nor can any predictions on the existence and significance of cultural materials be generated.

Ebright and Capozzola (1997) and Ebright (2001a) provide much of the environmental and historical background against which expectations and arguments for historical significance could be made for archeological resources found in and around the village of Hancock, particularly along Main Street (MD144), the route of the early 19th-century National Turnpike. Scholl et al. (1999), monitoring sidewalk and street demolition within the west half of the streetscape revitalization project, identified 21 cultural resources (specifically, features), including coal chutes (7), coal vaults (2), foundation sections (4), stairwells (3), a bulkhead entranceway, a concrete planter, a buried creek channel, and discrete deposits of brick and other building rubble. Ebright (2001b) also identified and recorded a stone masonry culvert that channeled water from an unnamed stream between the Big and Little Tonoloway creeks beneath Main Street towards the Potomac River. No prehistoric artifacts or deposits were encountered.

Prehistoric sites for the Hancock area have been registered as unverified isolates and as woefully under-reported sites (Table 3–3). Little should be inferred from these finds other than that they do not belie the patterns suggested by Stewart (1980) and Wall (1981). Given the lack of systematic sampling in the area, they should not be regarded as confirmations of those patterns for the Ridge and Valley province. Isolates 2, 3, and 4 are possible rockshelters on Round Top Hill, just west and upstream of the village. These sites have not been confirmed as prehistoric occupation sites. Moreover, Round Top Hill served as a limestone/hydraulic cement quarry from 1837 until 1909, rendering suspect the attribution of any adit, shelter, or cave to prehistoric use.

Table 3–3. Archeological isolates and sites near Hancock.

Site 18WA ² :	Elev 'n (ft)	Location	Period	Finds
X2		Round Top Hill	Prehistoric?	Rockshelter?
X3		Round Top Hill	Prehistoric?	Rockshelter?
X4		Round Top Hill	Prehistoric?	Rockshelter?
X5		North side of village	Early 18th C	Fort Tonoloway?
X6		Potomac River bed	Prehistoric?	Fish weir
2	100	Potomac River floodplain	LW and earlier	Triangles, Brewerton side-notched
3	200	Potomac River floodplain	LW, poss. earlier	Triangles, crushed stone temper pottery, other points
4	200	Potomac River floodplain	EW/LW	Point fragments, cord-marked chert and sandstone tempered sherds
5	400	Ditch Run terrace	T/EW	Point, lithics
6	200	Potomac River floodplain	A/W	Corner-notched points, lithics, sherds
7	50	Potomac River floodplain	W, poss. earlier	Lithics, grit-tempered sherds
*		Potomac River bed	?	Two fish weirs (Guzy 2001)

Key: A=Archaic, unspecified; MA=Middle Archaic; LA=Late Archaic; T=Transitional; EW=Early Woodland; MW=Middle Woodland; LW=Late Woodland; W=Woodland, unspecified.

² Maryland employs the Smithsonian Institution's trinomial system for cataloguing archeological sites and isolates; e.g., 18WAX3 is an isolate, whereas 18WA3 is a site.

Cryptic descriptions of temporally and functionally diagnostic artifacts, in most cases transcribed directly from the Maryland Archeological Site Inventory forms, reveal the lack of information available for any of the prehistoric sites noted in the vicinity. Professional archeologist Henry T. Wright completed all of the forms, but drew the information from local informants. No subsurface testing appears to have been undertaken on any of the putative sites. Those sites yielding temporally diagnostic artifacts occupy floodplain and first terrace locations along the Potomac River, locations perfectly consistent with those observed on the Allegheny Plateau and the Great Valley. Quadrangle note #5 (18WAX5) is the reported, but unsubstantiated site of Fort Tonoloway, a briefly occupied frontier blockhouse erected during the Anglo–French conflict of the 1750s and early 1760s.

Isolate 18WAX6 likely is one of two fishweirs Guzy (2001) identified in his study of weirs along the Potomac and Monocacy rivers (Guzy 1999, 2001). Prehistoric and historic era peoples constructed weirs to channel streams and facilitate capture of fish (some were designed to deepen water around ledges to facilitate navigation in the 18th and 19th centuries). They are characterized by V–shaped alignments of stone rubble erected across stream channels with the apex downstream from the wings, in contrast to natural ledges transversely crossing streams that usually are extensions of folded strata visible on the banks and in exposed sections. No criteria yet exist for distinguishing prehistoric from historic weirs, nor have any wooden components to those in the Potomac been identified.

Wooden fishweirs, such as that at Boylston Street in Boston, Massachusetts (Johnson 1949) have been preserved in saturated sediments and can be expected in the narrower portions of stream valleys (Lutins 1992). Their discovery, however, has been fortuitous, the stake weirs either not surviving or blanketed by sediment. Most identified weirs are made of stone and located in stony waterways. But whether stone or wooden stake, these features elude dating and attribution to any one cultural–historical period, and many of the stone weirs may represent well–documented historic period fishing strategies (Guzy 1999). None of the Potomac’s tributary streams in Washington County appear to have been examined for evidence of weirs.

The prospects for finding prehistoric cultural resources in the project area, except for possible stone fishweirs, are poor. The south bank of the creek is too steep for open sites and lacks any evidence of rock overhangs. The terrace on the north side is very narrow and largely buried by the embankment created for Rayloc Drive. Moreover, a gristmill (see below) occupies that terrace remnant and likely destroyed any earlier cultural deposits. Wall’s (1981) and Stewart’s (1980) work also suggests that prehistoric cultural deposits are more likely to exist near the stream’s headwaters (in Pennsylvania) and on the Potomac floodplain, about a half mile downstream. I will note, however, that a broad floodplain, currently cultivated, exists just a few hundred yards upstream of the project area. This relatively high, level, broad expanse has a high probability of yielding prehistoric materials that could prove useful in testing the Wall–Stewart model, at least for the Ridge and Valley province.

Historic

General history writing for Western Maryland, especially for Washington County, has not distinguished itself. The grand county histories of the late 19th century (Scharf (1882), Williams 1968 [1906]) played up then living or recently deceased prominent individuals, offering a welter of largely unsubstantiated historical facts and current descriptions of communities, with special focus on Hagerstown, and to a lesser degree Williamsport and Funkstown. They made limited use of the scholarly apparatus of footnotes, what Grafton (1997: *vii*) has called “the humanist’s rough equivalent of the scientist’s report on data...the empirical support for stories told and arguments presented.” The most recent history published for the county follows in the vein of most recently published county histories in Maryland, and nationwide: Mary H. Rubin’s (2001) *Illustrated Images of America: Washington County*, is a highly marketable, but singularly uninformative book for the period preceding photography (practically speaking, pre-Civil War), offering little more than captioned photographs for later periods. The book is not without value, but it is no substitute for scholarly research. Rubin glosses over important developments and uncritically repeats local stories out of context. For cultural resources management surveys, the researcher must turn to primary documents, specifically land titles and censuses, and that is what I have done for this project.

Europeans have occupied the Hancock area at least since the 1730s, about a century after their initial settlement of the coastal plain. Fur traders made the first inroads of European colonization, establishing networks with Native American groups that extended beyond the Appalachian range (Kester 1995). Charles Polke, or Polk, was among the earliest, establishing his post on what became the west side of the village of Hancock along the Little Tonoloway Creek. The site appears to have been more convenient than the mouth of the Great Tonoloway to the Potomac River ford into what, at the time, was Virginia. (West Virginia was erected out of Virginia during the American Civil War.) Polke did not patent the land that he occupied, although he likely held a trading license from Lord Baltimore.

The first land patent granted by Lord Baltimore in what became Washington County (at the time, western Prince George’s County, later [1748] Frederick County) was for a 260-acre tract near Williamsport on the Potomac River in 1739 (Smith 1979:2). But John Hanthorn also patented land in 1739, taking up lands formerly improved by Charles Polke around the lower Little Tonoloway Creek (see Table 3–4 for references). Significant settlement by Europeans, however, did not occur until the conclusion of the French and Indian War (1763), although Charles Calvert—the fifth Lord Baltimore—surveyed a proprietary manor east of the area in 1734. Sales of proprietary manor lands in the 1760s—ordered by Frederick, Lord Baltimore—were slow; particularly of those manor lands in the western portion of the colony that were confiscated by the newly erected State of Maryland after 1776. Frederick Calvert conveyed Conegocheague Manor to John Morton Jordan in 1768 (*Archives of Maryland* 14:536, 1768).

Conegocheague³ Manor contained 10,594 acres—east of present day Hancock—and was located on the north side of the Potomac River, west of present day Hagerstown (Stiverson 1977:152). The manor consisted of at least 80 tenements in 1767. Frame houses were constructed on some of the tracts (7 out of 69 [10%], not including outbuildings), but most were of round log construction. Buildings of both sorts had average and median lengths of 24 ft. (7.3m). The average tract size was 133 (52.4ha) acres, with median and mode values of 108 acres (42.5ha) and 100 acres (39.4ha), respectively, calculated on 80 tracts.⁴

Table 3—4. Early tracts in the Hancock area.

No. Tract		From	Owner	Reference	Date	Acres	Corrected	Year		
1	The Saint John	Chas Polke land	Baltimore	John Hanthorn	LG#B/216	2/8/1739	150	145	1739	
2	Hanthorn's Rest	Chas Polke land	Baltimore	John Hanthorn	LG#B/235	9/27/1739	100	102	1739	
3	Dutch Folly		Baltimore	Cornelius Elting	LG#B/622	10/23/174	2	105	105	1742
	Reserve on				BC&GS#13					
4	Three Friends	Three Friends	Baltimore	John Jones	142	10/3/1751	951	1003	1751	
	Abbott of				BC&GS#19					
5	Canterbury		Baltimore	Peter Butler	562	9/29/1763	100	96	1763	
					BC&GS#31					
6	Mill Place		Baltimore	Wm Yates	168	10/12/176	3	50	52	1763
	Resurvey of				BC&GS#31					
7	Mill Place	Mill Place	Baltimore	Wm Yates	345	1763	113	113	1763	
					BCGS#36/					
8	Chatham, First of		Baltimore	John Ridout	78	5/1/1766	220	220	1766	
					BC&GS#51					
9	Dalecarlia	Chatham, First of	Baltimore	John Ridout	225	6/16/1774	229	268	1774	
					BC&GS#48					
10	Old Times		Baltimore	Levi Linn	306	5/27/1774	46	45	1774	
					BC&GS50/					
11	Sarah's Fancy	Dutch Folly	Baltimore	Wm Yates	160	3/27/1775	685	683	1775	
	Resurvey on									
12	Old Times	Old Times	Baltimore	Levi Linn	Pat Cert 785	1/16/1777	204	195	1777	
13	pt of	Sarah's Fancy	Dutch Folly	Jon Rose	A167	3/21/1778	28.5	20	1778	
14	pt of	Sarah's Fancy	Dutch Folly	Jon Rose	A167	3/21/1778	21.2	20	1778	
						12/15/178				
15	Adventure		Baltimore	Samuel Price	Pat Cert 97	9	29.75	28.4	1789	
	Add to Mill									
16	Place		Baltimore	Wm Yates	Pat Cert 485	?	?	113	1790	
17	John & Davy	Add to Mill Place	Wm Yates	David Rowland	IC#G/711	9/23/1794	911	1004	1794	
18	pt of	John & Davy	David Rowland	Wm Yates	K478	4/18/1797	22	20	1797	

³ A variant spelling of Conococheague. The manor was resurveyed in 1768 and found to contain 10,688.25 acres. The project area lies outside of Conococheague Hundred (not the same as the manor), in Linton Hundred.

⁴ Data drawn from “A List of Tenements of His Lordship’s Manor of Conoqochegue—1767,” Public Records Office A.O.12/79, Ottawa, Canada. Photocopy on file at the Western Maryland Reading Room, Washington County Public Library, Hagerstown, Maryland. Originally analyzed in Gibb (1996).

Add to	Mill Place/Sarah's							
19 John & Davy	Fancy		David Rowland	Pat Cert 39	11/2/1798	3	7	1798
		heirs of						
20 pt of	Sarah's Fancy	Joshua Yates	Wm Yates	LL623	1/5/1830	300	310	1830
21 Bowles Security	Dalecarlia?		Jas H Bowles	Pat Cert 158	2/26/1831	272	268	1831
22 pt of	2nd of Dalecarlia	JJ & Rosa Bowles	Jacob Grove	IN15/60	4/4/1861	158	161	1861
Abbott of								
23 Canterbury		Equity	Wm Andrews	IN18/132	4/18/1864	204	305	1864
Bowles								
24 Establishment	several	various	John Bowles	Pat Cert 157	5/20/1796	1146	1024	1796

(Source: Land Records of Washington County)

Many of the 18th and early 19th century settlers moved to the Hagerstown Valley, and the greater Great Valley, from adjoining Virginia and Pennsylvania, particularly from the latter. The Pennsylvania settlers were largely Germanic. They established a pattern of agriculture and commercial settlement based on European patterns previously modified in the other colonies (Comstock 1994), and only gradually moved into the Allegheny foothills. Colonial settlement patterns in the Hancock area are represented, although imperfectly, in the record of surveys of parcels (the second step, after securing a warrant, in patenting land from the Lord Proprietor) taken from Ferguson (1932a). Graphing the number of surveys per decade for the period 1730–1799 yields a bimodal distribution with a small peak spanning the 1760s and 1770s and a much larger spike in the 1790s (Figure 3–1).

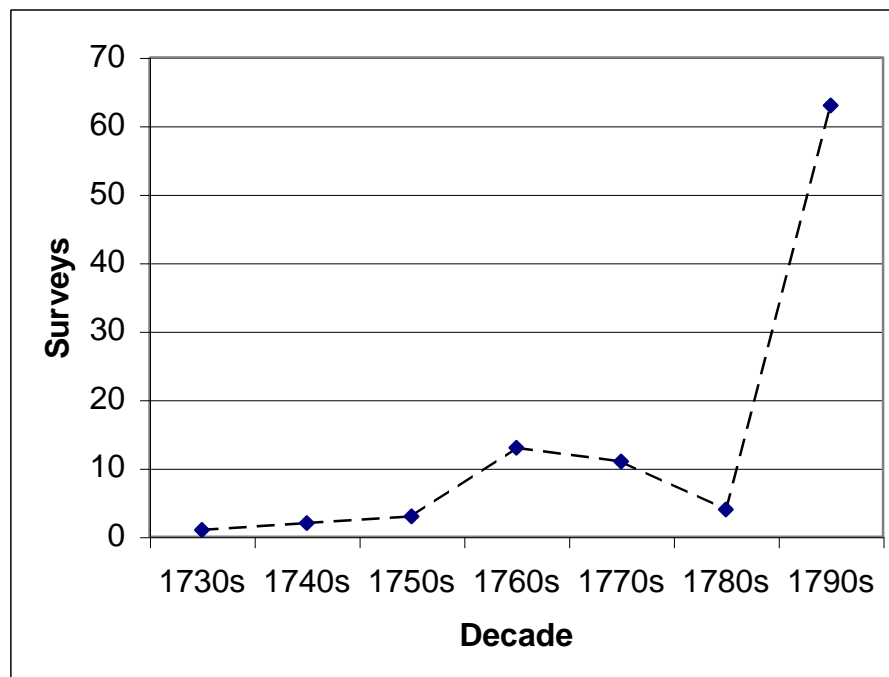


Figure 3–1. Land surveys per decade in the western section of Washington County. (Source: Ferguson 1932a)

The survey and patenting process was very much affected by world events, locally expressed in terms of the French and Indian War (a.k.a. Seven Years War) and the

American Revolution. Of the combined 24 surveys completed in the 1760s and 1770s, 17 (71%) were undertaken between 1763 (by which time hostilities between the British and French in North America had largely ceased) and the eruption of open hostilities between the colonists and the British Empire in the spring of 1775. Following the Treaty of Paris and the economic downturn following the Revolution, the region experienced a burst of in-migration, funded in no small part by the new National Bank and paper-issuing state banks keen on land speculation.

I said the graphed survey data are imperfect, only an approximation of actual settlement trends. Why? Ferguson (1932a) recorded only six surveys during the 1730s through 1750s, yet one of the earliest surveys in the 1760s was for William Yates' "Mill Place" on Great Tonoloway Creek in 1763 (Table 3-4), a 50-acre tract expanded to 113 acres that same year. Was a mill necessary for lands amounting to just over 1,500 acres surveyed for seven individuals? Would there have been any point in Joseph Hancock securing a ferry license in 1774 for the Potomac River crossing when barely two-dozen tracts had been surveyed?

Remember Charles Polke, the first documented settler? He didn't patent the land. John Hanthorn's 1739 patent for Hanthorn's Rest notes improvements to the land made by Polke, but implies that Polke made no legal claim to the land. (The proprietary rent rolls, in fact, note that Charles Polke's heirs remained in possession of Hanthorn's Rest and Hanthorn's Rest Resurveyed between 1753 and 1773.) A number of settlers undoubtedly squatted or arranged leases with local proprietors and such absentee landlords as John Ridout, the personal secretary and right hand of Governor Horatio Sharpe. Others held trading licenses from Lord Baltimore's government and lived itinerant lives. A better approximation of the number of settlers in the area might be gained through a careful combing of provincial records for the mid-1750s, a period during which settlers and government panicked in the face of French and Indian incursions, survivors of raids taking shelter in a series of blockhouses and forts erected during the middle of the decade. Such a study falls outside of the scope of this project. For present purposes, the area's European settlement might best be described as light and vulnerable during the 1750s, slow growing during the political tumults and revolution of the mid-1760s through early 1780s, and blossoming during the 1790s.

Washington County as a whole grew rapidly during the 1790s and the settlers soon had pretensions to something greater than cabins in the wilderness or even well-cultivated farms in a civilized landscape. Or perhaps they expected, and speculated on, greater things before relocating to the area. In 1790, the citizens of Mecklenburg, Virginia, also called Shepherdstown, made a play for one of the most hotly contested public enterprises yet attempted by the new nation: the creation of a federal district, a home for the new government.

Berkley County [Virginia], Nov 1790

We the Subscribers Obligate ourselves and our heirs to pay to the president of the United States or the Commissioners to be appointed under the Law for picking the Permanent Residence of Congress or their agent

the several sums of money subscribed to our names in Eight annual payments[,] the first payment on demand expressly on the following Conditions that the Town of McLinburgh alias Shepards be included in the District and that the Federal seat of Government be located in any of the Lands between Thomas Shepards plantation and Capt Joseph Chaplines mansion Each subscriber to be impressible for the sum subscribed by him and no more. (Citizens of Berkley County 1790)

Their Washington County neighbors proposed Sharpsburg, supplying the federal government with a crude plat.

The idea of creating the new federal district on the Maryland–Virginia frontier was not as preposterous as might appear at first blush. James Madison, then one of the most powerful members of the House of Representatives, and in the entire federal government, proposed that the capital city be erected on the upper reaches of the Potomac River, near Conococheague Creek, as a strategic location on the best route to the Ohio Valley (a fiction, of course). Historian Joseph Ellis (2000: 71) reports that the “mention of Conococheague Creek provoked waves of sarcasm from incredulous congressmen,” whose uncertainty as to the area’s location was exceeded only by their inability to spell, and presumably pronounce, its name. But the Potomac River and its navigation long had been a pet project of George Washington, and serious consideration by him at the peak of his popularity would have made the Washington and Berkeley County locations contenders.

Of the several sites that were actively considered, Philadelphia and New York held the greatest promise, more so Philadelphia for its many amenities and the projected temporary capital during the construction of the new federal district. The Potomac River reclaimed attention and won out over its competitors as part of a backroom deal in which the emerging Jeffersonian party conceded assumption of state debts in exchange for a Potomac River site for the district. Ultimately, of course, a downriver location was selected, ceded for the purpose from Maryland. Interest in the Potomac as a trans–Appalachia corridor, however, did not fade. The National Road, the nation’s first major public works project outside of the District of Columbia, incorporated portions of state chartered turnpikes along part of the Potomac to include in the network that eventually linked Baltimore with the Midwest, with Hancock confidently sitting astride the National Turnpike portion of the route.

Because of its location on the National Road, Hancock—like the county seat of Hagerstown—became a nexus for turnpikes and post roads. The Congressional Record notes several petitions by local people to designate post roads radiating out from Hancock:

Resolved, That the committee on the Post Office and Post Roads be instructed to inquire into the expediency of establishing by law, a post road from the town of Hancock, in Washington county, Maryland, to Bath, in the county of Berkely, in Virginia (*House Journal* 12/1/1818, p.54).

Resolved, That the Committee on the Post Office and Post Roads be instructed to inquire into the expediency of establishing a post route from the Crossings of Juniata, the former residence

of John McMullen, in Bedford county, Pennsylvania, to Hancock, in Maryland, by the way of Warfordsburgh, a distance of about twenty-two miles (*Senate Journal* 3/23/1832).

By Mr. McClean: A petition of citizens of Bedford county, in the State of Pennsylvania, praying the establishment of a mail route from McConnellsburg, in Bedford county, Pennsylvania, to Hancock, in Washington county, in the State of Maryland (*House Journal* 2/22/1847)

By Mr. Job Mann: Three petitions of citizens of Bedford county, in the State of Pennsylvania, praying for the establishment of a mail route from Bloody Run, in the State of Pennsylvania, to Hancock, in the State of Maryland (*House Journal* 6/25/1850).

By Mr. Russell: The petition of citizens of the State of Pennsylvania, for a mail route from Mercersburg, Franklin county, to Hancock, Washington county, Maryland (*House Journal* 3/8/1854).

Also, the petition of citizens of the State of Pennsylvania, praying for the establishment of a mail-route from Harrisonville, Fulton county, in said State, to Hancock, in the State of Maryland (*House Journal* 3/2/1858).

Two of the petitions date to the first third of the 19th century, the remaining four penned after new transportation media were adopted: water and steel rails.

The Chesapeake & Ohio Canal, an outgrowth of Washington's Potowmack Canal, followed the Potomac, originating in Georgetown in 1828, completed through to Hancock in 1839, and extended to Cumberland in 1850.⁵ Barges hauled largely bulk produce—particularly coal from Maryland's Allegheny Plateau—on the canal until it closed in 1924. (The canal corridor was designated a National Historic Park in 1971 and is administered by the National Park Service.) Hancock flowered, establishing manufacturing and services industries along the canal, including mills, warehouses, domiciles, and inns, a pattern identical to that reported for Matildaville along the earlier Potowmack Canal (Dent 1986). But the canal did not reign supreme...not for long at any rate. The Baltimore & Ohio Railroad extended to Hancock, albeit in Virginia on the south side of the river, in the early 1840s. The Western Maryland Railroad wasn't completed on the north side of the river until c. 1900.

The canal, and especially the B & O Railroad, placed Hancock firmly within national and international exchange networks (Figure 3–2). These innovations—turnpikes, canals, and railroads—opened up local produce to larger markets and brought the same goods to this rural town as might be found in any of the large metropolises of the East Coast. But the blessing was mixed. In 1861, the nation went to war with itself, and the transportation network along one of the principal fronts attracted military attention.

On January 4 and 5, 1862, Confederate Major General Thomas 'Stonewall' Jackson bombarded Hancock in an attempt to take the town and secure or destroy the canal and the railroad on the south bank. Union Brigadier General F. W. Lander's troops maintained control over the river crossing on the west side of town and Jackson

⁵ Chartered in 1784 and 1785 by Maryland and Virginia, respectively, the Potowmack Company relied on riverbed improvements, circumventing cataracts with bypass canals. The canal, situated on the Virginia side of the Potomac, operated from 1802 to 1828, but for an average of only 45 days each year due to low water in the river (Dent 1986).

withdrew. Damage to the town appears not to have been considerable, although St. Thomas Episcopal Church on High Street (extant) sustained some damage. On June 23, 1862, House bill HR541 was presented to the 37th Congress, appropriating \$2,161.40 for the town of Hancock to repair the church and rectory,

which were seriously damaged by their occupation by soldiers of the United States army, and by the concussion from the cannon used by them in repelling an attack from the rebels who, from the heights of the Virginia side of the Potomac, bombarded that town and the forces of the United States there stationed on the night of the fourth and the morning of the fifth of January, eighteen hundred and sixty-two.

Another petition from the citizens of Hancock for compensation for property damage by US troops, likely upon their vacating the church-cum-hospital, was presented to the House of Representatives on February 6, 1863. The extent to which other properties were damaged during the 1862 assault and subsequent occupation remains uncertain.

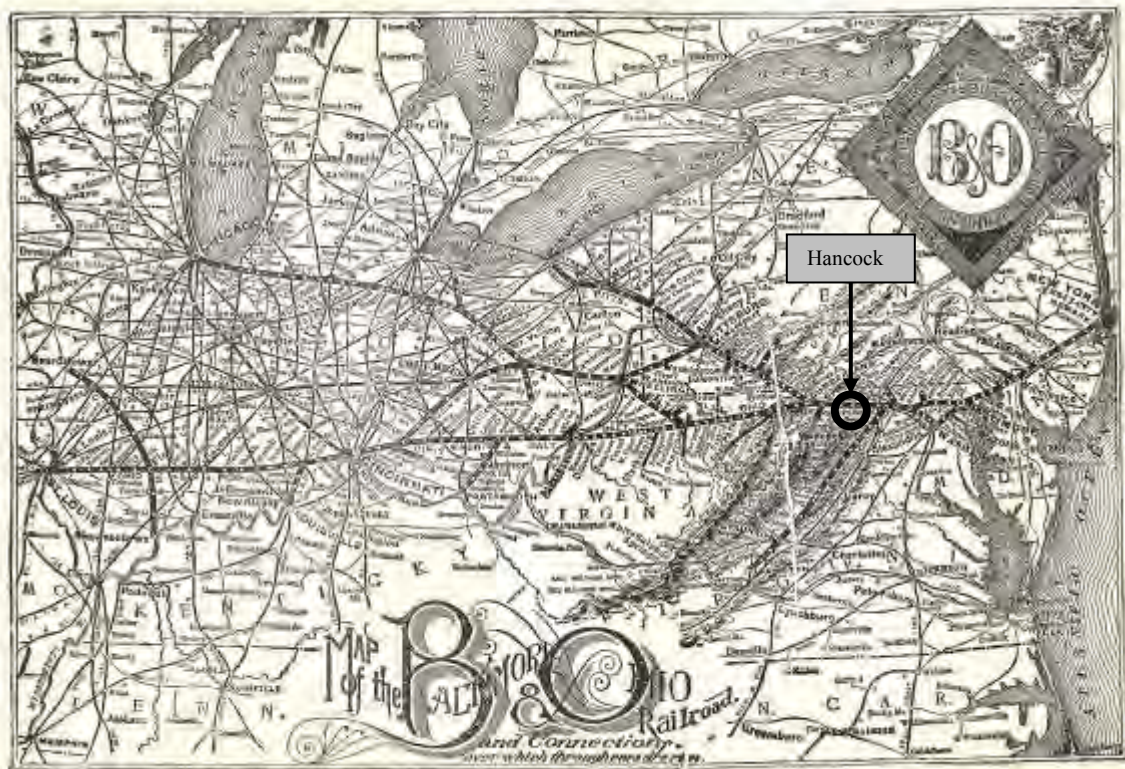


Figure 3-2. The B & O Railroad network, c. 1860.

Hancock's encounter with the Civil War didn't end in 1863. Confederate forces briefly occupied the village in the summer of 1864, demanding money and provisions of the inhabitants. No doubt private properties were damaged or stolen and the prospects for further depredations remained until the war in the northern department ended with Lee's surrender at Appomattox Courthouse.

Situated in one of the most hotly contested regions of the Civil War, Washington County and its citizens fared poorly during and immediately after the war. Local newspaper editor and chronicler Thomas J.C. Williams described the effects of the war 40 years after the fact:

The close of the Civil War found the people of Washington County greatly impoverished. Their losses had been heavy and there was yet a decade before substantial recovery began. The County as a whole has lost the wealth producing energies of one or two thousand able-bodied men who had gone into the army and were withdrawn from industrial work for a period of four years. Fifteen hundred slaves had been set free. Crops had been destroyed, horses and all farm animals carried off and fencing burned by marching armies. But possibly the largest loss was caused by the fluctuating currency. Prices in gold for land and farm animals had remained steady. But the depreciated greenback was the measure of values. As the greenback became less valuable the price, or rather the nominal price, of lands, wheat and corn advanced. The high price of wheat tempted many to buy land at inflated values, giving mortgages to secure deferred payments. Many farmers were compelled to mortgage their lands to pay for horses and cattle which they had to buy in place of those taken by the soldiers, and upon those mortgages the interest charged was a rate of 8 to 10 per cent. ...As the greenback more nearly approached the gold standard, land values made a nominal shrinkage and many acres which had been bought in the flush of times at \$100 or more per acre were sold under the hammer at mortgagee's or trustee's or sheriff's sales for less than half that sum. For ten years after the close of the war the work of liquidation went on (Williams 1968 [1906]: 367).

By the 1880s, however, social and economic stability became the norm, notwithstanding periodic economic recessions. In the Hancock area, farmers began turning their hands to commercial fruit production. By the 1930s, orchards covered the area. Ferguson (1932b) noted many orchards/fruit farms on his map of then current property holdings (Figure 3–3): Clenallen Fruit Farms, Elberta Fruit Farms, Corona Orchard Company, J. A. Cohill's, Dillon's Orchards, and others.

The Great Depression of the 1930s considerably affected development of the fruit growing industry as farmers stopped planting new trees. The industry recovered and the peach and apple orchards expanded during the 1950s as older trees 'played out' (*Morning Herald*, August 1956). The Pennsylvania Glass Sand Company on the West Virginia side of the Potomac, however, was the single largest employer at the time and residents also commuted to Fairchild (an aeronautical firm specializing in military contracts) and other factories in Hagerstown. Other significant employers included the State Roads Commission (in the process of straightening and dualizing Route 40, as per the Federal Highway program)⁶ and the Western Maryland Railroad, complemented by a growing number of retail and professional services providers in town. Now, at the beginning of the 21st century, the retail and professional service providers seem to exert a weaker reach over the region and the larger employers of the 1950s have largely departed. NAPA's auto parts refurbishing facility (est. 1972) at the end of Rayloc Drive, adjacent to the project area, now offers considerable employment to communities on both sides of the river.

⁶ State Roads Commission (1958) and the Federal Interstate and Defense Highway Act of 1956.

Despite war, post-war depression, major highway development, the loss of the canal and railroad, the development of a National Historic Park, replacement of several major employers by one employer, and a steep rise in commuting, the population—in terms of numbers—has changed little since the late 19th century (Figure 3–4). (The official population more than doubled in the 1950s as the town annexed surrounding areas to provide public utilities, but the area’s social and market structure remained appreciably unchanged.) The community has enjoyed a mixed economy of agriculture, mining, and retail and professional services, all greatly enhanced by the market and employment advantages of its strategic location on the narrow transportation corridor that linked the coal fields and agricultural lands of Western Maryland with the Eastern markets of Washington, D.C., and Baltimore, and beyond. Hancock played a brief central role in the great national conflict of the early 1860s, to the great disadvantage of its citizens and outlying farmers, but came no closer to the central governmental role proposed by Virginians of the Federal period than as a playground for presidents and industrialists in the early 20th century.⁷

⁷ Camp Harding (Rubin 2001: 23) and Woodmont Rod & Gun Club (Ferguson 1932b) were two among a number of resorts in the area.

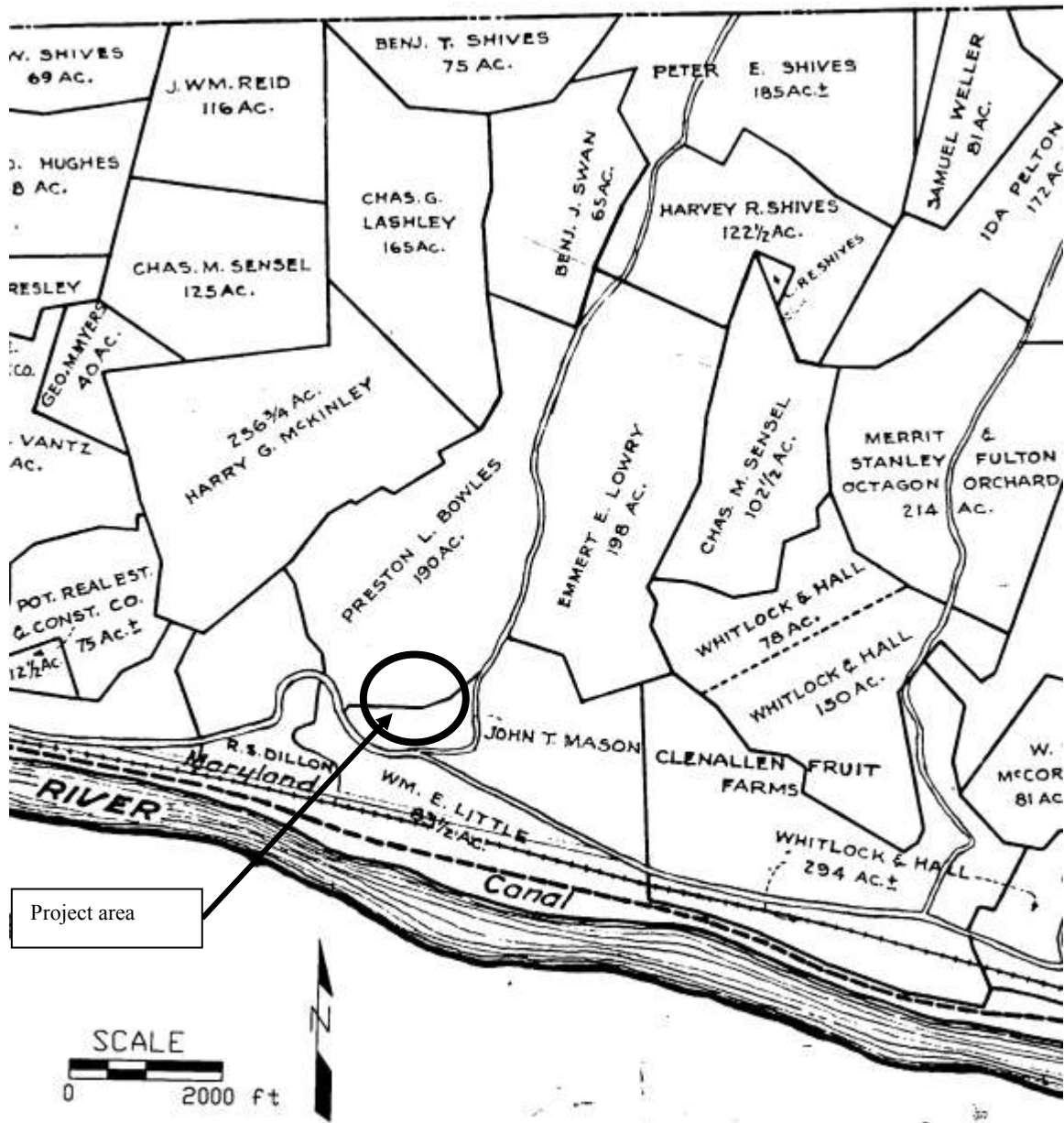


Figure 3-3. Ferguson's (1932b) plat reconstruction for the 1930s, detail.

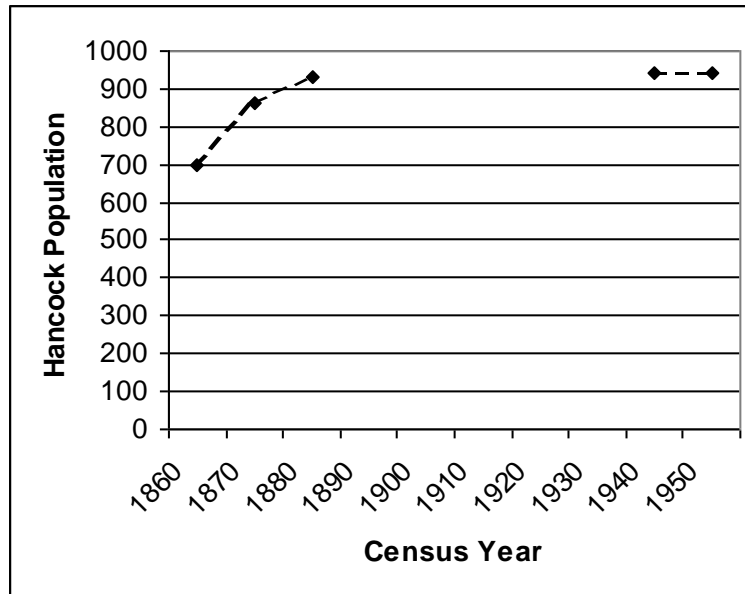


Figure 3–4. Population of the Village of Hancock, 1860–1950.

N.B. 1860 population is a wartime estimate, other figures are from Cloos (1951), Lake, Griffing, and Stevenson (1877), and *Morning Herald* (1956).

Tract History

William Yates’ patent, mentioned above, is significant for more than its apparent corrective to Ferguson’s (1932a) survey and patent data. The Mill Place patent included the I–70 project area and provides the earliest documentation for at least the intended, if not necessarily realized, use of the land. Ferguson’s (1932a) plat reconstruction does not locate Mill Place, or Addition to Mill Place, nor does his bill of patents include the tracts (Figure 3–5). My reconstruction, however, clearly places Mill Place in the project area (Figure 3–6). The survey description notes that the land was held of the Manor of Conococheague, its beginning boundary stone to be found on the east side of Tonoloway Creek, 18 perches from the creek and approximately one–half mile from the mouth of the creek, i.e., the Potomac River. The courses are as follows, the distances expressed in perches, one perch equaling 16.5 ft:

1. S66E 45p
2. S29E 40p
3. S27W 46p
4. S54W 62p
5. S81W 28p
6. N37W 21p
7. to point of beginning for 50 acres.

The resurveyed tract, called Addition to Mill Place, used the first five courses of the original, adding ten courses. All of the latter courses, except Course 9 (a probable error in the distance, 28 instead of 78 perches), are identical to those enumerated in David

Rowland's 1794 survey of John & Davy, which included Addition to Mill Place, purchased of William Yates for nearly £150, and Abbott of Canterbury, a 100-acre tract patented by Peter Butler in 1763, possibly with the intention of erecting one or more mills. The metes and bounds for John & Davy demonstrate that the surveyor for Mill Place and the addition thereof meant the Great, and not the Little, Tonoloway Creek. Proprietary Rent Rolls place William Yates on Addition to Mill Place at least between 1768 and 1773. He resurveyed Dutch Folly on the east side of the creek in the latter year and patented it as Sarah's Fancy in 1775 for 685 acres.

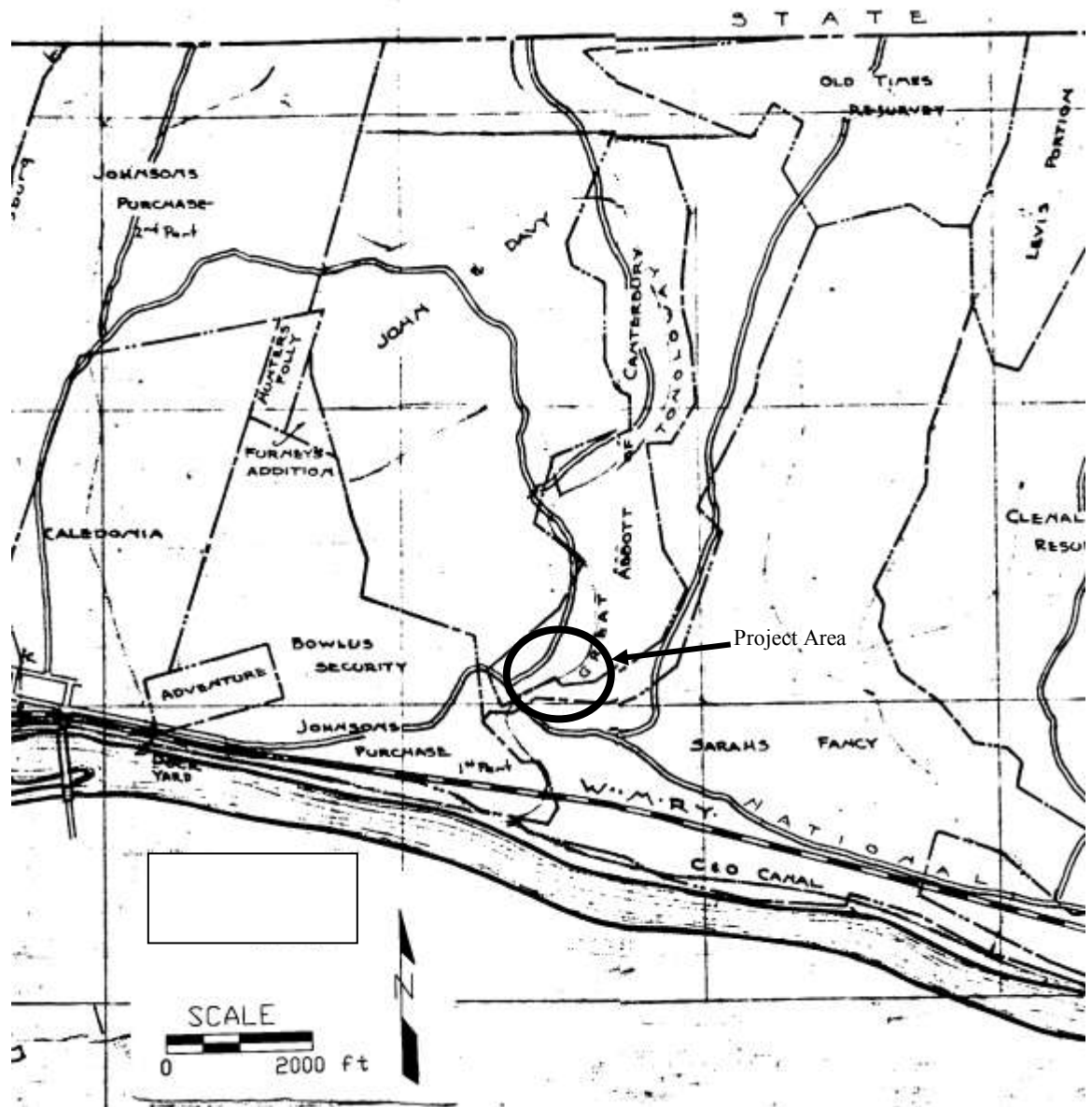


Figure 3-5. Ferguson's (1932a) patent plat reconstruction, detail.

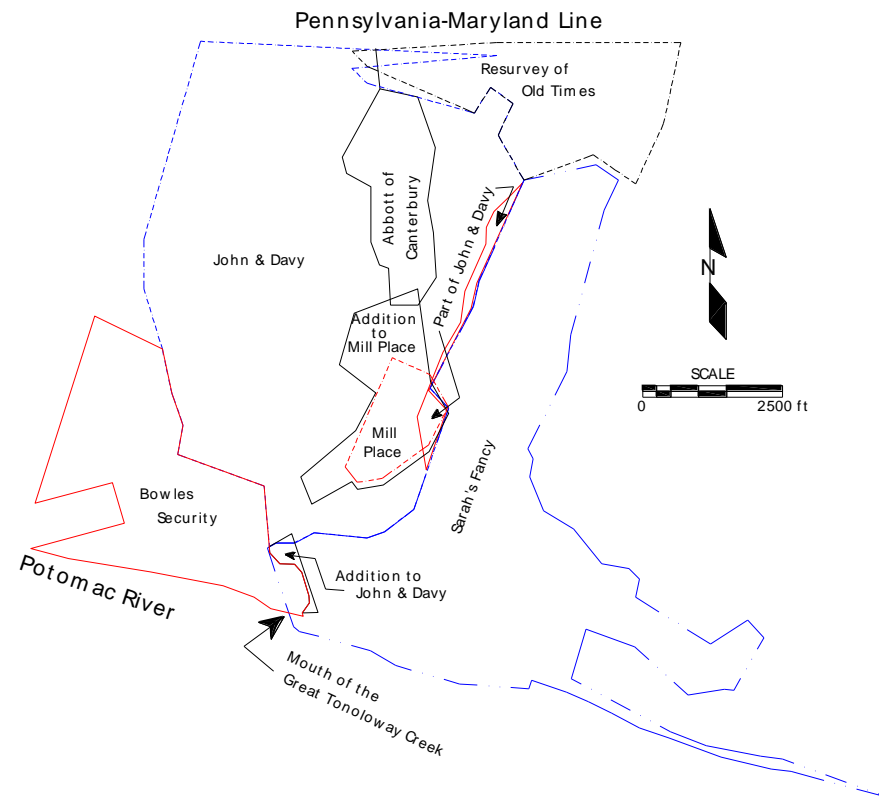


Figure 3–6. Reconstructed plats encompassing project area.
 N.B. The project area lies within ‘Mill Place,’ extending eastward into ‘Sarah’s Fancy.’

Conveyances of the Mill Place portion of John & Davy have proven elusive, and no evidence has yet emerged to indicate that William Yates, David Rowland, Peter Butler, or their heirs, were millers. We can be certain that a William Yates acquired the tract immediately to the east—Sarah’s Fancy—in 1775, bequeathing it to his son Joshua. Joshua Yates died prior to the probating of William’s will and the executors thereby conveyed 300–acres of Sarah’s Fancy to William Yates, Jr. (Land Records, R398, 28 September 1805).

The land records for Washington County also demonstrate that the Bowles (a.k.a. Bowlus) family occupied the Hancock area at least since the last quarter of the 18th century. Eleanor Bowles had the landed estate of her late husband Thomas surveyed in 1790. John Bowles and others patented that 969¼–acre tract, called Bowles Enlargement, 20 years later (Land Records, JK#U/169, 5 June 1809).⁸ But it was James H. Bowles in 1831 who patented Bowles Security, a 271¼–acre part of Dalecarlia (patented by John Ridout in 1774; see Table 3–4). This tract may have included a portion of John & Davy. In any case, James H. Bowles appeared to have acquired the land through which I–70 now runs in the 1830s. In a notice published in the *Hagerstown Mail* (30 December 1831), the Commissioners of Roads announced a meeting for the following month at which several new road locations would be examined as to whether they were necessary and convenient to the public. One of the proposed roads would extend “from the foot of the hill east of the mill of Jas. H. Bowles, to intersect the Pennsylvania road from McConnells–town and Mercersberg.”

The *Hagerstown Herald of Freedom* (7 November 1849) carried Bowles’ obituary: “Died, Suddenly at his residence, near Hancock, on Sunday night last [the fourth], James H. Bowles, Esq., at an advanced age. Mr. B. was a highly respectable citizen in this county.” Respectable, yes: the state governor appointed James H. Bowles as a Justice of the Peace each year between in 1835 and 1838, and as a District judge in 1838 (various notices in the *Hagerstown Mail*). His neighbors chose him to serve as a delegate to the constitutional reform convention in Annapolis in 1836 and his fellow delegates selected him as their chair of the Washington County Reform committee (*Hagerstown Mail*, 15 April and 6 May, 1836). Bowles also served as a member of an Internal Improvement committee that petitioned the Maryland General Assembly to speedily complete the Chesapeake & Ohio Canal and the Baltimore & Ohio Railroad (*Hagerstown Mail*, 6 May 1836). The marshal for the 1840 census listed Bowles and his wife, Martha (nee Swope), but omitted his occupation. By the enumeration of 1850, he was dead and Martha was listed as a farmer and as head of a household that included sons Samuel (aged 23) and James H., Jr. (15) and daughters Ellen L. (17), Mary E. (14), and Susan (8). The census marshal failed to note occupations for any of the older children. In short, a newspaper notice mentioned James H. Bowles as a mill owner, but no other document described him as a miller, nor did any of the half–dozen probate documents

⁸ First patented by Thomas Bowles in 1787 as Bowles Establishment for 1145½ acres (Patents IK#U/165). The 1783 Federal Direct Tax, however, noted four years earlier that Thomas possessed 866 acres of woodland, seven of meadow, and 200 of arable (total of 1073), along with 13 slaves and five ounces of silver plate.

mention a mill seat among his holdings at the time of his death (Probate Records for Washington County F/320, R/36 and 331, B/219, 16/426 and 785). John J. and John H. Bowles, their relationship to James H. Bowles uncertain, both appear in 1850 census for the Hancock District as millers (Table 3–5).

In the 1860 census, Samuel, aged 34, was listed as a farmer and the head of household that included his mother, Martha (61), and his sisters Mary (22) and Susan (18). Also in his household at the time was a young boarder, John H. Rohr (24) by name and miller by trade. The 1870 census described Samuel as a farmer and miller living with his wife Amanda (40), sons William (9), Preston (7), and Evan (1), daughter Hattie (3), his unmarried sister Susan, his widowed sister Ellen Taney and her two sons, and a 15–year old domestic, Louisa Gray. Samuel and Amanda did not appear in the 1880 census: both died in 1878, Samuel in March, Amanda in June. Samuel’s neighbor and childless brother William A. Bowles (farmer, 56), and his sister–in–law Mary (52) took in unmarried sister Susan and all of Samuel and Amanda’s children. They were interred at the St. Thomas Episcopal Church cemetery (the embattled Union hospital of some 15 years earlier) beneath a marble obelisk and next to their son Preston, who died 1942 (Figures 3–7 and 3–8).

Wading through all of this genealogical information, the reader might inquire whether the Bowles owned a mill within the project right–of–way. Yes, they did, the evidence clearly illustrated in Thomas Taggart’s wall map of 1859 and the Lake, Griffing, and Stevenson Company’s 1877 atlas of Washington County, Figures 3–9 and 3–10, respectively. The Taggart map clearly indicates that Samuel Bowles owned all of the land along the west side of the Great Tonoloway Creek and north of the National Pike. The symbol for a gristmill lies at the intersection of the National Road and the Great Tonoloway Creek, but is only barely visible on the original wall map. Samuel Bowles also held a mortgage on the Abbott of Canterbury portion of John & Davy for which one William Andrews was obligated to pay \$580.63 (Land Records IN#18/132, 18 April 1864). The 1877 atlas map depicts both the mill and residence of Samuel Bowles. Additional confirmation comes from the industrial schedules for the 1850 and 1880 federal censuses. The reader shouldn’t draw any conclusions for the lack of Bowles mill entries for 1860 and 1870: the industrial schedules are notoriously incomplete, particular in their enumeration of small mills, smithies, wagon shops, and other small artisan enterprises. James H. Bowles appears in the 1850 industrial schedule along with two other “country mills” for which no further information is provided other than monthly average number of hands and their wages. Bowles employed an average of one man at \$20 per month. Seven other mills were listed with additional details, including quantity of wheat ground (16–25,000 bushels), employees (1–2), flour produced (3550–6000 barrels), and value of annual product (\$17,750–\$30,000). No doubt these were merchant mills producing for a broader market, while the Bowles mill did custom work for the local trade.

For reasons I have yet discover, the 1880 industrial schedules consistently are more extensive than those of the immediate preceding three censuses. (The 1820 industrial returns are rudimentary and incomplete, while Secretary of the Treasury Louis McLane’s

1833 mailed census returns targeted the Northeast and were compiled in connection with the tariff debates in the US House of Representatives [McLane 1969; see also Gibb 1985].) Table 3–6 reproduces the 1880 mill data for the Hancock District. These data clearly portray a small mill, likely managed by William Bowles for his minor nieces and nephews. It operated year round for the local trade, grinding mostly wheat and corn, some of the latter no doubt for livestock feed on demand or for sale at William A. Bowles feed and grain store, located nearby at Lock 52 on the C & O Canal. R. E. Taney’s mill was comparable in size and situated on the Little Tonoloway Creek, just north of the National Road on the west side of town. It appears on the Taggart 1859 map as Jacob Slagle’s mill. Mindenhall’s mill both custom milled and produced for the market, undoubtedly shipping barrels of flour by way of the canal or the B & O Railroad. It drew its waterpower from the canal in a manner similar to the mills of a half–century earlier on the Potowmack Canal.

Table 3–5. Census entries for the extended Bowles family, 1840–1880.

Census	Household	Name	Age	Occupation	Realty	Personalty	Years	Married
1840		Jas H Bowles		N/A	N/A	N/A	1781-1849	12/12/1821
		Martha Swope					1799-1861	12/12/1821
1850	#914/931	Martha Bowles	50	Farmer	N/A	N/A	1799-1861	
		Samuel	23	N/A			1826-1878	
		Ellen L.	17					
		Jas H Bowles	15					
		Mary E	14					
		Susan	8					
1850	#885/901	John J. Bowles	84	N/A	N/A	N/A		
		Roxann	25				1822-1900	
		Ann L	8					
		Johnson J	5					
		[Jas] Hamilton	1				1849-1904	
1850	#358/370	John J. Bowles	41	Miller	\$7,000	N/A		
		May H.	26				1825-1905	
		Anna S	11					
		John C	8					
		Ernst	1					
		Mary Sparrow	18					
		John Young	36	Miller				
		Wm Sennett	26	School Teacher				
1850	#123/127	John H. Bowles	30	Miller	N/A	N/A		
		Mary A	26				1826-1857	
		Sarah L	4					
		Isabella	3					
		Clara G	1					
1860	#1201/1173	Samuel Bowles	34	Farmer	\$7,000	\$1,500	1826-1878	
		Mary	22					
		Susan	18					
		Martha Bowles	61				1799-1861	
		John H Rohr	24	Miller				
	#780/752	John Bowles	48	Miller	\$8,000	\$1,500		
		Ann S	14					

		John C	12				
		Ernst	11				
		Joseph	9				
		Thomas	7				
		[illegible]	5				
		John Young	43				
		Robert [illegible]	40	Laborer (Black)			
	#1070/1042	John J. Bowles	43	Farmer	\$14,000	\$7,000	1815-1868 Colonel?
		Rose	33				1900
		Ann D	17				
		Johnson	15				
		Henrietta	13				
		Rose	7				1855-1921
		Jesse	4				1858-1923
		Frank	3				
		Harry	1				1859-1912
1870	#177/189	Samuel Bowles	43	Farmer & Miller	\$8,000	\$1,500	1826-1878
		Amanda	40	Keeping House			1829-1878
		William	9	At Home			1861-
		Preston	7	At Home			1863-1942
		Hattie	3	At Home			
		Evan	1	At Home			
							Widow of Austine
		Ellen Taney	38	No Occupation		\$300	Brooke Taney
		Ethelbert	13	At Home			
		Augustine	11	At Home			
		Susan Bowles	28	At Home			
		Louisa Gray	15	Domestic			
1870	#178/190	Wm A Bowles	45	Farmer	\$8,000	\$800	1824-1903
		Mary A	42	Keeping House			1825-1905
		Wm Dugan	35	Farm Laborer			
		Amanda Gray	11	Domestic			
		David Barber	32	Merchant		\$400	
1880	#10/10	Wm A Bowles	56	Farmer	N/A	N/A	1824-1903
		Mary A	52	Keeping House			1825-1905
		Susan	38	Boarding			Sister
		William	19	Boarding			Nephew
		Preston	17	At School			Nephew
		Evan	11	At School			Nephew
		Hattie	13				Niece
		Fayette Hart					Brother-in-law
		Terry Burk		Servant (Black)			
		Martha J Houck		Cook			



Figure 3-7. Samuel and Amanda Bowles burial plot and monument.



Figure 3-8. Bowles family monument, detail, east face.

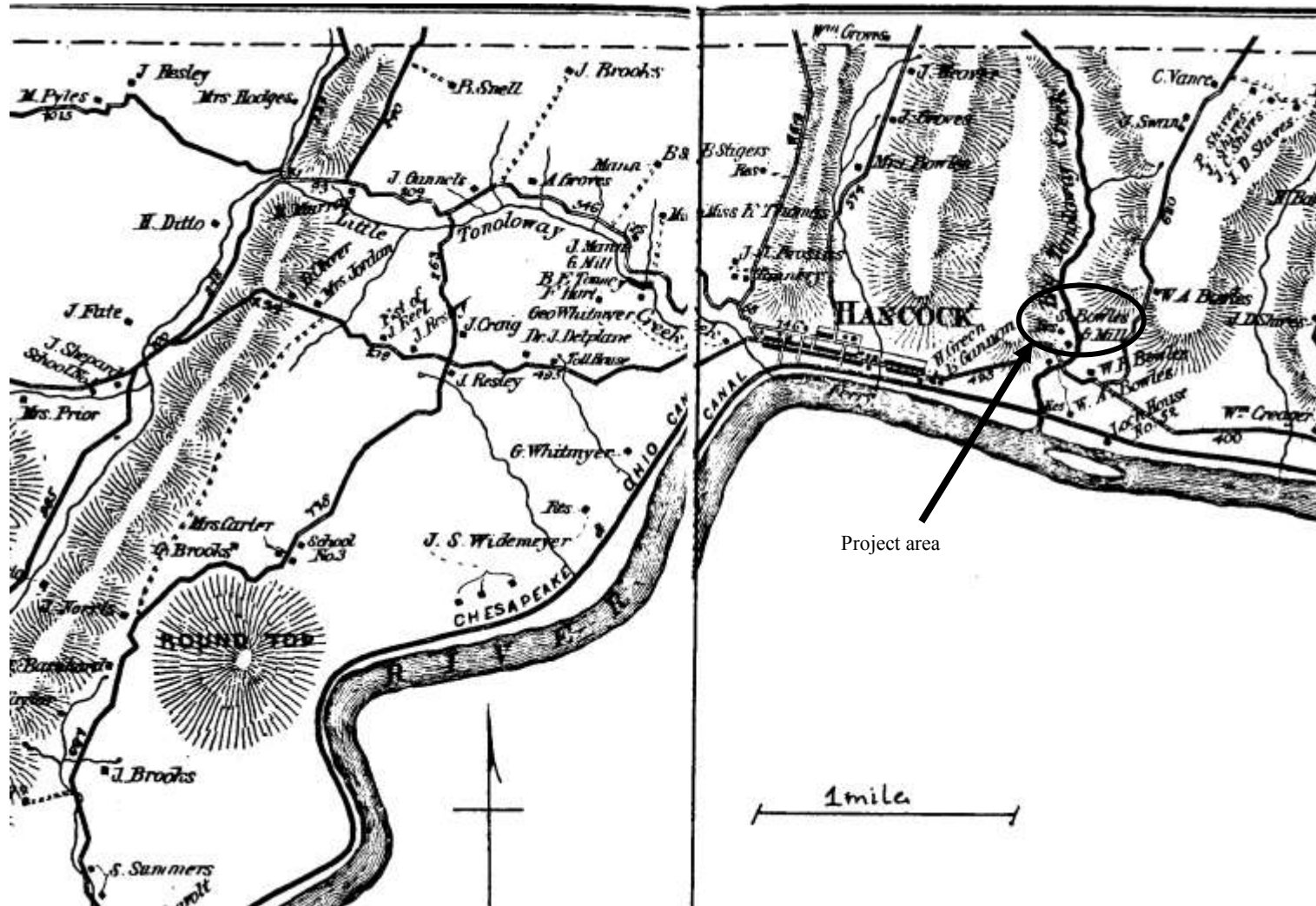


Figure 3-10. Lake, Griffing, & Stevenson (1877) Map of Washington County, detail.

Table 3–6. 1880 census returns for Hancock District mills.

Owner(s)	Heirs of Samuel Bowles	R. E. Taney	Mindenhall
Capital	\$6,000	\$4,000	\$6,000
Greatest # of male workers	5	1	3
Average # of male workers	2	1	3
Average workday, May–Nov	12	10	10
Average workday, Nov–May	10	10	10
Average daily wages, skilled workers	\$1.00	\$1.25	\$1.50
Average daily wages, unskilled workers	\$0.50	\$1.00	\$1.00
Annual total paid labor	\$300	\$225	\$1,020
Months operating full time	8	10	12
Months operating three–quarter time	4	2	0
Months operating half–time	0	0	0
Type of trade	Custom	Custom	"Half Market"
Creek	Tonoloway	Tonoloway	C&O Canal
Fall (feet)		6	6
Wheel type	Turbine	Breast	
Breadth (feet)		4	10
Revolutions per minute		50	30
Horsepower		15	10
Wheat, bushels	3000	3000	15000
Wheat, value	\$3,000	\$3,000	\$15,000
Other grain, bushels	1000	1000	1000
Other grains, value	\$500	\$500	\$500
Mill supplies	\$300	\$250	\$900
Wheat flour, barrels	600	600	2500
Buckwheat flour, pounds	450	300	500
Cornmeal, pounds	54000	54000	54000
Value of produce	\$5,000	\$4,725	\$19,035

The census returns also provide bits of important information on the Bowles mill; sp., it used a 4 ft wide turbine and a 6 ft fall of water. Taney’s mill, on the other hand, used a breast wheel, a common wheel arrangement where the fall was low due to a low dam or low stream gradient. Turbines, available as early as the 1830s, were not widely used prior to the Civil War, and then generally for sawmills requiring high rotational speeds. The turbine at Bowles mill might have been an original installation if James H. Bowles built the mill in 1831. But he surveyed Bowles Security at the end of February in 1831 and the mill was already used as a landmark by year’s end in the road commissioners’ meeting notice. The evidence suggests, but does not demonstrate unequivocally, that the Bowles mill predates 1831 and possibly was built by the younger William Yates (no mills were noted for the Great Tonoloway Creek in the 1783 Federal Direct Tax Assessment, although Richard Barnes owned two mills elsewhere in the Hundred). The turbine very likely was a modification to the mill’s power system and probably of recent date when the census marshal questioned William A. Bowles in 1880. Indeed, William’s possible role in this change cannot be discounted.

Leads as to the vintage of the Bowles mill proved inconclusive or misleading. Fry and Jefferson's 1751 map depicts Little Tonoloway and Tonoloway creeks, but provides no further detail. Varlé's map of 1808 (Figure 3–11) bears a mill symbol in the vicinity of Hancock, but nothing can be extrapolated from that because of the scale.

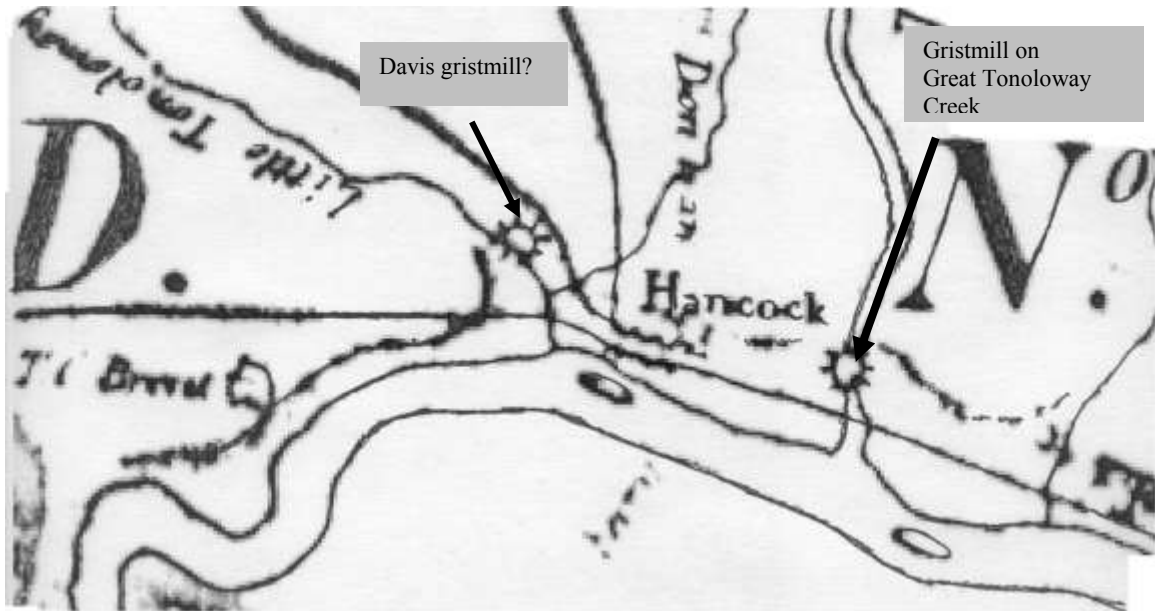


Figure 3–11. Varlé's 1808 map, detail (enhanced).

North is top of map, scale unavailable.

The most misleading bit of information, but dismissed within minutes, is that provided by Scharf (1882) and reiterated, with errors, by McGrain (1971). On page 999 (not 99, as reported by McGrain),⁹ Scharf transcribed an account from an official document, the likes and location of which he did not specify:

In 1819 the roads in Washington County were the following:

No. 30.—From the Big Tonoloway by Henry Davis' mill, to the Pennsylvania line, and from Hancock Town, by Jeremiah Stillwell's to the Pennsylvania line near Samuel Graves'. Distance, nine miles. John Ressler, supervisor.

No. 31.—From Little Tonoloway to Sideling Hill Creek, near Goulding's. Distance, ten miles. [no supervisor listed]

Henry Davis purchased nearly 30 acres of Caledonia and Polks Meadows from William and Elizabeth Long on April 12, 1806, for £1,150 (Land Records S/276), a substantial

⁹ McGrain (1971) also wrote that the September 29, 1953, issue of the Herald-Mail [Hagerstown newspaper] placed the Bowles mill on the Greencastle and Williamsburg Turnpike. That road more or less paralleled the east bank of Conococheague Creek, approximately 25 miles east of Hancock. He seems to have accepted that observation without question.

sum for such a small property, suggesting it was extensively improved. The surveyor, however, put the tract one-half mile from the confluence of the *Little* Tonoloway Creek and the Potomac River.

Henry Davis, Miller, purchased a second parcel of barely more than an acre from Elias Stillwell, Tanner, and Stillwell's wife Sarah, on June 11, 1810 (Land Records W/317). The lot was on a 50-acre parcel on the Little Tonoloway Creek that Stillwell had purchased of Baltimorean William Rapell some 15 years earlier (Land Records J/66). Finally, on November 14, 1818, Henry Davis purchased James Hampton's two-fifths interest in 'Snowball City' for \$280, land on which Henry Davis lived.

The upshot is that Scharf or the recording clerk mistranscribed the road description: there is no evidence that he ever owned or operated a mill on the Big, or Great, Tonoloway Creek. On the contrary, he appears to have owned the mill later acquired by Jacob Slagle and then by R. E. Taney on the Little Tonoloway Creek.

Precisely when the mill closed has not been determined. Leatherman (1985: 22), writing the reminiscences of a local, provides this one clue:

James P. Hook and Samuel Bowles ran flour and feed mills operated by water power....All the mills used buhr stones for grinding and all were operated on the toll system—they took their pay for custom grinding from the grain.

She also reported four mills in operation in Hancock in 1825, although that tidbit of information could not have come from a primary informant.

The use of the plural 'mills' suggests that Hook (probably Houck) and Bowles did not work at a single mill, but managed separate operations. The choice of the terms 'flour' and 'feed' also serves as a reminder that mills produced different products: different kinds and grades of flour, various feeds for livestock, and possibly mash for use in distilleries. Buhr stones—composite runner and bed stones made from fragments of tough, sharp, imported stone cinched together in an iron hoop, much like the felloes of a wooden wheel with an iron tire—were preferred throughout the Eastern United States, although some quarrymen cut grinding stones from native bedrock in Brockton, Massachusetts, Ulster County, New York, and elsewhere (e.g., Howell and Keeler 1977: 69, 72).

Taking a percentage of the grain prior to milling also was a time-honored means of the miller receiving payment, with roots in English tradition, and Colonial laws often stipulating the allowable percentage. Samuel Bowles might well have marketed his take through his brother's feed and grain store.

Martenet's 1885 map of Washington County, unavailable for reproduction here, depicts a mill on the lower Great Tonoloway Creek, but does not indicate who was running it or even if it was in operation. The clue about when the mill closed is the reference to Samuel Bowles: more than a century after his death, he was still remembered as a miller, suggesting that few followed in his footsteps. There is no indication that any of his children became millers, including his son Preston who appears to have inherited the mill lands. He appears in the Washington Board of County Commissioners tax assessment roles for 1896–1910 owning 190 acres valued at \$5.00 per acre with

unspecified improvement. The personality of J. T. Bridges, owner of the cement mill, on the other hand, was described in detail, including the value of land, livestock, houses, milling machinery, sawmills, and a hotel. Ferguson (1932b) noted that Preston Bowles owned 190 acres along the west side of the Great Tonoloway Creek in the early 1930s. Hagerstown's *The Daily Mail* noted Preston Bowles' death in 1942:

Preston L. Bowlus (sic), well known citizen of Hancock, died Saturday morning a 10 o'clock, aged 78 years...He is the last surviving member of his family.

In fact, he bequeathed his entire estate to Julia Barnhart, including a farm and buildings valued at \$3,500 (Wills 19: 376). The 1901 and 1944 (Figure 3–12) USGS topographic maps lack detail.

Preston Bowles' likely inherited his house from his parents and, more than a half-century later, bequeathed it to Julia Barnhart, who subsequently married Edward J. Lynn. That house was demolished in the last few years (see brief site description in Chapter 6), but was inventoried in July 1978 by Paula Stoner as WA–VI–012. At the time it was part of a 54-acre tract owned by Julia B. Lynn. Since the amount of information provided at the time was meager, I will quote the relevant descriptions and statements of significance in their entirety:

This stuccoed farmhouse would appear to date from the last quarter of the 19th century. It is a two story, five bay structure[,] L-shaped with a two story, three bay wing extending to the rear. The building may be of brick construction. Windows have two over two pane sashes with arched tops. The main entrance has an arched topped transom and sidelights around the door. Behind the house is a brick outkitchen.

This house follows a traditional regional form. It is a five bay L-shaped house with a central front entrance. Such a form was popular in Washington County from the 18th and through the early 20th century.

On the Preston Bowles land and associated with the house was a 250-car drive-in movie theater, the Hancock Drive-in, reputed to have been in operation between 1950 and 1955. The owners relocated the theater, in advance of construction of I-70 which impinged on the theater grounds, to the intersection of what is now MD 144 and the westbound I-70 off-ramp where it continued in operation until 1984. The site on the Great Tonoloway Creek was reopened, on a reduced scale, as the Tri-State Drive-in between 1958 and 1967. The site is now a private residence; the projection booth and possibly a snack bar adaptively reused as a dwelling and garage, respectively.

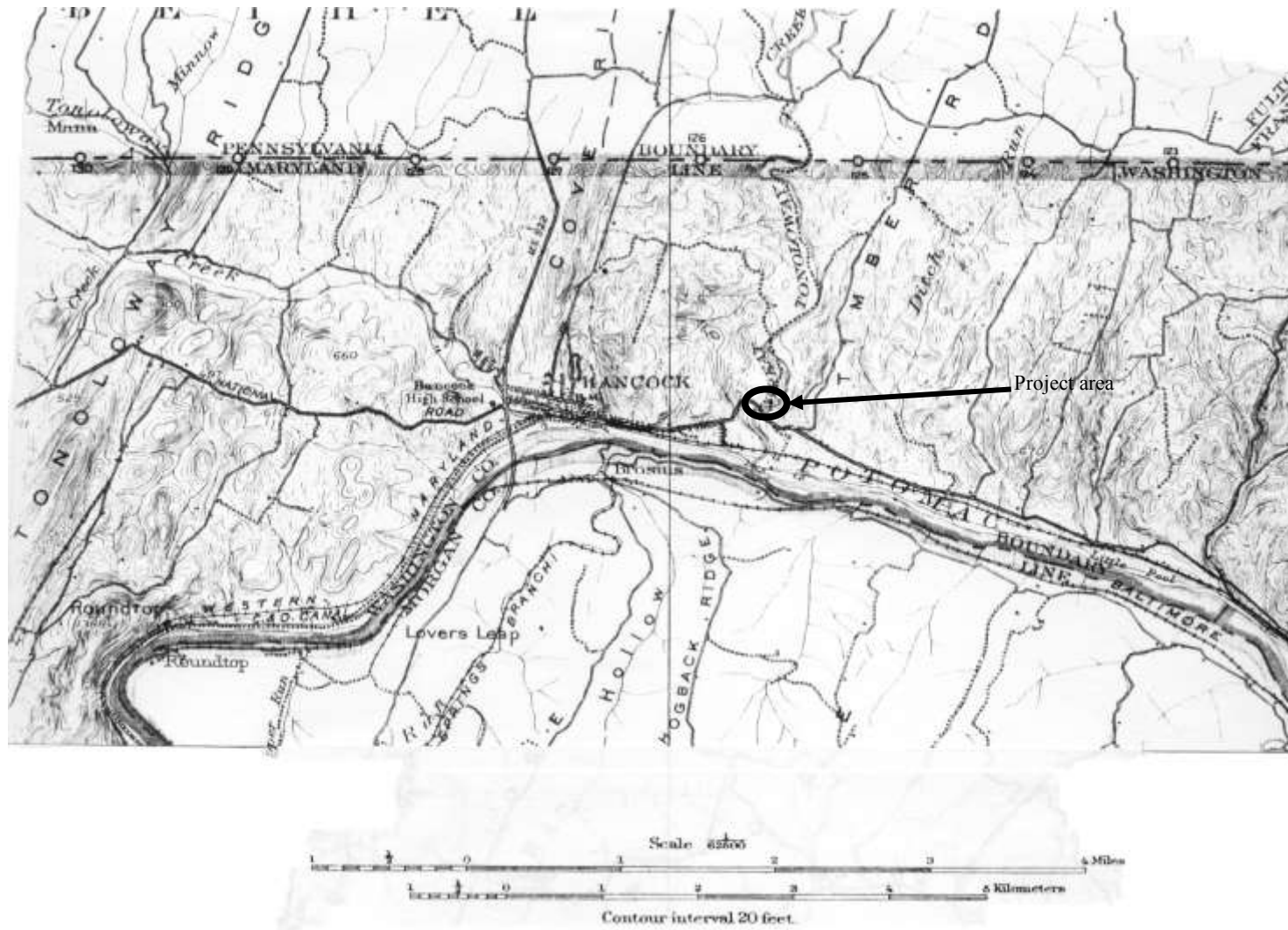


Figure 3–12. U.S.G.S Topographic map, Hancock 15' quadrangle, detail (1944)

The Hancock Drive-in's life cycle falls neatly within the statewide pattern with the rapid growth in popularity of these institutions during the early 1950s and their demise in the early 1980s (Figure 3-13).

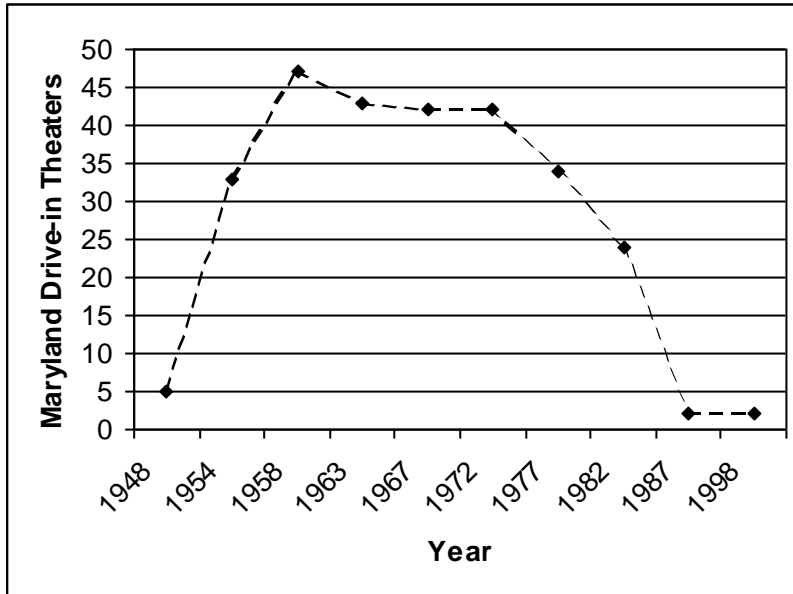


Figure 3-13. Rise and fall of Maryland's drive-in theaters, 1948-1998.

(Source: (<http://mywebpages.comcast.net/driveins/frames.htm>))

The idea for drive-in theaters was patented on May 16, 1933 (Pat.# 1,909,537), but that patent was invalidated in May 1950. The number of pre-1950 theaters (<1000) nationwide increased nearly 500% by 1958. Growth stagnated in the 1960s, eventually declining by 20%, and continued to decline throughout the 1970s and early 1980s. By the late 1980s, nationwide, drive-in theaters were virtually extinct. Maryland's drive-ins followed that same trajectory.

Summary and Conclusion

Archival research indicates a low probability of encountering intact prehistoric deposits in the project area due to a variety of topographic, hydrologic, and historical reasons. The probability of encountering historic period resources, on the other hand is high. An initial assessment of the area by SHA archeologist Carol A. Ebright led to the preliminary recording of submerged timbers and a stone masonry wall within the project right-of-way. Subsequent, more prolonged visits to the site by me led to the discovery of additional timbers and wall remnants as well as of two sites adjacent to, but outside of, the I-70 right-of-way: a dwelling, likely the home of the miller, and the drive-in movie theater. Although all three sites will be discussed in subsequent chapters, the two lying outside of the right-of-way will be discussed only briefly. Significance will be assessed in terms of the following two themes and periods:

1. Agricultural Intensification, 1776–1860
2. Industrial Decline and the Small Farm, 1860–1930

The themes and dates differ slightly from those used in the Maryland Statewide Historic Contexts Organization, but they are appropriate to developments in west–central and western Maryland. To the two following contexts, we might add those sites dating between 1861 and 1863 that relate to military occupation during the Civil War. No record of any damage to the mill site has been uncovered for the years 1862 and 1864, but the prospect of finding such material, especially for the Confederate occupation of July–August 1864 remains high.

AGRICULTURAL INTENSIFICATION, 1776–1860

Maryland’s transportation system through the Great Valley, Ridge and Valley province, and the Allegheny Plateau matured between the onset of the War for Independence and the War Between the States. Private interests financed canals and turnpikes beginning in the first quarter of the 19th century. The rapidly expanding rail network eventually eclipsed the canals.

Well developed, if not well financed, transportation fostered agricultural and industrial development in the region. Grains—particularly wheat and corn—flour, dairy products, and fruit found ready markets locally and in eastern markets. Bulk manufactures such as hydraulic cement and sand suitable for glassmaking also could be shipped inexpensively and quickly.

INDUSTRIAL DECLINE AND THE SMALL FARM, 1860–1930

Beginning in the years immediately preceding the Civil War and continuing throughout the 19th century, farms increased in number, but decreased in average size (Wesler et alia, 1981:81).¹⁰ Principal crops in the county as a whole changed only in relative importance, subject to the vagaries of weather and the produce market. But the agricultural economy of Hancock changed rapidly beginning in the 1880s as orchards replaced grain fields and dairy pastures.

The war appears to have little affected industry in Hancock, which was geared largely to the needs of the transportation corridor that passed through the center of town. Mining diminished, first with the closing of the cement mill, then with that of the sand quarry.

¹⁰ The decennial federal censuses recorded 1,039 farms averaging 231.1 acres (93.5ha) in Washington County in 1850, and 2,393 farms averaging 104.1 acres (42.1ha) in 1900; roughly a doubling in the number of farms coincident with a 50% reduction in farm size.

Chapter 4. Research Design and Methodology

Research Design

Background research indicated that a Phase I archeological survey of the affected portion of the I-70 right-of-way has a high probability of yielding remains of the 19th-century Bowles Mill, but little else of prehistoric or historic vintage. That probability became a certainty after extensive archival research and limited fieldwork, therefore the project developed into a Phase II site examination to determine the horizontal and vertical limits of the site, its integrity, its eligibility for inclusion into the National Register of Historic Places and, if eligible, the criterion or criteria under which the Bowles Mill site would be deemed eligible. The only other cultural resources that might occur within the right-of-way are fishweirs. Since these prehistoric and historic features have not been sought on the smaller tributaries, the likelihood of encountering them on the Great Tonoloway Creek cannot be estimated.

The goals for this study are:

1. Identify and interpret cultural materials within the right of way for improvements to the I-70 bridge, and
2. Collect sufficient data with which to make and justify a determination of National Register eligibility.

The issue of fishweirs has been discussed at length above and needs no revisiting here. Suffice it to say that the streambed requires close visual inspection for V-shaped alignments of stone rubble, the vertices downstream of the wings. Given the rockiness of the streambed and lack of unconsolidated sediments, weirs of the wooden stake variety are unlikely to have occurred or to have been preserved in this portion of the stream. Since work on regional fishweirs is still at a very preliminary stage of survey and identification, any discussion of a research design along these lines would be highly speculative and premature; and, in any case, a close inspection of the creek from its westward bend to the Old MD 40 bridge revealed no evidence of fishweirs or other mill dams. An extended discussion of mills and millsite archeology, however, is very much in order since prior mill studies will play an important part in determining the historical significance of the Bowles Mill site.

Rural Mills and Millsite Archeology

Set astride idyllic streams in rural settings, reminders of the peace and independence and self-sufficiency of America's Wooden Age, water-powered mills easily engage the interests of historic preservationists, archeologists, and the public. They have been preserved in many places, some in working condition, the machinery actuated several days each year in observance of 'Olde Tyme Dayes,' apple harvest festivals, and other local heritage and cultural celebrations.¹¹ Where mills have disappeared, some

¹¹ Examples include: Treman State Park/Enfield, Stony Brook, and New/Blydenburgh gristmills in New York; and Wye, Cecil's and Rock Run mills in Maryland (Zimiles and Zimiles 1973; Stott 1974; McGrain 1998: 34-35).

heritage groups have recreated them, the mill designed by architectural historian Fiske Kimball for Stratford Hall, Virginia, for one example. There appears to be no question in the minds of many that extant mills are historically important and worthy of preservation.

Those of broader thinking accept the archeological remains of mills as also worthy of protection and study, provided those sites retain sufficient integrity to inform scholars of their general appearance and technological systems. Where in situ preservation is impractical, data recovery may be required to recover the information for which the site has been deemed historically significant. But there's the rub: which data are significant and why? Morin (1991), in a paper revealingly titled, asks "Why Dig Another Mill Site?"

So, what is the contribution of archaeological research in increasing our understanding of mill technology, changes in this technology, and the role mills played in the social and economic fabric of the surrounding region?

Based on the results of studies conducted to date, including the East Creek Mill [Cape May County, New Jersey] investigation, the answer to this question is: very little. This does not out of hand suggest that mills should not be examined archaeologically. What it does suggest is a change in the orientation of this work. The research questions posed by archaeologists may be the wrong questions to be asking.

Issues such as reuse, craftsmanship, speed of construction, may be a new focus for further archaeological research on mills. Through archaeological investigations these manifestations can be best and most effectively investigated (Morin 1991: 105).

I couldn't agree more. I couldn't agree less.

Morin suggests a connection between reuse of processed, or dressed, wood and the value a community places on crafted wood products. "The reuse of [lumber] suggests that crafted wood was at a premium. Thus, it was more efficient to reuse a processed element than to invest the time and/or skill in manufacturing a new item" (Morin 1991: 106). Efficiency? Placing a premium on crafted wood? One might forget that Morin is discussing a sawmill where the sawyers presumably had the raw materials, skills, and equipment to shape and install any structural members necessary for the construction and repair of their mill. Perhaps more surprising, Morin mentions in passing themes—not questions—related to mill technology and social function: he never really tells us what questions he posed of this sawmill, or of any other mill studies he reportedly examined. (He cites only three, all by Edward Rutsch, and a 1984 study of New Jersey sawmills by an archaeologist who seems otherwise not to have distinguished himself in the field of industrial archaeology. Experience analyzing, evaluating, and interpreting these kinds of sites is critical to anyone presuming to establish research directions and preservation priorities.) Nor does he specify why mills (he doesn't distinguish between saw, grist, and fulling mills) might be more appropriate for a study of cannibalization, than dwellings, barns, or chicken coops.

Cheek and Heck (1992), leaning on Morin's work (1991) but investing little in his narrowly defined research focus, recommended Maryland's Wilson Mill site (18DO177)

as eligible for inclusion into the National Register of Historic Places, per criterion 36 CFR 60.4 (d):

This mill is an example of a once–common type of industrial structure that played a significant role in economic expansion during the late nineteenth century in Dorchester County. The significance of the mill structure derives from the information it contains about the construction methods and techniques used in these structures. Such information provides direct evidence of the folk system of skills and practices of the craftsmen and millwrights, professional or amateur, who built the mill.

Cheek and Heck, citing Morin (1991), also note the potential for the site to provide information on reuse of structural members in reconstruction and repair, although they seem to do so with little conviction. Their recommendation for complete data recovery in the event that the mill could not be preserved in situ was to gather information on the mill’s construction through preparation of measured drawings and large format photography under the direction of an architectural historian, an approach clearly modeled on HABS/HAER techniques for recording standing structures. Again, I disagree, for a variety of reasons that pertain as well to Morin’s assessment of the East Creek Mill.

The Wilson Mill site is an archeological site, not a standing structure. Its examination and interpretation requires knowledge of cultural and natural transformation processes, stream migration and sedimentation, and archeological features related to the impoundment, funneling, and management of water. The investigator must bring to the site knowledge of industrial and domestic artifacts and familiarity with historical and anthropological problems that the mill site might be used to elucidate. This sounds like the work of archeologist, perhaps in collaboration with an architectural historian, but governed by the research priorities and expertise of the archeologist.

Cheek and Heck jump far too quickly to the expedient of determining how the mill building was constructed without giving due concern to the timber and water delivery systems. Where was the ramp or ‘ways’ by which large timbers were loaded into the mill and onto the carriage? Where was the dam and how was it built? How, in a relatively flat area, did the millwright manage an 11 ft fall? (Millwrights often solved the low stream gradient problem by erecting low dams well upstream of the mill and then building long head races.) More important, in what context was the mill constructed and operated? Although Morin comes closer to an analysis of the mill and its construction within a social and market context, both studies fail to examine the strategies developed and instituted by the millers. And neither examines the available millwrighting and millsite archaeological literature, ignoring the work of Langhorne (1976), Howell and Keller (1977), Macaulay (1983), Zimiles and Zimiles (1973), Schuyler and Mills (1976), Penn and Parks (1975), and Wilson (1975), the latter three all dealing with individual sawmills.¹² Morin (1991: 102) would have benefited by comparing the wooden tub at the East Creek Mill site with the scroll–case turbine recorded by Penn and Parks (1975: 8) for

¹² Although an illustrator, and not an archeologist, Macaulay consulted with Patrick M. Malone and Theodore Z. Penn, both established, experienced industrial archeologists.

the Nichols–Colby Sawmill in New Hampshire, and prior knowledge of the wheelpit recorded by Wilson (1977: 44–47) for the Upper Factory Brook Sawmill in Massachusetts would have guided field recording of a similar feature at the Wilson site (Cheek and Heck 1992: 10–11). Finally, neither Morin (1991) nor Cheek and Heck (1992) explicitly address the issue of variability among mills.

Oliver Evans' (1850) *The Young Mill–Wright and Miller's Guide*, first published in 1795 and reprinted more than a dozen times since then, explicates hydraulic and mechanical principles and offers some solutions to practical millwrighting problems, solutions for which he received a patent from the Maryland General Assembly in 1787. It was not a template upon which all mills were built. (Closest adherence may be found in the mills of southeastern Pennsylvania, especially among the Amish mills of Lancaster County, an area near which Evans worked.) And, while consulting Evans will alert archeologists to the specific needs of saw and grist mills and improve understanding of the intricacies of water–power systems, *The Young Mill–Wright and Miller's Guide* should not blind investigators to the all important issue of variability, the bulwark concept upon which anthropological research is based and the key to understanding historical process.

Langhorne's (1976) study of mill–based settlement patterning drives this point home, albeit by his failure to recognize it. He proposed a model for settlement location and differentiation based on the location of market–oriented and materials–oriented industries; sp., sawmilling and gristmilling. His argument is flawed on many fronts, not the least of which is his reliance on census data from the 1850s onward, long after east–central New York State was settled. While one can't dispute his characterization of sawmills as relatively ephemeral complexes that often were moved in pursuit of receding tree lines and gristmills as relatively stable complexes accessible to permanent farms, his argument poses two types of industries: sawmilling and gristmilling.

Langhorne overlooked associated enterprises such as tanning (with the aid of tree bark, especially hemlock), the production of potash and pearl ash, and distilling, to name but three. He also overlooked the variety of products and services that formed continuums along which individual establishments created their own niche based on the operator's knowledge of demand and supply, and availability of skills and capital. In New York State, especially, mills specialized in the production of hubs for wheeled vehicles, spokes and felloes for wheels, singletrees, shingles, custom milled work for molding and window and door joinery, construction grade lumber, and other products. And the products might be aimed at local consumers and producers or at a larger regional, national, or even international market. Gristmills might have produced a variety of grades of flour—from fine to course meal and bran—for distant markets, course meal for local distilleries and feed stores, or purely custom work geared to the special needs of local consumers and producers. The New England colonies derived much of their economic strength from milling and transporting flour to the West Indies plantations, but not all mills served that market.

Recently, Conrad Goodwin (1994) offered a ray of sunshine to the problems of millsite archaeology in his discussion of test excavations within the northern of two windmills on the Betty's Hope plantation on the island of Antigua in the Lesser Antilles.

Archaeologists all make assumptions about sites and about how the different components work. On a sugar plantation, for example, spatial layout is extremely important. How the different parts—the mill, the factory, the fields, the roads, the residences (both labor and managerial), and all other elements—are arranged is critical to the sustainability of the plantation. These elements are supposed to work 'as a well-constructed machine.' All too often archaeologists intuitively base some of their interpretations on assumptions derived from models, and, therefore, do not excavate or only partially excavate components that may have critical explanatory value. At Betty's Hope, excavations were as thorough as possible; they uncovered details about the windmill that did not fit the model. The model was falsified, and the search for an alternative explanation of how the sugar juice got to the factory has begun (Goodwin 1994: 108–109).

Goodwin's excavations may have been as thorough as possible (given financial and political constraints), but they clearly weren't thorough enough. The elevation of the sugar juice collecting pan at the base of the windmill, relative to the site of the boilers, would not have admitted gravity flow of the juice, greatly diminishing the efficiency of the enterprise in a highly competitive, low-profit margin market (Karras 1992). Perhaps Goodwin's model of a Caribbean sugar mill requires refinement. More likely, it is his model of the Betty's Hope complex that needs attention. In either case, there may be some interesting information and ideas that would ultimately crystallize in pursuing the investigation further.

Goodwin (1994: 110) discovered the interpretative problems that arise from focusing on one component of a site: "This project has reaffirmed that excavating only one component of a site—in this case, the windmill tower on a sugar plantation—and trying to interpret that component without detailed consideration of how it fits into the total site complex can be an exercise in frustration." He also touched on the importance of variability in model definition. From that variability, the entire structure of the Caribbean may have changed, taking on a new character in the face of changing social and market conditions and, in the process, further changing those social and market conditions. In short, addressing variability and context, rather than relying on abstract models of folk culture and technological innovation, potentially can lead to the development of dialectical models that clearly and directly demonstrate the significance of a site to the social and economic development of the community and economy of which it was a part. Put another way, interpreting sites in terms of the decisions that the occupants of a range of sites made in the context of their community and the market simultaneously establishes their historical significance in terms of National Register criteria [c] and [d]. Whether they also meet criteria [a] and [b] depends on the prominence of the people and events directly related to those sites.

Although developed in connection with the study and assessment of the National Register eligibility of a late 19th-century wagon shop (Gibb 1985) and a contemporary cheese factory (Gibb, Bernstein, and Cassedy 1990), both in central New York State, the production strategy concept is well-suited for evaluating any industrial site. It facilitates

the organization of disparate archival, oral history, and archeological data for a particular site while also compelling the investigator to address the social and economic context of which the site was a part. A production strategy is a set of organizational, capitalization, technological, and marketing options around which an individual or corporation establishes a business. Successful businesses—that is businesses that achieve their goals (usually expressed as profitability and longevity)—generally develop well-integrated, flexible strategies to meet the demands of an ever-changing market. Production technologies, plant expansion (and, conversely, non-expansion), and waste disposal leave archaeological traces. Changes of ownership or management, materials procurement, marketing, and other organizational changes often leave documentary traces, involving as they do legal questions of property and debt. Some organizational practices such as capital investment also leave indirect archaeological evidence; e.g., plant expansion and the remains of machinery purchased from national and international manufacturers. The production strategy concept encompasses the production subsystems approach developed by Harris and Pickman (2000) in their study of the Hudson River ice industry (c. 1870–1920s), providing an explanatory device for the variations they observed in the production and transportation subsystems.

Production strategies is not an all-inclusive concept: it omits, for instance, attitudes of labor toward management, a weakness similar to that encountered by Harris and Pickman (2000), but addressed by Veit and Schopp (1999) in their study of a railroad roundhouse in New Jersey. Veit and Schopp (1999) reported a minimum of 153 bottles from two features, all of late 19th and early 20th century vintage. Of these, 117 were liquor flasks. Such deposits can be interpreted as resistance to management, but are not of themselves direct representations of production strategies. They are indirect representations—reactions to—the management strategies that comprise a particular production strategy. Evidence of labor's resistance to management, however, often may go unrecognized and unreported. Gibb, Bernstein, and Cassedy (1986), for example, found a cache of liquor bottles just outside of one corner of the Columbus Center Cheese Factory building in south-central New York State, but failed to recognize the importance of that deposit in their technical report and failed to even mention the deposit in their published report (Gibb et al., 1990). Such evidence may survive at mill sites as well, particularly in those instances—and here the Bowles Mill may serve as an apt example—where the mill owner did not regularly work in the mill, remanding daily management to a miller.

Factory owners and independent artisans developed and instituted production strategies, changing those strategies when, by their measure, it became appropriate and desirable to do so. Farmers also developed production strategies, material evidence of which can be found in census records and in the buildings and archeological materials surviving on farmstead sites. The broad applicability of the concept allows researchers to organize different kinds of data into a meaningful whole, and it facilitates comparisons between seemingly disparate units of analysis. The Phase II site examination of the Bowles Mill is hardly adequate to fully reconstruct the succession of strategies employed by the Bowles family over more than a half-century, much less for their possible

predecessors (post-1783-1831) or for the households and businesses they served; however, it should be adequate to determine whether sufficient evidence survives to allow such reconstructions, and therefore determine historical significance. The methods differ little, if at all, from typical examinations of industrial sites: only the organizing concept of production strategies is different.

Methods

ARCHIVES

With the assistance of historian Sarah Goode, I conducted intensive archival research on the project area at the Washington County Courthouse (Land Records and Orphans Court), the Western Maryland Reading Room at the Washington County Free Library (for which I gratefully acknowledge the help of librarian/archivist John Frye), the Maryland State Archives, and the Maryland Historical Trust library. Research focused on a chain of title for the project area, general historical and environmental research on the community of Hancock, and detailed genealogical research on the Bowles family. Ferguson's (1932a,b) reconstructed plats for western Washington County, brought to my attention by John Frye of the Washington County Free Library's Western Maryland Room, proved particularly helpful in this regard. I conducted a standard site files check and a review of archeological research in the immediate area, a simple undertaking given how little archeological research by avocational and professional archeologists has occurred in the Hancock quadrangle. I also reviewed my own library for materials on mills and millsite archeology, the source of much of what appears immediately above.

FIELD

Standard Phase I approaches—shovel testing and controlled surface collecting—are entirely inappropriate for the project area. The slopes are generally steep, the overburden from road construction deep, and the soils contain large, numerous stones that would thwart the completion of shovel tests. Most of the right-of-way is comprised of fill upon which the I-70 roadbed is constructed. The surface of the roadbed was photographed only. Phase I efforts in the field at the Bowles Mill site (18WA498) consisted of careful mapping with tapes of the visible ruins on the north bank of the creek and within the creek bed. Some scraping of recent detritus and humus was necessary in some cases to expose masonry on land. No excavations occurred within the water, although samples were taken with the aid of a hacksaw and axe from each of eight timbers and two planks for species identification. Justine Woodward McKnight identified each sample.

Since it lies outside of the I-70 right-of-way and will be unaffected by construction, no testing occurred at the Julia B. Lynn site (18WA499; MIHP# WA VI 012). The surface, however, was examined and a list compiled of temporally diagnostic artifacts (Appendix A). The field crew mapped the site with tapes and a compass. The Hancock Drive-in site was photographed, but no testing occurred because it lies outside of the right-of-way. An archeological site number has not been sought, but the State

Highway Administration will submit a Determination of Eligibility short form for this property to the Maryland Historical Trust.

Phase II testing at the Bowles Mill site employed a series of 2 to 2.5 ft wide trenches, 5 to 10 ft long, excavated stratigraphically, the soil screened through ¼-inch hardware mesh. All artifacts were retained and placed in resealable plastic bags with provenience information. All units were recorded with planview and profile drawings at a scale of 1:12 and photographed. I used color photography to more clearly record features, particularly those in the water.

The field crew recorded a small number of elevations of exposed features with a theodolite transit. A 4 ft length of reinforcement bar was driven into the ground at the upstream end of the site, about 4.5 ft north of the deteriorated portion of a stone masonry wall originally identified by Carol Ebright. That point was designated N400 E400 and assigned the arbitrary, but close to true, elevation of 420 ft above mean sea level. A second 4 ft length of reinforcement bar was driven into the ground approximately 20 ft southwest of the culvert and gully and designated N400 E300. All horizontal and vertical measurements were taken from these points. Two secondary elevation datum points—the top of a dressed stone and the top of a gravel stratum in Unit 8—were used avoid obstructions and to accommodate the difference in elevation from the highest and lowest portions of the site, taking into consideration instrument height, which exceeded the length of the ranging pole.

LABORATORY

Consistent with findings at other mill sites, few non-architectural artifacts were encountered on the site's surface or in the excavation units. Those that were recovered from the Bowles Mill site were retained, cleaned, and catalogued (see Appendix A). No prehistoric artifacts were recovered. The Bowles Mill material has been prepared for permanent curation, as per current standards and guidelines (Seifert 1999). Wood samples were not saved since the dam will not be adversely affected by construction and the components will remain undisturbed.

Chapter 5. Results

Introduction

Carol Ebright's initial assessment of the project area established the likely presence of at least a portion of the Bowles Mill. The Phase I survey clearly demonstrated that the millsite did lie within the I-70 right-of-way and probably was, in the main, intact. The State Highway Administration amended the work order, merging Phase I and Phase II into a single project. The results of the work appear below in an order that reflects a narrowing of the focus of the investigation, from project area overview and site inventory to investigation and analysis of the Bowles site. I have not tried to force the results into separate phases: given the continuity of methods at the Bowles site, that kind of presentation would be cumbersome and unenlightening.

Project Overview

Proposed construction is limited, for the most part, to widening of the roadway, adding 25 ft to the outer edges of the westbound and eastbound lanes for a total linear distance of approximately 2400 ft, exclusive of the bridge (Figure 5-1). Two new bridge piers on the north side of the existing westbound span will support the widened deck. This portion of the area of potential effects is generally steep, with exposed bedrock in areas lacking fill, and already disturbed by highway construction (Figures 5-2 through 5-5).

Running parallel and just south of I-70 is the old National Road, subsequently incorporated into the numbered highway system as Route 40, and later renamed Tollgate Ridge Road when MD 144 replaced Route 40 as the principal artery. Tollgate Ridge Road crosses the Great Tonoloway Creek just east of its intersection with Rayloc Road (Figures 5-6 and 5-7). The bridge is a two-lane pre-stressed concrete arch bridge constructed on stone masonry abutments. The abutments may be survivors of an earlier span, washed out in one of the area's severe floods. The bridge and roadbed lie south of the area of potential effects.

West of the Rayloc Drive-Tollgate Ridge Road intersection, on the north side of the latter, there is a large residential lot abutting the south right-of-way line of I-70. It is the site of the 250-car Hancock Drive-in Theater, reputedly in operation from 1950 to 1955, reopened from 1958 to 1967 as the Tri-State Drive-in Theater. The projection booth and concession stand survive, albeit modified for residential purposes, as do dome of the berms on which theater-goers maneuvered the front ends of the automobiles (Figures 5-8 through 5-9). Neither the speakers nor the screen survive, and the ticket booth (erected behind the screen, a typical arrangement to control entry) also has been removed. State Roads Commission Plats 18688 and 18887, dating to 1958 and 1963, respectively, illustrate the theater layout, then owned by Edward J. Lynn (Figure 5-10).

Rayloc Drive follows, in part, the course of a farm road that once led from the old National Road (a.k.a. Old Route 40, now Tollgate Ridge Road) northward to the Julia B. Lynn House (Figures 5-11 through 5-14). The part of the road was abandoned and the remainder extended further north along the creek to provide access to the Rayloc/NAPA automobile parts refurbishing factory (after 1972).

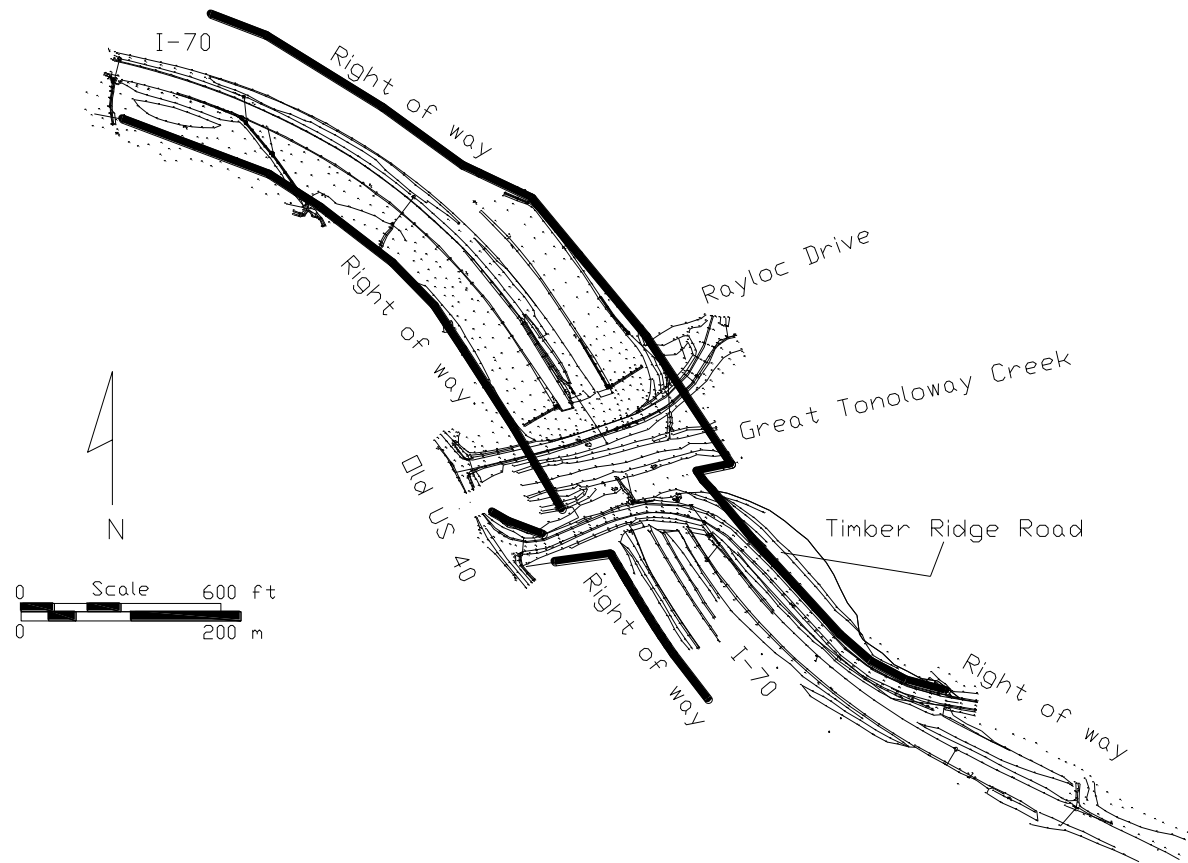


Figure 5-1. I-70 bridge widening right-of-way.



Figure 5–2. North end of project area, westbound lanes.



Figure 5–3. North end of project area looking southeast to bridge.



Figure 5-4. I-70 overpass and Timber Ridge Road.



Figure 5-5. Timber Ridge Road, looking east, and I-70 overpass.



Figure 5–6. Tollgate Ridge Road bridge over Great Tonoloway Creek.
Looking west.



Figure 5–7. Great Tonoloway Creek.
Looking upriver from Tollgate Ridge Road bridge.



Figure 5-8. Hancock Drive-in concession stand and projection booth.
Note berms in foreground and new house in background.



Figure 5-9. Berms of Hancock Drive-in Theater, looking south.

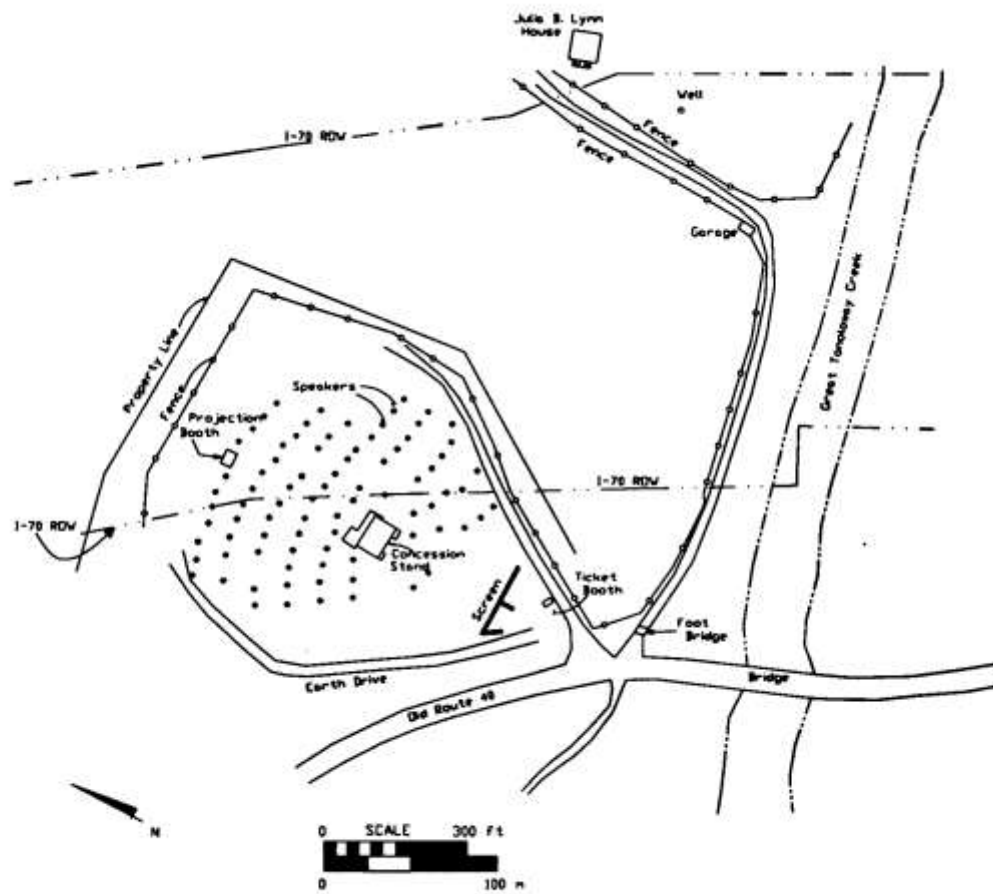


Figure 5-10. Hancock Drive-in and Julia B. Lynn House.
 Source: State Roads Commission Plats 18688 and 18887.



Figure 5-11. Realigned portion of Rayloc Road.
Looking south across creek. Note new utility line.



Figure 5-12. Abandoned farm road viewed from Rayloc Road.
Grade pile in foreground, probably from demolished garage.



Figure 5–13. Julia B. Lynn House site (18WA499).
Looking south. Surface graded, c.2000.



Figure 5–14. Julia B. Lynn House site (18WA499).
Close-up of graded surface. Note brick rubble.

The Julia B. Lynn site lies along, and just outside of, the north right-of-way line of I-70, on land owned by the Genuine Parts Company. As noted in an earlier chapter, Paula Stoner inventoried the site in 1978 as WA-VI-012. Two photographs accompany the site form in the files of the Maryland Historical Trust. By the time I arrived on site in July 2002, the buildings had been razed, and recently judged by the appearance of the ground. The field crew mapped the site and inventoried—but did not collect—temporally and functionally diagnostic artifacts on the surface (Figure 5–15; Appendix A). The house, attributed by Stoner to the last quarter of the 19th century, undoubtedly was the home of Preston Bowles (c. 1885–1942) and possibly of his father, miller and farmer Samuel Bowles. Whether or not his grandfather, James H. Bowles, Esq., built the dwelling cannot be determined with the data at hand. The few surface artifacts inventoried date to the late 19th and 20th centuries, but they are not necessarily representative of the site’s assemblage. No effort was made to determine the historical significance of the Julia B. Lynn site since it lies outside of the right-of-way and beyond the area of potential effects. It should be noted that, despite razing, it may have qualities of significance in American history and archeology on the bases of its possible association with locally prominent James H. Bowles, who played some part in Maryland’s 1836 constitutional convention (Criterion [b]), and in the information it may provide on a 19th century family of millers and farmers (Criterion [d]). The site appears to have played no role in Hancock’s two Civil War events—the bombardment and successful defense by the Union of the railroad and canal in 1862, and the Confederate occupation in the summer of 1864—but that has not been confirmed.

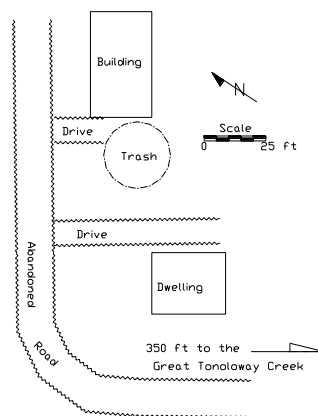


Figure 5–15. Plan of the Julia B. Lynn site.

Only one cultural resource was encountered within the area of potential effects, and a marvelous resource it is: a 19th-century gristmill with a portion of its dam cribbing

surviving within the streambed. A savvy, sharp-eyed observer might suspect a dam or weir from the middle of the I-70 bridge: a riffle extending perpendicularly across the stream with no evidence of a protruding rock ledge and the remainder of the stream within view devoid of similar riffles (Figures 5-16 and 5-17). Reconnaissance at stream level reveals timbers across and perpendicular to the stream flow, most submerged, but some exposed during this, one of the worst summer droughts in the past century. Several timbers bear notches and pointed ends that fit into the notches of others (Figures 5-18 through 5-21). On the north bank (the south bank is very steep), on the remains of a terrace partly modified by the construction of Rayloc Road and a new utility line, a mound of earth—a dam remnant—and a masonry wall—a headrace—lie adjacent to the submerged timbers (Figures 5-22 and 5-23).

The field crew waded the streambed from the Tollgate Ridge Road bridge to the sharp, westward bend in the creek to the north without finding any other evidence of dams or weirs.

All of the timbers were mapped and ten elements—eight timbers and two planks—sampled for identification (Table 5-1; Figure 5-24; Appendix B). Nine were identifiable to genus, the tenth only as a conifer. There does not seem to be any pattern in the placement of woods, both locally available white oak (*Quercus* sp.) and yellow or hard pine (*Pinus* spp.) having been used for the cribbing, but not in any distinct spatial patterning. If other species of lesser resistance had been used in the cribbing, they are no longer present among the timbers. The planks, not surprisingly, were of pine: it is simply easier to saw into planks than the harder oaks.

Table 5-1. Identification of wood samples by genus.

N.B. See Figure 5-24 for sample locations.*

Sample	<i>Pinus</i> spp.	<i>Quercus</i> sp.	Indeterminate Coniferous	Length (ft)	Diameter (inches)
1		X		17	12
2		X		16	
3	X			47	
4	X			67	8
5		X		9.5	9
6			X	24	8
7	X			6	7
8		X		*	10
9	X			*	8x½
10	X			*	8x½
11	Unsampled			1.5	
12	Unsampled			11	
13	Unsampled			*	
14	Unsampled			7.5	

*Asterisks indicate planks for which length could not be determined. Notches typically measured 1 ft in length. Diameters of many timbers could not be reliably determined due to eroded surfaces and irregular surfaces.



Figure 5–16. Dam remnant in creek, middle ground.



Figure 5–17. Creek from dam remnant to I-70 bridge.



Figure 5–18. Timber cribbing, Timber #s 1, 4, and 5.



Figure 5–19. Exposed cribbing and vertical boards, Timber #8.

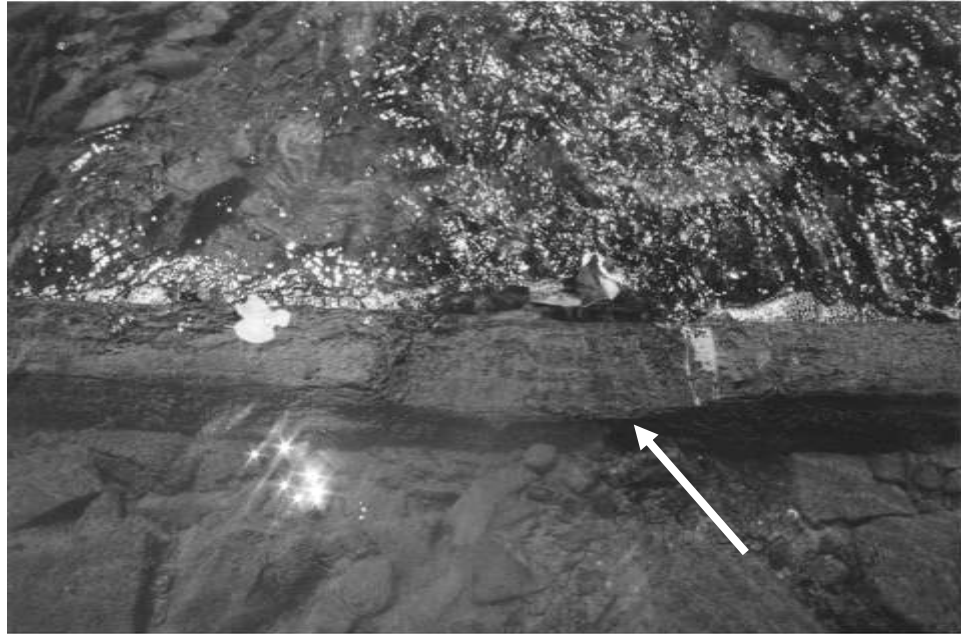


Figure 5–20. Notched Timber #4.

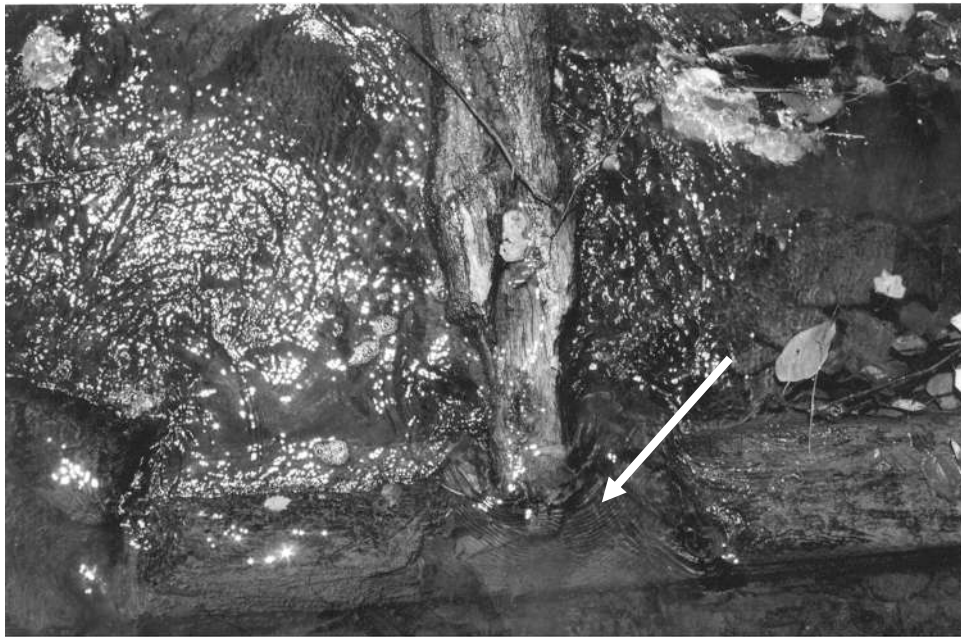


Figure 5–21. Pointed timber in notch of perpendicular timber, #s 4 and 5.



Figure 5–22. Earthen dam remnant with protruding tree.



Figure 5–23. Stone revetment of the headrace.

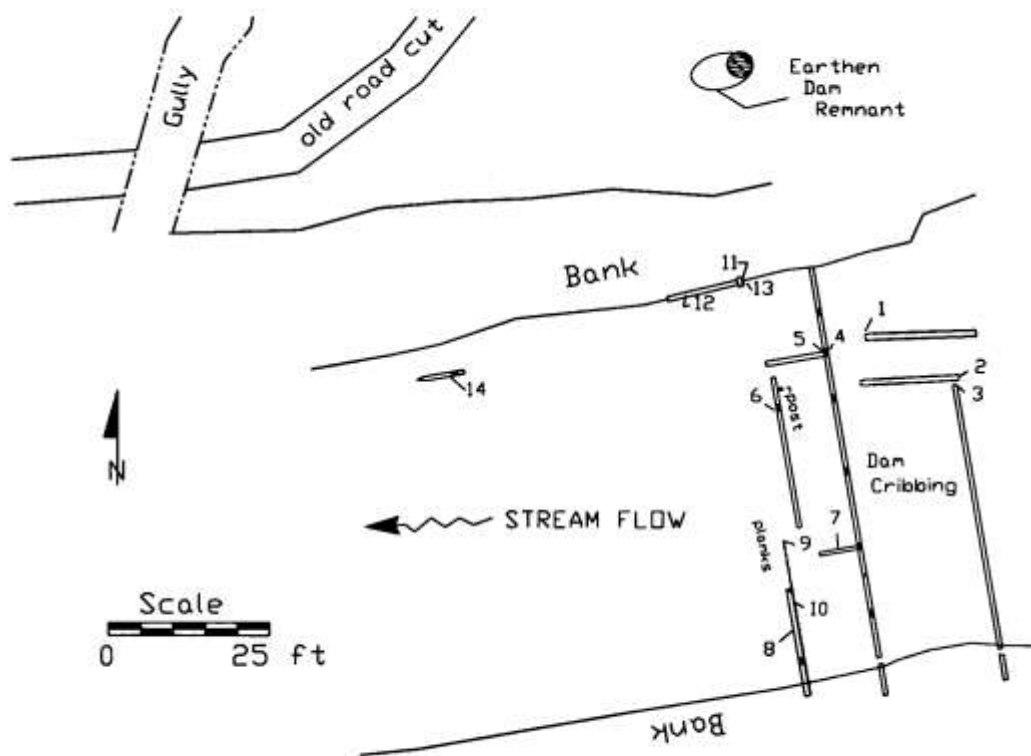


Figure 5–24. Dam cribbing.

Numbers correspond to samples in Table 5–1.

The cribbing represents a common technique in dam construction described in Howell and Keeler (1977) and illustrated by Macauley (1983). The builders laid a timber frame across the streambed and erected a ramp–like structure on top of it, the high end on the downstream side. They then filled the cribbing with stone rubble and earth and fitted a caplog to the highest part of the dam, over which floodwaters would spill if they exceeded the capacity of the spillway and over which a reasonably well–coordinated person might walk.

The 5” to 6” remnants of vertical planks found wedged into the streambed (#s 9 and 10, and #13) behind two of the transverse timbers (#s 8 and 11, respectively) probably are the lowest portions of long boards that served to keep the rubble within the cribwork until gravity and the pressure of the water on the dam held the material in place. The most inexpensive planks of irregular widths could be used for this purpose. At least one 4” post was also noted in the streambed on the upstream side of Timber #6, undoubtedly a support for the cribbing or one of the upright members. A stone revetment on the downstream side of each end of the dam would have protected the structure from the erosion by eddies, but the remains of such revetments could not be distinguished from

the stone native to the stream. Flood damage also has moved timbers from their original locations.

On the north bank of the creek, in line with the timber cribbing, was a mound of earth, several feet high, with a tree growing out of the top. The absolute elevations of the tops of the mound and the intact portion of the masonry wall 14 ft to the north was approximately 417.5 ft and 418 ft, respectively; that of Timber #4 about 405.5 ft, a difference of 12 ft, the estimated height of the dam. If the miller's report to the census marshal in 1880 was accurate—that the fall at his mill was 6 ft—then the turbine should have been seated in the wheelpit and an absolute elevation of approximately 410 ft, allowing a height of 1.5 to 2.0 ft for the turbine casing. The wastewater would have descended and additional 4 ft to 6 ft before reentering the stream, assuming the stream level has not changed significantly; i.e., that the streambed has not been significantly eroded over the last 125 years.

Overall, the dam was approximately 125 ft long, 30 to 40 ft wide at the base, and 12 ft high. It was constructed of notched and pointed white oak and yellow pine timbers, apparently cut for the purpose, measuring 8" to 12" in diameter, with driven uprights of 6" (the one 4" post likely has lost much of its size to erosion), and what Morin (1991) might call heartening boards, probably all of yellow pine, ½" thick, 8" wide (although width likely varied), and up to 12 ft in length. A spillway has not been identified, although as the weakest part of the dam, it is the least likely to have survived repeated floods. The headrace appears to have been revetted with stone and measured 14 ft in width and at least 5 ft in depth (Unit 8 uncovered a gravel layer at the base of the masonry wall at an elevation of 413 ft, 5 ft below the top of the wall; see below.)

After completing their mapping of the cribbing (with some refinements later in the project), the field crew mapped the land features. We established two datum points, both 4 ft lengths of reinforcement bar as discussed in the methods section, set at what appeared to be the upstream and downstream ends of the site at N400 E400 and N400 E300, respectively. From this baseline, the creek bank, cribbing, and land surface features were mapped with tapes (Figure 5–25).

Visible manifestations of the mill included:

1. the dam cribbing;
2. a remnant of the earthen portion of the milldam;
3. a stone retaining wall on the north side of a 14 ft wide ditch that separated wall and the earthen part of the dam (Figure 5–26; see also Figure 5–24);
4. a crude road cut that appeared to have been used to move machinery to the I-70 bridge pier locations downstream (Figure 5–27);
5. a depression with a sharply defined north edge that proved, upon removal of some detritus and leaf mold to be a mortared stone wall (see Figure 5–25);
6. a pile of brick rubble above that wall (see Figure 5–25);
7. two deteriorated stone walls in a gully created by a stormwater culvert (Figures 5–28 through 5–31);

8. A dressed piece of limestone with two projecting, threaded, one-inch diameter iron bars and two holes left by two others no longer present (Figure 5–32);
9. a dense area of brick and stone rubble at the lower end of the gully, just above its confluence with the creek (see Figure 5–25); and
10. a stone revetment extending along the base of the Rayloc Drive embankment and the bridge piers, undoubtedly installed when the bridges were built or soon thereafter (Figure 5–33). Delivery of the stone may account for the crude road cut extending across the headrace and along the streamside of the site.

Surface indications of damage to the site included: partial burial from the embankment (dating to construction of Rayloc Drive, c.1972); minor disturbance to the headrace wall from clearing and limited use of the road by which equipment and materiel (probably the revetment stone) were brought to the bridge piers; and operation, though probably not the installation, of the upstream culvert, part of a stormwater drainage system for I-70 that passes alongside of the Julia B. Lynn site and under Rayloc Drive. The exposed segment of corrugated metal culvert has shifted downward and is rusting and eroding from both above and below, creating and scouring the gully that has exposed and damaged the walls.

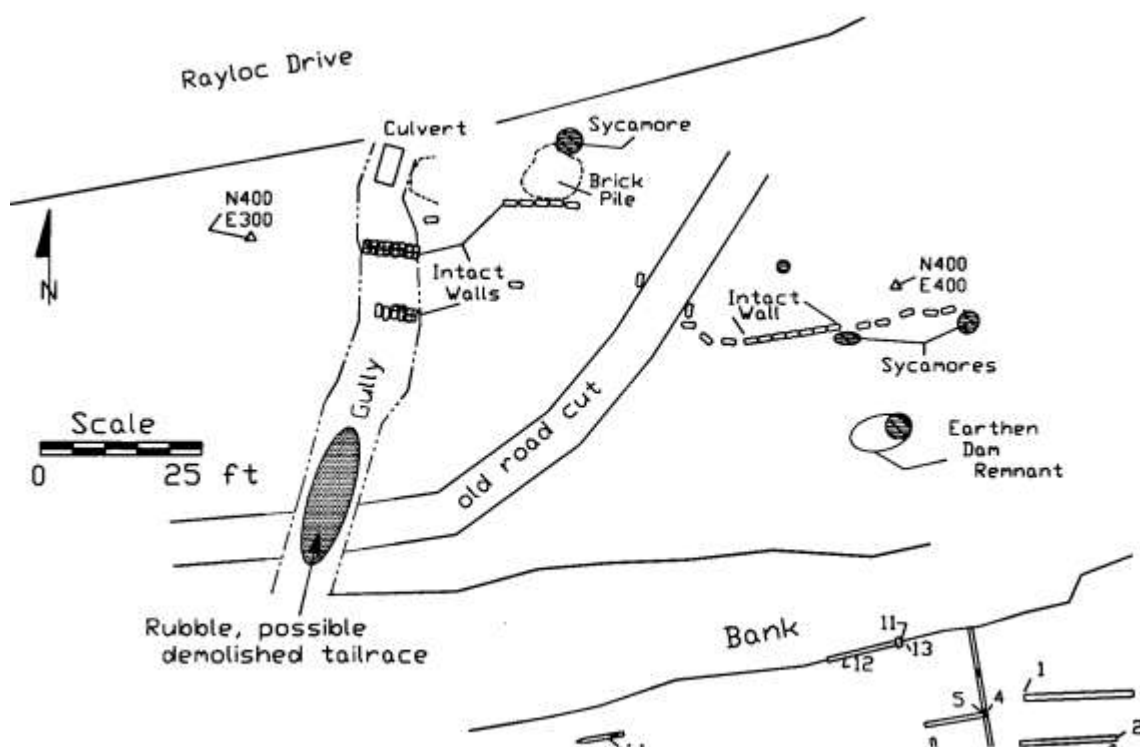


Figure 5–25. Map of terrestrial features.



Figure 5-26. Top of headrace retaining wall, looking west.



Figure 5-27. Road cut through site, looking west.



Figure 5–28. Culvert and gully with Rayloc Drive above.
Note culvert dropped below original horizontal plane and rusted.



Figure 5–29. Culvert, gully, and walls.
White arrows indicate walls.



Figure 5-30. North wall in gully and stone rubble fill.



Figure 5-31. Top of north wall in gully, looking east.



Figure 5–32. Dressed limestone and projecting bolts.
White arrows indicate bolts and holes from lost bolts.



Figure 5–33. Northeast bridge pier and stone revetment, looking northwest.

Having demonstrated the extent of surface features and the high probability that the Bowles Mill site might be eligible for inclusion into the National Register of Historic Places, I notified the State Highway Administration and they approved a modification of the project to include a Phase II site examination to:

1. determine the horizontal extent of the site;
2. locate the tailrace and any other features that might be adversely affected by proposed construction;
3. sample the site's artifact content;
4. evaluate the site's integrity; and
5. assess the site's historical significance in terms of National Register of Historic Places criteria.

Toward these ends I proposed a series of stratigraphic excavations designed to maximize horizontal exposure. Trenches measuring 2 ft by 5 to 10 ft seemed appropriate for exposing walls and interior fills. The crew excavated nine such units, summarized in Table 5–2, illustrated in Figure 5–34, and discussed briefly below.

Table 5–2. Summary of excavation units.

Unit #	Dimensions	Features	Coordinates*
1	2 ft by 5 ft	Stone wall	N400 E312
2	2 ft by 5 ft	None	N400 E299
3	2 ft by 10 ft	Stone wall	N400 E300
4	2 ft by 10 ft	Stone wall	N410 E340
5	2 ft by 5 ft	Stone wall	N415 E340
6	2 ft by 10 ft	Ditch	N390 E340
7	2.5 ft by 5 ft	Stone wall, footer	N382.5 E350.5
8	2 ft by 5 ft	Stone wall	N391 E380
9	2 ft by 5 ft	Stone wall footer	N382.5 E360.5
STP1	1.5 ft dia	None	N380 E260
STP2	1.5 ft dia	None	N360 E260

*Datum point at northwest corner of each unit.

Initially concerned that the two walls mapped during Phase I might extend into the pier construction area on the upstream side of the bridges, we excavated three units to determine their westward trajectory and extent. Unit 1 exposed a portion of the northern of the two walls about 5 ft from the edge of the gully. Unit 2, parallel to, and 10 ft west of, Unit 1 failed to encounter the wall. Unit 3, extending from the northern end of Unit 1 to that of Unit 2, exposed about 6 ft of the wall (not including the 2 ft in Unit 1) and its terminus (Figures 5–35 and 5–36). Clearly the walls were part of the mill building and not of the tailrace, which proved to be closer to the creek (see below). Twenty to 25 ft further west along the N400 line the road embankment intrudes on the site. Two shovel tests were excavated west and south of the wall terminus, but yielded only one-foot of dark yellowish brown (10YR4/4) silt loam over dark yellowish brown (10YR4/4) gravelly silt loam. No artifacts were recovered from either, although there was a brickbat on the surface of STP1.

The wall was overlain by two strata, both very dark grayish brown (10YR3/2) gravelly loams, distinguished by moderate quantities of light-colored common red brick rubble in Stratum 2. The subsoil, Stratum 4, was brown (7.5YR5/4) stony clay. Stratum 3

designates the stone rubble wall. No mortar was noted. Artifacts were few: a metal button with soldered shank from Unit 1, Stratum 2; a chip of white earthenware and a wine glass base from Unit 2, Stratum 1; a black-glazed red earthenware sherd from Unit 3, Stratum 1; and indeterminate bottle glass, Owens-type bottle glass, window glass, common red brick, and an indeterminate nail from the units. Several pieces of coal, a likely heating and cooking fuel during the operation of the mill, given its proximity to the C & O canal, also were recovered.

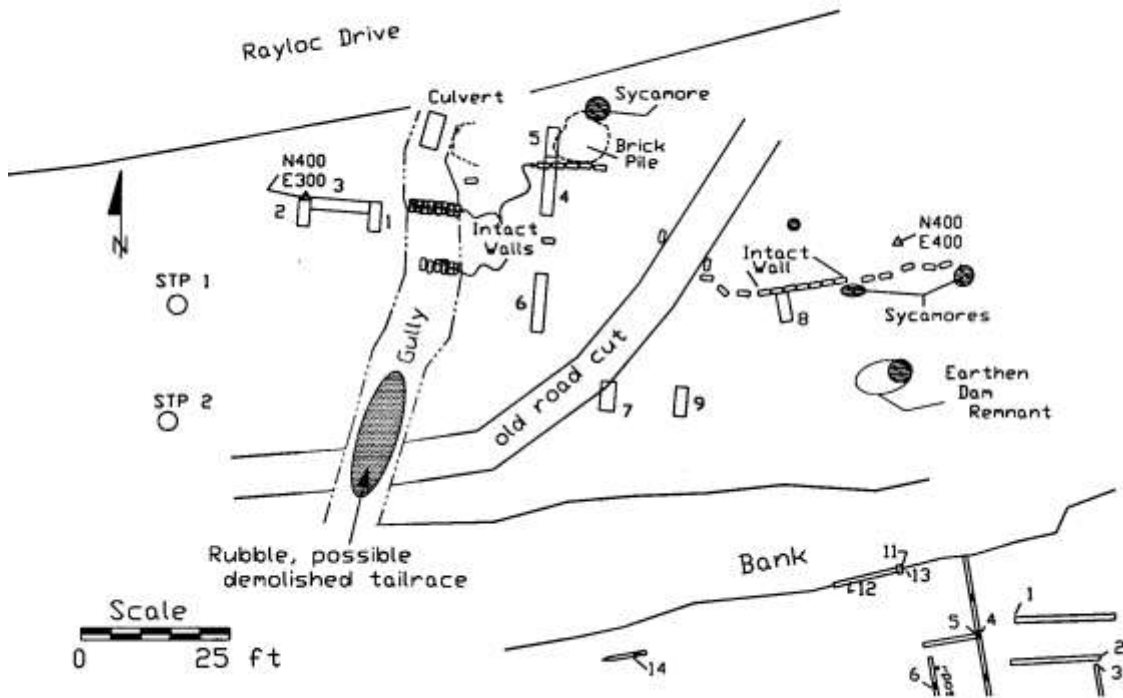


Figure 5-34. Excavation unit map.



Figure 5–35. Units 3 and 1, looking east.

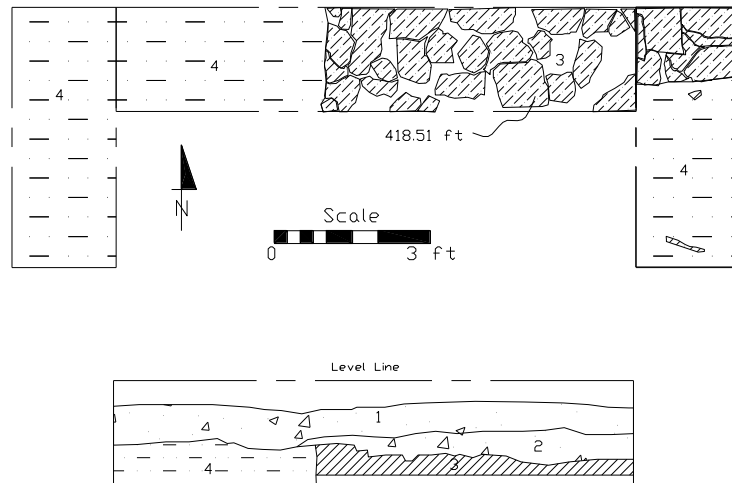


Figure 5–36. Plan of Units 1 through 3, and north profile of Unit 1.

Units 4 and 5 comprise segments of a 15 ft long trench, Unit 5 excavated as an extension of Unit 4 to identify the north side of the stone wall uncovered in Unit 4 and to sample the edge of the brick rubble pile recorded during the Phase I fieldwork (Figure 5–37). The units were carefully placed to sample the brick rubble without going through the middle of it (the pile is at least 2 ft high) and to avoid the deep depression to the east (approximately 4 ft deep). The units exposed dark yellowish brown (10YR4/4) silt loam

with stone and brick inclusions (Stratum 1) over a mortared stone wall with some mortar and brick rubble concentrations lying directly on the wall. The brick rubble layer appeared to be very thin in the east profile and the rubble pile appears to be surficial. South of the wall Unit 4 exposed three zones of brown to yellowish brown silt loams with progressively higher brick rubble concentrations to the south, Stratum 2 comprised of approximately 50% brick bats and brick rubble, Stratum 3 about 25%, and Stratum 4 virtually no brick rubble.

The field crew made no attempt to test the depth of these deposits. The deposits, as exposed in the horizontal plane, conformed to the classic model of cellar fill, the rubble from the last stage of demolition and/or filling forming the innermost and uppermost lens, surrounded by outer rings of progressively earlier materials. A glance to the east at the adjacent depression suggested that such deposits could be 4 ft or more in depth. Any attempt to test these deposits, which likely contain large quantities of brick rubble, would involve excavations far more expansive and deeper than would be possible within the project budget. And, given the goals of the project, the discovery of these deposits can be taken as compelling evidence for the preservation of deposits, although the information value of those deposits can only be speculated upon.

As with Units 1 through 3, artifact recovery was low: highly fragmented remains of a minimum of one embossed, paneled, pharmaceutical bottle (EY & SON/ N, MD), 20 machine-cut nails, window glass, common red brick, and some wire.

Based on the limited findings reported above, it appears that the brick pile resulted from site demolition and possibly cannibalization of at least some materials. Whether the brick was from a foundation or a stove chimney cannot be determined with the data at hand. Recovery of ceramic chimney pot fragments or portions of a stove, damper, or thimble would support a stove chimney hypothesis. The few pieces of coal recovered from Units 4 and 5, and from across the site, are insufficient to support the stove chimney hypothesis, although a stove may well have been fueled with locally plentiful cordwood. Debris from the demolition or cannibalization also found its way into the mill building's interior, covering sediments that had already formed, suggesting the site had been long abandoned or flooded prior to concerted demolition. The brick and stone rubble pile south of Unit 4 also may derive from the demolition of the mill building.

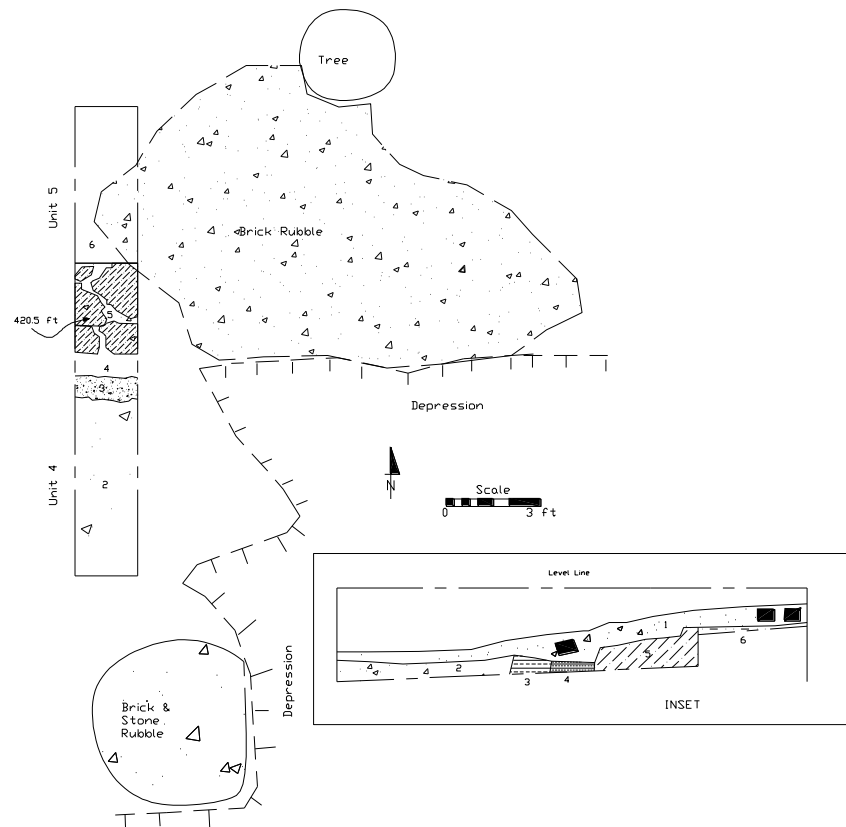


Figure 5–37. Plan and profile (inset) of Units 4 and 5.

Units 1 through 5 failed to uncover any trace of a tailrace, a feature suggested by the discovery of the parallel stone walls, approximately 7.5 ft apart on the inside, in the gully. Unit 6 was excavated below the brick and rubble pile and on the same easting as Units 4 and 5 to identify the south wall of the mill building and/or the north wall of the tailrace (Figure 5–38). We succeeded with the latter, failed in the former. Several large, partially dressed stones were noted on the surface of the slope below Units 4 and 5, so Unit 6 was laid out to straddle those stones. No stonework was uncovered beneath the dark yellowish brown (10YR4/4) stony silt loam, but exposure of the underlying subsoil demonstrated a precipitous deepening of Stratum 1. The profile (the reader should ignore the slight upturn of subsoil at the left hand side of the profile as an artifact of the excavation) revealed a ditch that had filled rapidly with material, leaving no discernable distinctions. I think the dressed stone found on the surface is all that remains of an apron along a ditch feature from which stone had been removed. Support for this cannibalization hypothesis was found in Units 7 and 9, of which more anon.

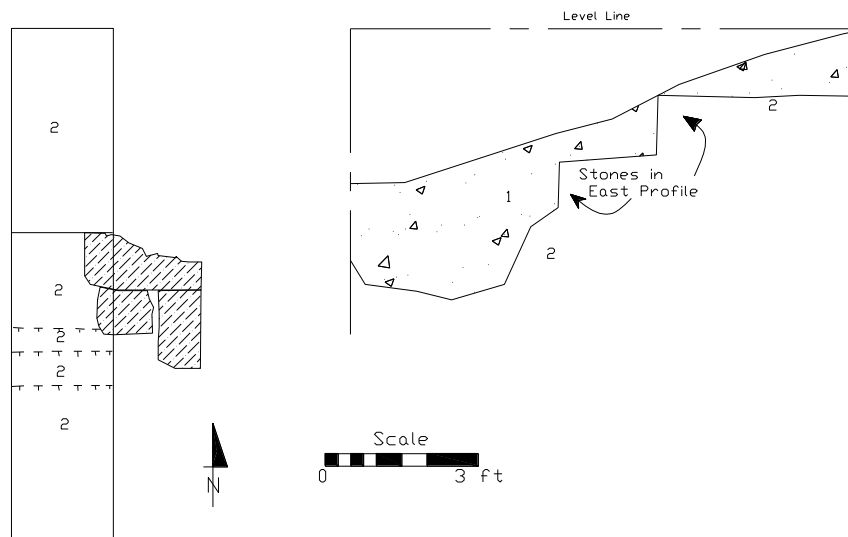


Figure 5–38. Plan and profile views of Unit 6.

Artifact return from Unit 6 proved paltry, comprised of: colorless beverage bottle glass with molded design (6); a slate pencil and severely corroded iron tool with a lead alloy handle (Stratum 2); a dozen machine–cut nails; window glass (22); four wire nails; and traces of brick, mortar, and coal.

If the ditch was part of the tailrace, as we had hypothesized, the south edge should have been located just to the south, although how far to the south was not readily apparent. Surface inspection revealed that a large dressed limestone block, noted during the Phase I portion of the project, had two threaded iron rods, each one–inch in diameter, projecting out of the block about 9” apart (Figure 5–39). The east end of the block had been broken, but holes drilled for two other bolts—no longer present—were evident. Suspecting that this might be the clue for which we searched, the crew excavated Unit 7

along the east side of the block. Unlike the other units, Unit 7 was 2.5 ft wide to expose the east face of the limestone block and the west edge of a 6" wooden post (Figures 5–40 through 5–43). Unit 9 was excavated on the same northing, but 10 ft to the east to further test the existence of a wall.



Figure 5–39. Unit 7 and dressed limestone, looking south.
N.B. White arrows point to footer.

Stratum 1 in Units 7 and 9 was a dark yellowish brown (10YR4/4) silt loam, between 0.5 and 1.5 ft thick, overlying stony silt loam of the same color. Each, in its south end, exposed a stone rubble footer or foundation aligned with the limestone block suggesting removal of other blocks or stonework. Both units also exposed a strand of barbed wire running through Stratum 1, parallel to the stone footers and alongside two 6" by 6" wooden posts and a tree stump, the bole lying just to the south of the stump. Artifacts were few and included: colorless beverage bottle glass (2); machine-cut nails (5); wire staples (4) and barbed wire from the fence; and traces of brick and lime mortar.



Figure 5–40. Unit 7 with two posts in foreground, looking west.

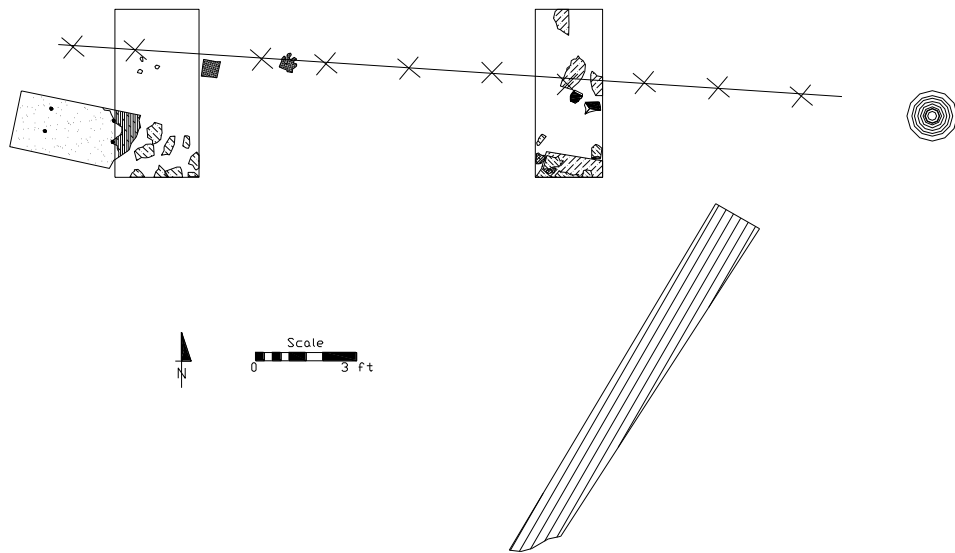


Figure 5–41. Plan view of Units 7 and 9 and surface features.

Elevation of top of block: 414.66 ft. Top of Footer in Unit 7: 413.26 ft. Top of footer in Unit 9: 413.62 ft.

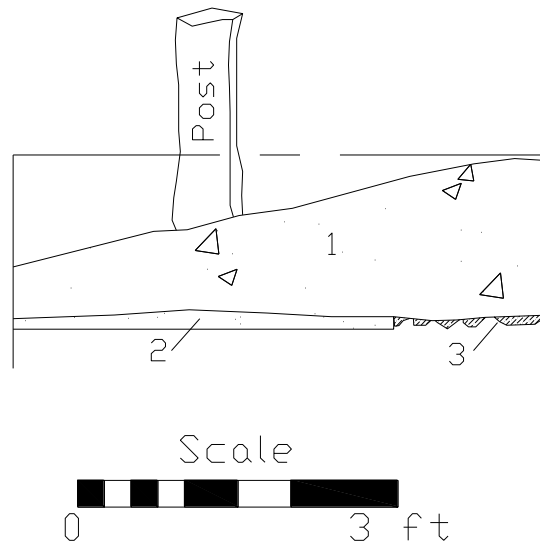


Figure 5–42. Profile of Unit 7.



Figure 5–43. Unit 9 and wall remains.

N.B. White arrow marks footer location.

The distance between the projected lines of the ditch edge, identified in Unit 6, and the stone footers and block, identified in Units 7 and 9, was 14 ft., identical to the distance noted between the earthen dam remnant and headrace retaining wall. Projecting these parallel lines westward into the gully, we searched the gully—removing substantial quantities of organic debris, including trees and large limbs that had accumulated there.

We found two poorly defined clusters of stone rubble that might mark the course of the cannibalized tailrace (Figures 5–44 and 5–45).



Figure 5–44. Rubble in gully after clearing.



Figure 5–45. Possible remains of cannibalized tailrace.

In hope of finding the bottom of the raceway, we looked to the east end of the site. Recent installation of utility poles and lines across the creek at this point may have damaged or destroyed the upstream end of the headrace, but the area between the

headrace retaining wall and earthen dam remnant seemed to hold promise, there being no evident signs of disturbance. (The road cut damage was 5 ft and more to the west of Unit 8.) No doubt we were correct in that assumption, but the excavation proved difficult and dangerous due to the large stones in the fill. One, at the south end of the unit, was as large as one of the crew members and, we guessed, somewhat heavier.

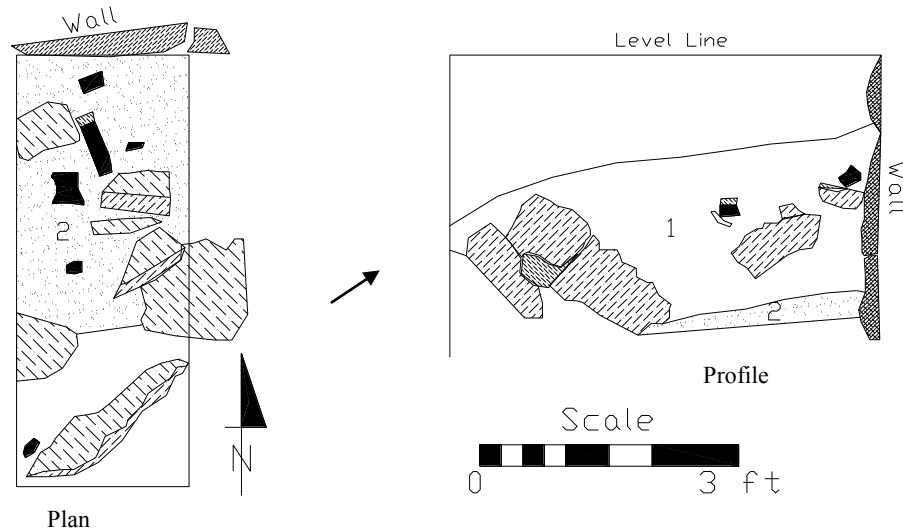


Figure 5-46. Plan and profile of Unit 9.

Unit 8 lies slightly askew of the orthogonal grid, the wall determining unit orientation. It extended nearly 2.5 ft through dark yellowish brown (10YR4/4) silt loam and considerable quantities of stone rubble and some whole and partial bricks (Figure 5-46). At that depth the excavator encountered a layer of gravel and dark yellow brown (10YR4/4) silt loam. A deeper excavation would have required significant expansion to work around and remove large stones and to maintain a reasonable level of safety. I decided to terminate the unit at that point, an elevation of 413.08 ft. Considerable rubble was removed, but artifacts included only: beverage bottle glass (3); two machine-cut spikes; one definite and as seven probable machine-cut nails; indeterminate corroded iron; and a small piece of coal. Several largely intact bricks and brickbats were uncovered, but not saved.

None of the units, nor a thorough search of the site's surface, uncovered any evidence of milling machinery.

Chapter 6. Summary, Conclusions, & Recommendations

Summary and Conclusions

Two phases of archeological investigation—including intensive archival research, mapping, and limited excavations—resulted in the documentation of the Bowles Mill site, as well as recording of a 1950s+ drive-in movie theater and a 19th through 20th century house site, the latter two both outside of the right-of-way. No other evidence of a mill or of weirs was found in the creek bed from the sharp westward turn in the creek behind the NAPA facility downstream to the Tollgate Ridge Road Bridge. The mill clearly is that owned and operated by Samuel Bowles and his heirs, likely the same owned by his father James H. Bowles, and possibly owned by earlier millers (e.g., William Yates the Younger) and documented in the 1808 Varlé map. The mill can be dated with a fair degree of confidence to the period 1830–1890; it is unlikely to have operated after 1890 since it doesn't appear in the county's tax assessments for 1896–1910. It may pre-date 1830, but since the mill doesn't appear among the listed mills in the 1783 tax assessment, it likely was less than 40 years old when James H. Bowles purchased the land and mill seat. Land patent data suggest at least an intention of erecting a mill on the lower Great Tonoloway Creek as early as 1763.

The archival evidence suggests that James H. Bowles and his son Samuel employed a miller to operate the facility. Miller John H. Rohr boarded with Samuel Bowles in 1860 and both Samuel and his father seemed to think of themselves as farmers first, if their reports to the census marshals can be taken as evidence. Also, the mill is virtually invisible in their combined probate and land title records. Were it not for cartographic and census data, the mill might easily have been overlooked in standard archival and background research. And it is difficult to imagine the busy farmer, jurist, and political activist James H. Bowles having the time to oversee mill operations, much less work at the trade himself. Millers John J. Bowles and John H. Bowles, of uncertain relation to James H. and Samuel Bowles, described themselves as millers to the census marshal in 1850, and John H. Bowles did so again in 1860. It is possible that one or both worked in Bowles Mill, especially in 1850 when the only Bowles noted in the industrial schedules was James H., although he reported employing an average of only one adult male.

The 1880 census industrial schedule return for Samuel Bowles reported up to five men working at the mill at one time, with a monthly average of two. The mill conducted custom milling, suggesting a status similar to that of 'country mill,' the term employed by census marshals in 1850 to describe the Bowles Mill and seven others in the area. It operated with a single turbine, 4 ft in diameter with a 6 ft fall, spinning at 50 revolutions per minute and generating 15 horsepower. These are the only technical data available for the mill, and—given the history of turbines in American grain milling—it appears unlikely that the power system was in place for the full life of the mill. The turbine likely was a recent installation, although whether by Samuel Bowles or his administrator and brother, William A. Bowles, has not been determined.

Fieldwork yielded the following finds:

1. location of the miller's house, or at least that of the mill owner, Samuel Bowles;
2. identification and recording of the remains of the cribwork and small portion of the earthen work dam that impounded and channeled the water to the mill;
3. identification of what appears to be the headrace at the upstream portion of the mill complex;
4. identification of the main mill building and a possible ell on its downstream side;
5. location of the probable wheelpit;
6. location of the probable tailrace; and
7. evidence that the mill complex had been extensively cannibalized for building stone, and probably for its timber framing.

The miller's house, again, lies outside of the area of potential effects. Until a few years ago, the dwelling stood on property acquired by Genuine Parts Company, land that had been owned by Julia B. Lynn and which she had inherited from the last survivor of the Bowles family, Preston. Preston was a farmer and it may have been during his tenure that the mill was dismantled. He probably erected the barbed wire fence—represented by the two fence posts and barbed wire found along the probable wheel pit—to control his livestock.

The cribwork undoubtedly has been conflated, with one or more lower timbers dropping down among the original base timbers. Much of the framing has been lost to severe periodic floods, such as the one in the spring of 1936. Nonetheless, enough survives to indicate that the dam was wedge-shaped, its highest end reaching as much as 12 ft on the downstream side, erected in a manner described by the late Charlie Howell, an English miller long employed on the Tarrytown, New York, mill reconstruction, and by David Macaulay, an artist who consulted with industrial historian–archeologists Theodore Z. Penn and Patrick M. Malone of Old Sturbridge Village and the Slater Mill Historic Site, respectively. Although the revetted ends of the dam are gone, vertical yellow pine planks that retained the stone rubble and earth fill on the downstream side of the dam survive as a series of stubs less than a foot high embedded in the stream sediments. An earthen portion of the dam also survives on the north bank of the creek. The gap between that embankment and the stone retaining wall of the headrace, a distance of 14 ft, represents the width of the headrace, a distance identical to that of the probable wheel pit some 40 to 50 ft to the west. No evidence of a spillway survives, but it likely was on the streamside of the embankment.

Nine stratigraphic excavation units measuring 2 to 2.5 ft wide and 5 to 10 ft long revealed portions of stone walls and evidence that the building materials were recovered for use elsewhere; most notably, the brick rubble pile on the north side of the site in Units 4 and 5, removal of stone from the probable wheel pit in Unit 6, and removal of stone from the south side of the probable wheel pit in Units 7 and 9, as well as fragmentary remains of the tail race in the lower portion of the gully on the downstream side of the site. The wheel pit may have measured 14 ft on a side, maintaining the width of the head and tail races. The main part of the mill appears to have been approximately 20 by 27 with a 28 ft long ell of uncertain width on its west side. All of these dimensions are based on very limited testing

and await confirmation through more extensive excavation. A tentative reconstruction of the mill complex appears as Figure 6–1.

No evidence of milling machinery (e.g., bolters, steel roller mills) was found through intensive surface reconnaissance or limited excavation, but the possibility—despite cannibalization of building materials—cannot be ruled out. Given the likelihood that operations ceased between 1885 (the publication date of the Martenet map) and 1896 (the earliest county tax assessment examined in connection with this study), such machinery, and especially the steel rollers that became popular in the 1880s (see McGrain 1998: Figure 18 for an example), is unlikely to have been purchased and installed at the Bowles mill. The 1880 characterization of the mill as a provider of custom milling also indicates that the Bowles family did not employ such machinery to compete with the rapidly growing and highly industrialized operations of the upper Midwest.

Much remains to be learned about the Bowles' mill, in addition to testing the descriptive model proposed in Figure 6–1. Moreover, we need a reason—a research design—to justify efforts to test the model and to guide the collection of new archival and archeological information. In Chapter 4, I suggested using production strategies as a central concept in a contextual framework; viz., identify, date, and organize the various decisions made by the owners and operators of this mill, then use that information to examine how they adapted to changing market and social conditions, and how those conditions then changed in response to their adaptations. I also pointed out that the production strategy concept is not all-encompassing, omitting for example such evidence of employee dissatisfaction as on-site drinking. (Only a dozen or so liquor bottle sherds were recovered from the limited testing, and most if not all of those may be products of recent roadside discard.) The approach has been exemplified in Gibb (1985) and Gibb, Bernstein, and Cassedy (1990). Some components of the Bowles strategies included:

1. family ownership;
2. hiring and at one time boarding outside help;
3. shift in power systems, probably from a 10 ft wide breast wheel—such as that used in the 20th century at Cecil's Mill in Great Mills, St. Mary's County (Figure 6–2), and by R. E. Taney on the Little Tonoloway Creek in 1880—to a small 15 hp turbine;
4. maintaining the raceway structure, despite the shift from a horizontal wheel to turbine;
5. possible addition of an ell to the west end of the main mill building, possibly as a warehouse, office, stable, or combination of functions, or for additional machinery such as bolters or even a sawmill; and finally and most dramatically,
6. abandonment of the mill and its subsequent use as a 'quarry' for building materials.

These, of course, are only tidbits based on a very limited study; but they point the way to a more intensive study with greater resources. They also suggest the directions for determining the historical significance of the site beyond decontextualized discussions of folklore and the history of technology, and they relate to specific archeological data demonstrated to exist at the site. They do not assume the preservation of extensive mill-related deposits in the building and waterworks interiors. Such deposits may exist and contribute to a more comprehensive reconstruction of production strategies at the Bowles Mill site, but those deposits were not sought as part of this investigation, requiring as they likely would

expansive excavations extending 4 ft or more below grade and requiring movement of large stones and securing potentially unstable deposits.

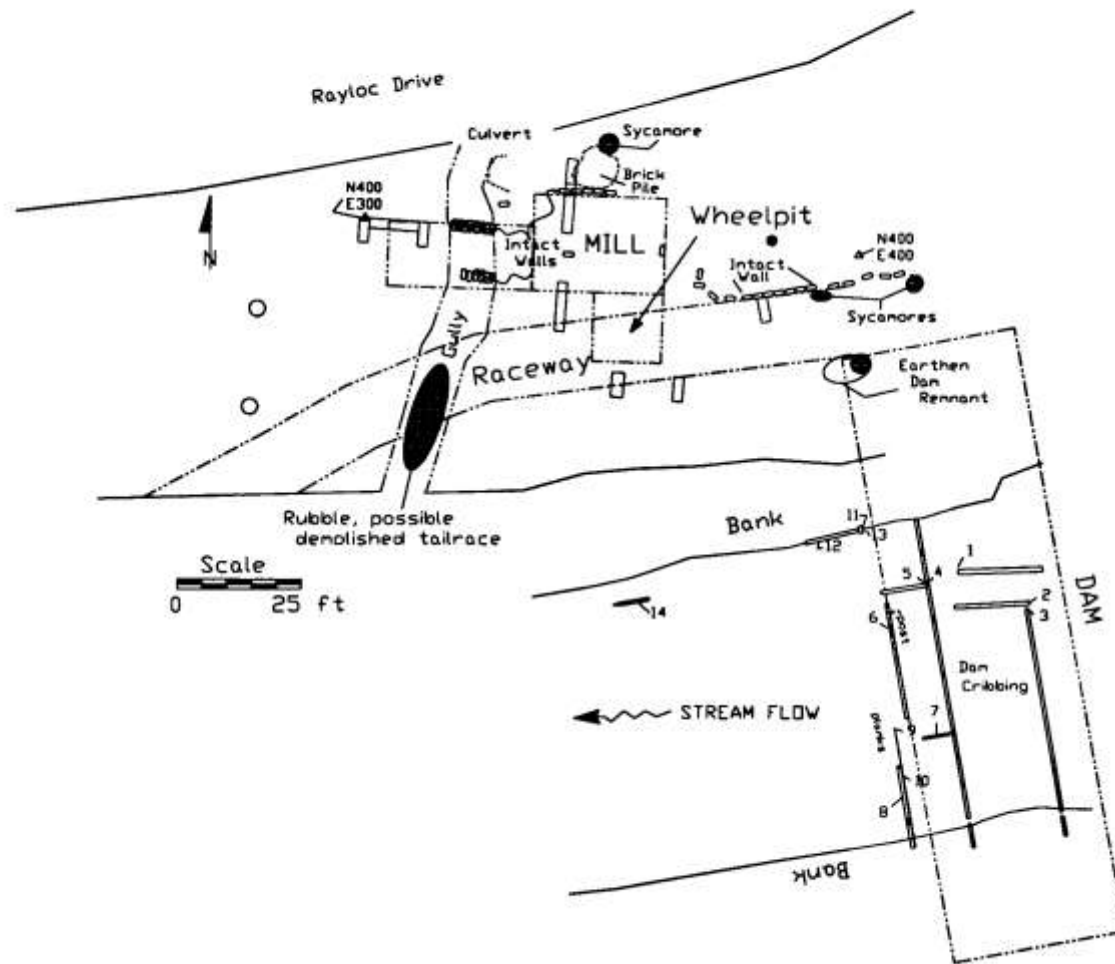


Figure 6-1. Hypothesized layout of the Bowles Mill.



Figure 6–2. Breast wheel at Cecil’s Mill, Great Mills, St. Mary’s County.

Recommendations

Excavations and archival research have demonstrated that the Bowles Mill site (18WA498) has data important to the study of mill technologies (sp., dam construction) and the role of rural industrialists in the agricultural and industrial development of their Western Maryland community during the periods of Agricultural Intensification and Urban Domination (sp., strategies involving products and targeted markets, building expansion and modernization, staffing). They also relate this site to the complex development of privately and publicly funded transportation networks, the one owner—who selected this site on the National Turnpike—taking a direct role in advocating state assistance for the completion of the C & O Canal and the B & O Railroad. The Bowles Mill site meets Criteria [c] and [d] for inclusion into the National Register of Historic Places. Since the political and legal activities of James H. Bowles’ did not relate directly to his mill, the site does not meet Criterion [b], nor have we demonstrated any direct link with events during the Civil War to meet Criterion [a]. I recommend avoidance of the site and the erection of a temporary construction fence to avoid inadvertent intrusions by construction personnel or equipment. If avoidance is not possible, a comprehensive data recovery plan should be formulated and executed in consultation with the State Highway Administration’s archeologists and with the staff of the Maryland Historical Trust. The research design should pose specific, answerable, non-trivial questions based on thorough knowledge of mill technologies and millsite archeology and realistic assessments of the kinds of data demonstrated and suspected to survive at the site.

Fieldwork at Bowles Mill has established the horizontal boundaries of the mill complex (Figure 6-3). The proposed widening of the I-70 bridge and ancillary activities, as currently planned, should not impinge on the site. All activities should avoid the site and stay more than 50 ft from the culvert. Continued deterioration of the culvert will continue to degrade the western portion of the mill complex. Any attempt to rectify the culvert deterioration problem should take into account the effects on the site and should be planned in consultation with the State Highway Administration's archeologists and with the staff of the Maryland Historical Trust.



Figure 6–3. Bowles Site boundaries relative to northeast bridge pier.

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Appendix A. Artifact Inventory and Catalogue.

Inventory of Julia B. Lynn House site (18WA499), uncollected

Description	Number
White earthenware, plain	7
Ironstone, raised design	2
Ironstone, decaled	2
American stoneware, Bristol glaz	3
White granite, plain	3
White porcelain	1
Paneled tumbler, amethyst cast	3
Green liquor bottle, hand-tooled lip	1
Amber bottle glass	2
Aqua vessel glass	8
Blue vessel glass	3
Porcelain insulators	2

Catalogue of Bowles Mill site (18WA498)

Lot	Unit #	Stratum	Class	Type	Type/Color/Decoration	Quantity	Weight (ounces)	Comment
1	1	1	Vessel glass	bottle	colorless	1		
1	1	1	Architecture	window glass		5	0.1	
1	1	1	Architecture	nail	indeterminate	2		
1	1	1	Architecture	brick	common red, handmade	1	18.9	
1	1	1	Architecture	brick	common red, handmade	50	4.4	
2	1	2	Vessel glass	beverage bottle	green	2		Molson Ale
2	1	2	Vessel glass	beverage bottle	colorless	5		molded design
2	1	2	Vessel glass	bottle	olive green	1		paneled?
2	1	2	Clothing	button	metal, soldered shank	1		
2	1	2	Architecture	window glass		13	0.5	
2	1	2	Architecture	brick	common red		54.4	sample of 5, 10.3 ounces
2	1	2	Fuel	coal	cinders	2	0.5	
2	1	2	Miscellaneous	indeterminate lead alloy, painted	green	1		

Lot	Unit #	Stratum	Class	Type	Type/Color/Decoration	Quantity	Weight (ounces)	Comment
3	2	1	Ceramic	white earthenware	white	1		chip
3	2	1	Vessel glass	wine glass	base	1		
3	2	1	Vessel glass	indeterminate	colorless	2		
3	2	1	Architecture	window glass		4	<.1	
3	2	1	Architecture	brick	common red	18	0.5	
3	2	1	Architecture	nail	indeterminate	5		
3	2	1	Fuel	coal		5	0.1	
3	2	1	Miscellaneous	plastic, painted	green	1		
4	3	1	Vessel glass	beverage bottle	aqua	2		
4	3	1	Vessel glass	beverage bottle	green	1		
4	3	1	Architecture	brick	common red, handmade	1	24.6	
4	3	1	Architecture	brick	common red	19	2.1	
5	3	2	Ceramic	red earthenware	black glazed	1		
5	3	2	Architecture	window glass		4	<.1	
5	3	2	Architecture	brick	common red		54.6	saved of 5, 4 ounces
5	3	2	Hardware	wire		1		
6	4	1	Vessel glass	pharmaceutical bottle	aqua	1		hand finished
6	4	1	Architecture	nail	machine-cut	4		
6	4	1	Architecture	window glass		4		
7	5	1	Vessel glass	pharmaceutical bottle	paneled, aqua	15		_EY & SON/_N, MD
7	5	1	Architecture	window glass		8		
7	5	1	Architecture	nail	machine-cut	9		
7	5	1	Architecture	brick	common red	4	0.5	glazed
7	5	1	Hardware	wire		3		
8	5	2	Vessel glass	pharmaceutical bottle	aqua	16		
8	5	2	Architecture	window glass		80	1.6	
8	5	2	Architecture	nail	machine-cut	7		
8	5	2	Hardware	wire		1		
9	6	1	Vessel glass	beverage bottle	colorless	2		molded design
9	6	1	Architecture	window glass		2		
9	6	1	Architecture	nail	machine-cut	1		
9	6	1	Architecture	nail	indeterminate	2		

Lot	Unit #	Stratum	Class	Type	Type/Color/Decoration	Quantity	Weight (ounces)	Comment
10	6	2	Vessel glass	beverage bottle	colorless	4		molded design
10	6	2	Architecture	window glass		20		
10	6	2	Architecture	nail	machine-cut	11		
10	6	2	Architecture	nail	wire	1		
10	6	2	Architecture	nail	indeterminate	27		
10	6	2	Architecture	brick	common red	1	0.1	
10	6	2	Architecture	mortar		2	0.5	
10	6	2	Fuel	coal		3	<.1	
10	6	2	Miscellaneous	indeterminate	metal	10		
10	6	2	Miscellaneous	slate pencil		1		
10	6	2	Hardware	hafted tool	iron & lead	1		
11	7	1	Vessel glass	beverage bottle	colorless	2		
11	7	1	Architecture	nail	machine-cut	5		
11	7	1	Architecture	nail	indeterminate	8		
11	7	1	Architecture	brick	common red	2	0.5	
11	7	1	Hardware	wire	barbed	9		
11	7	1	Hardware	staple	wire	1		
12	8	1	Vessel glass	bottle	aqua	1		
12	8	1	Architecture	window glass		1		
12	8	1	Architecture	nail	indeterminate	7		prob mach-cut
12	8	1	Architecture	brick	common red	2	0.3	
12	8	1	Fuel	coal		1	<.1	
13	8	2	Vessel glass	beverage bottle	aqua	2		
13	8	2	Architecture	spike	machine-cut	2		
13	8	2	Architecture	nail	machine-cut	1		
13	8	2	Miscellaneous	indeterminate	metal	6		
14	9	1	Architecture	nail	indeterminate	2		
14	9	1	Architecture	brick	common red	5	2.4	
14	9	1	Architecture	mortar	lime	3	0.2	
14	9	1	Hardware	staple	wire	3		
14	9	1	Hardware	wire	barbed	7		

Appendix B. Wood Identification

Prepared by Justine Woodward McKnight

Identification of wooden members associated with the dam cribbing was attempted as part of Phase I testing at the Mill Site (). Ten waterlogged wood samples were collected from well-preserved portions of structural elements and planking. All wood was packed as found in vinyl bags, and stored under refrigeration pending analysis.

Classification of waterlogged wood is often hampered by the deterioration of diagnostic features due to post-depositional processes (Pearsall 2000). Cell walls can disintegrate due to repeated freezing and thawing, and decay caused by anaerobic bacteria, insect activity and fungi often obliterate key morphological characteristics (Dimpleby 1978). Examination of wood fibers from the Mill Site revealed that little destruction of minute features had taken place. Some insect damage (and living insects) was noted, but these were not a real impediment to analysis.

Identification of wood fibers based on microstructure relies upon obtaining a clear traverse section of wood fibers. A good result was achieved by cutting across the grain by hand with a sharp scalpel. Each specimen was then examined under 10X-40X magnification and key anatomical features were noted. The structure of the archaeological specimens were compared with appropriate keys (Constantine 1987; Panshin and deZeeuw 1980; Hoadley 1990) and confirmed by direct comparison to wood specimens from a reference collection.

The wood assemblage analyzed from the dam cribbing revealed the predominance of oak and pine species in its construction. White oak (*Quercus spp.*, *LEUCOBALANUS* group) accounted for 50 percent of the analyzed specimens; yellow, or hard pine (*Pinus spp.*) for 40 percent of the analyzed wood specimens, and coniferous taxa for 10 percent. The following table presents the species identification for each wood specimen analyzed.

Sample	Pinus spp.	Quercus sp.	Indeterminate Coniferous
1		X	
2		X	
3	X		
4	X		
5		X	
6			X
7	X		
8		X	
9	X		
10	X		

Although segregation of particular species of oak is not possible based on minute anatomy (Panshin and deZeeuw 1980:586-587), the two major groups of the genus *Quercus* (the red oak group and the white oak group) can be distinguished. The white oak group (*LEUCOBALANUS*) contains such species as white oak (*Quercus alba*), bur oak (*Quercus macrocarpa*), post oak (*Quercus stellata*), swamp white oak (*Quercus bicolor*), Durand oak (*Quercus durandii*), chestnut oak (*Quercus prinus*) and overcup oak

(*Quercus lyrata*). Lumber of numerous white oak species have historically been used for marine/aquatic applications requiring hardness, resiliency and natural durability. White oak (*Quercus alba*) is the most important commercial lumber tree of the white oak group and one of the best oaks with high-grade, all-purpose timber (Panshin and deZeeuw 1980:568-572).

The yellow or hard pine (*Pinus spp.*) group cannot be easily separated to the species level on the basis of minute wood structure (Panshin and deZeeuw 1980:444-447). Contemporary lumber trade classifies yellow/hard pines according to structural density, with longleaf and slash pines frequently exhibiting multiple late-wood bands measuring up to 0.2 inches in diameter against 0.1 inches or less for other southern pines (Kukachka 1960:43:887-896). Such classification does not translate well to pine specimens recovered from submerged archaeological contexts, because considerable shrinkage and other quantitative modification to the wood structure over time is common. Various species of the yellow/hard pine group occupy a broad range of environmental zones from New Jersey south to the Mississippi River Delta. Members of the yellow/hard pine group include the following species: longleaf pine (*P. palustris*), shortleaf pine (*P. echinata*), loblolly pine (*P. taeda*), pitch pine (*P. rigida*), and pond pine (*P. serotina*). Yellow or hard pines have been of great economic importance throughout the southern and eastern United States for centuries. Due to its strength, stiffness and hardness, timber from this group of pines has been highly suited for structural timbers in bridges and trestles, for building construction, and in ship and boat building (Panshin and deZeeuw 1980:444-447). *Pinus palustris*, or longleaf yellow pine was the preferred pine for naval construction (Little 1980:291). Shortleaf pine (*Pinus echinata*) was historically one of the most prized woods for ship building and for wharfs and piers (Constantine 1975:278).

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Appendix C: Credentials

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Education

- 1994 Ph.D. in Anthropology, Binghamton University
- 1985 M.A. in Anthropology, Binghamton University
- 1978 B.A. in Anthropology, State University of New York at Stony Brook

Professional Experience

Twenty-four years of archaeological field and laboratory experience in six eastern states and Arizona, on sites ranging in age from early prehistoric to late 19th century. Author of more than 50 technical reports.

Fourteen years of supervisory experience and eight years as Principal Investigator in Sole Proprietorship consulting firm.

Select Publications

- in press The Archaeologist as Playwright. In *Ancient Muses: Archaeology and the Arts*, edited by John H. Jameson, Jr., Christine Finn, and John E. Ehrenhard.
- 2000 Learning Cast Up from the Mire: Archaeological Investigations of Schoolhouses in the Northeastern United States. *Northeast Historical Archaeology* 29: 109-131. (with April M. Beisaw)
- 2000 Imaginary, But by No Means Unimaginable: Storytelling, Science, and Historical Archaeology. *Historical Archaeology* 33 (2): 1-6.
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- 1999 *A Layperson's Guide to Historical Archaeology in Maryland*. Archeological Society of Maryland. (Editor and contributor)
- 1997 Selby Bay Phase Subsistence Strategies at the Smithsonian Pier Site, Anne Arundel County, Maryland. *Maryland Archeology*. 33(1&2): 59-76. (with Anson H. Hines)
- 1997 Necessary but Insufficient: Archaeology Reports and Community Action. In "In the Realm of Politics: Prospects for Public Participation in African-American and Plantation Archaeology," edited by Carol McDavid and David W. Babson. Special Issue of *Historical Archeology* 31(3): 51-64.
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- 2001 *Recognizing and Reporting Archeological Sites*. Educational pamphlet produced for Free State Electric, Waldorf, Maryland. Greenhorne & O'Mara, Greenbelt, Maryland (with Varna Boyd).
- 2001 Fischer's Station on the Chesapeake Beach Railway, Anne Arundel County, Maryland (1908–1935). *The Calvert Historian* 27: 7–42.
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- 2000 Animating History at Colonial London Town. *Chesapeake Life Magazine* (January–February): 92–95. (with John Kille)
- 1999 Revolutionary Spirits: A Play in Two Acts. Performed at London Town Historic Park by the London Town Publik House Players, April 1999.
- 1998 Ghosts of London: A Play in Three Acts. Performed at London Town Historic Park by the London Town Publik House Players, October 1998; reprised October 1999.
- 1998 Letters from London: A Provident Visit. *The New Bay Times* August 6–August 12, 1998.
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