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reconnaissance survey



Juniata River Corridor

America's Industrial Heritage Project

Southwestern Pennsylvania

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Cover photo: Aerial view of Juniata River near Mill Creek, Huntingdon County

reconnaissance survey



september 1991

JUNIATA RIVER CORRIDOR AMERICA'S INDUSTRIAL HERITAGE PROJECT • SOUTHWESTERN PENNSYLVANIA

Southwestern Pennsylvania Heritage Preservation Commission

prepared by

United States Department of the Interior / National Park Service



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SUMMARY

The Juniata River valley in southwestern Pennsylvania is rich in history and natural beauty. For more than a century this area was a bustling transportation hub and industrial area. Today, after many years of economic decline, efforts by public and private groups are being initiated to help reverse that condition and revitalize the area.

The America's Industrial Heritage Project, managed by the Southwestern Pennsylvania Heritage Preservation Commission, is working cooperatively within the nine-county project area to help promote tourism and commemorate the significant contribution of the region's iron and steel, coal, and transportation industries. As part of this effort, the *Juniata River Corridor Reconnaissance Survey* was initiated. The purpose of the Juniata survey is to identify the resources within the Juniata valley, examine their significance, and determine whether further study is needed. To accomplish this, the study assesses the area's historic heritage and natural, cultural, scenic, and recreational values and concludes with a discussion of general significance and recommendations for further study.

THE RESOURCES

The survey area is in Blair and Huntingdon counties and includes the Juniata River, Main Line Canal, Pennsylvania Railroad, US 22, and several sites and towns along these routes, including Hollidaysburg, Frankstown, Williamsburg, Mount Etna furnace, Alexandria, Petersburg, Huntingdon, and Mount Union. Much of the history and most of the remaining cultural resources in and around these areas support the primary National Park Service theme of "America at work," including such subthemes as "commerce and industry" and "transportation and communication."

The most dramatic scenic qualities of this corridor are found where the meandering river flows through the narrow gorges and along the banks of steep forested mountains – particularly Lock, Tussey, and Short mountains and Warrior Ridge. The rural scenic qualities are enhanced where the valley widens to accommodate pastoral

landscapes, ecologically rich riparian habitat, or scattered rural communities.

The area's ancient geological history of tilted and folded mountains and eroded valleys has resulted in an abundance of minerals at varied strata, primarily sandstone, limestone, shale, siltstone, and some coal, iron, and lead. These resources allowed for a rich industrial economic base throughout the 1800s and early 1900s.

The hardwood forests were largely cut over to build homes, create farms, and support industrial activities such as iron furnaces. Today, the second-growth forests provide habitat for a wide variety of wildlife. The river has the capability to support many species of fish, although currently fish habitat is adversely impacted by pollution. The corridor may also contain 22 federal or state-listed threatened or endangered plant and animal species.

SIGNIFICANCE

Various modes of transportation that greatly stimulated westward expansion and industrial growth in Pennsylvania evolved in the Juniata River valley, and this is the basis for the valley's primary significance. Indian paths and use of the river for navigation evolved into the development of turnpikes (roads). Then the Pennsylvania Main Line Canal was constructed and dramatically improved access to markets, thereby stimulating industrial growth and local community prosperity. When the Pennsylvania Railroad replaced the canal, prosperity continued for those communities along the line.

Without the canal, this historical scenario is not unlike what evolved in other river valleys in Pennsylvania. The canal's construction was the singular most important phenomenon to occur in the history of the Juniata valley. This first major east-west transportation route linked the East Coast and its waterways with the inland Great Lakes and Mississippi River, thus opening up Pennsylvania west of the formidable Allegheny Mountains.

In addition to transportation, the Juniata River valley has a rich iron history. During the early to mid 19th century, the region's numerous iron plantations were noted for producing high-quality iron products.

Within the corridor are several cultural resources that are nationally significant or have the potential for state or national recognition. These include the Juniata Division of the Pennsylvania Main Line Canal; the Pennsylvania Railroad; the East Broad Top Railroad; the Mount Etna iron furnace complex; and the historic districts of Hollidaysburg, Huntingdon, and Alexandria. In addition, there are other individual structures and sites in Williamsburg and Mount Union and throughout the corridor that reflect the AIHP transportation and industrial heritage themes.

RECOMMENDATIONS

Due to their significance, the canal, railroads, furnace, and historic districts are recommended for further individual study where appropriate. Efforts are underway to look at options for the protection and management of the East Broad Top Railroad National Historic Landmark and Mount Etna iron furnace complex in separate studies of alternatives. There are also several other historic sites and districts in the general survey area that need greater recognition and protection at state and local levels. Refer to the individual segment analysis in appendix A.

The corridor, in certain areas, provides good opportunities for scenic driving and touring of historic sites, and potentially can provide good opportunities for fishing, canoeing, walking, bicycling, and nature study. Some of these activities occur to a limited extent, but it is not clear what the current and future demand is for these and other activities. A more comprehensive study of recreational use along the corridor is therefore recommended to assess recreational opportunities and demand.

Also, water quality and water levels currently place major restrictions on water-based activities. Area state parks, forests, and gamelands provide some protection of scenic values, plant and animal habitat,

and water quality within the river corridor. This protection is limited because of the continuing impact of mine drainage, industrial pollution, and new development on corridor resources. Increased local support for land use regulations – through the updating and enforcement of area master plans, zoning, and subdivision regulations – is needed to curtail indiscriminate development and protect scenic and natural resources. Recognition of the importance of agricultural landscapes as part of the area's cultural heritage is needed to help limit significant loss of the scenic rural landscape and help maintain the agricultural economy of the region.

The 40-mile corridor limit is artificial and does not reflect the much broader area that directly influences the resources within the corridor. Therefore, a more comprehensive study of the Juniata River system and its tributaries may be appropriate in the future. The study would identify significant opportunities and concerns throughout the system and provide a more coordinated approach to long-range planning, protection, and management of those resources. The Pennsylvania Department of Environmental Resources could potentially conduct such a study if the local communities expressed support for it.

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INTRODUCTION

PURPOSE

The *Juniata River Corridor Reconnaissance Survey* is a general survey of natural, cultural, scenic, and recreational resources within the river corridor in Huntingdon and Blair counties. The purpose of the survey is to examine the significance of these resources and determine whether further study of the corridor or individual resources is recommended.

PLANNING HISTORY

The 1985 *Reconnaissance Survey of Western Pennsylvania Roads and Sites* provided the groundwork for later regional congressional hearings that resulted in broad support for federal recognition of the region's significant natural and cultural features related to iron and steelmaking, transportation, and associated industrial themes. Recently an additional theme of labor history and ethnic culture have been added. Congressional funding followed, with the establishment of the America's Industrial Heritage Project and its *Action Plan*. This *Juniata River Corridor Reconnaissance Survey* is an outgrowth of the *Action Plan*. That *Action Plan* recommended various efforts, including further surveys of the Juniata River, the Pennsylvania Main Line Canal, Hollidaysburg, Mount Etna iron furnace complex, East Broad Top Railroad, and Mount Union. Because these and other sites fall within the Juniata River valley area, the recommended follow-up surveys of these areas are included in this *Juniata River Corridor Reconnaissance Survey*.

METHODOLOGY

This survey was prepared by a multidisciplinary planning team. Information on the survey area was gathered from on-site visits; available historic, natural resource, recreation, land use, and census literature; and consultation with federal, state, and local agencies. Early meetings were held with local citizens and citizen groups.

Aerial and on-ground photography was essential in helping analyze natural and scenic qualities and land use patterns. The information is presented in two main sections – (1) a general description of the resources in the study corridor, *general land use trends*, and *resource threats*, and (2) an evaluation of the status and significance of corridor resources with recommendations for additional resource management and protection measures and further study. A more detailed segment-by-segment description of the corridor and resources including detailed maps of each segment is provided in appendix A.

STUDY CORRIDOR

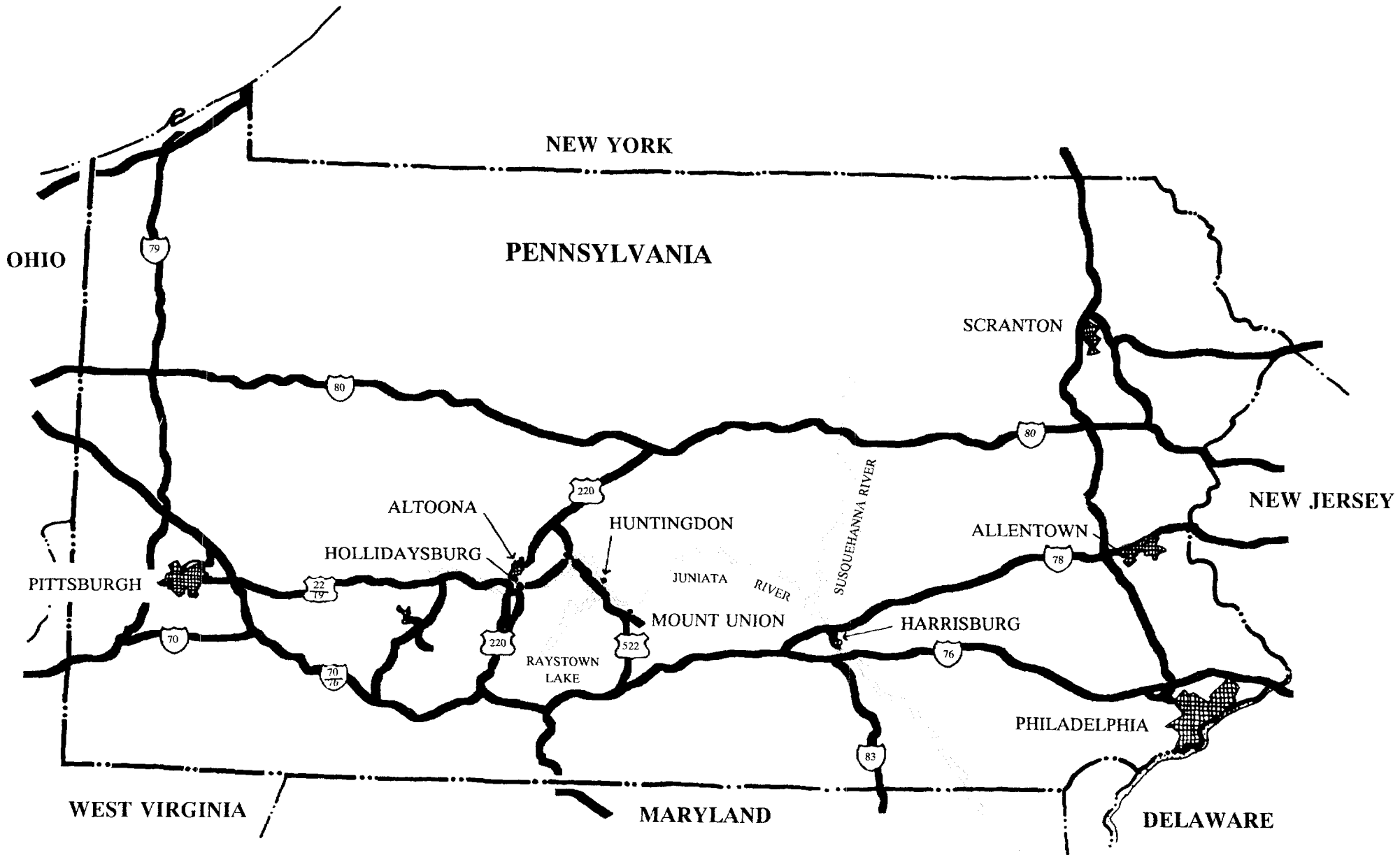
The area surveyed in this document, which will be referred to as the study corridor, lies within a geographical area known as the Juniata River Basin. The river and the Juniata Division of the Main Line Canal form the backbone of the study corridor. The Juniata Division stretched 127 miles along the Juniata River, from the juncture of the Juniata and Susquehanna rivers at Columbia to its terminus at Hollidaysburg where goods and passengers transferred to the Allegheny Portage Railroad. Only the final 40 miles of this canal – roughly between Hollidaysburg and Mount Union – are considered in this reconnaissance study because the project scope is limited to the AIHP nine-county area. However, there are many communities east of the Huntingdon County line that were profoundly influenced by the Juniata Division and retain significant canal-era remains. In particular, Newton Hamilton in Mifflin County has a significant remnant of the canal prism that is intact and accessible and has potential for restoration and interpretation to the public.

The study corridor, in Blair and Huntingdon counties, includes segments of the Beaverdam and Frankstown branches and the Juniata River proper (see Region and Study Corridor maps). Within the corridor are 2 miles of the Beaverdam Branch as it flows east from Hollidaysburg to the Frankstown Branch. The Frankstown Branch flows from this intersection approximately 23 miles to the Little Juniata River confluence. At this point the two branches become the Juniata River, which flows from this confluence another 15 miles to the terminus of the study corridor at the Huntingdon County line, just

past Mount Union. The study corridor is generally ¼ mile on either side of the river, allowing the inclusion of many resources associated with the evolution of canal and, later, railroad transportation and related industries.

AMERICA'S INDUSTRIAL HERITAGE PROJECT THEMES

The America's Industrial Heritage Project is based on the following themes – iron and steelmaking, coal, transportation, and labor and social history; the secondary AIHP themes relate to support industries (such as brickmaking and quarrying); some of these resources also relate to peripheral themes associated with America's growth westward. Throughout the document, and especially in the segment-by-segment analysis in appendix A, the themes represented by the resources are shown. See appendix B for a more detailed discussion of these themes.



Region

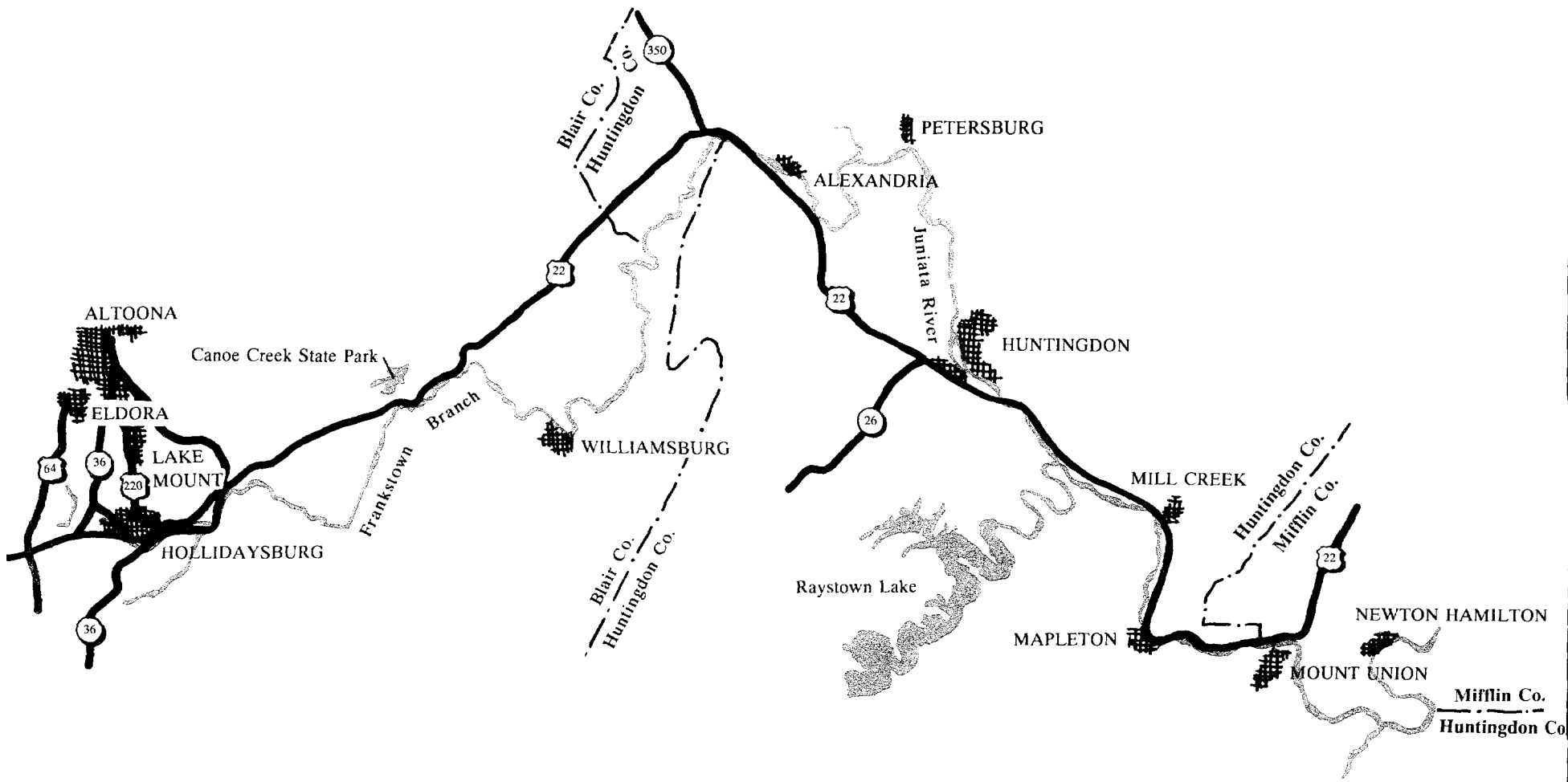
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Study Corridor Juniata River Corridor

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RESOURCE DESCRIPTION

This section presents a general history of the study corridor, a description of the most significant of the resources in the corridor, and a description of general land use patterns and local economy. A more detailed description of the cultural, natural, scenic, and recreational resources in the corridor, which is divided into segments of approximately 3 to 4 miles each, is provided in appendix A. The segments and their respective resources are mapped in much greater detail and representative photos are included in that appendix.

HISTORICAL OVERVIEW

The river and its valley have been used and influenced by native Americans and settlers for hundreds of years. For centuries, numerous Indian tribes occupied the river valley, establishing well-worn trails up and down the mountain-fringed corridor. The valley, with its east-west orientation, made an attractive route through the Allegheny Mountains to lands west. In the 1700s, fur traders, missionaries, explorers, and pioneers began moving west along the valley, using the old Indian paths and then building their own crude roads. The first settlers to the Juniata valley were largely the Scotch-Irish who immigrated for religious reasons. Most were Presbyterians, although a good number of Lutherans and some Roman Catholics lived in the valley, too. These first settlers were later followed by a large influx of German immigrants. Industry and settlement remained sparse due to the isolation of the area and the difficulty of transportation. The Juniata, especially the Frankstown Branch, became one of the early main travel arteries through the interior of Pennsylvania to the Ohio valley. Trading preceded agriculture as early inducements for settlement along the western Juniata, with several outposts built in key locations in the mid 1700s. Communities coalesced around trading establishments at what became Shirleysburg, Huntingdon, and Frankstown, among other places, during the middle of the 18th century. Forts built to protect settlers from the ravages of Indian warfare also encouraged settlement on adjacent tracts.

In 1771 the Pennsylvania Assembly declared the Juniata a public stream and highway for navigational purposes, thereby acknowledging the river's social and economic importance to the colony. While the pronouncement boosted travel and trade in the region, it was during the post-Revolutionary War period that settlement increased all along the Pennsylvania frontier. Huntingdon burgeoned into the preeminent economic hub because of its location on the river.

During the early 1800s the Juniata valley became a major turnpike route between west and east, and beginning in 1821 the Huntingdon, Cambria, and Indiana Turnpike routed traffic west through the mountains. By then, numerous agricultural settlements had evolved along the Juniata, usually at key convergence points of trails or water tributaries. In time the valley, with its rich soil, became noted for its production of grains and grasses. It also supported large numbers of horses, cattle, and sheep. Agriculture-associated industries in the region included woolen mills, gristmills, flour mills, and breweries.

During the 1830s, the coming of the Pennsylvania Main Line Canal, which followed the Juniata River from the Susquehanna River west to Hollidaysburg, transformed these largely self-sustained settlements into communities that were economically grounded in industry and transportation. Iron production, already an established local industry, increased profoundly with improved accessibility to markets. The iron became commonly known as "Juniata" iron. Communities along the Juniata blossomed with their new accessibility and opportunity for transporting goods to major marketplaces. Mining and industry prospered. The Mount Etna iron furnace and other Juniata River area furnaces enjoyed previously unmatched prosperity. Besides Huntingdon, towns like Newton Hamilton, Mount Union, Mill Creek, and Petersburg became important warehousing, milling, and passenger centers. In 1834, Hollidaysburg, at the western terminus of the canal, became a fixture on the line; between 1831 and 1840 its population grew from 72 to 3,000. Other town populations also increased. When the canal closed, replaced by the Pennsylvania Railroad that was completed in 1850, some communities were bypassed and their economies suffered. Communities that were not bypassed continued to grow and prosper.

When iron production in the Juniata valley declined in the 1870s because of competition from modern furnaces in Pittsburgh, other industries took over. Limestone quarrying and processing operations increased, as did coal mining and sand quarrying. This period saw the rise of the East Broad Top coalfield as a major extractive industry. Some towns, like Mount Union, turned to silica brick manufacturing based on their proximity to available resources. By the late 1800s brickmaking had become a primary industry; this and related extractive industries became dominant throughout the corridor, particularly in the Mount Union, Huntingdon, Alexandria, and Williamsburg areas.

Since 1900 most study corridor communities have alternated between periods of prosperity and depression. The rise of automobiles and trucking has somewhat reversed the effects of diminishing industrial productivity in areas without rail transportation. Further offsetting periodic economic strife since the 1950s has been the infusion of small retail businesses and manufacturing plants that have bolstered and continue to supplement the economy of the study corridor. The economic depression that has affected other mining and industrial communities has not spared the Juniata valley. Unemployment is high, and in many areas the population is decreasing as people seek jobs in the larger cities. However, the Juniata valley represents a long history of man's efforts to survive in the wilderness and create a strong nation. The valley's cultural heritage is great, as is its natural beauty, and it is these attributes that may help bring people and economic prosperity back to the valley. Thus tourism and economic diversification in the region offer promise.

CULTURAL RESOURCES

Following is a description of the most significant cultural resources within the study corridor; some of these resources extend along the entire length of the study corridor and, like the river itself, are of transcendent importance to the history and settlement of the region.

Directly, these resources relate to the AIHP theme of transportation and iron and steelmaking; indirectly, they represent an amalgam of all

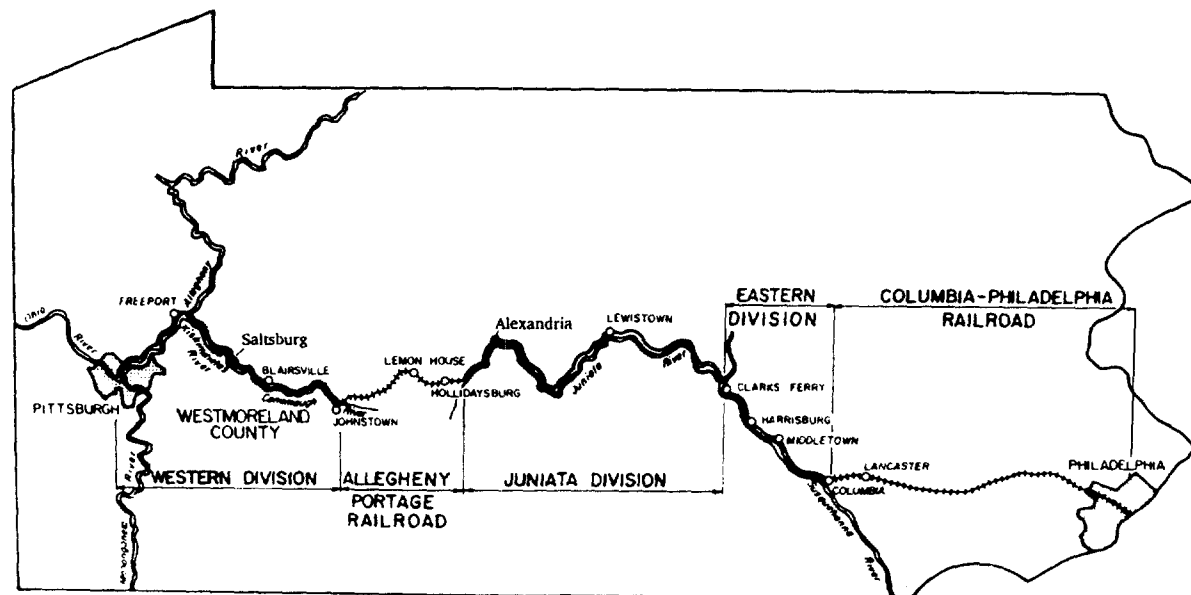
the primary and secondary themes. The historic districts, not directly related to a specific theme, cover a broader context. Individual sites related to these resources as well as descriptions of other cultural resources are discussed in the segment-by-segment analysis in appendix A.

Juniata Division of the Pennsylvania Main Line Canal

The Juniata Division of the Pennsylvania Main Line Canal closely paralleled the Frankstown Branch and the Juniata River through Huntingdon and Blair counties. Inaugurated in 1826 in response to the demands of settlers in the western part of the state, the Main Line Canal finally offered viable competition to New York's Erie Canal as well as to Maryland's National Road – at that time the primary modes of transportation between the Atlantic seaboard and the western country. The canal was the first major east-west transportation route that linked the East Coast and its waterways with the inland Great Lakes and Mississippi River, thus opening up Pennsylvania west of the Alleghenies. The canal was organized into five divisions. The Juniata Division, completed between 1827 and 1832, linked the Eastern Division with the Allegheny Portage Railroad and spanned the rugged mountainous terrain between the Susquehanna River and Hollidaysburg.

The first boat to pass from Huntingdon to Hollidaysburg on the canal was the *John Blair*, which arrived at the latter town on November 28, 1831. En route, the vessel met welcoming parties at Alexandria, Williamsburg, and Frankstown, and at Hollidaysburg a public meeting celebrated completion of the Juniata Division, which cost \$3,521,000. At its terminus, the canal abutted the slope of Allegheny Mountain, over which a unique 36-mile inclined plane portage was built by 1834 (later superseded by the new Allegheny Portage Railroad) to transport canal cargo to the start of the Western Division of the canal. Between March and September of that year approximately 1,100 boats passed Huntingdon in ascending and descending the 395-mile Main Line Canal to and from the west.

Along its 127-mile length, the Juniata Division climbed 584 feet with the aid of 88 locks and 25 aqueducts. The latter devices, supported by stone piers and consisting of roofed wood troughs 18 feet wide, conveyed the canal across streams entering the Juniata River as well as the river itself. Between Huntingdon and Hollidaysburg stood 14 river dams and six towpath bridges, and between Williamsburg and Hollidaysburg there were 15 locks. The dams created pools for 16 miles of slack-water navigation between Huntingdon and Hollidaysburg. As with the other divisions of the Main Line Canal, the Juniata Division canal prism measured 40 feet wide at the top water line and 28 feet wide at the bottom. The channel was 4 feet deep. Generally, the locks were 90 feet long by 15 feet wide; some were of cut-stone masonry, and others were of wooden frames and planks or rubble stone and mortar. Each lock included a gated spillway facing inland to regulate the volume of the lock's water.



Main Line Canal (Dennis Semsick and George B. Johnson, Saltsburg and the Pennsylvania Canal, 1984).

In the eastern part of Huntingdon County, the canal ran along the northern side of the Juniata River to Huntingdon. Above that community, a number of dams provided slack-water pools for navigating along 16 miles of the stream en route to Hollidaysburg. In places where the river itself served as the canal, the towpath alternated from one side to the other as practicality dictated. To ensure a sufficient water supply to offset losses during dry spells, two large reservoirs or basins were built at the Hollidaysburg terminus.

The decline of the Juniata Division, as well as other Pennsylvania canals, began during the mid 19th century. Railroads successfully competed with the canals in the transportation of produce and passengers, and in 1857 the Pennsylvania Railroad acquired the entire Main Line Canal between Philadelphia and Pittsburgh. Ten years later the Pennsylvania Canal Company purchased the Juniata Division from the railroad and continued to operate it. In 1872 the section of the

canal between Williamsburg and Hollidaysburg was abandoned, and its bed was filled in for a branch railroad running between those communities. That part of the canal east of Huntingdon operated until 1889, when it was largely ruined by floods. At Huntingdon, the Pennsylvania Railroad constructed its tracks atop the filled-in canal bed.

Numerous sites along the corridor contain vestiges of the Juniata Division of the Main Line Canal. They commemorate the era of canal transportation and resultant economic growth of western Pennsylvania during the middle of the 19th century.

Pennsylvania Railroad

The route of the Pennsylvania Railroad or its branches closely follows the Juniata River for much of its distance between Mount

Union and Hollidaysburg. As in the case of the canal, outside competition promoted the development of railroads in Pennsylvania in the 1830s – even as the canals were being completed. The Pennsylvania Main Line began construction in 1846, and the 137-mile Eastern Division between Harrisburg and Hollidaysburg was completed four years later, ultimately joining with the Allegheny Portage Railroad and the Mountain Division (on its completion) to surmount Allegheny Mountain.

In 1857 the Pennsylvania Railroad acquired the canal, continuing to operate parts of it into the 20th century. After 1872, however, most of the Juniata Division of the canal was filled in to provide a convenient railroad track bed. In 1873 a branch line was built between Hollidaysburg and Williamsburg; it was extended to Mount Etna in 1892. By 1900 the branch reached the main line of the railroad at Petersburg. The branch line carried ore, limestone, coal, and iron products from local factories, mills, furnaces, forges, and iron mines.

Today operated by Conrail, the route of the old Pennsylvania Railroad is visible virtually everywhere. It follows the Juniata in the form of tracks, roadbeds, bridge abutments, and trestles. It remains historically significant as a catalyst for the developing coal mining and iron production industries in the western part of the state. It further provided transportation for extracted iron and farm products, thereby promoting diversification of the regional economy and contributing to the settlement and cultural growth of that area.

US 22 – The William Penn Highway

US 22 closely parallels the Juniata River for much of its length between Mount Union and Hollidaysburg. The road has provided a major passage between the Susquehanna River on the east and the Ohio River on the west since the late 1700s. Cleared as a wagon route in 1789, the road became a prominent avenue over which iron was transported from the Juniata region to Pittsburgh. Appropriations for improving the road came in 1807, and it became known as the Huntingdon Pike. Approximating parts of the route after 1821 was

the Huntingdon, Cambria, and Indiana Turnpike, also known as the Northern Pike.

Today designated the William Penn Highway, US 22 represents a major historical route along which numerous communities evolved, thereby contributing economically and socially to the growth of the western part of Pennsylvania. The America's Industrial Heritage Project *Action Plan* recommended that US 22 be the nation's first national heritage route, commemorating the early transportation trails and routes and the railroad and canal eras of western Pennsylvania. As such, the William Penn National Heritage Route would provide direct access to cultural resource sites along the study corridor and indirect access to other regional cultural, natural, and recreational sites. A comprehensive study of this heritage route is currently underway.

Mount Etna Iron Furnace Complex

Completed in 1809, the Mount Etna furnace issued up to 600 tons of pig iron annually. Built of cut dolomite, the furnace stands 25 feet high, 16 feet square at the base, 9 feet square at the top, and has a 6-foot semielliptical arch at the front. The west side of the structure, which contained the casting arch, collapsed in 1975. It is currently under repair. The edge of the adjoining charging terrace consists of a high stone wall. Its most productive years were between 1830 and 1865. As many as 130 laborers toiled at the furnace complex, and thus the population of the relatively self-contained Mount Etna Company community numbered several hundred. Pig iron produced at Mount Etna was hauled by wagon along the Huntingdon, Cambria, and Indiana Turnpike to markets in western Pennsylvania. After 1834 the canal and portage railroad provided much more economical transportation of the iron to the company's rolling mill in Pittsburgh.

During the Civil War, when Samuel Isett owned the property, the furnace produced more than 1,000 tons per year, partly for munitions for combat use. Competition from modern furnaces in Pittsburgh led to Mount Etna's closure in 1876. At its peak, Mount Etna produced a reputable iron. Located along Catharine Township Route 463, near

the Juniata River, its significance today stems from the relatively intact survival of the various component structural units of the complex, which together constitute a prime example of Pennsylvania's early iron industry and are thus reflective of a major AIHP theme. Besides the principal buildings and extant ruins, the complex includes an associated cemetery and ore and limestone quarry sites. The furnace site is on the National Register of Historic Places, and the boundary is currently under revision to encompass additional significant resource features. Related extant features include the furnace itself, the ironmaster's house, the worker's living quarters, the stone and frame barn, the blacksmith shop ruins, the manager's residence, the store/office, workers' cabins, charcoal shed ruins, and some canal remnants (details are in appendix A).

Several conditions threaten the integrity of the Mount Etna site, including development, long-term neglect and structural deterioration, erosion, flooding, vegetative overgrowth, and vandalism. The furnace itself is owned by Blair County Historical Society and is currently undergoing stabilization procedures.

East Broad Top Railroad National Historic Landmark

This 36-inch narrow gauge railroad, the last such surviving in the eastern United States, was built in 1872-73 to transport semibituminous coal, sand, rock, lumber, and general freight from the region of Broad Top Mountain to Mount Union, 30 miles distant, where the cargoes were transferred to the Pennsylvania Railroad for shipment to market. It also provided passenger service. The train shops stood at Rockhill Furnace, the approximate midway point.

Although the working railroad formally closed during the 1950s after demand for coal waned, it reopened as a tourist attraction in 1960, providing limited excursions over 5 miles of track in the area of Rockhill. Now a national historic landmark, the enterprise includes six locomotives, several passenger and freight cars, the rails, a station complex, a roundhouse, a turntable, shops, a section house, signals, a tunnel, a water tank, and yards at Rockhill and Mount Union. The East Broad Top is significant as a transportation mode that

contributed to the economic and industrial development of the coal mining region of central Pennsylvania and is thus representative of the AIHP theme of transportation.

Today the East Broad Top Railroad is seriously threatened. There has been cumulative deterioration to the bridges, tunnels, and trestles on the right-of-way, and the threat of fire in the shop complex is very high due to the accumulation of grease and soot over the years. Many of the shop buildings need to be treated for stabilization and deterioration problems. Four of the six Baldwin Mikado locomotives are operational, and several East Broad Top passenger cars survive and are in use. Other rolling stock, including boxcars and coal cars, have not been maintained and are in poor condition.

Hollidaysburg Historic District

This property, on the National Register of Historic Places, encompasses architecturally significant structures dating from the mid 19th century and contains various homes, government buildings, churches, and commercial structures that exhibit styles ranging from Gothic Revival to Italianate to Romanesque to late Victorian. The diverse array of structures includes (1) Highland Hall, a female academy built in 1892 of locally quarried limestone; (2) the Blair County Courthouse, a Victorian Gothic Revival building erected in 1877; (3) the turreted Blair County Jail, built in 1869; and (4) the 1869-70 Presbyterian Church with its corbeled brickwork and carved stone arches. Some of these structures could be impacted by future development in Hollidaysburg; some of the structures show signs of neglect.

Huntingdon Borough Historic District

Nearly 500 historic buildings dating from the 18th century through the early decades of the 20th century compose the district, a national register property in Huntingdon. Some structures were the dwellings and business establishments of prominent local figures, but most were not. A few buildings represent the earliest settlement period; however,

most buildings were built between 1825 and 1900 and represent the Federal, Queen Anne, and Italianate architectural styles (although other styles are present). The district also contains some structures that were erected later or whose integrity has been somehow compromised. A few representative district structures include: (1) the Huntingdon County Jail, built in 1829 and the oldest public building; (2) the William E. McMurtrie house, built in 1854 and presently housing the offices of the Huntingdon County Historical Society; (3) the Huntingdon County Courthouse, erected in 1883, in the French Renaissance style; and (4) the J.C. Blair Building, raised in 1889 to house a stationary business and once the tallest building between Philadelphia and Pittsburgh. The elements composing the historic district probably face the threat of long-term development.

Potential Alexandria Historic District

A recent Historic American Buildings Survey report lists 22 historic structures in Alexandria that were built between the early 1800s and the early 1900s, with most related to the canal era and thus the AIHP theme of transportation (see appendix B). This report further recommended the town be nominated to the National Register of Historic Places as an historic district. These historic structures exhibit various architectural designs and are of frame or brick construction. Most were private residences. These buildings are still privately owned, and threats to them include long-term deterioration and possible future site development.

CULTURAL RESOURCES – ISSUES AND OPPORTUNITIES

A serious concern for many of the transportation, industrial, and community historic resources is the current lack of documentation and protection measures being taken. This applies particularly to the canal and canal-era structures. There are many resources in private ownership that are either abandoned or being poorly maintained and are deteriorating. Others are being threatened by encroaching development. It is important that more efforts be undertaken at various federal, state, local, and private levels to document these

resources and look at creative ways of protecting and interpreting them, where appropriate. Refer to the discussions in appendix A for more details on current threats.

NATURAL RESOURCES

The River System

On its easterly journey to the Susquehanna River in Pennsylvania, the Juniata River meanders through steep forested mountains, narrow gorges, rolling farmland, isolated riverbank communities, and scattered small cities. At times the river is remote and inaccessible as it squeezes between the steep shoulders of mountains; at other times man's presence is obvious as railroad tracks, roads, and buildings press at the river's edges.

The drainage area of the Frankstown Branch is over 738 square miles (in Blair and Huntingdon counties) and consists of approximately 30 smaller tributaries. The total drainage area of the Juniata River proper (the Juniata joins the Susquehanna River at Duncannon in Perry County) is over 3,404 square miles and includes over 180 tributaries (including the Little Juniata, the Raystown Branch, and of course the Frankstown Branch). From Petersburg to Mount Union there are approximately 20 tributaries to the Juniata River, including the Raystown Branch. The Raystown Branch has a drainage area of over 963 square miles. The other tributaries of the Juniata between Petersburg and Mount Union drain an area of over 338 square miles.

Geology, Vegetation, and Wildlife

The most dominant features in the study corridor are the long ridges and valleys that are oriented southwest to northeast. Some of the mountains and ridges observable from the corridor include Lock, Tussey, and Short mountains and Warrior Ridge. The valleys vary in width from 2-3 miles and are drained by quick-flowing streams. Eventually these streams flow into the slower-moving branches that make up the Juniata River.

The topography along the river varies from area to area, quite steep in the gorge areas and flat, gently rolling, or sloping in other areas. Most of the rural communities and farmland are in the flat to rolling landscapes.

Tilting, folding, and erosion have produced the mountains and valleys that extend from 970 feet at the base to crests of 2,500 feet. Generally, sandstone caps the ridges, limestone is under the valley bottoms, and shale and siltstone are under the mountainsides and lower hills.

The geology of the area has had and continues to have an impact on the economy of the area. Sand, gravel, and stone quarries, along with glass-sand mining, continue in the area. Some coal mining may occur, although most mines closed down 30 years ago.

Four seasons are sharply defined throughout this part of Pennsylvania. Rainfall, averaging 39 inches annually, supports a variety of lush vegetation. Snowfall averages 25 to 42 inches annually.

The existing Allegheny hardwood forests are primarily second growth because of the heavy logging that occurred during the 19th and early 20th centuries. From 1800 to 1890, lumbering involved scattered, sporadic harvesting of the larger trees of selected species – mostly white pine, although hemlock and even some of the better hardwoods were cut toward the end of the period. Most of this wood was used for making charcoal for the iron furnaces, log homes, and furniture. From about 1890 to 1920, and in some areas through 1930, most of the forests were completely clear-cut.

The most heavily forested areas through which the river flows are those areas where the topography has prevented much human intervention, such as on steep slopes (e.g., Warrior Ridge and Jack's Narrows gorges and Tussey Mountain). The upper steep rocky slopes are usually dominated by an association of chestnut and red oaks, and the lower slopes by white oak and hickory. Other major canopy trees that can be found on the slopes include red maple, black gum, and sweet birch. Other types of mountain forests usually include white

oak forest, which would have an association with white pine and birch.

Swamps and bogs (caused by depressions in the floodplain) have canopies of red maple, black gum, hemlock, white pine, yellow birch, sweet birch, and paper birch. Secondary woody plants include silky dogwood, spice bush, witch hazel, huckleberry, dewberry, and blueberry.

The riparian habitats along the corridor contain box elder, sycamore, silver maple, and willow canopy vegetation. These vegetation types are also found in association with American elm, red maple, musclewood, crataegus, and spice bush. In the gorge areas, the riparian habitats may be dominated by hemlock/hardwood associations, with hemlock, white ash, and yellow birch dominating.

Forests and open woodlands are considered to be major habitat areas for wildlife within the river corridor. Pasture and croplands are of secondary importance, with rural and urban areas providing some habitat for those species that are tolerant of this type of environment.

Birds, which can be seen and heard in all habitats during all seasons, are the most conspicuous and abundant animal life in the area. There are close to 200 species of birds that may be seen within the study corridor, including over 35 species of water birds (including ducks, shorebirds, swans, and wading birds), 25 species of warblers, 13 species of sparrows, 8 species of owls, 6 species of woodpeckers, 6 species of hawks, and more than 100 other species of birds.

This area potentially contains about 50 species of mammals, including bats, mice, shrews, squirrels, voles, weasels, rats, rabbits, fox, raccoon, opossum, porcupine, and beaver. The larger mammals within the river corridor are black bear, white-tailed deer, bobcat, and possibly coyote.

The three state game lands that border the corridor, and four others that are nearby, provide habitat for many game species. The most important game species in this region is deer. Other important mammal species are rabbit, fox, gray squirrel, and woodchuck. Game

birds include turkey, pheasants, and bobwhite quail. Mourning doves and ducks are the other most frequently hunted species in the area. Other animals hunted less frequently in the area include opossum, raccoon, red squirrel, woodcock, and crows.

Aquatic species within the study corridor include 25 species of amphibians and 40 species of fish. The major fish types within the corridor (Frankstown Branch and the Juniata River proper) include 7 species of shiner, 4 species of minnow, 3 species each of dace and chub, 2 species each of sucker, sculpin, and bass, and another 15 species, including brown trout, sunfish, madtom, carp, bluegill, and catfish. Smaller tributaries to the study corridor have some of the above species in addition to brook trout, rainbow trout, and sculpins. Some waters have sufficient numbers of trout, primarily brown trout, to qualify for wild trout management. The Frankstown Branch is stocked with trout in two locations. The Juniata River proper is not stocked with trout, but four tributaries to the study corridor (within Huntingdon County) are stocked.

The most popular fish harvested within the corridor waters include brown trout, bass (rock and smallmouth), bluegill, pickerel, bullhead catfish, carp, and suckers.

There are 22 species of plants and animals that may be found in the study corridor that are listed as threatened or endangered: the eight state-listed threatened species include the American bittern, least bittern, Henslow's sparrow, black tern, sedge wren, small-footed myotis, eastern wood rat, and showy lady's slipper; the six state-listed endangered species include the osprey, short-eared owl, king rail, upland sandpiper, Bewick's wren, and Indiana myotis. The bald eagle, peregrine falcon, arctic falcon, Indiana myotis, and eastern cougar (probably extinct) are all listed as federal endangered species. The state has also listed the white heath aster as rare, and the yellow gentian, hemlock-parsley, and three-flowered melic as tentatively undetermined. Showy lady's slipper habitat is swamps and bogs within the floodplains of the Juniata River and its tributaries. The white heath aster is known to occur around the rolling hills within the study corridor. The three-flowered melic is found in the corridor on

rocky southwest-facing limestone banks. Hemlock-parsley grows on the banks of rivers and streams.

Marketable Resources

The natural resources of this area – the abundant minerals, ores, vegetation, streams, and rich soils – have had a major impact in shaping the development of this region by providing the basic raw materials that settlers used to build a strong industrial base for their economy. Even with the competition of industrial centers elsewhere and new technologies, these resources continue to contribute to regional industrial activities, including the tourism industry.

Fuels. The northern end of the Broad Top coalfield covers an area within the southwestern part of Huntingdon County and southeastern part of Blair County. Large reserves remain to be mined, and with the renewed emphasis on coal, the Broad Top coalfield is generating some attention.

Nonmetallic Minerals. The valleys in this area are underlain by limestones that are adaptable for many purposes. Limestone has been quarried for crushed stone, cupola flux, agricultural lime, glass manufacturing, paper production, and road metal. Dolomite, with millions of tons available, occurs near Spruce Creek.

The Ridgely sandstone of the Oriskany formation has provided an abundance and variety of sandstone that contains valuable glass sand, said to be the best in the country. A wide range of industrial and ground sand is produced near Mapleton.

Tuscarora (Median) sandstone is a quartzite and serves well as ganister, which is used in the manufacturing of refractory brick. Several refractory plants along the Juniata River use this material. The Gatesburg and Oriskany formations are important sources of white refractory clays. Extensive operations for producing the clay, which is used principally as refractory cement and furnace lining, were located in a couple towns in and surrounding the study corridor.

Although the shale resources are undeveloped, large reserves are suitable for making brick and tile. Of particular promise are the Devonian shales near Huntingdon and Mill Creek.

Metallic Minerals. Deposits of iron ore, lead, zinc, and manganese occur within the two-county area. These have been worked to varying degrees over the past two centuries. Deposits of limonite and brown hematite ore have also been mined, and until Lake Superior ores became available, limonite was mined extensively.

Forest/Lumber. Huntingdon County has a very strong hardwood lumber resource base. Seventy-five percent of the county is forested, with oaks (white, chestnut, red, and other oaks) comprising 37.5 percent of all sawlog production, 58 percent of all hardwood net board feet volume, and 55 percent of all net board foot volume in the county. Conifers, while less plentiful, are also available for harvest and include hemlock and white pine. These figures are pretty close to what is happening in Blair County also, although Huntingdon surpasses Blair in forest resource use. There are approximately 30 sawmills in the two-county area.

Water Resources

There are 26 reservoirs in Blair County, with a combined total capacity of 3,270 million gallons. The total yield is 70 million gallons per day. The amount of water that could be safely drawn from these sources is approximately 36 million gallons per day. As the county develops, the need for additional strategically placed reservoirs becomes more likely. These new reservoirs would better serve domestic users and could provide additional water needed to attract or support new industries. In addition to the reservoirs, 12 wells and three springs are presently being used for municipal purposes.

There are several main tributaries of the Juniata River in Huntingdon County that provide potable water to local homes and businesses. The county has the potential for additional development of its water resources for the generation of electricity. The largest project is at Raystown Dam, which produces 21 megawatts of hydroelectric power

using run-of-the-river power. Another project is the replacement of the Warrior Ridge facility. Three 500 kilowatt generators will be installed.

Agriculture

There are approximately 120,000 acres of usable farmland in the two-county area. This acreage includes permanent pasturelands (primarily for dairy production), hay, corn, oats, alfalfa, and other small grains. Less than .5 percent of the total acreage consists of orchards, vineyards, and idle cropland.

NATURAL RESOURCES - ISSUES AND OPPORTUNITIES

Under Pennsylvania state law, all rivers and streams are classified based on water quality criteria. The classifications include exceptional value waters, high quality waters, cold water fishery streams, and warm water fishery streams. The three major class streams within the study corridor are all warm water streams. Of the more than 50 tributaries that drain into these major streams, only 13 cold water streams are classified as high quality, and most of these drain into the Juniata River proper. High quality waters have not only excellent water quality, but also environmental features that require special water quality protection. There are four cold water streams, which drain primarily into the Frankstown Branch. The remaining tributaries are warm water streams. Healthy cold and warm water streams are maintained or propagated with fish and other flora and fauna species indigenous to the respective habitat.

However, these classifications do not reflect the fact that the Beaverdam and Frankstown branches and the Juniata cannot easily support a naturally diverse and healthy population of flora and fauna because of pollutants such as acid mine drainage, agricultural runoff, siltation and sedimentation, and sewage treatment plant effluent. Although some of these threats originate outside of the study corridor, they directly affect the study corridor. For example, there is a paper mill in the Roaring Springs area that pumps effluent into a

tributary of the Frankstown Branch, and there are sewage treatment plants, mines, and factories that pump wastes into tributaries along the study corridor.

At the time of this survey, nine sewage treatment plants within the study corridor were providing various levels of treatment. All were pumping treated effluent into the study corridor, either directly or indirectly. Four plants were pumping effluent directly into the Frankstown Branch, two were pumping effluent into tributaries of the Frankstown Branch, one was pumping effluent directly into the Juniata, and two were pumping effluent into tributaries of the Juniata.

Upstream from Hollidaysburg, the Beaverdam Branch is being degraded by acid mine drainage, urban runoff, and sewage treatment effluent that is pumped into the various tributaries. The combination of impacts to tributaries and the quality of the water flowing into the Beaverdam Branch creates a very complex and highly variable water quality. Water quality begins to improve slowly as the water flows toward Hollidaysburg. However, as the Beaverdam Branch flows to its confluence with the Frankstown Branch it passes the Conrail railroad yards, and runoff from these expansive yards during storms further decreases the water quality.

Water quality data for the Frankstown Branch (before it enters the study corridor) indicates a variety of point-source pollutants, including industrial waste, sewage, and urban and agricultural runoff. However, it appears pollution has not degraded the first 6 miles because the Pennsylvania Fish Commission manages that section as a trout fishery, indicating good water quality. It is after this that most of the pollutants have been monitored and water quality begins to decline.

From Petersburg to Mount Union the Juniata River has not been continuously monitored since 1976; however, U.S. Geological Survey data from 1969 to 1976 and state data indicate that the river has significant pollution problems because of the same sources mentioned for the Beaverdam and Frankstown branches. Although not a completely dead river, certain segments (those areas of point-source pollution) are considered significantly polluted. At no point along the Juniata River is fish stocking considered. In certain areas, trout may

be present, but only in areas where there is a confluence with a cold water trout stream.

The acid rain issue has been well documented for this region of America. Coal and iron ore mining, and possibly quarrying, have had impacts on rivers and streams in the form of acid mine drainage. Although there have been many favorable advances in water treatment technology, sewage treatment and industrial plant effluent still impact water quality. Agricultural lands also impact rivers and streams with pesticide and fertilizer runoff.

Man's impact on the area has altered the ecosystem in other ways – the increased gypsy moth population and impact on the oak forests is one example. Overpopulation of deer herds and their browsing has seriously restricted young overstory reproduction and ground cover. Drastic changes have been made in existing topography by mining (especially surface mining); road, railroad, and canal-building; river channelling, dredging, and damming; and development of cities. Deep mining has brought up slag that is now spread across the surface of the ground. Deep mining and deep pumping of water have caused rock movement and lowered water tables, resulting in increased sinkhole formation and shrinking of wet, especially organic, soil substrate. Continuing crop production, grazing, timbering practices, road building – all of these have major impacts on soil deterioration through erosion, leaching, oxidation, and structural breakdown. Toxic material build-up is occurring in the forms of radioactive, lead, chemical, and organic (as sewage) wastes that pollute streams, drinking water, air, and soil. Although these impacts may not all be occurring directly within the study corridor, these things are occurring in the southwestern Pennsylvania region.

Maintaining the environmental quality of open space is a concern of both Blair and Huntingdon counties. Community support is limited for land use regulations that will help protect the area's environmental quality. Effective building permit, subdivision, and zoning ordinances are more the exception than the rule throughout the corridor. Soil erosion control, stormwater management, floodplain management, and water quality control are major concerns that have received little municipal support to date.

Agriculture contributes to the area's economic diversity and to the scenic rural landscape. This major land use may continue to decline in importance unless measures are taken to ensure its protection. Many of the soils suitable for agricultural use are also suited to on-site septic systems and community development.

RECREATIONAL RESOURCES

The abundant open space provided by the state parks, forests, and game lands in and near the study area offers residents and tourists ample opportunities for hunting, fishing, and hiking. The Lake Raystown development in southern Huntingdon County provides the major source of water-based recreation and camping in the region. As a result of these amenities, recreation is a major factor in the area's economy. Certain recreation facilities, however, are not provided. For example, Huntingdon County identified in its *Open Space and Recreation Plan* (Huntingdon County Planning Commission 1979b) a need for more pedestrian, bicycle, and bridle trails that are more easily accessible to population centers. The plan also recommended additional private camping facilities to augment facilities provided at Raystown. Most other recreation needs identified in the plan focused on additional municipal indoor recreation facilities and performing arts centers.

In recognition of the benefits open space and recreation areas provide, the 1979 plan listed the following goals:

The public ownership of all lands within the County presently held by various agencies of the State and Federal Governments is endorsed and these agencies are encouraged to acquire additional lands, not specifically identified, which are situated within low intensity use areas, have steep slopes, and/or poor or alluvial soils.

Use of land difficult to develop by reason of steep slopes (20% and over), floodplains, and difficult soil conditions either as open space or for agriculture, forestry, camping,

hunting, limited commercial recreation, or low-intensity residential areas is encouraged.

Improvements to existing State Parks and Game Lands are endorsed.

The designation and acquisition of natural areas should coordinate the multiple goals of recreation potential as well as environmental concerns, wildlife preservation, educational opportunities.

Scenic quality within the County enhances and strengthens recreation potential; thus, scenic corridors should be protected by land use regulations and sign control. Presently designated scenic routes in the County to which this might specifically apply are Routes 26 and 994 and parts of Routes 913, 305, and 45. Overlooks that are presently just pull-offs without guard rails should be improved.

A recognized need involves the development of further trail systems, specifically in the areas of passive walkways and bikeways. Great strides have been made in the County involving hiking trails such as the Mid-State Trail, Tussey Mountain Trail, and various trails that have been developed on State Forest and Game Lands and in State Parks. Further emphasis should be placed on passive trails and walkways more available to local and community use. Existing old roads and abandoned railroad beds are well suited to this type of trail use, but they need deliberate development to maximize their value to the user public. Recreation potential of vintage barge canals, flood plains and utility rights-of-way should also be recognized and used.

The Juniata River

The Juniata River is an important local waterway for fishing and, to a lesser extent, canoeing. The amount and variety of fish are limited because of pollution, primarily from the mining and paper industries,

agriculture, and sewage. Further downstream, the more polluted waters are diluted by tributaries, increasing the quality of fishing. The 1979 *Open Space and Recreation Plan* for Huntingdon County noted that improved water quality had expanded fishing opportunities on the Juniata and recommended that the Juniata be protected for water sport use. Some other streams near but outside the study corridor have prime trout fishing and are a major destination for fishermen in the region.

Canoeing is a very seasonal activity because of the very low water levels most of the year. Canoeing is usually feasible throughout the study corridor in late winter and early spring. Especially wet early springs extend the season – from the middle to the end of April on the Frankstown Branch and from the end of April to mid May on the Juniata River. Following these times, shallows on both rivers become troublesome, often requiring carrying the canoe for short distances. The Frankstown Branch has a steeper gradient than the Juniata and during high water is considered a good, fast run with rapids of medium difficulty. The Juniata River offers a more extended and leisurely course and could include camping; it also offers good examples of Pennsylvania geology.

Within the study corridor are two dams. The one at Williamsburg has a 6-foot drop and is an impoundment for cooling water for a coal-fired power plant. (This plant may be closing in the near future, and an opportunity potentially exists to remove the dam to improve navigability.) This dam is best portaged along the southern shore. The other is a 16-foot hydroelectric dam at Warrior Ridge, just south of Petersburg. Canoeists need to portage approximately 150 yards along the northern shore.

Downstream of the juncture of the Raystown Branch and the Juniata, water levels appear nominally adequate for canoeing most of the year. This area of the river is much wider, more exposed, and offers a different experience from the narrower, more enclosed and intimate experience upstream of the Raystown Branch.

The Pennsylvania Scenic Rivers Act 283 (1972), as amended by Act 110 of 1982, authorized a state scenic rivers system. This act

specified procedures for designating certain river segments having outstanding aesthetic and recreational values. Rivers were evaluated and rated according to natural resource values, character, extent of man-made development, resource threats, and recreational use or potential. There are three priority groups in the inventory that was completed for the program. One of the groups is “considered to be of statewide and/or nationwide significance.” Both the Frankstown Branch (from just east of Hollidaysburg to the confluence with the Little Juniata) and the Juniata proper (from the Little Juniata to Mount Union) were included in this statewide and/or nationwide significance group. Nationwide significance refers to the fact that these segments are on the National Rivers Inventory. The Juniata, from the Little Juniata to just north of Huntingdon, was also categorized as a waterway with an immediate need for protection. The only section of the corridor that was given a canoeable rating by the inventory was the Juniata proper from south of Huntingdon to the confluence with Tuscarora Creek in Juniata County. Canoeable ratings were based on degree of difficulty and water levels.

Resorts

The major recreational attraction in the vicinity of the study corridor is Raystown Lake National Recreation Area in southern Huntingdon County. The Army Corps of Engineers created Raystown Lake on the Raystown Branch of the Juniata River between 1968 and 1978. The 8,300-acre, 30-mile lake was built as part of the Susquehanna River Basin flood control system. The dam controls 960 square miles of drainage and was designed to provide flood control, recreation, and enhancement of fisheries and wildlife. There are 13 public use areas, including two major resort complexes run by concessioners. Together these developments provide access and opportunities for boating, waterskiing, fishing, swimming, camping, hunting, and picnicking. The resorts provide additional attractions, such as boat rentals, boat cruises, water slides, bike rental, miniature golf, a petting zoo, an amphitheater, fine lodging, restaurants, and camp stores and concessions. The lake had 1.6 million visits in 1987. It is only a two- to three-hour drive from such major metro areas as Pittsburgh, Washington, D.C., and Baltimore.

Edgewater Acres is a small, family-run, country resort just outside Alexandria that is a particularly popular vacation destination of elderly Pittsburgh residents. It offers a relaxing rural experience along the Juniata River and provides lodging, dining, nightly entertainment, and a wide range of recreational activities such as swimming, volleyball, badminton, fishing, horseshoes, and shuffleboard.

State Parks, Forests, and Game Lands

The state parks offer cabin lodging, canoeing, camping, fishing, swimming, picnicking, cross-country skiing, nature studies, and hiking. There are 8,112 acres of parkland within the surrounding area. The only state park in the immediate study corridor is Canoe Creek State Park, between Hollidaysburg and Williamsburg on Route 22, where a man-made lake offers fishing and canoeing opportunities. Within a short drive of the study corridor are Blue Knob, Greenwood Furnace, Whipple Dam, and Trough Creek state parks.

The state forests are managed by the Pennsylvania Bureau of Forests for timber production and watershed protection. Hunting, fishing, and hiking are the primary activities available. The Bureau of Forests does make hunting cabin camps available to groups through a leasing program. Rothrock State Forest, a large tract of over 33,000 acres, borders a short section of the study corridor in the town of Water Street. Most of Rothrock is outside the study corridor.

The state game lands, managed by the Pennsylvania Game Commission, are set aside to provide habitat for wildlife and are used primarily for hunting, hiking, and fishing. There are 12 designated game lands within an easy drive of the study corridor, representing over 35,000 acres of wildlife habitat. Parts of game lands (numbers 147, 118, 112, and 71) are within the study corridor.

Trails and the Railroad Right-of-Way

Many miles of hiking trails are available to the more hardy in the state parks, forests, and game lands. Of note is the Mid-State Trail in

Rothrock State Forest and Standing Stone Experimental Forest – a continuous 50-mile ridge trail that is managed by the state (and by Pennsylvania State University within the experimental forest).

There is a notable lack of trails for casual walking, bicycling, or horseback riding near the populated areas of the study corridor. Potential sources for trail routes include abandoned railroad right-of-ways, abandoned roads, and utility corridors.

Within the study corridor are several miles of abandoned railroad tracks. These level, graded rights-of-way have excellent potential as recreation sites for activities ranging from train excursions to hiking, bicycling, cross-country skiing, and horseback riding. Frequently directly parallel to the river, these rights-of-way often connect historic resources while offering an attractive natural environment through which to visit sites. Only the East Broad Top Railroad and Shade Gap Electric Railway offer visitors steam train and electric trolley rides along a small portion of the East Broad Top Railroad line between Orbisonia and Shirleysburg. Also, the Blair County Chapter of Rails to Trails is planning the Juniata Trail along the Juniata River from Williamsburg to Alexandria. The Williamsburg Heritage and Historical Society is planning to develop a heritage park, which would also serve as a trailhead. In its open space plan, Huntingdon County endorses in theory the development of trails in such corridors. But in the *Transportation Plan* (Huntingdon County Planning Commission 1980), the county recommends retaining all existing rail lines because Huntingdon currently has inadequate rail service.

Local Recreation and Community Events

Most recreational activities occur in and around the local communities. Local municipal parks, recreation fields, and schools provide most of the community open space and are used primarily for picnicking and ball games. Huntingdon County has identified only a few areas that are significantly lacking in these facilities. The major recreational needs identified in the 1979 plan include more swimming pools, gymnasiums, and performing arts centers. Several annual festivals are held in the study corridor and attract mostly local

residents. These include the spring and fall festivals in Hollidaysburg and Huntingdon, annual county fairs, and festivals that commemorate historic events, such as Hart's Log Day in Alexandria and Canal Era Day in Mount Union.

Even though some of these events reflect local heritage, little is done on the part of the communities to provide programs on local history, such as historic house or district tours or lecture series. In Hollidaysburg the Blair County Foundation for Historic Hollidaysburg conducts tours of the historic district; the Huntingdon County Historical Society and Museum offers occasional lecture series and stores historic records and artifacts; and the Hartslog Heritage Museum in Alexandria displays various local historical objects.

Other local tourist attractions include the Swigart Auto Museum just outside Huntingdon, which specializes in the preservation and display of vintage American cars and accessories. The Indian and Lincoln Caverns, which are commercially run attractions in Huntingdon County, offer guided tours, souvenirs, and picnicking. Tituna Caverns, which are protected through the Western Pennsylvania Nature Conservancy, are not developed and visitors must obtain permission to visit them.

LAND USE AND ECONOMY

The land base along the corridor is devoted mostly to undeveloped open space in the form of the river, its floodplain, the surrounding forested mountains, and farmland. Some of this is owned by the state in the form of park and game lands. Some of the privately owned parcels, which range in size from one to several hundred acres, are owned by companies and organizations such as the Pennsylvania Glass Sand Corporation, Quarry Hollow Club, Ridge Realty and Development Company, Pennsylvania Central Corporation, and Harbison-Walker Refractories Company.

The towns that dot the length of the corridor are primarily residential centers, with the larger communities also centers for the three major employment activities – manufacturing, retail trade, and services. In

Blair County the manufacturing sector has grown substantially over recent decades, allowing the wholesale, retail, and service trades to grow steadily. In Huntingdon County, the stone, clay, glass, and concrete industries employ more than one-third of the work force, followed by the apparel and footwear manufacturing, electronics, and paper industries. Most of this industry is concentrated in the boroughs of Huntingdon and Mount Union and also in Smithfield and Shirley townships. Tourism is a growing part of the local economy because of the scenic, recreational, and historic amenities available in the vicinity. One of the areas most affected by tourism benefits has been Huntingdon County because of the Raystown Lake complex.

Originally, the canal and then the railroad linked this corridor of communities together. These transportation routes provided the economic stimulus for the development and growth of mining and iron- and steel-related industries. Now US 22 forms the major lifeline between these communities and the main markets to the east and west. The Pennsylvania Department of Transportation has recently released a study of the US 22 corridor that addresses improving its level of service and safety. This would involve realigning sections and widening others to four lanes of limited access. These actions may affect historic resources along the corridor.

Based on 1980 census data, the general population trend in both counties appears to be shifting slightly. The boroughs are losing residents while the surrounding countryside population is increasing. In Huntingdon County, all of the boroughs along the Juniata showed no growth to substantial population decreases of up to 15 percent. Of the townships, only those dependent on mining have shown an overall population loss since the 1940s. Based on the 1980 census, Frankstown Township, in which Hollidaysburg and the western terminus of the study corridor are located, had the densest population of 120 or more persons per square mile. Following the corridor east, population levels quickly drop to moderate (40-80 persons/sq mi) and sparse (0-40 persons/sq mi) levels. The exceptions to this trend in Huntingdon County are in the boroughs of Huntingdon and Mount Union and in Smithfield Township, where population is relatively dense (80-120 persons/sq mi or more).

SIGNIFICANCE AND RECOMMENDATIONS

The Juniata River valley in Huntingdon and Blair counties is today an economically depressed region. No longer does it bustle with the mining and industrial activities that provided such economic stability in the past. To help ensure greater future economic stability, the region is beginning the important process of diversifying business activity into other sectors, such as light manufacturing, retail trade, services, and tourism. Tourism is a growing revenue source because of the region's natural beauty, isolated communities, abundant outdoor recreation space, and proximity to several large urban areas. The potential exists for developing additional tourism opportunities through the protection, promotion, and interpretation of significant cultural resources within the study corridor and by providing additional recreational opportunities.

CULTURAL RESOURCE SIGNIFICANCE AND RECOMMENDATIONS FOR FURTHER STUDY

The Juniata River valley is primarily significant for the evolution of transportation modes that took place in the valley that greatly stimulated westward expansion and industrial growth in Pennsylvania. Continually improving transportation allowed communities to market the abundant natural resources readily available in this geologically rich area and develop a variety of local industries.

Of the myriad historic resources identified in this report, several were found to be particularly significant to Pennsylvania and American history and are recommended for further study. These resources are summarized below.

Juniata Division of the Pennsylvania Main Line Canal

The canal is significant for the role it played in Pennsylvania during the canal era of American transportation history. The canal resulted in significant growth in population and industry along the corridor, provided the critical initial link between Allegheny Portage National

Railroad and Philadelphia, and competed successfully, although briefly, with the Erie Canal and the National Road.

Vestiges of the canal that were not covered by the railroad remain in varying degrees of decay. It is critical that a comprehensive study be undertaken to document the original location of the canal's 127-mile Juniata Division and the location and condition of canal remnants. Appropriate historical documentation of its development, operation, and economic impact should also be included, along with recommended preservation measures. (The National Park Service administers other sites highlighting the importance of canals in American history, notably the Chesapeake and Ohio Canal National Historical Park, Cuyahoga Valley National Recreation Area, and the George Washington Memorial Parkway.)

The Pennsylvania Railroad

More efficient and reliable than the canal, the railroad provided better transportation for extracted iron and farm products and thereby promoted further diversification of the regional economy and contributed to the settlement and cultural growth of that area.

Further study of the railroad's impact on the study corridor's economy is needed to fully understand its contribution to the region. (Another NPS site associated with the role of railroads in the development of regional economy is at Steamtown National Historic Site in Scranton.)

Mount Etna Iron Furnace Complex

This complex is on the national register as a historic district and represents a prime example of Pennsylvania's early iron industry due to the survival of archeological remains and important components of the site's operations, including the furnace, store, ironmaster's house, and workers' living quarters.

Potential options for protection, use and management have been explored in a 1990 *Study of Alternatives* for the Southwestern Pennsylvania Heritage Preservation Commission. The commission has recommended the complex for establishment of a national historic site. The National Park Service currently maintains two areas relating to the history and importance of local and regional furnace complexes – Hopewell Furnace National Historic Site in Pennsylvania and Saugus Iron Works in Massachusetts. The site also complements the theme of commerce on the Pennsylvania Main Line Canal, which is part of the interpretive program at Allegheny Portage Railroad National Historic Site.

East Broad Top Railroad National Historic Landmark

The East Broad Top Railroad National Historic Landmark is the oldest and best remaining example of an operating narrow gauge system in the nation and is significant as a transportation mode that contributed to economic and industrial development of the coal mining region of southwestern Pennsylvania. The railroad is just south of Mount Union, which is on the proposed US 22 National Heritage Route.

Alternatives for the protection, management, and use of all or sections of the 30-mile railroad system have been explored in a 1990 draft *Study of Alternatives* for the Southwestern Pennsylvania Heritage Preservation Commission. Please refer to this study for more details. (Nearby Allegheny Portage National Historic Site further exemplifies the role of railroads in the economic growth of western Pennsylvania and the nation.)

Historic Districts

Associated with the above resources and the development they stimulated are the historic town districts such as Hollidaysburg Historic District and Huntingdon Borough Historic District. An Alexandria Historic District has been proposed as a result of a study by the NPS Historic American Buildings Survey/Historic American

Engineering Records divisions in 1989 entitled *Two Historic Pennsylvania Canal Towns: Alexandria and Saltsburg*. Other areas within the corridor have a variety of structures that date to the canal and railroad period, many of which are privately owned. Some are publicly owned and being protected, but many are threatened by neglect and encroaching new development. Increased public and private cooperation in documenting, protecting, and interpreting these resources is recommended. This would be especially appropriate for canal-era structures. The Park Service is currently working with Hollidaysburg to provide assistance in the development of interpretive wayside exhibits, a type of assistance that could be available to other communities where the need is identified.

NATURAL AND RECREATIONAL RESOURCE RECOMMENDATIONS

From the analysis of natural, scenic, and recreational resources, the region is identified as scenic with many recreation opportunities for both tourists and local residents. As part of the statewide scenic rivers inventory of 1975, two segments were nominated as having statewide and/or nationwide importance. One segment is 18 miles long and extends from Warrior Ridge to Mount Union. The other 28-mile segment includes the Frankstown Branch from Hollidaysburg to its confluence with the Juniata River proper. Also, a 10-mile segment of the Little Juniata just upstream of its confluence with the Juniata is listed on the NPS Nationwide River Inventory as a potential candidate for inclusion in the National Wild and Scenic Rivers system.

Clearly there is growing recognition for the natural values of this area. With this recognition and increasing desires for diversifying the local economic base through tourism, there is more attention being paid to improving the environmental quality of the river and its environs. Impacts to environmental quality, largely due to many years of mining and industrial activity, combined with lack of environmental controls, have been cumulative. Various actions are recommended to address this situation, but to adequately do so will require the cooperation of entities outside the study corridor. Ideally, a more comprehensive study of the Juniata River watershed is needed

that will look at the resource as a interdependent system and not be limited by artificial boundaries such as in this study. The Pennsylvania Department of Environmental Resources has the ability to take this more comprehensive approach if the communities along the river and tributaries express support for a study. Such a study will provide a better framework for future planning and management, particularly of water quality and fisheries management.

In the meantime, the following actions are recommended as soon as possible to begin enhancing the natural values of the river corridor. These actions can be accomplished by various entities, including federal, state, and local governments, universities, and private organizations.

- Improve community and local government commitment toward and enforcement of existing land use regulations and development of new creative land use protection approaches – Lack of regulations, particularly along the river floodplain, within scenic mountain views, and along or within historic corridors or districts, results in indiscriminate development that threatens resource integrity and qualities attractive to tourism and settlement. It is recommended that area master plans, transportation plans, zoning, and subdivision regulations be updated. Also, recognition of agricultural landscapes and their importance to the region's cultural heritage is needed to help limit significant loss of agricultural activities. This might be accomplished through special zoning and tax breaks.
- Improve water quality and flow levels – A cooperative regional effort to improve the water quality of the Juniata River and its tributaries is recommended. A water quality assessment of the upper Juniata River drainage basin is needed to identify regional water quality issues and establish comprehensive baseline water quality data using existing and additional monitoring stations. The study should identify the major point and nonpoint pollution sources and provide prioritized recommendations on how to effectively clean up the river system. The assessment should also determine if there are uses along the river and its tributaries that deplete river flow levels and whether such depletion is impacting

the health of the river ecosystem and opportunities for recreation. Improved water quality and flow levels would make the streams more attractive for water-based recreation activities such as fishing and canoeing.

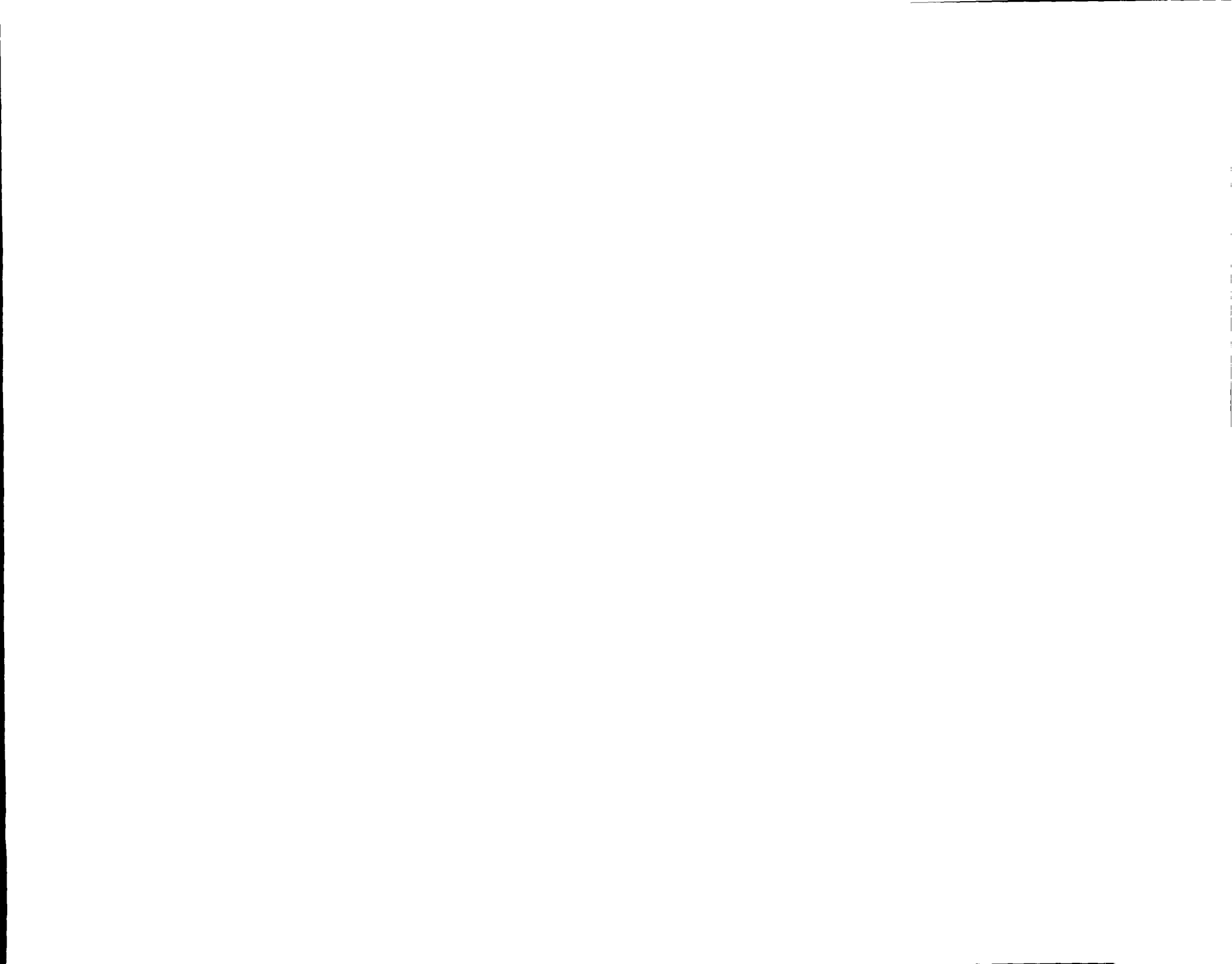
- Enhance recreation opportunities – More accessible recreation opportunities, particularly trails, are desirable in and between the populated areas of the study corridor. A recreation study that assesses the long-range recreational needs of the study corridor is recommended.



Appendixes

A: INDIVIDUAL SEGMENT ANALYSIS 25

B: THEMES 82

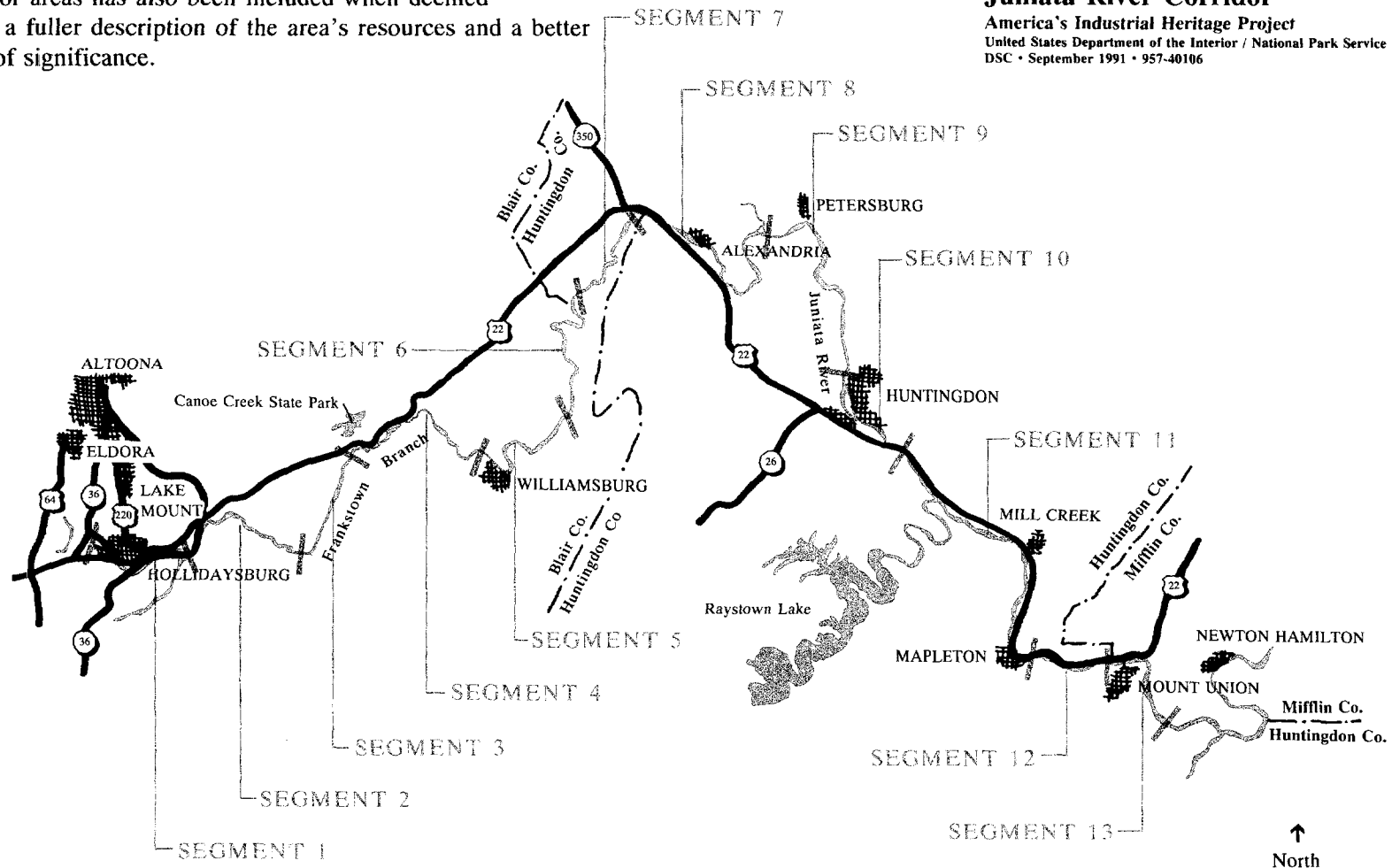


APPENDIX A: INDIVIDUAL SEGMENT ANALYSIS

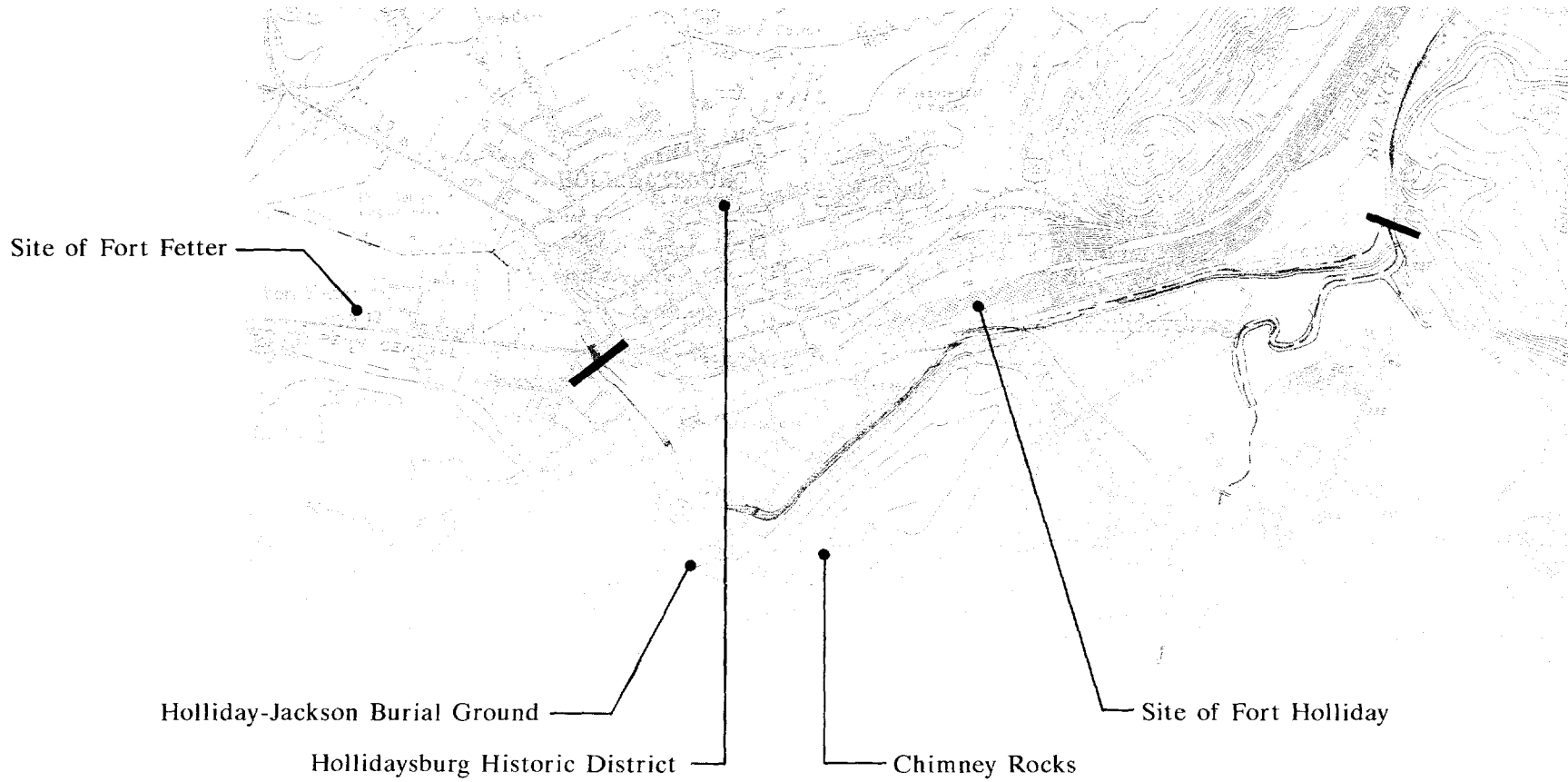
Due to the complexity of resources within this corridor, most of the resource description and detail has been left to this appendix. The following is a description of the 13 segments of the study corridor and the important cultural, natural and scenic, and recreation resources that are within each segment. A background history of specific towns or areas has also been included when deemed appropriate for a fuller description of the area's resources and a better understanding of significance.

Study Corridor Segments Juniata River Corridor

America's Industrial Heritage Project
United States Department of the Interior / National Park Service
DSC • September 1991 • 957-40106



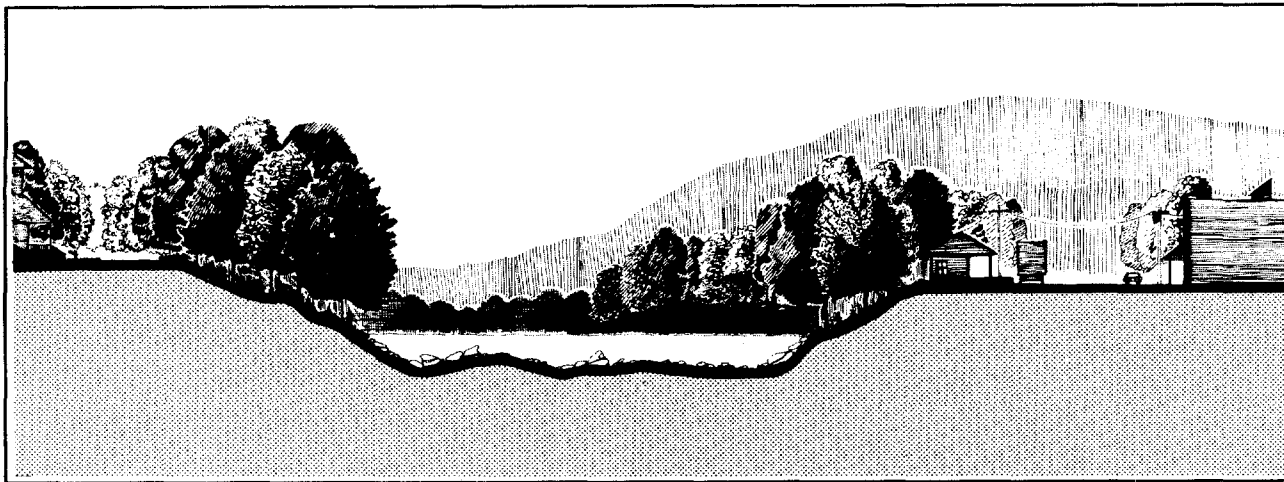
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SEGMENT 1, HOLLIDAYSBURG

Juniata River Corridor, America's Industrial Heritage Project DSC/Aug 91/957-40086A

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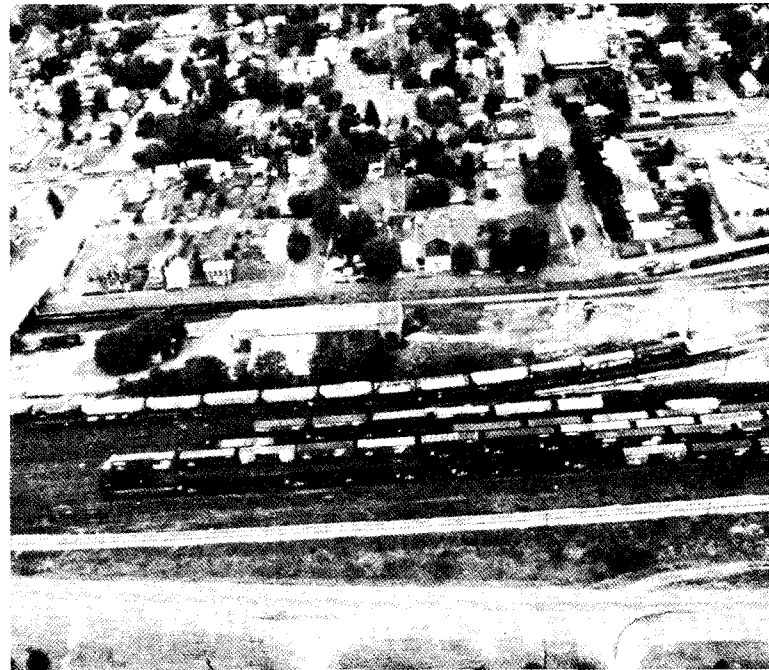


Segment 1

Hollidaysburg Predominantly Urban



Beaverdam Branch, Hollidaysburg



Hollidaysburg and railroad switchyard

History of Hollidaysburg

Hollidaysburg was first settled in the 1770s by Adam and William Holliday, brothers who laid out the town and sold lots in 1796. In the foothills of the Alleghenies, the community remained small and in 1814 numbered only a few houses and a tavern. It grew, however, following completion of the Huntingdon, Cambria, and Indiana Turnpike, and in 1832 the Pennsylvania Main Line Canal opened the area to eastern markets. The Allegheny Portage Railroad, completed two years later, joined the canal to create a link between Philadelphia and Pittsburgh, foreshadowing an era of commercial prosperity for Hollidaysburg during which the town, as terminus of the Juniata Division of the canal, became the location for the canal basin. In 1836 the borough was incorporated, and within a few years the population soared, reaching nearly 2,000 inhabitants by 1840. Six years later Hollidaysburg became the seat of Blair County. More than 140 homes, warehouses, and other commercial buildings were present in 1850. Iron production in the Juniata region increased, and pig iron was hauled to Hollidaysburg for delivery to Pittsburgh. Besides marketing, the village became a focus of passenger service along the canal and railroad, leading to the construction of several hotels. Later, the banking industry augmented local business.

When the Pennsylvania Railroad laid its route north of Hollidaysburg in the 1840s and 1850s, fears grew that the community's business would be diverted. In 1857 the portage railroad was discontinued. However, a number of branch lines converged at Hollidaysburg to continue to serve local and regional interests. Notably, in 1873 a line was extended east to Williamsburg; by 1900 it reached Petersburg, providing transportation to market for coal, limestone, iron ore, and other products. Early in the 20th century the Pennsylvania Railroad established a large switching yard at Hollidaysburg, ensuring the continued economic health of the community into the 1950s. Through most of its 19th and 20th century existence, Hollidaysburg has played a significant role in the development of transportation in the area of west-central Pennsylvania and in the promotion of regional enterprise.

Cultural Resources

The AIHP theme represented at Hollidaysburg is transportation; other themes represented include settlement and Indian occupation (see appendix B).

Hollidaysburg Historic District. This property, on the National Register of Historic Places, encompasses architecturally significant structures dating from the mid 19th century and contains a variety of homes, government buildings, churches, and commercial structures that exhibit styles ranging from Gothic Revival to Italianate to Romanesque to late Victorian. The diverse array of structures includes (1) Highland Hall, a female academy built in 1892 of locally quarried limestone; (2) the Blair County Courthouse, a Victorian Gothic Revival building erected in 1877; (3) the turreted Blair County Jail, built in 1869; and (4) the 1869-70 Presbyterian Church with its corbeled brickwork and carved stone arches. Most of the structures are along Allegheny, Walnut, and Montgomery streets. A number of canal-related brick and frame buildings stand along the north side of South Juniata Street. Some of these structures could be impacted by future development in Hollidaysburg. In addition, a number of the structures on south Juniata Street show signs of neglect.

Chimney Rocks. A geological feature on the ridge overlooking Hollidaysburg from the south, Chimney Rocks afforded a broad view of the countryside. Historically, perhaps prehistorically, it served as an observation point for Indians and a place for council meetings. Now owned by the Blair County Historical Society, Chimney Rocks is about 1 mile from the road between Hollidaysburg and Leamersville and is south of the Juniata.

Site of Fort Holliday. This site is along US 22 approximately 1/2 mile east of Hollidaysburg. The log fort was built from a barn in 1777 for protection against Indian attack. There may be archeological resources on the site, which would be subject to the effects of long-term erosion. There is no threat of immediate development.

Site of Fort Fetter. Fort Fetter, raised in 1777 as a defense against Indians, stood approximately 1 mile west of Hollidaysburg and was

garrisoned by militia and rangers during the Revolutionary War. The site is a few hundred yards northeast of US 22. Although there is no immediate threat from development, any archeological resources are subject to long-term exposure and the chance of erosion.

Holliday – Jackson Burial Ground. This small cemetery off Newry Lane in the Gaysport section southwest of Hollidaysburg marks the site of the grainfield where Indians killed William Holliday's three children during the Revolutionary War. Holliday escaped north to Fort Roberdeau. The children were buried where their bodies lay. The historic site has changed since the incident. The cemetery is under no immediate threat.

Canal Remains. Several canal sites are in the vicinity of Hollidaysburg. At the foot of Montgomery Street is the site of the terminus of the Juniata Division, the basin area where the canal boats were transferred to cars and pulled to the start of the portage incline. South Juniata Street parallels the railroad and the former location of the canal bed. South of the Blair Street extension (US 22) are traces of the canal ditch and towpath. All such features may be threatened by long-term erosion and vegetative growth.

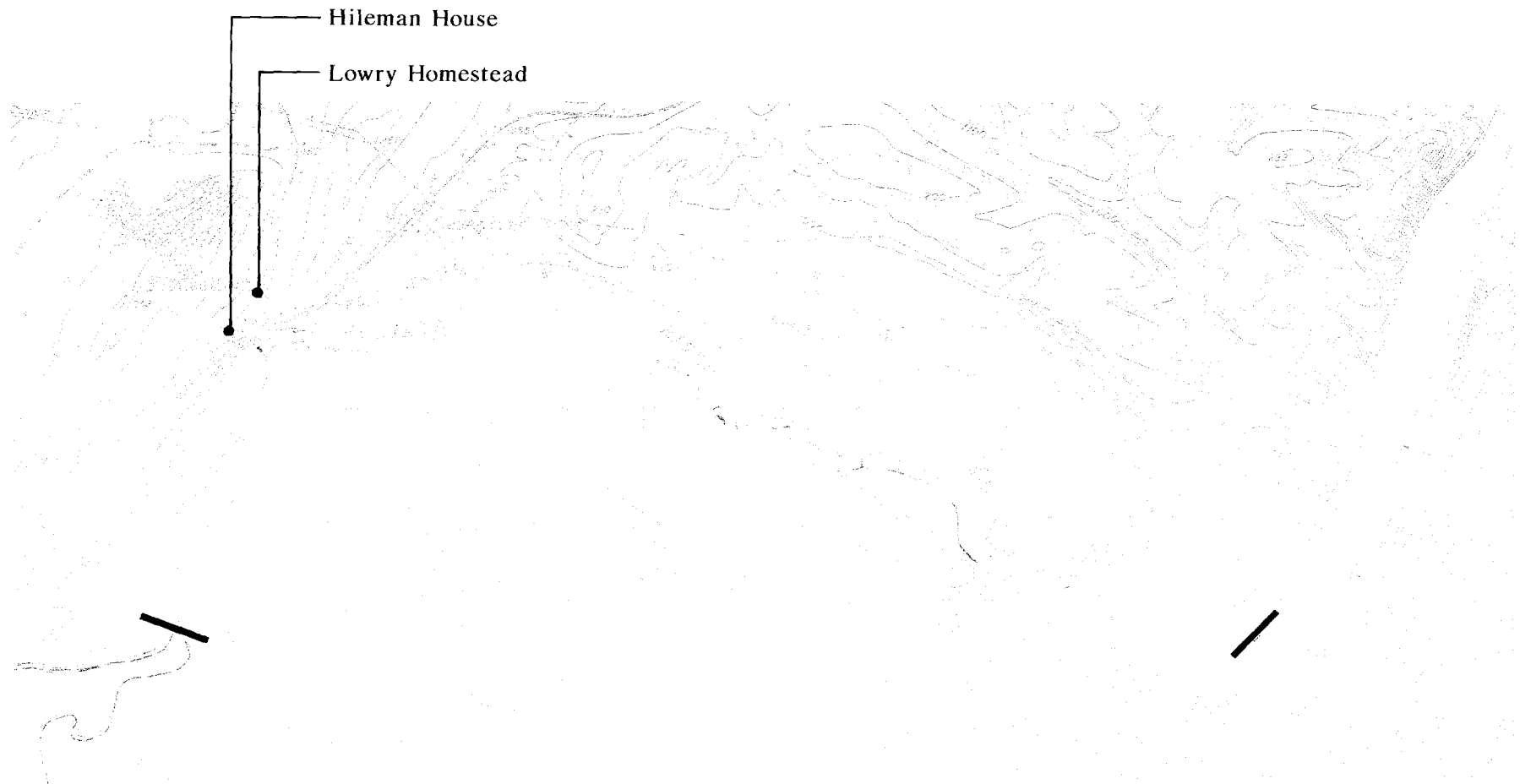
Natural and Scenic Resources

From Hollidaysburg east to the Frankstown Branch, the shallow Beaverdam Branch is heavily impacted by urban development. One consequence is that the stream's water quality is poor, being degraded by such pollutants as road and railroad yard runoff, sewage plant effluent, and possible dumping. Because of the surrounding urbanization, vegetation along 90 percent of this segment is comprised solely of narrow bands of streambank vegetation.

Recreation Resources

The Blair County Foundation for Historic Hollidaysburg conducts tours of the historic district. Hollidaysburg holds annual spring and fall festivals, and just outside of Hollidaysburg is a large amusement park called Lakemont Park where the annual Keystone Country Crafts

Festival is held. Lakemont also offers amusements, swimming, paddle boating, fishing, ice skating, roller skating, and overnight camping. Nearby in Altoona is the Altoona Railroaders Memorial Museum, and just west is Horseshoe Curve National Historic Landmark.



Hileman House

Lowry Homestead



North

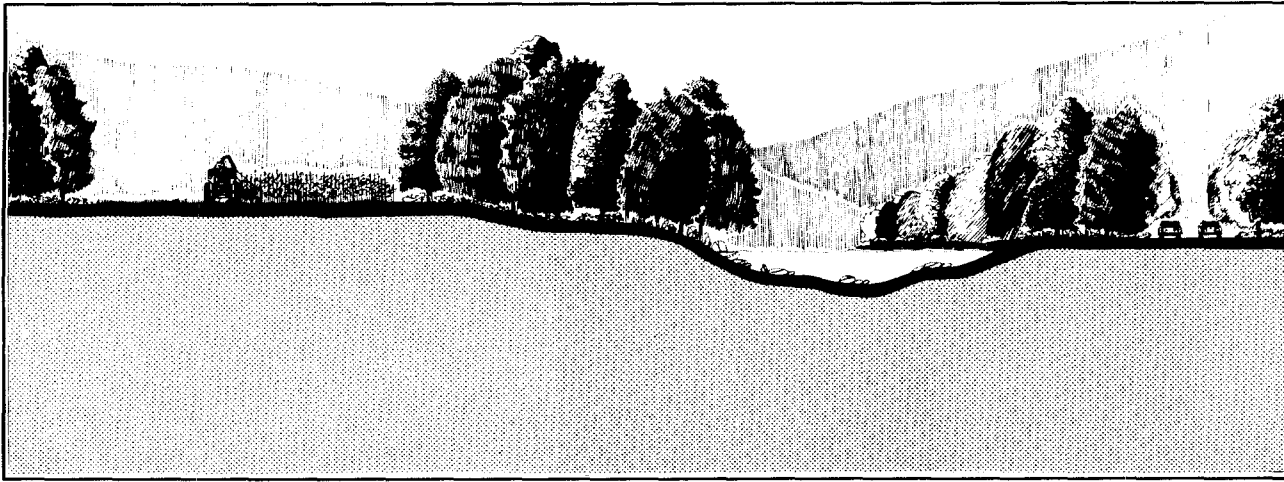
SEGMENT 2, FRANKSTOWN

Juniata River Corridor, America's Industrial Heritage Project . DSC/Aug 91/957-40087

ON MICROFILM

Segment 2

Frankstown Predominantly Rural



Rural setting in Upper Reese



Frankstown Branch near Frankstown

History of Frankstown

Frankstown, in Frankstown Township, is one of the oldest communities in Blair County. Named after Frank Stevens, who operated a trading post nearby, the junction of the Juniata and the Kittanning Trail became a noted gathering and commercial center in the 1730s before being gradually abandoned in the following decade as fur trading opportunities arose elsewhere. It became reoccupied in the 1780s, when militia erected a blockhouse at Frankstown, and in June 1781 militia troops engaged British-inspired Seneca Indians nearby. Several men were killed and captured before the tribesmen withdrew. Following the Revolutionary War, Frankstown developed into a major regional trade center; in 1820 it stood astride the Huntingdon, Cambria, and Indiana Turnpike and contained 20 homes, as well as a tannery, a sawmill, a gristmill, and several distilleries. Later selected as the western terminus of the Juniata Division of the canal, Frankstown surrendered that distinction after a resident refused to sell land for the project. Instead, nearby Hollidaysburg became the designated terminus, quickly assuming economic dominance over Frankstown.

Cultural Resources

The predominant AIHP theme represented at Frankstown is transportation; the settlement theme is also represented (see appendix B).

Lowry Homestead. The oldest stone house in Blair County, erected in 1785 by trader Lazarus Lowry, is along Township Route 503 just beyond its junction with US 22. The two-story building has been modified by additions, including porches. A springhouse, also built in 1785, stands near the dwelling. There is no immediate threat to the house or the springhouse.

Hileman House. This early stone house, raised in 1795 by a man named Hileman, was later owned by Jacob Confer. It stands along US 22 in Frankstown. No imminent threats to the property are known at this time.

Canal Remains. A large remnant of the canal, approximately 200 feet long and often filled with water, exists along the north side of US 22 immediately east of Frankstown. Another trace is $\frac{1}{8}$ mile to the east.

Almost 2 miles east of Geeseytown, along the south side of the Juniata valley road, are water-filled traces of the canal bed, part of which is adjoined by a 50-foot segment of the towpath. These various remnants are for the most exposed and subject to the long-term effects of erosion.

Natural and Scenic Resources

Where the Beaverdam Branch joins the Frankstown Branch, the river flows directly north. Along this stretch one can view the prominent shoulder of Loop Mountain, 1,580 feet above the stream, and Brush Mountain to the north, which rises 1,630 feet behind Frankstown. At Frankstown the river begins a large eastward bend, passing Frankstown, Geeseytown, Upper Reese, and Reese. In this part of the segment the landscape begins to reflect the general rural aspect of western Pennsylvania. Small, isolated communities hug the riverbanks.

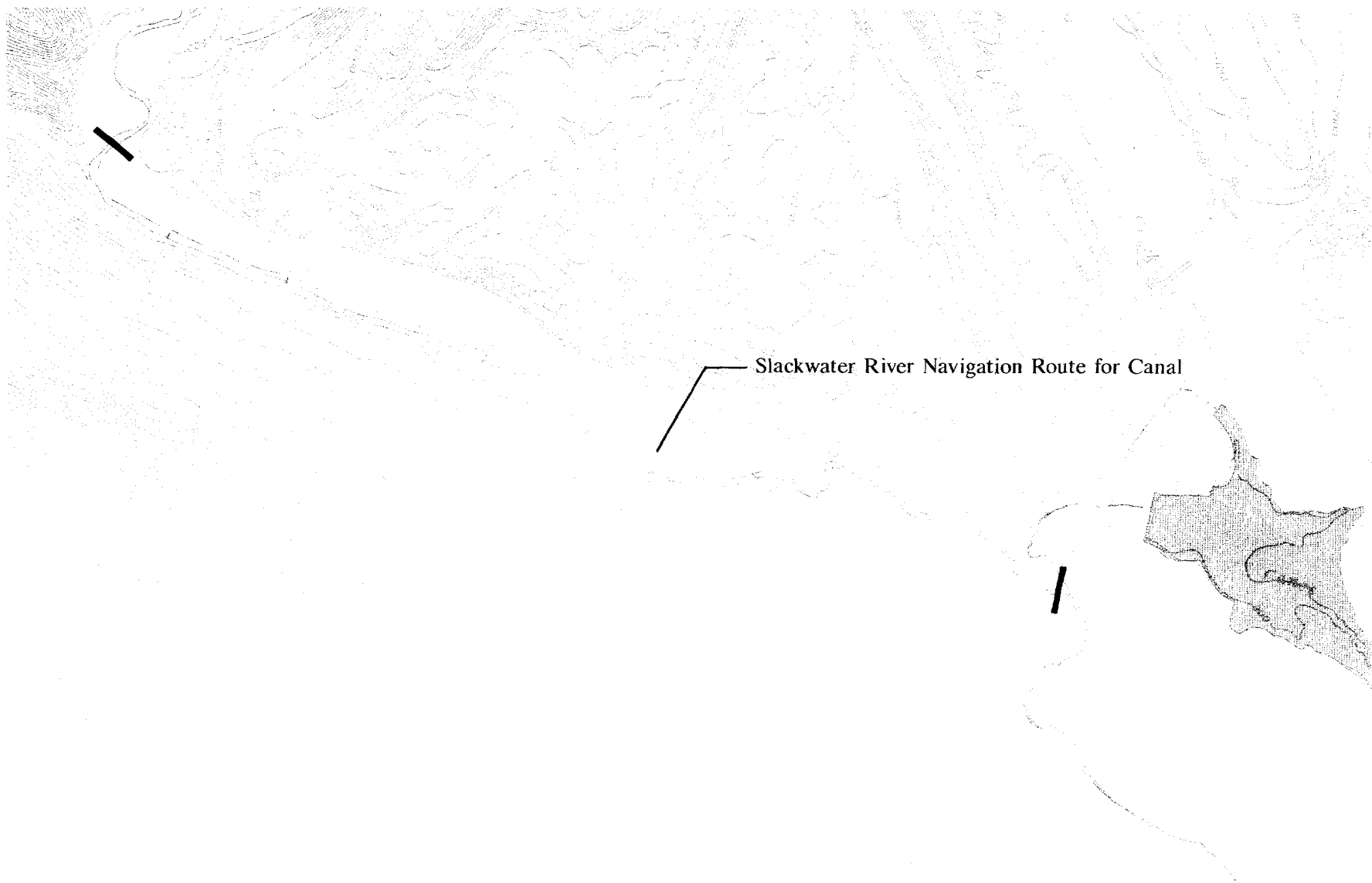
Occasionally the roads are close enough to the river that vehicles can be seen and heard from the river. In some places the riverbank vegetation is thick enough that it is difficult to see the surrounding hills, mountains, and farmlands; at other times the vegetation opens up and the views are quite rustic. The stream is generally smooth and shallow. Riffle areas can be observed in shallow areas that expose rocks and boulders.

Recreation Resources

No significant recreation resources were found in this segment.



A quiet, tree-bordered stretch of the Frankstown Branch



Slackwater River Navigation Route for Canal

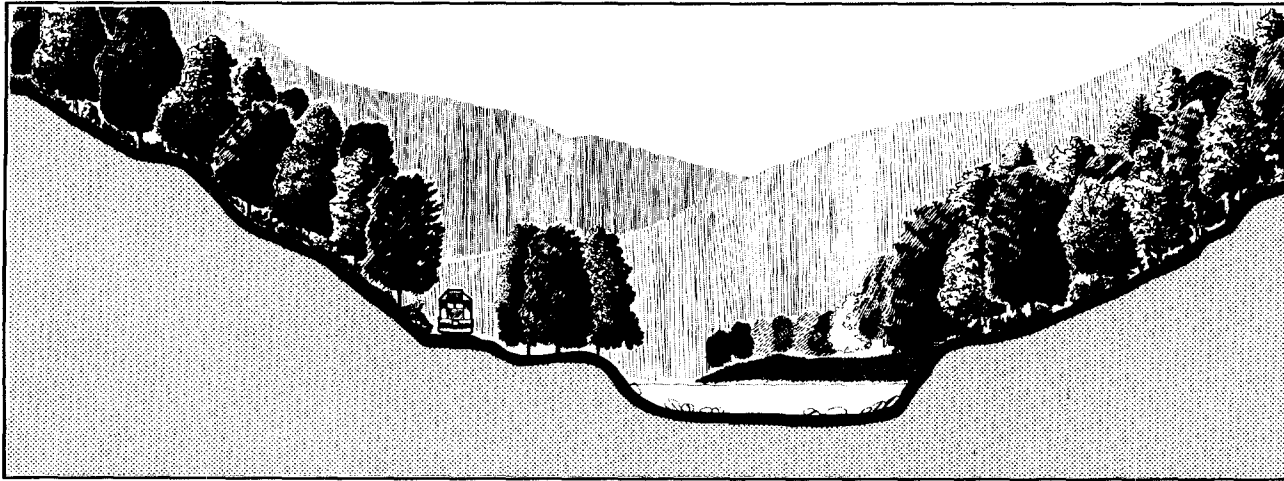


North

SEGMENT 3, LOCK MOUNTAIN

Juniata River Corridor, America's Industrial Heritage Project DSC/Aug 91/957-40088A

ON MICROFILM



Segment 3

Lock Mountain

Predominantly Remote



Remnant railroad abutment



Lock Mountain

Cultural Resources

Pennsylvania Railroad bridge remnants are located in this segment. Evidence of the canal prism is found about midway in this segment near an area called Horrell.

Natural and Scenic Resources

At Reese the river swings sharply northeast toward Canoe Creek and enters into one of the few remote areas within the corridor. At this bend the forested ridgeline of Lock Mountain towers 1,047 feet above the river. Robinson Run empties into the river near here. For over 2 miles, the stream follows the western base of Lock Mountain. It then crosses the wide valley floor and hugs low, steep terraces that effectively block any views of the much taller Brush Mountain to the west. The wooded shores, where trees arch and meet over the stream, create a feeling of isolation that is occasionally broken by glimpses of mountains in the distance. The modest 5-foot-per-mile gradient provides a strong river current, but water depths are generally low and there is little white water.

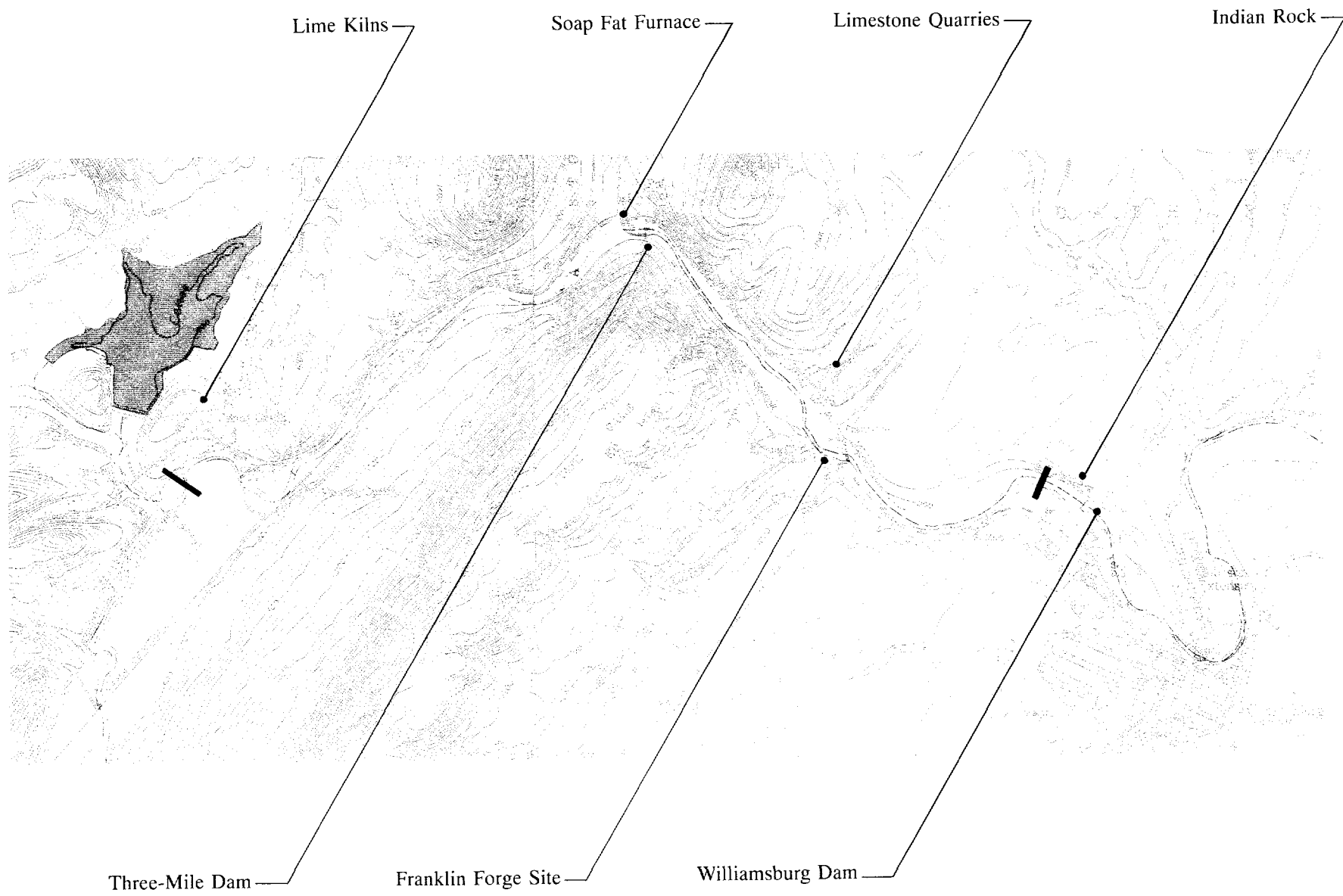
Although unobserved because of the trees, the floodplain area is heavily farmed. Water quality may be impacted by agricultural runoff. Other tributaries (mostly cold water fishery waters) include New and Canoe creeks. Agricultural lands border both sides of the river at the end of this section.

Recreation Resources

No significant recreation resources were found in this segment.



Canal between Hollidaysburg and Canoe Creek



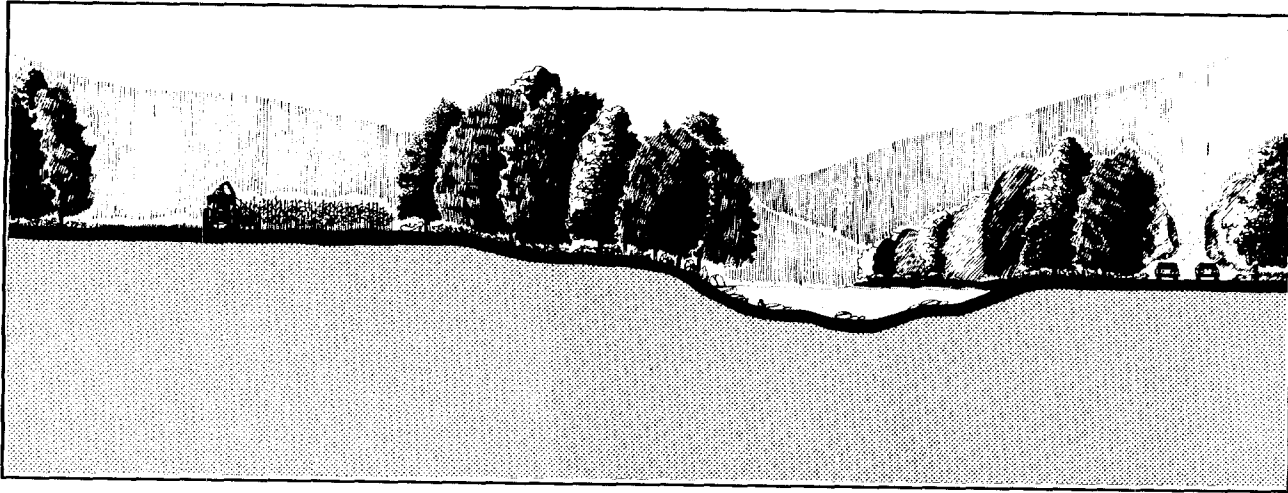
North

SEGMENT 4, POINT VIEW

Juniata River Corridor, America's Industrial Heritage Project

DSC/Aug 91/957-40089A

ON MICROFILM

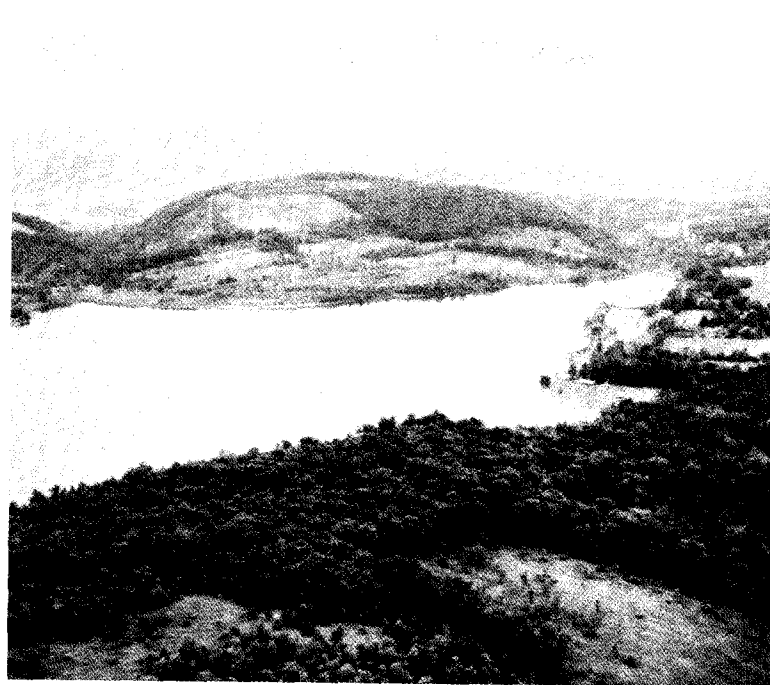


Segment 4

Point View
Predominantly Rural



Secluded forested section



Canoe Creek State Park

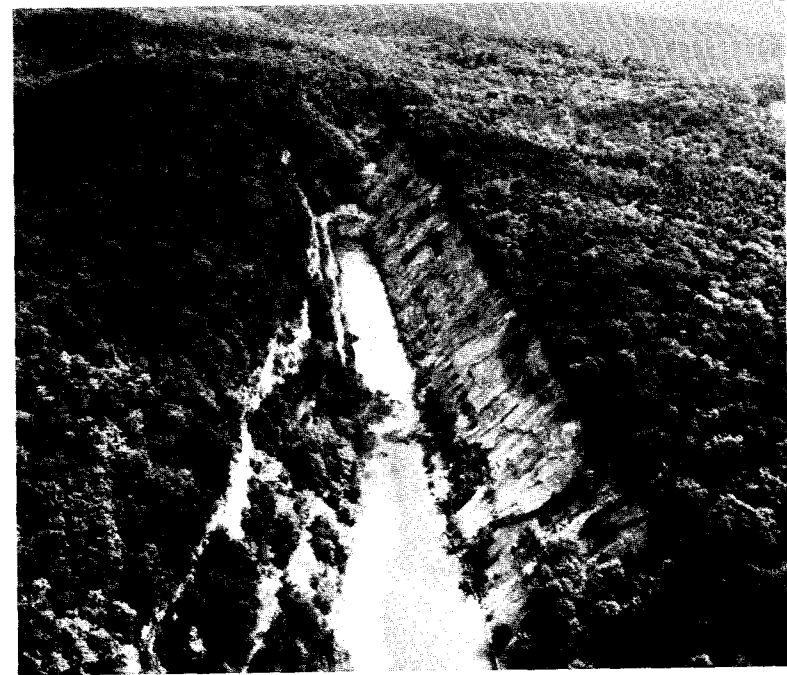
Cultural Resources

AHP themes in this segment relate primarily to the themes of transportation and iron/steelmaking (see appendix B).

Three-mile Dam Vestige. Along the south side of State Route 866 at Ganister is a cut stone masonry vestige of Three-mile Dam. This abutment is on the north side of the Juniata and measures about 50 feet long by 20 feet high. (Another abutment is on the south side.) A trace of the canal bed lies below and immediately east. Garbage dumping has been observed here and affects water quality. Vegetation, erosion, and flooding are also impacting the vestiges of the dam. A large brick house on the north side of Route 866 was reportedly a canal inn and/or tavern.

Soap Fat Furnace. Beehive-shaped Soap Fat furnace, also known as Canoe furnace, is north of US 22 at Point View, approximately 5 miles west of Williamsburg. Built of fieldstone, it is partially collapsed. Associated resources include the mill race, nine stone and frame houses (now designated as Point View cottages), plus several building foundations. The cottages were built from the vestiges of the furnace complex, which was purchased from Samuel Isett (the last Mount Etna ironmaster) in the late 1800s by the Point View Cottage Association. The cottages became summer homes for the many wealthy and prominent business and political figures during the late 1800s and early 1900s. The site is neglected, isolated, and exposed to the elements. Although the site is partially intact, vegetation and water runoff threaten the foundations.

Limestone Quarries. Limestone was shipped on a branch line of the Pennsylvania Railroad from Williamsburg, and a number of quarries stood within a few miles of Williamsburg. Carlim quarry was 4 miles east of Williamsburg, Spar quarry was on the railroad near Calcite, the St. Clair Limestone Company operated a quarry on the north side of the Juniata at Ganister, and, farthest east, was the Blair Four quarry. These pits operated at various times between the years 1889 and 1930. Limestone exposed to the elements tends to erode and



Limestone quarry

crack, and pollution caused by dumping is also a threat, particularly at the St. Clair quarry.

Franklin Forge Site. Franklin forge, associated with Springfield furnace south of Williamsburg, was built by Samuel Royer in 1830 and operated until 1861, when it was demolished. The site is near the mouth of Piney Creek on the south side of the Juniata. Nearby are two large and several smaller stone tenement houses that are possibly historically associated with the forge. The site is threatened by human intrusion, which has already resulted in the burning of one house in a row of stone houses associated with the forge. Should one or more of the houses be occupied, the primary concern would be alteration of the historic fabric. Otherwise, the structures are threatened by neglect. Potential erosion and flooding threaten the site's archeological resources.

Natural and Scenic Resources

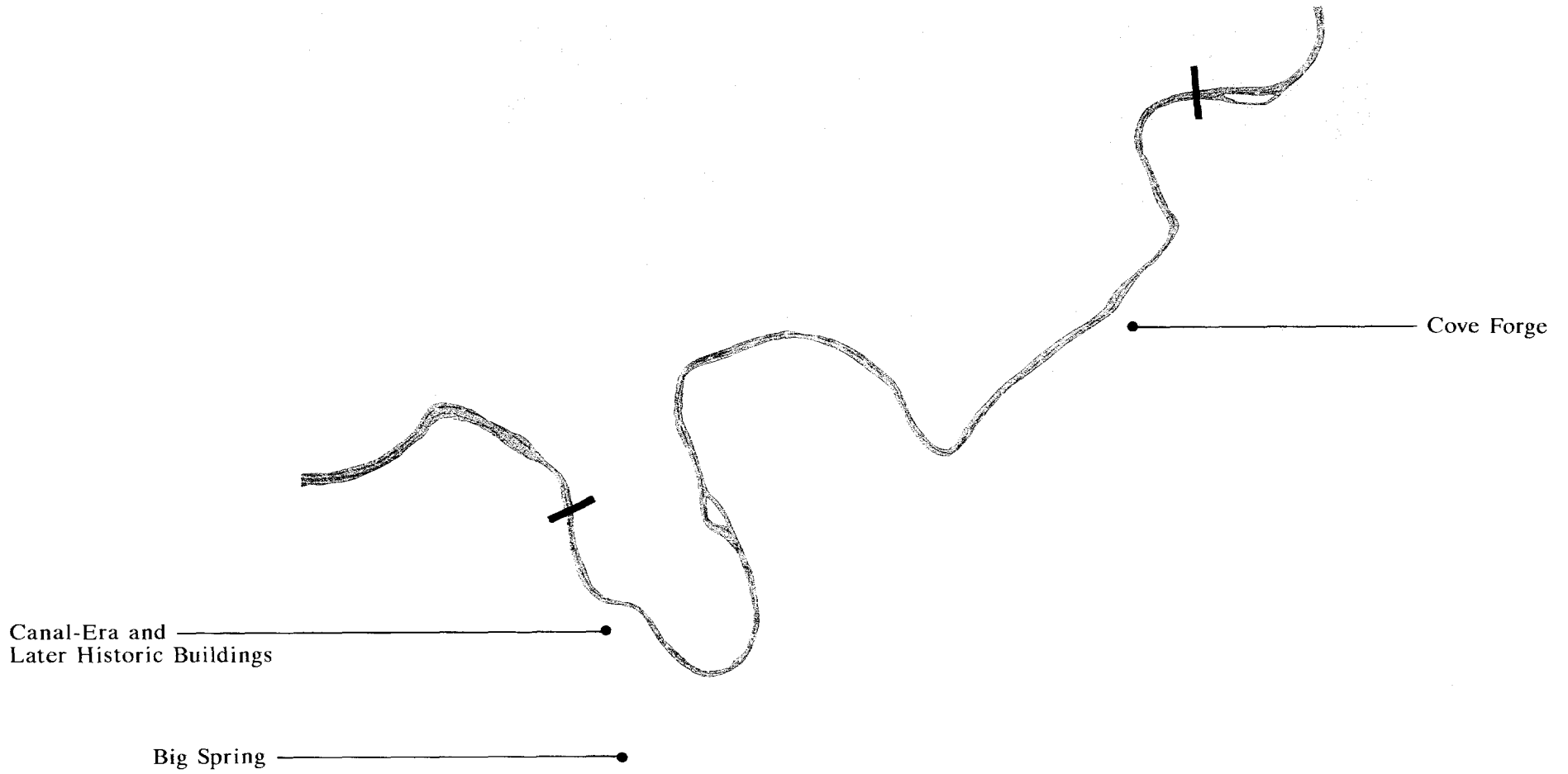
At Canoe Creek the Frankstown Branch turns east and enters a picturesque break through Lock Mountain. Along this section the gradient averages 5.8 feet per mile, resulting in some swift passages and minor rapids. Mountain scenery dominates the view as the enclosing slopes of Lock Mountain rise steeply 1,000 feet along the southern bank; a complex of Lock, Canoe, and Short mountains rise erratically, as high as 980 feet, on the north bank. At Water Gap the constriction is greatest, resulting in some dramatic scenery. Through this gorge, Route 866 parallels the river on the north and the former Conrail right-of-way parallels the river on the south. The river emerges from the gorge about 1½ miles later at the community of Ganister. Piney Creek empties into the river at this point. The area just downstream of the gorge is a semi-open landscape of small-town development and agricultural land. The south banks of the river are rolling hills, while the north banks have semi-steep slopes down to the river's edge. Just west of Williamsburg, and at the end of this segment, there is the Williamsburg Dam, which cools water for the adjacent power plant. For canoeists, this involves a short carry along the southern shore. If this power plant is eventually closed down, the dam could be removed, thus eliminating a hazard and obstacle to canoeists and returning the river to its original banks.

Recreation Resources

Canoe Creek State Park has a lake that offers picnicking, swimming, nonpowerboating, and fishing. Nearby are state game lands 166 and 147, which provide hunting, hiking, camping, and fishing.



Aerial view of river corridor



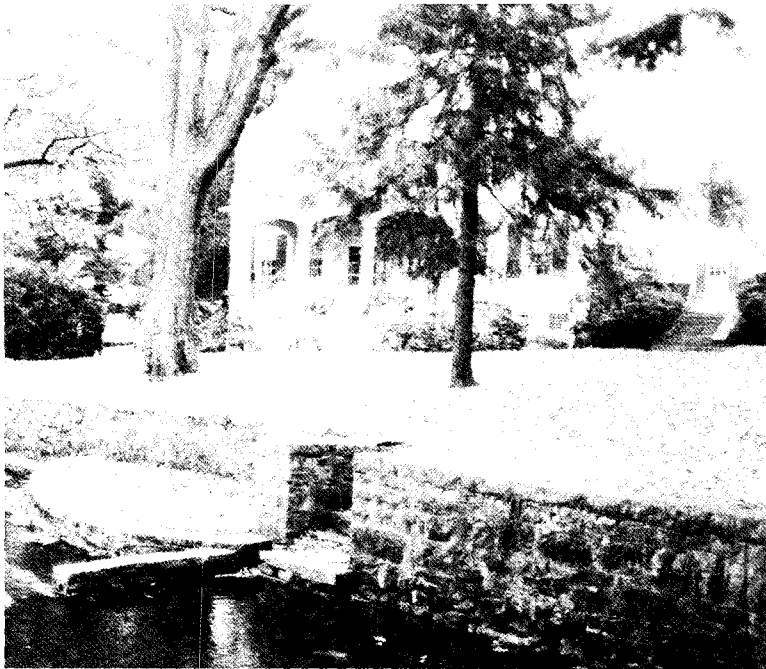
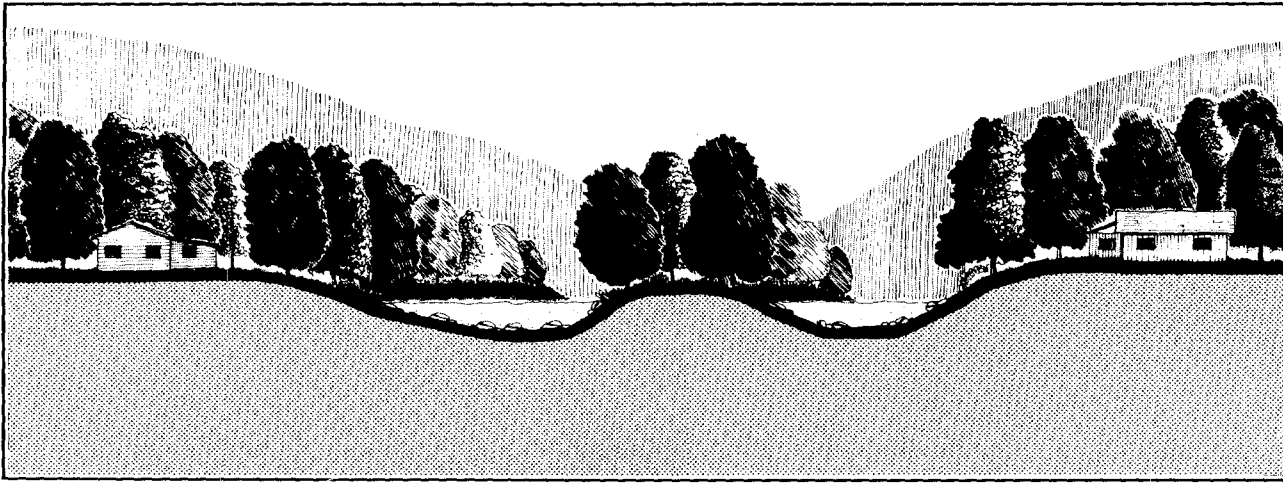
SEGMENT 5, WILLIAMSBURG

Juniata River Corridor, America's Industrial Heritage Project . DSC/Aug 91/957-40090A

ON MICROFILM

Segment 5

Williamsburg Rural/Urban



Juniata College conference center at Big Spring in Williamsburg



Playground near riverside

History of Williamsburg

Williamsburg, in Woodbury Township, evolved in the late 18th century as an agricultural community along the southwestern bank of the Juniata River. By 1814 some 20 families resided there, and local industries included a sawmill, a gristmill, a tannery, and a distillery. An expanding economy based on regional agriculture and iron manufacturing promoted Williamsburg as an important trade center in west-central Pennsylvania. Locally produced pig iron was transported west to Pittsburgh, and one of the most successful entrepreneurs was Daniel Royer, who established a forge and a furnace in the vicinity of Williamsburg. Other profitable community enterprises that thrived during the 19th century after completion of the Pennsylvania Main Line Canal included a woolen mill (1830), a foundry (ca. 1830s), and a broom factory (ca. 1850s).

Although the canal passed through Williamsburg, the railroad that succeeded it bypassed the borough until 1873, when a branch line was built from Hollidaysburg. In the 1880s, largely because of the presence of the railroad, lime burning became a major industry, with large limestone quarrying and crushing operations centered along the Juniata above the town. Late in the century, as steel supplanted iron, the community fell on hard times. Limestone quarrying continued, and during the 20th century several new enterprises have succeeded. A power generating industry evolved that employed many residents. A paper manufacturing plant founded in 1905 helped resurrect Williamsburg and turn its economy in a new direction that has lasted to the present.

Cultural Resources

AIHP themes represented in Williamsburg are those for iron and steel manufacturing. There are also properties reflecting the secondary theme of support industries. Architecture is another theme that is represented (see appendix B).

Canal-Era and Later Historic Buildings in Williamsburg.
Williamsburg contains many architecturally significant structures

dating from the mid and late 19th century, when the community was prominent in trade and industry along the canal, and from the early years of the 20th century when its industry enjoyed a resurgence. A small fieldstone locktender's house is south of Route 866 at the west end of town. Other noteworthy structures include the former county orphanage building, the unique octagonal (eight-sided) schoolhouse (now used as a chapel), the public library, and the yellow brick hotel on High Street. Many of these buildings have already been lost to development, floods, and neglect, which also threaten the remaining structures. Two significant buildings are still in good condition – the Schwab Hotel (ca. 1900) at 221 High Street and the log house (ca. 1830) at 517 W. 1st Street.

Cove Forge. Three miles below Williamsburg, on the south side of the Juniata near its confluence with Clover Creek, is the site of Cove forge – at the present community of that name. Cove forge was established in 1811 by Daniel and John Royer, and it operated into the 1880s utilizing pig iron from the Mount Etna and Springfield furnaces. The forge employed about 30 men from the Williamsburg area and averaged approximately 300 tons of bar iron annually for shipment to Pittsburgh. Today, a stone ironmaster's house and several log houses are all that remain. The site is presently occupied by New Beginnings, a drug and alcohol rehabilitation center. The site is threatened by human occupation and use. Part of the canal dam has been converted into a picnic area. With the swimming pool and new buildings added in recent years, development continues to be a threat. Flooding and erosion also are hazards.

Big Spring. A most significant site from the standpoint of local industrial development, Big Spring provided the power to operate the paper mill at Williamsburg. The spring delivers in excess of 6 million gallons of water daily. It is near the south end of High Street at its intersection with Clover Creek Road in Williamsburg. The pool is overgrown with algae and threatens the raceway, the lower end of which is on the floodplain.



Canoeists on Frankstown Branch



Williamsburg power plant

Natural and Scenic Resources

This segment begins downstream (east) of the power plant impoundment and enters Williamsburg. Here the river flows through the town's residential area, with backyards sloping to the river's edge. The town proper occupies a shelf of land and adjacent terraces south of an oxbow. The town is attractively framed by partially wooded hills to the east and west. Trees edge the southern bank in Williamsburg.

Further along the river are open floodplains, which are mainly agricultural lands that may contribute chemical runoffs to the river. Many areas of the river are riffled, which indicates low water levels. Past the oxbow, in the middle part of the segment, is a broader bend bordered by some fairly large farms. The river then enters narrows

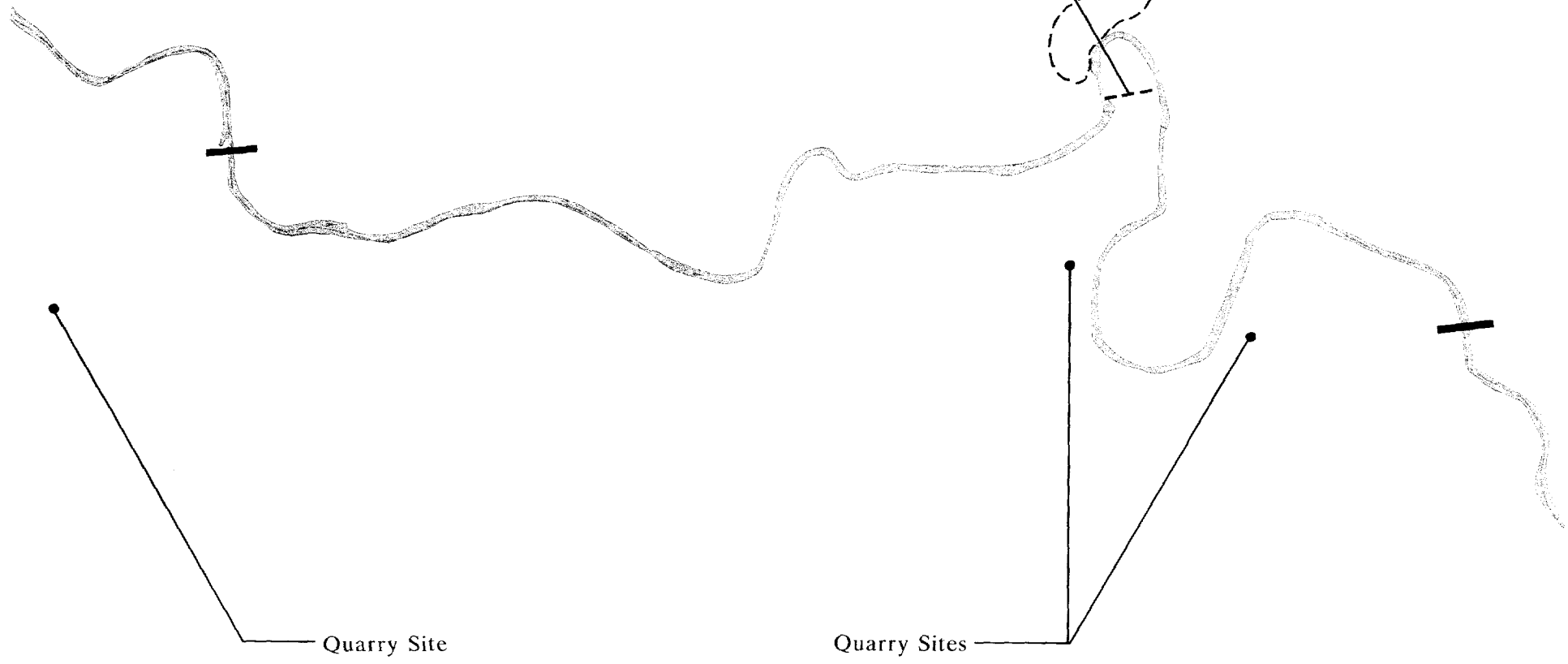
bordered by heavily wooded, 200-foot inclines and bluffs, passing Clover Creek and Schmucker Run on its way to the Covedale bend.

Recreation Resources

Williamsburg has a community park, and the town holds an annual fall festival.

Mount Etna Furnace Complex

Canal and Lock Remains



Quarry Site

Quarry Sites



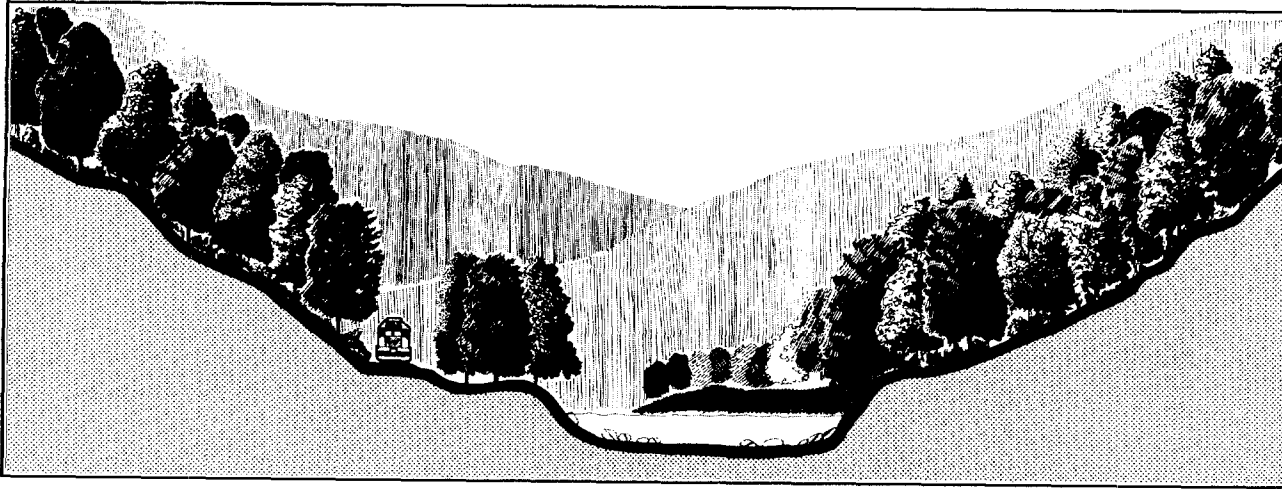
SEGMENT 6, MOUNT ETNA

Juniata River Corridor, America's Industrial Heritage Project DSC/Aug 91/957-40091A

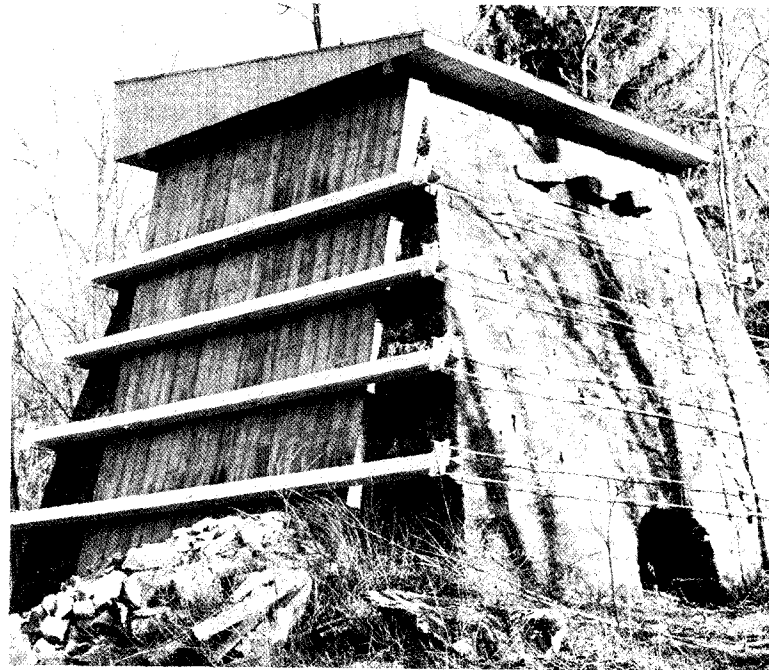
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Segment 6

Mount Etna Predominantly Remote



Aerial view of Mount Etna furnace complex



Etna furnace undergoing stabilization

History of Mount Etna Iron Furnace Complex

The Mount Etna furnace was built in 1808 on a tract near the Juniata River in Catherine Township, Blair County, by John Canaan, David Stewart, and William Moore. Completed in 1809, the furnace issued up to 600 tons of pig iron annually. Operating under various owners, its most productive years were between 1830 and 1865. Under the management of Henry S. Spang, iron production flourished in the late 1830s, when several of the current auxiliary structures were completed. The site evolved into a large, relatively self-contained company community that employed up to 130 laborers. With family members, the population of the Mount Etna community numbered several hundred. Pig iron produced at Mount Etna was hauled by wagon along the Huntingdon, Cambria, and Indiana Turnpike to markets in western Pennsylvania. After 1834 the canal and portage railroad provided the transportation.

During the Civil War, when Samuel Isett owned the property, the furnace produced more than 1,000 tons per year, partly for munitions for combat use. Competition from modern furnaces in Pittsburgh determined Mount Etna's closure in 1876. At its peak, Mount Etna produced a reputable iron. Standing along Township Route 463 off Legislative Route 07020, its significance today stems from the relatively intact survival of the various component structural units of the complex, which together constitute a prime example of Pennsylvania's early iron industry and are thus reflective of a major AIHP theme (see appendix B). The Mount Etna complex occupied an expansive tract along Roaring Run near its confluence with the Juniata. Besides the principal buildings and extant ruins, the complex includes an associated cemetery and ore and limestone quarry sites. A national register property, the boundary is currently under revision to encompass additional resource features.

Cultural Resources

Mount Etna Iron Furnace Complex. This complex is listed on the National Register of Historic Places. Several structures of the Mount Etna complex still stand today.

Mount Etna Furnace – Built in 1807 of cut dolomite, the furnace stands 25 feet high, 16 feet square at the base, 9 feet square at the top, and has a 6-foot semielliptical arch at the front. The west side of the structure, which contained the casting arch, collapsed in 1975. The edge of the adjoining charging terrace consists of a high stone wall.

Ironmaster's House – Erected in 1832 by ironworks owner Henry S. Spang, this large stone mansion served as the residence of the ironmaster. The interior of the structure was damaged by fire in 1980. It stands along Legislative Route 07020 about ¼ mile from the furnace.

Workers' Living Quarters – This two and one-half story, 12-windowed stone tenant house was erected by Henry S. Spang. Divided into apartments for three families, the structure has four chimneys surmounting a gable roof.

Stone and Frame Barn – Used for boarding horses and mules, the barn stands two and one-half stories high. The interior framework is of hand-hewn timber erected early in the 19th century.

Blacksmith Shop Ruins – The stone structure stood one and one-half stories high and had two dormer windows. The roof and windows have been lost since 1979.

Manager's Residence – A two-story stone structure built in 1804, the house reportedly was occupied by William Moore, one of the founders of the ironworks, as well as by later owner Henry S. Spang.

Store/Office – This two-story stone building was erected by Henry S. Spang in 1832. Containing two front entrances, one side served as a company store while the other served as an office.

Workers' Cabins – Near Legislative Route 07020 are three hand-hewn log workers' cabins, reportedly more than 200 years

old. During the 1850s-1860s Samuel Isett apparently purchased the cabins and had them moved to Mount Etna.

Charcoal Shed Ruins – The charcoal shed stood on the hill above the furnace.

Canal Remains – Canal features exist on both sides of the Juniata River at the Mount Etna iron furnace complex. On the north bank of the river is a stone bridge over the forge's race, constructed as part of the canal system. Stone piers for the aqueduct that crossed the river here now support an abandoned railroad bridge. On the south side of the river are four canal locks. One of them, the guard lock at the river, is covered by tailings from a late 19th century limestone quarry. The foundation for the lockkeeper's house and a waste weir can also be found.

Several conditions threaten the integrity of the Mount Etna site. Some of the tracts composing the site are for sale, and development is possible. Most of the extant structures, including the houses and cabins, have faced long-term neglect and structural deterioration. Archeological resources face continued damage by erosion, which also threatens adjacent canal features. Many of these remnants, besides the houses adjoining Legislative Route 07020, lie on the floodplain. Vegetative overgrowth threatens the charcoal shed ruins, the blacksmith shop ruins, and related archeological resources. Dairy cows pasturing in the upper area of Roaring Run can affect the water quality at the site. Vandalism and consequent destruction of the properties constituting the complex could occur. The furnace itself is owned by Blair County Historical Society and is currently undergoing stabilization procedures. The nearby remains of the canal, all situated on the Juniata River floodplain, are subject to floods and erosion by the elements.

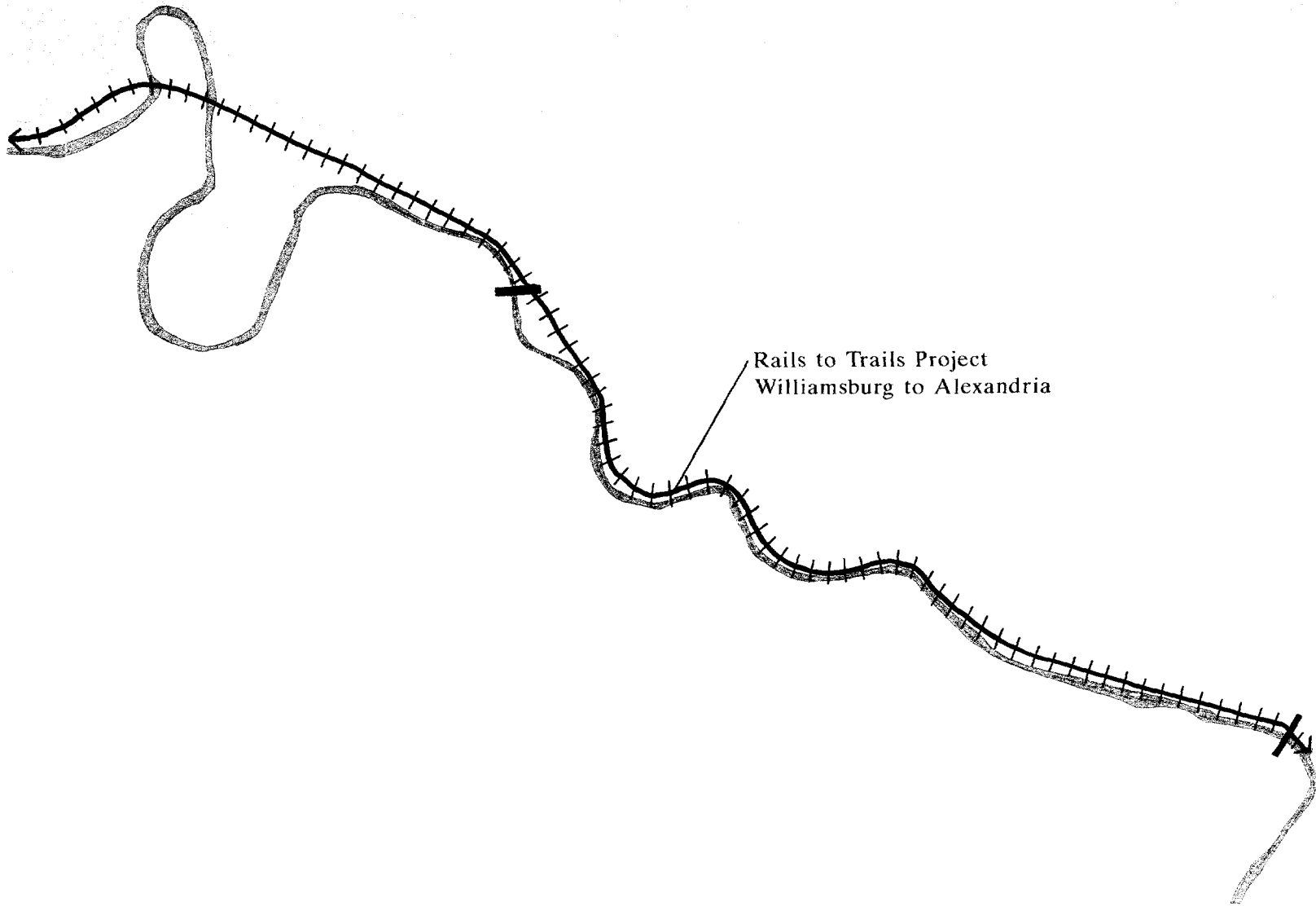
Natural and Scenic Resources

This segment of the corridor begins downstream of Covedale and flows north along the base of Tussey Mountain. The long and variable ridgeline of Tussey Mountain peaks at 1,345 feet above the

eastern bank. State game land 118, on Tussey Mountain, is heavily wooded and borders the east bank of the river. Along the west riverbank are agricultural lands all the way to Mount Etna. This mostly agricultural valley varies between 1½ and 2½ miles wide between Canoe and Tussey mountains. The valley is a complex pattern of eroded plateaus that are sculptured by brooks – giving the appearance of rolling, hilly terrain. The river hugs the eastern edge of the valley and has eroded isolated ravines and gorges. Partly because of the ruggedness of this narrow area, there are no roads paralleling the river; access is almost impossible. As a result, this is the most remote section of the river within the study corridor. Only the former Conrail right-of-way follows the river (on the west bank) in this area. The floodplains that exist are mostly on the west side of Porter Mountain. The river has a 9½ foot/mile gradient that creates strong currents, riffles, and several rapids. At the hamlet of Mount Etna, the river begins an exaggerated S-shaped bend. Just downstream from a railroad bridge, Roaring Run enters from the west bank. Mount Etna furnace is near Roaring Run, 300 yards upstream. Further downstream Fox Run enters from the west shore.

Recreation Resources

State game land 118 borders the river on either side, providing hunting, hiking, and fishing opportunities. There is also potential for a recreational trail to be developed on the old railroad right-of-way.



Rails to Trails Project
Williamsburg to Alexandria

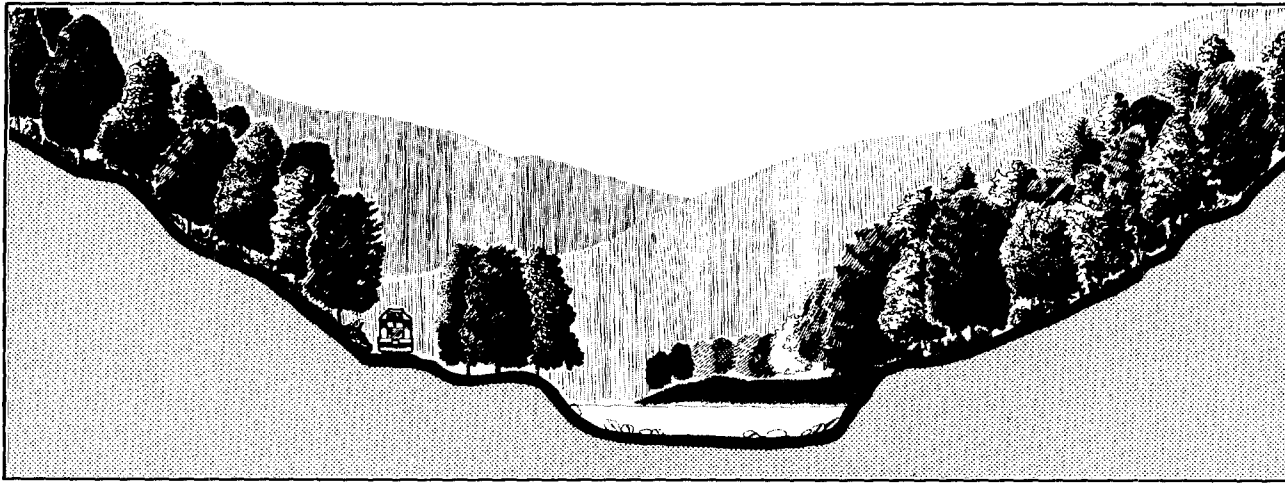


North

SEGMENT 7, TUSSEY MOUNTAIN

Juniata River Corridor, America's Industrial Heritage Project . DSC/Aug 91/957-40092 A

ON MICROFILM



Segment 7

Tussey Mountain Predominantly Remote



River at the foot of Tussey Mountain

Cultural Resources

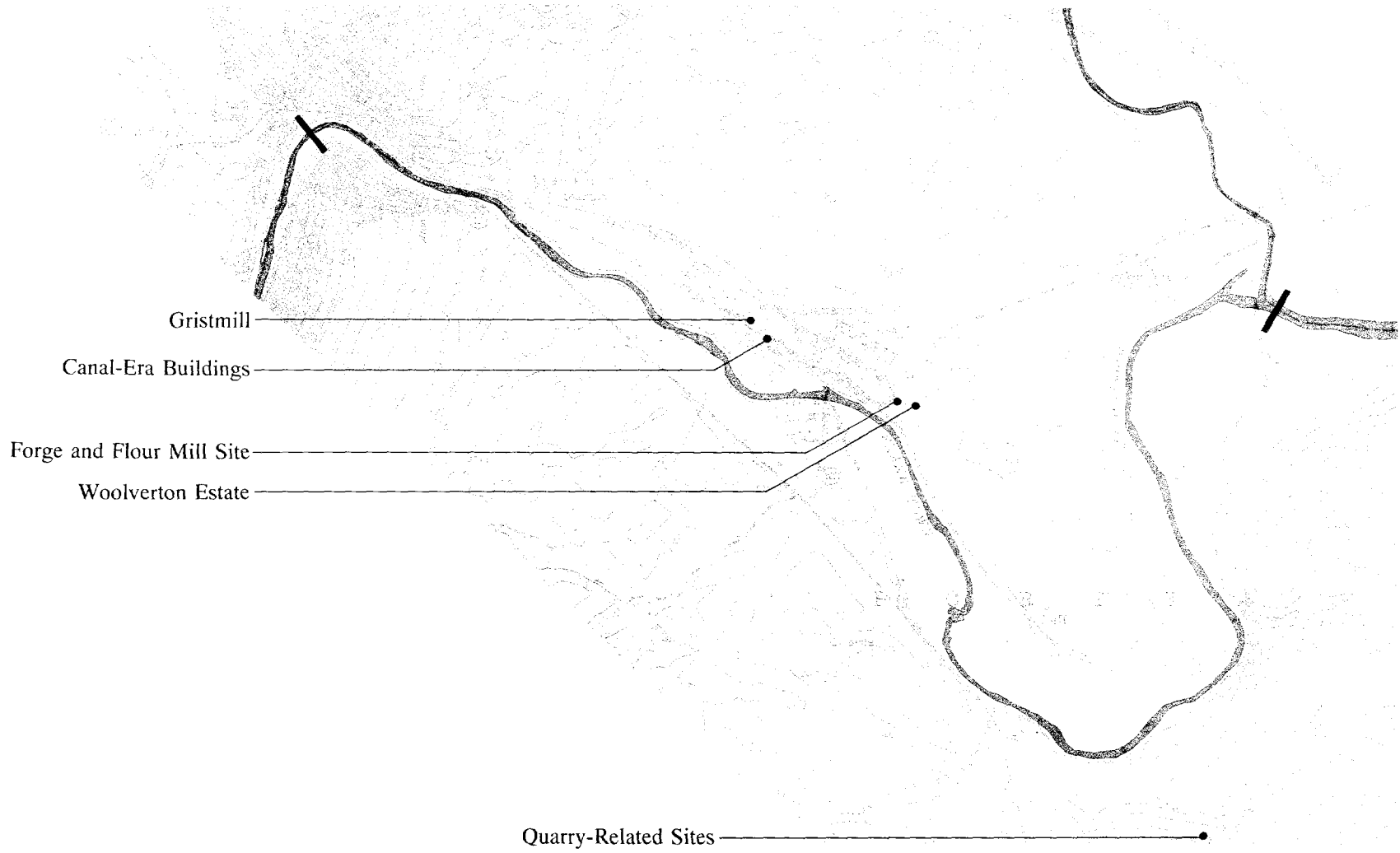
There were no significant cultural resources found in this segment.

Natural and Scenic Resources

Just downstream of Fox Run is a 1½-mile stretch where floodplains border both sides of the river. The river then enters a scenic gorge-like stretch that goes 2.7 miles to Water Street and the Water Gap entrance. This winding passage is bordered on the west by 200-300 foot inclines and to the east by the dramatic 800-1,000 foot rise of Tussey Mountain. The steep, wooded slopes on both sides of the river prohibit roads, making access to the river very difficult, thereby giving this section of river a very remote character. The 9-foot/mile gradient contributes to several good rapids during high water.

Recreation Resources

State game land 118 borders the river, providing hunting, hiking, and fishing opportunities.



SEGMENT 8, ALEXANDRIA

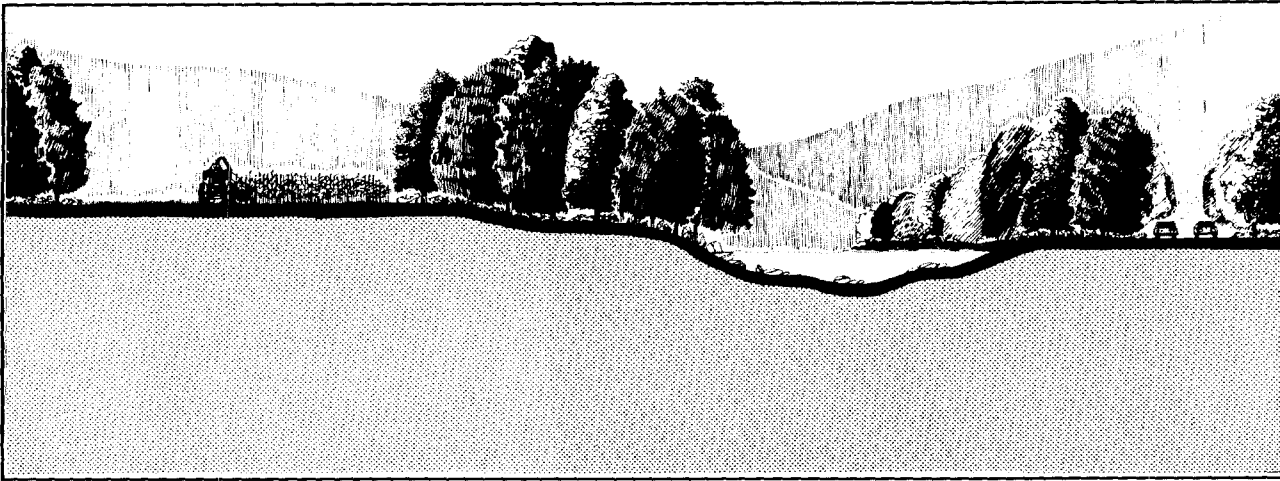
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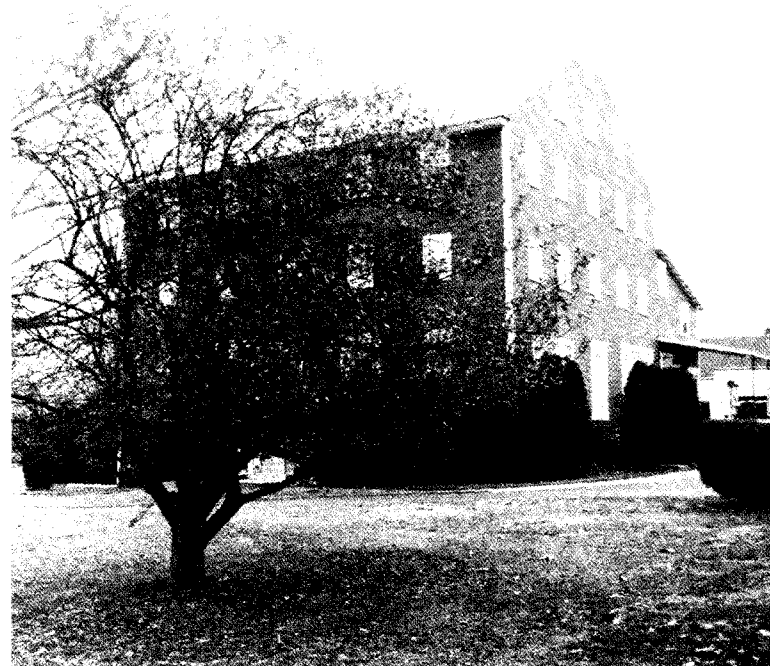
ON MICROFILM

Segment 8

Alexandria
Predominantly Rural



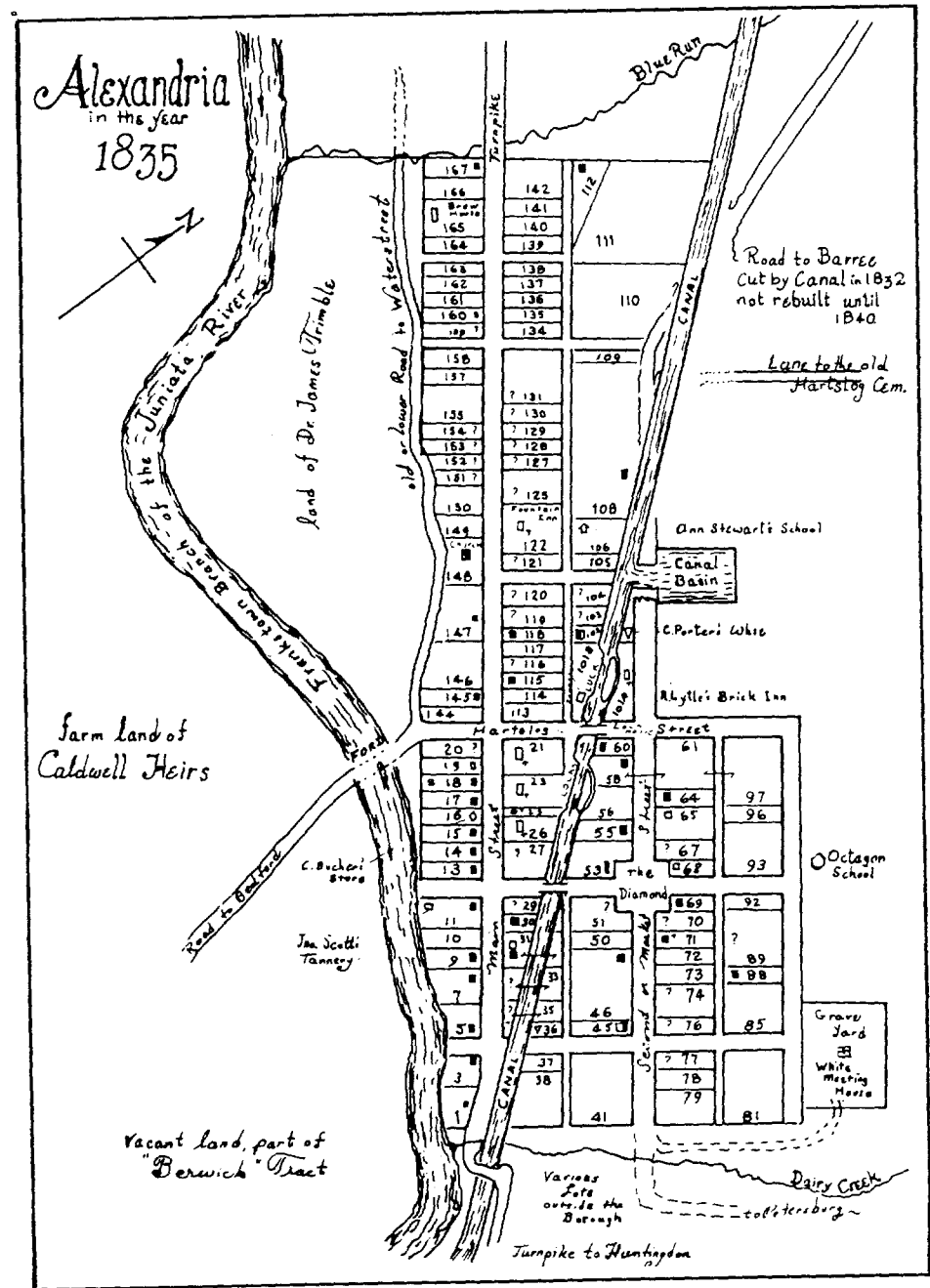
Convergence of Little Juniata and Frankstown branches



Historic gristmill in Alexandria

History of Alexandria

The land on which Alexandria was settled was occupied by Indian trader John Hart in the 1740s. His tract, where the Frankstown path crossed the Juniata, was known to later settlers as Hart's Log. Alexandria, in Porter Township, was incorporated in 1827 on the northeastern side of the river. Its population expanded in the 1830s as a result of the presence of the Pennsylvania Main Line Canal, which diagonally bisected the borough, and by 1833 Alexandria contained 64 houses, 8 stores, 2 churches, 11 taverns, and a brewery. The community prospered during the 1800s because of its proximity to the major east-west transportation corridor that paralleled the Juniata and included, besides the canal, the turnpike between Harrisburg and Pittsburgh and, later, the Pennsylvania Railroad. The Juniata Iron Works was a fixture of local industry until 1875, when it and the canal ceased operations. Late in the 1800s railroading and industry dominated the economy, with local businesses, including agriculture, a brick refractory, and iron ore, limestone, sandstone, and silica extracting enterprises. When rail service was discontinued in 1930, the locus of Alexandria's economy shifted to larger surrounding communities, such as Huntingdon, where, to a large degree, it remains today. Modern businesses in the vicinity of Alexandria include a regional medical center, a paper products factory, and a resort complex.



Alexandria ca. 1835, showing newly opened canal, lower road to Water Street, and developing street grid that is sparsely dotted with houses (J.P. Harsbarger et al., *Hartslog Heritage*, 1975).

Cultural Resources

Alexandria contains a number of historic structures (a recent Historic American Buildings Survey report lists 22) built between the early 1800s and the early 1900s, with most related to the canal era and thus the AIHP theme of transportation (see appendix B). They exhibit various architectural designs and are of frame or brick construction. Most were private residences and are along either side of Main Street. These buildings are still privately owned, and threats to them include long-term deterioration and possible future site development. A few historically nonresidential structures, along with other area cultural resources, include the following.

Locktender's House. Built ca. 1832 at the southeast corner of Hartslog Street and Shelton Avenue, this two-story gabled structure served as a locktender's house until the 1870s. Since then it has remained in private ownership and is currently occupied.

Willibrand Brewery. Erected by brewer and distiller Henry Willibrand ca. 1824-1832, the building served important commercial purposes under various owners until 1880. The brick structure was later converted into apartments and is currently used as such. It stands along Main Street at the west end of Alexandria.

Pennsylvania Railroad Station. This small-frame building was erected in 1897 and served as the community's first train station until 1903 when a larger structure replaced it. The old station was removed to a site on the north side of Shelton Avenue between Hartslog Street and the canal basin. It is deteriorating.

Memorial Public Library. Erected between 1899 and 1901 under an Andrew Carnegie endowment, this large, imposing structure stands on the northeast corner of Hartslog and Main streets. Of a Neo-Renaissance design, the elaborately pedimented, hipped-roof, two-story building is brick atop a cut-stone foundation. The upper level currently houses a local museum.

Gristmill. A water-powered mill operated by a man named Altman was along the north side of the Juniata at the west end of Alexandria.

This frame building has since been converted into a dwelling house. There appears to be no immediate threat to the building.

Woolverton Estate. William H. Woolverton, an Alexandria resident and businessman with diverse properties, erected this large house and barn between 1899 and 1901. Occupied by Woolverton as a summer residence, the estate was operated as a farm during his family's absence. Today owned by the Rohrbaugh family, the impressive Victorian structures stand on a hill overlooking State Route 305 and the east edge of Alexandria.

Site of Hatfield Forge and Big Juniata Roller Flour Mill. These buildings stood at the east side of Alexandria between the river and the canal. The forge was operated by Edward Hellyer to rework pig iron. A small building presently on the site was a forge worker's house. The principal buildings for the forge and flour mill were destroyed by a flood in 1936. The site today constitutes an archeological resource that may be threatened by erosion and vegetative growth.

Quarry-Related Sites. Among the numerous vestiges of the quarrying industry around Alexandria are the following:

On Warrior Ridge east of Alexandria are the remains of the loading dock for quarries of the Hatfield Clay Company, which operated during the 19th and 20th centuries and went out of business in the 1940s.

On the southwest slope of Warrior Ridge southeast of town is a drying kiln for fire clay used in lining early blast furnaces. The kiln operated between ca. 1900 and World War II. There are fire clay quarry sites along Warrior Ridge to the east of the drying kiln.

Rock quarries are northwest of State Route 305 at the west end of town. These supplied Federal Refractories, a brickworks that once operated at Alexandria. Few buildings survive from this enterprise.



Aerial view of agricultural landscape

Beyond continued erosion, these sites face *minimal* threats to their existence.

Canal Remains. Approximately 1½ miles east of Alexandria, adjoining the Petersburg-to-Hollidaysburg branch of the Pennsylvania Railroad, lie the remains of a stone canal lock. A short distance below this site are the remains of an aqueduct where the canal crossed the Juniata. The bed of the canal through Alexandria has been filled in as right-of-way for the railroad. Near State Route 305 on the north side of the Little Juniata River, between Alexandria and Petersburg, depressed traces of the canal bed can be seen. All of these resources are subject to the impacts of protracted erosional forces.

Natural and Scenic Resources

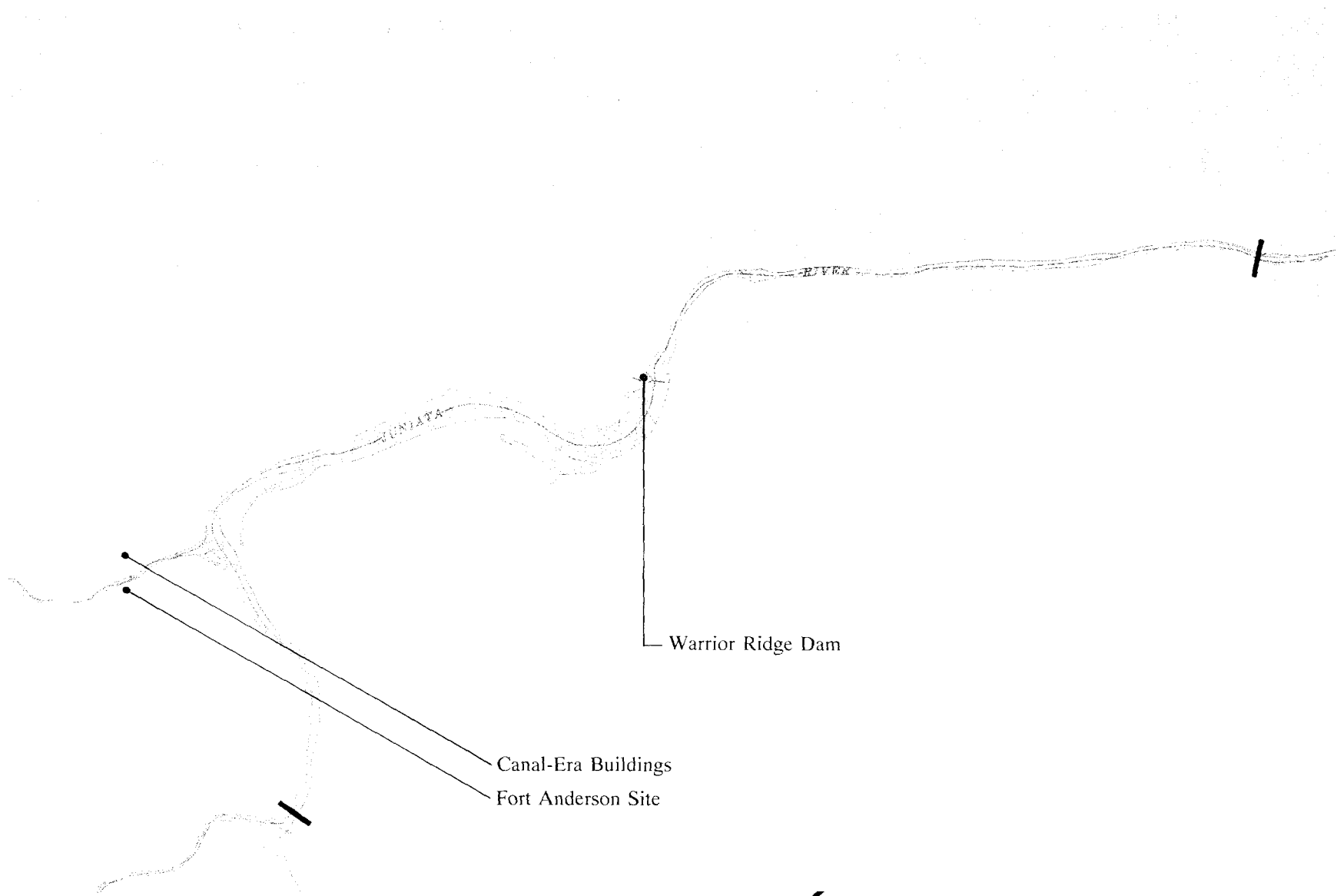
This segment begins near Water Street, where US 22 and the Frankstown Branch of the Juniata meet. At Water Street, the river swings east and breaks through Tussey Mountain. Along this 1½ miles of narrows, an 820-foot promontory borders the south shore, and a 1,000-foot slope borders the north. The land then opens up to semirolling hills and wide open floodplains. The floodplains are heavily used for agriculture, but the riverbank vegetation is still thick. The river gradient is less steep, water depths are deeper than in segment 7, and there are few riffled areas. As the river meanders past the south side of Alexandria, it passes by the backyards of local residences. Beyond Alexandria, a large oxbow has formed. The openness of the valley provides good views of the mountain ridges to the north and south. Almost 5 miles downstream of Alexandria, the Little Juniata and the Frankstown Branch converge, forming the Juniata River proper. The feeling of a new environment begins here, as another "gorge" is evident downstream.

Recreation Resources

Visitors can take a scenic drive north from Water Street along State Route 45. Along this drive they can view picturesque Spruce Creek valley and visit Indian Caverns and Colerain State Park. Colerain is

the beginning of a major southwest-northeast running 50-mile chain of state forest and park lands that are linked by the Mid-State Trail.

Alexandria has a museum of local historical artifacts, called the Hartslog Museum, on the second floor of the Alexandria Library. The town has an annual fall festival called Hart's Log Day. Nearby is Edgewater Acres, a small country resort along the Juniata River that offers a variety of indoor and outdoor forms of recreation and entertainment.



North

SEGMENT 9, PETERSBURG

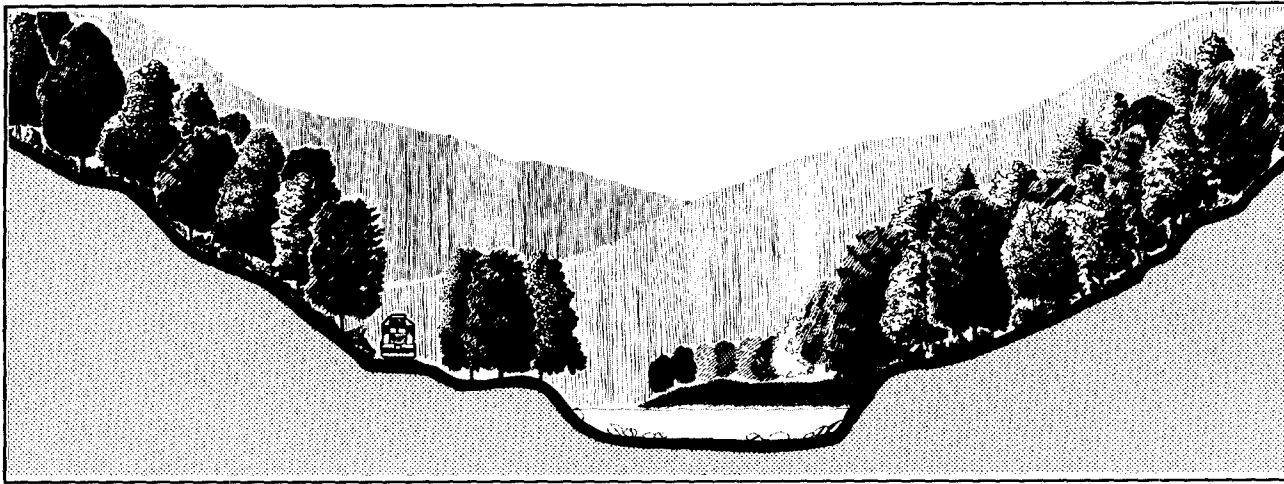
Juniata River Corridor, America's Industrial Heritage Project

DSC/Aug 91/957-40094A

ON MICROFILM

Segment 9

Petersburg
Predominantly Remote



Canal-era houses in Petersburg



Warrior Ridge gorge

History of Petersburg

Petersburg, in West Township, was laid out during the 1790s along Shaver's Creek, at the stream's confluence with the Juniata, although settlement accelerated in the 1830s and 1840s with the coming of the canal. During the latter period, the community grew with the development of warehousing, grain, and lumber operations. The canal trade dwindled following completion of the Pennsylvania Railroad, and by 1875 Petersburg established itself as a premier marketing point on the line, soon boasting numerous stores, hotels, and churches. Local industries included gristmills and sawmills, a tannery, and a steam-powered foundry that produced farm machinery. By 1900 train freight and passenger service dominated the town's economy and contributed heavily to its continued healthy employment. Soon after World War II, however, railroad service to Petersburg was discontinued. Today's industry includes several small manufacturing plants and retail businesses.

Cultural Resources

Site of Fort Anderson. This site is on the west side of Shaver's Creek adjoining present State Route 305. The fort, erected by Samuel Anderson in the 1770s, consisted of a blockhouse shelter for the refuge of local settlers during Indian raids. Beyond the long-term impacts of erosion, there is no threat to the archeological site.

Canal-Era Buildings. Many brick and stone buildings dating from the early and middle 1800s stand on either side of the south end of Main Street. Appearing in various states of repair, most are occupied as dwellings. Because these structures are independently owned, threats to them generally remain subject to the whims of their owners and would probably include fabric deterioration and development.



Site of Fort Anderson near Petersburg

Natural and Scenic Resources

From the confluence of the Frankstown and Little Juniata to Petersburg, a wide flat valley backed by rolling hills borders the north shore. The abrupt forested hillside of Warrior Ridge flanks the southern shore. The river makes a sharp bend where Shaver Creek enters near Petersburg and begins a southeasterly course through Warrior Ridge gorge. The river is much wider and deeper between the dam and the confluence than in any other part of the study corridor. There is a feeling of being in a very remote area in this segment. Warrior Ridge gorge, longer than any of the previous gorges, has very steep, heavily forested slopes. There are sections of narrow floodplains on both sides of the river north of the Warrior Ridge community. Access to the river south of this community is almost impossible. About 2 miles downstream is a dam for a

hydroelectric plant. There are various unnamed cold water tributaries to the river within the Warrior Ridge gorge area.

Petersburg is on the narrow valley floor of Shaver Creek at the base of a 500-foot promontory. Warrior Ridge reservoir, formed by the Warrior Ridge Dam further downstream, backs up to just west of Shaver Creek. Between Petersburg and just upstream of the dam, 500-foot slopes create an isolated, scenic experience.

Warrior Ridge Dam, with its 16-foot drop, can be circumvented by boaters with a 150-yard carry along the northeast shore, adjacent to the power plant. Below the dam the river enters a very straight, inaccessible, canyon-like stretch of narrows with steep 300- to 500-foot slopes. Strong currents, riffles, and minor rapids provide a good canoe descent.

Recreation Resources

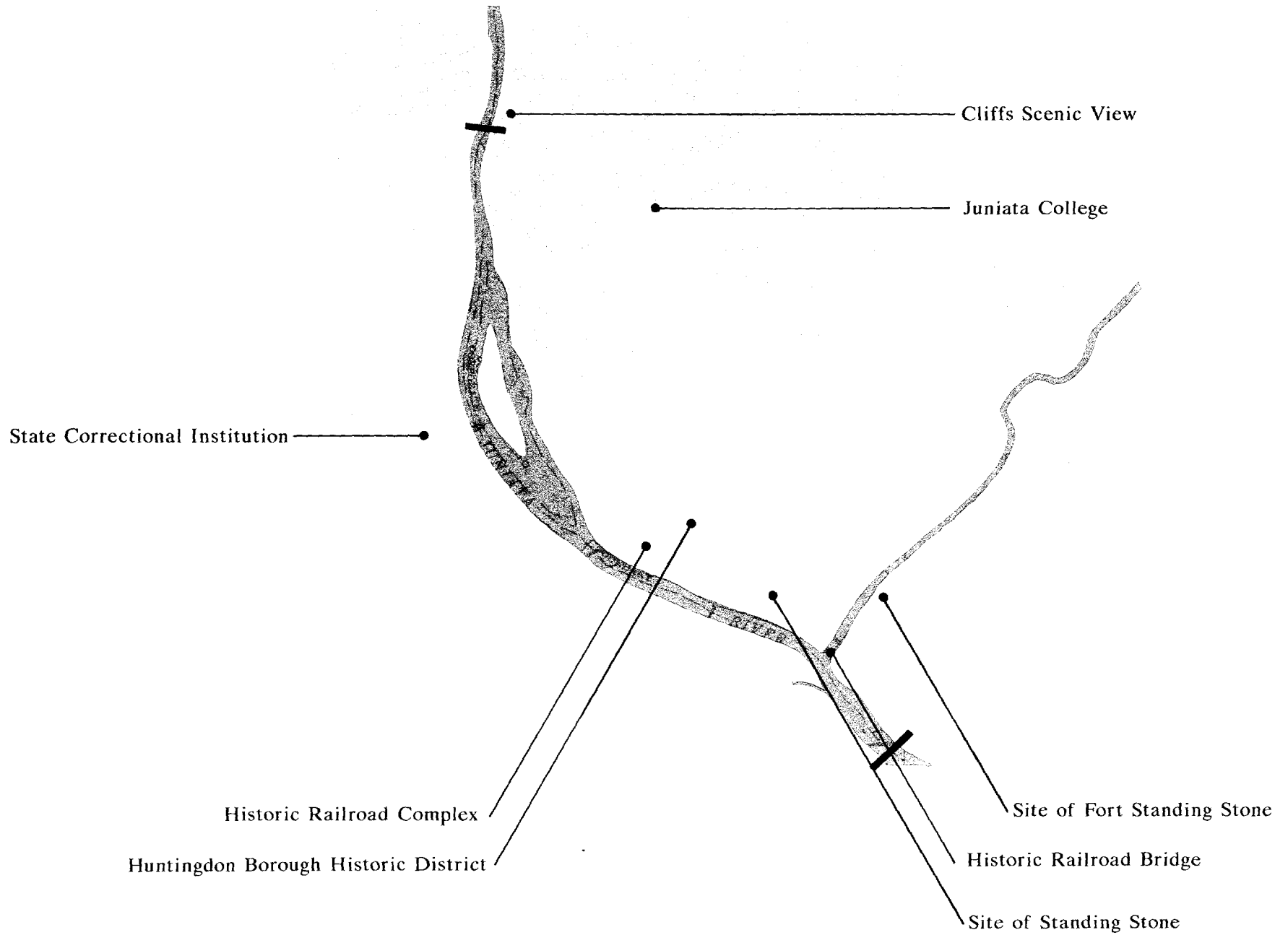
The greater depths created by Warrior Ridge reservoir between Petersburg and the dam allows for year-round use by small boats, including motorboats. This provides a rare opportunity for boat fishing. A boat ramp is provided along Shaver Creek in Petersburg.



Warrior Ridge dam and power plant



Warrior Ridge reservoir



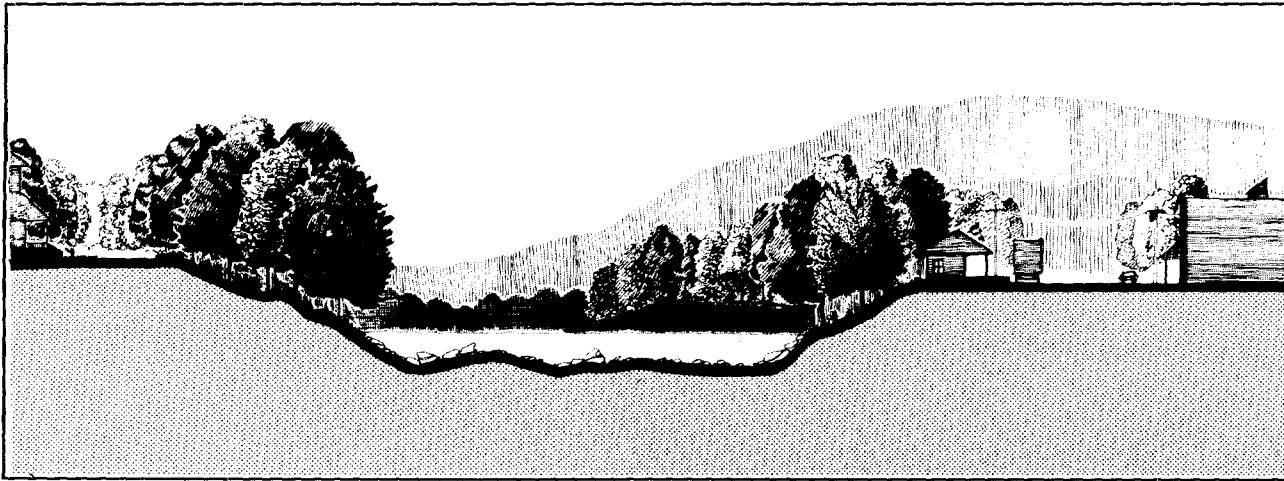
SEGMENT 10, HUNTINGDON

Juniata River Corridor, America's Industrial Heritage Project DSC/Aug 91/957-40095A

ON MICROFILM

Segment 10

Huntingdon Predominantly Urban



Pennsylvania Railroad switching tower



View of Huntingdon from US 22 bridge

History of Huntingdon

Beginning as a proprietary settlement in the 1760s, Huntingdon, in Oneida Township, developed as a principal commercial community because of its proximity to the Juniata's water power as well as its accessibility to various Indian trails and traders' paths. The first settlement occupied the former site of an Indian village near the junction of Standing Stone Creek and the Juniata. The river provided ready transportation into the wilderness of central and western Pennsylvania, and in 1787 the growing outpost became the seat of Huntingdon County. It was incorporated as a borough in 1796. Settlement proceeded in the late 1700s, gaining an impetus starting in the 1820s and lasting through the 1850s with the successive completion of the Huntingdon, Cambria, and Indiana Turnpike, the Pennsylvania Main Line Canal, and the Pennsylvania Railroad, all of which fronted the town along the northeastern side of the river. From a major transportation hub and rural trade center, Huntingdon expanded rapidly in construction activity and industrial enterprise during the post-Civil War years. Although the canal was later discontinued, by 1900 the city had assumed nearly its present size, presenting a strong economy based on its role in regional commerce, manufacturing, banking, and transportation. Construction-related industries burgeoned during the early 1900s as more people moved into the city from outlying areas. Major occupations today include wholesaling, retailing, marketing, and small manufacturing. Since the last quarter of the 19th century, Juniata College and the state prison facility have continued as important employment adjuncts to the city and region.

Cultural Resources

Extant cultural resources in Huntingdon relate to the AIHP theme of transportation and to other themes of settlement, architecture, and education (see appendix B).

Site of Standing Stone. Standing Stone marked the location of an Indian village and tribal council site near the confluence of Standing Stone Creek with the Juniata River east of present Huntingdon. The

rock pillar stood west of the creek near an Indian trail leading upstream, a site today on the south side of Allegheny Street. By early accounts, the stone measured between 7 and 14 feet high and was about 6 inches square. The stone served as an early local landmark, figuring in deed descriptions until the mid 1750s when it disappeared, possibly removed by Indians. The site of Standing Stone, significant in local settlement history, is under no immediate threat.

Site of Fort Standing Stone. At the east side of the borough near the confluence of Standing Stone Creek with the Juniata is the approximate site of Fort Standing Stone, erected as early as the French and Indian War and used for the protection of local settlers from Indians, seemingly into the 1770s. Its precise location and appearance remain unknown. Erosion may impact its archeological potential; there are no other immediate threats to the site.

Historic Railroad Complex. Surviving elements of the heyday of the railroads in Huntingdon, besides the track locations, consist of two stations and a switching tower dating from 1872-1900. The eastbound passenger station is a one-story frame structure of Victorian design that is still being used. The two-story brick westbound station, now closed, retains numerous architectural features inside and out and is at Fourth and Allegheny streets. A block away is a two-story switching tower of brick and wood. This structure, currently undergoing interior renovation for adaptive reuse, is being sold by Amtrak. There is no current threat to the eastbound station.

Huntingdon Borough Historic District. Nearly 500 historic buildings dating variously from the 18th century through the early decades of the 20th century compose the district, a national register property bounded approximately by Allegheny, Ninth, Moore, and Second streets. Some structures were the dwellings and business establishments of prominent local figures, but most were not. A few buildings represent the earliest settlement period; however, most buildings were built between 1825 and 1900 and represent the Federal, Queen Anne, and Italianate architectural styles (although other styles are present). The district also contains some structures that were erected later or whose integrity has been somehow compromised. A few representative district structures include (1) the



Huntingdon train depot

Huntingdon County Jail, built in 1829 and the oldest public building; (2) the William E. McMurtrie house, built in 1854 and currently housing the offices of the Huntingdon County Historical Society; (3) the Huntingdon County Courthouse, erected in 1883 in the French Renaissance style; and (4) the J.C. Blair building, raised in 1889 to house a stationery business and once the tallest building between Philadelphia and Pittsburgh. The elements composing the historic district probably face the threat of long-term development.

State Correctional Institution. This local landmark along the southwestern side of the Juniata opened in 1889 as an industrial reformatory for the rehabilitation of prisoners. Occupying 10 acres, the enclosed brick facility registers Victorian features in its architectural design. It served as a penal institution until 1945, when it became a home for delinquents; 15 years later it was redesignated as the state correctional institution, with a capacity for 2,000 inmates to learn the rudiments of vocations such as carpentry, bricklaying, and painting. There is no immediate threat to this resource.

Juniata College. Founded in 1876 by the Church of the Brethren, Juniata College has remained an important occupational and educational facility in the Huntingdon community. An independent institution whose mission has grown over the past century, the

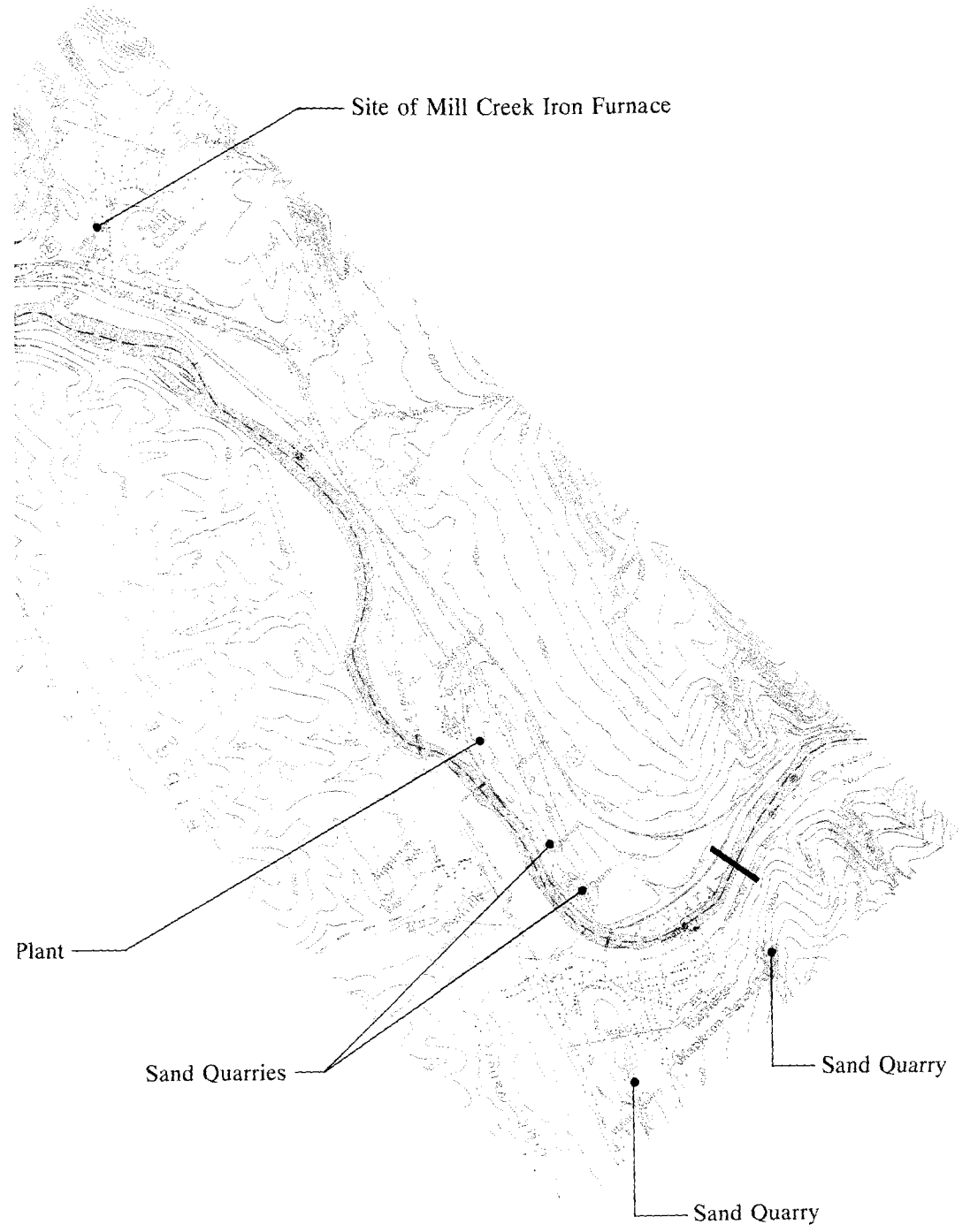
college today occupies a campus of 100 acres at the northeast end of the borough and has an enrollment of approximately 1,500 students. No impacts to the college site are currently foreseen.

Natural and Scenic Resources

As the river leaves Warrior Ridge gorge, the land immediately opens up into wide floodplains with small agricultural lands. Here Cypress Island splits the river. When the two forks of the river meet again, it forms the boundary between the cities of Smithfield to the southwest and Huntingdon to the northeast. In this segment the river flows under five bridges and past some small industrial complexes. The banks of the river are still vegetated even where the river flows through town, but this vegetation is not enough to block the urban environment. Piney Ridge can be seen to the south-southeast. At the terminus of this segment there is a sewage treatment plant that pumps effluent into the river. The effluent plume can, at times, be seen flowing south as one stands on the Route 10 bridge. Crooked and Standing Stone creeks and Synder Run are tributaries within this segment.

Recreation Resources

The Huntingdon County Historical Society is an active organization that, besides storing historical documents and other articles, displays exhibits and sponsors lectures and occasional ceremonies. Juniata College has annual occasions such as parent weekend, homecoming, and alumni weekend. It also offers lecture and concert series. The town has two festivals, the Spring Fest and the Family Fall Festival. Just out of town are popular tourist caves such as Indian and Lincoln caverns. The Swigart Museum of Antique Autos has a large, rotating collection of antique cars on display. An area locally referred to as "the cliffs" is a sandstone formation just outside of town that is a popular hiker's destination. Just south of Huntingdon is Standing Stone Creek, a good canoeing creek during high water. Huntingdon and Smithfield both have park and recreation areas along the river; these areas currently are not oriented to river activities. South of town is the Lake Raystown resort, a major regional outdoor recreation destination.



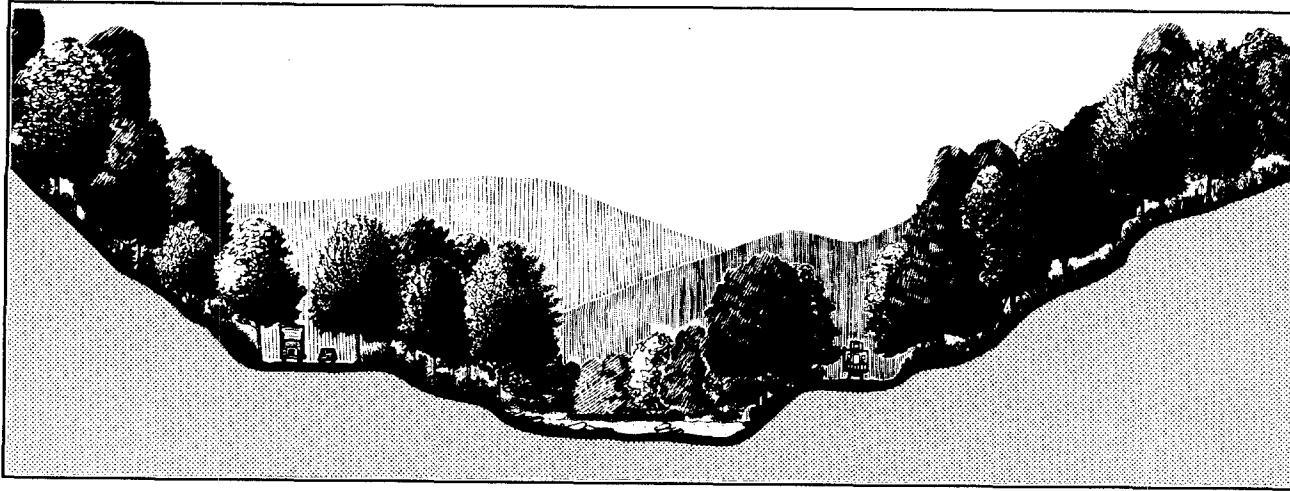
Site of Mill Creek Iron Furnace

Plant

Sand Quarries

Sand Quarry

Sand Quarry



Segment 11

Mill Creek
Rural/Remote



Looking upriver toward Mill Creek



View of river corridor

History of Mill Creek

The area of the confluence of Mill Creek with the Juniata in present Brady Township first attracted settlers in the 1760s as an outlier of nearby Huntingdon. Agriculture was an early occupation, and later industries included flour mills, gristmills, bark mills, and sawmills, all powered by the stream named Mill Creek or its tributaries. The community developed on the northeastern side of the Juniata along either side of Mill Creek. During the 1830s and 1840s Mill Creek served as a shipping point on the Main Line Canal, which traversed the north side of the river and had an aqueduct, a basin, a wharf, and storage facilities at the town. The Pennsylvania Railroad supplanted the canal as a fixture of the local economy in the 1850s.

In the 1870s Mill Creek became an important railroad loading hub for lumber, flour, and grain produced there, and by the mid 1880s several of the mills had converted to steam power. Early in the 1900s a stocking factory was erected in the village and brickyards were later established, all joining with the mills and quarries to sustain local employment. Mill Creek suffered during the Great Depression, and in 1936 a major flood hit the town. Today agriculture remains an important business, although many residents commute to jobs in nearby Huntingdon.

Cultural Resources

AIHP themes found at Mill Creek relate to transportation, iron/steelmaking, and support industries (see appendix B).

Site of Mill Creek Iron Furnace. Between 1838 and 1869 the Mill Creek iron furnace stood $\frac{1}{4}$ mile up the creek, employing as many as 120 people at the height of its operation. There is ongoing discussion about installing a septic system in the community. Such a project could adversely threaten this archeological site.

U.S. Silica Plant. This plant processed the local sand used for the Mt. Palomar mirror.

Quarry Site. Sandstone quarrying also promoted the local economy by the middle of the 1800s. A major quarry site, at Stone Mountain, is east of the town. Erosion threatens this resource.

Prehistoric Indian Sites. Near Mill Creek on the south side of the Juniata are two prehistoric Indian sites. The first lies approximately 2 miles west of Mill Creek and consists of a rock-shelter at the floodplain level along with a burial site of the Eastern Woodland Period. The second lies $\frac{1}{2}$ mile farther west and consists of an unexcavated village site. The field area is currently for sale, and the sites are probably threatened by development.

Canal Remains. About $1\frac{1}{2}$ miles west of Mill Creek are the remains of a stone feeder dam. This remnant is threatened by continued erosion and possible future development.

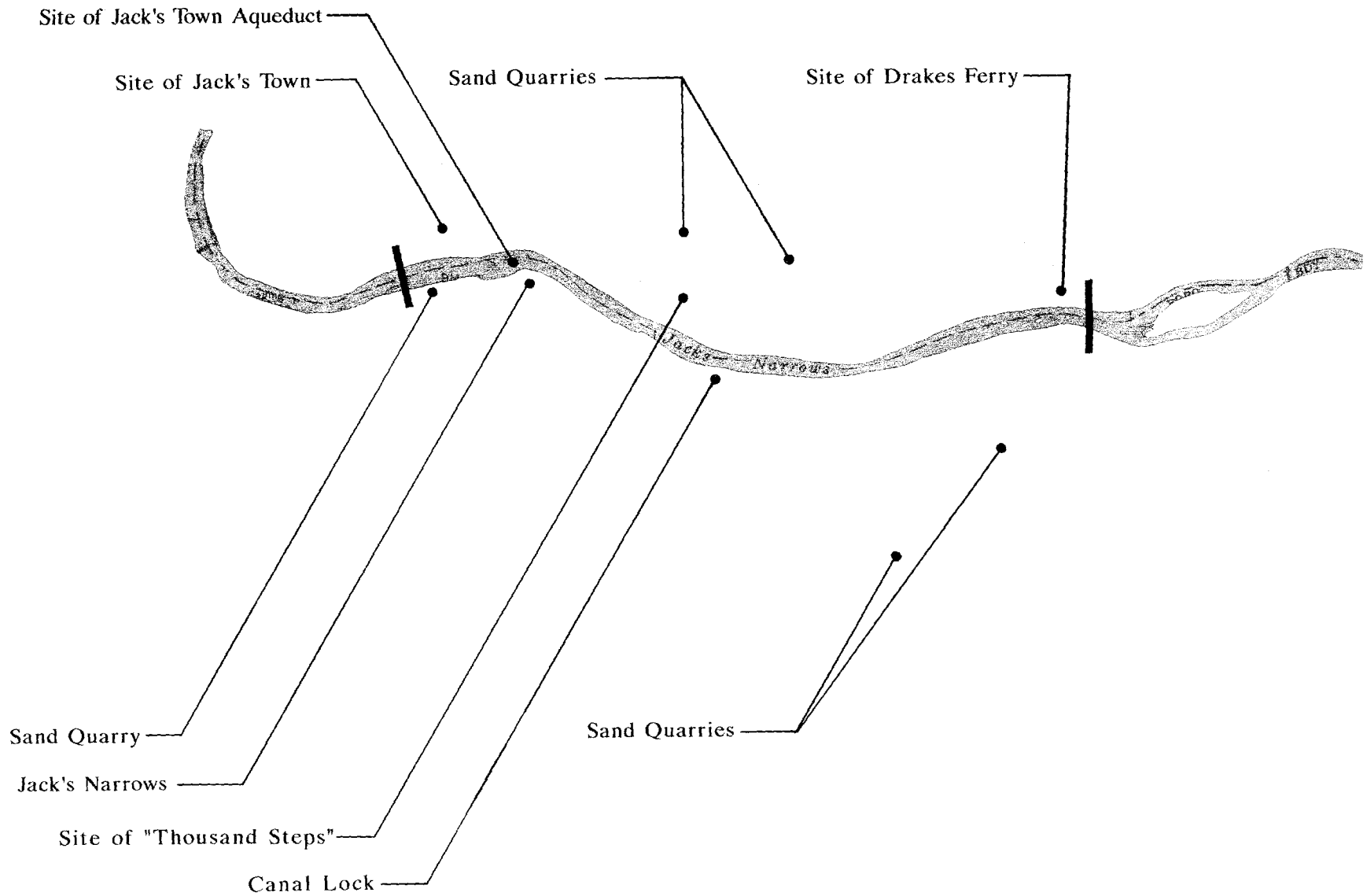
Natural and Scenic Resources

Impacted at the beginning of the segment by sewage plant effluent, the river flows southeast through an area having both a rural and a remote character. This effect is created by the river flowing through a wide gorge area that is made up of various mountains and ridges (Stone, Terrace, and Jack's mountains, and Lick, Bark, Allegrips, and Clear ridges) and several hollows that drain over 10 small cold water fisheries. Just before its junction with the Raystown Branch (a major tributary), the Juniata River is split by a small $\frac{1}{2}$ -mile-long island. Along the northeast shore on the narrow band of river terrace is the community of Ardenheim. Within this gorge are US 22, the Conrail Railroad, and a wide expanse of floodplain that has been converted to agricultural land. Downstream of the Raystown junction, the river hugs the base of Terrace Mountain, which rises 1,240 feet above the Juniata. As the river begins a southward turn, it passes the community of Mill Creek. On this southward course toward Mapleton, State Route 655 and the railroad tracks parallel the river on the eastern shore. Quarries on the lower terraces of Jack's Mountain are visible from the river. Throughout this segment, vegetation on the banks is thick, but the ridges and mountains can occasionally be glimpsed from the river, which adds to a feeling of remoteness.

Recreation Resources

Near Ardenheim is the juncture of the Raystown Branch and the Juniata. There are two good islands for canoe camping nearby. The Raystown Branch itself is a good canoeing stream, even since the damming of the stream for Raystown Lake.

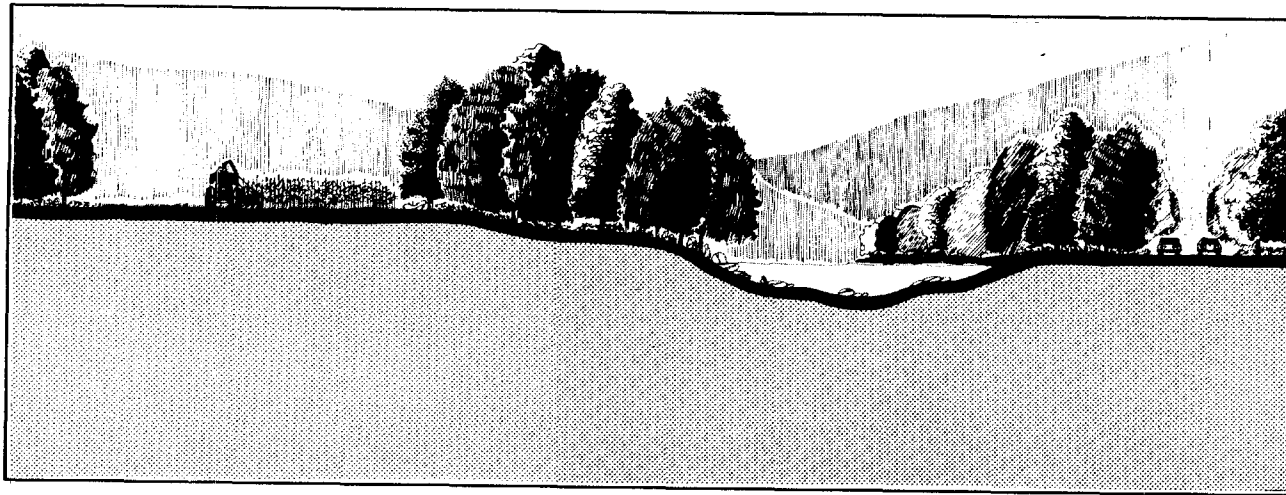
Traveling south along State Route 829 near Mill Creek, visitors can take a scenic drive atop Mill Creek Mountain, where they can stop and view Jack's Narrows. By taking State Route 655 north from Mill Creek, visitors can view Big Valley with its rich farmlands and Amish homes.



SEGMENT 12, JACK'S NARROWS

Juniata River Corridor, America's Industrial Heritage Project DSC/Aug 91/957-40097A

ON MICROFILM



Segment 12

Jack's Narrows Predominantly Rural



Looking upstream toward Jack's Narrows



Aerial view of Jack's Narrows

History of Mapleton

The community of Mapleton, in Union Township, stands 3 miles west of Mount Union along the south side of the Juniata River and near the intersection of State Route 655 with US 22. Although settlement occurred in the area as early as the 1760s, the town was laid out north of the river following construction of the canal and later the railroad through southern Huntingdon County; the town became known as Mapleton Depot. Incorporated in 1866, by 1880 the borough's population was about 450. Early industries in Mapleton included a tannery, a distillery, a brickmaking plant, a flour mill, and sand and limestone quarrying operations. In the early 1900s a ganister rock quarry was opened on Jack's Mountain east of Mapleton by the Mount Union Silica Brick Company. This enterprise used an inclined plane and a steam dinky to deliver rock to a loading tipple south of the town. Sand quarrying has been a major industry, with several plants operating in the Mapleton area since the 1860s. Many of the sand works south of the community were incorporated under the Pennsylvania Glass Sand Corporation in the 1920s. The sand quarrying operations continue to be an important part of the livelihood of Mapleton's population.

Cultural Resources

Mapleton's representative sites relate to the AIHP themes of transportation and support industries (brickmaking). The settlement theme is also represented (see appendix B).

Jack's Narrows. A picturesque stretch of the Juniata River east of Mapleton, Jack's Narrows figures in long-standing local history – Captain Jack Armstrong was murdered there by Indians in 1744, and Armstrong was buried along the riverbank. The narrows later became the site of the course of the old Frankstown path, the Pittsburgh Turnpike, the Main Line Canal, the Pennsylvania Railroad, and US 22. The Pennsylvania Department of Transportation has proposed substantially widening US 22 through the narrows, which could have long-range effects on cultural resources there, including the historic site of Jack's Town.

Canal Remains. In the Juniata River near Mapleton, opposite the junction of US 22 and State Route 655, lie the remains of the Jack's Town or Jack's Narrows aqueduct, which was destroyed in the 1889 flood. The remains consist of two cut stone block piers, each approximately 70 feet long, 10 to 15 feet high, and 40 feet wide. On each bank of the stream is a cut stone block abutment measuring about 40 feet long by 15 feet high. Of immediate concern is the proposed construction of a four-lane highway through the town. Continued erosion also poses a long-term threat to these resources.

Sand Quarries. One quarry was on the western slope of the hill lying just beyond the east edge of Mapleton. Another stood on the ridge directly south of the town. These quarries signify past industries in Mapleton as well as a major reason for the continued existence of the community in the 20th century. Other quarry sites are on the north and south sides of the Juniata at Jack's Narrows. The one on the north side, approximately 1½ miles below Mapleton, contains remains of an incline engine house with stone steps leading to the top. Other than erosion and potential long-term development in the vicinity, there are no threats to these resources.

Site of Jack's Town. Jack's Town was just below Mapleton along the canal on the north side of the Juniata. An access point for goods and passengers using the canal during the 1830s and 1840s, the tiny community ultimately faded with the canal's discontinuance in later years. Future highway development poses a threat to Jack's Town.

Site of Drake's Ferry. Samuel Drake, Sr., built this ferry in 1783 to assist travelers at a key convergence of several roads and trails with the Juniata River. The site of the ferry with its tavern and stables is north of the river and west of the Old County Bridge. Representative of early transportation procedures in the area, the site may have archeological resources. A bridge pier remains on the south side of the river. The site is subjected to weather and erosional processes.

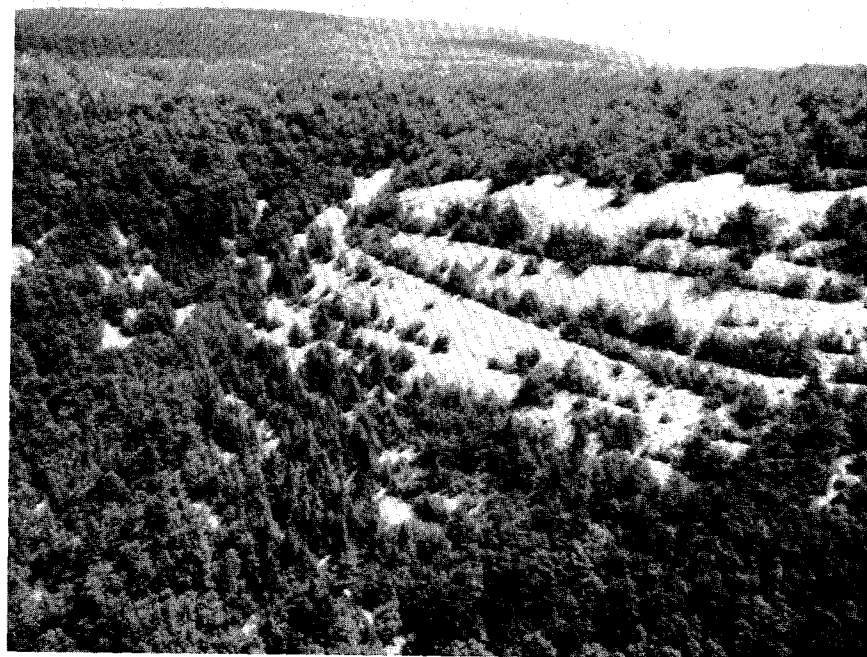
Natural and Scenic Resources

At Mapleton the river bends sharply eastward, beginning its dramatic cut through Jack's Mountain. Along the southern shore is Mapleton,

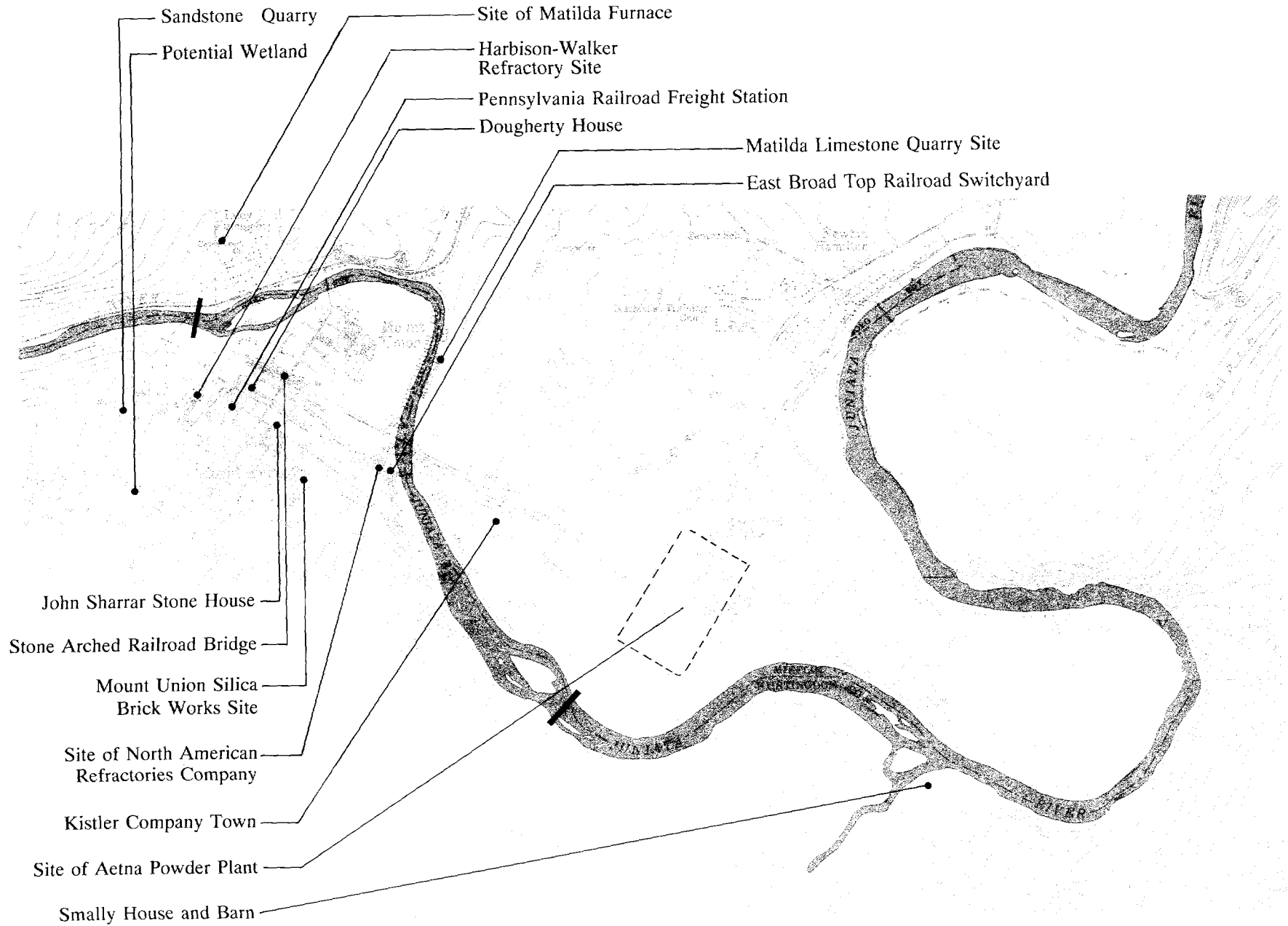
clustered just beyond the railroad tracks at the base of Jack's Mountain, with an almost 3-mile segment through Jack's Narrows following. Here, steep forested slopes tower over 1,000 feet on either side, with even higher peaks in the background. Because of the steepness of the shores, access to the river is limited. Even though US 22 parallels the north bank and railroad tracks parallel the south bank, bank vegetation shields them from view, leaving the steeply sloped walls of Jack's Narrows visible to the boater.

Recreation Resources

Between Mapleton and Mount Union, in Jack's Narrows, is the old quarry site on the southern flank of Jack's Mountain – referred to as the "Thousand Steps" area. It is a local hiking area that offers spectacular views of the narrows and reveals much history of the old quarrying operation. Visitors can park along US 22 and hike the steep, old stairway of cut stone. Also, a 2½-mile trail begins just west of Lucy furnace, which takes visitors west along a more gradual route to the same general area.



Limestown quarry, "Thousand Steps" area



North

SEGMENT 13, MOUNT UNION

Juniata River Corridor, America's Industrial Heritage Project

DSC/Aug 91/957-40096A

ON MICROFILM

Segment 13

Mount Union Urban/Rural



Scenic view of Juniata near Mount Union



Aerial view of Mount Union

History of Mount Union

Mount Union, in Shirley Township, emerged from several settlements that grew up in the central Juniata valley during the late 1700s and early 1800s. Numerous interconnecting roads and trails converged at a point where a ferry crossed the Juniata River during the 1790s. With the coming of the Main Line Canal in the 1830s, the coalescing of the various communities began and the area grew in population. One town, Clintonville, became closely identified with the canal, and tons of pig iron from area furnaces were transported on the canal. Agricultural production increased, and the area boomed. Contributing communities included Matilda furnace, Jack's Town, and Santa Fe. The advent of the railroad in 1850 ensured continued prosperity, and a major leather tanning industry developed. Finally, in 1867, the borough of Mount Union received a charter. The addition of a line of the East Broad Top Railroad five years later added to the borough's affluence, and by the 1880s Mount Union's success in industry and banking was secured. As the tanning industry fell off during the last years of the 1800s, other businesses took hold. Notably, at this time, silica brick production began in Mount Union. Although other brick manufacturing facilities operated there, too, the Harbison-Walker plant at Mount Union ultimately became the world's largest supplier of silica bricks, with an estimated output of 80,000 units per day. Although this particular operation continued brick production only until 1956, other brick plants survived longer. Sustained by these and other industries, Mount Union has weathered periodic economic adversity down to the present.

Cultural Resources – Mount Union Area

Mount Union area cultural resources reflect the AIHP themes of transportation, iron/steel making, and support industries (brickmaking and munitions); the other themes of settlement and architecture are also represented (see appendix B).

Site of Matilda Furnace. Frederick Cottrel established this pig iron furnace ca. 1836, its produce being shipped over the canal to outlets in eastern Pennsylvania. Today known as Lucy furnace, the site

discloses various trails and ore cuts on the mountainside. The furnace is on the north side of the Juniata and US 22.

Significant as a component of early industrial activity in the area, the site currently is in fair condition. The dam needs repair and the property is overgrown with vegetation. The main threats to the resource are erosional deterioration and vandalism.

John Sharrar Stone House. Early businessman John Sharrar raised this structure in about 1841 along the south side of the canal to serve as a home, store, and warehouse. As part of Sharrar's business complex that at one time included other buildings, including a tavern, the stone house became a nucleus for community growth in Mount Union. The building, restored between 1976 and 1979, is on Water Street near the corner of Division Street. It is well maintained. The local historical society is considering building an addition on the Sharrar House that will follow foundation traces of an addition that once existed.

Site of Aetna Powder Plant. This munitions plant, erected in 1915, stood in the river loop area east of Mount Union. Before the entry of the United States into World War I, the factory produced gunpowder for the use of various European armies in the fight against Germany. Its existence boosted the local and regional economy until 1918 when the plant officially closed its doors on November 11 with the end of World War I. The land was sold to Hercules Powder, who then sold the land and buildings. A few storage buildings, an uncompleted ordnance building, and several company houses remain at the site near Silverford Heights. The site signifies the munitions industry around Mount Union. Some remaining foundations have been demolished during development in the area, and the remnant of the ordnance building is threatened by potential development. However, the extant company houses are being maintained in fair condition. Throughout the powder plant site, vats and tunnels have been filled in. Vegetative overgrowth constitutes a threat to the resource.

Site of Harbison-Walker Brick Refractory. Established in 1899 as a fire brick plant, the interest was sold to the Harbison-Walker industrial complex in 1900, and between 1910 and 1930 it became

the world's largest producer of silica brick for lining coking ovens and steel mill crucibles. During its heyday, the refractory used 140 tons of coal daily to fire the brick. A mainstay of the local economy during its years of operation, the surviving buildings and kilns are at the west edge of Mount Union on a tract adjoining Lafayette Street. Today these remnants are threatened by vegetative overgrowth, removal, and development of the land base.

Site of Mount Union Silica Brick Works. Founded in 1901, this refractory operated 18 kilns, six steam engines, and several electric-powered motors in treating stone imported from nearby Mapleton to produce nearly 14,000 bricks per day. Later output stood at 80,000 bricks per day from 24 kilns. General Refractories purchased the property in 1915, operating the works until its closure in 1956. The site of the operation is at Mount Union's municipal park. There is no immediate threat to the existing houses and buildings, which are occupied.

Site of North American Refractories Company. This firm started operations in 1911 as the Mount Union Refractories Company. As other brickmaking plants in the community, the company contributed heavily to sustaining the local economy. Originally consisting of eight kilns, after 1922 it operated 29 kilns as the United States Refractories Company; in 1930 it underwent a final name change to North American Refractories Company. The plant operates today and stands west of the Juniata River, just east of Pennsylvania Avenue. There are no immediate threats to the complex beyond possible changes imposed by the ownership.

Kistler Company Town. Kistler Company Town, east of Mount Union and across the Juniata in Mifflin County, began with the growth of the Mount Union Refractories Company. John Nolen of Cambridge, Massachusetts, designed the community. The buildings, most of which were standardized five-room houses, were designed by the firm of Mann and MacMeille of New York City. The Kistler Real Estate Corporation managed the enterprise, which included a company-subsidized school system. The project became noted internationally as a model community, boasting a community building, a playground, and landscaped surroundings, all revolutionary

concepts for the time. Between 1917 and 1925 the company town flourished; this growth ended in 1925 when the borough of Kistler was formally chartered. Today, the community building and a number of Kistler company town homes (now privately owned) survive.

Pennsylvania Railroad Freight Station. This gable-roofed two-story frame structure faces the railroad tracks near where the tracks cross Washington Street. The station epitomizes the height of the Pennsylvania Railroad era in Mount Union during the late 1800s and early 1900s, as well as the community's role in the iron and brick production industries. The freight station (currently operated by Conrail) is threatened with demolition.

Stone Arched Railroad Bridges. Several arched railroad bridges, built in 1906 of coursed fieldstone, stand along Division and Jefferson streets. These sturdy structures not only represent examples of railroad bridge architecture early in the 1900s, but point up the long-standing importance of the railroad to the Mount Union community. Long-term erosion is a possible threat to the piers.

East Broad Top Railroad Switchyard. This yard served as the switch point between the narrow gauge track of the East Broad Top Railroad and the standard gauge of the Pennsylvania Railroad. The switchyard, including the track and enginehouse, is at the east end of Shirley Street and Pennsylvania Avenue adjacent to the west bank of the Juniata River. In addition, existing hopper cars and custom-built wooden cars are threatened by erosional deterioration.

Dougherty House. This structure was built by Dougherty in the 1850s. Dougherty was a coal developer and a founder of Mount Union. He also developed the sectional canal boats used by the Allegheny Portage Railroad. The house is at the corner of Shirley and Washington streets. There is no immediate threat to the house; it is occupied and well maintained.

Quarries. East of Mount Union and the Juniata River is the site of the Matilda limestone quarry, an 1870s operation associated with area iron manufacturing. West of the borough is a sandstone quarry connected with the brickmaking operation. Beyond vegetative

overgrowth and normal erosional forces, there are no immediate threats to the quarries.

East Broad Top Railroad. This 36-inch narrow gauge railroad, the last such surviving in the eastern United States, was built in 1872-73 to transport semibituminous coal, sand, rock, lumber, and general freight from the region of Broad Top Mountain to Mount Union, 30 miles distant, where the cargoes were transferred to the Pennsylvania Railroad for shipment to market. It also provided passenger service. The train shops stood at Rockhill Furnace, the approximate midway point. Although the working railroad formally closed during the 1950s after demand for coal waned, it reopened as a tourist attraction in 1960, providing limited excursions over 5 miles of track in the area of Rockhill. Now a national historic landmark, the enterprise includes six locomotives, several passenger and freight cars, the rails, a station complex, a roundhouse, a turntable, shops, a section house, signals, two tunnels, a water tank, and yards at Rockhill and Mount Union. The East Broad Top is significant as a transportation mode that contributed to the economic and industrial development of the coal mining region of central Pennsylvania.

Today the East Broad Top Railroad is seriously threatened. There has been cumulative deterioration to the bridges, tunnels, and trestles on the right-of-way, and the threat of fire in the shop complex is very high due to the accumulation of grease and soot over the years. Many of the shop buildings need to be treated for stabilization and deterioration problems. Four of the six Baldwin Mikado locomotives are operational, and several East Broad Top passenger cars survive and are in use. Other rolling stock, including boxcars and coal cars, have not been maintained and are in poor condition.

History of Shirleysburg

This borough, in Shirley Township approximately 7 miles below Mount Union along US 522, was settled in the mid-to-late 1700s following the 1747-1748 erection of Fort Shirley, the garrison of which was commanded by Captain George Croghan. Croghan was also an Indian trader who operated a nearby establishment that attracted the earliest settlers to the area. Settlement increased after the

French and Indian War, and the principal economy became agriculture, although in later years brickmaking and pottery were major livelihoods of Shirleysburg residents. Today the tiny community contains a number of houses that date from the early 1800s.

Cultural Resources – Shirleysburg

Site of Fort Shirley. The site of Fort Shirley is west of US 522 at the north edge of the town. A stockade structure, the post served as one of a defense line of forts established west of the Susquehanna River. In 1756 it served as a staging area for Colonel John Armstrong's expedition against the Indians. An archeological resource, the site faces erosional damage. If development occurs west of US 522, the site would be threatened.

History of Newton Hamilton

A canal town in Wayne Township, Mifflin County, Newton Hamilton evolved along the north side of the Juniata beginning in the 1760s. In 1783 Margaret Hamilton acquired a warrant to 60 acres, and in 1802 a town was laid out. Although trading and agriculture constituted early incentives for the community, Newton Hamilton prospered as a reception point for local goods destined for eastern and western markets following construction of the canal. Incorporated in 1843, at the height of its existence the borough contained several boarding houses, stores, saloons, and a post office. Local businesses included a boat yard where canal boats were built, a blacksmith shop, a hotel, and two tanneries. Canal-associated fixtures included wharfs, docks, storehouses, locks, and dams.

Cultural Resources – Newton Hamilton

At Newton Hamilton several canal features are preserved, including a feeder dam lock, two lift locks, part of an aqueduct, part of a bridge, ruins of a lock house, and 14,000 feet of canal prism. Besides canal remains, cultural resources surviving in Newton Hamilton include a number of buildings that were erected contemporaneously with

operation of the canal during the 1800s. Newton Hamilton contains perhaps the most well-preserved complex of canal features in the study corridor. Threats consist of vegetative overgrowth and increased recreational use along the Juniata at this point, which could include filling in the existing canal prism. If cuts are made between the prism and the river, flooding and increased erosional damage to the resources could result.

Natural and Scenic Resources

As the river leaves Jack's Narrows, the landscape opens out into a valley with the town of Mount Union directly in view along the southern shore. The much smaller community of Lucy Furnace sits on the northern shore at the base of Jack's Mountain. Heavy vegetation on the banks helps soften the urban development as the river passes these communities, resulting in a more rural experience. Just past Mount Union the river passes the satellite communities of Kistler on the east shore and Allenport on the west. Water quality at this point is suspect. Pockets of agricultural lands are found on the floodplain and in narrow valleys between the hills. As the river flows southeast toward a large oxbow bend, it is split by several attractive islands. Here the valley is distinguished by its open character framed by distant mountains. Aughwick Creek joins the river at the beginning of the oxbow. Beyond the bend, the river takes a northwestern approach to Newton Hamilton, a town on the north bank in Mifflin County that has some of the better remnants of the Pennsylvania Main Line Canal.

On the outskirts of Mount Union near the Harbison-Walker quarry is a wetland that was created as a result of quarry sand that has filled a small valley.

Recreation Resources

Southeast of Huntingdon, before the river curves north, Aughwick Creek enters the river. This is another good canoeing creek when water levels are high.

In Orbisonia are the East Broad Top Railroad National Historical Landmark and the Shade Gap Electric Railway Museum, which is operated by Railways to Yesterday. The East Broad Top Railroad offers visitors a 50-minute steam-powered ride through the Aughwick Valley along the historic narrow gauge line. The railway museum has a trolley museum and offers trolley rides.

Mount Union has an annual celebration called Canal Era Day. In the Orbisonia and Rockhill area are various festivals, such as the Shade Gap picnic, the Orbisonia-Rockhill Homecoming Festival, the Old-timers Baseball Festival, and the Cassville Octoberfest.

APPENDIX B: THEMES

The Park Service has various approaches for examining and determining the significance of areas and resources under study. One of those approaches is based on how that area or resource relates to an established list of NPS themes. When an area or site fits within an underrepresented theme at a national level and has integrity, it is generally considered significant.

The NPS natural resource theme “Appalachian Ranges” (subthemes “Mountain Systems” and “Geologic History”) is relevant to the study corridor resources. The study corridor is in the Appalachian Range Region, more specifically the Allegheny Ridge and Valley Province. The Ridge and Valley Province is not currently represented in the NPS “Mountain Systems” subtheme and is therefore considered significant. This mountain system is underlain by sandstones, shales, and limestones of the Cambrian through Devonian ages. Mississippian rocks are exposed in parts of the western side of the ridge and valley. Many of these Paleozoic formations are richly fossiliferous. Within the “geologic history” subtheme, the Cambrian, Devonian, and Mississippian periods are significant and underrepresented within the national park system.

Most of the study corridor cultural resources relate also to the broad NPS history theme of “America at work” (subthemes of “commerce and industry” and “transportation and communication”), and the AIHP themes (essentially part of the “America at work” theme) of iron and steelmaking, coal, transportation, and labor and social history and the secondary theme of support industries.

Below is an outline of the AIHP and NPS history themes and accompanying resources within the study corridor; the resources themselves are described in more detail under the discussions of each segment in appendix A.

AMERICA AT WORK

A. Transportation

Early River Use – Drake’s Ferry near Mount Union

Canals – Juniata Division of the Main Line Canal throughout study corridor and canal remains (Hollidaysburg, near Williamsburg, Frankstown, Geeseytown, near Alexandria, Mill Creek); vestige of Three-mile Dam at Ganister; Jack’s Town aqueduct near Mapleton; canal features at Newton Hamilton

Railroads – Pennsylvania Railroad (main line) between Mount Union and Hollidaysburg; historic railroad complex in Huntingdon; Pennsylvania Railroad freight station, stone arched railroad bridges, East Broad Top Railroad switchyard in Mount Union, and East Broad Top Railroad in Rockhill/Orbisonia

Roads – US 22 throughout study corridor

B. Commerce and Industry

Coal Mining – East Broad Top Railroad switchyard

Iron/Steelmaking

Mining – Limestone quarries near Williamsburg; Matilda quarry near Mount Union

Furnace/Forge – Soap Fat furnace near Point View; Franklin forge site and Cove forge near Williamsburg; Mount Etna ironworks and related resources near Mount Etna; site of Hatfield forge and Big Juniata roller flour mill in Alexandria; site of Mill Creek iron furnace site in Mill Creek; Matilda furnace near Mount Union

C. Support Industries

Brickmaking – Quarries around/in Alexandria; quarry site near Mill Creek; sand quarries near Mapleton; Harbison-Walker Brick Refractory, Mount Union Silica Brick Works, North American Refractories Company, and Kistler Company Town in Mount Union; sandstone quarry near Mount Union

Gristmilling – Gristmill, Hatfield forge, and Big Juniata roller flour mill in Alexandria

Munitions – Site of Aetna powder plant near Mount Union

OTHER THEMES

Other resources within the study corridor did not fit within the NPS or AIHP themes; these resources are listed below.

Settlement – Sites of Forts Holliday and Fetter and the Holliday-Jackson burial ground near Hollidaysburg; Lowry homestead and Hileman house near Frankstown; Big Spring in Williamsburg; canal-era buildings in Alexandria; Fort Anderson site and canal-era buildings in Petersburg; Fort Standing Stone site in Huntingdon; Jack's Narrows and Jack's Town near Mapleton; John Sharrar stone house and Dougherty house in Mount Union

Military – Site of Fort Fetter near Hollidaysburg; site of Fort Shirley near Shirleysburg

Indian Sites – Chimney Rocks in Hollidaysburg; Holliday-Jackson burial ground near Hollidaysburg; site of Standing Stone near Huntingdon; Indian sites near Mill Creek; Jack's Narrows near Mapleton

Architecture – Hollidaysburg Historic District in Hollidaysburg; canal-era and later historic buildings in Alexandria (potential historic district), Williamsburg, and Mount Union; Huntingdon Borough Historic District and the state correctional institution in Huntingdon.

Education – Juniata College in Huntingdon

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As the nation's principal conservation agency, the Department of the Interior has basic responsibility for most of our nationally owned public lands and natural and cultural resources. This includes fostering wise use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historical places, and providing for the enjoyment of life through outdoor recreation. The department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people. The department also promotes the goals of the Take Pride in America campaign by encouraging stewardship and citizen responsibility for the public lands and promoting citizen participation in their care. The department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

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