



# CHAPTER III

## Affected Environment



# Chapter III – Affected Environment

## LOCATION

Flight 93 National Memorial is located in Stonycreek Township, Somerset County, in southwestern Pennsylvania. Somerset County lies within a 500-mile radius of two-thirds of the nation's population, and is about one hour driving time from Pittsburgh, three hours from the Washington D.C./Baltimore area, and about four hours from Philadelphia. The Pennsylvania Turnpike (I-70/76) extends through the center of the county with an interchange (Exit 110) at Somerset Borough, which is also the county seat.

Stonycreek Township is situated just to the east of the mid-section of Somerset County. The township is bounded to the north by Shade and Quemahoning Townships, to the west by Somerset Township, to the south by Brothersvalley Township, and to the east by Allegheny Township. Counties surrounding Somerset are Cambria County to the north; Bedford County to the east; Allegany and Garrett Counties, Maryland, to the south; Fayette County to the southwest; and Westmoreland County to the northwest.

The memorial lies approximately 18 miles northeast of Somerset Borough and about 3.5 miles southeast of Stoystown Borough. The village of Friedens is about 7 miles to the west and the villages of Lambertsville and Buckstown are adjacent to the memorial. The Borough of Shanksville lies about 3.5 miles to the south. The region surrounding Flight 93 National Memorial is shown on Figure III-1.

### Site Overview

Somerset County is situated on the Allegheny Plateau between the Laurel Highlands and the Allegheny Mountains. The area receives more snowfall and experiences colder winters than its neighboring counties, as well as strong, gusty winds. The average mean temperature is 46°F and the mean maximum temperature during

winter ranges between 18°F and 35°F. Summer temperatures are mild, ranging between 60°F and 84°F. Average annual precipitation is about 41.6 inches with an average annual snowfall between 60 and 66 inches.<sup>1</sup>

The Flight 93 National Memorial site is composed of rolling hills dominated by a gentle ridge along its eastern limit. The central portions of the site are overlain with rocky, thin topsoil that was placed over the site as part of the reclamation of previous bituminous coal strip mining. Several sediment and treatment ponds, along with artificially constructed wetlands, are found scattered throughout the site. Power and telephone lines transect the site, and a cell tower is located on the north side of U.S. Route 30, just to the east of the Haul Road entrance. The core visitor lands within the memorial boundary are composed of approximately 1,355 acres. The perimeter or buffer encircling the core visitor lands is composed of approximately 907 acres.

Visitor lands within the memorial boundary are composed of approximately 1,355 acres. The perimeter or buffer encircling these lands is composed of approximately 907 acres. Figure III-2 shows the existing site from an aerial photograph.

The site was significantly shaped by more than 50 years of surface and subsurface mining. Mining equipment and buildings are scattered throughout the site and are described later in this chapter under Historic and Cultural Resources. Two of the most prominent features on the site are mining draglines formerly used during strip-mining operations. They are situated atop a ridge that forms the northeastern edge of the Bowl that slopes down to the crash site. The draglines are large mining machinery used during former mining operations on the site. The photo below shows one of the mining draglines.



Temporary Memorial in winter  
(Tim Baird 2004)



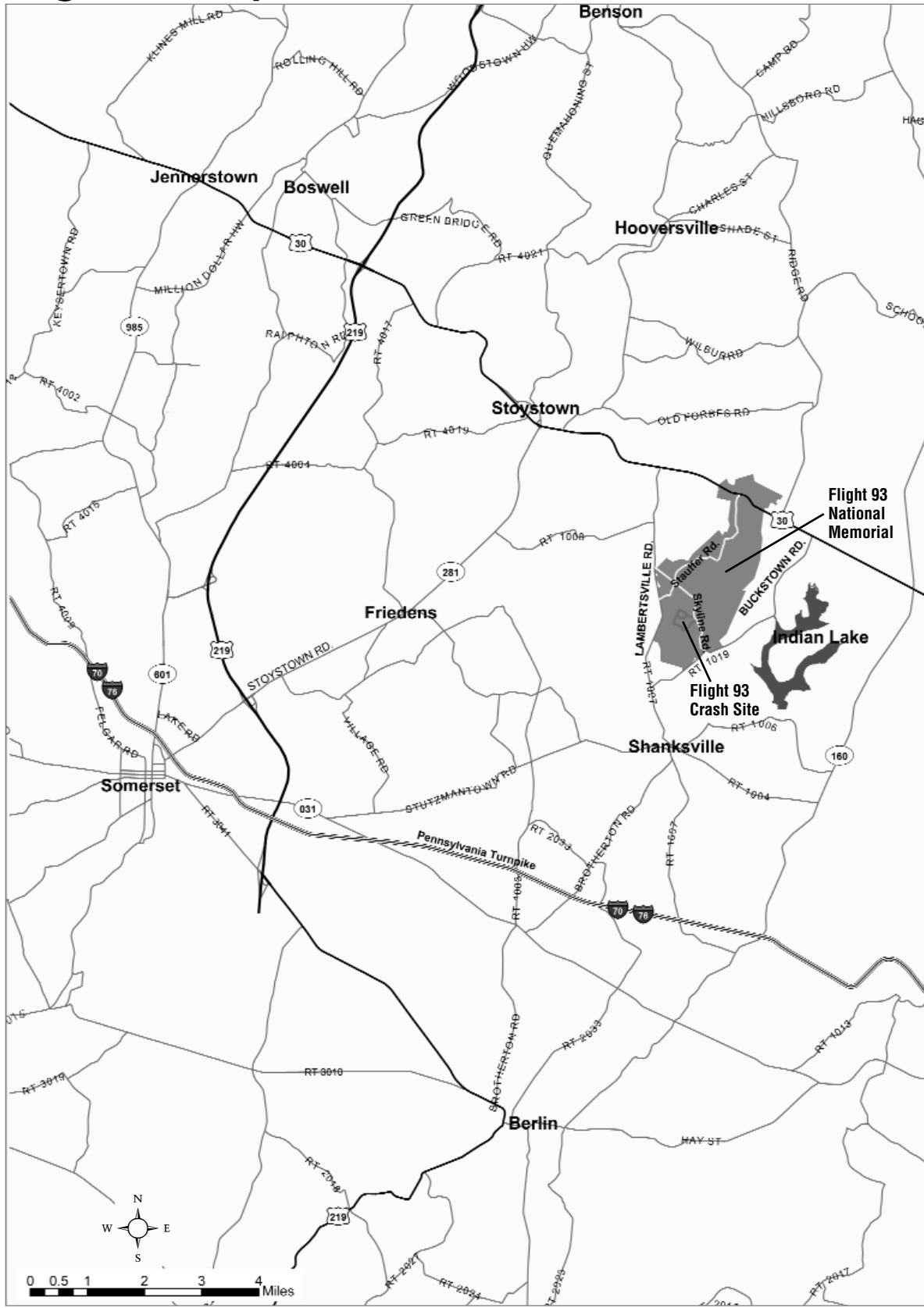
Mining Draglines  
(Jason Cohn 2004)

Figure III-1: Flight 93 National Memorial Regional Map

Flight 93 National Memorial  
Somerset, PA

National Park Service  
U.S. Department of the Interior

# Regional Map



Source: Prepared by The Office of Merlyn Paulson, Inc., 2004.

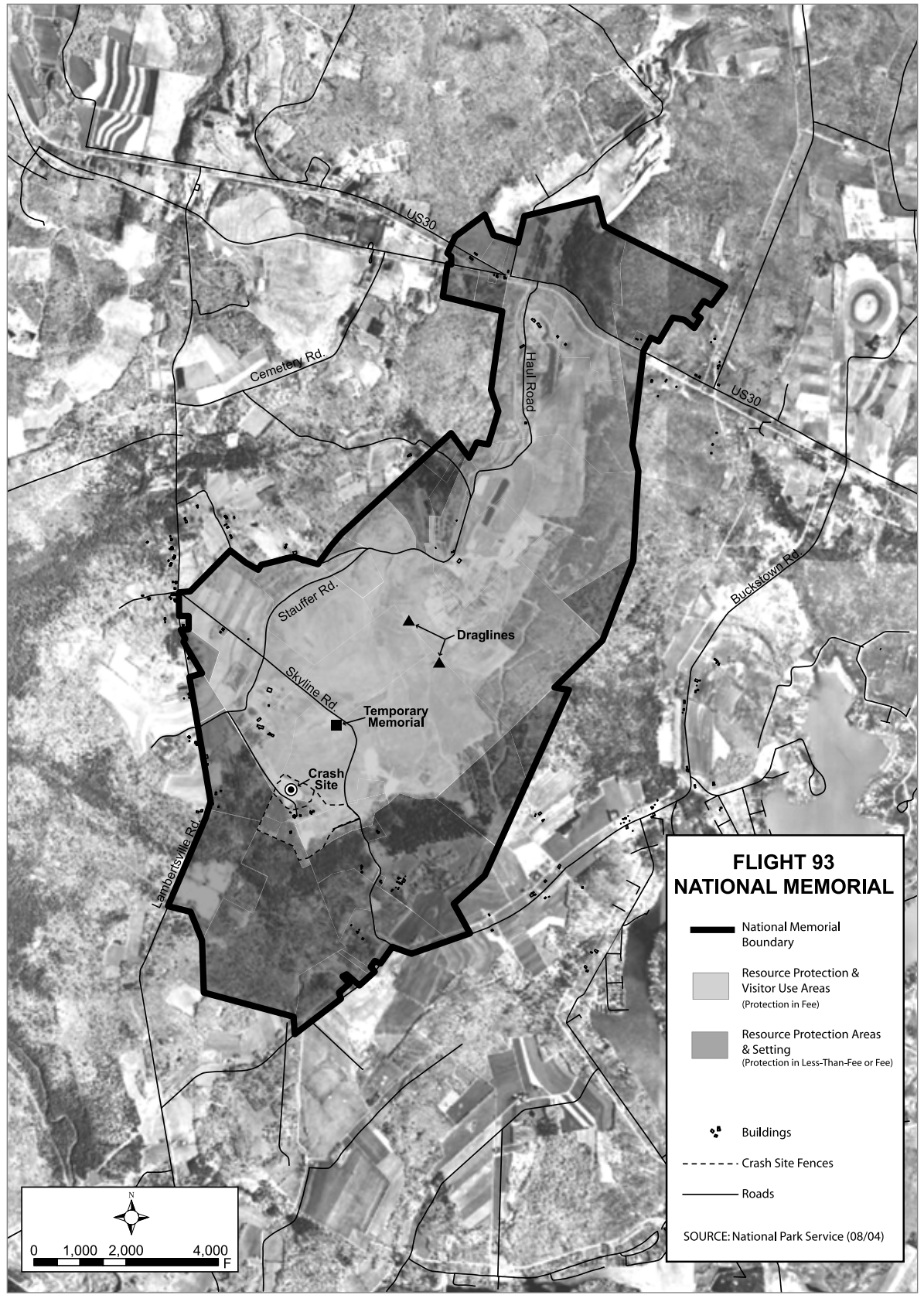
Figure III-2: Aerial Photograph of Flight 93 National Memorial

Flight 93 National Memorial  
Somerset, PA

National Park Service  
U.S. Department of the Interior



# Aerial Photo



Source: National Park Service, 2005



View into the Bowl (David Urda 2005)

The topography of the site creates a natural “bowl” around the crash site. This area includes the Temporary Memorial and a scrap metal and recycling facility owned by Rollock, Inc., which is situated at the top of a knoll, northwest of the crash site. Established in 1999, the Rollock facility comprises an administrative building, the scrap yard, and a cluster of buildings located further southwest of the scrap yard. An electric furnace smelts the scrap metal for recyclable products, and a narrow, 30-foot tall bag house collects fumes emitted from the burning metal for pollution control. The scrap yard is currently accessed from an entrance road southwest of Skyline Road.

The crash of Flight 93 occurred in an area about 30 to 40 feet north of the southern highwall of the strip mine and north of an access road off Lambertsville Road on land owned by Svonavec, Inc.<sup>2</sup> This area is situated at the base of the Bowl to the north and east of the hemlock grove. The crash and the subsequent investigation created a depression approximately 85 feet by 85 feet with a maximum depth of 27 feet. Immediately after the crash, investigators enclosed about 10 acres within security fencing to prevent the public from disturbing the site and later enclosed a larger area, approximately 47 acres that includes the hemlock grove, residences and a passive treatment pond.<sup>3</sup> A large grassy mound, formed by material that was intended to fill in an adjacent settlement pond, is adjacent to the fence.

<sup>2</sup>United Airlines *Final Closure Report Flight 93*, Environmental Resources Management, 3 Sept. 2002, p. 3.

<sup>3</sup>National Park Service. *Draft Cultural Landscapes Inventory*, pp. 23 and 26.

<sup>4</sup>*Ibid.*, p. 32.

A mature hemlock grove, mixed with some hardwoods, is located immediately southeast of the crash site in an area where mining has not occurred. Several springs, Grove Run and a wetland occur within the hemlock grove. This area can be accessed by a private, gravel entry road extending from Skyline Road. Four homes, three of which are constructed of logs and one constructed of ashlar stone, are situated within the hemlock grove. Of the four residences, three are seasonal homes estimated to have been built during the 1930s-1940s.<sup>4</sup> The fourth, an ashlar stone-cased house, is of newer construction and was a year-round residence. These residences have been vacant since the crash occurred in 2001. During the summer of 2002, hemlock trees that had been damaged by the fire from the crash were removed and chipped. The pile of wood chips remains west of the crash site just beyond the hemlock grove.

Nearly immediately after the crash, people began arriving in the area and leaving memorial tributes in a field located off Lambertsville Road. In November 2001, the existing Temporary Memorial (photo, below) was established at its current location off Skyline Road on a hill about 500 yards north of the crash site. A 10-foot by 40-foot section of chain link fencing was erected to provide an area for visitors to leave memorial tributes, flowers and messages.

The Temporary Memorial is located on private property and is open to the public year-round through an agreement with the owner. The site is



View of the Existing Temporary Memorial, Flight 93 National Memorial (OCLP 2003)

staffed by a group of local volunteers known as the Ambassadors, who were organized in January 2002 to explain the site to visitors and to answer questions.<sup>5</sup> These volunteers explain the facts surrounding the crash and, most importantly, serve as personal contacts to the thousands of visitors who continue to come to the site each year. In December 2003, a temporary shelter, donated by Assateague Island National Seashore, was installed at the site to provide protection to volunteers and visitors from the weather.

## MEMORIAL BOUNDARY AND LAND OWNERSHIP

Determining the boundary for the Flight 93 National Memorial involved more than a year of technical studies and a comprehensive public participation process. This collaborative process was led by a Resource Assessment Committee, comprised of community residents and local officials, the Partners, and the National Park Service. On July 30, 2004, the Flight 93 Advisory Commission signed Resolution 0401 recommending a boundary for the national memorial. The Secretary of the Interior signed and approved this boundary on January 14, 2005 (refer to Chapter I, Figure I-2).

To gain a better understanding of the resources on the site that required protection, a *Cultural Landscapes Inventory* (CLI) was completed by the National Park Service in 2004. A team of multidisciplinary specialists also prepared a series of technical studies, including transportation, an internal shuttle and traffic study; a visual resource analysis of the site; a preliminary geotechnical study; a Phase I environmental assessment for hazardous materials; natural resource inventories; and a water and sewerage feasibility study. Visitation projections and an economic impact analysis of the park on the local community were also prepared.

State-of-the art LIDAR (Light Detecting and Ranging) technology was used to help produce detailed maps and to develop a three-dimensional model to aid decisionmakers in understanding the important characteristics of the landscape. Geographic Information System (GIS) technology was used to demonstrate the views that visitors would have from different vantage points.

After considering all the resource information, the National Park Service and the Partners determined that the boundary for the memorial must: 1) protect the crash site, the debris field, and the lands where human remains were found

as the most significant resources of the memorial; 2) include lands for visiting the memorial and accessing the site with minimal disruption to the neighboring communities; and 3) provide a reverent, contemplative and appropriate setting. The total area within the boundary is 2,261.65 acres, of which about 1,355 acres is dedicated to the core visitor area of the memorial. An estimated 907 acres around the perimeter of the core visitor area would remain in private ownership and would be protected through conservation or scenic easements where possible.

All landowners within the central portion of the memorial have formally agreed to participate in the land acquisition process. As of early-2006, all land within the memorial boundary is in private ownership. The National Park Service and its partners are likely to close on several properties in the spring of 2006. PBS Coals, Inc. is the principal landowner for most of the core visitor lands and is working closely with the Pennsylvania Department of Environmental Protection to complete reclamation work before selling the property to The Conservation Fund. To date, PBS Coals and a private landowner within the boundary have announced intentions to donate approximately 29 and 5 acres, respectively. Consolidated Coal Company donated approximately 135 acres to the north of the boundary to The Conservation Fund to protect the area from development. The Conservation Fund has purchased the mineral rights underlying a portion of the site.

The properties within the boundary are all privately owned. The land is primarily wooded areas and scattered farms. It is anticipated that this land will be protected through partnerships with local residents and other organizations and agencies, and where possible, through less-than fee acquisition methods such as the purchase of scenic or conservation easements.

## PARK VISITATION

People have been coming to the Flight 93 crash site since the crash occurred in September 2001. Approximately 150,000 people visited the Temporary Memorial in 2003, and in 2004, volunteers recorded 129,702 visitors to the site. Current projections show that about 130,000 visitors are now visiting the site annually, and by the 10th anniversary (2011), given construction of a permanent memorial and visitor facilities, a peak of about 400,000 visitors are projected to visit the memorial that year. Long-term projections show that visitation to the park is expected

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*More than 1 million people have come to the site since the September 11, 2001 crash. Approximately 130,000 people visited the site in 2004.*

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<sup>5</sup>Ibid., p. 14.



Visitors at the Temporary Memorial (Chuck Wagner 2005)

to decline slightly after 2011 and then stabilize to about 230,000 visitors annually.

Current visitors to Flight 93 National Memorial come from every State and around the world. School children and retired seniors comprise an important part of the visitation. Tour groups en route to Gettysburg, Baltimore/Washington, D.C., New York, Pittsburgh or Philadelphia also stop at the memorial. Large groups of motorcyclists, specialty car clubs, and bicyclists have visited the site while touring the area.

Based on visitor records, many of the visitors to the memorial return to the site numerous times, including multi-generational groups, many of whom now visit the site as part of an annual trip through the area. Visitors have expressed a desire to pay their respects to those honored and to see the place in remembrance of the September 11th events.

Visitors express curiosity about the site, the community, the environment, the plans for the permanent memorial, and about the family members of those who were lost in the crash. Others contemplate and are reflective about the events that created the memorial. Many visitors come to the site with some form of tribute to leave at the memorial. Some study the tributes and messages left at the memorial and nearly everyone wants to share where they were and what they were doing on the morning of September 11, 2001.<sup>6</sup>

## EXISTING PARK ADMINISTRATION AND OPERATIONS

In September 2002, the Flight 93 National Memorial was established through legislation enactment (Chapter I) when Congress gave the National Park Service the responsibility of administering the site as a unit of the national park system. In 2005, the memorial was staffed by four full-time park staff, including the park superintendent, park planner, historian/curatorial specialist, an administrative assistant, three interns, and three contracted curatorial staff. Additional staff support is available from other national park units in western Pennsylvania, including Allegheny Portage Railroad National Historic Site, Fort Necessity National Battlefield and Johnstown Flood National Memorial. The National Park Service Flight 93 National Memorial project office is located in Somerset Borough about 18 miles from the memorial.

<sup>6</sup>Donna Glessner, March 2005. "Visitor Profile."

<sup>7</sup>National Park Service. *Draft Cultural Landscapes Inventory*, 2004.

<sup>8</sup>TransAssociates. *Flight 93 National Memorial Traffic Impact Study, Phase I Assessment*. 2004.

The Flight 93 Temporary Memorial is staffed year-round by a group of local volunteers known as The Ambassadors. The Ambassadors were organized in January 2002, and have continued to greet visitors, answer questions and provide information on the site.

The memorial is open to the public from dawn to dusk. However, because the Temporary Memorial can currently be accessed from a public road, people can drive to it at any time.

Approximately 20,000 curatorial items and tributes have been left at the Temporary Memorial since 2001. These items are processed locally at the National Park Service office, archived and stored offsite in a secure location north of Pittsburgh.

## SITE INFRASTRUCTURE

### Access and Circulation

Flight 93 National Memorial is situated between Lambertsville Road on the west side of the site and Buckstown Road which extends along the east side. U.S. Route 30 (Lincoln Highway), an east-west highway, traverses through the northernmost tip of the site. The mining operation created a network of compacted dirt mining roads leading to different areas throughout the site. These roads were originally constructed to provide temporary access to certain areas, and then were abandoned or backfilled during the reclamation process.

Skyline Road (T-613), a two-lane township road, is currently the main access to the site. Skyline Road extends southeast about 2 miles from Lambertsville Road to Buckstown Road. It provides access to the Temporary Memorial and a paved parking lot spanning both sides of the road. Farther to the east and south, Skyline Road passes a gravel parking lot that accommodates auxiliary parking and tents for large events. A small, private gravel road extends to the west off Skyline Road and provides access to the ashlar stone and log cabins in the hemlock grove.<sup>7</sup> The roadway surface of Skyline Road is a combination of bituminous and rock/gravel, and varies from fair to poor condition. No speed limit is posted though it is assumed that the speed is 25 miles per hour (mph). The posted weight limit is 10 tons. Several residences are located along the eastern edge of this roadway.<sup>8</sup>

Stauffer Road (T-708), a two-lane, 16 to 30-foot-wide township road, connects Skyline Road to Cemetery Road. The surface of Stauffer Road is rock/gravel and is in poor condition. The speed limit is posted at 15 mph only within the vicinity of Cemetery Road; it is not posted elsewhere and is assumed to be 25 mph. Stauffer Road is also weight-restricted to 10 tons within the vicinity of Cemetery Road. Several residences are located along Stauffer Road in the vicinity of Cemetery Road.

Sturtz Road (T-615) is a two-lane, township road connecting Lambertsville Road to Stauffer Road. The roadway width varies from a single travel lane, or approximately 8 feet to 22 feet wide, resulting in an average lane width of 11 feet wide without shoulders. The roadway surface is rock/gravel and is in poor condition. No speed limit is posted, though it is assumed to be 25 mph. The posted weight limit is 10 tons. Several residences are located along this road.

The Haul Road is a privately owned, rock/gravel road that has restricted (gated) access. The Haul Road extends between Stauffer Road and U.S. Route 30 and was used for hauling coal by heavy trucks during mining operations. This road is not posted for either weight or speed limits. It is approximately 30 feet wide and ranges even wider at some locations. Just south of U.S. Route 30, the Haul Road is paved for a short distance.

A gated, private gravel road that provides access to the scrap and recycling facility, the welding shop complex and the crash site extends south from the intersection of Stauffer Road and Skyline Road to Lambertsville Road. The portion of the road nearest Lambertsville Road has been paved and provides restricted access to the crash site for visiting family members and authorized personnel, and access to the Sheriff's Deputy trailer.

### Utilities

Above-ground electric power and telephone lines currently transect the memorial site in many places. Electricity was used to power the draglines and to provide power to well pumps, the welding shops, the shower facility and other structures, as well as to the Rollock scrap yard. Electric and telecommunications services are provided by Penelec—A First Energy Company, Rural Electric Cooperative and Verizon.

A communications cell tower, owned and operated by Wireless Development Group, LLC, was erected in 2004 on the north side of U.S. Route 30 near the Haul Road in Shade Township. The tower is situated on a 100'x100' parcel that lies within the boundary in the area designated for scenic protection. A 25-year lease agreement between Wireless and PBS Coals, Inc. was signed on June 27, 2001, and includes the right to renew for three additional 25-year terms.<sup>9</sup>

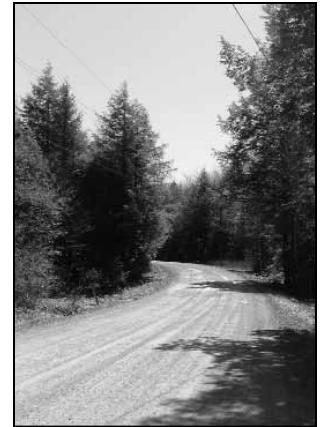
Numerous wells have been drilled at the Flight 93 National Memorial as part of the past mining operations. The only well that reportedly produces a significant yield of good quality water is the Diamond T Mine shower house well. This well is 131 feet deep and has an estimated yield of 7 gallons per minute (gpm). Water quality analyses provided by PBS Coals showed that this well produces water excessively high in iron.<sup>10</sup> Figure III-3 illustrates the local infrastructure at the Flight 93 National Memorial.

There are four areas within the boundary where sewage disposal systems once operated. These onsite sewage systems were in the following locations:<sup>11</sup>

- Diamond T Mines "C" and "D" – This system is estimated to have had a 2,500 gpd capacity, but is reportedly unusable and not functioning.
- Diamond T Mine Shop and Warehouse.
- Two on-lot residential systems located north of U.S. Route 30 near the cellular tower.
- Rollock sewage holding tank, located at the Rollock scrap yard.

The Diamond T Mines "C" and "D" sewage treatment facility was previously used to treat sewage from the shower house facility operated by PBS Coals, Inc. Due to the mine closure, the small size of the onsite treatment facility and its high elevation, it was determined impractical to expand this facility to support the park's needs.

Sewage disposal for the cabins located in the hemlock grove are served by on-lot septic systems. In September 2003, an *Act 537 Sewage Facilities Plan for Stonycreek Township* recommended that the sewage along Lambertsville Road, which could include the Flight 93 National Memorial, be conveyed to the Shanksville Borough Sewage District.<sup>12</sup>



Skyline Road near Grove Run  
(Donna Glessner 2005)

<sup>9</sup>Wireless Development Group, LLC. Letter to Jay Zimmerman from John Malloy, dated July 19, 2001.

<sup>10</sup>Secondary Maximum Contaminant Level (SMCL) for public water supplies is 0.3 mg/l. Casselberry & Associates letter to Steve Sesack, P.E., dated April 25, 2005, p. 3.

<sup>11</sup>The EADS Group, April 2005. *Flight 93 National Memorial Water and Sewage Service Feasibility Study*, p. 26.

<sup>12</sup>Telecon with Brad Stinebiser of The EADS Group, July 13, 2005. *Act 537 Sewage Facilities Plan for Stonycreek Township, Somerset County, PA*, Sept. 2003, pp. 19-20 and p. 31.



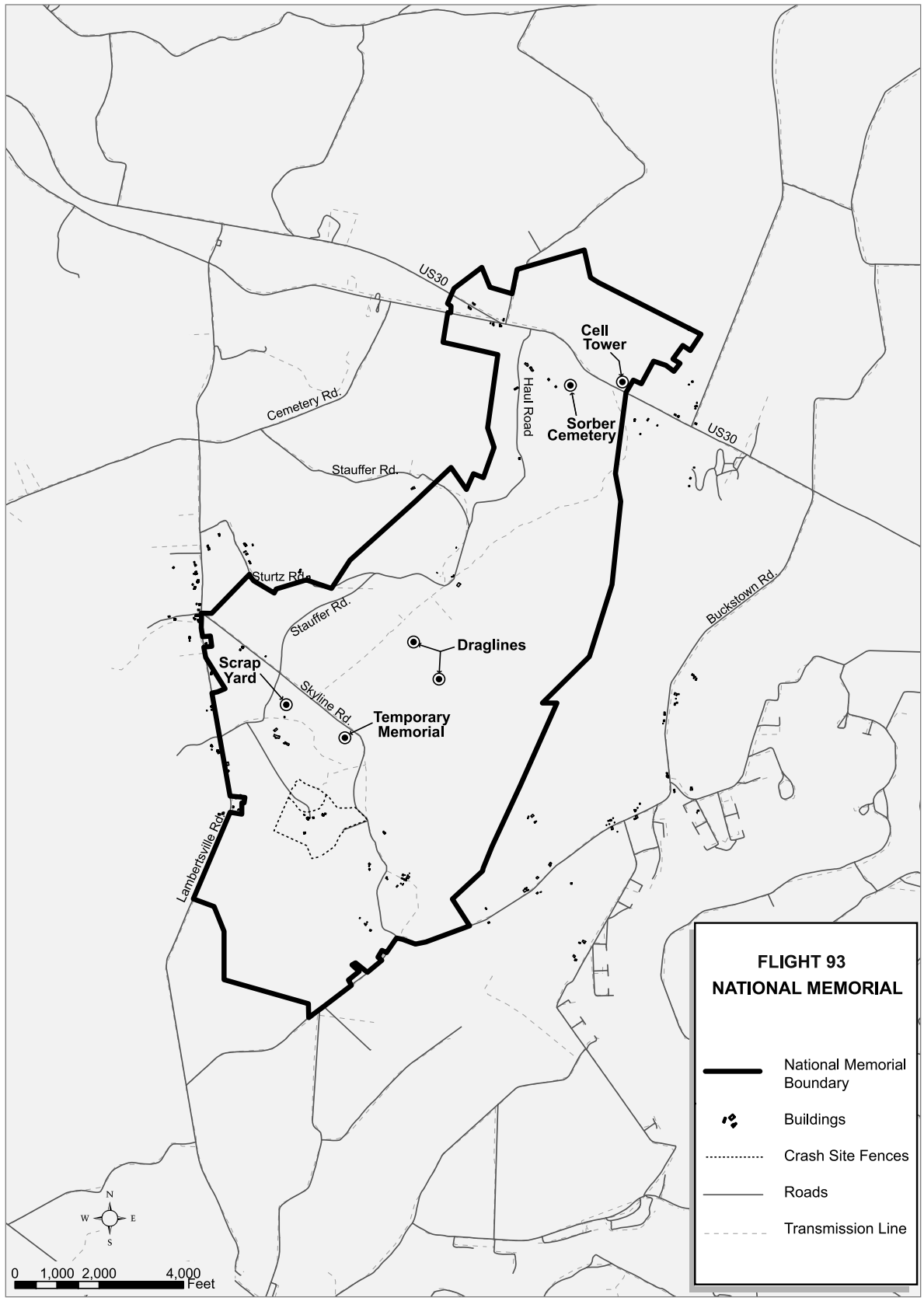
Figure III-3: Flight 93 National Memorial Existing Infrastructure, 2005

Flight 93 National Memorial  
Somerset, PA

National Park Service  
U.S. Department of the Interior



# Site Infrastructure Map



Source: National Park Service Cultural Landscapes Inventory, 2004. Prepared by The Office of Merlyn Paulson, Inc., 2005.

## NATURAL RESOURCES

Commonly referred to as the Laurel Highlands, the region consists of a series of parallel, rounded ridges oriented northeast/southwest with high elevated stream valleys that drain into the Ohio River basin. Laurel Hill forms the ridge to the west and the Allegheny Mountains lie to the east. The prevalent orientation of the major ridges and valleys in the region is northeast-southwest. The county's land area totals 1,085 square miles, and is almost entirely in the Ohio River drainage area. Elevations within Somerset County range from 1,040 feet in Southampton Township located in the far southeast corner of the county, to 3,213 feet at Mount Davis near Meyersdale—the highest point in Pennsylvania—located about 25 miles southwest of Flight 93 National Memorial.

Consistent with the regional terrain, the memorial site is composed of rolling hills dominated by a gentle ridge along the northeastern limit. Maximum elevations at the site range from 2,550 feet to 2,600 feet above sea level, and the minimum elevation along the western limit is about 2,260 feet. The southern limit near the crash site is 2,350 feet above sea level and the crash site is approximately 2,400 feet above mean sea level.<sup>13</sup> The site's latitude and longitude are 40.03.02 (DD>MM>SS) West and 78.54.17 North. The study area is depicted primarily on the Stoystown USGS quadrangle, with the eastern perimeter of the site extending into the Central City USGS quadrangle. Figure III-4 illustrates the topography of the site.

### Geology, Soils and Topography

In 2004, a preliminary geotechnical study was conducted on the core visitor lands within the memorial boundary. This study summarized the strip- and deep-mining conducted at the site and general soil conditions that could affect foundation construction, grading, and other geotechnical considerations of the project. In addition, a groundwater and hydrology study for potable water was conducted in 2005. Descriptions of existing geologic conditions and the mining history of the site are presented.

Somerset County lies entirely in the Allegheny Mountain section of the Appalachian Plateaus physiographic province. The area was formed during the Paleozoic era, more than 290 million years ago.<sup>14</sup> The Allegheny Front physiographic

escarpment along the eastern border of the county creates updrafts and thermals that have formed a well-established raptor migration corridor.

Somerset County has three primary regions with coal deposits: 1) Southampton Township, 2) the area between the Little Savage Mountain and the Big Savage Mountain in the Berlin area, and 3) the Lower Productive coal measure, which occupies more than half of the county's surface and consists of coal beds from 3 to 5 feet deep.<sup>15</sup>

Surficial bedrock in this area is composed of the Freeport Formation (Fm), Allegheny Group (Grp), Pennsylvanian System, with mining extending to the Clarion Formation. These bedrock intervals include several economically important bituminous coal seams, descending from the Upper Freeport coal, to the top-most member of the Freeport Fm, to the Lower Kittanning coal, the basal member of the Kittanning Fm.<sup>16</sup>

Other members of these formations are interbedded sequences of limestone, coal and sandstone with shale and claystone. These seams are basically horizontal thin beds of sedimentary rocks which have been deformed over time by tectonic movements, folding and faulting. Limestone beds on the site are thin and are not conducive to cave formation. Although the Loyalhanna Fm is a limestone unit that pervades throughout much of the county, there are no known caves located within the memorial boundary.

The memorial site occupies a broad northeast-trending ridge that is truncated by the headwaters of Lamberts Run to the north and Grove Run to the south. The groundwater flow systems are developed within gently folded Pennsylvanian and upper Mississippian-age bedrock belonging to the Glenshaw Fm of the Allegheny Grp, the Pottsville Grp and the Mauch Chunk Fm.<sup>17</sup> The Glenshaw Fm is a heterogeneous unit composed of alternating layers of shale, sandstone, limestone, claystone and coal.<sup>18</sup>

An assessment of the site's soils showed the biotic conditions, such as areas where certain plants and animals occur including wetlands; identified construction constraints; determined suitability for sewage disposal systems and groundwater aquifers; and identified prime farmland.

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*The memorial site is composed of rolling hills that are typical of the Laurel Highlands.*

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<sup>13</sup>Engineering Mechanics, Inc. *Flight 93 National Memorial Geotechnical Report*. July 8, 2004. Cited PBS Coals, Inc. for elevations.

<sup>14</sup>Ibid.

<sup>15</sup>*Somerset County Comprehensive Plan Update*, July 31, 2003, p. 2-9.

<sup>16</sup>Engineering Mechanics, Inc. *Geotechnical Report*. July 8, 2004.

<sup>17</sup>Casselberry & Associates. Letter report to Steve Sesack, P.E., The EADS Group, dated Apr. 25, 2005.

<sup>18</sup>Ibid, p.2.

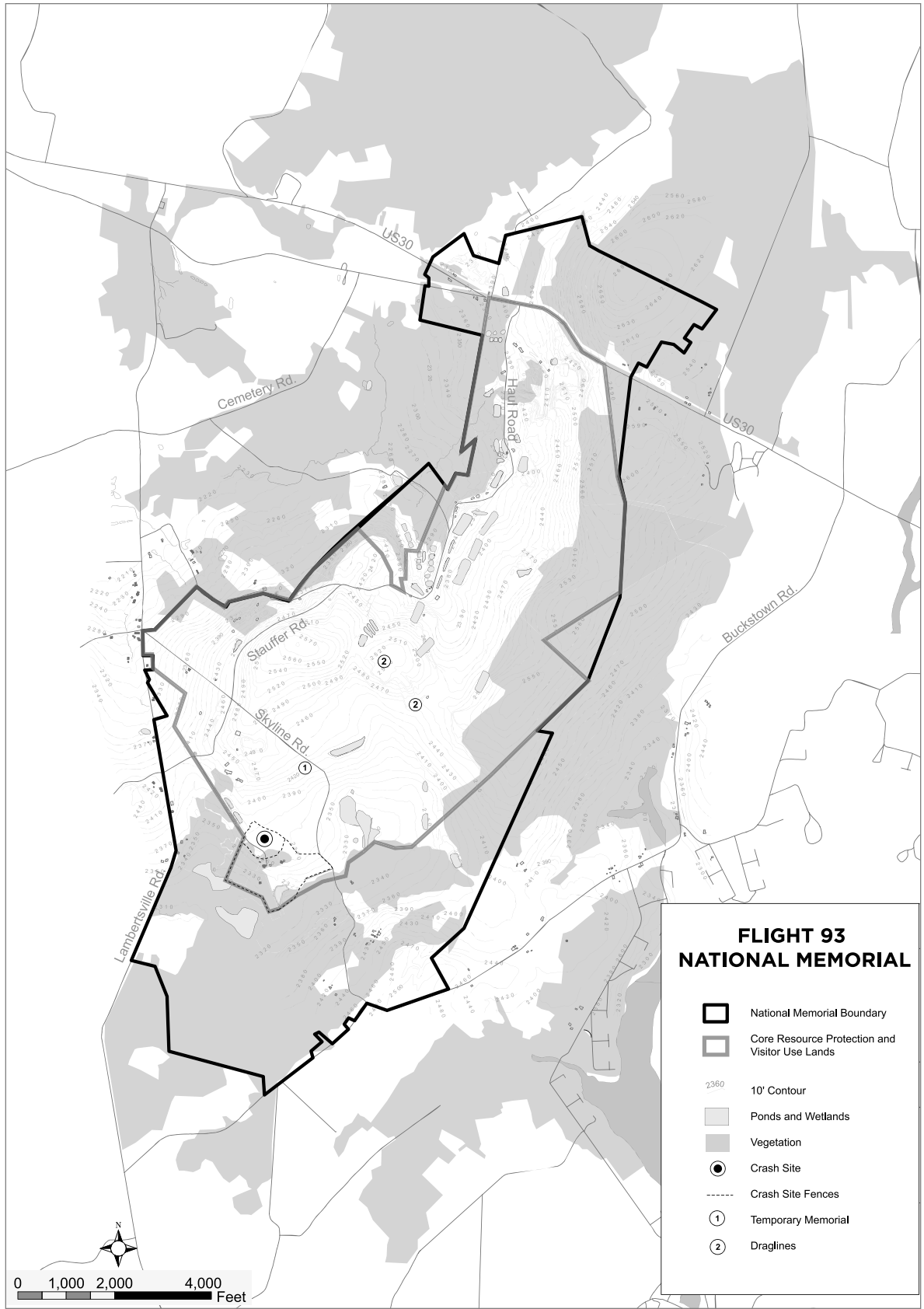
Figure III-4: Flight 93 National Memorial Topography

Flight 93 National Memorial  
Somerset, PA

National Park Service  
U.S. Department of the Interior



# Topography



Source: National Park Service, 2005

Although the soils on the site are generally not classified as hydric, hydric soils do occur adjacent to streams and in some low-lying areas on the site. All of the soils of the study area are acidic in reaction and developed under forest vegetation. They formed by weathering of bedrock in place, except for alluvium along stream channels. According to the Soil Survey of Somerset County, more than 70 percent of the soils in Stonycreek Township are considered unsuitable for on-lot sewage disposal systems.

Soil type also determines whether the land is classified as prime farmland and farmland of statewide importance, as defined in the Farmland Protection Policy Act (FPPA). Prime farmland is defined as land that has the best combination of physical and chemical characteristics for producing food, feed, fiber, forage, oilseed, and other agricultural crops with minimum inputs of fuel, fertilizer, pesticides, and labor, and without intolerable soil erosion. The Somerset County Comprehensive Plan Update estimates that the county has approximately 81,000 acres of prime agricultural soils.<sup>19</sup>

Small areas of prime farmlands existed on the memorial site prior to surface mining.<sup>20</sup> Three soils mapping units in the core part of the site are classified as prime farmland. These are Hazelton channery sandy loam (HaB), 3-8% slopes; Rayne-Gilpin channery silt loams (RgB), 3-8% slopes; and Wharton silt loam (WhB), 3-8% slopes (only those areas with 5.4% slope or less are considered prime farmland). Soils of statewide importance are composed of Atkins silt loam (At); Cavode silt loam (CaB), 3-8% slopes; Ernest silt loam (ErB), 3-8% slopes; Hazelton channery sandy loam (HaC), 3-8% slopes; and Rayne-Gilpin channery silt loams (RgC), 8-15% slopes.

### Air Quality

Based on the U.S. Environmental Protection Agency's listing of counties in nonattainment for 8-hour ozone standards, Somerset County is not listed and therefore is designated as a county that is in attainment for meeting air quality standards. Within the 9-county study area, Cambria County is the only county that is nonattainment.

In 2003, PennDOT released the *Air Quality Conformity Analysis Report for the Johnstown Non-MPO Ozone Nonattainment Area*.<sup>21</sup> Though this report acknowledged that Somerset County

is in attainment by USEPA standards, it identified two major highway projects in the county that could have a significant effect on emissions as a result of increasing capacity or significantly impacting vehicular speeds. The transportation projects that could result in adverse effects on the county's air quality are—

- U.S. 219 Garrett—Construction of a new four-lane roadway connecting the existing southern terminus of US 219 in Somerset Township to the current northern terminus of the Meyersdale Bypass in Summit Township.
- U.S. 219 Meyersdale to I-68—Relocating/constructing U.S. 219 from the Meyersdale Bypass in Summit Township to I-68 in Maryland.

### Vegetation and Wildlife

In 2004 and 2005, two natural resource surveys were conducted mainly of the core visitor lands of the site. The core visitor lands are comprised of approximately 1,355 acres, or about 60 percent of the entire area within the memorial boundary. In July 2004, Schmid & Company focused on inventorying the site's vegetation, water resources, and terrestrial habitat. In March 2005, a supplemental natural resource inventory was conducted by the Western Pennsylvania Conservancy to augment the 2004 information and to focus on species of concern, wildlife species and habitat, birds, venomous snakes and invasive species. The following sections summarize both natural resource surveys that were conducted within the boundary.

Long before mining occurred in the area, the memorial site and most of the surrounding area was farmland, forests and pastureland. The vegetation types found at the memorial reflect the land use history, existing land management practices and the varied environmental settings. Based on the mining reclamation plan obtained from the Department of Environmental Protection, PBS Coals, Inc. is backfilling and regrading the mining area to its approximate original contours and overlaying the site with an average of 12 inches of topsoil (soil generated from the site) prior to reseeding.<sup>22</sup> It should be noted that the stipulations provided in the Department of Environmental Protection reclamation plan were followed as closely as possible but in many areas the site exceeds a foot of overburden and in other areas the top soil is less than a foot.



Open fields and rolling hills at the site (David Urda 2005)

<sup>19</sup>Somerset County Comprehensive Plan Update, July 2003, p.2-11.

<sup>20</sup>Schmid & Company, 2004. Preliminary Natural Resource Inventory, Flight 93 National Memorial Study Area.

<sup>21</sup>Southern Alleghenies Planning and Development Commission. *Southern Alleghenies Rural Planning Organization Long Range Transportation Plan FY 2003-2023*, "Air Quality Conformity Analysis Report for the Johnstown Non-MPO Ozone Nonattainment Area," Vol. I, Executive Summary. PennDOT, 2002.

<sup>22</sup>PaDEP. Diamond T mine reclamation plan.

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*The fire resulting from the crash destroyed a portion of the hemlock grove.*

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The standard seed mixture used by PBS Coals, Inc. during reclamation included birdsfoot trefoil (*Lotus corniculatus*), Kentucky #31 tall fescue (*Festuca arundinacea*), reedtop (*Agrostis gigantea*), perennial ryegrass (*Lolium perenne*), timothy (*Phleum pratense*), orchard grass (*Dactylis glomerata*), red clover (*Trifolium pratense*), white clover (*Trifolium repens*), and annual ryegrass (*Lolium perenne* L. ssp. *multiflorum*); all of which are non-native species. In addition, several species may have been planted to increase wildlife forage and cover, such as switch grass (*Panicum virgatum*), white spruce (*Picea glauca*), white pine (*Pinus strobus*), Scots pine (*Pinus sylvestris*), autumn olive (*Elaeagnus umbellata*), and sawtooth oak (*Quercus acutissima*).<sup>23</sup>

The reclaimed strip mine community type is represented by grasses and dominated by herbaceous species such as goldenrods. Black locust (*Robinia pseudoacacia*), bristly locust (*R. hispida*), devil's walking-stick (*Aralia spinosa*), and staghorn sumac (*Rhus typhina*) are found to form dense clones in places.<sup>24</sup> Today, about 59 percent of the memorial site is reclaimed strip mine and about 27 percent is forestland. Most of the forest patches within the memorial boundary are predominantly modified variations of naturally occurring forests. Though classified mainly as northern hardwoods forest types, the forests within the boundary vary in composition due to logging. The forests are composed of small seedlings and stump sprouts from former overstory trees. Shade and deer browsing may limit oak recruitment in this forest, thus increasing the number of red maples. The upland forests on the eastern border of the core visitor lands are essentially young, degraded versions of the northern hardwood forests typical of southwestern Pennsylvania.

A stand of eastern hemlocks and mixed deciduous hardwoods exists within the fenced area south of the crash site. The trees in this area are about 70 feet high, and average 10 inches in diameter. Along the northern and eastern edges of this grove, several trees have fallen due to high winds and shallow root systems. The outer edge of the hemlock grove toward the crash site was burned during the crash and explosion.

The fire resulting from the crash and subsequent logging destroyed the natural buffer that was composed of shrubs, small deciduous trees, and younger hemlocks. Since September 11, 2001,

several large hemlocks have fallen over from high winds and heavy snow. In this area, shrubs and other woody vegetation have re-established, including rambling rose, black raspberry, red elder, hay-scented fern, pokeweed, timothy, reed-canary grass, coltsfoot and broadleaf dock.<sup>25</sup>

The high water tables and rocky soils found within the memorial boundary prevent trees from establishing deep root systems though hemlocks naturally do not have extensive root systems. Individual trees in even aged stands are likely to devote resources to shoot growth at the expense of root development where competition for light is high, as is the case in even aged hemlock stands. Consequently, interior trees do not develop large root systems. These trees are buffered from high winds by adjacent trees. However, when the buffer was removed by the fire from the crash, the trees that were once in the interior of the hemlock stand are now exposed and the chance for additional fallen trees due to high winds and heavy snowfall is high. Overtime, trees will naturally establish along the edge.

Black locust forests and hawthorn thickets occur on highly disturbed sites, most often following agricultural abandonment.<sup>26</sup> A hawthorn thicket was found adjacent to the Sorber Cemetery, which most likely indicates that a relict orchard had once been present.

Hemlocks, interspersed with deciduous trees, are dominant trees found near Grove Run and Lamberts Run. The ground layer around these streams consists of sphagnum moss, sweet wood-reed [grass], and broad stands of skunk cabbage.

The non-wetland deciduous forest in the lower elevations of the site (up to about 2,400 feet) supports a wide variety of plants and typically has a conspicuous understory of small trees and shrubs, as well as a diverse ground layer. Typical species are oak, American beech, black gum, white pine, birch, sassafras, maples, eastern hemlock, shagbark hickory, bitternut hickory, and American basswood. Typically, the canopy in the older woods of the lower elevations is about 70 feet tall.

Woodlands dominated by black locust and black cherry occur in the higher elevations (above 2,400 feet). Trees at this elevation seldom

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<sup>23</sup>Western Pennsylvania Conservancy, April 2005. *Rapid Inventory and Assessment of the Ecological and Biodiversity Resources of the Flight 93 National Memorial in Somerset County, Pennsylvania*, p. 18; Source, PaDEP, Diamond T Reclamation Plan.

<sup>24</sup>Ibid.

<sup>25</sup>Schmid & Company, 2004. Preliminary Natural Resource Inventory, Flight 93 National Memorial Study Area, p. 7.

<sup>26</sup>Ibid.

exceed 50 feet in height and are most noticeable along the eastern ridge and to the northwest of the site. Black locust is the primary species on the older mine spoils. Native wood species include white oak, black oak, hawthorns, black cherry, and trembling aspen. Staghorn sumac and autumn-olive are common shrubs.

With the exception of the hemlock communities south of the site, the habitats encountered during natural resource surveys support species tolerant of disturbance. There are, however, a significant number of rare plant records in the general vicinity of the site, a few of which should be considered as having potential to occurring on the site, either because the hemlock grove may provide suitable habitat or because the species are tolerant of disturbance. Because there is some potential for seasonal ponds to occur on the site, these areas could also support rare plant populations. No vernal pools were apparent from the aerial photos, and if any are present, they are most likely very small.

Although no federally or State listed or candidate plant species of conservation concern were found or are known to occur within the memorial boundary, limited but significant potential exists for plant species of conservation concern to occur on the site. Vegetative surveys conducted during two natural resource surveys did not discover any rare plant populations. However, time constraints prevented the timing of those surveys to coincide with the optimal seasonal times to observe any of the rare plant species known to occur in the region.

**Hemlock Grove**—The hemlock grove south of the crash site was surveyed by Western Pennsylvania Conservancy biologists on March 17, 2005. The stand is composed of three eastern hemlock-dominated plant community types: hemlock white pine (terrestrial) forest, hemlock palustrine forest, and hemlock mixed hardwoods palustrine forest. The 10-acre hemlock white pine (terrestrial) forest patch is dominated by hemlocks (>25 cm dbh) and scattered white pines and hardwoods. The overstory trees appeared to be healthy and there was a substantial number of seedling and sub-canopy sized hemlock stems. Large clones of rosebay rhododendron (*Rhododendron maximum*) were found in the understory. Because the area is protected by fencing, hemlock seedlings may be protected from deer browsing.

The hemlock communities at the south end of the site are probably the healthiest natural communities at the site and have the greatest potential to support viable populations of rare plants, such as *Juncus debilis* (weak rush, proposed Pennsylvania Tentatively Undetermined), *Listera smallii* (kidney-leaved twayblade, Pennsylvania Endangered), and *Listera cordata* (heart-leaved twayblade, Pennsylvania Endangered).

Southeast of the hemlock grove, the elevation declines and there is a greater amount of standing water. The trees are decidedly smaller and there is a greater hardwood cover. This change in community types from a nearly pure hemlock forest stand to a hemlock-mixed hardwoods palustrine forest to red maple-mixed hardwoods palustrine woodland creates habitat for a number of species that require both conifer forests and deciduous species (such as magnolia and black-throated green warblers), and adds to the significance of the hemlock grove.<sup>27</sup>

**Sorber Cemetery**—The Sorber Cemetery is located at the north end of the core visitor area and was not disturbed by mining operations. This family cemetery dates to the mid-1800s. This site is represented by three vegetation types: Black locust forest, hawthorn thicket, and an artificially constructed pond. A combination of plant species around the grave site includes day lilies (*Hemerocallis c.f. fulva*) and pear (*Pyrus c.f. communis*), as well as a number of species common to the herbaceous-dominated reclaimed strip-mine community, hawthorn thicket and black locust forest communities.

An artificially constructed pond situated nearly 10-15 m from the graves is surrounded by reed-canary grass (*Phalaris arundinacea*), monkey-flower (*Mimulus ringens*), wool-grass (*Scirpus cyperinus*), wrinkle-leaf goldenrod (*Solidago rugosa*), smooth goldenrod (*Solidago c.f. gigantea*), and redtop (*Agrostis c.f. gigantea*). Although this area is only a small patch and exhibits a relatively non-native occurring plant community type, it is one area of the site that has not been disturbed by strip-mining. Because of this, this site and other non-strip mined areas could potentially harbor or support species of concern.

Only a few mammals were documented during the Western Pennsylvania Conservancy field visits in March 2005. These species included eastern chipmunk (*Tamias striatus*), white-tailed



Hemlock Grove (OCLP 2003)

<sup>27</sup>Western Pennsylvania Conservancy, 2005, pp. 42-43.

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*The past stripmining of most of the site created disturbed wildlife habitat and a fragmented, open landscape.*

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deer (*Odocoileus virginianus*) and fox (tracks and den) believed to be red fox (*Vulpes vulpes*). Some signs of small mammals (voles, shrews) were noted, although no estimation of those species could be made. Black bears have been seen at the site and an interview with Mr. John Weir (PBS Coals, Inc.) revealed that fox and bobcat trappings had occurred near the hemlock grove at the southern end of the property.<sup>28</sup>

Because most of the site has been strip-mined, it represents disturbed habitat for wildlife and creates a fragmented open landscape that is less optimal for many species. Post-surface mining has created changes in water as an element of habitats in two ways. First there are several pools and ponds that are now part of the memorial's landscape. These represent diversification of habitats on the site, although existing pond quality is low. Secondly, the history of coal mining in the area has altered the quality of surface and subsurface water sources.<sup>29</sup>

The results of the field study relative to mammals and reptile habitat showed a rather diverse assemblage of habitats within the memorial boundary.<sup>30</sup> The site revealed that habitat exists suitable for about 63 species and 33 sub-species of mammals.

Two venomous snakes, the northern copperhead (*Agkistrodon contortrix mokasen*) and the timber rattlesnake (*Crotalus horridus*), are known to occur in the region. However, there are no known records for either of these species to occur on or in the vicinity of the memorial and the probability that this snake is present on the property is low.<sup>31</sup>

The Western Pennsylvania Conservancy's natural resource survey reported that 70 bird species were recorded at or near the Flight 93 National Memorial. A listing of these species can be obtained from the National Park Service office in Somerset. Of these bird species, 20 species were recorded at the memorial during Western Pennsylvania Conservancy surveys and during the 1st and 2nd Pennsylvania Breeding Bird Atlases (PBBA). Nine species were observed at the memorial in 2004 and during the first year of the 2nd PBBA.<sup>32</sup>

On July 26, 2004, 32 bird species were observed at the memorial. Wild turkey (*Meleagris gal-*

*lopavo*) was the only species confirmed to be breeding based on criteria established by the PBBA. A great-blue heron (*Ardea herodias*) and a pair of red-tailed hawks (*Buteo jamaicensis*) flew over the site during the survey. Tree and bank swallows (*Tachycineta bicolor*, *Hirundo rustica*) and cedar waxwings (*Bombocilla cedrorum*) were also observed foraging over grassy, open areas at the site. The remaining species were considered possible breeders.<sup>33</sup> About 39 percent of the bird species observed using the reclaimed strip mine portion of the site are grassland-dependent species.

Three species of special concern were observed at the memorial during a survey in March 2005:

- northern harrier (*Circus cyaneus*), a State candidate at-risk species of special concern;
- Wilson's snipe (*Gallinago delicata*), a State-threatened species of special concern; and
- a short-eared owl (*Asio flammeus*), a State-endangered species of special concern.

Both the northern harrier and Wilson's snipe were considered to be probable breeders. The northern harrier uses upland and wetland habitats, including marshy meadows; wet, lightly grazed pastures; old fields; freshwater and brackish marshes; dry uplands; and riparian woodland. The Wilson's snipe uses wetlands to well-drained grassy uplands, and marshy edges of streams, though it appears to avoid tall, dense vegetation and cattails.

The short-eared owl was observed using the site for wintering habitat in March 2005. This species prefers large expanses of grassy, upland habitats similar to those found at the memorial for all or part of its life cycle. Nests are usually located on dry sites and slight ridges with enough vegetation to conceal incubating females.

**Invasive Species.** Due to the significant alteration and disturbance to the site from past mining activities, much of the site is composed of non-native species. Most of these species do not pose significant threats to natural communities in this geographic area, although there were some species found in more natural habitats at the site that do have the potential to spread and displace native species.

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<sup>28</sup>Ibid, p. 36.

<sup>29</sup>Ibid, p. 36.

<sup>30</sup>Ibid. pp. 38-39.

<sup>31</sup>Western Pennsylvania Conservancy, 2005. p. 36, and PA Fish and Boat Commission's Natural Diversity Section. This conclusion was also supported in conversation with Mr. John Weir (PBS Coal, Inc.).

<sup>32</sup>Ibid, p. 40.

<sup>33</sup>Ibid.

Kentucky #31 tall fescue (*Festuca arundinacea* Schreb.) was approved for use in the seed mixture during the reclamation of the site by the Pennsylvania Department of Environmental Protection. Tall fescue, a long-lived grass with short underground stems, is a versatile plant that establishes quickly; is used for livestock feed, lawns, turf and conservation purposes; and is adapted for a wide range of soil and climatic conditions. It is widely used on construction sites and slopes because of its ability to rapidly establish and to control erosion. The Pennsylvania Game Commission acknowledged its usefulness in controlling erosion and establishing quickly, but commented that this grass is non-native, is very thick and does not present suitable habitat for birds or for other wildlife species.<sup>34</sup>

Viable gypsy moth (*Lymantria dispar*) egg masses were also observed at the memorial. Because gypsy moth populations have declined in the region, and because oak-dominant forests occupy minimal area at the site, this species was not of serious concern.<sup>35</sup>

In addition to the invasive species observed at the site, one non-native species that was not observed, but which is of serious concern, is the hemlock woolly adelgid (*Adelges tsugae*). The woolly adelgid (photo, below) is an insect that has been known to occur in the United States since 1924. This introduced species, believed to

be a native of Asia, is a serious pest of eastern hemlocks. In the eastern United States, the woolly adelgid ranges from northeastern Georgia to southeastern Maine and west to eastern Tennessee.<sup>36</sup> This species has been identified as a serious threat to the hemlock grove at Flight 93 National Memorial, as its range is expanding from the east towards Somerset County.<sup>37</sup>

In addition to hemlock woolly adelgid, Pennsylvania has been experiencing a threat called “maple die-back” or “sugar maple decline” to sugar maples (*Acer saccharum*). This threat is due in part to soil fertility problems and insect defoliation. Red maples are susceptible to fusarium canker, which results in long, narrow lesions on the bark.

**Federally and State Protected Species.** The Endangered Species Act of 1973, as amended, (87 Stat. 884, as amended; 16 U.S.C. 1531-1543) is administered by the U.S. Fish and Wildlife Service (FWS) and provides protection to certain plant and animal species. Pennsylvania’s Act 170, Wild Resource Conservation Act, administered by the Department of Conservation and Natural Resources, preserves and enhances species in the Commonwealth, including those that are rare or endangered. For the most part, Pennsylvania defers to the Federal listing of species maintained under the Endangered Species Act of 1973. The Pennsylvania

<sup>34</sup>Conversations with Barry Zaffuto, Pennsylvania Game Commission and Environmental Management Collaboration, Ltd., 2003 and 2005.

<sup>35</sup>Western Pennsylvania Conservancy, 2005, p. 20.

<sup>36</sup>USDA-Forest Service website <http://na.fs.fed.us/fhp/hwa/>.

<sup>37</sup>National Park Service, website <http://www.nature.nps.gov/biology/ipm/manual/aphids.htm>



**Adult Hemlock Woolly Adelgid (*Adelges tsugae*)**  
(Dennis J. Souto, USDA Forest Service, [www.invasive.org](http://www.invasive.org))





**Mining ponds and dragline as seen from U.S. Route 30**  
(Jason Cohn 2004)

Natural Diversity Inventory (PNDI) is a listing species of special concern in the State.

Two upland sandpipers (*Bartramia longicauda*), State threatened species of special concern, were observed about 5 miles southwest of the memorial. In 2004, a northern harrier (*Circus cyaneus*), a State candidate at-risk species of special concern, and Wilson's snipe (*Gallinago delicata*), a State-threatened species of special concern, were observed at the memorial. A short-eared owl (*Asio flammeus*), a State-endangered species of special concern, was also observed using the site for wintering habitat during the March 11, 2005, site visit.<sup>38</sup>

In December 2003, the National Park Service initiated consultation with the U.S. Fish and Wildlife Service and the Pennsylvania Natural Heritage Inventory (PNHI) through the scoping process for the Flight 93 National Memorial General Management Plan/Environmental Impact Statement and a request for natural resource data within the affected environment. On December 16, 2003, the PNHI responded that their records showed no occurrences of plant species of special concern within the project area. Further, impacts to endangered, threatened or rare plant species at this site were not anticipated.

On December 22, 2003, the U.S. Fish and Wildlife Service submitted initial scoping comments to the National Park Service and stated that except for occasional transient species, no federally listed or proposed threatened or endangered species under their jurisdiction were known to occur in the project area. Copies of these agency letters are provided in **Appendix B**.

On April 5, 2005, the National Park Service re-established coordination with the U.S. Fish and Wildlife Service pursuant to the Endangered Species Act of 1973, as two years had passed since the initial coordination had occurred. The U.S. Fish and Wildlife Service responded with comments regarding potential occurrence of the federally endangered Indiana bat (*Myotis sodalis*) and potential hibernacula that may exist on this site due to the former coal mines.

The Indiana bat (*Myotis sodalis*) is listed in the "Federally Listed, Proposed, and Candidate Species in Pennsylvania" (rev. July 27, 2004) that was provided by the U.S. Fish and Wildlife

Service. This species is listed as federally endangered and is the only federally protected species known to occur in Somerset County. Consultation with Mr. John Weir of PBS Coals, Inc. revealed that the mines within the memorial boundary were immediately closed and portals and opening sealed after mining activities ceased. These mines were not abandoned for any prolonged period of time. Bats have never been seen in active mines, most likely due to the high level of noise and bright lights that are used during mining operations. Bats could not hibernate under these conditions and would be more likely to use abandoned limestone mines rather than active coal mines.

The Western Pennsylvania Conservancy stated in their recent natural resource survey that the Conservancy is not aware of any known occupied summer habitats for the Indiana bat within the Flight 93 National Memorial area. It was acknowledged that the PNHI database shows two known hibernacula within Somerset County, both of which are located about 8 to 25 kilometers from the site. Information collected from field studies, site maps and interviews did not show winter habitat or particularly suitable summer habitat for the Indiana bat on or near the memorial site. In addition, no knowledge of any open portals that could have served as a winter hibernacula were known.

### **Water Resources**

Resources discussed in this section include onsite wetlands and floodplains, surface waters and existing potable water supplies within the memorial boundary. Figure III-5 shows the location of the wetlands found on the NWI maps, as well as the sediment and treatment ponds used for treating acid mine drainage.

In 1998, the Somerset County Conservancy acquired 49 acres located to the west of the western boundary of the mine through a transfer from the Diamond T Mine. The Natural Resource Conservation Service (NRCS) designed a passive treatment system (the Lamberts Run AMD Remediation Project), approximately 39 acres in size, to treat approximately 100 gpm of acid mine drainage from five separate seeps in the headwaters of Lamberts Run. The Stonycreek Conemaugh River Improvement Project (SCRIP) and the Southern Alleghenies Resource Conservation and Development Area participated in the project, which was constructed by the Pennsylvania Mountain Service Corps.<sup>39</sup>

<sup>38</sup>Western Pennsylvania Conservancy, 2005, p. 30.

<sup>39</sup>Stonycreek-Conemaugh River Improvement Project, "Lamberts Run," <http://www.scrip.pa-conservation.org/stlambprt.htm>

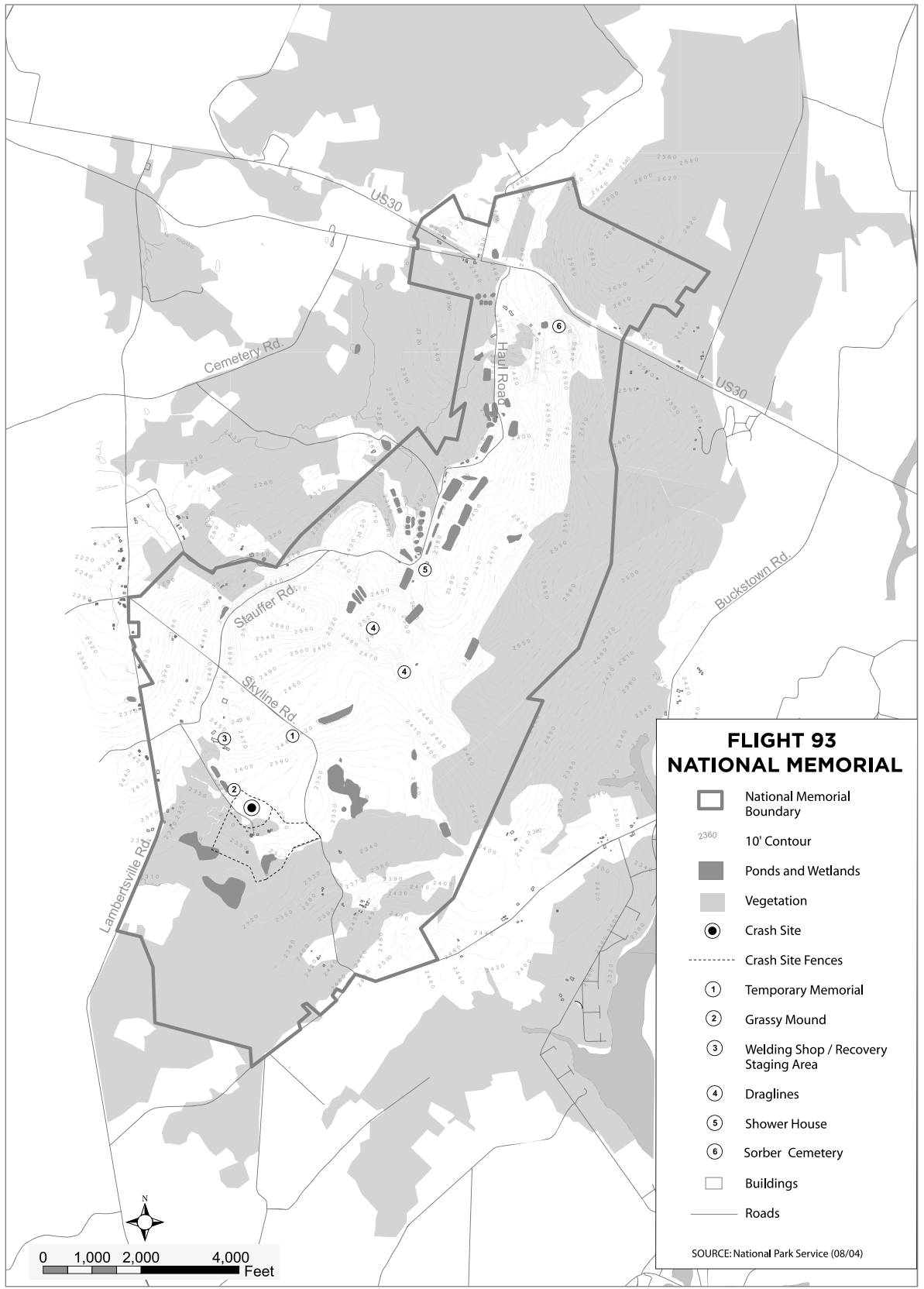
Figure III-5: Flight 93 National Memorial Resources and Constraints, 2004

Flight 93 National Memorial  
Somerset, PA

National Park Service  
U.S. Department of the Interior



# Resource/Constraints



Source: National Park Service, 2004. Prepared by The Office of Merlyn Paulson, Inc., June 2005.



Wetlands and ponds to the east of the Temporary Memorial (OCLP 2003)

Vegetation in the area of the Natural Resource Conservation Service mitigation site includes willows, spike-rushes, sedges, rushes, tear-thumbs, and goldenrods. Other herbaceous dominants, such as wide-leaved cattail (*Typha latifolia*), narrow-leaved cattail (*Typha angustifolia*), soft rush (*Juncus effusus*), wool-grass (*Scirpus cyperinus*), boneset (*Eupatorium perfoliatum*), purple-stemmed aster (*Symphotrichum puniceum*), monkeyflower (*Mimulus ringens*), beggar's ticks (*Bidens* sp.), and wild mint (c.f. *Mentha arvensis*), were also noted. There are several shrubs and small trees scattered throughout these wetland areas.<sup>40</sup> Although the species composition and hydrology of these sites have been altered, these areas provide some habitat for waterfowl.

Other wetlands occupied by woods, scrub shrub, and herbaceous openings are associated with a riparian band along Grove Run in the southern margin of the study area and along Lamberts Run to the west of the surface-mined lands. Shrubs along the streams include spicebush, smooth arrowwood, great laurel, mountain laurel, and early azalea. The canopy trees along the stream courses typically are about 80 feet or taller. These wetlands appear to receive water from seeps and springs as well as from surface flow. Hydrophytic vegetation establishes quickly in artificial ditches and sediment ponds throughout the study area.<sup>41</sup>

Several examples of naturally occurring wetland patches occur outside the hemlock palustrine forest and hemlock mixed hardwoods palustrine forest patches found within the fenced area of the crash site. Fed predominantly by groundwater, these areas receive a significant amount of drainage from the mined or filled areas. Orange iron deposits were observed in the creeks through the forests, and in the substrate of palustrine woodlands and cattail marshes on the western border of the core visitor area. Despite a substantial amount of AMD, these areas may also support rare plant species since they were not mined or disturbed. Their diverse understory and conifer composition may provide habitat for warbler species.

Similar diverse stands of hydrophytes are conspicuous within the fenced crash site. The topsoil replaced over the almost flat excavation of 6.1 acres of mine spoil following recovery of the crash site is of fine texture, and slight ruts retain water for long periods of time. These wet-

lands are developing as a result of topographic impoundment of surface water.

Red maple (*Acer rubrum*) dominates the tree stratum with a mixture of eastern hemlock (*Tsuga canadensis*), eastern white pine (*Pinus strobus*), yellow birch (*Betula alleghaniensis*), trembling aspen (*Populus tremuloides*), swamp white oak (*Quercus bicolor*), and black ash (*Fraxinus nigra*). Shrubs include red willow (*Cornus amomum*), winterberry (*Ilex verticillata*), hawthorn (*Crataegus* sp.), spicebush (*Lindera benzoin*), smooth alder (*Alnus serrulata*), and common elderberry (*Sambucus nigra*). Ferns usually dominate the herbaceous layer.<sup>42</sup>

**Wetlands.** No formal wetlands delineation was conducted for this site. Field inspections by qualified wetlands scientists and review of hydric soils (outside the surface mined areas) and National Wetland Inventory maps were used to approximate the location and classification of wetlands. These investigations showed that much of the area south of the core visitor lands and along Lamberts Run and Grove Run support wetland communities. Approximately 25 acres of mitigated replacement wetlands are located below the core visitor lands of the memorial, and 1.9 acres of National Wetland Inventory wetlands are scattered throughout the site. There are also 107 ponds located onsite, most of which were constructed to contain sediment. Other wetlands that were not shown on the National Wetland Inventory maps include about 1.0-1.5 acres associated with the Natural Resource Conservation Service Lamberts Run AMD Remediation Project. These, too, are constructed wetlands.

Palustrine wetland communities include the hemlock palustrine forest, hemlock-mixed hardwoods palustrine forest, red maple-mixed shrub palustrine woodland, and cattail marsh. The cattail marsh located south of the hemlocks is composed of plant species that can tolerate standing water throughout the year. These are robust emergent marshes dominated by common cattail (*Typha latifolia*), or less commonly, narrow-leaved cattail (*T. angustifolia*). This type can occur in a variety of landscape positions in Pennsylvania including river backwaters, protected pond and lakeshores, and upland depressions. The substrate may be muck or mineral soil. The surface is usually flooded for most of the year. Associated species include bulrushes (*Scirpus* spp.), sensitive fern (*Onoclea*

<sup>40</sup>Ibid.

<sup>41</sup>Schmid & Company, 2004.

<sup>42</sup>Western Pennsylvania Conservancy, 2005. p. 19-20.

*sensibilis*), tear thumb (*Polygonum sagittatum*), reed canary grass (*Phalaris arundinacea*) and sedges (*Carex spp*).<sup>43</sup>

**Surface Waters and Water Quality.** The Pennsylvania Department of Environmental Protection defines a watershed as a land area from which water drains toward a common watercourse in a natural basin or a crucial dividing point or line. Somerset County includes parts of three river basins: the Ohio River Basin, the Potomac River Basin and the Susquehanna River Basin. All waters west of the Eastern Continental Divide flow toward the Ohio River and ultimately to the Mississippi River.<sup>44</sup>

The Flight 93 National Memorial lies in the upper Stonycreek River Watershed, which is a part of the Conemaugh River Watershed. Stonycreek River joins the Little Conemaugh at Johnstown to form the Conemaugh River, which discharges into the Kiskiminetas River. The Kiskiminetas River is the largest tributary to the Allegheny River, which then joins the Monongahela River in Pittsburgh to form the Ohio River, which flows into the Mississippi River.

The Stonycreek River, a major tributary to the Kiski-Conemaugh, is an important recreation resource for the northern Somerset-southern Cambria County region. The Stonycreek River drainage area encompasses about 467 square miles. Although most Stonycreek headwater streams are of good quality, Lamberts Run, Oven Run and Wells Creek have been substantially impacted over the years by acid mine drainage (AMD). When coal is mined, the associated materials such as high-sulfur, iron pyrite are exposed to the air and bacteria, resulting in the formation of sulfuric acid which dissolves metals—especially iron, manganese, and aluminum, but also zinc, arsenic, cadmium, and mercury. These compounds are carried by groundwater to streams, where the resulting concentrations are often toxic to most fish and benthic (streambed) organisms.

The rivers and streams of the region are beginning to form the basis of a strong recreation and tourism economy. Through the use of improved management practices, many of Somerset County's creeks and rivers are showing dramatic improvements in water quality and ecological health. Environmental legislation requires the active treatment of mine-polluted wastewater by mine operators so that it meets water quality standards prior to its discharge to streams. As a

result, fish and the aquatic organisms on which they depend are beginning to return to those waterways.<sup>45</sup> Both natural and stocked trout populations are found in the Stonycreek River basin. Protected uses in the Stonycreek River and its tributaries, including Grove Run and Lamberts Run, from the headwaters to U.S. Route 30 (confluence of Beaverdam Creek) are those of a trout stocking fishery.

Typical fish within the study area include smallmouth bass (*Micropterus dolomieu*), largemouth bass (*Micropterus salmoides*), brown bullhead (*Ameiurus nebulosus*), channel catfish (*Ictalurus punctatus*), suckers (*Catostomidae*), carp (*Cyprinus cyprio*), sunfish (*Centrarchidae*), and minnows (*Cyprinidae*). The ambient water quality of the streams within the study area assessed during the 1990s is documented in **Appendix E**.

The Lamberts Run and Oven Run watersheds have been accorded high priority by the Pennsylvania Department of Environmental Protection for remediation of AMD. Oven Run is one of the most severely degraded streams in Pennsylvania. The entire Flight 93 National Memorial study area lies within the Pennsylvania Bureau of Abandoned Mine Reclamation (PABAMR) Hooversville Planning Unit (PU-314) and Water Cataloging Unit 05010001. The reclaimed Diamond T surface mine occupied the central section of the memorial site. To mitigate AMD occurring from this mine, more than 100 sediment and treatment ponds were constructed by the mining company to catch eroded sediment and to treat mine wastewater. Most of the artificial ponds on the Diamond T surface mine discharge into Lamberts Run and require perpetual maintenance.

The streams within the memorial study area are typical of streams in the surrounding region with respect to their degradation by coal mining. The following section focuses on the streams within the memorial boundary.

*Lamberts Run*—Lamberts Run is a small headwaters tributary of the Stonycreek River, flowing through a largely isolated ravine that includes a significant waterfall. Lamberts Run drains the core visitor area of the memorial. It flows westward to join the Stonycreek River about 2 miles west of the study area, and has a drainage area of 3.77 square miles. The stream has suffered from low pH caused by AMD, which also adversely impacts the Upper Gorge of the Stonycreek

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*The rivers and streams of the region are showing dramatic improvements in water quality and ecological health and are beginning to form the basis of a strong tourism economy.*

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<sup>43</sup>Ibid. p. 20.

<sup>44</sup>*Somerset County Comprehensive Plan Update, Draft, 2003, pp. b-49 to b-51.*

<sup>45</sup>Ibid.

River. As a result, Lamberts Run is listed by the Pennsylvania Department of Environmental Protection, pursuant to Section 303(d) of the Clean Water Act, as water quality limited, and receives both actively treated mine wastewater and untreated acid mine drainage from the abandoned underground mines under the site. The headwaters of Lamberts Run have been designated a problem area by the Department of Environmental Protection, and a part of this problem area extends eastward beyond the surface drainage divide into the Calendars Run watershed.

Water is pumped almost continuously into upper Lamberts Run from closed mines located under the memorial site. This discharge is treated first by caustic soda and then by a series of ponds within the Diamond T Mine. It flows down the steep gradient in a limestone-lined channel at a rate determined by the rate of pumping. This pumping has been undertaken voluntarily by PBS Coals since late 2001 to reduce the potential flow of mine water into a small pond located just south of the crash site.

Since its completion in 1999, the Lamberts Run treatment system has treated AMD from five separate seeps flowing from the abandoned mines of the site, typically raising the pH of the incoming water before discharging it to Lamberts Run. Data collected in 2002 showed that the system continues to function and raw water coming into the system has a pH of 3.8, a total acidity of 343 mg/l, total Al of 33.4 mg/l, total Fe of 13.5 mg/l and total Mn of 31.2 mg/l. These values compare with the treated water from the system, which shows a pH of 6.1, a total acidity of 0.0 mg/l, a net alkalinity of 24.0 mg/l, total Al of 0.8 mg/l, total Fe of 1.5 mg/l and total Mn of 25.7 mg/l.<sup>46</sup>

The water quality in Lamberts Run has varied chiefly in response to the operations of and discharges from the surface and underground mines in the watershed. When the Diamond T Mine was active during the 1980s and 1990s, its treated wastewater generally kept the pH of Lamberts Run within acceptable limits (6.0 to 9.0), despite occasional permitted discharges that exceeded limits. During the period January 1997 through October 2000, the average for pH taken from 77 measurements was 6.27 and the average for alkalinity was 11.97 mg/l at Lambertsville Road. During mid-2000, the pH in

Lamberts Run began to drop below 6.0, as mining activities were curtailed and the volume of treated mine discharge dwindled.

From late May through mid-November 2001, the pH ranged between 3.25 and 5.00, and measured alkalinity consistently was 0 mg/l. In January 2002, the pH returned to 6.0. Most pH values reported during 2003 and 2004 were within the acceptable range.<sup>47</sup> Figure III-7 shows the early monitoring results of water quality in Lamberts Run.

In April 2004, a rapid bioassessment of benthic invertebrates was performed at four stations on Lamberts Run for the Southern Alleghenies Conservancy. The overall characterization of Lamberts Run resulting from the benthos analysis was that of an impaired but recovering stream.<sup>48</sup> In 2005, the Natural Resource Conservation Service updated the water quality information, based on updated data from the PA Department of Environmental Protection, as shown on Figure III-6.

Figure III-7 shows that the alkalinity starts out high (60.8) in the headwaters because of the active treatment of the mine water, and then decreases to (12.9) at the mouth of the stream due to the acid production of the precipitation reaction of the iron. Therefore, the acidity increases from (11.8) in the headwaters to (30.1) at the mouth, and the pH decreases as expected with the increase in acidity. As a result of treatment, acidity in the raw water is being reduced from 334 mg/l to 0 mg/l in the treated outflow during periods of normal flow volume, and the average alkalinity of the discharge is 77 mg/l. The excess alkalinity helps neutralize acidity downstream in Lamberts Run and in the Stonycreek River. In 2000, trout were stocked for the first time above the falls on Lamberts Run, and stocking occurred again in 2002.<sup>49</sup>

*Grove Run*—The southern section of the study area includes much of the headwaters of Grove Run, which flows westward and then northwest to join the Stonycreek River about 1.5 miles from the memorial. Grove Run currently exhibits intermittent flow within the site, perhaps because its flow is being diverted by pumping to Lamberts Run. Grove Run becomes a permanent watercourse downstream from sizeable natural wetlands where it passes beneath Lambertsville Road at about elevation 2,300 feet.

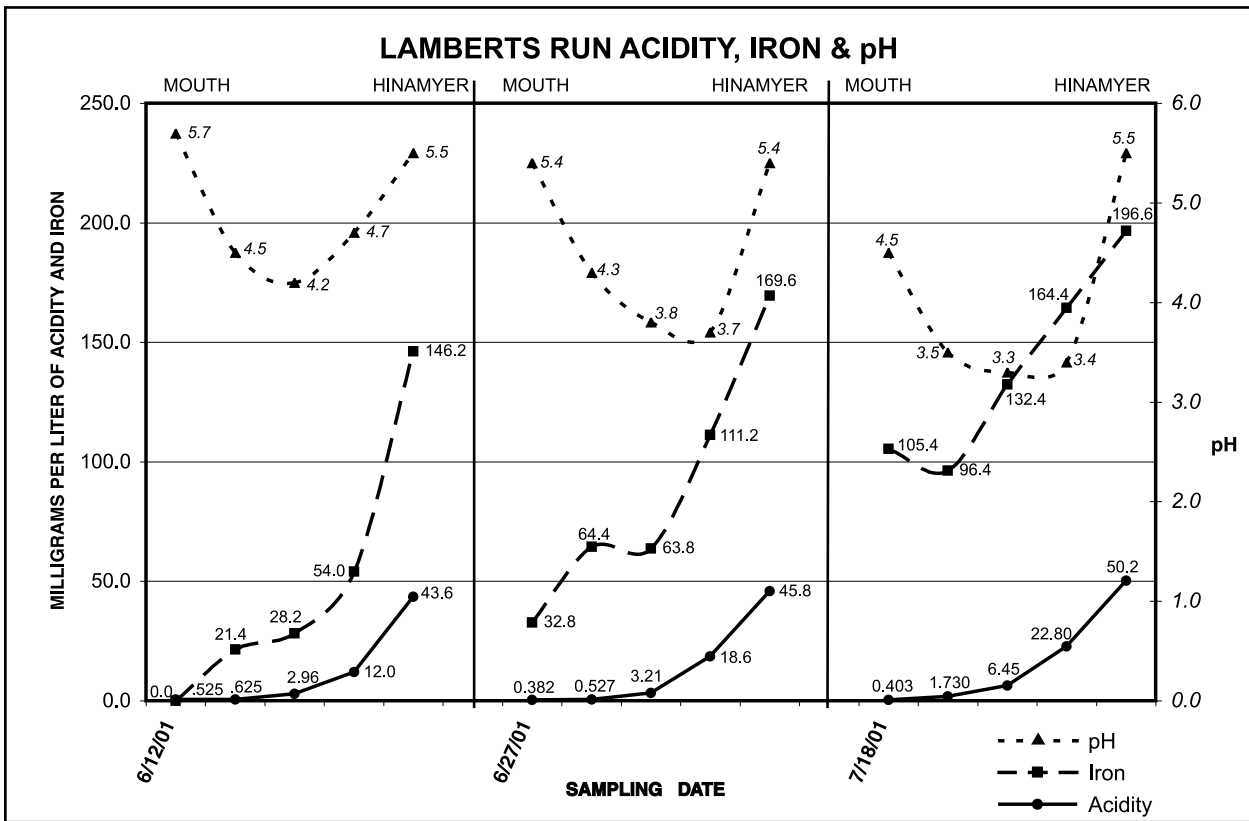
<sup>46</sup>USDA-NRCS, Somerset Technical Center, Somerset, PA, 2005

<sup>47</sup>Schmid & Company and Cahill Associates, 2004.

<sup>48</sup>Western Pennsylvania Conservancy, 2005.

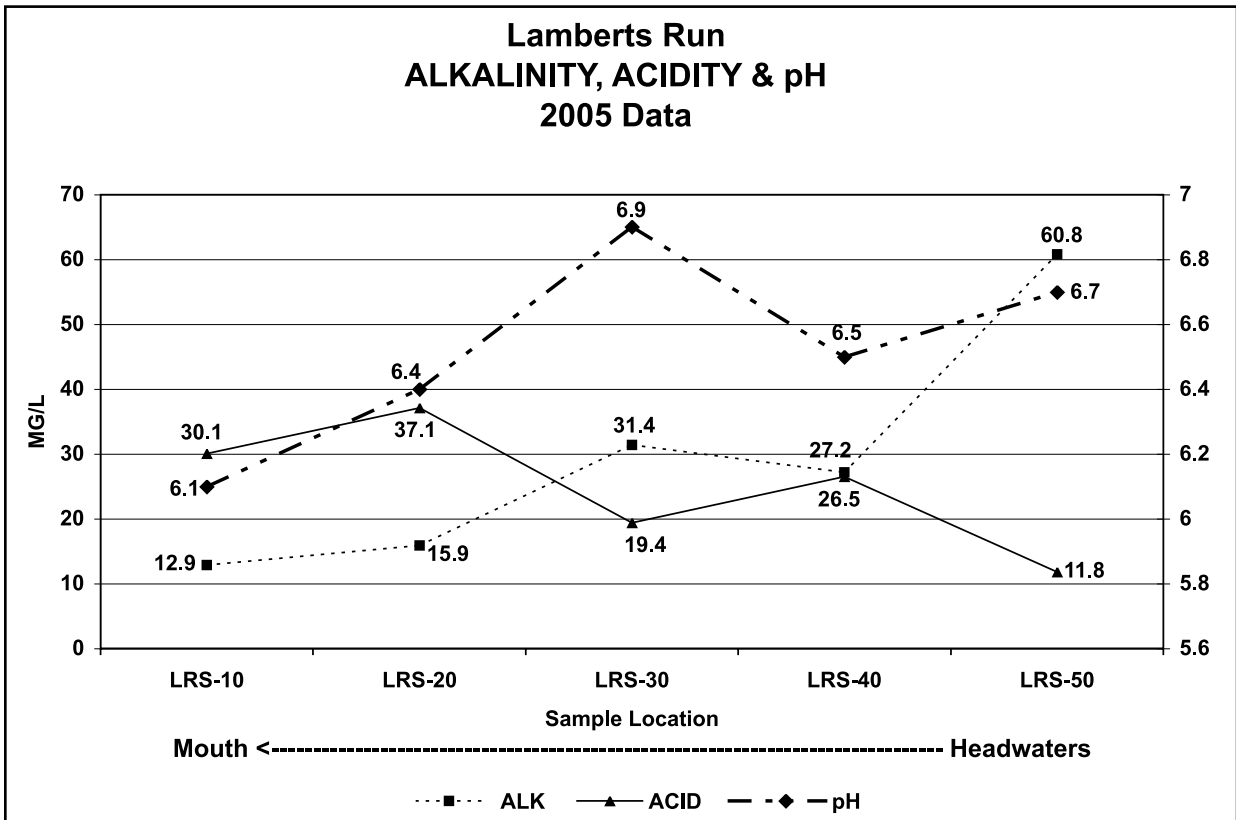
<sup>49</sup>USDA-NRCS, Somerset Technical Center, 2005.

Figure III-6: Water Quality Monitoring Results of Lamberts Run Remediation Project, 2001



Source: U.S. Department of Agriculture, Natural Resources Conservation Service, Somerset Technical Center, Somerset, PA, 2005.

Figure III-7: Lamberts Run Water Quality, 2005



Source: U.S. Department of Agriculture, Natural Resources Conservation Service, Somerset Technical Center, Somerset, PA, 2005.



Log home in hemlock grove  
(OCLP 2003)

Grove Run accepts surface runoff from much of the reclaimed Diamond T Mine, including overflow from the created wetlands just east of the crash site and from other erosion control basins farther east. Water quality in the large pond associated with created wetlands located just east of the crash site is reported to be satisfactory, and fish were noted in this pond. This pond appears to be isolated from groundwater of low pH. Its clay liner is reported as effective in retaining surface runoff in the pond, except in one forebay in its southwestern section, which has been isolated by a berm to prevent leakage from the pond. An older and smaller pond located just south of the crash site within the fenced area is reportedly affected by AMD.<sup>50</sup>

During periods of relatively low flow, the chemical quality of the water is better in Grove Run where Skyline Road crosses it just southeast of the crash site than downstream at Lambertsville Road farther west. During periods of high flow, there is less difference in measured water quality parameters along the stream. Small, acidic seeps of iron-laden water typically associated with coal mining are noticeable along the south side of Grove Run at Lambertsville Road. These seeps most likely are associated with the underground mining in the study area, but no detailed information on the hydrology and hydraulics of the study area mines is available.

The average of 38 measurements of pH in Grove Run at Lambertsville Road made by Thurman Korns of the Wells Creek Watershed Association during November 1997 through July 1998 was 5.09, with slightly higher values prevalent toward the end of the monitoring period. The average alkalinity of these samples was 18.16 mg/l. On 31 March 2004 the measured pH was 4.8 with alkalinity 19.50 mg/l, and on 18 April 2004 pH was 5.7 with alkalinity 0.625 mg/l. Lower Grove Run reportedly is capable of supporting fish, and its entire length is listed by the Pennsylvania Fish and Boat Commission as supportive of natural reproduction of trout.

## HISTORIC AND CULTURAL RESOURCES

Stonycreek Township was first settled in 1762 and later incorporated in 1792. This township was formed from a portion of Quemahoning Township, and was one of the six original townships that formed Somerset County. In 1795,

Somerset County was established through the assimilation of portions of Brothersvalley, Turkeyfoot, Quemahoning, Milford, Elk Lick and Stonycreek Townships in Bedford County. Shanksville Borough, the main borough of Stonycreek Township, was first settled in 1798 and later incorporated in 1913.

In 2004, the National Park Service prepared a *Cultural Landscapes Inventory* of Flight 93 National Memorial. The report described the pre-September 11, 2001 history of the site and the landscape as it existed on September 11, 2001, and in the months that followed. In addition to the site's landscape characteristics and infrastructure, the site's views and vistas, water resources, adjacent lands and archeological sites were also described.

The *Cultural Landscapes Inventory* noted that it is highly unlikely that any prehistoric archeological evidence remains on the site due to the extensive strip mining activities that occurred during the 20th century. Mining disturbance of the ground exceed 30 feet in most places. However areas that have never been excavated, such as the hemlock grove and the agricultural areas within the outlying areas, have potential to contain prehistoric archeology.<sup>51</sup>

The *Cultural Landscapes Inventory* also addressed the possibility that some features within the memorial may have local significance outside the context of Flight 93, such as the log homes within the hemlock grove that were constructed by a member of the local Lambert family and date back to the 1930s. Due to the age of these cabins and their connection with a locally prominent family, they may have historic significance within the context of the vernacular architecture for this region of southwest Pennsylvania.<sup>52</sup>

The site has acquired its historic significance both from the events of 2001 and from the Act of Congress that established the site as a national memorial. It is an historic area that is essentially commemorative in nature and as such, is automatically listed on the National Register of Historic Places (36 CFR 60.1). National Memorials frequently consist wholly or partly of created resources that are considered historic because they are commemorative.

The boundaries of an historic area are not necessarily coterminous with the boundaries of

<sup>50</sup>Schmid & Company and Cahill Associates, 2004.

<sup>51</sup>National Park Service. 2004. *Flight 93 National Memorial Landscape Pre-Memorial Existing Conditions, Draft Cultural Landscapes Inventory*.

<sup>52</sup>Ibid.

a park, although until documented, the boundaries of an historical area are the authorized park boundaries (National Park Service Cultural Resource Management Guideline, Appendix Q). Exclusions may include non-historic buffer zones. The National Park Service documented the log homes, mining structures, and other site resources in the Cultural Landscapes Inventory, but has not determined their historic significance. This evaluation will occur separately from this planning effort.

It is likely that some of the mining and industrial structures and equipment at the site will be removed prior to National Park Service acquisition of the properties. The scrap and recycling operation is a functioning business and will be relocated to a new site to continue operation. Many of the buildings associated with the mining operation are in very poor condition and the ground surrounding them is contaminated from the mining operation. Most of these structures will be removed as part of reclamation. Several companies have shown interest in purchasing and retrofitting the draglines and returning the machinery to operation.

Pursuant to Section 106 of the National Historic Preservation Act (16 U.S.C. 470) and its promulgating regulations (36 CFR 800), the National Park Service has formally consulted with the Pennsylvania Historical and Museum Commission, Bureau for Historic Preservation, the State Historic Preservation Office (SHPO), concerning potential effects to historic properties and cultural resources. This correspondence is summarized in Chapter V and the letters are presented in Appendix B.

### Structures in the Hemlock Grove

Four homes are located within the hemlock grove south of the crash site, three of which are constructed of hemlock logs and one of ashlar stone. The three log homes are seasonal homes used mainly during hunting season and the summer. The stone house was used as a year-round residence. These homes, constructed by a local family from logs taken from the hemlock grove, may date back to the 1930s or the 1940s. Due to the age of these homes, their connection with a locally prominent family and their construction, they may have local historic significance within the context of vernacular architecture.

The smallest of these homes, located farthest to the west, is constructed on a stone foundation. The structure has a corrugated metal roof and log walls mortared with concrete. Small porches were constructed on the front (screened) and back façades. The second seasonal home, located southeast of the home with the stone foundation, is also constructed of hemlock logs and was built upon a poured concrete foundation. No additions were built on this structure.

The third home, located adjacent to the crash site fence, is constructed of hemlock logs and mortar, and has had several additions constructed of vertical wood siding. A wood deck is attached to the addition and an ashlar stone fireplace was constructed on the gabled end of the original structure. This home was damaged by the crash and is vacant. The fourth house, constructed of ashlar stone, has a large screened porch attached to one façade. Other structures associated with these homes include a small trailer and an outhouse.<sup>53</sup>

### Mining Legacy

During the mid-twentieth century, the area within the Flight 93 National Memorial boundary was rural farmland. From the 1950s through about 2002, most of the site was extensively mined for bituminous coal. Deep mining occurred basically in the Lower and Middle Kittanning seams, and strip-mining occurred along the western and southern limits of the site, where no deep-mining was conducted. Strip mining extended to the Lower Kittanning seam, which was as much as 200 ft below existing grade on the west and up to a maximum of 350 ft deep on the east. The approximate locations of the Longview Mine portals are shown on Figure III-8 for reference.

In the mid-1960s, Svonavec, Inc. mined the coal of the Upper Kittanning Fm. A mining permit was issued in 1969 for Diamond T Coal Company to conduct mining of the coal in the Upper Kittanning, Middle Kittanning, and Lower Kittanning Fms, including the area that later was the crash site. The crash site was reclaimed from the late 1960s through the early 1970s by backfilling with overburden that consisted of shale/sandstone and plantings of pines and grasses.<sup>54</sup> In the mid-1980s, PBS Coals, Inc. purchased the 1,400-acre Diamond T mines and actively strip-mined the site between 1991 and 1998. In 1989, PBS Coals began mining the coal



Stripmining of the The Bowl  
(PBS Coals and Bill Zeigler)

<sup>53</sup>Ibid.

<sup>54</sup>ERM. 2002. Final Closure Report, p. 3-4.



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*The plane impacted the relatively soft stripmine backfill, plowed to a depth of 30 ft, then collided with the remaining strip excavation rock highwall, causing the plane to explode.*

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from the site from the north to the south, making bench cuts that ran east to west. According to PBS, the depth of the strip-mining at the southwest limit of the area near the crash site ranged from 115 feet to 150 feet. Reports of investigators and emergency response personnel indicate that during the crash, the plane impacted the relatively soft strip-mine backfill, plowed to a depth of 30 ft, then collided with the remaining strip excavation rock highwall, causing the plane to explode.

Most of the site was extensively deep- and strip-mined from the 1950s through about 2002. Coal was last removed from the Longview Mine on July 30, 2002, and final sealing of that mine was accomplished on April 11, 2003.<sup>55</sup> Deep mining was conducted with continuous mining equipment, using “room and pillar” configurations. The mining plan was to either cause immediate subsidence or protect the surface against subsidence. Active mining in the Diamond T mines was conducted from 1991 through about 1998. In 1992, PBS Coals began backfilling the area and reclaiming the site with topsoil and grasses through 1994. The Diamond T portals were backfilled between 1999 and 2000. Other coal seams were strip-mined above the deep mines.

**Mining Draglines.** Two draglines, large crane-like machinery, remain on the site from the surface mining operations. The larger dragline, a Marion 7500 with a 22-cubic yard bucket, was manufactured in 1976 and is situated on a ridge-line near the center of the memorial. The smaller dragline, a Marion 7400 with a 14-cubic yard bucket, was manufactured during the 1960s and is located southeast of the larger one. Both structures were set in their current locations during the mid-1990s when surface mining operations were completed on the PBS Coals property. On the morning of September 11, 2001, Flight 93 descended over the Rollock scrap yard less than a mile southwest of where the dragline are situated and crashed at the northwestern edge of the hemlock grove. Flight 93 was initially believed to have flown near the two mining draglines at the site. The National Transportation Safety Board later provided information that showed that assumption was inaccurate.

Since the crash, the draglines have served as markers on the landscape (see photo, page III-1). A 17-foot American flag was flown on the Marion 7500 immediately after the crash and a flag has flown there ever since. The draglines can be seen from many distant vantage points, including U.S. Route 31.

**Industrial and Mining Structures.** The Cultural Landscapes Inventory documented all the structures related to the industrial and mining operations at the site. Many of the structures on site were built during the 1960s and are being removed as part of the reclamation and clean-up work. Structures related to the treatment of mine drainage will remain. A blue office and shower house was constructed in the Diamond-T B and C areas in the 1980s. Most of the other structures consist of a steel frame and concrete slab and range from poor to good condition.

Several small garages exist throughout the site. A single-bay frame garage with a wooden door is located on the north side of Skyline Road.<sup>56</sup> Another garage is located at the corner of Skyline Road and the Haul Road, and still another garage for pump trucks used for cleaning the treatment ponds is located near the Rollock scrap and recycling operation.

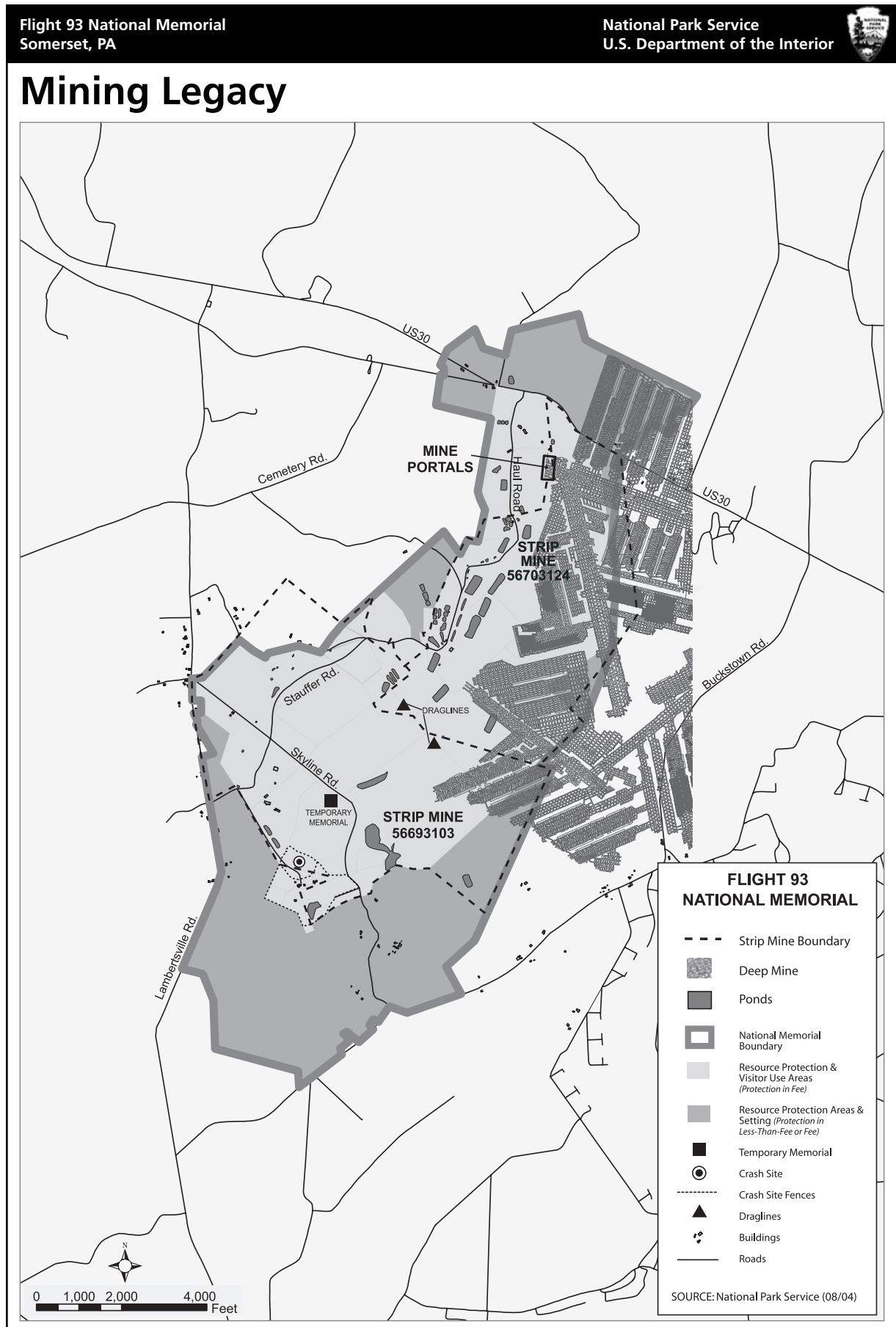
The scrap and recycling complex includes a metal storage building and a single-story administration building with aluminum siding. The yard includes piles of scrap metal and vending machines. A metal-framed warehouse, a garage used as a truck washing facility and a bucket/welding shop are located in the Diamond-T welding shop complex to the west of the crash site. This area was the staging and headquarters area security and investigation operations. Family members of the passengers and crew were also brought to this area to first view the crash site.

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<sup>55</sup>Ibid.

<sup>56</sup>Ibid, p. 31.

Figure III-8: Flight 93 National Memorial Mining Legacy Map, 2004



Source: National Park Service. Data provided by Engineering Mechanics, Inc. and PBS Coals, Inc., 2004.

### Local Family Cemeteries

A small family cemetery, dating from the mid-19th century (1856 through 1892) is located within the memorial boundary and is a historic resource. This cemetery, referred to as the Sorber Cemetery, is located south of U.S. Route 30 across the road from the cell tower and about 200 meters southwest of the roadway in a grove of trees. The Sorber Family cemetery is situated on PBS Coals, Inc. property just west of the Camp Allegheny property line. The family members believed to be buried in this cemetery are listed in Table III-1.

Name	Dates
Lewis, Rebecca (1st wife of Charles of New Jersey)	23Sep1844-08Aug1863
Rebecca	16Mar1863-26Oct1863
Charles	d-29Nov1856 ag 3-11-26
Margaret (Brant)	No dates inscribed
Annie Jane	d-28Dec1856 ag-7-0-3
Sorber, Daniel, Jr.*	Jul1892 ag 77-4-28

Note: Stoystown Lutheran Church records show Daniel's birthdate as March 1, 1811, and baptism date as September 25, 1812. Although these dates do not correlate with the age given on his headstone, the inscription is very clear with the date shown above.

Source: Nancy Hallberg, Stonycreek Township, Mar. 23, 2005.

Coordination with a Stonycreek Township historian and genealogist was conducted in 2005. The historian reported that there are at least three Daniel Sorbers in the Sorber line. Based on the historian's records, the Sorber family cemetery is the burial site of the second generation of Sorbers, Daniel Jr.'s family.

- Daniel 1777-1852 and his wife Elizabeth Sivits (1782 - 1851) buried in the Sorber Cemetery in Shade Township.
- Daniel & Elizabeth had a son named Daniel, Jr. who married Margaret Brant on Feb. 21, 1839, another of his sons, Joseph Sorber (1805-1887) was the one who married Mary Brant (the Brant girls were probably sisters, married to brothers) and they had a son named Daniel W. Joseph is buried in the Lambertsville Cemetery.
- Daniel W. Sorber, the youngest child of Joseph & Mary Sorber, was born sometime shortly after 1850. As of 1884, records show Daniel W. was still living on the family farm in Stonycreek Township. Daniel W. married Jane Richardson.

A single grave was also formerly located on the Duppstadt farm within the memorial boundary. Prior to mining the area, PBS Coals, Inc. exhumed the gravesite. Only pieces of glass, a few buttons and rotten wood were found. PBS re-interred these artifacts at the Lambertsville Cemetery and placed a marker at the new gravesite showing the family name of the deceased as "Brant."

According to the Lambertsville Cemetery caretaker, the person who had been buried on the PBS Coals site was thought to have been Mr. Brant, a veteran whose grave was marked annually at the original location on the Duppstadt property with a flag. However, since that time, descendants of the Brant family have said that the former grave on the Duppstadt farm was that of Mrs. Brant.

### National Register of Historic Places and National Historic Landmarks.

There are 30 sites listed in and 54 sites determined to be eligible for inclusion in the National Register of Historic Places in Somerset County, Pennsylvania. Two sites within Stonycreek Township are listed in the National Register, including the Flight 93 Crash Site, and two sites are eligible for listing in the National Register. National Register sites and their listing dates are shown below—

- Flight 93 Crash Site-Listed November 8, 2002
- Glessner Bridge-Listed December 10, 1980
- South Pennsylvania Railroad Allegheny Tunnel-Eligible 1998
- Jonathan Yoder House-Eligible 2003

Appendix D presents a complete listing of sites included in the National Register of Historic Places for Somerset County. There are no listed National Historic Landmarks or National Natural Landmarks listed in Somerset County.

**Other Cultural and Historic Sites.** Other significant historic and cultural sites in the vicinity of Flight 93 National Memorial include, but are not limited to, the following:

- Allegheny Ridge Heritage Area
- Allegheny Portage Railroad National Historic Site
- Johnstown Flood National Memorial
- Lincoln Highway Heritage Corridor
- National Road Heritage Corridor
- Great Allegheny Passage Trail
- Fort Necessity National Battlefield
- Fallingwater and Kentuck Knob

Appendix C provides a listing of related historic sites, plans and projects in the area.

**Native Americans and Tribal Lands.** Today, there are no federally recognized tribal lands within the Commonwealth of Pennsylvania. The Pennsylvania Historical and Museum Commission and the Somerset Historical Center were consulted regarding the presence of Native American resources in Somerset County, particularly in Stonycreek Township.

The Monongahela was the first tribe known to inhabit the area between 900 AD-about 1300 AD. This tribe mysteriously disappeared in the 1600's and no one knows where they went or why they left the area, though some believe they may have been absorbed into other Indian nations. The Shawnee and Delaware tribes were eventually pushed westward into western Pennsylvania from the east in the early 1600's, and were permitted to settle in western Pennsylvania by the Iroquois Confederation, which had strong political control in the area.

In 1681, King Charles II declared William Penn the sole owner of all land in Pennsylvania. In the mid-1700's, William Penn purchased the land from the Iroquois before selling land to European settlers. In 1763, there was a rebellion at the end of the French & Indian War (1754-1763), called Pontiac's Rebellion, where the Native Americans revolted against European settlers basically "squatting" on their land. Subsequently, the Native Americans left the Somerset area between 1768 and the late 1770's.<sup>57</sup> The Treaty of Fort Stanwix in 1768 opened the land to settlement by whites and the Native Americans were pushed farther west.

Other tribes that may have moved through the area include the Lenni Lenape, or Delaware tribe, who were pushed westward out of their traditional homelands in eastern Pennsylvania, New Jersey and Delaware during the French and Indian War. Like the Delaware tribe, the Shaw-

nee were pushed from their homeland westward and are thought to have moved through Somerset County during the 18th century. The Kickenpaulin's Old Town, located about 8 miles from Stonycreek, was probably the closest Indian settlement in the area and was believed to have been a temporary Shawnee settlement.<sup>58</sup>

## VISUAL AND AESTHETIC RESOURCES

The open character of the rolling landscape affords views from many different vantage points throughout the site. The most important views are to and from the crash site. The location of the crash site at the bottom of the bowl-like topography near the center of the site creates expansive views that extend toward the north and east to the edge of the knoll and ridge.

The Temporary Memorial, located on a knoll inside the Bowl, provides visitors with a view directly to the crash site. Views to the Lambert Farm and wooded hillsides provide the setting for understanding the rural nature of this area. The draglines situated on the ridge line to the north can also be seen from the Temporary Memorial. Due to the rolling terrain, the scrap metal operation is not visible from this vantage point.

From the crash site, the Temporary Memorial is visible to the north and two draglines rest at the edge of the viewshed (photo, below). The views south and west are blocked by the hemlock grove. The welding shop complex and scrap operation are visible beyond a tall grassy mound located just northwest of the crash site.

Due to the dense vegetation of the hemlock grove, there are only limited views outside of the woods. However, due to the removal of burned and damaged trees and the fact that more trees have fallen over time, the views to the crash site are now more open than before the crash or within a year after the crash.



View of Lambert's Farm from the Temporary Memorial (OCLP 2003)

<sup>57</sup>Telephone conversation with Charles Fox, Site Administrator, Somerset County Historical Center, March 15, 2005; and Sturtz, Richard W., Harry W. Gibson and John J. Brett. Reflections of Stonycreek, 1776-1976.

<sup>58</sup>Email communication from Nancy Hallberg to Eileen Carlton, March 17, 2005.



Panoramic view from crash site looking northeast toward draglines (OCLP, 2003)

**Panoramic view from the Welding Shop Complex looking southeast toward crash site with Lambert Farm in background**  
(OCLP 2003)



The lower buildings adjacent to the Rollock scrap metal yards are part of a welding shop complex associated with the mining operations and provide a good overview of the impact site with the Lambert Farm and the wetlands in the background (photo, above). This is the first vantage point from which family members saw the site immediately after the crash. Closer prospects were not available to the families until after the initial investigations were complete.

The view over the Bowl from the ridge where the draglines are located is another important view. Both the Temporary Memorial and the crash site are in view, as well as a settling pond and the constructed wetland. The Lambert Farm and the scrap yard can be seen from the draglines.

The views from U.S. Route 30 at the high point near the northeastern boundary of the memorial provide an excellent view of the landscape leading to the Bowl and the crash site. This landscape includes many mining ponds and treatment facilities and the draglines are visible on the horizon. Views along U.S. Route 30 are of wooded areas, reclaimed fields, or small residences.

Through meetings and mail-in and online comment forms, the public and the Partners strongly supported the need to protect the open, rural views of the site that are indicative of Somerset County and provide an appropriate commemorative setting for the memorial. To supplement the information provided in the *Cultural Landscapes Inventory*, a visual and aesthetic analysis was conducted of Flight 93 National Memorial to identify and describe all significant resources that may be affected by the various alternatives. The following discussion provides the methodology, the conditions and the results of this analysis.

### **Methodology**

The method employed for this study is based upon the premise that aesthetic quality derives from interaction between features of the land-

scape and perception of residents and visitors. It utilizes applicable components of Federal aesthetic inventory and evaluation systems: 1) the USDA Forest Service's *Scenery Management System*; and 2) the USDI Bureau of Land Management's *Visual Resource Management System*. The method combines and streamlines site-specific components of both systems, including the following aesthetic elements and indicators: landform, vegetation, water, structures, and land use. Three evaluation criteria portray relative sensitivity to change in the visual environment: 1) existing visual conditions; 2) viewer location; and 3) view context/viewer expectation.

**Viewer Location.** This analysis is generated for representative public viewing locations, termed Key Observation Points (KOPs). KOPs are designated based upon relative numbers of viewers, viewer sensitivity, and potential visibility of introduced elements. Determining the visibility of critical study area elements is a central component of this analysis and plays an important role in evaluating affected environments and potential aesthetic impacts.

**View Context/Viewer Expectation.** This analysis documents the relative aesthetic sensitivity of viewers. It is a premise of the study that those individuals whose primary purpose is to visit the national memorial possess major scenery expectations, while those who utilize the study area roadways only for purposes of transportation expect less with regard to the quality of scenery. It is also a premise of the study that those individuals who possess major scenery expectations are more sensitive to alterations of the landscape than those who have minor scenery expectations.

### **Characteristic Landscape**

The regional landscape is known for its pastoral patterns of hills and valleys of fields, farms, and villages surrounded by groves of tall, broadleaf hardwoods and softwoods. The project area's reclaimed coal mine landscape and two draglines situated at the ridgeline are among the predominant landscape features of the vicinity. The character of the mined areas, associated

mine-related buildings, and scrap yard is industrial, while the character of remaining portions of the project area is natural or pastoral.

The site's topography is comprised of flat lowlands in the bowl area surrounding the crash site and along the Stauffer Road near U.S. Route 30. Flat to moderately sloping (10-15 percent) landforms rise at the edges of the Bowl and north of Stauffer Road, and moderately sloping to steeply sloping (15-25 percent) landforms define the eastern portions and edges of the mined area. Some road-related embankments along Stauffer Road are sloped at approximately 3:1 and afford roadway viewers substantial vistas over the landscape. Refer to Figure III-4 for an exhibit showing the site's topography.

Vegetation patterns have an important impact on the characteristics of the landscape. The hemlock grove south of the crash site is an aesthetically beautiful and mature landscape. The characteristic vegetation of the uplands and the undisturbed areas is mixed northern hardwoods and softwoods. Native and non-native shrubs occupy the edges of fields and roadways. Rectangular patterns of grasses and rows of immature pines characterize inclined portions of previously mined areas. Farm fields contribute substantially to the region's strong pastoral character and are layered with organic patterns of hay and grain crops. The site's water features include constructed mine-related water and sediment ponds. They are typically geometric in shape and industrial in character.

### **Existing Visual Conditions**

The scale and influence of existing alterations is significant throughout the project area landscape. The cultural influence of the surrounding farmsteads, farm fields, and residential structures is pastoral, while the landscape modifications created by the scrap yard, mine-related industrial structures, unvegetated landforms, geometric water and sediment ponds, electrical lines, and mined area clearings are industrial in character. The stone and log residential structures associated with the hemlock grove are particularly high in aesthetic quality.

The open nature of the mined areas and central focus of the Bowl contribute minimally to visual absorption of industrial elements in the landscape. Moderate to high surface pattern variation of tree cover along the edges of the mined areas and beyond topographic ridgelines contributes substantially to visual absorption of modifications in those areas. The tree cover pattern is typically 45 to 70 feet in height. The

overall degree of naturalness or pastoral character and related quality of aesthetic elements in the surrounding landscape is high. The overall degree of naturalness or pastoral character and related quality of scenery of the mined area and mining-related structures is low.

### **Viewer Locations**

Three key observation points (KOPs) are identified as follows: 1) Temporary Memorial; 2) knoll near the draglines; and 3) intersection of US30 and the entry road.

**KOP 1** – Views of and from the Temporary Memorial are exemplified by the crash site to the south, draglines to the north, and farms, forests, and fields to the east. While the analysis was conducted at the Temporary Memorial, it is characteristic of the conditions experienced at locations throughout the Bowl. Due to its position in the Bowl and its close proximity to the Crash Site the view location at KOP 1 and its aesthetic environment are highly sensitive to change.

**KOP 2** – Views from the knoll near the draglines extend to a wide range of elements of the site and region. Visible is the Crash Site, Temporary Memorial, scrap and recycling operation, mining ponds, and 360 degree panorama of the landscape of the region. The view location at KOP 2 and its aesthetic environment are highly sensitive to change.

**KOP 3** – Views along US30, both eastward and westward, are comprised of a variety of pastoral landscapes and highway-related structures. Views from US30 toward the north and south contain elements of the mine area. The view location at KOP 3 and its aesthetic environment are moderately sensitive to change.

### **Context/Expectation**

**KOP 1** – The context of the Temporary Memorial represents the nature of visitors' connections with the crash site and with intimate memorial expressions of past visitors. Visitors to the Temporary Memorial anticipate foreground experiences consistent with a commemorative landscape and background experiences that borrow content and meaning from the farms, fields and forests of the rural countryside. The context/expectation at KOP 1 and its aesthetic environment are highly sensitive to change.

**KOP 2** – The context of views from the knoll near the draglines offers a rich diversity of elements of the site and region. Elevated positions



**View from U.S. Route 30 looking south toward the draglines**  
(Jason Cohn 2004)

such as this one are uniquely situated for visual exploration of the site and the varied expressions of landscape. Visitors to the knoll expect aesthetic experiences consistent with a commemorative landscape, with the ongoing reclamation of a coal strip mine, and with distant views of the farms, fields and forests of the rural countryside. The context/expectation at KOP 2 and its aesthetic environment are highly sensitive to change.

**KOP 3** – The context of views eastward and westward along U.S. 30 is that of roadway development, rolling forest and field landscapes, and a relatively high volume of vehicular traffic. Views from U.S. 30 toward the north and south contain elements of the mine area reclamation areas. Visitors traveling U.S. 30 foresee aesthetic experiences consistent with the built environment of the highway corridor and with the rural countryside. However, visitors to the memorial are anticipating a commemorate setting for the memorial so the context/expectation at KOP 3 and its aesthetic environment are moderately sensitive to change.

Table III-2 ranks the aesthetic sensitivity of the affected landscapes. Values were assigned based upon a relative scale of high, moderate, and low aesthetic sensitivity. The composite value for each KOP indicates overall sensitivity to changes in the landscape as a result of development of features of the national memorial, compared with typical Somerset County landscape viewing situations. Based upon these indicators, it is estimated that KOP 1 and similar locations within the Bowl are the most sensitive to change, followed closely by elevated positions such as KOP 2. KOP 3 is less sensitive to change than are KOP 1 and KOP 2.

## SOCIOECONOMIC CHARACTERISTICS

The socioeconomic characteristics of the 9-county region, including Somerset County, will be summarized based on U.S. Census data, the draft Somerset County Comprehensive Plan Update and *A Socioeconomic Atlas for Flight 93 National Memorial and its Region, 2004*.

### Demographic Profile

**Population.** In 2000, a total of 2,221 people lived in Stonycreek Township. This estimate is projected to increase 10.2 percent between 2000 and 2020, based on the draft Somerset County Comprehensive Plan Update.<sup>59</sup> Table III-3 summarizes the existing population and changes over the past decade for the 9-county region, and projects changes in population through 2020. As shown in the table, Somerset County has realized a 2.3-percent increase in population between 1990 and 2000, and is expected to continue to grow by only 1.5 percent during the next 20 years. Census estimates show 79,515 residents were living in Somerset County in 2004, compared with 80,023 in 2000.<sup>60</sup>

**Age Composition.** The median age of the Somerset County resident was just about 40 years. Seniors, 65 years and older, comprised 18 percent of the population in 2000. The county's Comprehensive Plan shows that many senior residents choose to remain in Somerset County, as the percentage of persons aged 85 years and older sharply grew by 369.4 percent between 1990 and 2000. Middle-aged residents in the 45-54 age group also increased 43.7 percent.<sup>61</sup> Based on the *Socioeconomic Atlas for Flight 93 National Memorial*, Somerset County is projected to see a 22.6-percent increase in its elderly population by 2020.

**Table III-2: Aesthetic Sensitivity of Affected Landscapes by Criteria, Key Observation Points and Sensitivity Values, Flight 93 National Memorial**

Criteria	KOP 1	KOP 2	KOP 3	Typical Somerset County
Existing Visual				
Condition	High	Moderate	Moderate	Moderate
View Location	High	High	Low	Moderate
Context/Expectation	High	High	Moderate	Moderate to High
Composite	High	High	Low to Moderate	Moderate

KOP=Key Observation Point.  
Source: The Office of Merlyn Paulson, Inc., April 2005.

<sup>59</sup>U.S. Census Bureau; BonData Service. Somerset County Comprehensive Plan Update, 2003, p. b-14.

<sup>60</sup>U.S. Census Bureau, Population Estimates Program. American FactFinder. <http://factfinder.census.gov>

<sup>61</sup>*Somerset County Comprehensive Plan Update*, Draft. July 31, 2003, pp. 2-3.

**Table III-3: Current Population, Changes in the 9-County Region, 1990-2020**

County	Population (2003)	Population Change (1990-2000)	Projected Population Change (2000-2020)
Bedford	49,941	4.3	5.7
Blair	127,175	-1.1	-3.0
Cambria	149,453	-6.4	-9.9
Fayette	146,121	2.3	3.3
Indiana	89,054	-0.4	3.1
Somerset	79,365?	2.3	1.5
Westmoreland	368,224	-0.1	2.1
Allegany, MD	73,668	0.0	-4.9
Garrett, MD	30,049	6.1	21.2
Pennsylvania	12,365,455	3.4	7.1
U.S.	5,508,909	13.2	21.1

<sup>1</sup>U.S. Census Bureau American FactFinder <http://factfinder.census.gov>. Data Set: 2004 Population Estimates.

Sources: U.S. Census Bureau, 2000 and *A Socioeconomic Atlas for Flight 93 National Memorial and its Region*, Woods & Poole, Inc. 2002.

**Table III-4: Median Age, Elderly and Racial Diversity in the 9-County Region, 2000**

County	Median Age (2000)	Percent of Elderly Population (65 & older)	Percent of Minority Population <sup>1</sup>
Bedford	39.5	16.5%	1.5%
Blair	39.5	17.4%	2.4%
Cambria	41.2	19.7%	4.2%
Fayette	40.2	18.1%	4.7%
Indiana	36.2	14.9%	3.1%
Somerset	40.2	18.0%	2.6%
Westmoreland	41.3	18.3%	3.4%
Allegany, MD	39.1	17.9%	7.0%
Garrett, MD	38.3	14.9%	1.2%
Pennsylvania	38.0	15.6%	14.6%
United States	35.3	12.4%	24.9%

<sup>1</sup>Minorities include African American, American Indian and Alaska Native and Pacific Islander, including Native Hawaiian, Hispanic and multiracial.

Source: U.S. Census Bureau, 2000 and *A Socioeconomic Atlas for Flight 93 National Memorial and its Region*, Woods & Poole, Inc. 2002.

**Table III-5: Somerset County Racial and Ethnic Diversity, 2000**

Race	Number	Percent of Total
White	77,938	97.4%
African American	1,275	1.6%
Native American and Alaska Native	65	0.1%
Asian <sup>1</sup>	178	0.2%
Hispanic <sup>2</sup> /Latino	532	0.7%
% Minority Pennsylvania		14.6%
% Minority U.S.		24.9%

<sup>1</sup>Includes Native Hawaiian and other Pacific Islanders.

<sup>2</sup>Hispanics may be of any race and are included in applicable race categories.

Source: U.S. Census Bureau. MapStats from FedStats. [www.fedstats.gov/qf/states/42/42111.html](http://www.fedstats.gov/qf/states/42/42111.html)

**Racial Diversity.** Approximately 2.6 percent of the county's population is minority. After whites, African-Americans represented the second racial group, with only 1.6 percent of the county's population, followed by Latinos and Hispanics. Table III-4 summarizes the median age and the racial diversity for the 9-county region. Table III-5 summarizes the racial and ethnic diversity within Somerset County, as reported in the 2000 Census.

**Income, Unemployment and Poverty.** Somerset County's annually adjusted unemployment rate for 2000 was 5.7 percent, which showed steady improvement from the 1980 and 1990 rates of 11.4 percent and 7.4 percent, respectively. However, 11.8 percent of the county's population was still living below poverty, which was greater than the State average but below the national average of 12.4 percent. Poverty in Somerset County dipped 2.5 percent in 1999 from 14.3



percent a decade earlier. Table III-6 shows the household and personal incomes, unemployment rate and poverty levels for the 9-county area.

Unemployment has steadily declined over the past 20 years. Most of the county's labor force works in management and professional level jobs (24.7 percent), followed by sales and office jobs (22.5 percent), and production, transportation, and material moving occupations (22.2 percent). Most of the resident workforce (74.2 percent) live and work in Somerset County.<sup>62</sup>

**Major Employers and Job Sectors.** Somerset County has historically been a supplier of raw materials, such as coal, sandstone and lumber. A shifting economy has led industry to change focus in order to provide more diversity in the industrial base. Table III-7 lists the top employers in Somerset County by number of employees.<sup>63</sup> Table III-8 shows the number of establishments by industry and the number of

employees for 2001 and the percentage change in these industries between 1997 and 2001.

Mining represents the greatest loss in both the number of establishments as well as the number of employees, whereas retail trade and manufacturing showed declines in employees but gains in the number of establishments. Agriculture, forestry and fishing showed the highest increases in both the number of establishments and employees.

Table III-9 shows the percentage of total earnings by industrial category within the 9-county region in 1999. Sales and Services, followed by Construction and Manufacturing, were the leading economic sectors. In Somerset County, the highest percentage of employment occurred in the Sales and Services sector (58%), followed by Construction and Manufacturing (21%), Government (13%) and lastly, Agriculture and Natural Resources (8%).<sup>64</sup>

**Table III-6: Household and Personal Incomes, Unemployment and Poverty in the 9-County Region, 1999**

County	Median Household Income	Personal Income	Percent Unemployed	Percent Property
Bedford	\$32,731	\$16,316	5.7	10.3
Blair	\$32,861	\$16,743	6.2	12.6
Cambria	\$30,179	\$16,058	8.8	12.5
Fayette	\$27,451	\$15,274	8.3	18.0
Indiana	\$30,233	\$15,312	8.2	17.3
Somerset	\$30,911	\$15,178	5.7	11.8
Westmoreland	\$37,106	\$19,674	5.1	8.6
Allegany, MD	\$30,821	\$16,780	8.9	14.8
Garrett, MD	\$32,238	\$16,219	5.6	13.3
Pennsylvania	\$40,106	\$20,880	5.7	11.0
U.S.	\$41,994	\$21,587	5.8	12.4

Source: U.S. Census Bureau data and *A Socioeconomic Atlas for Flight 93 National Memorial and its Region*, Woods & Poole, Inc. 2002.

**Table III-7: Somerset County Top Employers by Number of Employees, 2004**

Somerset Co. Top Employers by Number of Employees	Employees
Somerset Hospital	725
Fleetwood Folding Trailers	650
PBS Coals, Inc.	362
Gilmour Manufacturing Co.	361
Highland Tank & Manufacturing Co., Inc.	351
Windber Medical Center	350
CVS/Pharmacy Distribution	350
Snyder of Berlin	325
Sunrise Medical/Respiratory Products Division	300
Mincorp, Inc./PBS Coals, Inc./Roxcoal, Inc.	280

Source: *Directory of Industrial and Related Firms in Somerset County, Pennsylvania, 2004*. Published by Somerset County Economic Development Council and Somerset County Chamber of Commerce, p. 21.

<sup>62</sup>Ibid, pp. 2-6 to 2-7.

<sup>63</sup>Somerset County Chamber of Commerce Membership Directory & Community Profile, 2005, p. 23.

<sup>64</sup>Ibid, p. 26.

**Table III-8: Number of Establishments and Employees by Industry for Somerset County, 2001**

Industry Category	No. of Establishments 2001	Percent Change 1997-2001	Number of Employees 2001	Percent Change 1997-2001
Agriculture, Forestry & Fishing	42	35.5%	258	57.3%
Mining	41	-4.7%	877	-10.1%
Construction	232	9.4%	1,434	12.2%
Manufacturing	147	9.7%	5,137	-1.7%
Transportation & Utilities	186	8.8%	1,731	5.9%
Wholesale Trade	105	5.0%	1,075	4.4%
Retail Trade	460	6.0%	4,946	-2.5%
Finance, Insurance and Real Estate	130	6.6%	957	12.9%
Services	604	9.6%	8,413	5.2%
Public Administration	74	8.8%	2,062	14.9%
<b>TOTAL</b>	<b>2,021</b>	<b>8.3%</b>	<b>26,890</b>	<b>3.4%</b>

Source: Somerset County Economic Development Council, <http://www.scedc.net/work.html>. 2005.

**Table III-9: Percentage of Total Earnings by Industrial Category within 9-County Region, 1999**

County	Agriculture & Nat. Resources	Construction & Manufacturing	Sales & Services	Government
Bedford	5%	37%	44%	14%
Blair	1%	23%	61%	15%
Cambria	5%	18%	58%	19%
Fayette	3%	21%	59%	17%
Indiana	22%	15%	42%	21%
<b>Somerset</b>	<b>9%</b>	<b>25%</b>	<b>49%</b>	<b>17%</b>
Westmoreland	2%	32%	54%	13%
Allegany, MD	1%	23%	54%	23%
Garrett, MD	11%	20%	56%	14%

Source: *A Socioeconomic Atlas for Flight 93 National Memorial and its Region*, Woods & Poole, Inc. 2002.

**Local Government Structure.** Somerset County government is comprised of 25 townships and 25 boroughs. The County board is comprised of three county commissioners. Each township elects three township supervisors and each borough has a mayor, and a council of five to seven members.

**Tourism and Recreation.** An estimated 2.7 million visitors annually are estimated to visit the county.<sup>65</sup> Two major ski resorts (Seven Springs and Hidden Valley) are located in Somerset County, along with a system of heritage tourism sites and State parks and game lands. U.S. Route 30 is also known as the Lincoln Highway and was the first cross-country road. It is now part of a state heritage park that protects and promotes the corridor. Somerset County's domestic traveler market supports more than 4,000 jobs, most in the restaurant and lodging categories. The significance of the recreation and tourism industry to the local economy can

be indicated by the percentage of county workers the industry supports.<sup>66</sup>

Workers counted as recreation and tourism employees include country club managers, campground employees, fishing and water guides, motel attendants and other providers of recreation services. The percentage of total paid employees in arts, entertainment, recreation and accommodation services for Somerset County was 2.7 percent in 2001.

Somerset County assesses a hotel tax which is currently set at 3 percent. This tax reportedly generates from \$500,000 to \$700,000 per year. Approximately 40 percent of the tax income is distributed to the Somerset County Tourism Grant Program Committee for marketing and advertising, and capital improvement project that benefit local tourism. The remainder is divided between Somerset County and the Laurel Highlands Visitors Bureau and is used for similar purposes.

<sup>65</sup>Somerset County Economic Development Corporation. County Profile. <http://www.scedc.net/county>

<sup>66</sup>*A Socioeconomic Atlas for Flight 93 National Memorial and its Region*, Woods & Poole, Inc. 2002.

**Table III-10: Percentage of Total Paid Employees and Total Sales in Arts, Entertainment, Recreation, and Accommodation Services within 9-County Region, 2001**

County	Percent of Paid Employees	Percent of Total Sales
Bedford	3.9%	1.2%
Blair	1.7%	0.5%
Cambria	1.8%	0.6%
Fayette	7.6%	3.1%
Indiana	1.6%	0.7%
Somerset	2.7%	1.1%
Westmoreland	2.0%	0.6%
Allegheny, MD	2.4%	0.2%
Garrett, MD	7.2%	3.3%

Source: A Socioeconomic Atlas for Flight 93 National Memorial and its Region, Woods & Poole, Inc. 2002.

A high level of recreation/tourism employment indicates that the area attracts visitors and vacationers or those residents have more disposable income. The percentage of total sales in Somerset County from this service sector was 1.1 percent compared to 0.9 percent for the State.<sup>67</sup> Table III-10 shows the percentage of paid employees and total sales from the entertainment, recreation and accommodation services for all counties in the study area.

**Payments in Lieu of Taxes.** Public Law 94-565 (31 U.S.C. 6901-6907), commonly referred to as the Payments in Lieu of Taxes Act (PILT) provides certain payments from the Federal Government to local governments based upon the removal of land from the real estate tax rolls. The act authorizes the Secretary of the Interior to make annual PILT payments to local governments for entitlement lands and acquired lands. PILT payments are designed to supplement other Federal land receipt-sharing payments that local governments may be receiving. Payments are based on funding levels adopted by Congress.

#### Local Transportation Systems

**Roadways.** Somerset County contains 2,264 miles of roads, of which 30 miles consist of the Pennsylvania Turnpike (Interstate 70/76). The Turnpike traverses the width of the county with an interchange (Exit 110) located at Somerset. Stonycreek Township and Somerset County have installed temporary signs directing travelers to the memorial. These signs will be eventually replaced with standard National Park Service signs. Brochures provided at the Turnpike tollbooth, at the site, and on the project website direct visitors to take S.R. 281 from Somerset Borough to U.S. Route 30 to Lambertsville Road to the site. However, visitors follow a com-

ination of routes to reach the site. A brief description of those roadways is provided below.

U.S. Route 30, known as the Lincoln Highway, crosses the central portion of Somerset County. U.S. Route 30 is a state-owned and maintained two-lane, east-west principal arterial highway that crosses the state and connects Pittsburgh and Philadelphia. This highway was the first cross-country, all-weather highway in the United States. U.S. Route 30 provides access to major roadways, such as U.S. Route 219, U.S. Route 522, Interstate 70/76, Interstate 79, Interstate 81 and Interstate 99.

The average lane width of U.S. Route 30 varies from 10 to 11 feet in each direction in the vicinity of the memorial. The roadway and shoulder surfaces are bituminous and range from good to fair condition. Average shoulder widths vary from 5 to 10 feet. Speed limits are generally not posted; thus, a statutory speed limit of 55 mph is assumed. A 35-mph speed limit is posted for trucks on some steep grades and in the village of Buckstown, located east of the memorial. Weight restrictions are not posted.

East of the memorial, U.S. Route 30 widens to four lanes (two lanes in each direction) within the vicinity of Bedford Borough. The average lane width ranges from 10 to 11 feet in each direction and the shoulder widths average from 5 to 10 feet. The roadway and shoulder surfaces are bituminous and range from good to poor condition.

State Route 601 (S.R. 0601) is a state-owned and maintained three-lane (one travel lane in each direction and a center left turn lane) north-south major arterial roadway that runs through Somerset Borough. The average lane width of

<sup>67</sup>Ibid, pp. 46-48.

S.R. 601 is 15 feet in each direction for both travel lanes and the center left turn lane. Speed limits range from 25 mph between Patriot Street and the Turnpike ramp to 35 mph between the Turnpike ramp and the intersection with U.S. Route 219. There are no posted weight restrictions. The roadway surface is bituminous with concrete curb and gutter pan, and ranges from good to fair condition.

State Route 281 (S.R. 0281) is a state-owned and maintained two-lane, north-south minor arterial that connects Somerset Borough to U.S. Route 30. The average lane width for S.R. 0281 varies from 10 to 11 feet (in each direction) and average shoulder widths vary from 3 to 5 feet. Speed limits range from 15 miles per hour in school zones, to 35 miles per hour within the village of Friedens, to 55 miles per hour in the vicinity of the memorial (near U.S. Route 30). There are no posted weight restrictions. The roadway and shoulder surfaces are bituminous and range from good to fair condition.

U.S. Route 219 is a state-owned and maintained four-lane (two lanes in each direction) north-south limited access divided highway. The average lane width is 12 feet in each direction and the average shoulder widths vary from 5 feet to 11 feet. The roadway and shoulder surfaces are bituminous and are in good condition. Speed limits are posted at 65 miles per hour. Weight restrictions are not posted.

**Airports.** The Somerset County Airport, located off Route 281 near the village of Friedens in Somerset Township, lies approximately 6 miles southwest of the memorial. The airport is open to the public and currently serves turbo-prop commuter aircraft. The airport is primarily used for recreational flying, pilot training and flight instruction, law enforcement, military, air taxi, aerial photography/surveying and aerial inspections, environmental patrols, agricultural purposes and medical support services.

In 2003, 38 aircraft were based at Somerset, and 42 based aircraft are projected through 2020. Of these aircraft, 35 are single-engine, two are multi-engine and one is a business jet. The airport averages 59 flights per day, or a total of 18,050 annual operations, which are expected to remain stable through 2020. The primary runway is 4,697 feet long and the secondary runway is 2,695 feet in length. In February 2003, the PennDOT Bureau of Aviation conditionally approved an updated Airport Layout Plan

(ALP), which included a 300-foot runway extension. This extension would allow business aircraft, such as corporate jets, to operate at this airport. The end of the primary runway is about 5.5-6 miles from the memorial.

Indian Lake Airport, located about a mile to the east of the memorial, was constructed in 1966 as part of the Indian Lake resort community. The airport is a private facility that is not certified by the FAA, and has no aircraft based at the airport and no available services. The airport's primary runway is Runway 14/32, which is a paved 50 foot by 4,490 foot runway, with a 524-foot displaced threshold. In 1971, Allegheny Mountain Lakes Inc., the former owner of the community, sold the resort.<sup>68</sup> The airport was later closed in 1999. During a scoping meeting conducted in December 2003, the Mayor of Indian Lake commented that he would like to sell the Indian Lake Airport to an airport authority and reopen the facility. To date, the airport remains closed.

Seven Springs Airport, a public airport owned by the Severn Spring Airport Authority, is located at the Seven Springs Resort in Fayette County. The airport has one runway, Runway 10/28, which is 42 feet by 3,045 feet long, and serves as base for the single-engine aircraft owned by the resort.

The closest commercial airport is John Murtha Johnstown-Cambria County Airport, about 27 miles north of Flight 93 National Memorial in Johnstown and Arnold Palmer Regional Airport in Westmoreland County, about 29 miles west of Somerset Borough. The memorial is less than 2 hours from Pittsburgh International Airport.

**Rail.** Currently, Conrail and CSX Transportation provide freight service to Somerset County. The nearest passenger rail service is located in Johnstown.

#### **Land Use**

Somerset County is currently preparing an update to the County's Comprehensive Plan. The draft County Comprehensive Plan is a general policy guide for the physical development of Somerset County. The plan serves as a guide for the county's future and evaluates the existing land uses, transportation systems, housing, community facilities and services and natural and cultural resources. The plan also projects future growth trends, sets goals and direction for the townships and boroughs, and proposes land use and implementation strategies to accommodate



**Seven Mile Stretch of the Lincoln Highway** (Flight 93 National Memorial Area: Design & Development Concepts 2005)

<sup>68</sup>“Abandoned & Little-Known Airfields: Southwestern Pennsylvania,” [http://www.airfields-freeman.com/PA/Airfields\\_PA\\_SW.htm](http://www.airfields-freeman.com/PA/Airfields_PA_SW.htm).



**Somerset County farm**  
(Flight 93 National Memorial Area:  
Design & Development Concepts 2005)

the projected growth while balancing the county's resource values.

The draft County Comprehensive Plan gives policy guidance and direction toward establishing County regulations and codes in a manner that is consistent with the municipal comprehensive plans, as required by the Pennsylvania Municipalities Planning Code. The draft Comprehensive Plan identified the following goals that apply to Flight 93 National Memorial:

- Expand zoning/land use controls and update existing codes to control commercial development along the Route 219 and U.S. Route 30 corridors
- The creation of a National Park Memorial for Flight 93 could have a positive impact on the county's tourism economy. However traffic and land use ramifications for the Shanksville and Somerset areas would likely occur as well.<sup>69</sup>

The draft County Comprehensive Plan set forth Ten Key Initiatives to "spur new economic opportunities and enhance quality-of-life..." Initiative 7 addresses zoning and land development ordinances. This initiative established a goal "to ensure that new development conserves and maintains the positive character qualities of the County and its landscapes and to provide for growth which is consistent with infrastructure investments."

The Somerset County Planning Commission, with the assistance of the Pennsylvania Environmental Council, is preparing a corridor planning study of the major routes between the Somerset turnpike interchange (Exit 110) and the Flight 93 National Memorial to understand the types of development that could occur in the vicinity of the park. The study will evaluate Routes 281, 219 and U.S. Route 30 and the potential for residential, commercial and other development along the highway corridor and recommend strategies for "encouraging economic development while keeping the rural character of the area intact."

Stonycreek Township, Shade Township and Somerset County do not have land use regulations in place near the memorial at this time. More than 90 percent of the land area in Somerset County is classified as undeveloped, of which 63.4 percent is forested and 35.6 percent is agricultural.<sup>70</sup> The rural character and aesthetic quality of the county is changing as a form

of suburbanization, sprawl and mixed development is occurring, particularly in Somerset Township and around the turnpike interchange. The proliferation of windmill power farms is also affecting the county's scenic qualities and rural character.

Land uses along U.S. Route 30 through the northern portion of the site include residential, communications and mining uses. Land north of U.S. Route 30, is owned primarily by Berwind Coal Sales Company, and is currently under reclamation. In 2004, a cell tower was erected immediately north of U.S. Route 30.

Camp Allegheny, a United Methodist church camp, lies adjacent to the east side of the memorial boundary along U.S. Route 30. The camp offers year-round facilities and programs for children, youth and adults. Facilities include a large camp center, a sports center hosting basketball, volleyball and other large group activities, and eight lodges or cabins available for groups and families during their stay at Camp Allegheny. The closest commercial establishments are Duppstadt Country store to the east, at the intersection of Buckstown Road and U.S. Route 30, and Castagna's restaurant at the western boundary of the memorial along U.S. Route 30.

Indian Lake Borough is located to the east of the site, off State Route 160, south of U.S. Route 30. The community is comprised of 750 acres with 20 miles of shoreline that supports boating, fishing, swimming, and water skiing. Indian Lake was originally built as a resort community on a 5-mile long horseshoe lake, and offers two golf courses, a lodge and restaurant and a marina.

Single-family residences, pastureland and farms are the predominant land uses along Buckstown and Lambertsville roads. Most of the property adjacent to the west side of the memorial is residential. Highland Tank & Manufacturing Co., Inc. is located at the intersection of Lambertsville Road and U.S. Route 30. This industrial land use occupies both sides of Lambertsville Road.<sup>71</sup> Immediately south of the memorial lie several residential properties in wooded areas through which Grove Run flows. In 2004, a game hunting preserve for wild boar and deer was established on land adjacent to the crash site. Another deer farm (Stonycreek

<sup>69</sup>Somerset County Draft Comprehensive Plan Update, July 2003, p. E-10.

<sup>70</sup>Ibid, p. 2-II.

<sup>71</sup>ERM. *Final Closure Report, Flight 93*, 2002, p. 4.

Whitetails) is situated on 160 acres on Stutzman-town Road southwest of the memorial.

Wind farms are proliferating throughout Somerset County and southwestern Pennsylvania. Existing projects include 6 wind turbines south of the Pennsylvania Turnpike, which are 330 feet tall and serve about 3,400 homes, and 8 wind turbines near Garrett in the southern part of the county. Numerous other wind farms planned near the memorial include a 23 wind turbine project in northern Somerset County.

Stonycreek WindPower LLC is a 65-megawatt project located in central Somerset County, supplying energy to the PJM Interconnection LLC. The project is currently configured for up to 40 or more wind turbine locations, is fully developed and permitted, and is expected to be operational at the end of 2006. The wind turbines are 387 feet above ground level (agl). Other components of the project include a new substation and local road/distribution line upgrades and an onsite meteorological tower with a height of 262 feet agl. The estimated annual 170,000 MWh of energy generated will interconnect with the PJM grid through the 115 kV Somerset-Allegheny transmission line owned and operated by the Pennsylvania Electric Company (Penelec).

Forward WindPower LLC is a 30 MW project to be located in northern Somerset County, supplying energy to the PJM Interconnection LLC. The project is currently configured for 23 wind turbines and should be operational by the end of 2006 or early 2007. Like the Stonycreek WindPower Project, this project will include a new substation and local road/distribution line upgrades. The estimated annual 115,000 MWh of energy generated will interconnect with the PJM grid via the 115 kV Hooversville-Central City transmission line owned and operated by the Pennsylvania Electric Company (Penelec). Gamesa Energy and St. Francis University submitted plans for a 5- to 10-turbine wind farm north of U.S. Route 30 in Reels Corner in Shade Township.

In December 1997, Somerset County adopted an ordinance, establishing setback and decommissioning requirements for wind and communication towers. This ordinance also conditionally exempts leases of these towers from a subdivision plan while filing a nonresidential development plan. In January 2005, the county amended

this ordinance to require developers to obtain waivers from adjacent property owners before building wind turbines or cell towers within a set distance of those properties. The County Commissioners decided that a proposed 3,000-foot setback was too restrictive and settled on a formula that takes into account the height of the structure. Based on the height of the wind turbines, setbacks would range between 990 and 1,320 feet.

### Public Health and Safety

**Hazardous Materials.** Because of the industrial nature and the historic mining activities that occurred at the memorial site, hazardous materials and contaminants were found on site. Some of these materials and conditions will be addressed as part of the final mining reclamation of the site. The more prevalent hazardous materials<sup>72</sup> include:

- Arsenic, caused by the disturbance of heavy metals during mining, is typically found in areas where strip mining has occurred. During a Phase I Environmental Site Assessment, arsenic levels were detected in three soil samples, located within the Bowl. Of the 10 soil samples collected within the boundary, three samples confirmed the presence of arsenic. One (SS-8) sample showed the arsenic level was 14 ppm, which exceeds the residential Statewide Health Standard (rSHS) of 12 ppm. SS- 6 detected arsenic at a concentration of 10 ppm and SS-7 revealed concentrations of 12 ppm, which is equal to the rSHS. The effects of these conditions are addressed in Chapter IV-Environmental Consequences.
- Pole-mounted and ground-mounted transformers were observed throughout the site. Transformers have the potential to contain PCBs, though no staining was visible in proximity to these transformers.
- Soil staining was observed throughout the Long-T area, and numerous 5-gallon buckets of lubricating oil on a pallet were observed leaking in this area. Staining was also observed near a valve protruding from secondary containment situated under five 275-gallon aboveground storage tanks containing lubricating oil. Surface staining was also observed throughout the Long-T area most likely due to equipment and maintenance use.

<sup>72</sup>RT Environmental Services. *Flight 93 National Memorial Phase I Site Assessment*, May 2004.

- Numerous 55-gallon drums were observed in the Diamond-T area. These drums are being removed as part of the reclamation activities. A few of these drums contained oil filters and were discharging oil to the surface. A burn pit area was also observed in proximity to the truck wash garage in the Diamond-T area. The type of materials burned in this area was not identified. Some surface staining from equipment and maintenance was observed inside the bucket shop/weld shop in the Diamond-T area.
- A fill port and vent pipe for an underground storage tank was observed behind the bucket shop/weld shop. This UST was most likely used for heating oil. PBS reported that six underground storage tanks were properly removed and a closure report filed.
- A number of treatment ponds are located throughout the subject property.
- Bonds for the PBS coal mining activities at the site had been planned to be released in March of 2003, but seepage was noted and further treatment was required. Pond 25-5, which had been planned for closure but will remain open due to debris findings from the crash, also held up release of the bonds. The Department of Environmental Protection has indicated that many of the treatment ponds onsite will need to remain for perpetual treatment. There are also seeps associated with the Longview Mine.
- Draglines contain PCBs, heavy metals and other contaminants.
- Acid mine drainage which drains from the mines.

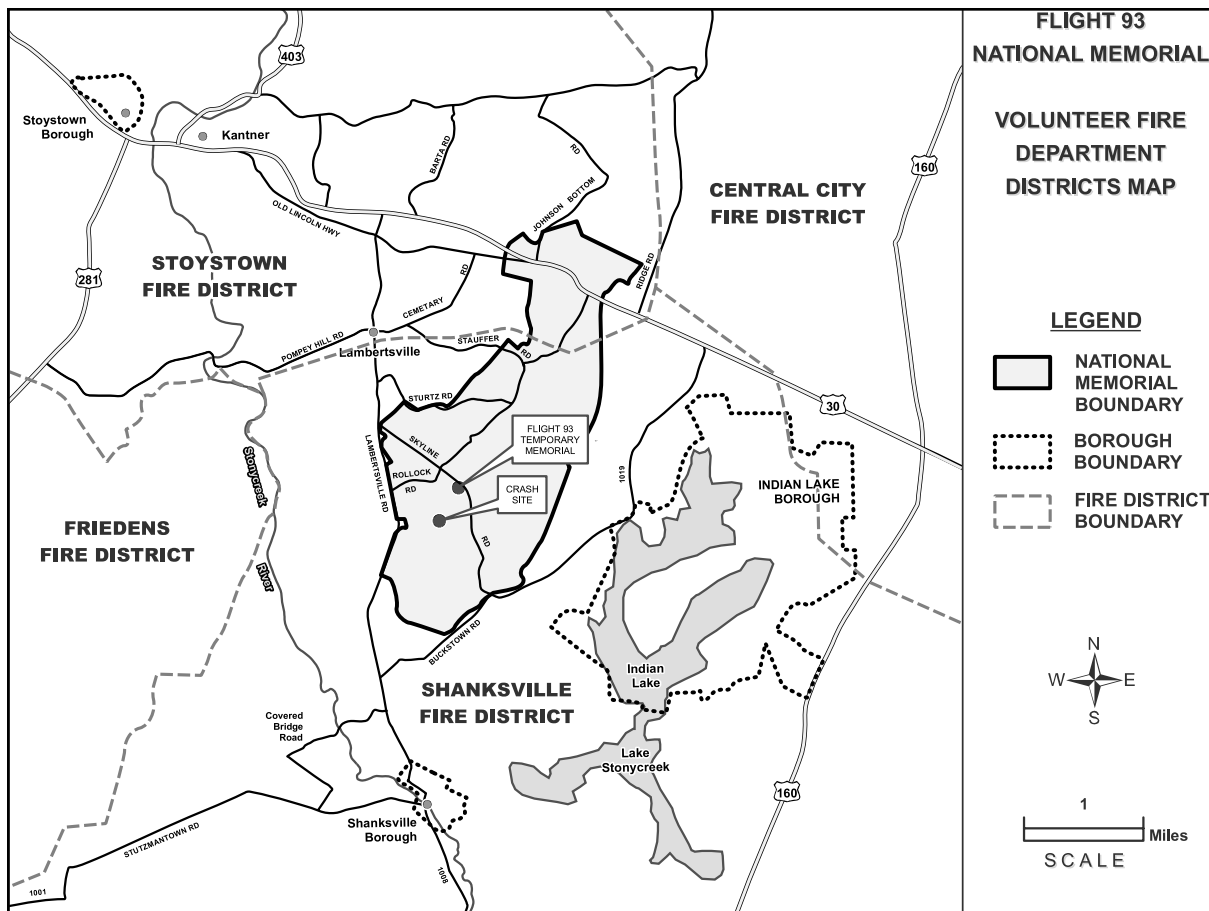
**Roadway Accidents.** Accident data provided by the PennDOT were reviewed for the section of U.S. Route 30 extending from approximately 3,000 feet west of the proposed memorial entrance to about 2,000 feet to the east of the entrance. A total of nine (9) accidents occurred on this segment of S.R. 0030 during 1999- 2001. All nine accidents involved hitting a fixed object, with no apparent pattern. Compared with statewide averages, this segment of the roadway is about 40 percent below the accident intensity average for rural undivided highways.

During public meetings conducted by the National Park Service, local residents voiced concerns that this portion of U.S. Route 30 is dangerous and that many accidents are unreported. Although this anecdotal information cannot be corroborated, it is clear from the roadway alignments, sight distances, and vehicle-truck traffic mix that the area presents many potential safety issues, especially during inclement weather. In August 2005, a fatal accident occurred adjacent to the memorial along U.S. Route 30 when a car attempted to access the roadway and was struck by an oncoming truck. The Commonwealth of Pennsylvania has provided Somerset County with funding to conduct a study of U.S. Route 30 and the other routes leading to the memorial to identify necessary safety improvements given the introduction of visitor traffic. The specific location of the entrance road and necessary intersection and roadway improvements will be identified in this study.

**Emergency Response Services.** The Department of Emergency Services, Somerset County Control 9-11, is the local Emergency Management Agency and is located in Somerset Borough. The 9-11 center is staffed 24 hours-a-day, year-round. The 9-11 office has 12 full-time and 5 part-time personnel that serve as dispatchers.

Security at the crash site is currently provided by the Somerset County Sheriff's Deputies. The Pennsylvania State Police provide general police protection at the site and the Shade Township Police Department is responsible for the areas north of US Route 30. Flight 93 National Memorial is primarily served by the Stoystown Volunteer Fire Department from the north and the Shanksville Volunteer Fire Department from the south (Figure III-9). Other local fire departments that serve Stonycreek Township include Central City Volunteer Fire Company, Friedens Volunteer Fire Company and Berlin Volunteer Fire Company.

**Figure III-9: Flight 93 National Memorial Volunteer Fire Department Districts**



Source: Somerset Co. 9-11 Office. Prepared by The EADS Group, June 2005.

**CONTEMPLATED FUTURE ACTIONS**

Other plans that are being prepared by Federal, State and local governments are identified in this section. These plans are noted to build a solid foundation for identifying cumulative impacts, or those impacts that result from past, present and reasonably foreseeable future actions. The county has presented the following listing of planning, recreation and open space projects that are expected to occur during this planning period. These plans and projects include, but are not limited to—

- Completion and adoption of the Somerset County Comprehensive Plan Update
- Southern Alleghenies Regional Greenways and Open Space Network Plan
- Flight 93 National Memorial Corridor Planning Study
- Allegheny Ridge Heritage Area
- Lincoln Highway Heritage Corridor
- Route 219 Corridor Improvement
- Shanksville Borough Sewage Plan
- Opening of a major new underground mine on Stutzmantown Road in Somerset Town-

ship, including reopening of railroad siding and Cambria Fuel cleaning plant near Shanksville.

Wind farm proposals, including Gamesa Energy confirmed plans to build 5 to 10 wind turbines north of U.S. Route 30 in the village of Reels Corner, Shade Township by 2006-2007. Reel’s Corner is about 2.5 miles east of the memorial. Other proposed wind farms in Somerset County include Keystone Wind in Somerset Township, and Stony Creek in Stony Creek Township.

The Somerset County Airport recently completed a master plan update addressing a proposed 300-foot runway extension, bringing the runway length to 5,000 feet. This extension would allow for larger twin-engine and corporate jets to operate at the county airport. Flight 93 National Memorial is located about 5.5 miles northeast of the airport.