

THE CORNELIA & FLORENCE BRIDGE PRESERVE

MASTER SITE PLAN



FEBRUARY 2010

DRAFT

THE CORNELIA & FLORENCE BRIDGE PRESERVE MASTER SITE PLAN

PLAN PREPARED FOR:

DINGMAN TOWNSHIP
118 FISHER LANE
MILFORD, PA 18337

MILFORD TOWNSHIP
560 ROUTE 6 and 209
MILFORD, PA 18337

PLAN PREPARED BY:

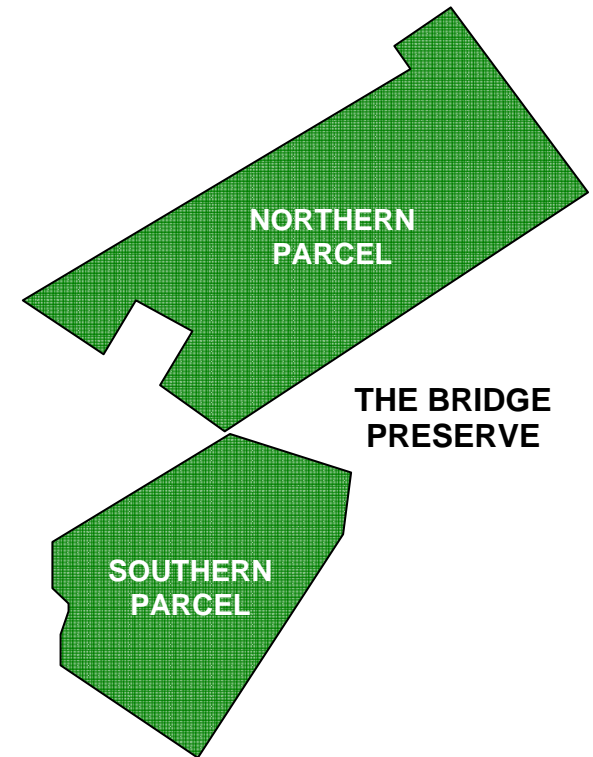
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Thomas J. McLane, R.L.A., A.S.L.A.

Signature: _____



FUNDING PROVIDED BY:

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Special thanks to all master site plan participants — especially members of the study committee — who donated their time, offered their ideas and provided constructive criticism to the consultant over the last several months. The completion of this master site plan was greatly facilitated by their efforts. Additional thanks is extended to representatives from several state and county regulatory agencies for their professional advice during the master site plan process. They include the Pike County Planning Commission and Conservation District, the PA Game Commission, PA Department of Conservation and Natural Resources, PA Bureau of Forestry and PennDOT.

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Sandy Leiser

Field visits by county and state agencies helped assure the master site plan had the least impact on current environmental conditions. Agency representatives helped answer questions related to trail layout, wetland and stream encroachment, required permits, species of special concern and trail head access. Their advice helped produce a passive plan with low environmental impacts.

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EXECUTIVE SUMMARY

Through donation, Dingman Township became the current owner of the 317-acre Bridge Preserve in 2007. Historic Route 6 bisects the preserve and essentially splits the property into two parcels – a 250-acre parcel north of Route 6 in western Milford Township and a 67-acre parcel south of Route 6 in northeastern Dingman Township. Although development is common along the Route 6 corridor, the parcels remain primarily forested and show little signs of human-induced degradation or man-made structures on the site. A small 0.3 acre pond was built in the northern parcel and remnants of an old single-room schoolhouse and a few billboards are present along Route 6.

Dingman Township, in conjunction with Milford Township, decided to undertake the master site plan process to help assure the preserve will reach its full potential as a community asset and destination. Dingman Township formed a well-rounded Study Committee comprised of residents from both Dingman and Milford Townships to facilitate and develop a more inter-municipal plan for the Preserve.

Charles Bridge, the previous owner, had a few specific visions and requests for the parcel, that centered on honoring his late wife and mother and meeting their dreams for the land. First and foremost, he requested the property be named the Cornelia & Florence Bridge Preserve. Secondly, he wanted to protect and preserve the property for future generations. Lastly, the preserve would allow public access and its amenities would facilitate public enjoyment of the natural world. In addition to these requests, the input obtained from the study committee and key person interviews also helped develop and define the goals of the Preserve. They include the following: adequately honor the Bridge Family; follow conservation, preservation and limited development principals; promote passive recreation and environmental education; utilize creative, simple and effective park design solutions; design for low maintenance; have compatibility with surroundings and existing recreation facilities; and promote regional connectivity.

The Bridge Preserve fits very well into the overall park and open space system. It expands the public land footprint and may become a viable link that extends the reach of the regional trail network. The preserve provides a rare opportunity to connect state lands to municipal land via trail linkages. Additionally, the Bridge Preserve will help address a needed amenity — single track trails for hiking and mountain biking. The Huckleberry Trail is a key link and it currently runs from the Savantine Creek corridor along the Bridge Preserve to

the Pike County Park. The Huckleberry Trail is part of a larger trail system that connects the Delaware State Forest to the State Game Lands and even to federal lands along the Delaware River.

In general, the main community needs satisfied by the Bridge Preserve include land conservation, watershed protection, environmental education, recreation-based tourism, and passive recreation. More specifically, improvements proposed for the Bridge Preserve include:

- New trail network with regional connections
- Installation of a small gazebo in the northern meadow area
- Educational signage/kiosks at important natural or historical features
- New trash receptacles and a few picnic tables near Sawkill Pond
- New viewfinder along Sawkill Pond to observe the Bald Eagle nest.
- Removal of invasive species that dominate several areas in both parcels
- Low impact and sustainable parking lots
- Tree identification tags for nature trail
- Install rustic wooden log benches along trails
- Wildlife viewing area/bird blinds in the southern meadow
- Directional, safety and regulatory signage

The estimated costs, without any in-kind or volunteer donation, is \$70,307.50 for the northern parcel and \$62,125.00 for the southern.

The Dingman Township Recreation Board is charged with overseeing the recreational activities sponsored by the Township and as expected it will oversee maintenance and operation at the Bridge Preserve. Monitoring and maintenance at the preserve will be centered around five main areas: 1) the trail system, 2) the parking areas, 3) the meadow and grass areas, 4) the installed amenities like signage and structures, and 5) natural features and habitat management. The township or volunteers should at a minimum complete two site walk-throughs each year. The site visits should thoroughly observe the following: existing drainage and sheet flow patterns; any areas of erosion, washouts, pooling water, soft conditions, rill formation and /or sedimentation (the end product of erosion); the integrity of trail features like rock armoring and logs; location of downed trees, hazardous trees and branches or roots within the trail ceiling or tread; signs of vandalism by ATV's on the trail tread or damage to amenities; health of newly planted vegetation and the growth of restored trail segments; any litter and/or illegal dumping; and any signs of vandalism to preserve signage. Anticipated annual maintenance should include, trash removal, trail repair, snow removal from trail heads, mowing of maintained lawn areas, and grading and resurfacing of the parking areas. Estimated combined costs for the maintenance for both parcels is approximately \$5,156.00 per year.

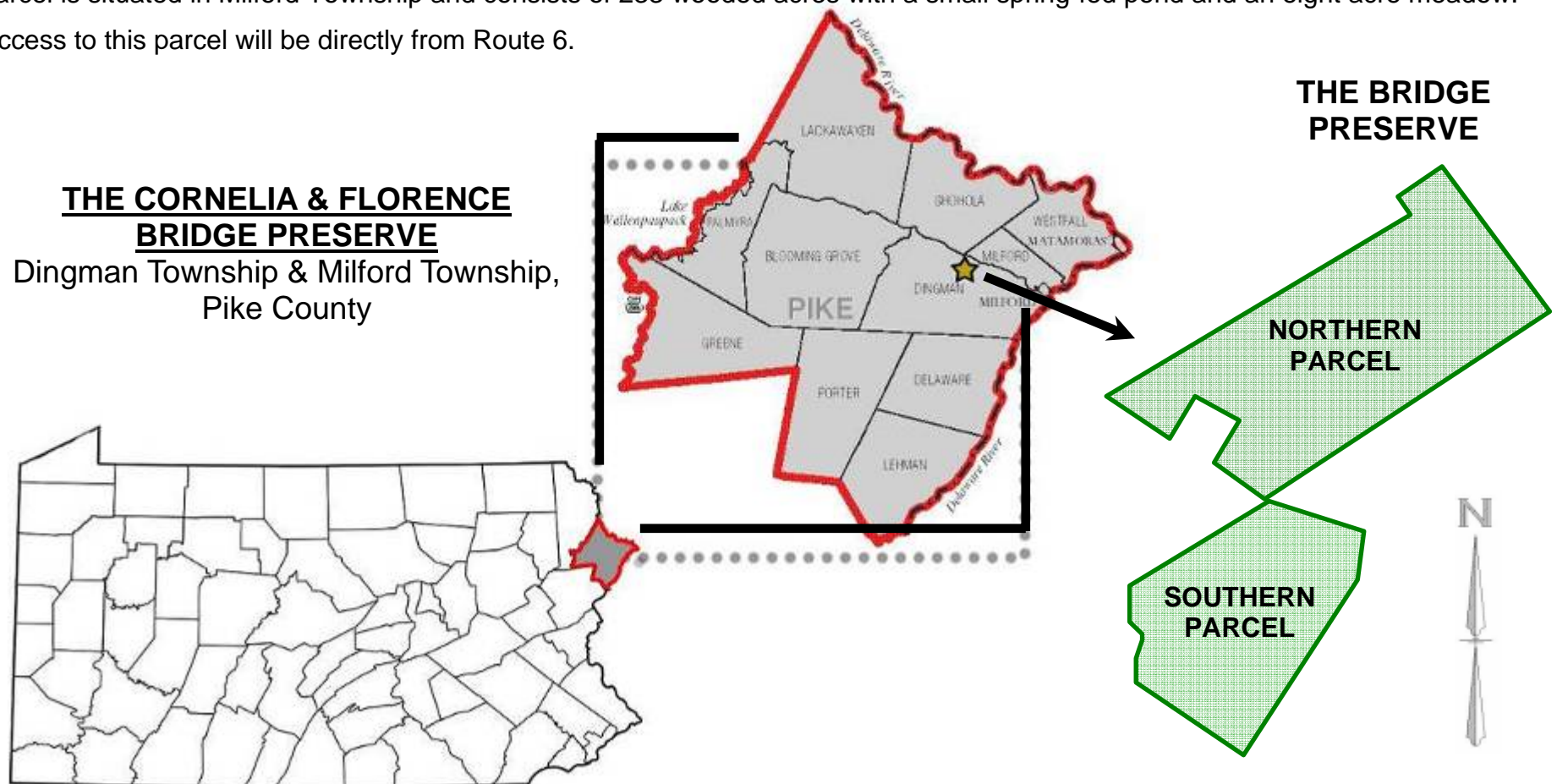
SECTION A

SITE INTRODUCTION



PROPERTY LOCATION AND OVERVIEW

The Bridge Preserve is easily accessible for both local residents and for tourists. Historic Route 6 bisects the preserve and essentially splits the property into two main parcels – one in western Milford Township and the other in northeastern Dingman Township. Throughout this document, the parcels will be referred to as the Northern and Southern Parcels, respectively. The approximately 66 acre parcel to the south is primarily wooded with a large open meadow in the interior, 400 feet of frontage on Sawkill Pond, and a 1000 linear foot section of Sawkill Creek (an Exceptional Value stream). Access to the parcel is from Sawkill Road (SR2011). The northern parcel is situated in Milford Township and consists of 233 wooded acres with a small spring-fed pond and an eight acre meadow. Access to this parcel will be directly from Route 6.



PROPERTY OWNERSHIP

Through donation, Dingman Township is the current owner of the Bridge Preserve. Charles Bridge, the previous owner, placed a conservation easement on the property prior to its donation. The easement was facilitated by the North American Land Trust. The Pike County Open Space, Greenway, and Recreation Plan (2008) describes a conservation easement as “a way for a landowner to permanently protect the environmental or agricultural value of his or her land while continuing to own it. It is a legal agreement between a landowner and a government agency or nonprofit organization that permanently limits development of the land, preserving it for its environmental or agricultural value.”

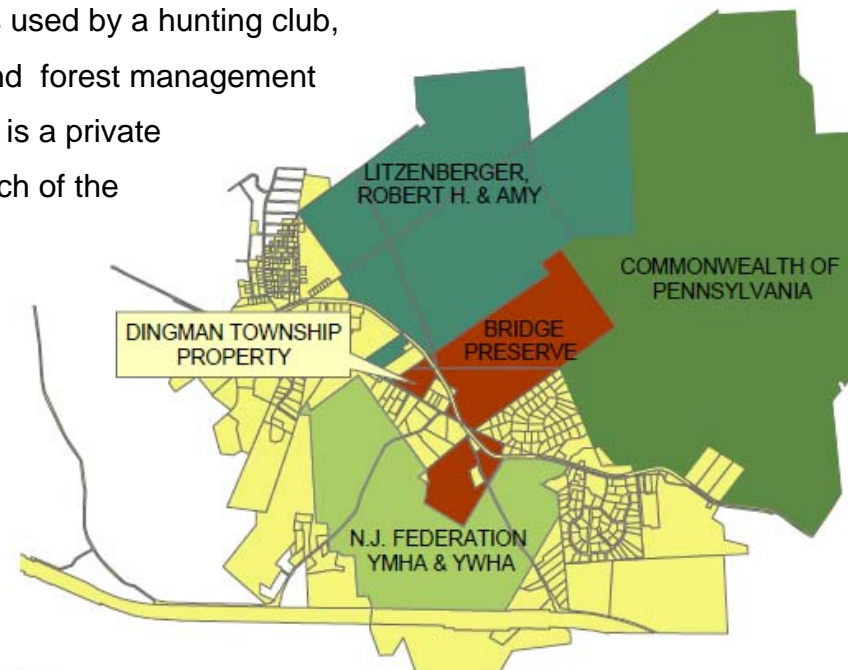


The adjacent parcels to the Bridge Preserve are either privately owned or state-owned. The large tract of state-owned land to the east and northeast is the Delaware State Forest and the Pike County Park. The Litzenberger family shares a boundary with the Preserve to the NNW. The property is used by a hunting club, has several private trails and follows several land conservation and forest management practices. The major adjacent land owner for the southern parcel is a private camp called the New Jersey Y Camp. Their property includes much of the Sawkill Pond. The remaining land owners are single family residential, including the Hickory Hills Development. This master site plan intends to respect the privacy of these neighbors by placing amenities and trails away from their property lines.

A substantial property line buffer will benefit Preserve users as well as adjacent landowners. The buffer will help retain the quiet, scenic nature of the Bridge Preserve and it may actually increase the property values of adjacent landowners.

Legend

- Private Camp
- State Lands
- Bridge Preserve
- Large Private Landowner
- Residential



MASTER SITE PLAN PURPOSE AND PROCESS

The property of interest was donated to Dingman Township for use as a preserve by the previous owner through a conservation easement. Dingman Township, in conjunction with Milford Township, then decided to undertake the master site plan process and develop a planning document that will better define what the preserve will become and help assure the preserve will reach its full potential as a community asset and destination.

Once completed, the Bridge Preserve master site plan will facilitate and guide any future passive-based and environmentally sound development on the property. The master site plan process also gives the public an opportunity to voice their opinions about how the property should be used including the type of amenities, educational opportunities and overall trail layout.

The Master Site Plan is being jointly funded by Dingman Township and PA DCNR. The state funding is through a grant from the Community Conservation Partnerships Program, Keystone Recreation, Park and Conservation Fund, under the administration of the PA DCNR's Bureau of Recreation and Conservation.

In general, the master site planning process compiles background information, assesses site assets and constraints, incorporates public input through several techniques like public hearings and critically reviews alternative concepts for the site. The process includes the completion of a site inventory and analysis of existing natural and manmade features, identifies conflicts with adjacent land uses that may hinder implementation and develops alternative concepts. Additionally, and of importance to the Bridge Preserve, the process identifies local trail connections, trail access points, trailheads and key pedestrian destinations including; historic, cultural, natural, recreational and commercial areas.

Basically, the end product of the master site plan process is a long-range, phased consensus planning document. PA DCNR views master site plans as “a research, public input and an analysis process that leads to a size type and location plan for the full development or redevelopment of a park site.”

PA DCNR oversees the master site plan process and they dictate the general components that the plan's Scope of Work (SOW) should include. For example, the plan should verify that all proposed facilities meet current standards, identify the recreation needs and priorities of the community, and provide a relatively accurate cost estimate for feasible amenities. PA DCNR strives to advance the greening of Pennsylvania, to protect the Commonwealth's natural and heritage resources, and to provide recreational opportunities for all Pennsylvanians and visitors to enjoy. The Bridge Preserve does parallel the mission of PA DCNR.

BRIDGE PRESERVE MASTER SITE PLAN																																							
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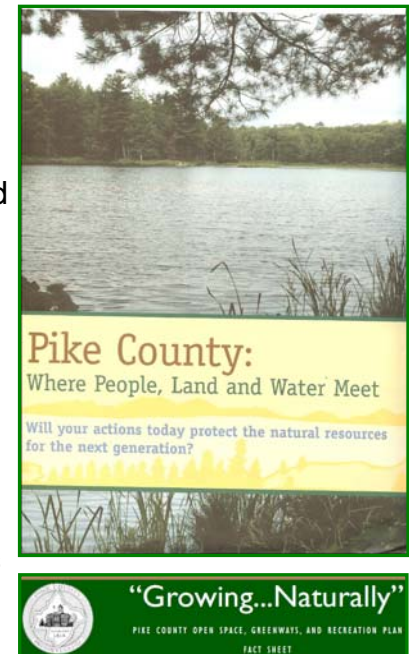
BRIDGE PRESERVE GOALS

Charles Bridge, the previous owner, had a few specific visions and requests for the parcel; they centered on honoring his late wife and mother and meeting their dreams for the land. First and foremost, he requested the property be named the Cornelia & Florence Bridge Preserve in their honor. Secondly, he wanted to protect and preserve the property for future generations. Lastly, the preserve would allow public access and its amenities would facilitate public enjoyment of the natural world. Dingman Township with the help of Milford Township aims to meet all of these requests.

The over arching goal of the Bridge Preserve is to preserve the existing parcels of land and to promote only environmentally sound and sustainable development on the property. In addition to land conservation, other goals for the property include promotion of passive recreation rather than active recreation and the inclusion of environmental education opportunities. The new hiking and biking trails outfitted with interpretive signage will traverse the varying terrain throughout the property, however, they will avoid sensitive areas. The Bridge Preserve goals also adhere to Pike County's motto of "Growing...Naturally," and the preserve itself really can become a place "where people, land and water meet."

Active Recreation Areas can vary greatly in their size, the activities they offer and in the initial and ongoing expense to construct and maintain the activities. Typical components that characterize Active Recreation Areas include athletic fields, concession stands, athletic courts, paved pathways, large children's play areas, and even buildings for restrooms, indoor activities and offices.

Conversely, a **Passive Recreation Area** is generally defined as an undeveloped space, a minimally improved parcel or an environmentally sensitive area that requires minimal development and strives to protect, conserve and/or enhance the health and well-being of the public, the local wildlife and/or the natural environment. Typically, a passive recreation area offers low-impact, non-motorized activities, and provides interpretive/educational signage and amenities like trails that foster and facilitate appreciation and understanding of the benefits of natural, open spaces (<http://www.uslegal.com>).



PA DCNR does not yet have finalized definitions for passive recreation or a passive recreation area. They do acknowledge that most passive recreation areas require minimal development with minimal impact on the environment. Additionally, PA DCNR does consider several elements as “passive recreation.” Examples include:

- Wildlife viewing areas, landscaped areas and natural areas
- Biking and hiking trails
- Quiet places for reading and relaxing
- Sensory gardens (where children can touch, smell, taste plants)
- Watershed, wetland and/or critical habitat protection
- Night sky viewing
- Activity areas that invite creativity and imagination that may include boulders for climbing, streams for discovery, open meadows with trails, large trees and other natural features for hide-and-seek and unstructured games.
- Nature trails with interpretive signage
- Water trails for canoeing
- Butterfly gardens and native plant gardens
- Water fountains
- Environmental education
- Open spaces for impromptu play

Following the goals of conservation and the basic components of passive development, the master site plan for the Bridge Preserve will aim to produce a design that is simple, yet creative, and as low maintenance as possible to ensure that the integrity of the land remains intact. To restate, the Bridge Preserve goals are as follows:

BRIDGE PRESERVE GOALS:

- Adequately Honor the Bridge Family
- Conservation, Preservation and Limited Development
- Promote Passive Recreation and Environmental Education
- Creative, Simple and Effective Park Design Solutions – Low Maintenance
- Compatibility with Surroundings and Existing Recreation Facilities

PROJECT COMPATIBILITY WITH PREVIOUS PLANNING EFFORTS

The current planning efforts and the subsequent future passive-based development at the Bridge Preserve supports several of the planning efforts within Pike County.

First and foremost, the planned passive recreation at the Bridge Preserve is compatible with the Conservation Easement developed by the North American Lands Trust (2007), and the wishes of Mr. Charles Bridge.

PA DCNR's Action Plan places priority on building sustainable and attractive communities, promoting recreational activities, utilizing cooperative planning and extensive public participation, demonstrating sound land use planning practices, and enabling citizens and visitors the ability to experience the outdoors. The Bridge Preserve addresses all of these priorities.

Additionally, the plan is compatible with the mission of the Route 6 Scenic Byway, the Pike County Comprehensive Plan (2006), the Dingman Township Comprehensive Plan (1999), the Milford Borough/Milford Township Joint Comprehensive Plan, the Pike County Open Space, Greenways & Recreation Plan (2008), Pike County Park Master Site Plan (2000), The Sawkill Creek and Vandermark Creek Watershed: A Rivers Conservation Plan (2005), and the Milford Water Authority's Source Water Protection Plan (2006). Some of the more important planning efforts and how they relate to the Bridge Preserve are discussed below.

The North American Land Trust

The Bridge Preserve property is under a conservation easement through the North American Land Trust and it is paramount that this master site plan and the preserve continues to meet the North American Land Trust's expectations. The Pennsylvania Land Trust Association seeks to protect Pennsylvania's special places and landscapes for today and for generations to come (<http://conserveland.org>). In our assessment, the master site plan does adhere to the conservation easement requirements regarding development.

Pike County Open Space, Greenways, and Recreation Plan

Pike County, in conjunction with Gannett-Fleming Inc. & Toole Recreation, completed the Open Space, Greenways and Recreation Planning Project in January 2006. One initiative of this plan was to organize the county into multi-municipal planning regions and then develop multi-municipal plans for regional parks, trails and local parks and recreation facilities. Dingman Township and Milford Township are grouped along with Milford Borough, Matamoras Township and Westfall Township in the River Gateway Region. The Bridge Preserve Master Site Plan does represent an effort to adhere to the Open Space, Greenway, and Recreation Plan's initiative of multi-municipal planning. The Bridge Preserve is one step towards Pike County's goal of preserving undeveloped tracts of land and its "Growing...Naturally" motto. Hopefully visitors of the Bridge Preserve will see the importance of land preservation and this will facilitate additional land conservation easements.

Pike County Park Master Site Plan

Pike County developed a master site plan for a new county-run park in 2000. The land is leased from the Commonwealth of PA and it is located adjacent to the northeast property boundary of the Bridge Preserve. Their main goals were as follows: to enhance and create outdoor recreation and environmental education opportunities for Pike County residents and visitors; to conserve the visual beauty and diverse natural resources of the site; and to enhance public interest in, and support for, the Pike County Park as a community resource. Another goal of the Pike County Park was to create interpretive trails and formal natural education sessions. The goals for the Bridge Preserve parallel the goals for the Pike County Park plan. Sharing a property border creates many opportunities to connect the two sites through pedestrian trails and bike paths. The Huckleberry Trail has the potential to connect the Bridge Preserve property with the Pike County Park and these new connections between the Bridge Preserve and the Pike County Park will only enhance the nature trails on both sites.

The Sawkill Creek and Vandermark Creek Watershed: A Rivers Conservation Plan

The comprehensive management plan for the Sawkill-Vandermark Creeks Watershed effectively developed a “Rivers Conservation / Watershed Management Plan” that identified significant natural, recreational and cultural resources; determined the issues, concerns and threats to river/watershed resources and values; and recommended methods to conserve, enhance and restore the watershed’s streams and waterways. (<http://www.pikepa.org/Planning/SawkillVandermark.htm>)

The Bridge Preserve will aid in attaining the Sawkill-Vandermark Watershed’s goals. The Bridge Preserve’s low impact trail design combined with small permeable parking areas will ensure that no unnecessary runoff will occur into the Sawkill Pond or Sawkill Creek. Also, the signage around the pond, lake and creek will help educate patrons of the importance of water quality so they will in turn have a new appreciation for maintaining high water quality.

Milford Water Authority’s Source Water Protection Plan

In 2006 a water protection plan was adopted by Milford Borough. The final product was an ad in the local newspaper to inform the local citizens how to best protect their natural water sources. The newspaper insert, “*Pike County: Where People, Land and Water Meet, A Citizens Guide to Clean Water,*” was a successful project in that it is graphically appealing, easy to read and focuses on easy steps residents can take to reduce non-point source pollution and get involved in water resource protection individually and on the community-level. The insert educated and provided useful information on Pike County’s exceptional water resources and the importance of these resources to county communities (<http://palwv.org/wren/projects/pike.html>).

The Bridge Preserve can also aid in educating the public about the importance of water quality through trail signage and the information kiosk.

A Natural Areas Inventory of Pike County, Pennsylvania

The “Natural Areas Inventory” completed in 1995 by the PA Natural Heritage Program introduced Pike County as “rich in scenic and natural resources, however, its rural character in combination with its proximity to major metropolitan centers has made Pike County an attractive place to have a vacation home or a permanent residence. As a result, Pike is now one of the fastest growing counties in Pennsylvania. The scenic and natural environments that have attracted so many people to the county are quickly being lost because of increasing development pressure. If these natural environments and the plants and animals associated with them are to be maintained, wise planning is required. “ The Bridge Preserve represents one such wise planning effort.

The inventory is one aspect of Pike County’s overall comprehensive plan. Its purpose is to provide maps of the most natural areas in the county and the locations of all known animal and plant species of special concern (endangered, threatened, or rare). The inventory also includes an overall summary of the highest quality sites with corresponding suggestions for protection. The inventory describes the Sawkill Creek as a “High-Gradient Clearwater Creek community (NC517).” The watershed contains many habitat types and it is worthy of protection for wildlife. The inventory recommends restricting logging and development within the creek’s watershed.

The Sawkill Mud Pond is classified by the inventory as a county rank of 3. This feature is due west and hydrologically connected to the Sawkill Pond. Its natural community is described as a good glacial bog with 1 G5S3 plant. It has threats from upslope development and needs watershed protection with conservation easements. The same threats and recommendations can be expressed for most natural features, even those not listed in the inventory as special areas, like the Sawkill Pond.

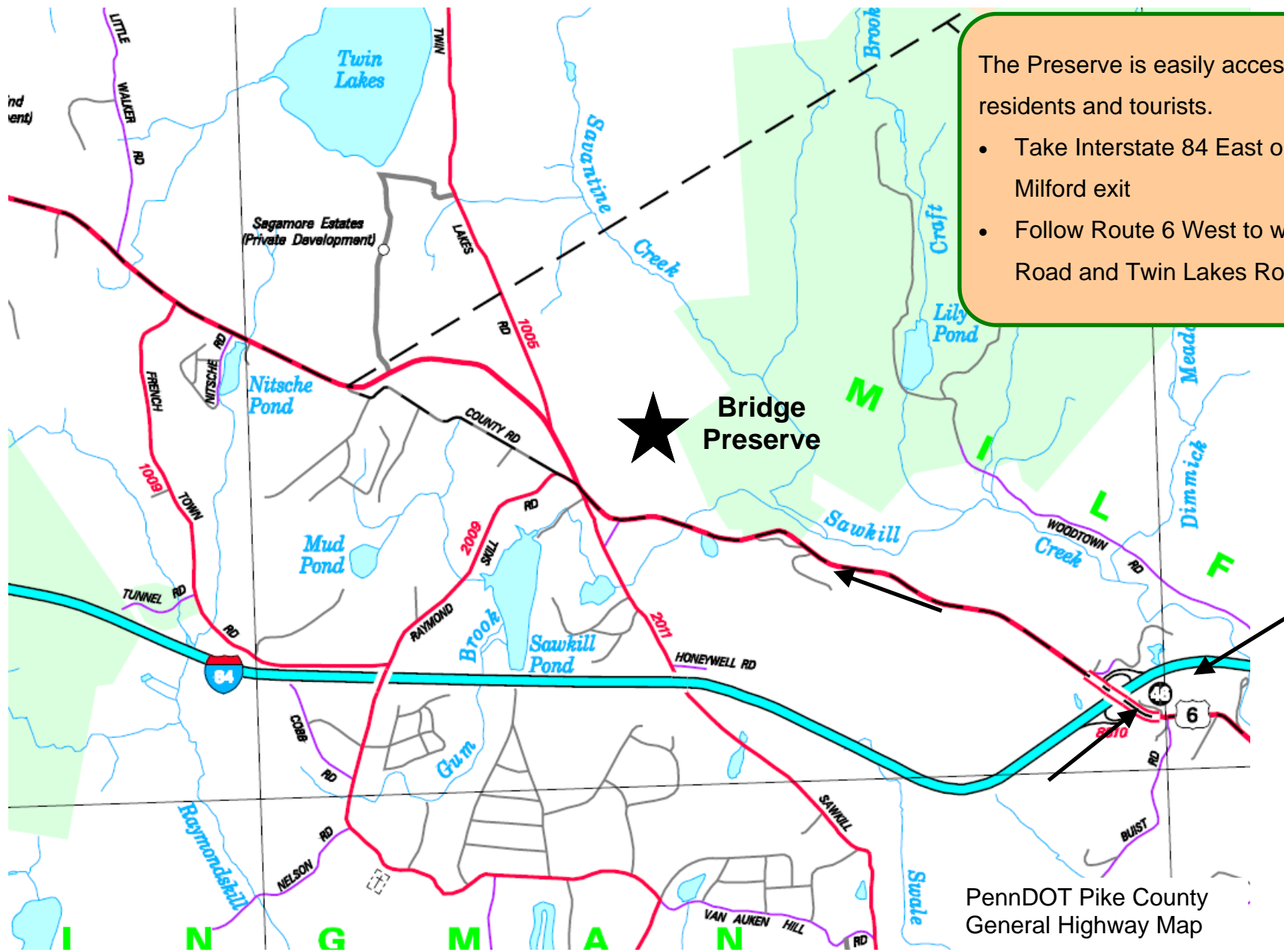
Overall, the Bridge Preserve adheres to the recommendations listed in the Natural Areas Inventory.

SECTION B

BACKGROUND INFORMATION



PARK DIRECTIONS



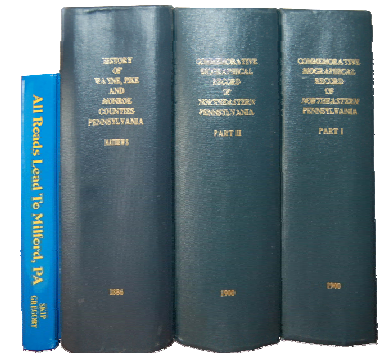
SITE HISTORY

The consultant contacted the Pike County Historical Society, completed on-line web searches, spoke with committee members, and contacted the township historians from Shohola, Milford Township and Dingman Township. The most useful information regarding the Bridge Preserve and Charles Bridge was provided by Sandy Leiser, Dingman Township Historian, and the study committee.

Charles Bridge was born on November 9, 1849, the son of Henry and Adeline Bridge in Rockland County, New York. He had ten siblings. In 1850, the Bridge family, along with Charles, settled near Shohola where his father worked as a foreman for the Erie Railroad Company. His father was very respected within the community and within the local Lutheran Church.

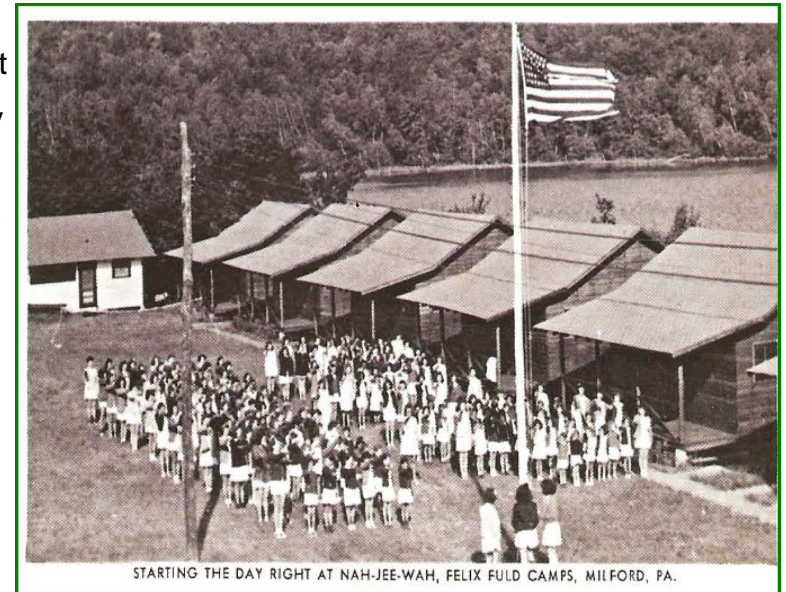
Charles Bridge's father and mother passed away in 1887 and in 1883 at the ages of seventy-two and sixty, respectively.

When he nineteen, Charles began working for the Erie Railroad Company where he remained for eighteen years. Charles left his family home at the age of twenty-four and relocated to Dingman and Milford Townships in 1874, which is the current location of the Bridge Preserve. Charles and his wife Miss Mary H. Stark lived at the present day address of 600 Sawkill Road with their five children. This residence was not only their home, but also served as the Sawkill Village Post Office. Charles' estate contained 280 acres of choice land and much of his time was devoted to its management. Additionally, like his father, he became actively involved and respected within his community. Charles Bridge spent a large portion of his life in the public eye as tax collector, post master, county auditor, and constable. Charles was an efficient and popular postmaster at Sawkill Village. His farm was located in an area of Pike County, along



the Sawkill Lake, which was considered at the time to be one of the most beautiful and picturesque places in the region. The Sawkill Lake was revered by fishermen because it was known for excellent and bountiful fishing. From the beginning, the Sawkill Village and Lake attracted summer tourists who appreciated the natural features of the area.

Sawkill Lake remains a key historic and natural feature at the Bridge Preserve. It is also a primary amenity for the adjacent New Jersey Y Camp. The New Jersey Y Camp was originally called Camp Nah-Jee-Wah. It was established by the New Jersey Woman's Auxiliary of the YMHA. Camp Nah-Jee-Wah was used for girls and Cedar Lake Camp in the same vicinity was used for boys. In 2005, after an environmental impact study was completed, it was determined that the camp and Mr. Leonard Robinson, the executive director of the NJ YMHA and YMHA Camps, were excellent stewards of the property.



STARTING THE DAY RIGHT AT NAH-JEE-WAH, FELIX FULD CAMPS, MILFORD, PA.



A SHADY NOOK FOR STORYTELLING AT NAH-JEE-WAH, FELIX FULD CAMPS, MILFORD, PA.

"All Roads Lead to Milford, Pennsylvania; Postcards from the Past," (Gregory and Leiser 2007).

Over the last few years Charles P. Bridge, the son of Charles Bridge and grandson of Henry Bridge, began the process of donating his family's 300 acres of property to Dingman Township via a conservation easement through the North American Lands Trust. Charles requested the property be protected and preserved and provide public access. Additionally, he requested the property be named the "Cornelia & Florence Bridge Preserve" in honor of his wife and mother and as a way to keep the prominence of the Bridge family forever present at the property.

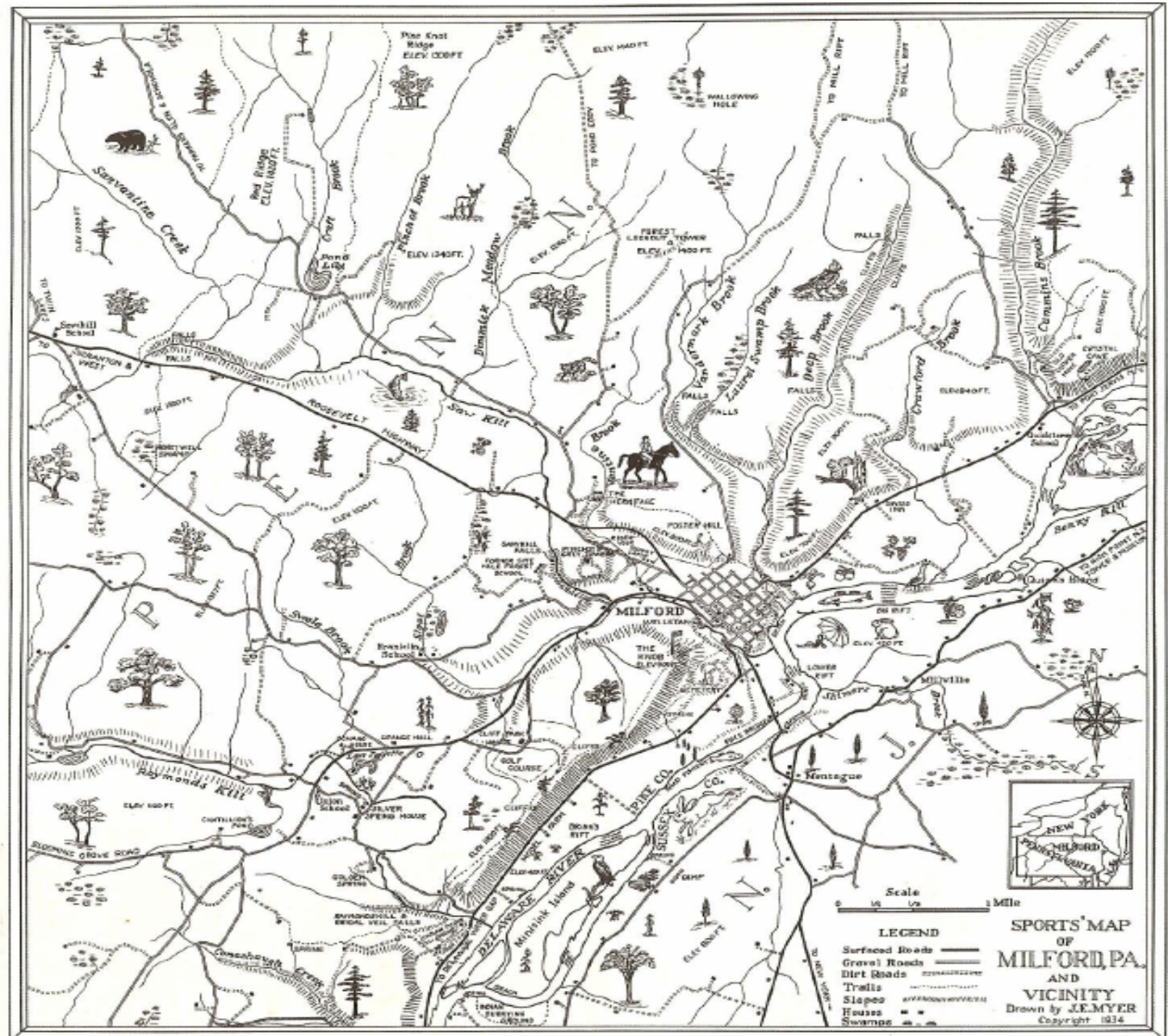
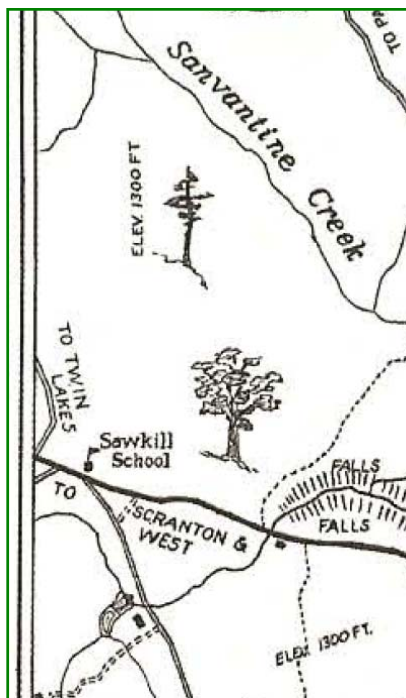


The consultant interviewed Sandy Leiser on December 23, 2009. She shared her knowledge and insight about the Bridge Preserve property. Among her references was a J. H. Beers and Company map of the area dated 1872. Unfortunately the map predated the Bridge families ownership of the property by two years. The Bridge family settled at this location in 1874. The map did identify a single-room school house located at the proposed entrance to the northern parcel. Remnants of the building are still present.

Likewise, the Sawkill School is identified in a "Sports' Map" from 1934 that is reproduced in the book, "All Roads Lead to Milford, Pennsylvania; Postcards from the Past," (Gregory and Leiser 2007). This reference describes the Sawkill School as one of

seven one-room schoolhouses with eight grades used to educate the children of Dingman Township. It was located five miles from Milford on Route 6 West across the road from Charles Bridge's former Sunoco Gas Station.

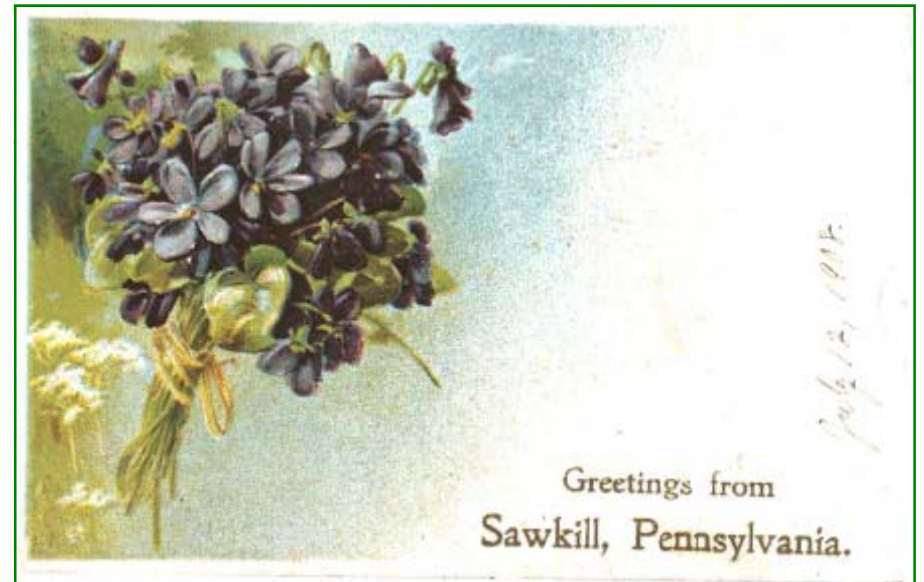
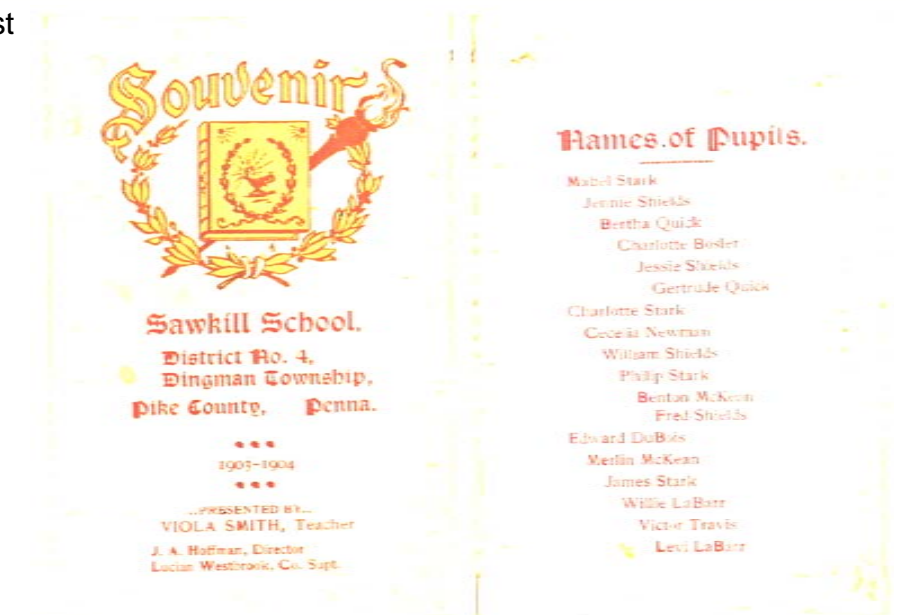
Remnants of the Sawkill School are still visible. They are located near the proposed access road and trail head for the northern parcel. Much of the southern parcel is also shown on the map — Sawkill Lake is just off of the map to the west.



The Sawkill Village had a one-room school house, a church, and a post office. For many years, Charles Bridge owned and operated a Sunoco gas station and provided the area children with a place to purchase penny candy. It was a popular attraction. Mr. Bridge also allowed people to use his property for cross-country skiing.

SAWKILL POST OFFICE

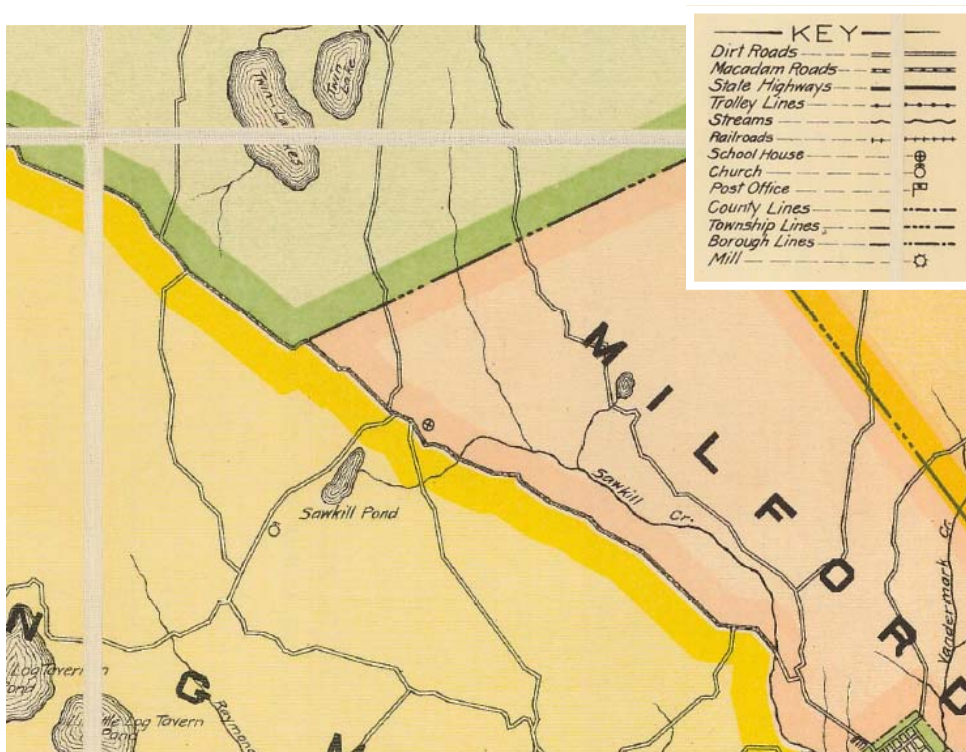
This postcard was mailed from Milford on July 18, 1908. In Beers' Commemorative Biographical Record of North-eastern Pennsylvania, Sawkill is referred to as a village. It was located near Sawkill Lake on the upper Sawkill Road near the present New Jersey Y Camps and extended from Route 6 onto the upper Raymondskill Road to Frenchtown Road. Charles C. Bridge, owner of the Sunoco Gas Station on Route 6, now a tattoo parlor, tells us the Sawkill Post Office was located in the house of his grandfather, Charles Bridge at 600 Sawkill Road near the Y camps. Mr. Bridge was appointed to the position of postmaster in 1895. Charlie believes the post office closed in the early 1920s. A Protestant Church was located at what is now 252 Raymondskill Road. The nearby one-room Sawkill School educated children through the eighth grade. The Hoffman family also lived in Sawkill and Lorraine Gregory's grandfather Ira Hoffman was born there in 1874. One of the main attractions of the area was the excellent fishing on Sawkill Lake. Access to the lake was available from the Richard "Judd" Hoffman property until the early 1950s when the New Jersey Y Camps acquired the land.



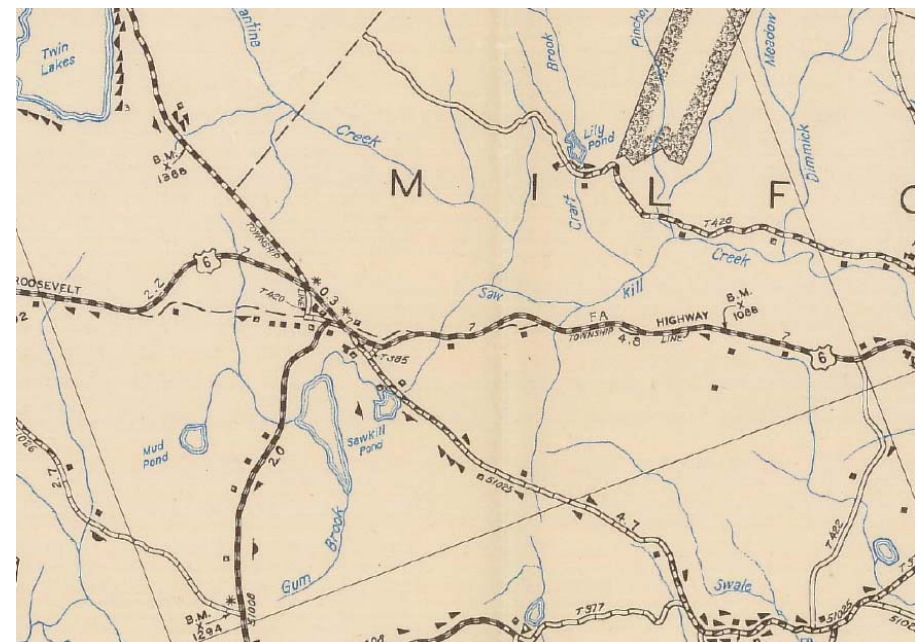
"All Roads Lead to Milford, Pennsylvania; Postcards from the Past," (Gregory and Leiser 2007).

Historic Route 6

For over a century Historic Route 6 has been an important transportation corridor through the Bridge Preserve. As mentioned earlier, Route 6 (Grand Army of the Republic Highway) is a scenic drive that transects the Bridge Preserve as it meanders across the Commonwealth. Route 6 continues to be a key transportation corridor in Pike County today and the Bridge Preserve is ideally positioned to become another destination point along the drive.



PennDOT 1911 Transportation Map



PennDOT 1941 Transportation Map

REGIONAL AND LOCAL SITE CONTEXT

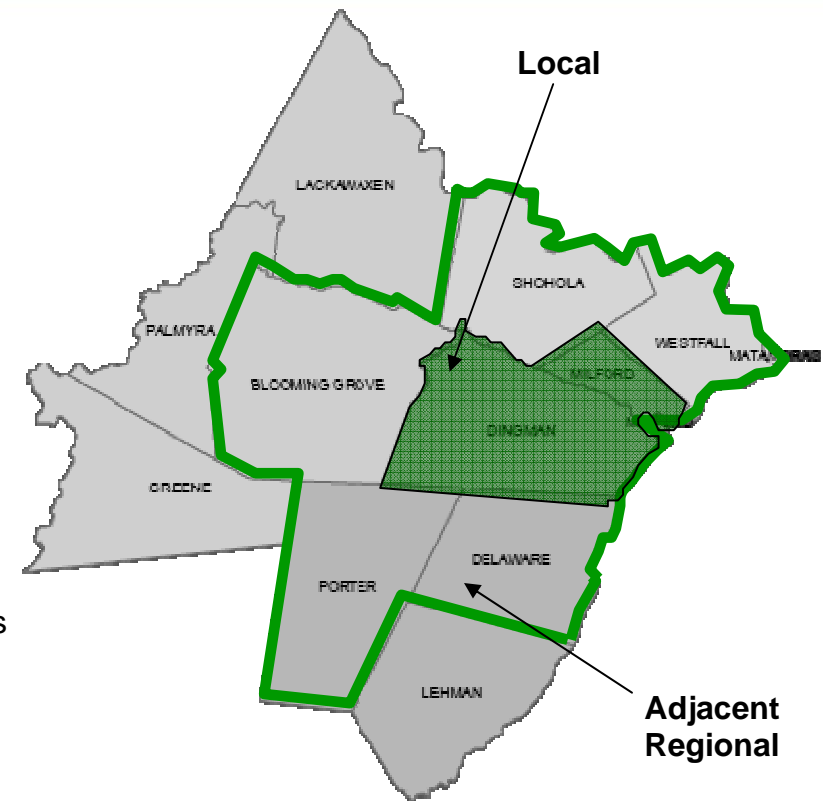
Due to previous planning efforts and tourism-based marketing, the Bridge Preserve is located within multiple classifications.

Visit PA locates the Bridge Preserve site within “UpState PA.” The *Pocono Mountain Visitors Bureau* splits the preserve between the Delaware River Region and the Upper Delaware River Region (other regions include Lake Region, Mountain Region, and Lehigh River Gorge). *Discover Pike*, organizes Pike County as the Upper Delaware, the Delaware and the Lake Regions, with the preserve being within the Upper Delaware Region.

The *Pike County Open Space, Greenway and Recreation Plan* (2008) delimits the County in the following manner:

- Upper Delaware Region (Lackawaxen and Shohola Townships)
- River Gateway Region (Milford Borough and Matamoras Boroughs, Westfall, Milford and Dingman Townships)
- Bushkill Region (Lehman and Delaware Townships)
- Wallenpaupack Region (Palmyra, Greene, Blooming Grove and Porter Townships)

For this master site plan: “Local” will simply be defined as Dingman Township and Milford Township; whereas, “Regional” will encompass the remaining municipalities within Pike Counties. However, only the municipalities adjacent to the “local” municipalities will be described in more detail within this master site plan.



Boroughs

- Milford
- Matamoras

Townships

- Blooming Grove
- Delaware
- Dingman
- Greene
- Lackawaxen
- Lehman
- Milford
- Palmyra
- Porter
- Shohola
- Westfall

REGIONAL — PIKE COUNTY

Pike County was separated from Wayne County on March 6, 1814. Then in 1836, a portion of Pike County was removed to form Monroe County. This move effectively finalized the Pike County boundary, which encompasses 547.2 square miles. The county was named for Zebulon Montgomery Pike, the discoverer of Pikes Peak and the War of 1812 general. The County seat is located in Milford Borough (Pike County Official Directory 2009).

The county represents the northern gateway to the Pocono Mountains. The county is most recognized for its clean water, acres of contiguous forests, rural character, quaint and livable towns, fine resorts, fall foliage, scenic viewsheds, ample outdoor recreation opportunities and its abundant wildlife. The county contains over 125,000 acres of public land, 63 miles of the Delaware River and the 5,200 acre Lake Wallenpaupack. The county is considered the birthplace of the American Conservation Movement and it was also home to Gifford Pinchot, an early conservation proponent and the first head of the U.S. Forest Service (Bailey 2009).

These assets, as well as, the counties close proximity to New York City and New Jersey have drawn tourists, summer renters and permanent residents to the county for over a century. Pike County has been one of the fastest-growing counties in the Commonwealth for the last three decades. For example, Pike County's population saw a 65.6% increase between 1990 and 2000 from 27,966 to 46,302 permanent residents. According to census data, the population is projected to near 80,000 by 2020.



COMMUNITY PROFILES - LOCAL MUNICIPALITIES

Dingman Township

- Created in 1832 and named in honor of Judge Daniel Westbrook Dingman.
- Total area is 59.9 square miles (58.2 square miles of land and 1 square mile of water). 5,488.63 acres are forested and 2,316 acres are owned by the PA Game Commission.
- The 2000 Census indicates a population of 8,788 people, 2,425 families and 2,980 households within the township. The average density was 97.8 people per square mile.
- The township is 94.14% White; 5.12% Hispanic or Latino ; 2.28% African American; 0.47% Native American; 0.51% Asian; 1.05% other and 1.56% bi-racial.
- Age ranges within the township were as follows: 31.1% under the age of 18; 5.4% from 18 to 24; 30.6% from 25 to 44; 22.8% from 45 to 64; and 10.1% who were 65 years of age or older. The median age was 37 years.



DINGMAN TOWNSHIP

Milford Township

- Created in 1832.
- Origin of its name may be from two potential sources: 1) for Milford Haven in Wales where William Biddis, the father of John Biddis who laid out the village in 1796, was born; 2) for the Wells' Mill and the spot where the Delaware River was forded resulting in the name Milford.
- Total area is 12.6 square miles (12.5 sq. mi. of land and 0.1 sq. mi. of water). 858.04 acres are forested.
- The 2000 Census indicates a population of 1,292 people, 375 families and 527 households within the township. The average density was 47.6 people per square mile.
- The township is 96.90% White; 1.39% African American; 3.48% Hispanic or Latino; 0.08% Native American; 0.70% Asian; 0.08% from other races; and 0.85% from two or more races.
- Age ranges within the township were as follows: 23.1% under the age of 18; 4.1% from 18 to 24; 25.5% from 25 to 44; 30.0% from 45 to 64; and 17.3% who were 65 years of age or older. The median age was 44 years.

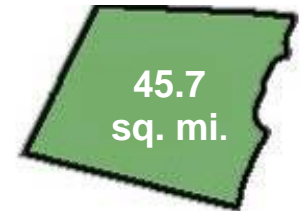


MILFORD TOWNSHIP

COMMUNITY PROFILES - REGIONAL MUNICIPALITIES

Delaware Township

- Created in 1832; It is considered the oldest township in Pike County.
- Simply named for its border with the Delaware River.
- Total area is 45.7 square miles (44.0 square miles of land and 1.7 square miles of water). 2, 169.38 acres are forested.
- The 2000 Census indicates a population of 6,319 people, 1,748 families and 2,244 households in the township. The average density was 143.6 people per square mile.
- The township is 95.20% White; 4.78% Hispanic or Latino; 2.15% African American; 0.14% Native American; 0.44% Asian, 0.85% from other races; and 1.20% from two or more races.
- Age ranges within the township were as follows: 31.2% under the age of 18; 4.9% from 18 to 24; 31.9% from 25 to 44; 21.6% from 45 to 64; and 10.3% who were 65 years of age or older. The median age was 36 years.



DELAWARE TOWNSHIP

Porter Township

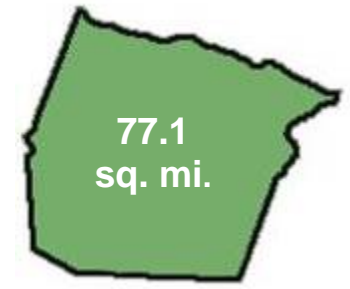
- Created in 1851.
- Named in honor of Hon. James Madison Porter who built the first home at Porter's Lake in 1849
- Total area is 60.4 square miles (58.6 square miles of land and 1.8 square miles of water). 22,899.16 acres of land are forested.
- The 2000 Census indicates a population of 385 people, 117 families and 168 households within the township.
- The township is 95.84% White; 3.12 Hispanic or Latino; 1.30% African American; 0.52% Asian; 1.30% from other races; and 1.04% from two or more races. The average density was 6.6 people per square mile.
- Age ranges within the township were as follows: 15.6% under the age of 18; 5.5% from 18 to 24, 24.9% from 25 to 44; 32.2% from 45 to 64; and 21.8% who were 65 years of age or older. The median age was 49 years.



PORTER TOWNSHIP

Blooming Grove Township

- Created in 1850.
- Named for its' abandoned farm with a full grove of apple trees.
- Total area is 77.1 square miles (75.3 square miles of land and 1.8 square miles of water). 13,553.43 acres are forested.
- The 2000 Census indicates a population of 3,621 people, 1,076 families and 1,382 households within the township. The average density was 48.1 people per square mile.
- The township is 92.38% White; 4.17% Hispanic or Latino; 3.37% African American; 0.19% Native American; 0.72% Asian; 0.03% Pacific Islander; 2.32% from other races; and 0.99% from two or more races.
- Age ranges within the township were as follows: 20.2% under the age of 18; 5.7% from 18 to 24; 23.4% from 25 to 44; 29.5% from 45 to 64; and 21.2% who were 65 years of age or older. The median age was 46 years.



BLOOMING GROVE

Shohola Township

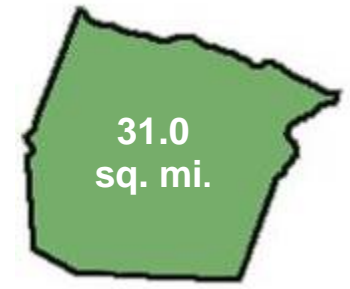
- Created in 1852.
- Named for the word derived from Native American Lenni Lenape language which means "Place of Peace".
- Total area is 45.9 square miles (44.6 square miles of land and 1.2 square miles of water). 2,169.38 acres are forested.
- The 2000 Census population indicates a population of 2,008 people, 585 families and 836 households within the township. The average density was 46.8 people per square mile.
- The township is 97.99% White; 3.64% Hispanic or Latino; 0.14% African American; 0.10% Native American; 0.34% Asian; 0.86% from other races; and 0.57% from two or more races.
- Age ranges within the township were as follows: 24.4% under the age of 18; 4.3% from 18 to 24; 26.1% from 25 to 44; 27.9% from 45 to 64; and 17.3% who are 65 years of age or older. The median age is 42 years.



SHOHOLA TOWNSHIP

Westfall Township

- Created in 1839 from Milford Township.
- Named for Simon Westfall who settled in the area in 1743.
- Total area is 31 square miles (30.4 square miles of land and 0.6 square miles of water).
- The 2000 Census indicates a population of 2,430 people, 675 families and 951 households within the township. The average density was 79.8 people per square mile.
- The township is 96.38% White; 2.55% Hispanic or Latino; 0.37% African American; 0.21% Native American; 1.15% Asian; 0.37% from other races; and 1.52% from two or more races.
- Age ranges within the township were as follows: 23.8% under the age of 18; 5.4% from 18 to 24; 24.2% from 25 to 44; 27.1% from 45 to 64; and 19.4% who were 65 years of age or older. The median age was 43 years.



WESTFALL TOWNSHIP

Milford Borough

- Incorporated as a Borough in 1874 from Milford Township. The County seat of Pike.
- Named for the word derived from Native American Lenni Lenape language which means "Place of Peace".
- Total area is 0.5 square miles (all land).
- The 2000 Census population indicates a population of 1,104 people, 281 families and 522 households within the borough. The average density was 2,318.0 people per square mile.
- The borough is 96.2% White; 1.45% Hispanic or Latino; 1.36% African American; 0.45% Native American; 0.54% Asian; 0.54% from other races; and 0.91% from two or more races.
- Age ranges within the borough were as follows: 20.7% under the age of 18; 6.4% from 18 to 24; 26.9% from 25 to 44; 25.5% from 45 to 64; and 20.5% who were 65 years of age or older. The median age was 42 years.

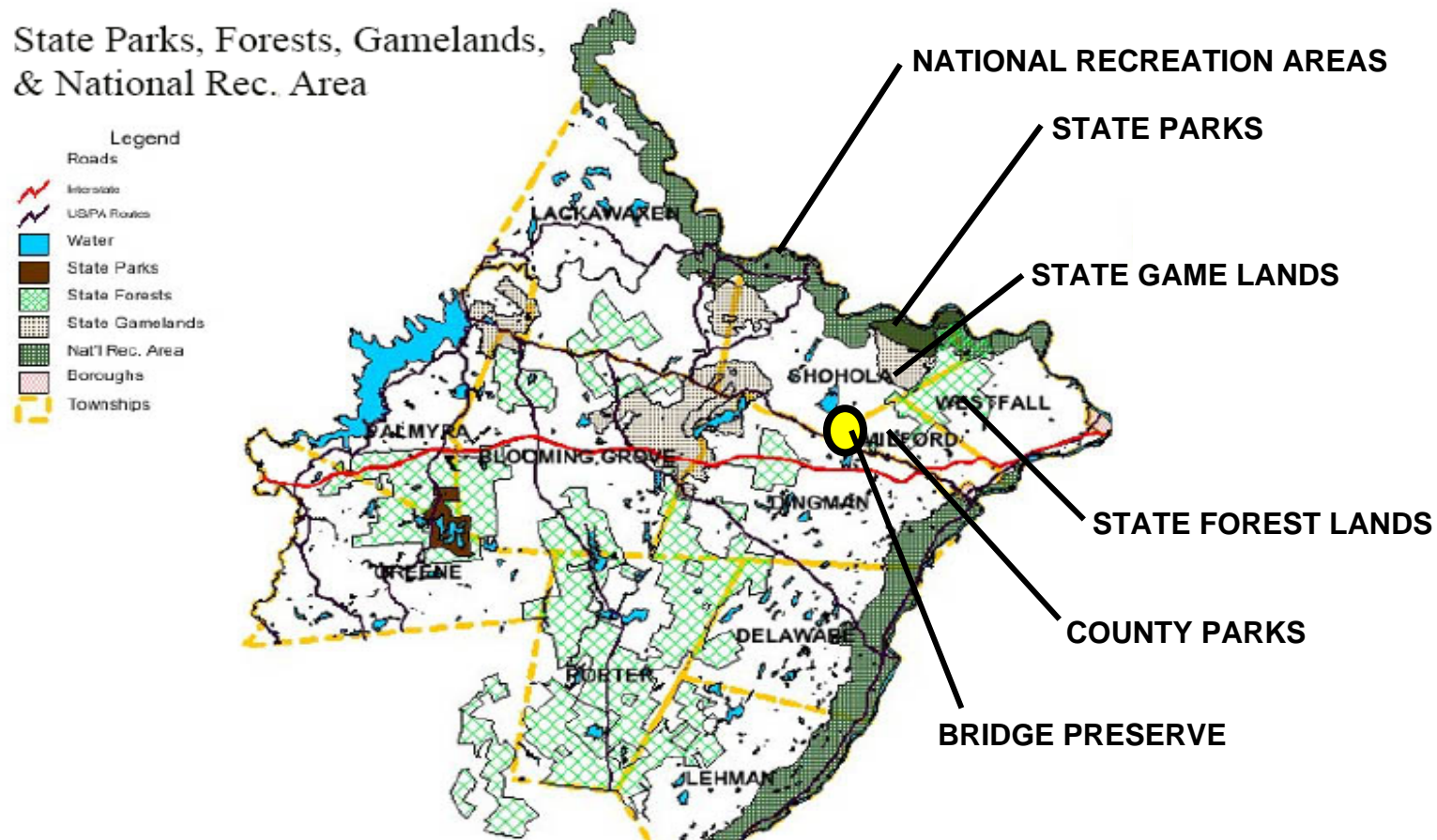


MILFORD BOROUGH

SURROUNDING PARKS AND OPEN SPACE

The Pike County Open Space, Greenways and Recreation Plan (2008) states that one of the hurdles of planning within Pike County is distinguishing between land that is truly protected versus lands that are still susceptible to development. For example, “large private landowners including owners such as hunting-fishing clubs and summer camps represent much of the large contiguous open spaces that maintain the rural quality of the County” and these “large tracts of forestland are unprotected unless preserved under a conservation easement.”

Luckily, the county does have several notable public lands, which total over 125,000 acres in Pike County. They include the Delaware State Forest, Pennsylvania State Game Lands and National Park Service Land. Residents of all thirteen municipalities have access to either federal, state, or municipal recreation resources within their own municipality.



www.pikegs.org/pike/viewer.htm

LOCAL PARKS & OPEN SPACES (within Dingman and Milford Townships)

PARK/OPEN SPACE NAME	LOCATION	OWNERSHIP	AREA
Delaware State Forest	Milford Twp./Dingman Twp.	State	Portion
George W. Childs Recreation Site	Delaware Twp.	Federal	52 Acres
Pike County Park	Milford Twp.	County	325 Acres
PA State Gamelands 180	Dingman Twp.	State	Portion
Dingman Township Park	Dingman Twp.	Municipal	103 Acres
Delaware River Natl. Rec. Area	Dingman Twp.	Federal	Portion
Santos Open Space	Milford Twp.	County	89 Acres

REGIONAL PARKS & OPEN SPACES (select parcels within Pike County)

PARK/OPEN SPACE NAME	LOCATION	OWNERSHIP	AREA
Delaware State Forest	Throughout	State	2,845 Acres
Camp Akenac	Delaware Twp.	Municipal	203 Acres
Delaware River Natl. Rec. Area	Along Delaware River	Federal	40 Miles
Delaware Township Park	Delaware Twp.	Municipal	140 Acres
Airport Park	Matamoras Boro.	Municipal	68.5 Acres
Polatnick Property on Cummins Hill	Westfall Twp.	County	708 Acres
Ann Street Park, Memorial Park	Milford Boro.	Municipal	1.8 Acres
Catherine Street, Ballfield Park	Milford Boro.	Municipal	3.4 Acres
Promised Land State Park	Blooming Grove, Palmyra, Greene	State	3,000 Acres
Pocono Environ. Education Center	Delaware Twp.	Private	38 Acres
PA State GameLands 116	Shohola, Lackawaxen	State	3,024 Acres
PA State GameLands 180	Blooming Grove	State	11,372 Acres
PA State GameLands 183	Blooming Grove, Palmyra, Lackawaxen	State	2778 Acres
PA State GameLands 209	Westfall, Shohola	State	4391 Acres
PA State GameLands 316	Lackawaxen	State	2715 Acres

FEDERAL LAND:

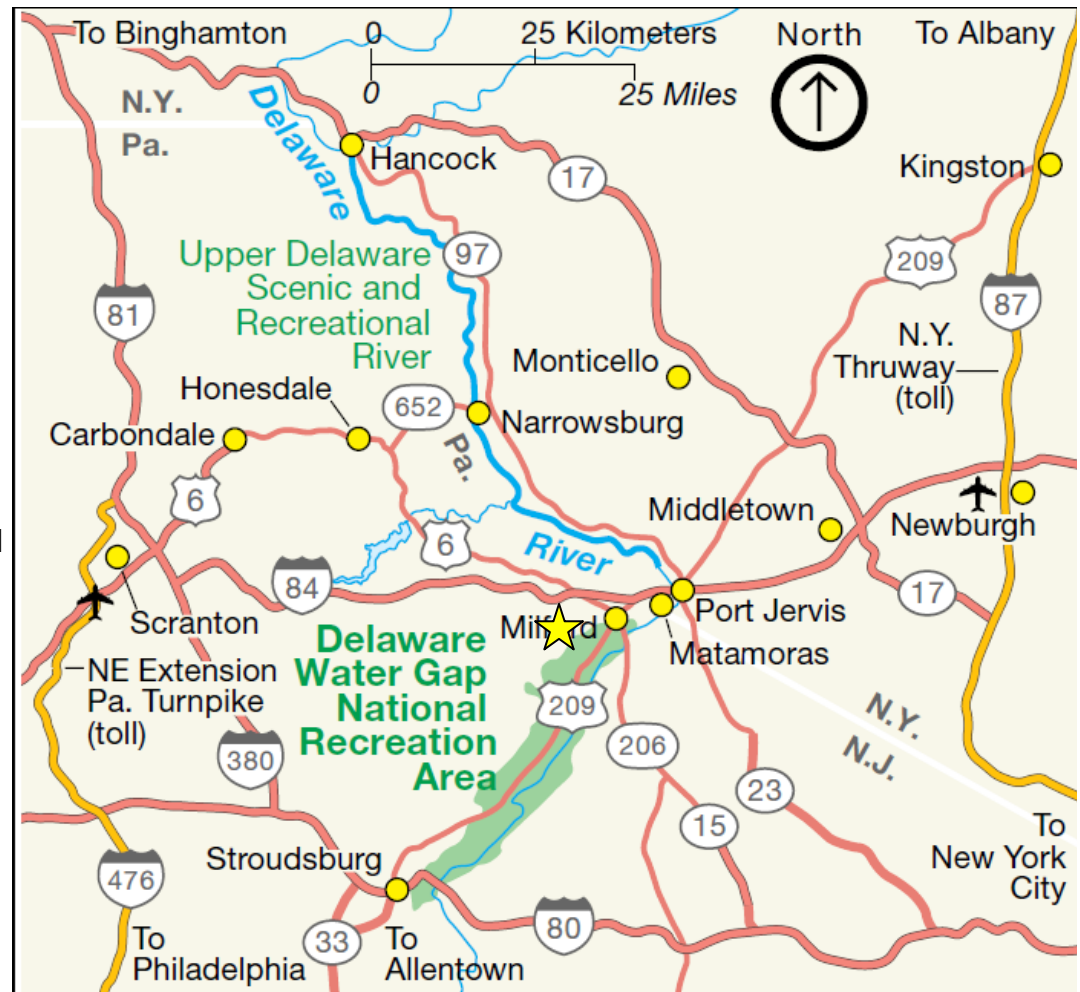
The *Delaware Water Gap National Recreation Area*, headquartered in Bushkill, PA, parallels the Delaware River between PA and NJ. A portion of the area is located in Dingman Township.

For example and nearer to the Bridge Preserve, George W. Child's Park is a 52 acre park located on Silver Lake Road in Delaware Township, Pike County, Pennsylvania. Child's Park which was once a state park, is now part of the Delaware Water Gap National Recreation Area (National Parks). The park winds through dense hemlock ravine and three waterfalls; Fulmer Falls, Factory Falls, and Deer Leap Falls (Keystone Trails Association). Fishing, camping, swimming and picnicking can be enjoyed at Child's Park.

The *Upper Delaware Scenic & Recreational River* is located in Pike and Wayne Counties in PA and Delaware, Orange and Sullivan counties in NY state.

The *Delaware National Scenic River* forms the boundary between the states of NJ and PA.

Please view www.nps.gov for more information.



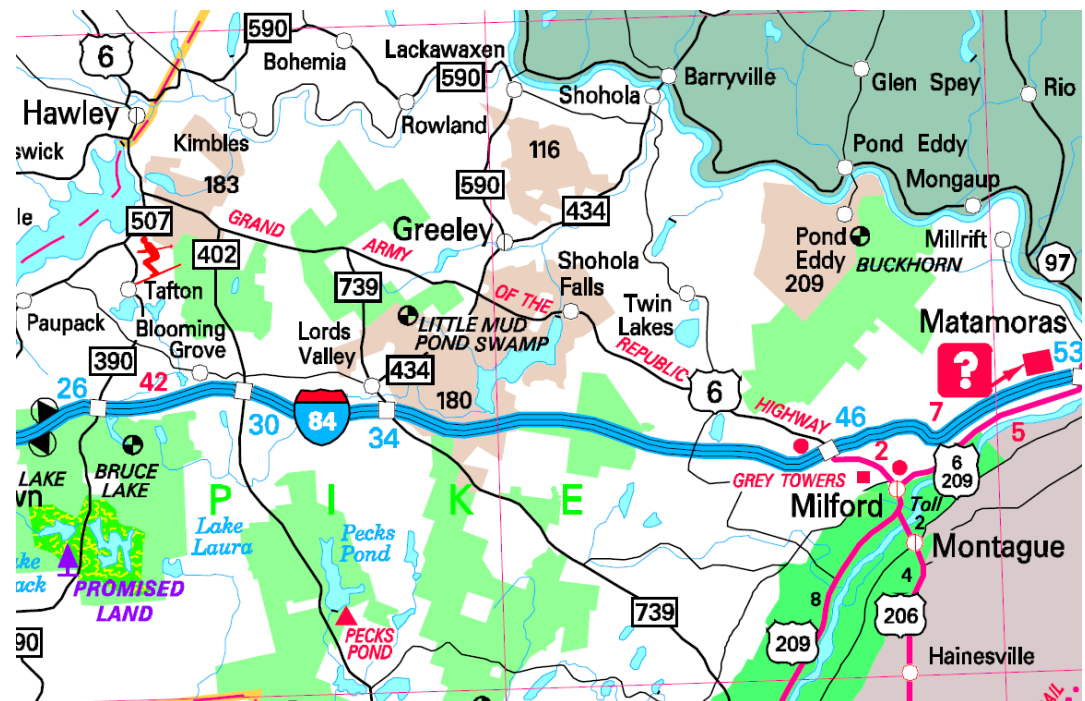
STATE LAND:

State owned lands within Pike County include forest land, game lands, and parks. Their locations are colored coded and identified on the accompanying PennDOT issued map from 2009. A more detailed map is included on the following page.

The *Delaware State Forest* is comprised of 4 State Parks and 6 Natural Areas containing 13 ponds and lakes, numerous picnic areas, hiking trails, and ATV and snowmobile trails. The forest is open for hiking, biking, hunting, fishing and observing wildlife in it's native habitat.

The PA State Game Lands #116, #180, #183, #209 and #316 are located within Pike County. The primary focus of the game lands is hunting and fees for licenses help maintain the land. Aside from hunting season, hikers are encouraged to utilize the State Game Lands during the remainder of the year and biking is allowed in certain areas as well..

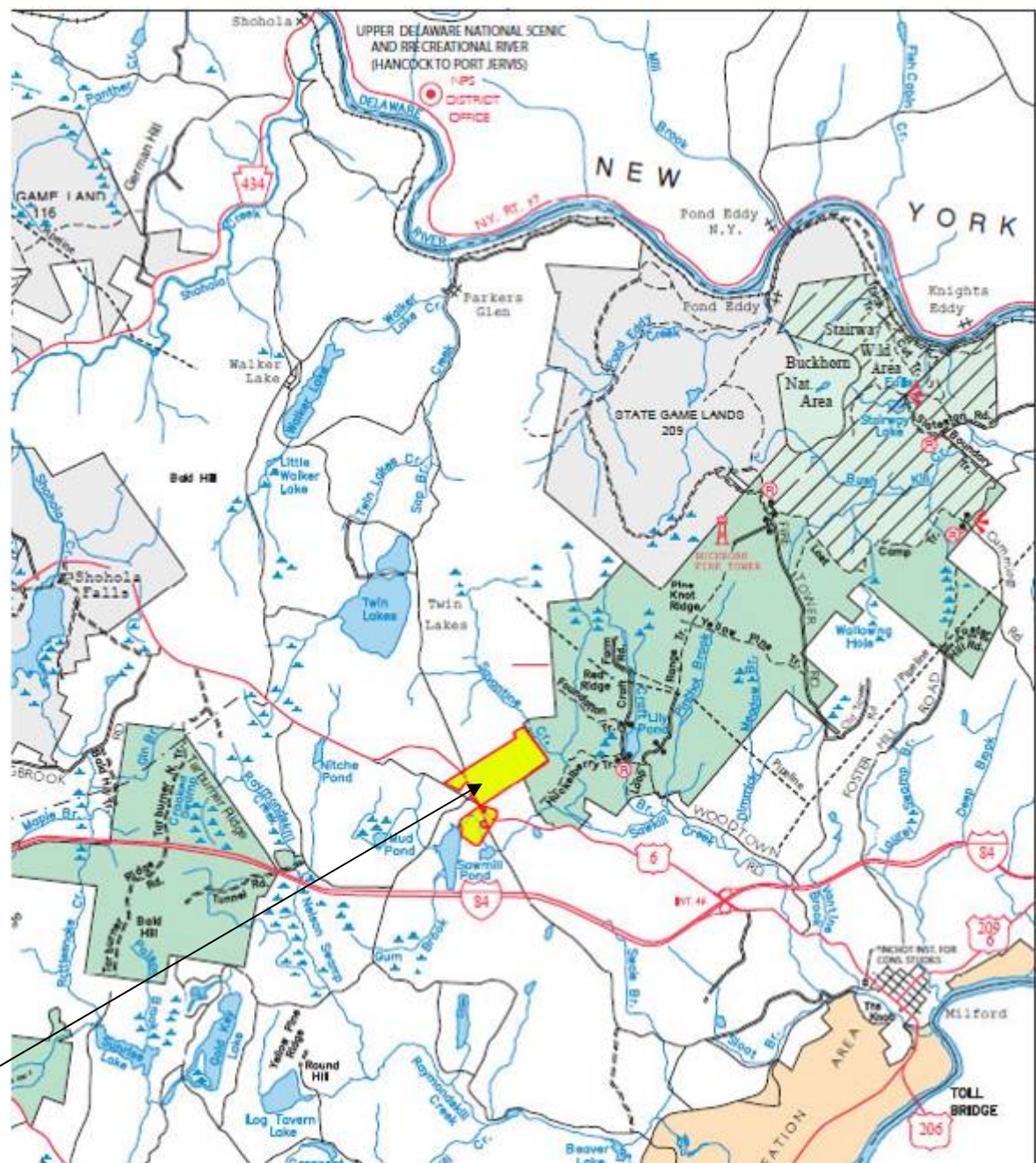
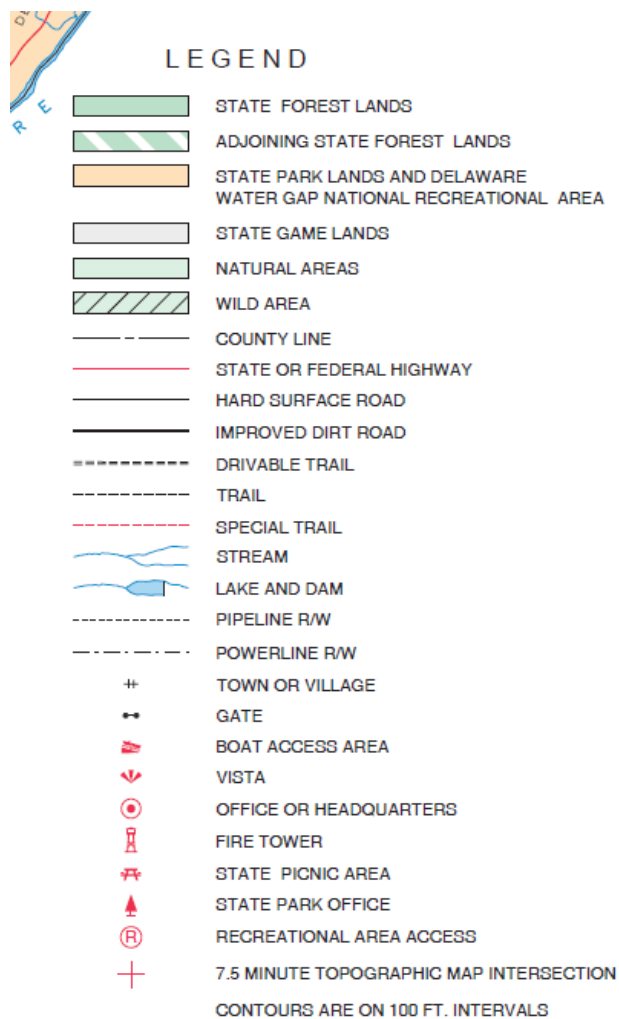
The *Promised Land State Park*, as described by PA DCNR, is an approximately 3,000 acre parcel located at 1,800 feet in elevation atop the Pocono Plateau. The park is surrounded by 12,464 acres of Pennsylvania's Delaware State Forest, which further enhances the contiguous protected lands available to visitors. The park consist primarily of a beech, oak, maple and hemlock forest, two lakes and several small streams, which collectively provide several scenic opportunities.



PennDOT 2009 Tourism and Transportation Map

DELAWARE STATE FOREST

DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES
BUREAU OF FORESTRY



The Bridge Preserve

COUNTY LAND:

Pike County Park, along Schocopee Road, is the only county park within Pike County. The property represents a unique cooperative conservation planning effort between PA DCNR, Pike County and the Trust for Public Land, a non-profit land trust. Currently, the property is actually owned by the state, however, it is leased by the County. Additionally, the county recently purchased open space land totaling 800 acres— the Santos Property in Milford Township and the Polatnick Property on Cummins Hill in Westfall Twp.

MUNICIPAL LAND:

Local opportunities are as follows:

Dingman Township: The Bridge Preserve will be the townships primary passive recreation facility. The Dingman Township Park along Log Tavern Road will be under construction in 2010 and it will become the main active recreation facility within the township.

Milford Township: No parks or open space lands were identified.

Regional Opportunities are as follows:

Milford Borough: The borough has two main parks. The Milford Memorial Park has a playground and a community gathering area. The small park also has a basketball court and baseball field. The Catherine Street Park contains a baseball field, basketball court, skate park and an ice skating rink. Two smaller parks include Barckley Park and Remembrance Park.

Delaware Township: Camp Akenac was acquired in 2006 and a master site plan is currently underway. The property was a former corporate retreat and family camp and includes cabins, recreation fields and courts, a recreation building, trail system, a nice lake. Delaware Twp. Park on Wilson Hill Road offers active recreation opportunities like baseball, basketball, soccer and it has a skate park.

Shohola Township: Rohman Park, located along Twin Lakes Road, is adjacent to Shohola Glen. Currently, the park has fields that accommodate regional baseball and softball leagues and future plans include a playground, interpretive walking trails and small picnic areas.

Blooming Grove, Westfall and Porter Townships: No parks or open spaces were identified.

SURROUNDING TRAIL NETWORKS

Regional Connectivity is an important goal within Pike County. The Bridge Preserve can be a viable link within a regional trail network. The trails within closest proximity to the Bridge Preserve are listed and briefly described below. The information was available through the Discover Pike PA website and they are all classified as located within the Upper Delaware River Region (discoverpikepa.com).

Pike County Park Trails

This trail network is located within the Pike County Park, four miles west of Milford and accessible via Schocopee Road. Lily Pond is the main feature to enjoy at the park and five trails are constructed within the park. There is also a connector for a deeper hike into the Delaware State Forest.

Huckleberry Trail is adjacent to the Lily Pond Dam. It is currently a barely visible path leading into the woods and it is a short $\frac{1}{4}$ mile hike over a low ridge to where Savantine Creek flows from noticeable swampland. If a crossing is established over the Savantine, a new trail can then be constructed to provide connectivity between the Bridge Preserve and the County Park.



The *Foundation Trail* is located past Huckleberry Trail at the end of Lily Pond where an old forest road leads off to the left. This trail follows a long-out-of-use, rutted road for a good $\frac{3}{4}$ mile through beautiful upland woods to another tributary of the Savantine. The trail continues on the other side of the tributary, however, it is probably only passable in dry weather.

The trail tread of the *Craft Farm Road Trail* is literally an old farm road. It is located near the Foundation Trail and it parallels Craft Brook, which feeds Lily Pond. It extends out to the homestead area (about 1 mile) where Dr. Craft brought his family from NYC in 1865. The state forestry bureau has since razed the house for safety reasons. The beauty of the area is still evident even after 145 years.

The *Loop Trail* is easily accessible from the parking lot. The trail passes through a pine stand to a meadow and a rocky area above

where the Craft Brook makes a turn to meet the Sawkill. There is a connection from the Loop Trail along an old forest road which connects to the Milford Experimental Forest and the Pinchot Trail leading to or from the historic Grey Towers.

The *Range Trail* is accessible via a pipeline swath through the woods that bisects the Craft Brook Trail. The pipeline connector requires crossing the Craft Brook using stepping stones and hiking uphill to the Ridge Trail. Like the other Pike County Park Trails, the Range Trail is an abandoned road as well. The trail leads to the Buckhorn Fire Tower (1.7 miles away) and connects north to trails in the Delaware State Forest and State Gamelands.

Buckhorn Natural Area:

Also accessible from Schocopee Road is the 535-acre Buckhorn Natural Area within the Delaware State Forest and near State Game Land 209. Twenty-one miles of trails are found within this natural area.

Grey Towers National Historical Landmark:

The Grey Towers National Historic Site (home of the US Forest Service and ancestral home of Gifford Pinchot, the nation's first forester and two-time PA Governor) sits above the Sawkill Creek. Grey Towers offers tours of the chateau and grounds and has educational timeline and tree identification trails. The *Grey Towers Trails* meander through the Milford Experimental Forest and connect to the Pike County Park and the Delaware State Forest. The *Pinchot Greenway Trail* links Milford Beach on the Delaware River, which is the northern terminus of the 32-mile McDade Recreational Trail, with Grey Towers. The trail is still under development as a formal trail, however, it is currently functional because it utilizes mostly public roads in and around Milford Borough.

State Game Land #116, #180, #183, #209, and #316:

These state properties are located throughout Pike County and #209 is nearest to the Bridge Preserve. They have several worthwhile trail systems including the *Cobey Pond Trail* within State Gameland #316. Many of the trails provide access for fishing, hunting and hiking. Biking is authorized in special locations. Use of any State Gameland trails should adhere to game commission regulations and users should be aware of hunting seasons.

INTEGRATION INTO THE OVERALL PARK AND OPEN SPACE SYSTEM

The Bridge Preserve fits very well into the overall park and open space system. It expands the conserved public land footprint and it can extend the reach of regional trail networks. The preserve provides a rare opportunity to connect state lands to municipal land via trail linkages. Additionally, the Bridge Preserve will help address a needed amenity — single track trails for hiking and mountain biking.

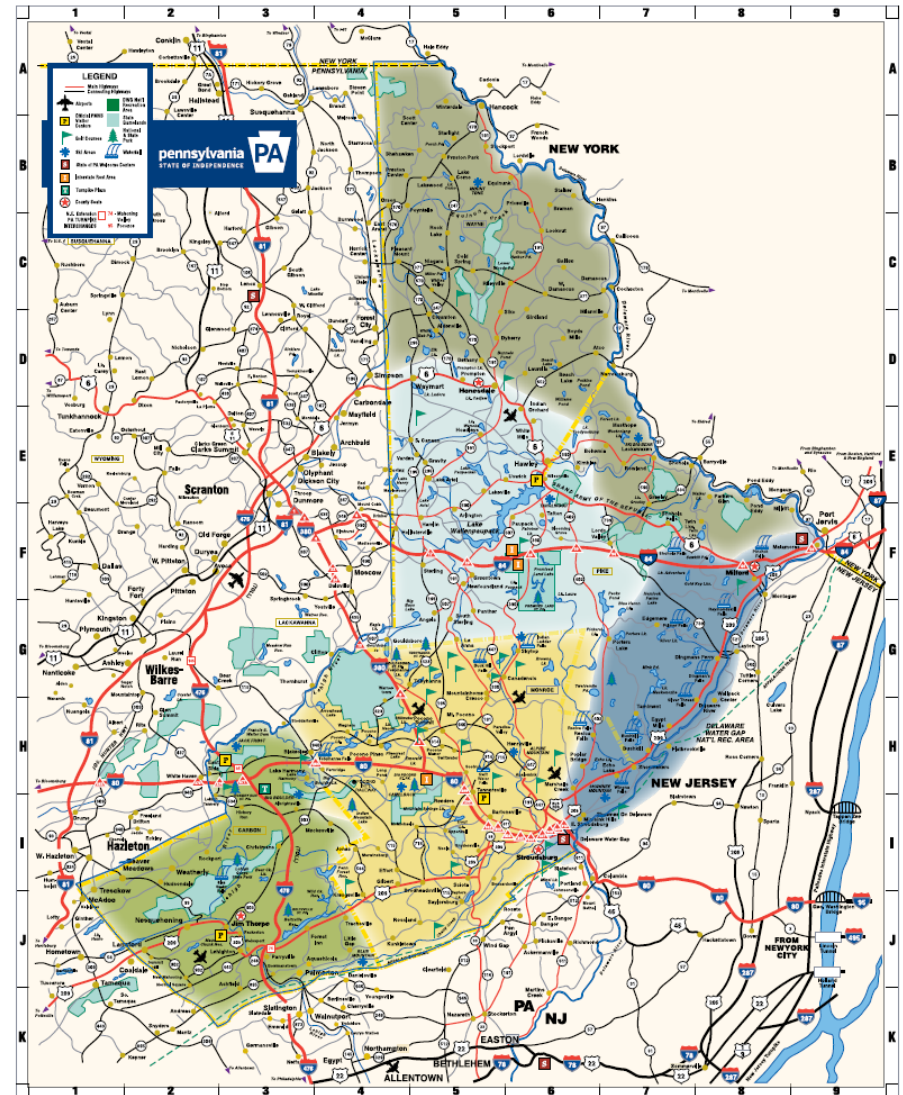
Most eagle watching locations and the primary environmental education opportunities are found along the Delaware River. The Bridge Preserve may provide an alternate and less-populated observation area for bird-watchers. Likewise, the Preserve can provide additional environmental education opportunities for residents and tourists not looking to travel to the Delaware River.

INTEGRATION INTO THE POCONO MOUNTAINS TOURISM INDUSTRY

Considering the Bridge Preserve's proximity to Milford Borough (5 miles) and its beautiful natural features, the Preserve has the potential of becoming a popular destination for tourists. The recreation opportunities at the Bridge Preserve represent another attraction that can be promoted by the tourist, visitor and vacation agencies. Key person interviews have indicated the need for nice mountain biking trails in the greater Milford area and the Bridge Preserve can become a destination for bikers in the future. The Preserve is also conveniently located along the Route 6 corridor.

PA RT. 6 Tourist Association

The PA Route 6 Tourist Association is a partnership of the nine convention and visitor bureaus serving the 11 counties connected by US Route 6 in Pennsylvania. The Pennsylvania Route 6 experience stretches over 400 miles across northern PA and encounters many of the Keystone State's historic treasures and scenic places. This section of Route 6 has been called by National Geographic "One of America's most scenic drives." The Bridge Preserve is bisected by Route 6 and can become a viable destination stop for tourists.



SECTION C

PUBLIC PARTICIPATION



STUDY COMMITTEE DEVELOPMENT

Dingman Township is responsible for park operation and maintenance and for making the decisions that will ultimately shape the Bridge Preserve. However, large portion of the property is within Milford Township. Thus, Dingman Township formed a well-rounded Study Committee comprised of residents from both Dingman Township and Milford Township to facilitate the Master Site Plan process and develop a more inter-municipal plan for the Preserve.

Collectively, the Bridge Preserve Study Committee helped develop a consensus master site plan centered around passive recreation and environmental education for the Preserve. Individually, the committee members also were responsible for making sure the site plan met the specific needs that each of their respective municipalities had regarding park development.

The committee was created to better assess the needs of the community and to provide community leaders and residents with an opportunity to voice their opinions and become involved in the park planning process. The Study Committee had six meetings — on June 11, 2009, June 27, 2009, July 27, 2009, September 21, 2009, January 27, 2010 and in Spring 2010. Each Park Study Committee meeting reviewed the progress being made on the master plan and the committee was solicited for comments and guidance. Additionally, the committee participated in the two public hearings held on October 28, 2009 and December 3, 2009.

Lastly, Julie Forbes is Secretary for the Study Committee. She was responsible for arranging meeting space, facilitating meetings, and interacting more closely with the consultant during the master plan process. Additional oversight was provided by Karen Kleist, the secretary/treasurer with Dingman Township.

BRIDGE PRESERVE STUDY COMMITTEE:

Dingman Township Representatives

George Kleist Anthony Contino Tony Sciano
Julie Forbes Sharon Schroeder

Milford Township Representatives

Phyllis Simpson Ken Rosanelli

STUDY COMMITTEE MEETINGS

There were a total of five study committee meetings for the Bridge Preserve. The meetings helped to guide and direct the planning process and they provided the committee members and the public an opportunity to voice their concerns, ideas and criticisms.

Study Committee Meeting #1 (June 11, 2009) — Kick off Meeting

During the first meeting, the DCNR master site planning process was fully explained to the committee members. Also, a general and open discussion identified several possible activities that could occur within the Bridge Preserve. These included nature trails, bike trails and fishing. Another topic discussed during the introductory meeting was maintaining a proper buffer between the preserve and the neighboring residential properties.

Study Committee Meeting #2 (June 27, 2009) — Northern Parcel Hike

Study Committee Meeting #3 (July 27, 2009) — Southern Parcel Hike

The second and third meetings were conducted at the Northern Parcel and the Southern Parcel on June 27 and July 27, 2009, respectively. The site hikes allowed committee members, stakeholders and the consultant a chance to explore the current preserve conditions and suggest potential development ideas in an outdoor environment rather than an indoor setting.

The second meeting consisted of a walkthrough of the northern parcel. One idea discussed during the meeting was the incorporation of a few kiosks for displaying a preserve map and educational information. Another topic was the creation of a trail loop that would highlight the small pond as a destination point. The trail should be wide enough to handle two people side by side (5-8' width) and outfitted with log type rustic benches along its length to serve as rest areas. Other suggestions were to clear portions of the northern meadow area and use the maintained space as the preserve center. The concerns voiced by the committee were to keep activities and amenities away from adjacent properties to respect the neighbors and to determine whether the existing driveway to the site would have issues obtaining an HOP from PennDOT.

The third meeting consisted of a walkthrough of the southern site. The key items discussed in this meeting included keeping a portion of the meadow mowed for trail use, and to provide two areas of access to the lake. These lake access areas will include a picnic table

and a trash receptacle, which the township will empty. Swimming and boating will be forbidden on the lake, but fishing will be permitted. One new idea proposed during the third committee meeting was the installation of a few wildlife blinds in the meadow to observe birds and other native animals. Some committee members were concerned that the current parking area was too close to the Sawkill Creek, an EV stream, and that the term “pavilion” should be removed from all concepts because large gatherings were not a goal of the preserve. Also, it was determined that the townships would plow the parking area in the winter.

Study Committee Meeting #4 (September 21, 2009) — Critical Review of Concept Plans

During the fourth committee meeting, a critical review of the concept plan, the following items were decided upon: all trails will be non-motorized (hikers, bikes, cross-country only); no dog park will be proposed in the initial concept; dogs will be allowed in preserve, but only on a leash; the park will have dawn to dusk hours; a one rustic looking gazebo will be constructed in the northern parcel meadow; both parking areas would consist of 6-8 stalls at a maximum; and educational signage will be placed throughout the preserve especially near water features like the Sawkill Creek, Sawkill Pond, and the small northern parcel pond. Additionally, the committee members raised concern that the shelter areas may be used inappropriately after hours. Adjacent property owners should be notified about the project. Some areas of concern were that shelters will be used inappropriately especially after hours, and that all adjacent property owners should be notified about the project.

Study Committee Meeting #5 (January 27, 2010) — Critical Review of Draft Narrative

The consultant guided the committee through the draft report and the committee members critically reviewed the document. The report was also distributed via compact disc and uploaded on to the Dingman Township website to encourage and provide the committee members and other stakeholders with the opportunity to further analyze the report in more detail at home. Their thoughts and ideas were noted and the consultant finalized the draft report based on their comments. The draft plan will then be sent to PA DCNR for their agency review.

Study Committee Meeting #6 (Spring, 2010) — Implementation Meeting

The consultant will facilitate a discussion about plan implementation. Potential volunteers will be invited to attend.

PUBLIC HEARINGS

Two public hearings were advertised for the Bridge Preserve and both the study committee and the general public were encouraged to attend. The first Public Hearing to review the draft plan was held on October 28, 2009 at the Milford Township Municipal Building. The second hearing was held at the Dingman Township Municipal Building on December 3, 2009.

Public Hearing #1 (October 28, 2009) — Milford Township Municipal Building

Public Hearing #2 (December 3, 2009) — Dingman Township Municipal Building

During the public hearings a powerpoint presentation was presented on the following topics; the master site planning process, site introduction, regional and local context, site inventory and analysis, existing conditions and concepts and proposed amenities.

Several items came to the forefront during the meetings that were addressed by the consultant before finalization of the master site plan. Some of these include:

- *More site history information is needed; specifically about the Bridge family and the site's past facilities, amenities and activities.* The consultant met with Sandy Leiser, the Dingman Township historian.
- *How are the trails going to be constructed?* The consultant explained that the trails would be constructed following guidelines set forth by the International Mountain Bicycling Association and the trail tread would be made of a natural mineral surface.
- *Concern over the preserve becoming a "party" location due to amenity upgrades like pavilions and picnic areas.* The consultant explained a shelter, if any are constructed, would consist of a small gazebo at most. Additionally, the access road will not lead directly to the shelter, which lessens the likelihood that preserve users would drag large quantities of "party" supplies into the preserve.

KEY PERSON INTERVIEWS & MEETINGS WITH AGENCIES

PA DCNR states that the purpose of key person interviews is to give community leaders (beyond the elected officials) an opportunity to voice their concerns and respond to a standard set of questions. The interviews actively engaged key community leaders with the master site planning process.

After input from the Study Committee, the consultant conducted several key person interviews. The key persons were asked a standard list of five questions, followed by a discussion period that focused on the key person's area of expertise or on a topic they deemed important for the development of the preserve. Following is a brief review of these meetings.

Several key person interviews were conducted to better grasp the public desires for the Bridge Preserve. For example, representatives from the active, Greater Milford, Mountain Biking community were contacted to discuss the need for single track trails. Other key person interviews were completed with the Pike County Conservation District, Pike County Planning Commission, the Milford Water Authority, the PA Bureau of Forestry, and the Pike County Environmental Education Center. All representatives were very supportive of the proposed Master Site Plan and they were excited about the potential local and regional benefits of the Preserve. The benefits include watershed protection, education and the potential for collaboration and regional trail connectivity.

BRIDGE PRESERVE MASTER SITE PLAN KEY PERSON INTERVIEW

NAME:	EMAIL:
ADDRESS:	PHONE NUMBER:
MUNICIPALITY:	PROFESSION:

INTERVIEW NOTES:

RECOMMENDED BY: STUDY COMMITTEE

BACKGROUND:

STANDARD QUESTIONS:

HAVE YOU VISITED THE SITE BEFORE AND IF SO FOR WHAT PURPOSE?

WHAT IS THE BEST NICHE FOR THE BRIDGE PRESERVE – TOURISM, ACTIVE RECREATION, PASSIVE RECREATION, CONSERVATION?

WHAT IMPROVEMENTS ARE NEEDED AND/OR WHAT ACTIVITIES/AMENITIES SHOULD BE ADDED TO THE PRESERVE?

SHOULD COMMUNITY CONNECTIONS BE EXPLORED? IF SO, WHICH CONNECTIONS ARE MOST IMPORTANT?

WHAT CONCERNS DO YOU HAVE ABOUT THE PRESERVE (MAINTENANCE, SECURITY, ETC.)?

ADDITIONAL BRIDGE PRESERVE OPINIONS/CONCERNS/IDEAS

Jeff Rosalsky of the Pocono Environmental Education Center (PEEC) was interviewed on 07-27-09. Jeff provided guidance on educational materials and his thoughts on successful passive recreation including trail layout. Additionally, Jeff provided his thoughts on amenities like pavilions, shelters, benches and receptacles in terms of durability and materials. Jeff also mentioned that the PEEC staff can be available to lead educational tours once Preserve is completed and he believes education can be successful at the Preserve. Regarding safety, he suggested that the trail head locations and trails be well marked with mileage and difficulty. PEEC has GPS points for places of interest and mile markers to assure if someone is hurt they can be accessed easily. He suggested visiting Camp Akenac and the Shohola Elementary School, which are near the Preserve to get ideas about signage and trail markers. Using similar signage throughout the region's preserved and public lands will truly facilitate regional recreation opportunities.

Sally Corrigan & Scot Boyce from the Pike County Planning Commission and *Susan Beecher* from the Pike County Conservation District were interviewed on 08-19-09. Susan has a wealth of knowledge about erosion and sediment control measures and permitting. She mentioned that the Sawkill River is an EV Watershed; thus no general permits would be acceptable and any impacts would need to be included in a joint permit application. Also, both mulch and gravel, if used for the trail tread in any floodplain or wetland areas is considered fill material, however, raking and mowing is not earth disturbance. Susan recommended trying to maintain the pre-existing drainage patterns as much as possible. Lastly, she suggested staying away from the documented floodplain with the trail layout (approximately fifty feet from top of bank) or else an encroachment permit must be used.

Sally mentioned that a parking/trail head close to Route 6 can provide a nice stop for tourists along the Route 6 corridor, however, standard signage should be installed to encourage stopping. Also, PennDOT recently completed right of way (ROW) work along Route 6 and studied whether the ROW could act as a bike lane — this would enhance accessibility to the site as well. Additionally, signage near the trail head, Sawkill River and Sawkill Pond should be erected to provide educational opportunities. The signage should have a section entitled, "What can you do?," to promote conservation at home.

Other general suggestions included the following: propose a trail loop around the small northern pond; if possible, remove billboards or restrict advertising for businesses or non-profits that promote conservation and tourism; six to eight stalls should be plenty for the trailhead; all agreed the plan should look for potential regional connections to trails like the McDade Trail; provide access for dogs on a leash and consider a dog park in void space next to Route 6; post the property to alert hunters that there is no hunting in Bridge Preserve, especially because hunting is permitted in the adjacent parcels; try to control ATV's; and lastly, consider a composting toilet.

Money can pay for maintenance, billboards were there

The consultant conducted an interview (short presentation with question and answer) for the *Milford Water Company* Board Meeting on September 28, 2009. The Sawkill River is linked to the public water supply for Milford Borough, thus the Milford Water Company (Tim Gardner) was approached about the master site plan due to the Bridge Preserve's upstream location. The study committee also wanted to inquire if the water authority had any interest in providing signage or support for educational signage dedicated to watershed protection, ground water and the water cycle, specifically geared to the Sawkill River Watershed.

PennDOT:

An onsite meeting with Allen Jones from PennDOT on 08-19-09 helped identify safe access points to the parcels. Highway Occupancy Permits (HOP's) are required at the Preserve for the construction of new minimal use driveways. The permits were formally submitted to PennDOT in December 2009.

Pike County Conservation District::

Susan Beecher , the executive director, was interviewed in a key person interview on 8-19-09. Additionally, the consultant met with Ellen Salak and John Mason, Resource Conservation Officers, on December 3, 2009 to discuss the feasibility of the proposed trail layout and the potential permits that would be required. Based on this meeting, the overall trail layout and parking lot location was altered in an attempt to remove any need for permits and any impacts on potentially wet areas.

Pike County Planning Commission:

Sally Corrigan and Scot Boyce were interviewed as key persons on 8-19-09 and Scot attended most of the study committee meetings and public hearings. Scot also accompanied the consultant on a walk through to determine feasibility of regional connectivity specifically to the Delaware State Forest lands, the Pike County Park and State Game Lands #209 via the Huckleberry Trail.

Pennsylvania Game Commission:

James Leigey conducted an onsite investigation with the consultant on 01-13-10 to locate a historically known Bald Eagle nest and determine the proximity of the nest to the preserve. Presently, the eagle has relocated its nest from the eastern shore to the western shore of Sawkill Pond and it no longer poses an issue for any proposed development at the Bridge Preserve.

Pennsylvania Department of Conservation and Natural Resources:

The consultant met with PA DCNR, Bureau of Forestry, to discuss constructing a new trail that would connect the Bridge Preserve to the existing Huckleberry Trail, which starts at Lily Pond and terminates at Savantine Creek. Nick Lylo, District Forester, and Tim Ladner and Tim Balch, Assistant District Foresters, were in attendance.

Interestingly, connecting municipally owned land with state forest land is a relatively rare and isolated venture within the Commonwealth. Thus, additionally meetings will obviously be needed between the townships and PA DCNR before the proposed regional connection becomes a reality. The main topics of concern as noted during this interview included: assuring sustainable trail layout; acquiring proper permits especially for the Savantine Creek crossing; funding for the actual trail construction phase; setting trail width to discourage ATV's; posting no hunting signs entering the Preserve; and the most important topic was preparing a suitable maintenance program for both the short term (1-2 years), as well as, the long-term (15-20 years and beyond).

Despite additional planning needs that are outside the scope of this master site plan, the Bureau of Forestry is supportive of the project and they are willing to discuss the potential connection in the future. This represents a solid first step for a very important

component of this master site plan—regional connectivity. The new trail would essentially connect the Bridge Preserve to the Pike County Park, to the Delaware State Forest lands, to State Game lands #209 and ultimately northward to the McDade Trail, the Delaware River Corridor and National Recreation Area.

The Greater Milford Mountain Biking Community:

The consultant met at Action Bikes and Outdoor Shop in Matamoras on January 27, 2010. Chris Barletto, the store owner, and Norbert Andryszak, an engineer with McGoey, Hauser & Edsall, were interviewed and they were very supportive of the project. They believe the Bridge Preserve is a key cog and potential catalyst for a regional biking trail network. They were optimistic that the local biking community would rally to help layout and construct the proposed trails at the Preserve. Additionally, there is a real possibility that local bikers would help with the maintenance of the trails. The Bridge Preserve is also ideally located along Route 6, which is a road bicycling route as well. Thus, the project can be enjoyed by both mountain bikers and road cyclists. Lastly, Chris believed potential exists in the Milford area to develop a respected, destination trail network that can even host amateur and professional mountain biking events and sanctioned tournaments.

MEETINGS WITH ELECTED OFFICIALS

No specific meetings were conducted with elected officials. However, several of the elected officials were invited to and several did attend the public hearings to voice their opinions. The study committee members also kept the municipal officials aware of the project.

NEEDS ASSESSMENT

In general, the main community needs that are satisfied by the Bridge Preserve include land conservation, watershed protection, environmental education, recreation-based tourism, and passive recreation. Specific to the Bridge Preserve, there were a variety of requests and needs that came to the forefront during the public participation process.

Low impact and sustainable parking lots are needed at the Preserve to accommodate vehicles because no off-street parking is available. The parking lots will remain small with space for six to eight cars. The lots will not be lighted to discourage large gatherings or loitering after hours.

Multiple forms of directional, safety, regulatory and educational signage are needed at the Preserve. Signs should inform users of the fines/penalties for using the park after hours, they should state the minimum age of unaccompanied minors to avoid any loitering at the preserve, they should state no ATV's or hunting is allowed and they should encourage "carry in carry out" practices. Other signage, like educational signage, would explain watershed issues, flora and fauna, and aquatic habitats. Kiosks at the trail heads should contain such information as trail map, rules and regulations, and emergency contact information.

Community and Bridge Preserve Needs

**Low maintenance
Environmental education
New directional and safety signage
Invasive species control
Regional connections
Wildlife viewing**

**Trails for hiking/biking
No large shelters or pavilions
New trailhead parking lots
Fishing permitted at Sawkill Pond
Nature trails
Passive recreation**

SECTION D

SITE INVENTORY AND ANALYSIS



DESCRIPTION OF PARK SITE

The Bridge Preserve is a 317-acre site composed of two separate parcels along the Dingman and Milford Township line in Pike County. A 67-acre parcel south of US Route 6 lies in Dingman Township, and a 250-acre parcel lies north of Route 6 in Milford Township. Although development is common along the Route 6 corridor, the parcels remain primarily forested and show little signs of human activity or human-induced degradation.

The southern parcel is primarily wooded. It does have a large open meadow in the interior, approximately 400 feet of frontage along Sawkill Pond, and a 1000 linear foot section of Sawkill Creek (an Exceptional Value stream) meandering through the parcel. Portions of this southern parcel were maintained as open fields in the past and cross-country skiing was a nice amenity utilized in the winter months. The southern parcel is bounded to the west by Sawkill Pond, the New Jersey Y Camp to the south, and Route 6 to the east. Current access to the parcel is best achieved by turning left onto Sawkill Road off of Route 6 and proceeding for approximately 200 feet to a dirt road on the right that runs into the parcel, skirting the northwestern property line and leading to the lake.

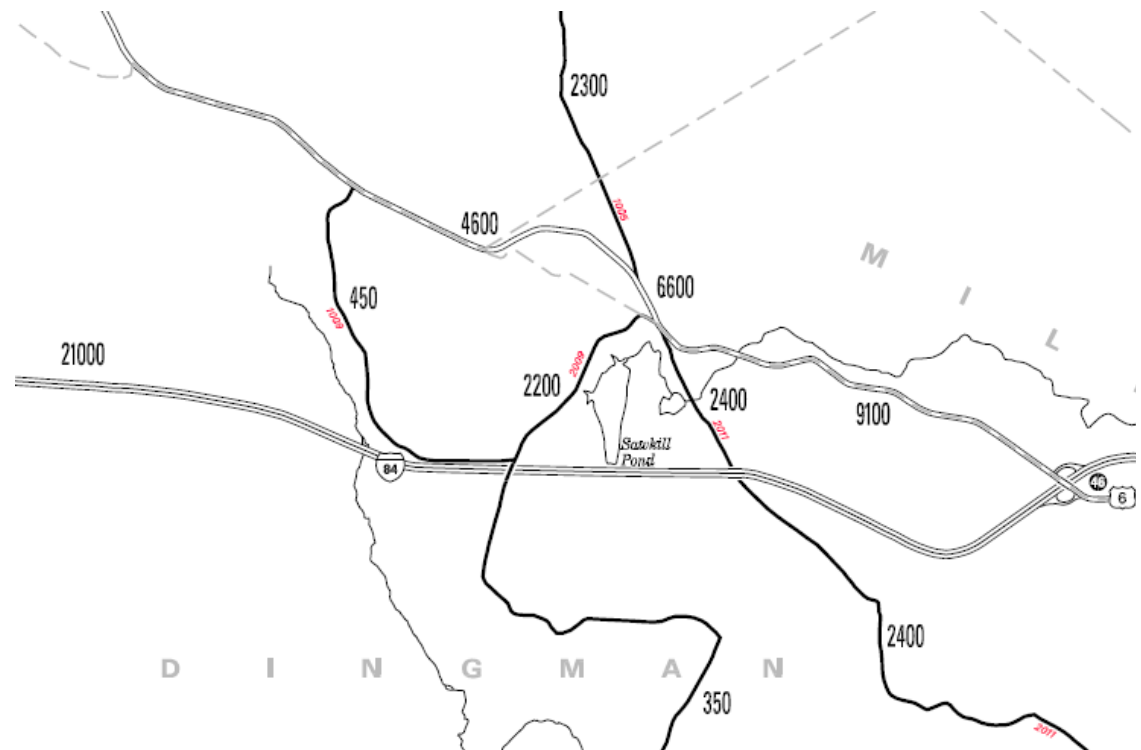
The northern parcel consists primarily of 233 wooded acres with a small spring-fed pond and an eight acre meadow. The northern rectangular-shaped parcel fronts Route 6, and extends to the northwest away from the highway. It is bounded to the north and east by undeveloped forestland, to the south by the Hickory Hills Estates residential development and to the west by Route 6. A larger residential parcel is cut out of the western portion along Route 6. An unimproved dirt road leads into the site from Route 6, however, it is difficult to access this road off the highway without a vehicle that has high clearance and 4-wheel drive. This road is narrow, grass-covered, rutted in spots and does not see regular usage. It runs nearly the entire length of the property from the southwest corner of the site to a small pond that lies in the northeast corner of the parcel.

PARK ACCESS AND CIRCULATION

The preserve has frontage along Route 6, Twin Lakes Road and Sawkill Road. Access to the southern parcel is anticipated from Sawkill Road (SR2011). Access to the northern parcel is planned from Route 6, directly across from the intersection of Route 6 with Sawkill Road. This ingress/egress point is convenient, however, the traffic and speed of cars on Route 6 is a concern.

The Preserve is easily accessible by local residents and tourists. The 2007 Penn DOT Traffic Volume Map supports this statement. Over 9000 cars pass the property daily along Route 6 and over 2000 cars pass the northern and southern parcels using Twin Lakes Road and Sawkill Road, respectively.

Twin Lakes Road (a few hundred feet off of Route 6) is a secondary access option for the northern parcel. The main drawback for the Twin Lake Roads access is the need to construct a trail system from the new trail head through a EV wetland area to the main, usable areas of the Bridge Preserve. Overall, the time and money required to obtain federal and state permits is too prohibitive to utilize the Twin Lakes Road option.



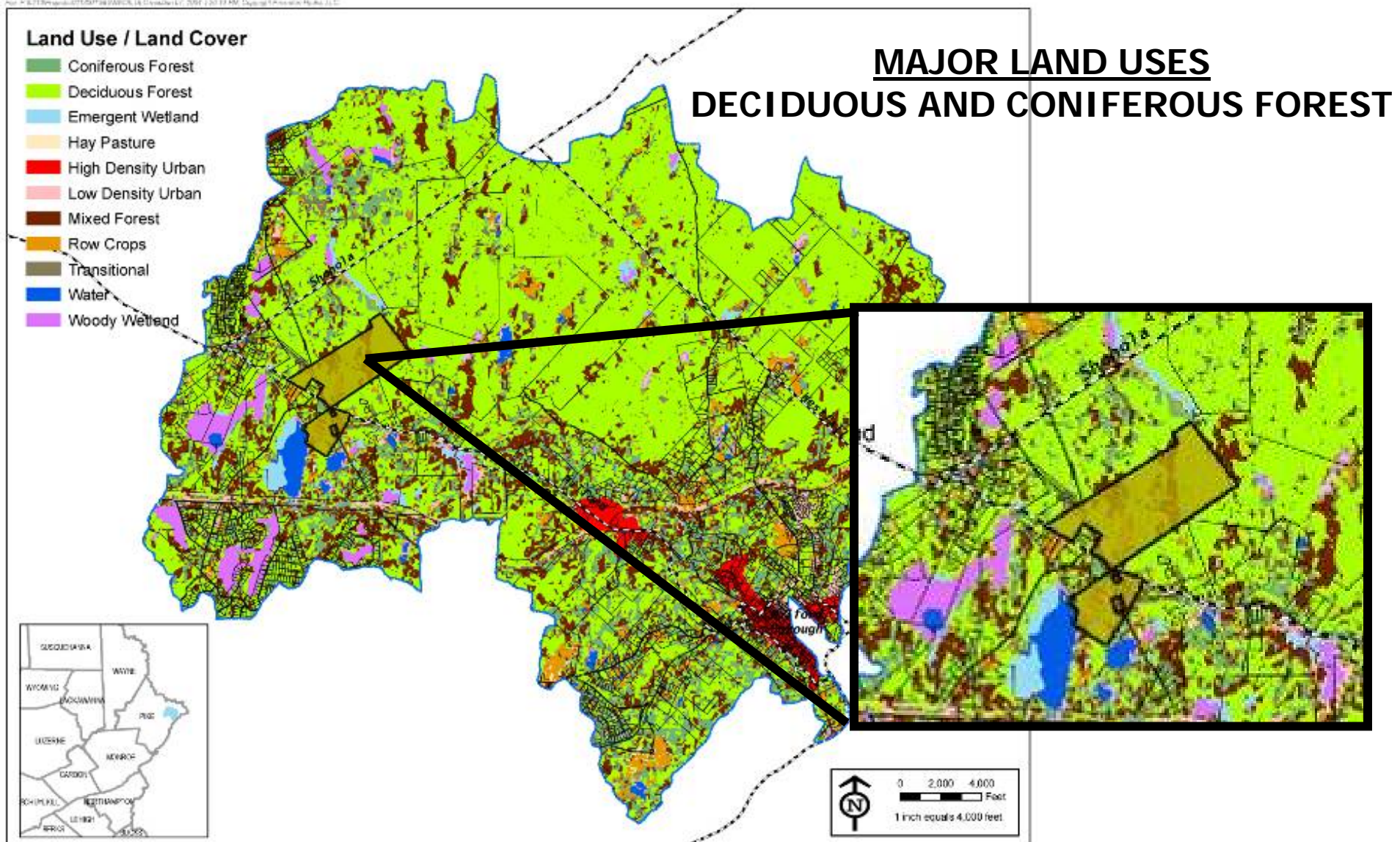
PennDOT Pike County 2007 Traffic Volume (average daily)

SLOPES AND TOPOGRAPHY

The northern parcel is composed of low-gradient slopes (0-8%) that generally originate around 1300 feet in elevation and rise to two broad areas that top out at 1360-1380 feet. Steeper slopes (15-40%) do exist along the northeast boundary of the parcel as elevations decrease to 1180 feet. Within this area, a 0.3-acre pond appears to have been constructed into the side of the slope. A berm along the northeast side of the pond has created a steep drop-off along that side. A small amount of water was observed overtopping the berm along the northeast side, and flowing down slope. The southern parcel has elevations ranging from 1280 feet near Route 6 to an elevation of 1120 feet at the southern tip of the parcel. The slopes are typically 3-8% with some 8-15% slopes near the Sawkill Creek.



LAND USE AND ZONING

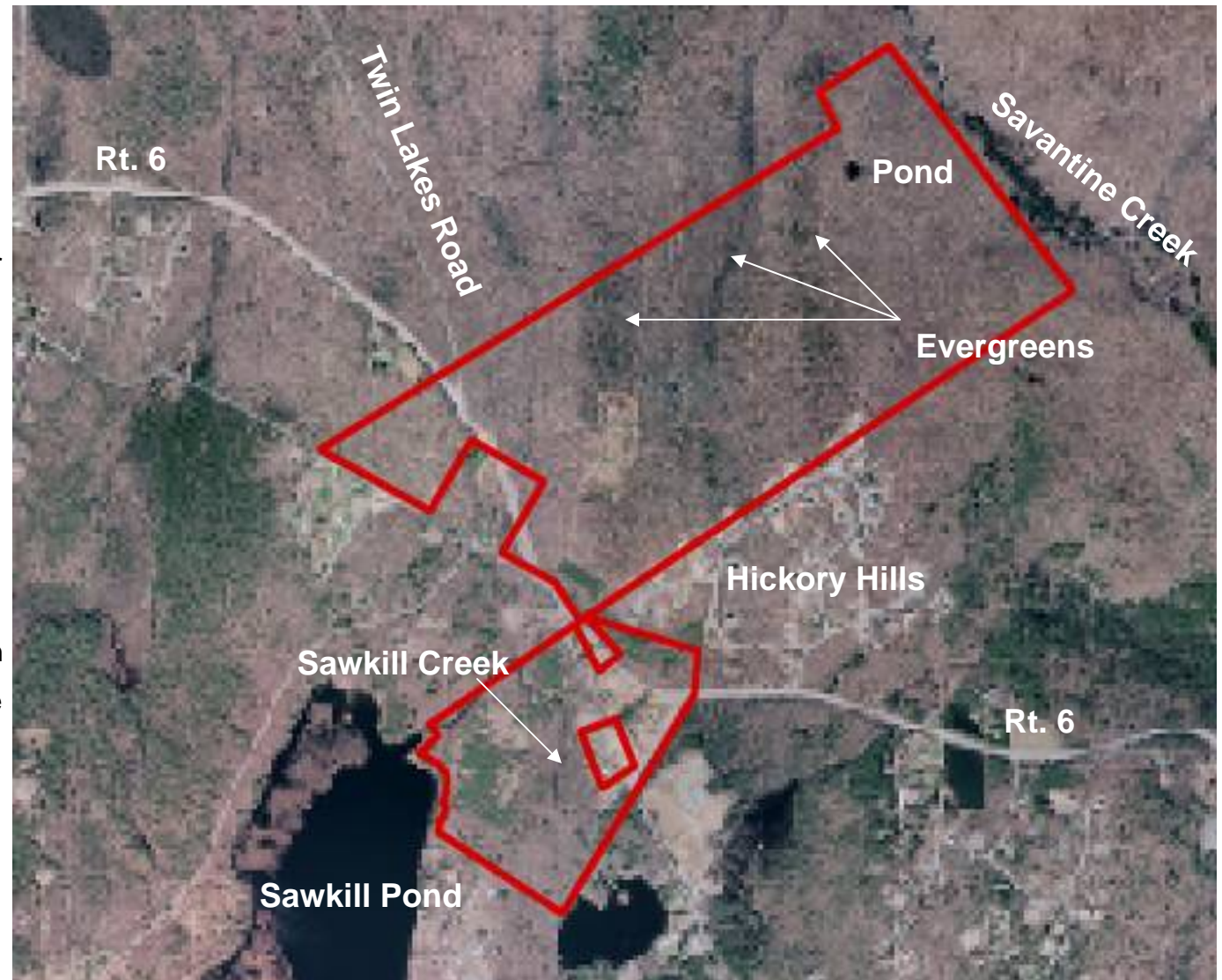


The land use and land cover for the Bridge Preserve and the surrounding properties is dominated by deciduous forest. There are several adjacent water resources and some high density urban cover as well.

AERIAL

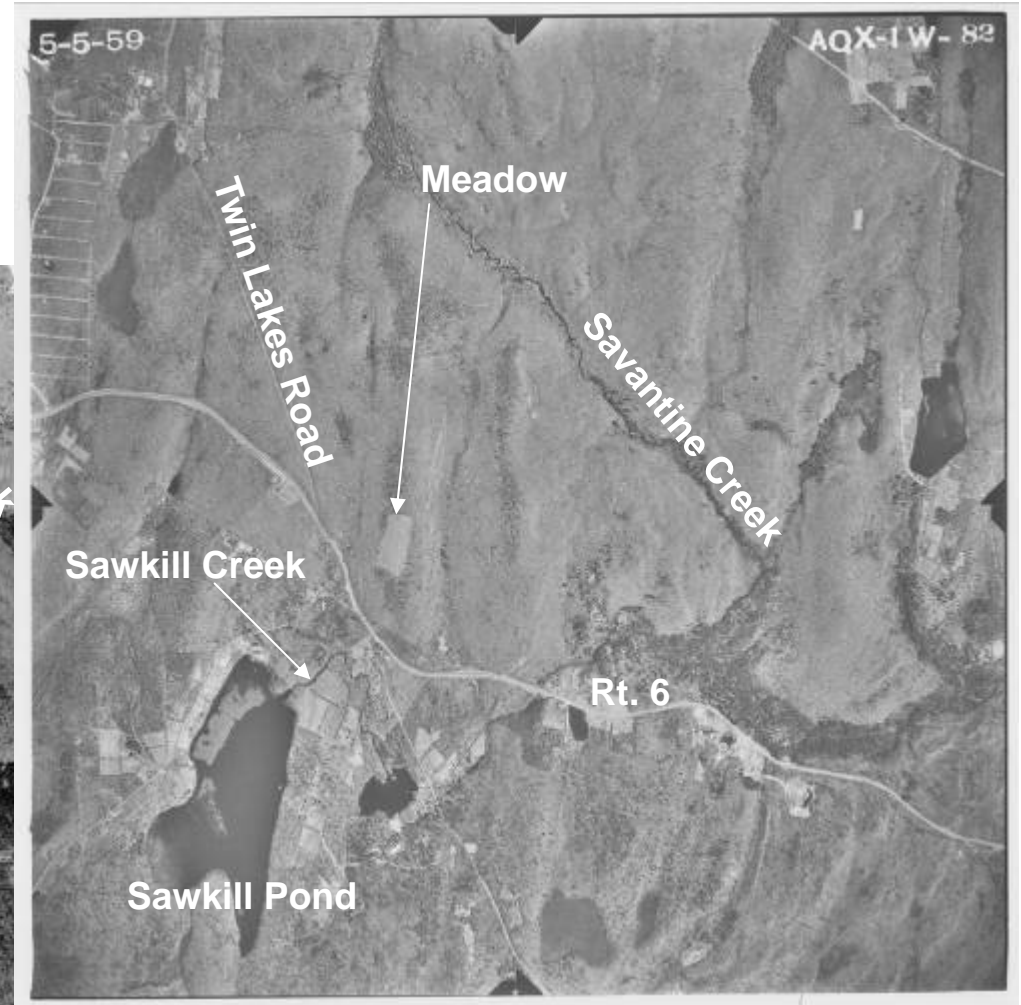
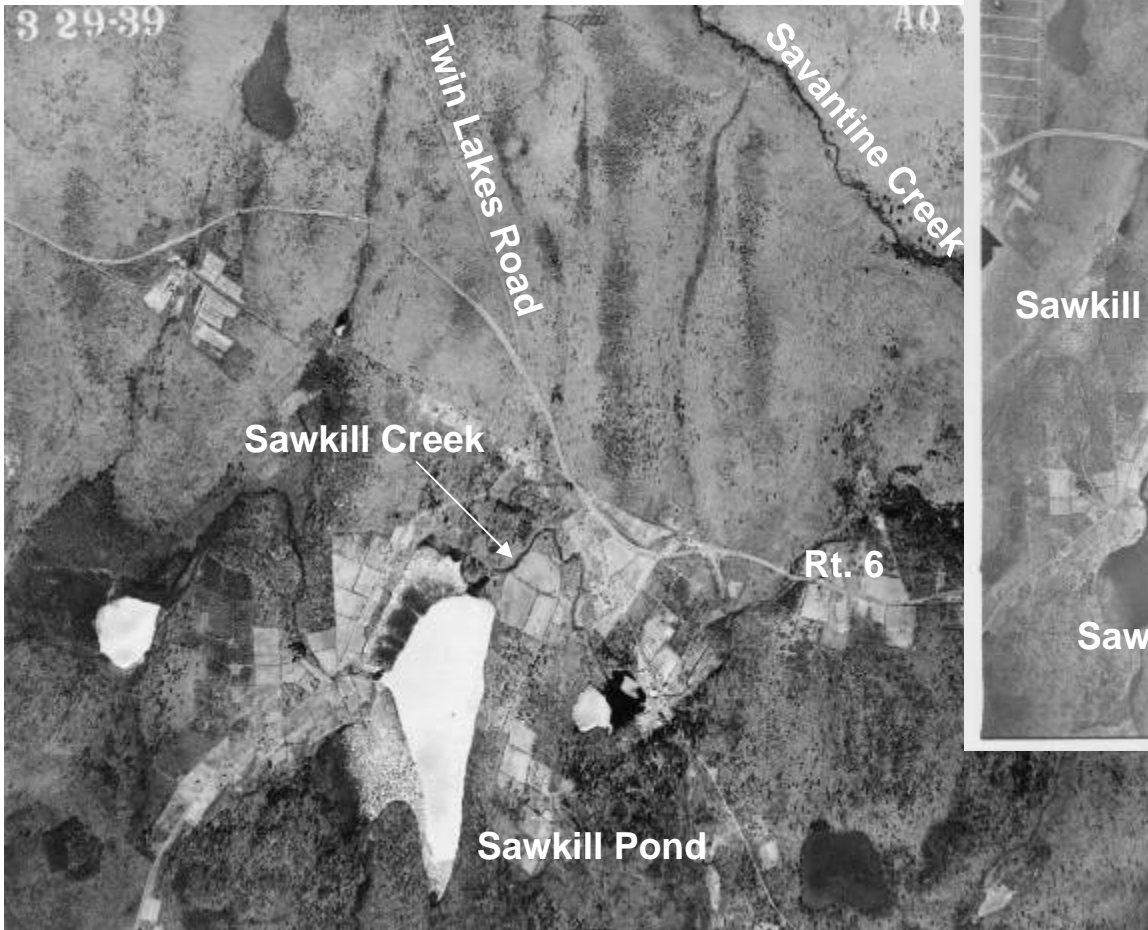
Most of the land surrounding the two parcels is wooded forest and is not heavily developed. The Sawkill Pond is located to the southwest of the southern Bridge Preserve parcel. Other water features include the Sawkill Creek and the Savantine Creek. The only major residential subdivision is Hickory Hills Estates located along the southeastern boundary of the northern parcel.

Several small individual residences can be found scattered near the site but the nearest high density urban area is found several miles east down Route 6 near Milford. While no wetlands are found on the bridge preserve site, several large wetlands can be found to the south of the site.



HISTORIC AERIALS

The Bridge Preserve has remained largely protected and undeveloped as evident by these historic aerial photographs, from the Penn Pilot Program, dated 1939 and 1959. The main differences include the appearance of the meadow and a reduction in the number and size of evergreen tree stands. The small spring-fed pond in the northern parcel is not present in 1959.

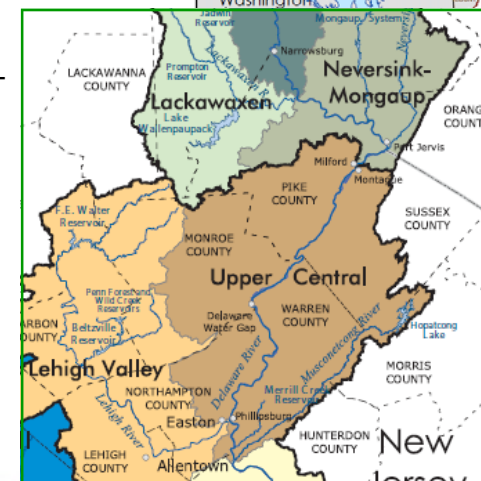
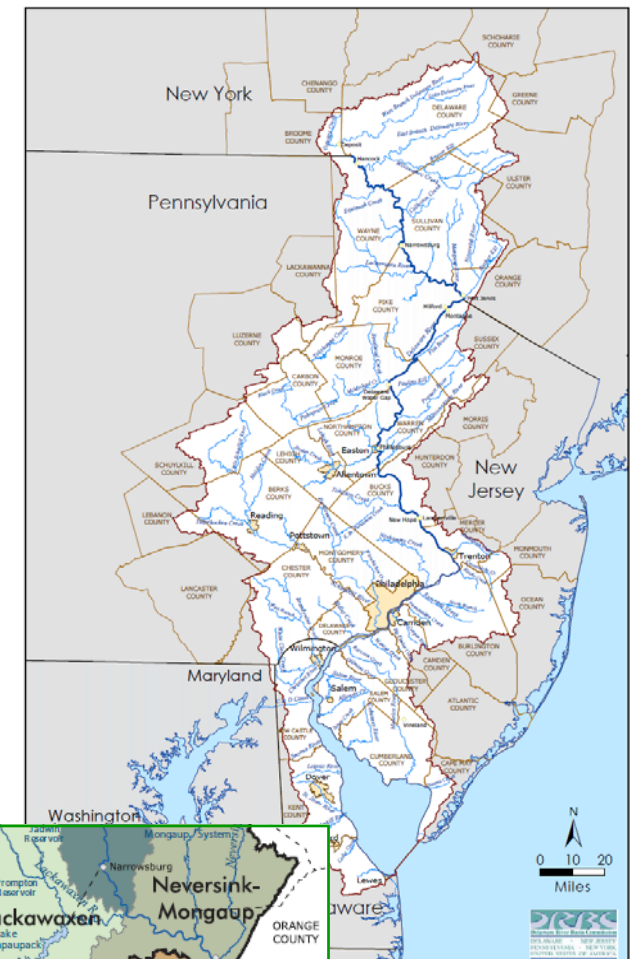


HYDROLOGY AND WATERSHED INFORMATION

At the most general scale, the Bridge Preserve and all the water that falls onto or flows within the property is contained within the Delaware River Watershed, whose drainage area flows to a Special Protection Waters. According to the Delaware River Basin Commission (DRBC) the site is located within the Upper Central Region of the Delaware River Basin. The DRBC also classifies the Delaware River, where it flows the closest to the Bridge Preserve, as Special Protection Waters, National Wild and Scenic River System, Outstanding Basin Waters and Significant Resource Waters.

At the sub-watershed scale, The Bridge Preserve is located within the Sawkill and Vandermark Creeks Watershed, which drains 30 square miles and 5 municipalities in Pike County (Milford Borough and Dingman, Milford, Shohola and Westfall Townships) before emptying into the Delaware River. According to the Sawkill Creek & Vandermark Creek Watersheds Conservation Plan (2005), “the watershed, and its many creeks and tributary streams are characterized by exceptional water quality, adequate water supply, and diverse and healthy biological communities, including several rare threatened plant and wildlife species. Moreover, the watershed’s surface water resources have been afforded strong protection under Pennsylvania state law as either High Quality – Cold Water Fisher (HQ-CWF) streams or the more stringent Exceptional Value (EV) streams. These designations ensure that the water quality and the biological communities native to these waterways are maintained through the state’s and-degradation requirements.”

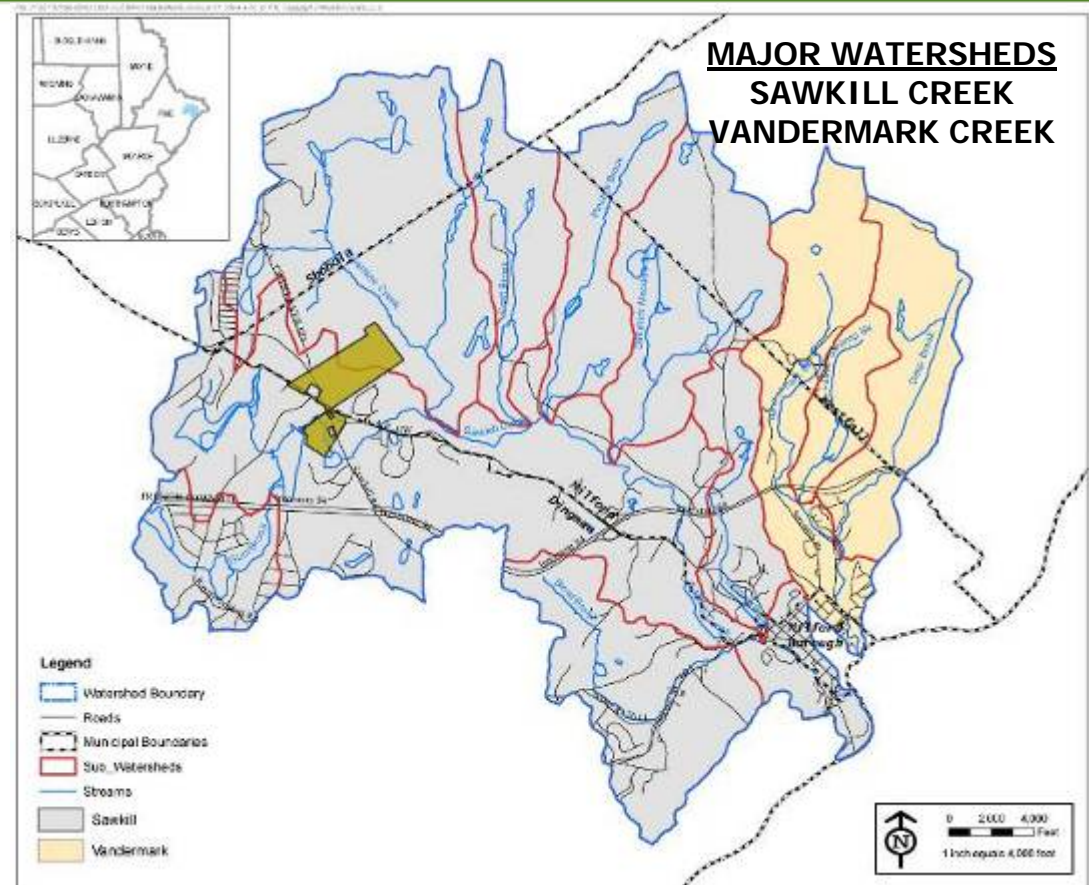
Delaware River Basin with County Boundaries



Delaware River Basin Commission (DRBC).

Despite these designations, the Sawkill-Vandermark Creeks Watershed is not isolated from environmental degradation. The steady rise in regional population growth rates often dovetails with steady rises in water-borne and air-borne pollutants, fragmented forests, stormwater volume, invasive species and sediment loading. The Bridge Preserve represents the best method of watershed protection — land preservation.

At the most localized scale, the Bridge Preserve, the Sawkill Creek flows through the southern parcel and it is one of two streams that would be impacted by development activities on the Bridge Preserve. The second watercourse, the Savantine Creek, is a tributary to the Sawkill Creek. It does not actually flow through the Bridge Preserve property, however, portions of its floodplain and the tributaries to its main channel are located on the Bridge Preserve.



(Princeton Hydro LLC 2005)

The Sawkill Creek is approximately 15-feet wide and it had an average depth of approximately 1-foot during the time of the first site visit. It is designated as an Exceptional Value (EV) stream by the PA Department of Environmental Protection, which offers it the highest level of protection from human degradation.

The Savantine creek can be found at the northern most portion of the northern parcel. Like the Sawkill Creek, the Savantine Creek has been given the stream designation value of EV (Exceptional Value) the highest rating possible.

* The Sawkill Creek is classified by A Natural Areas Inventory of Pike County, Pennsylvania (1995) as a “High-Gradient Clearwater Creek community (NC517).

(Princeton Hydro LLC 2005)

HYDROLOGY AND WATERSHED INFORMATION: NWI WETLANDS



No National Wetland Inventory (NWI) wetlands are present on site. However, a few large tracts of lowland, wet areas associated with two intermittent streams are found within the Bridge Preserve property. No official wetland delineation has been completed.

VEGETATION

Generalized — State Level

The *Terrestrial & Palustrine Plant Communities of Pennsylvania* manual helps to better categorize both terrestrial and palustrine (wetland) plant communities within Pennsylvania. A plant community is defined as an assemblage of plant populations sharing a common environment and interacting with each other, with animal populations and with the physical environment.

Overall the Bridge Preserve is located within the Glaciated Northeast Ecological Region of Pennsylvania and both palustrine forests and terrestrial forests are present on the site. Forests have 60% to 100% tree cover, whereas, woodlands have between 10% and 60% tree cover. Contrary to terrestrial communities, palustrine type communities are subject to surface flooding or periods of prolonged saturation during the growing season and vegetation is a least partially hydromorphic. The manual does not categorize meadow or field communities. Specifically, the community types identified by the consultant at the preserve include the following:

Northern Parcel:

Palustrine Forest: Red maple, black gum palustrine forest

Terrestrial Forest: Hemlock (White Pine), red oak, mixed hardwood forest.

Southern Parcel:

Terrestrial Forest: Hemlock (White Pine), red oak, mixed hardwood forest.



Generalized — County Level

The Natural Areas Inventory (Davis *et. al.* 1990) classifies Pike County as within the Glaciated Section of the original oak-chestnut Forest Region, which once extended from southern New England to northern Georgia, prior to the chestnut blight caused by the parasitic fungus *Endothia parasitica* in the early 1900's. The region is now referred to as the Mixed Oak Forest.

Portions of the Mixed Oak forests have been logged in the past for lumber and fuel. Most of the forested areas in Pike County consist of even-aged timber between 40 and 80 years old, comprised of white, red and black oaks as the dominant canopy species. Microtopography, moisture regimes and abundance of nutrients guides the spatial layout of the various oak species within the forest. White oaks do best on the moist soils while red oak prefers drier, better drained soil conditions, and black oak does best on the dry upland slopes. Common associates include red and sugar maple, black cherry, black gum, and white pine in the canopy and the shrub layer includes blueberry, shadbush, viburnums, and witch hazel. All of these species are present at the Bridge Preserve.

The deciduous portions are usually dominated by beech and sugar maple while the mixed communities are dominated by hemlock with sugar maple, beech, and other hardwoods. White Pine is a subordinate species now but it was a more common component of the forest prior to logging. Because of the proximity of the Mixed Oak Forest and the Northern Hardwoods Forest, species overlap and outliers can be found in either forest type due to aspect, moisture, and soils.

The Natural Areas Inventory also states that glaciated landscapes often have an abundance of wetlands because when the ice retreated it leaves drainage ditches that retain water. Marshes, wet meadows, and swamps have formed in shallow depressions and along streams and other water bodies throughout Pike County. These wetlands receive water that is generally well aerated, are relatively high in nutrients and have very little organic matter accumulation. Red maple, hemlock, ash, black gum, and yellow birch are typical canopy species while blueberry and swamp azalea are common shrub species.

Specific — Bridge Preserve:

During the conservation easement process, a thorough vegetative inventory was completed at the Bridge Preserve. It was compiled by in 2006 by Janet Ebert and Jack Holt, biologists from the North American Land Trust. Their site inventory and report is included in the Appendix. Following is a more generalized summary of the site's vegetation.

Most of the southern parcel is covered by a diverse mix of trees and shrub understory, except for the large open meadow parcel lies within the parcel. Red maple, various oak species, and black birch trees composed much of the forest cover. White pine was also prevalent throughout the site, and appeared to be planted in thick stands around the open meadow area and near the pond. The meadow was covered by goldenrod, multi-flora rose, barberry, and had white pine interspersed throughout. The shoreline along Sawkill Pond was covered by stands of rhododendron and huckleberry. Multi-flora rose and barberry shrubs were the most prevalent invasive species observed in the parcel.

Excluding the 8-acre meadow area, the northern parcel is uniformly forested, with the majority of trees in the same age group (most likely 50+ years). Various oak species, hickory, sassafras, and pitch pine were common. A uniform cover of huckleberry, low-bush blueberry and ferns comprised the understory, with stands of witch hazel also common. The open meadow was composed primarily of goldenrod, barberry, sweet fern, various grasses and a smattering of white pine. It appears that this rectangular shaped open area may have served as an agricultural field at some point.

Species List — Summary*:**Northern Parcel**

Canopy: oak, maple, black gum, sassafras, some white pine and pitch pine

Understory: huckleberry, mountain laurel, sheep laurel, teaberry and lowbush blueberry

Meadow: brome, sweet fern, spiraea, barberry, multiflora rose, goldenrod, asters

**Southern Parcel**

More diverse and richer in species and habitats compared to the northern parcel

Canopy: oak, maple, black gum, birch, sassafras, some white pine and pitch pine

Understory: huckleberry, sheep laurel, teaberry, lowbush blueberry, barberry, green brier and viburnum; highbush blueberry and buttonbush near water

Old field: grasses, spiraea, barberry, multiflora rose, goldenrod, asters, strawberry, yarrow

* The complete inventory completed by Janet Ebert and Jack Holt from the North American Land Trust is included in the Appendix.

WILDLIFE

The Bridge Preserve contains several distinct habitats and plenty of microtopography to support species and multiple food chains, commonly observed throughout the Pocono Mountains. A non-exhaustive list of wildlife includes rabbits, squirrels, deer, beavers, opossum, raccoons, chipmunks, songbirds, raptors, snakes, bear and amphibians. Additionally, monarch butterflies were observed in the meadow area and ticks were heavily abundant throughout the site. Lastly, numerous deer trails were also evident.

A PNDI (Pennsylvania Natural Diversity Inventory) review was completed for the site to examine the potential impacts to threatened and endangered and or special concern species and resources within the project area.

The search yielded responses from both the PA Game Commission and the PA Fish and Boat Commission. The Fish and Boat Commission reported that the timber rattlesnake occurs in the forested, mountainous regions of the Commonwealth including Pike County. The Game Commission reported the presence of a documented Bald Eagle Nest adjacent to the property. The nest has a development buffer of 1000 feet around the nest.

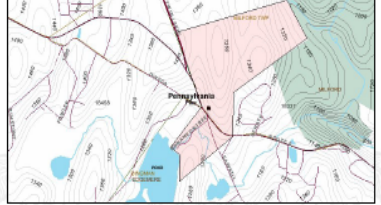

Christopher A Urban, of Chief Natural Diversity Section, said “They (the rattlesnakes) prefer forested areas to forage for small mammals (e.g., mice and chipmunks) and talus, south to southeaster facing rocky slopes for hibernating and other thermoregulatory activities. The timber rattlesnake is threatened by over hunting, poaching and habitat alteration.” Christopher Urban also said “There have been observations of timber rattlesnakes nearby, but not in the immediate vicinity of the project area. Therefore we do not anticipate any direct adverse impacts to the timber rattlesnake from the proposed project.”

The consultant met with James Leigey from the PA Game Commission on 01-13-10 to locate the previously documented Bald Eagle nest directly adjacent to the Bridge Preserve. Field investigation revealed that the Bald Eagle had relocated the nest across the pond; thus, there are no further conflicts.

PNDI Project Environmental Review Receipt Project Search ID: 20091015214441

1. PROJECT INFORMATION

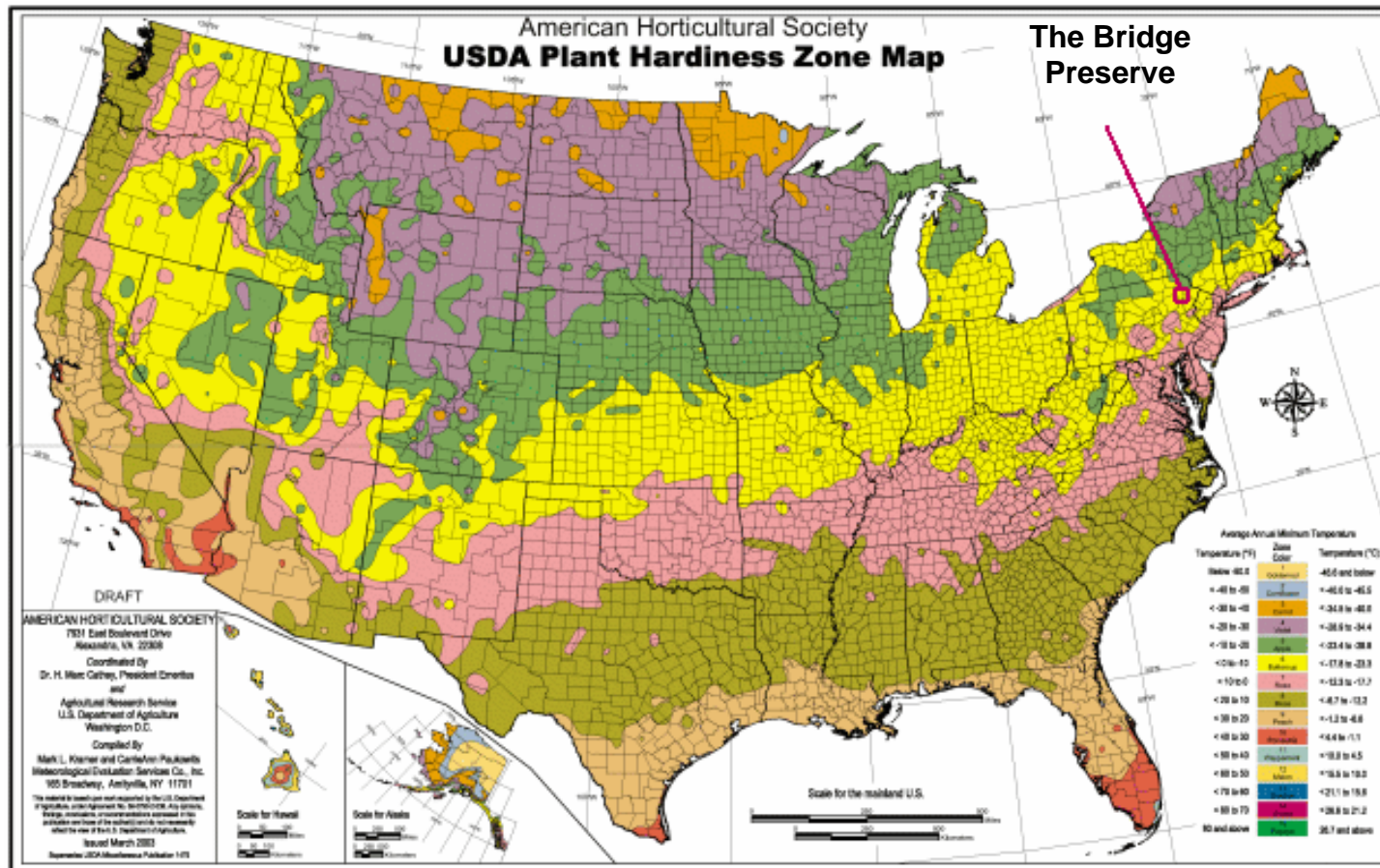
Project Name: Bridge Preserve Master Site Plan
 Date of review: 10/15/2009 2:16:57 PM
 Project Category: Recreation, Trails & Trailheads (parking, etc.)
 Project Area: 301.8 acres
 County: Pike Township/Municipality: Dingman, Milford Twp
 Quadrangle Name: EDGEEMERE
 ZIP Code: 18337, 18458
 Decimal Degrees: 41.36168 N, -74.88968 W
 Degrees Minutes Seconds: 41° 21' 42" N, -74° 53' 22.9" W

2. SEARCH RESULTS

Agency	Results	Response
PA Game Commission	Potential Impact	FURTHER REVIEW IS REQUIRED, See Agency Response
PA Department of Conservation and Natural Resources	No Known Impact	No Further Review Required
PA Fish and Boat Commission	Avoidance Measure	See Agency Response
U.S. Fish and Wildlife Service	No Known Impact	No Further Review Required

CLIMATE



Pennsylvania is considered to have a humid continental climate. However, the topographic features of Pennsylvania divide the state into four distinct climatic areas — Pike County is located in the Allegheny Plateau. These areas have a more severe humid continental climate with colder, snowier winters and cooler summers compared to the valley areas of the state. Average high and low temperatures are 30 degrees F and 75 degrees F in January and July, respectively (averages compiled between 1899 and 2009 by Penn State University). Mean precipitation ranges from 2.7 inches in February to 4.5 inches in May, June and September (means compiled between 1899 and 2009 by Penn State University). The Bridge Preserve is located in the USDA Plant hardiness Zone of 5b.

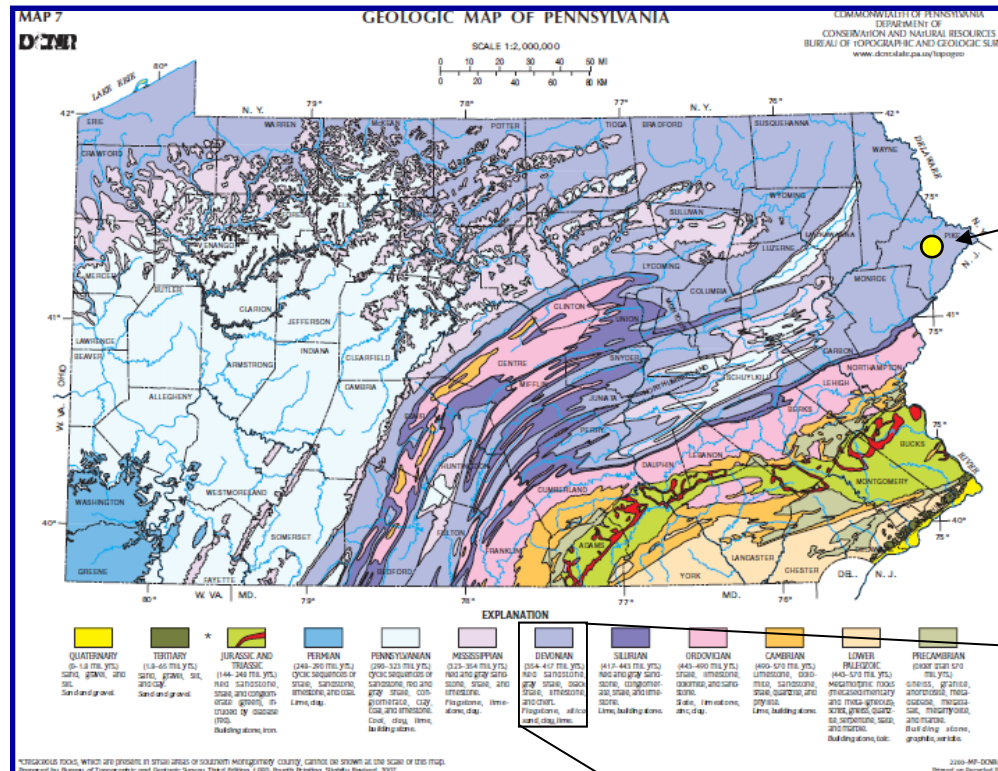
The following geologic information was obtained from the PA DCNR website (www.dcnr.state.pa.us) and from the Natural Areas Inventory of Pike County, Pennsylvania (PNHP 1995).

All of Pike County has been influenced by glacial activity. The area was glaciated at least three different times in the past million years. The most recent glacier, the Wisconsin Glacier, withdrew through the county about 10,000 to 15,000 years ago.

The Glaciated Low Plateau Section includes diversified topography with rounded hills and broad to narrow valleys all of which have been modified by glacial erosion and deposition. Swamps and peat bogs are common in the eastern part of the Section.



The site is located within the Catskill Formation of the Devonian Period, which is characterized by grayish-red sandstone, siltstone and shale, with some gray sandstone and conglomerate rock. The Bridge Preserve has several large outcroppings scattered throughout the site.



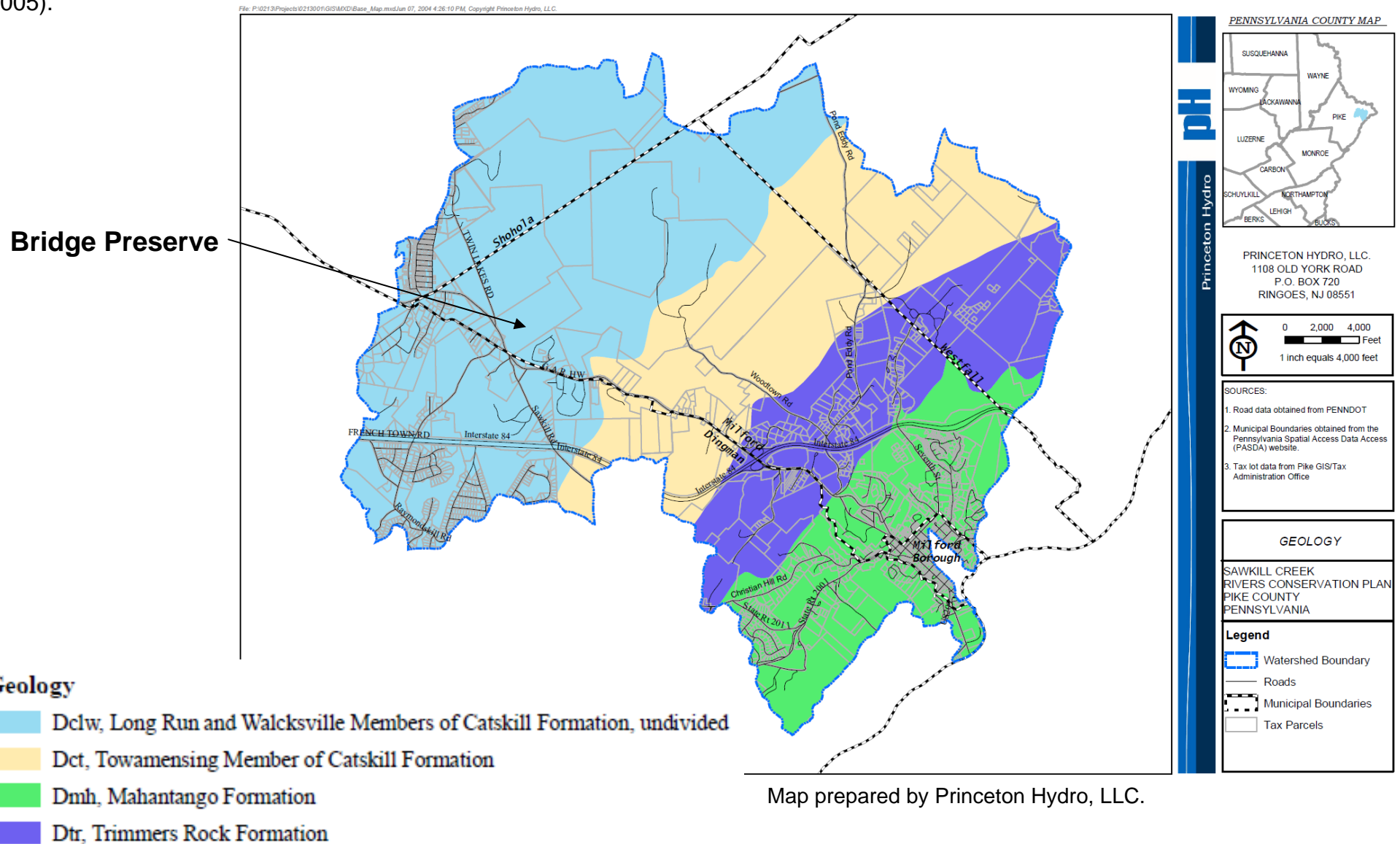
The Bridge Preserve

Landforms of Pennsylvania, Map 7, Geologic Map of Pennsylvania)

DEVONIAN

(354-417 mil. yrs.)
Red sandstone, gray shale, black shale, limestone, and chert.
Flagstone, silica sand, clay, lime.

More specifically, the site is located within the Delaware Long Run and Walcksville Members of the Catskill Formation. This map was prepared by Princeton Hydro, L.L.C. for inclusion in the *Sawkill Creek & Vandermark Creek Watershed: A Rivers Conservation Plan* (2005).



SOILS

A review of the soil map (following page) indicates that moderately to well drained and extremely stony soils comprise most of the property. Also, based on the mapping, poorly drained soils that could reflect wetland conditions are present on the site. No wetland delineation was completed for the property. A small intermittent stream and the Sawkill Creek flows through the northern and southern parcels, respectively. Thus, floodplain soils are also present. The Bridge Preserve property contains a total of 5 major soil series. The largest percentage of soils found on the site were in the Wurtsboro soil series with the next most prevalent soil type being the Smartswood Series. The soil information was obtained through PA SoilMap (Survey Area, PA 103 Pike County, PA), the Soil Survey of Pike County and from Pike County GIS data.

Wurtsboro Soil Series (30B, 25B, 25C, 30C):

The Wurtsboro series consists of deep, moderately well drained, sandy soils that were formed in glacial till derived from acid, gray sandstone and siltstone. These soils are gently sloping to moderately steep and are on plane or slightly concave slopes of the uplands in the eastern two-thirds of the county. The Wurtsboro soils have moderate available moisture capacity and slow permeability through the profile. These soils have a fragipan that begins about 20 inches below the surface. It is a dense, brittle layer that impedes the movement of water and the growth of roots. The soils are very strongly acidic. Nearly all the Wurtsboro soils in Pike County are so stony that they have severe limitation for crops and moderate to severe limitations for use as building sites.

The 30B Wurtsboro stony fine sandy loam (northern and southern parcels) are not prime farmland and occur on 0-8% slopes. They are moderately drained, with a seasonal water table at 12-28" and a very deep depth to bedrock.

The 25B Wurtsboro channery fine sandy loam (northern and southern parcels) are classified as prime farmland. They are moderately well-drained on 0-8% slopes.

25C Wurtsboro channery fine sandy loam (southern parcel) are classified as farmland of statewide importance. They are moderately well drained, stony, with a seasonal water table at 12 to 28 inches. They occur on 8 to 15 percent slopes.



30C Wurtsboro (northern parcel) stony fine sandy loam are moderately well drained with a seasonal water from 12 to 28 inches. They occur on 8 to 15 percent slopes, are extremely stony and are not prime farmland.

Swartswood Soils Series (38C, 38B):

The Swartswood series consist of deep, well drained, moderately coarse textured soils that were formed in glacial till derived from gray sandstone and siltstone. These soils are gently sloping to moderately steep and are on convex slopes of the uplands. These soils have moderate available moisture capacity and moderate permeability. They are very strong acidic and most of them are stony or channery. Most of the areas are wooded, but a few have been cultivated. The major limitations are the stones and the steep slopes.

38C Swartswood stony fine sandy loam (northern and southern parcels) is not prime farmland and it is well-drained and extremely stony exhibiting 8 to 15 percent slopes.

Likewise, 38B Swartswood stony fine sandy loams (northern and southern parcels) have the same characteristics, however, they are within 0 to 8 percent slopes

Oquaga-Arnot-Rock Outcrop Complex:

The Oquaga-Arnot-Rock Outcrop Complex is steep or very steep having slopes ranging from 20-60 percent. The surface of these soils has 15 to 50 percent coverage of stones and boulders. Most areas have not been cleared, because of the slopes and the stones. Steep slopes and stones are the major limitations of this Oquaga soil. They make cultivation impractical and logging difficult. This soil is suited only to trees. The steep and very steep slopes make it general undesirable for building sites.

240F Oquaga-Arnot Rock outcrop complex (northern and southern parcels) occur on 20 to 60 percent slopes. They are very rubbly and not prime farmland. They are well drained to somewhat excessively drained.

Shohola-Edgemere complex (7B, 7C, 111B):

The Edgemere-Shohola complex consists of deep, very poorly drained, silty soils that were formed in brown to reddish-brown alluvial deposits. Most of these soils are in the central part of the county on flood plains along the smaller streams. This complex of soils has a seasonable high water table, moderate to high available moisture capacity, and very slow permeability through the profile. They are subject to very frequent flooding and ponding.

The 7B Shohola-Edgemere complex (northern and southern parcels) are very rubbly and somewhat poorly drained to poorly drained within 0-8% slopes. The seasonal water table is from 0 to 18" and they are not prime farmland. These soils comprise the lowland, wetter areas on the site.

111B Edgemere-Shohola complex, are classified as hydric soils and have very slow permeability and a seasonal water table at 0-18 inches. They occur at 3 to 15 percent slopes and are very rubbly. Additionally, they are very poorly drained to somewhat poorly drained and thus are not prime farmland

7C Shohola-Edgemere complex occur on 8 to 15 percent slopes. They are very rubbly and not prime farmland. The seasonal water table is at 0-18 inches and they are somewhat poorly drained to poorly drained, although not classified as hydric.

Lordstown Soil Series (97B):

The Lordstown series consists of deep, moderately well drained, sandy soils that have a reddish-brown color. These soils are gently sloping to moderately steep and have very little flooding potential. The main limitation of the Lordstown soil series is the stones and boulders that are very near the surface.

97B Lordstown very channery loam is found on 3 to 8 percent slopes. It is very stony and not prime farmland. It is well drained with a seasonal water table greater than 60 inches.

BUILDING STRUCTURES AND MAN-MADE FEATURES

There are very few man-made structures on the site. A small pond was built on the northern parcel called PP pond totaling 0.3 acres. The remnants of an old single-room schoolhouse and a few billboards are present along Route 6. Both parcels also have portions of previously cleared land that are undergoing succession from field to forest. Other than these items there are no other man made structures or features.



POTENTIAL THREATS

Threats can occur in several forms – human threats to natural and/or cultural features; natural threats to natural features; and natural threats to park users.

Human induced threats: Park users should refrain from bushwhacking off the existing built trail system. This process tends to encourage widening of the trail corridor and it promotes further environmental degradation. Park Users should refrain from picking wildflowers and removing other plant material from the preserve that would negatively impact insect, bird and wildlife species. Park users should not litter and they should carry out any trash they bring into the preserve. Park users should avoid contact with wildlife. Park users can also inadvertently carry invasive species further into the preserve.

Natural threats to park users: The preserve is habitat for Timber Rattlesnakes, Black Bear, poisonous plants, aquatic resources and rough terrain that can potential cause harm to park users. Ticks are prevalent in the preserve and they area common throughout the understory waiting for a new blood meal. Park users should stay on the trails to reduce exposure to tick and potentially Lyme disease.

Natural threats to Natural Resources: Natural threats can include impacts from invasive species and deer.

Invasive Species: While the site contains a large number of healthy and native species, it also contains several invasive species that can be detrimental to the overall health of the forest and grasslands. The biologist for the North American Land Trust identified 45 alien species among the total 256 species inventoried. Of the 45 species, eight are listed on the Invasive Plants of Pennsylvania List as serious threats to native ecosystems. Certain invasive species, like the Japanese barberry, have infiltrated portions of the preserve and they should be eradicated whenever possible and monitored by volunteers or the township.

PA Invasive Species at Bridge Preserve

Garlic Mustard	<i>Alliaria petiolata</i>
Japanese Barberry	<i>Berberis thunbergii</i>
Bull Thistle	<i>Cirsium vulgare</i>
Purple Loosestrife	<i>Lythrum salicaria</i>
Japanese Stilt Grass	<i>Microstegium vimineum</i>
Reed-Canary Grass	<i>Phalaris arundinacea</i>
Japanese Knotweed	<i>Polygonum cuspidatum</i>
Multi-Flora Rose	<i>Rosa multiflora</i>

PA DCNR defines an invasive plant as a species that has become a weed pest, grows aggressively, spreads, and displaces native plants. Additionally, “invasive plants tend to appear on disturbed ground, and the most aggressive can actually invade existing ecosystems. Invasive plants are generally undesirable because they are difficult to control, can escape from cultivation, and can dominate whole areas. In short, invasive plant infestations can be extremely expensive to control, as well as environmentally destructive.”

Lymantria dispar (Gypsy Moth): Gypsy moths can severely damage the integrity of a hardwood forest. The effects of the moths can vary and it depends upon the amount of foliage that is removed from the tree, the health and resiliency of the tree during the attack, the time since the last infestation and whether ample nutrient and water resources are available to the tree. Dingman Township does have a link on its website with information to reduce the impacts from the moth.

Odocoileus virginianus (White Tail Deer): Deer can effectively remove the understory of a woodland habitat and subsequently reduce food and cover for smaller mammals. The Bridge Preserve has multiple deer paths and may suffer from some browsing; however, the understory is still well intact for much of the landscape. The impact and extent to browsing should be continually monitored. The only effective prevention technique is erecting a deer enclosure. Deer browsing can impact forest health. Hunting will not be allowed on the preserve but both private and public hunting is allowed on neighboring properties. The hunters will aid in controlling the deer population. Excess deer can greatly reduce understory vegetation and they are a vector for deer ticks that carry Lyme disease. Thus keeping the deer population in check is important to the safety of the Bridge Preserve patrons.

SECTION E

EXISTING PARK CONDITIONS



CURRENT PRESERVE CONDITIONS

NORTHERN:

The northern parcel also showed very little sign of human activity. It appeared that the access road into the site had not been used for quite some time, and the site was virtually void of any litter.

Assets:

- Preserve abuts additional protected land, thus, potential is high for regional connectivity.
- The forested habitat is well intact and has several destination points (a pond, an intermittent stream habitat and the Savantine Creek)

Constraints:

- Access to the site is from Route 6, which is heavily traveled at a high rate of speed.
- The existing trail/road is rutted in spots and has a few unsustainable segments.
- Large wet areas and an intermittent stream transect the property. To avoid costly permits and any unnecessary, negative environmental impacts, any new trails need to avoid crossing these areas.



NORTHERN PARCEL



Woodlands, Existing Trail



Lowland Area



Near Twin Lakes Road



Existing Trail

NORTHERN PARCEL



Woodlands, Understory



Pond



Meadow Area



Meadow Area

SOUTHERN PARCEL:

Very few signs of recent human activity were observed on the southern parcel. A narrow trail ran from the access road parallel to the stream and skirted the open meadow to reconnect to the access road by the lake. This trail showed limited signs of recent use or maintenance. An occasional small pathway branched off the trail and ran down to the stream; these paths most likely have provided access points to the stream for fishing. No signs of dumping and very little litter were observed on-site, and it generally appears that the site has been untouched over the past few decades.

Assets:

- Beautiful viewsheds of the Sawkill Pond and the Sawkill Creek corridor.
- There is potential to observe a Bald Eagle Nest.
- Easy access from Route 6 and Sawkill Road.

Constraints:

- The current bridge across the Sawkill Creek is deteriorated and may need replacement and proper permits.



SOUTHERN PARCEL



Rock Outcropping



Successional Meadow



Sawkill Creek Riparian Area



Pine Stand

SOUTHERN PARCEL



Woodlands



Successional Meadow



Existing Trail



Stone Wall

SECTION F

PARK DESIGN AND MASTER SITE PLAN



SITE CONSTRAINTS & DESIGN CONSIDERATIONS

Hydrology

The site hydrology had a large impact on the site planning process. The Sawkill Pond and the Sawkill Creek are key natural features in the southern parcel and multiple low, wet areas, an intermittent stream and a small pond occupy the northern parcel. The main design constraint was trying to layout a functional trail in the northern parcel without crossing any potential wetland areas. The preserve lies within the Savantine Creek Watershed, which has EV status. Thus, additional design was required to avoid the creek floodplains or wet areas. Another contributing factor to the master site plan was the location of the Bridge Preserve within the Sawkill Creek Watershed, which is Exception Value (EV). Thus, careful attention was placed on the selecting and designing the proposed amenities at the site. For instance, instead of using asphalt for the parking lots, gravel will be used in its placed to reduce water runoff. The trail heads were also moved away from the floodplain to preserve water quality. The trails will be built following recommendations established by the International Mountain Bicycling Association for natural trails treads. This should prevent washouts and subsequent erosion, which will reduce sediment loading and deposition.

Surrounding Land Use

As mentioned earlier surrounding land use also played a role in the planning process. The consultant and committee ensured that adjacent neighbors were impacted as little as possible.

Soil

Most of the soils can easily handle the proposed development at the preserve, mainly new trails with a natural trail tread. However, patches of hydric soils and poorly drained soils are also present. Any development will avoid these areas.

History

Site history is another factor that can hinder or help the development of a parcel. The remnants of the past can actually benefit a passive recreation area and provide interesting destination points. The only notable historical remnant at the Bridge Preserve is the old foundation of a one-room school house. This feature can be explained via signage.

Wildlife & Vegetation

Consideration was given to the high site diversity and the rare wildlife species found on or near the site (Timber Rattlesnake and the Bald Eagle). Their habitats should remain relatively undisturbed, including the meadows, stream corridors and forested areas.

The Bridge Preserve is covered by many native species; however, the usual invasive species are also present on the site including Japanese Knotweed, Multi-flora Rose and Japanese Barberry. The new trails and the educational signage aim to provide preserve users with a chance to experience and learn about a healthy native forest. This may require managing and eradicating invasive plants wherever possible. Additionally, the trail layout tried to avoid any pristine areas to prevent transporting and spreading invasive species any further into the site.

Vegetation is also a key component of the trail system. The rich flora that abounds the site provides many opportunities to educate pike county citizens about native species. The proposed trail will guide trail users to as many of those different plant species as much as possible. Through the use of plant ID tags the park user will have a greater appreciation of the land and vegetation that surrounds them.

Topography & Slopes

The site has varying topography and slopes that could constrain certain types of development. However, the varying slopes can actually aid in creating a unique design and they will benefit the sustainable trail layout as long as fall lines are avoided.

When creating a trail system, topography plays a large role in determining where to locate a trail. For example, locating the trail along the Preserves ridgelines will give the hiker access to scenic vantage points as they traverse the landscape. A majority of the trails will follow the contour lines and have proper flow with a few steep climbs and descents to provide bikers with a richer and more challenging ride. The varied use of site topography gives a rich array of trail types and amenities for all park users to enjoy.

Areas to be Developed and Phasing

Organization:

For the purpose of this master site plan, the Bridge Preserve was simply organized into two main parcels — the northern parcel and the southern parcel — with development plans grouped into two main phases. Both parcels will undergo some form of passive development centered around trail construction and environmental education. The northern parcel is being considered as Phase One and the southern parcel is Phase Two.

Alternative Options:

The study committee and representatives from several agencies critically reviewed all or most of the concept plan, the concept sketches, the proposed amenity list, the proposed phasing and the proposed location for the amenities at multiple occasions throughout the Master Site Plan process. They provided feedback that ultimately determined the final master site plan.

The passive nature of the park, the wish to reduce the need for permits and the goal of limiting environmental disturbance really guided the process and helped dictate the type and the location of most proposed amenities. Most of the proposed amenities, like the trails and environmental education signage, had a consensus from the beginning in terms of need — the main question was location, layout and the extent of development.

PROPOSED DEVELOPMENT:

- New trail network with regional connections
- Installation of a small gazebo in the northern meadow area
- Tree identification tags for nature trail
- Educational signage and kiosks at important natural or historical features
- New trash receptacles and a few picnic tables near Sawkill Pond
- Wildlife viewing area/bird blinds in the southern meadow
- New viewfinder along Sawkill Pond shoreline to observe the Bald Eagle nest.
- Removal of invasive species that dominate several areas in both parcels
- Install rustic wooden log benches along trails

NORTHERN PARCEL — CONCEPT DESCRIPTION

Initial preserve enhancements (Phase One) will be centered on the 233 acre northern parcel. The main goal is to provide safe public access to the site, to build safe and sustainable trails for site exploration and to install signage for educating preserve visitors. The preserve will provide an ideal backdrop to practice and teach about passive recreation, sustainability and watershed protection for a crucial watercourses like the Sawkill and Savantine Creeks.

More specifically, it is our intent to install a trail head with parking for 6- 8 cars off of Route 6 and construct approximately 2.35 miles of hiking trail (5' main loop trail with a few 18" wide spur trails). The trails will be designed with grade reversals and proper longitudinal slopes and constructed following the International Mountain Bicycling Association as a guide. Approximately half of the trail already exists in the form of an old logging road and they will only require some maintenance like mowing. The new trail construction will be done as unobtrusively as possible and we will strive to retain all mature trees. Any brush

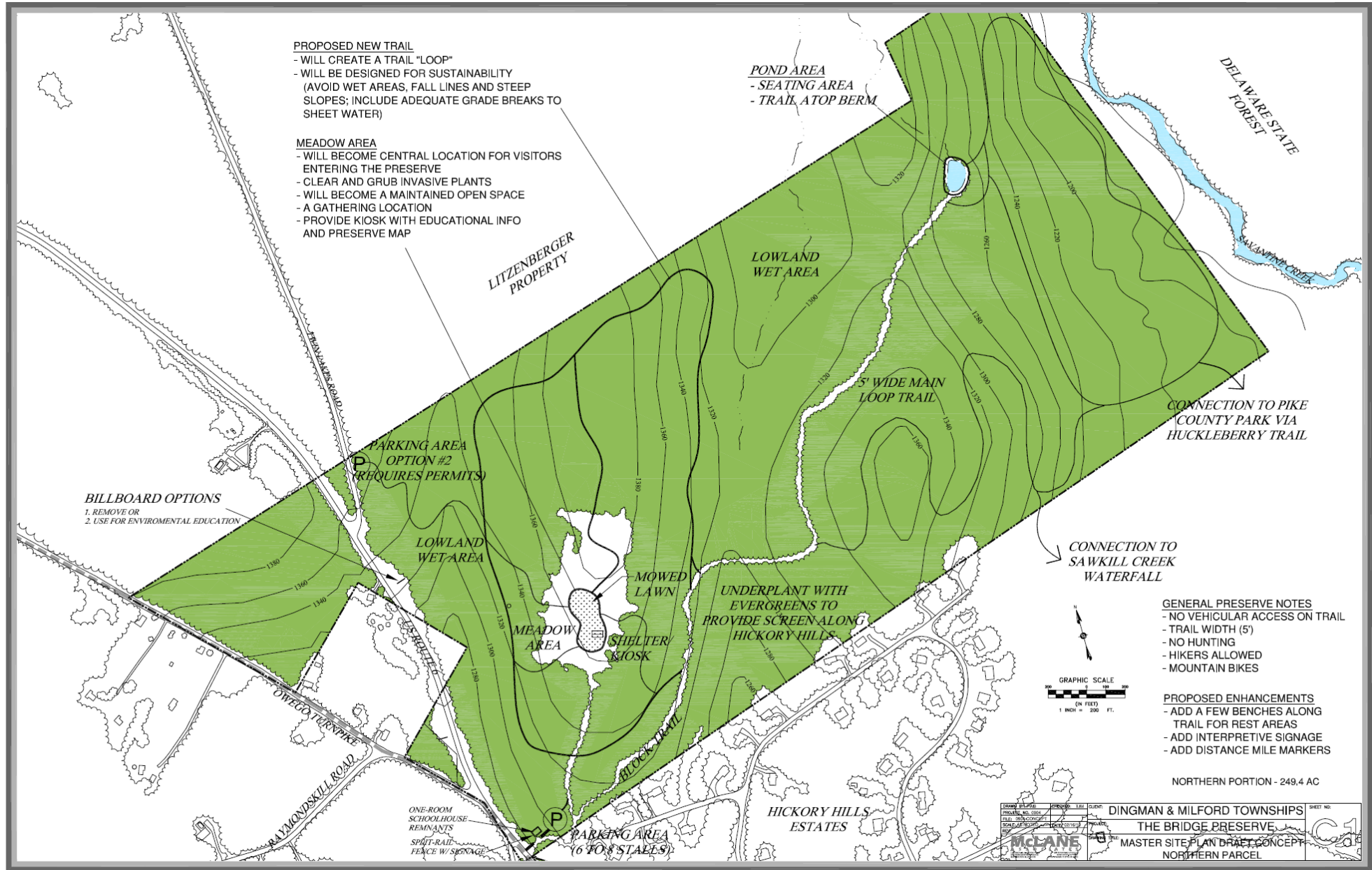


Northern Parcel Summary

- New main loop trail able to handle two-people side by side (approx. 5' wide).
- Spur trails (1.5—2' wide trails) will lead users further into the preserve and provide regional connections.
- Add Mile markers, Interpretive signage (plant/tree tags), and rustic benches that blend into nature along trail (rest areas).
- Add Shelter/Kiosk for map and educational information (pond ecology, wildlife, etc.).
- The pond will be a destination point.
- New trails will aim to be sustainable (follow contours, avoid wetlands, eliminate fall lines).

and woody material that is removed within the trail corridor will be mulched by the township and kept for future use at the preserve. We intend to utilize township equipment, staff and volunteers for most of the trail rehabilitation and installation. In addition to providing access to the northern portion of the Bridge Preserve, the proposed trail network intends to connect to the adjacent Delaware State Forest and the Pike County Park.

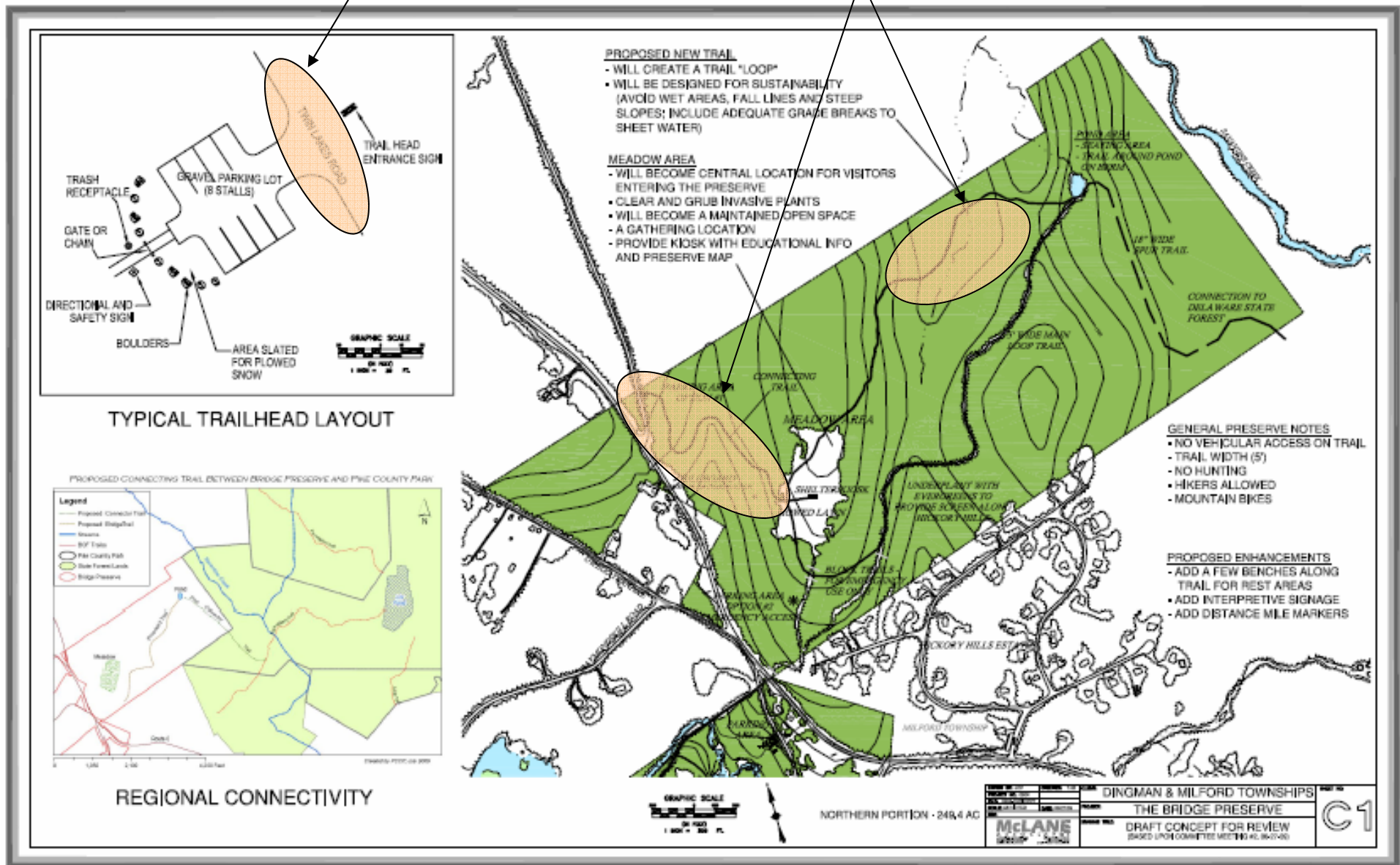
NORTHERN PARCEL — CONCEPT MAP



NORTHERN PARCEL — ALTERNATIVE CONCEPT MAP

Moved trailhead to Route 6

Reworked to avoid wet areas



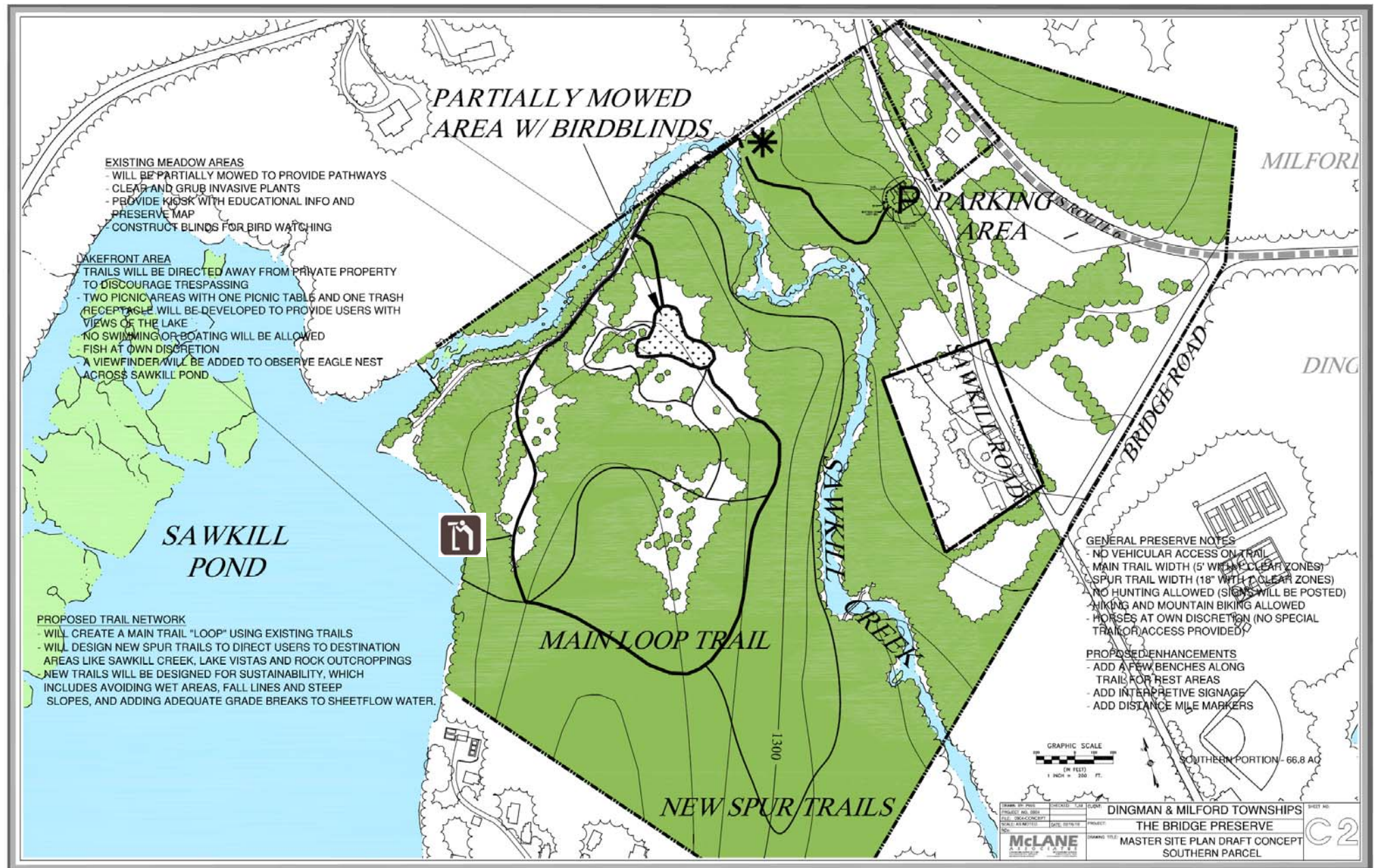
SOUTHERN PARCEL — CONCEPT DESCRIPTION

Phase Two improvements will focus on the southern parcel. The main goals — providing trails, vistas and education — are nearly the same as the northern parcel. The main difference will be the construction of viewsheds and access along Sawkill Pond. Access to the pond will be limited to two areas and they will include a picnic table and a trash receptacle, which the township will empty. There will be no swimming or boating, however, fishing at your own discretion will be allowed. The main loop trail will utilize the existing access road and then it will be directed away from the New Jersey Camp and other private property areas along the lake to reduce trespassing. The spur trails will utilize several existing trails and deer paths. These trails need minor enhancements like limbing up trees, mowing and raking. All trails will be non-motorized (hikers, bikes, x-country). The Sawkill Creek is an EV stream and it is linked to the Milford water supply. Thus, the trails and parking areas will be positioned away from the floodplain.

Southern Parcel Summary

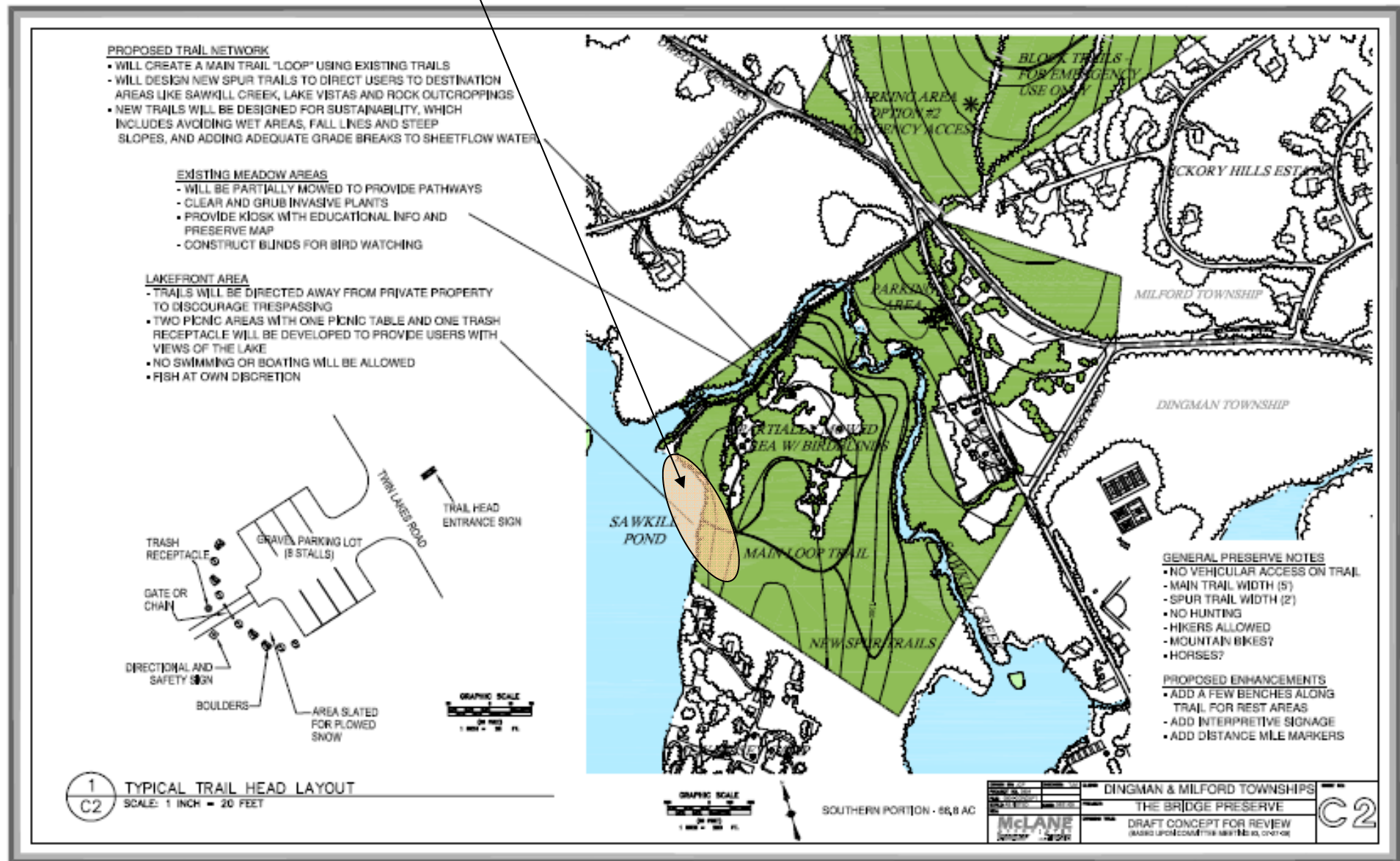
- New main loop trail able to handle two-people side by side (approx. 5' wide).
- Spur trails (1.5—2' wide trails) will lead users closer to the Sawkill Creek Corridor.
- Add mile markers, Interpretive signage (plant/tree tags), and rustic benches that blend into nature along trail (rest areas).
- Add Shelter/Kiosk for map and educational information (pond ecology, wildlife, etc., Bald Eagle and Timber Rattlesnake).
- Trails will aim to be sustainable (follow contours, avoid wetlands and floodplain, utilize rock outcroppings, eliminate fall lines).
- Proposed parking area #1 is too close to Sawkill Creek, an EV Stream. New location will be along Sawkill Road.
- Keep trails away from property line and adjacent landowners.
- A portion of the meadow area will be maintained (mowed) and a few wildlife blinds will be added to observe birds and wildlife.
- Access to the lake will be limited to two areas; they will include a picnic table and a trash receptacle. A viewfinder may be added to observe the Bald Eagle nest.
- There will be no swimming or boating and fishing at your own discretion

SOUTHERN PARCEL — CONCEPT MAP



SOUTHERN PARCEL — ALTERNATIVE CONCEPT MAP

Added a Viewfinder to see Bald Eagle Nest



TRAIL SUSTAINABILITY

Creating a trail system that has low environmental impact and also remains in excellent condition for many years post-construction is a critical element of the Bridge Preserve project. Sustainable practices in trail design include incorporating grade reversals and proper longitudinal slopes. Much of the proposed main trails already exists as old logging or access roads and these trails will only require minimal maintenance like mowing or regrading. Some sections may need to be abandoned and restored and the new trail will be rerouted around these areas. The new trail construction will be done as unobtrusively as possible and we will strive to retain all mature trees. Any brush and woody material that is removed within the trail corridor can be used to hide or cover the abandoned sections.

Proposed trail design methodology, construction and existing trail rehabilitation will primarily follow, as a guide, the eleven essential elements of sustainable trail development set forth by the International Mountain Bicycling Association (IMBA 2007). Design elements can include the following: proper trail location (avoid fall lines), proper trail alignment, trail grades not exceeding half the grade of the side hill (half rule), designing around existing soils, creating consistent trail flow, preventing the need for user-created trails (rogue construction), and proper planning for maintenance. Further, trails should be constructed with a 10% average grade, a proper maximum sustainable grade, a grade less than 15%, multiple grade reversals and trail out slopes to promote sheet flow.

The new trail network will also strive to be naturally designed, following several concepts presented by Troy Scott Parker (2004). For example, the Bridge Preserve trail network will: create trails with flow and natural shapes; use rocks, large trees or wetlands to anchor and edge the trail; provide gateways and access into several habitat types; avoid wetlands and environmentally sensitive areas wherever possible; and lastly attempt to provide users with trails that are safe, playful, efficient and in harmony with the natural surroundings.

Also the importance of alignment and slopes is paramount for sustainable trails. Most unsustainable trails are either built too steep or too flat and become fall lines or wet areas, respectively. The most sustainable trail design type is a rolling contour trail constructed with appropriate slopes - both longitudinal and out slopes. A rolling contour trail is characterized by having a hillside location that is perpendicular to the fall line and that follows the grades of the hillside.

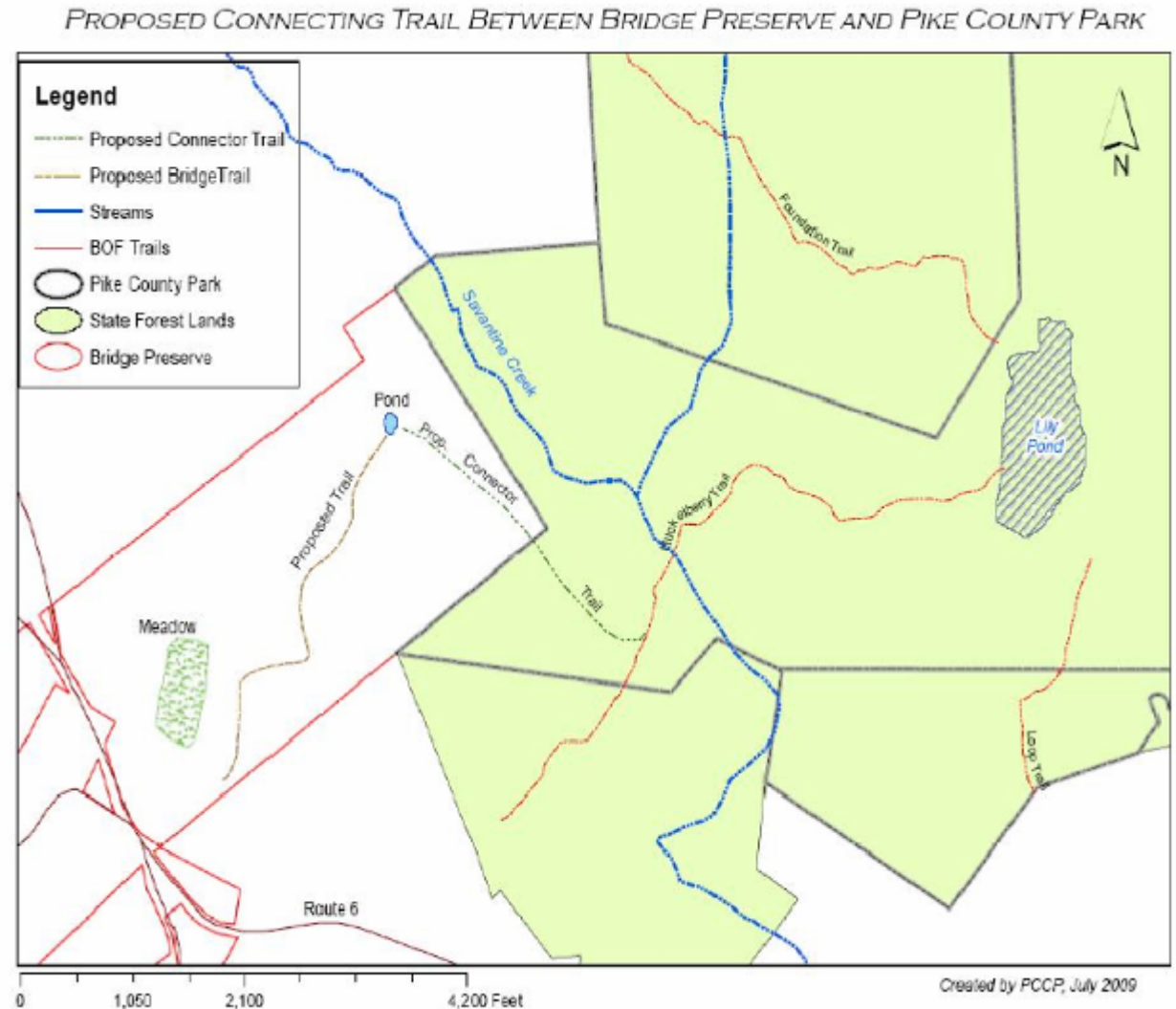
The trail tread (trail treadway width) for the main trail will be five feet. with a 1' clear/safety zone on both sides of trail. Thus, the trail corridor clearing (vegetation) will be seven foot for the main loop trails. The vertical clearance or trail ceiling will be eight feet as shown in the trail details (Appendix A). The trail width for the spur trails will be 18 inches with a 1' clear/safety zone on both sides of the trail and a 8 foot ceiling.

Trail Construction Notes and Guidelines:

Trail construction should result in minimal disturbance to the existing ecosystem and should not pose any long-term impact on wildlife. For spur trails, any woody plants of 2 inch caliper or less should be completely removed from the trail tread, whereas, larger trees should remain. The trail should maneuver around the existing trees, blend into the natural topography and follow contours as much as possible. Removing stormwater from the trail is of paramount importance and rolling grade dips, grade reversals, cross slopes to promote sheet flow and knick points should be utilized.

REGIONAL CONNECTIVITY: POTENTIAL LINKAGES AND CONNECTORS

There are several opportunities to connect the Bridge Preserve with other properties throughout Pike County. The Huckleberry Trail is a key link and it currently runs from the Savantine Creek corridor to the Pike County Park. The Huckleberry Trail is part of a larger trail system that connects the Delaware State Forest to the State Game Lands and even to federal lands along the Delaware River. Creating links between the Bridge Preserve and this larger trail system will only increase the richness of each trail system and hopefully increase the number of trail users.



REGIONAL CONNECTIVITY



SECTION G

OVERALL COST ESTIMATE



NORTHERN PARCEL

PHASE ONE (P1) COST ESTIMATE: BRIDGE PRESERVE NORTHERN PARCEL					
BASE BID					
Detail	Line Item Description	Estimated Quantity (EQ) and Units		Unit Cost (UC)	Total Cost (EQ x UC)
TOTAL:					\$ 70,307.50
	BOULDERS FOR TRAIL HEAD, RELOCATE FROM DINGMAN TOWNSHIP PARK	9	EA	\$ 50.00	\$ 450.00
	GRADING FOR TRAIL HEAD, ACCESS ROAD	6350	SF	\$ 0.35	\$ 2,222.50
	GRAVEL, N0.2A, 4" DEPTH (FOR PARKING LOT AND ACCESS ROAD)	78	CY	\$ 65.00	\$ 5,070.00
	TRASH RECEPTACLE	1	EA	\$ 500.00	\$ 500.00
	SIGNAGE - DIRECTIONAL, SAFETY (EXACT LOCATIONS TBA)	3	EA	\$ 250.00	\$ 750.00
	INFORMATIONAL SIGNAGE INSTALLATION	3	EA	\$ 1,350.00	\$ 4,050.00
	TRAIL ENTRANCE SIGN	1	EA	\$ 1,800.00	\$ 1,800.00
	MEADOW AREA REHABILITATION (DEFINE SHAPE AND MOW)	1	LS	\$ 600.00	\$ 600.00
	INVASIVE SPECIES REMOVAL	1	LS	\$ 500.00	\$ 500.00
	SIGHT DISTANCE IMPROVEMENTS (TREE REMOVAL, GRADING)	1	LS	\$ 1,500.00	\$ 1,500.00
	BENCH, MADE FROM CUT LOGS - REST AREAS ALONG TRAIL	3	EA	\$ 425.00	\$ 1,275.00
	ABANDON EXISTING TRAILS/ ACCESS ROADS (BLOCK ACCESS WITH CHAINS)	4	EA	\$ 75.00	\$ 300.00
	TRAIL MARKERS, & TREE ID TAGS 4"x 4" RECYCLED PLASTIC - ALONG TRAIL	100	EA	\$ 5.00	\$ 500.00
	PROPOSED 18" SPUR TRAIL - CLEAR & GRUB, LEVELING + MINOR REGRADING	2530	LF	\$ 3.00	\$ 7,590.00
	EXISTING 5' TRAILS TO BE UPGRADED	1500	LF	\$ 1.00	\$ 1,500.00
	PROPOSED 5' TRAILS - CLEAR & GRUB, LEVELING + MINOR REGRADING, HARDEN TRAIL WITH GRAVEL/ROCK IF NEEDED	4950	LF	\$ 5.00	\$ 24,750.00
	EVERGREEN TREES FOR SCREEN	12	EA	\$ 450.00	\$ 5,400.00
	SHELTER IN MEADOW	1	EA	\$ 5,500.00	\$ 5,500.00
	PICNIC TABLE	2	EA	\$ 900.00	\$ 1,800.00
	PROFESSIONAL SERVICES (CONSTRUCTION DRAWINGS, PERMITS, EDUCATIONAL INFORMATION, SIGN DESIGN, ETC.)	1	LS	\$ 4,250.00	\$ 4,250.00

SOUTHERN PARCEL

PHASE TWO (P2) COST ESTIMATE: BRIDGE PRESERVE SOUTHERN PARCEL					
BASE BID					
Detail	Line Item Description	Estimated Quantity (EQ) and Units		Unit Cost (UC)	Total Cost (EQ x UC)
TOTAL:					\$ 62,125.00
	BOULDERS FOR TRAIL HEAD, RELOCATE FROM DINGMAN TOWNSHIP PARK	9	EA	\$ 50.00	\$ 450.00
	GRADING FOR TRAIL HEAD, ACCESS ROAD	4800	SF	\$ 0.35	\$ 1,680.00
	GRAVEL, N0.2A, 4" DEPTH (FOR PARKING LOT AND ACCESS ROAD)	60	CY	\$ 65.00	\$ 3,900.00
	TRASH RECEPTACLE	3	EA	\$ 500.00	\$ 1,500.00
	SIGNAGE - DIRECTIONAL, SAFETY (EXACT LOCATIONS TBA)	3	EA	\$ 250.00	\$ 750.00
	INFORMATIONAL SIGNAGE INSTALLATION	3	EA	\$ 1,350.00	\$ 4,050.00
	TRAIL ENTRANCE SIGN	1	EA	\$ 1,800.00	\$ 1,800.00
	MEADOW AREA REHABILITATION (DEFINE SHAPE AND MOW)	1	LS	\$ 1,200.00	\$ 1,200.00
	INVASIVE SPECIES REMOVAL	1	LS	\$ 900.00	\$ 900.00
	SIGHT DISTANCE IMPROVEMENTS (TREE REMOVAL, GRADING)	1	LS	\$ 1,100.00	\$ 1,100.00
	BENCH, MADE FROM CUT LOGS - REST AREAS ALONG TRAIL	3	EA	\$ 425.00	\$ 1,275.00
	ABANDON EXISTING TRAILS/ ACCESS ROADS (BLOCK ACCESS WITH CHAINS)	2	EA	\$ 75.00	\$ 150.00
	TRAIL MARKERS, & TREE ID TAGS 4"x 4" RECYCLED PLASTIC - ALONG TRAIL	100	EA	\$ 5.00	\$ 500.00
	PROPOSED 18" SPUR TRAIL - CLEAR & GRUB, LEVELING + MINOR REGRADING	4200	LF	\$ 3.00	\$ 12,600.00
	EXISTING 5' TRAILS TO BE UPGRADED	1570	LF	\$ 1.00	\$ 1,570.00
	PROPOSED 5' TRAILS - CLEAR & GRUB, LEVELING + MINOR REGRADING, HARDEN TRAIL WITH GRAVEL/ROCK IF NEEDED	3180	LF	\$ 5.00	\$ 15,900.00
	EVERGREEN TREES FOR SCREEN	5	EA	\$ 450.00	\$ 2,250.00
	BIRDBLINDS IN MEADOW	3	EA	\$ 1,500.00	\$ 4,500.00
	PICNIC TABLE	2	EA	\$ 900.00	\$ 1,800.00
	PROFESSIONAL SERVICES (CONSTRUCTION DRAWINGS, PERMITS, EDUCATIONAL INFORMATION, SIGN DESIGN, ETC.)	1	LS	\$ 4,250.00	\$ 4,250.00

Cost Estimate Justification

The cost may appear high for a passive recreation and low-development preserve like the Bridge Preserve; however, this estimate does not necessarily translate into the realized and actual cost. When developing this estimate, the consultant made a few assumptions: A) all amenities and items will be installed by a general contractor; B) the amenities would not be put out to bid for a few years when costs are presumably higher; C) phase one items are more likely to be implemented, however, all potential ideas regardless of price should be listed in subsequent phases; D) it is better to be conservative especially when the fine details are not fully known; and E) the cost estimate may be used when pursuing future requests for funding.

Our company is assuming all enhancements to existing conditions and all new amenities, upon implementation, will cost money and that no in-kind services are being provided. Obviously, if Dingman and Milford Townships can receive volunteer help or in-kind donations, then the townships can passively develop the Preserve in a more cost-effective manner with a lower price tag. For example, volunteers can plant the trees, construct the trails and conduct litter cleanups. However, we cannot assume volunteers will make a commitment, thus, we included a cost for professional contracting services for these items. Also, all items within each phase do not need to be implemented.

Additionally, the completion of a Master Site Plan is usually just the first step towards the development of a well-thought-out park, especially when applying for state funding to offset the costs of park improvements. Other steps can include a Feasibility Study and preparation of Construction Drawings, both of which will fine-tune and provide a more detailed cost estimate. These items will also push back development by a few years, which is why I tried to be conservative with the estimate as well. The rougher Master Site plan cost estimate can help the townships gauge where they should initially focus their efforts. It can also help identify which grants or funding opportunities to pursue or conversely identify which amenities they should include when pursuing a funding source.

SECTION H

IMPLEMENTATION OF MASTER SITE PLAN



COMPLIANCE WITH APPLICABLE LAWS & REGULATIONS

Compliance with a number of laws and regulations relating to health and safety may be required when designing and implementing a master site plan.

Parking

Parking will need to be created in both Milford and Dingman Townships to accommodate preserve users. All parking facilities will need to comply with off-street parking requirements as set for by both the Milford and Dingman Township Zoning Codes and Ordinances.

Wetland Protection

State and federal environmental laws protect the extensive wetlands and the associated hydric soils. Any filling or disturbance of the wetlands and/or hydric soils would require the approval from a number of local, state and federal agencies. The site will have to be designed to minimize impacts on the wetland and hydric soil areas. Development at the Bridge Preserve will strive to avoid any wetland impacts. No wetland delineation has been completed for the preserve; however, potential wetland areas are being avoided as a precaution.

Dam Safety and Waterway Management Standards

Any activities related to obstructions or encroachments onto the streams, wetlands or lakes at the site will have to be designed and implemented in compliance with the PA DEP Chapter 105 regulations. Such activities would include the construction of bridges, boardwalks and crossings over the streams and wetlands; the construction of a fishing dock; and the construction of a shoreline access areas.

ADA Requirements

Proposed amenities and facilities will have to meet the Americans with Disabilities Act requirements, as requires in Title #2. Funding from federal agency grants may be subject to additional requirements. Currently no ADA access is proposed for the preserve.

Additional Agency Approvals:

- Dingman Township sent in a Highway Occupancy Permit (HOP) to PennDOT in October 2009 to get approval for the new trailhead parking areas.
- Site meetings were held with the conservation district and the planning commission during Master Site plan development process. No permits were required at this time.
- A Pennsylvania Natural Diversity Inventory (PNDI) was completed as well as subsequent correspondences with the PA Fish and Boat Commission and the PA Game Commission regarding the master site plan. Both agencies did not identify any conflicts with the proposed passive design with any threatened or endangered species of concern, especially the Timber Rattlesnake and the Bald Eagle.

POTENTIAL SOURCES OF FUNDING

Realistic funding sources for the development of the Bridge Preserve may include state and federal grant programs, township funding, local businesses, gaming money and in-kind donations.

Actions Already Taken Towards Funding

CAP Block Grant - A request for the CAP Block Grant was submitted in October 2009. The Conservation Assistance Program (CAP) is a reimbursement funding program through the Pocono Forest and Water Conservation Landscape (PFW) Block Grant, which is funded by the Pennsylvania Department of Conservation and Natural Resources (PA DCNR) and administered by the Pennsylvania Environmental Council (PEC). The grant was not awarded for the Bridge Preserve during this round of funding. However, similar funding may become available in the future.

Federal and State Funding

The Bureau of Recreation and Conservation administers the *Community Conservation Partnerships Program* — known as C2P2 — which combines several funding sources into one grant program. Funding sources include the Keystone Recreation, Park and Conservation Fund (Key '93); the Environmental Stewardship and Watershed Protection Act (Growing Greener); the Growing Greener Bond Fund (GG2); Act 68 Snowmobile and ATV Trails Fund; the federal Land and Water Conservation Fund (LWCF); and the Recreational Trails component of federal transportation funding. (dcnr.state.pa.us)

Relevant Partnership Opportunities identified by PA DCNR on their website includes the following:

Heritage Parks Grants promote public-private partnerships to preserve and enhance natural, cultural, historic and recreation resources to stimulate economic development through heritage tourism. Grants are available to municipalities, nonprofit organizations or federally designated commissions acting on behalf of the municipalities in a heritage park area. Grants are awarded for a variety of purposes including feasibility studies; development of management action plans for heritage park areas; specialized studies; implementation projects; and hiring of state heritage park managers. Grants require a 25-50 percent local match.

Community Grants are awarded to municipalities for recreation, park and conservation projects. These include the rehabilitation and development of parks and recreation facilities; acquisition of land for park and conservation purposes; and technical assistance for feasibility studies, trails studies, and site development planning. Grants require a 50 percent match except for some technical assistance grants and projects eligible as small community projects. The small community development projects provide a municipal applicant with a population of 5000 or less with an alternate method of funding for rehabilitation and development of minor indoor and basic outdoor park, recreation and conservation areas and facilities. The initial \$20,000 or less in grant funding provided must be used to purchase materials only and approved professional design fees. Additional grant funds of up to \$20,000 may be provided matching the municipal applicant's local cash or non-cash contribution to the project. The additional \$20,000 may be used to cover all other eligible costs and other costs such as labor and/or equipment. The maximum grant under this project type is \$40,000.

Pennsylvania Recreational Trails Program Grants provide funds to develop and maintain recreational trails and trail related facilities for motorized and nonmotorized recreational trail use. Eligible applicants include federal and state agencies, local governments and private organizations. Match requirements for Pennsylvania Recreational Trails Program Grants are 80% grant money, up to a maximum of \$100,000, and 20% project applicant money. However, acquisition projects will require a 50/50 match. "Soft match" (credit for donations of funds, materials, services, or new right-of-way) is permitted from any project sponsor, whether a private organization or public agency. Eligible project categories include: maintenance and restoration of existing recreational trails; development and rehabilitation of trailside and trailhead facilities and trail linkages; purchase and lease of recreational trail construction and maintenance equipment; construction of new recreational trails (with restrictions on new trails on Federal land); and, acquisition of easements or property for recreational trails or recreational trail corridors. Funding for the Recreational Trails Program is provided to the Commonwealth through the Federal Highway Administration (FHWA) and the Transportation Equity Act for the 21st Century (TEA 21).

Wildlife Conservation and Appreciation Grants- Eligible project are for those whose main purpose is to provide opportunities for the public to use and enjoy fish and wildlife through non-consumptive activities. All designated fish and wildlife agencies are eligible to

apply. Potential assistance is available for expanding public recreation opportunities pertaining to nongame wildlife enjoyment, including trails and waterways. Grants range from \$10,000 to \$25,000.

Land and Water Conservation Program -The LWCF program provides matching grants to States and local governments for the acquisition and development of public outdoor recreation areas and facilities. The program is intended to create and maintain a nationwide legacy of high quality recreation areas and facilities and to stimulate non-federal investments in the protection and maintenance of recreation resources across the United States. Only political subdivisions (municipalities, municipal agencies and school districts) are eligible to receive LWCF funding. Annual appropriations of federal funds are made to the states to provide 50 percent matching grants for general public outdoor park, recreation and conservation projects.

Northeast Pennsylvania Urban & Community Forestry Program - The Northeast Pennsylvania Urban and Community accepts grant applications from organizations, communities, and citizen groups for urban and community forestry projects. This is a federally funded grant program directed by the PA Urban and Community Forestry Council in cooperation with the USDA Forest Service, Northeastern Area, State & Private Forestry (Forest Service), the Pennsylvania State Forester; and the Pennsylvania Department of Conservation and Natural Resources, Bureau of Forestry, Rural and Community Forestry Section (PA DCNR Forestry RCF). May be able to obtain native vegetation for buffer screens.

The Grants Program sponsored by *EPA's Environmental Education Division (EED), Office of Children's Health Protection and Environmental Education*, supports environmental education projects that enhance the public's awareness, knowledge, and skills to help people make informed decisions that affect environmental quality. EPA awards grants each year based on funding appropriated by Congress. Annual funding for the program ranges between \$2 and \$3 million. Most grants will be in the \$15,000 to \$25,000 range.

The Pennsylvania National Guard – The Pennsylvania National Guard and the U.S. Army Reserves both provide engineering and construction services at no cost or at a reduced cost to communities undertaking certain public projects. There is no fixed schedule for their services and all requests are reviewed on a case by case basis.

Historic Preservation Grants—Eligible organizations are colleges/universities, conservancies, historic preservation organizations, historic societies, local governments, museums, and other historical organizations. Keystone Historic Preservation Grants requiring 50/50 cash match are available for the preservation, restoration and/or rehabilitation of historic resources listed in or eligible for listing in the National Register of Historic Places. Grant requests should range from \$5,000 to \$100,000. All grant projects must relate to identifying, preserving, promoting and protecting the historic and archaeological resources of Pennsylvania for the benefit of the public.

Local, Private and Other Funding Sources

Perhaps Dingman and Milford Township can propose implementing a per capita conservation tax (approximately \$1 to \$3 dollars per person per year) and use this money to help with implementation of proposed development and with the ongoing operation and maintenance costs associated with the park. This method has worked well for communities in Monroe County.

The Bikes Belong Grant Program strives to put people on bicycles and they fund important and influential projects that leverage federal funding and build momentum for bicycling in communities across the U.S. These projects include bike paths and rail trails, as well as mountain bike trails, bike parks, BMX facilities, and large-scale bicycle advocacy initiatives. Since 1999, Bikes Belong has awarded 196 grants to municipalities and grassroots groups in 48 states and the District of Columbia, investing nearly \$1.6 million in community bicycling projects and leveraging close to \$550 million in federal, state, and private funding.

The Gaming Industry: Money may become available through the gaming industry that will support recreational opportunities throughout the Pocono Mountains. Mount Airy Resort and Casino and Mohegan Sun are in closest proximity to the Bridge Preserve.

Mountain Bike Races: If the trail network is regionally connected to adjacent lands and if the trails are built according to special mountain biking guidelines then the trails may be able to host a mountain biking race. The entry fee can be used to preserve maintenance and operation.

Volunteers and In-kind: In order to reduce construction costs and increase public participation volunteers can be asked to build several components of the trail. Several ideas include requesting the boy scouts or local mountain biking groups to help build trails and install some of the signage including tree ID tags, trail makers, etc. The boy scouts could also help in construction of the log benches that will be placed along the trails. School districts like the Delaware Valley School District can be approached to help maintain the preserve in exchange for environmental education opportunities. Students could get involved with clubs, fund-raisers, and cleanup days. Lastly, local contractors and landscapers may be of assistance in providing in-kind services for landscaping, shelter and gazebo construction.

SECTION I

PARK MAINTENANCE, MANAGEMENT, & OPERATION



PARK MAINTENANCE, MANAGEMENT & OPERATION

Recommendations

The Dingman Township Recreation Board is charged with overseeing the recreational activities sponsored by the Township and as expected it will oversee maintenance and operation at the Bridge Preserve.

Park management, operation and maintenance should continue under the direction of the Dingman Township Recreation Board. The Board and municipal employees will oversee day-to-day activities, including scheduling the use of park facilities, purchasing needed equipment and supplies, and generally serving as the face of the park, by maintaining visitor relations and communications. It would be beneficial if Milford Township could provide additional support or funding.

Due to the large portion of woodlands, we recommend working with the Bureau of Forestry to develop a forest management plan to assess and preserve this natural resource. Additionally, we recommend utilizing park users as volunteers to assist with the operation and maintenance of the facilities they use. Scheduling volunteer events for such purposes would get users involved in park projects and could potentially draw additional users to the park.

Expected Maintenance

Due to the proximity and potential connections to the Pike County Park, similar maintenance standards currently used at the County Park can be implemented at the Bridge Preserve. The use of similar maintenance and signage will further add to the regional connections and appeal. The following maintenance and operations recommendations were developed based on the consultants years of experience and several were adapted from the Pike County Operations and Maintenance Manual completed by Mineo (2003).

Monitoring and maintenance at the preserve will be centered around five main areas: 1) the trail system, 2) the parking areas, 3) the meadow and grass areas, 4) the installed amenities like signage and structures, and 5) natural features and habitat management.

The Trail System:

Maintenance of the trails system will be an ongoing process. Long-term maintenance of the Bridge Preserve trail system will be the responsibility of the Dingman Township or volunteers. Site visits should be more frequent immediately after construction when the trail network is hardening and becoming established, however, trail monitoring and maintenance will always be required to some degree. Site monitoring will include checking and documenting the following:

- any areas of erosion, washouts, pooling water, soft conditions, rill formation and /or sedimentation (the end product of erosion),
- the degree of compaction, muddiness, displacement and erosion,
- the integrity of trail features like rock armoring and logs,
- location of downed trees, hazardous trees and branches or roots within the trail ceiling or tread,
- signs of vandalism by ATV's on the trail tread or damage to amenities,
- health of newly planted vegetation and the growth of restored trail segments,
- any litter and/or illegal dumping,
- document any sightings or evidence (lodges, nests, tracks, scat, etc.) of birds, amphibians, reptiles, and mammals along or within the trail network during monitoring visits.

Actual trail maintenance should include restoration of the out slope or tread crowns to keep sheet flow (Parker, 2004). Maintenance will also include removing fallen woody debris, clearing the trail tread, reestablishing grade breaks, adding rock and/or modified stone and trash removal.

During the first two years, post-construction, site monitoring should be conducted every four months (after each season). At least two site visits should be conducted during rain events to observe existing drainage patterns, sheet flow, and runoff. Additionally, visits should be made after any large rain event (1-inch storms) to check for erosion. After the initial two years, bi-annual monitoring (after spring, before winter) will be sufficient for all years thereafter. Maintenance will be conducted as needed.

Dingman Township or a volunteer bike club may even want to keep an ongoing and updated monitoring and maintenance log to document the sustainability of the trail system. The log can also provide photographic documentation of the trail network from several permanent locations to help track trail conditions over time. Photos shall be labeled with the location, date photographed, and direction and the view shown on a site plan. The log should note and summarize all problem areas that have been identified and potential corrective measures to address them. Any corrective measures and maintenance solutions that are completed should be recorded in the logbook and their judged success should be determined and documented. The ongoing log can help identify any changes and trends occurring within the trail system and it will act as a resource for future trail development in the greater Milford Area.

The Parking Areas:

Annual grading and resurfacing may be necessary for the parking areas. A smooth surface is ideal for snow plowing and for preserve visitors. Gravel replacement will eliminate pot holes and restore the original grade, which keeps water off of the parking surface. The pothole should be repaired by refilling with 2b modified gravel in 2 inch lifts and tamped to level, then rolled tight and smooth. Boulders which are installed in the rear of the parking lot should be re-located to original location in the case that they get moved from snow removal. Snow plowing should occur before visitor use in the winter months, and cindering and sanding is used on ice, if ice is very thick, magnesium ammonium acetate should be used first followed with fertilizer if necessary to break the ice.

The Meadow and Grass Areas:

The meadow area should receive at minimum two annual mowings to aid in retention of their character. The first mowing should occur in the late spring (generally after field bird nesting season) to a height of two inches or as low as possible. Then these areas should be mowed again in late July / early August to a height of no less than 8 inches to retain those portions of the native grass plant that store the plants energy reserves. These areas are then allowed to grow and over winter with no further mowing to provide shelter and nesting areas. (Mineo 2003)

The maintained grass areas and trails should be mowed on a more regular basis, approximately twice a month. This will provide definition to the trails and reduce the likelihood of ticks and wildlife occupying the areas and interacting with preserve users.

The Installed Amenities:

Any installed signage, kiosks, trash receptacles, benches and picnic tables should be checked for damage bi-annually at a minimum. Damage may be caused by humans, by animals or from storm damage. Regardless of the source, the amenities should be fixed immediately according to accepted standards. Unfixed amenities symbolizes a lack of preserve oversight and it can breed additional problems. Any litter should be removed during site inspections.

Natural Features and Habitat Management:

Plant life, wildlife and fish habitat management requires expert and professional advise. It is recommended that the wildlife habitat and fish habitat areas are to be managed under the guidance of the Pennsylvania Game Commission, the Pennsylvania Fish and Boat Commission and the PA DCNR Bureau of Forestry (Mineo 2003).

It is recommended that a forest management plan be considered under the direct guidance of the Bureau of Forestry, especially because the Delaware State Forest abuts the Preserve. Hazardous trees or limbs should be removed by a professional who is educated in tree removal and proper pruning techniques.

The impact of White-tailed Deer, Gypsy Moths, Hemlock Woolly Adelgid and future potential stressors like the Emerald Ash Borer, should be addressed on a yearly basis to determine whether prevented or remedial maintenance should be employed. There is already a link on the Dingman Township website that provides information about gypsy moths and the Bureau of Forestry can be approached for advice on deer management and overall woodland health.

Costs and Revenues

Management, operation and maintenance costs will vary by phase and may increase to a degree as each phase is implemented.

Current Costs:

The current annual cost to operate and maintain the Bridge Preserve is approximately \$ 0.00. No improvements or maintenance is currently being completed at the site.

Anticipated Costs after Phase One (Northern Parcel):

The costs will be associated with maintaining the parking lot, mowing defined lawn areas, plowing snow at trail heads, emptying trash, managing invasive species and woodland trail maintenance. Much of the existing open areas will be allowed to grow to promote wildflowers and provide habitat for birds and pollinators. This will also reduce mowing costs. Other grass areas will be maintained on a regular basis.

Current Cost: =	\$ 0.00
Mowing of Open Grass Areas (Labor: 4 hrs./mo. for 6 months, @ \$18/hr.) =	\$ 432.00
(Material: \$10/hr) =	\$ 240.00
Snow Removal (Labor: 6 hrs./year @ \$18/hr.) =	\$ 108.00
(Material: \$10/hr) =	\$ 60.00
Trash Removal (Labor: 3 hrs./year @ \$18/hr.) =	\$ 54.00
(Material: \$10/hr) =	\$ 30.00
Managing Invasive Species (Labor: 10 hrs./year @ \$18/hr.) =	\$ 180.00
(Material: \$10/hr) =	\$ 100.00
Preserve Inspections (Labor: 3 hrs. twice a year @ \$ 18/hr.) =	\$ 108.00
Parking Lot Regrading and Materials (Lump Sum per year) =	\$1,000.00
Trail Maintenance (10 hrs/year, @ \$18/hr) =	\$ 180.00
(Material: \$10/hr) =	\$ 100.00
	<u>\$2,592.00</u>

Anticipated Costs after Phase Two (Southern Parcel):

The costs will be comparable to Phase One.

Current Cost + Phase One Costs: =	\$2,592.00
Mowing of Open Grass Areas (Labor: 3 hrs./mo. for 6 months, @ \$18/hr.) =	\$ 324.00
(Material: \$10/hr) =	\$ 180.00
Snow Removal (Labor: 6 hrs./year @ \$18/hr.) =	\$ 108.00
(Material: \$10/hr) =	\$ 60.00
Trash Removal (Labor: 3 hrs./year @ \$18/hr.) =	\$ 54.00
(Material: \$10/hr) =	\$ 30.00
Managing Invasive Species (Labor: 15 hrs./year @ \$18/hr.) =	\$ 270.00
(Material: \$10/hr) =	\$ 150.00
Preserve Inspections (Labor: 3 hrs. twice a year @ \$ 18/hr.) =	\$ 108.00
Parking Lot Regrading and Materials (Lump Sum) =	\$1,000.00
Trail Maintenance (10 hrs/year, @ \$18/hr) =	\$ 180.00
(Material: \$10/hr) =	\$ 100.00
	<u>\$5,156.00</u>

Security and Safety Analysis

The optimal situation for the bridge preserve would include the following: 1.) Providing safe activities for the public; 2.) Ensuring legal protection for the land owner, Dingman Township; 3.) Protecting the natural and man made amenities and features in the preserve.

Preserve and user protection:

Several mechanisms will be implemented to guarantee the safety of Preserve users and to reduce the risk of vandalism.

One method is to enforce dawn to dusk hours. Volunteers or township employees should periodically inspect the trails and all other amenities for potential safety concerns. Additionally, as a preventative measure, no large buildings or structures are proposed for the site since they tend to promote large gatherings. The township has applied for Highway Occupancy Permits to assure safe ingress and egress. The preserve also has emergency access points one off Sawkill road and the other off Route 6.

Property owner protection:

General liability policies are already in place for Dingman Township and they should provide adequate protection for the township against any potential lawsuits. As an additional safe guard the township should install signage that states all preserve users do so at their own risk. Additionally, the Pennsylvania Recreational Use of Land and Water Act (RULWA), (68 Pa. Purdon's Statutes, Section 477-1, *et seq.*, February 2, 1966) was established in order "to encourage owners of land to make land and water areas available to the public for recreation purposes by limiting their liability toward person entering thereon for such purposes." This laws provides and "immunity" to private landowners and the Commonwealth of Pennsylvania and its local government from lawsuits but allows the right to injured parties to sue on certain circumstances. There are two exceptions to the "immunity" of lawsuits if the landowner charges a fee for recreational use on the land or if the landowner is guilty of deliberately or maliciously failing to guard or warn against a dangerous condition, use structure or activity. This does not mean the land owner has a duty of care "to keep the premises safe for entry or use by others for recreational purposes, or to give any warning of a dangerous condition, use, structure, or activity on such premises to persons entering for such purposes"