

An aerial photograph of a lush green valley. A river flows through the center, curving to the right. A long bridge spans across the river in the lower middle. A road follows the right bank of the river. The surrounding hills are covered in dense green forest. The sky is blue with scattered white clouds.

CLINTON COUNTY GREENWAYS & OPEN SPACE PLAN

Bald Eagle and Spring Creek Canal Trail Feasibility Study
West Branch Susquehanna River Access & Camping Feasibility Study
Pine Creek Trail Connector Feasibility Study

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November 2010

Prepared for:

Clinton County Planning Commission

Clinton County Commissioners:

Adam Coleman, Chairman
Joel Long, Vice Chairman
Tom Bossert

Clinton County Planning Commission:

Timothy L. Holladay - Director
Gregory T. Smith - Community Planner
Jim Watson – Clinton County GIS

Centre County Planning and Community Development Office:

Susan B. Hannegan - Assistant Director
Beth A. Rider - Senior Environmental Planner

Clinton County Greenway Committee:

Peter Lopes, Clinton County Economic Partnership
Leonora Hannagan, Lock Haven City Planner
Dr. Steven Guthrie, LHU Recreation Management Department
Alice Trowbridge, Northcentral Pa. Conservancy
Helene McKernan, Penn State Cooperative Extension
Steve Steveson, Lock Haven City Council
Rick Henrich, Owner, Rock River & Trail Outfitters

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Prepared by:

Simone Collins Landscape Architecture
GTS Technologies Inc.
Delta Development Group Inc.



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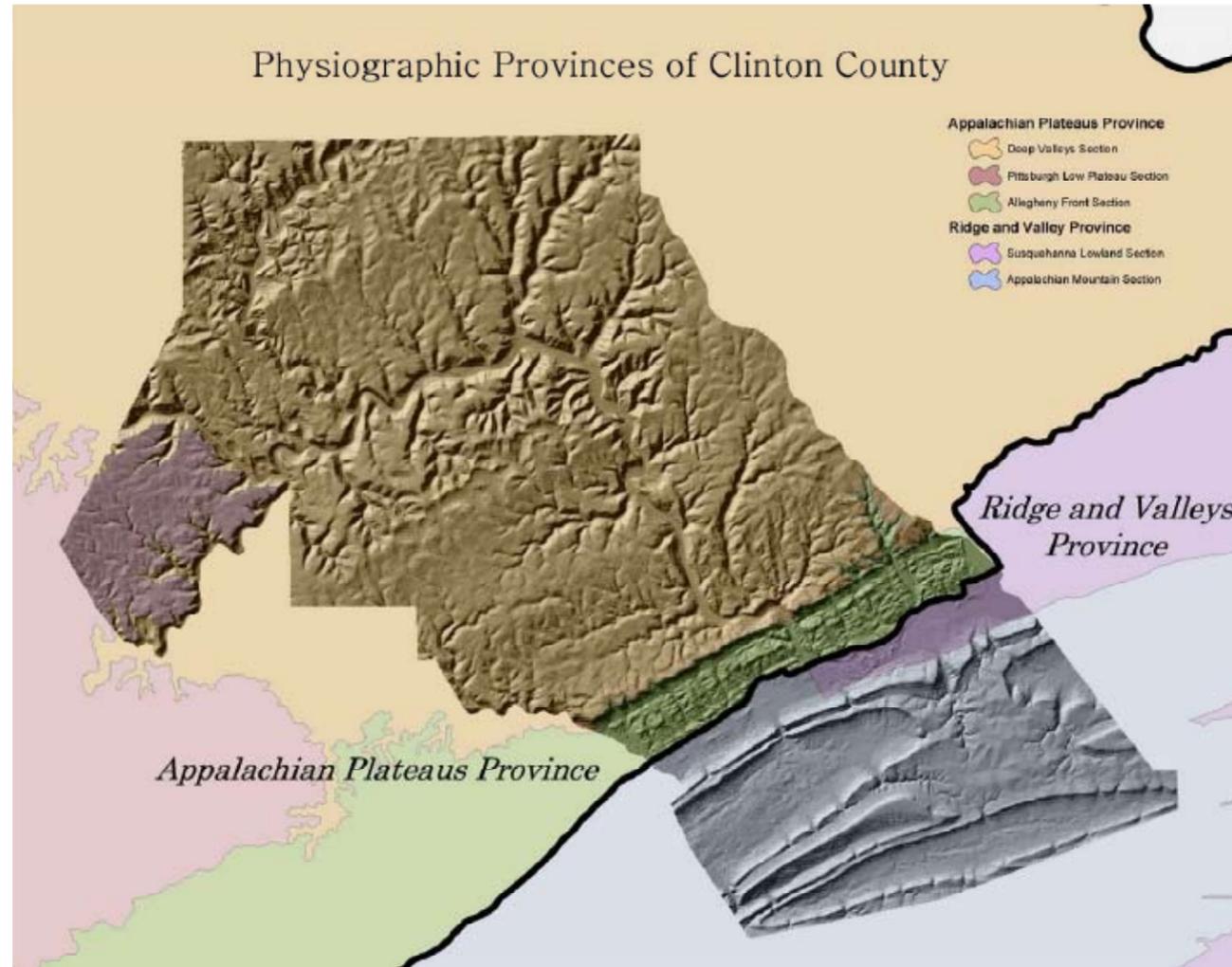
INTRODUCTION

PLAN PURPOSE

The primary purpose of the Clinton County Greenways and Open Space Plan is to identify, locate, and examine greenway and trail opportunities throughout Clinton County and within Clinton County as part of a regional greenways and trails network. The Greenways and Open Space Plan will be an amendment to the County Comprehensive Plan by coordinating efforts connecting greenways to land use management techniques, open space protection, recreation, multimodal trail systems, and community revitalization goals.

In addition to the overall County Greenways and Open Space Plan, this report contains the following feasibility studies to further investigate three major greenway corridors that will provide connectivity within and beyond the borders of Clinton County. These studies are:

- **West Branch Susquehanna River Camping and Access Feasibility Study** – investigates potential river access points and overnight camping locations associated with the West Branch Susquehanna River Water Trail from the PAFBC Karthaus Access in Centre County to the eastern Clinton County line at the river's confluence with the Pine Creek;
- **Bald Eagle / Spring Creek Canal Trail Feasibility Study** – studies the placement of a trail to connect the Borough of Bellefonte in Centre County with the City of Lock Haven in Clinton County along the Spring and Bald Eagle Creeks and historic canal alignment through the Bald Eagle valley.
- **Pine Creek Trail Connector Feasibility Study** – investigates the possibility of providing a trail connection from the Lock Haven vicinity to the existing 60 mile Pine Creek Rail-Trail in adjacent Lycoming County.



(Image Source: Clinton County Natural Heritage Inventory)

PLAN GOALS

The following are goals to be accomplished by the Greenways and Open Space Plan:

- Develop a greenway and multi-modal trail system, which will improve the quality of life for citizens and visitors within Clinton County by identifying/recommending a network within the County that will also access the network of regional and national trails;
- Serve as an important asset to the region in attracting new forms of economic development.

Residents and employers will find these types of facilities important to their goals and objectives;

- Preserve and protect wildlife, waterways and scenic areas;
- Identify locations of potential greenways and multi-modal trail systems, in particular routes and locations pertinent to the three (3) feasibility studies;
- Identify, locate, and prioritize the most important and threatened open space areas including important natural and cultural community features. This inventory will serve as a framework

for developing greenway corridors, locating trail and trail connections, and identifying conservation areas;

- Address how the greenway and trail system will benefit the communities, residents, and visitors of Clinton County;
- Provide recommendations on how the greenway and trail networks can best complement the existing environment and residential and commercial developed areas;
- Identify the maintenance needs and requirements of greenway and trail systems;
- Identify techniques to use the greenway and trail systems to promote tourism and quality of life issues in Clinton County.

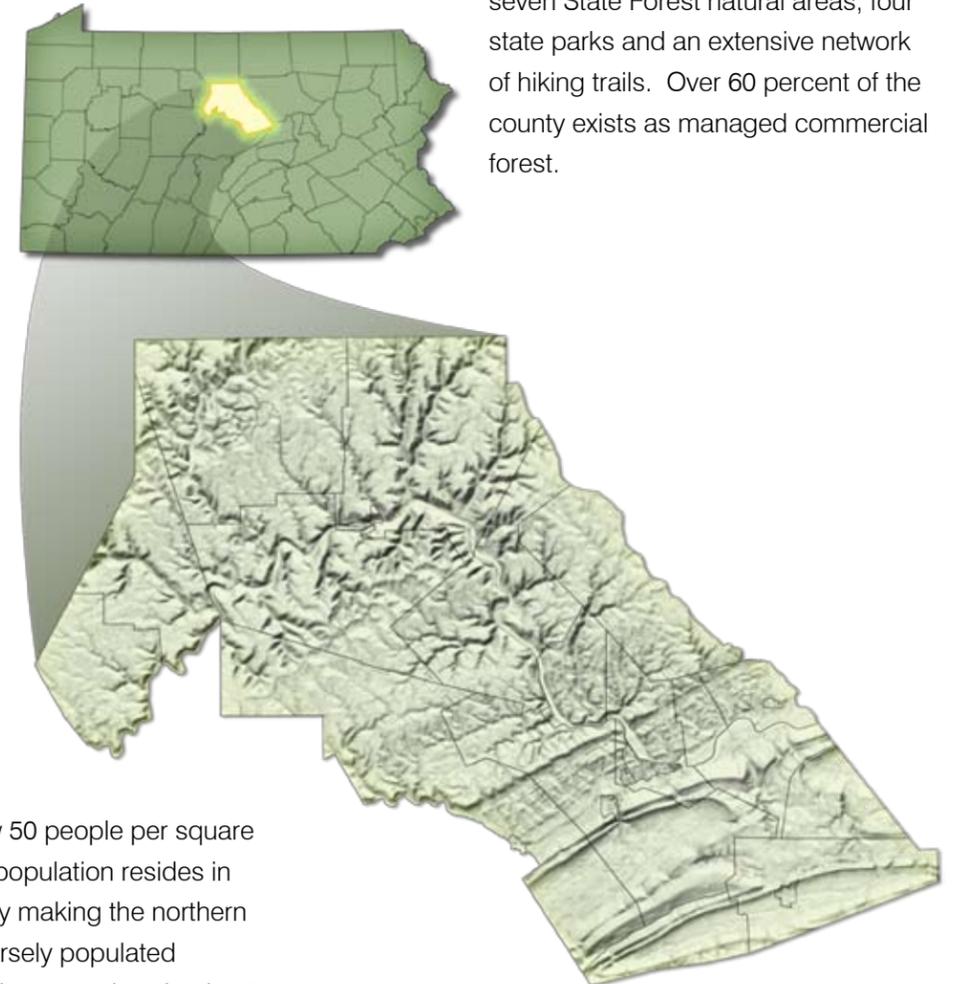
other municipalities, including 7 boroughs and 21 townships.

Clinton County straddles the division of two major physiographic provinces: the Appalachian Plateau Province which comprises the northern two-thirds of the county and is heavily forested and mountainous; and, the Ridge and Valley Province characterized by the two prominent valleys – Sugar Valley and Nittany Valley – located between Bald Eagle Mountain and Nittany Mountain. These major physiographic divisions along with the underlying geology are responsible for the striking contrasts in population distribution, land-use, natural communities, and landscape features in the county.

Clinton County contains all or part of six state forests, seven State Forest natural areas, four state parks and an extensive network of hiking trails. Over 60 percent of the county exists as managed commercial forest.

REGIONAL CONTEXT/ CLINTON COUNTY BACKGROUND

Clinton County, population 37,914 (2000), is the 15th largest county in Pennsylvania with a total land area of 902 square miles and is surrounded by Cameron, Centre, Clearfield, Lycoming, Potter and Union Counties. It is among the 14 counties within Pennsylvania with population densities below 50 people per square mile. Nearly 85 percent of the population resides in the lower one third of the county making the northern two thirds among the most sparsely populated areas in the state. The County has one city – Lock Haven – that serves as the County Seat and 28





Clinton County (red outline) and its geographic relation to the PA Wilds Region

THE PENNSYLVANIA WILDS (PA WILDS) INITIATIVE

The following is an excerpt from the PA Wilds Resource Center website (<http://www.pawildsresources.org/index.html>):

“The PA Wilds is a 12-county region that offers tremendous outdoor experiences, some of the best in the nation, with 29 state parks, 50 state game lands, abundant wildlife and hundreds of miles of land and water trails. The amount of public land in the region — more than 2 million acres — is comparable to Yellowstone. The region is home to the largest elk herd east of the Mississippi, some of the darkest skies in the country. It is a unique place in America.

The PA Wilds is also a region surrounded by major tourism markets. More than 50 million people live within a day’s drive of the Pennsylvania Wilds — making it an attractive place to come hunt, bike, hike, camp, fish, canoe and more. Nature

draws many to the area, but visitors also love the region’s small town charm.

In 2003, the state launched the PA Wilds initiative. The idea was to market the region to tourists while simultaneously helping local communities capitalize on the benefits and deal with the challenges of increased visitation. Stewardship of the region’s remarkable natural resources is an important underlying message of the initiative.

The state has since spent millions upgrading trails, bathrooms, signage and facilities in the region — improvements enjoyed by residents and tourists alike. A new, state-of-the-art Elk Country Visitor Center in the heart of the region is slated to open in summer 2010, along with a new Nature Inn in at Bald Eagle State Park. Other, similar facilities are in the works. Millions more have been awarded to businesses in the form of low-interest loans and grants, and to communities for revitalization and planning projects. The

state Tourism Office has spent more than \$5 million reaching out to potential visitors through television, radio, and print advertising, with real results.”

The main public portal on the web for the PA Wilds may be found at the following link: <http://www.pawilds.com/index.aspx> This site is a valuable resource for potential visitors to the PA Wilds region as many of the attractions, activities, events, lodging and other related facilities may be found here and used as a planning tool for a trip to the region.

The **PA Wilds Resource Center** is targeted towards the communities and businesses located within the PA Wilds region, and provides a database of loans, grants, and technical assistance programs that may be used by the local businesses and communities to promote smart and sustainable tourism growth.

In addition these programs, the site provides access to [The Pennsylvania Wilds Design Guide: A Design Guide for Community Character Stewardship](#) that “was created to help communities protect these treasured characteristics while reaping and strengthening the benefits of economic growth.” “The Design Guide outlines several principals that can be used by developers, design professionals and others. Examples include: Applying the Pennsylvania Wilds logo more extensively throughout the region; incorporating wood and timber as a strong visual theme; preserving and rehabilitating historic buildings to retain a visual representation of the past; and incorporating elements such as water, wildlife, glass, and stone throughout the Pennsylvania Wilds as visual reminders of the region’s valued resources.”

(Source: PA Wilds Resource Center website)



PENNSYLVANIA LUMBER HERITAGE REGION

The Lumber Heritage Region is one of the State Heritage Parks in Pennsylvania. Formed in 1998, and designated as a State Heritage Area in 2001, this region covers all or part of 15 counties in North Central PA, including Clinton County, and was created to attract visitors, create new jobs and offer an understanding of the dynamics of the early lumbering industry and its relationship to the development of the region’s economic base. The area includes the Allegheny National Forest, 10 State Forests, 34 State Parks, over 50 State Game Lands, and numerous recreational, historic, cultural, and natural resources.

The primary goal of the Lumber Heritage Region is to promote education & interpretation, outdoor recreation, historic preservation & cultural conservation, economic development, and partnerships surrounding the following themes and events associated with the lumber industry:

- Pioneers of Logging
- Spars and Sticks: Timber Rafting and Log Booms
- Bark Peelers and Lumber Barons: Railroad Logging Arrives

- Forest Conservation and the Recovery of a Resource
- A Second Forest and a Sustainable Approach: Modern Forest Management

Each theme provides a view into the lives, practices, and techniques of the time and is elemental in telling the tale of the Lumber Heritage Region.

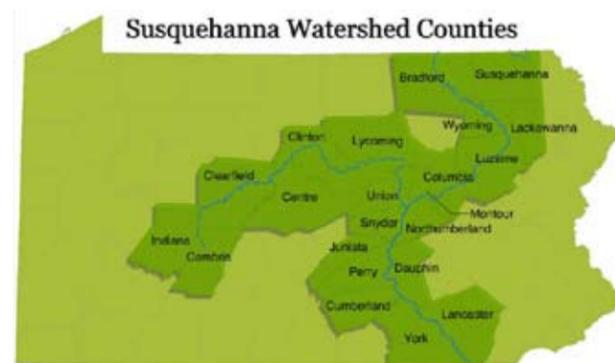
The Lumber Heritage Region works very closely with the PA Wilds Initiative to promote the resources of the region, and PA DCNR for project planning and funding assistance.

(Source: PA Lumber Heritage Region website: <http://www.lumberheritage.org/>)

THE SUSQUEHANNA GREENWAY PARTNERSHIP

Mission Statement: “The Susquehanna Greenway Partnership is dedicated to developing and sustaining the Susquehanna Greenway to connect communities and enrich lives through enhanced recreation, healthy living, economic prosperity and environmental stewardship.”

The Susquehanna Greenway is a one mile corridor on each side of the 539 miles of the North Branch, West Branch, and Main Stem of the Susquehanna River and is Pennsylvania’s largest greenway.



The Susquehanna Greenway Partnership (SGP) is a nonprofit corporation governed by a 20 member board of directors. The partnership is the lead advocate for Susquehanna Greenway development in Pennsylvania. It champions the greenway vision and values, and guides greenway development in keeping with the publicly derived actions and priorities set forth in the Susquehanna Greenway Strategic Action Plan. This Action Plan was “developed to guide the Susquehanna Greenway, during the first three years of operation, to ensure steady and coordinated growth of the greenway from a visionary concept to on-the-ground reality.” The five main goals of the Susquehanna Greenway are:

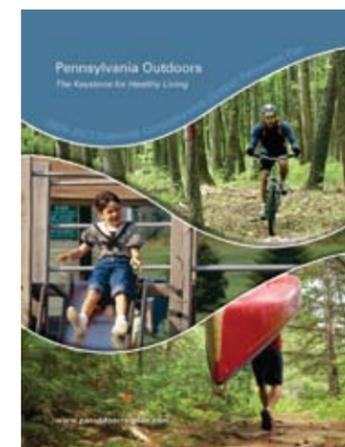
- **Goal # 1** – Special Place - The Susquehanna Greenway will be a specially recognized place – a distinctive destination consisting of diverse and interconnected landscapes and communities.
- **Goal # 2** – Conservation - The Susquehanna Greenway Partnership will conserve, protect, and restore the natural environment for future generations, creating healthy and sustainable communities.
- **Goal #3** – Benefits – The Susquehanna Greenway will bring multiple benefits to the region including economic development, community revitalization, environmental stewardship, and enhance recreation, education, and healthy living opportunities.
- **Goal #4** – Awareness - The Susquehanna Greenway Partnership will increase public understanding and awareness of the Susquehanna River and its enduring story.
- **Goal # 5** – Partnership - The Susquehanna Greenway Partnership, in cooperation with local partners, will champion and implement the vision of the Susquehanna Greenway.

The Greenway was divided into six different planning ‘reaches’. Clinton County is located within Reach #5 –Upper West Branch: from Carrolltown to Lock Haven, and Reach #6 – from Lock Haven to Northumberland.

The SGP has been very instrumental in the development of the West Branch Susquehanna River Water Trail and has worked closely with the PA Lumber Heritage Group to develop and install interpretive signage at many access points along the West Branch. SGP has also worked with the Northcentral Pennsylvania Conservancy in their development of the Stewardship and Conservation Plan for the West Branch Water Trail. SGP is currently the Water Trail Manager of Record with the National Park Service for the West Branch Water Trail and is an instrumental partner in the development of the Clinton County Greenways and Open Space Plan.

PENNSYLVANIA OUTDOORS: THE KEYSTONE FOR HEALTHY LIVING

This document is the 2009-2013 Statewide Comprehensive Outdoor Recreation Plan prepared by the PA Department of Conservation and Natural Resources (DCNR) in September 2009.



This document “serves as a status report and as an overall guideline for recreation resource preservation, planning and development through the year 2013”.

(Source: <http://www.paoutdoorrecplan.com/>)

Table 1. Participation Rates for Most Popular Outdoor Recreation Activities



Two of the major components of this plan include a Resident Survey and a Trail Gap Survey.

The Resident Survey tabulated results from 2,648 surveys statewide. Table 1 from the report indicates the participation rates for the most popular outdoor recreation activities. Walking is the top outdoor recreation activity, with visiting historical sites and driving for pleasure also in the top five. Clinton County has many historic features and scenic roads that could be incorporated into the proposed greenways plan.

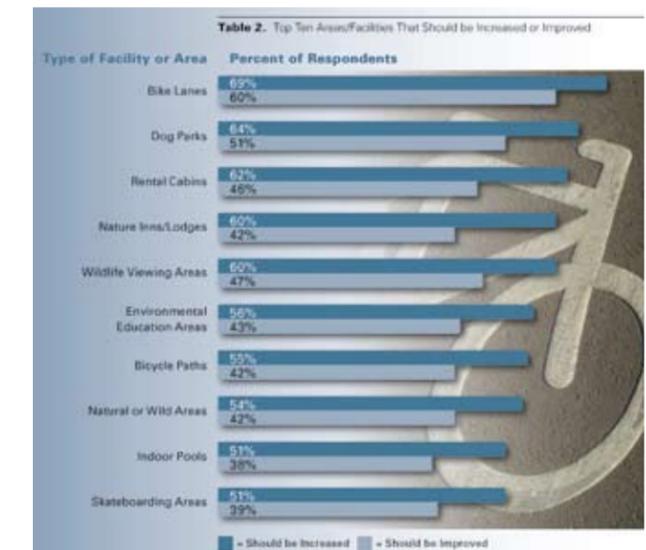


Table 2 lists the top ten areas/facilities that should be increased or improved. Respondents listed Bike Lanes as the facility that should be provided more widely than any other. Bicycle Paths also received a high rate of response with over 55% requesting this facility type.

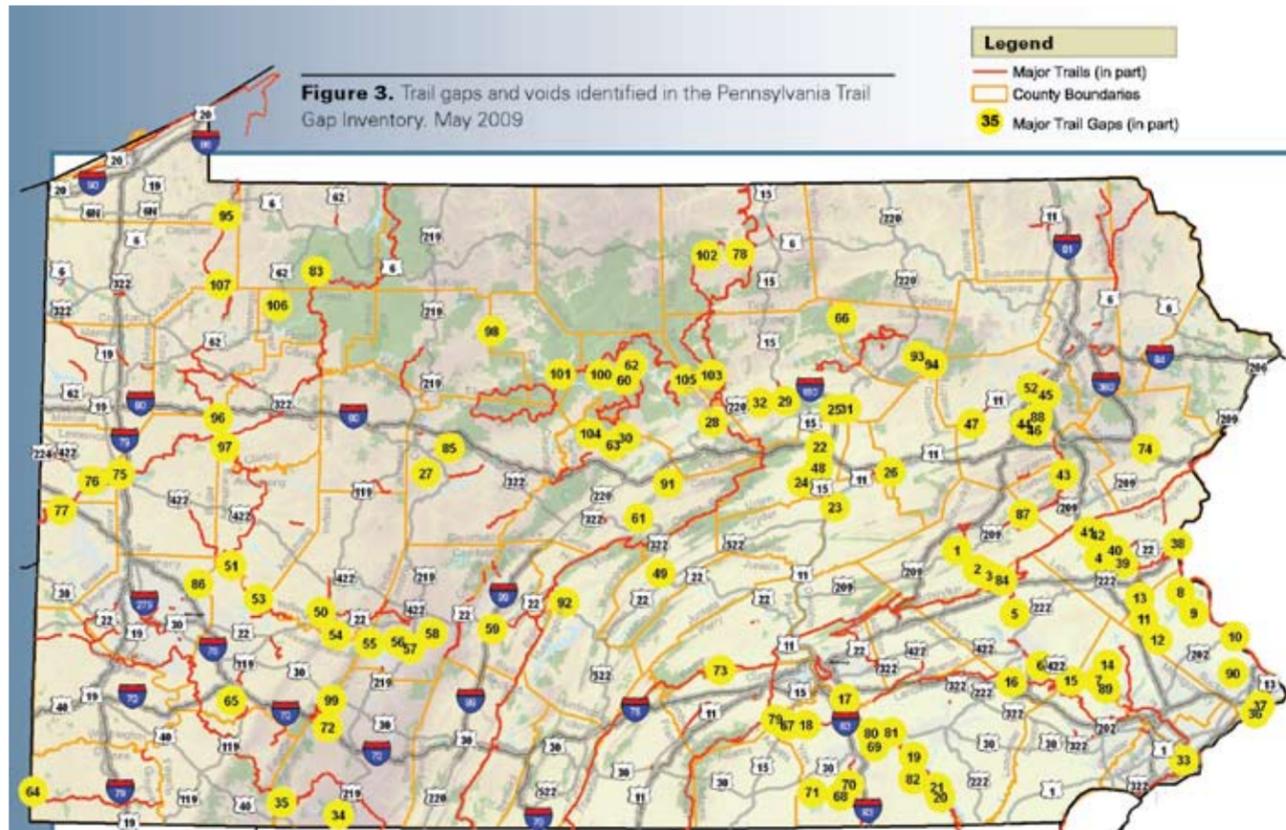


Figure 3. Trail gaps and voids identified in the Pennsylvania Trail Gap Inventory, May 2009

The Trail Gap Survey was performed by the DCNR / Penn State team that solicited the opinions of 21 major trail organizations statewide for their top 10 priority trail gaps. The results for Clinton County indicate the need for: spur trails connecting the Bloody Skillet and Whiskey Springs ATV areas within Sproul State Forest to the towns of Renovo and South Renovo; additional trails east and west of Kettle Creek State Park, and a connection between Lock Haven and the Pine Creek Trailhead in Jersey Shore. A study for the latter is included within this plan as the Pine Creek Connector Feasibility Study. A complete listing of the trail gaps identified may be found in the appendix of this report, or online at the PA Outdoor Rec Plan website listed above.

BENEFITS OF TRAILS AND GREENWAYS

Having an established trails & greenways system will provide many economic, social - and most importantly - health benefits for county residents.

Health Benefits

The most important benefit of a trails & greenway system is the opportunity these facilities can provide towards bettering the community's general health and well being through regular physical activity.

Depression, obesity and diabetes are chronic diseases directly related to the physical inactivity and unhealthy eating habits associated with a sedentary lifestyle. The US Department of Health and Human Services, Center for Disease Control and Prevention (CDC) reports that in the past 30 years,

the prevalence of obesity amongst adults aged 20-74 has increased from 15.0% to 32.9%, and the estimated cost of obesity in the United States in 2000 was about \$117 billion.

For more information on the facts presented as well as many other programs promoting healthy lifestyles by the CDC, please refer to their website: <http://www.cdc.gov/HealthyLiving/>

The opportunity for physical activity that trails & greenway related facilities provide not only fights obesity and related diseases, but also results in reduced health care costs, increased work productivity, and improved longevity for the community as a whole.

The following is an excerpt from a document entitled Health and Wellness Benefits published by the Rails to Trails Conservancy.

HOW CAN TRAILS AND GREENWAYS HELP MAKE A HEALTHIER COMMUNITY?

- Trails and greenways create healthy recreation and transportation opportunities by providing people of all ages with attractive, safe, accessible places to bike, walk, hike, jog, skate or ski. In doing so, they make it easier for people to engage in physical activity.
- Trails connect people with places, enabling them to walk or cycle to run errands or commute to work. A majority of the daily trips people make are short, providing an opportunity for physical activity that can be built in to the daily routine.
- Trails and greenways provide natural, scenic areas that cause people to actually want to be outside and physically active. Cities, such as Chattanooga, Tennessee and Providence, Rhode Island have transformed unsightly urban decay into inviting and popular greenways and

walkways that make their communities more livable and walkable. Both cities promote their riverside greenways to attract visitors, businesses and residents.

- Trails connect neighborhoods and schools so children can cycle or walk to their friend's homes or to school, especially in communities that lack sidewalks. In Denver, the Weir Gulch Trail provides a safe neighborhood route for elementary-aged children, the trail's primary users.
- In this age of expensive indoor gyms and health clubs, trails and greenways offer cost-effective places to exercise. Like gyms and health clubs, they also serve as a place where people can see and interact with other people exercising. Researchers have found that a lack of this type of social support is often a barrier to participation in exercise.
- A North Carolina State University study conducted to gauge potential use of a trail in Cary, North Carolina, found that 72 percent of respondents indicated it was likely the trail would provide a place for them to exercise, and 57 percent said they likely would exercise more if the trail were created. Even if only half those respondents actually end up increasing their exercise because of the trail, the impact on public health is substantial.

The full document may be found here on the web: http://www.railstotrails.org/resources/documents/resource_docs/HealthandWellness.pdf

Economic Benefits

The following summary of the economic benefits of greenways was prepared by the National Trails Training Partnership and the American Trails

group, and posted on their website: <http://www.americantrails.org/> This summary of findings cites specific examples and was based on a report entitled Economic Impacts of Protecting Rivers, Trails, and Greenway Corridors, prepared by the National Park Service in 1990.

Real Property Values

Many studies demonstrate that parks, greenways and trails increase nearby property values, thus increasing local tax revenues. Such increased revenues often offset greenway acquisition costs.

- California's Secretary for the State Resources Agency estimated that \$100 million would be returned to local economies each year from an initial park bond investment of \$330 million (Gilliam, 1980).
- A greenbelt in Boulder, Colorado increased aggregate property values for one neighborhood by \$5.4 million, resulting in \$500,000 of additional annual property tax revenues. The tax alone could recover the initial cost of the \$1-5 million greenbelt in three years (Cornell, Lillydahl, and Singel, 1978).
- In the vicinity of Philadelphia's 1,300 acre Pennypack Park, property values correlate significantly with proximity to the park. In 1974, the park accounted for 33 percent of the value of land 40 feet away from the park, nine percent when located 1,000 feet away, and 4.2 percent at a distance of 2,500 feet (Hammer, Coughlin and Horn, 1974).

Expenditures by Residents

Spending by local residents on greenway related activities helps support recreation related business

and employment, as well as businesses patronized by greenway and trail users.

- Residents are increasingly spending vacations closer to home, thus spending increasing amounts of vacation dollars within the boundaries of the state (NPS 1990).
- In 1988, recreation and leisure was the third largest industry in California. More than \$30 billion is spent each year by Californians on recreation and leisure in their state. This amounts to 12 percent of total personal consumption (California Department of Parks and Recreation, 1988).

Commercial Uses

Greenways often provide business opportunities, locations and resources for commercial activities such as recreation equipment rentals and sales, lessons, and other related businesses.

- Along the lower Colorado River in Arizona, 13 concessionaires under permit to the Bureau of Land Management generate more than \$7.5 million annually, with a major spinoff effect in the local economy (Bureau of Land Management, 1987).
- Golden Gate National Recreation Area has contracts with ten primary concessionaires. Total 1988 gross revenues for these concessionaires were over \$16 million, over 25 percent of which was spent on payroll (NPS, 1990).

Tourism

Greenways are often major tourist attractions which generate expenditures on lodging, food, and recreation related services. For example, tourism is Maryland's second largest and most stable industry, and is projected to become its largest.

- A poll conducted by the President's Commission on Americans Outdoors found that natural beauty was the single most important criterion for tourists in selecting outdoor recreation sites (Scenic America, 1987). Maryland's Department of Economic and Employment Development estimated the annual value of tourism and commercial activities directly related to the Chesapeake Bay was \$31.6 billion in 1989 (DEED 1989).
- The San Antonio Riverwalk is considered the anchor of the \$1.2 billion tourist industry in San Antonio, Texas. A user survey concluded that the Riverwalk is the second most important tourist attraction in the state of Texas (NPS 1990).
- The Governor's Committee on the Environment reported in 1988 that the governors of five New England states officially recognized open space as a key element in the quality of life in their region. They credited that quality of life with bringing rapid economic growth and a multi-billion dollar tourism industry to the region (Governor's Committee on the Environment, 1988).

Agency Expenditures

The agency responsible for managing a river, trail or greenway can help support local businesses by purchasing supplies and services. Jobs created by the managing agency may also help increase local employment opportunities. Corporate Relocation Evidence shows that the quality of life of a community is an increasingly important factor in corporate relocation decisions. Greenways are often cited as important contributors to quality of life. The quality of life in a community is an increasingly important factor in corporate relocation decisions; greenways are often cited as important contributors to quality of life and to the attractiveness of a community to which businesses are considering relocating.

- An annual survey of chief executive officers conducted by Cushman and Wakefield in 1989 found that quality of life for employees was the third most important factor in locating a business (NPS, 1990).
- St. Mary's County, Maryland, has found over the last ten years that businesses which move to the county because of tax incentives tended to leave as soon as the incentives expire. However, businesses that move to the county because of its quality of life remain to become long term residents and taxpayers (NPS, 1990).
- Site location teams for businesses considering San Antonio, Texas regularly visit the San Antonio Riverwalk. A location on the river-walk is considered very desirable; A regional grocer, the HEB Company, relocated its corporate headquarters to a historic building oriented towards the river (NPS, 1990).
- The Joint Economic Committee of the U.S. Congress reports that a city's quality of Life is more important than purely business- related factors when it comes to attracting new businesses, particularly in the high-tech and service industries (Scenic America, 1987).

Public Cost Reduction

The conservation of rivers, trails, and greenways can help local governments and other public agencies reduce costs resulting from flooding and other natural hazards. While greenways have many economic benefits it is important to remember the intrinsic environmental and recreation value of preserving rivers, trails and other open space corridors. Greenways along rivers can help reduce the cost of repairing flood damage and improving water quality.

- In a study of major land uses in Culpepper

County, Virginia, it was found that “for every dollar collected from farm/forest/open space, 19 cents is spent on services’ (Vance and Larson, 1988).

- In Yarmouth, Maine, an analysis of costs of providing municipal services to a specific parcel proposed for parks showed that the annual costs of those services exceeded revenues generated by taxes by \$140,000 annually. This was compared to an annual cost of \$76,000 over 20 years to purchase the property (World Wildlife Fund, 1992).
- In Boulder, Colorado, the 1988 public cost for maintaining developed areas was estimated to be over \$2,500 per acre. The cost for maintaining open space in the city was only \$75 per acre, or less than three percent the cost of non-open space (Crain, 1988)

Additionally, a report prepared by the Pennsylvania Greenways Partnership Commission entitled Benefits of Greenways: A Pennsylvania Study (June 2002) cites examples where trails and greenways are of benefit throughout Pennsylvania. The full document may be found here on the internet: <http://www.pagreenways.org/toolbox/Benefits.pdf> The following is an excerpt:

Pennsylvania is home to some of the nation’s richest and most scenic natural areas, many of which are internationally known. Greenways throughout the Commonwealth are currently serving the communities in which they are located by:

- Protecting Natural Resources,
- Protecting Rural Legacy,
- Providing Communities with Economic Opportunities and Prosperity,
- Conserving Historic and Cultural Resources,

- Providing Opportunities for Public Recreation, Health and Fitness,
- Enabling Outdoor Educational Opportunities for People of all Ages,
- Assisting in the Planning and Shaping of Communities, and;
- Providing Alternative and Safe Modes of Transportation.

As an interconnected network of open space corridors, the statewide greenways system will enhance and support meaningful and lasting benefits such as those described above.

In summary, the benefits that trails and greenways can have on a community are well documented and extend to many quality of life issues including social, health, economic, transportation, education and historic preservation initiatives.

PUBLIC PARTICIPATION SUMMARY

Public participation is a key ingredient in the success of any community project. Public meetings are designed to inform the public of the project status; to receive input as to the desired facilities; and address questions, comments, or concerns relative to the greenway development.

Meetings

During the course of the overall project schedule that began in March 2009, there have been a series of meetings with both the public and the project steering committee. Public meetings were held in the project’s initial programming phase in:

- the Lock Haven University Price Performance Center (6/17),

- the Penn State Cooperative Extension in Lamar (6/17),
- the Bald Eagle State Park Environmental Education Center (6/18),
- and the Loganton Borough Building in the Sugar Valley (7/14).

Plan progress was presented at a public meeting held at :

- Lock Haven City Hall on 10/13/09.

The DRAFT Plan recommendations were presented at a public meeting held at:

- Penn State Cooperative Extension in Lamar 6/8/10.

The final plan was presented at a public meeting on 9/14/10 at the Commissioner’s Meeting Room, 232 East Main Street, Lock Haven, PA.

In addition, there were two special sub-committee meetings held relative to the feasibility studies. One was for the Bald Eagle/Spring Creek Canal Trail feasibility study held 7/13/09 at the Centre County Planning and Community Development office in Bellefonte, PA followed by a field tour of the project area from Bellefonte to Curtin Village the following day. The other special sub-committee meeting was for the Pine Creek Connector Trail feasibility study and was held 10/13/09 at the Wayne Township Municipal Building to review the potential grant application submission for the development of the connector trail.

Throughout the process, there were a total of seven (7) Study Committee meetings that took place in April, July, September, and November of 2009, as well as February, April, and August of 2010. All Study Committee Meetings were to review the plan progress and were held at either the Clinton County Planning Commission or the Clinton County Economic Partnership in Lock Haven, PA.

Key Person Interviews

A total of 19 people representing a cross section of the community were identified by the project committee for the key person interviews. These interviews were conducted during the DRAFT report review phase of the project so that the interviewees would have the opportunity to offer more valuable input towards the recommendations included within the document.

One common theme expressed by many of the participants revolved around the multiple historical interpretation opportunities that could be incorporated into each of the proposed trail systems. While there are a few National Register historic locations within the County, there are hundreds more locally significant historic locations inventoried by the PA Historical and Museum Commission that may be included for interpretation along the trails. In addition, a number of paranormal or ghost locations were provided by one of the participants that may be used for interpretive purposes.

Another common theme was the concern expressed over the Marcellus shale gas drilling industry and activities that many believe has the potential to cause significant damage to the natural environment and scenic beauty of the county. This threat includes the development and population boom that is expected to occur once the gas drilling industry is further established combined with the lack of zoning and land management techniques and oversight that are often employed in more populated regions.

Providing connections between communities and the existing and proposed trail systems is another element that participants. While some believe that the County should focus on establishing the larger regional connections between population centers and trails, such as connecting the City of Lock Haven to State College and to the Pine Creek Trail, others feel that providing the simple connections between existing trail systems would greatly expand recreational opportunities for the local residents.

While many recognize the need for economic development in the County through the promotion of the many recreational opportunities, there are varying opinions on how this could best be accomplished without destroying the rural and remote character of the communities. For example, some believe that the PA Wilds marketing campaign is a great way to promote the region, while others believe it to be in conflict with the current ability of the communities to handle this influx of potential tourists. Some believe that large adventure type events such as the Hyner View Challenge are a great way to promote the region, while others in the more remote and rural communities feel that events like this would not be appropriate for their community and eventually lead to the disturbance of their current way of life.

In summary, most if not all of the participants stated that there are many opportunities for both increased recreation and historical interpretation and that these opportunities should be developed in a way that strikes a balance between economic growth and maintaining the character of the existing communities and landscape while also protecting the natural environment.



INVENTORY & ANALYSIS

DATA COLLECTION AND METHODOLOGY

Data found within this report was compiled from many different sources, including previous planning efforts referenced later in this chapter and throughout the report, and new field reconnaissance data collected by the consultant team.

Geographic Information System (GIS) base map information was obtained from Clinton County GIS department, the Susquehanna Greenway Partnership, and other resources including PA DCNR, PA DEP, PA Fish and Boat Commission, PA Game Commission, PennDOT and the PA Mapping Project from the Pennsylvania Spatial Data Access (PASDA) public access geospatial information clearinghouse and website. Maps were prepared from the GIS database consisting of the base aerial photography and other identifying features for use during the field reconnaissance efforts associated with the overall plan and three feasibility studies. Field data was recorded onto the field maps, and photographs were taken of existing site conditions for use in the evaluation process of potential access & camping sites and trail alignment alternatives.

The final GIS mapping and site inventory photography associated with the open space plan and three feasibility studies was compiled and forwarded to the County upon completion of the final plan for use in preparation of a web based mapping database to be utilized for future promotion of the trails and other attractions to the public as a whole.

Relevant Planning Documents

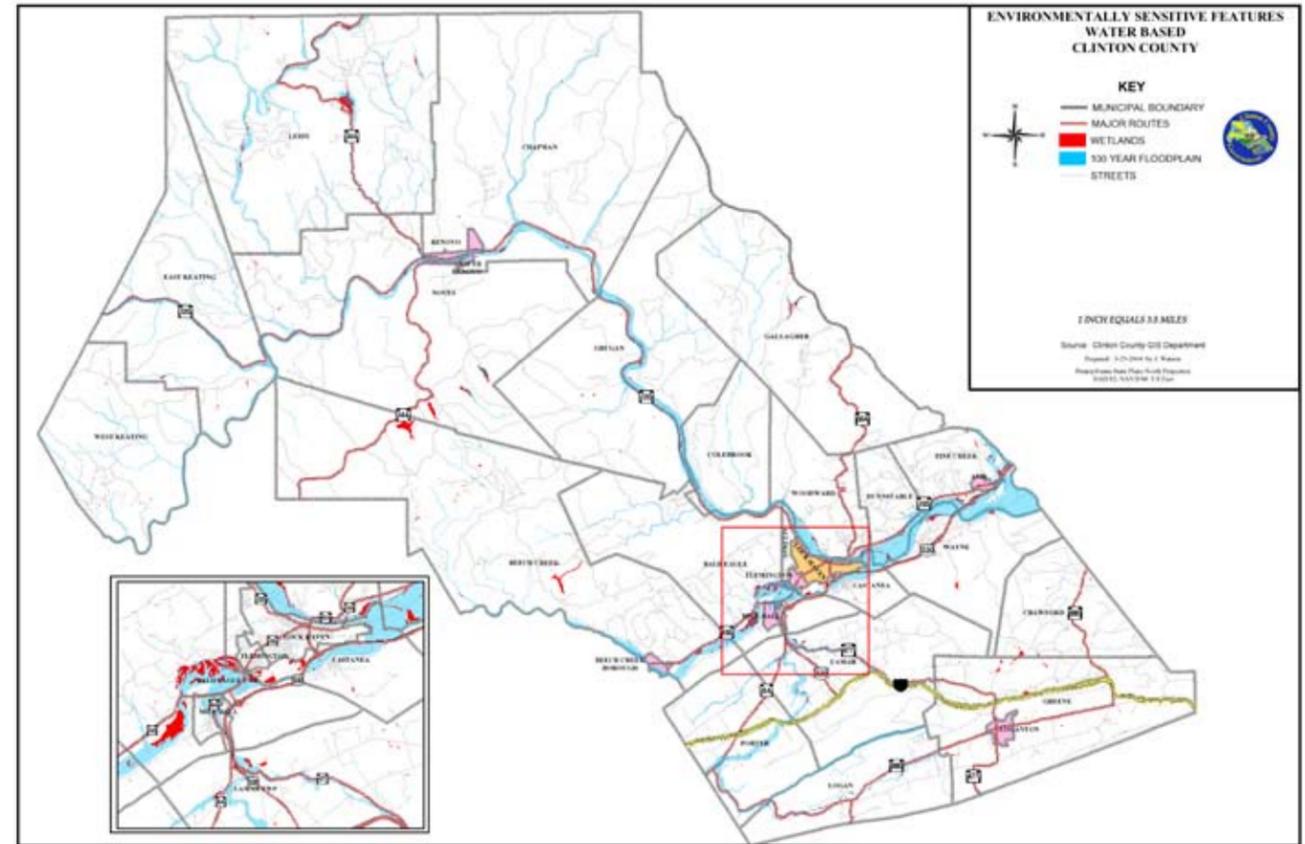
Existing and on-going planning documents that have been reviewed in the preparation of and contributed to the development of the Greenways and Open Space Plan and the three feasibility studies include but are not limited to the following:

- Clinton County Comprehensive Plan Update, September 8, 2005
- City of Lock Haven Comprehensive Plan Update, May 2005
- Clinton County Recreation Plan Update, 1981
- A Recreation Plan for the State Parks and State Forests in the Pennsylvania Wilds, February 2006
- Lumber Region Heritage Area Management Action Plan, May 2006
- Lower West Branch Susquehanna River Conservation Plan, May 2003
- Middle West Branch Susquehanna River Conservation Plan
- West Branch Susquehanna River Water Trail
- PA Fish and Boat Commission 2006 Annual Report
- Community Trails Handbook, The Brandywine Conservancy, Inc., 1997
- PA WILDS Planning Study, Mackin, December, 2007
- West Branch Canal, Robert N. DeVoss & David a. Hainley, 1975
- Smart Transportation Guidebook, PA & New Jersey DOT's, March 2008
- West Branch Susquehanna Subbasin AMD Remediation Strategy: Background, Data Assessment and Method Development, Publication 254, Susquehanna River Basin Commission, May 2008
- An Economic Benefit Analysis for Abandoned Mine Drainage Remediation in the West Branch Susquehanna River Watershed, Pennsylvania, Downstream Strategies, LLC, July 3, 2008
- Susquehanna Greenway Strategic Action Plan, Technical Report, Greenway Incorporated EDAW, March 2006
- Clinton County Natural Heritage Inventory, Western PA Conservancy, Updated 2002
- Shaping Sustainable Pennsylvania, DCNR's Blueprint for Action, September, 2004
- Lycoming County Comprehensive Recreation, Parks, and Open Space/Greenway Plan, Lycoming County Planning Commission, April 10, 2008
- Centre County Recreation and Greenway Plan, September 2007
- PA DCNR Bureau of Forestry, Guidelines for Establishing Water Trail Designated Island & Lakeshore Campsites, January 15, 2008
- Bellefonte Central Rail Trail,
- Beech Creek Greenway Plan, Fall 2007

These documents contain a wealth of information and recommendations that are specifically cited throughout this document as they relate to the narrative text.

Existing Natural Resources

The natural resources inventoried within the Clinton County Comprehensive Plan Update 2002 and the Clinton County Natural Heritage Inventory provide a thorough and detailed description of Clinton County's environmental and physiographic features. The natural resources that were the foundation for the growth of the County will continue to figure



Map Source: Clinton County Comprehensive Plan Update

prominently as nature based tourism and heritage tourism continue to grow in popularity.

The following are generalized descriptions of those features that directly impact greenway and trail development:

Water Resources

The West Branch of the Susquehanna River is the primary feature and runs through the entire County. Its major tributaries include the following: Sinnemahoning Creek, Kettle Creek, Young Woman's Creek, Hyner Run, Queen's Run, Chatham Run, McElhattan Creek, Fishing Creek, Bald Eagle Creek, and Beech Creek. Many of these waters qualify as Special Protection Waters according to Chapter 93 of the Pennsylvania Code. Most are classified as High Quality – Cold Water Fisheries, but there are also fourteen Exceptional Value Streams, which are listed below:

- Cooks Run (from headwaters to confluence with Onion Run)
- Onion Run
- Fish Dam Run
- Kettle Creek
- Barney Run
- Drury Run
- Paddy Run
- Boggs Hollow
- Young Woman's Creek
- Lick Run (PA designated Scenic River)
- Middle, East, and West Branch of Big Run
- Cherry Run

However, many more waterways have been impaired due to Acid Mine Drainage (AMD) including Beech Creek and Cooks Run watershed areas. In addition, portions of the upper reaches of the West Branch of the Susquehanna River near the Borough of Renovo are severely impaired due to AMD. Although coal mining activity in Clinton County has ceased, problems associated with deep mining and strip mining linger in the natural environment. Minerals left behind in many abandoned underground and surface mines, produce additional acidity which drains into the nearest waterway, affecting aquatic life, public drinking sources, private wells, and recreation. Currently, the Clinton County Conservation District and PA DEP play a major role in remediation of the impact of AMD and also sedimentation.

There are three very active Watershed Associations in Clinton County that are working to improve water quality: Kettle Creek Watershed Association, Beech Creek Watershed Association, and Sugar Valley Watershed Association. These groups are partnering with the County Conservation District, as well as many other agencies to improve these watersheds.

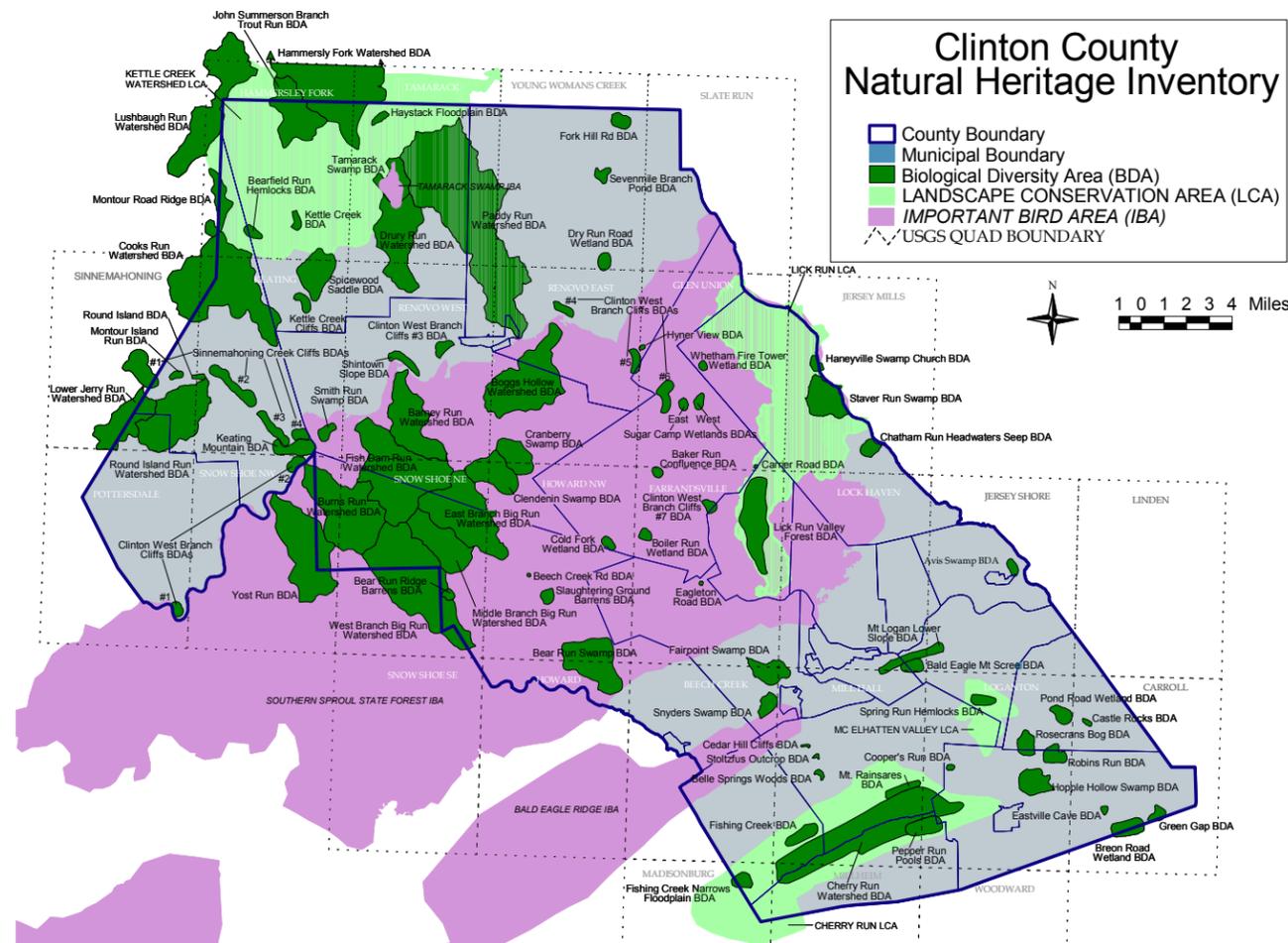
(Source: Clinton County Comprehensive Plan Update, September 2005)

Natural Areas

The following is an excerpt from the Clinton County Natural Heritage Inventory (Update 2002) outlining the general recommendations for the protection of natural heritage areas:

The inventory identifies natural heritage areas in order to promote their protection. Specific site recommendations for the maintenance of these important biotic and ecological resources are made based upon (1) type of natural heritage site; (2) the ecological characteristics of each site; (3) evidence of past or present disturbance within the site; and (4) the potential effects of the land-use activities that surround the site. Thus, these recommendations and site mapping recognize the interaction between the site's biotic resources and the natural ecosystems and/or land-use activities in proximity to the site. The general recommendations furnished below are meant to further clarify the differences between the various natural heritage areas and to provide a general framework into which specific management recommendations can be made.

are recognized as supporting special species (Special Species Habitat), relatively large numbers and kinds of species (High Diversity Areas), or entire communities or ecosystems (Community/Ecosystem Conservation Areas). Occasionally, Special Species Habitats and High Diversity Areas require some manipulation to maintain suitable conditions for the species or group of species. This is particularly true in places where natural habitats have been displaced and where species are now surviving in human influenced/created areas that mimic certain natural habitats. Beyond such specific cases, however, these BDAs should remain as free from other disturbances as possible. BDAs which include communities or ecosystems of significance should be managed in a similar way as Natural Areas, but with, again, the potential of management designed to provide habitat that has been displaced or compromised by various land uses (e.g. an oak barren that has not been permitted to burn under fire suppression policies may require periodic controlled burns).



Map Source: Clinton County Natural Heritage Inventory

Natural Areas

Natural Areas are recognized as areas whose communities have flourished with little or no human disturbance, particularly recent disturbances. Their continuance as the best examples of natural communities in the county depends upon the maintenance of the undisturbed qualities. Therefore, the protection of Natural Areas requires that the disturbances associated with all land-uses, including those described below, be eliminated from the site and its buffer. In some cases, specific and non-invasive management may be required to maintain the qualities of the Natural Area (e.g. removal of exotic plant species that are threatening the integrity of the natural community may be an acceptable practice, whereas, spraying for gypsy moth would not be considering the broad scale effects of the pesticide).

Biological Diversity Areas

Biological Diversity Areas include those sites that

Dedicated Areas

Dedicated Areas are recognized because of the owner's intention to protect their present and potential future ecological resources. Under protection, those sites that are not presently examples of special habitat or exemplary communities will be permitted to mature and attain qualities recognized for natural areas or biodiversity areas. Sites that are already significant as natural areas or biodiversity areas will be allowed to continue, undisturbed, as the best examples of natural communities in the county. The management of DA's may therefore follow the recommendations furnished for NA's and BDAs and may involve some level of carefully planned intervention to maintain their significant ecological resources. Usually, management involves simply

leaving the area alone to mature and recover from previous disturbance. Generally, many land-uses, including those discussed below, are not compatible with the protection granted by DA's and should be avoided.

Landscape Conservation Areas

LCAs recognize large pieces of the landscape that are relatively undisturbed, but may include a variety of land-uses. Also, LCAs may contain NA's, BDAs, OHA's or managed land - all which serve to increase the significance and complement the integrity of the LCA. Management requirements for LCAs are less stringent than those for either NA's or BDAs because they are generally not delineated to protect specific species or communities. Whereas with NA's and BDAs, disturbances must be evaluated in terms of direct impacts to areas, with LCAs disturbances must be considered on a broad scale in terms of fragmentation and general habitat integrity. Construction of new roads and utility corridors, timber harvesting, clearing or disruption of large pieces of land, and other activities that divide and alter the character of the LCA landscape should be avoided. People and human created features are often part of LCAs but should not dominate the landscape. Very importantly, the management of existing activities within LCAs needs to emphasize the integrity of the recognized natural systems and be sensitive to the effects of even small alterations in habitat. By limiting the amount of land in intensive use (agricultural zones, residential zones, etc.) and by compressing development into already disturbed areas (villages, roads, existing ROW's, etc.), large pieces of the landscape can be maintained intact.

Other Heritage Areas

Areas containing ecological resources that involve public education or scientific study fall into this category of Natural Heritage Area's. These activities

lend importance to places that might not otherwise be considered as unique or significant relative to other areas in the county. OHA's require that resources emphasized for study be protected from disturbances that are not within the context of the study (e.g. a stream may be studied as a pristine aquatic habitat or as an aquatic habitat effected by a land-use within its watershed, each study requiring a different protection approach). This protection should include the environment and processes necessary for the sustenance of the resource. For example, if aquatic resources are the focus of the OHA, an entire watershed may require protection. If the focus is a small patch of forest, a much more compact area of protection may be appropriate. Also, the study of the resource may require management or sampling and may alter the natural character of the site. Such management would not be appropriate within an NA or BDA but is acceptable in an OHA.

For more detailed information regarding each of the specific Natural Areas, Biological Diversity Areas, Landscape Conservation Areas and/or Other Heritage Areas, please refer to the Clinton County Natural Heritage Inventory, found here on the internet: <http://www.clintoncountypa.com/heritage.pdf>

(Source: Clinton County Natural Heritage Inventory, Update 2002)

Important Bird Areas

The following are excerpts from the Clinton County Natural Heritage Inventory (Update 2002) describing Pennsylvania's Important Bird Area (IBA) Program:

Pennsylvania's Important Bird Area (IBA) Program is part of a dynamic worldwide effort to identify and protect outstanding habitats for birds and all wildlife. The IBA concept was first developed in Europe (in 1985) by BirdLife International. The program's resounding success in the Old World

quickly spread to North America, where the IBA Program has become pivotal to a continent-wide bird conservation strategy. Working in partnership with the American Bird Conservancy, the National Audubon Society has already identified over 400 Important Bird Areas in the U.S.

Pennsylvania was the first state to develop an IBA program in the United States. Based on strict scientific criteria, a group of scientific advisors (known as the Ornithological Technical Committee) selected 73 IBA sites encompassing over one million acres of public and private lands. These areas include migratory staging areas, winter feeding and roost sites, and prime breeding areas for songbirds, wading birds and other species. They also include critical habitats, such as spruce-fir bogs, tidal saltmarsh, bottomland hardwood swamps, and open grasslands. Additional IBA sites in Pennsylvania will be selected by the technical committee on an ongoing basis.

Clinton County includes portions of three Important Bird Areas. Note: the following information is adapted from the Audubon Society of Pennsylvania IBA site descriptions (Audubon 2002).

Bald Eagle Ridge

Bald Eagle Ridge has varied habitats, including mature forests, late successional stage fields, wetlands, perennial and intermittent streams, and hillside seeps. In some areas, it appears that the entire side of the ridge is seeping water. These areas remain open all year and are important for amphibians, turkeys, grouse, woodcock, and other species that are dependent on open water for survival during the winter. The large expanses of unfragmented forest are important habitat for breeding Neotropical migrant species

such as Cerulean Warbler, Worm-eating Warbler, Wood Thrush, Scarlet Tanager, and Ovenbird. Bald Eagle Ridge is also an important flyway for raptors. Counts of Golden Eagles are some of the highest recorded in eastern North America and consistently exceed those of migration count sites along the Kittatinny Ridge.

Southern Sproul State Forest

This is an extremely large, remote area representative of northern hardwood forest. Southern Sproul State Forest extends from the West Branch of the Susquehanna River south to approximately the Beech Creek watershed. There are no permanent residences and no electricity within this area, with the only human disturbances being timber sales, limited oil and gas development, and seasonal cabins. The Fish Dam and Burns Run Wild Areas, Bucktail State Park, Cranberry Swamp, and East Branch Swamp Natural Areas are all included within this area.

This site supports breeding species associated with very wild, mixed forest types. Deciduous woods provide habitat for breeding Cerulean and Prairie warblers. Other species include Whip-poor-will, Eastern Wood-Pewee, Least Flycatcher, Eastern Phoebe, Eastern Bluebird, Hermit Thrush, Cedar Waxwing, Black-and-white Warbler Black-throated Green Warbler, Pine Warbler, Black-throated Blue Warbler, Chestnut-sided Warbler, Ovenbird, Rose-breasted Grosbeak, Indigo Bunting, and Eastern Towhee.

Tamarack Swamp

Tamarack Swamp is situated at the head of Drury Run in Clinton County. From Renovo, it is reached by following Route 144, which skirts the western edges of the swamp. Francis R. Cope published

in 1925 his "Observations on the Summer Birds of Parts of Clinton and Potter Counties, Pa." He described Tamarack Swamp as, "a little oasis in the desert – the dense growth of hemlock, spruces and balsams and other heavy foliaged forest trees keeps out the hot rays of the summer sun and affords a cool retreat for both birds and plants – everywhere we find beautiful beds of sphagnum moss – one sees little pools of icy water collected around the roots of trees – we find many birds typical of the Canadian fauna such as Brown Creeper, Winter Wren and many of the northern forms of warblers."

The above description of Tamarack was made at the turn of the century. Tamarack Swamp bears little of its original condition. Logging, residential and commercial encroachment have destroyed much of the undisturbed qualities that Cope reported. Still, Tamarack Swamp holds valuable and unique habitat. Bird species include: Turkey Vulture, Sharp-shinned Hawk,

Broad-winged Hawk, Ruffed Grouse, Killdeer, American Woodcock, Spotted Sandpiper, Black-billed Cuckoo, Whip-pool-will, Flicker, Hairy Woodpecker, Downy Woodpecker, Kingbird, Crested Flycatcher, Phoebe, Alder Flycatcher, Barn Swallow, Cliff Swallow.

More information on Important Bird Area program in Pennsylvania can be found on their website, at <http://pa.audubon.org/iba/>

(Source: Clinton County Natural Heritage Inventory, Update 2002)

PA Elk Range

The following is a brief history of the Pennsylvania elk herd:

HISTORY OF PENNSYLVANIA ELK

Through the early 1800s, elk (*Cervus elaphus*) inhabited much of Pennsylvania. In the mid-1800s,

as human settlements increased, the elk population declined. By the late 1800s, elk had been totally eliminated from their last stronghold in areas around Elk County. In 1913, the Pennsylvania Game Commission (PGC) began reintroducing elk. Elk from Yellowstone National Park, South Dakota, and a private preserve in Pennsylvania were released until 1926. During this time, 177 elk were released into the central and northeastern parts of Pennsylvania, but only the northcentral population survived. From 1923 to 1932 a hunting season took place. Hunters took 98 bulls; another 78 elk were killed illegally or for crop damage. The season was closed in 1932 due to dwindling numbers of elk. The elk roaming the mountains of Northcentral Pennsylvania today are the progeny of the animals that remained. Today, Pennsylvania is home to 600-700 elk — the largest herd in northeast United States.

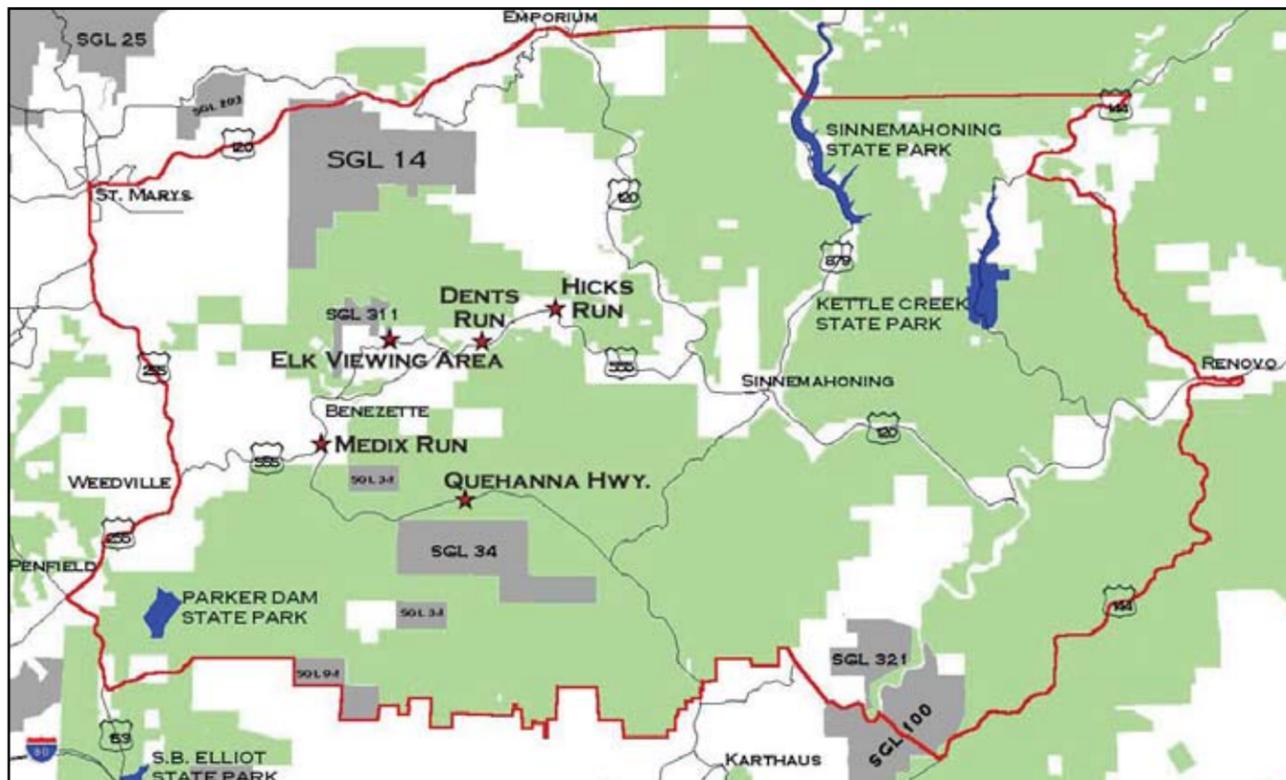
(Source: PA Game Commission)

The Pennsylvania Game Commission (PGC) and Department of Conservation and Natural Resources (DCNR) have partnered with the Rocky Mountain Elk Foundation and other conservation groups to develop a seven-year habitat enhancement plan for Pennsylvania's 835-square mile elk range. This range spans five PA counties including Elk, Cameron, Clearfield, Clinton, and Potter.

(Source: Rocky Mountain Elk Foundation: Pennsylvania Elk Project brochure)

Currently, the PA DCNR along with other contributing foundations, including the Rocky Mountain Elk Foundation are developing the Elk Country Visitor Center on a 245 acre tract of land in Benezette Township, Elk County, and is scheduled to be opened in the summer of 2010. This facility will be a major attraction associated with the PA Wilds tourism initiative.

For more information pertaining to Pennsylvania's Elk Herd, please refer the PA Game Commission website at: www.pgc.state.pa.us/

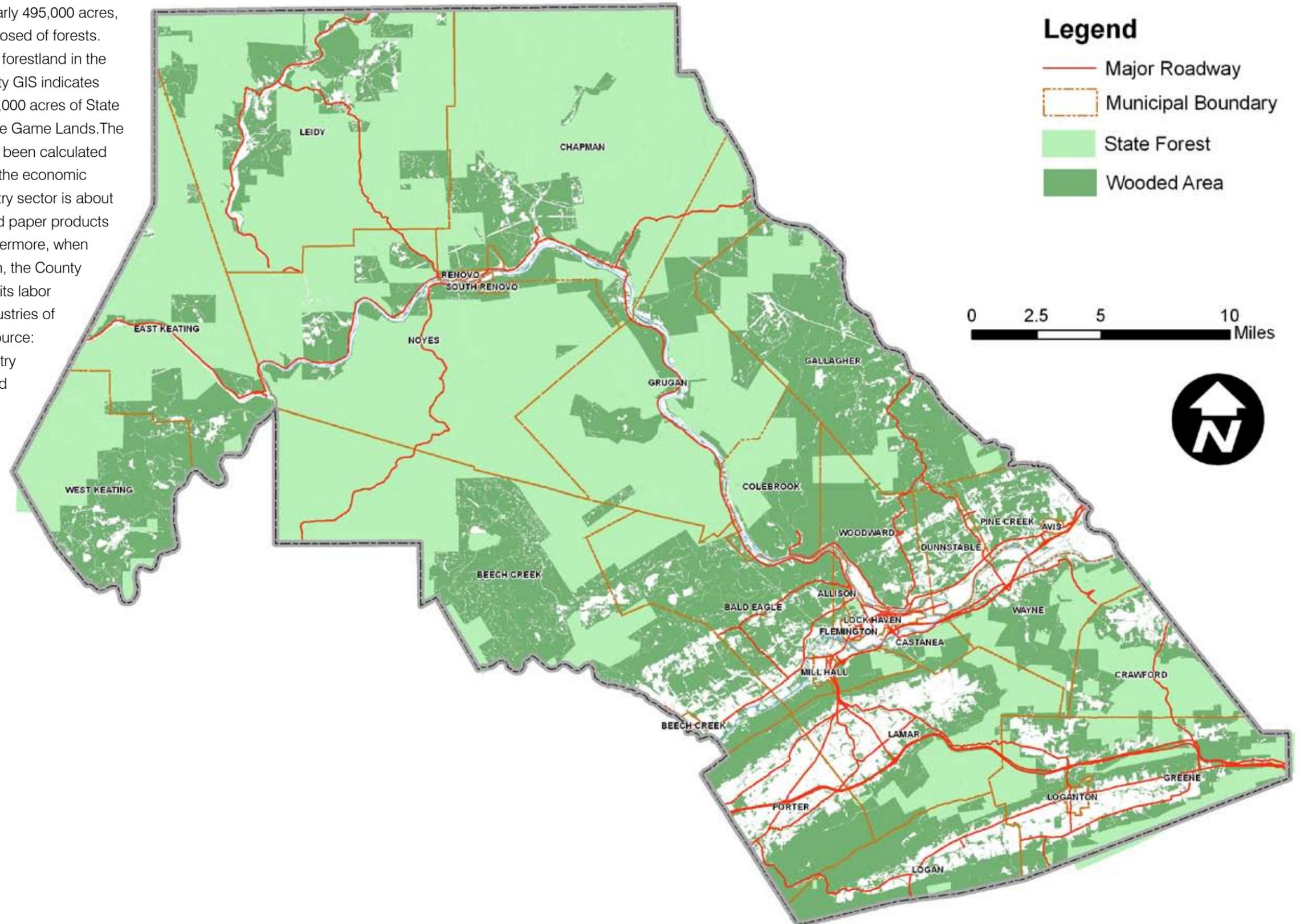


Pennsylvania Elk Range (Source: Rocky Mountain Elk Foundation: Pennsylvania Elk Project brochure)

Forest and Woodlands

Approximately 87 percent, or nearly 495,000 acres, of Clinton County's land is composed of forests. Just over half (52 percent) of the forestland in the County is publicly owned. County GIS indicates that there are approximately 312,000 acres of State Forests and 22,000 acres of State Game Lands. The value of this standing timber has been calculated at over \$293 million. In addition, the economic contribution of the forestry industry sector is about \$4.5 million and that of wood and paper products reaches over \$123 million. Furthermore, when compared to the Commonwealth, the County maintains a higher proportion of its labor force engaged in the related industries of forestry, fishing, and hunting. (Source: "Economic Contribution of Forestry in Pennsylvania". Study prepared by PSU's Natural Resources Extension)

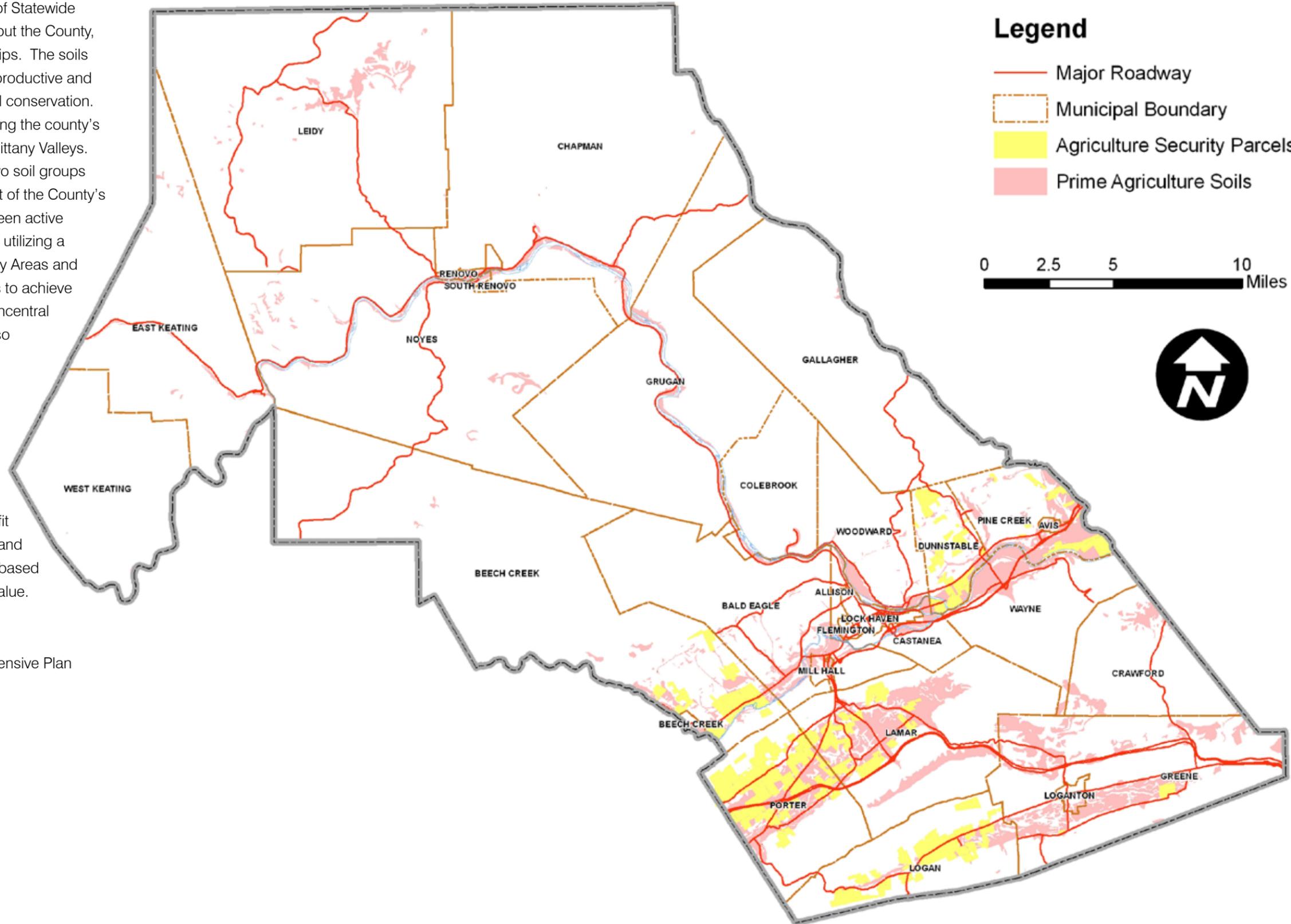
(Source: Clinton County Comprehensive Plan Update, September 2005)



Farmland and Active Agricultural Land

Prime Agricultural Soils and Soils of Statewide Importance can be found throughout the County, particularly in the southern townships. The soils found in these classes are highly productive and are usually targeted for agricultural conservation. Most of these soils are located along the county's waterways and in the Sugar and Nittany Valleys. County GIS indicates that these two soil groups make up approximately 17 percent of the County's total land area. The County has been active in agricultural conservation efforts, utilizing a combination of Agricultural Security Areas and conservation easement purchases to achieve their preservation goals. The Northcentral Pennsylvania Conservancy has also been a key player in this arena, with 9 conservation easements purchased, covering over 5,000 acres. The County also utilizes the Clean and Green Program as a preservation tool. Formally known as Act 319, the program is designed to provide a tax benefit to owners of agricultural or forest land through preferential assessments based on use value, rather than market value.

(Source: Clinton County Comprehensive Plan Update, September 2005)



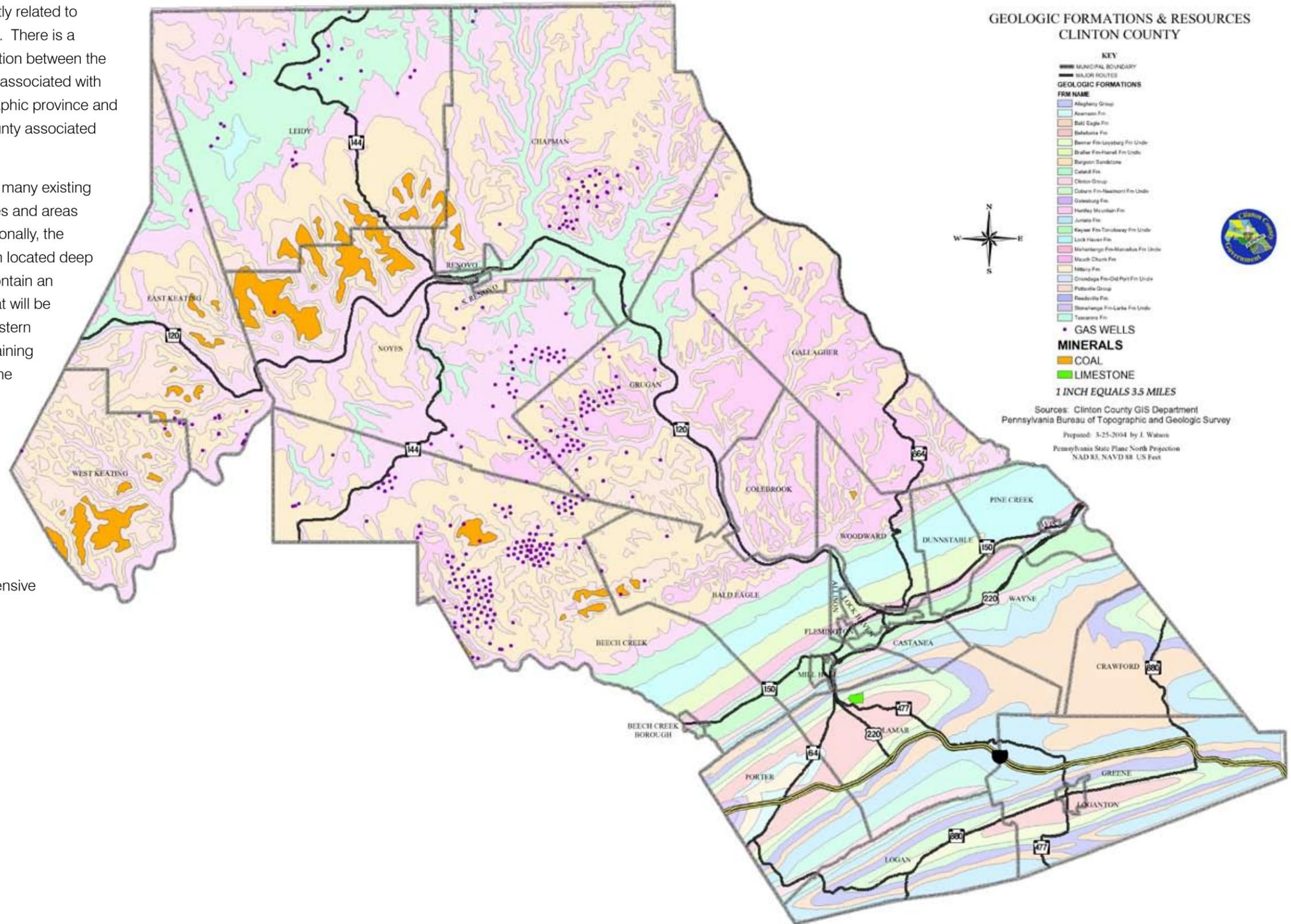
Soils and Geological Features

Natural resources extraction relative to mining and gas drilling operations is directly related to the underlying geologic formations. There is a sharp distinction in geologic formation between the northwestern portion of the county associated with the Appalachian Plateau physiographic province and the southeastern portion of the county associated with the ridge and valley province.

The northwestern plateau contains many existing shallow well natural gas drilling sites and areas of coal strip surface mining. Additionally, the Marcellus Shale geologic formation located deep beneath the surface is known to contain an abundant source of natural gas that will be best accessed from these northwestern plateaus due to the formation remaining largely intact and un-fractured by the earth's tectonic forces that formed the ridge and valley province.

The southeastern ridge and valley province provides the best soils for agricultural purposes and direct access to existing limestone seams for quarrying.

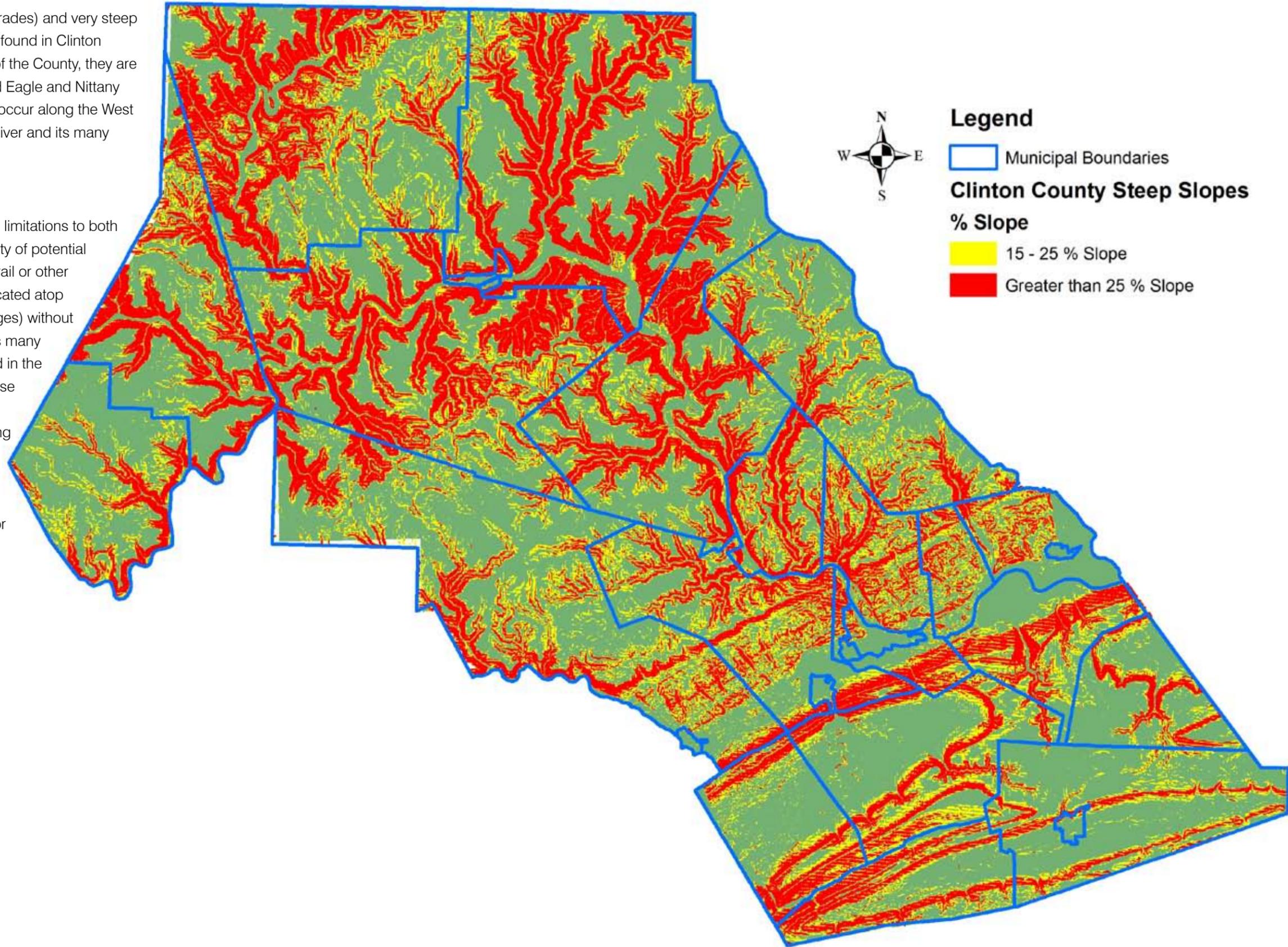
(Source: Clinton County Comprehensive Plan Update, September 2005)



Steep Slopes

Both steep slopes (15 -25% grades) and very steep slopes (grades over 25%) are found in Clinton County. In the southern part of the County, they are found along the ridges of Bald Eagle and Nittany Mountains. In the north, they occur along the West Branch of the Susquehanna River and its many tributaries.

Steep slopes provide physical limitations to both trail development and the ability of potential trail users to access existing trail or other recreation facilities that are located atop the highlands (plateaus or ridges) without the use of a motor vehicle. As many population centers are located in the valley areas of the County, these grade differentials provide a significant obstacle to providing direct bicycle and pedestrian connections between these population centers and established recreation areas or facilities.

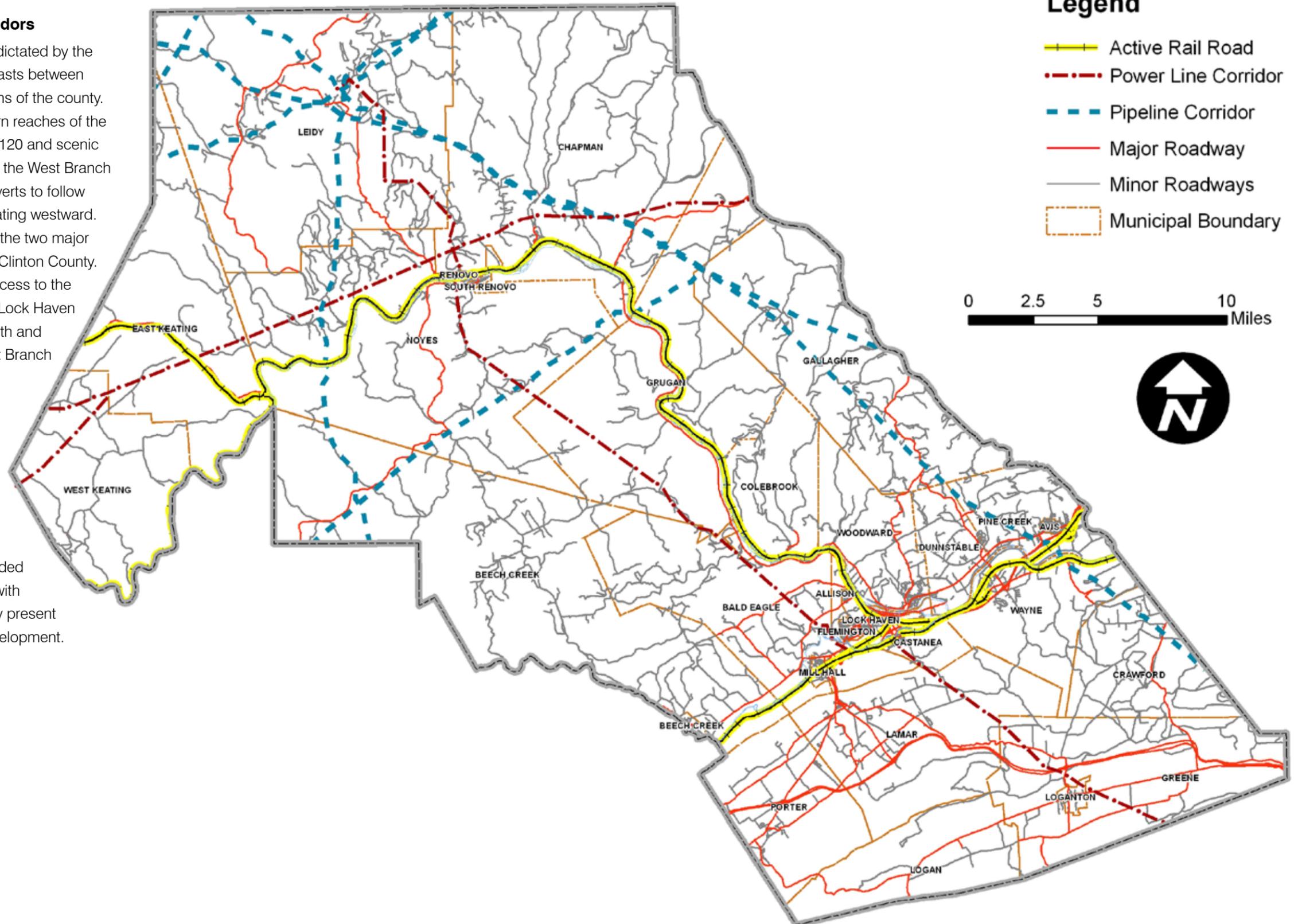


Manmade Resources

Transportation and Utility Corridors

Transportation routes are primarily dictated by the existing landforms with sharp contrasts between the northwest and southeast portions of the county. Vehicular access to the northwestern reaches of the county centers along the PA Route 120 and scenic byway corridor that travels through the West Branch Susquehanna River valley until it diverts to follow the Sinnemahoning Creek from Keating westward. Interstate 80 and US 220 comprise the two major vehicular corridors in southeastern Clinton County. US 220 provides the most direct access to the south and State College area from Lock Haven as well as to Williamsport to the north and east as it generally follows the West Branch Susquehanna River valley.

Gas and power transmission corridors traverse the landscape of Clinton County uninhibited and meet at the natural gas facility located at Tamarack in Leidy Township. Additional and/or expanded gas transmission lines associated with the Marcellus shale gas drilling may present opportunities for additional trail development.





- Sections of Tiadaghton State Forest are in several of the townships bordering Lycoming County - Crawford, Greene, and Gallagher Townships.
- Small portions of three other State Forests reside in Clinton County, as follows: Elk State Forest bordering Cameron County in Leidy, East Keating and West Keating Townships; Susquehannock State Forest bordering Potter County in Leidy and Chapman Townships; and, Moshannon State Forest bordering Clearfield County in West Keating Township.
- The most prominent of the state forests is Sproul State Forest, which covers the vast majority of the

northern and western Clinton County. Hunting, fishing, hiking, mountain biking, cross-country skiing, canoeing, snowmobiling, and horseback riding are allowed in designated areas of this forest

(Source: Clinton County Comprehensive Plan Update, September 2005)

Golf courses located in Clinton County include:

- The Belles Springs Golf Course (public) is a par 72 course measuring over 6900 yards from the back tees – Bald Eagle Township; and,
- The Clinton Country Club Golf Course (private) is an 18 hole 6,781 yard championship layout that requires a membership – Bald Eagle Township.

Other significant recreational resources include:

- The West Branch Susquehanna River Water Trail;
- Major Hiking Trails including: Donut Hole Trail, Chuck Keiper Trail, FYE Trail, Hyner View Trail, Mid State Trail, Eagleton Mine Camp Trail, and Cherry Run Trail;
- PennDOT On-Road Cycling Route G;
- Commercial Campgrounds, including: Sunrise, Holiday Pines, Kettle Creek, Hyner View, Lowes Black Forest, Sons of Italy, and Quiet Oaks;
- ATV Areas - Bloody Skillet and Whiskey Springs in Sproul SF; and,
- Miscellaneous minor hiking trails within Sproul, Tiadaghton and Bald Eagle State Forests totaling over 200 miles.

Clinton County has an abundance of recreational opportunities and facilities that could be linked with a greenway system. The challenge lies in how to create non-motorized linkages between these resources and the population centers where the majority of county residents live.



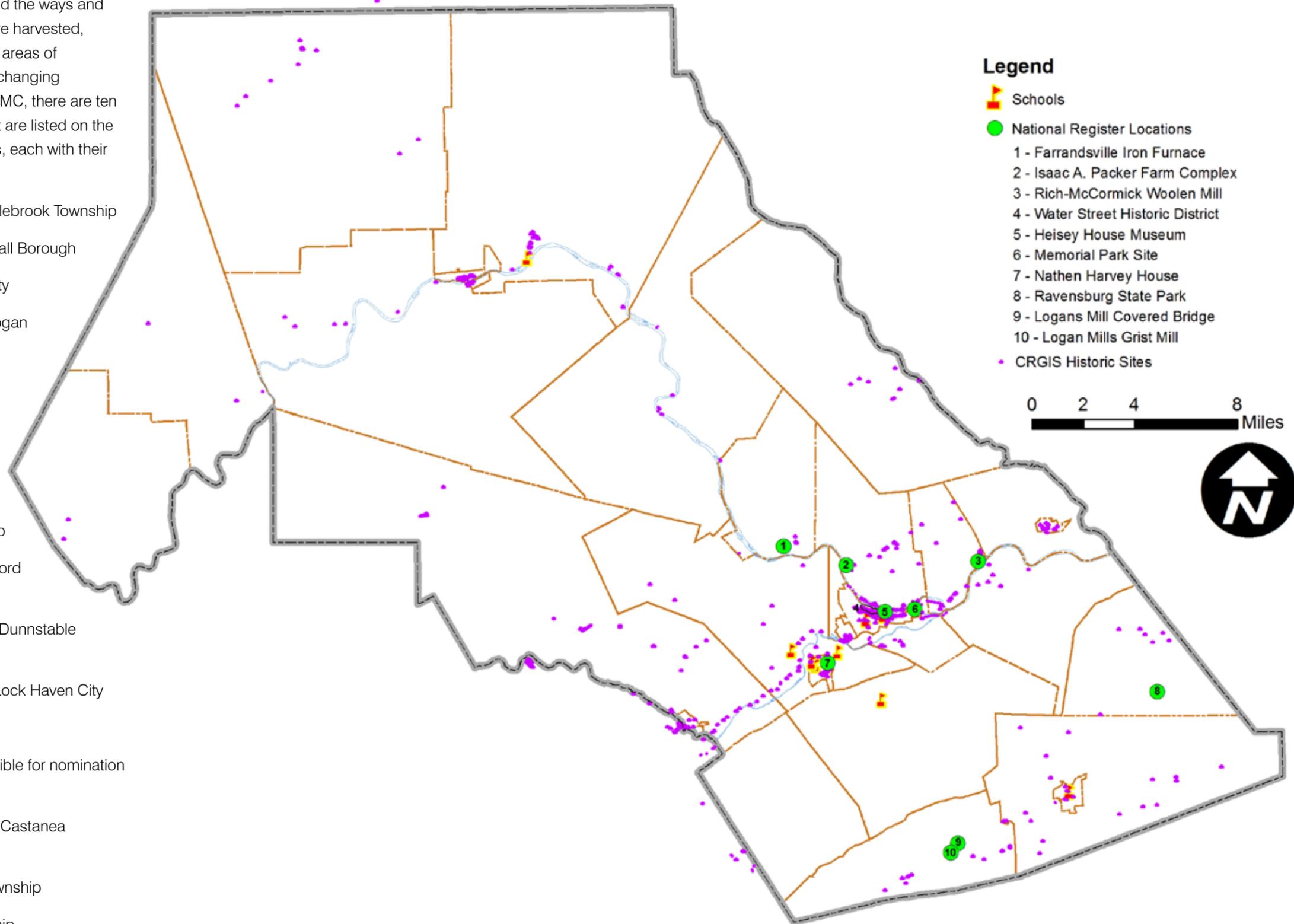
Cultural / Historical Sites

Clinton County has a rich history due to its abundance of natural resources and the ways and means of how those resources were harvested, collected, and transported to other areas of the country while adapting to ever-changing technologies. According to the PHMC, there are ten locations within Clinton County that are listed on the National Register of Historic Places, each with their own distinct story:

- Farrandville Iron Furnace - Colebrook Township
- Harvey, Nathan, House - Mill Hall Borough
- Heisey House - Lock Haven City
- Logan Mill Covered Bridge - Logan Township
- Logan Mills Grist Mill - Logan Township
- Memorial Park Site - Lock Haven City
- Packer, Isaac A., Farm Complex - Woodward Township
- Ravensburg State Park - Crawford Township
- Rich-McCormick Woolen Mill - Dunnstable Township
- Water Street Historic District - Lock Haven City

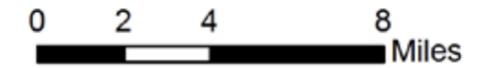
An additional 17 properties are eligible for nomination to the National Register, including:

- Castanea Elementary School - Castanea Township
- Castanea Hotel - Castanea Township
- Clintondale Mill - Porter Township



Legend

- Schools
- National Register Locations
 - 1 - Farrandville Iron Furnace
 - 2 - Isaac A. Packer Farm Complex
 - 3 - Rich-McCormick Woolen Mill
 - 4 - Water Street Historic District
 - 5 - Heisey House Museum
 - 6 - Memorial Park Site
 - 7 - Nathen Harvey House
 - 8 - Ravensburg State Park
 - 9 - Logans Mill Covered Bridge
 - 10 - Logan Mills Grist Mill
- CRGIS Historic Sites





- Fergus Island Historic District – Dunnstable Township
- Furst, George T., Store - Beech Creek Borough
- Harvey, John, House - Castanea Township
- Lock 34 & House (West Branch Pa. Canal) - Woodward Township
- Logan Ave. Historic District - Castanea Township
- Mackeyville Historic & Archeological District - Lamar Township
- Market, Lock Haven - Lock Haven City
- Renovo High School - Renovo Borough
- Renovo Historic District - Renovo Borough
- Rogers Gymnasium - Lock Haven City
- Sanderson, William H., House – Bald Eagle Township
- Southwestern Railroad - Castanea Township
- Wylie, David, House - Porter Township
- Woolrich Historic District - Pine Creek Township

Beyond the National Register locations, the Pennsylvania Bureau of Historic Preservation maintains a database of historical locations via their Cultural Resources Geographic Information System (CRGIS). This system is a map-based application that provides analytical, mapping, and reporting tools for investigating recorded historic properties, archaeological sites, and archaeological surveys throughout Pennsylvania. Clinton County contains approximately 850 of these sites, as indicated on the mapping.

These attractions offer the opportunity for historic interpretation if located within reasonable distances relative to the proposed greenways network and associated trails.



Abandoned Mine Lands and Reclaimed Mine Lands

A review of the GIS data revealed mining locations to be concentrated in two areas of the County.

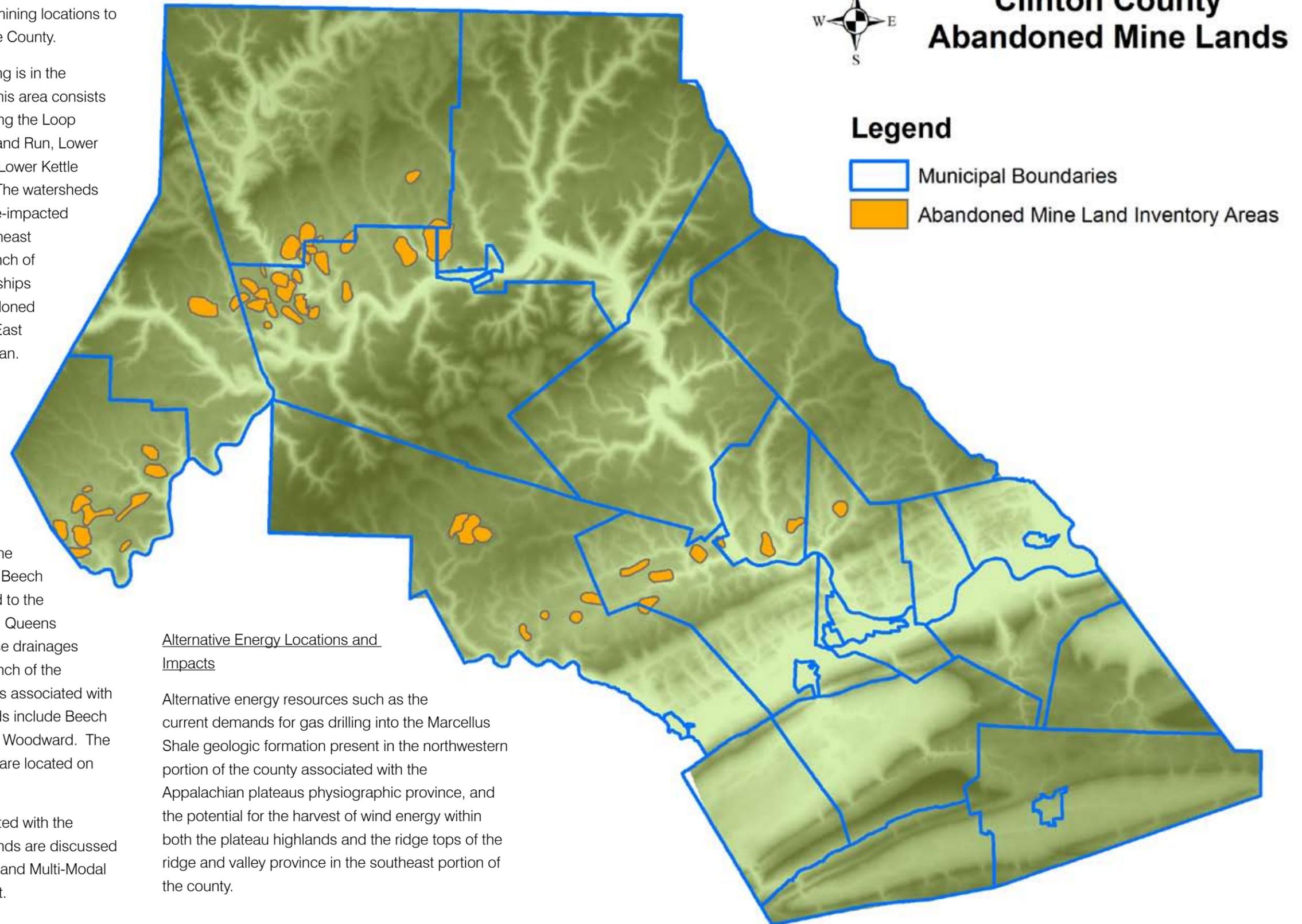
The first area of concentrated mining is in the northwest portion of the County. This area consists of the ridges and valleys surrounding the Loop Run, Little Boughner Run, Birch Island Run, Lower Sinemahoning Creek, Cooks Run, Lower Kettle Creek, and Drury Run drainages. The watersheds of these abandoned mine drainage-impacted streams basically drain to the southeast and are tributaries to the West Branch of the Susquehanna River. The Townships encompassing this group of abandoned mine lands include West Keating, East Keating, Noyes, Leidy, and Chapman. The majority of abandoned mine lands are located on State Forest Lands. However, mine lands also exist on State Park land, State Game land, and private land.

The second area of concentrated mining is in the central portion of the County. This area consists of the ridges and valleys surrounding the Beech and Tangascootack Creeks located to the southwest and Lower Lick Run and Queens Run located to the northeast. These drainages are also tributaries to the West Branch of the Susquehanna River. The Townships associated with this group of abandoned mine lands include Beech Creek, Bald Eagle, Colebrook, and Woodward. The majority of abandoned mine lands are located on private lands in this area.

Recreational opportunities associated with the abandoned and reclaimed mine lands are discussed in the Proposed County Greenway and Multi-Modal Trails Network chapter of this report.

Alternative Energy Locations and Impacts

Alternative energy resources such as the current demands for gas drilling into the Marcellus Shale geologic formation present in the northwestern portion of the county associated with the Appalachian plateaus physiographic province, and the potential for the harvest of wind energy within both the plateau highlands and the ridge tops of the ridge and valley province in the southeast portion of the county.



Marcellus Shale Gas Drilling

Introduction

The Commonwealth is presently in the midst of a natural gas leasing and drilling “boom”. This economic opportunity, given our energy crisis, is a trend that cannot be denied – and enjoys the support of state government. However, drilling in Clinton County and the PA Wilds region has potential negative consequences of marring scenic vistas, and localized beauty. The purpose of this review is to discuss natural gas drilling in the Marcellus Formation, its associated impacts and the relationship between these impacts and the development of the Clinton County Greenways and Open Space Plan.

Information was obtained through a number of sources. The Pennsylvania Department of Environmental Protection, Department of Conservation and Natural Resources and Susquehanna River Basin Commission have compiled reference material outlining the geology and environmental impacts surrounding natural gas drilling in Pennsylvania. The Oil, Gas and Solution Mining Regulatory Program of New York State was also used as a source for this report since it deals directly with environmental impacts of drilling in the Marcellus Shale. Mitigation measures used to drill natural gas from the Barnett Shale in Texas, the Fayetteville Shale in Arkansas and the Haynesville Shale in Louisiana were also compared to the current trends in Pennsylvania’s Marcellus Shale “play”.

Geology

The Marcellus Shale formation found within the Hamilton Group geologic structure is a Devonian aged Shale that has been found to contain a significant amount of natural gas. It is the largest known shale deposit in the world. In the past, scientists had knowledge of the existence of natural gas in this formation but the drilling procedures

were not advanced enough and extraction of the gas was not economically feasible. Natural gas extraction will be done by means of a method called hydraulic fracturing, a drilling process that combines both vertical and horizontal drilling and uses large amounts of water to fracture the rock and allow for the flow of the natural gas.

The Marcellus Formation underlies most of Pennsylvania, but the organic-rich portion reaches its maximum development in the northeastern part of the state (Harper, 2008). More than two-thirds of Clinton County is over the Marcellus Shale formation and thickness varies between 50 to 150 net feet of organic-rich shale (See Figure-1). A large portion of this area is undeveloped making it a much desirable location for drilling.

The Commonwealth of Pennsylvania has created a leasing program for state owned lands for the purpose of natural gas drilling. In January of 2010, a tract of land in Sproul State Forest located in Clinton

County, known as Tract 737, was leased to Anadarko E&P. As of the date of this publication, Clinton County GIS department has mapped 49 permitted well pad sites within the county on both private property and state forest land (See Figure-2).

Tract 737 within Sproul State Forest, covers an area of 2,724 acres. It was one of six tracts of state forest land up for bid on January 12, 2010 by Pennsylvania’s Department of Conservation and Natural Resources (DCNR). Sproul State Forest covers an area of 280,000 acres in western Clinton and northern Centre counties. Tract 737 was the only location within Clinton County up for bid in January 2010.

Impacts associated with Marcellus Shale drilling

Finding a balance between conservation efforts, such as this Clinton County Greenways & Open Space Plan, and supporting local economics through natural

resource extraction such as natural gas drilling in the Marcellus Shale can be a challenging task. There are many environmental impacts associated with natural gas drilling. Proper planning and mitigation is necessary to minimize each impact associated with the activities involved. It is important to evaluate each site individually as every site is unique. Proximity to areas of environmental sensitivity, water resources, wildlife habitat, and recreational areas must all be considered when assessing impacts. The positive economic impacts at the state and local level are also important factors to consider.

Recreational experiences within Clinton County can be impacted based on the activities associated with Marcellus Shale drilling. The following is a list of various issues and impacts associated with drilling for Marcellus Shale in Sproul State Forest’s Tract 737 as well as other potential and existing well site within Clinton County.

Water Quantity, Quality and Groundwater

Water plays an important role in the extraction of natural gas from Marcellus Shale. The hydraulic fracturing process uses large amounts of water. The horizontal wells used for drilling into Marcellus Shale use anywhere from 1,500,000 to 9,000,000 gallons of water during the fracturing process which takes about 4 to 6 weeks (Weidenhof, 2009). Large amounts of water withdrawal can lead to a number of environmental issues including negative impacts to aquatic habitat, drinking water quality/quantity and destruction of local fisheries. Water withdrawal permits are mandatory, as a result, through the Department of Environmental Protection (DEP) and the Susquehanna River Basin Commission (SRBC). SRBC water withdrawal permits acquired in Clinton County, to date, total approximately 1.64 million gallons per day (mgd).

Both surface water and groundwater quality can be

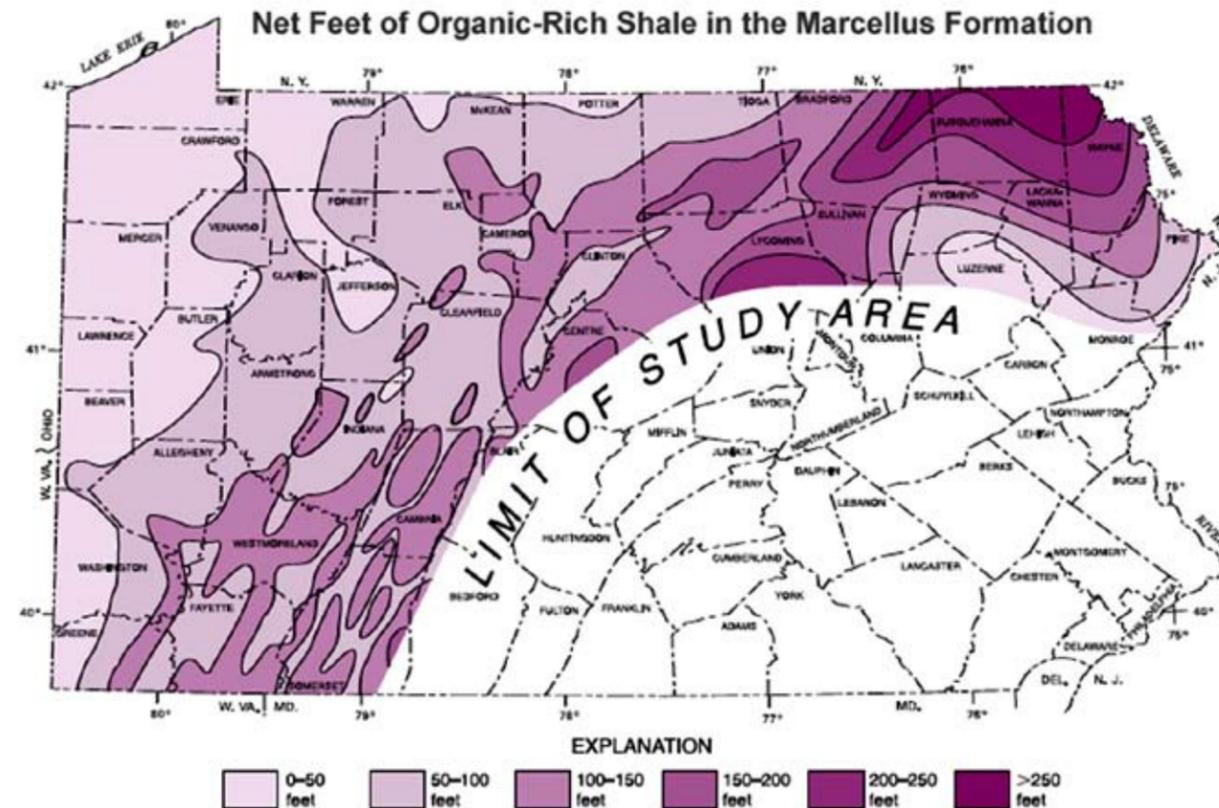


Figure 1-Net Feet of Organic-Rich Shale in the Marcellus Formation (source: Piotrowski and Harper, 1979)

greatly impacted by the fracturing fluid wastewater (frac water) produced as a result of the hydraulic fracturing process. Water and sand make up over 98% of the fracture fluid, with the rest consisting of various chemical additives that improve the effectiveness of the fracture job (US Department of Energy, 2009).

Typically, 30 to 40% of the water used for drilling and fracturing returns to the surface highly contaminated (Weidenhof, 2009). High levels of total dissolved solids (TDS) pollution are contained within the frac water that results from natural gas drilling. TDS is a measure of all elements dissolved in water that can include carbonates, chlorides, sulfates, nitrates, sodium, potassium, calcium and magnesium (Pennsylvania Department of Environmental Protection, 2010) TDS can lead to highly impaired streams and pollution of drinking water sources. Surface spills can lead to high levels of TDS runoff into nearby streams or groundwater contamination.

The question, "What do we do with frac water?" is highly debated. Wastewater treatment facilities are often not equipped to handle the pollutants found within the frac water. As wastewater is collected, it is typically stored in tanks or ponds and then transported to an offsite wastewater treatment facility. At this time, however, DCNR does not support the construction of holding ponds on its lands. All wastewater must be contained within a tank and transported on all well pad sites located on State lands.

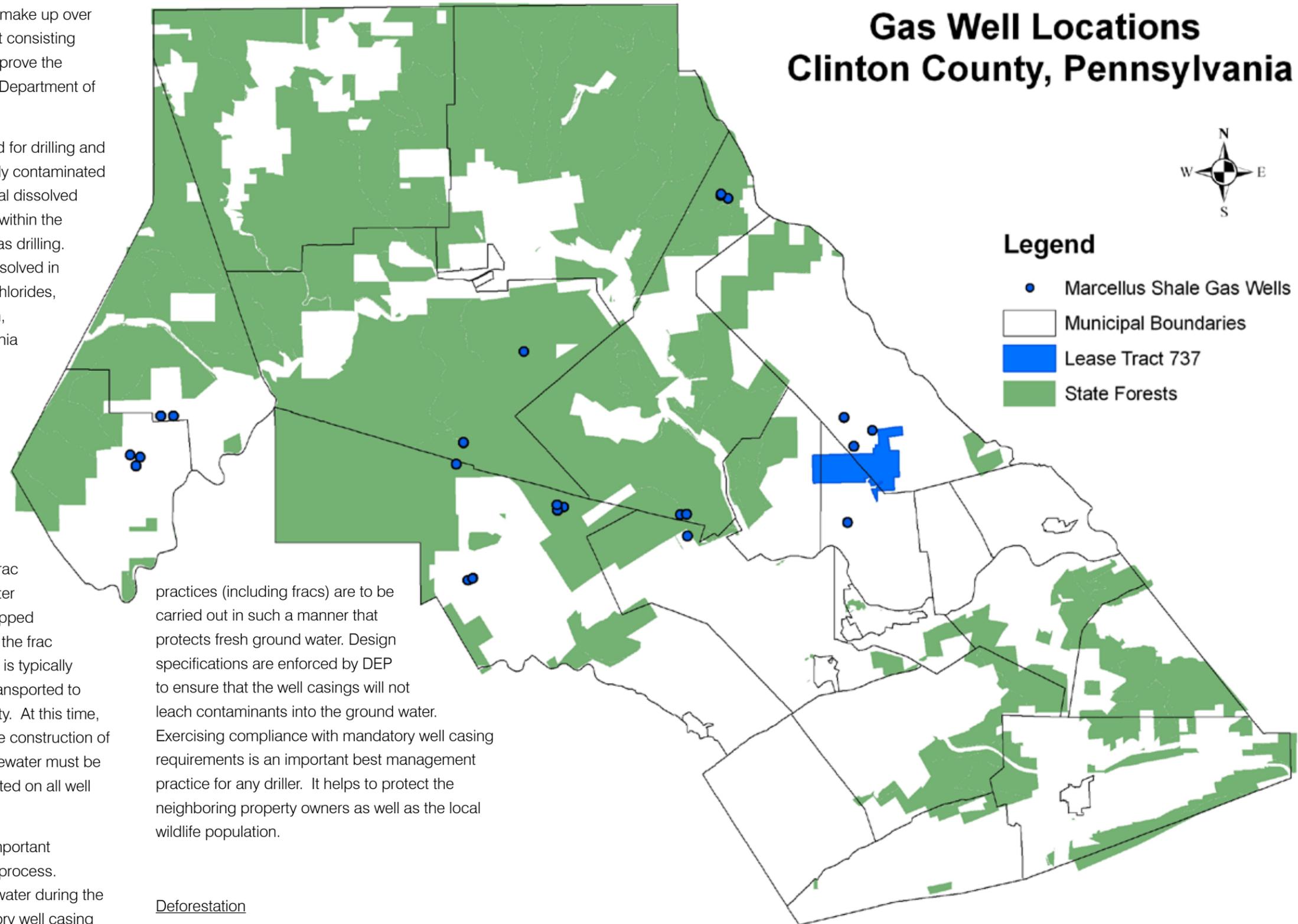
Groundwater protection is also an important consideration for any type of drilling process. Groundwater is protected from frac water during the drilling process through the mandatory well casing requirement as specified by DEP. According to DEP, all drilling, casing, cementing, and well completion

practices (including fracs) are to be carried out in such a manner that protects fresh ground water. Design specifications are enforced by DEP to ensure that the well casings will not leach contaminants into the ground water. Exercising compliance with mandatory well casing requirements is an important best management practice for any driller. It helps to protect the neighboring property owners as well as the local wildlife population.

Deforestation

To initially prepare a well pad site for drilling, the area must first be clear-cut. Well pad sites average about

Marcellus Shale Gas Well Locations Clinton County, Pennsylvania





Above: Aerial photo of a gas well site (source: geology.com 2010)

5 acres in size. It is estimated that approximately 3,500 trees must be cut down to clear a site. Forests fragmentation can lead to a number of negative environmental impacts including increased incidence of erosion and sedimentation, introduction of invasive and non-native species, destructions of wildlife habitat and increased spread of disease among tree species.

The Oil and Gas Lease for State Forest Lands created by DCNR's Bureau of Forestry has strict requirements to help protect the lands after the area is clear-cut. Erosion and Sediment control plans are required prior to any earthmoving activity. Planting and revegetation plans are also required to plan a course of action to restore the forest to its pre-drilling state. Lands that were leased prior to the creation of DCNR's, State Forest Environmental Review and lands leased on private property may not be held to the same environmental regulations. In the case of lands leased prior to the issuance of the state's environmental regulations and private property, it may be necessary to encourage implementation of buffer zones and erosion and sediment control plans to promote stabilization of the landscape and prevent the spread of invasive plant species

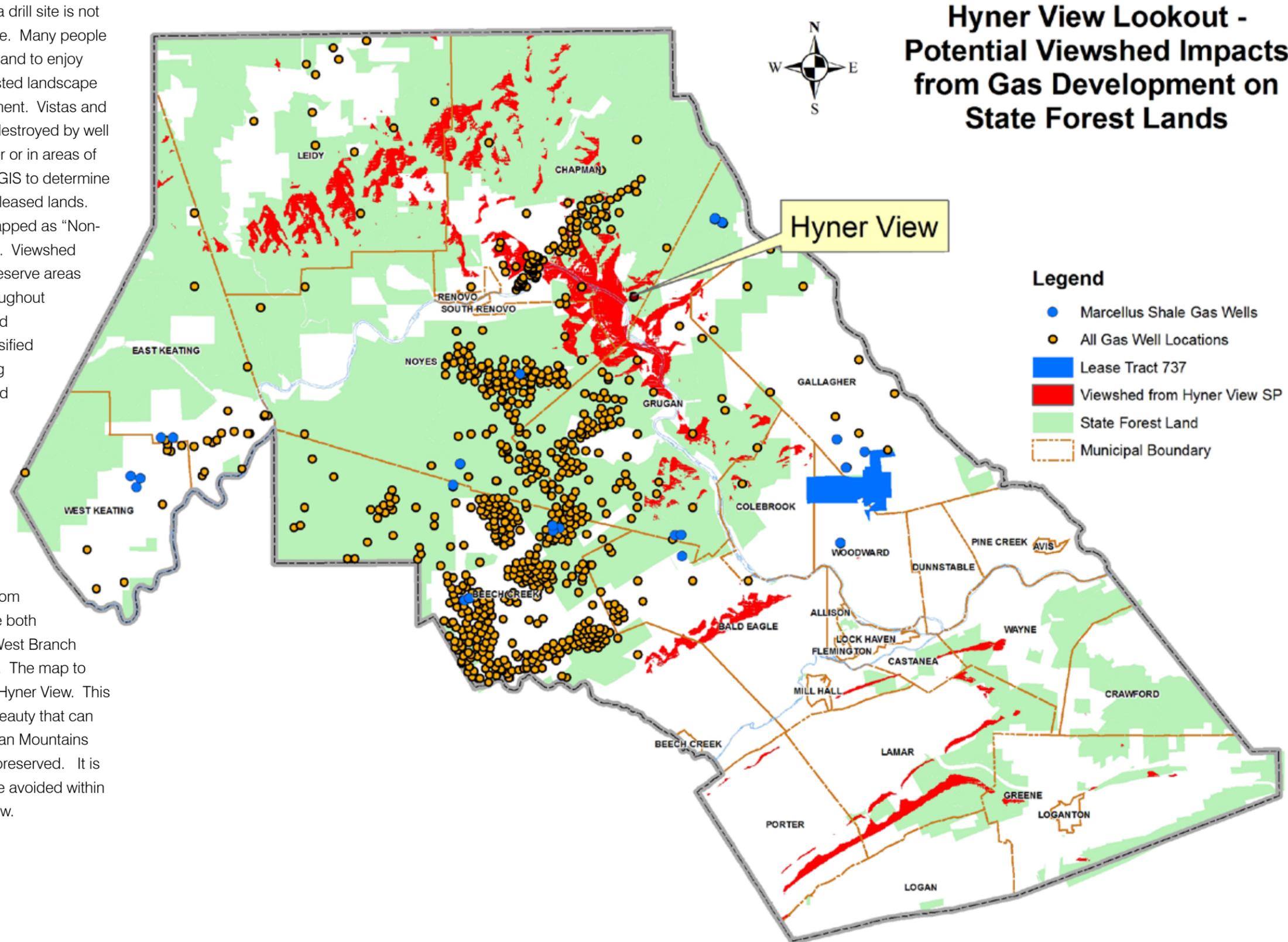


Vista from Hyner View

Aesthetics and Viewsheds

A major complaint by many is that a drill site is not an attractive and eye-catching place. Many people travel to state forests for recreation and to enjoy nature. It is important that the forested landscape is not jeopardized by overdevelopment. Vistas and serene campsites could easily be destroyed by well pad sites located too close together or in areas of natural beauty. DCNR has utilized GIS to determine areas that can be preserved within leased lands. These areas are delineated and mapped as "Non-development areas" (See Figure-3). Viewshed analysis has been completed to preserve areas that hold aesthetic importance throughout the leased land. 1,516 acres of land throughout tract 737 has been classified as Non-development areas. Drilling restrictions have also been specified in the lease agreement setting distance requirements from areas of significance.

The view from Hyner View State Park has been referred to as one of the most spectacular views in all of Pennsylvania. It is located in the heart of Sproul State Forest. From Hyner View State Park, one can see both upstream and downstream of the West Branch Susquehanna River for many miles. The map to the right shows the viewshed from Hyner View. This park serves as an example of the beauty that can be found throughout the Appalachian Mountains and it is important that this view is preserved. It is suggested that any future drilling be avoided within the areas visible from the Hyner View.



Noise

Noise levels will increase during the lifetime of the well pad site. Increased truck traffic to bring water to and from the site will add to an increase in noise. The drilling equipment will also disturb the quiet nature of the forest for sites located on state forest land. Well pad site placement is important to reduce the amount of noise that could be heard at adjacent recreational areas within the forest. The creation of buffer zones can aid in cutting back the amount of noise that can travel to adjacent recreational areas. For example, the typical state forest lease agreements state that no drilling is permitted 300 feet from any picnic area or trail.

Another way to reduce the amount of noise that is heard from well pad sites is to use noise curtains or outdoor noise barriers. Noise abatement systems have been developed for the gas and oil industry and could be used if the well site is located in an area that



Noise Control surrounding a Drill Rig (source: Environmental Noise Control)

infringes upon the peacefulness of landscape views or creates a disruption to campgrounds or popular recreation spots. This method of noise reduction is not commonly used out in forested lands and is more common in more populated areas where the noise is a nuisance to a larger population but could prove to be very beneficial from a recreational standpoint.

Air Quality

Emissions from increased vehicular traffic to and from the well pad site in addition to the use of operating equipment associated with the drilling process can both contribute to air quality issues. Pollutants in the form of exhaust emissions from heavy machinery such as carbon monoxide, nitrogen oxide and sulfur dioxide as well as increases in dust and particulate matter have been commonly associated with gas well drilling. DCNR has suggested possible limitations of vehicular use during certain times of the year to protect the integrity of the road. Reducing well pad site related traffic during times of increased recreational traffic could also help in regards to air quality since an increase in traffic will lead to an increase in airborne pollutants.

Internal combustion engines provide the power to run compressors that assist in the production of natural gas from wells to the pressure of lateral lines that move natural gas in large pipelines to and from processing plants and throughout the interstate pipeline network. The engines are often fired with raw or processed natural gas, and the combustion of the natural gas in these engines results in air emissions (NY Bureau of Oil and Gas Regulation, 2009). The United States Department of Energy has suggested that internal combustion engines are replaced with electric motors where appropriate. This could lead to a significant reduction in the amount of emissions released at a well site.

Wildlife Habitat

Pennsylvania contains some of the largest contiguous forest blocks east of the Mississippi River. These areas acts as an important species corridor. There are multiple species of either endangered or special concern and indicator species of healthy vibrant habitat found here. The number of roads and increased heavy truck traffic and cleared swaths for pipelines to connect the drilling pads to the pipelines in this region will dissect these important forest blocks and corridor (Catskill Mountainkeeper, 2010).

Restoration of the drill site to its predrilled condition will be important as an ongoing commitment to the wildlife in Sprout State Forest. For drill sites located within the state forests, DCNR has defined special Management Zones. The Pennsylvania Natural Diversity Inventory (PNDI) is a state inventory or special plant and animal habitat areas. PNDI is an important planning tool and should be utilized when choosing a drill site in order to avoid these sites.

Roads/Transportation

Development of a well pad site results in a need for sufficient access roads to and from the site. The amount of traffic will increase significantly to and from the well site. Two general concerns outlined by DCNR dealing with roads and transportation are 1) a major increase in the number of roads, and 2) the capability of the existing State Forest roads to handle the increased heavy truck traffic. Other related concerns include: traffic congestion, impacts to the road, potential road closure, and State Forest visitors safety with such an increase in traffic (DCNR, 2009). Also, as mentioned in the Wildlife Habitat section of this report, the need for roads as a result of increased truck traffic and pipeline construction will dissect the state forest land therefore jeopardize wildlife habitat.

Pipelines

Transportation of the extracted natural gas is necessary and is conducted by construction of a pipeline infrastructure. New pipeline infrastructure will be required for all extracted natural gas within State Forest leased land. Requirements for pipeline activity within lease Tract 737 are included in the Oil and Gas Lease Agreement (Section 29 – Oil and Gas Pipelines). Pipeline construction could potentially have damaging impacts based on the fact that the pipeline travels through a variety of different locations whereas the well site is confined to one location. It is important to plan out the construction of the pipeline infrastructure as carefully as the well site.

A few Best Management Practices to minimize impacts of pipeline construction are as follows:

- Minimize crossings of environmentally sensitive areas such as water bodies, wetlands, and vernal pools;



Natural gas pipeline (source: Catskill Mountainkeeper, 2010)

- Follow pipeline construction along road corridors as much as possible to minimize disturbed surface area and provide easy access to and from the pipeline corridor;
- Require restoration and revegetation of pipeline corridors as soon as possible after the pipeline has been installed; and,
- Utilize noise abatement systems or electric motors at pipeline compressor stations similar to those described for the well pad sites.

Mitigation/Minimization of Impacts

A variety of planning tools can be utilized to mitigate and minimize the impacts of Marcellus Shale drilling on the landscape. Best Management Practices are being used or have been proposed by DCNR to protect the environment from the impacts of Marcellus Shale drilling. The use of Geographic Information Systems to plan the creation buffer zones, locate areas of environmental sensitivity and watershed analysis has been useful in determining appropriate well pad locations and creating areas where development should be avoided. DCNR has utilized GIS applications to create a number of Buffer Zone and Non-Development Zones to protect areas within the state forest that could be heavily impacted by the drilling process. These zones have been mapped out and included within the Lease Agreement between DCNR and the lessee (See Figure-3).

Well site spacing should be used when determining areas of future well sites. DCNR has determined a derivative-spacing formula for use on state land that will make it possible to develop well pad sites in a manner that reduces surface impact. The methodology used in the derivative-spacing formula appears to minimize the potential impacts to the surface while maintaining the engineering integrity required to economically recover the natural gas

reserves without waste (DCNR, 2009). By using a combination of buffer zones and well site spacing formulas, it can be possible to maximize the potential for economic development through natural gas extraction while protecting areas of environmental sensitivity and recreational value.

Economic Benefits

Pennsylvania is still in the early phases of natural gas extraction from the Marcellus Shale formation. As more land is leased out for drilling, there will be a need for workers to support the emerging workforce. Clinton County is located in the heart of a region rich with Marcellus Shale and as a result, growth is evident. The economic impacts are also evident at the statewide level since large portions of state forest land have been leased to drillers. Drilling in the Marcellus Shale makes natural gas available and more affordable to Pennsylvania residents, supplying a cheaper and cleaner alternative to coal and oil. It is important to support the economic growth in Clinton County through natural gas development but remain conscious about the environmental impacts on the recreational landscape so that we can ensure that the county's resources are preserved for the future.

Review and Summary of Pine Creek COG – PA Wilds Initiatives: Oil and Gas Research and Recommendations - Pine Creek Valley

T&B Planning and Mackin Engineering prepared the Pine Creek COG – PA Wilds Initiatives on behalf of the Pine Creek Council of Governments. The report was published on August 26, 2008 and included a specific chapter on research and recommendations associated with the oil and gas industry within Pine Creek Valley.

The Pine Creek Valley Oil and Gas report discusses the extent to which the local municipality can regulate natural gas exploration. The PA Oil and Gas Act (Section 601.602) states that “all local ordinances and enactments purporting to regulate oil and gas well operations... are hereby superseded...[and] no ordinances...shall contain provisions which impose conditions, requirements, or limitations on the same features of oil and gas well operations regulated by this act or that accomplish the same purposes as set forth in this act.” In addition, the Oil and Gas act also states “Except with respect to ordinances adopted pursuant to ... the Pennsylvania Municipalities Planning Code, and...the Flood Plain Management Act, all local ordinances and enactments purporting to regulate oil and gas well operations regulated by this act are hereby superseded.”

The Pine Creek document outlines two legal decisions in which the Commonwealth rejected local municipalities' attempts to regulate oil and gas extraction. Both cases were in the Pennsylvania Supreme Court appeal process as of the date of the Pine Creek COG report. A press release published February 27, 2009, by the Pennsylvania State Association of Township Supervisors, summarized the outcomes of these notable cases....

Huntley & Huntley, Inc. vs. Borough Council of Oakmont

The Commonwealth Court ruled that a municipality could not regulate the location of a gas well through the denial of a conditional use permit. The Court reasoned that the Oil and Gas Act preempts the municipality's attempt to regulate the location of natural gas drilling.

The Commonwealth's decision was appealed to the Supreme Court. The court carefully reviewed the rules of preemption and concluded that the location of wells was not an operational feature regulated by the Oil and Gas Act, nor did the Oil and Gas Act's “safety” purposes supersede

the local safety purposes authorized by the Municipalities Planning Code and embodies in the zoning provision

Great Lakes Energy Partners vs. Salem Township

The ordinance in question sought to regulate items which were arguably operational activities and within the exclusive control of the state statute. Significantly, the ordinance included a local permitting requirement and invested a degree of discretion in the Township as to whether or not the permit should be issued. Further, the Supreme Court found that some of the ordinance's provisions directly targeted oil and gas drilling. Accordingly, the Supreme Court invalidated the ordinance because it addressed subject matter preempted by the Oil and Gas Act.

Aside from the PA Oil and Gas Act provisions, natural gas extraction is regulated through the Department of Environmental Protection's permitting requirements. The Department of Conservation of Natural Resources is able to control environmental impacts as best as possible through their leasing agreements. Furthermore, existing local controls and the Zoning and Subdivision and Land Development Ordinances were reviewed for the municipalities of Pine Creek Valley. Clinton County's SALDO contains no regulations referencing oil and gas drilling.

The Pine Creek COG Study outlined a number of recommendations, based on the limitations of the PA Oil and Gas Act, to aid in limiting environmental damage and nuisance impacts of oil and gas drilling and operation without over-regulating to the point that the economic benefits of the extraction activity would be lost or severely diminished. The recommendations were directed at the Pine Creek Valley area but can easily be adapted for use in Clinton County. The recommendations are as follows:

- Include Stipulations in lease agreements for locally owned land similar to the stipulations set in DCNR's oil and gas lease agreements.
- Create a master lease agreement for County and township-owned lands
- Report any oil and gas drilling violations to DEP. The municipalities and/or County should keep an eye on drill sites to ensure that the rules are being met.
- Add supplemental use regulations to local municipal zoning codes if needed
- Make clarifications of the County's Temporary Use Permit Requirements
- Add supplemental use regulations to County draft zoning ordinance
- Employ a technical advisor who is an expert on the issue of oil and gas drilling
- Create a tailored temporary use permit application for oil and gas wells
- Supplement the Zoning ordinance list of definitions to include terminology associated with oil and gas drilling.
- Add supplemental zoning provisions and or enact a gas well drilling and production ordinance or incorporate these provisions into a lease agreement.
- Posting and bonding of locally-owned roads so that heavy haulers are responsible to pay for road damages they cause.

It was suggested at the presentation of the draft report recommendations public meeting that the latter recommendation listed above regarding the posting and bonding of locally-owned roadways may be better served with the application of Roadway Use Maintenance Agreements.

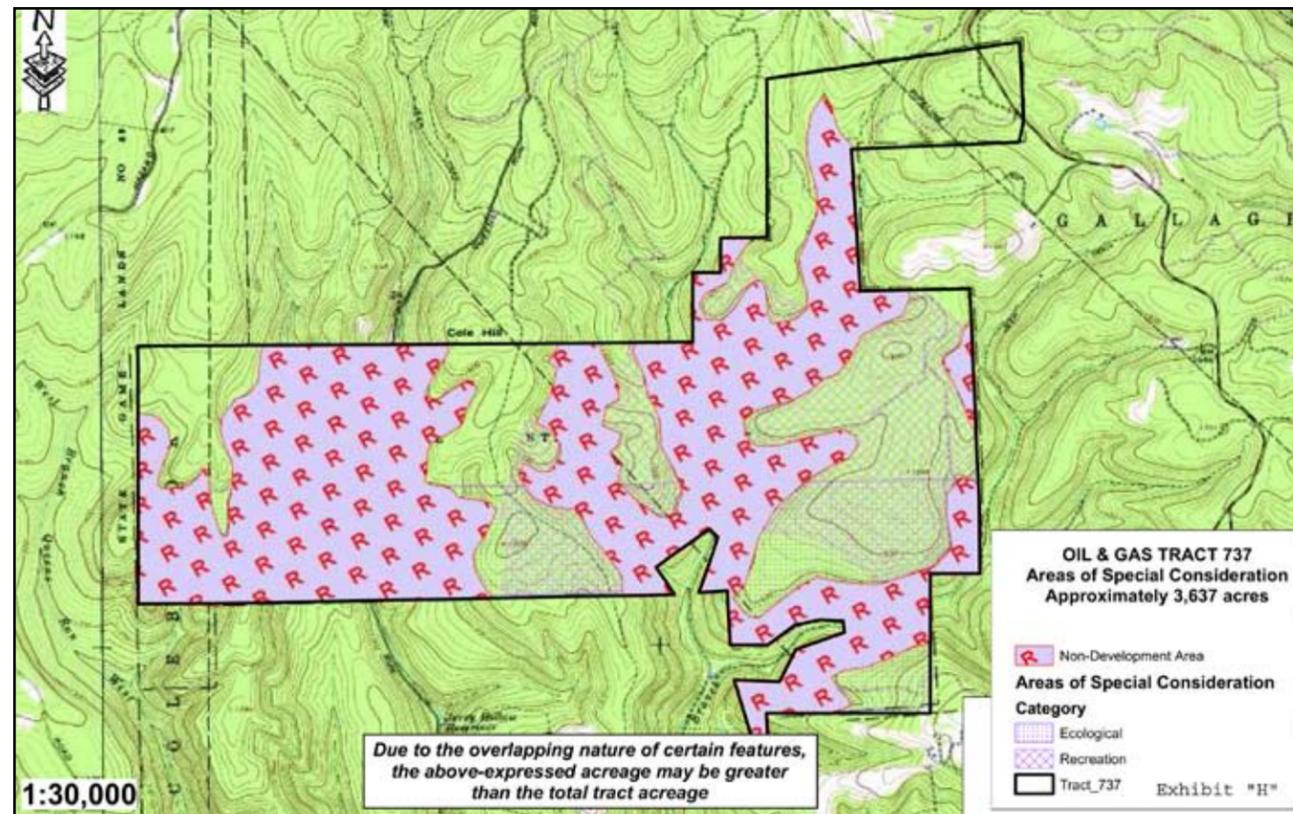


Figure - 3

Drilling in the Marcellus Shale is still in the early phases of leasing and acquisition but the phases of development and return are upon us. By reviewing the current regulations and considering any other options for control at the local level it may be possible to minimize the environmental impacts and also maximize the economic opportunity for this natural resource.

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Pennsylvania Council of Governments (August 26, 2008). PA Wilds Initiatives.

Pennsylvania State Association of Township Supervisors (February 27, 2009), "Pennsylvania Supreme Court Issues Major Decisions on Uniform Construction Code, Oil and Gas Act, http://www.psats.org/news_ucc_code_030309.html

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U.S. Department of Energy (April 2009): Modern shale gas development in the United States: A Primer.

Weidenhof, Emily (Spring 2009), "Hancock & The Marcellus Shale Visioning the Impacts of Natural Gas Extraction Along the Upper Delaware".

Wind

Existing and potential wind energy development in Clinton County was identified from information obtained from PA Wind Map.org, Penn Future.org, and PA Wind Energy Now.org. There were no site location design standards or criteria found on either Pennsylvania Department of Environmental Protection’s (PADEP) or the Department of Conservation and Natural Resources (DCNR) website, however New York State Energy Research and Development Authority (NYSERDA) has design ordinances on safety, siting and installation, setbacks, nuisance levels, and environmental and visual factors.

Wind energy has the potential to be one of the cleanest, safest, most renewable energy resources on Earth. Bringing additional wind farms to Clinton County would create jobs and help the

local economy by bringing money into the area. Local land owners can earn an average of \$2,000 per year for each wind turbine installed on their property (PA Wind Map). A portion of this money also goes towards local taxes, which will help fund improvements within the County. On the other hand, large wind turbines can be considered an eyesore for the local population. Property values in areas where the wind turbines are visible have the potential to drop. Wind farms have known impacts to birds and bats, but the exact extent of the impacts are still under investigation and to date have not been quantified. Noise from the operation of the wind turbines can also be an issue, although most of the newer models have become more efficient and most of the noise is masked by the sound wind itself.

There are twelve wind farms currently operating in the state of Pennsylvania, none of which are

in Clinton County. Wind energy is classified into classes ranging from class 1 (the lowest) to class 7 (the highest). According to pawindenergynow.org, developers only look at lands that have wind power class 3 or higher. Then, they will eliminate urban and environmentally sensitive areas. Different land types, such as forest land, farm land, and rangeland, are also taken into consideration and subtracted out according to importance. Using the siting criteria listed above and if wind energy development comes to Clinton County it appears as though there are three potential areas that could qualify for wind farm development. One area is a linear stretch along Big Mountain south of Lamar and Mackeyville, south of Interstate 81, see Figure 5. The southwest portion of this area is located within State Game Lands number 295 on Big Mountain. Big Mountain is located within Bald Eagle State Forest. Area 2 is northeast of Interstate 81 and is also located within Bald Eagle

State Forest. Area 3 is in the northern portion of the state near the town of Hyner, see Figure 6. This area is much smaller than the wind potential areas in the south.

Hyner View State Park is a local tourist attraction where people come to see the view of the mountains. The class 3 area north of Hyner would most definitely be within the immediate viewshed from Hyner’s Point. For this reason alone, wind development would not be recommended at this location.

Areas 1 and 2 in the southern part of the County are larger than Area 3, but they also have significant environmental impact concerns, including potential impacts to State Game Lands 295 and the Cherry Run watershed which has a history of preservation efforts. Cherry Run is also designated by the PA Fish and Boat Commission to be a Wilderness Trout Stream.

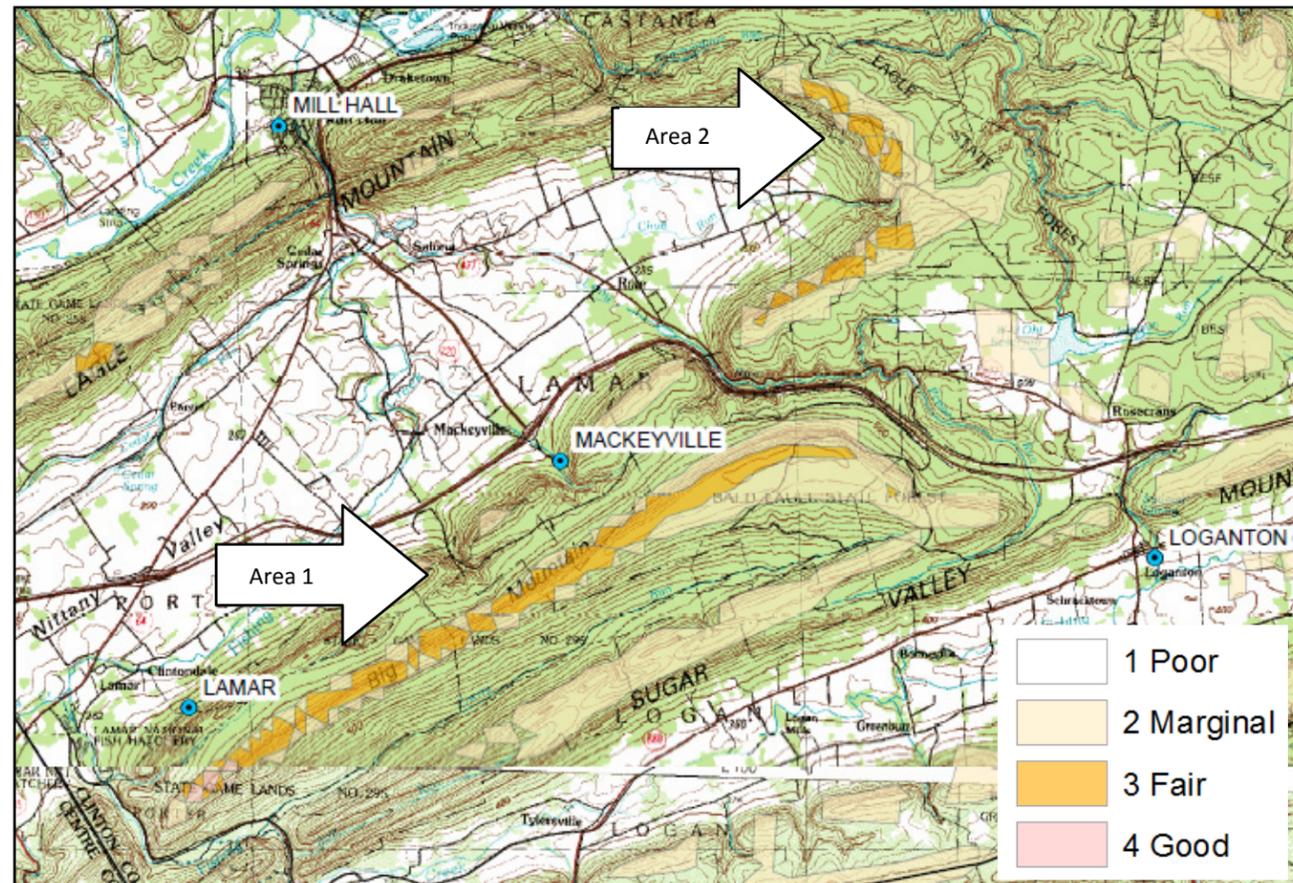


Figure 5: Wind Potential in the Southern Portion of Clinton County



Figure 6: Wind potential in the northern portion of Clinton County, near Hyner.

In summary, with the potential environmental and visual impacts combined with all three locations initial rating at the lower end of the scale for potential development, this plan suggests that none of the three locations identified by the Wind industry should be appropriate for wind farm development.

Resources:

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PennFuture. Energy: Wind Farms in Pennsylvania. May 6, 2010. <<http://www.pennfuture.org>>

Pennsylvania Wind Working Group. May 6, 2010. <www.pawindenergynow.org>

Power Naturally. New York State Energy Research and Development Authority. October 2005, accessed May 6, 2010. <<http://www.powernaturally.org>>

Key Issues: Opportunities and Constraints

The following are the key issues, categorized as opportunities and/or constraints relative to the resources inventory and their potential for Greenway/Trail development

Opportunities:

- There is an abundance of recreational and historical facilities that could be utilized as part of an eco-tourism / economic development initiative to promote the County's assets;
- Beautiful natural scenery and the opportunity to witness unique wildlife habitats including various important bird species and the PA Elk herd are an important asset that must be managed and preserved; and,

- Marcellus Shale gas drilling infrastructure improvements and/or new construction may provide additional trail development opportunities.

Constraints:

- Steep slopes associated with the Appalachian Plateau in the northwestern portion of the county presents a significant obstacle to providing bicycle and pedestrian (non-motorized) connections between the population centers in the valleys and the recreational facilities in the highlands;
- Limited transportation access and no existing cell phone service make the northwestern portion of the County one of the most remote locations in PA, and a detriment to providing emergency access;
- Marcellus Shale gas drilling impacts could have a significant negative impact with respect to aesthetics, noise, air quality, wildlife habitat if the facilities required for the extraction of this valuable natural resource are not carefully implemented.



WEST BRANCH SUSQUEHANNA RIVER WATER TRAIL ACCESS & CAMPING FEASIBILITY STUDY

STUDY PURPOSE

It is the intent of this study to evaluate potential boating river access points, both existing and proposed, and the potential to access riverside lands and islands for camping along the West Branch Susquehanna River Water Trail within Clinton County, and within Burnside Township in Centre County.

The study corridor begins at the existing DCNR Karthaus Access located on the Centre County side of the river from the village of Karthaus in Clearfield County at river mile 132.4 and ends at the Pine Creek confluence with the West Branch at river mile 58.5. and the Clinton / Lycoming County line.

The Pennsylvania Lumber Heritage Region (LHR) published The Susquehanna River Water Trail - West Branch Map & Guide in 2004. This guide was developed by the North Central Pennsylvania Regional Planning and Development Commission (NCPRPDC) who acquired funding for the guide through the Chesapeake Bay Gateways and Watertrails Network. This document locates points of interest, facilities and adjacent attractions and is the best available and most widely used guide for the West Branch Water Trail (see Figure 1).

Currently many of the existing locations along the water trail - both public and private - are not formally identified for public access, thus leading trail users to unknowingly trespass onto privately - owned property. It is the intention of this study to be able to add additional camping and



Figure 1 – sample page from *The Susquehanna River Water Trail - West Branch Map & Guide*.

access site locations to the LHR Water Trail Guide if these sites are determined to be feasible and can be formalized for public access.

A study that was performed concurrently with this plan is the *Susquehanna River Water Trail-West Branch Stewardship and Conservation Plan*, completed in August 2009 by the Northcentral Pennsylvania Conservancy. This study was financed by the Chesapeake Bay Gateways network and the Pennsylvania Department of Conservation

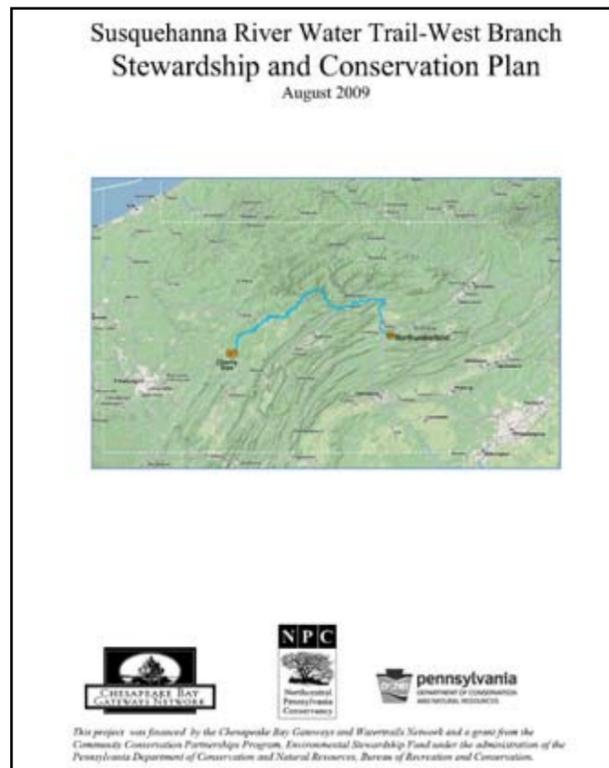


Figure 2 – Cover from the *Susquehanna River Water Trail-West Branch Stewardship and Conservation Plan*.

and Natural Resources and provides an excellent and thorough detailed report on the status of the water trail and the many factors influencing its current and future use. The plan addresses the inventory and analysis of existing conditions, issues for sustainability, and recommendations for management and stewardship of the water trail.

The feasibility study contained herein focuses on the water trail portion from Karthaus through Clinton County as described in the study purpose and concurs with the recommendations found within the NPC Stewardship Plan.

Major recommendations of this plan include, but are not limited to:

- the need for additional public camping and access sites along the river, particularly in the remote stretch between Karthaus and Keating;
- the need for a consistent system of signage and way-finding to be used to not only identify the sites for public access, but also to orient and direct trail users to local features or attractions and community connectivity;
- the need for an organizational structure to oversee trail management and stewardship for long term sustainability.

Specific references to this plan and its recommendations are cited throughout the following narrative. The full report is available for review at the Northcentral Pennsylvania Conservancy website at the following link: <http://www.npcweb.org/stewardship-plan.pdf>

WEST BRANCH SUSQUEHANNA RIVER HISTORY

The West Branch of the Susquehanna has a rich cultural history relative to the transportation of goods,

primarily with the mining and lumber industries. During much of America's early history, the West Branch Susquehanna was a main "thoroughfare" for logging and lumber. Numerous lumber mills were located there, surrounded by forests that provided the lumber. The Pennsylvania Lumber Heritage Region (LHR), as part of its *Management Action Plan*, prepared in May 2001 by Mackin Engineering identified five (5) key themes and events in the lumber history:

- **Pioneers of Logging** - In the 1780s, the first small scale lumbering began in Pennsylvania. These sawmills operated seasonally and supplied local needs, but also shipped wood down rivers and streams as lumber rafts.
- **Spars and Sticks** - In the 1830s, sawmills along the West Branch were supplied by logs, or "sticks", that were cut and floated downriver - either as part of a raft or as scattered logs in a "drive" that would be captured by a boom placed across the river. The straightest stock was used as masts, or "spars", in the Chesapeake Bay shipbuilding industry.
- **Bark Peelers and Lumber Barons** - From 1864 to 1941 the logging railroad was the principal means of hauling timber. The railroads hauled mostly hemlock, which was used for leather tanning and lumber. Because of the efficiency of the railroads, Pennsylvania's forests were nearly cleared by the 1930s.
- **Forest Conservation** - Decades of clearing forests eventually eroded soil, which increased sediments in the West Branch and downstream to the Chesapeake Bay. Efforts were made to control wildfires, erosion, and the depletion of forest resources. The Pennsylvania Bureau of Forestry, the U.S. Forest Service, and the Civilian Conservation Corps had the largest roles in restoring and protecting the state's forests.

- **A Second Forest and a Sustainable Approach** - After World War II, Pennsylvania's "new" hardwood forests replaced the white pine and hemlock forests, and sustainable forestry practices emerged. Sustainable management keeps land in forest use, fosters cleaner rivers and more wildlife, and makes Pennsylvania the nation's leading producer of hardwoods, while over half of the state (17 million acres) remains forested.



Figure 3 - Interpretive signage at DCNR Karthaus Access.

These themes were illustrated on a number of interpretive panels that were installed at many of the river access sites to educate residents and visitors about the region's rich lumber heritage (see Figure 3).

These signs were developed by the LHR with funding from the Pennsylvania Department of Conservation and Natural Resources, Heritage Parks Program; and the Chesapeake Bay Gateways Network. The Susquehanna Greenway Partnership was also very instrumental in the implementation of these interpretive panels and development of the water trail map & guide.

PHYSICAL INVENTORY AND ASSESSMENT

Data Collection and Methodology

Potential access points and camping sites were generally located and mapped by the Clinton County Planning Commission and GIS Departments and were provided to the Consultant for further development at the outset of this study. Additional potential camping and access sites were identified from the available GIS information including tax parcel information, PAMAP Project aerial photography and contour information as well as sites identified in the Lumber Heritage Water Trail Guide and compiled into a set of field maps. These field maps were then taken along in a field reconnaissance trip that took place during the first week of June 2009.

Field Reconnaissance

A field reconnaissance trip took place over a period of four days and covered the river from the DCNR Bureau of Forestry Karthaus Access in Centre County at river mile 132.4 on Day 1 and ended at the existing Farrandsville railroad bridge at river mile 74.1 on Day 4 for an excursion totaling approximately 60 river miles. The remaining potential sites were inventoried by land in subsequent field reconnaissance efforts. Each of the potential sites was evaluated for their feasibility and photo inventoried where applicable. The results of this field reconnaissance and evaluation is summarized in the following narrative sections and on the project mapping found at the end of this chapter.

Significant Natural Features

The West Branch of the Susquehanna River travels through one of the most remote locations in Pennsylvania. Since this is a water trail, natural

features that would affect the usefulness of this trail are limited to the river itself and the ability to access these sites from both the river and from the adjacent environs. The following are summaries of the conditions affecting the use of the water trail as well as factors limiting access to the river in its more remote locations.

Abandoned Mine Drainage (AMD)

One of the most significant issues impacting the West Branch Susquehanna and water trail is the damaging effects created by Abandoned Mine Drainage (AMD). These effects are caused by an unregulated era of mining and resultant deposits of heavy metals, iron, aluminum and manganese transported through surface and deep mine runoff from multiple sources throughout the watershed. These pollutants are witnessed by the layman through the presence of reddish orange staining of the water and rocks, the presence of a slimy grayish sludge covering the riverbed and submerged rocks, and the overall lack of aquatic life in the river. During the field reconnaissance trip in June 2009, the first sign of fish living in the river was evidenced in Keating, 20 miles into the trip at the confluence with the Sinnemahoning Creek.

Governor Edward G. Rendell, with support from Trout Unlimited and Pennsylvania Department of Environmental Protection Secretary Kathleen McGinty established the West Branch Susquehanna River Task Force in 2004 to develop a comprehensive AMD remediation strategy. The result was the West Branch Susquehanna Subbasin

AMD Remediation Strategy: Background, Data Assessment and Method Development, produced by the Susquehanna River Basin Commission (SRBC) in partnership with the Task Force in May 2008. This report thoroughly documents the existing conditions and impacts of AMD and provides a number of recommendations for how to best provide for the remediation. The full report may be downloaded

from the SRBC website at the following link: http://www.srbc.net/pubinfo/techdocs/publication_254/techreport254.htm

The Pennsylvania chapter of Trout Unlimited prepared a concurrent plan entitled An Economic Benefit Analysis for Abandoned Mine Drainage Remediation in the West Branch Susquehanna River Watershed, Pennsylvania, published in July 2008.

The following map excerpts from this report show the existing streams impacted by AMD within the watershed (Figure 3), and the lost sport fishing revenue lost annually due to AMD within the watershed (Figure 5).

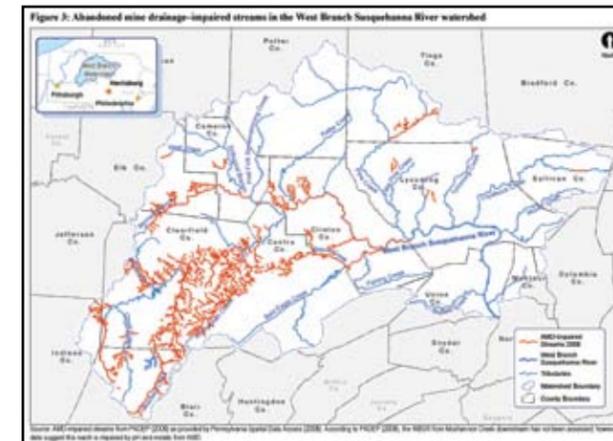


Figure 3 - AMD impaired streams in the West Branch Susquehanna River watershed

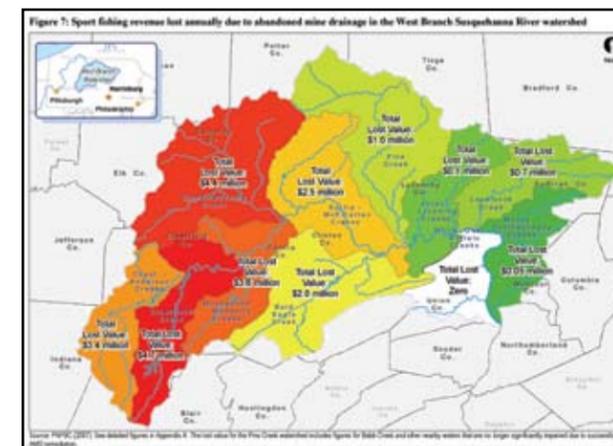


Figure 4 - Sport fishing revenue lost annually due to AMD in the West Branch Susquehanna River watershed.

According to this report, an estimated \$22.3 million in sport fishing revenues was lost in the West Branch Susquehanna watershed due to AMD in 2006. Economic Benefits of AMD remediation are identified in this report as:

- Remediation generates jobs and stimulates the local economy;
- Recreational spending will increase with cleaner waters;
- Property values will increase with AMD remediation; and,
- Drinking water options will be cheaper and more plentiful.

The full report may be downloaded from the following link: <http://www.wbsrc.com/documents/economicbenefits/fulldocument.pdf>

Flow Conditions on the River

According to the Water Trail Guide, the USGS Gage at Karthaus should be at 2.0 feet or higher to ensure good flow conditions. Historically, this period is from the spring thaw in March and lasts until mid-June. Current flow conditions, as well as access to historical flow data can be found at the USGS website for the Karthaus gage: http://waterdata.usgs.gov/usa/nwis/uv?site_no=01542500

Peak use of the water trail typically occurs on the weekends surrounding the Memorial Day holiday evidenced by the heavy use at the existing access points.

During the public participation process of the NPC Stewardship Plan, people expressed concern over recent droughts and the potential pollution concentration and navigability impacts caused by water withdrawals from industrial activities, including the demand for such withdrawals associated with the burgeoning Marcellus shale gas drilling industry. Interest was expressed to pursue the possibility of scheduled releases from the Curwensville Dam

which would help alleviate heat stress on the aquatic habitats and provide for a longer period of navigability in the summer months.

Vehicular Access to the River

In order to provide for river access sites, there must first be the availability of roadways that lead to their potential locations. With limited exceptions, the active railroad located from Karthaus to Farrandville serves as a significant barrier to providing river access along the northern bank of the river (see Figure 6). The railroad continues to limit access opportunities along the southern bank between the Farrandville bridge and Lock Haven, then again in limited locations from the confluence with Bald Eagle Creek to the county line and Pine Creek.

In addition, there are no existing public roadways that provide access to and cross the existing railroad from

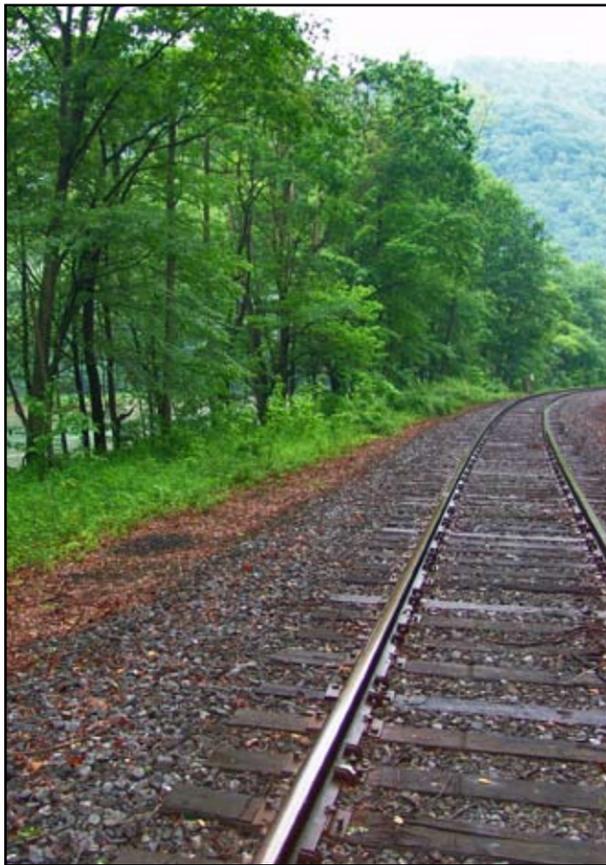


Figure 6 - Existing active railroad along entire northern riverbank

the Karthaus Access at river mile 132 to the potential DCNR Access at river mile 111 along the northern river bank. It is not until river mile 99 and the South Renovo Access where there is a public road leading to the river on the southern bank.

This lack of vehicular access is primarily due to the existing topography of the Appalachian Plateaus physiographic province which makes the water trail one of the most naturally scenic, yet inaccessible locations in Pennsylvania, particularly in the first 20+ miles between Karthaus and Keating.

To compound matters, at the time of this report there is no existing cell phone coverage along the river until one passes what is locally known as the Ice Mine Cut on the southern bank along PA 120 at river mile 76. This creates a serious challenge in providing emergency access to any location along the river above this location (see Figure 7).



Figure 7 - View from River of the locally known 'Ice Mine Cut' along the southern bank and PA 120 at river mile 76.

SUMMARY OF OPPORTUNITIES AND CONSTRAINTS

Opportunities:

- There were many potential camping locations identified along the southern bank of the river with access to fresh water from local streams, primarily in the stretch between Karthaus and Keating;
- The potential for future controlled releases from the Curwensville Dam will provide relief to the seasonal effects of AMD drainage and provide for an extended period of navigability into the summer months;
- Future improvements associated with AMD remediation will enhance user demand by providing additional recreational fishing opportunities and an enhanced natural environment; and,
- The overall natural beauty of the West Branch Susquehanna River and its remote quality provides for an excellent outdoor adventure experience for users of this water trail.

Constraints:

- The remote nature of the water trail including lack of vehicular access caused by the topography and active railroads and the absence of cell phone service poses serious challenges to providing emergency access to both existing and potential sites along the river;
- Navigability of the water trail is dependent on existing flow conditions which historically limit the season to approximately 3 months +/- per year; and,
- AMD and its effect on water quality provides

limited availability to fresh potable water along the trail, as it may only be obtained from certain fresh water tributaries to the river in remote sections.

Potential Camping and Access Sites

Important Note: the potential locations identified herein are located on both public and private properties. In the cases where these locations are located on private property, there is evidence that these sites have been historically used by boaters and/or anglers for a significant period of time without incident. Many of the potential camping sites are located on existing State Game Lands owned by the PA Game Commission where overnight camping is prohibited. At no time during the course of this study were there any knowingly intentional trespassing onto private property, nor does this report by identifying these potential sites intend to promote or suggest the continued use of these sites without them first being formalized for public access, including the sites located on PA Game Commission property.

Please refer to the mapping at the end of this chapter for site specific information relative to each of the potential camping and access sites included in this study. Existing features are noted on the mapping, including but not limited to: public and privately owned parcel boundaries, State Game Lands, State Forest Lands, waterways, roadways, and formalized trails.

The following are brief descriptions of the potential camping and access sites located along the river trail beginning at the DCNR Karthaus Access and river mile 132 to the DCNR Pine Creek Access located at the eastern Clinton County line at river mile 59. Included with each site description is its river mile location, ownership info, and a brief description of the site with recommendations.

DCNR Karthaus Access

Type: existing access

Location: river mile 132.4

Ownership: PA DCNR Bureau of Forestry

Description: This existing access site is located off of PA Route 879 in Burnside Township, Centre County. This site is heavily used as it is a popular starting point for trips travelling downstream to Keating and the most remote section of the water trail. The access driveway is very steep and parking is available for approximately 15 cars. There is a portable handicap accessible bathroom, a picnic area with a fire ring and interpretive signage installed by the Lumber Heritage Region and Susquehanna Greenway Partnership. Many of the features one would expect with the river access points can be found at this site with little need for new improvements.

Recommendations:

- Install Landing Marker signage visible from the river;
- Improve driveway access for long term sustainability.



Sterling Run West

Type: potential camping site

Location: river mile 125.6

Ownership: PA Game Commission

Description: This first landing site offers the first real opportunity for overnight camping approximately 7 miles downstream from the Karthaus access. While overnight camping is prohibited on State Game Lands, this site has been used for many years as evidenced by the existing features. There is a large rocky landing area with the tenting and campfire areas being located at a good elevation above the river. Sterling Run provides a source of fresh water.

Recommendations:

- Install Landing Marker signage visible from the river;
- Provide site BMPs to stabilize trail connection between landing site and camping area;
- Pursue acquisition of this site from the PA Game Commission to formalize public use.



Sterling Run East

Type: potential camping site

Location: river mile 125.2

Ownership: PA Game Commission

Description: Located less than a half mile downstream from the previous landing, this potential camping site offers multiple campfire and tenting areas on the terraced slopes leading away from the river. While overnight camping is prohibited on State Game Lands, this site has been used for many years as evidenced by the existing features. There is no source of fresh water at this site.

Recommendations:

- Install Landing Marker signage visible from the river;
- Provide site BMPs to stabilize trail connection between landing site and camping area;
- Pursue acquisition of this site from the PA Game Commission to formalize for public use.



Jeep Trail

Type: potential camping site

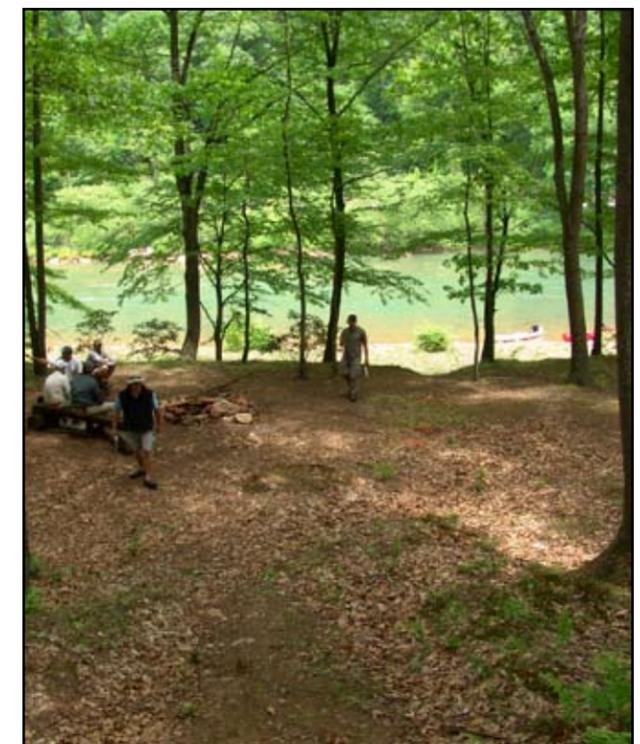
Location: river mile 124.2

Ownership: PA Game Commission

Description: Similar to the previous two potential camping sites, this one is also located on State Game Lands where overnight camping is prohibited, yet evidence exists that shows this site has been in use for many years. The site is named for an existing jeep trail that ends at this site and as noted on the USGS quadrangle map for this location. There is no fresh water access at this location.

Recommendations:

- Install Landing Marker signage visible from the river;
- Provide site BMPs to stabilize trail connection between landing site and camping area;
- Pursue acquisition of this site from the PA Game Commission to formalize for public use.



Pine Run West

Type: potential camping site

Location: river mile 123.8

Ownership: PA Game Commission

Description: Located less than a half mile downstream from the previous 'Jeep Trail'. While overnight camping is prohibited on State Game Lands, this site has been used for many years as evidenced by the existing features. However, it appears that this site receives significantly less use due to the large boulders along the riverbank thus providing for a difficult landing. There are many camp fire rings and large open areas for tenting, but the presence of groundcover ferns indicate that this site is not as heavily used. There is no source of fresh water at this site.

Recommendations:

- Install Landing Marker signage visible from the river;
- Create a better landing site at one location to provide for better accessibility and minimize river bank disturbance;
- Provide site BMPs to stabilize trail connection between landing site and camping area;
- Pursue acquisition of this site from the PA Game Commission to formalize for public use.



Spruce Run

Type: potential camping site

Location: river mile 123.0

Ownership: PA Game Commission

Description: Due to the availability of fresh water, existing rock outcroppings and overall scenic beauty, this is a very popular potential camping site location. Although located on State Game Lands where overnight camping is prohibited, this site contains all of the typical campsite amenities and evidence of previous use for many years. Trails lead up the mountain sides to the rock outcroppings and there are old stone foundations located within the valley of Spruce Run.

Recommendations:

- Install Landing Marker signage visible from the river;
- Provide site BMPs to stabilize trail connection between landing site and camping area;
- Pursue acquisition of this site from the PA Game Commission to formalize for public use.



Leaning Pine East

Type: potential camping site

Location: river mile 122.6

Ownership: PA Game Commission

Description: This site is located directly across the river from land owned by the PA DCNR Bureau of Forestry where an existing public road provides the rare opportunity for access to this remote location. An overnight camping area was previously proposed for the western bank of the river, but due to the inability to acquire a public crossing of the railroad, the campsite was not developed. The potential camping site on the western bank is located on State Game Lands where overnight camping is prohibited, however there is evidence of previous use for many years. This potential site sits along a narrow base of the adjacent mountain with good elevation above the river and access to fresh water from an unnamed tributary.

Recommendations:

- Install Landing Marker signage visible from the river;
- Provide site BMPs to stabilize trail connection between landing site and camping area;
- Pursue acquisition of this site from the PA Game Commission to formalize for public use.



Boughner Run

Type: potential camping site

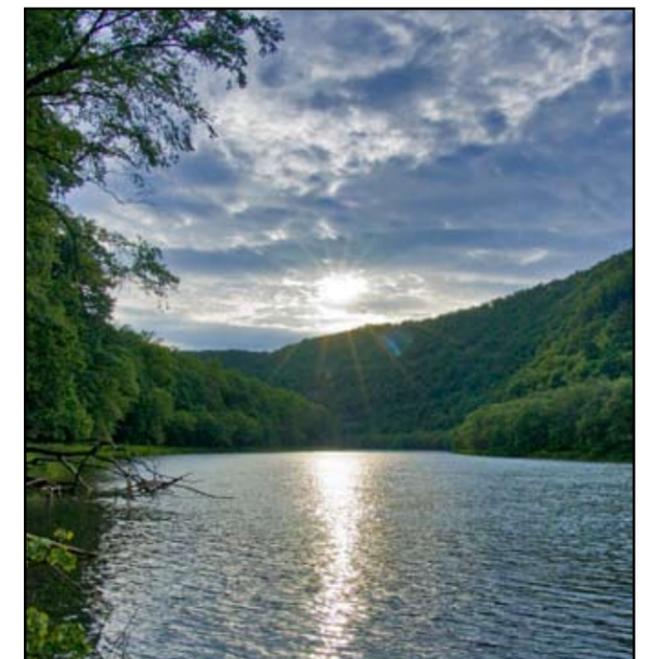
Location: river mile 121.3

Ownership: PA Game Commission

Description: This is another popular potential camping site exhibiting previous and long term use located on State Game Lands where overnight camping is prohibited. This site contains all of the typical amenities, including access to fresh water and informal trails leading into the valley of Boughner Run. The landing area at the river is fairly accessible and moderate in size, however the path leading to the camping area located well above the river is quite steep.

Recommendations:

- Install Landing Marker signage visible from the river;
- Provide site BMPs to stabilize trail connection between landing site and camping area;
- Pursue acquisition of this site from the PA Game Commission to formalize for public use.



Moores Run

Type: existing and potential camping sites

Location: river mile 119.1

Ownership: PA Game Commission and PA DCNR Bureau of Forestry

Description: The boundary between the State Game Lands and State Forest Lands lies along Moores Run. Camp sites exhibiting historic use are located on both sides. Overnight camping is prohibited on State Game Lands, but permitted on State Forest Lands. There is a long grassy shore with a narrow landing area near the Moores Run delta, making it difficult to land more than a few boats. There are many existing camp fire rings and tenting areas on terraced lands leading away from the river. There is also an old stone foundation within the State Forest Lands east of Moores Run.

Recommendations:

- Install Landing Marker signage visible from the river;
- Create a better landing site at one location to provide for better accessibility and minimize river bank disturbance;
- Provide site BMPs to stabilize trail connection between landing site and camping area;
- Pursue acquisition from the PA Game Commission for the land west of Moores Run to formalize public use of this site.



Birch Island Run

Type: existing camping site

Location: river mile 118.4

Ownership: PA DCNR Bureau of Forestry

Description: This existing camping site on State Forest Land is located on the opposite (south side) of the river from the actual Birch Island Run and an existing privately owned camping area on the north shore. The landing is level and grassy, but difficult to locate from the river. This camp site is moderately sized with a relatively low elevation in relation to the river.

Recommendations:

- Install Landing Marker signage visible from the river;
- Create a better landing site at one location to provide for better accessibility and minimize river bank disturbance;
- Provide site BMPs to stabilize trail connection between landing site and camping area.



Fields Run

Type: existing camping site

Location: river mile 115.5

Ownership: PA DCNR Bureau of Forestry

Description: The Fields Run camping site is located directly adjacent to an existing privately owned parcel on the downstream side. The landing is at a grassy slope that could be improved for better ease of access. An existing road grade provides access to the adjacent private property that eventually connects to a State Forest Road.

Recommendations:

- Install Landing Marker signage visible from the river;
- Create a better landing site at one location to provide for better accessibility and minimize river bank disturbance;
- Provide site BMPs to stabilize trail connection between landing site and camping area.



DCNR Access

Type: potential access

Location: river mile 111.5

Ownership: PA DCNR Bureau of Forestry

Description: This potential access point is located along Vincent Drive, a narrow Township roadway that parallels the exiting active railroad line between the tracks and the river, approximately 1 mile upriver from the village of Keating. The NPC Stewardship plan identified the need for an additional access point in the Keating area to replace the current access located on private property along the Sinnemahoning. This site has its limitations as it is relatively small and does not have the capacity to park any more than 1 or 2 vehicles. However, it could very well serve the purpose of an extraction point for those making the typical 2 day trip from Karthaus. The landing is also difficult to locate with the best landmark being a large rock located in the middle of the river.

Recommendations:

- Install Landing Marker signage visible from the river;
- Provide site BMPs to stabilize the landing/launch and associated driveway;
- Install directional signage to lead users back to PA 120.



Keating Access

Type: existing access, not formalized for public use

Location: river mile 110.3, approx ¼ mile upstream along the Sinnemahoning Creek

Ownership: private

Description: This access point is located directly adjacent to the Keating Mountain Road bridge crossing of the Sinnemahoning Creek on privately owned property. The NPC Stewardship Plan suggests that this access point be removed from the LHR Water Trail Map & Guide since official permission could not be obtained from the private property owner to formalize this site for public use. Recent construction work on the adjacent bridge left an improved access driveway to the river, improving it from its previous condition. Parking is available along Keating Mountain Road. It is also difficult to paddle upstream in the Sinnemahoning Creek to access this site from the West Branch.

Recommendations:

- Continue to pursue acquisition of this site or obtain an easement from the current landowner. If this is not possible, this access point should be removed from the Water Trail Guide and replaced with the DCNR Access at river mile 111.5.



5th Street Access

Type: existing access, undeveloped

Location: river mile 97.9

Ownership: Public ROW

Description: This access point is located where the existing 5th Street ROW meets the river. It is currently undeveloped with limited space available for improvements within the ROW beyond the installation of a stabilized launch ramp and limited parking

Recommendations:

- Install Landing Marker signage visible from the river;
- Provide site BMPs to stabilize the landing/launch and associated driveway;
- Pursue the acquisition of easements from the adjacent landowners for additional space along the river, if additional space is necessary;
- Install informational and directional signage to guide trail users to local businesses and attractions.



South Renovo Access

Type: existing access, undeveloped

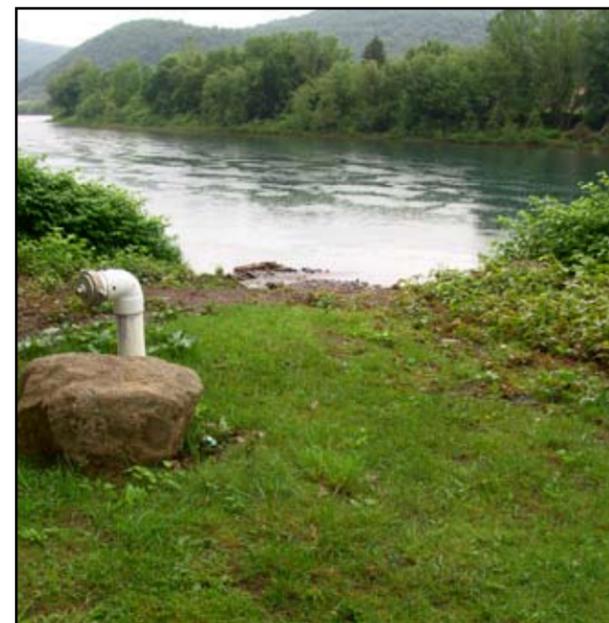
Location: river mile 97.8

Ownership: private

Description: This access point in South Renovo is located at the end of a very steep gravel driveway leading from Susquehanna Avenue to the landing on privately owned property. On street parking is available on the dead end street leading to the access driveway. A USGS Gage station is located at the top of the gravel driveway.

Recommendations:

- Acquire or obtain an easement from the property owner to formalize this site for public use;
- Install Landing Marker signage visible from the river;
- Provide site BMPs to stabilize the landing/launch and associated driveway;
- Install informational and directional signage to guide trail users to local businesses and attractions.



PA Flaming Foliage Access

Type: existing access

Location: river mile 97.5

Ownership: PA Flaming Foliage Association no parcel information was included for this location in the County GIS Tax parcel database

Description: This is Renovo's main access point to the river located next to the PA 144 Bridge to South Renovo on PA 120. Parking is available for approximately 10 cars and there is an open lawn area with a picnic pavilion. LHR interpretive signage has been installed here.

Recommendations:

- Install Landing Marker signage visible from the river;
- Provide site BMPs to stabilize the landing/launch and associated driveway;
- Install informational and directional signage to guide trail users to local businesses and attractions.



Tamarack Island

Type: potential camping site

Location: river mile 95.5

Ownership: assumed to be property of the Commonwealth

Description: This river island located halfway between Renovo and North Bend may be considered for use as an overnight camping site. There are local concerns over this site being a hot spot for underage drinking due to its unique combination of having relative ease of access from the local communities yet remote nature in the middle of the river where enforcement is difficult to apply. The site has the physical capabilities to provide for a camp site

Recommendations:

- Determine who maintains actual ownership of this island. If privately owned, seek acquisition or an easement to formalize for public use;
- Further consideration for potential use of this site will be necessary to determine its feasibility.

Assuming it will be feasible:

- Install Landing Marker signage visible from the river;
- Create a better landing site at one location to provide for better accessibility and minimize river bank disturbance;
- Provide site BMPs to stabilize trail connection between landing site and camping area.



PAFBC North Bend Access

Type: existing access, partially developed

Location: river mile 94.8

Ownership: PA Fish and Boat Commission

Description: Future development plans for this site include a parking area for 18-20 vehicles and general improvements to the launch and driveway access. The existing launch is an earthen ramp that could benefit from stabilization BMPs. LHR interpretive signage is installed at this site. Japanese knotweed is ever present along the river bank and should be eradicated and replaced with BMPs or native non-invasive riparian edge plantings to provide for bank stabilization.

Recommendations:

- Continue installation of the proposed improvements;
- Install Landing Marker signage visible from the river;
- Provide site BMPs to stabilize the landing/launch and associated driveway;
- Install informational and directional signage to guide trail users to local businesses and attractions.



PAFBC Hyner Access

Type: existing access

Location: river mile 90.9

Ownership: PA Fish and Boat Commission

Description: This existing access is just down river from the Hyner bridge crossing of the river. Parking is available with gravel areas adjacent to the asphalt driveway and an existing lot nearest PA 120. LHR interpretive signage has been installed at this access.

Recommendations:

- Install Landing Marker signage visible from the river;
- Provide site BMPs to stabilize the landing/launch and associated driveway;
- Install informational and directional signage to guide trail users to local businesses and attractions.



McCloskey Island

Type: potential camping site

Location: river mile 88.9

Ownership: private

Description: This island is one of the largest in the West Branch and is nearly one mile long. Access to the island is best along the left channel nearest the downriver end where elevations on the island are higher in relation to the river and where many of the existing historically used camping areas are located. Upriver portions of the island are lower in elevation with less mature vegetation characterized by birch thickets and some stands of knotweed. Similar to State Game Lands, this island does not have any current provisions for public use.

Recommendations:

- Install Landing Marker signage visible from the river;
- Provide site BMPs to stabilize trail connection between landing site and camping area;
- Pursue acquisition or obtain an easement from the private landowner to formalize all or a portion of the island for public use.



PennDOT Rest Area

Type: potential access

Location: river mile 87.1

Ownership: PennDOT along PA 120, private at river bank.

Description: This rest area provides a respite and restrooms for motorists along PA 120. This site includes 2 public bathrooms, parking for 7 vehicles, and an open lawn area of about 1.5 acres with multiple picnic tables, fire pits, and a gazebo. This site was once used as an overnight campsite/stop for a sojourn and has potential to be used an access point (for canoes/kayaks only). The river landing is difficult to locate from the water and is approximately 100 yards from the existing parking and restrooms. Knotweed is prevalent along the riverbank and poses a long term maintenance issue.

Recommendations:

- Install Landing Marker signage visible from the river;
- Provide site BMPs to stabilize trail connection between landing site and camping area;
- Pursue permission from PennDOT and acquire or obtain an easement from the private landowner to formalize this site for public use;
- Install informational and directional signage to guide trail users to local businesses and attractions;
- Install LHR interpretive signage and Water Trail orientation signage.



DCNR Baker Run Access

Type: future access to be developed

Location: river mile 83.2

Ownership: PA DCNR Bureau of Forestry

Description: This undeveloped site will provide an additional and much needed access point to the river between the Hyner Access at river mile 90.9 and the Woodward Township Access in Lock haven at river mile 70.0. Preliminary DCNR plans include development of a parking area for cars and trailers, a restroom facility, and an access driveway to the river's edge with a concrete plank boat ramp. There is an elevation difference of approximately 60 feet between PA 120 and the river, requiring a steep access driveway to the river.

Recommendations:

- Move forward with installation of the proposed improvements;
- Install Landing Marker signage visible from the river;
- Install informational and directional signage to guide trail users to local businesses and attractions.



Farrandsville Bridge Access

Type: potential access

Location: river mile 74.1

Ownership: private

Description: This currently informal access point could potentially be used as an access point for canoes and kayaks only due to the steep embankment between the roadway and river. The railroad bridge crossing the river at this location marks the beginning of the slack water created by the dam in Lock Haven making paddling more difficult for boaters heading down river. The bridge is also a concern as people can and do climb onto it which is a dangerous activity.

Recommendations:

- Pursue acquisition or obtain an easement from the private landowner to formalize this site for public use;
- Install Landing Marker signage visible from the river;
- Provide site BMPs to stabilize trail connection between landing site and roadway;
- Provide preventive measures to keep people from climbing onto the railroad bridge.



Douglas H. Peddie Memorial Park Access

Type: future access to be developed

Location: river mile 72.5

Ownership: City of Lock Haven

Description: Peddie Park is at the upper end of the impoundment created by the dam in Lock Haven. An existing at-grade railroad crossing within the park provides access to the river and the proposed launch site to the southern end of the park.

Recommendations:

- Develop a site plan to provide for boat access;
- Install Landing Marker signage visible from the river;
- Provide site BMPs to stabilize landing site and access driveway;
- Install informational and directional signage to guide trail users to local businesses and attractions.



Woodward Township Access

Type: existing access

Location: river mile 70.0

Ownership: Woodward Township

Description: This is the largest and most developed access point in the study. There is parking for approximately 35-40 trailers, a large bathroom facility, and a concrete boat launch ramp. This site primarily serves powered boat access to the impoundment created by the dam located about ¼ mile down river from the launch ramp.

Recommendations:

- Install Landing Marker signage visible from the river;
- Install informational and directional signage to guide trail users to local businesses and attractions.



Lock Haven Veterans Memorial Park Access

Type: existing access

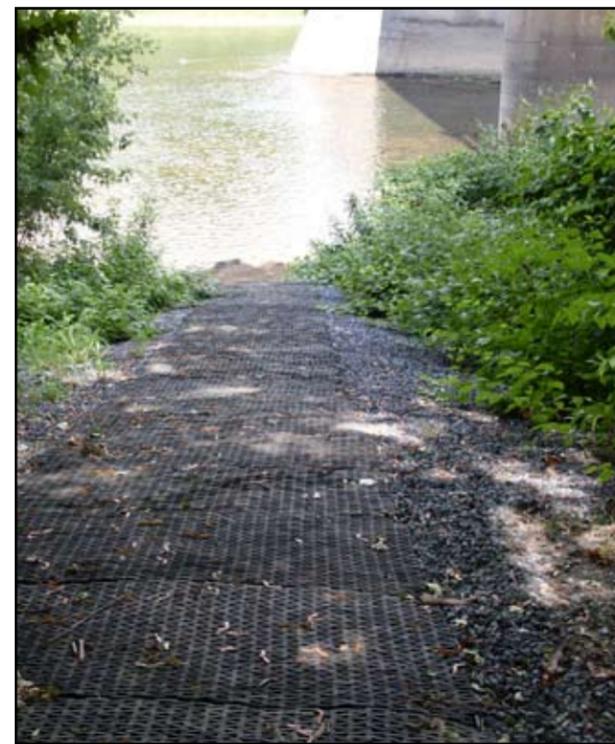
Location: river mile 68.9

Ownership: City of Lock Haven

Description: This existing park at the end of Water Street and before the River Road bridge crossing to the island has parking for 15 cars +/-, and a picnic pavilion within 2.25 acres of passive open space (see Figure 17).

Recommendations:

- Install Landing Marker signage visible from the river;
- Provide site BMPs to stabilize landing site and access driveway;
- Install informational and directional signage to guide trail users to local businesses and attractions.



Spook Hollow Access

Type: future access to be developed

Location: river mile 64.8

Ownership: public right-of-way

Description: This access point will be located directly adjacent to the McElhattan Drive bridge crossing of the West Branch Susquehanna River. Parking for this access could be combined with a trailhead facility for the Pine Creek Connector Trail to follow Spook Hollow Road.

Recommendations:

- Develop a site plan to provide for boat access
- Install Landing Marker signage visible from the river;
- Provide site BMPs to stabilize landing site and access driveway;
- Install informational and directional signage to guide trail users to local businesses and attractions.



PAFBC Pine Access

Type: existing access

Location: river mile 62.1

Ownership: Wayne Township

Description: This existing PAFBC access site associated with the Alan Gardner Memorial Park contains a picnic pavilion, parking for 20 cars, an asphalt launch ramp, and interpretive signage associated with the Water Trail. This site is maintained by Wayne Township (see Figure 18).

Recommendations:

- Install Landing Marker signage visible from the river;
- Install informational and directional signage to guide trail users to local businesses and attractions.



DCNR Pine Creek Access

Type: future access to be developed

Location: river mile 58.5, approx. 1 mile upstream along Pine Creek

Ownership: Commonwealth of Pennsylvania

Description: This future access point is to be developed on approximately 1.5 acres of land that was once the site of the historic Tiadaghton Elm where the Fair Play Men declared their independence from England on July 4th, 1776. Directly adjacent to this site is one of a few remaining lenticular truss bridges that is currently being refurbished and will be reset in the near future. This bridge carries River Road between Clinton and Lycoming Counties

Recommendations:

- Develop a site plan to provide for boat access;
- Install Landing Marker signage visible from the river;
- Provide site BMPs to stabilize landing site and access driveway;
- Install informational and directional signage to guide trail users to local businesses and attractions.



Figure 8 – Family of proposed wayfinding signs.

PROPOSED IMPROVEMENTS FOR CAMPING AND ACCESS SITES

Signage / Wayfinding System

A signage system with a consistent design will assist water trail users by identifying what camping and/or access sites they may enter while traveling on the river, and will assist adjacent landowners along the river by helping to prevent trail users from unknowingly trespassing onto their properties. This need was identified by the Northcentral Pennsylvania Conservancy (NPC) Steering Committee and the public participation process associated with the previously referenced Stewardship Study, and is one of the goals of this study.

Interpretive panels have been placed at many of the existing access sites by the Lumber Heritage Region and Susquehanna Greenway Partnership. These signs offer information about the water trail and historical events associated with the lumbering industry.

Through prior experience gained in developing a system of water trail signage for the Schuylkill River

Heritage Area, the consultant has developed a conceptual signage system that may be applied to the West Branch Susquehanna Water Trail. While the final design of these signs may change with further design development, the concept related to the purpose of the proposed signage should be maintained (see Figure 8).

One consistent element in all of the signs is a unique 'help' number that could be tied to a 911 or similar emergency access system so that emergency personnel could instantly identify the location at which help is needed.



Figure 9 – Landing Marker Sign.

The following are examples of each of the proposed individual sign types:

Landing Marker Signs:

These signs would be placed at each and every camping and access site along the water trail. These signs should be placed in the most visible location and at an elevation that would prevent it from being damaged by normal seasonal flooding. These landing marker signs must be consistent throughout the entire trail so that trail users will know exactly what to look for while navigating the river. Materials and construction of these landing markers needs to be substantial to avoid river damage and theft or vandalism (see Figure 9).

Local Directional Signs

These signs should be placed at site specific location within camping and/or access sites to direct trail users to adjacent trails, attractions, and/or facilities. Consistency in the look of these signs remains important, and the materials and construction should be theft/vandal proof as possible yet easily replaceable in case they do happen to be destroyed or disappear. These signs are generally not recommended for the remote camping sites due to the increased probability of theft/vandalism at those locations (see Figure 10).



Figure 10 – Local Directional Sign.

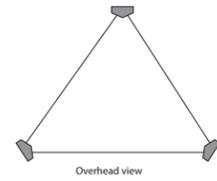


Figure 11 – Informational Kiosk with 3 panels

Informational Kiosks

These multi-paneled signs should be installed only at locations that are accessible by vehicle and can be generally monitored. Although there are products available that are very durable and vandal resistant, they are not damage proof and would be relatively expensive to replace on a regular basis. Therefore these proposed sign types should only be placed at the higher the existing or proposed access sites (see Figure 11).

Typical Shoreline Protection and Best Management Practices (BMPs) for Boat Landing Areas

Shoreline protection and/or best management practices (BMPs) could be installed at camping access and vehicle access points along the water trail.

Camping access points are typically not accessible by road vehicles along the West Branch and



Figure 12 – Camp site landing area that would benefit from Shoreline BMPs.

therefore shoreline protection at these points would be minimal. Many of the camping sites currently have a gravel bar that could be used for boat parking in moderate flows and the existing trails to camping areas are mostly sufficient. However, some camping locations have no readily available location to moor/store boats and the trails to some campsites are relatively steep and slippery. These are the sites that would benefit most from the installation of BMPs. Figure 12 is an example of this kind of access point.

BMPs at these relatively remote locations should be low impact, should be designed to provide minimal impact to the surrounding area and riverbank and use natural materials to the greatest extent possible. These types of designs not only provide an environmental benefit to the water trail but also provide a practical application for construction. Due



Figure 13 - Erosion control matting used for shoreline stabilization.



Figure 14 - Rock Toe Protection used for shoreline stabilization.



Figure 15 - Plastic Webbing or GeoGrid Used for Shoreline Stabilization.

to the remoteness of some of the sites, the BMP designs should involve onsite materials such as boulders or downed trees or be of minimal design that the materials could be boated in.

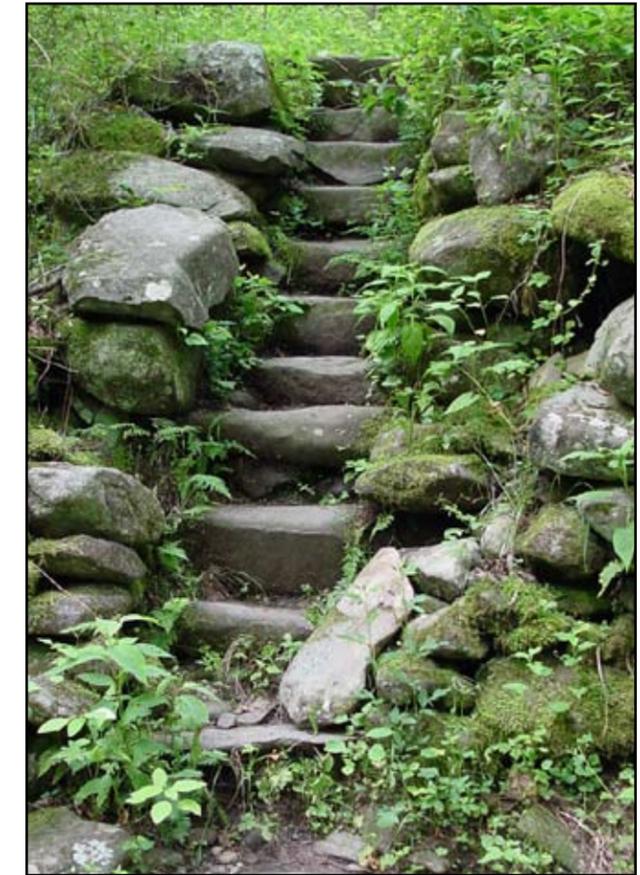


Figure 16 - Stone Stairway



Figure 17 - Railroad Tie Stairway



Figure 18 - Log and Root Stairway

Shorelines that need slope enhancements could be minimally excavated to create a more gradual grade and protection could be installed in the form of permanent erosion control mat, stone, or plastic webbing. Figures 13 through 15 show typical BMPs that could be installed at these locations. These images represent larger scale applications than would be needed at most West Branch Camping and Access locations. Smaller applications would be appropriately scaled down.

Stairways made of natural materials could be installed in the stream bank to improve access to the campsites. Figures 16-18 show types of low impact stairways.

New proposed Access (launch) sites would benefit from the installation of BMPs. These areas should be designed with the parameters of minimal impact and should be based on expected vehicle use. The



Figure 19 - Gravel Access Ramp with Boat Storage.

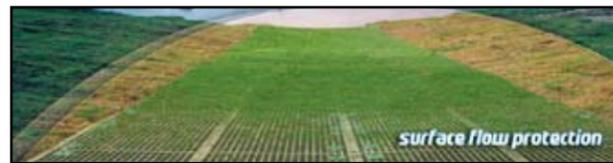


Figure 20 - Plastic Webbing or GeoRunner used for vehicular access ramp.



Figure 21 - Grass Pavers used for a vehicle access ramp.



Figure 22 - Paved Boat Launch Area.

areas of heavier projected vehicle use may need more involved or “harder” designs. BMPs at these accessible locations could include more structural alternatives. Materials could be delivered and installed by heavy equipment.

Shorelines at these points could be excavated to create a more gradual grade and protection and/or launch ramps could be in the form of concrete, pavers, plastic webbing, and stone. Figures 19-22 show typical BMPs that could be installed at these locations.

Operation and Maintenance

This feasibility study concurs with the recommendations of the NPC Stewardship Plan regarding the management and maintenance of the

Water Trail. The following is excerpted from the NPC Plan:

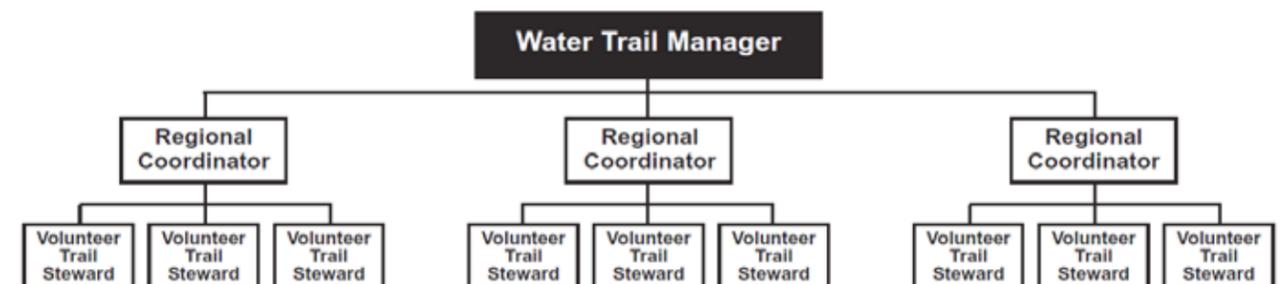
*At the present time, the **Susquehanna Greenway Partnership** serves as the Water Trail Manager of record, but there is no formal structure in place and limited resources for organizing volunteers and championing their efforts throughout the corridor. Development of a volunteer stewardship network would build a strong foundation to implement the recommendations of this plan for sustainability of the Water Trail. People are reportedly willing to work, but they need good direction, leadership, and specific tasks to accomplish.*

Recommendation for Management Structure

The recommendation of an effective management structure for this Water Trail would be a tiered approach, built on the strong foundation of local volunteers. Volunteer Trail Stewards would be used to make site visits, record observations and provide maintenance at sites. Regional Coordinators would be “go to” people for the Trail Stewards, organizing regional information and providing coordination with the Water Trail Manager. The Water Trail Manager is responsible to ‘see the whole picture’. The Water Trail Manager must provide leadership to unify the local and regional efforts, and support to assist them to follow through with their tasks. Together, these individuals and groups will form the Volunteer Water Trail Stewardship Network.

Recommendation for Management Structure

The recommendation of an effective management structure for this Water Trail would be a tiered approach, built on the strong foundation of local volunteers.



Please refer to the full NPC Stewardship document for detailed descriptions of the roles and responsibilities for Trail Stewards, Regional Coordinator, and Water Trail Manager.

Maintenance

The NPC developed a detailed checklist for use by the Trail Stewards for both routine and seasonal maintenance. This checklist can be used to not only identify the more immediate needs, but also identify potential improvements that will help the sites to achieve long term sustainability. This checklist may be found in the appendix of this report.

LEGAL FEASIBILITY

Potentially Affected Properties

This plan recommends the use of publicly owned land and avoids impacts to privately owned land wherever possible. However, where friendly agreements can be reached, some sites will require acquisition through either fee simple purchase, easement if possible, or by donation from a private landowner.

The following is a summary of the number of potentially affected privately-owned parcels by type:

Camping Sites:

- The following is a listing of the potential camping sites that are located on State Game Lands (8):
 - Sterling Run West
 - Sterling Run East
 - Jeep Trail
 - Pine Run West
 - Spruce Run
 - Leaning Pine East
 - Boughner Run
 - Moores Run

Each of these sites will need to be formalized for public use as overnight camping is illegal under current Game Commission policy.

- Tamarack Island may require an easement if determined to be in private ownership.
- McCloskey Island is privately owned according to the County GIS tax parcel database and will require purchase or an easement to formalize this location for public use.

Access Sites

- Keating Access is on privately owned land and will require purchase or an easement for continued public use. If not, this site should be removed from the Water Trail Guide.
- 5th Street Access in Renovo may require easements from adjacent property owners along the river bank if additional space for improvements is required.
- Farrandsville Access at the existing railroad bridge is privately owned and will require purchase or an easement for public use. If not, this site should not be considered for further promotion as an access point along the Water Trail.
- PennDOT Rest Area will require purchase or an easement from the private landowner for the property between the rest area and river to provide for public access to the river. Please refer to the Legal Feasibility Section of Chapter 6: Proposed County Greenway & Multi-Modal Trails Network for more information regarding easement acquisition and general liability issues.

Other Liability Issues affecting the Water Trail:

The following is excerpted from the NPC Stewardship Plan:

There are two liability issues that the Water Trail Manager (WTM) will need to address, liability for private property owners who allow the Volunteer Trail Stewards to assist with, or perform maintenance tasks, and liability for all the volunteers that serve as part of the stewardship network for any injuries they

may receive while performing their duties. The WTM needs to evaluate these issues and create a risk management plan to ensure partner landowners and volunteers are aware of any liability issues they may face.

The Pennsylvania Recreational Use of Land and Water Act (RULWA) needs to be reviewed for applicability to this Water Trail. The Act distinguishes between “developed” land and/or facilities and open space and provides protection at varying levels based on the level of development on the property. The Water Trail Manager needs to know and understand what activities the volunteers should and should not undertake and how those activities may impact the landowners. The landowner agreement that defines the terms and conditions of assistance private landowners will accept from the volunteers should address liability. The landowner will need to maintain adequate insurance coverage based on recommendations from their legal advisor(s), and the stewardship network will need to maintain liability insurance for its volunteers.

The Water Trail Manager will need to work with appropriate legal counsel and insurance providers to research and determine how to address volunteer liability. While many volunteers will have their own medical coverage, the stewardship network should carry volunteer accident insurance. This will demonstrate that the Network cares about its volunteers, and will supplement any coverage the volunteers may have for things like missed work, etc. At a minimum, a waiver of responsibility should be drafted and reviewed by legal counsel. All volunteers should be required to sign the waiver prior to conducting any work. Any volunteer under 18 should sign it as well as their legal guardian. The Water Trail Manager should maintain these waivers.

FINANCIAL FEASIBILITY

Estimate of Probable Development Costs

This Feasibility Study-level estimate of probable development costs is intended to provide a general range of costs for the various facilities and improvements proposed as part of the proposed improvements described herein. This estimate is based on 2010 construction costs including standard prevailing wage rates associated with the public sector. Costs will need to be adjusted at a rate of 3-4% for each year following to account for the general rate of inflation. As more detailed design and engineering information becomes available during subsequent development phases, costs will be more accurate. Costs will also be heavily impacted by market conditions current at the time. Escalation of materials and labor costs may occur.

Costs are for installed improvements only and do not include property acquisition or easements.

The following is a breakdown of the estimated costs for proposed improvements by location type:

Potential Camping Sites: 12

- Signage: \$4000 each site (Landing Marker, Local Directional) X 12 sites = \$48,000
- Landing BMP Installations: \$7,500 allowance per site X 12 sites = \$90,000
- Subtotal: \$138,000

Existing Access Sites: 6 (Karthus, Flaming Foliage, Hyner, Woodward Twp., Lock Haven Veterans Memorial Pine)

- Signage: \$10,000 each site (Landing Marker, Local Directional, Informational Kiosk) X 6 sites = \$60,000
- Landing BMP Installations: \$15,000 allowance per site X 6 sites = \$90,000
- Parking/Site Improvements: \$15,000 allowance per site X 6 sites = \$90,000
- Subtotal: \$240,000

Potential or Undeveloped Access Sites: 11 (DCNR, Keating, 5th Street, South Renovo, North Bend, PennDOT Rest Area, Baker Run, Farrandsville, Peddie Park, Spook Hollow, Pine Creek)

- Signage: \$12,500 each site (Landing Marker, Roadway Marker, Trail Directional, Informational Kiosk) X 11 sites = \$137,500
- Landing BMP Installations: \$15,000 allowance per site X 11 sites = \$165,000
- Parking/Site Improvements: (\$25,000 allowance per site X 11 sites = \$275,000
- Subtotal: \$577,500

Total Improvements:	\$955,500
Design & Engineering (15%):	\$144,500
GRAND TOTAL:	\$1,100,000

ACTION PLAN

Phased Implementation

The following recommendations are suggested and listed in order of priority and are not necessarily meant to be sequential.

1. Proceed with the recommended management structure as outlined in the NPC Stewardship and Conservation Plan of a tiered approach including a system of Volunteer Trail Stewards, Regional Coordinators, and an overall Water Trail manager. This is an important step in providing for long term sustainability and use of the West Branch Water Trail and its facilities, including water trail camping and access site development, monitoring, and maintenance. Currently, the Susquehanna Greenway Partnership is the official Water Trail Manager of record with the National Park Service;
2. Foster negotiations between the PA Game Commission and PA DCNR Bureau of Forestry for a land swap of the existing illegal campsites

located on State Game Lands;

3. Acquire all necessary easement agreements for formal public access to camping and access sites;
4. Install signage to brand camping and access sites from the river – incorporate into the LHR Water Trail Map & Guide ;
5. Continue development of new and improvements to existing access sites as funding becomes available.

Project Partners:

The following is an excerpt from the NPC Stewardship Plan regarding Public Partnerships:

There is not a single organization, entity, or individual that can successfully implement this Plan by acting alone. It will take partnerships, cooperation, communication, and multiple partners working toward a common goal. Nearly all of the recommendations in this plan will require some level of collaboration. The key will be keeping these collaborations focused on the common goal while acknowledging the individual efforts that make each collaboration a success. The Water Trail Manager must be capable of facilitating connections between partners and coordinating activities and efforts.

Federal and state level support is available through The Pennsylvania Water Trails Partnership. This group was formally established in September of 2008. An excerpt from The Partnership statement indicates that it was formed..... "In order to ensure the ongoing stewardship and sustainability of our Water Trails..., the Pennsylvania Department of Conservation and Natural Resources, Pennsylvania Fish & Boat Commission, National Park Service-Chesapeake Bay Gateways and Watertrails Network, National Park Service-Rivers, Trails & Conservation Assistance Program and the Pennsylvania Environmental Council agree to work together in a coordinated effort with local and regional

organizations to achieve collaborative goals of the Pennsylvania Water Trails Partnership."

Additional partners for long-term Water Trail sustainability:

Public Agencies that have a role and interest:

- Chesapeake Bay Gateways and Watertrails Network (CBGN)
- National Park Service Rivers, Trails & Conservation Assistance Program (NPS-RTCA)
- Susquehanna River Basin Commission (SRBC)
- United States Fish and Wildlife Service (USFWS)
- Pennsylvania Fish and Boat Commission (PFBC)
- Pennsylvania Department of Conservation and Natural Resources (DCNR)
- Pennsylvania Department of Environmental Protection (DEP)
- Pennsylvania Department of Transportation (PennDOT)
- County Conservation Districts (CCD)
- County Planning Staff

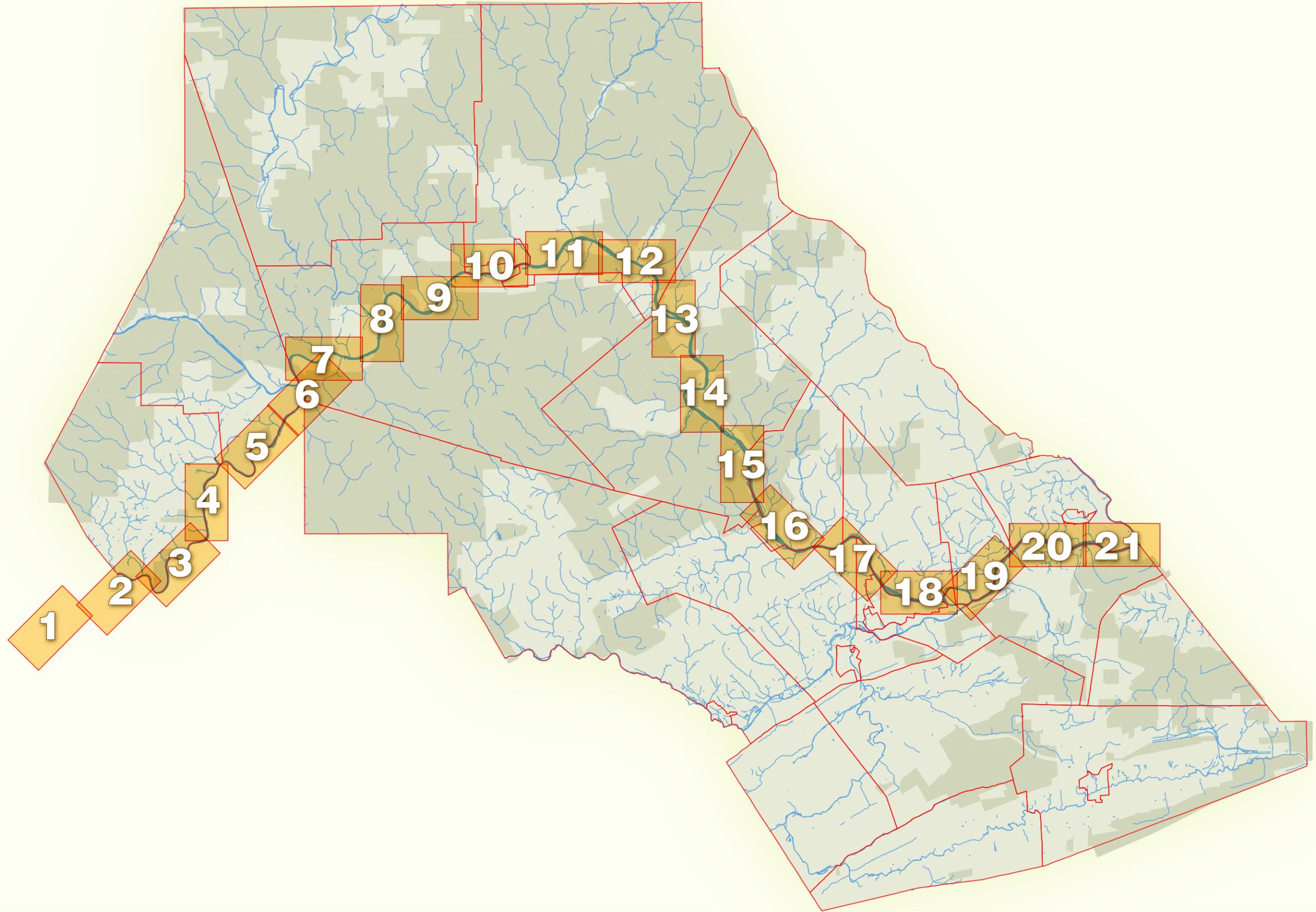
Non-governmental Organizations that can provide support in the form of information, being a source of manpower, and providing management:

- Susquehanna Greenway Partnership (SGP) - the Water Trail Manager of record
- Pennsylvania Environmental Council (PEC) - PA Water Trail Coordinator
- North American Water Trails, Inc. -a non-profit organization in partnership with the Chesapeake Bay Gateways Network
- Conservancies and Land Trusts: Northcentral Pennsylvania Conservancy (NPC), The Nature Conservancy (TNC), Clearwater Conservancy,

Western Pennsylvania Conservancy (WPC), and Rocky Mountain Elk Foundation (RMEF)

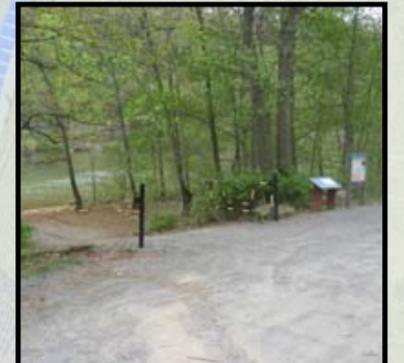
- County and Local Recreation Authorities and Commissions
- Local Tourist Promotion agencies and Chambers of Commerce
- Clinton County CleanScapes (an independent affiliate of PA CleanWays)
- West Branch Restoration Coalition (WBRC)
- Correctional Facilities and Boot Camps
- University Groups such as: Lock Haven University's Recreation Department, Biology Club, Outdoor Recreation Club, Fly Fishing Club, and Catholic Campus Ministries; Lycoming College's Cleanwater Institute, Lycoming Environmental Awareness Foundation, and the Flyco (the fly fishing club); The Susquehanna River Heartland Coalition for Environmental Studies; and various service clubs, fraternities and sororities.

There are other volunteer organizations and informal groups that may be interested in helping steward the Water Trail. This list includes churches, service clubs, local paddling groups, Bassmaster's clubs, garden clubs, Boy Scouts, Girl Scouts, sportsmen's clubs (Western Clinton County Sportsmen and Curwensville Anglers Restocking Program were two mentioned repeatedly) as well as churches, and Trout Unlimited Chapters.





DCNR Karthaus Access



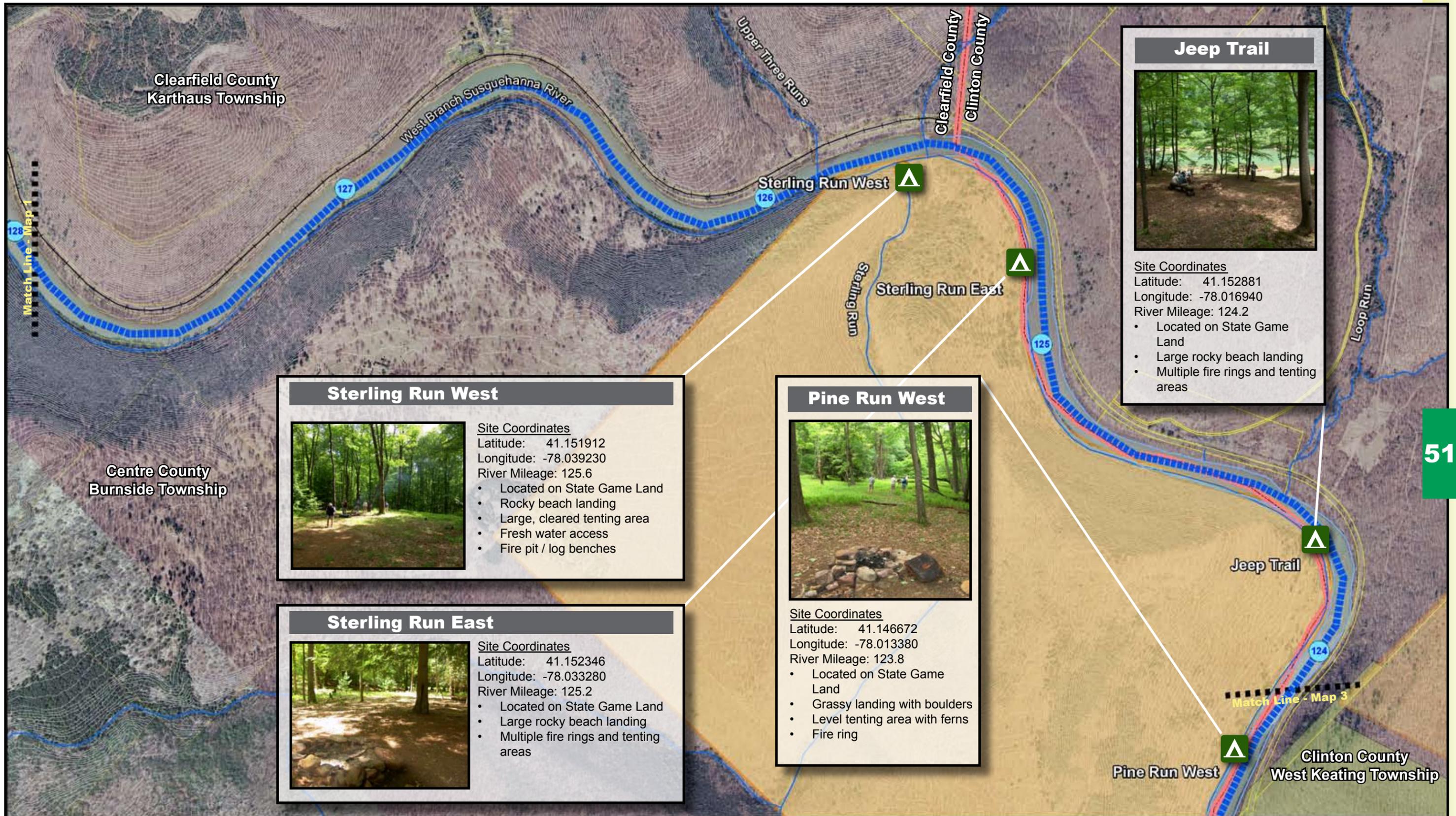
- Site Coordinates
 Latitude: 41.114444
 Longitude: -78.110977
 River Mileage: 132.4
- Access off of Pine Glen-Road (RT. 879)
 - Steep driveway access
 - 15 car parking lot
 - Handicap accessible rest-room - portable
 - Concrete launch
 - Gate at top of launch
 - Rocky beach
 - Picnic Table
 - Fire pits
 - Two interpretive panels

Legend

Camping Sites	State Game Lands	Municipalities
Canoe Access	State Forest Land	Trails
Boat Access	Parcels	River Miles
Parking	Contour	Waterways
Water Trail		

North arrow and graphic scale bar showing 0, 200', 600', 1000', and 2000'.

Inset map of Clinton County showing the location of the study area. **MAP 1 OF 21**



Jeep Trail

Site Coordinates
 Latitude: 41.152881
 Longitude: -78.016940
 River Mileage: 124.2

- Located on State Game Land
- Large rocky beach landing
- Multiple fire rings and tenting areas

Sterling Run West

Site Coordinates
 Latitude: 41.151912
 Longitude: -78.039230
 River Mileage: 125.6

- Located on State Game Land
- Rocky beach landing
- Large, cleared tenting area
- Fresh water access
- Fire pit / log benches

Pine Run West

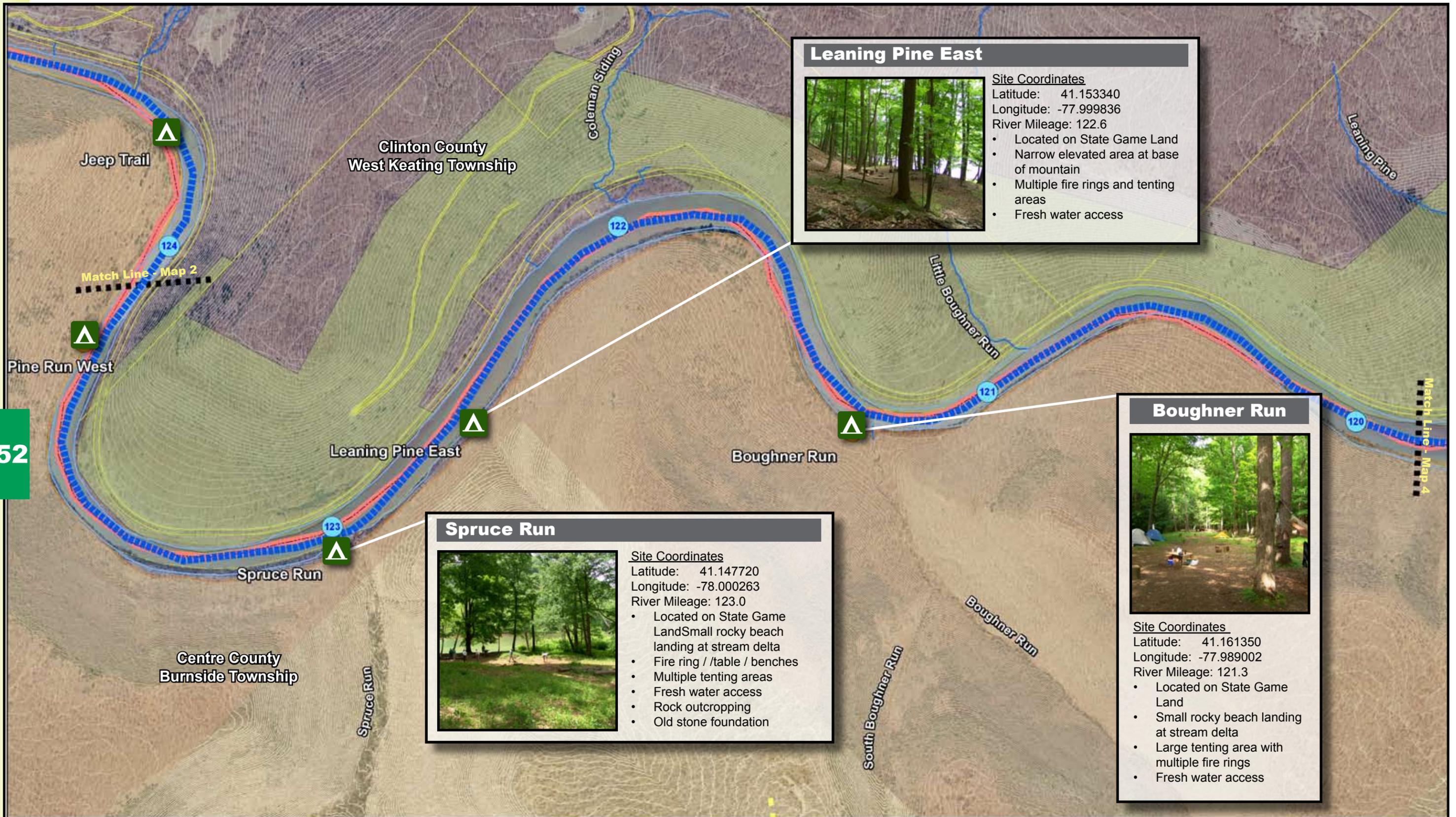
Site Coordinates
 Latitude: 41.146672
 Longitude: -78.013380
 River Mileage: 123.8

- Located on State Game Land
- Grassy landing with boulders
- Level tenting area with ferns
- Fire ring

Sterling Run East

Site Coordinates
 Latitude: 41.152346
 Longitude: -78.033280
 River Mileage: 125.2

- Located on State Game Land
- Large rocky beach landing
- Multiple fire rings and tenting areas



Leaning Pine East



Site Coordinates
 Latitude: 41.153340
 Longitude: -77.999836
 River Mileage: 122.6

- Located on State Game Land
- Narrow elevated area at base of mountain
- Multiple fire rings and tenting areas
- Fresh water access

Boughner Run



Site Coordinates
 Latitude: 41.161350
 Longitude: -77.989002
 River Mileage: 121.3

- Located on State Game Land
- Small rocky beach landing at stream delta
- Large tenting area with multiple fire rings
- Fresh water access

Spruce Run

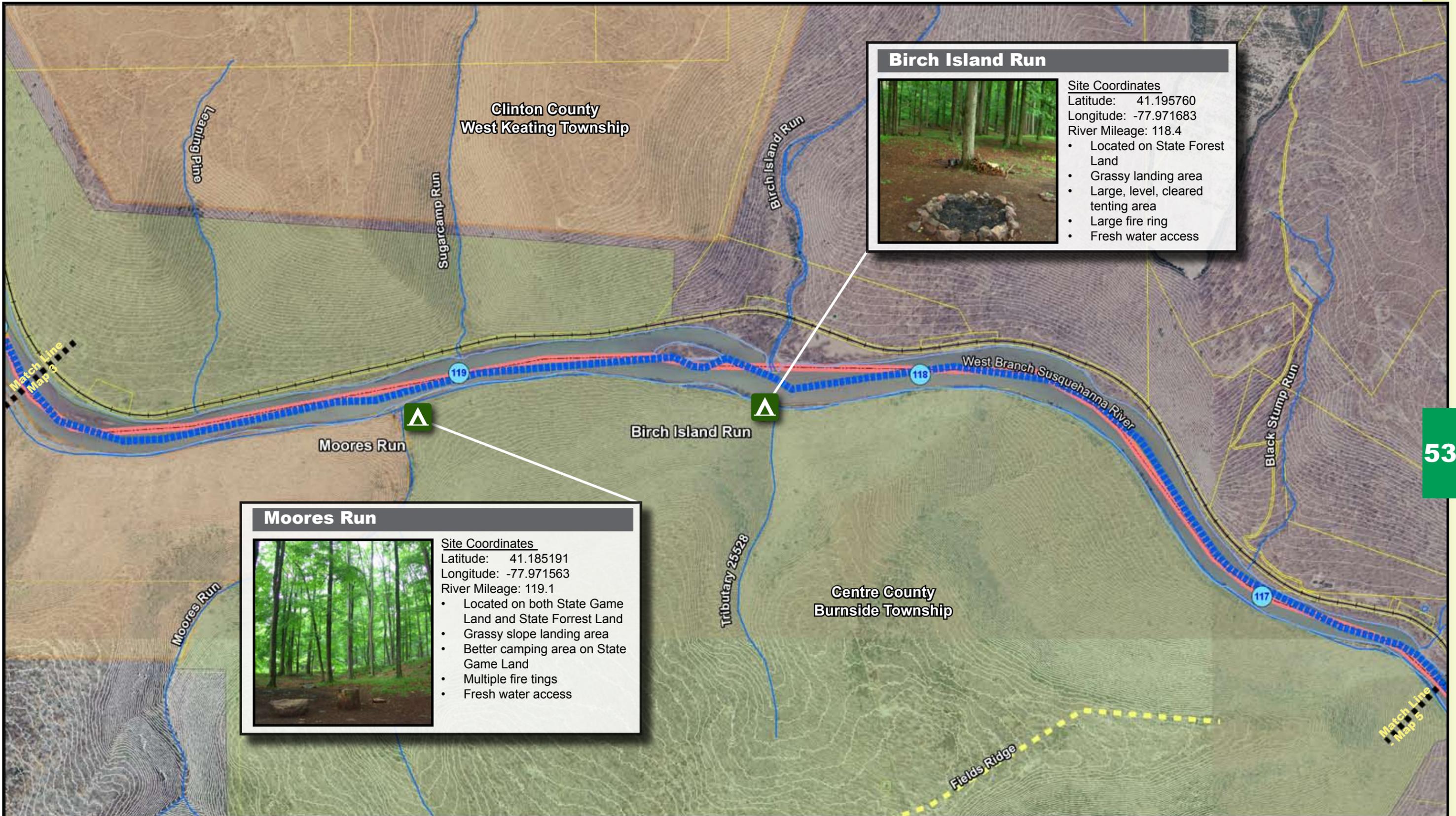


Site Coordinates
 Latitude: 41.147720
 Longitude: -78.000263
 River Mileage: 123.0

- Located on State Game Land
- Small rocky beach landing at stream delta
- Fire ring / table / benches
- Multiple tenting areas
- Fresh water access
- Rock outcropping
- Old stone foundation

Legend

Camping Sites	State Game Lands	Municipalities
Canoe Access	State Forest Land	Trails
Boat Access	Parcels	River Miles
Parking	Contour	Waterways
Water Trail		



Birch Island Run



Site Coordinates
 Latitude: 41.195760
 Longitude: -77.971683
 River Mileage: 118.4

- Located on State Forest Land
- Grassy landing area
- Large, level, cleared tenting area
- Large fire ring
- Fresh water access

Moores Run



Site Coordinates
 Latitude: 41.185191
 Longitude: -77.971563
 River Mileage: 119.1

- Located on both State Game Land and State Forrest Land
- Grassy slope landing area
- Better camping area on State Game Land
- Multiple fire tings
- Fresh water access

Clinton County
West Keating
Township

Clinton County
East Keating Township

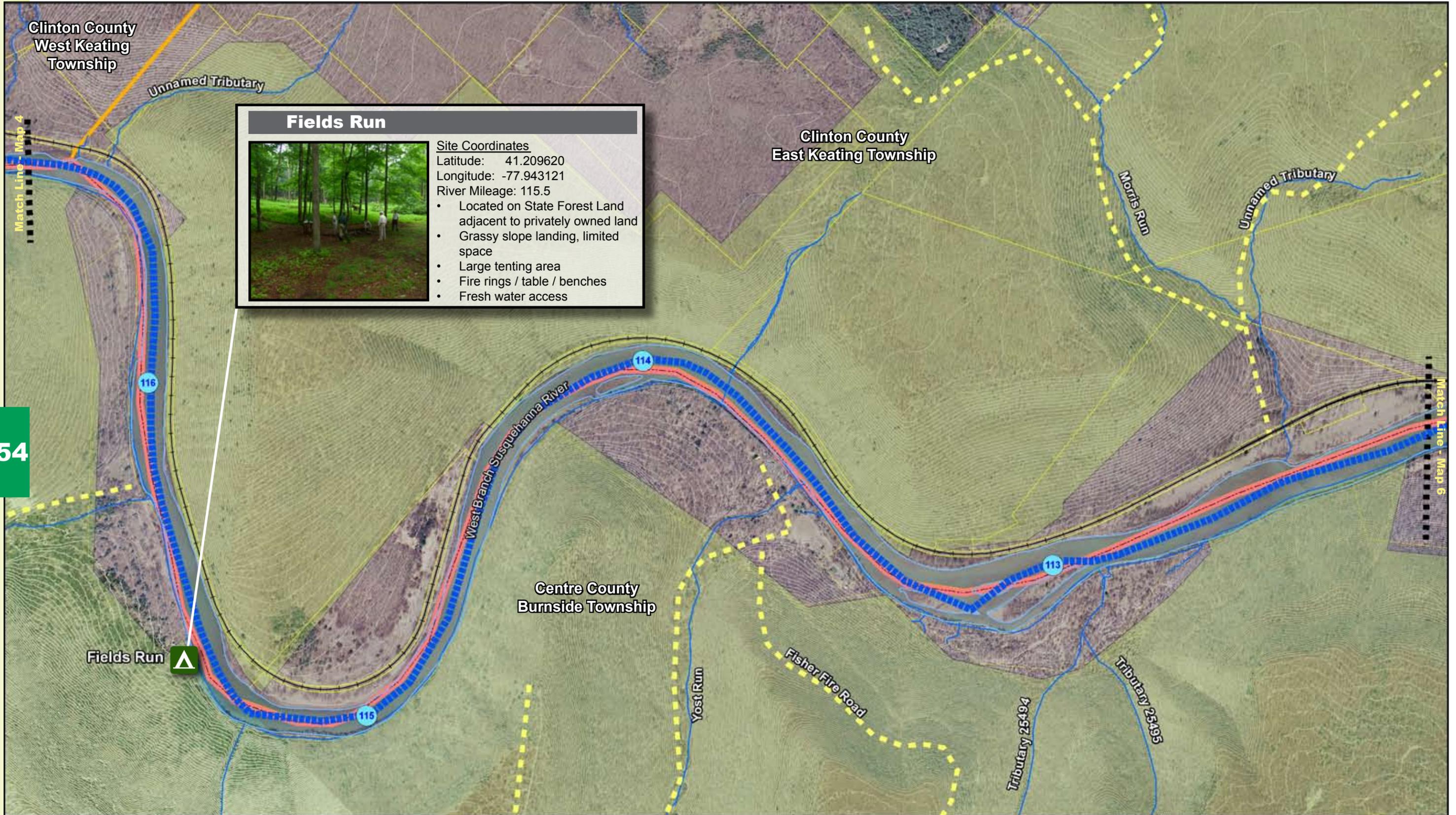
Centre County
Burnside Township

Fields Run



Site Coordinates
 Latitude: 41.209620
 Longitude: -77.943121
 River Mileage: 115.5

- Located on State Forest Land adjacent to privately owned land
- Grassy slope landing, limited space
- Large tenting area
- Fire rings / table / benches
- Fresh water access



Legend

Camping Sites	State Game Lands	Municipalities
Canoe Access	State Forest Land	Trails
Boat Access	Parcels	River Miles
Parking	Contour	Waterways
Water Trail		

MAP 5 OF 21

Keating Access



Site Coordinates
 Latitude: 41.260605
 Longitude: -77.906886
 River Mileage: 110.3

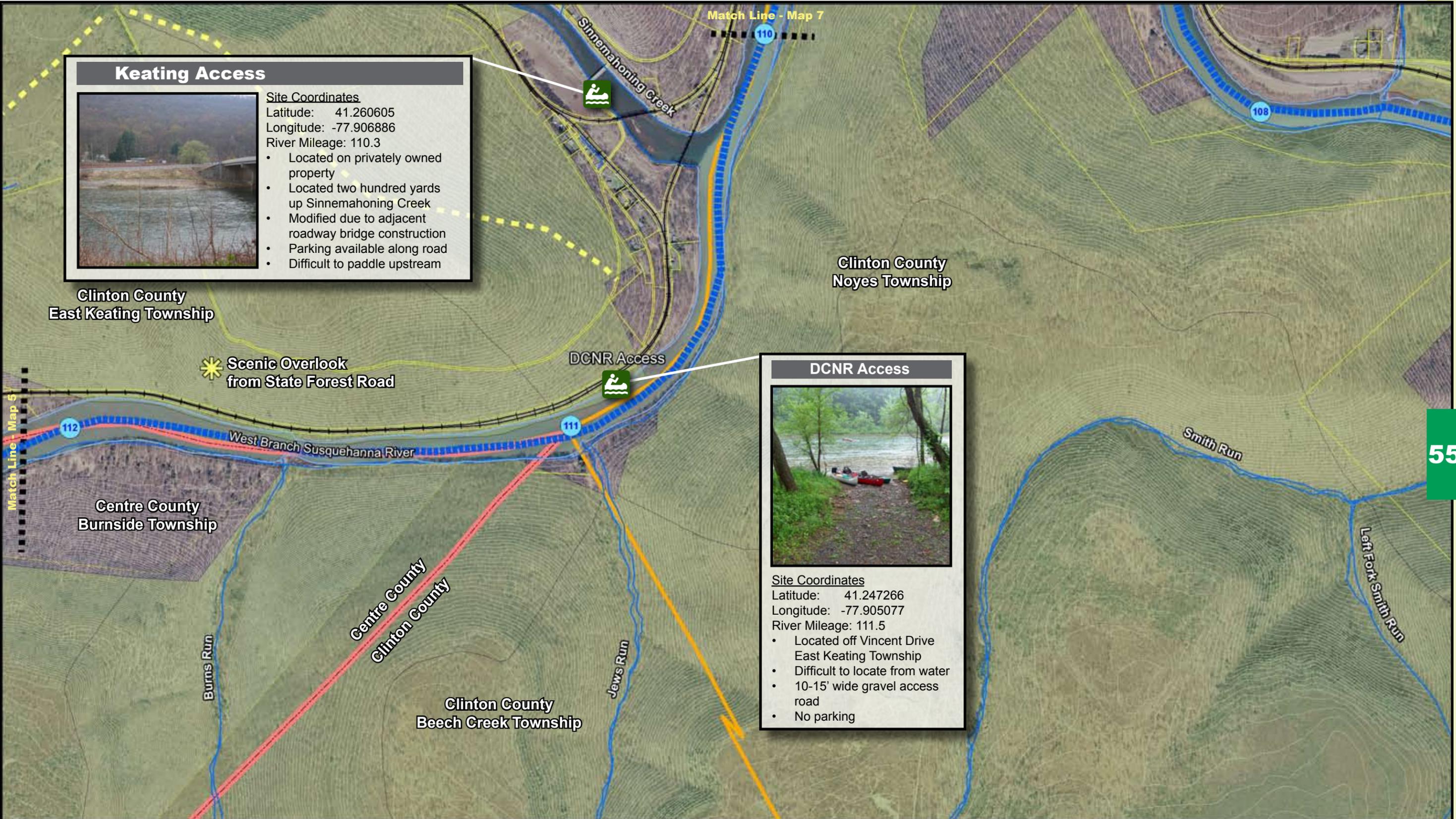
- Located on privately owned property
- Located two hundred yards up Sinnemahoning Creek
- Modified due to adjacent roadway bridge construction
- Parking available along road
- Difficult to paddle upstream

DCNR Access



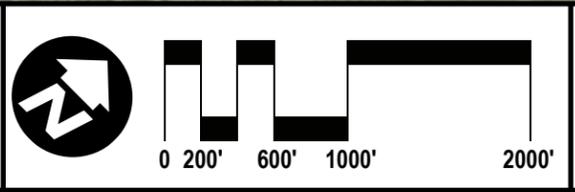
Site Coordinates
 Latitude: 41.247266
 Longitude: -77.905077
 River Mileage: 111.5

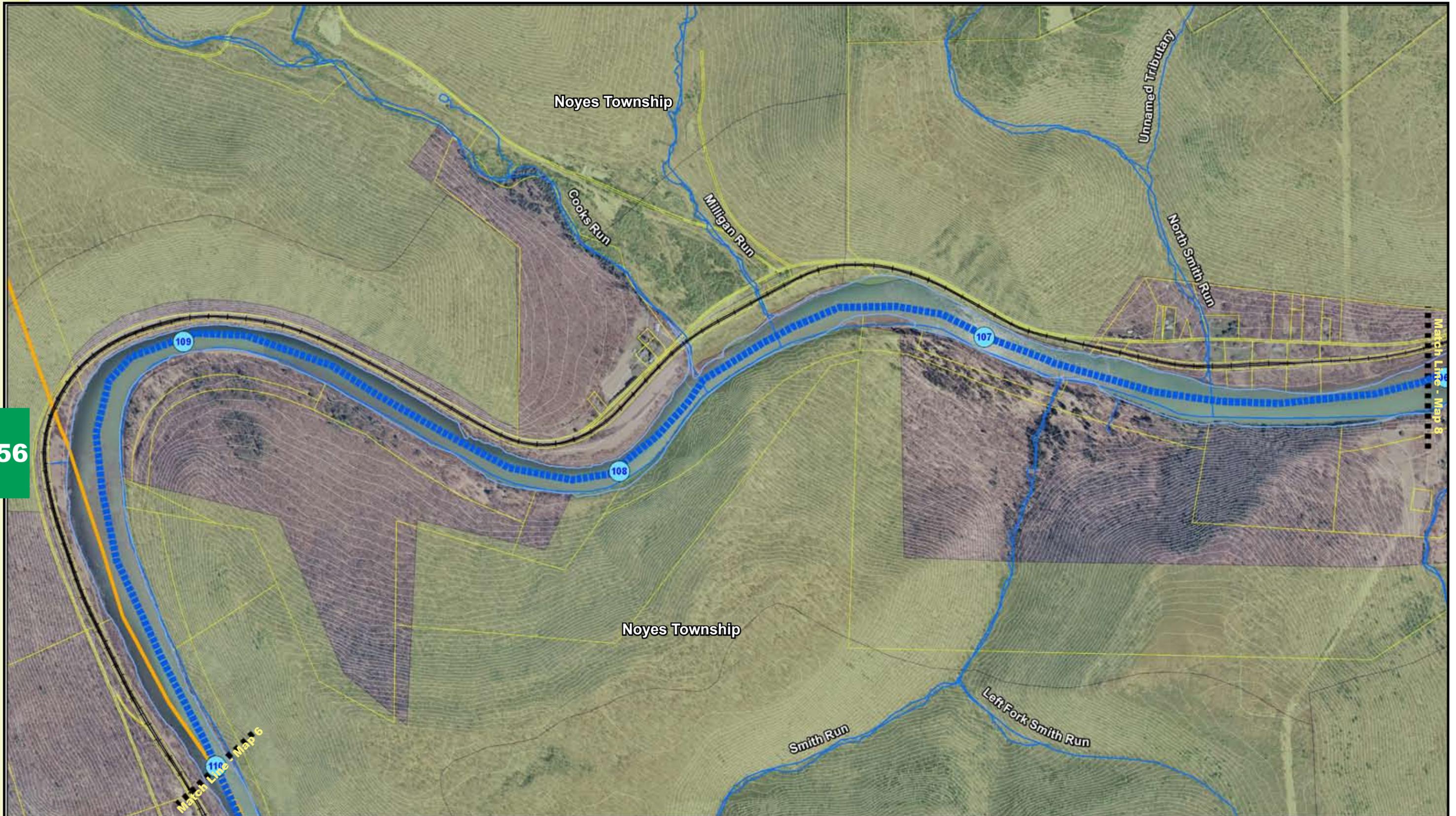
- Located off Vincent Drive East Keating Township
- Difficult to locate from water
- 10-15' wide gravel access road
- No parking



Legend

Camping Sites	State Game Lands	Municipalities
Canoe Access	State Forest Land	Trails
Boat Access	Parcels	River Miles
Parking	Contour	Waterways
Water Trail		

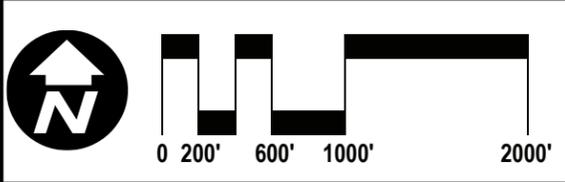


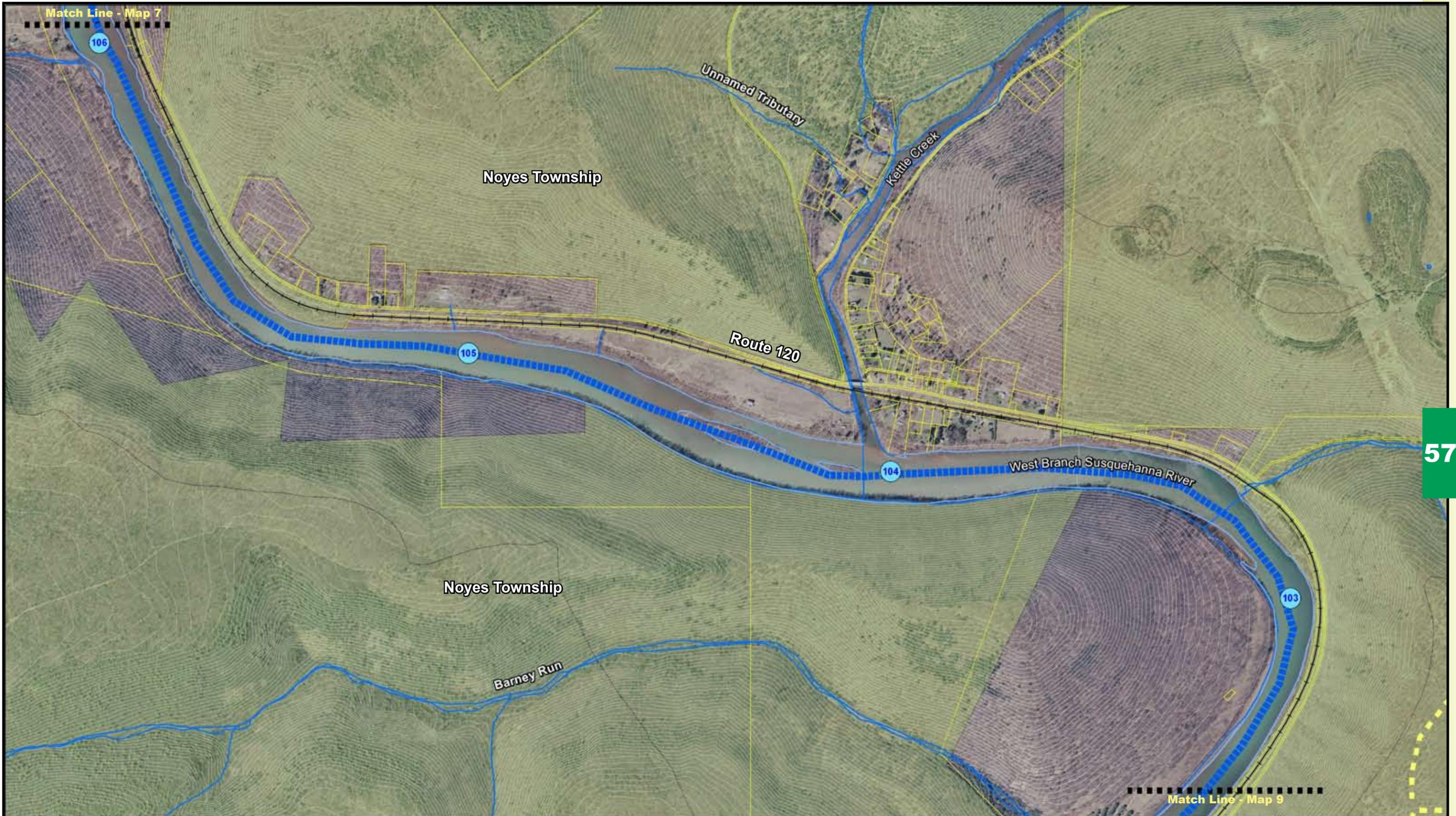


CLINTON COUNTY GREENWAYS & OPEN SPACE PLAN
 Clinton County, Pennsylvania
West Branch Susquehanna River Access & Camping Feasibility Study

Legend

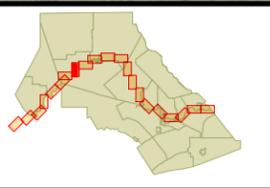
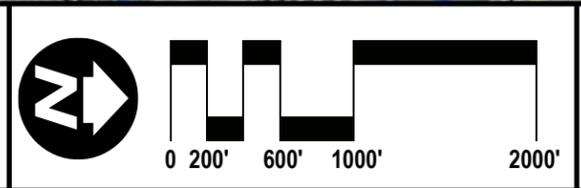
Camping Sites	State Game Lands	Municipalities
Canoe Access	State Forest Land	Trails
Boat Access	Parcels	River Miles
Parking	Contour	Waterways
Water Trail		

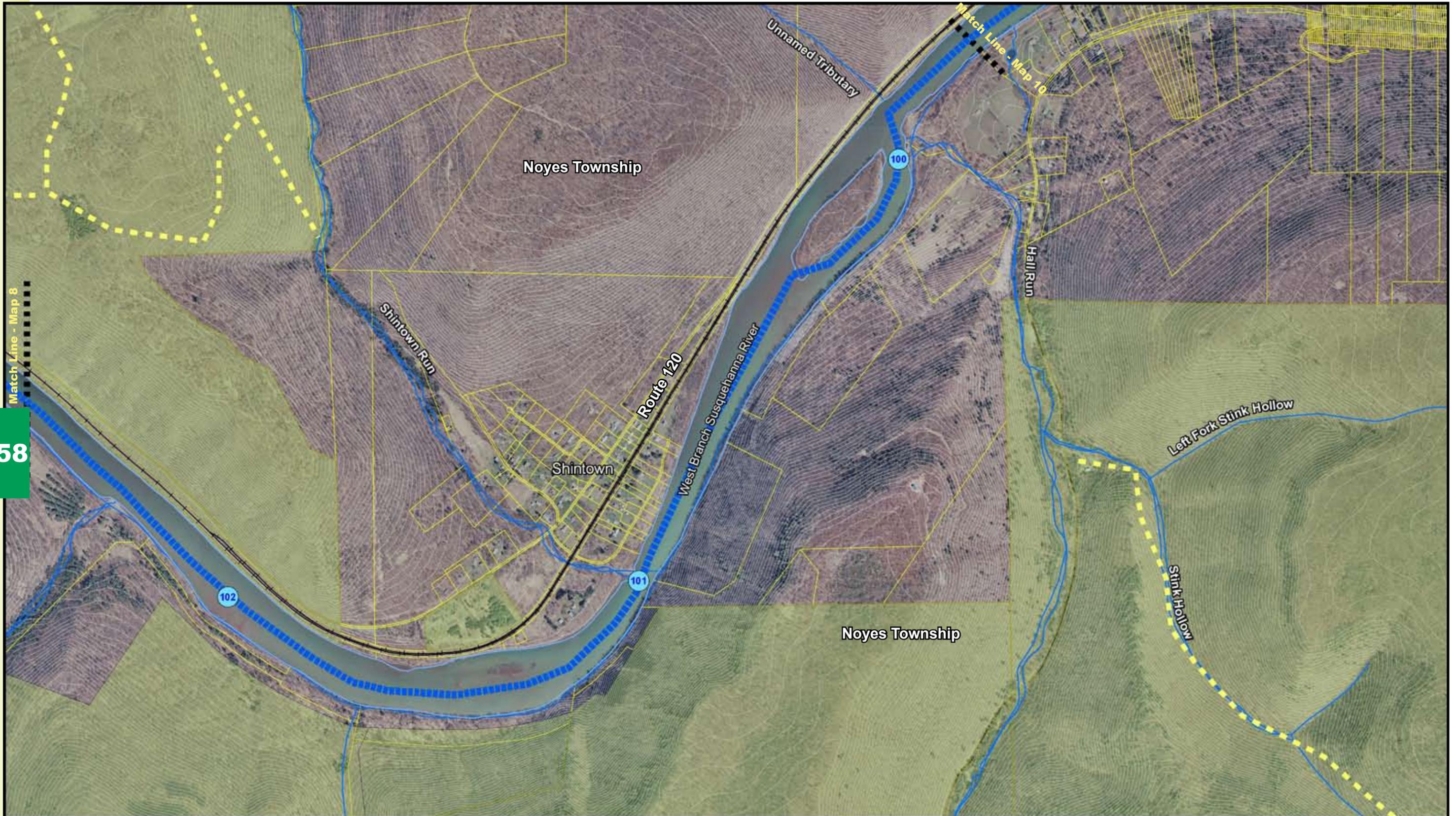




CLINTON COUNTY GREENWAYS & OPEN SPACE PLAN
 Clinton County, Pennsylvania
West Branch Susquehanna River Access & Camping Feasibility Study

Legend		
Camping Sites	State Game Lands	Municipalities
Canoe Access	State Forest Land	Trails
Boat Access	Parcels	River Miles
Parking	Contour	Waterways
Water Trail		

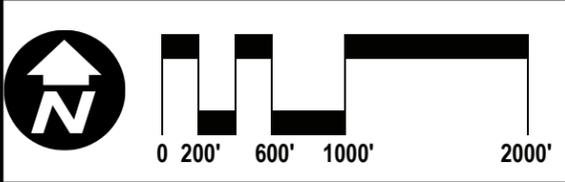


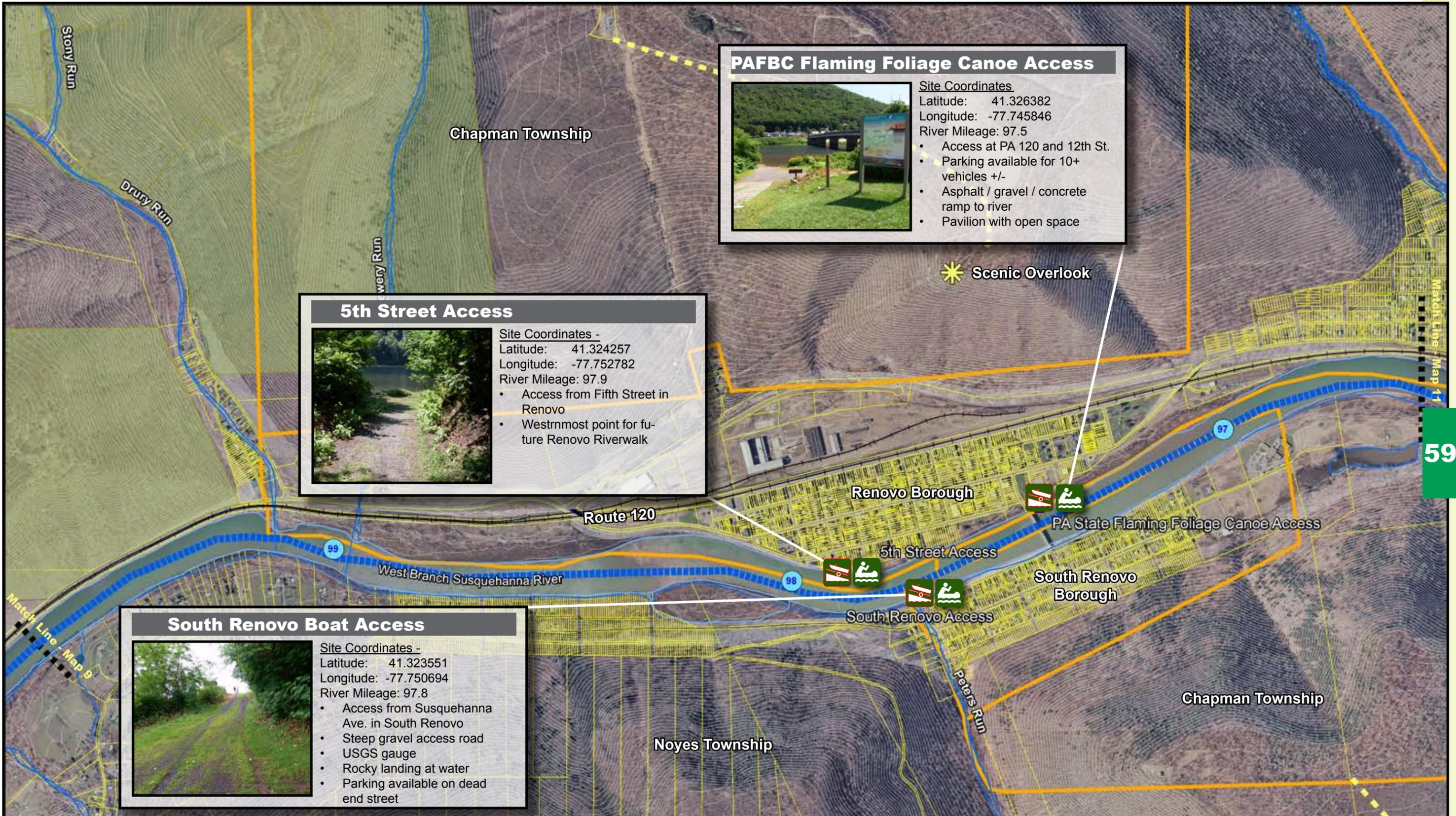


CLINTON COUNTY GREENWAYS & OPEN SPACE PLAN
 Clinton County, Pennsylvania
West Branch Susquehanna River Access & Camping Feasibility Study

Legend

Camping Sites	State Game Lands	Municipalities
Canoe Access	State Forest Land	Trails
Boat Access	Parcels	River Miles
Parking	Contour	Waterways
Water Trail		





PAFBC Flaming Foliage Canoe Access



Site Coordinates
 Latitude: 41.326382
 Longitude: -77.745846
 River Mileage: 97.5

- Access at PA 120 and 12th St.
- Parking available for 10+ vehicles +/-
- Asphalt / gravel / concrete ramp to river
- Pavilion with open space

Scenic Overlook

5th Street Access



Site Coordinates -
 Latitude: 41.324257
 Longitude: -77.752782
 River Mileage: 97.9

- Access from Fifth Street in Renovo
- Westmost point for future Renovo Riverwalk

South Renovo Boat Access



Site Coordinates -
 Latitude: 41.323551
 Longitude: -77.750694
 River Mileage: 97.8

- Access from Susquehanna Ave. in South Renovo
- Steep gravel access road
- USGS gauge
- Rocky landing at water
- Parking available on dead end street

PAFBC North Bend Access



- Site Coordinates**
 Latitude: 41.341931
 Longitude: -77.701946
 River Mileage: 94.8
- Access from Reese Rd.
 - Currently being developed
 - Parking planned for 18-20 vehicles
 - Existing earthen launch
 - Interpretive signage

North Bend

PAFBC North Bend Access

Chapman Township

Tamarack Island



- Site Coordinates**
 Latitude: 41.333030
 Longitude: -77.708732
 River Mileage: 95.5
- No ownership information - assumed to be property of the commonwealth
 - Potential overnight camping
 - Access from right channel at far end of island

Tamarack Island



Chapman Township

Match Line - Map 10

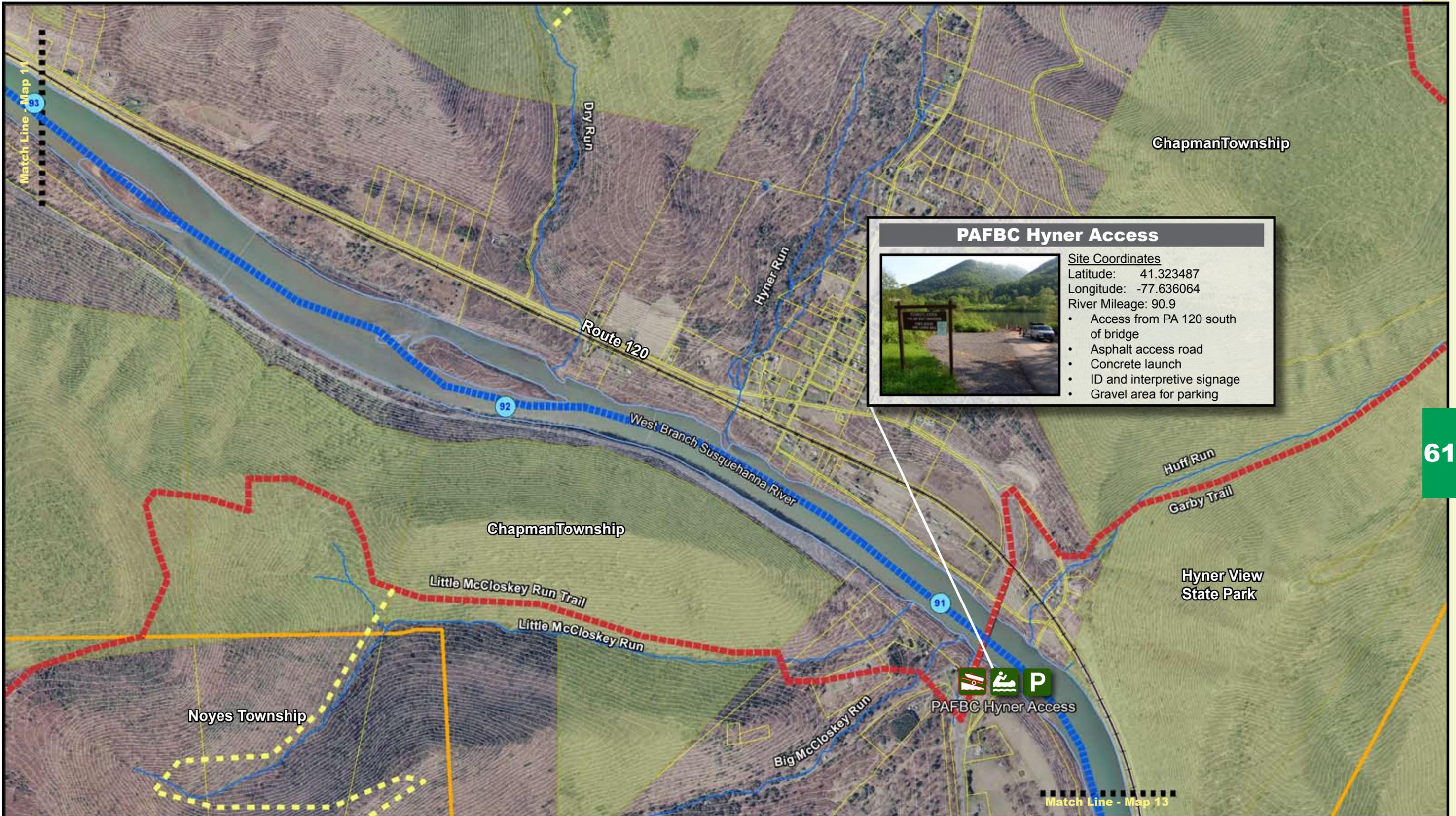
Match Line - Map 12

Legend

Camping Sites	State Game Lands	Municipalities
Canoe Access	State Forest Land	Trails
Boat Access	Parcels	River Miles
Parking	Contour	Waterways
Water Trail		

North arrow and scale bar (0, 200', 600', 1000', 2000').

Inset map of Clinton County showing the location of the study area. **MAP 11 OF 21**



PAFBC Hyner Access



Site Coordinates
 Latitude: 41.323487
 Longitude: -77.636064
 River Mileage: 90.9

- Access from PA 120 south of bridge
- Asphalt access road
- Concrete launch
- ID and interpretive signage
- Gravel area for parking

Legend

Camping Sites	State Game Lands	Municipalities
Canoe Access	State Forest Land	Trails
Boat Access	Parcels	River Miles
Parking	Contour	Waterways
Water Trail		






McCloskey Island



Site Coordinates
 Latitude: 41.302310
 Longitude: -77.624954
 River Mileage: 88.9

- Privately owned
- Best access fat rocky landing area far end of island in left channel
- Multiple fire rings / tent areas

PennDOT Rest Area

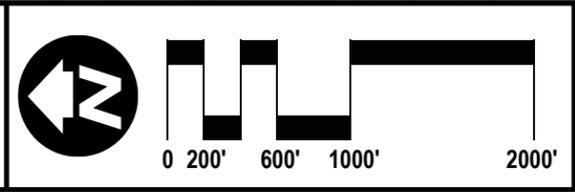


Site Coordinates
 Latitude: 41.286387
 Longitude: -77.607282
 River Mileage: 87.1

- Access from PA 120
- Potential canoe access only / over night camping
- Land currently leased to PennDOT
- Difficult to locate from water
- Trail from water to rest area in need of constant maintenance due to knotweed
- 100 yards between waters edge and rest area clearing
- 2 public bathrooms
- 7 total parking spots
- Trash cans/ dumpsters
- Stone wall fire pit / picnic table / gazebo

Legend

Camping Sites	State Game Lands	Municipalities
Canoe Access	State Forest Land	Trails
Boat Access	Parcels	River Miles
Parking	Contour	Waterways
Water Trail		





DCNR Baker Run Future Canoe Access



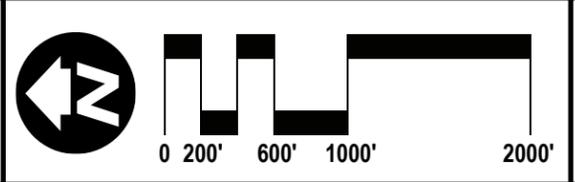
Site Coordinates
 Latitude: 41.244636
 Longitude: -77.600047
 River Mileage: 83.2

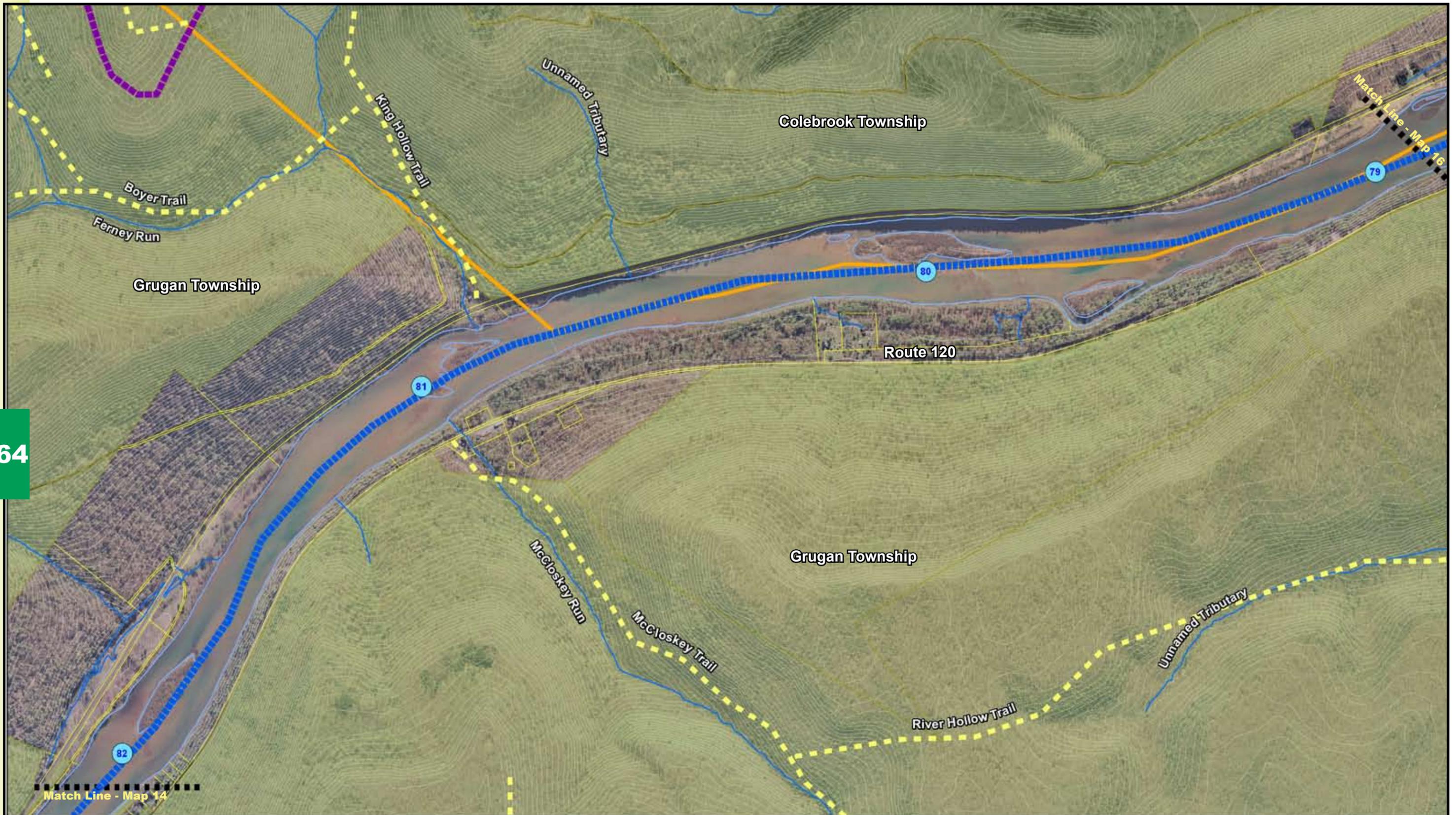
- Access from PA 120
- Future plans include:
- Car / trailer / ADA parking
- Steep (15%) access ramp to concrete plank launch at river



Baker Run Future Canoe Access

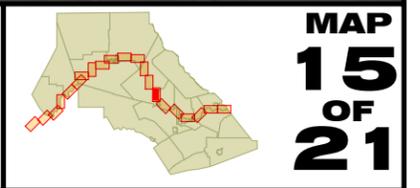
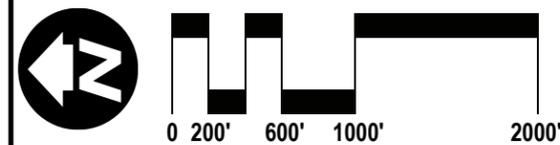
Legend		
	State Game Lands	Municipalities
	State Forest Land	Trails
	Parcels	River Miles
	Contour	Waterways

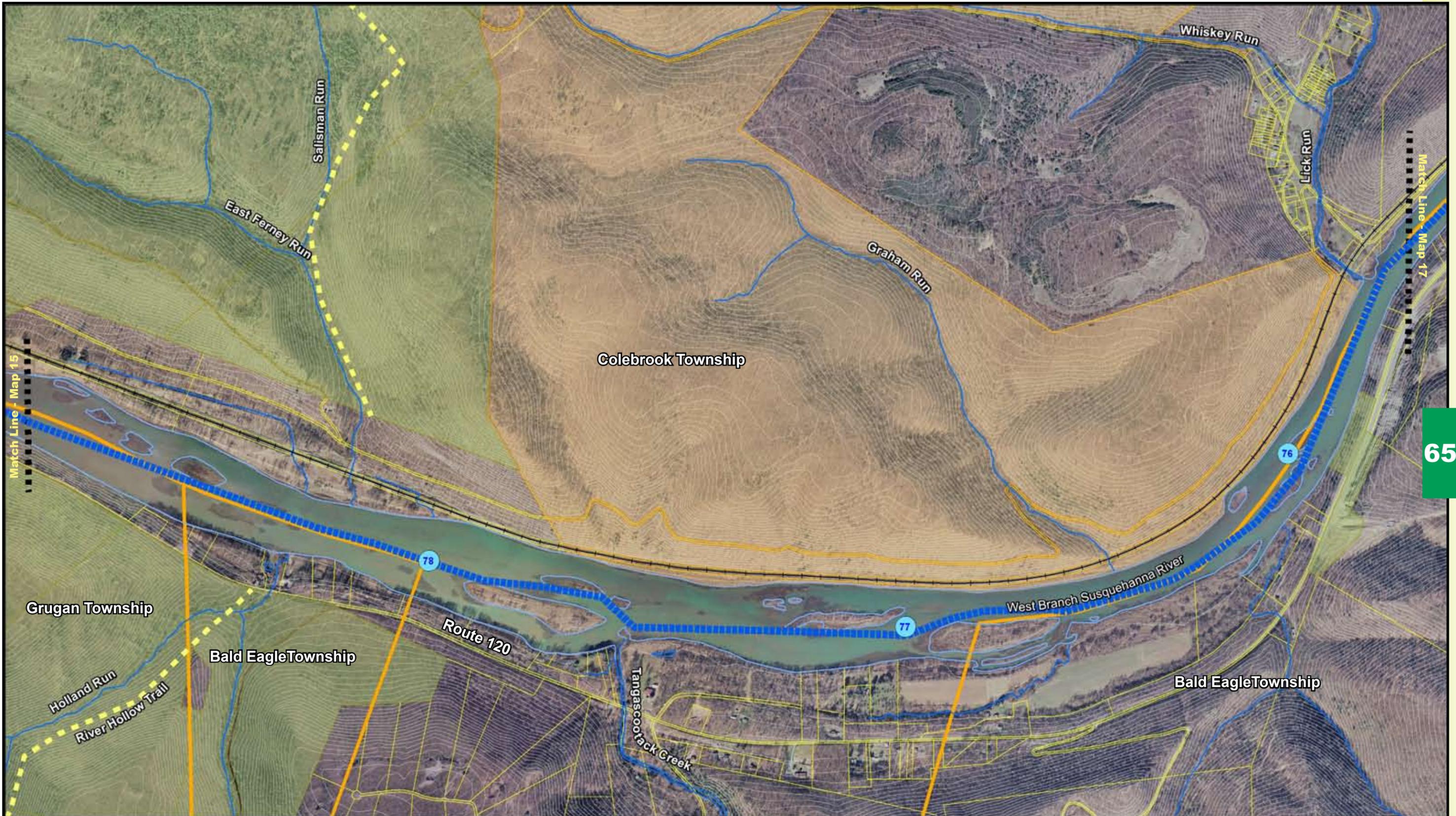




CLINTON COUNTY GREENWAYS & OPEN SPACE PLAN
 Clinton County, Pennsylvania
West Branch Susquehanna River Access & Camping Feasibility Study

Legend		
	State Game Lands	Municipalities
	State Forest Land	Trails
	Parcels	River Miles
	Contour	Waterways

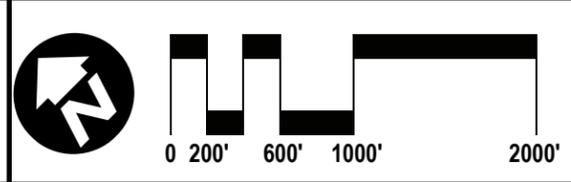




CLINTON COUNTY GREENWAYS & OPEN SPACE PLAN
 Clinton County, Pennsylvania
West Branch Susquehanna River Access & Camping Feasibility Study

Legend

Camping Sites	State Game Lands	Municipalities
Canoe Access	State Forest Land	Trails
Boat Access	Parcels	River Miles
Parking	Contour	Waterways
Water Trail		





Farrandville RR Bridge



Site Coordinates
 Latitude: 41.173285
 Longitude: -77.490986
 River Mileage: 74.1

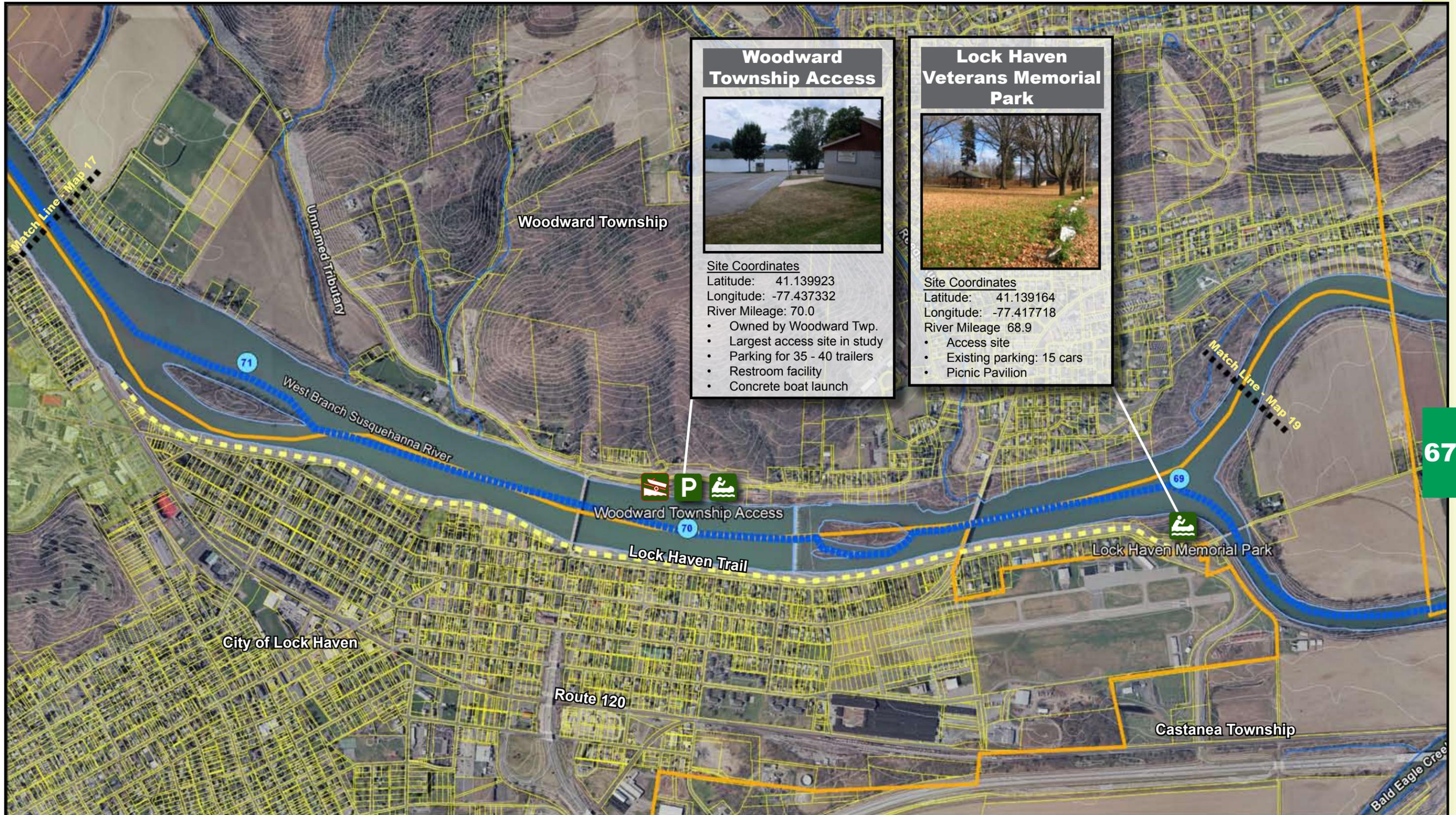
- Located on Private Property
- Access from Farrandville Rd.
- Canoe access only / steep bank
- Existing gravel pull off along road

Peddie Access



Site Coordinates
 Latitude: 41.162379
 Longitude: -77.472683
 River Mileage: 72.6

- Located with Douglas H. Peddie Memorial Park
- Access to river via an existing at-grade railroad crossing within park



Woodward Township Access



Site Coordinates
 Latitude: 41.139923
 Longitude: -77.437332
 River Mileage: 70.0

- Owned by Woodward Twp.
- Largest access site in study
- Parking for 35 - 40 trailers
- Restroom facility
- Concrete boat launch

Lock Haven Veterans Memorial Park



Site Coordinates
 Latitude: 41.139164
 Longitude: -77.417718
 River Mileage: 68.9

- Access site
- Existing parking: 15 cars
- Picnic Pavilion



Spook Hollow Access

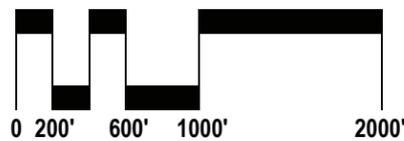


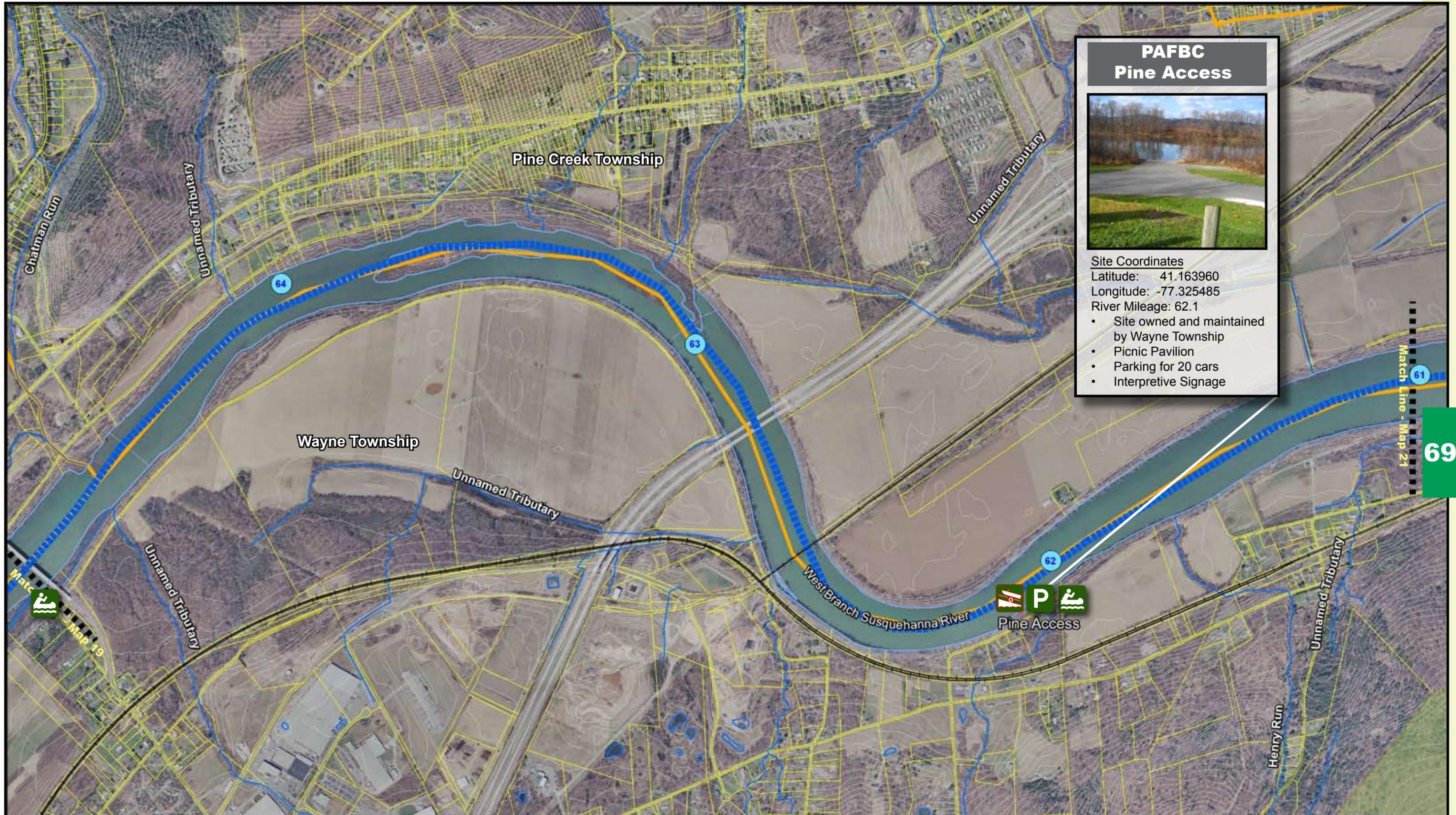
Site Coordinates
 Latitude: 41.164593
 Longitude: -77.365462
 River Mileage: 65.8

- Located beneath McElhattan bridge over the West branch
- Possible dual use as a trail head for the Pine Creek connector

Legend

Camping Sites	State Game Lands	Municipalities
Canoe Access	State Forest Land	Trails
Boat Access	Parcels	River Miles
Parking	Contour	Waterways
Water Trail		



**PAFBC
Pine Access**



Site Coordinates
 Latitude: 41.163960
 Longitude: -77.325485
 River Mileage: 62.1

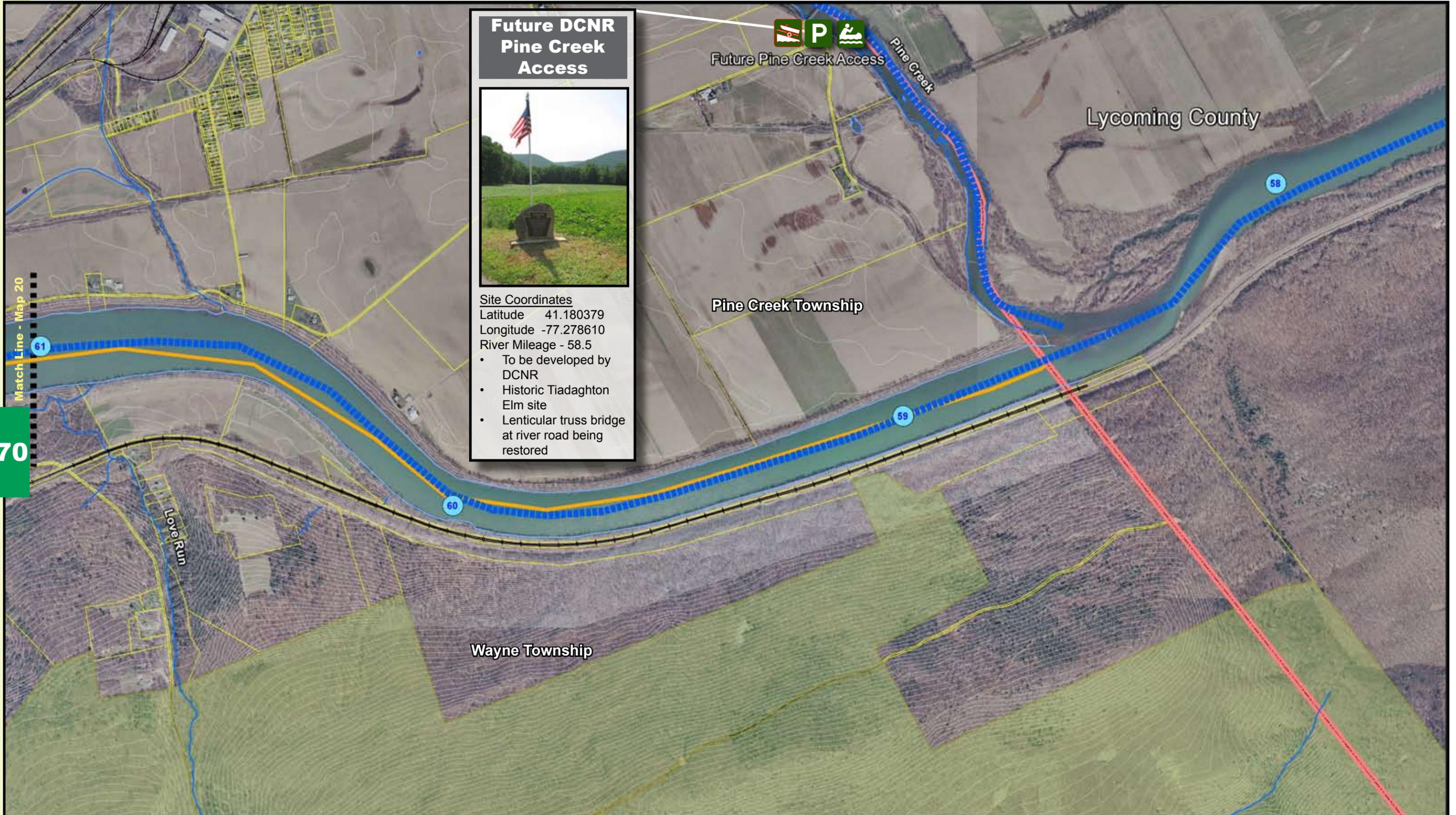
- Site owned and maintained by Wayne Township
- Picnic Pavilion
- Parking for 20 cars
- Interpretive Signage

Legend

Camping Sites	State Game Lands	Municipalities
Canoe Access	State Forest Land	Trails
Boat Access	Parcels	River Miles
Parking	Contour	Waterways
Water Trail		

North arrow and scale bar (0, 200', 600', 1000', 2000').

Inset map of Clinton County showing the location of the study area. **MAP 20 OF 21**



**Future DCNR
Pine Creek
Access**



Site Coordinates
 Latitude 41.180379
 Longitude -77.278610
 River Mileage - 58.5

- To be developed by DCNR
- Historic Tiadaghton Elm site
- Lenticular truss bridge at river road being restored



Future Pine Creek Access

Match Line - Map 20

Legend

Camping Sites	State Game Lands	Municipalities
Canoe Access	State Forest Land	Trails
Boat Access	Parcels	River Miles
Parking	Contour	Waterways
Water Trail		

North arrow icon

Scale bar: 0 200' 600' 1000' 2000'

Inset map of Clinton County showing the study area location

MAP 21 OF 21



BALD EAGLE & SPRING CREEK CANAL TRAIL FEASIBILITY STUDY

STUDY PURPOSE

The Bald Eagle and Spring Creek Canal Feasibility investigates the potential of creating a trail between the Borough of Bellefonte in Centre County and the City of Lock Haven in Clinton County. This feasibility study is being performed by the consultant team with assistance from both the Centre County and Clinton County Planning agencies.

The study corridor is approximately 25 miles in length (as the crow flies) and is intended to follow the general alignment of the historic Bald Eagle and Spring Creek Navigation Company canal. The study corridor can be divided into three (3) distinct segments:

- **Segment 1** - from the Borough of Bellefonte to Milesburg along the Spring Creek, then from Milesburg to Curtin Village along the Bald Eagle Creek in Centre County;
- **Segment 2** - from the historic Curtin Village site through the Townships of Boggs, Howard, and Liberty, the Borough of Howard and PA DCNR's Bald Eagle State Park in Centre County to the Borough of Beech Creek in Clinton County. This segment is also known as the 'Brick Town Trail' for which a feasibility study was prepared in the Fall of 2007 as part of the Beech Creek Greenway Plan prepared by the Beech Creek Watershed Association; and,
- **Segment 3** - from the Borough of Beech Creek through Beech Creek, Bald Eagle and Castanea Townships, and within or adjacent to the Boroughs of Flemington and Mill Hall on to the City of Lock Haven in Clinton County along the Bald Eagle Creek.

CANAL HISTORY

The study corridor has a rich cultural history related to the Iron Industry and transport of goods through the valley in the mid-19th century. The Bald Eagle and Spring Creek Navigation Company constructed the canal that was in operation between 1834 and 1865. Some general facts about the canal's history compiled from various sources including the Centre County Historical Society, Library of Congress, and other sources summarize the events surrounding the canal's history:

- **1834** - The Bald Eagle and Spring Creek Navigation Company was formed to build a twenty five-mile canal between Bellefonte and Lock Haven. Unlike the "Pennsylvania Canal" which was paid for by the funds of the Commonwealth, appropriations were made only to cover certain expenses. The bulk of the money was raised by stock subscriptions, in which municipalities benefitted by the canal's construction. In preparation for the building of the Bald Eagle & Spring Creek Canal, the Bald Eagle Cut, a 4-mile (6.4 km) waterway, was built from the West Branch Canal through Lock Haven to the Bald Eagle Creek and the foot of the new canal.
- **1837** - The Lower Division of the Bald Eagle & Spring Creek canal (12.5 miles) was opened from Flemington Borough outside of Lock Haven to the Borough of Howard in Centre County. Tough economic times throughout the country delayed further construction of the Upper Division towards Bellefonte for the next ten years, however the segment of canal to Milesburg was completed later that year.
- **1848** – Construction of the Upper Division (12.5 miles) was completed, including the segment along the Spring Creek into the Borough of

Bellefonte.

- **1857** – Competition with the railroad industry began with the chartering of the Tyrone and Lock Haven Railroad that paralleled the canal route through the Bald Eagle Valley. The Pennsylvania Railroad Company took over the financing of the railroad, renamed it the Bald Eagle Valley Railroad and completed its construction into Lock Haven in 1865.
- **1865** – Significant flooding in March led to widespread damage of the canal infrastructure. Faced with the financial burdens of repairing the canal combined with the competition from the newly established railroad, the canal fell out of operation.

PHYSICAL INVENTORY AND ASSESSMENT

Historic Canal Alignment

In addition to providing both a recreational and

transportation alternative(s) through the Spring and Bald Eagle Creek valleys, the former canal and its associated history is proposed to be the primary theme behind the marketing and heritage tourism efforts to promote the trail corridor.

The first step in determining the potential location of a trail through the corridor was to establish and map the current day location of the historic canal. While it may not be possible for a trail to follow the formal canal alignment precisely from beginning to end due to many changes in land use, property ownership, and/or submergence caused by the creation of the Foster Joseph Sayers Dam at Bald Eagle State Park, there may be opportunities to witness canal remnants such as locks, lock houses, and sections of canal and towpath from a trail alignment that is more easily accessible to the public.

An historical map of the entire canal alignment (see Figure 1) was provided to the consultant team by Centre County Planning. The map illustrates the relationship between the canal alignment and locks and other established geographic landmarks such as the adjacent mountains, Bald Eagle Creek, major roadways, and towns/villages located along its

route. While this map provides the best geographical reference for the location of the canal and its facilities found to date, this hand drawn map lacks the specificity required to identify the modern day location of the alignment.

The historic alignment was then transcribed into the project's GIS mapping and overlaid onto the current and much more detailed aerial photography provided by the PA Map project. The historic canal alignment mapping was adjusted to correlate to the visible evidence of the canal as seen in the more detailed aerial photography. Centre County Planning assisted in the refinement of the historic alignment by researching and adjusting the canal route based on aerial photographs taken in the Fall of 1938, as well as other historical maps located as part of their research (see Figures 2 and 3). The line representing the historic alignment as shown on the project mapping in this report represents the best physical approximation of its actual location to date. Further refinement to this alignment should continue as additional resources are uncovered through the trail development process.

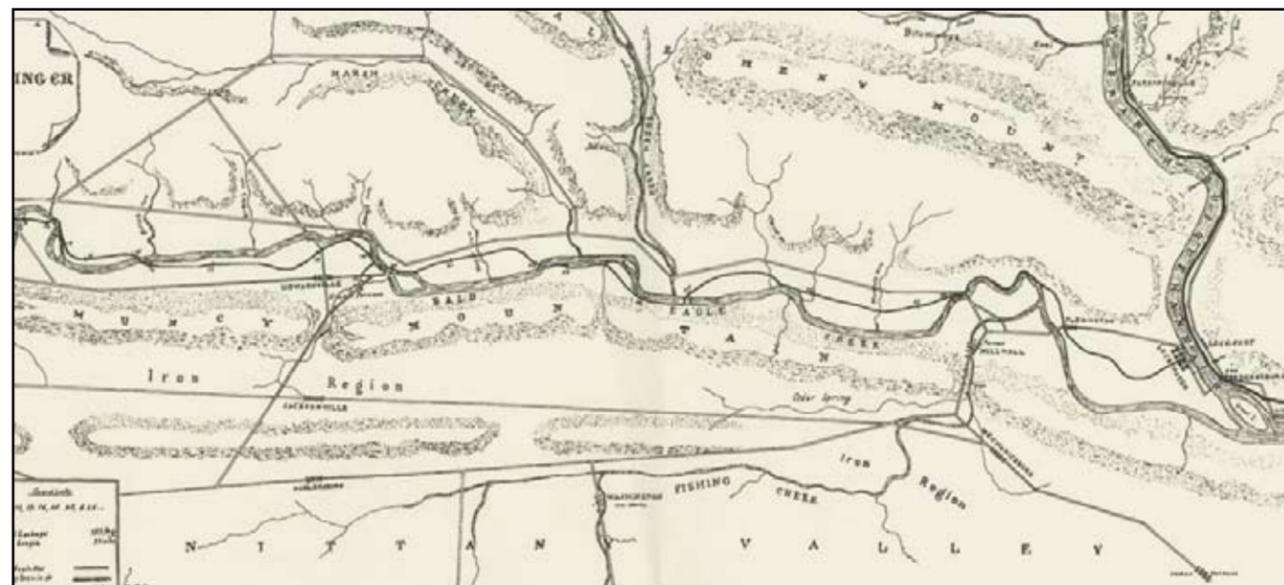


Figure 1 – Bald Eagle and Spring Creek Navigation – Location Map by M.R. Stealey Eng. – 1835.

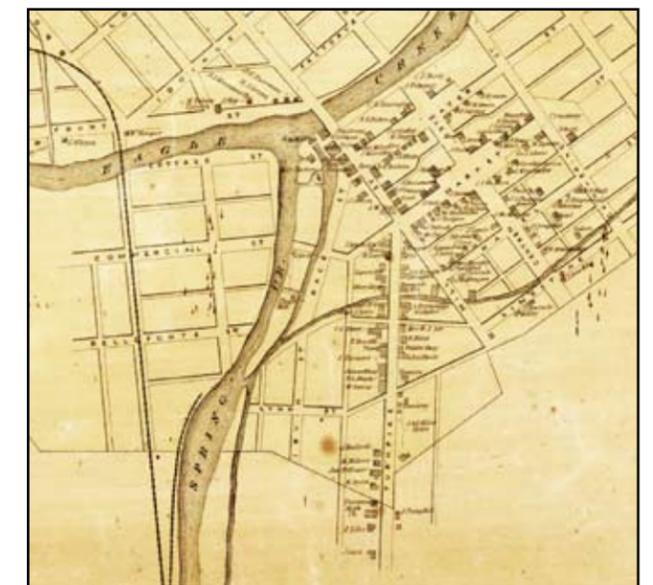


Figure 2. 1861 Topographic Map of Centre County - Milesburg



Figure 3. 1938 Aerial Photo.

Significant Natural Features

The primary natural features encountered throughout this study corridor are the existing floodplains, wetlands, and natural wildlife habitats associated with the Spring and Bald Eagle Creeks. Although there are no specific locations that have been identified as part of this study that would limit trail development, further investigation will need to be done as more detailed plans for the trail's ultimate alignment are refined as part of the development and construction documentation process.

According to the initial Pennsylvania Natural Diversity Inventory (PNDI) query conducted as part of this study for trail Segment 1 between Bellefonte and Curtin Village, only one resource was identified as being potentially affected between Bellefonte and Milesburg. This species of concern identified is noted as 'Springs' by the PA Department of Conservation and Natural Resources. Further instructions relative to whom should be contacted and what should be sent are included as part of the PNDI receipt generated as part of the query.

PNDI searches are only valid for a period of one (1) year from the time of initial review and are to

be considered a preliminary screening tool only to identify potentially affected resources requiring further study. A PNDI query should be performed again as part of the design process when the trail alignment is refined and construction plans are formulated.

Clinton & Centre County Natural Heritage Inventory

The study corridor passes through the Bald Eagle Ridge IBA or 'important bird area' as identified in both the Centre County and Clinton County Natural Heritage Inventories.

The Pennsylvania Important Bird Area Program is administered by the Pennsylvania Audubon Society. PA Audubon defines an IBA as "a site that is part of a global network of places recognized for their outstanding value to bird conservation. An IBA can be large or small, public or private and must meet one of several objective criteria. Since the IBA program is voluntary, there are no legal or regulatory restrictions."

The Bald Eagle Ridge IBA has varied habitats, including mature forests, late successional stage fields, wetlands, perennial and intermittent streams, and hillside seeps. In some areas, it appears that the entire side of the ridge is seeping water. These areas remain open all year and are important for amphibians, turkeys, grouse, woodcock, and other species that are dependent on open water for survival during the winter. The large expanses of unfragmented forest are important habitat for breeding Neotropical migrant species such as Cerulean Warbler, Worm-eating Warbler, Wood Thrush, Scarlet Tanager, and Ovenbird. Bald Eagle Ridge is also an important flyway for raptors. Counts of Golden Eagles are some of the highest recorded in eastern North America and consistently exceed those of migration count sites along the Kittatinny Ridge. (Source: Centre County Natural Heritage Inventory)

Proposed trail development within the study corridor is not envisioned to adversely impact the Bald Eagle Ridge IBA. However, the presence of this IBA indicates that there will be opportunities for trail users to witness these important migrant species in their natural habitats.

Slopes and Accessibility

Although the grades are generally gradual with no significant steep slope areas throughout the corridor, limited areas of steep slopes associated with the proposed alignment will need to be addressed with respect to ADA accessibility as more detailed construction plans are developed.

Accessibility for the proposed trail and other facilities should be designed in compliance with the ADA accessibility guidelines for Outdoor Recreation Areas. These guidelines may be found at the ADA website: <http://www.access-board.gov/outdoor/>

Preliminary Alignment Alternatives

The first step in the analysis and development of a trail plan is to inventory all possible alignment alternatives. These proposed alignment alternatives included both on-road and off-road connections and were compiled as part of the base mapping analysis and site reconnaissance performed by the consultant. Additional alignment alternatives for review were suggested by the project committee and both county planning agencies.

The following criteria were used to determine whether or not a proposed alignment could or should be included in the overall proposed trail system:

- **Safety** – Both actual safety and the mere perception of safety is a major factor in the determination of a proposed trail route, particularly when trails are proposed to share a right-of-way with vehicular traffic. Potential

on-road routes were evaluated relative to traffic volumes and roadway speeds and field verified for the actual roadway conditions. Off-road alignments are generally considered to be the safest of the alignment alternatives, however each of these must also consider site specific factors such as their ability to be monitored and/or provide emergency access.

- **Connectivity / Continuity / Level of Service** - Each of the recommended alignments need to contribute to a larger system and/or provide a level of service worthy of its development. Larger trail systems, such as the one under study here, are often implemented over a period of many years depending on its demand and available funding. An individual trail segment that does not provide a connection between destination points or cannot become part of a larger system is typically not recommended.
- **Private Property Impacts** - By reviewing parcel boundaries and ownership information within the GIS database along any potential off-road alignments located outside of publicly owned lands or rights-of-way, the approximate number of potential impacts can be identified and assessed to determine whether or not an alignment should be pursued.
- **Environmental Impacts** - Trail alignments that have the potential for significant environmental impacts such as clearing of wooded areas, requiring significant grading, or disturb wetlands and/or any other sensitive ecosystems should be generally avoided.
- **Constructability / Cost** - Engineering can provide solutions to almost anything; however the costs associated with providing an engineering solution may be unreasonable or cost prohibitive. Alignments that require significant engineering efforts and abnormal construction costs should be generally avoided - unless it is the only

solution possible for a critical trail linkage.

Summary of Opportunities and Constraints

Opportunities:

- Publicly owned land (PA Fish Commission) provides the best opportunity for off-road trail development between Bellefonte and Milesburg;
- Old Route 220 with its relatively low traffic volume and existing wide shoulders provides the best opportunity to connect Milesburg with Curtin Village and the upper end of Bald Eagle State Park.
- Publicly owned land associated with the Bald Eagle State Park and impoundment between Curtin Village and Beech Creek provides ample opportunity for trail development without the need for the acquisition of easements on private property, plus
- Bald Eagle State Park provides an abundance of recreational opportunities within multiple attractions for potential trail users, including the newly constructed Nature Inn.
- Controlled release of waters from the Foster Joseph Sayers Dam and reservoir provides significant opportunity for the establishment of a water trail along the Bald Eagle Creek between Beech Creek and Lock Haven.

Constraints:

- Many of the original canal facilities have either been destroyed in the original flooding event that caused the canal to cease operation, have been submerged as part of the Foster Joseph Sayers Dam construction at Bald Eagle State Park, or

are currently located on private property and therefore are not accessible to the general public.

- PA Route 150 between Lock Haven and Milesburg generally serves as the northern boundary for possible trail alternatives. High traffic volumes and speeds along this roadway limit the available on-road alignment options for a continuous land-based trail.
- Private ownership of the land associated with the historic canal alignment below the Foster Joseph Sayers Dam, combined with existing land uses (including private residences and commercial/ industrial development), plus generally poor roadway conditions severely limits opportunities for a continuous land based trail between Beech Creek and Lock Haven.

PROPOSED TRAIL ALIGNMENT

Feasibility Determination

The proposed alignment for **Segment 1** between Bellefonte and Curtin Village (6.3 miles +/-) will be a feasible combination of both on-road and off-road bicycling routes that will pass alongside and connect many of the known remaining canal artifacts as it passes through Milesburg to Curtin Village.

The proposed alignment for **Segment 2** between Curtin Village and Beech Creek (14.0 miles +/-), also known as the 'Brick Town Trail', was studied separately as part of the Beech Creek Greenway Plan. The Brick Town Trail will also be a feasible combination of both on-road and off-road alignments, the majority of which will be located within publicly owned land associated with Bald Eagle State Park.

The final **Segment 3** between Beech Creek and Lock

Haven in Clinton County is proposed to be a water trail to follow the Bald Eagle Creek from the end of the proposed Brick Town Trail alignment along the Beech Creek and Bald Eagle Creek to the confluence with the West Branch Susquehanna River below Lock Haven (12.7 miles +/-). This proposed water trail has excellent recreational potential due to the extended period of navigability provided by controlled releases from the Foster Joseph Sayers Reservoir.

In summary, the proposed trail alignments totaling approximately 32.5 miles have the potential to tell the history of the former canal from both the land and water perspective and will serve as a multi-faceted recreational and historical means of transport through the Bald Eagle Valley.

The following narrative section provides a more detailed description of the current preferred trail alignment.

Preferred Alignment

Please refer to the project mapping found at the end of this chapter for reference of the preferred alignment. The following features are indicated on the trail mapping:

Aerial Photography (PAMAP Program 2006 Color Orthophotos of Pennsylvania);

Bald Eagle & Spring Creek Canal Navigation Company canal alignment and lock locations approximated from historical mapping; and,

Public and privately owned land parcels⁴.

SEGMENT 1 - BELLEFONTE TO CURTIN VILLAGE

Beginning at the intersection of the Spring Creek and Lamb Street nearest the Gamble Mill Tavern & Restaurant, the proposed trail will travel north through

the Lamb Street Parklet, now known as Krauss Pic, an existing peninsula in the Spring Creek. At the northern tip of the peninsula, a pedestrian bridge is proposed to cross to the eastern bank of the creek and proceed northward along an existing utility line access road behind the Tussey Mountain

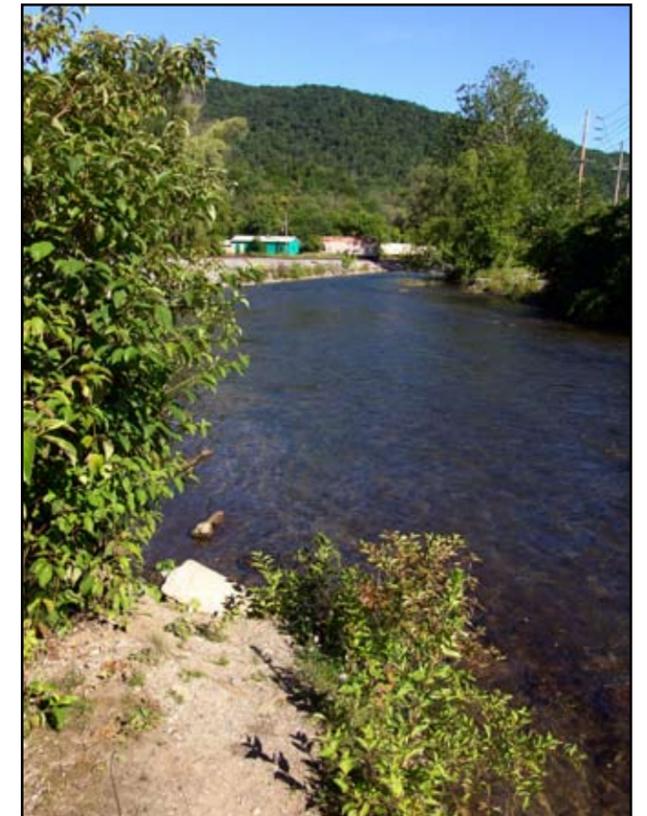


Figure 4. Proposed bridge location at northern end of the Lamb Street Parklet.



Figure 5 - Bellefonte Waterfront Restoration and Redevelopment Plan graphic of Lamb Street Parklet.



Figure 6 - Kayak training course near Bellefonte

Outfitters (see figure 4). This recommendation concurs with the proposed link to Milesburg as noted in the Bellefonte Waterfront Restoration and Redevelopment Plan prepared for the Borough of Bellefonte in 2000 by LandStudies, Inc. (see Figure 5). Further engineering study will be required to determine the engineering and permit requirements for the placement of a pedestrian bridge at this location.

According to the GIS tax parcel database, the existing utility line access road heading north from the proposed bridge straddles publicly-owned property by the PA Fish Commission associated with the stream bank and privately-owned property between the streambank and PA 144/150. This proposed trail will offer an alternate viewing location for the existing kayak training course within this segment of the Spring Creek (see Figure 6)

An easement formalizing trail use along this utility

access road will be required. This off-road trail continues northward along the eastern bank of the Spring Creek until it reaches a sewage treatment plant. The treatment plant has placed its facilities and fencing to the top of the existing bank and does not provide enough space for the continuation of a multi-use trail. Only narrow hiking paths created by fisherman provide access to the creek at this location. The proposed off-road trail between Lamb Street and the sewage treatment plant travels approximately 0.6 miles before the preferred alignment enters the PA 144/150 right-of-way.

The proposed on-road segment of the trail between the sewage treatment plant and where the proposed alignment returns to being off-road is 0.56 miles and will pass in the front of approximately 11 privately-owned commercial/industrial enterprises. The existing roadway shoulders are quite generous (5'



Figure 7 - Spring Creek at McCoy Access with remnants of iron-related industrial buildings.

+/-) on the northern/western shoulder, while the southern/eastern shoulder could be expanded for cycling purposes, and there is ample space available adjacent to the northern shoulder to install a separate pedestrian route. This pedestrian route may be accomplished with simple signage and/or striping improvements. To formalize this proposed pedestrian route, easements would have to be acquired from the privately-owned businesses.

The trail will then return to an off-road alignment as it re-enters PA Fish and Boat Commission (PAFBC) property beyond the existing gas station. The proposed alignment through the PAFBC land is proposed to follow along the eastern bank between the creek and PA 144/150, however limited space at this location may warrant a bridge crossing to the western bank and then another bridge to get back to the eastern bank further north at the PAFBC McCoy Access. Since the removal of the McCoy-Linn

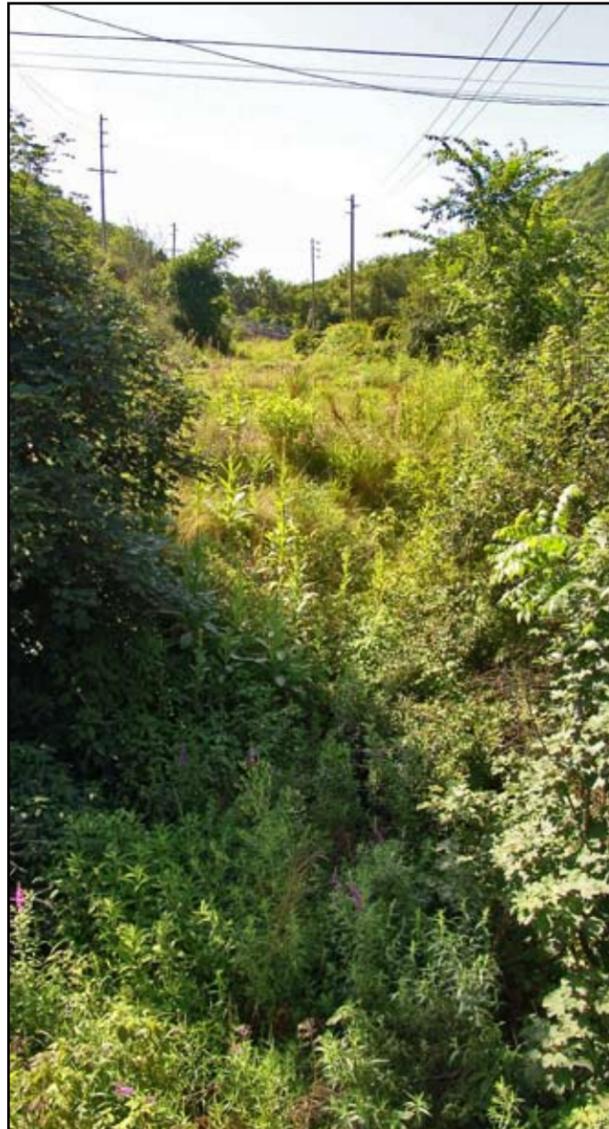
hydroelectric dam in 2007, there is much more land area available within the creek bed to allow for trail development (see Figure 7).

The PAFBC McCoy Access may serve as a trailhead and parking area for trail users. This PAFBC access is located directly adjacent to the Harmony Forge



Figure 8 - Former canal lock beneath bridge at Harmony Forge.

Mansion property, which is listed in the National Register of Historic Places for its contribution to the charcoal iron industry in the 1800's. It is from this point northward into Milesburg where remnants of the former canal become noticeably apparent. Two former canal locks are located within the Harmony Forge property, with one having a bridge placed over it for access to the property (see Figure 8), and the depression for the canal waterway extends approximately ½ mile before it rejoins the Spring Creek waterway.



Former canal

While the PAFBC retains the base ownership of the former canal in this ½ mile stretch to Milesburg, the trail is proposed to follow along the eastern side of the canal and utilize an existing farm road. This is to avoid the inevitable impacts to the existing canal, both historical and environmental, and significant trail development costs that would be incurred to place a trail within the canal itself. This also helps to protect the historic resource of the canal for future generations while utilizing a significantly less expensive trail alignment option with the farm road (see Figure 9). This option will require easements



Figure 9 - Existing farm road adjacent to former canal alignment south and west of Milesburg along the Spring Creek.

through two properties: one from the Harmony Forge mansion property and one from the West Penn Power Company for the trail's continuation to the Church Street right-of-way in Milesburg.

The proposed trail will then become a share the road facility and follow Church Street northward to Market Street, then along Market Street across PA 144/150 next to the Fisher's Market and into central Milesburg. The trail will proceed eastward approximately 0.4 miles from the central park area along Market Street to Richmond Road and access to Old Route 220.

From the intersection of Richmond Road, the proposed share the road alignment will follow Old Route 220 for 1.56 miles. Old Route 220 has relatively low traffic volume and ample shoulders and will provide for the best connection between Milesburg and the beginning of lands associated with the Bald Eagle State Park.

Just beyond the I-80 overpass, the trail will exit the roadway and enter onto land owned by the US Government and the high point of the Foster Joseph Sayers Dam impoundment. The trail will then rejoin and parallel the historic canal alignment and Bald



View looking south on Church Street.

Eagle Creek for 1.52 miles until it meets Curtin Road and the historic Eagle Ironworks at Curtin Village. The proposed off-road alignment will need to cross beneath the existing active railroad within this segment at one of two potential locations associated with bridges crossing either the creek or the former canal. If further investigations into this alignment reveal this potential crossing to be infeasible, the proposed alignment could continue along Old Route 220 to Curtin Road, then north to the beginning of the Brick Town Trail alignment and study corridor Segment 2.

SEGMENT 2 – BRICK TOWN TRAIL

Segment 2 of the corridor was previously studied with The Brick Town Trail, Backbone of the Beech Creek Greenway Plan, a Feasibility Study, prepared in 2007 by Albertin Vernon Architecture LLC for the Beech Creek Watershed Association. This study is an excellent document covering all aspects of the area's history, the process involved in determining the trail's feasibility, and examination of necessary requirements to move the project forward and create recreational, educational, health and economic benefits for the local communities. The complete final document can be found at the Centre County Office of Planning and Community Development website at: <http://www.co.centre.pa.us/planning/recreational.asp>

This DCNR funded Brick Town Trail study investigated the following 8 trail segments:

1. Curtin Village to Howard – 5 miles
2. Howard Borough - 0.57 miles
3. Bald Eagle State Park- 4.87 miles



Figure 10 – Brick Town Trail Feasibility Study cover.

4. Blanchard & Beech Creek – 3.55 miles
5. Beech Creek to Martins Grove- 1.94 miles
6. Martins Grove to Iron Bridge – 3.05 miles
7. Iron Bridge to Monument- 1.74 miles
8. Monument to Orviston- 2.9 miles

At the conclusion of this study, the Watershed Association and its project steering committee decided to proceed with phase one of trail development to include segments 1-4 from Curtin Village to Beech Creek. Other segments were determined to be not feasible at this time, primarily due to property ownership issues relative to the proposed alignments. The next step in this trail's development is to acquire the funding necessary for a detailed master plan for trail improvements to make the Curtin Village to Beech Creek segments a reality.

This study concurs with the findings of the Brick Town Trail Feasibility Study and has transcribed the proposed alignment for the Brick Town Trail onto the mapping included in this report.

The Brick Town Trail includes both on-road and off-road segments that are located almost entirely within publicly-owned lands and/or rights-of-way totaling nearly 14 miles. While the preferred alignment generally follows the southern side of the Bald Eagle Creek and impoundment from Curtin

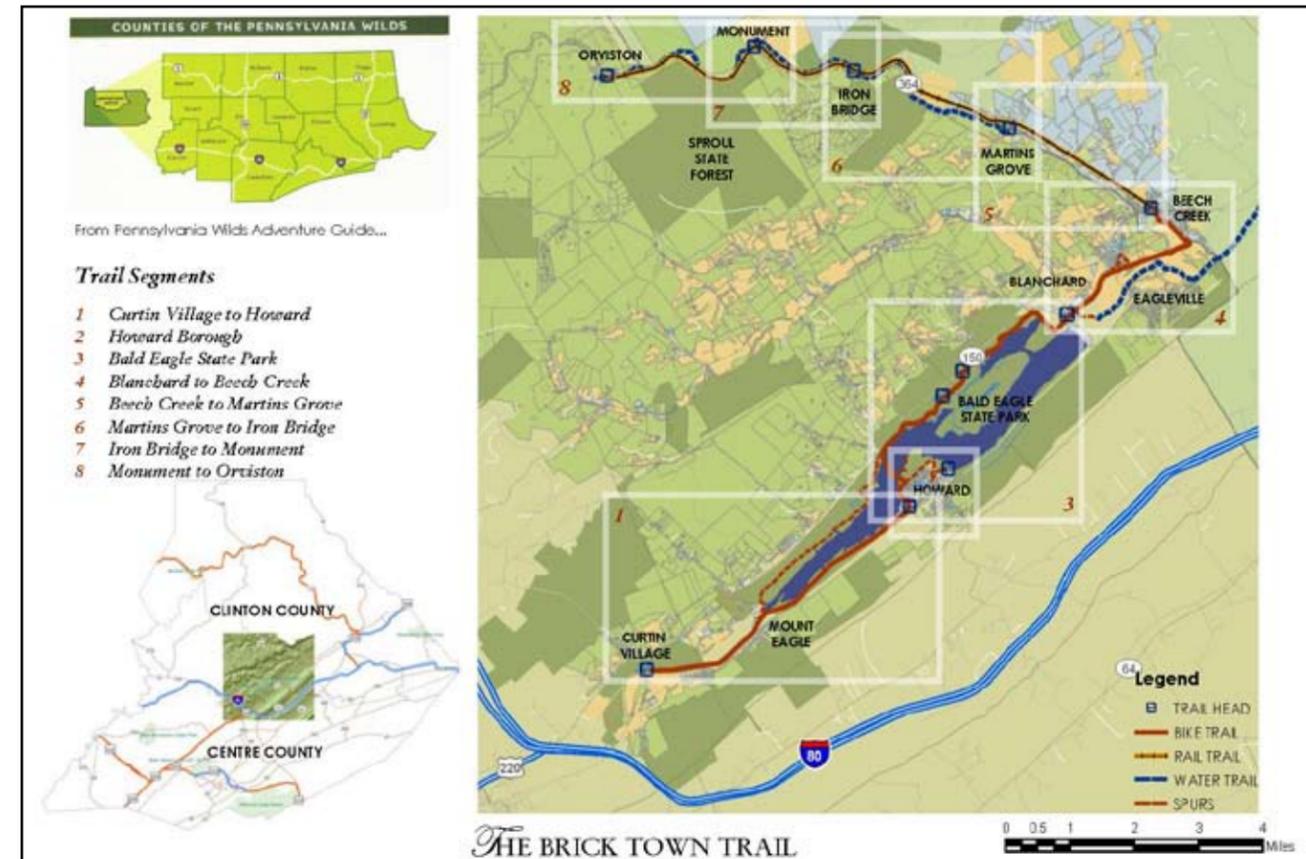


Figure 11 – Brick Town Trail Segments from the Brick Town Trail Feasibility Study

Village into the Borough of Howard, there may be an opportunity to cross over to the northern shore at two different locations. The first is at Holter's Crossing, approximately 0.85 miles east of Curtin Village along the proposed alignment, and the second is at the site of a former cable suspension bridge in the village of Mount Eagle, another 1.5 miles +/- east of Holter's Crossing. Both of these potential crossings would connect to Dowdy Hole Road, an existing township road within Bald Eagle State Park. This route on the northern shore would be an alternative to the causeway crossing of the lake along PA Route 26 heading north out of the Borough of Howard, which is perceived to be less than desirable for most trail users due to the roadway's narrow width and vehicular speeds.

The Brick Town Trail alignment is proposed to cross over the Beech Creek from the end of Bald Eagle

Street in Centre County to Maple Avenue in Clinton County via a reconstructed covered bridge. It is at this location where Segment 3 and the proposed Bald Eagle Water Trail will begin.

SEGMENT 3 – BALD EAGLE CREEK WATER TRAIL

The consultant performed field reconnaissance and kayaked the proposed water based portion of Bald Eagle and Spring Creek Canal Trail on April 21, 2010. The purpose of this field reconnaissance was to determine the feasibility of establishing this water trail including recommending access points, identifying any possible hazard areas, elements impeding passage, and necessary portage routes.

Creek Hydrologic Conditions

A review of existing/secondary source information was completed to understand the general hydrologic conditions within the study reach which can help determine the viability of the water trail.

Water levels in this part of the creek are controlled by Foster Joseph Sayers Dam and the creek remains passable for much of the year including times when the West Branch of the Susquehanna is impassable. In his book "Keystone Canoeing", Edward Gertler states that the stream is canoeable from spring thaw until late July and usually is flowing in November and December due to the drawdown of the Foster Joseph Sayers Reservoir.

The USGS Gage on Bald Eagle Creek near Beech Creek Station, PA (Gage# 01548005) is located approximately 4 miles downstream of the Foster Joseph Sayers Dam and was used as a check for general conditions in the study reach. At the time of the reconnaissance (April 21, 2010) the gage

registered 6.52 feet or approximately 280 cubic feet per second, which is low for this time of the year. Although the creek was passable, there were points that the canoes scraped bottom. In his book "Keystone Canoeing", Edward Gertler recommends that the gage should read a minimum of 6.8 feet or approximately 330 cubic feet per second for passage of non-motorized boats. Although the water trail was passable with kayaks at the gauge reading of 6.5 feet, it is recommended that 6.8 feet or approximately 330 cubic feet per second be the minimum water level to avoid long carries of non-motorized boating equipment. To check water levels at the Beech Creek Station Gauge, go to: <http://waterdata.usgs.gov/nwis/uv?01548005>.

A review of the USGS Gage on Bald Eagle Creek near Beech Creek Station, PA shows that since the installation of the Foster Joseph Sayers Dam in approximately 1979, the levels are sufficient for non-motorized boating all months of the year with the exception of early July through early November

assuming an approximate minimum flow of 330 cubic feet per second is required (See Figure 12 Chart).

The Foster Joseph Sayers Dam was initially constructed as part of a comprehensive flood control plan for the protection of communities in the West Branch Susquehanna River Basin and was authorized by the Flood Control Act approved September 3, 1954. The US Army Corps of Engineers were contacted about the current status of Dam releases. They stated that recreation is a primary use of the reservoir and water releases usually equal water gains to maintain a relatively uniform water elevation.

The current access point to the water trail is along Maple Avenue near the town of Beech Creek (Latitude: 41.06902 N, Longitude: -77.57522 W). This access is currently being used by local boaters and is on privately owned land. The access has a small, grass parking area adjacent to it, which can park approximately 2-3 vehicles. A small soil berm exists adjacent to the roadway that boats must be pulled over to access the creek (See Figure 13).

Future recommendations for an access point to the Beech Creek include acquiring or obtaining an easement for a piece of property from private ownership to provide for boat access at or near the current informal access point. This may be done at

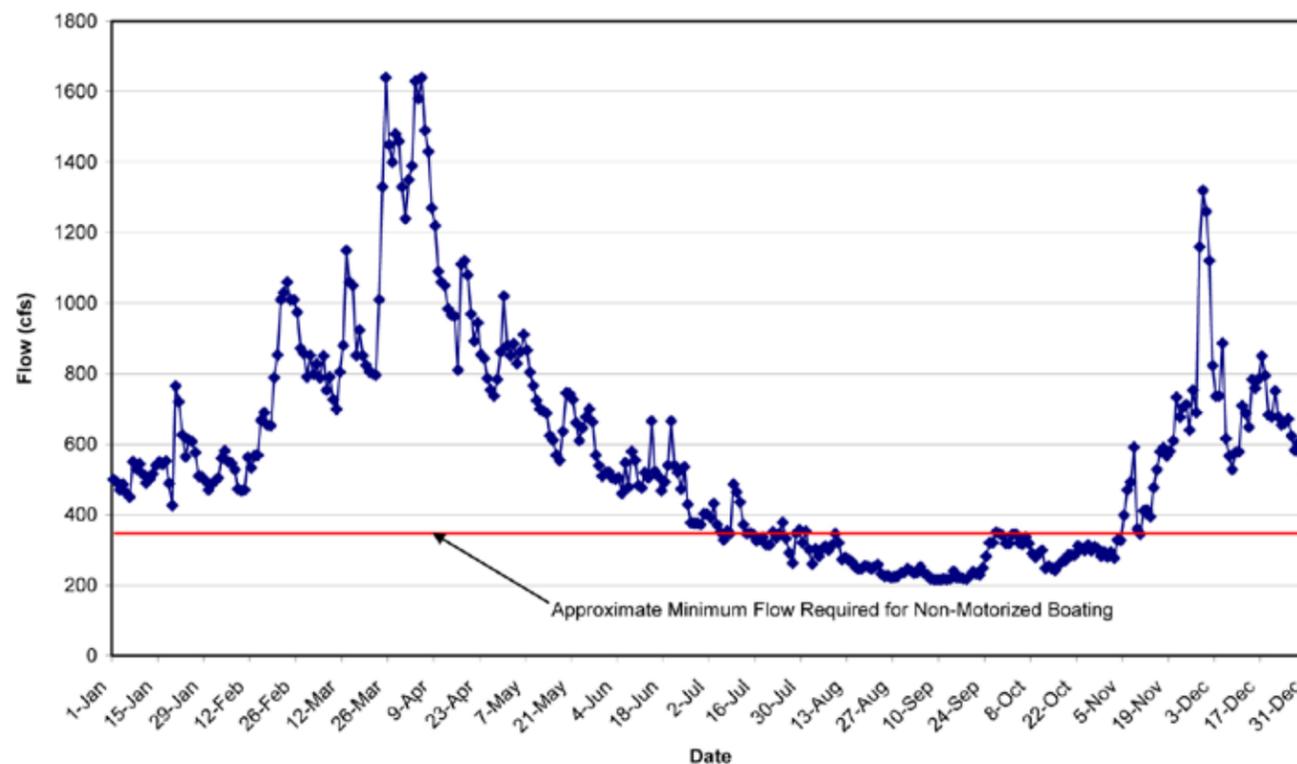


Figure 12. Median Daily Flows for Bald Eagle Creek (1980-2000) at USGS Gauge Near Beech Creek Station



Figure 14. Confluence of Beech Creek and Bald Eagle Creek

a location further upstream where there is a larger land parcel of approximately 2.5 acres that may be considered for the creation of a parking area and combination water access/trailhead. Other proposed improvements include providing for a sustainable and easily maintainable launch area at the water's edge utilizing best management practices or BMPs, as well as branding, informational and interpretive signage.

The portion of the proposed water trail on Beech Creek is dominated by a series of riffle and pools. The portion of the water trail on Beech Creek only takes about 15 minutes (0.6 river miles) to navigate, but has some difficult currents and obstacles.



Figure 13. Beech Creek Access along Maple Avenue



Figure 15. Iron Bridge near Beech Creek Station

Beech Creek joins Bald Eagle Creek at a large pool (See Figure 14). Signs of metal precipitation from the abandoned mine drainage contaminated Beech Creek can be seen at this location. Downstream of the confluence, is a former crossing of the Bald Eagle and Spring Creek Canal.

The next portion on the water trail between the Beech Creek Confluence and the Iron Bridge near Beech Creek Station takes approximately 30 minutes (1.4 river miles) to navigate. This section of the trail has a series of gentle pools and riffles and has wooded shores on both sides. Several species of birds were seen along this portion of the water trail including osprey, wood duck, Canadian goose, kingfisher, and various songbirds.



Figure 16. Typical Eroded Bank due to Lack of Riparian Buffer

The Iron Bridge near Beech Creek Station carries a private road (Bridge Lane) over Bald Eagle Creek (See Figure 15). Small dirt paths to the creek exist on both sides of the road which are probably used as local fishing and boating access points. A USGS gauge is also located at this bridge. The Iron Bridge is very unique and should be noted as a point of interest on the water trail.

The next section of the creek runs from the Iron Bridge to the Pennsylvania Fish and Boat Commission (PAFBC) Access near Mill Hall. This section of the creek takes about 90 minutes (4.3 river miles) to float and is dominated by a series of gentle riffles and pools. Several large islands exist on these stretches that are teeming with birdlife. The left channel around the island is extremely shallow while the right channel should be passable during most flows.

This stretch of the creek has wooded shores with agricultural fields on the left side of the creek for the first 4 miles. Many streambanks on the river left are eroded probably due to lack of riparian buffer (See Figure 16). Further downstream is a unique series of equally spaced islets that are probably the remnants of a logging boom (See Figure 17).

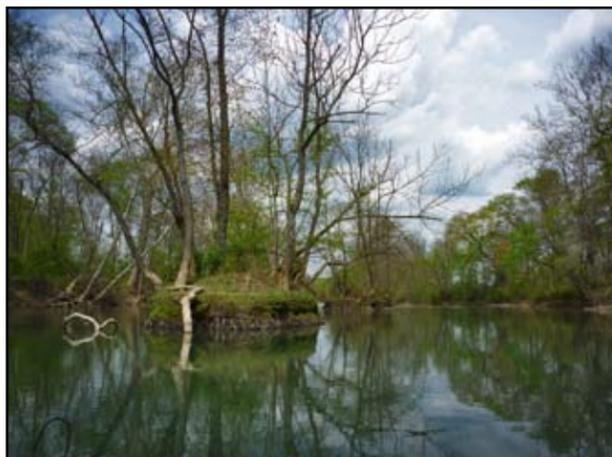


Figure 17. Series of Interesting, Small, Equal Distant Islets



Figure 18. PAFBC Bald Eagle Access

Approximately one half mile upstream of the PAFBC Access, you start to see homes along the streambank and hear the rumblings of State Route 150. Just prior to reaching the PAFBC Access on the left, the creek slows down and widens significantly. This is the beginning of the pool that is caused by a dam approximately 1.6 miles downstream.

The PAFBC Access off of SR 150 has a concrete launch ramp that could be used by canoes, kayaks, and motorized boats (See Figure 18). Warning signs state that slow no wake zone laws are in effect where Bald Eagle Creek is less than 200 feet wide.

The next portion of the Water Trail runs from the PAFBC Bald Eagle Access to the 6-foot dam



Figure 19. Portage Trail below Dam

approximately 1.6 miles downstream. This portion of the creek takes about 70 minutes to complete due to the slow flow of the water.

The approach to the dam is marked by a buoy and a warning sign. A water intake channel with two gates is on the river left. Land exists between the intake channel and the dam that can be used for portage. The intake channel follows the former canal alignment that can be observed from this location. The portage around the 6-foot dam is only approximately 200 feet and easy to traverse (See Figure 19). The portage path is not currently marked. It is recommended that the portage start point be marked as part of the water trail development. The former canal also offers the opportunity for historical interpretation (See Figure 20). Permission for any recommended improvements would have to be acquired from the existing landowner (currently the First Quality Tissue Company).

The next portion of the water trail runs from the dam to the Lower SR 150 (Hogan Boulevard) Bridge near Flemington. This portion of the creek takes about 20 minutes to complete and is approximately 0.9 miles long. Downstream from the dam a maze of channels and small islands. The channels closest to the center of the creek provide enough depth for boat passage. In his book "Keystone Canoeing", Edward Gertler states that this stretch can be hazardous at high

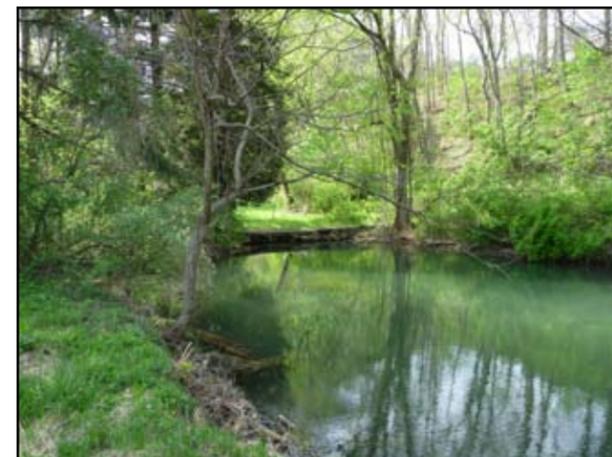


Figure 20. Water Intake Channel at Location of Former Canal



Figure 21. Small Grass Parking Area Adjacent to Lower SR 150 Bridge

flows because of numerous strainers. Fishing Creek enters on the river right and is known for its excellent trout fishing and also provides boating opportunities at higher flows. This stretch is wooded, full of wildlife, and one of the most scenic portions of the water trail.

The lower SR 150 Bridge near Flemington is a potential future access point to the water trail. Currently, there is dirt path that is being used to access the creek on the downstream, river right side of the bridge. The parcel at this location is owned by Mill Hall Borough with a small access drive to a fenced pump station. Before the fenced pump station, a small grass area that could park 2-3 cars exists (See Figure 21). This location should be investigated further as it could provide a mid-way access point between the PAFBC Bald Eagle Access and the Castanea Township Access, which is currently a fairly long stretch without access. Several local restaurants are located adjacent to this bridge which could be utilized by boaters.

Future recommendations for improvements to this access point include coordination with the Borough to confirm that this area can be used for boat access, stabilizing and leveling the access path to the creek, stabilizing and increasing the size of the parking area, signing the parking area, stabilizing the boat launch location, and identification signage for both the parking area from the street and landing area from the water.



Figure 22. Castanea Township Boat Launch

The next portion of the water trail runs from the Lower SR 150 Bridge to the Castanea Township Access. This portion of the creek takes about 50 minutes to complete and is approximately 1.9 miles long. This section starts with a short wooded section followed by a scenic railroad bridge. After the bridge a long shallow section of creek begins. This section has a high rock fill wall and industrial discharge on the river left and SR 220 on the river right. This shallow section is slow moving under low flows. After the wide shallow reach, the stream passes under the SR 220 bridge.

The Castanea Township Boat Access is on the river left approximately a quarter mile downstream of the SR 220 Bridge. This access point has a concrete launch ramp, gravel parking areas, recreation facilities, and picnic areas (See Figure 22).

The remainder of Bald Eagle Creek was not investigated during the April 21 field reconnaissance, however approximately 2.5 river miles exist prior to the confluence with the West Branch of the Susquehanna River. It is estimated that it would take approximately 60 minutes to float the remaining portion of the Creek. There is no public access available at the mouth of Bald Eagle Creek. However, boaters could float down the West Branch of the Susquehanna for approximately 5.5 river miles to the PAFBC Pine Access downstream in Wayne Township and would add approximately 1.5 to 2 hours of paddling time.

Connections to other Points of Interest and Trail Systems

The following are some of the existing and proposed points of interest located along or within a short vicinity of the preferred trail alignment:

- Tallyrand Park and the National Register Bellefonte Historic District and victorian era downtown;
- The Bellefonte Central Rail Trail system is

proposed to enter the study corridor just to the north of the Lamb Street Parklet on the western bank of the Spring Creek from the Buffalo Run valley;

- The National Kayak Slalom Training Course
- Harmony Forge Historic Property
- Milesburg Historical Society and Museum
- Eagle Ironworks at Curtin Village
- Bald Eagle State Park
- Bellefonte is a gateway community in Lumber Heritage Region.

Art on Trails

During the initial phase of this project, a sub-committee meeting was held where the potential for providing opportunities for the exhibition of public art was discussed.

Art and artists enhance trails and greenways. Art related to the cultural heritage of trails makes them more interesting, enjoyable, and exciting. Art can be added to existing components of the trails such as benches, drinking fountains, signs, bridges, walls etc. in the form of murals, sculptures, etc. Art can also stand on its own along the trails. Artful Ways, a trails collaboration between the National Park Service and the National Endowment for the Arts recently conducted a survey of individuals on the art benefits for trails. It discovered that about 86% of those surveyed confirmed that art enhanced public appreciation of the trail environment as well as attracted positive public attention and increased trail use.

LEGAL FEASIBILITY

Potentially Affected Properties

This plan recommends the use of publicly owned land and/or rights-of-way and avoids trail alignments that would impact privately owned land wherever possible. However, where friendly agreements can be reached, some alignments will require the acquisition of right-of-way through either fee simple purchase, easement if possible, or by donation from a private landowner.

The following is a summary of the number of potentially affected privately-owned parcels by segment for the Preferred Alignment:

Segment 1 – A minimum of three (3), and a maximum of 14 between Bellefonte and Milesburg will be required depending on the trail's location along PA 144/150 between the sewage treatment plant and gas station. Another easement may also be required in the final off-road segment connecting to Curtin Road, depending on where the proposed trail may be able to pass below the existing active railroad.

Segment 2 – Zero (0). This proposed alignment is located entirely within publicly-owned lands or rights-of-way.

Segment 3 – A total of two (2) acquisitions or easements will be required. One will be necessary for the proposed access point along the Beech Creek at the beginning of the water trail. Another will be required to formalize the portage route around the existing dam in Bald Eagle Township.

Please refer to the Legal Feasibility Section of Chapter 6: Proposed County Greenway & Multi-Modal Trails Network for more information regarding easement acquisition and general liability issues.

FINANCIAL FEASIBILITY

Estimate of Probable Development Costs

This Feasibility Study-level estimate of probable development costs is intended to provide a general range of costs for the various facilities and improvements proposed as part of the preferred alignment described herein. This estimate is based on 2010 construction costs including standard prevailing wage rates associated with public sector. Building and construction costs will need to be adjusted at a rate of 3-4% for each year following to account for the general rate of inflation. As more detailed design and engineering information becomes available during subsequent development phases, costs will be more accurate. Costs will also be heavily impacted by market conditions current at the time. Escalation of materials and labor costs may occur.

Costs are for installed improvements only and do not include property acquisition or easements.

The following is a breakdown of the estimated costs by Trail Segment:

Segment 1:

Costs for the land based trail system proposed for Segment 1 were developed by taking measurements from the GIS mapping database and applying them to the unit costs as described below.

Proposed off-road segments were estimated for costs as a Multi-Use Trail. Construction requirements for these sections include site preparation & vegetation clearing, earthwork & drainage improvements, security measures such as fencing and bollards, and an asphalt or macadam trail surface. The estimated cost for these improvements averages \$55 per linear foot, including a 10% contingency. Compacted limestone dust trail surface, where applicable and gentle slopes allow for

a savings of \$10 per linear foot.

Construction requirements for the proposed on-road improvements will include shoulder improvements and additional paving where necessary, lane striping, directional and safety signage, and bicycle-safe grates. The estimated cost for these improvements averages \$20 per linear foot, including a 10% contingency.

The proposed bridge crossing from the Lamb Street Parklet to the eastern bank of the Spring Creek would be approximately 150' in length. Pedestrian bridges come in wide variety of style and function. It is not envisioned that this bridge will need to accept vehicular loads as there is current vehicular access available at both ends. This will keep the bridge costs down as load requirements are a significant cost factor in bridge design. Given the length and proposed location of this bridge, costs could range between \$150,000 to \$200,000, plus engineering and permitting costs. A PADEP General Permit 11 will be required for this bridge.

Design and engineering costs vary depending on the selected funding source and their associated regulatory requirements. Privately funded projects typically have the least regulatory requirements and generally fall within the 10-15% of the proposed construction costs. Federally funded projects typically have the most stringent design and engineering requirements and often have additional clearances (environmental, historical, etc.) that must be obtained as part of the design process. These projects generally fall within the 25-30% of proposed construction costs. For purposes of this study, 20% will be the assumed average.

Off-Road Trails		
16,725 LF (3.17 miles) @ \$55/LF=		\$919,875
On-Road Trails		
16,475 LF (3.12 miles) @ \$20/LF=		\$329,500

Bridge Crossing	\$200,000
Subtotal:	\$1,449,375
Design & Engineering (20%)	\$289,875
TOTAL SEGMENT 1:	\$1,739,250

Segment 2:

Proposed improvement costs were taken directly from the Brick Town Trail Feasibility Study cited earlier in this chapter.

Curtin Village to Howard 5.05 miles	\$1,136,558
Howard Borough 0.57 miles	\$213,485
Bald Eagle State Park 4.87 miles	\$914,595
Blanchard & Beech Creek 3.55 miles	\$650,493
Subtotal: 14.04 miles	\$2,915,131
Design & Engineering (15%)	\$437,270
TOTAL SEGMENT 2:	\$3,352,400

Segment 3:

Costs for the proposed water trail are limited to the access sites and portages. Typical improvements include allowances for signage at all locations and parking/site improvements at the newly proposed access sites. Costs for these improvements should be refined as site plans and construction documents are developed for each site. The following is an initial generalized estimate:

Signage:	
\$10,000/access site X (4 access sites + 1 portage site) =	\$50,000
Parking/Site Improvements:	
\$25,000/site X 2 new access sites =	\$50,000
Subtotal:	\$100,000

Design & Engineering (20%)	\$20,000
TOTAL SEGMENT 3:	\$120,000
GRAND TOTAL ALL SEGMENTS:	\$5,211,650

State agencies such as DCNR and DCED will be important sources for design/ engineering and construction funding. PennDOT should be involved with the highway-related improvements projects. Local recreation groups and businesses can contribute through fund raising and/or by applying for funding as non-profit agencies.

Please refer to the 'Potential Funding Sources' section of Chapter 8: Action Plan of this report for more information relative to the most appropriate funding programs that may be applicable towards the funding of this proposed trail system at its varied stages of development.

ACTION PLAN

Phased Implementation

The following recommendations are suggested and listed in order of priority and are not necessarily meant to be sequential. For example, recommendations #3 & #4 could occur simultaneously, while #5 could be on-going and begin at any time.

1. Form a trail management entity to oversee trail development, including preparation of funding applications, design, construction, promotion, and maintenance. A list of potential project partners follows these recommendations from which representatives from each could be invited to participate.
2. Complete Master Plan to further refine alignment, proposed improvements, and historical theme. This could be done for each of the proposed segments separately or as warranted by available funding. The Brick Town Trail in Segment 2 has already begun this process and is now looking to acquire funds for the Master Plan phase of trail development;
3. Secure the necessary easements at proposed access points and develop the proposed Water Trail along the Bald Eagle Creek. This segment is a relatively low cost for implementation and could be established rather quickly for most benefit to the community;
4. Acquire all necessary land through fee simple purchase or easement agreements for the preferred land trail alignment in Segment 1. All required easements within Segment 1 would be with commercial/industrial landowners and/or parties that may see a mutual benefit in the trail's development;
5. Continue historical research and location of

canal remnants for possible interpretive sites & opportunities for public art;

6. Prepare and submit funding applications for trail design and development;
7. Construct trail as funding becomes available.

Project Partners:

The following is a listing of potential project partners identified through the public participation and development of this study:

- **Clinton County**
- **Centre County**
- Lumber Heritage Region
- Clinton County Historical Society
- Centre County Historical Society
- Pennsylvania Historic and Museum Commission
- Milesburg Museum & Historical Society
- DCNR – Bald Eagle State Park
- Beech Creek Watershed Association
- PA Fish and Boat Commission
- PA Wilds
- Susquehanna Greenway Partnership

Each of these entities will likely be involved with the promotion, funding, implementation and/or maintenance of the proposed trail systems. The Susquehanna Greenway Partnership and both Centre and Clinton Counties are those that should likely take the lead in the formation of a trail management entity as suggested in the first recommendation listed above. Other groups, such as representatives from each of the municipalities through which the trails will pass, or non-profit volunteer 'friends of the trail' type organizations could also participate in this

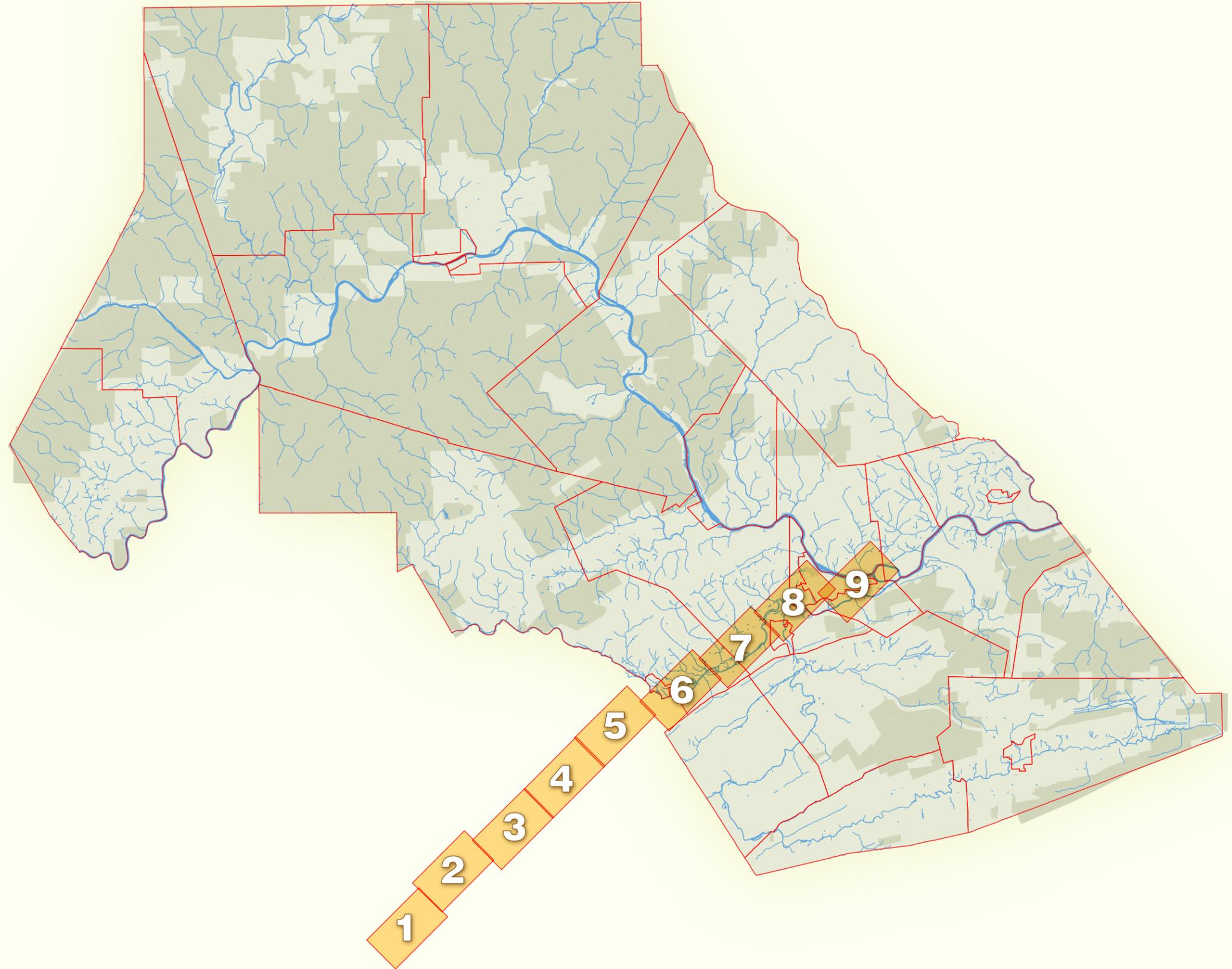
management entity. For more information relative to the forming of such an agency, please refer to the corresponding section in Chapter 8: Action Plan of this report.

References

Gertler, Edward. *Keystone Canoeing – A Guide to Canoeable Waters of Eastern Pennsylvania*. Silver Spring, Maryland. The Seneca Press. 1993.

The Brick Town Trail, Backbone of the Beech Creek Greenway Plan, a Feasibility Study, prepared in 2007 by the Beech Creek Watershed Association.

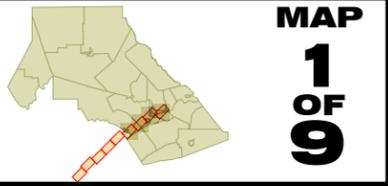
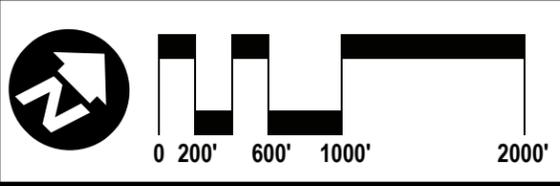
Bellefonte Waterfront Restoration and Redevelopment Plan prepared for the Borough of Bellefonte in 2000 by LandStudies, Inc.





CLINTON COUNTY GREENWAYS & OPEN SPACE PLAN
 Clinton County, Pennsylvania
Bald Eagle and Spring Creek Canal Trail Feasibility Study

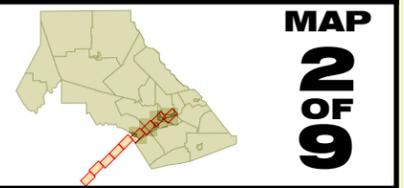
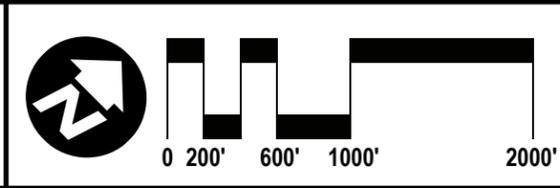
- Legend**
- █ Preliminary Trail Alignment Alternative
 - █ Historic Canal Alignment
 - Preferred On Road Route
 - Preferred Off Road Route
 - Proposed Water Trail
 - Canal Lock
 - ✦ Points of Interest
 - Publicly Owned Lands
 - Privately Owned Lands

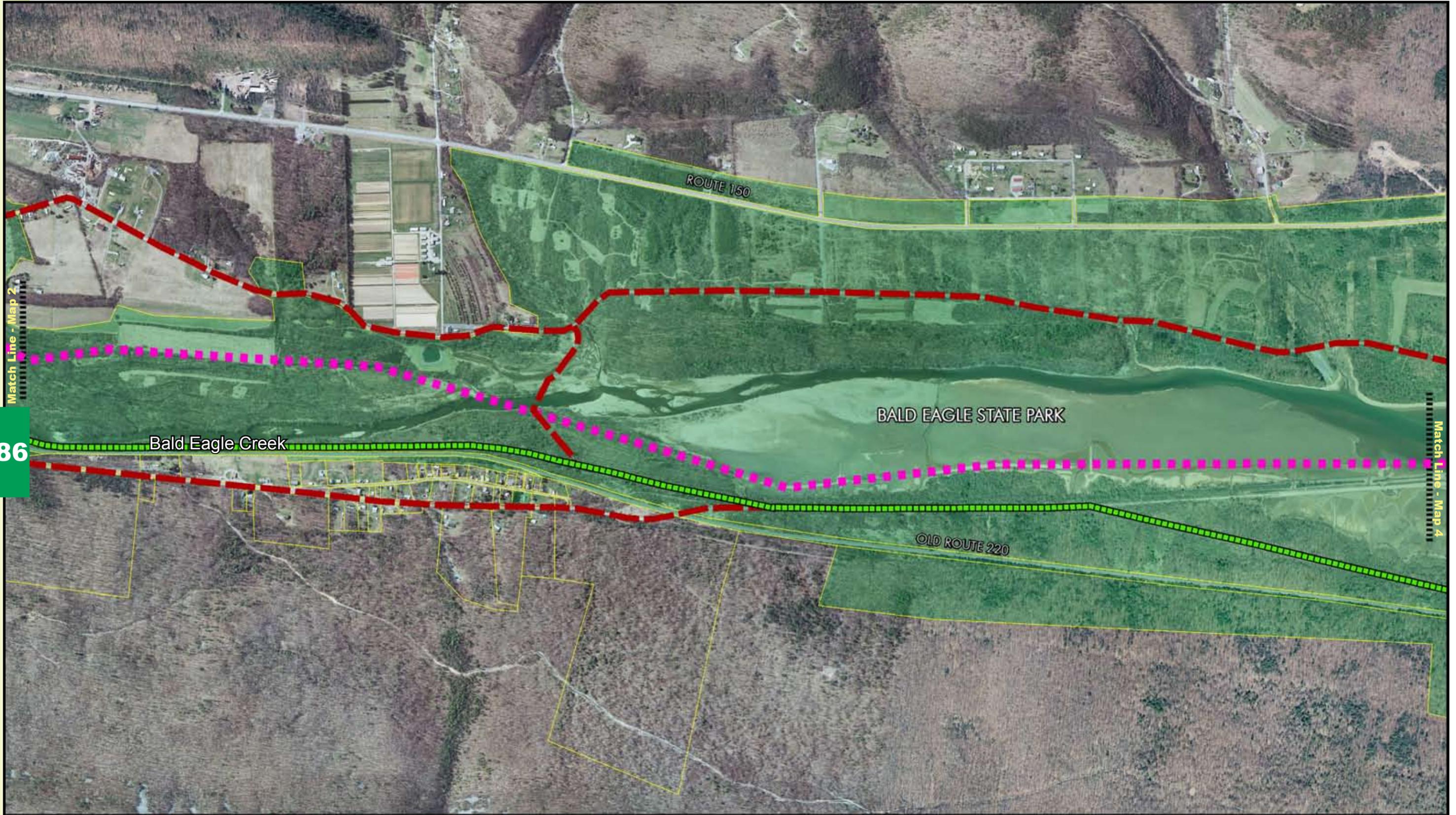




CLINTON COUNTY GREENWAYS & OPEN SPACE PLAN
 Clinton County, Pennsylvania
Bald Eagle and Spring Creek Canal Trail Feasibility Study

- Legend**
- Preliminary Trail Alignment Alternative
 - Historic Canal Alignment
 - Preferred On Road Route
 - Preferred Off Road Route
 - Proposed Water Trail
 - Canal Lock
 - ✱ Points of Interest
 - Publicly Owned Lands
 - Privately Owned Lands





Match Line - Map 2

Match Line - Map 4

Bald Eagle Creek

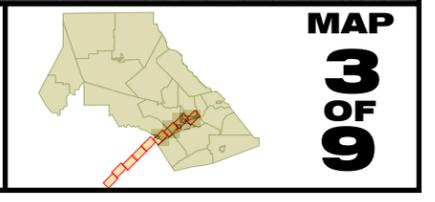
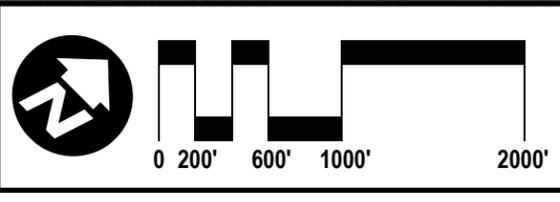
ROUTE 150

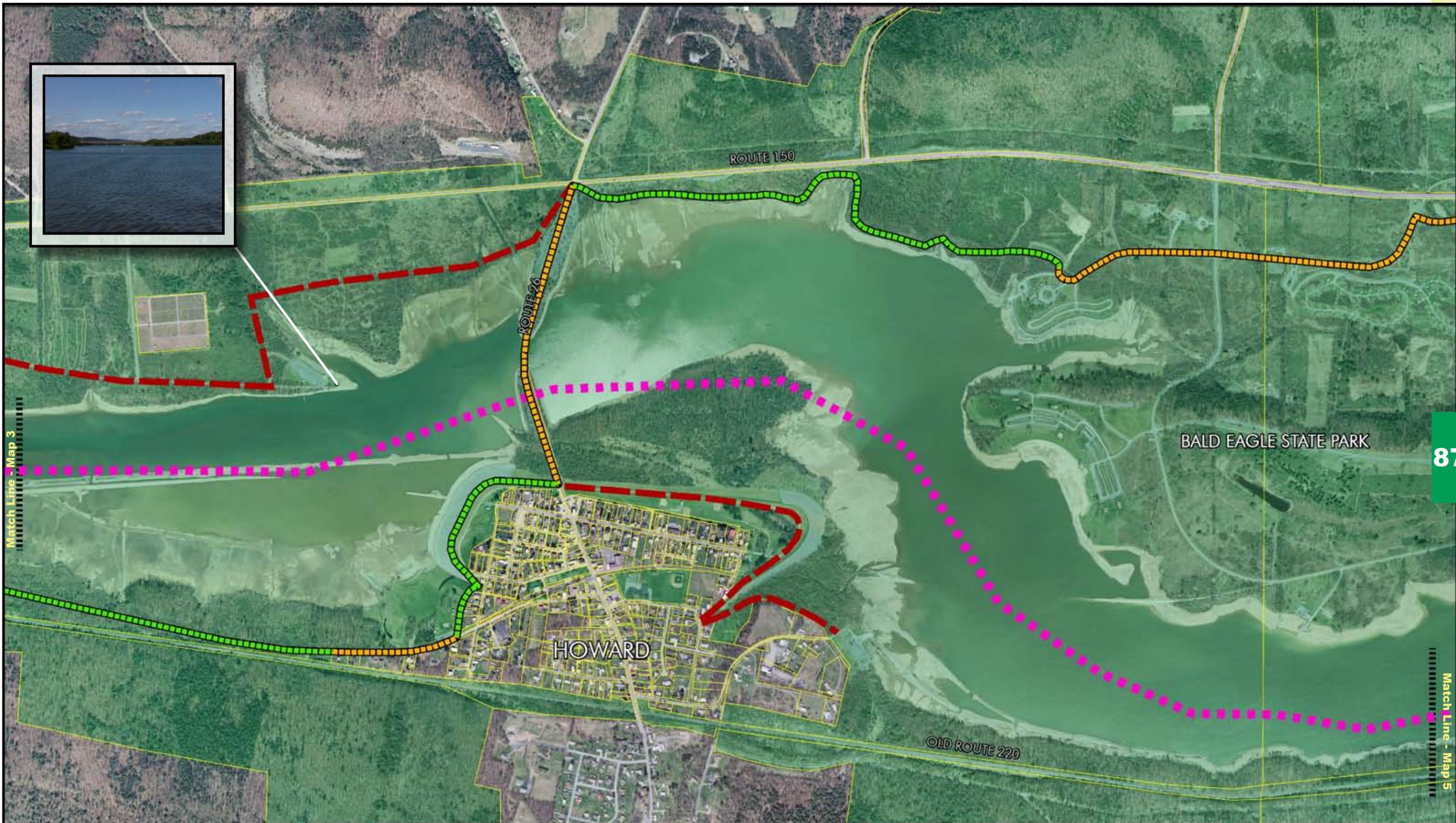
BALD EAGLE STATE PARK

OLD ROUTE 220

CLINTON COUNTY GREENWAYS & OPEN SPACE PLAN
 Clinton County, Pennsylvania
Bald Eagle and Spring Creek Canal Trail Feasibility Study

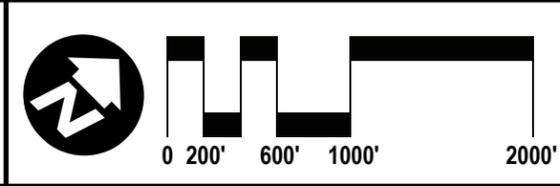
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 - Historic Canal Alignment
 - Preferred On Road Route
 - Preferred Off Road Route
 - Proposed Water Trail
 - Canal Lock
 - ✦ Points of Interest
 - Publicly Owned Lands
 - Privately Owned Lands

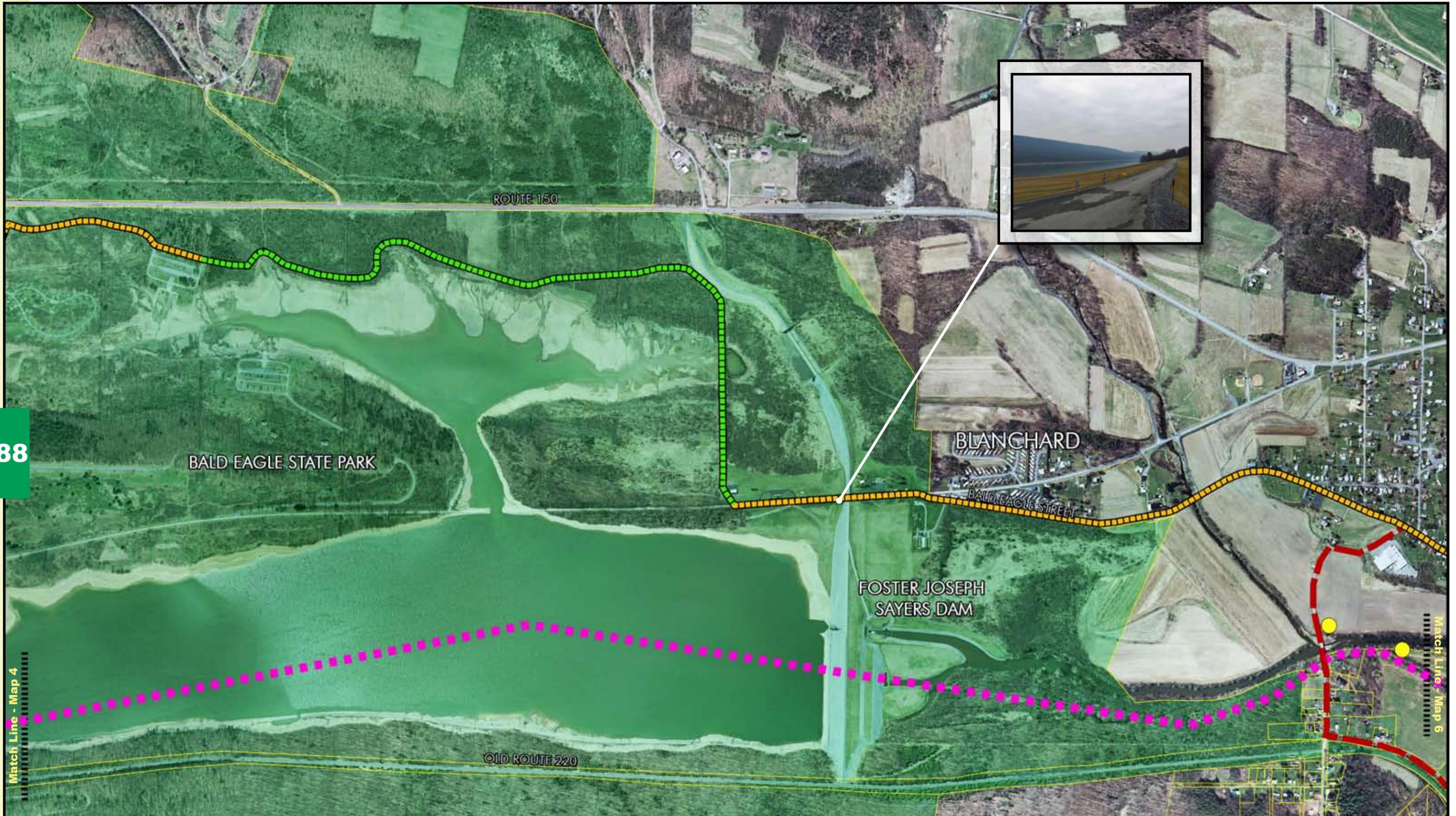




CLINTON COUNTY GREENWAYS & OPEN SPACE PLAN
 Clinton County, Pennsylvania
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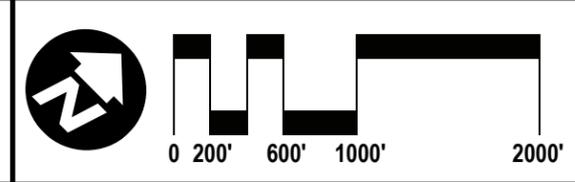
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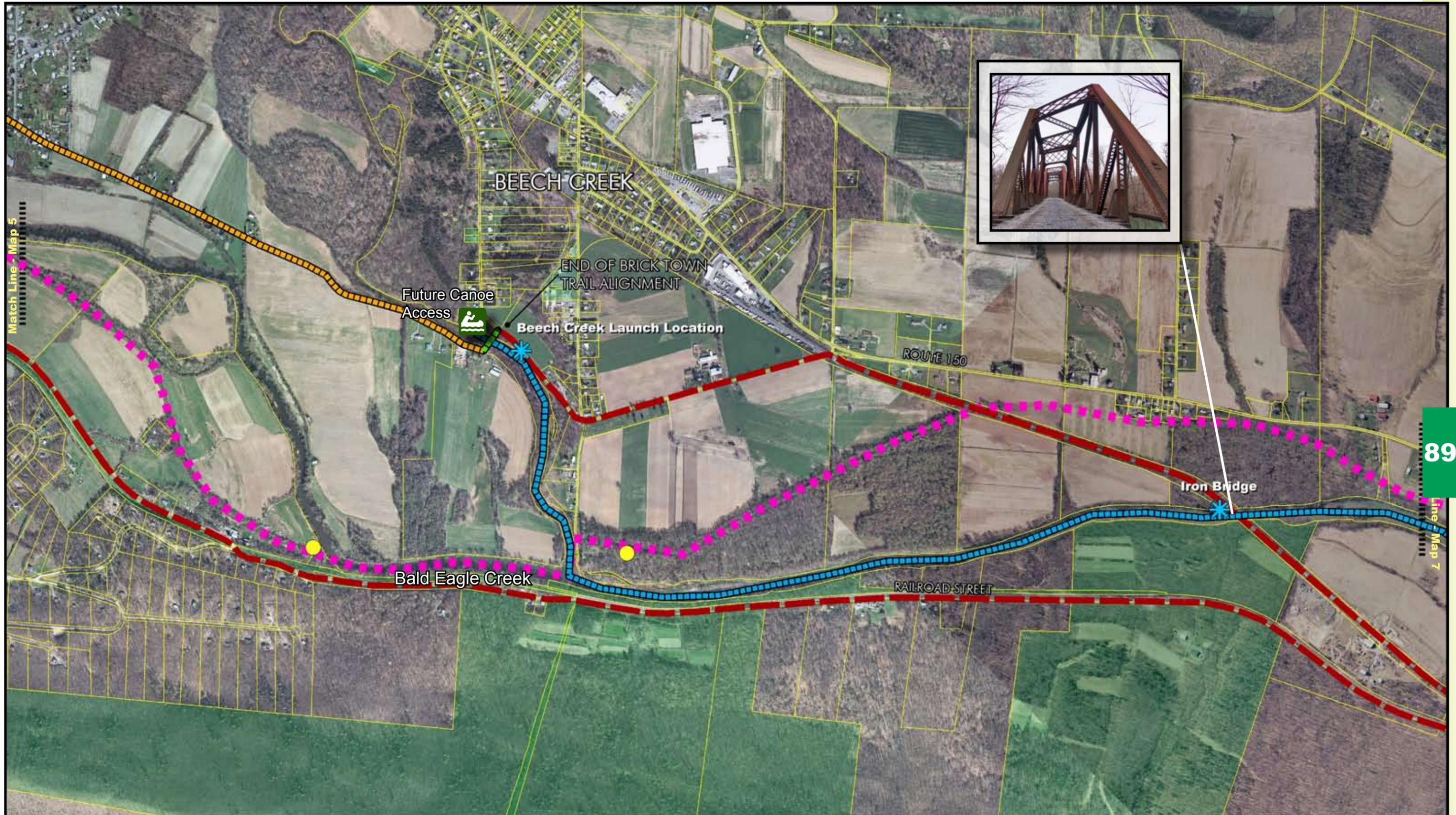




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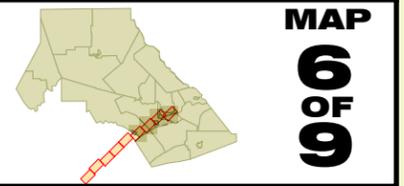
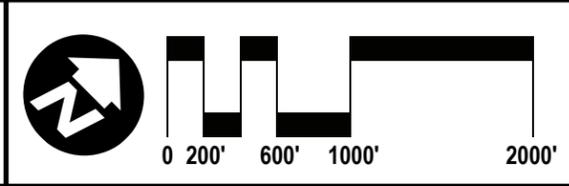
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 - ★ Points of Interest
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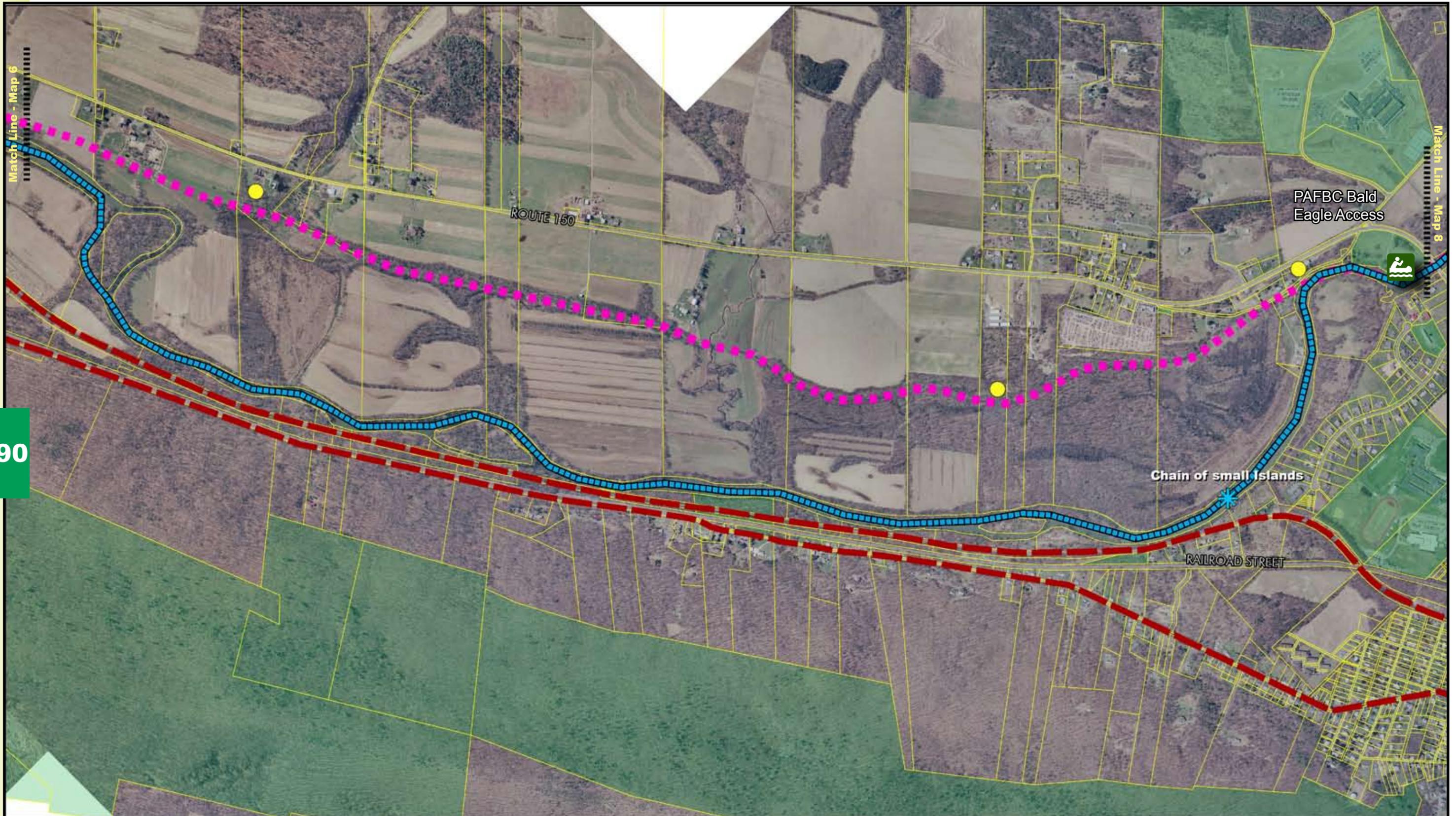




CLINTON COUNTY GREENWAYS & OPEN SPACE PLAN
 Clinton County, Pennsylvania
Bald Eagle and Spring Creek Canal Trail Feasibility Study

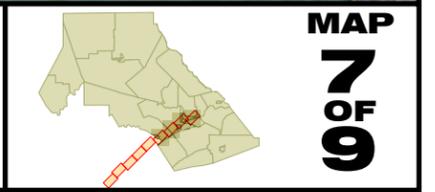
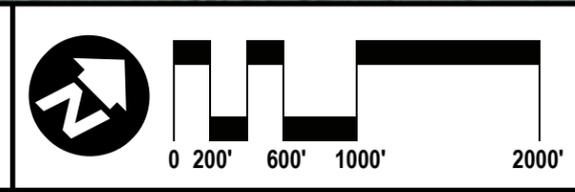
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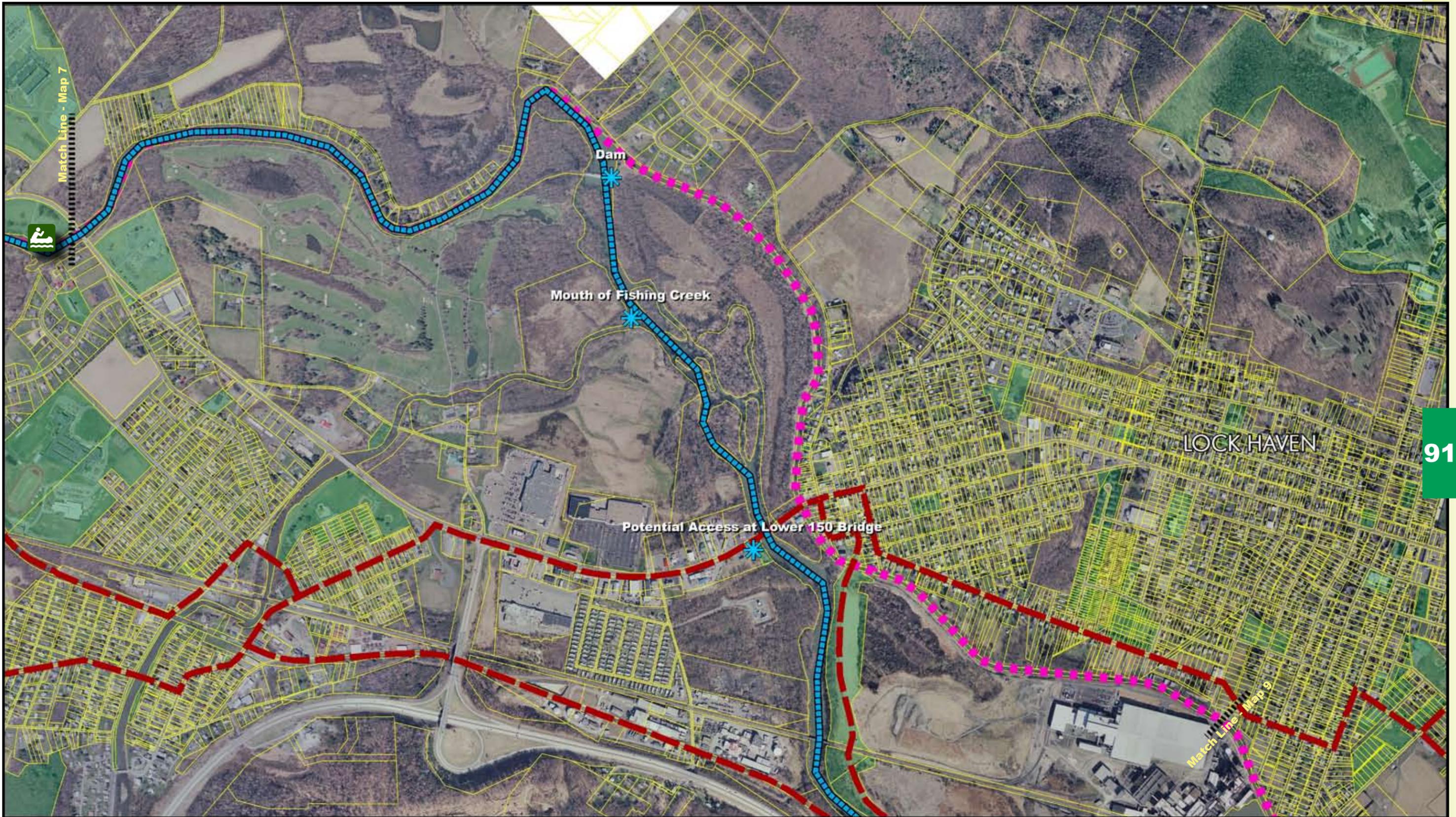




CLINTON COUNTY GREENWAYS & OPEN SPACE PLAN
 Clinton County, Pennsylvania
Bald Eagle and Spring Creek Canal Trail Feasibility Study

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CLINTON COUNTY GREENWAYS & OPEN SPACE PLAN
 Clinton County, Pennsylvania
Bald Eagle and Spring Creek Canal Trail Feasibility Study

Legend

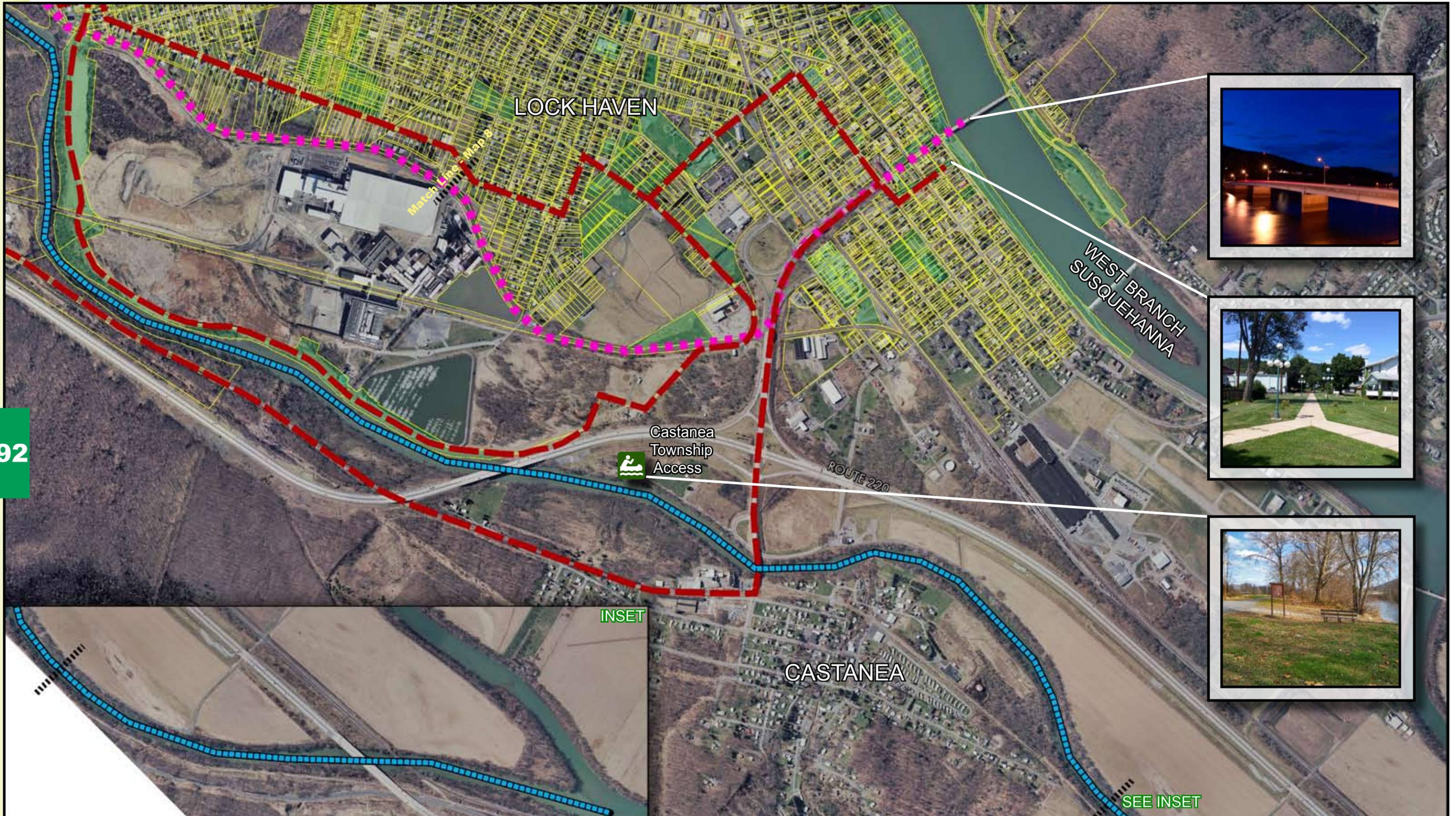
- Preliminary Trail Alignment Alternative
- Historic Canal Alignment
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- Preferred Off Road Route
- Proposed Water Trail
- * Canal Lock
- * Points of Interest
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North Arrow

Scale: 0 200' 600' 1000' 2000'

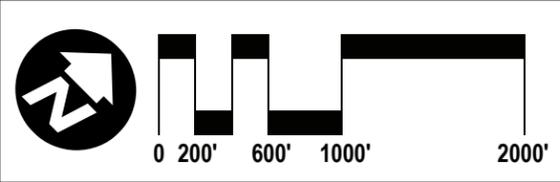
Inset Map of Clinton County showing the study area location.

MAP 8 OF 9



CLINTON COUNTY GREENWAYS & OPEN SPACE PLAN
 Clinton County, Pennsylvania
Bald Eagle and Spring Creek Canal Trail Feasibility Study

- Legend**
- Preliminary Trail Alignment Alternative
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 - Preferred Off Road Route
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PINE CREEK TRAIL CONNECTOR FEASIBILITY STUDY

STUDY PURPOSE

The purpose of this study is to investigate the feasibility of providing a multi-use trail connection between Lock Haven and the southern end of the existing DCNR Pine Creek Rail Trail in adjacent Lycoming County.

The recently completed 62+ mile Pine Creek Rail Trail is recognized by USA Today as one of the “10 great places to take a bike tour.” The length of the trail combined with the scenic natural beauty of the Pine Creek Valley make this one of the most beautiful rail trails in the country and can be considered a major regional attraction for the outdoor enthusiast. For more information on the Pine Creek Rail Trail, please visit the DCNR website: <http://www.explorepatrails.com/singletrail.aspx?id=151>

The study corridor may be defined as beginning in the City of Lock Haven, then south to Castanea Township, then eastward along the southern bank of the Bald Eagle Creek and West Branch of the Susquehanna River valley through Wayne Township, then across the West Branch utilizing an existing inactive railroad bridge to Pine Creek Township, then continuing eastward to Lycoming County and the Pine Creek Trail.

Background

At the outset of this study, Wayne Township was in the midst of negotiations with the PPL Corporation to acquire the rights to an existing utility corridor for trail use. This existing utility corridor (PPL ROW) under consideration extends from the former railroad station in Castanea to and through Wayne Township and the existing Wayne Township landfill until it meets the existing railroad bridge.

The intention was to first acquire the PPL ROW via a quit claim deed. The next step was for Wayne Township to subdivide the ROW into three

separate parcels. The segment of the PPL ROW north and east of McElhattan Dr. was to be offered to the County Solid Waste (Landfill) Authority, as it sits within the landfill area; the ROW segment south and west of McKinney Dr. was to be offered to the Clinton County Commissioners; and, the segment between McElhattan Drive and McKinney Road (nearest the Wayne Twp. Municipal Park) would be developed as a trail by Wayne Township. Assuming the Clinton County Commissioners accepted the segment between Castanea and McKinney Drive, an appraisal was to be done to determine the value of the land for use as a possible match for funding applications to develop this segment into a multi-use trail. The Wayne Township Landfill (Clinton County Solid Waste Authority) was also prepared to offer the labor and equipment necessary to construct the trail along the PPL ROW as in-kind services to be used as matching funds towards a grant application to fund trail construction.

The end result of the negotiations between Wayne Township and PPL was that only the portion of the PPL ROW north of McKinney Drive to the existing railroad bridge was acquired by Wayne Township via a donation from PPL. The value of the land donated was estimated to be approximately \$90,000. The remaining segment between McKinney Road and Castanea was not included as part of the land transfer due to a number of potential title issues related to this segment of the ROW, most notably in the section between McKinney Road and the intersection of the PPL ROW with Youngdale Road.

Currently, Wayne Township is proceeding with their plans to develop the segment between McKinney Road and McElhattan Drive as a neighborhood trail and has offered to assist Clinton County with any negotiations with PPL should the County consider pursuing the purchase of this remaining ROW segment.

PHYSICAL INVENTORY AND ASSESSMENT

Data Collection and Methodology

The Clinton County Planning Commission and GIS Department provided the consultant with base GIS information for the existing conditions, including tax parcel information, PAMAP Project aerial photography and contour information. The consultant developed a series of field maps that were then used for reference in subsequent field reconnaissance where existing field conditions were noted and photo inventoried. In addition to a general alignment that was proposed at the beginning of the study by the Planning Commission, analysis of the field reconnaissance information and GIS parcel information resulted in the development of alignment alternatives in certain areas that were later reviewed by the study committee for determination of the preferred alignment.

Significant Natural Features

With the exception of a short segment on the northern side of the existing railroad bridge in Pine Creek Township, the entire proposed alignment and alignment alternatives are located within existing utility or public roadway rights-of-way. This means that there are no potential direct impacts to any significant natural or manmade features associated with this proposed trail system within the study corridor.

A Pennsylvania Natural Diversity Inventory (PNDI) query was conducted for the proposed alignment through the study corridor, with only one resource identified as being potentially affected. This species of concern is for the Peregrine Falcon identified by the PA Department of Conservation and Natural Resources. Further instructions relative to whom should be contacted and what should be sent are included as part of the PNDI receipt generated as

part of the query. It is possible that the proposed trail alignment passes within a specified distance of a known habitat and does not directly impact the habitat. It is likely that this specific habitat is associated with one of the highway bridges that passes over the West Branch.

PNDI searches are only valid for a period of one (1) year from the time of initial review and are to be considered a preliminary screening tool only to identify potentially affected resources requiring further study. A PNDI query should be performed again as part of the design process when the trail alignment is refined and construction plans are formulated.

Slopes and Accessibility

Although the grades are generally gradual with no significant steep slope areas of significant length throughout the corridor, limited areas of steep slopes associated with the proposed alignment will need to be addressed with respect to ADA accessibility as more detailed construction plans are developed.

Accessibility for the proposed trail and other facilities should be designed in compliance with the ADA accessibility guidelines for Outdoor Recreation Areas. These guidelines will be most applicable at both ends of the proposed railroad bridge crossing over the West Branch of the Susquehanna, where a system of ramps will be required to make the transition from the bridge to the adjacent lands.

These guidelines may be found at the ADA website: <http://www.access-board.gov/outdoor/>

Summary of Opportunities and Constraints

Opportunities:

- The vast majority of the proposed trail alignment is located within existing utility or public roadway

rights-of-way resulting in a minimal amount of impacts to privately owned land.

- McKinney Road, Spook Hollow Road, and River Road on which the trail is proposed for a 'share the road' facility have low traffic volumes which lessens potential conflicts between motorists and bicyclists/pedestrians
- The beautiful scenery along the banks of the Bald Eagle Creek and West Branch of the Susquehanna River and adjacent mountain ridges will provide for a great trail user experience.

Constraints:

- The PPL ROW will need to be acquired between Castanea and the PPL ROW intersection with Youngdale Road in order to make the connection to Wayne Township as there are no other physically feasible options available.
- Easements with existing landowners will be necessary to make the connection between the existing bridge crossing to the River Road right-of-way in Pine Creek Township.
- Costs to improve the existing railroad bridge crossing over the West Branch of the Susquehanna for trail use will be significant, and may delay trail development dependent upon available funding.

Proposed Trail Alignment

Due to its proposed location being within existing utility or public roadway rights-of-way and associated relatively level grades, the proposed trail is determined to be physically feasible. The following is a description of the preferred alignment, including descriptions of the alignment alternatives (where utilized or considered) beginning at the westernmost end of the study corridor and the City of Lock Haven

Preferred Alignment

The most feasible connection between the City of Lock Haven and Castanea is via South Hanna Street to Creek Road, then west along Creek Road to Jarrett Avenue, then south across the Jarrett Ave. bridge, then east along West Allison Street to Logan Avenue and the Castanea Rail Station.(see Figure 1)

A more direct connection that could be used by the advanced cyclist would be to follow PA 120 / Paul Mack Boulevard due south from the central part of Lock Haven until it meets Jarrett Avenue south of the US 220 / Appalachian Thruway interchange. Although the existing shoulders along this roadway are significant, most bicyclists and pedestrians will not feel comfortable using this route due to the high



Figure 2 - View along the Jarrett Avenue bridge looking towards Lock Haven from Castanea.



Figure 3 - Former railroad station in Castanea Township.

traffic speeds and volumes along this section of roadway (see Figure 2)

Please refer to the project mapping found at the end of this chapter for reference of the preferred alignment.

The preferred alignment mapping begins at the Castanea Rail Station. This structure has recently been refurbished and is home to the Clinton County Historical Society (see Figure 3). This location marks the beginning of the proposed off-road trail section that will travel eastward through the existing PPL ROW along its existing access road.

The existing access road is in relatively good



Figure 4 - PPL ROW in Castanea Township, looking northeast.

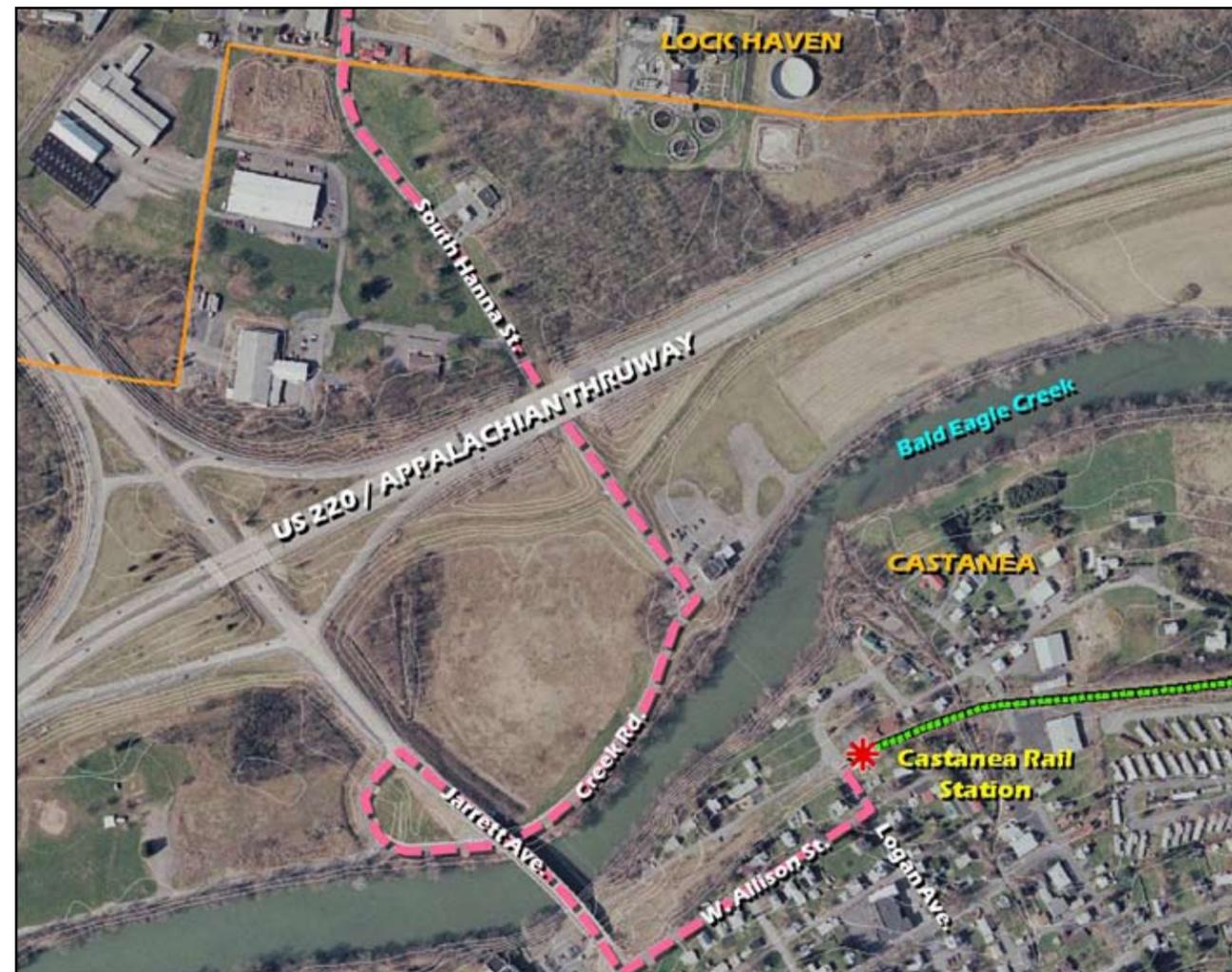


Figure 1 – proposed Lock Haven to Castanea bike/ped route.

condition with only minor improvements necessary to convert it for formal public use as a trail. These proposed improvements include ensuring the current drainage conveyance system is working properly, and the installation of a compacted stone surface that will be porous yet able to support maintenance vehicles for both the trail and power lines that will share this ROW (see Figure 4).

Additional improvements proposed include safety measures (signage, pavement markings) at the ROW crossing of McElhattan Ave. approximately 100 yards east of the rail station, and general security measures including bollards, fencing and/or guide rails to prevent unwarranted use by motor vehicles.

The proposed off-road trail segment will extend from the Castanea Rail Station to the PPL ROW intersection with Youngdale for a total distance of 2.93 miles. The PPL ROW lies benched on a steep slope between the East Keller St. / Youngdale

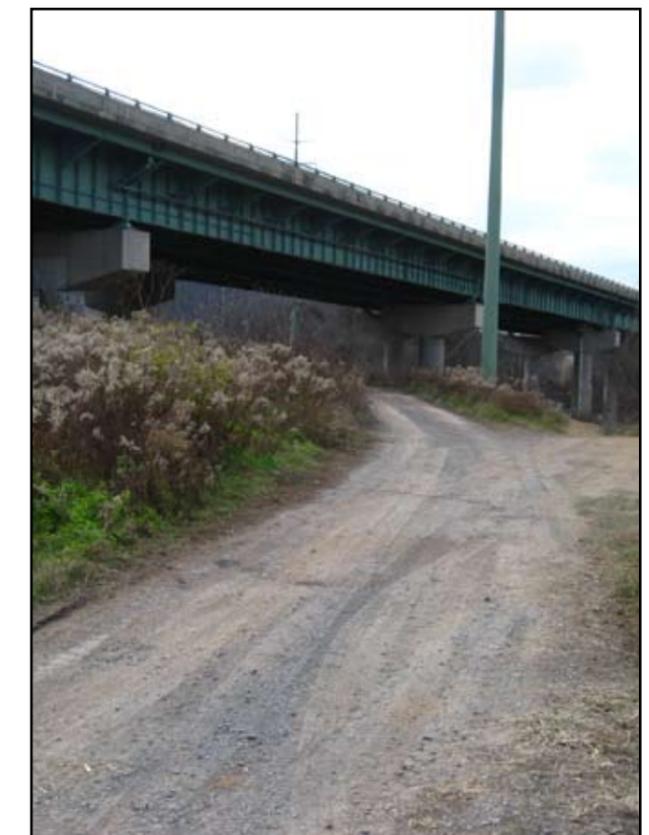


Figure 5 - PPL ROW beneath US 220 bridge between Castanea and Wayne Township.



Figure 6 – PPL ROW intersection with Youngdale Road, looking west.

Road right-of-way above and the Bald Eagle Creek below. The trail will pass beneath the existing US 220 overpass (see Figure 5), and extend another 1 ½ miles before its intersection with Youngdale Road (see Figure 6).

The PPL ROW eastward from the Youngdale Road intersection to McKinney Road contains many potential property title issues relating to the base ownership of the ROW. One landowner has constructed a garage and driveway within the ROW and others have branded the land with 'no trespassing' signs denoting the ROW as their property (see Figure 7). The details of how this land was originally acquired for the railroad line that once



Figure 7 - PPL ROW bridge with 'private property' sign along Youngdale Road.

travelled through this ROW is unclear. Therefore, in lieu of performing a detailed title search to determine who actually retains the legal rights to the land and the potential for the result of a title search to be challenged if this ROW has not reverted to the original landowners, the committee decided the trail should follow an alternate alignment along Youngdale Road.

The preferred alignment along Youngdale Road will be slightly more than one mile and will include improvements to the roadway shoulders and installation of appropriate safety and directional signage, including 'share the road' signs.

When Youngdale Road meets McKinney Road, the preferred alignment will turn west and follow McKinney Road across an existing at-grade crossing of an active railroad, then continue along the roadway as it turns north to the McElhattan Road overpass. This proposed on-road trail segment is little more than 1 ½ miles and includes roadway shoulder improvements and installation of safety and directional signage.

Trail users will have the option to access the neighborhood trail to be developed by Wayne Township by travelling east a short distance on McKinney Road and reentering the PPL ROW (see Figure 8). A Wayne Township municipal park is



Figure 8 – PPL ROW near Wayne Township Municipal Park.

a short distance north and to the west along this proposed trail, and trail users will be able to travel to McElhattan Drive approximately 0.6 miles to the north. By following McElhattan Drive another 0.55 miles to the north and west, which has an existing walkway along both sides for pedestrian use, trail users may be able to complete a 2.7 mile loop when combined with the previously described trail segment along McKinney Road.

Once the preferred alignment reaches the McElhattan Road overpass, McKinney Road becomes Spook



Figure 9 - View of proposed trail alignment along Spook Hollow Road looking eastward from beneath McElhattan Road overpass and bridge.

Hollow Road. During the course of this study, it was learned that Wayne Township intends to close Spook Hollow Road for vehicular use to convert it into a bicycle and pedestrian route only (see Figure 9). This is due to the remote nature of this roadway, its maintenance needs, and problems that have occurred in the past relative to dumping and other illegal activities. Wayne Township has also mentioned plans to construct a small parking area in the vicinity of the bridge that could serve as a potential trailhead.

The preferred alignment along Spook Hollow Road will require little effort to be converted for trail use

only, including minimal roadway improvements, installation of signage and security measures to prevent vehicular access. This trail will travel along the river bank and northern edge of an agricultural field affording the trail user a unique experience with spectacular views of the surrounding landscape. This preferred trail segment will go beneath the US 220 overpass. Approximately 0.20 miles south of the US 220 overpass and prior to passing beneath the railroad bridge crossing of the West Branch, there is a driveway leading to the historic Quiggle Cemetery



Figure 10 – At-grade railroad crossing nearest railroad bridge along Spook Hollow Road.

via a private crossing of the railroad.

The preferred alignment then must cross the active railroad at an existing at-grade crossing (see Figure 10). As seen in the photo, a section of the existing railroad bridge has been raised to accommodate the double-decker rail cars that travel along this active line. The preferred trail alignment will eventually utilize this elevated section of the railroad bridge, and accommodations will need to be made on both ends of the elevated section to provide for universal ADA accessibility along the trail.

Once across the active railroad, the trail will exit the road right-of-way and enter onto the Wayne Township Landfill property. The trail then must make

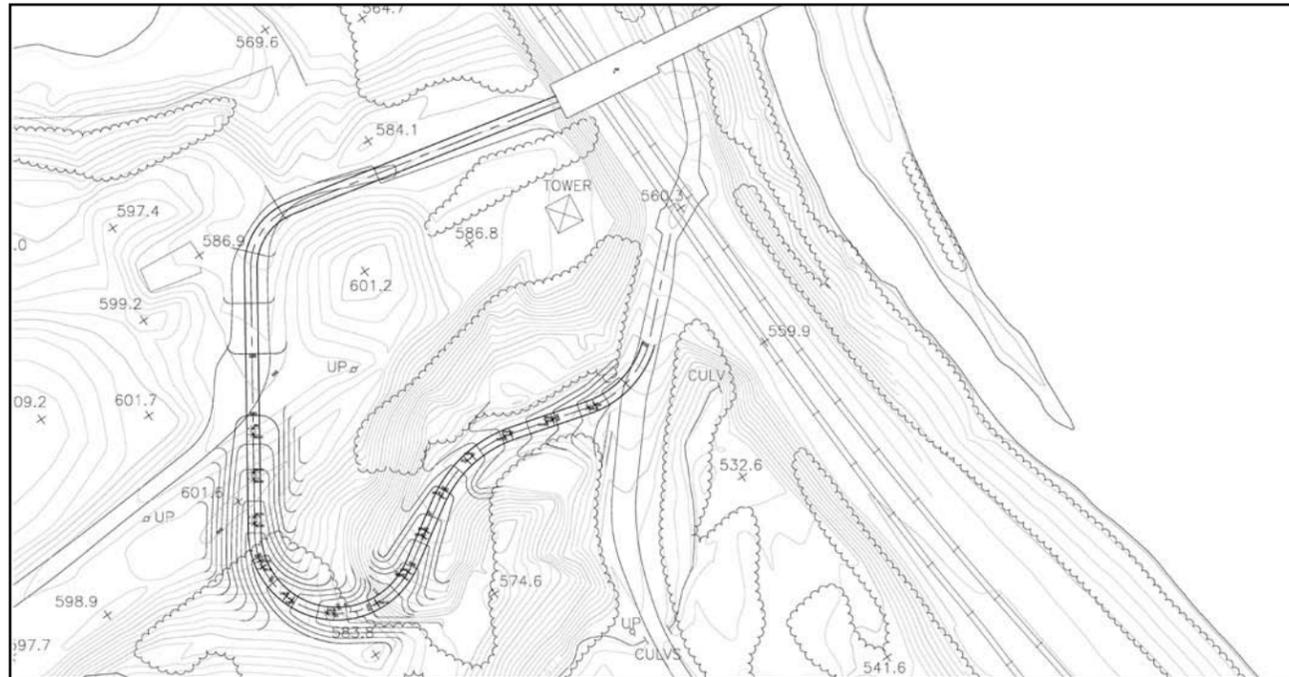


Figure 11 – Plan of proposed ADA accessible ramp between Spook Hollow Road and the existing railroad bridge.

the elevation transition to the existing railroad bridge crossing. The Clinton County Solid Waste Authority provided the consultant with a topographic survey so that a determination could be made whether or not an alignment could be formulated to make this transition and meet the ADA Accessibility Guidelines for Outdoor Developed Areas. A plan was developed that illustrates this transition could be made (see Figure 11). This plan was also used to estimate

probable development costs.

At the bridge, provisions must be made to provide for accessibility on both sides of the elevated bridge section over the active double-decker railroad that lies below. Once beyond the elevated bridge section, the trail is proposed to follow the northernmost of two existing rail lines across the bridge over the West Branch (see Figure 12). These improvements include the removal and replacement of existing railroad ties with a suitable decking structure / trail surface and safety railings for its entire length totaling over 850 feet. Costs for these bridge improvements will be significant and are initially estimated to be over a million dollars. The bridge also carries an existing gas pipeline that must be accommodated with new bridge design.

On the northern side of the bridge, two potential alignment alternatives were investigated to make the connection to the River Road right-of-way (see Figure 13). Both alternatives required a transition from the elevated railroad ROW to the existing grades



Figure 12 - Railroad bridge across the West Branch Susquehanna River.

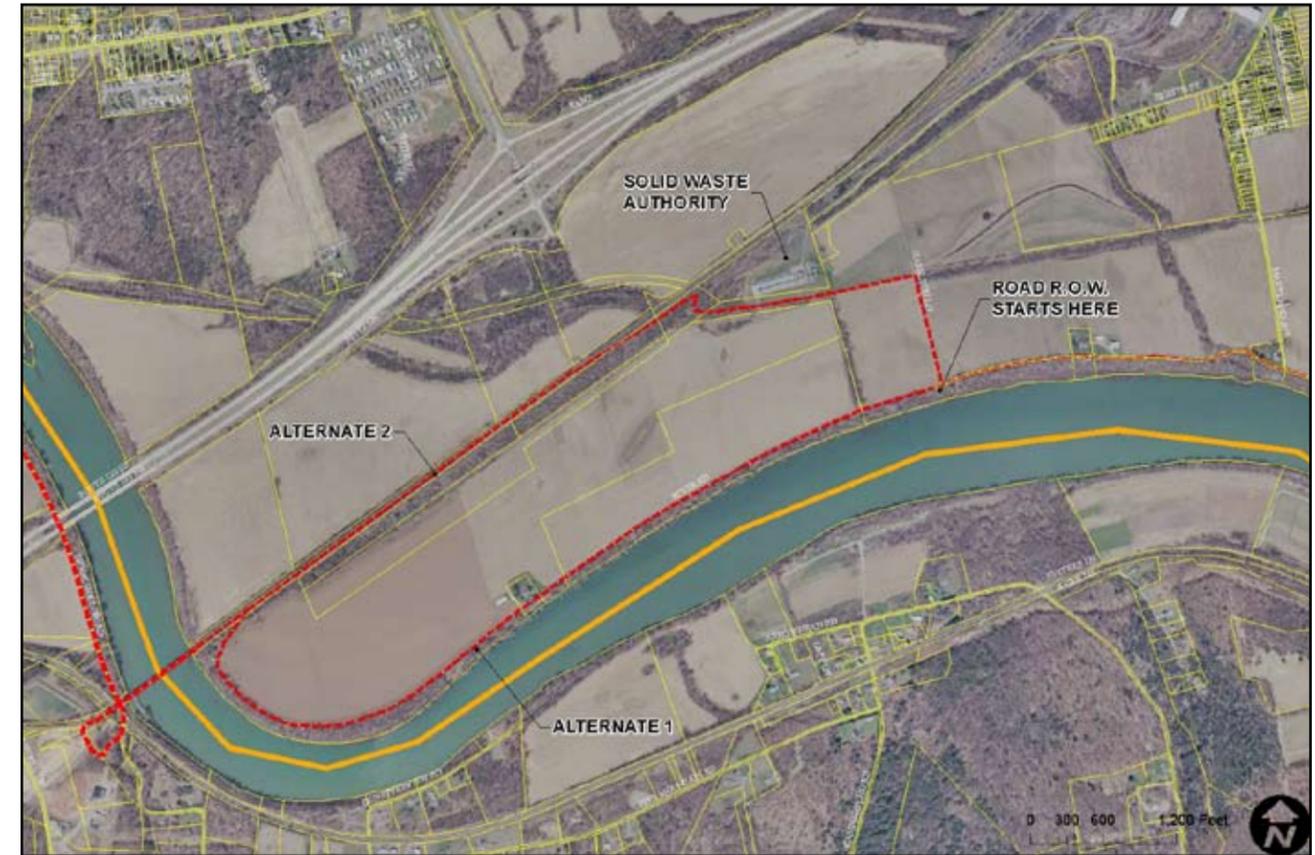


Figure 13 – Alignment alternatives on north side of railroad bridge in Pine Creek Township.

below, and each has potential impacts to privately owned property. Alternate 2 was determined to be less feasible and less desirable due to its location away from the river and through historically wet areas associated with the former Pennsylvania Canal alignment that passes just south of the Solid Waste Authority parcel.

Alternate 1 was determined to be the preferred alignment due to its proposed location adjacent to the river, lesser potential construction costs, and lesser potential private property impacts. This alignment is proposed to be developed as an off-road trail until meets the end of the driveway extending from the existing River Road ROW.

As part of the alternatives analysis, the consultant met with the primary landowner for the majority of the existing properties located along the river in November of 2009 to discuss the proposed trail and

solicit the landowner's feedback. The landowner agreed in principle with the concept of the proposed trail and would be in favor of allowing the trail to pass through the properties, pending the details of construction and other related issues associated with the agricultural operations of the land could

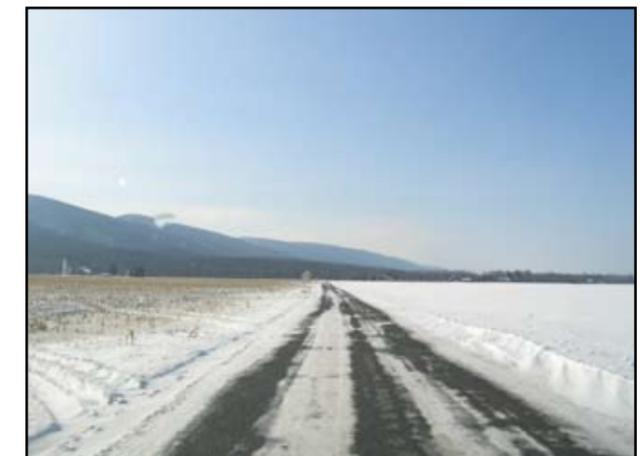


Figure 14 – River Road through Pine Creek Township.

be agreed upon. Additional easements with two other landowners will be required for the proposed alignment to make the connection to the existing River Road ROW.

The preferred alignment will then follow the River Road ROW eastward for 2.0 miles until it reaches the DCNR Tiadaghton Elm Site adjacent to the Pine Creek (see Figure 14). Recommended improvements include installation of safety and directional signage and roadway shoulder improvements where necessary.

Approximately ½ mile before the DCNR site, an alignment alternative for the advanced cyclist will head north along Tiadaghton Avenue to East Central Ave. then eastward across an existing roadway bridge to Railroad Street in the Borough of Jersey Shore in adjacent Lycoming County. Cyclists will have the opportunity to access the Pine Creek Rail Trail at either the existing trail crossing of Railroad Street or continue eastward to the DCNR Jersey Shore Trailhead, also on Railroad Street.

This future access point is to be developed on approximately 1.5 acres of land that was once the site of the historic Tiadaghton Elm where the Fair Play Men declared their independence from England on July 4th, 1776. This site is also slated to be a boating access point for users of the West Branch Susquehanna River Water Trail. Directly adjacent to this site is one of a few remaining lenticular truss bridges that is currently being refurbished and will be reset in the near future. This bridge carries River Road between Clinton and Lycoming Counties.

The preferred alignment is proposed to continue to follow River Road through Porter Township in adjacent Lycoming County until it meets a publicly owned portion of the former Pennsylvania Canal. This former canal alignment is owned by both Porter Township and the Borough of Jersey Shore and will provide an off-road connection northward into the heart of Jersey Shore Borough. This alignment was

suggested as part of the Jersey Shore Borough Riverfront/Boat Launch Improvement and Pine Creek Rail-Trail Connector Feasibility Study, prepared by the Borough of Jersey Shore in April 2008.

Trail users will then be able to access the Pine Creek Rail-Trail Extension that provides the connection from the existing DCNR Trailhead to Seminary Street in the eastern part of the Borough. This PennDOT Pennsylvania Community Transportation Initiative (PCTI) funded project is slated for construction in the Fall of 2010.

Avis Borough Connection

Following Map 8 at the end of this chapter is a potential alignment alternative connecting the trail to the Borough of Avis. This alignment was proposed as part of this document's DRAFT review period.

The proposed connection (approx. 4.5 miles in length) would exit the preferred alignment on the northern side of the West Branch river crossing, and follow existing farming roads around the perimeter of the fields through two privately owned parcels (for which easements would be required) until it meets the US 220 right-of-way. The remainder of this proposed connection lies within public rights-of-way along PA 150, Central Avenue, Henry Street, 5th Avenue and Tiadaghton Avenue until it rejoins the main preferred alignment at River Road.

LEGAL FEASIBILITY

Potentially Affected Properties

This plan recommends the use of publicly owned land and/or rights-of-way and avoids trail alignments that would impact privately owned land wherever possible. However, where friendly agreements can be reached, some alignments will require the acquisition of right-of-way through either fee simple

purchase, easement if possible, or by donation from a private landowner.

The following is a summary of the potentially affected landowners for the Preferred Alignment, all of which lie between the northern end of the existing railroad bridge and the River Road ROW in Pine Creek Township. These property owners were identified from the County GIS Tax parcel database:

South Avis Realty, Inc. (Jersey Shore Steel) owns the inactive railroad ROW on the northern end of the railroad bridge. Approximately 500 feet from the end of the bridge will be required to provide for the transition to the existing grade below this elevated right-of-way.

Doebler Farmland, Inc. owns the majority of the existing parcels located along the river in agricultural use. The preferred alignment impacts a total of 3 separate parcels owned by this company

A private residential landowner located at the end of the extension of River Road nearest the railroad bridge crossing.

FINANCIAL FEASIBILITY

Estimate of Probable Development Costs

This Feasibility Study-level estimate of probable development costs is intended to provide a general range of costs for the various facilities and improvements proposed as part of the preferred alignment described herein. This estimate is based on 2010 construction costs including standard prevailing wage rates associated with the public sector. Costs will need to be adjusted at a rate of 3-4% for each year following to account for the general rate of inflation. As more detailed design and engineering information becomes available during

subsequent development phases, costs will be more accurate. Costs will also be heavily impacted by market conditions current at the time. Escalation of materials and labor costs may occur.

Costs are for installed improvements only and do not include property acquisition or easements.

The following is a breakdown of the estimated costs by trail segment for the preferred alignment:

Castanea Rail Station to intersection with Youngdale Road:

- Type: Off-Road (multi-use)
- Distance: 2.93 miles
- Costs: \$525,000

Youngdale Road to McKinney Road:

- Type: On-Road (Share the Road)
- Distance: 1.06 miles
- Costs: \$100,000

McKinney Road to McElhattan Road Overpass:

- Type: On-Road (Share the Road)
- Distance: 1.56 miles
- Costs: \$295,000

McElhattan Road Overpass to Landfill Entrance:

- Type: Adaptive reuse of existing roadway
- Distance: 2.12 miles
- Costs: \$20,000

Railroad Bridge Crossing, including approaches on both sides:

- Type: Off-Road (multi-use)
- Distance: 0.48 miles
- Costs: \$1,350,000

Railroad Bridge to River Road:

- Type: Off-Road (multi-use) and On-Road (Share the Road)
- Distance: 1.33 miles
- Costs: \$120,000

River Road to DCNR Tiadaghton Elm Site:

- Type: On-Road (Share the Road)
- Distance: 2.00 miles
- Costs: \$170,000

Costs Summary:

- Total Miles: 11.48 miles
- Subtotal Costs: \$2,580,000
- Design & Engineering (20%): \$516,000

GRAND TOTAL: \$3,096,000

Design and engineering costs vary depending on the available funding source and their associated regulatory requirements. Privately funded projects typically have the least regulatory requirements and generally fall within the 10-15% of the proposed construction costs. Federally funded projects typically have the most stringent design and engineering requirements and often have additional clearances (environmental, historical, etc.) that must be obtained as part of the design process. These projects generally fall within the 25-30% of proposed construction costs. For purposes of this study, 20% will be the assumed average.

ACTION PLAN

Phased Implementation

The following recommendations listed below are suggested in order of priority and are not necessarily meant to be sequential. For example, recommendations #3 & #4 could occur simultaneously, while #5 could be on-going and begin at any time.

1. The Pine Creek Connector Trail needs a champion. Clinton County needs to take the lead and/or form a Trail Coalition or Authority to acquire the rights-of-way, manage trail development, and oversee trail operation and maintenance;
2. Pursue the acquisition of the PPL corridor off-road portion from Castanea to Youngdale Road. The County should work with Wayne Township and their established relationship with the PPL Corporation to further investigate the acquisition of this PPL ROW segment and follow up by preparing a grant application to fund its acquisition, if necessary;
3. Acquire all necessary easement agreements for the preferred alignment between the northern end of the railroad bridge crossing of the river and the River Road right-of-way. This will involve negotiations with three separate landowners;
4. Prepare and submit funding applications for trail design and development;
5. Complete design construction documents for entire trail; and,
6. Construct trail as funding becomes available.

Project Partners:

The following is a listing of potential project partners identified through the public participation and development of this study:

- Clinton County
- Township Consortium (Castanea, Wayne, Pine Creek Twps.)
- Clinton County Solid Waste Authority (Landfill)
- Clinton County Historical Society
- Susquehanna Greenway Partnership
- PA DCNR Bureau of Forestry – Tiadaghton SF (Pine Creek Trail)
- Keystone Trails Association
- PA Wilds
- Lumber Heritage Region

Each of these entities will likely be involved with the promotion, funding, implementation and/or maintenance of the proposed trail system. Clinton County should take the lead in the formation of a trail management entity. The County Solid Waste Authority and a consortium of the Townships through which the trail passes and are those that will have a vital role in the development of the trail and should be significant contributors to this management entity. Other groups, such as non-profit volunteer 'friends of the trail' type organizations could also participate in this management entity. For more information relative to the forming of such an agency, please refer to the corresponding section in Chapter 8: Action Plan of this report.

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LOCK HAVEN



ROUTE 220 NB

ROUTE 220 SB

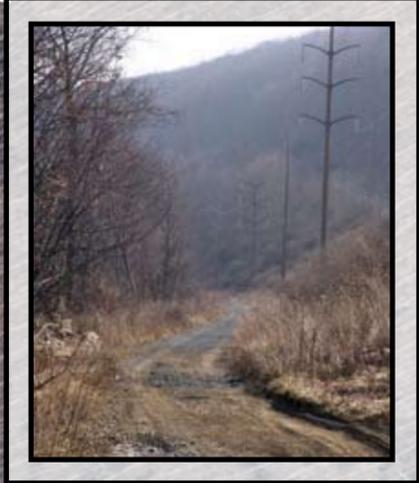
LOWER CREEK RD

Match Line - Map 2

102



CASTANEA

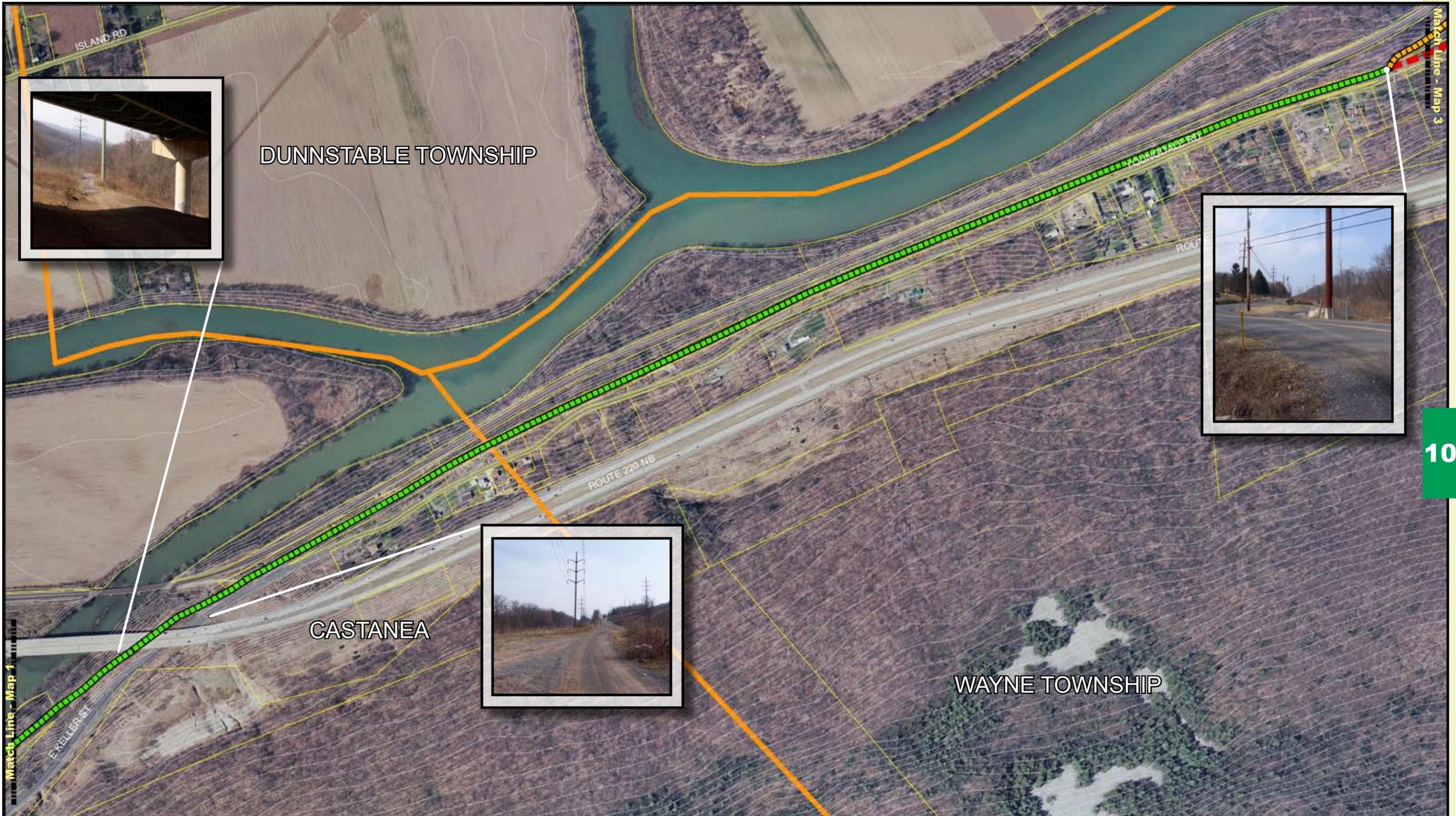


CLINTON COUNTY GREENWAYS & OPEN SPACE PLAN
 Clinton County, Pennsylvania
Pine Creek Trail Connector Feasibility Study

Legend

- Preliminary Trail Alignment Alternative
- Preferred On Road Route
- Preferred Off Road Route
- Privately Owned Lands
- Points of Interest

MAP 1 OF 8



Match Line - Map 4

Wayne Township
* Municipal Park

WAYNE TOWNSHIP

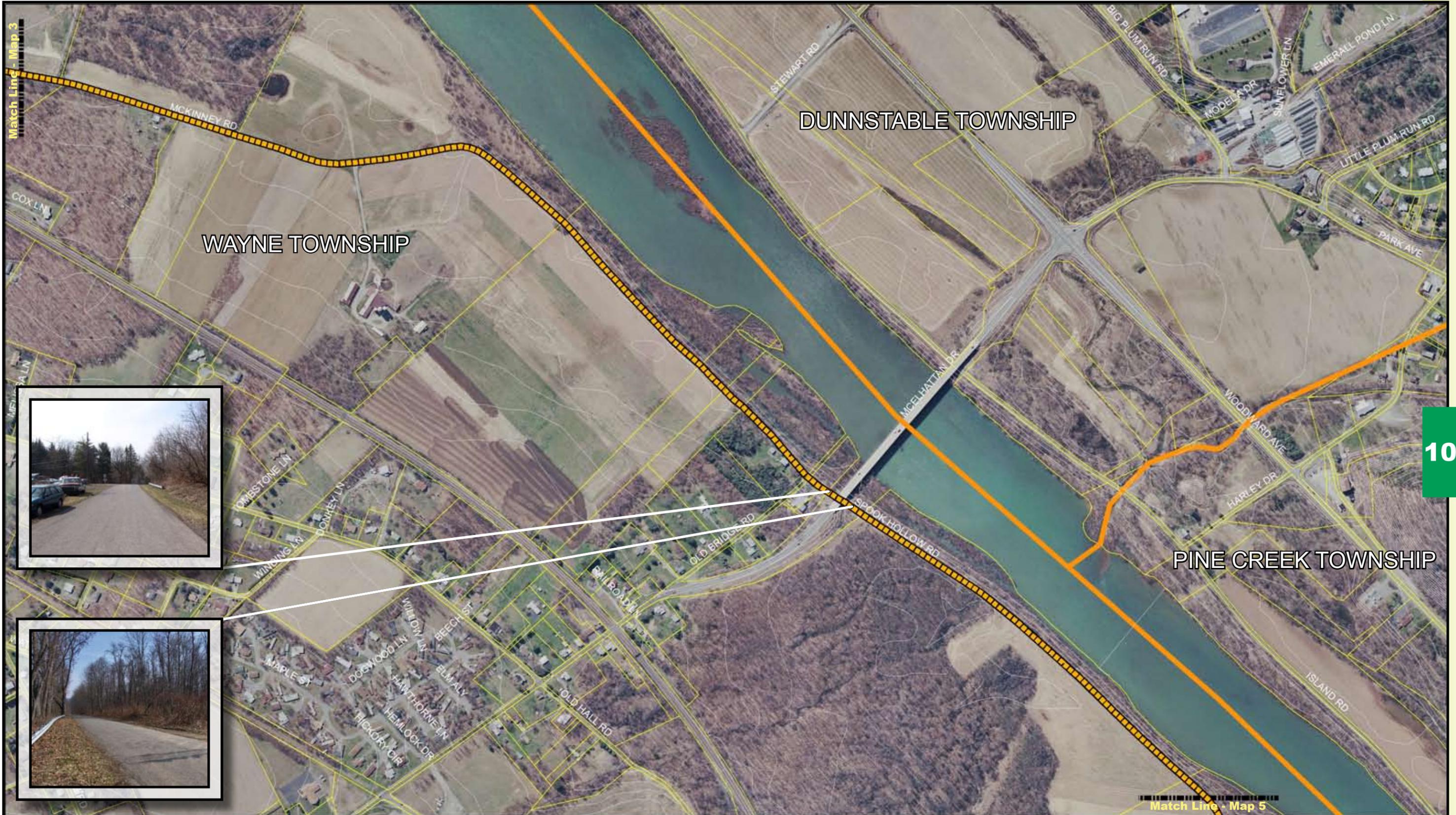


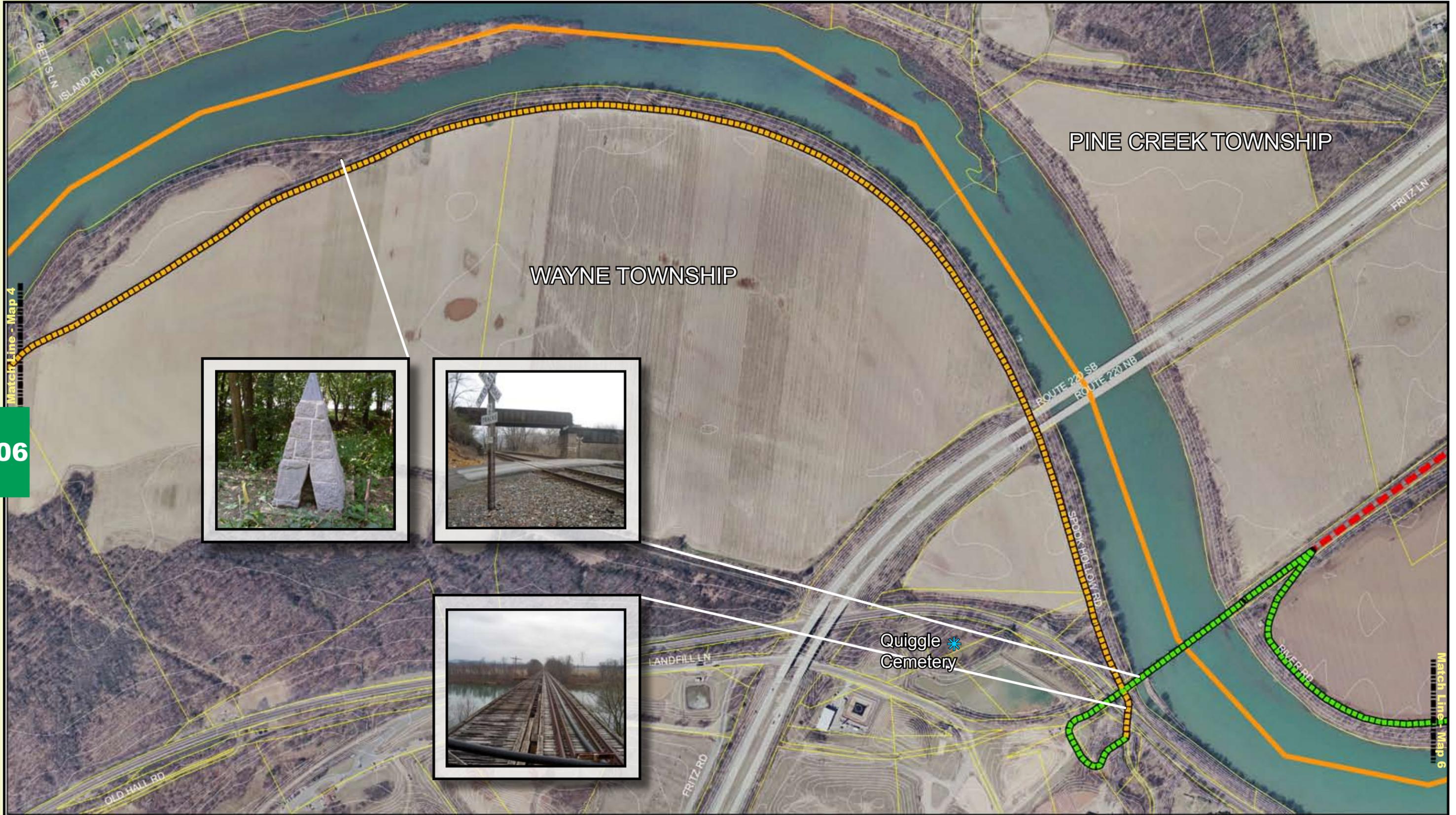
Match Line - Map 2

Legend

- Preliminary Trail Alignment Alternative
- Preferred On Road Route
- Preferred Off Road Route
- Privately Owned Lands
- Points of Interest

MAP 3 OF 6





Match Line - Map 4

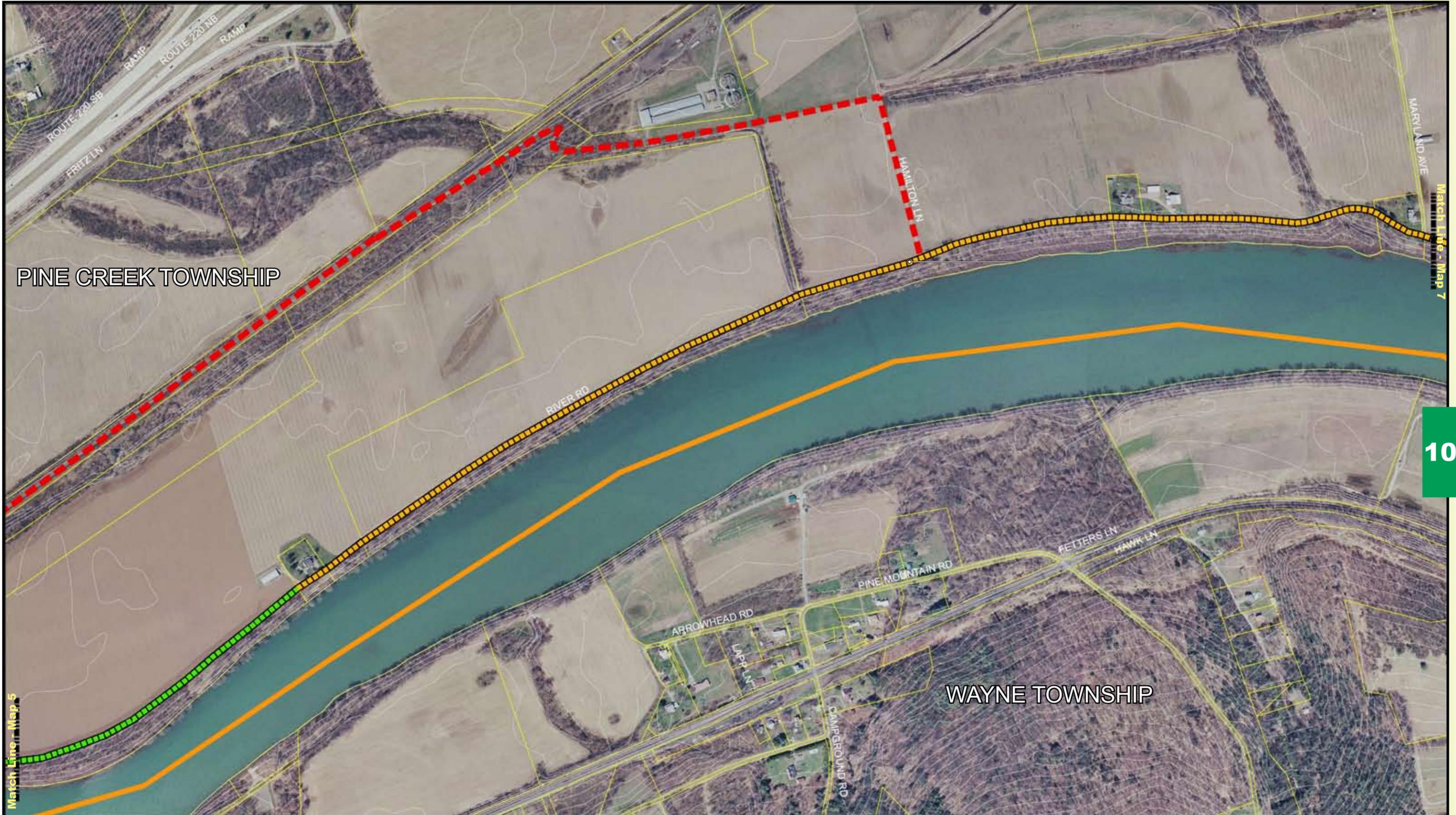
Match Line - Map 6

Legend

- Preliminary Trail Alignment Alternative
- Preferred On Road Route
- Preferred Off Road Route
- Privately Owned Lands
- * Points of Interest

North arrow pointing up.

Scale bar: 0, 200', 600', 1000', 2000'



PINE CREEK TOWNSHIP

WAYNE TOWNSHIP

Match Line - Map 7

Match Line - Map 5

CLINTON COUNTY GREENWAYS & OPEN SPACE PLAN
 Clinton County, Pennsylvania
Pine Creek Trail Connector Feasibility Study

Legend

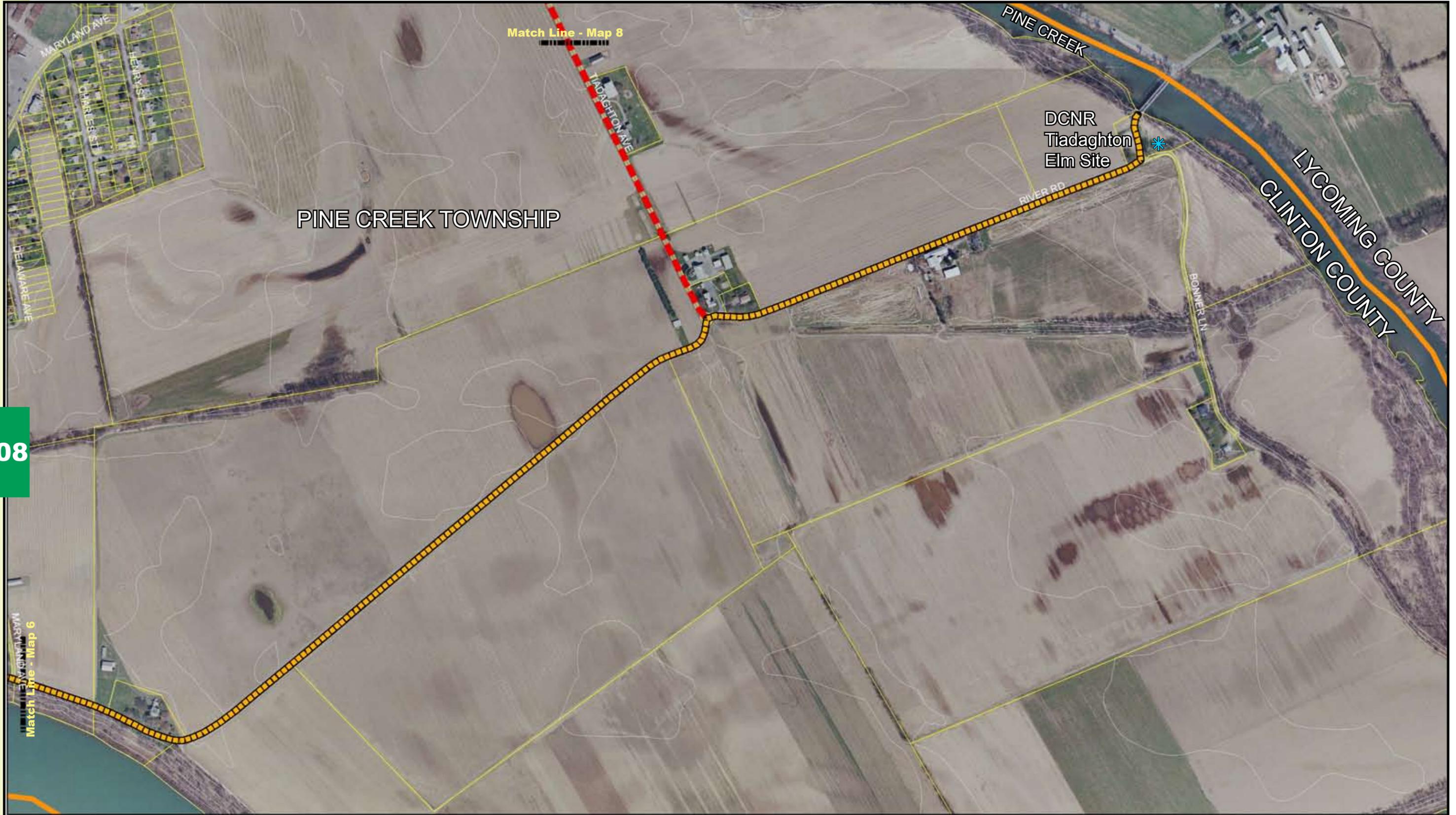
- Preliminary Trail Alignment Alternative
- Preferred On Road Route
- Preferred Off Road Route
- Privately Owned Lands
- * Points of Interest

North arrow pointing up.

Scale bar: 0, 200', 600', 1000', 2000'

Inset map of Clinton County showing the study area in red.

MAP 6 OF 6



CLINTON COUNTY GREENWAYS & OPEN SPACE PLAN
 Clinton County, Pennsylvania
Pine Creek Trail Connector Feasibility Study

Legend

- Preliminary Trail Alignment Alternative
- Preferred On Road Route
- Preferred Off Road Route
- Privately Owned Lands
- Points of Interest

MAP 7 OF 8



CLINTON COUNTY GREENWAYS & OPEN SPACE PLAN
 Clinton County, Pennsylvania
Pine Creek Trail Connector Feasibility Study

Legend

- Preliminary Trail Alignment Alternative
- Preferred On Road Route
- Preferred Off Road Route
- Privately Owned Lands
- Points of Interest

MAP 8 OF 8





PROPOSED COUNTY GREENWAY & MULTI- MODAL TRAILS NETWORK

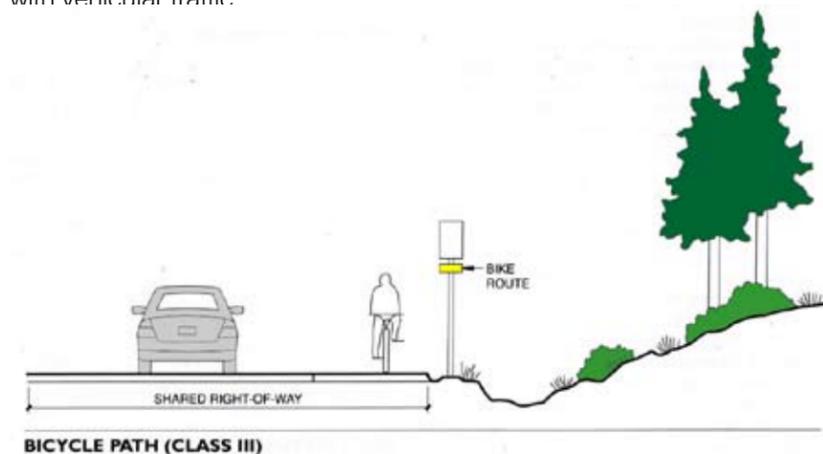
TRAIL TYPES

Trails come in many different forms and dimensions all dependent upon the specific purpose and designated user type. The following are specific definitions of trail types referenced within this plan.

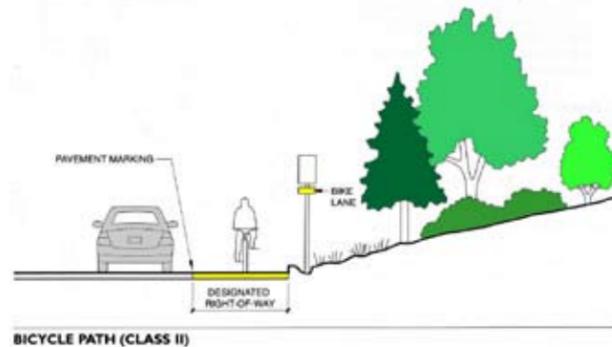
Bikeway Classifications

The following are nationally recognized bikeway classifications as per the American Association of State Highway Transportation Officials (AASHTO). These classifications are specific to bicycle transportation routes and do not include other pedestrian facilities such as sidewalks and off-road hiking trails which are described later in this chapter.

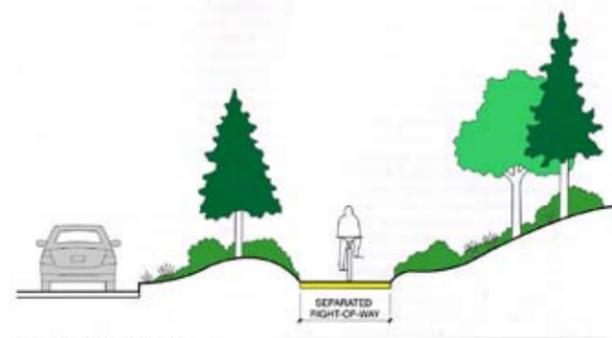
Class 3 Bikeways are also known as 'Bike Routes'. These offer no special accommodations for the cyclist within the road right-of-way. Signs are used to define the route and the cyclist shares the roadway with vehicular traffic.



Class 2 Bikeways are designated bicycle lanes within a roadway for exclusive use of the cyclist and contains special pavement markings and signage. Bike lanes are one-way in the direction of motor vehicle traffic. The common standard width for a bike lane is five (5) feet. While this plan does not propose any specific locations for any bike lanes or Class 2 Bikeways, future bicycle and pedestrian mobility plans developed for more urbanized areas such as Lock Haven may recommend the installation of these facilities where appropriate.



Class 1 Bikeways are completely separated from the roadway. They are also known as 'off-road trails', 'greenways', 'shared use paths', and/or 'multi-use paths'.



The trail type that provides for the largest population of users is a Multi-Use Trail, also known as Class 1 Bikeways (as described above). The following paragraphs provide a nationally recognized definition of a Multi-Use Trail and its typical design criteria.

The American Association of State Highway and Transportation Officials (AASHTO) defines a Multi-Use Trail or Shared Use Path as: a bikeway physically

separated from motorized vehicular traffic by an open space or barrier and either within the highway right-of-way or within an independent right-of-way. Shared use paths may also be used by pedestrians, skaters, wheelchair users, joggers, and other non-motorized users.

As the definition suggests, this trail type provides for a variety of trail users, depending on the trail surface paving and available right-of-way width. Another general trait of multi-use trails is universal accessibility for those with disabilities. This is due to gentle slopes, adequate widths, and smooth surfaces. Parking areas for multi-use trail segments should provide facility access in accordance with the Federal Americans with Disabilities Act (ADA) guidelines to provide for trail users with disabilities.

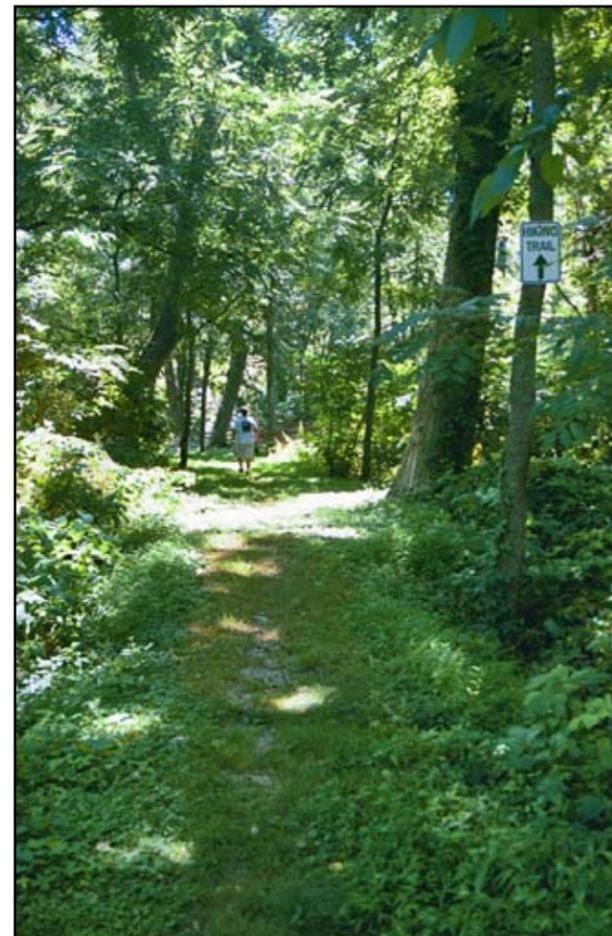
Both the Rails-to-Trails Conservancy (RTC) and AASHTO recommend a multi-use trail to be ten feet (10') wide, with the minimum width for a two-way trail at eight feet (8'), and for a one-way trail at five feet (5'). Depending on the user volume, widths of twelve feet (12') or fourteen feet (14') are recommended to avoid potential conflicts. An additional two-foot (2') shoulder is recommended on either side of the trail surface to provide clearance from trees, poles, walls, fences or any other lateral obstruction. Site conditions may warrant additional safety measures such as fencing and increased shoulder widths.

Hiking Trails

A hiking trail may be defined as a recreational trail that does not meet the design requirements of a multi-use trail such as width, slopes & surfacing. An advantage of hiking trails is that they can allow for access and recreational use of the land quickly at a relatively low cost. A disadvantage of hiking trails is that they generally limit the number and type of trail users due to their minimal width, steeper slopes, and softer surfaces, and generally do not meet ADA requirements.



Floating along the West Branch Susquehanna River Water Trail.



Typical hiking trail.

Water Trails

The West Branch Susquehanna River Water Trail through Clinton County is one of 20 different water trails that have been developed in Pennsylvania. The Bald Eagle Creek is recommended to be added to that list as a result of this study. Water trails in Pennsylvania are promoted by the PA Fish and Boat Commission. For more information regarding water trails, including individual trails with links to the maps and the organizations that manage them, please refer to the PA Fish and Boat Commission website:

<http://www.fish.state.pa.us/watertrails/trailindex.htm>

ATV Trails

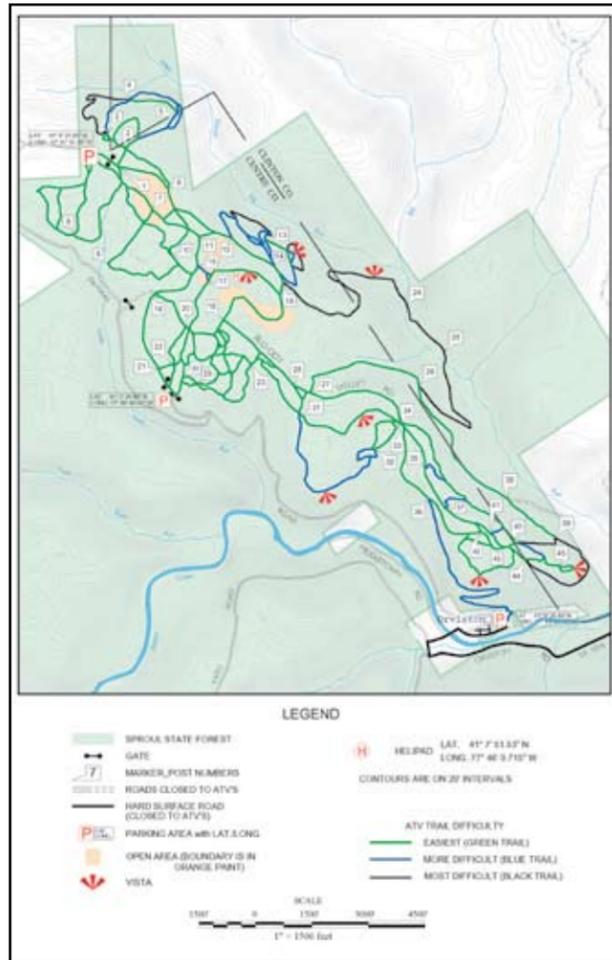
All Terrain Vehicle (ATV) and Off Highway Vehicle (OHV) parks and trails are another recreational resource that is receiving and responding to growing demand throughout Pennsylvania. There are two existing ATV areas located within Clinton County and the Sproul State Forest. These include:

- Bloody Skillet ATV Area, located along the Clinton/Centre County line nearest Orviston and the Beech Creek; and
- Whiskey Springs ATV Area, northwest of Renovo.



ATV riding is a popular activity in the State Forests.

In addition to the many privately developed ATV/OHV parks in Pennsylvania, the PA DCNR Bureau of Forestry has a website on ATV use in PA, including registration and titling info, safety info, and places to ride, including maps of ATV trail areas located on State Forest lands: <http://www.dcnr.state.pa.us/forestry/atv/index.aspx>



Bloody Skillet ATV Trails Map

This plan identifies two additional areas where ATV trails may be developed within Clinton County. Please refer to the Recommended Greenways Projects section later in this chapter for more information.

Other existing recreational trails and facilities located in Clinton County, but not specifically addressed in this report for proposed improvements include, but are not limited to:

Snowmobile Trails

Snowmobiling is a very popular winter activity in the PA Wilds Region and is often associated with State Forest Lands. For the locations of existing snowmobile trails within Clinton County and the PA Wilds region as a whole, please refer to the following map, found online at:

http://www.dcnr.state.pa.us/forestry/snowmobile/maps/PAWILD_SnoMo.pdf

Opportunities for the development of additional snowmobile trails have been realized as part of the pipeline construction associated with the Marcellus Shale gas drilling industry. These trails are being permitted within the pipeline areas that are typically located next to existing roadways. By allowing snowmobiles to use these existing pipelines, it removes the potential conflict between snowmobile users and motor vehicles who currently share State Forest roads.



Geo-Caching

This popular new activity is one that has been identified as having excellent potential for the promotion of the trails included in this chapter, especially with respect to the historical sites and themes that could be told for each.

Geocaching is a high-tech treasure hunting game played throughout the world by adventure seekers equipped with GPS devices. The basic idea is to locate hidden containers, called geocaches, outdoors and then share your experiences online. Geocaching is enjoyed by people from all age groups, with a strong sense of community and support for the environment. Geocaching is a worldwide game of hiding and seeking treasure. A geocacher can place a geocache in the world, pinpoint its location using GPS technology and then share the geocache's existence and location online. Anyone with a GPS unit can then try to locate the geocache. (Source: Geocaching.com)

The Rails to Trails Conservancy (RTC) has recently partnered with Geocaching.com to promote this new activity along rail-trails throughout the country. For more information regarding this partnership, please refer to the following RTC website: <http://www.trailink.com/activities/geocaching.aspx>



The Oil Region Alliance of Business Industry & Tourism, an economic development agency and the official tourist promotion agency serving the Oil Heritage Region, and administrator for Pennsylvania's Oil Region National Heritage Area has created the Allegheny Geotrail. There are 10-20 geocache locations within each of the PA Counties (Cameron, Clarion, Crawford, Elk, Forest, Jefferson, McKean, Potter, Venango, and Warren) making up the trail. By locating six or more geocaches within any one county, trail users earn a 'geocoin' particular to that county. If one locates six or more geocaches in all of the ten counties, they earn a special geocoin representing the entire trail. For more information on the Allegheny Geotrail, please refer to the website at the following link: <http://www.alleghenygeotrail.com/>

In addition, the PA DCNR has developed guidelines for the placement of geocaches in State Parks and Forests. These guidelines can be found on the web at the following link: <http://www.dcnr.state.pa.us/geocaching.aspx>

PROPOSED COUNTY GREENWAYS AND OPEN SPACE PLAN

Please refer to the County wide Greenways & Open Space Plan found at the end of this chapter. This plan provides a comprehensive overview of the existing recreational facilities and greenway projects proposed and/or studied within this document.

In addition to the trails recommended as part of the feasibility studies within this document, the following projects will provide additional facilities either within or closer to local communities and will add to the already abundant amount of recreational opportunities and contribute towards providing economic development opportunities for local businesses.

Sugar Valley Scenic Drive / Bike Route

The Sugar Valley is a hidden gem in Clinton County that provides breathtaking vistas of the surrounding mountains and agricultural lands from endless viewpoints. This proposed scenic drive / cycling route will provide a recreational opportunity for cyclists, but it will also attract potential dollars associated with touring enthusiasts to the many unique locally owned and operated businesses found throughout the valley. Please refer to the Market Assessment found within this report for more information relative to the local businesses in the Sugar Valley.

Other attractions located along or near the proposed route include the Logan Mills covered bridge (the only one in Clinton County) located along Logan Mills Road that connects both Winter and Valley Roads, and the trout hatcheries located just west from the route along Narrows Road and the Fishing Creek.

This proposed route is a 24.5 mile loop located on Valley and Winter Roads. For the advanced cyclist, it is a loop that would take approximately 1-1 ½ hours to complete. For the auto tourist, it would be a leisurely half hour to 40 minute trip. Roadway improvements may be necessary in certain segments to provide for adequate shoulder space for cyclists and to increase safety for the motorists, cyclists, and the local residents who use these roads on a daily basis.



The Scenic Sugar Valley.



Plan of proposed Sugar Valley Scenic Drive and Bike Route.

Renovo Riverwalk

This 2400 LF (0.45 miles) Riverwalk is proposed to connect the proposed 5th Street River Access site with the existing PA Flaming Foliage River Access along the north bank of the West Branch of the Susquehanna River. This facility would provide Renovo residents with a much needed local recreational facility and the opportunity to reconnect with the river and natural environment.

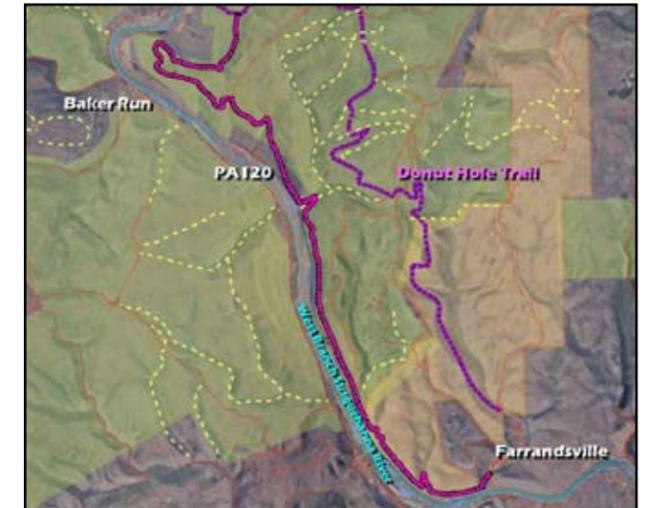


Plan of Proposed Renovo Riverwalk

The Riverwalk is proposed to be located along the base of an existing stone wall along the northern bank between these two water trail access points. Further investigation will be necessary to determine this walkway's feasibility, including an inventory of the existing physical conditions and assessment of the existing property ownership. Once developed, this public thoroughfare will be a unique attraction with the potential to create additional economic development projects in the Borough of Renovo.

Graham Road Trail

This 11.5 mile trail would follow the existing, yet currently rugged Graham Road and Kingston Road along the north bank of the West Branch Susquehanna River. It will be located on the opposite side of the river from the Bucktail State Park Scenic Route along PA 120 and provide equally magnificent

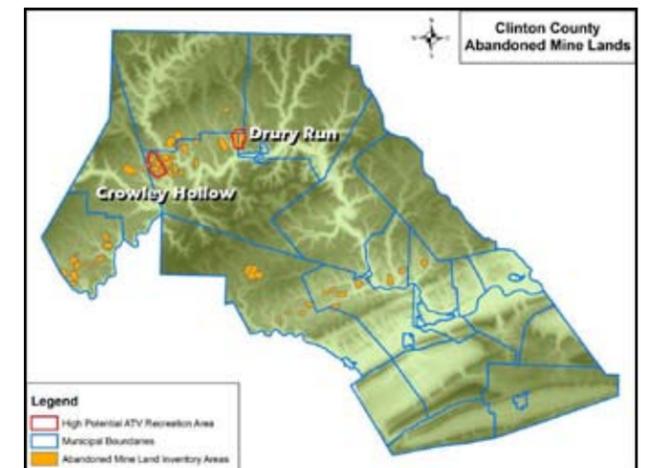


Plan of the proposed Graham Road Trail.

views of the river valley.

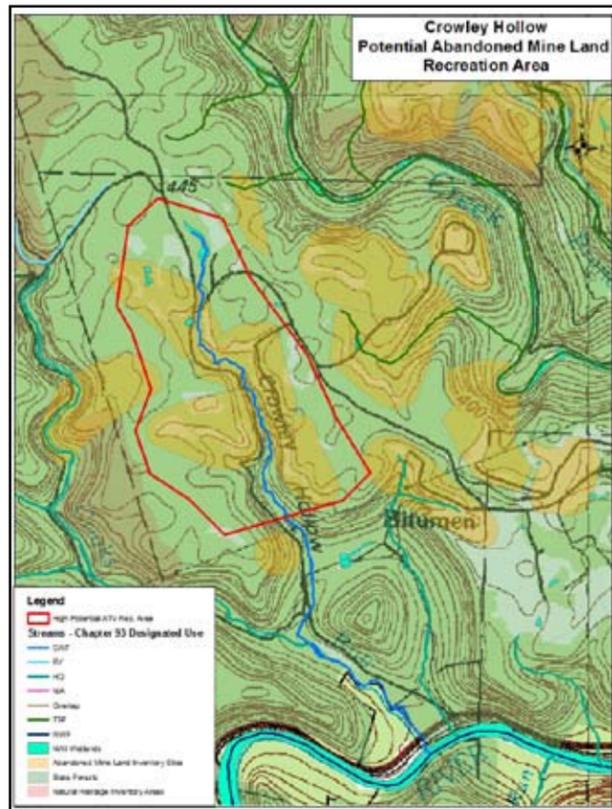
This trail has the opportunity to connect with the existing Donut Hole Trail to provide for a potential loop trail totaling nearly 25 miles. Current conditions of Graham and Kingston Roads have been described as being rather rugged. Further investigation is necessary to determine this proposed trail's feasibility, including the most appropriate trail type (hiking or multi-use).

Crowley Hollow and Drury Run Potential ATV Recreation Areas



Crowley Hollow Area

The Crowley Hollow area, located near the town of Bitumen in Noyes Township was determined to be an area of high potential for ATV recreation development. The unnamed tributary to Cooks Run which drains mined area is impacted by mine drainage and is listed as a Cold Water Fishery. This abandoned mine area is totally located within State Forest land. Crowley Road bisects the hollow, which provides public access to the area. Minimal wetlands

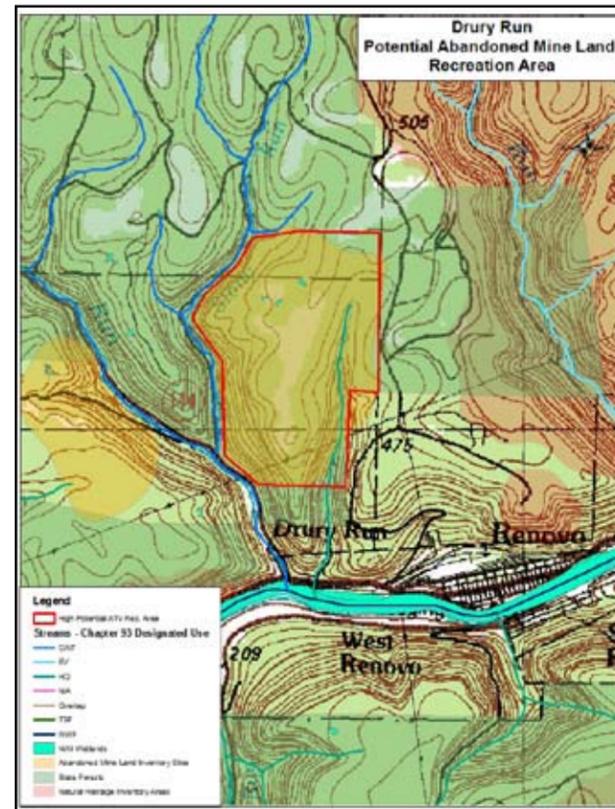


Potential Crowley Hollow ATV Recreation Area.

and floodplains exist that could be impacted by recreational development. This area is near the existing ATV area located on the Sproul State Forest Land.

The DCNR Bureau of Forestry has reviewed this suggestion and stated that there are many issues with this proposed use as the location is a very small and isolated area with no good connection to the

existing and nearby Whiskey Springs ATV area, and it is located adjacent to an area that is off limits for ATV use within the state forest. Future development of this site for ATV use will be at the discretion of the Bureau of Forestry. Only in the event of significant increased demand for ATV use within the State Forest is this site likely to be developed.



Potential Drury Run ATV Recreation Area.

Drury Run Area

The abandoned mine land area north of town of Drury Run was determined to be an area of high potential for ATV recreation development. This area, located in parts of Noyes, Chapman, and Leidy Townships, is totally located within State Forest land. Three streams drain this mined area: Stony Run (classified as a Cold Water Fishery), Cooks Run (Cold Water Fishery), and Brewery Run (High Quality). Stony Run Road is to the west of the abandoned mine

land area and Boone Road is to the east giving the site direct access from existing roadways. The potential site is located on a plateau, however, the side slopes are steep. Some existing logging trails could be developed from Stony Run Road or Boone Road to provide access to the plateau area. Minimal wetlands and floodplains exist that could be impacted by recreational development. This area is near the town of Renovo, which could provide amenities for recreation users.

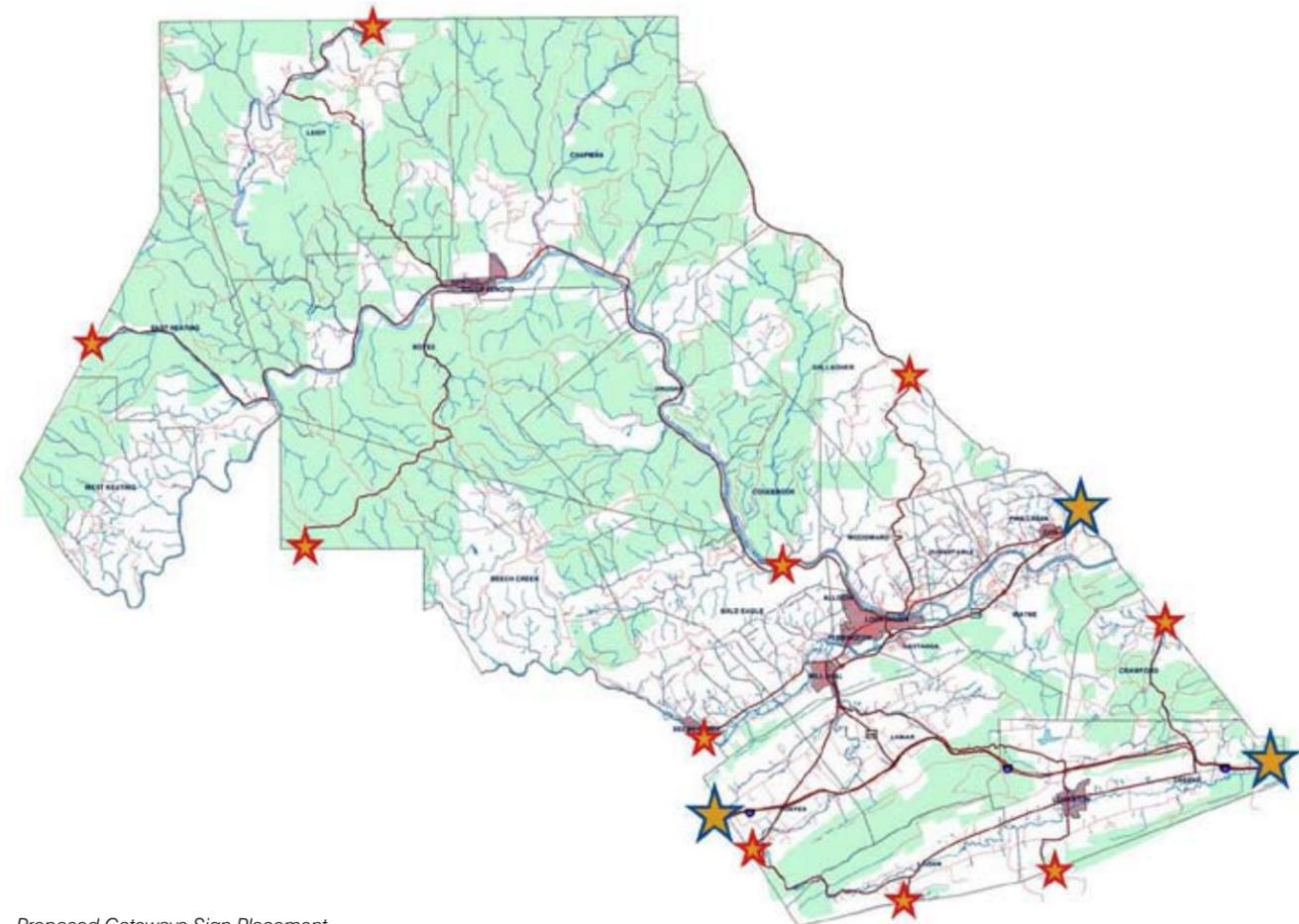
The DCNR Bureau of Forestry has recently partnered with the U.S. Department of Interior, Office of Surface Mining, DEP, Bureau of Abandoned Mines and Indiana University of Pennsylvania to undertake in converting much of this site to forest land. These recent improvements would have to be taken into consideration for the layout of the riding areas should

this location be developed in the future for ATV use.

Greenway Gateways



PA Wilds Sign along I-80 West approaching Clinton County.



Proposed Gateways Sign Placement.

The concept of identifying gateways with the placement of roadside signage was discussed by the project committee. Currently, the PA Wilds Initiative has signage located throughout the region, including along Interstate 80 westbound as one approaches Clinton County and the southeast boundary of the PA Wilds region.

The previous page shows a preliminary plan suggesting the locations of signage to be placed along the roadways entering Clinton County. The larger, blue outlined stars are located along major interstate highways I-80 and US 220. The smaller red outlined stars are located along the state highways entering Clinton County, plus one along PA 120 where there is a significant change in the landscape as one enters into the Appalachian Plateaus physiographic province.

In lieu of a specific marketing campaign for Clinton County, the committee determined that the best approach is to coordinate the signage design and placement with the existing and/or proposed signage efforts being done by the PA Wilds.

Important & Threatened Open Space to be Conserved

The following are the recommended important and threatened open space areas to be conserved as part of this plan, including:

- County Natural Heritage Inventory Areas – Specifically those that are located outside of public ownership on privately owned lands. The majority of these CNHI lands are located within the Sproul State Forest, and those that are in private ownership are located in remote areas or in areas that are otherwise undevelopable. The County should reference the NHI lands database for potential effects in the event any of these properties should be placed on the market or slated for new development. Existing

land development ordinances may prohibit development of certain parcels while other proposed uses may not adversely affect the resource, therefore this review should be done on a site specific basis prior to determining the appropriate degree of protection.

- Prime Agricultural Lands – These lands should be protected from new development wherever possible. While no specific properties have been identified as part of this study, the County should cross reference new land development applications versus the prime agricultural soils coverage for potential impacts. Please refer to the Farmland and Active Agricultural Land exhibit in Chapter Two.
- Riparian Corridors – This would apply to all waterways within the County. Protection could be provided through the adoption of a riparian corridors overlay district by municipalities willing to adopt such an ordinance. These ordinances typically provide a buffer or series of buffers with prohibited and/or conditional uses that provide shoreline protection from development.

MAINTENANCE, OPERATION AND SECURITY ISSUES

Maintenance

Maintenance responsibilities for off-road trail sections could be assumed by local stewards in the form of volunteer 'Friends of the Trail' or similar groups, or by local municipalities. These roles and responsibilities will have to be determined on a trail and location specific basis. Each of the trail operation and maintenance agreements will need to be developed on an individual basis by location and will determine the most appropriate entity to perform these tasks.

Typical trail maintenance tasks include clearing

fallen trees across trails, removing dangerous trees or limbs, bridge inspections, maintaining adequate shoulder clearances along trail, cleaning drainage structures, repairing erosion and damaged trail surfaces, removing invasive plant species, trash pick-up and removal, undertaking periodic inspections, and other associated tasks. Annual operations, maintenance and security guidelines for a typical trail can be found in the report appendix.

Maintenance Costs

Maintenance costs are difficult to estimate as they vary greatly depending on the specific existing conditions associated with each trail. Good design and implementation techniques can significantly reduce maintenance costs.

The Rails to Trails Conservancy has published a document entitled 'Rail-Trail Maintenance & Operation' where over 100 rail-trails were surveyed for their maintenance requirements and costs. The report concluded that average annual maintenance costs are \$2,000 per mile for a government run trail, \$1,500 per mile for an average trail, and \$700 per mile for a volunteer run trail. (weblink: http://www.railtrails.org/resources/documents/resource_docs/maintenance_operations_report.pdf).

Operations and Security

As uses of each trail section increases, both operations and security of the trail will become somewhat easier. Initially, while trail use is low, there may be a greater occurrence of unwanted activity. Littering, vandalism and underage drinking are typical negative activities that occur on some trails. As runners, hikers, cyclists and other trail users populate the trail, they will become the eyes and ears of "authority". Increasing numbers of trail users will have cell phones. People engaged in negative activities will not wish to be seen performing these

activities and they usually will go elsewhere. This has been the general experience on trails across the country.

Trail users also help the managing entity maintain and operate the trails. When there are problems, trail users notify the appropriate organization about the issue. This is a beneficial process that leads to the smooth operation of the trail. It is important that important phone numbers and e-mail addresses be posted at the various trail heads and trail connection access points as a part of trail signage.

There will inevitably be injuries that occur on the trail. Most multi-purpose sections of trail are designed to be accessible by police vehicles and ambulances to deal with these occurrences. Municipal maintenance vehicles, such as pickup trucks, will also access the trail for periodic inspections or maintenance. Bollards, gates and other vehicular controls will keep out private motor vehicles.

According to a Rails To Trails Conservancy publication entitled Rail-Trails and Safe Communities, four separate studies conducted between 1979 and 1997 concluded that rail-trails do not increase crime. However, rail trails are not crime-free. No place on earth can make that claim. However, when compared to the communities in which they exist, compared to highways and parking lots, and compared to many other public and private places, trails have an excellent public safety record. To view the full report please see the following link: http://www.railstotrails.org/resources/documents/resource_docs/tgc_safecomm.pdf

LEGAL FEASIBILITY ISSUES

Each of the three feasibility study trail projects contained within this document and the additional greenway projects proposed as part of this chapter have potentially affected privately-owned land parcels that will require some form of land acquisition. Those

potential impacts are summarized within each of their respective chapters. The following are general issues that apply to all:

Easement Acquisition

Easements that will be used for public trails are eligible for both state and federal funding – and easement/ownership term requirements should be investigated for the particular funding source to be used in a project's development. The acquisition of the easements would require an eligible entity – either a unit of government such as a municipality or county, or a competent non-profit organization partner.

Properties potentially impacted by proposed trail alignments can be identified by referencing the respective County tax parcel information and existing parcel boundaries and ownership information found within the GIS database.

The cost to acquire easements is difficult to estimate. The best method for determining what these costs may be would be to ascertain the average per acre real estate value of the land within which the proposed trail segment lies, multiply it by the amount of acreage to be purchased, and adjust it for the projected time of purchase. Easement values will likely differ from fee simple acquisition costs. The County will only negotiate Greenway trail improvements with private property owners who wish to engage in specific agreements.

A model trail easement agreement has been developed by the Pennsylvania Land Trust Association that can be used by the County as a starting point document for creating easement agreements where necessary. A copy of this model easement agreement can be found in the report appendix. Other trail and land conservation related tools can be found on the Land Trust's website: <http://conserveland.org/>.

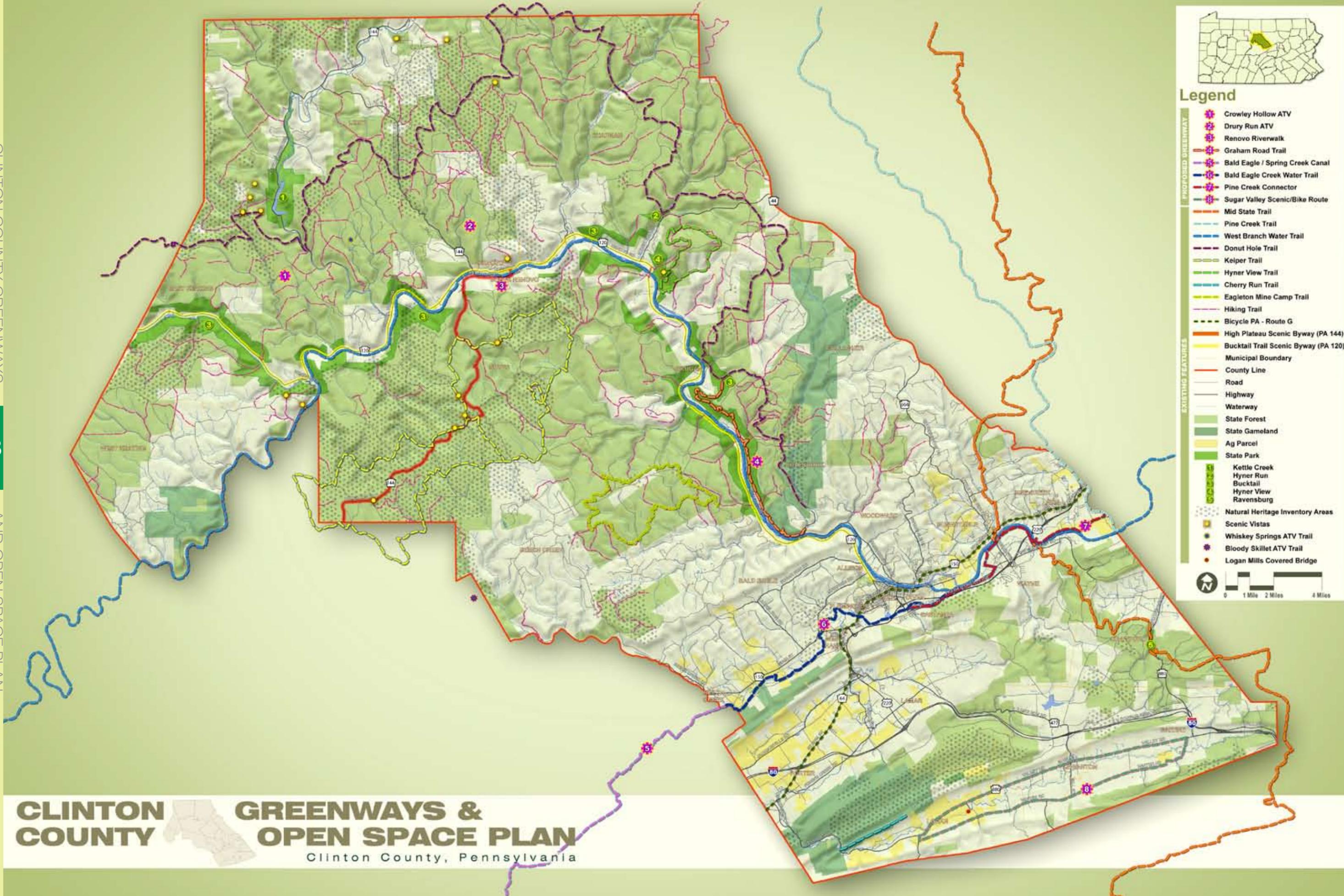
General Liability Issues

Questions are often asked about the potential liability a landowner may have when located adjacent to a publicly used trail. The Pennsylvania Recreational Use of Land and Water Act protects landowners who ease their property for trail use from general liability if their property is infringed upon as a result of the public use of the trail. This act does not prevent a landowner from being sued, however it does provide protection that has been upheld numerous times by Pennsylvania courts. A copy of this statute, and a summary prepared by DCNR can be found in the report appendix.

Boundary Surveys

Boundary surveys will be required for all proposed easements and/or purchases. The extent of each survey will be a matter of negotiation between the buyer and land owner.

For purposes of preparing construction documents, a centerline survey with cross sections of the trail alignment every fifty to one-hundred feet, (depending on topography and existing site features), will be the minimum necessary for proposed trail alignments. Access sites will typically require full topographic surveys for all areas where development activity is proposed. The level of detail to be provided within these surveys will need to be addressed on a site specific basis relative to the proposed improvements.



Legend

PROPOSED GREENWAY

- Crowley Hollow ATV
- Drury Run ATV
- Renovo Riverwalk
- Graham Road Trail
- Bald Eagle / Spring Creek Canal
- Bald Eagle Creek Water Trail
- Pine Creek Connector
- Sugar Valley Scenic/Bike Route
- Mid State Trail
- Pine Creek Trail
- West Branch Water Trail
- Donut Hole Trail
- Keeper Trail
- Hyner View Trail
- Cherry Run Trail
- Eagleton Mine Camp Trail
- Hiking Trail
- Bicycle PA - Route G
- High Plateau Scenic Byway (PA 144)
- Bucktail Trail Scenic Byway (PA 120)

EXISTING FEATURES

- Municipal Boundary
- County Line
- Road
- Highway
- Waterway
- State Forest
- State Gameland
- Ag Parcel
- State Park
- Kettle Creek
- Hyner Run
- Bucktail
- Hyner View
- Ravensburg
- Natural Heritage Inventory Areas
- Scenic Vistas
- Whiskey Springs ATV Trail
- Bloody Skillet ATV Trail
- Logan Mills Covered Bridge

0 1 Mile 2 Miles 4 Miles

CLINTON COUNTY GREENWAYS & OPEN SPACE PLAN
 Clinton County, Pennsylvania



MARKET ASSESSMENT

INTRODUCTION

The Clinton County Greenways and Open Space Plan includes three primary outdoor recreation facilities that have potential to attract county residents and out of county visitors to take advantage of these recreational assets, including the Pine Creek Trail Connector, Bald Eagle and Spring Creek Canal Trail and the West Branch Susquehanna River Access and Camping. While these expanded recreational facilities provide opportunities to attract a variety of potential users, the basis for the market assessment is to first examine the current market conditions, followed by the potential economic impacts that may result from development of the expanded recreational facilities within the county.

The two largest population centers in the county are Lock Haven and Renovo, and they are the primary commercial hubs in Clinton County. The first step of the analysis was to examine the market conditions of these two communities to identify what services and amenities are in place and where gaps in services may exist, creating opportunities for growth. In addition, with expansion of recreational facilities in the county, there is an opportunity to leverage the commercial activities in and around the Sugar Valley (Loganton) area for economic development. Secondly, based on new or planned recreational facilities in Clinton County, the impact of this development is examined, identifying the types of business opportunities that may be capitalized upon in the county. Recommendations for marketing these recreational and business opportunities are included to assist with planning for future advancement.

Local Market Characteristics

Determining the potential for economic development opportunities, for Lock Haven, Renovo, and Clinton County, as a result of the Clinton Greenways and Open Space Plan, is based on first understanding the current demographic and economic characteristics of the trade areas for both communities.

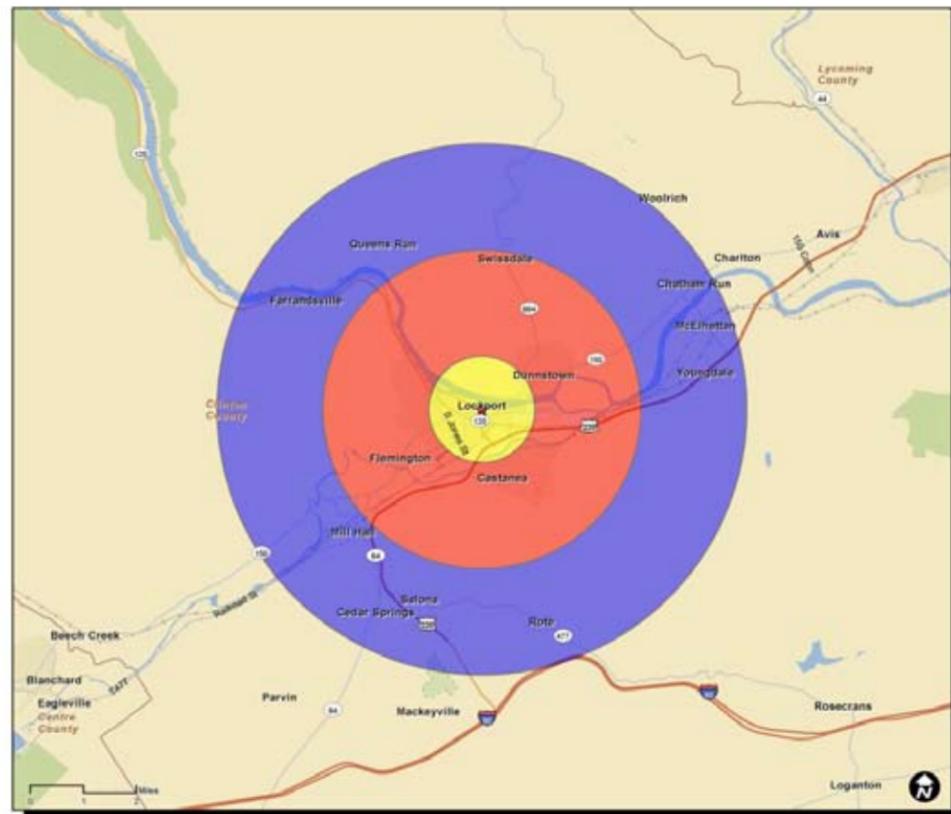
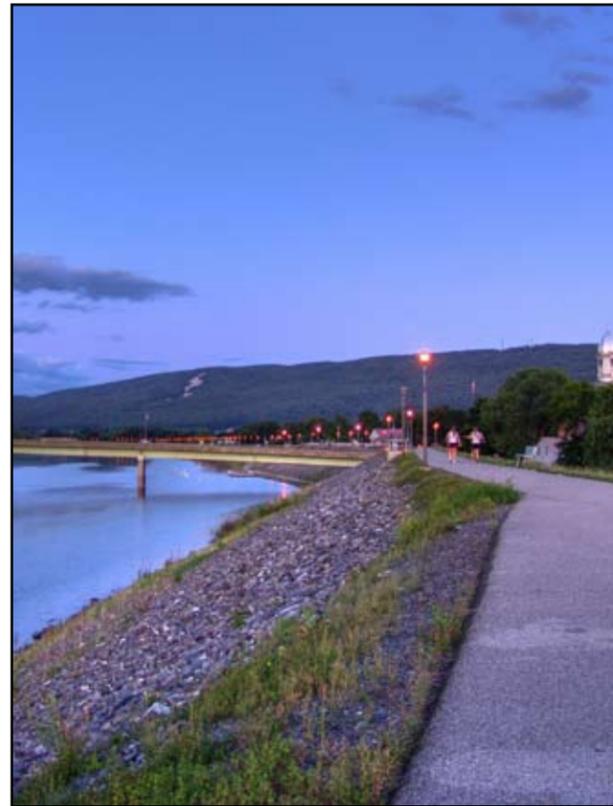
For the purpose of this study, we have analyzed the key demographic indicators of the 1-3-5 mile trade areas for both Lock Haven and Renovo,

Pa. For Lock Haven we used the central point for the ring as 300 East Main Street; for Renovo we used 500 Huron Avenue. The key demographic indicators were compared to Clinton County, as well as the Commonwealth of Pennsylvania. The indicators included population, households, median household income, median household value and median age.

We have also analyzed the market demand for both communities. Using the same trade areas, we conducted retail sales vs. demand for all three rings to determine whether the market is indeed meeting the consumer's demands.

LOCAL MARKET – LOCK HAVEN

The central point of our analysis of the trade area for Lock Haven is 300 East Main Street. We then analyzed the key demographic factors of the population that resides within the 1-3-5 mile rings of this center point.



Clinton County Greenways Plan

Lock Haven Market Profile



Date: February 24, 2010
 Source of Data: Pennsylvania Department of Transportation, ESRI, TeleAtlas Street Data, Delta Development Group
 Created by: Delta Development Group, Inc.

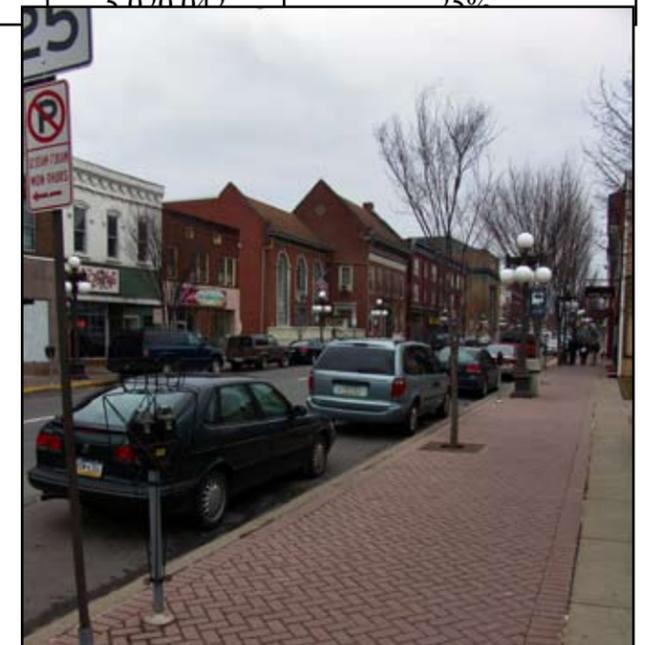
The following table includes population trends for the City of Lock Haven, the 1-3-5 mile rings, Clinton County and the State of Pennsylvania.

Population				
	2000	2009	2014	2009-2014 Annual Rate
Lock Haven	9,156	8,879	8,747	-.30%
1 mile	6,404	6,258	6,157	-.33%
3 mile	15,195	14,766	14,532	-.32%
5 mile	20,968	20,588	20,292	-.29%
Clinton County	37,914	37,546	37,046	-.27%
Pennsylvania	12,281,054	12,598,860	12,699,966	.16%

The decreasing population trends will continue over the next four year period for the City of Lock Haven, the 1-3-5 mile rings and for Clinton County. The number of households is also decreasing in the City of Lock Haven, the 1-3-5 mile rings and Clinton County.

Number of Households				
	2000	2009	2014	2009-2014 Annual Rate
Lock Haven	3,309	3,315	3,280	-.21%
1 mile	2,639	2,657	2,632	-.19%
3 mile	5,844	5,870	5,813	-.20%
5 mile	8,116	8,240	8,179	-.15%
Clinton County	14,773	15,075	14,987	-.12%
Pennsylvania	4,777,003	4,958,883	5,020,042	.25%

The median household income for the City of Lock Haven and the 1-mile ring is lower than that of the 3-5 mile rings, and Clinton County. This is reflective of the Lock Haven University and the student population that resides in the 1-mile ring. The household income of the City of Lock Haven and Clinton County is lower than that of Pennsylvania. The lower household income will result in a lower disposable income and the spending potential index. This will directly impact the demand potential for the trade area.



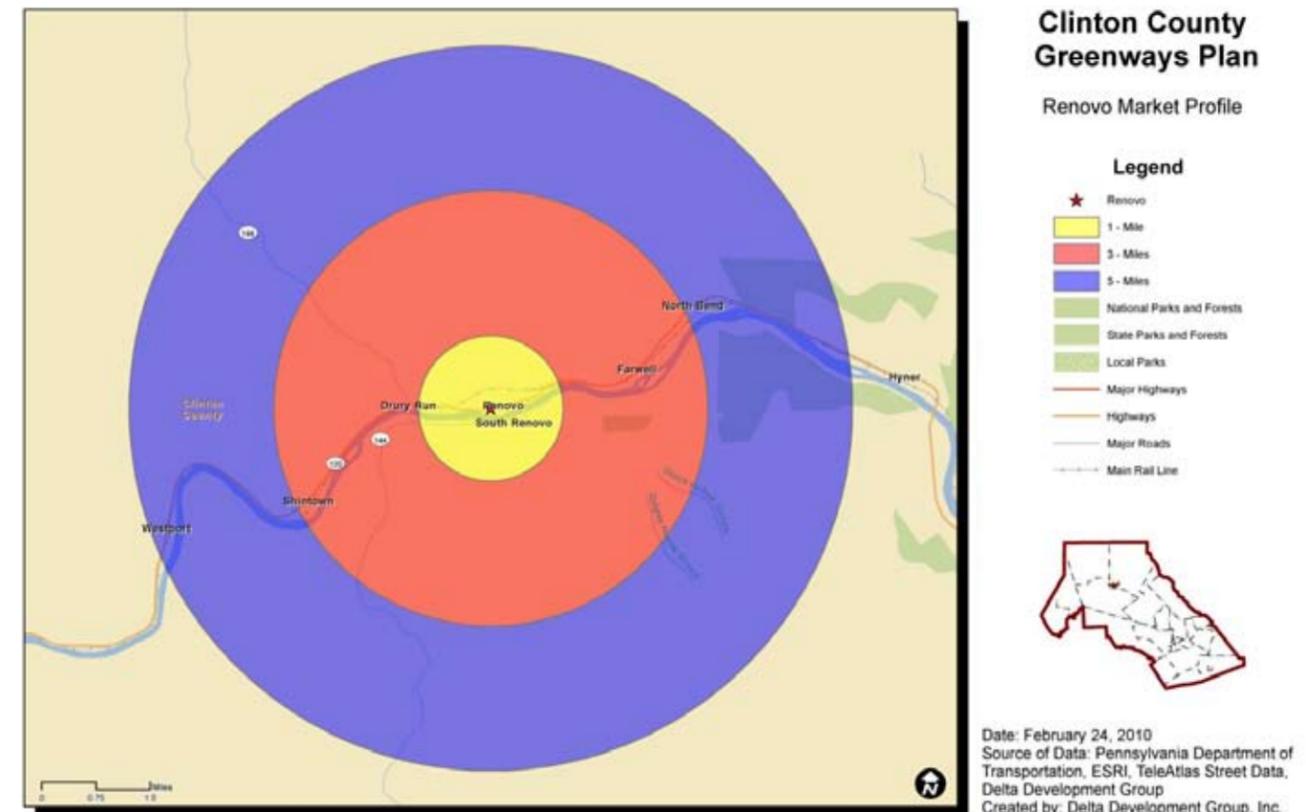
Median Household Income			
	2000	2009	2014
Lock Haven	\$20,712	\$26,297	\$26,806
1 mile	\$20,829	\$26,493	\$27,010
3 mile	\$26,147	\$33,950	\$35,404
5 mile	\$28,798	\$36,950	\$39,062
Clinton County	\$30,980	\$39,099	\$41,947
Pennsylvania	\$40,108	\$53,225	\$55,819

The median home values are lower in the 1-mile ring. The home values of the City of Lock Haven are comparable to Clinton County, but much lower than home values of Pennsylvania.

Median Home Value			
	2000	2009	2014
Lock Haven	\$74,828	\$126,955	\$137,439
1 mile	\$69,114	\$117,714	\$127,150
3 mile	\$77,636	\$130,454	\$143,234
5 mile	\$78,260	\$131,423	\$144,392
Clinton County	\$75,421	\$126,624	\$138,278
Pennsylvania	\$94,817	\$161,438	\$193,617

The median age of the City of Lock Haven and the 1-mile ring is much younger than the other trade areas, Clinton County and the state of Pennsylvania. Again, this is reflective of the university and the student population. A gap analysis will be conducted to determine if the needs are being met for the population that resides within the trade area, and if the local market represents an opportunity for new retail and restaurant establishments.

Median Age			
	2000	2009	2014
Lock Haven	25.1	27	27.4
1 mile	27.8	29.6	29.9
3 mile	32.4	34.5	35.9
5 mile	35	37.3	38.5
Clinton county	37.7	40.2	41.2
Pennsylvania	38	40.4	41.1

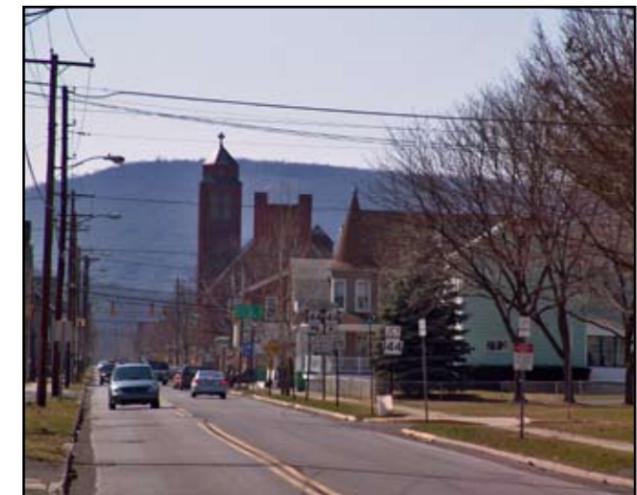


RENOVO

The central point of our analysis of the trade area for Renovo, PA is 500 Huron Avenue. We then analyzed the key demographic factors of the population that resides within the 1-3-5 mile rings of this center point.

The following table includes population trends for the Renovo, the 1-3-5 mile rings, Clinton County and the State of Pennsylvania.

As with Lock Haven, the population in Renovo continues to decrease, although at much higher rates.



Population				
	2000	2009	2014	2009-2014 Annual Rate
Renovo	1,330	1,256	1,216	-.65%
1 mile	1,685	1,557	1,498	-.77%
3 mile	2,449	2,295	2,221	-.65%
5 mile	2,826	2,663	2,582	-.62%
Clinton County	37,914	37,546	37,046	-.27%
Pennsylvania	12,281,054	12,598,860	12,699,966	.16%

The number of households is also decreasing in Renovo at a rate 4 times higher than that of Clinton County. This loss in population and households directly impacts the commercial district servicing Renovo.

Number of Households				
	2000	2009	2014	2009-2014 Annual Rate
Renovo	601	582	569	-.45%
1 mile	744	706	686	-.57%
3 mile	1,068	1,029	1,005	-.47%
5 mile	1,235	1,197	1,171	-.44%
Clinton County	14,773	15,075	14,987	-.12%
Pennsylvania	4,777,003	4,958,883	5,020,042	.25%

The median household income for Renovo and the 1-3-5 mile rings is lower than that of Clinton County, and substantially lower than the median household income for the state of Pennsylvania. Again, this directly impacts the vitality of the commercial district servicing the town of Renovo. Lower household income means lower disposable income and a lower spending potential index.

Median Household Income			
	2000	2009	2014
Renovo	\$17,913	\$21,733	\$21,668
1 mile	\$20,561	\$25,430	\$25,391
3 mile	\$22,224	\$28,021	\$28,759
5 mile	\$23,122	\$29,397	\$30,584
Clinton County	\$30,980	\$39,099	\$41,947
Pennsylvania	\$40,108	\$53,225	\$55,819

The median home value for Renovo and the 1 mile ring are slightly lower than those values found in the 3-5 mile ring. The values found for Renovo and the 1-3-5 mile rings are less than half of the median home values for Clinton County, and almost one third of the median home values for the state of Pennsylvania.

Median Home Value			
	2000	2009	2014
Renovo	\$30,978	\$50,648	\$52,581
1 mile	\$30,037	\$48,511	\$50,778
3 mile	\$32,964	\$54,000	\$59,453
5 mile	\$34,364	\$56,278	\$62,545
Clinton County	\$75,421	\$126,624	\$138,278
Pennsylvania	\$94,817	\$161,438	\$193,617

The median age for the population residing in Renovo and the 1-3-5 mile rings are higher than that of Clinton County and the state of Pennsylvania. As with the much younger population of Lock Haven, the older population residing in Renovo will have special needs and requirements. Further analysis of the commercial district will determine if these needs are being met.

Median Age			
	2000	2009	2014
Renovo	39.6	40.3	40
1 mile	41.9	44.3	44.3
3 mile	42.8	45.6	45.9
5 mile	43.4	46.2	46.9
Clinton County	37.7	40.2	41.2
Pennsylvania	38	40.4	41.1

Consumer Spending Patterns

The lower median income of the population residing in the City of Lock Haven and the 1-mile ring directly impacts their spending potential index (SPI). The SPI for retail goods, entertainment and food away from home is substantially lower, at about half of the national average (100%) for the City of Lock Haven and the 1-mile ring. Although it is slightly higher in the 3-5 mile ring for Lock Haven, the SPI for these three categories is about 37% to 34% below the national average. The SPI for all categories is also lower than the county and state SPI in the 1-3-5 mile rings.

The SPI for Renovo and the 1-mile ring is 56% and 51%, respectively, lower than that of the national average. The SPI for the 3-5 mile ring is slightly higher; however, it remains substantially below the national average. The SPI for the 1-3-5 mile ring is lower than both the county and state. The following chart provides data on the SPI for the City of Lock Haven and Renovo,

	Retail Goods		Entertainment		Food Away From Home	
	Total Spent	Spending Potential Index	Total Spent	Spending Potential Index	Total Spent	Spending Potential Index
Lock Haven	\$44,396,929	52	\$5,736,592	53	\$6,171,431	56
1 mile	\$34,095,150	50	\$4,399,057	51	\$4,747,043	54
3 mile	\$94,489,298	63	\$12,309,950	65	\$18,009,493	67
5 mile	\$140,133,240	66	\$18,333,762	69	\$18,578,105	68
Renovo	\$6,526,071	44	\$833,061	44	\$895,482	46
1 mile	\$8,925,313	49	\$1,147,018	50	\$1,188,063	51
3 mile	\$14,111,619	53	\$1,816,791	54	\$1,849,884	54
5 mile	\$17,048,845	55	\$2,197,876	57	\$2,216,476	56
Clinton County	\$263,977,327	68	\$34,658,150	71	\$34,487,949	69
Pennsylvania	\$116,810,086,716	92	\$15,522,689,068	97	\$15,786,666,428	96

Retail Leakage and Surplus Analysis

As discussed in the previous section, the lower median income and the SPI's of the City of Lock Haven and Renovo will directly impact the retail and restaurants establishments currently located in these two towns. The demand for retail/restaurant services is a direct function of the disposable income that could be spent within the trade areas of the commercial districts.

The Retail Leakage and Surplus Analysis will help us understand the following:

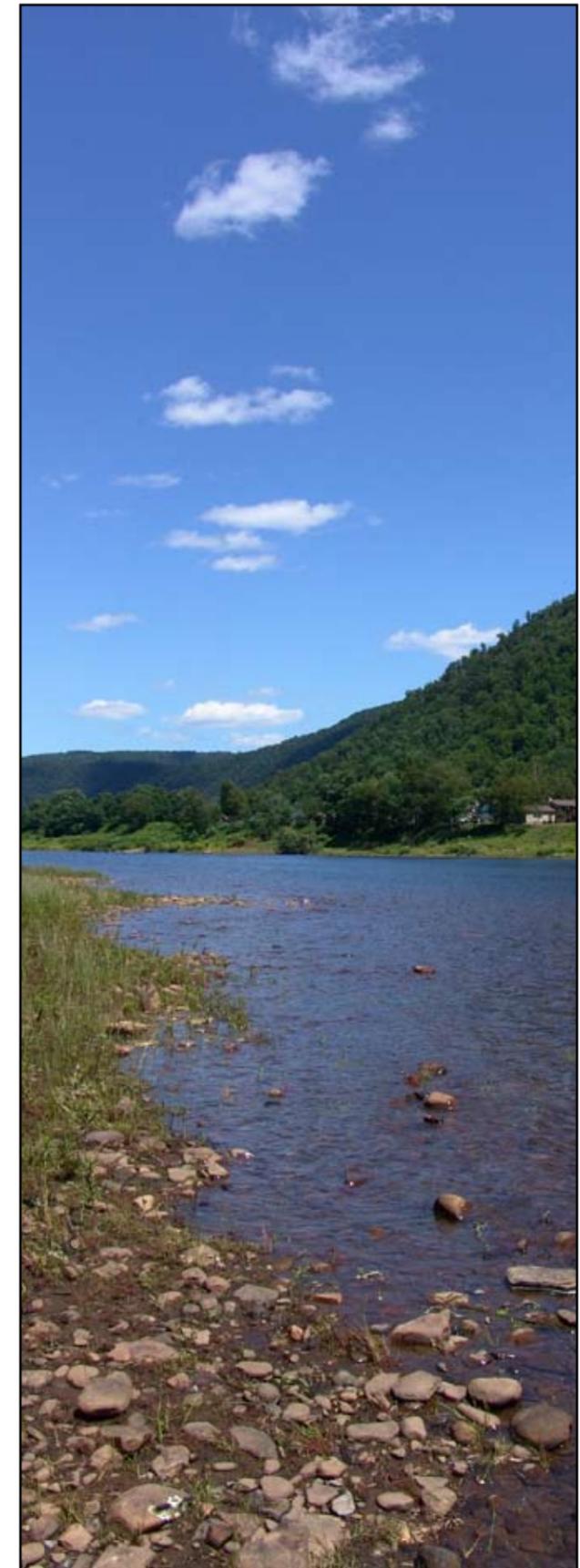
- What merchandise is meeting local demand
- What merchandise is missing in the market area, causing consumers to shop elsewhere
- The difference between actual and potential retail sales
- The extent to which the various commercial districts are capturing the retail spending potential of households residing both inside and outside the commercial districts drive time trade areas

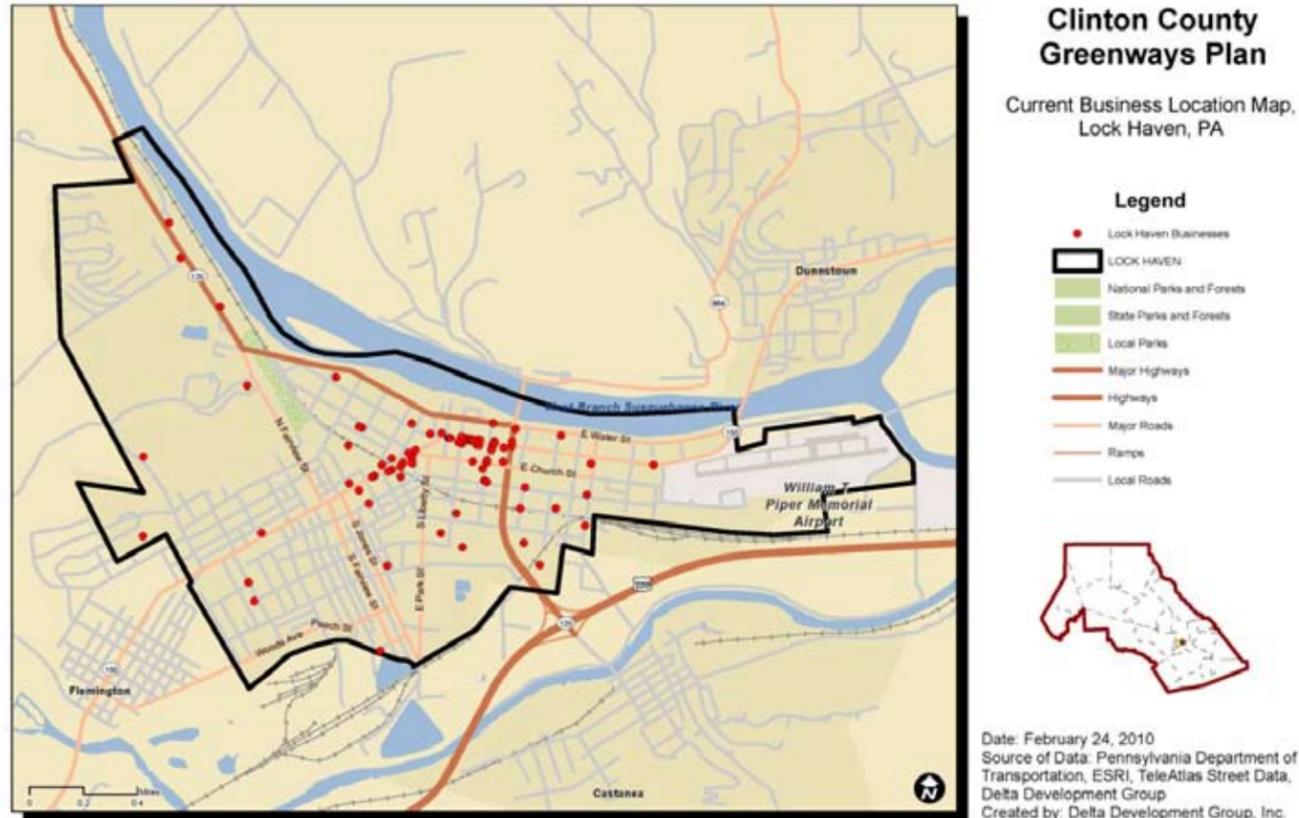
Retail Leakage

The loss in retail sales that occurs when people do not shop in the area where they live is referred to as retail leakage. Retail leakage suggests that there is an unmet demand in the trade area, and that the drive-time area can support additional store space for that type of business. In the retail analysis tables, retail leakage is shown as a positive number.

Retail Surplus

On the other hand, a retail surplus exists if the actual retail sales within the business district exceed the potential sales that could be generated by households living in the drive-time area. The surplus means the businesses within the drive-time area are capturing the local market plus attracting non-local shoppers. **A surplus does not necessarily mean the business district cannot support additional businesses. Developing a strong cluster of stores that have a broad geographic appeal can draw customers from outside the trade area.** In the retail analysis tables, retail surplus is shown as a negative number in red.





LOCK HAVEN MARKET

Exhibit A includes a full listing of the business located in the commercial district of Lock Haven. There are over 100 businesses that provide products and services to the market area. The following chart includes the classification of businesses with the annual sales volume.

Exhibit A - Lock Haven Aggregate Business Classification and Annual Sales Volume	
Total Motor Vehicle	\$36,201,000
Total Furniture/Home Furnishing	\$3,208,000
Total Electronics/Appliances	\$5,865,000
Total Building Materials	\$5,763,000
Total Food & Beverage Stores	\$33,071,000
Total Health/Personal	\$7,137,000
Total Gasoline Stations	\$2,784,000
Total Clothing & Accessories	\$10,659,000
Total Sporting Goods	\$296,000
Total Books and Music	\$1,253,000
Total General Merchandise	\$1,428,000
Total Misc. Retailers	\$11,308,000
Total Mail Order	\$405,000
Total Lodging	\$4,550,000
Total Food Services & Drinking Places	\$17,455,000

The consultant conducted a further analysis of the 1-3-5 mile rings to determine the retail gaps that may or may not exist. The center of the ring is 300 E. Main Street.

Industry Group	Retail Gap 1 mile	Retail Gap 3 miles	Retail Gap 5 miles
Motor Vehicle	\$-9,376,634	\$-5,608,374	\$ 477,244
Furniture/Furnishings	\$-13,124,421	\$-13,099,621	\$-12,195,350
Electronics	\$-5,149	\$-8,969	\$625,610
Bldg. Materials	\$502,080	\$-3,769,833	\$-3,459,489
Food & Beverage	\$-3,753,338	\$-10,654,825	\$-5,535,109
Health/Personal	\$-1,178,686	\$-6,699,640	\$-6,099,610
Gasoline	\$1,357,474	\$-1,820,975	\$4,445,761
Clothing/Accessories	\$-2,435,004	\$-2,356,619	\$-1,934,094
Sporting Goods/Music Instruments	\$-22,455	\$195,020	\$280,244
Book and Music Stores	\$55,766	-\$219,666	\$-175,806
General Merchandise	\$1,430,250	\$-8,401,911	\$-4,823,434
Misc. Retail (Florists, Office Supplies, Used)	\$-1,195,370	\$-2,977,627	\$-2,438,059
Full Service Restaurants	\$131,837	\$2,282,033	\$5,075,204
Limited Service Eating Places	\$-3,457,180	-\$4,371,030	\$-2,978,946
Special Food Services	\$-878,014	\$-742,597	\$-624,796
Drinking Places – Alcoholic Beverages	\$-145,363	\$8,731	\$160,110

Retail Gap Findings

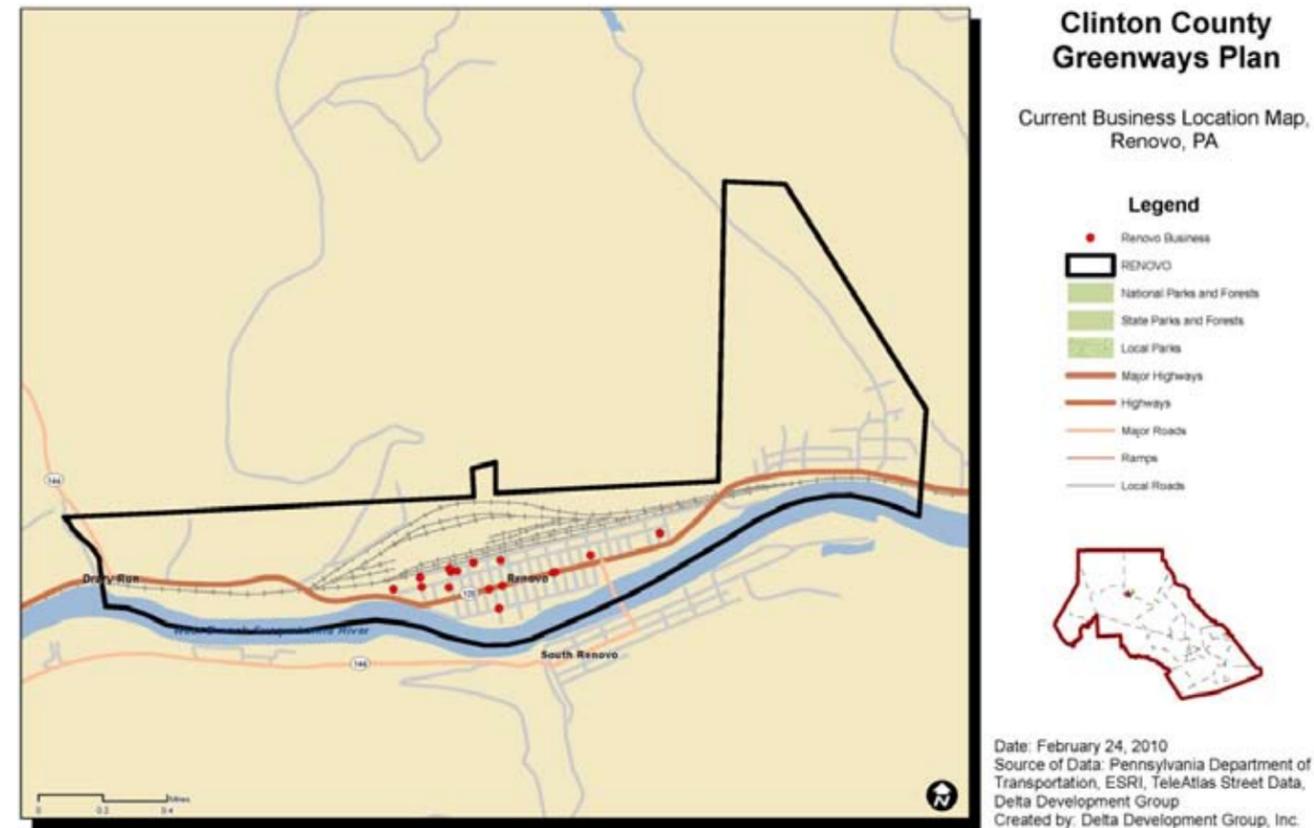
The needs of the Lock Haven 1-3-5 mile population are being met by the current retail establishments located within the 5 mile trade area. However, a small restaurant gap does exist with respect to full service restaurants.

RENOVO MARKET

Exhibit B includes a full listing of the business located in Renovo, PA. There are over 17 businesses that provide products and services to the market area. The following chart shows the annual sales volume for each business.

Business	Sales Volume
MAXWELL FURNITURE STORE	\$ 918,000
TRUE VALUE HARDWARE	\$ 531,000
BI-LO	\$ 5,928,000
WEIS MARKETS	\$ 3,211,000
SERVICE GARAGE	\$ 928,000
DELANEY'S JEWELRY	\$ 238,000
P A MOUNTAIN GEAR	\$ 148,000
NEWSTAND	\$ 156,000
DOLLAR BAZAAR	\$ 810,000
DOLLAR GENERAL	\$ 612,000
FAMILY DOLLAR STORE	\$ 510,000
FLORAL DESIGNS BY LONA	\$ 440,000
LAWSON'S FLOWER SHOP	\$ 176,000
PUFF-N-SNUFF	\$ 1,540,000
C & C ENTERPRISE	\$ 163,000
SOCKY'S RESTAURANT	\$ 240,000
KEYSTONE HOTEL	\$ 268,000

The consultant conducted a further analysis of the 1-3-5 mile rings to determine the retail gaps that may or may not exist. The center of the ring is 500 Huron Avenue.



Industry Group	Retail Gap 1 mile	Retail Gap 3 miles	Retail Gap 5 miles
Motor Vehicle	\$2,023,084	\$-4,717,697	\$-5,795,448
Furniture/Furnishings	\$-45,838	\$87,743	\$161,878
Electronics	\$175,705	\$276,531	\$332,962
Bldg. Materials	\$204,527	\$369,373	\$465,769
Food & Beverage	\$-2,218,905	\$-1,451,279	\$-874,617
Health/Personal	\$353,381	\$562,329	\$679,573
Gasoline	\$-1,693,997	\$-2,771,158	\$-2,671,546
Clothing/Accessories	\$115,648	\$180,626	\$216,563
Sporting Goods/Music Instruments	\$13,498	\$37,443	\$49,078
Book and Music Stores	\$20,920	\$32,123	\$38,311
General Merchandise	\$-2,003,774	\$-1,352,298	\$-951,237
Misc. Retail (Florists, Office Supplies, Used)	\$-87,121	\$860	\$65,399
Full Service Restaurants	\$612,329	\$970,750	\$1,128,111
Limited Service Eating Places	\$195,903	\$393,940	\$507,216
Special Food Services	\$27,624	\$43,156	\$51,748
Drinking Places – Alcoholic Beverages	\$-99,065	\$-76,790	\$-64,677

Retail Gap Findings

There currently exist small gaps in the marketplace, where the resident's needs are being met in other commercial districts. The gaps are too small however to warrant expanded retail and restaurant opportunities in Renovo currently.

SUGAR VALLEY / LOGANTON REGION

The area in and around Loganton and the Sugar Valley, located in southern Clinton County, is a scenic valley offering pristine countryside with amenities that provide an opportunity for developing the tourism trade in the area. According to the *Short Rides in Eastern PA Guidebook* (by William Simpson, The Globe Pequot Press) the Sugar Valley provides a 15.4 mile bicycling loop along local roads, that have good surfaces and are not heavily traveled, making it ideal for a day trip, by bicycle. This plan recommends a Sugar Valley Scenic Drive / Bike Route that encompasses 24.5 miles along both Valley and Winter Roads (please refer to Chapter 6).

Fishing Creek, a well known and exceptional value classified trout fishing stream, runs through the valley, offering an attraction for fisherman. At the eastern end of the Valley along Narrows Road exist both State and Federal trout hatcheries associated with the Fishing Creek that are attractions for the non-fisherman as well.

The valley landscape is predominantly rural with many scenic farms located throughout. Sugar Valley is home to prime agricultural lands, agricultural security areas, State Game Lands 296, Bald Eagle State Forest, numerous Natural Heritage Inventory sites, a bi-centennial family farm, and the County's only covered bridge at Logan Mills.

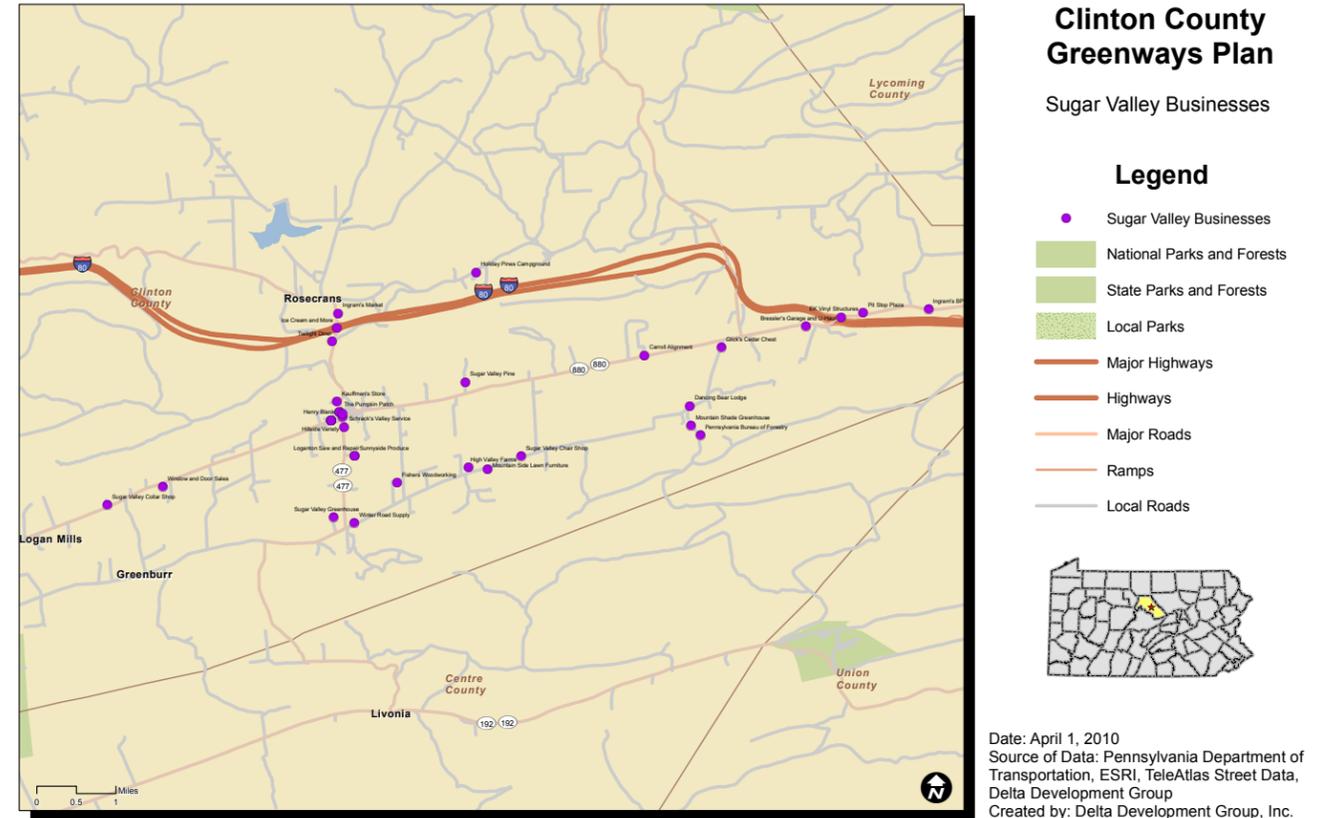
Complementing the outdoor recreational attractions, a number of small business dot the landscape in



the Sugar Valley, including artisan and hand crafted furniture, quilts and gift items, greenhouses and locally grown fruits and vegetables. Establishments such as the Kauffman's Store and the Hillside Variety offer unique and interesting alternatives to the standard national brand / big box stores for potential consumers. Several establishments offer meals and snacks and there currently is one bed and breakfast in the valley providing overnight accommodations. While the Sugar Valley may not be a destination on its own, it can be successfully marketed as an interesting side trip for visitors that come to Clinton County for other outdoor and recreational activities. The ability to offer a diverse menu of activity types that appeal to visitors will encourage longer stays and more frequent visits to Clinton County.

There are several longstanding businesses in the valley and a number of agricultural enterprises that provide the economic base in the valley.

While it is important to identify opportunities for economic growth in the Sugar Valley, it is also important to be sensitive to the concerns of citizens about over commercialization of the valley. It will be important going forward to identify the opportunities that strike a balance between economic opportunity and preservation of the environment and lifestyle enjoyed by those who live in the Sugar Valley. It is recommended that consideration be given to forming a Sugar Valley business network that will provide a forum for discussion and development of proactive steps that can be taken to guide the future of economic development in the valley.



Summary of Key Demographic Findings

The key economic indicators for Lock Haven and Renovo underscore the need to capitalize and market the greenways in Clinton County. As other communities market and build on man-made assets such as sport stadiums, cultural and convention centers, Lock Haven and Renovo should build on the natural assets that exist within the County. Just as stadiums and cultural centers attract tourists and their disposable income, greenways have been proven to attract and retain tourists and expand tourism revenues in many communities. Users spend money in places such as hotels, restaurants, retail stores, campgrounds, bicycle shops, bed and breakfasts, gas stations, and ice cream stands.

Outdoor Recreation Trends

Greenways, rivers, and trails can have varied levels of tourist draw. They can be travel destinations in themselves, encourage area visitors to extend their stay in the area or enhance business and pleasure visits. More than three out of every four Americans participate in active outdoor recreation, such as hiking, biking, camping, fishing, hunting and wildlife viewing, each year. Nationally, these activities supply significant contribution to the U.S. economy, creating jobs and supporting sustainable growth in rural communities.

According to the Outdoor Industry Foundation's 2009 Outdoor Recreation Participation Report, the most popular outdoor recreation activities for all Americans, age 6 and older were as follows:

Sport	Number of Participants (in millions)	% of Participation
Freshwater, Saltwater and Fly Fishing	48.2	17%
Car, Backyard and RV Camping	42.4	15%
Running, Jogging and Trail Running	42.1	15%
Road Biking, Mountain Biking and BMX	41.5	15%
Hiking	32.5	12%

Source: Outdoor Industry Foundation 2009 Outdoor Recreation Participation Report

In addition to data on the most popular activities, the report indicates the following to be the favorite outdoor recreation activities for all Americans, age 6 and older, based upon frequency of participation:

Sport	Number of Outings (total)	Average Number of Outings Per Participant (Annually)
Running, Jogging and Trail Running	3.65 billion	79
Road Biking, Mountain Biking and BMX	2.43 billion	51
Freshwater, Saltwater and Fly Fishing	1.04 billion	17
Wildlife Viewing	686 million	28
Car, Backyard and RV Camping	598 million	12

Source: Outdoor Industry Foundation 2009 Outdoor Recreation Participation Report

Development of the Clinton County greenways trails will provide an asset that will serve the outdoor recreation participant demographic in the national core outdoor recreation activities.

Participation in the core outdoor activities increased over participation numbers in previous years' studies. Recent economic challenges in the United States have contributed to changes in outdoor recreation participation, reflecting the beginning of adjustments in American lifestyles brought about by a challenging economy, shifting demographics and changing times.

The increase in participation in outdoor recreation presents an opportunity for Clinton County to provide a recreation asset for local residents and to attract visitors to the area. Development of the county greenways trails will contribute to participation levels within the county.

Along with other outdoor recreation facilities, Clinton County has historically offered significant resources for hunting, fishing, and wildlife viewing that can contribute to the number of visitors and economic impact in the region. The U.S. Fish and Wildlife Service 2006 National Survey of Fishing, Hunting and Wildlife Associated Recreation report provides

information about national and state participation and expenditures in these activities. According to the report, the number of hunters in Pennsylvania has remained stable at approximately 1,000,000 hunters in both 2001 and 2006. The majority of Pennsylvania hunters are residents, with resident hunters representing 86% of the total in 2001 and 89% in 2006. Non resident hunters represented 14% in 2001 and 11% in 2006. These percentages are reflected in the number of anglers as well, with 81% of anglers being residents in 2001 and 82% in 2006. Non-residents represented 19% and 18% of all anglers in the two years respectively. Participation in wildlife viewing decreased slightly from 1,279,000 in 2001 to 1,168,000 in 2006. However, the percentage of non resident participants in wildlife viewing increased from 23% in 2001 to 27% in 2006.

Food and lodging represent the largest expenditure by hunters and anglers. In 2001 the average daily expenditure for food and lodging on fishing and hunting was \$129, which increased to \$158 per day in 2006. The following table shows total expenditures by anglers, hunters and wildlife watchers in Pennsylvania for the years of 2001 and 2006.

Activity	2001 Expenditures	2006 Expenditures	Percent Change
Anglers	\$662,000	\$1,291,000	95%
Hunters	\$1,073,000	\$1,609,000	50%
Wildlife Watchers	\$1,096,000	\$1,443,000	32%

Source: U.S. Fish and Wildlife Service 2006 National Survey of Fishing, Hunting and Wildlife Associated Recreation/Pennsylvania

As new trails are developed in Clinton County, they will augment the current outdoor experience for resident and non-resident hunters, anglers and wildlife viewers. Increased outdoor facilities will provide an opportunity to increase the number of visitors and to capitalize on new business opportunities in the county.

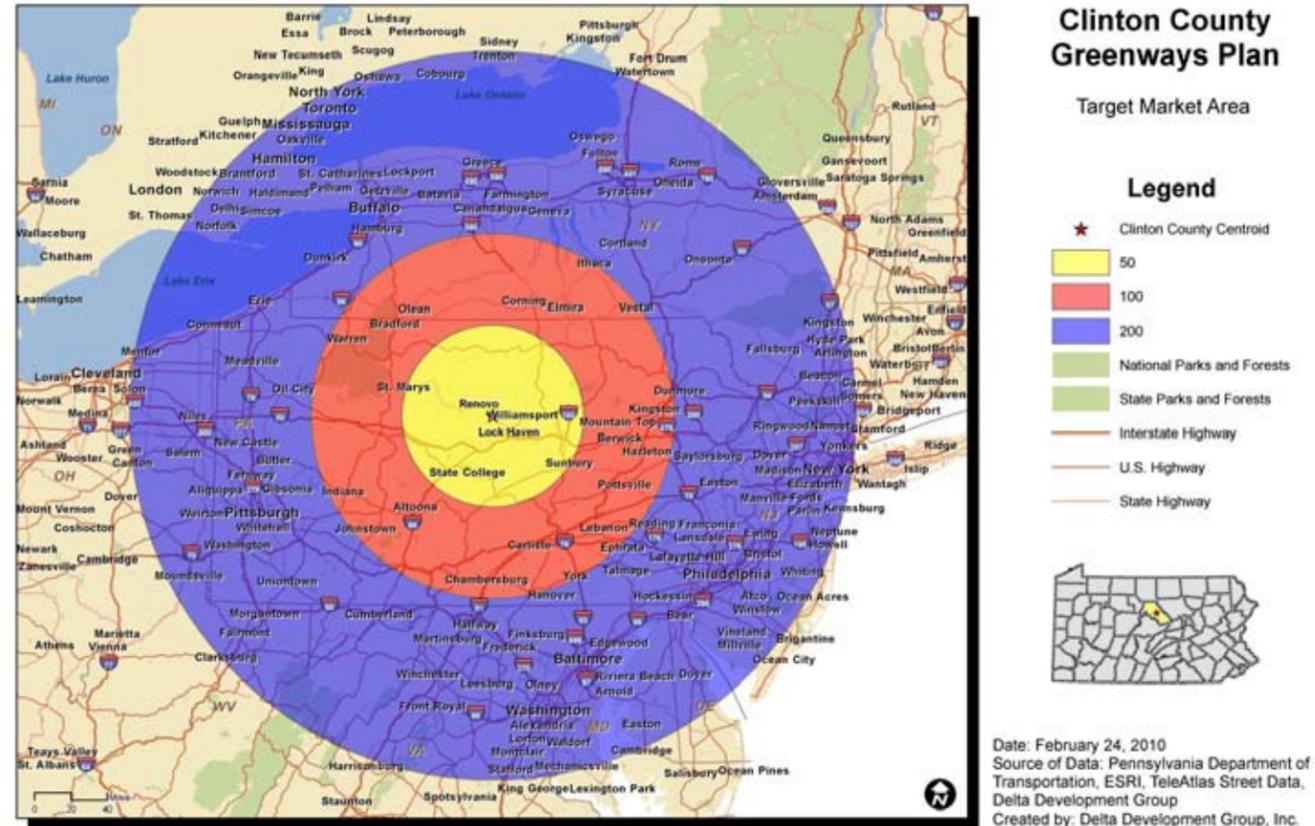


CLINTON COUNTY GREENWAYS TARGET MARKET

We choose the center of Clinton County as our central point to analyze the target market for the Clinton County Greenways (Greenways). Using this point, we have analyzed the key demographic information for the 50-100-200 mile rings.

Target Market Key Demographic Factors (2014 Projections)

The median household income for the households located in the 50-100-200 mile rings is substantially higher than those located in the immediate market areas for Lock Haven and Renovo. This will provide a higher SPI (Spending Potential Index) as well.



	0-50 Miles	0-100 Miles	0-200 Miles
Population	583,693	3,632,291	48,573,749
Households	225,962	1,456,851	18,502,334
Average Household Size	2.38	2.38	2.55
Median Household Income	\$46,645	\$50,607	\$62,105
Median Age	38.6	41.8	38.8

Target Market Consumer Spending Patterns

The SPI of the 50-100-200 mile target market is

	Retail Goods		Entertainment		Food Away From Home	
	Total Spent	Spending Potential Index	Total Spent	Spending Potential Index	Total Spent	Spending Potential Index
0-50 miles	\$4,302,003,446	73	\$567,782,237	76	\$571,838,495	76
0-100 miles	\$29,385,002,625	78	\$3,885,100,617	82	\$5,465,417,894	77
0-200 miles	\$492,392,359,401	104	\$65,677,814,031	109	\$68,277,632,591	113

substantially higher than that of Lock Haven and Renovo.

To better determine what percentage of the population will be attracted to the Greenway, the consultant used Tapestry Lifemode™ Segmentation data developed and maintained by Environmental Systems Research Institute (ESRI). The Tapestry system segments and qualifies populations in 65 categories based on diversity, lifestyles, and lifestages, with each category given a distinctive name.

The following are two examples of the type of detailed description provided by the ESRI Tapestry Lifemode:

Salt of the Earth - A rural or small-town lifestyle best describes the Salt of the Earth market. The median age is 41.4 years. Labor force participation is higher than the U.S. level, and unemployment is

lower. Above-average numbers of employed residents work in the manufacturing, construction, mining, and agricultural industries. The median household income is \$50,913. Households are dominated by married-couple families who live in single-family dwellings, with homeownership at 85 percent. Twenty-eight percent of the households own three or more vehicles. Most homes own a truck; many own a motorcycle. Residents are settled, hardworking, and self-reliant, taking on small home projects as well as vehicle maintenance. Families often own two or more pets, usually dogs or cats. Residents enjoy fishing, hunting, target shooting, attending country music concerts and auto races, and flying kites.

Exurbanites - Open areas with affluence define these neighborhoods. Empty nesters comprise 40 percent of these households; married couples with children occupy 32 percent. Over half of the householders are between the ages of 45 and 64 years. The median age is 44.8 years. Approximately half of those who work hold professional or managerial positions. The median home value is \$288,301; the median household income is \$88,531. Financial health is a priority for the Exurbanites market; they consult with financial planners and track their investments online. They own a diverse investment portfolio and hold long-term care and substantial life insurance policies. Residents work on their homes, lawns, and gardens. Leisure activities include boating, hiking, kayaking, playing Frisbee, photography, and bird-watching. Many are members of fraternal orders and participate in civic activities.

For detailed descriptions of the Tapestry Segmentation categories listed above, please refer to the Tapestry Segmentation Reference Guide prepared by ESRI, Inc. and available online at: <http://www.esri.com/library/brochures/pdfs/tapestry-segmentation.pdf>

The 50 mile ring includes 375,143 potential tourists for the Greenways, the 100 mile ring includes 2,025,977 potential tourists, and the 200 mile ring provides 16,423,573 potential tourists.

Tapestry Segmentation	0-50 miles	0-100 miles	0-200 miles
Connoisseurs	339	786	340,699
Boomburbs	0	1,456	266,035
Wealthy Seaboard Suburbs	0	0	533,260
Exurbanites	4,938	28,187	435,482
Laptops and Lattes	0	0	445,486
Silver and Gold	0	203	18,494
Green Acres	5,376	73,143	496,134
Metropolitans	4,224	10,957	174,157
Salt of the Earth	58,848	277,827	691,316
Midland Crowd	3,811	42,282	220,988
Metro Renters	1,656	2,248	411,241
Aspiring Young Families	391	5,225	195,992
College Towns	6,173	17,249	96,544
Retirement Communities	2,017	19,869	395,309
Rural Bypasses	557	2,076	22,173
Southwestern Families	0	0	5,393
Rooted Rural	16,701	107,184	307,441
Senior Sun Seekers	286	3,535	27,301
Heartland Communities	14,586	126,916	347,661
Home Town	7,744	38,902	162,808
Crossroads	1,104	6,003	55,750
Southern Satellites	14,791	51,650	150,965
The Elders	0	365	73,318
Rural Resort Dwellers	1,686	10,480	128,768
Rustbelt Traditions	10,936	70,260	425,020
Prairie Living	1,459	4,448	12,882
Total Households	157,623	851,251	6,440,617
Total Population	375,143	2,025,977	16,423,573

While the number of potential tourists that may visit Clinton County is large, only a percentage of them will be drawn to the region. It is difficult to estimate the number of visitors, but this number will be determined, in part, by the number and variety of activities that are available. As the proposed trails in the Clinton County Greenway and Open Space Plan are developed, the opportunities for an increase in the number of visitors will grow. The Pine Creek Connector trail will provide access to current users of the Pine Creek Trail, offering additional miles and sites to explore. The Bald Eagle and Spring Creek Canal Trail will offer an additional activity that will complement existing outdoor activities enjoyed

by visitors to the Bald Eagle State Park and newly constructed Bald Eagle Nature Inn. The West Branch Susquehanna River Access and Camping facilities will provide access to a water trail that currently has limited access and service providers.

Currently there is only one outfitter located in Clinton County that offers kayak and bicycle rentals and shuttle service for boating, bicycling and hiking. As trails are developed and the number of users increases, opportunities for additional business development will be created, either through expansion or new businesses development.

ECONOMIC IMPACT OF COMPARABLE TRAILS

In order to better understand the potential for the potential impacts of the development of the Clinton County outdoor and recreational facilities, a review of study data for three comparable trails was conducted. The three trail studies include:

- *Pine Creek Rail Trail 2006 User Survey and Economic Analysis*, conducted by the Rails-to-Trails Conservancy
- *Trail User Survey Report, The Lower Trail*, conducted by the Rails to Trails of Central Pennsylvania, Inc. in 2008.
- *The Great Allegheny Passage Economic Impact Study (2007-2008)*, conducted by the Progress Funds Trail Town Program, Laurel Highlands Visitors Bureau and Allegheny Trail Alliance.

The studies provide valuable information relative to the potential revenue that can be derived for retailers, restaurants and lodging as the result of a greenway, trail or campground.

It is important to note, the percentage of trail users who make local purchases is governed by the availability of local merchants from which to make the purchase and their location. Retailers should be in close proximity to the trail to capitalize on its users.

Pine Creek Rail Trail

The Pine Creek Rail Trail is a destination trail which covers over 62 miles in northeast Pennsylvania. The economic impact study was conducted in 2006, and used the survey methodology previously tested in Pennsylvania trails and documented in the Rails to Trails Conservancy Trail User Survey Workbook. The survey was intended to determine the economic impact of the Pine Creek Rail Trail.

General Results. According to the study, the majority of the users of the trail reside in Pennsylvania (86%). The trail also attracts users from New York, Maryland,

and New Jersey. Lycoming County represents twenty two percent of the Pennsylvania users. Fifty-seven percent of those surveyed as part of the Pine Creek Rail Trail study indicated their trip involved an overnight stay. The largest percentage stayed in a motel/hotel, followed by a camp ground or bed and breakfast. The Average expenditure on overnight accommodations was \$69.08 with an average number of nights per stay of 3.34.

Economic Impact. The following chart is the amount spent locally on soft goods (snacks, meals, and drinks) and lodging by users of the Pine Creek Rail Trail.

Annual Amount Spent on Soft Goods	Annual Amount Spent on Accommodations
\$30.30 per person	\$69.08 per night

Figures for Hard Goods (equipment and apparel) total \$355 per person, as per the Pine Creek Rail Trail survey. It should be noted that the expenditures for high priced (bicycle, canoe, etc.) hard goods typically do not occur at the trail location. Most likely, trail users purchase equipment in their home community and transport it to the trail. Hard goods sold along the trail would include smaller, incidental items such as bicycle tires, water bottle, etc.

The Lower Trail

The Lower Trail is a 16.5 mile trail in Blair County, located on the abandoned Petersburg Branch of the Old PA railroad. It follows the Frankstown Branch of the Juniata River from Flowing Springs to Alfarata. The trail is open to hiking, jogging, biking and all other non-motorized recreational activities.

General Results. According to the study, the majority of the users reside in Pennsylvania, although the trail also attracts residents of Maryland, New York, Ohio, Virginia, North Carolina, Florida and Iowa. Sixty percent of the users note that biking is their primary

activity, while twenty five percent of the users note walking as their primary activity.

Economic Impact. The following chart is the amount spent locally on soft goods (snacks, meals, and drinks), hard goods (bikes, shoes, and apparel) and lodging by users of the Lower Trail, Blair County.

Annual Amount Spent on Soft Goods	Annual Amount Spent on Lodging
\$27.21 per person	\$62.06/night

Figures for Hard Goods (equipment and apparel) total \$400 per person, as per the Lower Trail survey. It should be noted that the expenditures for high priced (bicycle, canoe, etc.) hard goods typically do not occur at the trail location. Most likely, trail users purchase equipment in their home community and transport it to the trail. Hard goods sold along the trail would include smaller, incidental items such as bicycle tires, water bottle, etc.

The Great Allegheny Passage

The Great Allegheny Passage (GAP) is a 132-mile system of biking and hiking trails that connects Cumberland, MD to McKeesport, PA (near Pittsburgh, PA). In 2006, the GAP was connected to the C & O Canal Towpath in Cumberland, MD creating a continuous non-motorized corridor, 318 miles long, from McKeesport to Washington, DC.

General Results: According to the Study, the majority of trail users are from Pennsylvania, Maryland and the Washington, D.C. region, although visitors from other states and countries were among those who used the trail. The most common use of the trail is biking, with 88 percent of users engaging in this activity. The second most common use was hiking/walking at 14.5 percent. The most common visitor to the trail was the local, day visitor.

Economic Impact: The GAP study found that 40.8% of trail users planned an overnight stay as part of their visit. This group spent an average of \$98 per day per person, including lodging and other expenditures compared to an average of \$13 per day per person for day visitors. The most common expenditures of trail users included restaurants, beverages and lodging.

In addition to surveying trail users, the GAP study surveyed businesses along the trail to determine the impact of the trail users on their businesses. Revenue in 2008 increased 20 percent over 2007 revenue and wages paid to employees in 2008 increased 16 percent compared to 2007 wages. On average, businesses indicated that approximately one quarter of their total revenue (23.3% of gross revenue) could be attributed to trail users. Approximately two thirds (66.4%) of businesses surveyed indicated some increase in revenues attributed to trail users.

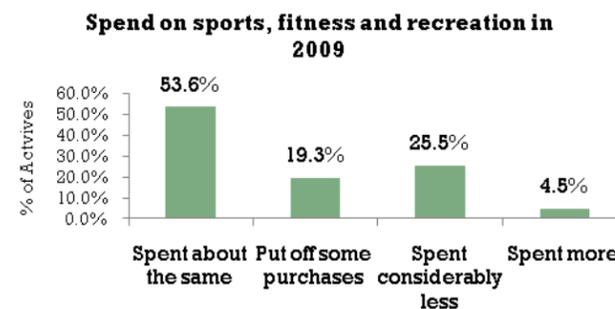
POTENTIAL ECONOMIC IMPACT

Clinton County is located in the PA Wilds region of Pennsylvania, which has been designated by the Commonwealth of Pennsylvania as a destination tourism region. The PA Wilds region offers a valuable resource to outdoor enthusiasts, with opportunities to participate in many types of outdoor recreational activities. According to the Economic Impact of Travel and Tourism in Pennsylvania – Travel Year 2006, prepared for the Pennsylvania Tourism Office, Department of Community and Economic Development, the PA Wilds has experienced a growth in tourist expenditures in each year from 2003 to 2006. Tourism expenditures in Clinton County have increased in each of the years included in the study as well, and represent approximately 8.5% of tourism expenditures in the PA Wilds each year.

Year	PA Wilds Expenditures	Clinton County Expenditures
2006	\$1,007,000,000	\$85,610,000
2005	\$953,000,000	\$81,480,000
2004	\$848,000,000	\$73,040,000
2003	\$739,000,000	\$63,560,000

Source: Economic Impact of Tourism in PA – Travel Year 2006, Global Insight for PA Tourism Office

While regional and national tourism expenditures have trended upward in recent years, the economic challenges experienced in the United States in the last two years have impacted tourism and recreation expenditures. According to the Outdoor Industry Foundation 2010 Top Line Report, only 4.5% of active recreation participants indicated that they had spent more in 2009 than in 2008. A quarter of participants spent considerably less in 2009 than in 2008. Of those who had spent less, over half had spent less on equipment, closely followed by reduced spending on travel. There was a similar picture for spending that had been postponed.



Source: 2010 Outdoor Recreation Participant Top Line Report, Outdoor Industry Foundation

According to the study, however, there is a more optimistic outlook for 2010, with 23.1% of participants indicating a plan to increase spending for equipment and 19.3% of participants indicating a plan to increase spending for travel in 2010.

While national trends in expenditures appear to be positive following the retraction of spending, it is

difficult to estimate what the economic trends and impact will be on Clinton County as the greenway trails are developed in future years. It is important, however, to assess what the potential economic impact for the county may be.

For the purpose of this analysis we will assume the Clinton County Greenways will have the potential to attract 5% of the 0-100 mile ring for day trips and 1/2% of the 200 mile ring. The percentages of use were derived from the current use of the Pine Creek Trail, which is the closest in proximity and comparable amenities to those proposed in Clinton County. Of the participants surveyed in the Pine Creek Trail study, 57% indicated that their trip involved an overnight stay. Of that group, 23.43% stayed in a hotel/motel. The balance stayed in vacation homes or camps located in the Pine Creek area. The average stay was 3.34 nights and average expenditure for lodging was \$69.08 per night.



Concentric Ring	Target Market	Percentage Attracted	Potential: Soft Goods	Potential: Lodging*
0-100 Mile Ring	2,025,977	101,298 (5%)	\$3,069,329	\$23,399,838
200 Mile Ring	14,397,596	71,988 (0.5%)	\$2,181,236	\$16,629,228

*Lodging calculations as follows: average expenditure of \$69.08 per night X 3.34 nights = \$231/person X percentage attracted.

Potential Hard Goods total \$35,960,790 for the 50-100 mile ring, and \$25,555,740 for the 200 mile ring based on the Pine Creek survey data and assumed percentage attracted to Clinton County. As stated earlier in this report, it should be noted that primary purchases of hard goods typically does not occur at the trail site by trail users from outside of the local region.

Based on the Pine Creek survey data, the initial assessment for the economic impact of the development of greenway trails in Clinton County indicates that there is potential for economic development related to the trails. While these numbers indicate a potentially untapped market for retail, restaurants, and lodging amenities, it should be noted that how Lock Haven and Renovo capitalize on nearby greenways and open spaces will depend on several factors:

- Types of trails (motorized, non-motorized)
- Existing character and visitor attractions
- Level of public support for trails
- Curb appeal
- Marketing of businesses to trailer users
- Proximity to trail

An example of outdoor recreation development is the recently constructed Nature Inn at Bald Eagle located within the Bald Eagle State Park. The Inn is designed to cater to eco-tourists and will attract visitors from outside of the region to enjoy the boating, fishing,

hiking and bird watching amenities at the park. Clinton County will be able to leverage the proximity of this facility to its trails by offering additional outdoor recreation opportunities that are not situated within the confines of the park.

A number of studies on the economic impact and economic development opportunities for communities with greenways and trails have been conducted in recent years. While the trail type and dynamics of each community are unique, there are similarities in the types of businesses and amenities that are well suited to the trail user. A 2009 study, [Bicyclists Bring Business: A Guide to Attracting Bicyclists to New York's Canal Communities](#), completed in collaboration by the by Parks & Trails New York, the New York State Canal Corporation and the Erie Canalway National Heritage Corridor, offers insight strategies for building on what you already offer to enhance the appeal of your community and your business to bicycle tourists and strengthening the local economy. A key element to attract bicyclists and other trail users is to provide support and services, including convenient places to stay (from camp grounds to higher end hotels), readily available options for food (from snack bars to restaurants) and services with a "bicycle-friendly" orientation.

An evaluation of trail communities in Pennsylvania and selected trail and Eco-Tourist communities across the county similar to those in Clinton County indicates that the following types of businesses are most often found (listed in order of frequency):

- Restaurants
- Gift Shops
- Clothing Stores

- Art Galleries
- Home Accessory Stores
- Wine/Liquor Stores
- Antiques & Collectibles
- Music & Books
- Sporting Goods/Outfitters
- Bed & Breakfast / Inns / Hotel

MARKETING THE CLINTON COUNTY TRAILS

In order to capitalize on the eco-tourists residing within the 50-100-200 mile trade area, an effective marketing plan must be developed to attract the tourists to the Clinton County trails and outdoor recreational facilities.

The most effective marketing effort will be one in which Clinton County leverages partnerships with local, regional and state organizations such as the PA Wilds, Susquehanna Greenway Partnership and Clinton County Economic Partnership to broaden the scope of their marketing efforts and to take advantage of potential cost sharing for advertising and promotion. The following represents strategic steps to creating an effective marketing plan.

Step One: Define the Clinton County Recreational and Outdoor Experience

The Clinton County trails and open spaces will become a place that can connect people to the beauty of the region's natural resources, and ultimately to its retail and restaurants establishments. With the large number and variety of outdoor experiences and natural resources available, it is critical to form categories and to link them together for an overall Clinton County outdoor and recreational identity.

The trails will attract a large number of individual and group users, from those who are interested in the hiking/biking experience only, to the active ATV clubs. The trails will also attract the fisherman, the kayaker, skier and hunter. It is important that the message of the Clinton County recreational and outdoor experience be defined to attract a diverse audience to the region.

The "audience" should be encouraged to explore Clinton County for the broad range of outdoor recreational activities. The trails and open spaces identified in the Greenways Plan represent an ideal playground that offers both water and land based activities. The experience should highlight the opportunities for hiking, biking, walking, running, trail running, canoeing, kayaking, fishing, camping, hunting, back-packing, skiing, four-wheeling, bird watching, wildlife observation, bicycling tours through the Sugar Valley, scenic views, and other unique characteristics found in Clinton County.

Lastly, the Clinton County experience should highlight the retail, restaurant and lodging establishments available in the towns of Renovo, Lock Haven and in the Sugar Valley. Tourists should be encouraged to explore the towns and all the amenities available to enrich the visitor's experience. This "exploring" will strengthen the current business base, while encouraging the development of new retail, restaurants and lodging opportunities.

Step Two: Develop a Slogan or Tag Line tied to regional efforts

The Clinton County greenway experience should be captured in a short tag line, brief and memorable. The tag line should embody what the county greenway trails can offer, the appeal of their location, and the value of the local amenities.

Step Three: Develop the Marketing Plan that aligns with regional efforts.

A uniform message is the key element of an effective marketing plan. All communications should be

presented under a comprehensive identity system. Posters and banners in downtown corridors should incorporate a consistent color scheme and tag line that identify the Clinton County greenway trail experience.

- External Marketing: Outreach to local and distant trail users includes radio, television or print advertising campaigns. It also includes

developing brochures for distribution in regional hotels, PA welcome centers, AAA travel agencies, and other tourism related organizations.

- Onsite Physical Signs: Gateway signage, banners, trail markers and directional signs tell the user they have arrived. Use of these signs in the commercial districts will also permit a co-marketing of the greenways with retail amenities.

The PA Wilds Design Guide is a valuable tool developed to assist communities in the PA Wilds region to create consistent themes based upon the natural and historic assets of the region.

- Informational Website: The website should have simple navigation, useful information, features that encourage frequent use, continual updates of content, social media, blogs and links to the

commercial districts. The system should have the ability to collect and maintain user data.

- Leverage Marketing Partnerships: By partnering with existing resources including the PA Wilds, the Susquehanna Greenway Partnership, and the Clinton County Economic Partnership for data, cross-marketing, promotion opportunities and shared infrastructure will extend the message about the Clinton County experience and provide opportunities to cost share on outreach activities.

Step Four: Encourage Communities to Become “Trail Friendly” Communities

As trail users begin to access amenities in local communities, it is important that their experience is one that will encourage them to return. Some simple steps can be taken to encourage business owners within communities to respond to visitors' needs. Some examples of these are found in the Bicycles Bring Business guide. A sampling of some suggestions included in that guide is as follows:

- Have and conspicuously display maps of the downtown area, community or region, as appropriate
- Know answers to visitors questions, like where a bike may be repaired, where are ATM's, etc.
- Have information on side trips, bike loops, and other points of interest in the area.
- Be a “bicycle ambassador” – keeping an eye out for bicyclists who seem unsure of where to go or are having mechanical problems.
- Collaborate with neighboring businesses to provide bike racks, lockers, etc.

While these suggestions may appear to be information that is already offered, it is a reminder of how existing businesses can enhance the experience of outdoor recreation enthusiasts to their community.



ADVERTISING AND PROMOTION

A key element of effective advertising and promotion involves coordinating efforts with local, regional and state agencies to broaden the reach of the audience for potential visitors to Clinton County. Several agencies that offer outlets for advertising and promotion include the Susquehanna Greenway Partnership, Clinton County Economic Partnership and the PA Wilds.

PA Wilds - The mission of the Pennsylvania Wilds is to promote the growth of tourism and related-businesses in the 12-counties located in north central Pennsylvania. The corporation is comprised of eight Tourist Promotion Agencies (TPAs) responsible for marketing the Pennsylvania Wilds and their respective regions. The Pennsylvania Wilds Marketing Corporation was established through a regional marketing grant from the Pennsylvania Tourism Office and matched with local contributions from the participating TPAs. The primary goal of the Pennsylvania Wilds Corporation is to establish a strong coalition of public and private partners with the goal of branding the Pennsylvania Wilds as the premier destination for outdoor experiences in the eastern United States.



A recent investment by the Commonwealth in the PA Wilds is construction of the Nature Inn at Bald Eagle in the Bald Eagle State Park. Scheduled to open in September 2010, this 18,500 square foot facility is the first of its kind in a Pennsylvania state park. It offers sixteen guest rooms with full service accommodations and will serve as a premier interpretative facility for bird watching. The Inn's location in the park will also attract visitors who are interested in hiking, boating, canoeing and kayaking at the Park and surrounding region. Development of the inn speaks to the Commonwealth's commitment to development of the PA Wilds region. Its close proximity to Clinton County provides an opportunity to attract visitors to the Inn to explore multiple experiences in the county during their stay.

Susquehanna Greenway Partnership - The Susquehanna Greenway Partnership is a regional organization, with members representing twenty two Pennsylvania counties connected to the Susquehanna River. The Partnership is dedicated to developing and sustaining the Susquehanna Greenway to connect communities and enrich lives through enhanced recreation, healthy living, economic prosperity and environmental stewardship.

Clinton County Economic Partnership - The Clinton County Economic Partnership is a non-profit corporation chartered in Pennsylvania. The purpose of the Partnership is to promote the economic welfare of the Clinton County "Community." The Partnership was created to bring together all organizations providing economic development services, including industrial, commercial and tourism related development. The Partnership is a member of the PA Wilds Tourism Corporation.

THE GREENWAYS AND ECONOMIC DEVELOPMENT

Once an effective marketing campaign has been developed and implemented, a trail signage system is in place, Clinton County, Lock Haven and Renovo

should actively develop an economic development strategy. The strategy should include recruiting new businesses to the commercial districts.

Step One: Inventory under utilized buildings and sites.

As opportunities for development occur, it is important that the county and local communities are prepared to respond to inquiries in an efficient and timely manner. A first step in this preparation is to have a comprehensive list of available buildings and sites that are available for development. The agencies should conduct a thorough inventory of all buildings and vacant sites within each commercial district. A profile sheet should be developed for each available property and building site, and should include the following information:

- Property Owner or Rental Agent
- Property Address
- Square footage available for lease and/or purchase
- Lease rates and terms
- Location with reference to major routes, the Greenways and other public assets.

Step Two: Develop Incentive Package.

Offering incentives to new business establishments and/or developers will assist in creating interest in the commercial districts. A variety of incentives have been used by communities throughout Pennsylvania to provide incentives to potential developers. Some of the incentive tools that may be utilized include:

- Tax abatements for improvements
- Waiving building permit fees by the local municipalities
- Working with property owners to offer lease concessions for the first six months

Step Three: Develop Business Recruitment Brochure

The Business Recruitment Brochure will be a visually appealing marketing brochure that highlights the assets of Clinton County, Lock Haven and Renovo. The brochure would be a four color folder which includes a pocket for the property profiles and financial incentive fact sheet.

Step Four: Identify and Actively Recruit New Businesses.

A list of potential businesses should be developed that fit the following categories:

- Restaurants
- Gift Shops
- Clothing Stores
- Art Galleries
- Home Accessory Stores
- Wine/Liquor Stores
- Antiques & Collectibles
- Music & Book Stores
- Sporting Goods/Outfitters
- Bed & Breakfast/Inns/Hotels

The list should include local businesses looking to expand into the marketplace; businesses in surrounding communities looking for a second location, and lastly national retailers expanding in the Pennsylvania markets.

FUNDING RESOURCES

The following funding matrix outlines various funding resources that may be utilized by Clinton County, municipalities and other organizations to leverage investment to implement the economic development opportunities related to the county Greenways.

Funding Source	Summary	Uses	Requirements/Terms
Progress Fund (www.progressfund.com)	The Progress Fund provides loans from \$20,000 to \$400,000 to new or expanding businesses that seek to create jobs and opportunity.	Progress Fund loans can be used to purchase property and/or equipment, restore and rehabilitate structures, purchase inventory, purchase the business assets of an existing business, and for working capital.	Progress Fund loans carry variable interest rates based on the nature of the project and have terms typically of five to fifteen years. The loans include an origination fee and closing costs.
First Industries Machinery and Equipment Loan Program (MELF) www.newpa.com	Low-interest loans to acquire and install new or used machinery and equipment or to upgrade existing machinery and equipment. Loans up to \$5,000,000 or 50% of the total eligible project costs, whichever is less.	Machinery and equipment acquisition and upgrading and related engineering and installation costs directly related to the business process.	5% interest rate; Up to 10 year term, depending upon the useful life of the machinery being financed; \$25,000 cost per job retained or created.
First Industries Small Business First (SBF) www.newpa.com	Provides low interest loans for eligible lodging and restaurant projects. Loans up to \$200,000 or 50% of total eligible project costs, whichever is less; Maximum loan amount for working capital is \$100,000 or 50% of total eligible project costs, whichever is less	Land and building acquisition and construction; Machinery and equipment purchase and upgrades; Working capital; Environmental compliance/pollution prevention.	5% interest rate; \$25,000 cost per job retained or created; Up to 15 year term, for land and building; Up to 10-year term for machinery and equipment; Up to 3-year term for working capital.
First Industries Guarantee Loan Fund	A loan guarantee program for large-scale tourism projects that (1) demonstrate significant regional impact, (2) deploy new or innovative technologies, and (3) demonstrate significant direct job creation and/or state and local revenue generation. Tourism projects that are designed to optimize and complement the use of Commonwealth resources, such as state parks, would also be eligible. Loans up to \$200,000 or 50% of total eligible project costs, whichever is less; Maximum loan amount for working capital is \$100,000 or 50% of total eligible project costs, whichever is less.	Land and building acquisition and construction; Machinery and equipment purchase and upgrades; and Working capital. Operation of Revolving Loan Funds (RLFs) by Regional organizations that require large-scale projects demonstrating regional impact; deploy new or innovative technologies; demonstration of significant job creation.	Variable
Pennsylvania Historical and Museum Commission (PHMC) Reinvestment Investment Tax Credit	This tax credit allows certain expenses incurred with the rehabilitation of older buildings to be eligible for a tax credit.	Tax credits may be 10% for non-historic, non-residential buildings built before 1936. Tax credits may be 20% for certified historic structures, including buildings built after 1936.	The building must be income producing and rehabilitated according to the Secretary of Interior's Standard for Rehabilitation. The amount must be greater than the adjusted basis of the building, or be at least \$5,000, and the owner must continue to own the building for at least five years.
PA Department of Conservation and Natural Resources (DCNR) Community Conservation Partnership Program (C2P2)	Grant funds to counties, communities, and non-profit organizations for conservation planning and acquisition of land for local parks, greenways, open space preservation and natural areas protection. Please refer to the program guidelines for a more detailed description: http://www.dcnr.state.pa.us/brc/grants/indexgrantsinstruct.aspx	Pennsylvania has received approximately \$1 million a year in allocated funding. These funds must be distributed according to the following formula: (1) 40% for diverse trail use, (2) 30% for motorized trail use, and (3) 30% for non-motorized trail use.	Projects carry an 80/20 cash match requirement. The only exception is acquisition projects, which carry a 50/50 match requirement, which can include soft match (e.g. donated funds, right of way).
Pennsylvania Redevelopment Assistance Capital Program (RACP)	Grant funds providing for the acquisition and construction of regional economic, cultural, civic, and historical improvement projects. Preference is given to projects that display significant potential for improving economic growth and the creation of jobs and new opportunities to a diverse group of communities throughout Pennsylvania.	Uses include property acquisition, site preparation, construction/building renovation; construction period interest; and permits and approvals.	Grant amounts vary and disbursements occur on a reimbursement basis only. The minimum individual project cost is \$1 million.
PA Department of Community and Economic Development (DCED) Tourism Promotion Assistance Grant Program.	The purpose of the Tourism Promotion Assistance Grant Program provides funding to supplement existing local destination marketing efforts by designated Tourism Promotion Agencies.	Eligible expenses include all activities associated with marketing a destination such as advertising, public relations, printing, postage, etc.	Award amount varies.



ACTION PLAN

Specific action items relative to each of the three feasibility studies may be found at the end of each respective chapter prior to the mapping. This chapter outlines the project partners, potential funding sources, and the means by which Clinton County may begin to form an overall management entity that would contribute to and/or oversee the development of the improvements outlined in this study.

PROJECT PARTNERS

The following is a listing of project partners identified by the study committee and the public participation process, including those identified for each of the three feasibility studies:

- Clinton County
- Centre County
- Susquehanna Greenway Partnership
- PA Wilds
- Lumber Heritage Group
- All affected local municipalities (Cities, Boroughs, Townships)
- PA Fish and Boat Commission
- PA Historic and Museum Commission
- PA DCNR Bureau of Forestry – Sproul SF
- PA DCNR Bureau of Forestry – Tiadaghton SF (Pine Creek Trail)
- PA DCNR – Bald Eagle State Park
- Clinton County Solid Waste Authority (Landfill)
- Northcentral PA Conservancy
- Beech Creek Watershed Association

- Keystone Trails Association
- Clinton County Historical Society
- Centre County Historical Society

Each of these partners will likely be involved with the promotion, funding, and/or implementation of the County Greenway system. There may be additional partners identified and added to this list as the projects contained within this report move forward towards development, including representatives from the agencies providing the project funding. The larger and more complex projects will have involvement from multiple project partners.

CREATING A MANAGEMENT ENTITY

The most common recommendation amongst the three feasibility studies and one that is applicable to the proposed projects suggested within this report is for the creation of a management entity or 'Greenway Authority'.

This report recommends that Clinton County take the lead in forming such an entity to coordinate development of the projects recommended in this study. This entity could assume the leadership role for all proposed projects, with the exceptions of the West Branch Susquehanna River Water Trail where the Susquehanna Greenway Partnership is the Manager of Record, and possibly the Bald Eagle and Spring Creek Canal Trail where it could be a joint venture with Centre County. The Clinton County Greenway Authority could serve the role of a 'regional coordinator' in the recommended management structure for the West Branch Water Trail.

To make the efforts of the project partners effective and most importantly efficient, it is best to form a unifying management entity to oversee the

development of greenway related projects and to coordinate and combine the efforts and resources of the project partners. While each greenway and/or trail project has its own unique set of circumstances and goals, general tasks of the management entity will include the preparation of funding applications, developing design documents, obtaining construction funding, and general promotion for each project.

The Susquehanna River Water Trail - West Branch: Stewardship and Conservation Plan, prepared in August 2009 by the Northcentral Pennsylvania Conservancy investigated a number of other organizations and their management structures as potential models for the management structure of the water trail. These organizations included:

- Lower Susquehanna Riverkeeper / Waterkeeper Alliance
- Hiawatha Water Trail / Noquemanon Network
- Northern Forest Canoe Trail
- The Allegheny Valley Trails Association
- The Yough River Trail / Regional Trail Corporation
- Pennsylvania Parks and Forest Foundation (Friends of Milton State Park and Friends of Shikellamy State Park)
- Susquehanna River Water Trail Association – Middle Section (SRTA)

Summaries of the management structures for each of these organizations and their applicability towards the West Branch Water Trail are provided in the NPC Stewardship Plan.

One of the more applicable organizations that could serve as a model for Clinton County may be the Regional Trail Corporation (RTC) located in Western Pennsylvania. This organization was formed to plan, develop, construct and oversee the management of the Youghiogheny River Trail – North Section, a 40.3

mile rail-trail traversing three counties (Allegheny, Westmoreland and Fayette) from McKeesport to Connellsville – now a major part of the Great Allegheny Passage connecting Pittsburgh, PA and Washington, DC.

The RTC is a non-profit 501c3 corporation with a Board of Directors comprising of three representatives from each of the three counties. This organization not only oversees the Youghiogheny River Trail North Section, but also a number of other trail projects in southwestern PA. The RTC mission "is to acquire, develop, and manage appropriate trail corridors in southwestern Pennsylvania and to create and promote opportunities for recreation, tourism, economic development, and historic and environment conservation."

The RTC coordinates the efforts of local volunteer groups that have formed within each county and assists these support groups in all phases of trail development, but primarily with trail maintenance efforts now that many of the trails have been constructed.

The RTC has developed a guidance document that it has distributed at a number of trail conferences throughout PA entitled Forming Trail Chapters and Developing Municipal Partners. This entire document can be found in the report appendix and includes examples of organizational articles, resolutions, agreements between the RTC and the local support groups and participating municipalities, and maintenance responsibilities checklists. For more information including contacts, please refer to the Regional Trail Corporation website: http://www.youghrivertrail.com/regional_trail_corporation.htm

Another organization that may serve as a good example for a county greenway or trail authority would be the York County Rail Trail Authority (YCRTA) in southcentral Pennsylvania. This organization was formed in 1990 to oversee the development of a 21 mile recreational trail now known as the Heritage Rail

Trail County Park. The trail was completed in 1999, and the management has since been transferred to the York County Department of Parks and Recreation. The YCRTA now works in conjunction with the York County Planning Commission as either the lead agency or advisor for a number of other trail opportunities within York County. For more information, please refer to the YCRTA website at: <http://www.yorkcountyrails.org/>

Getting Started

There are a number of ways that Clinton County may begin to establish this management entity. This could be done by partnering with other counties as recently proposed by the Susquehanna Greenway Partnership, by devoting a county staff person specifically to address the recommendations within this study, or by taking advantage of the DCNR Circuit Rider program.

The Susquehanna Greenway Partnership (SGP) is looking for possible agreements with the counties through which the trails traverse for opportunities to share the handling of open space acquisition and trail development, operations and maintenance. This could be in the form of a regional trail authority, similar to examples provided within this report, and described in further detail as an appendix to The North Branch Canal Feasibility Study, prepared by SEDA-COG in May 2009 entitled Alternative Organizational Models for Multi-County Trails by Jerry Walls, AICP. This document may be found online at: http://www.susquehannagreenway.org/Documents/Canal_Trail_Report_FINAL_June_09-s2.pdf

This organizational structure has been proposed to many of the SGP counties with many expressing interest in the further development of the idea until the recent downturn in the economy. This potential partnership should be further pursued by Clinton County.

In the event that the County is unable to devote a staff person towards development of the recommendations and specific projects within this study, they may consider applying to DCNR's C2P2 Circuit Rider program. This program's purpose is to initiate new programs and services for a county and municipalities that individually do not have the financial resources to hire a professional staff person. The intended result of such a hiring is to increase the ability of county and local officials to more efficiently and effectively meet their recreation, park, greenway, open space and/or natural resource conservation needs.

Applications for this program are accepted at any time and it is recommended that DCNR staff be consulted prior to submitting an application. More information on this program may be found online at: <https://www.grants.dcnr.state.pa.us/LearnMore.aspx?GrantProgramId=25>

POTENTIAL FUNDING SOURCES

The following are descriptions of the programs and/or resources from which funding may be sought for the development of proposed greenway facilities:

Federal legislation authorizes funding for a wide range of transportation projects under the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). SAFETEA-LU is the successor to the Transportation Equity Act for the 21st Century (TEA-21), which in turn derives from the 1991 Intermodal Surface Transportation Efficiency Act (ISTEA). Unlike previous federal transportation legislation that strongly favored investment in highway infrastructure, these pieces of legislation encouraged investment in multiple modes of transportation, such as mass transportation and pedestrian and bicycle facilities.

SAFETEA-LU funding has many subsets. Those programs that provide funding to bicycle and pedestrian facilities include:

- Transportation Enhancements
- Recreational Trails
- Federal Safe Routes to School

Because federal transportation funding is available for bridge and intersection improvements, as well as associated environmental improvements such as ecological restoration and invasive species management, funding for these components of the greenway should also be explored.

If federal funds are to be used to develop and implement a transportation project, the project must be on a Transportation Improvement Program (TIP). A metropolitan area TIP represents the list of transportation projects and programs scheduled to be undertaken over the next few years. Federally recognized Metropolitan Planning Organizations (MPOs) or Rural Planning Organizations (RPOs) are responsible for developing the TIP, usually every four years. The SEDA – Council of Governments is the federally recognized RPO for Clinton County.

Transportation Enhancements

Transportation Enhancements (TE) are community-based projects designed to improve the cultural, historic, aesthetic and environmental aspects of transportation infrastructure. The federal government provides funds for the TE program through reimbursement. The project sponsor is generally expected to pay the full cost of the project up front and will be reimbursed later by the federal government through the state department of transportation (DOT). Typically, the federal government will reimburse up to 80% of a TE project cost. Reimbursable costs usually include project feasibility, planning and engineering plans,

environmental reviews, land acquisition, and construction. The remaining 20% of the project cost is generally the responsibility of the project sponsor. TE projects must be one of 12 eligible activities and must relate to surface transportation. Of the 12 eligible categories, those most relevant to the Clinton County Greenway include:

- pedestrian and bicycle facilities (e.g., sidewalks, walkways or curb ramps; bike lane striping; wide paved shoulders; bike parking and bus racks; off-road trails; bike and pedestrian bridges and underpasses),
- acquisition of scenic or historic easements and sites, and
- landscaping and scenic beautification.

In Pennsylvania, the TE program is run through district TE offices. Projects are selected in a cooperative and collaborative process that involves PennDOT, Federal Highways Administration (FHWA), Metropolitan Planning Organizations, and Rural Planning Organizations. Eligible applicants include municipalities, counties, state agencies, and nonprofit organizations. Selection criteria include anticipated benefits for the community, anticipated number of users/beneficiaries, whether the project is eligible under multiple TE categories, environmental impact, fit with comprehensive planning goals, geographic location, level of public support, linkage to transportation system, need for TE funds to complete project, maintenance commitment, relationship to other projects, project innovation, and secured matching funds.

The application is available online and in print. Application training is available at multiple sites in the state. The project selection cycle occurs every two years. The next call for proposals is yet to be determined.

The maximum project award is \$1 million. Preconstruction costs are considered the local

match. More information about this program can be found at the PennDOT website: <http://www.dot.state.pa.us/Internet/Bureaus/CPDM.nsf/>.

Recreational Trails Program

The Recreational Trails Program (RTP) provides federal funds to the states to develop and maintain recreational trails and trail-related facilities for both non-motorized and motorized recreational trail uses. The RTP is an assistance program of the FHWA funded by the federal fuel tax. In Pennsylvania, the RTP is administered by the PA DNCR Bureau of Recreation and Conservation in consultation with the Pennsylvania Recreational Trails Advisory Board, which is composed of both motorized and non-motorized recreational trail users.

Match requirements for Pennsylvania Recreational Trails Program Grants are 80% grant money, and 20% project applicant money. "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 applicants include federal and state agencies, local governments and private organizations. Funding may be used for the development of urban trail linkages near homes and work-places; maintenance of existing recreational trails; development of trail-side and trail-head facilities; provision of features that facilitate the access and use of trails by persons with disabilities; acquisition of easements for trails, or for trail corridors identified in a state trail plan; acquisition of fee simple title to property from a willing seller; and construction of new trails on state, county, municipal, or private lands. More information on this program can be found at: www.dcnr.state.pa.us/brc/grants/indexgrantsinstruct.aspx.

Federal Safe Routes to School

The Federal Safe Routes to School program provides funding to enable and encourage primary and secondary school children to walk and bicycle to school. The program is a federal cost reimbursement program; no funding is provided up front. Projects are 100% federally funded and do not require a local match. All project phases are eligible for funding, but only after the project has been approved by PennDOT and the FHWA. All requirements for federal highway aid (NEPA, competitive bidding, Davis Bacon prevailing wage rates, etc.) must be followed.

Generally, physical improvements that enhance student safety and/or promote walking and bicycling to school are eligible. Such projects would include (but are not limited to) sidewalks, crossing improvements, traffic calming measures, signs, signals, bike storage facilities, and other similar features. Infrastructure improvements must be physically located in the public right of way and within approximately two miles of a kindergarten through eighth grade (K–8) school. Additionally, improvements to the walking and bicycling infrastructure may only be on routes that directly connect residential areas to schools. More information on this program can be found at the PennDOT website: <http://www.dot.state.pa.us/Internet/Bureaus/CPDM.nsf/>

PA Hometown Streets

This program was developed as part of a joint, statewide program designed for Governor Edward G. Rendell's initiative, Home Town Streets and Safe Routes to School, in 2004. Transportation enhancements money was used to fund the program, which encouraged the reinvestment in and redevelopment of downtowns in addition to providing safe walking routes to school for children. The Home

Town Streets program will continue to operate under the TE umbrella. The PA Safe Routes to Schools program has been folded into the Federal Safe Routes to School Program.

The Home Town Streets projects include a variety of improvements such as:

- Sidewalk improvements
- Planters
- Benches
- Street lighting
- Pedestrian crossings
- Traffic calming
- Bicycle amenities
- Kiosks
- Signage

More information on this program can be found at the PennDOT website:

<http://www.dot.state.pa.us/Internet/Bureaus/CPDM.nsf/>

Legislative Funding

State and federal elected officials can often include items into legislation for worthy projects in their districts. A conversation between county and municipal officials and legislators is the way to begin this process. This type of funding should be targeted toward capital improvement projects.

PA Department of Recreation and Natural Resources (DCNR) Community Conservation Partnership Program.

The DCNR Community Conservation Partnership Program (C2P2) provides funding for communities and nonprofit organizations to acquire, plan and implement open space, conservation and recreation resources, including trails. DCNR has grant application periods annually, with applications typically due in mid-April. DCNR requires a 50-50 match (cash or in kind services) to its grant awards for trail development projects. More information on this program can be found at the DCNR website: www.dcnr.state.pa.us/brc/grants/indexgrantsinstruct.aspx.

PA DEP Growing Greener II

The Growing Greener Program is an environmental grant program established under the Environmental Stewardship and Watershed Protection Act. Funds are distributed among four state agencies: the Department of Agriculture to administer farmland preservation projects; the Department of Conservation and Natural Resources for state park renovations and improvements; the Pennsylvania Infrastructure Investment Authority for water and sewer system upgrades; and the Department of Environmental Protection for watershed restoration and protection, abandoned mine reclamation; and abandoned oil and gas well plugging projects.

Grants are available to a variety of eligible applicants, including counties, municipalities, county conservation districts, watershed organizations, and other organizations involved in the restoration and protection of Pennsylvania's environment. These grants will support local projects to clean up "non-point" sources of pollution throughout Pennsylvania.

More information on this program can be found at the PA DEP website: <http://www.depweb.state.pa.us/growinggreener/site/default.asp>.

DCED Community Revitalization Funds

The Department of Community and Economic Development (DCED) Community Revitalization Fund is a state program that supports local initiatives that improve the stability of communities and enhance local economies. This agency has an open application period throughout the year, but applications should be submitted as early as possible in the fiscal year after June 30. The grant program covers a wide range of eligible uses including acquisition of land, buildings, and right-of-ways; trail, civic, and recreation projects; programs and developments that build capacity of the local community and relevant local organizations to better serve the needs of the community, and other reasonable and necessary expenses related to community-based activities. Active support of the district's state senator and / or state representative is critical in a successful grant application. More information on this program can be found at the DCED website: <http://www.newpa.com/find-and-apply-for-funding/funding-andprogram-finder/index.aspx>.

PA Fish and Boat Commission

In January 2005, the Pennsylvania Fish and Boat Commission created the Boating Facility Grant Program to provide grants to county and municipal governments for the planning, acquisition, development, expansion and rehabilitation of public boating facilities located on the waters of the Commonwealth. The goal of the program is to ensure Pennsylvania's recreational boaters are

provided with the highest quality boating facilities on all navigable water bodies in the state.

Boating Facility Grant Funds are available to public entities, including townships, boroughs, municipal and county governments which have or will have the capability to provide boat access facilities that are open and available for general public use.

The grant will reimburse recipients for up to 75% of the costs for land acquisition, project design and engineering, development, expansion, and major rehabilitation of public recreational boat access facilities. Eligible activities include the rehabilitation, expansion or construction of new boat ramps, bulkheads, courtesy floats, access roads, parking areas, restrooms, signs and localized landscaping. All construction activities must benefit and directly support recreational boating. Eligible projects must occur on public lands owned by the project sponsor, or where the sponsor has a long-term lease or agreement on the site.

Grant funds are to be used for major site improvements and not for any routine maintenance or operation activities. Grant recipients are responsible for at least 25% of the proposed project cost. This 25% match can be cash, the fair market value of any labor or materials or a combination thereof.

For more information on this program, please refer to the Fish and Boat Commission website: http://fishandboat.com/promo/grants/boat_fac/00boatfac.htm

Pennsylvania Department of Transportation

The Pennsylvania Department of Transportation may provide assistance with any on-road cycling route that is proposed. PennDOT may provide signs and installation of “share the road” markings and, if any shoulder widening is necessary, the local district may provide these improvements through their “betterment” maintenance funds.

PA Wilds Initiative

The PA Wilds Resource Center maintains a database of potential funding sources, including many of those listed above - to assist local businesses and communities within the region to promote smart and sustainable tourism growth.

Community Assistance resources may be found at the following PA Wilds Resource Center link:

http://www.pawildsresources.org/comm_fundingwtl.html

Programs applicable to local businesses within Clinton County may be found at the following PA Wilds Resource Center link:

http://www.pawildsresources.org/clinton_programs.html

Private Foundations

There are various corporations and foundations that support public works such as trail development. The competition for these funds has become brisk, but the opportunities should be researched. Funding must often be to nonprofit organizations.



APPENDIX

CLINTON COUNTY GREENWAYS & OPEN SPACE PLAN

Bald Eagle and Spring Creek Canal Trail Feasibility Study
West Branch Susquehanna River Access & Camping Feasibility Study
Pine Creek Trail Connector Feasibility Study

Prepared for:
Clinton County Planning Commission

Prepared by:



GTS Technologies Inc.
Delta Development Group, Inc.